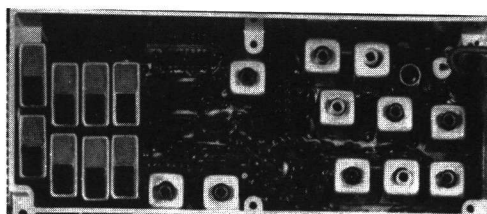
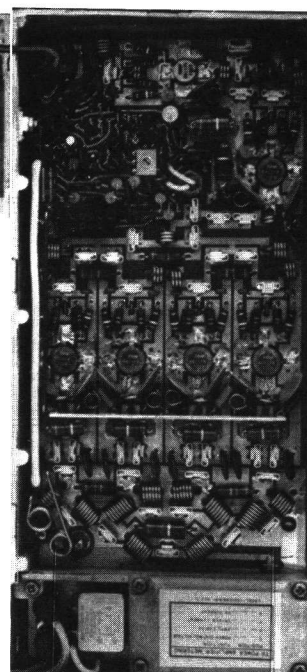




GE Mobile Communications



**EXCITER
ASSEMBLY**



**PA
ASSEMBLY**

MASTR® II

25-50 MHz

100-WATT STATION TRANSMITTER

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WARNING

Although the highest DC voltage in the MASTR II station transmitter is the 12 VDC supply voltage, 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!

SPECIFICATIONS*

FCC Filing Designation	KT-59-A, C Extended local control; Intermittent Duty KT-60-A, C Extended local/DC & Tone Remote DC Remote/Tone Remote; Intermittent Duty KT-61-A, C All controls; Continuous Duty		
Frequency Range	25-50 MHz		
Power Output	100 Watts (Adjustable from 50 to 100 Watts at 30 to 50 MHz, and from 75 to 100 Watts at 25 to 30 MHz)		
Frequency Stability	(-30°C to +60°C) $\pm 0.0005\%$ (KT-59-A, KT-60-A, KT-61-A) (0°C to +55°C) $\pm 0.0002\%$ (KT-59-A, KT-60-A, KT-61-A) (-30°C to +60°C) $\pm 0.0002\%$ (KT-59-C, KT-60-C, KT-61-C)		
Spurious and Harmonic Emission	At least 85 dB below full rated power output.		
Modulation	Adjustable from 0 to ± 5 kHz swing with instantaneous modulation limiting.		
Audio Frequency Characteristics	Within +1 dB to -3 dB of a 6-dB/octave pre-emphasis from 300 to 3000 Hz per EIA standards. Post limiter filter per FCC and EIA.		
Distortion	Less than 2% (1000 Hz) Less than 3% (300 to 3000 Hz)		
Deviation Symmetry	0.5 kHz maximum		
Maximum Frequency Spacing	Without Center tuning-Full Specs.	With Center tuning-Full Specs.	1 dB degradation from Advertized Specs.
LL (25-30)	.080	.160	.320 MHz
L (30-36)	.100	.200	.400 MHz
M (36-42)	.120	.240	.470 MHz
H (42-50)	.140	.280	.540 MHz
Duty Cycle	EIA 20% Intermittent (KT-59-A, C & KT-60-A, C) EIA Continuous (KT-61-A, C)		
RF Output Impedance	50 Ohms		

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

DESCRIPTION

Transmitter Types KT-59-A, C, KT-60-A, C & KT-61-A, C are crystal-controlled, phase modulated transmitters designed for one-through four-frequency operation in the 25 to 50 megahertz band. The solid state transmitter utilizes both integrated circuits (ICs) and discrete components, and consists of the following assemblies:

- Exciter Board; with audio, modulator, amplifier and multiplier stages.
- Power Amplifier Assembly; with amplifier, driver, PA, power control, filter and antenna switch.

megahertz, and the crystal frequency is multiplied three times (divided by four and multiplied by 12 for a multiplication of three).

Audio, supply voltages and control functions are connected through P902.

Centralized metering jack J103 is provided for use with GE Test Set Model 4EX3A11 or Test Kit 4EX3K12. The test set meters the modulator, multiplier and amplifier stages.

ICOMS

Three different types of ICOMs are available for use in the exciter. Each of the ICOMs contains a crystal-controlled Colpitts oscillator, and two of the ICOMs contain compensator ICs. The different ICOMs are:

- 5C-ICOM - contains an oscillator and a 5 part-per-million ($\pm 0.0005\%$) compensator IC. Provides compensation for EC-ICOMs.
- EC-ICOM - contains an oscillator only. Requires external compensation from a 5C-ICOM.

CIRCUIT ANALYSIS

EXCITER

The exciter uses nine transistors and two integrated circuits to drive the PA assembly. The exciter can be equipped with up to four Integrated Circuit Oscillator Modules (ICOMs). The ICOM crystal frequency ranges from approximately 8.33 to 16.67

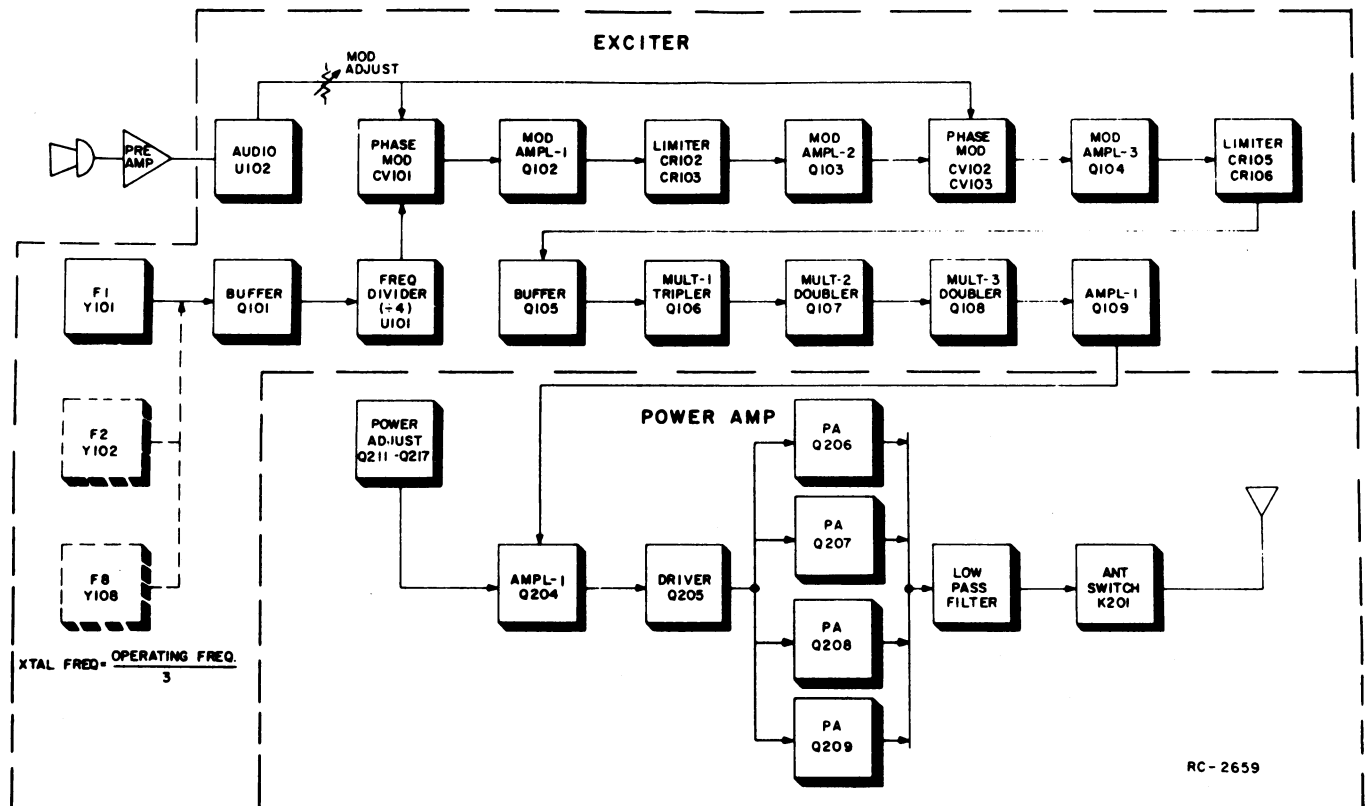


Figure 1 - Transmitter Block Diagram

- 2C-ICOM - contains an oscillator and a 2 PPM ($\pm 0.0002\%$) compensator IC. Will not provide compensation for an EC-ICOM.

The ICOMs are enclosed in an RF shielded can with the type ICOM (5C-ICOM, EC-ICOM or 2C-ICOM) printed on the top of the can. Access to the oscillator trimmer is obtained by prying up the plastic tab on the top of the can. The tabs can also be used to pull the ICOMs out of the radio.

Frequency selection is accomplished by switching the ICOM keying lead (terminal 6) to A-. The oscillator is turned on by applying a keyed +10 Volts to the external oscillator load resistor.

CAUTION

All ICOMs are individually compensated at the factory and cannot be repaired in the field. Any attempt to repair or change an ICOM frequency will void the warranty.

In transmitter types KT-59-A, C using EC-ICOMs, at least one 5C-ICOM must be used. The 5C-ICOM is normally used in the receiver F1 position, but can be used in any transmit or receive position. One 5C-ICOM can provide compensation for up to 8 EC-ICOMs in the transmit and receiver. Should the 5C-ICOM compensator fail in the open mode, the EC-ICOMs will still maintain 2 PPM frequency stability from 0°C to 55°C (+32°F to 131°F) due to the regulated compensation voltage (5 Volts) from the 10-Volt regulator IC. In transmitter types KT-60-A, C and KT-61-A, C at least one 5C ICOM is required for the transmitter and at least one 5C ICOM is required for the receiver. If desired, up to 8 5C-ICOMs may be used in the station.

The 2C-ICOMs are self-compensated at 2 PPM and will not provide compensation for EC-ICOMs.

Oscillator Circuit

The quartz crystals used in ICOMs exhibit the traditional "S" curve characteristics of output frequency versus operating temperature.

At both the coldest and hottest temperatures, the frequency increases with increasing temperature. In the middle temperature range (approximately 0°C to +55°C), frequency decreases with increasing temperature.

Since the rate of change is nearly linear over the mid-temperature range, the output frequency change can be compensated by choosing a parallel compensation capacitor with a temperature coefficient approximately equal and opposite that of the crystal.

Figure 2 shows the typical performance of an uncompensated crystal as well as the typical performance of a crystal which has been matched with a properly chosen compensation capacitor.

At temperatures above and below the mid-range, additional compensation must be introduced. An externally generated compensation voltage is applied to a varactor (voltage-variable capacitor) which is in parallel with the crystal.

In transmitter types KT-59-A, C a constant bias of 5 Volts (provided from Regulator IC U901 in parallel with the compensator) establishes the varactor capacity at a constant value over the entire mid-temperature range. With no additional compensation, all of the oscillators will provide 2 PPM frequency stability from 0°C to 55°C (+32°F to 131°F).

Compensator Circuits

Both the 5C-ICOMs and 2C-ICOMs are temperature compensated at both ends of the temperature range to provide instant frequency compensation. An equivalent ICOM circuit is shown in Figure 3.

The cold end compensation circuit does not operate at temperatures above 0°C. When the temperature drops below 0°C, the circuit is activated. As the temperature decreases, the equivalent resistance decreases and the compensation voltage increases.

The increase in compensation voltage decreases the capacity of the varactor in the oscillator, increasing the output frequency of the ICOM.

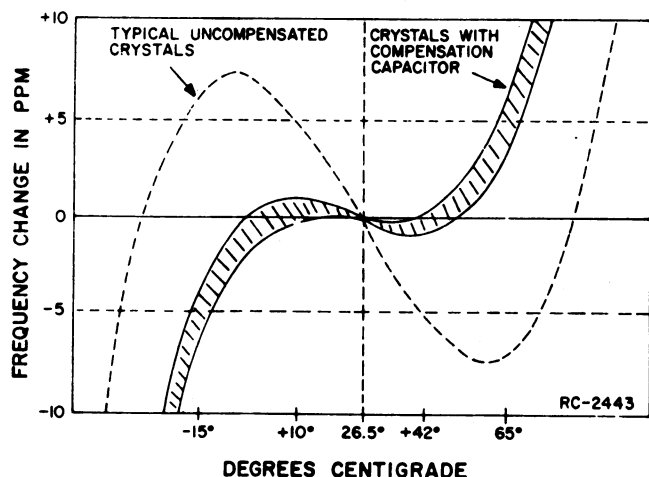


Figure 2 - Typical Crystal Characteristics

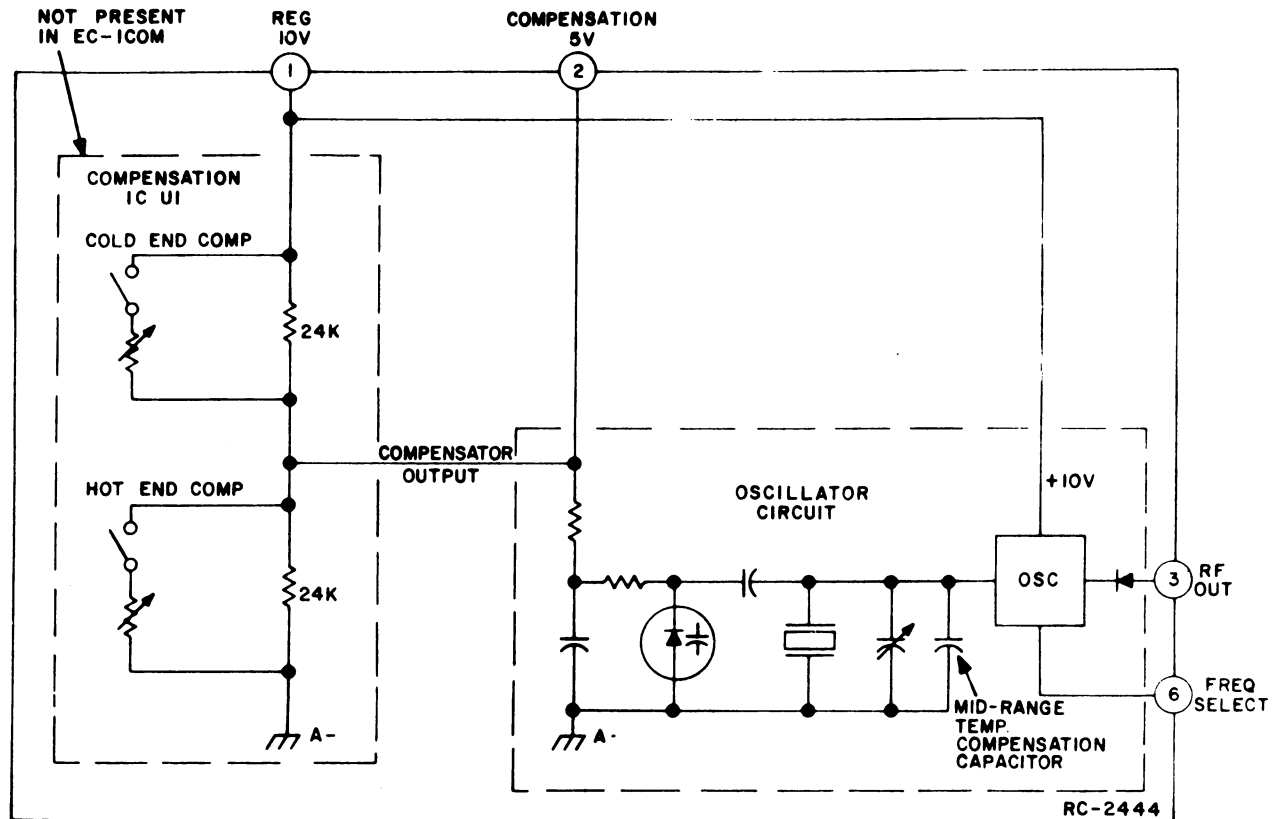


Figure 3 - Equivalent ICOM Circuit

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

SERVICE NOTE: Proper ICOM operation is dependent on the closely-controlled input voltages from the 10-Volt regulator. Should all of the ICOMs shift off frequency, check the 10-Volt regulator module or check output of 5C ICOM.

AUDIO PREAMPLIFIER

The transmitter Audio Preamplifier is not part of the transmitter and is covered in the station Maintenance Manual.

AUDIO IC

The transmitter audio circuitry is contained in audio IC U102. A simplified drawing of the audio IC is shown in Figure 4.

Audio from the Station Preamplifier at pin 12 is coupled through pre-emphasis capacitor C1 to the base of Q1 in the operational amplifier-limiter circuit.

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 R127 to the phase modulators.

SERVICE NOTE: If the DC voltages to the Audio IC are correct and no audio output can be obtained, replace U102.

For radios equipped with Channel Guard, tone from the encoder is applied to the phase modulators through CHANNEL GUARD MOD ADJUST potentiometer R128, and resistors

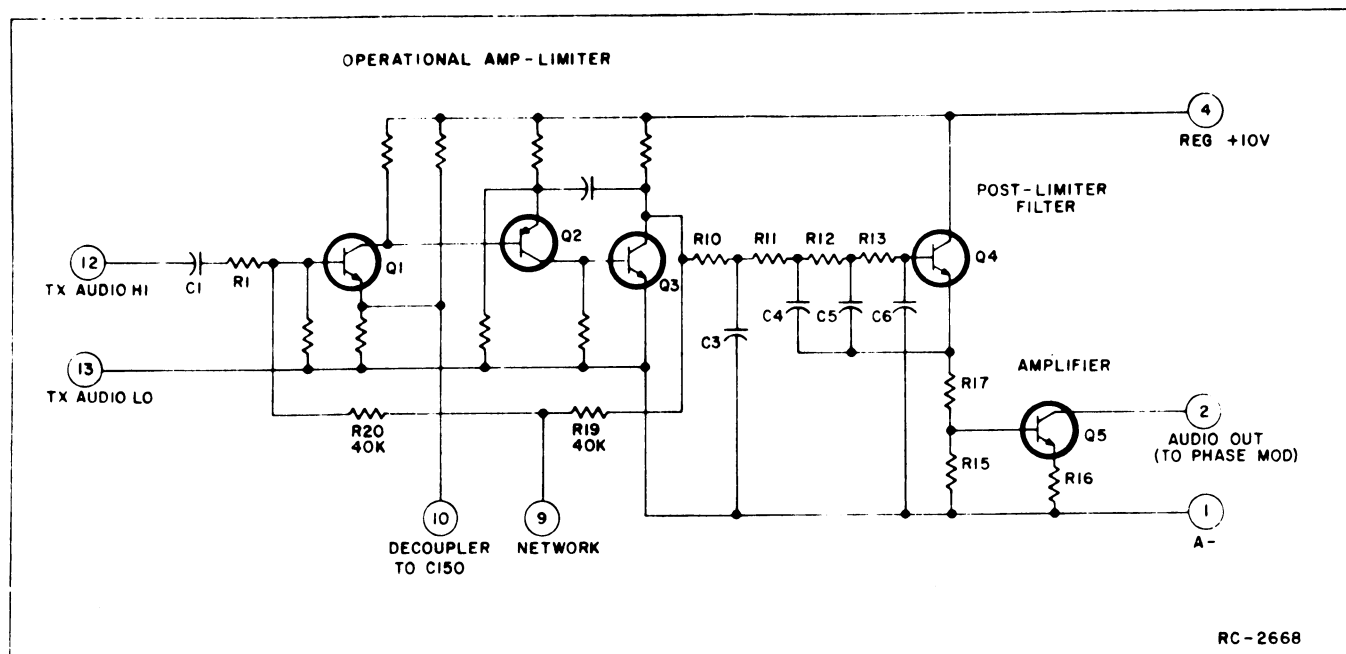


Figure 4 - Simplified Audio IC

R110, R121 and R124. Instructions for setting R128 and station gain Control R14 on the Audio Preamplifier are contained in the modulation adjustment section of the Transmitter Alignment Procedure.

FREQUENCY DIVIDER IC

The output at pin 3 of the selected ICOM is coupled through buffer amplifier Q101 to frequency divider U101, which divides the oscillator frequency by 4. The divider consists of two J-K flip-flops connected as a binary counter.

When the transmitter is not keyed (no ICOMs on), Q101 is saturated (turned on) with its collector voltage near zero. Keying the transmitter starts one of the ICOMs, and its output cuts Q101 on and off once each cycle. As Q101 turns off during each cycle, the drop in collector voltage causes the left flip-flop to change state. Assume the flip-flop was in the "0" state (the output at "Q" near A-). The first cycle of the oscillator output causes it to switch to the "1" stage (output at "Q" approximately 5 Volts). The second cycle will cause the flip-flop to switch back to the "0" state. Therefore, it requires two oscillator cycles to switch the left flip-flop through one complete cycle from "0" to "1" and back to "0".

When the left flip-flop switches from "1" to "0", it causes the right flip-flop

to change state. It requires two cycles of the left flip-flop to switch the right flip-flop from "0" to "1" and back to "0". Therefore, four cycles of the oscillator output are required for each cycle of output from pin 9 of U101.

If U101 was operating into a pure resistive load, its output would be a square wave. However, the modulator circuit presents a tuned load to the IC, so that harmonics are filtered out and the waveform at the junction of C102 and C103 (modulator input) is essentially a sine wave at one-fourth the oscillator frequency. The output of the frequency divider is coupled through DC blocking capacitor C102 to the first modulator stage.

PHASE MODULATORS, AMPLIFIER & MULTIPLIERS

The first phase modulator is varactor (voltage-variable capacitor) CV101 in series with tunable coil L101. This network appears as a series-resonant circuit the RF output of the oscillator. An audio signal applied to the modulator circuit through blocking capacitor C115 varies the bias of CV101, resulting in a phase modulated output. A voltage divider network (R108 and R109) provides the proper bias for varactors CV101, CV102 and CV103.

The output of the first modulator is coupled through blocking capacitor C106 to the base of Class A amplifier Q102. The first modulator stage is metered through a

metering network consisting of R115, R150, C107 and CR101. Diodes CR102 and CR103 remove any amplitude modulation in the modulator output.

Following Q102 is another Class A Amplifier, Q103. The output of Q103 is applied to the second modulator stage. The second modulator consists of two cascaded modulator circuits consisting of CV102, L102, L103 and CV103. Following the second modulator is a Class A amplifier Q104. The output of the second modulator stage is metered through R133, R145, C117 and CR104, and is applied to the base of buffer Q105. Diodes CR105 and CR106 remove any amplitude modulation in the second modulator output.

Buffer Q105 is saturated when no RF signal is present. Applying an RF signal to Q105 provides a sawtooth waveform at its collector to drive the class C tripler, Q106. The tripler stage is metered through R146. The output of Q106 is coupled through tuned circuits T101, T102 and T103 to the base of doubler Q107. T101, T102 and T103 are tuned to one-fourth of the operating frequency. The doubler stage is metered through R147.

The output of Q107 is coupled through tuned circuits T104 and T105 to the base of second doubler Q108. T104 and T105 are tuned to one-half the operating frequency. Q108 is metered through R148.

The output of Q108 is coupled through three tuned circuits (T106, T107 and T108) to the base of amplifier Q109. The circuits are tuned to the transmitter operating frequency.

Q109 is a class C amplifier with a collector feed network consisting of C139, C141, L104, L108 and R143. The stage is metered through R149. The amplifier collector circuit consists of C142, C143, C146 and L105, and matches the amplifier output to the input of the power amplifier assembly.

POWER AMPLIFIER

The PA assembly uses six RF power transistors and seven transistors in the Power Control circuitry to provide a power output of 100 Watts. The broadband PA has no adjustments other than Power Control potentiometer R261.

Supply voltage for the PA is connected to feedthrough capacitors C297 and C298 on the PA assembly. C297, C298 and C299, L297 and L298 prevent RF from getting on the Power leads. Diode CR295 (on the intermittent duty PA only) will cause the main fuse in the fuse assembly to blow if the polarity of the power leads is reversed.

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 power control, Driver and PA current. L251 through L257 in conjunction with bypass capacitors C4210 through C4216 keep RF off of the metering leads.

RF AMPLIFIERS

The exciter output is coupled through an RF cable to PA input jack J201. RF from the exciter is coupled through DC blocking capacitor C201 to the base of Class C amplifier Q204 through a matching network. The network matches the 50-ohm input to the base of Q204, and consists of C205, C206, C207, L201 and L202. R203 and R204 lower the gain of the amplifier stage.

Part of the RF input is rectified by CR201 and used to activate the Power Control circuit. Another portion of the rectified RF is applied to voltage dividers R201 and R202 for metering the Ampl-1 drive at J205.

Collector voltage to Q204 (Ampl-1) is controlled by the Power Control Circuit, and is applied through collector stabilizing network Z201 and collector feed network L205 and C213. The collector voltage of Q204 is metered through R271 at J205.

Following Q204 is a matching network (C208 through C212, L204 and L206) to a resistive pad (R207, R208 and R209). The output of the resistor network is applied to the base of the Class C driver (Q205) through a matching network consisting of C218, C219, C220, L207 and L208. Resistors R207 through R215 lower the gain of driver Q205.

Collector voltage to Q205 is coupled through collector stabilizing network Z202 and collector feed network L211 and C226. Collector current for Q205 is metered across tapped manganin resistor R249 at J205 (DRIVER CURRENT). The reading is taken on the one-Volt scale with the High Sensitivity button pressed, and read as 10 amperes full scale.

Following Q205 is a matching network (C221 through C225, L210 and L214) that matches the driver output to the input of the first power divider circuit (C230, C231, L214, L215 and L216).

The power amplifier stages consist of four identical paralleled Class C amplifiers (Q206 through Q209). The output of the first power divider circuit is applied to four additional power dividers. C234-L217 and C235-L218 provide drive for Q206 and Q207, while C236-L219 and C237-L220 provide drive for Q208 and Q209.

The output of C234-L217 is applied to the base of Q206 and impedance-matching network (L217, L221, C238, C242 and C243). Resistors R220 through R223, R236 and R237 lower the gain of Q206. Supply voltage for Q206 is coupled through collector-stabilizing network Z203 and collector feed network L223 and C270.

Collector current for Q206 through Q209 is metered across tapped manganin resistors R250 and R251 at J205 (PA CURRENT). The reading is taken on the one-Volt scale with the High Sensitivity button pressed, and read as 30 amperes full scale.

The output of Q206 is coupled through a matching network (C250, C251, L229, C258, C259, C266 and L237), applied to a lumped-constant combiner circuit (C280, L237 and L241), and added to the output of Q207. The outputs of Q206 and Q207 are added to the outputs of Q208 and Q209 through lumped-constant power combiner circuit C284, L249, C294, L250 and C285. The combined PA output is applied to 50-ohm microstrip W205, and then to an M-derived, constant K low-pass filter. The filter output is applied to the antenna through antenna switch K201.

Capacitors C286 through C293, C217, C228 and C233 provide ground isolation.

WARNING

The stud mounted 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 CONTROL CIRCUIT

When the transmitter is keyed, rectified RF from CR201 is applied to the base of switch Q211, turning it on. Turning on Q211 turns on voltage regulator Q212 which supplies a constant voltage to Power Adjust potentiometer R261.

Q215, Q216 and Q217 operate as an amplifier chain to supply voltage to the collector of Q204 (Ampl-1). The setting of R261 determines the voltage applied to the base of Q215. The higher the voltage at the base of Q215, the harder the amplifiers conduct, supplying more collector voltage to Q204. The lower the voltage at the base of Q215, the less collector voltage is supplied to Q204. Reducing the supply voltage to Q204 reduces the drive to Q205, thereby reducing the power output of the PA. The power output can be adjusted by R261 from approximately 50 to 100 Watts (75 to 100 Watts at 25-30 KHz).

Temperature protection is provided by Q213, Q214, and thermistor RT201 which is mounted in the PA heatsink. Under normal operating conditions, the circuit is inactive (Q213 is on and Q214 is off). When the heatsink temperature reaches approximately 100°C, the resistance of RT201 decreases. This increases the base voltage applied to Q213, turning it off. Turning off Q213 allows Q214 to turn on, decreasing the voltage at Power Adjust potentiometer R261. This reduces the base voltage to Q215 which causes Q216 and Q217 to conduct less, reducing the collector voltage to Q204 (Ampl-1). This reduces the transmitter output power, keeping the heatsink at a maximum of approximately 100°C. When the heatsink temperature decreases below 100°C, the temperature control circuit turns off, allowing the normal transmitter power output.

MAINTENANCE

DISASSEMBLY

For a more complete mechanical parts breakdown refer to the station manual. To service the transmitter exciter from the front:

1. Turn the two latching knobs (A) counter-clockwise to unlatch the Radio Panel Front Door. Refer to Figure 5.
2. Swing the Radio Panel Front Door down as shown.
3. Remove covers.

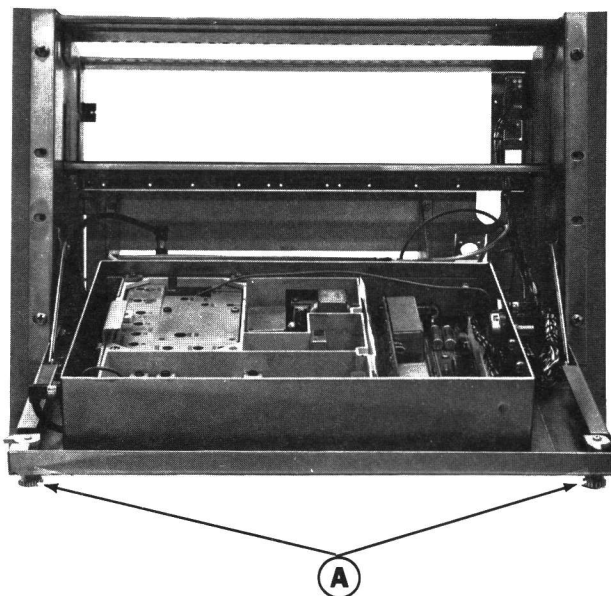


Figure 5 - Access to Exciter
Front View

To service the transmitter Power Amplifier from the rear:

1. Remove the top two screws (B) on the Intermittent or Continuous Duty Power Amplifier. Refer to Figure 6.
2. Swing the Power Amplifier down as shown. Remove the top cover of the Power Amplifier.

NOTE

If the heatsink blower option is present, this blower must be removed before the Power Amplifier can be lowered.

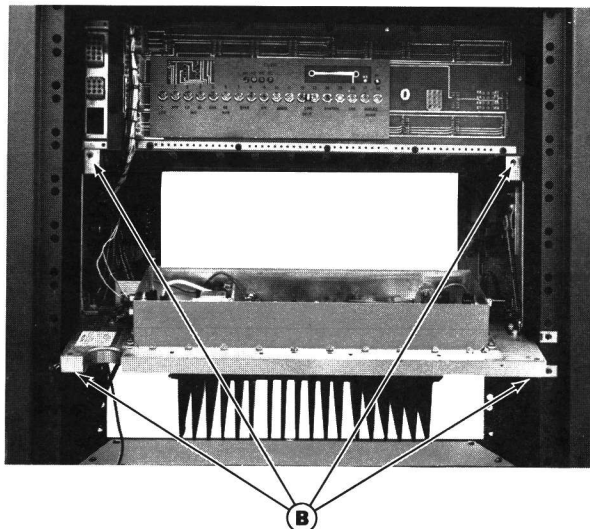


Figure 6 - Access to Power Amplifier Rear View

To remove the PA board: Refer to Figure 7.

1. Remove the PA top cover and unplug the exciter/PA cable (B).
2. Unsolder the two feedthrough coils (E) and the thermistor leads (F).
3. For Continuous Duty Stations only, remove all heat sink sections from the dissipator plate.
4. Remove the PA transistor hold-down nuts and spring washers on the bottom of the PA assembly.
5. Remove the four PA board mounting screws (G), the five screws in the filter casting (H), and the retaining screw in Q210 (J), and lift the board out.

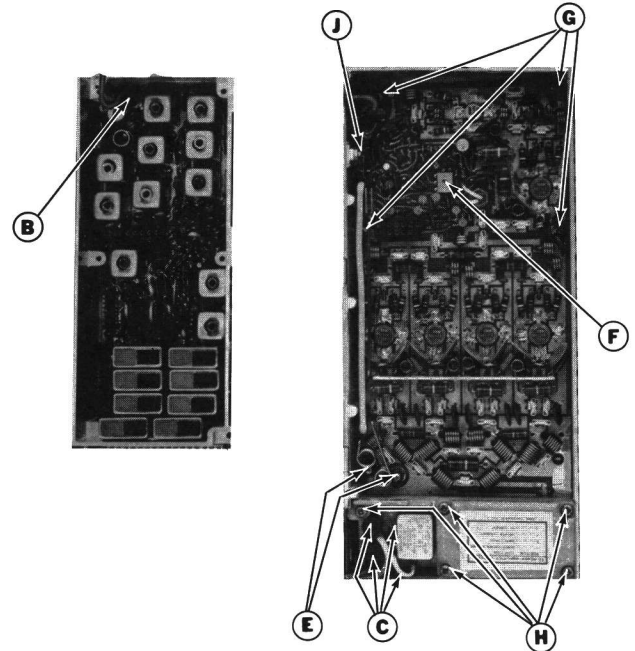


Figure 7 - PA Board Removal

PA TRANSISTOR REPLACEMENT

When replacing a power transistor where more than one are in parallel, make sure all the paralleled transistors are from the same manufacturer for proper operation.

WARNING

The stud mounted 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.

To replace the PA RF transistors:

1. Unsolder one lead at a time with a 50-Watt soldering iron. Use a scribe to hold the lead away from the printed circuit board until the solder cools.
2. Turn the transmitter.

NOTE

If the transmitter has a continuous Duty Power Amplifier a section of Heat Sink may have to be removed to get to the transistor hold-down nuts. Apply a light coat of silicon grease when replacing the removed section of Heat Sink.

3. Hold the body of the transistor to prevent it from turning. Remove the transistor hold-down nut and spring washer through the hole in the heat-sink with an 11/32-inch nut-driver. Lift out the old solder from the printed circuit board with a de-soldering tool such as a SOLDA PULLT®. Special care should be taken to prevent damage to the printed circuit board runs.
 4. Trim the new transistor leads (if required) to the lead length of the removed transistor. Cut the collector lead at a 45° angle for future identification (see Figure 7). The letter "C" on the top of the transistor indicates the collector.
 5. Applying a coating of silicon grease around the transistor mounting surface, and place the transistor in the mounting hole. Align the leads as shown in the Outline Diagram. Then hold the body of the transistor and replace the holding-down nut and spring-washer, using moderate torque (8 inch-pounds).
- A torque wrench must be used for this adjustment since transistor damage can result if too little or too much torque is used.
6. Make sure that the transistor leads are formed as shown in Figure 8 so that the leads can be soldered to the printed circuit pattern, starting from the inner edge of the mounting hole.
 7. Solder the leads to the printed circuit pattern. Start at the inner edge of mounting hole and solder the remaining length of transistor lead to the board. Use care not to use excessive heat that causes the printed wire board runs to lift up from the board. Check for shorts and solder bridges before applying power.

— CAUTION —

Failure to solder the transistor leads as directed may result in the generation of RF loops that could damage the transistor or may cause low power output.

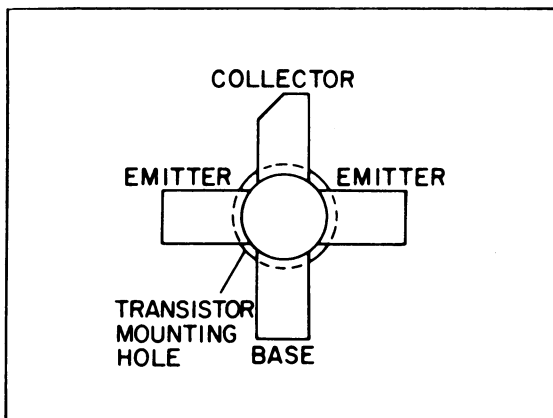


Figure 8 - Lead Identification

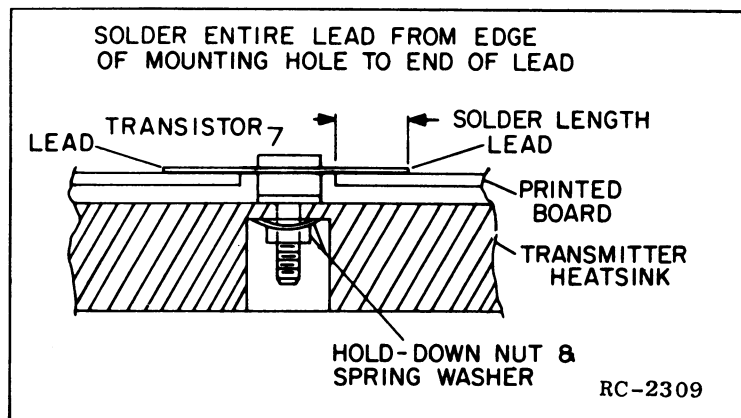


Figure 9 - Lead Forming



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MODULATION LEVEL ADJUSTMENT

The MOD ADJUST (R104) 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. An audio oscillator (GE Model 4EX6A10)
- 2. A frequency modulation monitor
- 3. An output meter or a VTVM
- 4. GE Test Set Model 4EX3A11 or 4EX8K12

PROCEDURE

- 1. Set the station gain control R14 to its fully clockwise position.
- 2. Connect the audio oscillator and the meter through a 0.5 µF (or larger) DC blocking capacitor, across audio input terminals J10 (Green-Hi) and J11 (Black-Lo) on GE Test Set, and connect the Red Test set plug to the system Red metering plug.
- 3. Set the audio generator frequency to 1 kHz.
 - A. In all station combinations except Local Control Intermittent Duty combinations, set the audio generator output to 30 millivolts RMS.
 - B. In Local Control Intermittent Duty station combinations, set the audio generator output to 1.0 volt RMS.
- 4. For transmitters without Channel Guard, set MOD ADJUST R104 for a 4.5 kHz swing with the deviation polarity which gives the highest reading as indicated on the frequency modulation monitor.
- 5. For transmitters with Channel Guard set Channel Guard MOD ADJUST R105 for zero tone deviation. Next, with the 30 millivolts signal at 1000 Hz applied, set MOD ADJUST R104 for 3.75 kHz deviation. Then remove the signal from the audio oscillator and set Channel Guard MOD ADJUST R105 for 0.75 kHz tone deviation.
- 6. For multi-frequency transmitters, set the deviation as described in Steps 4 or 5 on the channel producing the largest amount of deviation.
- 7. Remove the audio oscillator and key the mike. While talking in a normal voice at a distance of four to six inches from the station microphone, adjust station gain control R14 for a deviation of 3 kHz as measured on the deviation monitor.

PA POWER INPUT

For FCC purposes, the PA power input can be determined by measuring the PA supply voltage and PA current, and using the following formula:

P_i = PA voltage x PA current

where:

P_i is the power input in Watts, PA voltage is measured with Test Set Model 4EX3A11 in Position G on the 15-Volt range (read as 15 Volts full scale), and with the polarity switch in the (-) position. With Test Set Model 4EX8K12, use the B+ position and the 1-Volt range (read as 15 Volts full scale), with the HIGH SENSITIVITY button pressed and the polarity switch in the (-) position.

PA current is measured with the Test Set in Position G in the Test 1 position, and with the HIGH SENSITIVITY button pressed (10 amperes full scale).

Example:

P_i = 12.6 Volts x 8.5 amperes = 105.4 Watts

ICOM FREQUENCY ADJUSTMENT

First, check the frequency to determine if any adjustment is required. The frequency should be set with a frequency meter or counter with an absolute accuracy that is 5 to 10 times better than the tolerance to be maintained, and with the entire radio as near as possible to an ambient temperature of 26.5°C (79.8°F).

MASTR II ICOMs should be reset only when the frequency shows deviations in excess of the following limits:

- A. ±0.5 PPM, when the radio is at 26.5°C (79.8°F).
- B. ±2 PPM at any other temperature within the range of -5°C to +55°C (+23°F to +131°F).
- C. The specification limit (±2 PPM or ±5 PPM) at any temperature within the ranges of -40°C to -5°C (-40°F to +23°F) or +55°C to +70°C (+131°F to +158°F).

If an adjustment is required, pry up the cover on the top of the ICOM to expose the trimmer, and use one of the following procedures:

If the radio is at an ambient temperature of 26.5°C (79.8°F), set the oscillator for the correct operating frequency.

If the radio is not at an ambient temperature of 26.5°C, setting errors can be minimized as follows:

- A. To hold setting error to ±0.6 PPM (which is considered reasonable for 5 PPM ICOMs):
 - 1. Maintain the radio at 26.5°C (±5°C) and set the oscillator to desired frequency, or-
 - 2. Maintain the radio at 26.5°C (±10°C) and offset the oscillator, as a function of actual temperature, by the amount shown in Figure 10.
- B. To hold setting error to ±0.35 PPM (which is considered reasonable for 2 PPM ICOMs): Maintain unit at 26.5°C (±5°C) and offset the oscillator, as a function of actual temperature, by the amount shown in Figure 10.

For example: Assume the ambient temperature of the radio is 18.5°C (65.4°F). At that temperature, the curve shows a correction factor of 0.3 PPM. (At 25 MHz, 1 PPM is 25 Hz. At 50 MHz, 1 PPM is 50 Hz).

With an operating frequency of 50 MHz, set the oscillator for a reading of 15 Hz (0.3 x 50 Hz) higher than the licensed operating frequency. If a negative correction factor is obtained (at temperatures above 26.5°C), set the oscillator for the indicated PPM lower than the licensed operating frequency.

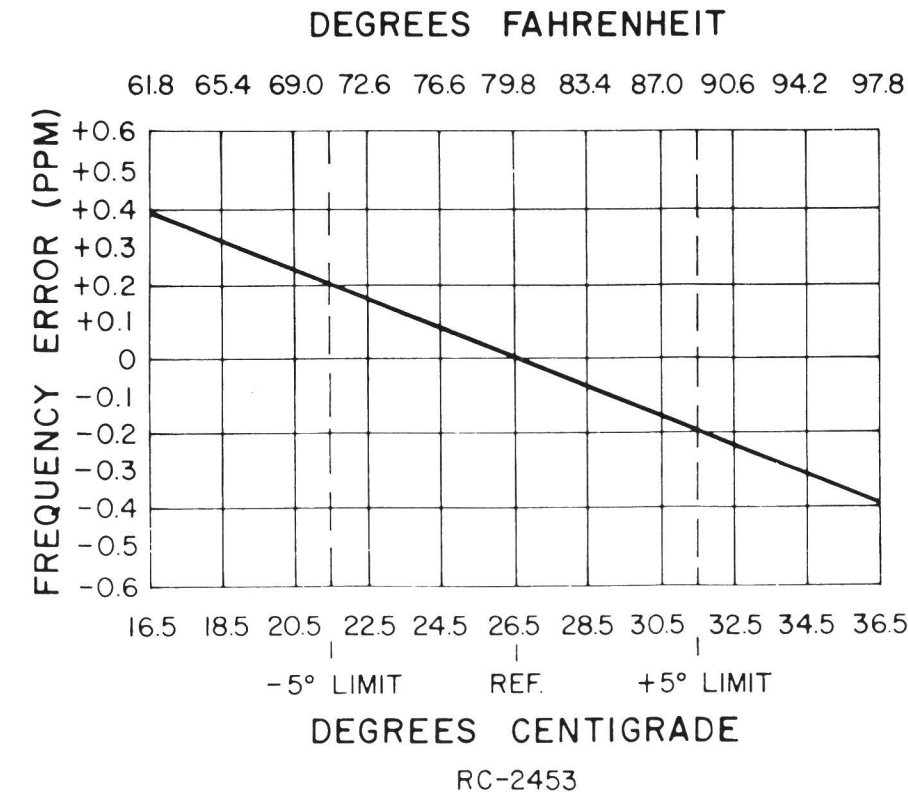
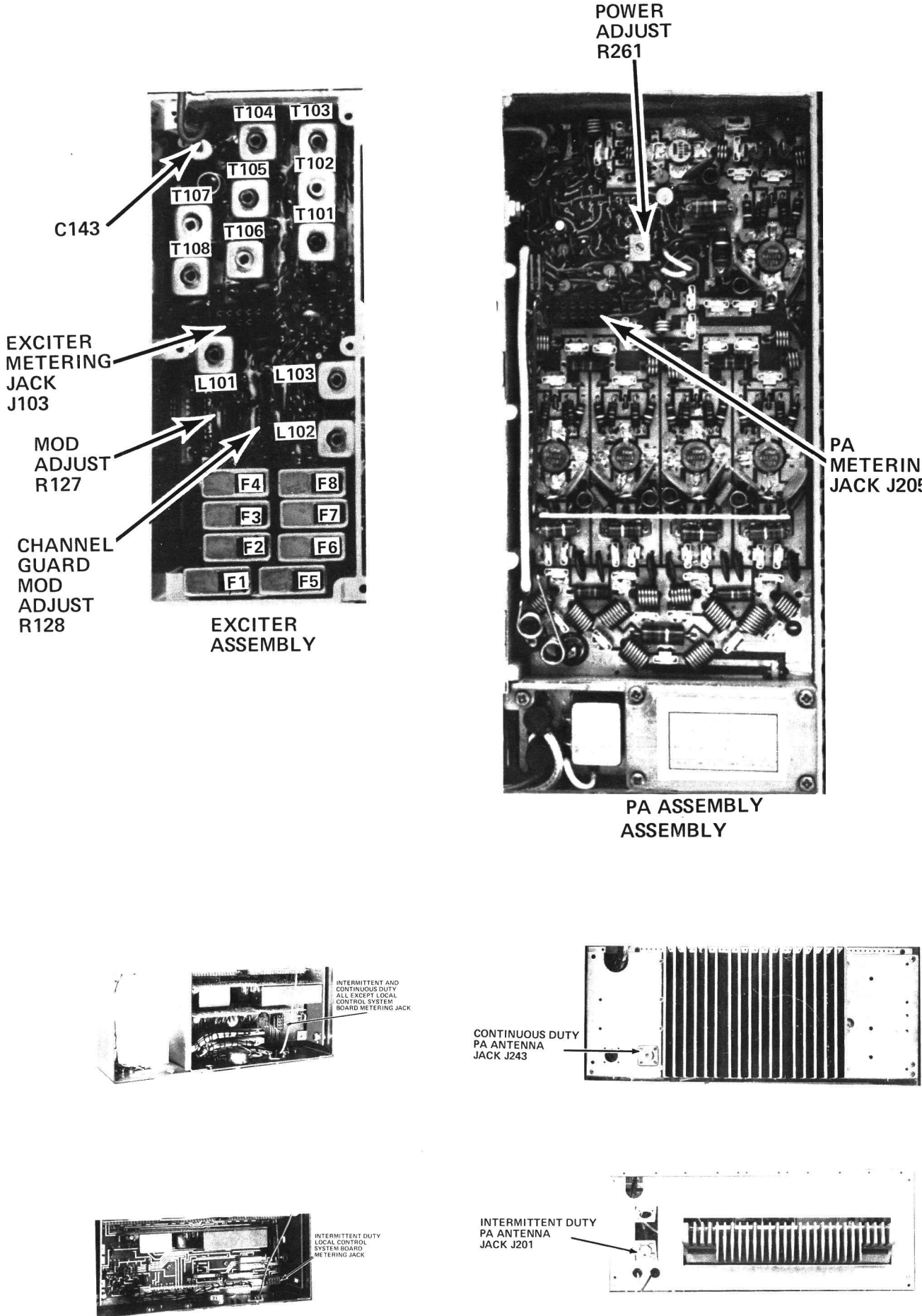


Figure 10 - Frequency Characteristics Vs. Temperature



TRANSMITTER ALIGNMENT

LBI-4728

EQUIPMENT REQUIRED

- 1. GE Test Set Model 4EX3A11 or Test Kit 4EX8K12.
- 2. A 50-ohm wattmeter connected to antenna jack J906.
- 3. A frequency counter.

PRELIMINARY CHECKS AND ADJUSTMENTS

- 1. Place ICOMs on Exciter Board (crystal frequency = operating frequency ÷ 3).
- 2. For a large change in frequency or a badly mis-aligned transmitter, pre-set the slugs in T101 through T108, and L101, L102 and L103 to the bottom of the coil form.

NOTE

The tuning frequency for multi-frequency transmitters is determined by the operating frequency and the frequency spread between transmitters. Refer to the table below for maximum frequency spread.

- 3. For multi-frequency transmitters with a frequency spread less than that specified in column (1), tune the transmitters to the lowest frequency.
- 4. For frequency spread exceeding the limits specified in column (1), tune the transmitters using a center frequency tune up ICOM. Except the maximum frequency spread can be extended to the limits specified in column (3) with 1 dB degradation.
- 5. For tuning L101, L102, L103, always tune L101, L102, L103 on the lowest frequency.

Multi-frequency Transmitter Tuning

Transmitter Frequency Range	MAXIMUM FREQUENCY SPREAD		
	(1) without center tuning	with center tuning	with center tuning (1 dB degradation)
25 - 30 MHz	.080 MHz	.160 MHz	.320 MHz
30 - 36 MHz	.100 MHz	.200 MHz	.400 MHz
36 - 42 MHz	.120 MHz	.240 MHz	.470 MHz
42 - 50 MHz	.140 MHz	.280 MHz	.540 MHz

- 6. Connect the red plug on the GE Test Set to the System Board metering jack, and the black plug to the Exciter metering jack. Set the polarity to +, and set the range to the Test 1 position (1-Volt position for 4EX8K12) for all adjustments. NOTE: With the Test Set connected to the PA metering jack, the voltage reading at position "F" with the HIGH SENSITIVITY button pressed may be converted to driver collector current by reading the current as 10 amperes full scale. The voltage reading at position "G" with the HIGH SENSITIVITY button pressed may be converted to PA collector current by reading the current as 30 amperes full scale.
- 7. All adjustments are made with the transmitter keyed. Unkey the transmitter between steps to avoid unnecessary heating.

STEP	METER POSITION	TUNING CONTROL	METER READING	PROCEDURE
1.	A MOD-1	L101	Maximum	Tune L101 for maximum meter reading.
2.	B	L102 & L103	Maximum	Tune L102 and then L103 for the maximum meter reading.
3.	C MULT-1	T101 & T102	See Procedure	Tune L101 for a dip in meter reading, and then tune T102 for maximum meter reading.
4.	D MULT-2	T103, T102, T101 & T104	See Procedure	Tune T103 for maximum meter reading and re-adjust T102 and T101 for maximum meter reading. Then tune T104 for a dip in meter reading.
5.	F MULT-3	T105, T104, T106 & T107	See Procedure	Tune T105 for maximum meter reading and re-adjust T104 for maximum meter reading. Then tune T106 for a dip in meter reading and T107 for maximum meter reading.
6.	G AMPL-1	T108, T107 & T106	See Procedure	Tune T108 for maximum meter reading, and then re-adjust T107 and T106 for maximum meter reading.
7.	D AMPL-1 DRIVE (on PA)	C143, C156	Maximum	Move the black metering plug to the Power Amplifier metering jack and tune C143 and C156 for maximum meter reading.
8.		R261		Set Power Adjust potentiometer R261 on the PA board for the desired power output (from 50 to 100 Watts at 30-50 MHz, or from 75 to 100 Watts at 25-30 MHz).

ALIGNMENT PROCEDURE

25—50 MHz, 100-WATT TRANSMITTER

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. 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 as shown:

1. Wattmeter similar to:

Bird # 43
Jones # 711N
2. VTVM similar to:

Triplet # 850
Heath # IM-21
3. Audio Generator similar to:

GE Model 4EX6A10
4. Deviation Meter (with a .75 kHz scale) similar to:

Measurements # 720
5. Multimeter similar to:

GE TEST SET MODEL 4EX3A11,
MODEL 4EX8K12 or
20,000 ohms-per-Volt voltmeter

POWER MEASUREMENT

TEST PROCEDURE

1. Connect transmitter output from the antenna jack to the wattmeter through a 50-ohm coaxial cable. Make sure the wattmeter is terminated into a 50-ohm load.
2. Key the transmitter and check the wattmeter for the desired power output.

SERVICE CHECK

Check the setting of the Power Adjust Control (R261).

Refer to the QUICK CHECKS on the Transmitter Troubleshooting Procedure.

VOICE DEVIATION AND SYMMETRY

TEST PROCEDURE

1. Connect the test equipment to the transmitter as shown.
2. In radios with Channel Guard, set Channel Guard Mod Adjust R128 for zero tone deviation.
3. Set the audio generator frequency to 1 kHz.

A. In all station combinations except Local Control Intermittent Duty combinations, set the audio generator output to 30 millivolts RMS.

B. In Local Control Intermittent Duty station combinations, set the audio generator output to 1.0 volt RMS.
4. Key the transmitter and adjust Deviation Meter to carrier frequency.
5. Deviation reading should be ± 4.5 kHz in radios without Channel Guard, and ± 3.75 kHz in radios with Channel Guard.
6. If necessary, adjust MOD ADJUST control R127 for the proper deviation on plus (+) or minus (-) deviation, whichever is greater.

NOTES: MASTR II STATION 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.

7. If the deviation reading plus (+) or minus (-) differs by more than 0.5 kHz, recheck Steps 1 and 2 as shown in the Transmitter Alignment Chart.

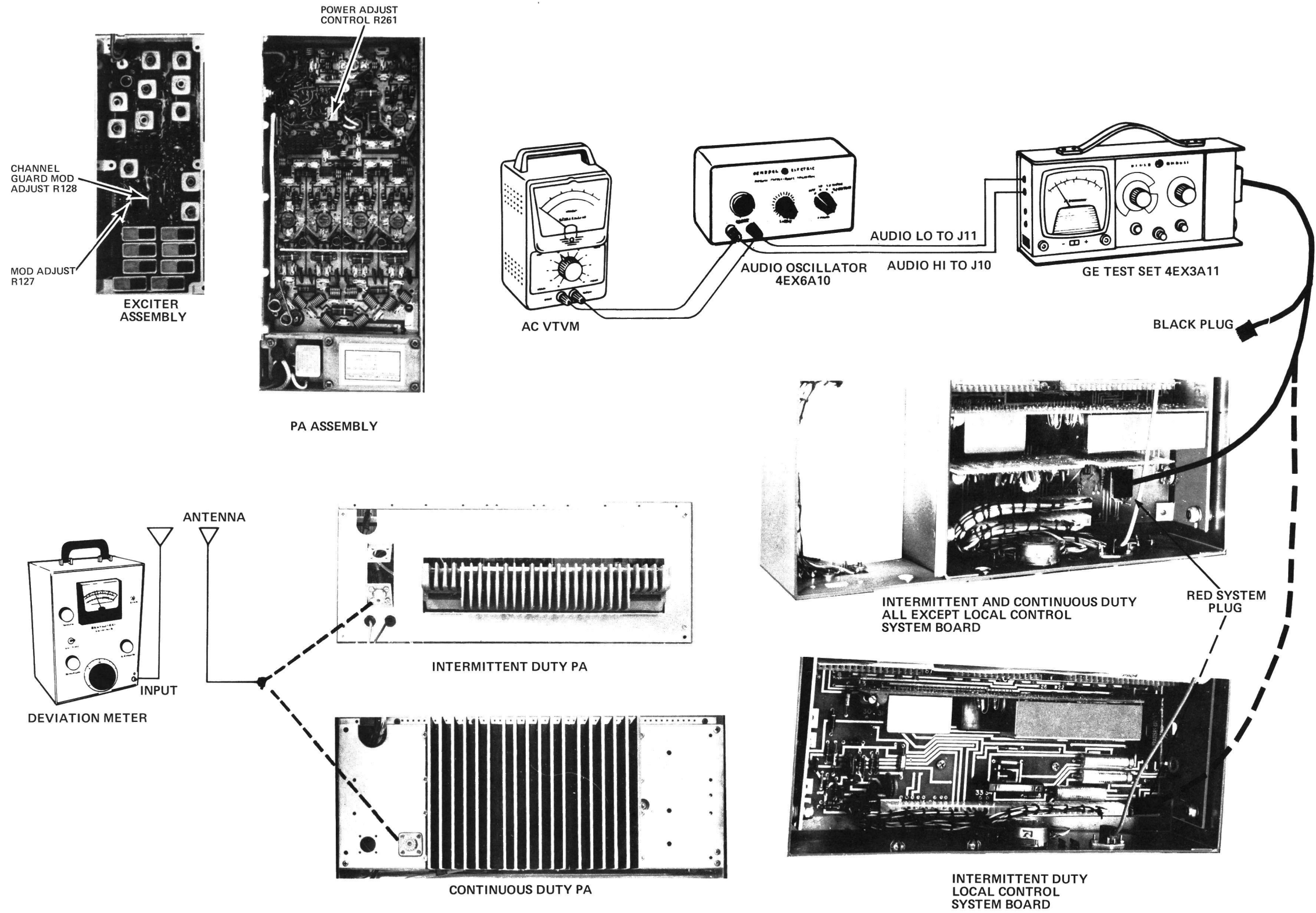
TONE DEVIATION WITH CHANNEL GUARD

TEST PROCEDURE

1. Set up the Deviation Meter and monitor the output of the transmitter.
2. Remove the 1000 Hz signal from the audio generator.
3. Key the transmitter and check for 0.75 kHz deviation. If the reading is low or high, adjust Channel Guard MOD ADJUST R128 for a reading of 0.75 kHz.

NOTES:

1. On units supplied with Channel Guard, the Phase Modulator Tuning should be adjusted carefully to insure proper performance. (Refer to Step 1 in the Transmitter Alignment Chart).
2. The Tone Deviation Test Procedures should be repeated every time the Tone Frequency is changed.



STEP 1 - QUICK CHECKS

METER POSITION GE TEST SET	PROBABLE DEFECTIVE STAGE		
	HIGH METER READING	LOW METER READING	ZERO METER READING
EXCITER			
A (MOD-1)	Q102, 10-Volt regulator	Q102, CV101, L101, 10-Volt regulator	ICOM, Q101, U101, L101, Q102, CR101, 10-Volt regulator or Channel Selector switch ground.
B (MOD-2)	Q104, 10-Volt regulator	Q103, L102, L103, CV102, CV103, Q104	Q103, L102, CV102, L103, CV103, CR104, Q104
C (MULT-1)	Q105, Q106, T101	Q105, Q106	Q105, Q106, T101
D (MULT-2)	Q107, T104	T101, T102, T103, Q107, T104	T101, T102, T103, Q107, T104
F (MULT-3)	Q108, T106	T104, T105, Q108	T104, T105, Q108, T106
G (AMPL-1)	Q109, C146, R144	T106, T107, T108, Q109, L104, L107	T106, T107, T108, Q109, L104, L107
POWER AMPLIFIER			
"D" (AMPL-1 DRIVE)		Low Output from Exciter	No output from Exciter, CR201
"C" (AMPL-1 CONTROL VOLT-AGE)	Q217	Q217	No Exciter output, Q217, Q211, CR201
"P" (DRIVER CURRENT)	Q205	Q205, Low Output from Q204	Q205, Q204, Check Pos. D & C
"Q" (PA CURRENT)	Q206, Q207, Q208, Q209	Q204, Q205, Q206-Q209	Q204, Q205, Q206-Q209 ANTENNA SWITCH K201

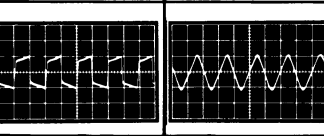
STEP 3
CHECK AUDIO AC VOLTAGES

EQUIPMENT REQUIRED
● AUDIO OSCILLATOR
● AC VTVM

SET AUDIO OSCILLATOR AT 1000 HZ WITH OUTPUT OF 1.0 V RMS. NOTE: AN RMS OR PEAK READING VOLT METER WILL READ 1/2 TO 1/3 OF PEAK-TO-PEAK READINGS.		
AC-VTVM	100MV P-P 46 MV RMS	1.1V P-P 0.36V RMS

STEP 4
AUDIO & OSC WAVEFORMS

EQUIPMENT REQUIRED
● AUDIO OSCILLATOR
● OSCILLOSCOPE

SCOPE SETTING	HORIZONTAL	0.5 MS/DIV	0.5 MS/DIV
	VERTICAL	50 MV/DIV	0.5 VOLT/DIV
SET AUDIO OSCILLATOR AT 1000 HZ WITH OUTPUT OF 1.0 V RMS.			
			

STEP 2
CHECK TYPICAL DC VOLTAGES

EQUIPMENT REQUIRED
● G.E. TEST MODEL 4EK3A11
OR
● 20,000 OHM-PER-VOLT METER
NOTE: ALL DC READINGS TAKEN WITH THE TRANSMITTER KEYED.

V-DC
TYPICAL MOD-1 READING AT POS. A SHOULD BE: 0.5V

V-DC
TYPICAL MOD-2 READING AT POS. B SHOULD BE: 0.5V

V-DC
TYPICAL MULT-1 READING AT POS. C SHOULD BE: 0.8V

V-DC
TYPICAL MULT-2 READING AT POS. D SHOULD BE: 0.56V

V-DC
TYPICAL MULT-3 READING AT POS. F SHOULD BE: 0.45V

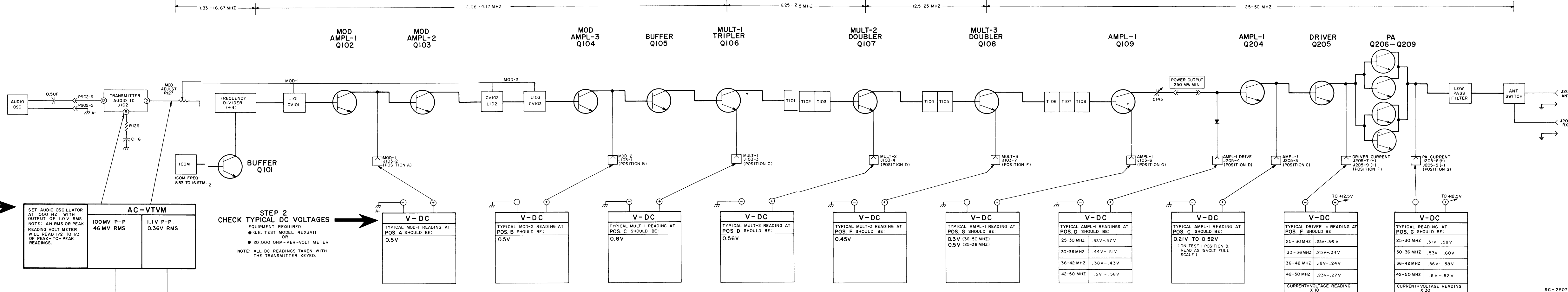
V-DC
TYPICAL AMPL-1 READING AT POS. G SHOULD BE: 0.3V (36-50 MHZ) 0.5V (25-36 MHZ)

V-DC
TYPICAL AMPL-1 READINGS AT POS. D SHOULD BE:
25-30 MHZ .33V-.37V
30-36 MHZ .44V-.51V
36-42 MHZ .38V-.43V
42-50 MHZ .5V-.58V

V-DC
TYPICAL AMPL-1 READING AT POS. C SHOULD BE: 0.21V TO 0.52V (ON TEST POSITION B READ AS 15VOLT FULL SCALE)

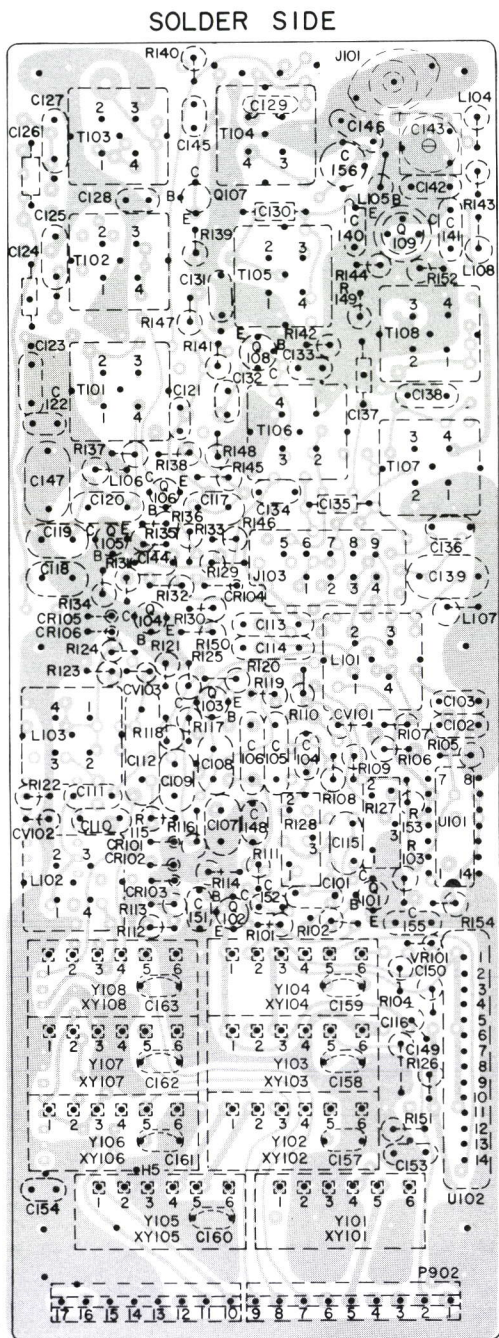
V-DC
TYPICAL DRIVER I _G READING AT POS. F SHOULD BE:
25-30 MHZ .23V-.36V
30-36 MHZ .25V-.34V
36-42 MHZ .18V-.24V
42-50 MHZ .23V-.27V
CURRENT-VOLTAGE READING X 10

V-DC
TYPICAL READING AT POS. G SHOULD BE:
25-30 MHZ .51V-.58V
30-36 MHZ .53V-.60V
36-42 MHZ .56V-.58V
42-50 MHZ .5V-.52V
CURRENT-VOLTAGE READING X 30

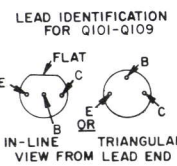


TROUBLESHOOTING PROCEDURE

25-50 MHz, 100-WATT STATION TRANSMITTER
INTERMITTENT AND CONTINUOUS DUTY



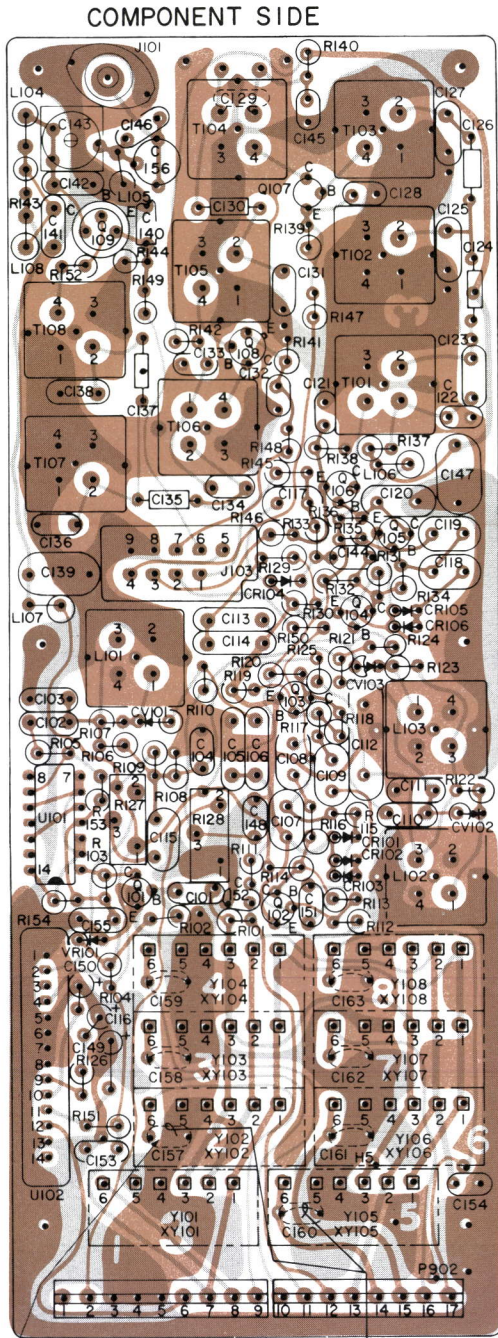
(19D423167, Sh. 2, Rev. 3)



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

IN EIGHT-FREQUENCY EXCITERS (GROUPS 5-8), CAPACITORS C157-C165 ARE CLIPPED OUT AS REQUIRED TO MEET THE CUSTOMER REQUIREMENTS FOR FREQUENCIES. EXAMPLE: IF CUSTOMER WANTS 100MS FOR F1, F2, F5, F7, THEN CAPACITORS C157, C160, AND C162 ARE CLIPPED OUT. C158, C159, C161, C163 ARE LEFT IN.

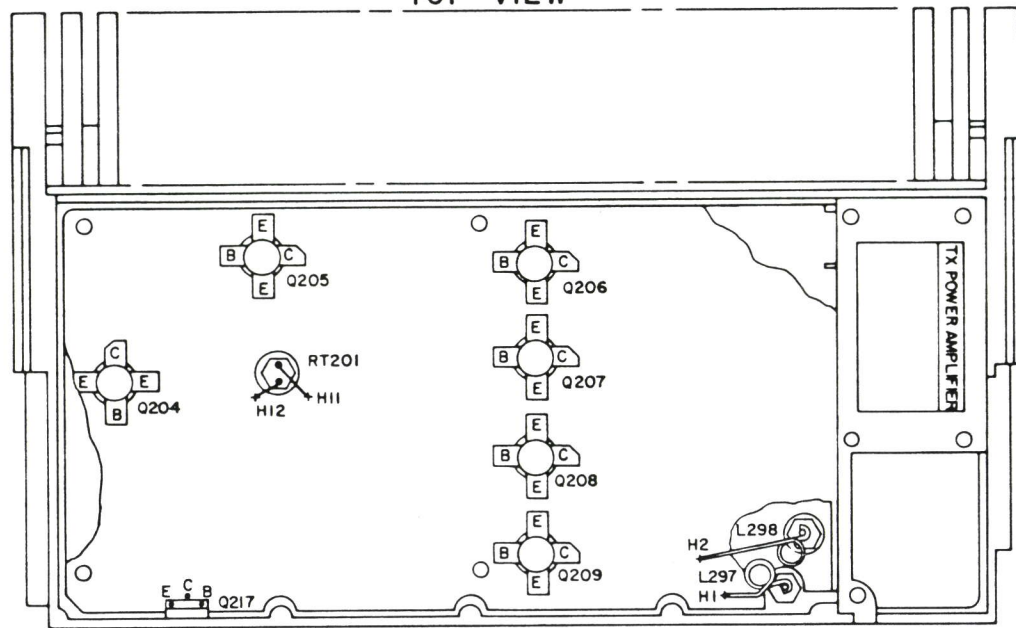
(19D423234, Rev. 3)



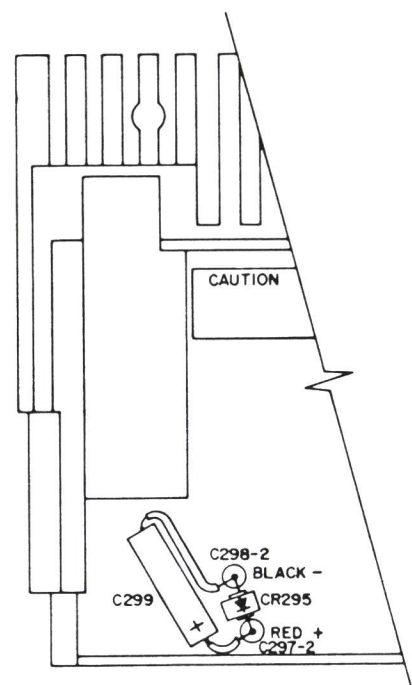
(19D423167, Sh. 2, Rev. 3)
(19D423167, Sh. 3, Rev. 3)

IN TWO-FREQUENCY EXCITERS (GROUPS 1-4), C157 IS CLIPPED OUT FOR COMBINATIONS WITH 2 TRANSMIT 100MS. DA JUMPERS ARE PRESENT ON FREQUENCY SWITCHING LINES OF OTHER SIX 100M CIRCUITS AS SHOWN.

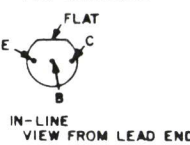
PA ASSEMBLY
TOP VIEW



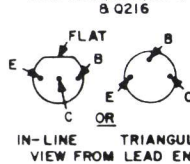
BOTTOM VIEW



LEAD IDENTIFICATION
FOR Q211 & Q215

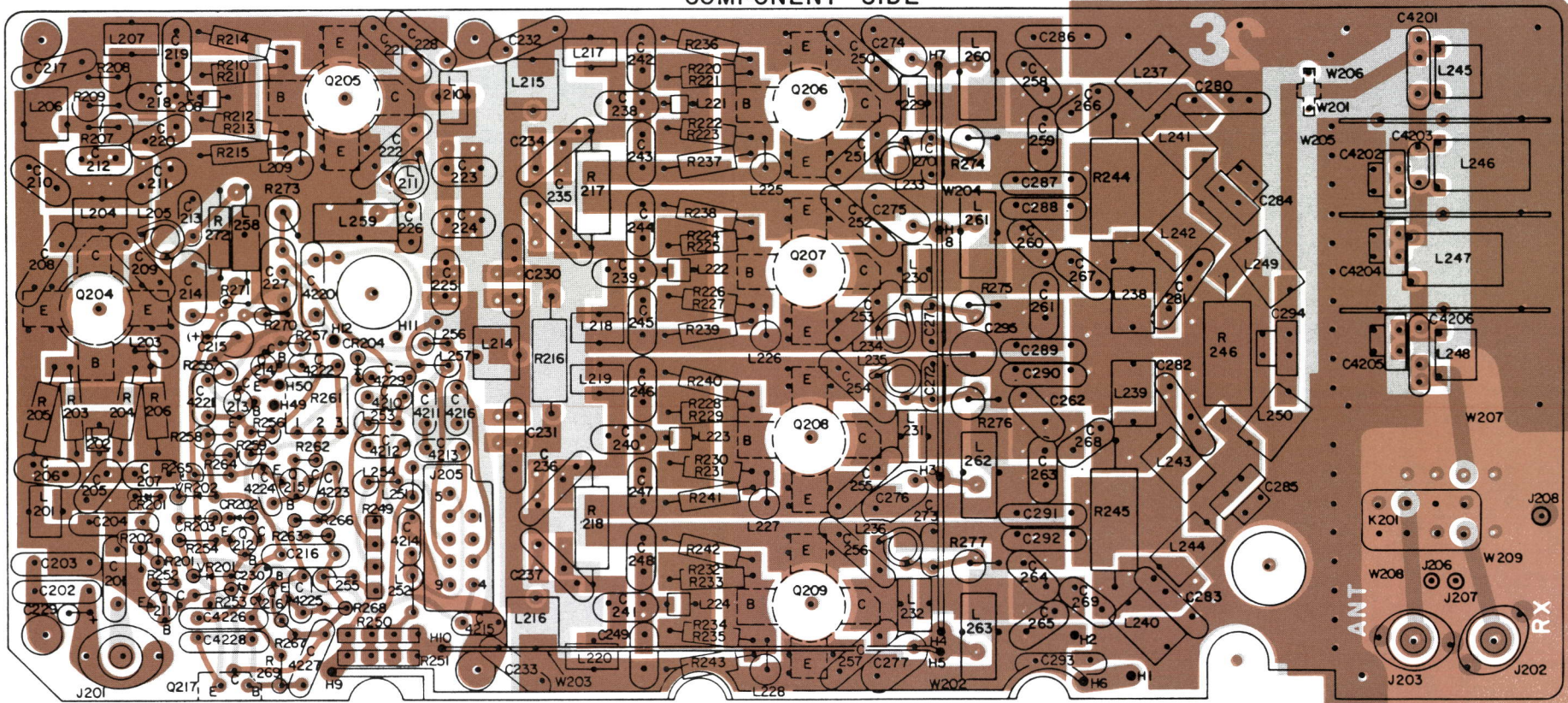


LEAD IDENTIFICATION
FOR Q212, Q213, Q214,
Q216



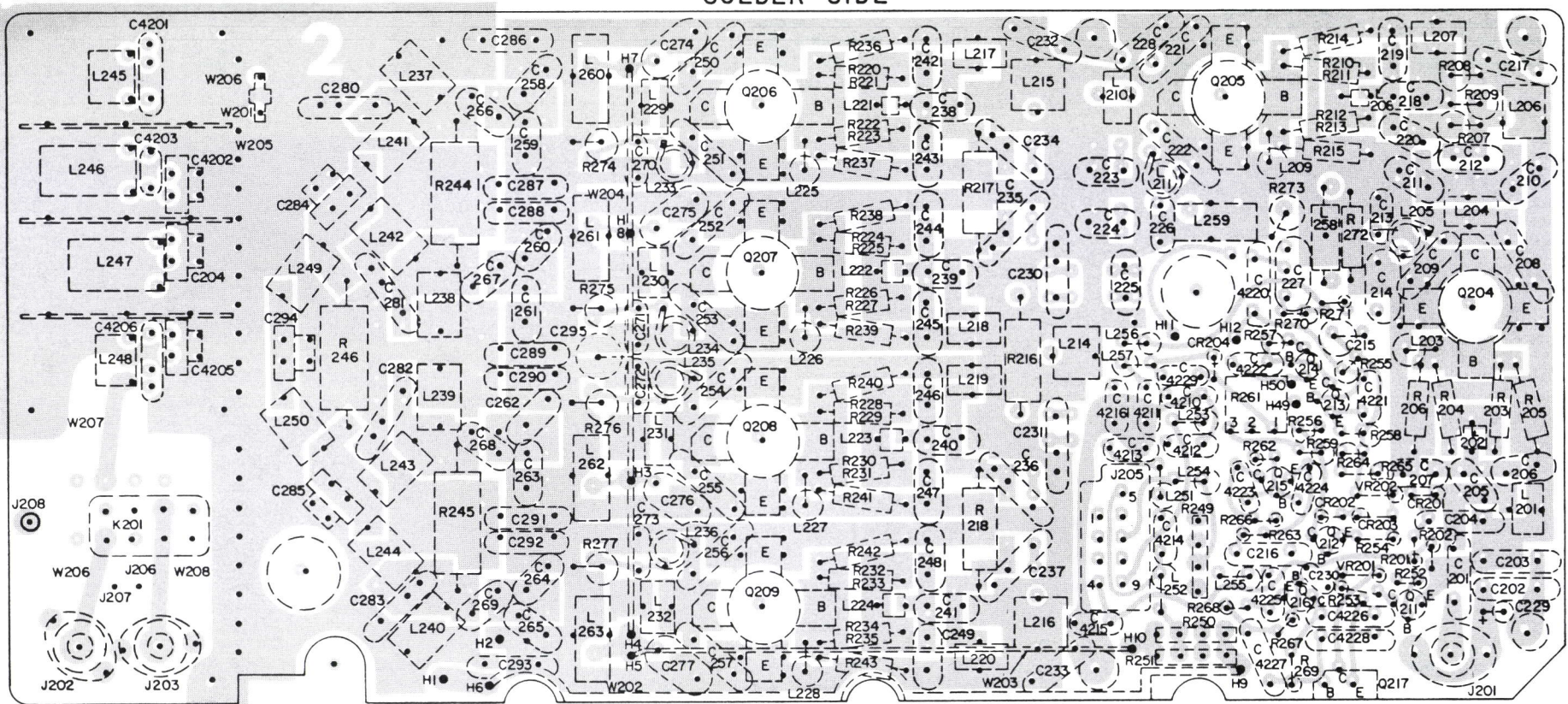
NOTE: LEAD ARRANGEMENT, AND NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION.

PA BOARD
COMPONENT SIDE



(19D417170, Sh. 2, Rev. 2)
(19D417170, Sh. 3, Rev. 3)

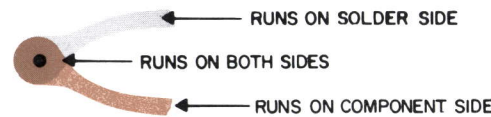
SOLDER SIDE



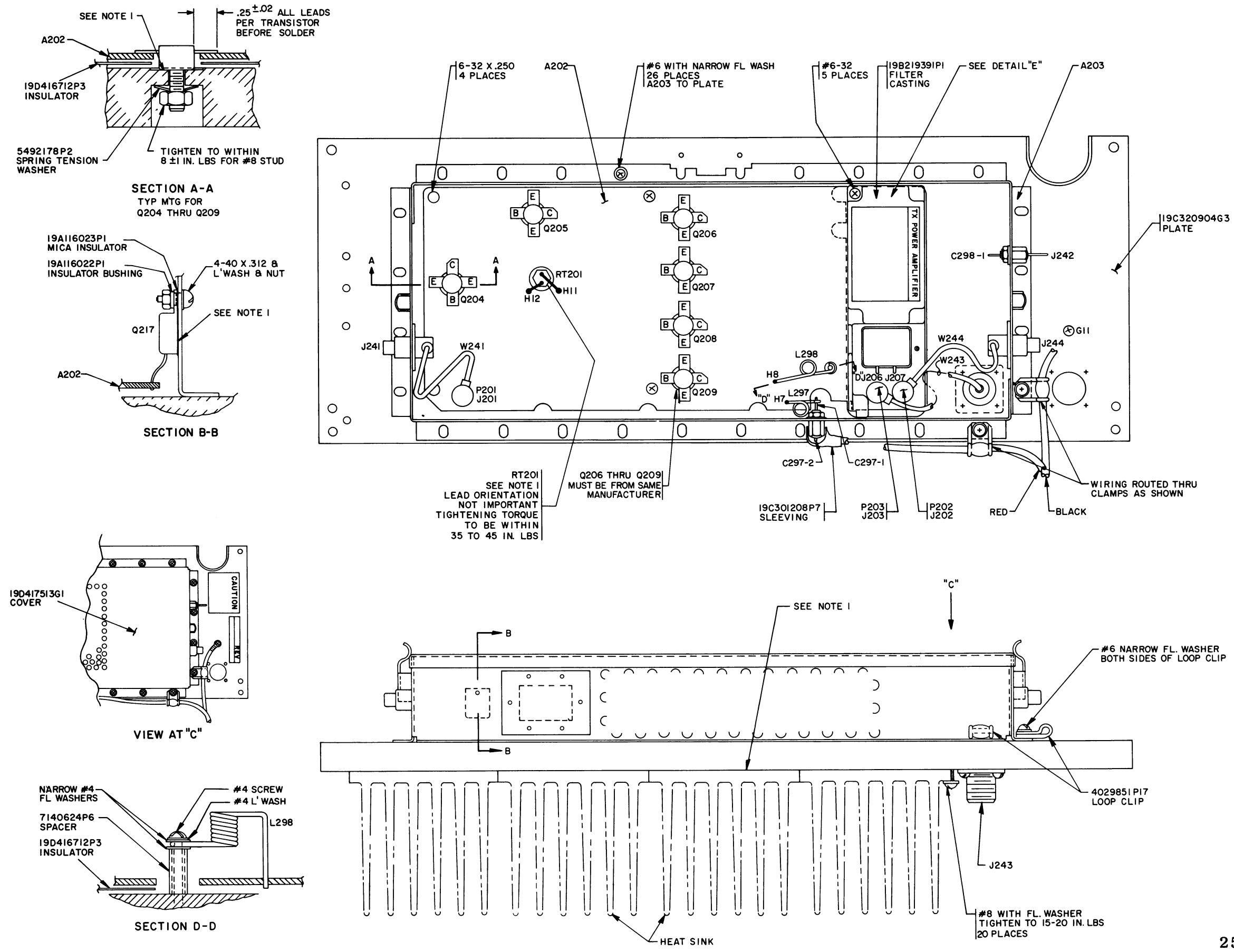
(19D417170, Sh. 2, Rev. 2)

OUTLINE DIAGRAM

25—50 MHz, 100-WATT STATION TRANSMITTER
INTERMITTENT & CONTINUOUS DUTY EXCITER &
PA BOARDS; INTERMITTENT DUTY PA ASSEMBLY



((19R622110, Rev. 8)



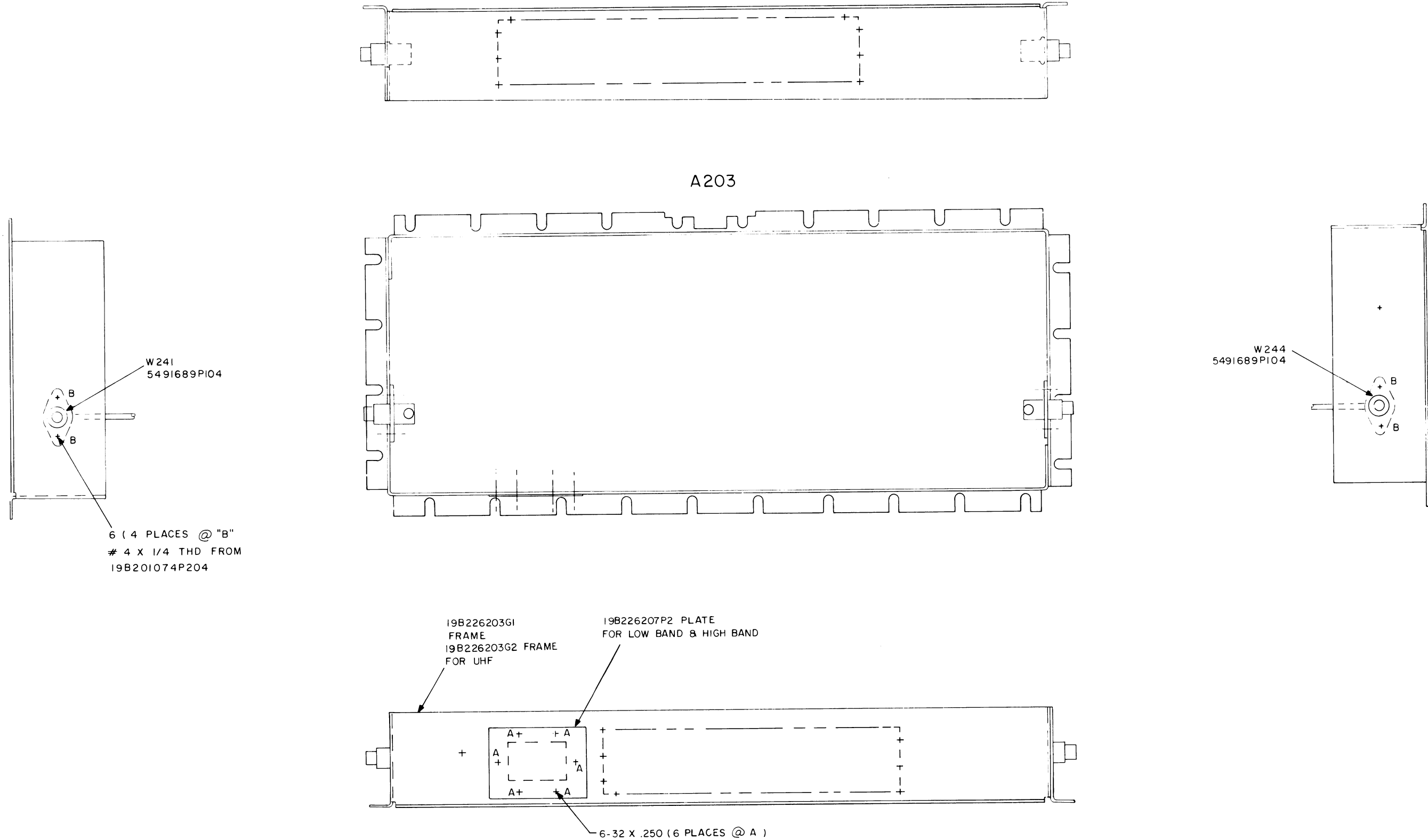
NOTES:

1. APPLY SILICONE GREASE TO BOTH SIDES OF MICA INSULATOR TO MOUNTING SURFACE OF Q204 THRU Q209 & RT201 AND UNPAINTED FLAT SURFACE OF HEAT SINKS.

NO GREASE ALLOWED ON THE THREADED PORTION OF THE MTG STUD.

OUTLINE DIAGRAM

25-50 MHz, 100-WATT STATION TRANSMITTER CONTINUOUS DUTY

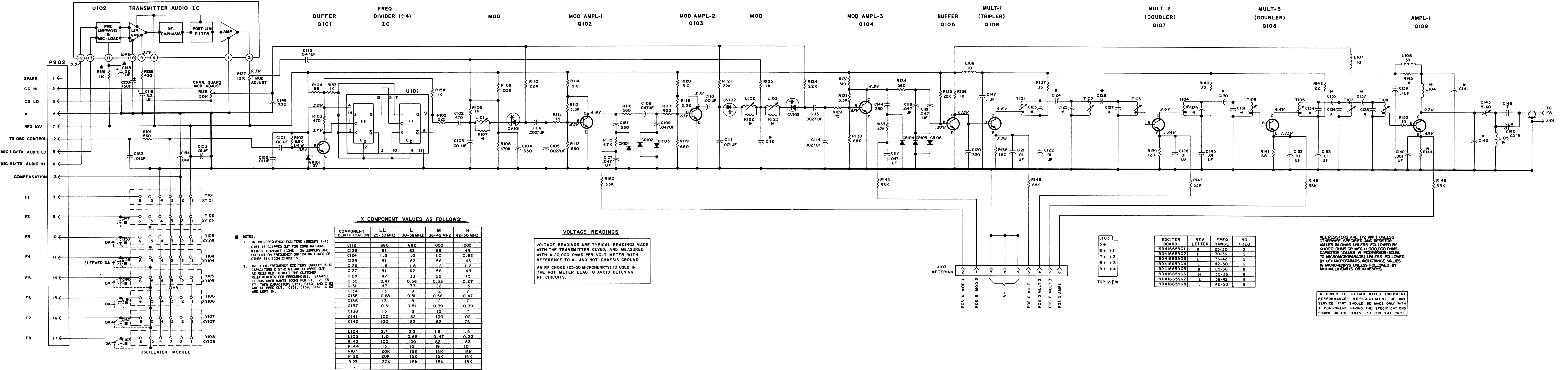


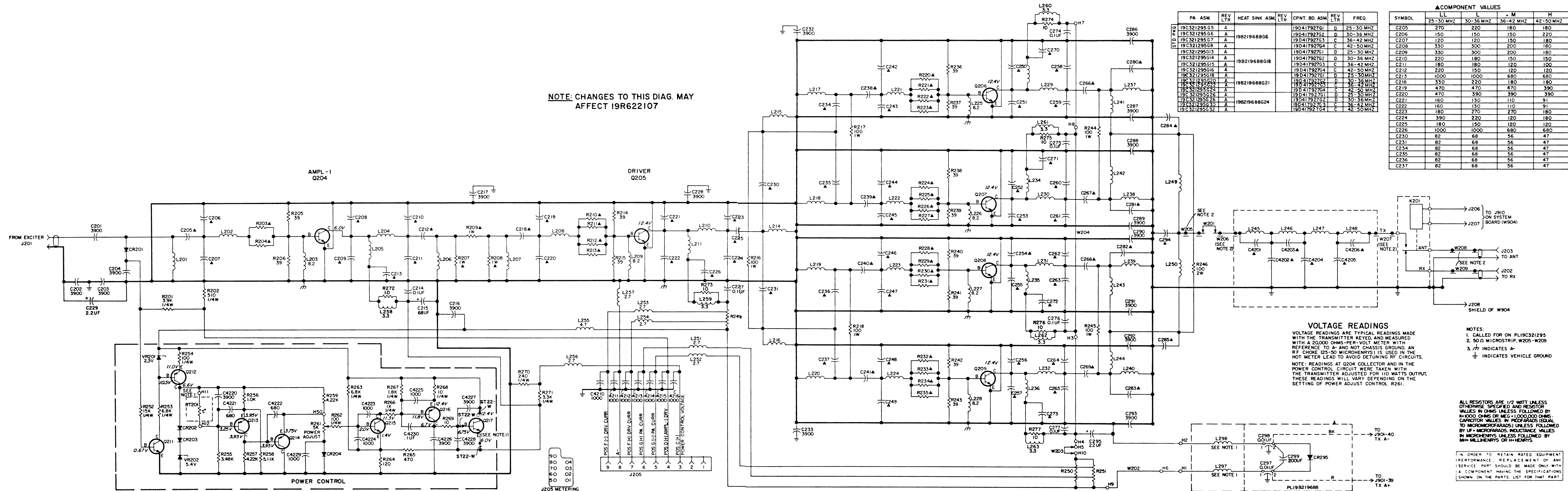
OUTLINE DIAGRAM

FRAME ASSEMBLY FOR INTERMITTENT &
CONTINUOUS DUTY TRANSMITTERS

SCHEMATIC DIAGRAM

25—50 MHz, EXCITER BOARD 19D416659G1-G8





SCHEMATIC DIAGRAM

25—50 MHz, 100-WATT STATION POWER AMPLIFIER
INTERMITTENT DUTY

PARTS LIST

LBI4899K
 5-50 MHz, 100 WATT
 POWER AMPLIFIER
 9C321295G5 - G8
 9C321295G13 - G16
 REV. A

SYMBOL	GE PART NO.	DESCRIPTION
		18C321295G5, G13 25-30 MHz (LL) 18C321295G6, G14 30-36 MHz (L) 18C321295G7, G15 36-42 MHz (M) 18C321295G8, G16 42-50 MHz (H)
		----- INDUCTORS -----
L297	19B219997P1	Coil.
L298	19B219997P2	Coil.
		----- TRANSISTORS -----
Q204	19A118965P1	Silicon, NPN.
Q205 thru Q209	19A134104P1	Silicon, NPN.
Q217	19A118742P1	Silicon, NPN.
		----- THERMISTORS -----
RT201	19A129379G1	Thermistor: 40K ohms $\pm 2\%$, color code white; sim to Carborundum Type M0806J-5. POWER AMPLIFIER BOARD 19D417927G1 25-30 MHz (LL) - REV D 19D417927G2 30-36 MHz (L) - REV D 19D417927G3 36-42 MHz (M) - REV C 19D417927G4 42-50 MHz (H) - REV C
		----- CAPACITORS -----
C201 thru C204	19A118655P23	Ceramic disc: 3900 pF $\pm 20\%$, 1000 VDCW; sim. to RMC Type JF Discap.
C205LL	19A700105P46	Mica: 270 pF $\pm 5\%$, 500 VDCW.
C205L	19A700105P44	Mica: 220 pF $\pm 5\%$, 500 VDCW.
C205M and C205H	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C206LL	19A700105P38	Mica: 150 pF $\pm 5\%$, 500 VDCW.
C206L	19A700105P38	Mica: 150 pF $\pm 5\%$, 500 VDCW.
C206M	19A700105P38	Mica: 150 pF $\pm 5\%$, 500 VDCW.
C206H	19A700105P44	Mica: 220 pF $\pm 5\%$, 500 VDCW.
C207LL and C207L	19A700105P36	Mica: 120 pF $\pm 5\%$, 500 VDCW.
C207M	19A700105P38	Mica: 150 pF $\pm 5\%$, 500 VDCW.
C207H	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C208LL	19A118656P330J15	Ceramic disc: 330 pF $\pm 5\%$, 500 VDCW, temp coef -1500 PPM.
C208L	19A118656P300J15	Ceramic disc: 300 pF $\pm 5\%$, 500 VDCW, temp coef -1500 PPM.
C208M	19A118656P200J4	Ceramic disc: 200 pF $\pm 5\%$, 500 VDCW; temp coef -470 PPM.
C208H	19A118656P180J4	Ceramic disc: 180 pF $\pm 5\%$, 500 VDCW; temp coef -470 PPM.
C209LL	19A118656P330J15	Ceramic disc: 330 pF $\pm 5\%$, 500 VDCW, temp coef -1500 PPM.
C209L	19A118656P300J15	Ceramic disc: 300 pF $\pm 5\%$, 500 VDCW, temp coef -1500 PPM.
C209M	19A118656P200J4	Ceramic disc: 200 pF $\pm 5\%$, 500 VDCW; temp coef -470 PPM.
C209H	19A118656P180J4	Ceramic disc: 180 pF $\pm 5\%$, 500 VDCW; temp coef -470 PPM.

SYMBOL	GE PART NO.	DESCRIPTION
C210LL	19A700105P44	Mica: 220 pF $\pm 5\%$, 500 VDCW.
C210L	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C210M and C210H	19A700105P38	Mica: 150 pF $\pm 5\%$, 500 VDCW.
C211LL and C211L	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C211M	19A700105P36	Mica: 120 pF $\pm 5\%$, 500 VDCW.
C211H	19A700105P34	Mica: 100 pF $\pm 5\%$, 500 VDCW.
C212LL	19A700105P44	Mica: 220 pF $\pm 5\%$, 500 VDCW.
C212L	19A700105P38	Mica: 150 pF $\pm 5\%$, 500 VDCW.
C212M and C212H	19A700105P36	Mica: 120 pF $\pm 5\%$, 500 VDCW.
C213LL and C213L	19A116655P19	Ceramic disc: 1000 pF $\pm 20\%$, 1000 VDCW; sim to RMC Type JF Discap.
C213M and C213H	19A116655P17	Ceramic disc: 680 pF $\pm 20\%$, 1000 VDCW; sim to RMC Type JF Discap.
C214	19A116966P107	Metallized Polyester: 0.1 uF $\pm 10\%$, 50 VDCW.
C215	5496267P11	Tantalum: 68 uF $\pm 20\%$, 15 VDCW; sim to Sprague Type 150D.
C216 and C217	19A116655P23	Ceramic disc: 3900 pF $\pm 20\%$, 1000 VDCW; sim to RMC Type JF Discap.
C218LL	7489162P39	Silver mica: 330 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C218L	19A700105P44	Mica: 220 pF $\pm 5\%$, 500 VDCW.
C218M and C218H	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C219LL	7489162P43	Silver mica: 470 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C219L	7489162P43	Silver mica: 470 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C219M	7489162P43	Silver mica: 470 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C219H	7489162P41	Silver mica: 390 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C220LL	7489162P43	Silver mica: 470 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C220L	7489162P41	Silver mica: 390 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C220M	7489162P41	Silver mica: 390 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C220H	7489162P41	Silver mica: 390 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C221LL	19A116656P160J3	Ceramic disc: 160 pF $\pm 5\%$, 500 VDCW, temp coef -330 PPM.
C221L	19A1166516P130J1	Ceramic disc: 130 pF $\pm 5\%$, 500 VDCW, temp coef -150 PPM.
C221M	19A116656P110J8	Ceramic disc: 110 pF $\pm 5\%$, 500 VDCW; temp coef -80 PPM.
C221H	19A116656P91J0	Ceramic disc: 91 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C222LL	19A116656P160J3	Ceramic disc: 160 pF $\pm 5\%$, 500 VDCW, temp coef -330 PPM.
C222L	19A116656P130J1	Ceramic disc: 130 pF $\pm 5\%$, 500 VDCW, temp coef -150 PPM.
C222M	19A116656P110J8	Ceramic disc: 110 pF $\pm 5\%$, 500 VDCW; temp coef -80 PPM.
C222H	19A116656P91J0	Ceramic disc: 91 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C223LL	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C223L and C223M	19A700105P46	Mica: 270 pF $\pm 5\%$, 500 VDCW.
C223H	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C224LL	7489162P41	Silver mica: 390 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.

SYMBOL	GE PART NO.	DESCRIPTION
C224L	19A700105P44	Mica: 220 pF $\pm 5\%$, 500 VDCW.
C224M	19A700105P36	Mica: 120 pF $\pm 5\%$, 500 VDCW.
C224H	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C225LL	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C225L	19A700105P38	Mica: 150 pF $\pm 5\%$, 500 VDCW.
C225M and C225H	19A700105P36	Mica: 120 pF $\pm 5\%$, 500 VDCW.
C226LL and C226L	19A116655P19	Ceramic disc: 1000 pF $\pm 20\%$, 1000 VDCW; sim to R Type JF Discap.
C226M and C226H	19A116655P17	Ceramic disc: 680 pF $\pm 20\%$, 1000 VDCW; sim to RMC Type JF Discap.
C227	19A116966P107	Metallized Polyester: 0.1 μ F $\pm 10\%$, 50 VDCW.
C228	19A116655P23	Ceramic disc: 3900 pF $\pm 20\%$, 1000 VDCW; sim to RM Type JF Discap.
C229	5496267P13	Tantalum: 2.2 μ F $\pm 20\%$, 20 VDCW; sim to Sprague Type 150D.
C230LL	19A116656P82J0	Ceramic disc: 82 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C230L	19A116656P68J0	Ceramic disc: 68 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C230M	19A116656P56J0	Ceramic disc: 56 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C230H	19A116656P47J0	Ceramic disc: 47 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C231LL	19A116656P82J0	Ceramic disc: 82 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C231L	19A116656P68J0	Ceramic disc: 68 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C231M	19A116656P56J0	Ceramic disc: 56 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C231H	19A116656P47J0	Ceramic disc: 47 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C232 and C233	19A116655P23	Ceramic disc: 3900 pF $\pm 20\%$, 1000 VDCW; sim to RM Type JF Discap.
C234LL	19A116656P82J0	Ceramic disc: 82 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C234L	19A116656P68J0	Ceramic disc: 68 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C234M	19A116656P56J0	Ceramic disc: 56 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C234H	19A116656P47J0	Ceramic disc: 47 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C235LL	19A116656P82J0	Ceramic disc: 82 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C235L	19A116656P68J0	Ceramic disc: 68 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C235M	19A116656P56J0	Ceramic disc: 56 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C235H	19A116656P47J0	Ceramic disc: 47 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C236LL	19A116656P82J0	Ceramic disc: 82 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C236L	19A116656P68J0	Ceramic disc: 68 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C236M	19A116656P56J0	Ceramic disc: 56 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C236H	19A116656P47J0	Ceramic disc: 47 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C237LL	19A116656P82J0	Ceramic disc: 82 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C237L	19A116656P68J0	Ceramic disc: 68 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C237M	19A116656P56J0	Ceramic disc: 56 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C237H	19A116656P47J0	Ceramic disc: 47 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C238LL	7489162P39	Silver mica: 330 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.

SYMBOL	GE PART NO.	DESCRIPTION
C238L	19A700105P44	Mica: 220 pF $\pm 5\%$, 500 VDCW.
C238M and C238H	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C239LL	7489162P39	Silver mica: 330 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C239L	19A700105P44	Mica: 220 pF $\pm 5\%$, 500 VDCW.
C239M and C239H	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C240LL	7489162P39	Silver mica: 330 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C240L	19A700105P44	Mica: 220 pF $\pm 5\%$, 500 VDCW.
C240M and C240H	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C241LL	7489162P39	Silver mica: 330 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C241L	19A700105P44	Mica: 220 pF $\pm 5\%$, 500 VDCW.
C241M and C241H	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C242LL and C242L	7489162P43	Silver mica: 470 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C242M and C242H	7489162P41	Silver mica: 390 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C243LL	7489162P43	Silver mica: 470 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C243L	7489162P41	Silver mica: 390 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C243M and C243H	7489162P39	Silver mica: 330 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C244LL and C244L	7489162P43	Silver mica: 470 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C244M and C244H	7489162P41	Silver mica: 390 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C245LL	7489162P43	Silver mica: 470 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C245L	7489162P41	Silver mica: 390 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C245M and C245H	7489162P39	Silver mica: 330 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C246LL and C246L	7489162P43	Silver mica: 470 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C246M and C246H	7489162P41	Silver mica: 390 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C247LL	7489162P43	Silver mica: 470 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C247L	7489162P41	Silver mica: 390 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C247M and C247H	7489162P39	Silver mica: 330 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C248LL and C248L	7489162P43	Silver mica: 470 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C248M and C248H	7489162P41	Silver mica: 390 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C249LL	7489162P43	Silver mica: 470 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C249L	7489162P41	Silver mica: 390 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C249M and C249H	7489162P39	Silver mica: 330 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C250LL	19A116656P160J3	Ceramic disc: 160 pF $\pm 5\%$, 500 VDCW, temp coef ~ 30 PPM.

SYMBOL	GE PART NO.	DESCRIPTION
C250L	19A116656P130J1	Ceramic disc: 130 pF $\pm 5\%$, 500 VDCW; temp coef -150 PPM.
C250W	19A116656P110J8	Ceramic disc: 110 pF $\pm 5\%$, 500 VDCW; temp coef -80 PPM.
C250H	19A116656P91J0	Ceramic disc: 91 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C251LL	19A116656P160J3	Ceramic disc: 160 pF $\pm 5\%$, 500 VDCW; temp coef -330 PPM.
C251L	19A116656P130J1	Ceramic disc: 130 pF $\pm 5\%$, 500 VDCW; temp coef -150 PPM.
C251W	19A116656P110J8	Ceramic disc: 110 pF $\pm 5\%$, 500 VDCW; temp coef -80 PPM.
C251H	19A116656P91J0	Ceramic disc: 91 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C252LL	19A116656P160J3	Ceramic disc: 160 pF $\pm 5\%$, 500 VDCW; temp coef -330 PPM.
C252L	19A116656P130J1	Ceramic disc: 130 pF $\pm 5\%$, 500 VDCW; temp coef -150 PPM.
C252W	19A116656P110J8	Ceramic disc: 110 pF $\pm 5\%$, 500 VDCW; temp coef -80 PPM.
C252H	19A116656P91J0	Ceramic disc: 91 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C253LL	19A116656P160J3	Ceramic disc: 160 pF $\pm 5\%$, 500 VDCW; temp coef -330 PPM.
C253L	19A116656P130J1	Ceramic disc: 130 pF $\pm 5\%$, 500 VDCW; temp coef -150 PPM.
C253W	19A116656P110J8	Ceramic disc: 110 pF $\pm 5\%$, 500 VDCW; temp coef -80 PPM.
C253H	19A116656P91J0	Ceramic disc: 91 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C254LL	19A116656P160J3	Ceramic disc: 160 pF $\pm 5\%$, 500 VDCW; temp coef -330 PPM.
C254L	19A116656P130J1	Ceramic disc: 130 pF $\pm 5\%$, 500 VDCW; temp coef -150 PPM.
C254W	19A116656P110J8	Ceramic disc: 110 pF $\pm 5\%$, 500 VDCW; temp coef -80 PPM.
C254H	19A116656P91J0	Ceramic disc: 91 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C255LL	19A116656P160J3	Ceramic disc: 160 pF $\pm 5\%$, 500 VDCW; temp coef -330 PPM.
C255L	19A116656P130J1	Ceramic disc: 130 pF $\pm 5\%$, 500 VDCW; temp coef -150 PPM.
C255W	19A116656P110J8	Ceramic disc: 110 pF $\pm 5\%$, 500 VDCW; temp coef -80 PPM.
C255H	19A116656P91J0	Ceramic disc: 91 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C256LL	19A116656P160J3	Ceramic disc: 160 pF $\pm 5\%$, 500 VDCW; temp coef -330 PPM.
C256L	19A116656P130J1	Ceramic disc: 130 pF $\pm 5\%$, 500 VDCW; temp coef -150 PPM.
C256W	19A116656P110J8	Ceramic disc: 110 pF $\pm 5\%$, 500 VDCW; temp coef -80 PPM.
C256H	19A116656P91J0	Ceramic disc: 91 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C257LL	19A116656P160J3	Ceramic disc: 160 pF $\pm 5\%$, 500 VDCW; temp coef -330 PPM.
C257L	19A116656P130J1	Ceramic disc: 130 pF $\pm 5\%$, 500 VDCW; temp coef -150 PPM.
C257W	19A116656P110J8	Ceramic disc: 110 pF $\pm 5\%$, 500 VDCW; temp coef -80 PPM.
C257H	19A116656P91J0	Ceramic disc: 91 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C258LL	7489162P41	Silver mica: 380 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C258L and C258M	19A700105P46	Mica: 270 pF $\pm 5\%$, 500 VDCW.
C258H and C259LL	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C259L	19A700105P44	Mica: 220 pF $\pm 5\%$, 500 VDCW.
C259M	19A700105P36	Mica: 120 pF $\pm 5\%$, 500 VDCW.

SYMBOL	GE PART NO.	DESCRIPTION
C259H	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C260LL	7489162P41	Silver mica: 390 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C260L and C260W	19A700105P46	Mica: 270 pF $\pm 5\%$, 500 VDCW.
C260R and C261LL	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C261L	19A700105P44	Mica: 220 pF $\pm 5\%$, 500 VDCW.
C261M	19A700105P36	Mica: 120 pF $\pm 5\%$, 500 VDCW.
C261H	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C262LL	7489162P41	Silver mica: 390 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C262L and C262W	19A700105P46	Mica: 270 pF $\pm 5\%$, 500 VDCW.
C262H and C263LL	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C263L	19A700105P44	Mica: 220 pF $\pm 5\%$, 500 VDCW.
C263W	19A700105P36	Mica: 120 pF $\pm 5\%$, 500 VDCW.
C263H	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C264LL	7489162P41	Silver mica: 390 pF $\pm 5\%$, 500 VDCW; sim to Sprague Type 118.
C264L and C264W	19A700105P46	Mica: 270 pF $\pm 5\%$, 500 VDCW.
C264H and C265LL	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C265L	19A700105P44	Mica: 220 pF $\pm 5\%$, 500 VDCW.
C265W	19A700105P36	Mica: 120 pF $\pm 5\%$, 500 VDCW.
C265H	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C266LL	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C266L	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C266W and C266H	19A700105P36	Mica: 120 pF $\pm 5\%$, 500 VDCW.
C267LL and C267L	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C267W and C267H	19A700105P36	Mica: 120 pF $\pm 5\%$, 500 VDCW.
C268LL and C268L	19A700105P41	Mica: 180 pF $\pm 5\%$, 500 VDCW.
C268W and C268H	19A700105P36	Mica: 120 pF $\pm 5\%$, 500 VDCW.
C269LL and C269L	19A700105P041	Mica: 180 pF $\pm 5\%$, 500 VDCW; sim to Electro Mica Type DM-15.
C269W and C269H	19A700105P36	Mica: 120 pF $\pm 5\%$, 500 VDCW.
C270LL and C270L	19A116655P19	Ceramic disc: 1000 pF $\pm 20\%$, 1000 VDCW; sim to Type JF Discap.
C270W and C270H	19A116655P17	Ceramic disc: 680 pF $\pm 20\%$, 1000 VDCW; sim to Type JF Discap.
C271LL and C271L	19A116655P19	Ceramic disc: 1000 pF $\pm 20\%$, 1000 VDCW; sim to Type JF Discap.
C271W and C271H	19A116655P17	Ceramic disc: 680 pF $\pm 20\%$, 1000 VDCW; sim to Type JF Discap.
C272LL and C272L	19A116655P19	Ceramic disc: 1000 pF $\pm 20\%$, 1000 VDCW; sim to Type JF Discap.
C272W and C272H	19A116655P17	Ceramic disc: 680 pF $\pm 20\%$, 1000 VDCW; sim to Type JF Discap.

SYMBOL	GE PART NO.	DESCRIPTION
C273LL and C273L	19A116655P19	Ceramic disc: 1000 pF $\pm 20\%$, 1000 VDCW; sim to Type JF Discap.
C273M and C273H	19A116655P17	Ceramic disc: 680 pF $\pm 20\%$, 1000 VDCW; sim to Type JF Discap.
C274 thru C277	19A116966P107	Metallized Polyester: 0.1 uF $\pm 10\%$, 50 VDCW.
C280LL	19A116656P82J0	Ceramic disc: 82 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C280L	19A116656P68J0	Ceramic disc: 68 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C280M	19A116656P56J0	Ceramic disc: 56 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C280H	19A116656P47J0	Ceramic disc: 47 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C281LL	19A116656P82J0	Ceramic disc: 82 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C281L	119A116656P68J0	Ceramic disc: 68 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C281M	19A116656P56J0	Ceramic disc: 56 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C281H	19A116656P47J0	Ceramic disc: 47 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C282LL	19A116656P82J0	Ceramic disc: 82 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C282L	19A116656P68J0	Ceramic disc: 68 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C282M	19A116656P56J0	Ceramic disc: 56 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C282H	19A116656P47J0	Ceramic disc: 47 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C283LL	19A116656P82J0	Ceramic disc: 82 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C283L	19A116656P68J0	Ceramic disc: 68 pF $\pm 5\%$, 500 VDCW, temp coef 0 PPM.
C283M	19A116656P56J0	Ceramic disc: 56 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C283H	19A116656P47J0	Ceramic disc: 47 pF $\pm 5\%$, 500 VDCW; temp coef 0 PPM.
C284LL	19A700015P38	Teflon/Mica: 240 pF $\pm 5\%$, 250 VDCW.
C284L	19A700015P36	Teflon/Mica: 200 pF $\pm 5\%$, 250 VDCW.
C284M	19A700015P34	Teflon/Mica: 160 pF $\pm 5\%$, 250 VDCW.
C284H	19A116679P140J	Silver Mica: 140 pF $\pm 5\%$, 250 VDCW.
C285LL	19A700015P38	Teflon/Mica: 240 pF $\pm 5\%$, 250 VDCW.
C285L	19A700015P36	Teflon/Mica: 200 pF $\pm 5\%$, 250 VDCW.
C285M	19A700015P34	Teflon/Mica: 160 pF $\pm 5\%$, 250 VDCW.
C285H	19A116679P140J	Silver Mica: 140 pF $\pm 5\%$, 250 VDCW.
C286 thru C293	19A116655P23	Ceramic disc: 3900 pF $\pm 20\%$, 1000 VDCW; sim to RMC Type JF Discap.
C294LL	19A700015P34	Teflon/Mica: 160 pF $\pm 5\%$, 250 VDCW.
C294L	19A700015P32	Teflon/Mica: 130 pF $\pm 5\%$, 250 VDCW.
C294M	19A700015P30	Silver mica: 110 pF $\pm 5\%$, 250 VDCW.
C294H	19A700015P28	Teflon/Mica: 91 pF $\pm 5\%$, 250 VDCW.
C295	549626P719	Tantalum: 22 uF $\pm 20\%$, 35 VDCW; sim to Sprague Type 150D.
C4201LL*	19A116656P91J2	Ceramic disc: 91 pF $\pm 5\%$, 500 VDCW; temp coef ~ 220 PPM. In REV A & earlier:
	19A116656P82J1	Ceramic disc: 82 pF $\pm 5\%$, 500 VDCW, temp coef ~ 150 PPM.
C4201L	19A116656P68J1	Ceramic disc: 68 pF $\pm 5\%$, 500 VDCW, temp coef ~ 150 PPM.
C4201M	19A116656P56J1	Ceramic disc: 56 pF $\pm 5\%$, 500 VDCW; temp coef ~ 150 PPM.
C4201H	19A116656P51J1	Ceramic disc: 51 pF $\pm 5\%$, 500 VDCW; temp coef ~ 150 PPM.

SYMBOL	GE PART NO.	DESCRIPTION
C4202LL	19A700015P30	Silver mica: 110 pF $\pm 5\%$, 250 VDCW.
C4202L	19A700015P28	Teflon/Mica: 91 pF $\pm 5\%$, 250 VDCW.
C4202M	19A700015P25	Silver mica: 68 pF $\pm 5\%$, 250 VDCW.
C4202H	19A700015P23	Teflon/Mica: 56 pF $\pm 5\%$, 250 VDCW.
C4203LL*	19A116656P15J1	Ceramic disc: 15 pF $\pm 5\%$, 500 VDCW, temp coef -150 PPM.
C4203L	19A116656P13J1	Ceramic disc: 13 pF $\pm 5\%$, 500 VDCW, temp coef -150 PPM.
C4203M	19A116656P12J1	Ceramic disc: 12 pF $\pm 5\%$, 500 VDCW; temp coef -150 PPM.
C4203H	19A116656P10J1	Ceramic disc: 10 pF $\pm 5\%$, 500 VDCW; temp coef -150 PPM.
C4204LL	19A116679P140J	Silver Mica: 140 pF $\pm 5\%$, 250 VDCW.
C4204L	19A700015P30	Silver mica: 110 pF $\pm 5\%$, 250 VDCW.
C4204M	19A700015P28	Teflon/Mica: 91 pF $\pm 5\%$, 250 VDCW.
C4204H	19A700015P27	Silver mica: 82 pF $\pm 5\%$, 250 VDCW.
C4205LL*	19A700015P31	Teflon/Mica: 120 pF $\pm 5\%$, 250 VDCW.
		In REV A & earlier:
	19A116656P82J1	Ceramic disc: 82 pF $\pm 5\%$, 500 VDCW, temp coef -150 PPM.
C4205L*	19A700015P28	Teflon/Mica: 91 pF $\pm 5\%$, 250 VDCW.
		In REV B & earlier:
	19A116679P100J	Mica: 100 pF $\pm 5\%$, 250 VDCW.
C4205M	19A700015P27	Silver mica: 82 pF $\pm 5\%$, 250 VDCW.
C4205H	19A700015P26	Teflon/Mica: 75 pF $\pm 5\%$, 250 VDCW.
C4206LL*	1A116656P91J2	Ceramic disc: 91 pF $\pm 5\%$, 500 VDCW, temp coef -220 PPM.
		In REV A & earlier:
	19A116656P82J1	Ceramic disc: 82 pF $\pm 5\%$, 500 VDCW, temp coef -150 PPM.
C4206L	19A116656P68J1	Ceramic disc: 68 pF $\pm 5\%$, 500 VDCW, temp coef -150 PPM.
C4206M	19A116656P56J1	Ceramic disc: 56 pF $\pm 5\%$, 500 VDCW; temp coef -150 PPM.
C4206H	19A116656P51J1	Ceramic disc: 51 pF $\pm 5\%$, 500 VDCW; temp coef -150 PPM.
C4210 thru C4216	19A116655P19	Ceramic disc: 1000 pF $\pm 20\%$, 1000 VDCW; sim to Type JF Discap.
C4220	19A116655P23	Ceramic disc: 3900 pF $\pm 20\%$, 1000 VDCW; sim to Type JF Discap.
C4221 and C4222	19A116655P17	Ceramic disc: 680 pF $\pm 20\%$, 1000 VDCW; sim to Type JF Discap.
C4223 thru C4225	19A116655P19	Ceramic disc: 1000 pF $\pm 20\%$, 1000 VDCW; sim to Type JF Discap.
C4226 thru C4228	19A116655P23	Ceramic disc: 3900 pF $\pm 20\%$, 1000 VDCW; sim to Type JF Discap.
C4229	19A116655P19	Ceramic disc: 1000 pF $\pm 20\%$, 1000 VDCW; sim to Type JF Discap.
C4230*	19A116192P14	Ceramic: 0.1 μ F $\pm 20\%$, 50 VDCW; sim to Erie U CW20C104-M2. Added to GI by REV C. Added to G2-G4 by REV B.
		- - - - - DIODES AND RECTIFIERS - - - - -
CR201*	19A116052P2	Silicon, fast recovery; sim to Hewlett Packard 5082-2811.
		Earlier than REV A:
	19A115250P1	Silicon, fast recovery, 225 mA, 50 PIV.
CR202 thru CR204	19A115250P1	Silicon, fast recovery, 225 mA, 50 PIV.
		- - - - - JACKS AND RECEPTACLES - - - - -
J201 thru J203	19A700049P2	Connector, receptacle; 500 VDCW maximum; sim NITF-1058.

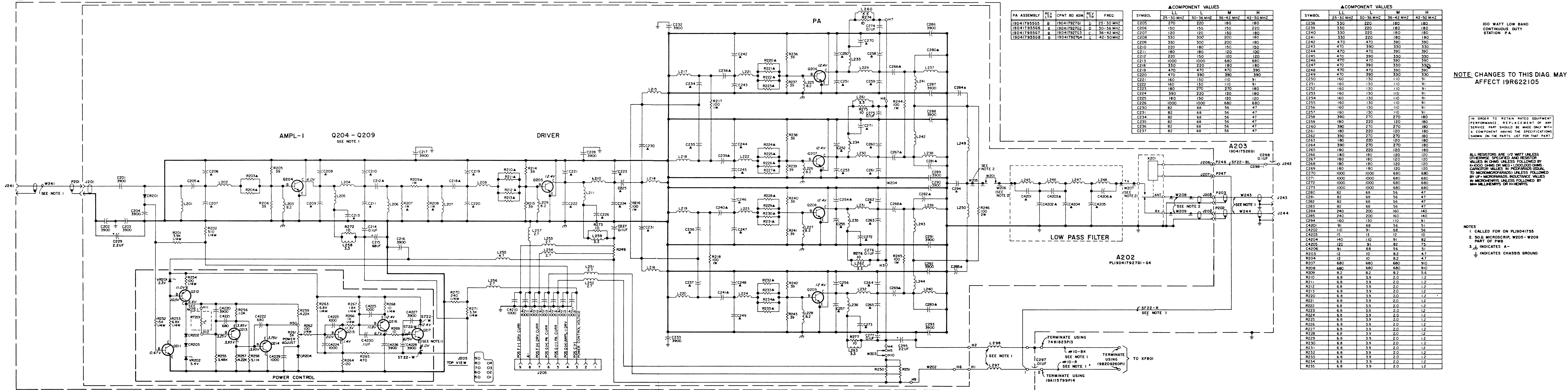
SYMBOL	GE PART NO.	DESCRIPTION	SYMBOL	GE PART NO.	DESCRIPTION	SYMBOL	GE PART NO.	DESCRIPTION	SYMBOL	GE PART NO.	DESCRIPTION
J205	19B219374G1	Connector, Includes: Shell.	L215H	19C320617P18	Coil.	L232H	19C320617P17	Coil.	L246L	19A129360P7	Coil.
J206 and J207	19A134263P2	Contact, electrical: sim to Selectro 229-1071.	L216LL	19C320617P13	Coil.	L233LL	19C320618P2	Coil.	L246M	19A129360P3	Coil.
J208	4033513P4	Contact, electrical: sim to Bead Chain L93-3.	L216L	19C320617P33	Coil.	L233L and L233M	19C320618P6	Coil.	L246H	19A129360P2	Coil.
		----- RELAYS -----	L216M	19C320617P34	Coil.	L233H	19C320618P1	Coil.	L247LL	19A129360P11	Coil.
K201	19A700061P1	Hermetic sealed: 180 to 341 ohms coil res, 8-16.3 VDC; sim to GE 3SAV1760A2, CPCLare HPW-1201558, or Potter-Brumfield HCM6160.	L216H	19C320617P18	Coil.	L234LL	19C320618P2	Coil.	L247L	19A129360P8	Coil.
		----- INDUCTORS -----	L217LL	19C320617P15	Coil.	L234L and L234M	19C320618P6	Coil.	L247M	19A129360P5	Coil.
L201LL	19C320617P1	Coil.	L217L	19C320617P5	Coil.	L234H	19C320618P1	Coil.	L247H	19A129360P3	Coil.
L201L	19C320617P23	Coil.	L217M	19C320617P26	Coil.	L235LL	19C320618P2	Coil.	L248LL	19A129360P9	Coil.
L201M	19C320617P24	Coil.	L217H	19C320617P6	Coil.	L235L and L235M	19C320618P6	Coil.	L248L	19A129360P6	Coil.
L201H	19C320617P2	Coil.	L218LL	19C320617P15	Coil.	L235H	19C320618P1	Coil.	L248M	19A129360P4	Coil.
L202LL	19C320617P3	Coil.	L218L	19C320617P5	Coil.	L236LL	19C320618P2	Coil.	L249LL	19C320617P41	Coil.
L202L	19C320617P5	Coil.	L218M	19C320617P26	Coil.	L236L and L236M	19C320618P6	Coil.	L249L	19C320617P42	Coil.
L202M	19C320617P25	Coil.	L218H	19C320617P6	Coil.	L236H	19C320618P1	Coil.	L249M	19C320617P43	Coil.
L202H	19C320617P4	Coil.	L219LL	19C320617P15	Coil.	L237LL	19C320617P37	Coil.	L249H	19C320617P44	Coil.
L203	19A700000P122	Coil, RF: 8.2 uH ±10%; sim to Jeffers 4422-3K.	L219L	19C320617P5	Coil.	L237L	19C320617P38	Coil.	L250LL	19C320617P41	Coil.
L204LL	19C320617P5	Coil.	L219M	19C320617P26	Coil.	L237M	19C320617P39	Coil.	L250L	19C320617P42	Coil.
L204L	19C320617P26	Coil.	L219H	19C320617P6	Coil.	L237H	19C320617P40	Coil.	L250M	19C320617P43	Coil.
L204M	19C320617P27	Coil.	L220LL	19C320617P15	Coil.	L238LL	19C320617P37	Coil.	L250H	19C320617P44	Coil.
L204H	19C320617P6	Coil.	L220L	19C320617P5	Coil.	L238L	19C320617P38	Coil.	L251 thru L254	19A700000P16	Coil, RF: 2.7 uH +-10%; sim to Jeffers 4411-13K.
L205LL	19C320618P2	Coil.	L220M	19C320617P26	Coil.	L238M	19C320617P39	Coil.	L255	19A700000P19	Coil, RF: 4.7 uH ±10%; sim to Jeffers 4421-3K.
L205L and L205M	19C310618P6	Coil.	L220H	19C320617P6	Coil.	L238H	19C320617P40	Coil.	L256 and L257	19A700000P16	Coil, RF: 2.7 uH +-10%; sim to Jeffers 4411-13K.
L205H	19C320618P1	Coil.	L221LL	19C320619P1	Coil.	L239LL	19C320617P37	Coil.	L258	19A700000P17	Coil, RF: 3.3 uH ±10%; sim to Jeffers 4421-1K.
L206LL	19C320617P7	Coil.	L221L	19C320618P7	Coil.	L239L	19C320617P38	Coil.	L259 thru L263	19A129346G1	Coil.
L206L	19C320617P28	Coil.	L221M	19C320619P5	Coil.	L239M	19C320617P39	Coil.			----- TRANSISTORS -----
L206M	19C320617P29	Coil.	L221H	19C320619P6	Coil.	L239H	19C320617P40	Coil.	Q211	19A700023P1	Silicon, NPN; sim to Type 2N3904.
L206H	19C320617P8	Coil.	L222LL	19C320618P7	Coil.	L240LL	19C320617P37	Coil.	Q212 thru Q214	19A115768P1	Silicon, PNP; sim to Type 2N3702.
L207LL	19C320617P9	Coil.	L222L	19C320619P5	Coil.	L240L	19C320617P38	Coil.	Q215	19A700023P1	Silicon, NPN; sim to Type 2N3904.
L207L	19C320617P30	Coil.	L222M	19C320619P6	Coil.	L240M	19C320617P39	Coil.	Q216	19A115779P1	Silicon, PNP; sim to Type 2N3251.
L207M	19C320617P31	Coil.	L222H	19C320619P6	Coil.	L241LL	19C320617P41	Coil.			----- RESISTORS -----
L207H	19C320617P10	Coil.	L223LL	19C320619P1	Coil.	L241L	19C320617P42	Coil.	R201	19A700106P77	Composition: 3.9K ohms ±5%, 1/4 w.
L208LL	19C320619P1	Coil.	L223L	19C320618P7	Coil.	L241M	19C320617P43	Coil.	R202	3R152P511J	Composition: 510 ohms ±5%, 1/4 w.
L208L	19C320618P7	Coil.	L223M	19C320619P5	Coil.	L241H	19C320617P44	Coil.	R203LL	19A700113P17	Composition: 12 ohms ±5%, 1/2 w.
L208M	19C320619P5	Coil.	L223H	19C320619P6	Coil.	L242LL	19C320617P41	Coil.	R203L	19A700113P15	Composition: 10 ohms ±5%, 1/2 w.
L208H	19C320619P6	Coil.	L224LL	19C320619P1	Coil.	L242L	19C320617P42	Coil.	R203M	19A700113P13	Composition: 8.2 ohms ±5%, 1/2 w.
L209	19A700000P122	Coil, RF: 8.2 uH ±10%; sim to Jeffers 4422-3K.	L224L	19C320618P7	Coil.	L242M	19C320617P43	Coil.	R203H	19A700113P7	Composition: 4.7 ohms ±5%, 1/2 w.
L210LL	19C320617P11	Coil.	L224M	19C320619P5	Coil.	L242H	19C320617P44	Coil.	R204LL	19A700113P17	Composition: 12 ohms ±5%, 1/2 w.
L210L and L210M	19C320617P4	Coil.	L224H	19C320619P6	Coil.	L243LL	19C320617P41	Coil.	R204L	19A700113P15	Composition: 10 ohms ±5%, 1/2 w.
L210H	19C320617P12	Coil.	L225 thru L228	19A700000P122	Coil, RF: 8.2 uH ±10%; sim to Jeffers 4422-3K.	L243L	19C320617P42	Coil.	R204M	19A700113P13	Composition: 8.2 ohms ±5%, 1/2 w.
L211LL	19C320618P2	Coil.	L229LL	19C320617P16	Coil.	L243M	19C320617P43	Coil.	R204H	19A700113P7	Composition: 4.7 ohms ±5%, 1/2 w.
L211L	19C320618P6	Coil.	L229L	19C320617P35	Coil.	L243H	19C320617P44	Coil.	R205 and R206	19A700113P29	Composition: 39 ohms ±5%, 1/2 w.
L211M			L229M	19C320617P12	Coil.	L244LL	19C320617P41	Coil.			
L211H	19C320618P1	Coil.	L229H	19C320617P17	Coil.	L244L	19C320617P42	Coil.	R207LL	19A700112P59	Composition: 680 ohms ±5%, 1 w.
L214LL	19C320617P13	Coil.	L230LL	19C320617P16	Coil.	L244M	19C320617P43	Coil.	R207L	19A700112P59	Composition: 680 ohms ±5%, 1 w.
L214L	19C320617P32	Coil.	L230L	19C320617P35	Coil.	L244H	19C320617P44	Coil.	R207M	19A700112P59	Composition: 680 ohms ±5%, 1 w.
L214M	19C320617P18	Coil.	L230M	19C320617P12	Coil.	L245LL	19A129360P9	Coil.	R207H	3R78P911J	Composition: 910 ohms ±5%, 1 w.
L214H	19C320617P14	Coil.	L230H	19C320617P17	Coil.	L245L	19A129360P6	Coil.	R208LL	19A700112P59	Composition: 680 ohms ±5%, 1 w.
L215LL	19C320617P13	Coil.	L231LL	19C320617P16	Coil.	L245M	19A129360P4	Coil.	R208L	19A700112P59	Composition: 680 ohms ±5%, 1 w.
L215L	19C320617P33	Coil.	L231L	19C320617P12	Coil.	L245H	19A129360P1	Coil.	R208M	19A700112P59	Composition: 680 ohms ±5%, 1 w.
L216M	19C320617P34	Coil.	L231H	19C320617P17	Coil.	L246LL	19A129360P10	Coil.			
			L232LL	19C320617P16	Coil.						
			L232L	19C320617P35	Coil.						
			L232M	19C320617P12	Coil.						

SYMBOL	GE PART NO.	DESCRIPTION	SYMBOL	GE PART NO.	DESCRIPTION	SYMBOL	GE PART NO.	DESCRIPTION
R208H	3R78P911J	Composition: 910 ohms $\pm 5\%$, 1 w.	R227L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.	R264	19A700113P41	Composition: 120 ohms $\pm 5\%$, 1/2 w.
R209LL	19A700112P13	Composition: 8.2 ohms $\pm 5\%$, 1 w.	R227M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.	R265	19A700113P55	Composition: 470 ohms $\pm 5\%$, 1/2 w.
R209L	19A700112P13	Composition: 8.2 ohms $\pm 5\%$, 1 w.	R227H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.	R266	19A700106P63	Composition: 1K ohms $\pm 5\%$, 1/4 w.
R209M	19A700112P13	Composition: 8.2 ohms $\pm 5\%$, 1 w.	R228LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.	R267	19A700106P69	Composition: 1.8K ohms $\pm 5\%$, 1/4 w.
R209H	19A700112P9	Composition: 5.6 ohms $\pm 5\%$, 1 w.	R228L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.	R268	19A700106P15	Composition: 10 ohms $\pm 5\%$, 1/4 w.
R210LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.	R228M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.	R269	19A700113P15	Composition: 10 ohms $\pm 5\%$, 1/2 w.
R210L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.	R228H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.	R270	3R152P241J	Composition: 240 ohms $\pm 5\%$, 1/4 w.
R210M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.	R229LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.	R271	19A700106P75	Composition: 3.3K ohms $\pm 5\%$, 1/4 w.
R210H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.	R229L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.	R272	19A700113P15	Composition: 10 ohms $\pm 5\%$, 1/2 w.
R211LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.	R229M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.	R273 thru R277	19A700112P15	Composition: 10 ohms $\pm 5\%$, 1 w.
R211L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.	R229H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.			
R211M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.	R230LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.			- - - - - VOLTAGE REGULATORS - - - - -
R211H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.	R230L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.	VR201	4036887P1	Zener: 500 mW, 2.3 v. nominal.
R212LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.	R230M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.	VR202	4036887P5	Zener: 500 mW, 5.4 v. nominal.
R212L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.	R230H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.			
R212M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.	R231LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.			- - - - - CABLES - - - - -
R212H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.	R231L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.	W201	19A701093P5	Strap.
R213LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.	R231M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.	W202	19B219998P2	Jumper.
R213L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.	R231H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.	W203	19B219998P1	Jumper.
R213M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.	R232LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.	W204	19C320624G1	Strip, connector.
R213H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.	R232L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.	W205 thru W209		(Part of printed wiring board 19D417923P1).
R214 and R215	19A700113P29	Composition: 39 ohms $\pm 5\%$, 1/2 w.	R232M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.			
			R232H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.			HEAT SINK ASSEMBLY
R216 thru R218	19A700112P39	Composition: 100 ohms $\pm 5\%$, 1 w.	R233LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.			19B219688G6 M MODEL & INTERMITTANT DUTY STATION
			R233L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.			19B219688G18 E MODEL
R220LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.	R233M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.			- - - - - CAPACITORS - - - - -
R220L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.	R233H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.	C297 and C298	19A116708P1	Ceramic: 0.01 uF -0 +100%, 500 VDCW, rated 20 amps; sim to Erie 327050XSW0103P.
R220M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.	R234LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.	C299	19A115680P10	Electrolytic: 200 uF +150-10%. 18 VDCW; sim to Mallory Type TTX.
R220H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.	R234L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.			
R221LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.	R234M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.			- - - - - DIODES AND RECTIFIERS - - - - -
R221L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.	R234H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.	CR295	19A116783P1	Rectifier, silicon: 100 VDC blocking, 6 amp; sim to MR751.
R221M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.	R235LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.			- - - - - MISCELLANEOUS - - - - -
R221H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.	R235L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.			
R222LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.	R235M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.		19A129361P1	Shield. (Located between L246 & L247, L247 & L248).
R222L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.	R235H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.		19A129361P2	Shield. (Located between L245 & L246).
R222M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.	R236 thru R243	19A700113P29	Composition: 39 ohms $\pm 5\%$, 1/2 w.		19D416275P2	Filter casting.
R222H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.					19A700068P1	Insulator, bushing. (Used with Q217).
R223LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.	R244 thru R246	19A700111P39	Composition: 100 ohms $\pm 5\%$, 2 w.		19A116023P1	Insulator, plate. (Used with Q217).
R223L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.					19D416712P6	Insulator. (Located under Power Amplifier Board).
R223M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.	R249	19C850605P2	Shunt resistor.		19A129661P1	Insulator. (Located at L298).
R223H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.	R250 and R251	19C850605P1	Shunt resistor.		19B201074P312	Tap screw, Phillips POZIDRIV®: No. 6-32 x 3/4. (Secures Filter Casting).
R224LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.					5492178P2	Washer, spring tension: sim to Wallace Barnes 375-20. (Used with Q204-Q209).
R224L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.	R252	19A700106P91	Composition: 15K ohms $\pm 5\%$, 1/4 w.		N207P16B6	Hex nut: No. 10-32. (Used with Q205-Q209).
R224M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.	R253	19A700106P83	Composition: 6.8K ohms $\pm 5\%$, 1/4 w.		19A129434P1	Washer. (Used with C297, C298).
R224H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.	R254	19A700106P39	Composition: 100 ohms $\pm 5\%$, 1/4 w.		19A129639P1	Coer, heat sink. (Located on heat sink).
R225LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.	R255	19A116278P253	Metal film: 3480 ohms $\pm 2\%$, 1/2 w.		19B219929P1	Support, heat sink. (Located on heat sink).
R225L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.	R256	19A116278P201	Metal film: 1000 ohms $\pm 2\%$, 1/2 w.		19B201074P305	Tap screw, Phillips POZIDRIV: No. 6-32 x 5/16. (Secures heat sink cover).
R225M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.	R257	19A116278P261	Metal film: 4220 ohms $\pm 2\%$, 1/2 w.		19A148393P306	Screw, thread forming, TORX® Drive 632 x 3/8. (Secures support on heat sink).
R225H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.	R258	19A116278P269	Metal film: 5110 ohms $\pm 2\%$, 1/2 w.			
R226LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.	R259	19A116278P261	Metal film: 4220 ohms $\pm 2\%$, 1/2 w.			
R226L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.	R261	19A116559P102	Variable cermet: 5000 ohms $\pm 20\%$, 1/2 w; sim to CTS Series 360.			
R226M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.	R262	19A700106P39	Composition: 100 ohms $\pm 5\%$, 1/4 w.			
R226H	19A700113P164	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.	R263	19A700106P83	Composition: 6.8K ohms $\pm 5\%$, 1/4 w.			
R227LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.						

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 - Power Amplifier Board 19D417927G1-G4
To improve operation. Changed CR201.
- REV. B - Power Amplifier Board 19D417927G1
To improve stopband attenuation (25-30 MHz range)
Changed C4201LL and C4206LL.
- REV. B - Power Amplifier Board 19D417927G2-G4
REV. C - Power Amplifier Board 19D417927G1
To improve operation of power control circuit. Added C4230.
- REV. C - Power Amplifier Board 19D417927G2
To re-center the passband of the low pass filter. Changed C4205L.
- REV. D - Power Amplifier Board 19D417927G1, G2
REV. C - Power Amplifier Board 19D417927G3, G4
REV. A - 100 Watt Power Amplifier Assembly 19C321295G5-G8, G13-G16
To improve operation of power control circuit. Added C295.



SCHEMATIC DIAGRAM

25-50 MHz, STATION POWER AMPLIFIER
19D417955G5-G8 CONTINUOUS DUTY

SYMBOL	GE PART NO.	DESCRIPTION	SYMBOL	GE PART NO.	DESCRIPTION	SYMBOL	GE PART NO.	DESCRIPTION	SYMBOL	GE PART NO.	DESCRIPTION	SYMBOL	GE PART NO.	DESCRIPTION	SYMBOL	GE PART NO.	DESCRIPTION
C216 and C217	19A116655P23	Ceramic disc: 3900 pF ±20%, 100 VDCW; sim to RMS Type JF Discap.	C230W	19A116656P56J0	Ceramic disc: 56 pF ±5%, 500 VDCW; temp coef 0 PPM.	C253LL	19A116656P160J3	Ceramic disc: 160 pF ±5%, 500 VDCW, temp coef -330 PPM.	C263M	19A700105P36	Mica: 120 pF ±5%, 500 VDCW.	C281M	19A116656P56J0	Ceramic disc: 56 pF ±5%, 500 VDCW; temp coef 0 PPM.	C4205LL*	19A700015P31	Teflon/Mica: 120 pF ±5%, 250 VDCW.
C218LL	7489162P39	Silver mica: 330 pF ±5%, 500 VDCW; sim to Sprague Type 118.	C230H	19A116656P47J0	Ceramic disc: 47 pF ±5%, 500 VDCW; temp coef 0 PPM.	C253L	19A116656P130J1	Ceramic disc: 130 pF ±5%, 500 VDCW, temp coef -150 PPM.	C263H	19A700105P41	Mica: 180 pF ±5%, 500 VDCW.	C281H	19A116656P47J0	Ceramic disc: 47 pF ±5%, 500 VDCW; temp coef 0 PPM.	19A116656P82J1	In REV A & earlier: Ceramic disc: 82 pF ±5%, 500 VDCW, temp coef -150 PPM.	In REV A & earlier: Ceramic disc: 82 pF ±5%, 500 VDCW, temp coef -150 PPM.
C218L	19A700105P44	Mica: 220 pF ±5%, 500 VDCW.	C231LL	19A116656P82J0	Ceramic disc: 82 pF ±5%, 500 VDCW, temp coef 0 PPM.	C253W	19A116656P110J8	Ceramic disc: 110 pF ±5%, 500 VDCW; temp. coef -80 PPM.	C264L	19A700105P46	Silver mica: 390 pF ±5%, 500 VDCW; sim to Sprague Type 118.	C282LL	19A116656P82J0	Ceramic disc: 82 pF ±5%, 500 VDCW, temp coef 0 PPM.	C4205L*	19A700015P28	Teflon/Mica: 91 pF ±5%, 250 VDCW.
C218M and C218H	19A700105P41	Mica: 180 pF ±5%, 500 VDCW.	C231L	19A116656P68J0	Ceramic disc: 68 pF ±5%, 500 VDCW, temp coef 0 PPM.	C253H	19A116656P10J8	Ceramic disc: 91 pF ±5%, 500 VDCW; temp. coef 0 PPM.	C264M and C265LL	19A700105P41	Mica: 180 pF ±5%, 500 VDCW.	C282L	19A116656P68J0	Ceramic disc: 68 pF ±5%, 500 VDCW, temp coef 0 PPM.	19A116679P100J	In REV B & earlier: Mica: 100 pF ±5%, 250 VDCW.	
C219LL	7489162P43	Silver mica: 470 pF ±5%, 500 VDCW; sim to Sprague Type 118.	C231W	19A116656P56J0	Ceramic disc: 56 pF ±5%, 500 VDCW; temp coef 0 PPM.	C254LL	19A116656P160J3	Ceramic disc: 160 pF ±5%, 500 VDCW, temp coef -330 PPM.	C264H and C265LL	19A700105P41	Mica: 180 pF ±5%, 500 VDCW.	C282W	19A116656P56J0	Ceramic disc: 56 pF ±5%, 500 VDCW; temp coef 0 PPM.	C4205M	19A700015P27	Silver mica: 82 pF ±5%, 250 VDCW.
C219M	7489162P43	Silver mica: 470 pF ±5%, 500 VDCW; sim to Sprague Type 118.	C231H	19A116656P47J0	Ceramic disc: 47 pF ±5%, 500 VDCW; temp coef 0 PPM.	C254L	19A116656P130J1	Ceramic disc: 130 pF ±5%, 500 VDCW, temp coef -150 PPM.	C265M	19A700105P36	Mica: 120 pF ±5%, 500 VDCW.	C283LL	19A116656P82J0	Ceramic disc: 82 pF ±5%, 500 VDCW, temp coef 0 PPM.	C4205H	19A700015P26	Teflon/Mica: 75 pF ±5%, 250 VDCW.
C219L	7489162P43	Silver mica: 470 pF ±5%, 500 VDCW; sim to Sprague Type 118.	C232 and C233	19A116655P23	Ceramic disc: 3900 pF ±20%, 100 VDCW; sim to RMS Type JF Discap.	C254W	19A116656P110J8	Ceramic disc: 110 pF ±5%, 500 VDCW; temp. coef -80 PPM.	C265H	19A700105P41	Mica: 180 pF ±5%, 500 VDCW.	C283L	19A116656P68J0	Ceramic disc: 68 pF ±5%, 500 VDCW, temp coef 0 PPM.	C4206LL*	19A116656P91J2	Ceramic disc: 91 pF ±5%, 500 VDCW, temp coef -220 PPM.
C219H	7489162P41	Silver mica: 390 pF ±5%, 500 VDCW; sim to Sprague Type 118.	C234LL	19A116656P82J0	Ceramic disc: 82 pF ±5%, 500 VDCW, temp coef 0 PPM.	C254H	19A116656P91J0	Ceramic disc: 91 pF ±5%, 500 VDCW; temp. coef 0 PPM.	C266L	19A700105P41	Mica: 180 pF ±5%, 500 VDCW.	C283M	19A116656P56J0	Ceramic disc: 56 pF ±5%, 500 VDCW; temp coef 0 PPM.	19A116656P82J1	In REV A & earlier: Ceramic disc: 82 pF ±5%, 500 VDCW, temp coef -150 PPM.	In REV A & earlier: Ceramic disc: 91 pF ±5%, 500 VDCW, temp coef -220 PPM.
C220LL	7489162P43	Silver mica: 470 pF ±5%, 500 VDCW; sim to Sprague Type 118.	C234L	19A116656P68J0	Ceramic disc: 68 pF ±5%, 500 VDCW, temp coef 0 PPM.	C255LL	19A116656P160J3	Ceramic disc: 160 pF ±5%, 500 VDCW, temp coef -330 PPM.	C266L and C266H	19A700105P36	Mica: 120 pF ±5%, 500 VDCW.	C283H	19A116656P47J0	Ceramic disc: 47 pF ±5%, 500 VDCW; temp coef 0 PPM.	C4206L	19A116656P68J1	Ceramic disc: 68 pF ±5%, 500 VDCW, temp coef -150 PPM.
C220L	7489162P41	Silver mica: 390 pF ±5%, 500 VDCW; sim to Sprague Type 118.	C234M	19A116656P56J0	Ceramic disc: 56 pF ±5%, 500 VDCW; temp coef 0 PPM.	C255L	19A116656P130J1	Ceramic disc: 130 pF ±5%, 500 VDCW, temp coef -150 PPM.	C267L and C267H	19A700105P41	Mica: 180 pF ±5%, 500 VDCW.	C284LL	19A700015P38	Teflon/Mica: 240 pF ±5%, 250 VDCW.	C4206M	19A116656P56J1	Ceramic disc: 56 pF ±5%, 500 VDCW, temp coef -150 PPM.
C220M	7489162P41	Silver mica: 390 pF ±5%, 500 VDCW; sim to Sprague Type 118.	C234H	19A116656P47J0	Ceramic disc: 47 pF ±5%, 500 VDCW; temp coef 0 PPM.	C255W	19A116656P110J8	Ceramic disc: 110 pF ±5%, 500 VDCW; temp. coef -80 PPM.	C267M and C267H	19A700105P36	Mica: 120 pF ±5%, 500 VDCW.	C284L	19A700015P36	Teflon/Mica: 200 pF ±5%, 250 VDCW.	C4206H	19A116656P51J1	Ceramic disc: 51 pF ±5%, 500 VDCW, temp coef -150 PPM.
C220H	74																

SYMBOL	GE PART NO.	DESCRIPTION	SYMBOL	GE PART NO.	DESCRIPTION	SYMBOL	GE PART NO.	DESCRIPTION	SYMBOL	GE PART NO.	DESCRIPTION
L202LL	19C320617P3	Coil.	L218H	19C320617P6	Coil.	L235H	19C320618P1	Coil.	L249LL	19C320617P41	Coil.
L202L	19C320617P5	Coil.	L219LL	19C320617P15	Coil.	L236LL	19C320618P2	Coil.	L249L	19C320617P42	Coil.
L202M	19C320617P25	Coil.	L219L	19C302617P5	Coil.	L236L and L236M	19C320618P6	Coil.	L249M	19C320617P43	Coil.
L202H	19C320617P4	Coil.	L219M	19C320617P26	Coil.	L236H	19C320618P1	Coil.	L249H	19C320617P44	Coil.
L203	19A700000P122	Coil, RF: 8.2 uH $\pm$ 10%; sim to Jeffers 4422-3K.	L219H	19C320617P6	Coil.	L237LL	19C320617P37	Coil.	L250LL	19C320617P41	Coil.
L204LL	19C320617P5	Coil.	L220LL	19C320617P15	Coil.	L237L	19C320617P38	Coil.	L250L	19C320617P42	Coil.
L204L	19C320617P26	Coil.	L220L	19C302617P5	Coil.	L237M	19C320617P39	Coil.	L250M	19C320617P43	Coil.
L204M	19C320617P27	Coil.	L220M	19C320617P26	Coil.	L237H	19C320617P40	Coil.	L250H	19C320617P44	Coil.
L204H	19C320617P6	Coil.	L220H	19C320617P6	Coil.	L238LL	19C320617P37	Coil.	L251 thru L254	19A700000P16	Coil, RF: 2.7 uH $\pm$ 10%; sim to Jeffers 4411-13K.
L205LL	19C320618P2	Coil.	L221LL	19C320619P1	Coil.	L238L	19C320617P38	Coil.	L255	19A700000P19	Coil, RF: 4.7 uH $\pm$ 10%; sim to Jeffers 4421-3K.
L205L and L205M	19C320618P6	Coil.	L221L	19C320618P7	Coil.	L238M	19C320617P39	Coil.	L256 and L257	19A700000P16	Coil, RF: 2.7 uH $\pm$ 10%; sim to Jeffers 4411-13K.
L205H	19C320618P1	Coil.	L221M	19C320619P5	Coil.	L238H	19C320617P40	Coil.	L258	19A700000P17	Coil, RF: 3.3 uH $\pm$ 10%; sim to Jeffers 4421-1K.
L206LL	19C320617P7	Coil.	L221H	19C320619P6	Coil.	L239LL	19C320617P37	Coil.	L259 thru L263	19A129346G1	Coil.
L206L	19C320617P28	Coil.	L222LL	19C320619P1	Coil.	L239L	19C320617P38	Coil.	----- TRANSISTORS -----		
L206M	19C320617P29	Coil.	L222L	19C320618P7	Coil.	L239M	19C320617P39	Coil.	Q211	19A700023P1	Silicon, NPN; sim to Type 2N3904.
L206H	19C320617P8	Coil.	L222M	19C320619P5	Coil.	L239H	19C320617P40	Coil.	Q212 thru Q214	19A115768P1	Silicon, PNP; sim to Type 2N3702.
L207LL	19C320617P9	Coil.	L222H	19C320619P6	Coil.	L240LL	19C320617P37	Coil.	Q215	19A700023P1	Silicon, NPN; sim to Type 2N3904.
L207L	19C320617P30	Coil.	L223LL	19C320619P1	Coil.	L240L	19C320617P38	Coil.	Q216	19A115779P1	Silicon, PNP; sim to Type 2N3251.
L207M	19C320617P31	Coil.	L223L	19C320618P7	Coil.	L240M	19C320617P39	Coil.	----- RESISTORS -----		
L207H	19C320617P10	Coil.	L223M	19C320619P5	Coil.	L240H	19C320617P40	Coil.	R201	19A700106P77	Composition: 3.9K ohms $\pm$ 5%, 1/4 w.
L208LL	19C320617P1	Coil.	L223H	19C320619P6	Coil.	L241LL	19C320617P41	Coil.	R202	3R152P51J	Composition: 510 ohms $\pm$ 5%, 1/4 w.
L208L	19C320618P7	Coil.	L224LL	19C320619P1	Coil.	L241L	19C320617P42	Coil.	R203LL	19A700113P17	Composition: 12 ohms $\pm$ 5%, 1/2 w.
L208M	19C320619P5	Coil.	L224L	19C320618P7	Coil.	L241M	19C320617P43	Coil.	R203L	19A700113P15	Composition: 10 ohms $\pm$ 5%, 1/2 w.
L208H	19C320619P6	Coil.	L224M	19C320619P5	Coil.	L241H	19C320617P44	Coil.	R203M	19A700113P13	Composition: 8.2 ohms $\pm$ 5%, 1/2 w.
L209	19A700000P122	Coil, RF: 8.2 uH $\pm$ 10%; sim to Jeffers 4422-3K.	L224H	19C320619P6	Coil.	L242LL	19C320617P41	Coil.	R203H	19A700113P7	Composition: 4.7 ohms $\pm$ 5%, 1/2 w.
L210LL	19C320617P11	Coil.	L225 thru L228	19A700000P122	Coil, RF: 8.2 uH $\pm$ 10%; sim to Jeffers 4422-3K.	L242L	19C320617P42	Coil.	R204LL	19A700113P17	Composition: 12 ohms $\pm$ 5%, 1/2 w.
L210L and L210M	19C320617P4	Coil.	L229LL	19C320617P16	Coil.	L242M	19C320617P43	Coil.	R204L	19A700113P15	Composition: 10 ohms $\pm$ 5%, 1/2 w.
L210H	19C320617P12	Coil.	L229L	19C320617P35	Coil.	L242H	19C320617P44	Coil.	R204M	19A700113P13	Composition: 8.2 ohms $\pm$ 5%, 1/2 w.
L211LL	19C320618P2	Coil.	L229M	19C320617P12	Coil.	L243LL	19C320617P41	Coil.	R204H	19A700113P7	Composition: 4.7 ohms $\pm$ 5%, 1/2 w.
L211L and L211M	19C320618P6	Coil.	L229H	19C320617P17	Coil.	L243L	19C320617P42	Coil.	R205 and R206	19A700113P29	Composition: 39 ohms $\pm$ 5%, 1/2 w.
L211H	19C320618P1	Coil.	L230LL	19C320617P16	Coil.	L243M	19C320617P43	Coil.	R207LL	19A700112P59	Composition: 680 ohms $\pm$ 5%, 1 w.
L214LL	19C320617P13	Coil.	L230L	19C320617P35	Coil.	L243H	19C320617P44	Coil.	R207L	19A700112P59	Composition: 680 ohms $\pm$ 5%, 1 w.
L214L	19C320617P32	Coil.	L230M	19C320617P12	Coil.	L244LL	19C320617P41	Coil.	R207M	19A700112P59	Composition: 680 ohms $\pm$ 5%, 1 w.
L214M	19C320617P18	Coil.	L230H	19C320617P17	Coil.	L244L	19C320617P42	Coil.	R207H	3R78P911J	Composition: 910 ohms $\pm$ 5%, 1 w.
L214H	19C320617P14	Coil.	L231LL	19C320617P16	Coil.	L244M	19C320617P43	Coil.	R208LL	19A700112P59	Composition: 680 ohms $\pm$ 5%, 1 w.
L215LL	19C320617P13	Coil.	L231L	19C320617P35	Coil.	L244H	19C320617P44	Coil.	R208L	19A700112P59	Composition: 680 ohms $\pm$ 5%, 1 w.
L215L	19C320617P33	Coil.	L231M	19C320617P12	Coil.	L245LL	19A129360P9	Coil.	R208M	19A700112P59	Composition: 680 ohms $\pm$ 5%, 1 w.
L215M	19C320617P34	Coil.	L231H	19C320617P17	Coil.	L245L	19A129360P6	Coil.	R208H	3R78P911J	Composition: 910 ohms $\pm$ 5%, 1 w.
L215H	19C320617P18	Coil.	L232LL	19C320617P16	Coil.	L245M	19A129360P4	Coil.	R209LL	19A700112P13	Composition: 8.2 ohms $\pm$ 5%, 1 w.
L216LL	19C320617P13	Coil.	L232L	19C320617P35	Coil.	L245H	19A129360P1	Coil.	R209L	19A700112P13	Composition: 8.2 ohms $\pm$ 5%, 1 w.
L216L	19C320617P33	Coil.	L232M	19C320617P12	Coil.	L246LL	19A129360P10	Coil.	R209M	19A700112P13	Composition: 8.2 ohms $\pm$ 5%, 1 w.
L216M	19C320617P34	Coil.	L232H	19C320617P17	Coil.	L246L	19A129360P7	Coil.	R209H	19A700112P9	Composition: 5.6 ohms $\pm$ 5%, 1 w.
L216H	19C320617P18	Coil.	L233LL	19C320618P2	Coil.	L246M	19A129360P3	Coil.	R210LL	19A700113P11	Composition: 6.8 ohms $\pm$ 5%, 1/2 w.
L217LL	19C320617P15	Coil.	L233L and L233M	19C320618P6	Coil.	L246H	19A129360P2	Coil.	R210L	19A700113P5	Composition: 3.9 ohms $\pm$ 5%, 1/2 w.
L217L	19C320617P5	Coil.	L233H	19C320618P1	Coil.	L247LL	19A129360P11	Coil.	R210M	7147161P27	Composition: 2 ohms $\pm$ 5%, 1/2 w.
L217M	19C320617P26	Coil.	L234LL	19C320618P2	Coil.	L247L	19A129360P8	Coil.	R210H	7147161P22	Composition: 1.2 ohms $\pm$ 5%, 1/2 w.
L217H	19C320617P6	Coil.	L234L and L234M	19C320618P6	Coil.	L247M	19A129360P3	Coil.	R211LL	19A700113P11	Composition: 6.8 ohms $\pm$ 5%, 1/2 w.
L218LL	19C320617P15	Coil.	L234H	19C320618P1	Coil.	L248LL	19A129360P9	Coil.			
L218L	19C320617P5	Coil.	L235LL	19C320618P2	Coil.	L248L	19A129360P6	Coil.			
L218M	19C320617P26	Coil.	L235L and L235M	19C320618P6	Coil.	L248M	19A129360P4	Coil.			
						L248H	19A129360P1	Coil.			

SYMBOL	GE PART NO.	DESCRIPTION
R211L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R211M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R211H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R212LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R212L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R212M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R212H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R213LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R213L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R213M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R213H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R214 and R215	19A700113P29	Composition: 39 ohms $\pm 5\%$, 1/2 w.
R216 thru R218	19A700112P39	Composition: 100 ohms $\pm 5\%$, 1 w.
R220LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R220L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R220M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R220H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R221LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R221L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R221M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R221H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R222LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R222L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R222M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R222H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R223LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R223L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R223M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R223H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R224LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R224L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R224M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R224H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R225LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R225L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R225M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R225H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R226LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R226L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R226M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R226H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R227LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R227L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R227M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R227H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R228LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R228L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R228M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R228H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R229LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R229L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.

SYMBOL	GE PART NO.	DESCRIPTION
R229M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R229H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R230LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R230L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R230M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R230H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R231LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R231L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R231M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R231H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R232LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R232L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R232M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R232H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R233LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R233L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R233M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R233H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R234LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R234L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R234M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R234H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R235LL	19A700113P11	Composition: 6.8 ohms $\pm 5\%$, 1/2 w.
R235L	19A700113P5	Composition: 3.9 ohms $\pm 5\%$, 1/2 w.
R235M	7147161P27	Composition: 2 ohms $\pm 5\%$, 1/2 w.
R235H	7147161P22	Composition: 1.2 ohms $\pm 5\%$, 1/2 w.
R236 thru R243	19A700113P29	Composition: 39 ohms $\pm 5\%$, 1/2 w.
R244 thru R246	19A700111P39	Composition: 100 ohms $\pm 5\%$, 2 w.
R249	19C850605P2	Shunt resistor.
R250 and R251	19C850605P1	Shunt resistor.
R252	19A700106P91	Composition: 15K ohms $\pm 5\%$, 1/4 w.
R253	19A700106P83	Composition: 6.8K ohms $\pm 5\%$, 1/4 w.
R254	19A700106P39	Composition: 100 ohms $\pm 5\%$, 1/4 w.
R255	19A116278P253	Metal film: 3480 ohms $\pm 2\%$, 1/2 w.
R256	19A116278P201	Metal film: 1000 ohms $\pm 2\%$, 1/2 w.
R257	19A116278P261	Metal film: 4220 ohms $\pm 2\%$, 1/2 w.
R258	19A116278P269	Metal film: 5110 ohms $\pm 2\%$, 1/2 w.
R259	19A116278P261	Metal film: 4220 ohms $\pm 2\%$, 1/2 w.
R261	19A116559P102	Variable cermet: 5000 ohms $\pm 20\%$, 1/2 w; sim to CTS Series 360.
R262	19A700106P39	Composition: 100 ohms $\pm 5\%$, 1/4 w.
R263	19A700106P83	Composition: 6.8K ohms $\pm 5\%$, 1/4 w.
R264	19A700113P41	Composition: 120 ohms $\pm 5\%$, 1/2 w.
R265	19A700113P55	Composition: 470 ohms $\pm 5\%$, 1/2 w.
R266	19A700106P63	Composition: 1K ohms $\pm 5\%$, 1/4 w.
R267	19A700106P69	Composition: 1.8K ohms $\pm 5\%$, 1/4 w.
R268	19A700106P15	Composition: 10 ohms $\pm 5\%$, 1/4 w.
R269	19A700113P15	Composition: 10 ohms $\pm 5\%$, 1/2 w.
R270	3R152P241J	Composition: 240 ohms $\pm 5\%$, 1/4 w.
R271	19A700106P75	Composition: 3.3K ohms $\pm 5\%$, 1/4 w.
R272	19A700113P15	Composition: 10 ohms $\pm 5\%$, 1/2 w.

SYMBOL	GE PART NO.	DESCRIPTION
R273 thru R277	19A700112P15	Composition: 10 ohms $\pm 5\%$, 1 w.
VR201	4036887P1	Zener: 500 mW, 2.3 v. nominal.
VR202	4036887P5	Zener: 500 mW, 5.4 v. nominal.
W201	19A129571P1	Strap.
W202	19B219998P2	Jumper.
W203	19B219998P1	Jumper.
W204	19C320624P1	Strip, connector.
W205		(Part of printed wiring board 19D417923P1).
A203		FRAME ASSEMBLY 19D417526G1
W241	5491689P104	Cable, RF: approx 4 inches long, 350 VRMS, 500 VDC operating voltage.
W244	5491689P104	Cable, RF: approx 4 inches long, 350 VRMS, 500 VDC operating voltage.
C297 and C298	19A116708P1	Ceramic: 0.01 uF ± 0 $\pm 100\%$, 500 VDCW, rated 20 amps; sim to Erie 327050X5W0103P.
L297	19B219997P3	Coil.
L298	19B219997P4	Coil.
P246 and P247	4036634P1	Contact, electrical; sim to AMP 42428-2.
Q204	19A116965P1	Silicon, NPN.
Q205 thru Q209	19A134104P1	Silicon, NPN.
Q217*	19A116753P1	Silicon, NPN.
	19A116742P1	Earlier than REV A: Silicon, NPN; sim to Type 2N6103.
RT201	19A129379G1	Thermistor: 40K ohms $\pm 20\%$, color code white; sim to Carborundum Type M0806J-5.
W243		RF CABLE ASSEMBLY 19A129312G6
J243	19A700067P1	Includes: Receptacle, coax; sim to Amphenol 83-798.
	4029082P2	Cover.
P203	5491689P108	Connector/cable: approx. 10 inches long.
	19A129361P1	Shield. (Located between L246 & L247, L247 & L248).

SYMBOL	GE PART NO.	DESCRIPTION
	19A129361P2	Shield. (Located between L245 & L246).
	19D416275P2	Filter casting.
	19A115222P3	Washer, shield. (Used with Q217).
	4029974P1	Insulator, plate: aluminum. (Used with Q217).
	19A134260P1	Insulator cover. (Used with Q217 under screw heads).
	N80P13016C6	Machine screw, phillips head: No. 6-32 x 1. (Secures Filter Casting).
	5492178P2	Washer, spring tension: sim to Wallace Barnes 375-20. (Used with Q204-Q209).
	N207P16C6	Hex nut: No. 10-32. (Used with Q204-Q209).
	19D417513G1	PA Cover.
	19B226212G1	Heat sink. (Quantity 4).

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 - Power Amplifier Board 19D417927G1-4
To improve operation. Changed CR201.
- REV. B - Power Amplifier Board 19D417927G1
To improve stopband attenuation (25-30 MHz range)
Changed C4201LL and C4206LL.
- REV. C - Power Amplifier Board 19D417927G1
- REV. B - Power Amplifier Board 19D417927G2, G3 & G4
To prevent the power control circuit from oscillating.
Added C4230.
- REV. C - Power Amplifier Board 19D417927G2
To re-center the pass band of the low Pass Filter.
Changed C4205L.
- REV. A - 100 Watt Continuous Duty Power Amplifier 19D417955G5-8
To change to a hermetically sealed transistor. Changed Q215.
- REV. B - 100 Watt Continuous Duty Power Amplifier 19D417955G5-8
- REV. D - Power Amplifier Board 19D417927G1 & 2
- REV. C - Power Amplifier Board 19D417927G3 & 4
To Improve Power Control Stability. Added C295.