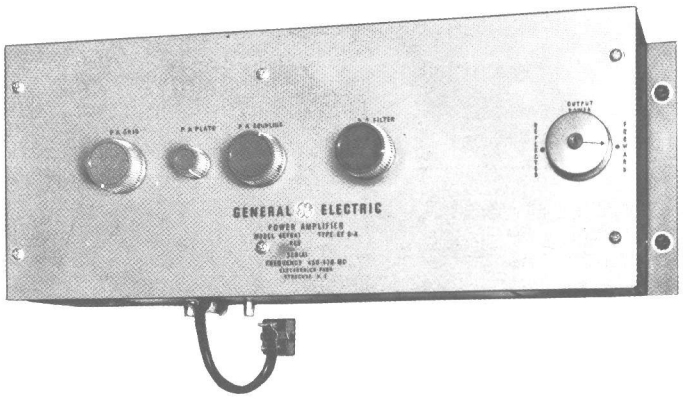
MOBILE RADIO

MASTR® II MAINTENANCE MANUAL

POWER AMPLIFIER MODEL 19D423414G1,G2



Maintenance Manual LBI-4940B

DATAFILE FOLDER - DF3159

DATAFILE FOLDER - DF3172 (IMTS)

19D423414G1,G2

SPECIFICATIONS *

Model Number and Frequency Range	19D423414G1 (406-470 MHz) 19D423414G2 (470-512 MHz)
Used With	Driver Type KT-55-C and Power Supply 19D402530 to provide a 200-Watt transmitter (KT-88-C)
Power Input	117 VAC, 50/60 Hz Standby: 2 Amps Transmit: 10 Amps
Power Output	200 Watts (Minimum)
Tube Complement	(1) 4CX300A ceramic tetrode
AM Hum and Noise Level	Down 34 dB
Maximum Frequency Spread: (2 or more Channels) 406-420 MHz 450-470 MHz	Full Specification 0.7 MHz 0.75 MHz
Rated Duty Cycle	Continuous -- Blower recommended for cabinet ventilation under conditions of high ambient temperatures or continuous duty operation.
Ambient Temperature Range	-30°C to +60°C (-22°F to +140°F)
Dimensions (H x W x D)	7" x 19" x 11"
Weight	22 pounds

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

GENERAL ELECTRIC

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WARNING

No one should be permitted to handle any portion of the equipment that is supplied with high voltage; or to connect any external apparatus to the units while the units are supplied with power. KEEP AWAY FROM LIVE CIRCUITS.

DESCRIPTION

General Electric 200-Watt Power Amplifier Model 19D423414G1, G2 has been designed for use in fixed stations operating in the 406 to 512 megahertz band, using an external driver and power supply. The amplifier employs a ceramic tetrode tube (4CX300A) as a Power Amplifier, with forced-air cooling provided by a blower mounted on the 19D420530 PA power supply. Standard RETMA rack-mounting dimensions are used. The tuning controls most frequently used are located on the front of the unit.

All the power connections, except the high voltage connection, are made with a 6-pin plug from the front of the unit. High voltage is brought to the plate at the rear of the plate compartment.

Antenna relay keying voltage connections are made to TB452 on the PA Power Supply, using screw connections. The RF drive connection is made by an RG-58/U cable plugged into the Driver from the front of the unit.

CIRCUIT ANALYSIS

RF drive to the Power Amplifier at P102 is fed to coupling loop L102 and coupled to coil L104, which, with FC102, forms the grid tank of the amplifier. By adjusting the PA GRID control (C101/C102), the grid tank may be tuned to the operating frequency.

Heater voltage on the Power Amplifier tube Y101 may be varied on the power supply chassis. In order to obtain optimum tube life the filament voltage should be set for 5.0 Volts, however, this may result in a slightly reduced RF power output during the first 3 to 5 seconds after RF drive is applied. If full rated power output is required immediately upon application of drive, the filament voltage can be set for 5.5 Volts with some reduction of tube life to be expected due to backheating of the cathode. Backheating of the cathode is further discussed in Datafile Bulletin 3000-5. C103, C104 and C105 are RF by-pass capacitors and R101A is used as a screen RF de-coupling resistor. Coil L101 isolates RF from the power cable. Built into the tube socket, XV101 is a ringtype capacitor which is used as a screen grid by-pass.

All DC input voltage connections to the Power Amplifier, except the B-plus voltage connection, are made at P101 on the front side of the Power Supply panel. The 2000-volt B-plus lead is connected at terminal PO-2 located in the rear on the plate cavity cover. C109 and C110 provide by-passing for the B-plus and L105 is an RF decoupling choke. The plate tank is composed of C107 and the tube output capacitance and the transmission line section formed by the inner and outer boxes of the plate cavity. The plate tank is tuned to the operating frequency by adjusting the PA PLATE control C107. C107 is formed by a movable flat ring around the tube and by the surface of the printed capacitor C106.

Adjusting the PA COUPLING control varies the coupling from the plate to the output by controlling the amount of magnetic flux linking the plate tank cavity to the filter cavity tuned circuit consisting of L106/L107 and C108. L103 couples energy from the PA FILTER cavity to J101. The signal from J101 is connected to the antenna through P1 and P2 on the Reflectometer, through the Low Pass filter and through the contacts on the optional antenna relay K1.

Power Reflectometer

The Power Reflectometer gives a relative voltage which indicates forward and reflected RF power output.

The Reflectometer is calibrated with a wattmeter at the factory, and a calibration chart is attached to the inside of the cabinet. The calibration chart provides a reference to convert the output meter voltage to the actual power output in watts.

The probe samples the magnetic field caused by current in the transmission line and the electric field from the voltage on the line. On a properly matched line, these two voltages are equal and cancel each other when reading REFLECTED power ("0" reflected power). When the probe is rotated 180°, these two voltages add to indicate FORWARD power.

When the load is not matched, these two voltages become unequal and provide a ratio of incident (forward) to reflected power. Any significant change in this ratio (if other than 1:1) after initial installation and check out, should be cause for examination of the antenna and feed line. Actual V.S.W.R. as measured on a calibrated bridge, should remain below 1.5:1 at all times.

ANTENNA RELAY

K1, the optional antenna relay, switches the antenna from the receiver to the transmitter when the transmitter is keyed.

MAINTENANCE

PREVENTIVE MAINTENANCE

To obtain optimum performance from the equipment, a program of regular preventive maintenance should be followed. This preventive maintenance should include the following:

1. A check of the operating frequency as required by the Federal Communications Commission.

2. A check of the PA PLATE current, Power Amplifier GRID current and PA PLATE voltage meter readings.

3. A check of the PA PLATE tuning and reflected power (if any) and realignment if improper operation is indicated.

4. A check for loose nuts, screws, cables and parts.

5. An inspection of the high- and low-voltage connections.

6. Check for proper blower operation.

POWER AMPLIFIER TUBE REPLACEMENT

To remove the Power Amplifier tube, proceed as follows:

1. Remove the high-voltage lead from PO-2, located on the rear of the Power Amplifier.

2. Loosen the screws holding the rear cover plate to the assembly.

3. Slide off the rear cover plate.

4. Insert the prongs of the tube extractor (included with the station equipment) between the cooling fins of the PA tube plate.

5. Rotate the PA tube 30 degrees counterclockwise; then gently pull the tube straight out from the socket.

To reinsert the Power Amplifier tube, proceed as follows:

1. Insert the prongs of the tube extractor between the cooling fins of the PA tube plate.

2. Gently insert the tube into the socket so that the tube contacts clear the socket contacts.

3. Firmly push the PA tube all the way into the socket while gently rotating the tube 30 degrees clockwise.

4. Check filament resistance to make sure that the tube is properly seated.

CAUTION

Be careful not to exert excessive pressure while performing Steps 2 & 3 so that damage will not result to the tube and socket contacts.

5. Replace the rear cover plate of the Power Amplifier.

6. Tighten the screws on the rear cover plate.

7. Replace the high-voltage lead to PO-2 on the rear of the Power Amplifier.

NEUTRALIZING ASSEMBLY REPLACEMENT

If it should become necessary to replace any part of the neutralizing assembly, it is recommended that the entire assembly be replaced.

To replace the assembly proceed as follows:

1. Remove all four knobs on the front of the power amplifier.

2. Remove the 6 screws holding the outer front plate, and remove plate.

3. Remove the 14 hex-head screws holding the inner front plate (left side), and remove the plate.

4. Remove the 2 screws holding the neutralizing assembly in place.

5. Unsolder the wire from the spade bolt on the neutralizing assembly and remove the assembly.

6. Install the new assembly.

ALIGNMENT PROCEDURE

This Alignment Procedure is provided for completely realignment and loading Power Amplifier Model 19D423414G1, G2 (using KT-55-C as a Driver Unit) in a KT-88-C transmitter.

Before tuning the Power Amplifier, the Driver multiplier stages must be aligned according to the procedure in the SERVICE OUTLINE or the ALIGNMENT PROCEDURE for the Driver.

PRELIMINARY ALIGNMENT

1. Connect a suitable 50-ohm load to the top jack on the Power Amplifier antenna relay or the output of the Low Pass Filter FL101 if the antenna Relay is not used.

2. Turn the PLATE switch OFF on the PA Power Supply.

3. Turn the SCREEN adjust on the PA Power Supply fully counter clockwise.

NOTE

Make sure the PLATE switch on the PA Power Supply is in the OFF position.

4. Place the AC power switches located on the Power Panel and Driver Power Supply to the ON position. Turn the PA Power Supply control switch to the ON position. Allow 15 minutes for warm up.

5. Connect a microphone to the MIKE jack (J1215) on the back of the station control shelf mother board.

6. Pull the PA COUPLING control out to its limit. Turn the control clockwise until it engages with the internal coupling window. Push the control approximately 3/4 of the way in.

7. Carefully turn the control counterclockwise to disengage it from the internal coupling window. Push the disengaged control in to its back limit.

8. Rotate the meter switch on the Power Panel to Transmitter Driver and the meter switch on the Receiver/Exciter door to Position 10.

9. Key the driver and adjust the power control potentiometer on the driver PA for approximately 2 amperes of Driver PA collector current (0.6 V on the 3 Volt scale of the tune-up meter). Rotate the meter switch on the power panel to PA GRID. Tune PA GRID for maximum voltage on the tuning meter and then readjust the power control potentiometer for 2.0 VDC on the meter.

10. Turn the plate switch on the PA power supply to the ON position.

11. While keying the driver adjust the PA plate control for a minimum reading on the plate current meter. Do not exceed 250 mA. Readjust PA GRID for 2.0 VDC.

12. Rotate the meter switch on the power panel to FWD./REV. position. Rotate the reflectometer to the FORWARD position.

13. While keying the driver adjust the PA FILTER for maximum reading on the tune-up meter.

14. While keying the driver adjust the SCREEN control for 250 mA on the plate current meter.

15. While keying the driver adjust the PA FILTER for maximum power output on the wattmeter.

16. NEUTRALIZATION

16.1 Turn the PLATE switch off on the PA Power Supply.

16.2 Rotate the PA neutralizing control to its full counter clockwise position. This control is accessible thru the hole on top of the PA.

16.3 Turn the driver power supply--switch off.

16.4 Disconnect the antenna cable from the low pass filter.

16.5 Disconnect the PA input cable from the output of the driver.

16.6 Connect a coaxial cable from the driver output to the PA output low pass filter.

16.7 Insert the negative lead of a DC micro-ammeter (0-60 or 0-100 μa scale) into the grid jack (J452-green) located on the PA power supply. Connect the positive meter lead to chassis ground.

16.8 Do not turn on the plate switch on the PA power supply. Key the driver.

16.9 Adjust the PA PLATE, PA FILTER, and PA GRID controls for maximum meter reading. Alternately tune each control until no further increase in meter reading can be obtained. Adjust coupling if necessary to obtain a meter reading less than full scale.

16.10 Rotate the PA neutralizing control (from its maximum counter clockwise position) until a null is obtained. The meter reading should not be more than 15 μa. At this point the PA is neutralized. If the null is greater than 15 μa, check for proper seating of the PA tube in its socket.

16.11 Unkey the driver and return all RF cables to their proper places.

17. Repeat steps 10 thru 13.

18. Increase the screen control for a maximum reading of 290 mA on the plate current meter. Adjust the coupling if necessary.

19. Adjust the PA plate, PA coupling and PA filter controls for minimum reading on the plate current meter and

maximum power output. Adjust the drive control for 2.0 VDC on the tune-up meter. The meter switch on the power panel should be in PA GRID position for measuring grid drive and in the PA FWD./REV. position for measuring RF Power output.

20. At this point the power output should be 200 watts minimum. If not, readjust the screen control for 200 watts output.

21. Leave the transmitter unkeyed for 5 minutes, then key the transmitter for 2 minutes and adjust the Plate control for a minimum reading again.

22. Readjust the screen control if necessary for 200 watts output. The alignment is now complete.

NOTE

The Power Output should be set for 200 Watts with the lowest possible PLATE CURRENT meter reading to obtain greatest tube life. Under no circumstances should the final adjustment conditions result in a continued Plate Current reading in excess of 290 mA.

MULTI-FREQUENCY OPERATION

1. Tune the Power Amplifier on the lowest frequency.

2. Select the highest frequency and re-adjust the PA plate tuning toward resonance (dip), about 5-10 mA decrease.

3. Select the lowest frequency. If the difference in plate current between the lowest and the highest frequency is greater than 10 mA, repeat Step 1.

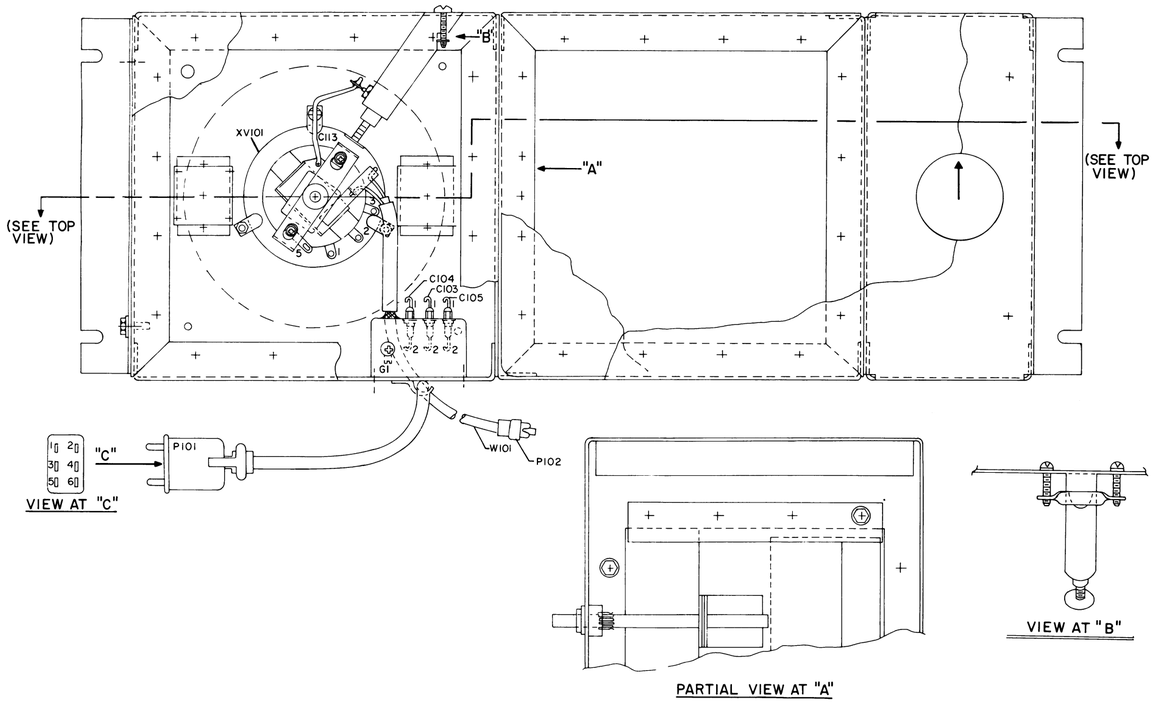
4. Re-set the screen control for rated plate current. If the power output is below the rated specifications, re-adjust the PA filter to balance the power output for the low and high frequencies.

5. Re-check for the 10 mA difference and rated maximum plate current. If not within those limits then repeat Steps 1 thru 3.

MOBILE RADIO DEPARTMENT
GENERAL ELECTRIC COMPANY • LYNCHBURG, VIRGINIA 24502

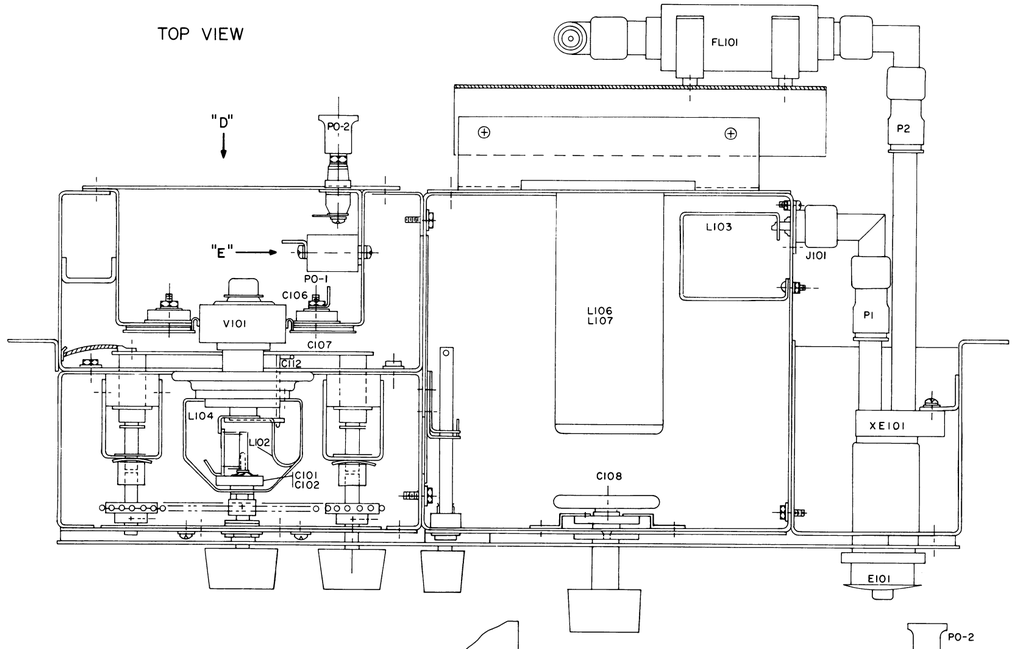
GENERAL ELECTRIC

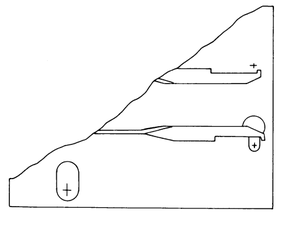
FRONT VIEW



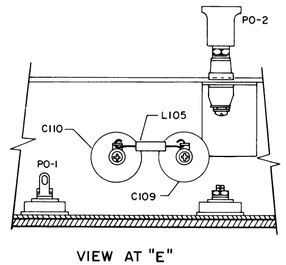
(19D423665, Sh. 1, Rev. 0)

TOP VIEW





PARTIAL VIEW AT "D"



VIEW AT "E"

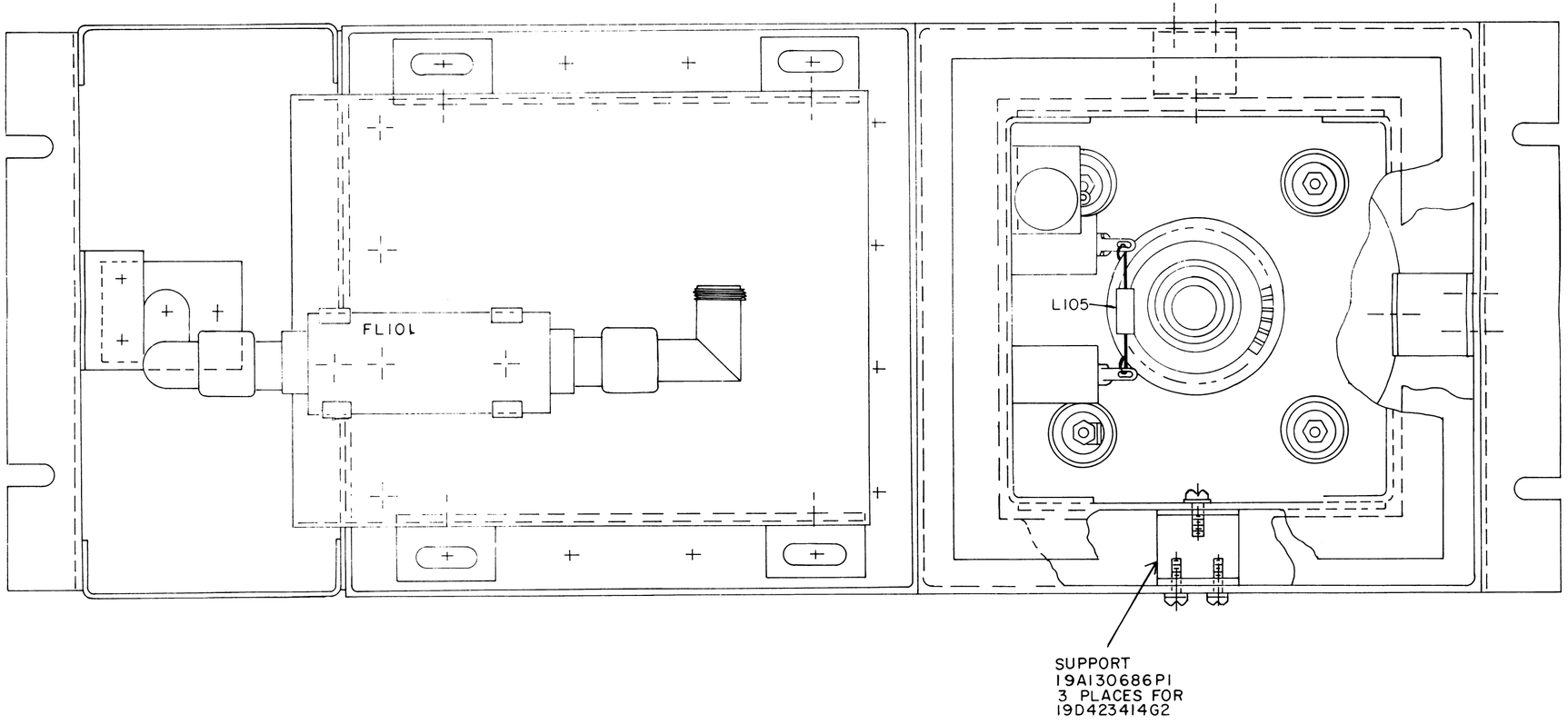
(19D423665, Sh. 2, Rev. 0)

OUTLINE DIAGRAM

406—512 MHz POWER AMPLIFIER
19D423414G1 & G2

Issue 1

REAR VIEW



(19D423665, Sh. 3, Rev. 0)

OUTLINE DIAGRAM

406—512 MHz POWER AMPLIFIER
19D423414G1 & G2

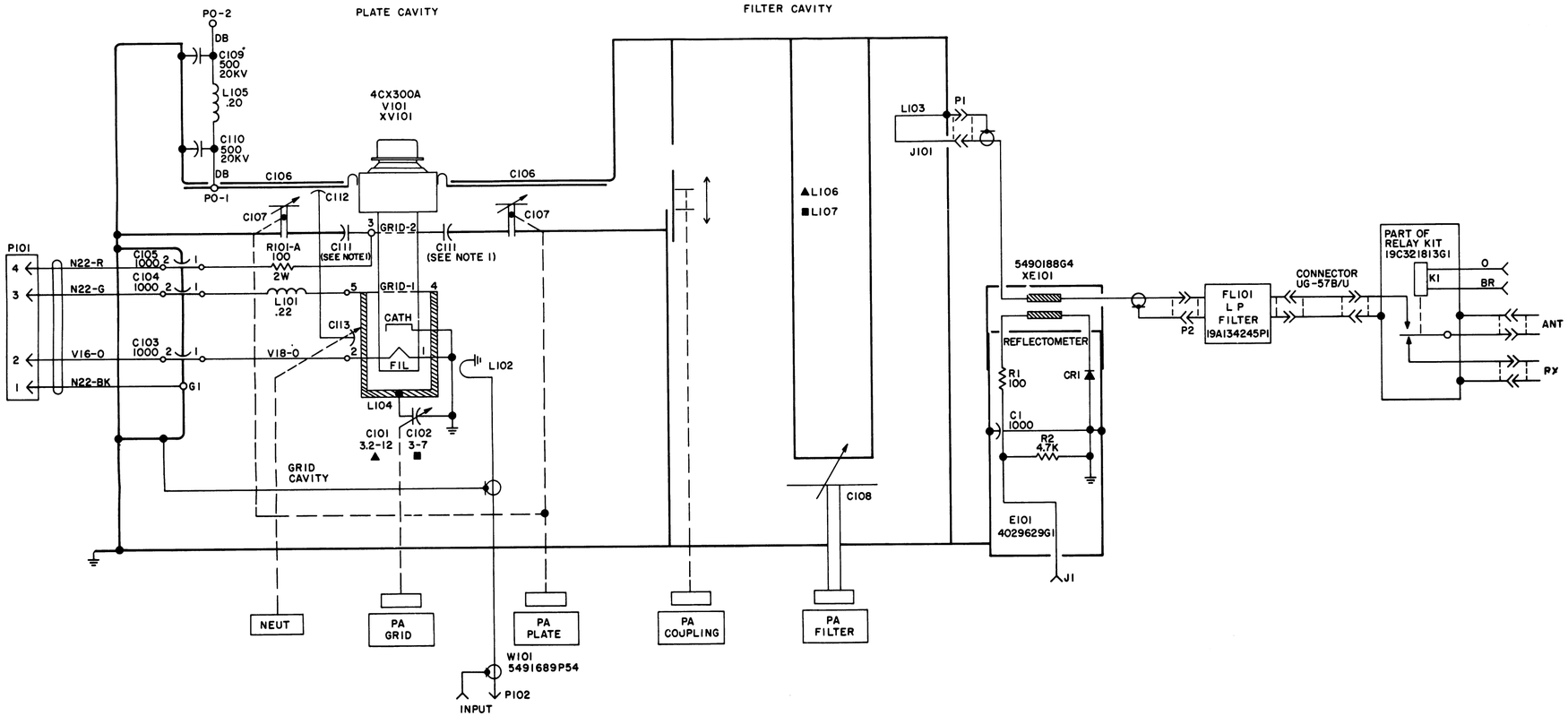
PARTS LIST

LBI4834A

POWER AMPLIFIER
19D423414G1 406-470 MHz
19D423414G2 455-512 MHz

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - CAPACITORS - - - - - - - -
C101	4029647P3	Variable, air: approx 3.6 to 12 pf; sim to Cambion T-8905.
C102	4029647P4	Variable, air: approx 2.0 to 5.7 pf.
C103 thru C105	7485975P19	Ceramic, feed-thru: 1000 pf ±20%, 500 VDCW; sim to Erie Style 327.
C106		(See RC2838 items 3-8, 108-112).
C107		(See RC2838 items 19, 38, 107).
C108		(See RC2838 items 27, 37, 38, 40-46, 56).
C109 and C110	5490306P2	Ceramic: 500 pf +50% -20%, 20,000 VDCW; sim to Sprague 708C50.
C111		(Part of XV101).
C112		(See RC2838 item 20).
C113		(See RC2838 items 26, 69-74).
E101		REFLECTOMETER PROBE 4029629G1
		- - - - - - - - - - CAPACITORS - - - - - - - - -
C1	7160807P1	Ceramic, feed-thru: 1000 pf +100% -0%, 500 VDCW.
		- - - - - - - DIODES AND RECTIFIERS - - - - - -
CR1	7777146P22	Germanium.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J1	7150763P2	Jack, tip, stake-in: red nylon; sim to Alden Products 110BC1.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1	3R77P101J	Composition: 100 ohms ±5%, 1/2 w.
R2	3R77P472J	Composition: 4.7K ohms ±5%, 1/2 w.
		- - - - - - - - - - FILTERS - - - - - - - - - -
FL101	19A134245P1	Lowpass, filter: freq range 406-512 MHz.
		- - - - - - - JACKS AND RECEPTACLES - - - - - - -
J101	7777145P5	Receptacle: 1 female contact; sim to Amphenol 82-97 or Military UG-58A/U.
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L101	7488079P2	Choke, RF: 0.22 µh ±20%, .04 ohm DC res max; sim to Jeffers 4411-2M.
L102	4029604P1	Input loop.
L103	4029435P1	Output loop.
L104	4029360P1	Grid loop.
L105	7772834P7	Choke, RF: 0.2 µh ±10%, 0.034 ohms ±15% DC res, freq range 320-520 MHz; sim to Ohmite Z-460.
L106	4029245G1	Conductor, inner.
L107	4029245G2	Conductor, inner.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P101	7473192P25	Plug: 6 pin male, cable clamp in cap; sim to HB Jones 261-31-06-030.
P102		(Part of W101).
		- - - - - - - - - - RESISTORS - - - - - - - - -
R101	3R79P101K	Composition: 100 ohms ±10%, 2 w.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES



SYMBOL	USED ON	FREQ RANGE
▲	19D423414G1	406-470MHZ
■	19D423414G2	455-512 MHZ

SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT, FOR DESCRIPTION OF CHANGES UNDER EACH REVISION LETTER.

THIS ELEM DIAG APPLIES TO

MODEL NO	REV LETTER
19D423414G1	
19D423414G2	

NOTES:
1. C111 IS PART OF XV101.

ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG=1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF= MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH= MILLIHENRYS OR H=HENRYS.

(19D423483, Rev. 2)

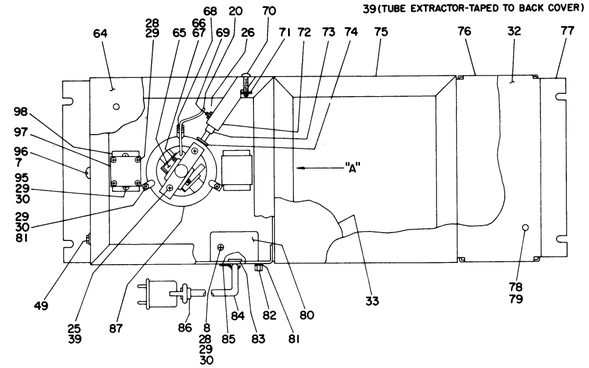
SCHEMATIC DIAGRAM

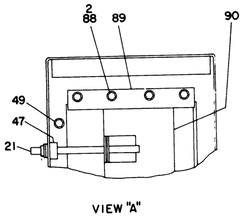
406—512 MHz POWER AMPLIFIER
19D423414G1 & G2

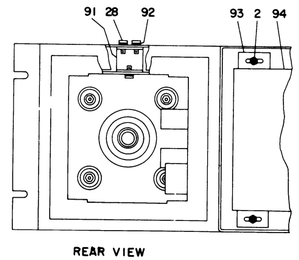
SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - - TUBES - - - - - - - - - - -
V101		Type 4CX300A.
		- - - - - - - - - - - CABLES - - - - - - - - - - -
W101	5491689P54	Cable, RF: approx 32-3/4 inches long; 350 VRMS, 500 VDC operating voltage.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XE101	5490188G4	Reflectometer housing. Includes:
P1 and P2	5490383P1	Connector, plug: sim to Ind. Products No. 91525.
XV101	5490190P1	Tube. (Includes C111).
		RELAY KIT 19C321813G1
K1	7479680P3	Relay, coaxial: 140 VDC nominal, 7000 ohms ±10% coil res, 1 form C contact; sim to Amphenol 300-11292.
	7777145P12	Connector, plug: male contacts; sim to Amphenol 82-100 or Military UG-57B/U.
	19B209260P103	Solderless terminal: wire range No. 24-20; sim to AMP 60495-1.
	19B201074P304	Tap screw, Phillips POZIDRIV®: No. 6-32 x 1/4.
		MECHANICAL PARTS (SEE RC2838)
1	5490364P1	Plate.
2	19B209103P506	Tap screw: 10-32 x 3/8.
3	4035306P20	Washer, fiber: .188 dia.
4	N401P8	Flatwasher: No. 8.
5	N83P15012	Machine screw: 8-32 x 3/4.
6	N414P16	Lockwasher, internal tooth: No. 8.
7	N207P15	Nut, hex: No. 8-32.
8	7135118P2	Solderless terminal.
9	N80P13024C6	Machine screw, phillipshead: 6-32 x 1-1/2.
10	7135118P1	Solderless terminal.
11	4035306P53	Washer, fiber.
12	4035306P2	Washer, fiber.
13	N404P13C6	Lockwasher, internal tooth: No. 6.
14	4037657P1	Knob, screw on: sim to Dimco-Gray 597.
15	7141225P3	Hexnut: No. 6-32.
16	N402P7C6	Flatwasher, narrow: No. 6.
17	7479752P1	Bushing.
18	7479752P11	Bushing.
19	N83P9004	Machine screw: No. 4-40 x 1/4.
20	19A121586P1	Probe.
21	4029768G2	Support.
22	19A115365P2	Clip, spring tension.
23	7777145P4	Connector, plug: sim to Amphenol 82-98 or Military UG-27B/U.
24	19B201074P305	Tap screw, Phillips POZIDRIV®: No. 6-32 x 5/16.
25	N81P9006	Machine screw: No. 4-40 x 3/8.
26	N207P9	Hexnut: No. 4-40.
27	N414P11	Lockwasher, internal tooth: No. 4.
28	N81P13005C6	Machine screw: No. 6-32 x 5/16.
29	N414P13	Lockwasher, internal tooth: No. 6.
30	N207P13C6	Nut, hex: No. 6-32.

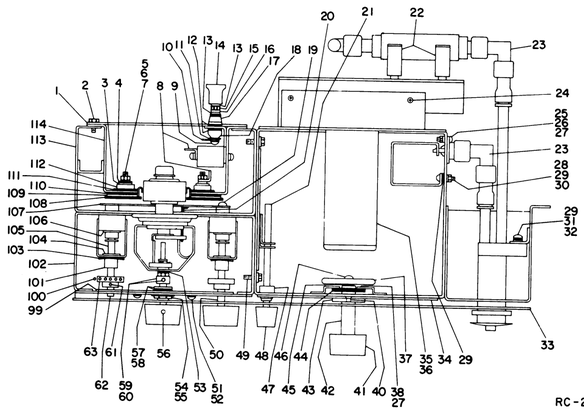
SYMBOL	GE PART NO.	DESCRIPTION
31	N81P13006	Machine screw: No. 6-32 x 3/8.
32	N401P7	Flatwasher: No. 6.
33	5490363G5	Plate.
34	19B226961G1	Plate.
35	4029245G1	Conductor, inner. (L106).
36	4029245G2	Conductor, inner. (L107).
37	4029421P1	Disk.
38	N81P9003	Machine screw: No. 4-40 x 3/16.
39	4029892P2	Tube extractor. (Taped to back cover for shipment).
40	N83P9003	Machine screw: No. 4-40 x 3/16.
41	7487773P6	Knob, set screw.
42	4029424P1	Support.
43	19A127387P1	Disc.
44	19A127388P1	Disc.
45	N413P16	Lockwasher, external tooth, bronze: No. 8.
46	N83P15008	Machine screw: No. 8-32 x 1/2.
47	4029771G1	Bushing.
48	7487773P5	Knob, set screw.
49	19B209103P504	Tap screw: No. 10-32 x 1/4.
50	4029954P2	Support.
51	N81P15004	Machine screw: No. 8-32 x 1/4.
52	4035306P50	Fiber washer.
53	N404P31C6	Lockwasher, internal tooth: No. 6.
54	7127662P1	Flatwasher: 3/8.
55	7165075P2	Hex nut, brass: No. 3/8-32.
56	N70P1503C	Set screw: No. 8-32 x 3/16.
57	4031530P1	Bushing.
58	7115130P9	Lockwasher: 3/8; sim to Shakeproof 1220-2.
59	19A130919G1	Support.
60	N70P1302C	Set screw: No. 6-32 x 1/8.
61	4031997P1	Set screw: No. 6-32 x 3/16.
62	4029954P1	Support.
63	4029956P1	Sprocket.
64	5490329P2	Plate.
65	4032516P1	Support.
66	N414P8	Lockwasher, internal tooth: No. 2.
67	N81P5005	Machine screw: No. 2-56 x 5/16.
68	7143206P6	Terminal, standoff.
69	7146362P2	Bolt, spade: brass, thd size No. 4-40.
70	N80P13016C6	Machine screw, phillip head: No. 6-32 x 1.
71	19A121587P1	Support.
72	19A130687G1	Support.
73	4029895P2	Bushing.
74	4029774G3	Stud.
75	5495046P1	Conductor.
76	5490194G1	Housing.
77	4029358P1	Support.
78	19B209103P510	Tap screw: No. 10-32 x 5/8.
79	N402P39C6	Flatwasher: No. 10.
80	4029710G1	Can.
81	N83P13008	Machine screw: No. 6-32 x 1/2.
82	7142162P51	Spacer, sleeve: No. 6-32 x 3/8.
83	5490407P8	Grommet.

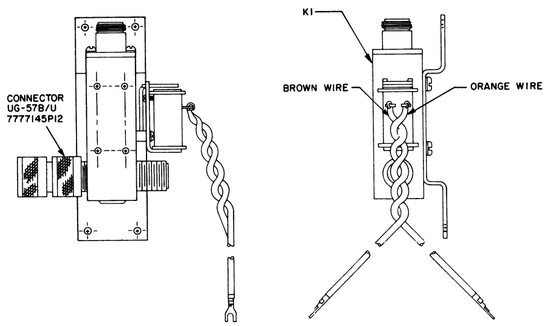
SYMBOL	GE PART NO.	DESCRIPTION
84	7162441P16	Sleeving.
85	7763541P5	Retainer strap.
86	5490407P29	Grommet.
87	N81P5003	Machine screw: No. 2-56 x 3/16.
88	N405P9C6	Lockwasher, spring type.
89	4029354P1	Clamp, spring.
90	4029784G1	Plate.
91	19A130686P1	Support.
92	N413P13C6	Lockwasher, external tooth, bronze: No. 6.
93	19B226966P1	Support.
94	19B226968G1	Plate.
95	N83P13016	Machine screw: No. 6-32 x 1.
96	N81P15006	Machine screw: No. 8-32 x 3/8.
97	4029361P2	Support.
98	4029605G1	Block.
99	4029955P2	Plate.
100	4029870P1	Bead Chain.
101	4029810P2	Coupling.
102	5495048P1	Grid cavity.
103	7160815P3	Washer, spring tension.
104	7109043P3	Retaining ring.
105	4029601P2	Stud.
106	N900P50C	Retaining ring.
107	4029712G3	Disc assembly.
108	19B216034P1	Insulator.
109	4029246G1	Plate.
110	5490189P1	Printed board.
111	4035306P50	Fiber washer: .719 dia.
112	4029112P1	Insulator, disc.
113	5495047P1	Cavity, plate.
114	5494530G1	Conductor.











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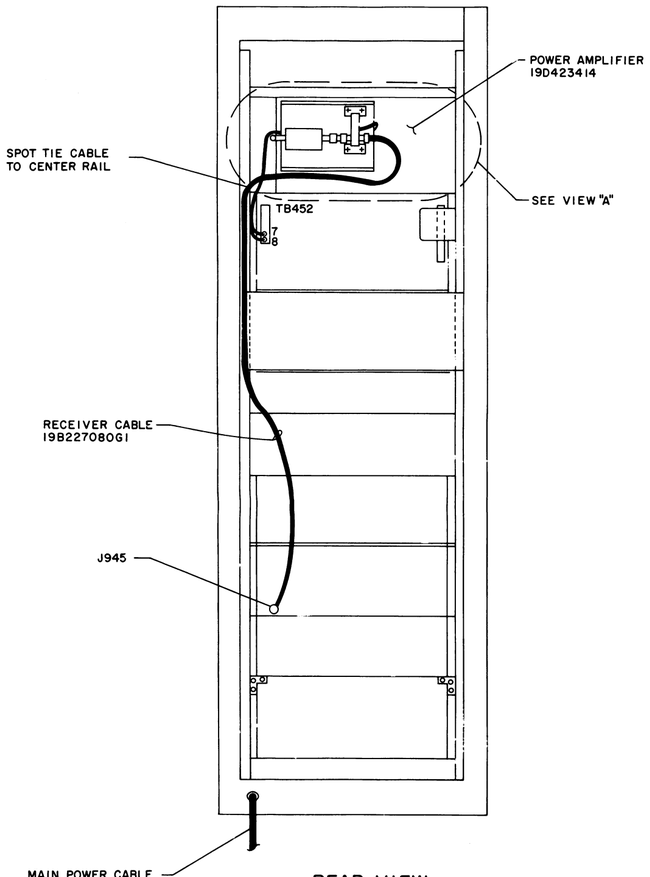
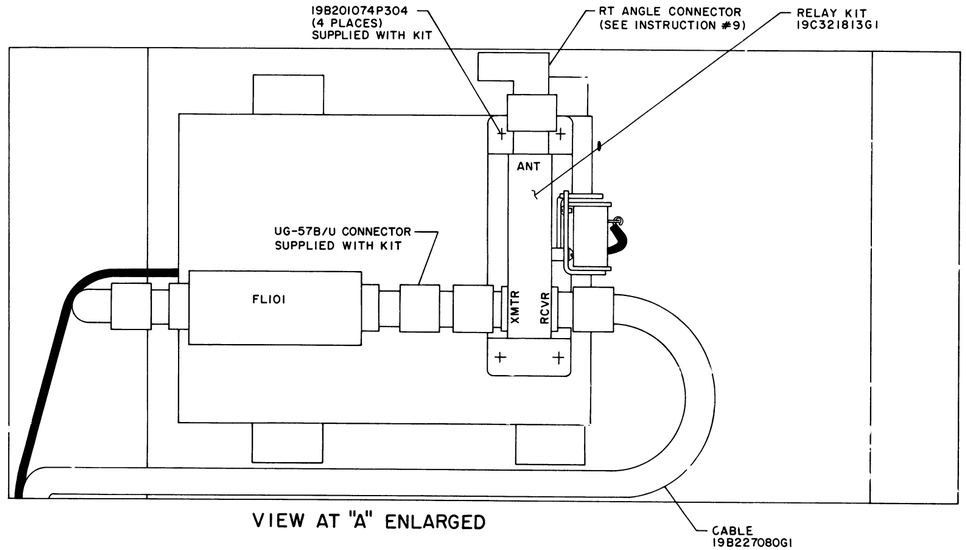


REAR VIEW
DOOR, HIGH VOLTAGE SHIELD & METER
SHIELD REMOVED FOR CLARITY



VIEW AT "A" ENLARGED

INSTALLATION INSTRUCTIONS

(1) THESE INSTRUCTIONS COVER THE INSTALLATION OF THE 19C321813G1 RELAY KIT AND 19B227080G1 RECEIVER CABLE IN UHF HIGH POWER APPLICATIONS.

1. REMOVE ALL POWER FROM CABINET BY UNPLUGGING MAIN POWER CABLE.
2. OPEN REAR CABINET DOOR AND SAFETY SCREEN.
3. REMOVE ANTENNA CABLE AND RIGHT ANGLE CONNECTOR FROM LOW PASS FILTER. SAVE CONNECTOR.
4. CONNECT "TRANSMITTER" PORT OF RELAY TO LOW PASS FILTER USING UG-57B/U CONNECTOR SUPPLIED WITH KIT.
5. ALIGN RELAY OVER MOUNTING HOLES BY SLIDING LOW PASS FILTER EITHER WAY IN MOUNTING CLIPS.
6. MOUNT RELAY TO SUPPORT ON TRANSMITTER USING FOUR #6-32 THREAD FORMING SCREWS SUPPLIED IN KIT.
7. ROUTE RELAY WIRES BEHIND SUPPORT, OVER REFLECTOMETER CABLE & DOWN TO TB452 ON POWER SUPPLY AS SHOWN.
8. CONNECT ORANGE WIRE TO TB452-7 AND BROWN WIRE TO TB452-8.
9. CONNECT ANTENNA CABLE TO "ANTENNA" PORT ON RELAY USING RIGHT ANGLE CONNECTOR SAVED FROM STEP #3.
10. ROUTE RF CABLE 19B227080G1 AS SHOWN. CONNECT "TYPE N" CONNECTOR TO "RECEIVER" PORT ON RELAY AND "UHF" CONNECTOR TO RECEIVER JACK (J945) ON REAR OF RADIO HOUSING.
11. CLOSE & SECURE SAFETY SCREEN & REAR CABINET DOOR BEFORE REAPPLYING POWER TO CABINET.

(19D423549, Rev. 2)

OUTLINE DIAGRAM &

INSTALLATION INSTRUCTION

RELAY KIT 19C321813G1 AND
RECEIVER CABLE 19B227080G1