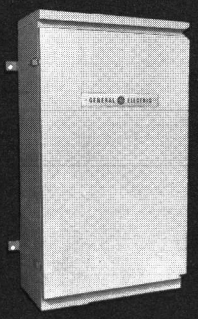
MOBILE RADIO

MASTR

Progress Line

MAINTENANCE MANUAL FOR SATELLITE RECEIVER COMBINATIONS

DESK-MATE CABINET

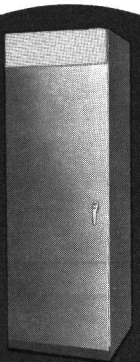


POLE-MOUNT CABINET

WALL MOUNT CABINET

LBI-4293E

DF-9026



FLOOR-MOUNT CABINET

GENERAL ELECTRIC

TABLE OF CONTENTS

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.

EQUIPMENT	TYPE OR MODEL NUMBER
Receiver	ER-39-A through ER-42-H
Power Supply	4EP39A11, 12
Tone Panel	19D413943G3
Standby Battery Panel Battery	19C317775G1 19A116574P1
Desk Mate Cabinet (DM) 117-Volt Power Cable	7354211G4 7491206P3
Pole Mount Cabinet (PM)	7132483G6
Floor Mount Cabinet (VM) 117-Volt Power Cable	7668242G14 7491206P1
Wall Mount Cabinet (WM) 117-Volt Power Cable	19D402658G1 19A122527G3
Speaker	4EX16A21
Interconnection Harness	19A128199G1
Multiple Receiver Power Harness	19A128199G3
Alignment Tools: Hex Slug Type Slotted Screw Type	 4038831P2 4033530G2
Handle (PM Cabinet)	7145676P2

OPTIONAL EQUIPMENT

EQUIPMENT	OPTION NUMBER	TYPE OR MODEL NUMBER
Battery Heater (WM Cabinet)	7697	19A128152G1
Cabinet Heater (PM Cabinet)	7698	4KZ3A1
Antenna Matching Unit	7699	KY-13-A, B, C
220/110-Volt Stepdown Transformer	7608	19A121971G1

COMBINATION NOMECLATURE

1st Digit	2nd Digit	3rd Digit	4th Digit	5th Digit	6th Digit	7th Digit	8th & 9th Digits
Product	Mechanical Package	Number of Receivers	Band-width	Standby Batteries	Type Signaling	Receiver Options	Frequency Range
R SATELLITE RECEIVER	**D** DESK MATE CABINET	**1** ONE RECEIVER	**4** 20 KHz	**A** NO BATTERY PANEL	**1** TONE	**S** STANDARD	**11** 25-33 MHz
	P POLE MOUNT CABINET	**2** TWO RECEIVERS	**5** 25 KHz	**B** ONE BATTERY PANEL	**2** E & M	**N** NOISE BLANKER	**22** 33-42 MHz
	V FLOOR MOUNT CABINET	**3** THREE RECEIVERS	**6** 30 KHz	**C** TWO BATTERY PANELS		**U** CHANNEL GUARD	**33** 42-50 MHz
	W WALL MOUNT CABINET	**4** FOUR RECEIVERS		**D** THREE BATTERY PANELS		**W** NOISE BLANKER & CHANNEL GUARD	**55** 132-150.8 MHz
		5 FIVE RECEIVERS		**E** FOUR BATTERY PANELS			**66** 150.8-175 MHz
		6 SIX RECEIVERS		**F** FIVE BATTERY PANELS			**77** 406-420 MHz
		7 SEVEN RECEIVERS		**G** SIX BATTERY PANELS			**88** 450-470 MHz
		8 EIGHT RECEIVERS					

SPECIFICATIONS *

Dimensions: (H x W x D)	
Desk-Mate	30-3/8" x 14" x 25 - 1/2"
Pole-Mount Cabinet	42" x 23" x 12-1/2"
Floor-Mount Cabinet	69" x 22" x 23"
Input Voltage	117 VAC ±20%, 50/60 Hz
Temperature Range	-30°C to +60°C (-22°F to +140°F)

DESCRIPTION

General Electric Satellite Receiver combinations are used with the GE Voting Selector to form a receiver voting system.

The satellite receivers are located so that at least one receiver will receive a good quality signal from a Personal or Mobile two-way radio transmitting from a specified operating area. The satellite receiver output is applied to the centrally located Voting Selector which selects the receiver with the best audio quality to be heard. The satellite receiver output is connected to the Selector by RF Link, AC or DC lines, or an E & M pair. A typical Satellite Receiver is shown in Figure 1.

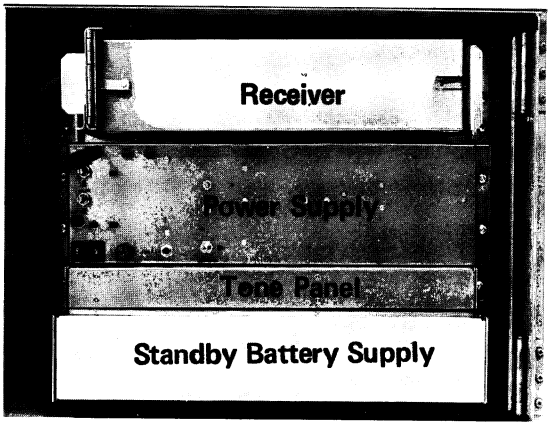


Figure 1 - Typical Satellite Receiver

Each Satellite Receiver normally consists of an FM receiver, power supply and Tone/Audio panel. In E & M signalling applications, the Tone/Audio panel is not used.

An optional Standby Battery supply is available for operating the Satellite Receiver in the event of power failure. One supply is required for each receiver.

RECEIVER

A standard, single-frequency MASTR Professional series receiver is used in the Satellite Receiver combination. The fully transistorized receiver is completely contained in an aluminum casting for maximum shielding, and is mounted on the front of the power supply. The receiver may be equipped with Channel Guard and noise blanker.

POWER SUPPLY

Transistorized Power Supply Model 4EP39A11 is used with standard receivers, and Model 4EP39A12 is used with receivers equipped with Channel Guard. The power supply is modified for use in Satellite Receiver systems. A description of the modifications is contained in the Power Supply Modification Section as listed in the Table of Contents.

The power supply provides the following supply voltages:

- A regulated +13.6 volts for the receiver audio stages, and for charging the standby battery.
- A regulated +10 volts for the receiver RF stages, line amplifier board and Tone/Audio board.

The power supply also provides the 117-volt AC input connections, VOLUME and SQUELCH controls, antenna and speaker jack, and the power OFF-ON switch. The power supply chassis occupies three rack units.

TONE/AUDIO PANEL

The Tone/Audio panel contains the 1950 Hz tone generator, tone gate circuit, and a 600-ohm line transformer. The panel normally mounts below the power supply, and occupies one rack unit.

STANDBY BATTERY PANEL

The Standby Battery Panel contains a sealed, rechargeable 12-volt lead-acid battery and a current limiting circuit. In the event of a power failure, the fully-charged battery will operate one receiver and Tone/Audio panel for a minimum of 24 hours at 25°C. The battery is float-charged from the 13.6-volt power supply output. A fully discharged battery will be fully recharged in three days at 25°C.

Current-limiting resistor R1 limits the charging current to 750 milliamperes. Diode CR1 on the regulator board (part of Modification Kit 19A129012G1 or G2) prevents the battery voltage from being applied to the +13.6 volt regulator during a power failure.

An optional heater is available for Wall Mount cabinets. The heater prevents low battery output and long charge times resulting from low temperature operation.

The Standby Battery panel normally is mounted below the Tone/Audio panel, and occupies two rack units. For interconnections to the power supply, refer to the Battery Panel Wiring Diagram as listed in the Table of Contents.

SPEAKER

The speaker connects to speaker jack J10 on the power supply, and provides an audio output of five watts. The output level is adjusted by the VOLUME control on the power supply. If the speaker is not used, connect a 3.5 ohm, 10-watt resistor from TB501-9 to TB501-13 as a substitute for the speaker load impedance.

NOTE

In applications where the Standby Battery Panel is used, do not leave the speaker plugged in, and do not use the dummy load.

CABINETS

Three different cabinet styles are available to meet individual system requirements. The different cabinets are as follows:

Desk Mate Cabinet

The Desk-Mate cabinet can be conveniently located adjacent to a desk to provide additional working area, or in some other suitable area as required. Both side panels on the station can be easily removed to gain access to the unit for servicing.

Pole-Mount Cabinet

The Pole-Mount Cabinet can be mounted outdoors in remote locations regardless of weather conditions. An optional heater kit is available for installations where the cabinet temperature drops below 5°F. The unit is mounted on a "swing out" rack to facilitate servicing either side of the equipment.

Floor-Mount Cabinet

The Floor-Mount Cabinet can be placed in the control building adjacent to the antenna installation, or located in another area as required. Front and back doors on the cabinet can be opened to gain access to the unit for servicing.

Wall-Mount Cabinet

The Wall-Mount Cabinet can be mounted on a wall in an office, warehouse or other building. The weatherproof cabinet can be mounted outdoors, if desired. The entire chassis is mounted on a "swing out" rack to provide access to both sides of the unit.

For multi-frequency systems, additional Satellite Receivers can be mounted in the DM, PM or VM cabinets. The capacity of each cabinet for the different applications is shown in the following chart:

	Number of Satellite Receivers Per Cabinet			
	Tone Signaling with Standby Battery Panel	Tone Signaling Without Standby Battery Panel	E & M Signaling with Standby Battery Panel	E & M Signaling Without Standby Battery Panel
Desk Mate	2	3	3	5
Pole Mount	3	4	3	5
Floor Mount	5	8	6	8 Standard 11 Maximum
Wall Mount	1	1	1	1

INSTALLATION

CABINETS

Install the Satellite Receiver Cabinet as close as possible to the antenna, and where the power cable will reach a 117-VAC, 50/60 Hz power source. Leave sufficient room so that the doors or side panels can be opened or removed for servicing.

A separate 15-ampere, 117 Volt circuit should be provided for the Satellite Receivers. A separate line will prevent an interruption of communications if a failure occurs in other building circuits.

NOTE

An optional 220-117-volt AC step-down transformer is available for locations having a 220-volt AC power source.

A power cable with a three-prong plug is provided with all cabinets except the Pole-Mount Cabinet. One prong grounds the equipment to protect personnel. If a three-prong plus is not available, a two-prong adaptor may be used until a three-prong outlet is installed. When a two-prong adaptor is used, the attached ground wire must be connected to building ground. Make a continuity check between the Selector rack and a known ground point to make sure that a good ground connection has been made. Check the electrical code to assure compliance with local ordinances.

DESK MATE

The Desk-Mate Cabinet has three 3/4-inch cable entry holes on each side of the base of the cabinet. The holes should be used for the power cable and telephone lines. Mount strain-relief clamps (supplied by the installer) in all of the holes that are used. Additional instructions for installing the cabinet and antenna are contained in LBI-4597.

POLE MOUNT

Access holes must be made in the cabinet to bring in the conduit for antenna transmission lines, AC cable, telephone lines, and ground connections. A separate hole should be drilled for each line or cable entering the cabinet. After the holes have been drilled or punched through, mount strain relief cable clamps in each hole (clamps are supplied by the owner or installer). It is recommended that the hole for the AC cable be made near the bottom right side front and all other holes made along the bottom left side of the cabinet. All holes should be made before the cabinet is installed.

The two mounting brackets on the back of the cabinet require four 1/2-inch bolts for mounting the unit.

Make the Power and Ground connections as follows:

1. Connect the 117-volt leads to TB501-1 and TB501-2 on the power supply.

2. Connect the ground wire to the chassis mounting rack.

After the ground lead from the power cable is connected to the chassis mounting rack, check for continuity between chassis mounting rack and the cabinet. Be sure cabinet and rack are grounded together to protect service personnel and to minimize hum currents.

The cabinet should be connected to a good earth ground. A #12 stranded flexible wire connected to the component mounting rack should be clamped along the pole and mounted securely to a ground rod for a good ground - or if inside, to a cold water pipe. Soldered terminals should never be used in grounding.

Additional instructions for installing the cabinet and antenna are contained in LBI-4598.

FLOOR MOUNT

The cabinet occupies a floor area of 22 inches by 23 inches. Be sure to allow sufficient space in front of - and behind - the cabinet to permit front and rear doors to open completely. Either door may be removed, inverted, and hinged on the opposite side if desired.

Three knockouts are located along the rear bottom edge of the cabinet for cable entry. If it is desirable to bring the cables up through the floor, the cabinet can be situated over the power receptacle or cable hole on the floor. Conduit may be extended into the cabinet through one of the two 7-inch by 17-inch baseplate openings in the cabinet bottom. A cable entry hole (2" x 1") is located in the top rear of the cabinet to bring in the antenna cables or conduit from the above station. The front and back sides of the station must always be accessible for the serviceman.

Holes are located on the bottom for bolting the cabinet securely to the floor with 1/2" bolts. Additional instructions for installing the cabinet and antenna are contained in LBI-4599.

WALL MOUNT

Two access holes are located in the bottom of the cabinet for installing the antenna and AC power cables. A separate 1/2-inch hole for the telephone lines may be drilled by the installer, or the telephone lines may be brought in through the antenna entry hole in the antenna. Attach 1/2-inch conduit or strain relief cable clamps in each hole (clamps or conduit are supplied by the owner or installer).

The station should be connected to a good earth ground. A #12 stranded flexible wire should be connected between the hinged cabinet rack and a ground rod - or if inside, to a cold water pipe - to ensure a good ground. In addition, the cabinet should be grounded to the hinged rack to protect service p ersonnel and minimize hum currents. This can be done by installing a 1" wide flexible tinned copper bond across the hinge and bolting each end of the bond to the frame. Before drilling the screw holes in the bond, apply solder across the width of the bond where the holes are to be drilled.

Additional instructions for installing the cabinet and the antenna are contained in LBI-3740.

CONNECTIONS

Make the following connections to each Satellite Receiver in the cabinet:

ANTENNA CABLE

Run the antenna cable through one of the cable entry holes in the base of the cabinet. For DM, PM and VM cabinets connect the cable(s) to J501 on the power supply. For WM cabinets, connect the cable to the antenna jack inside the cabinet.

TELEPHONE LINES

For tone signaling, connect the audio pair to TB1-6 and TB1-7 on the proper Tone/Audio panel.

For E & M Signaling, connect the audio pair to TB501-14 and TB501-15 on the power supply. Then connect the COR contacts to meet system requirements. For example, a ground or -48 volts from the signaling equipment can be applied to the "M" lead through the COR contacts.

BATTERY CONNECTIONS

If the combination is shipped with the Standby Battery panel, it is necessary to connect the Black and Red leads from the power supply to the battery. Connect the wire to the (+) battery terminal and the Black wire to the (-) battery terminal.

ADJUSTMENT PROCEDURE

Before adjusting the Satellite Receiver, make sure that all AC power lines, telephone lines and ground connections have been completed, and the receivers set on frequency.

There are two methods for adjusting the output levels of the Satellite Receiver. The preferred method requires one man at the Satellite Receiver and one man at the Voting Selector. The preferred method must also be used in E & M systems. The alternate method requires one man at the Satellite Receiver.

EQUIPMENT REQUIRED:

- Wide-band AC VTVM: Similar to Heath IM-38, Simpson 715 or HP400 series.
- Signal Generator: Similar to measurements M800.

PREFERRED METHOD

1. At the Satellite Receiver connect an AC-VTVM across TB1-6 amd TB1-7 on the Tone/Audio board.
2. Apply a 1000 microvolt signal modulated by 1000 Hz with ±3.3 KHz deviation to the receiver antenna jack J441.
3. Set the Line Level Adjust (R509) as follows:
   a. If the line loss is less than 10 dB, set R509 for the maximum level allowed by the telephone company, but no greater than 0 dBm.
   b. If the line loss is greater than 10 dB, set R509 for the maximum level allowed.
4. Remove the signal generator and unsquelch the receiver.
5. At the Voting Selector, connect a wide-band AC-VTVM to J1 on the front of the associated Receiver Module,' and to the Ground jack on the front of the power supply module.
6. With receiver noise on the line, adjust the Input level control (R1) on the front of the Receiver Module for -20 dBm.
7. At the Satellite Receiver, re-adjust

SQUELCH control, R501, on the EP-39-A for the desired setting.

8. Adjust R7 on the Tone/Audio panel for a reading of -20 dBM at J1 on the Voting Selector. Do not adjust R1 at the Receiver Module.

9. Repeat Steps 1 through 8 for each Satellite Receiver and Receiver Module.

ALTERNATE METHOD

1. Connect an AC-VTVM across TB1-6 and TB1-7 on the Tone/Audio Board.

2. Apply a 1000 microvolt signal modulated by 1000 Hz with +3.3 KHz deviation to the receiver antenna jack J441.

3. Set the Line Level Adjust (R509) as follows:

   a. If the line loss is less than 10 dB, set R509 for the maximum level allowed by the telephone company, but no greater than 0 dBm.

   b. If the line loss is greater than 10 dB, set R509 for the maximum level allowed.

4. Remove the signal generator and squelch the receiver.

5. When using MASTR receivers, adjust R7 on the Tone/Audio panel for tone output that is 3 dB less than the output signal level in Step 3.

NOTE

When MASTR receivers are not used, the receiver output on a standard signal and on unsquelched noise should be measured with a wide-band VTVM. This figure should be used instead of 3 dB in setting up the tone output.

6. Repeat Steps 1 through 5 for each Satellite Receiver.

7. Return to the Voting Selector and adjust Input Level control R1 on the front of each Receiver Module for a reading of -20 dBm at J1 on the 1950 Hz tone.

MAINTENANCE

The individual Maintenance Manual for the receiver describes standard test procedures which can be used to compare the performance of the receiver against the specifications of the unit when shipped from the factory.

In addition, specific troubleshooting procedures are contained in the applicable Maintenance Manual for troubleshooting the receiver, power supply and tone/audio board.

POWER SUPPLY MODIFICATIONS

NOTE

Regulator A502-R1 is normally set for +12.6 Volts. For standby battery applications, set A502-R1 for +13.6 Volts (+0, -0.1 V).

The power supply is modified as described below for use in Satellite Receiver systems. Refer to the Battery Panel Wiring Diagram and Power Supply Modification Diagram for the location of components used in the modification.

MODIFICATION KIT 19A129012G1

Modification Kit 19A129012G1 is used in tone signaling applications. The Modification adds diode CR1 to 13.6-Volt regulator board A502. The modification also adds speaker jack J10 to the power supply chassis.

MODIFICATION KIT 19A129012G2

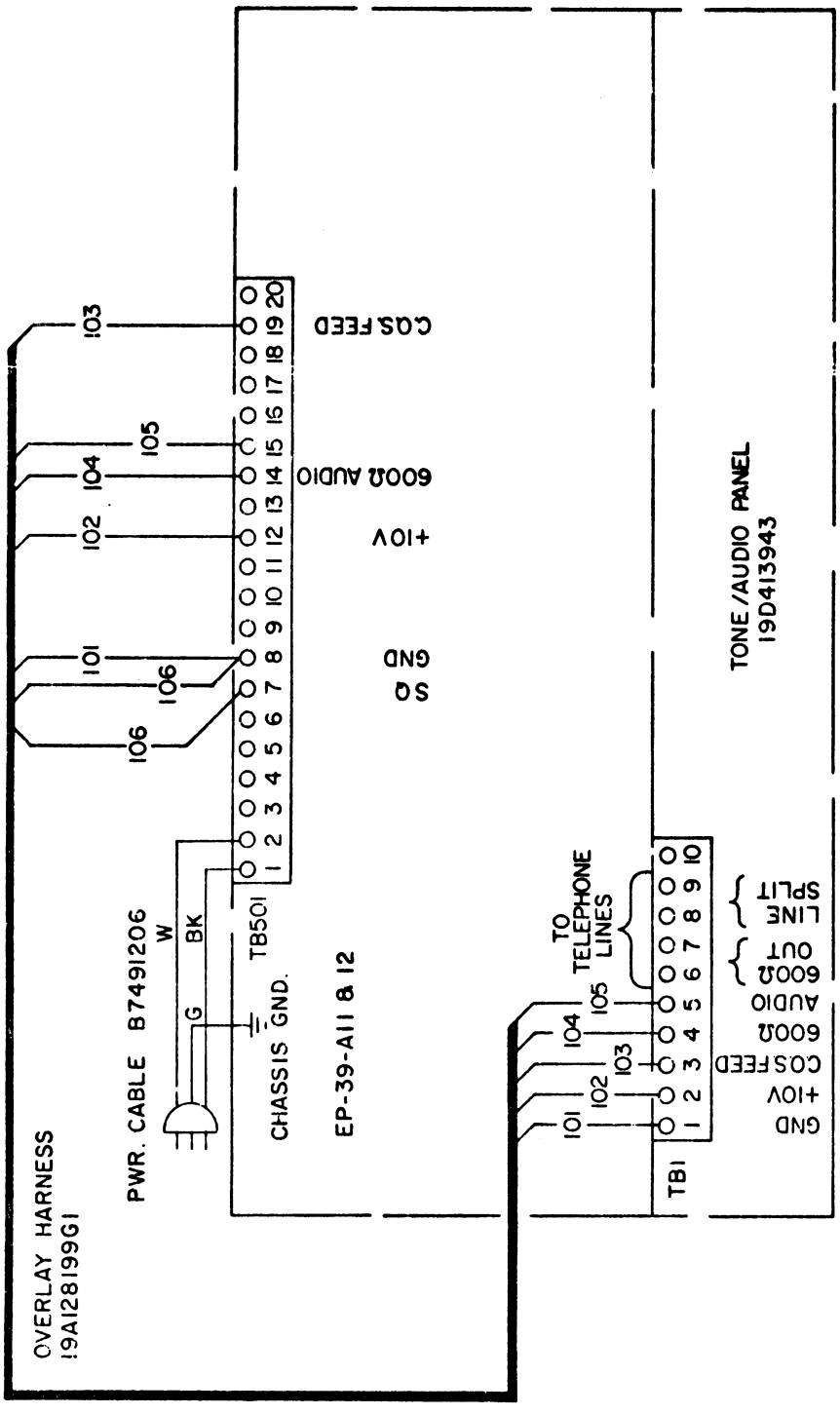
Modification Kit 19A129012G2 is used in E & M signaling applications. The modification adds diode CR1 to 13.6-Volt regulator board A502. The modification also adds speaker jack J10 and COR 19C303533G3 to the power supply chassis.

HEATER MODIFICATION

When optional battery heater 4034002P1 is used, thermostatic switch S1 is added to the power supply chassis.

MODIFICATION KIT 19A129012G4

Field Modification Kit 19A129012G4 is provided for field installation of the Standby Battery Panel. The modification adds the Battery Panel and adds CR1 to the 13.6-Volt regulator board A502.

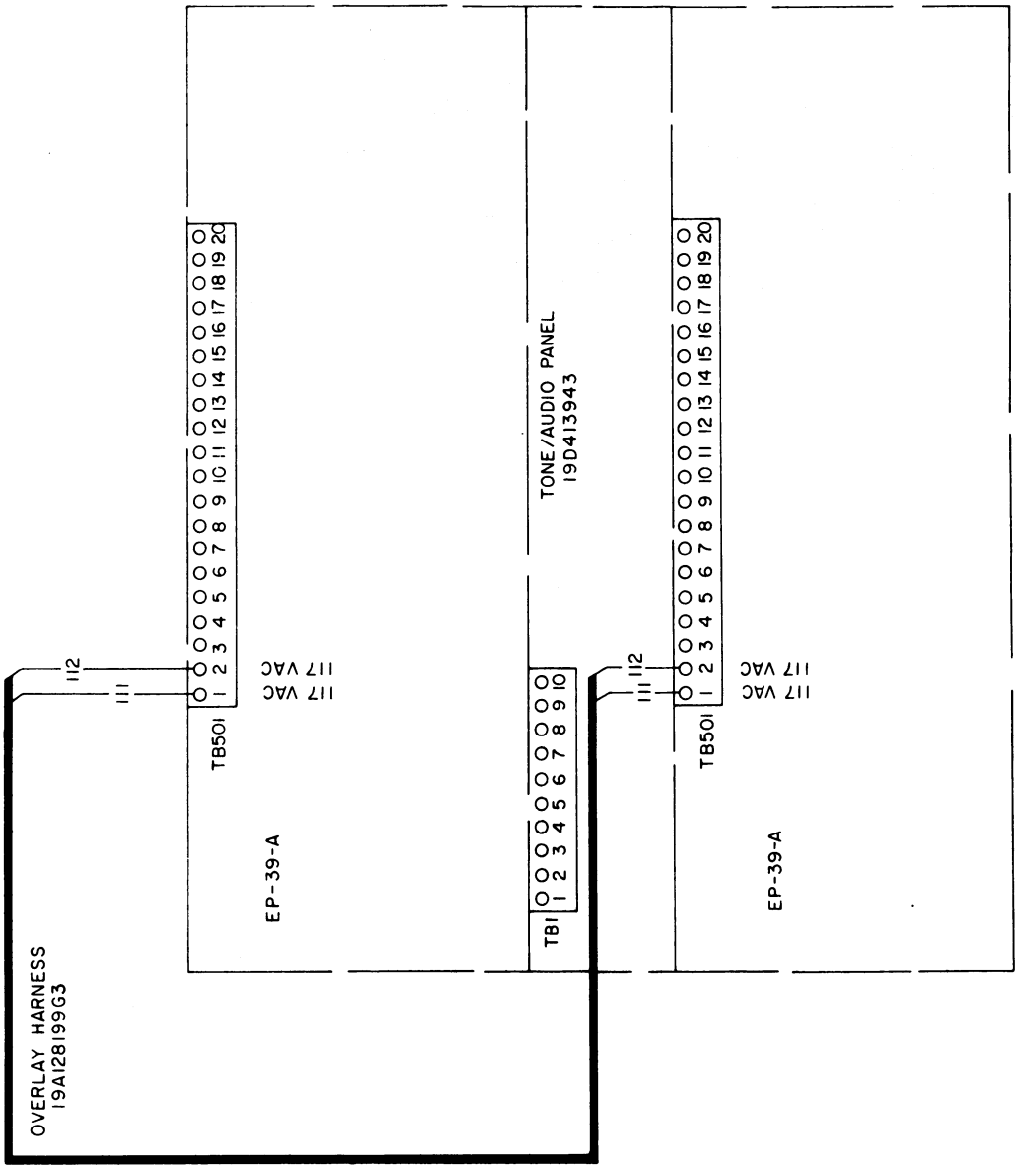


INSTRUCTIONS:
1. CABLES SHOULD BE CONSTRUCTED IN ACCORDANCE WITH WIRING INSTRUCTIONS A4031623.
2. ALL WIRES ARE #16 AWG.
3. MARK WIRES IN CABLE ON BOTH ENDS WITH CORRESPONDING WIRE NUMBER USING MARKER STRIP 19B209090.
4. TERMINATE ALL WIRES WITH TERMINAL 19B209260P102.

INTERCONNECTION DIAGRAM

(19C317806, Rev. 4)

RECEIVER & TONE/AUDIO PANEL



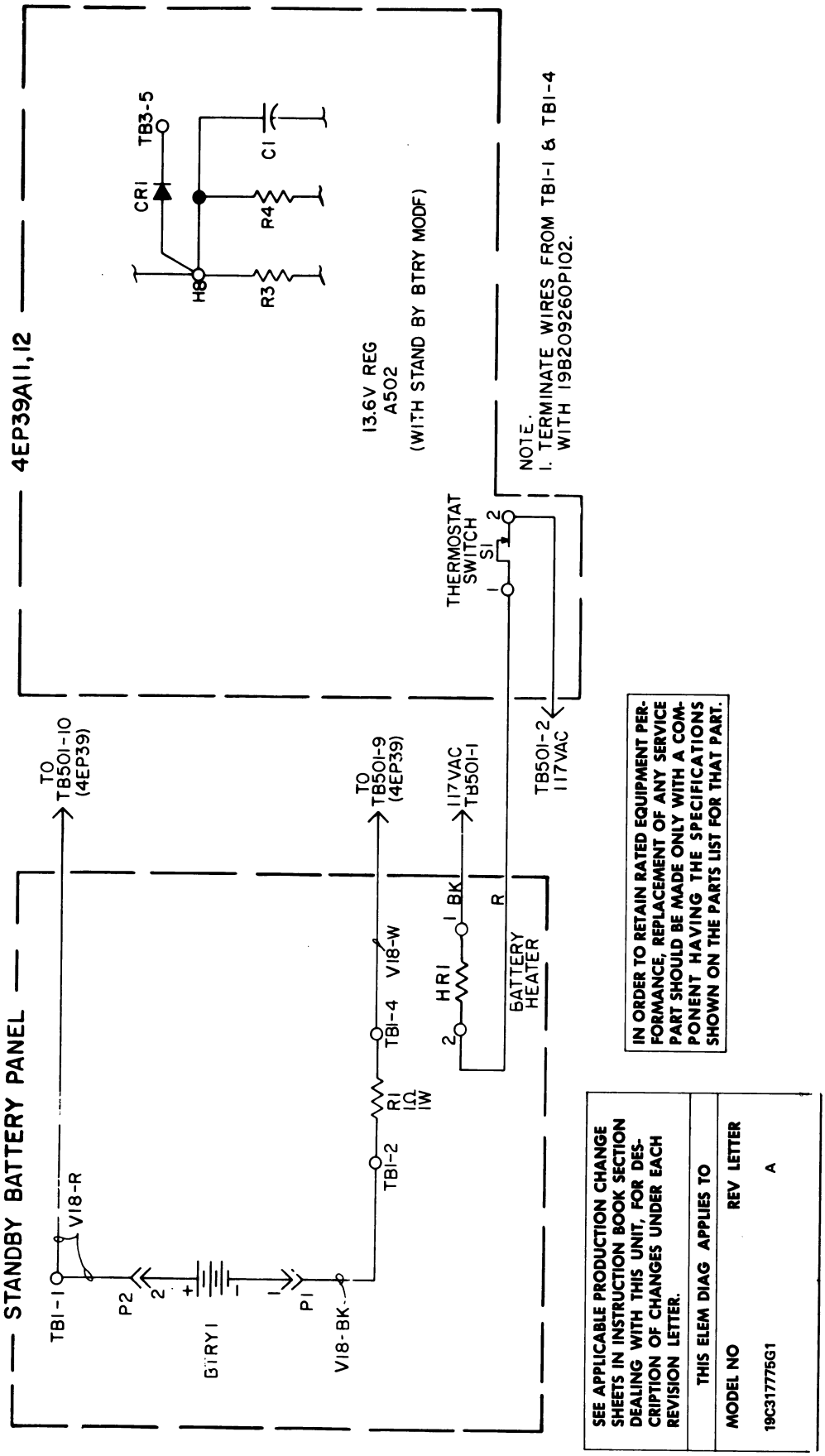
INSTRUCTIONS:

1. CABLES SHOULD BE CONSTRUCTED IN ACCORDANCE WITH WIRING INSTRUCTIONS A4031623.
2. ALL WIRES ARE #16 AWG.
3. MARK WIRES IN CABLE ON BOTH ENDS WITH CORRESPONDING WIRE NUMBER USING MARKER STRIP 19B209090.
4. TERMINATE WIRES WITH 19B209268P101.
5. CABLE SHOULD BE CONSTRUCTED IN SUCH A WAY AS TO ALLOW ENOUGH SLACK TO PERMIT MOUNTING PANELS TOTALING 5.18" BETWEEN TONE AUDIO PANEL AND RECEIVER ONLY POWER SUPPLY 4EP39A.

(19C317808, Rev. 2)

INTERCONNECTION DIAGRAM

MULTIPLE SATELLITE RECEIVERS



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

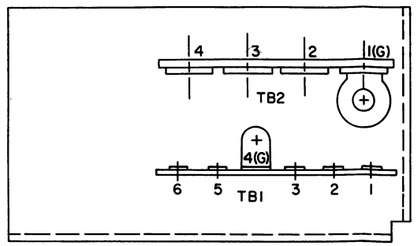
SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT, FOR DESCRIPTION OF CHANGES UNDER EACH REVISION LETTER.

THIS ELEM DIAG APPLIES TO	
MODEL NO	REV LETTER
19C317775G1	A

WIRING DIAGRAM

(19B219229, Rev. 6)

BATTERY PANEL



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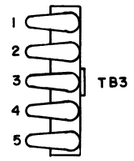

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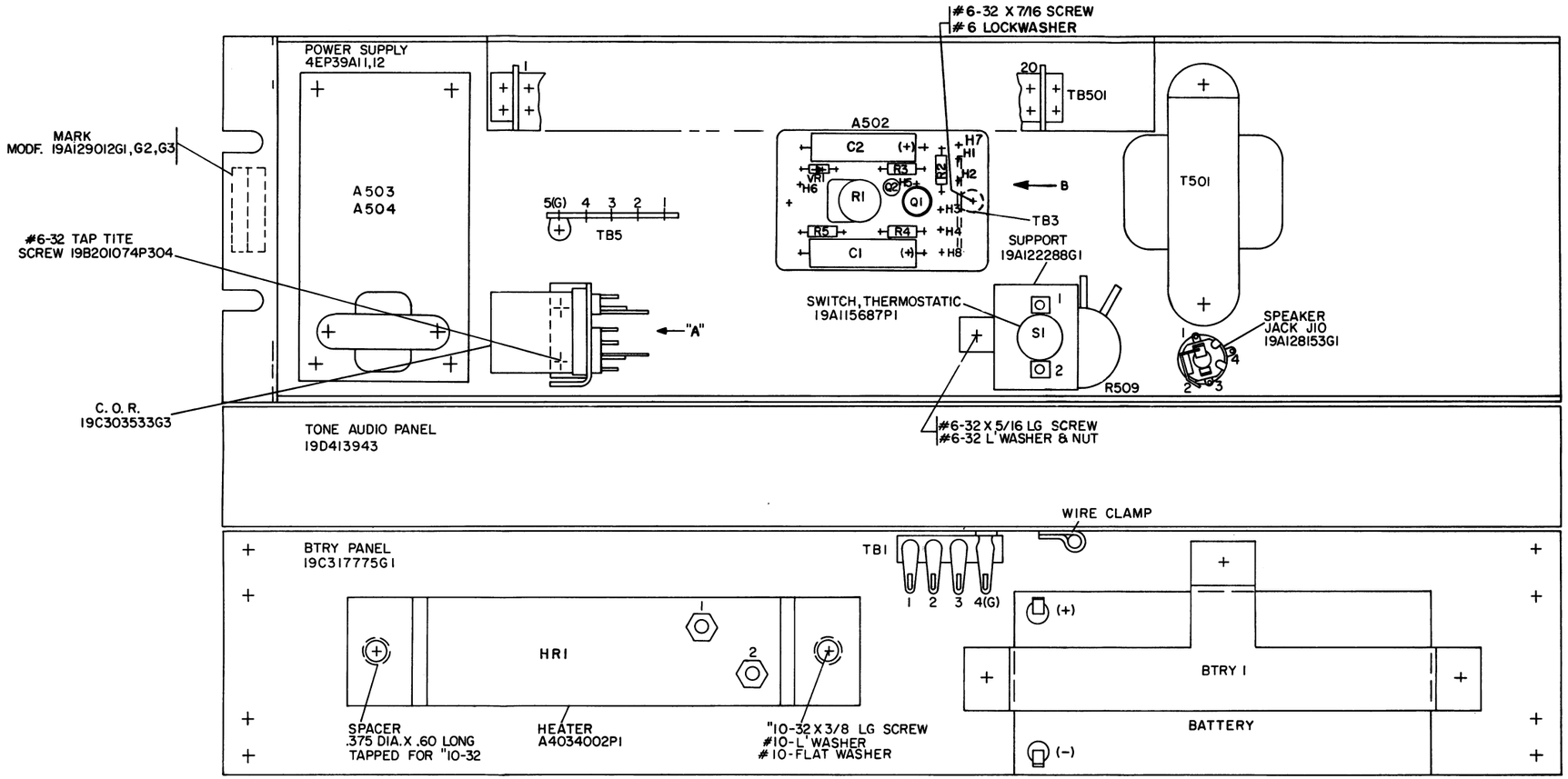


(19D413976, Rev. 9)

INSTALLATION INSTRUCTIONS TO MODIFY 4EP39A11, A12 POWER SUPPLY FOR SPEAKER JACK AND STANDBY BATTERY PL19A129012G1.

1. REMOVE RED WIRE THAT GOES TO TB3-5 FROM H1 AND SOLDER DIODE CR1 BETWEEN H8 & TB3-5. (CATHODE END TO TB3-5.)
2. SPOT TIE WIRES FROM TB1 ON BATTERY PANEL TO PRESENT HARNESS. ASSEMBLE RED WIRE TO TB501-10, BLACK WIRE TO TB501-9.
3. ASSEMBLE JACK TO 4EP39A10, 12 WITH HARDWARE SUPPLIED WITH JACK.
4. ASSEMBLE V20-BR WIRE ON J10-3 TO TB501-9 AND V20-W WIRE ON J10-1 TO TB501-13.
5. MARK BELOW MODEL NO. "MODF. 19A129012G1."

INSTALLATION INSTRUCTIONS TO MODIFY 4EP39A11, A12 POWER SUPPLY FOR SPEAKER JACK, STANDBY BATTERY AND C.O.R. PL19A129012G2.

1. REMOVE RED WIRE THAT GOES TO TB3-5 FROM H1 AND SOLDER DIODE CR1 BETWEEN H8 & TB3-5. (CATHODE END TO TB3-5.)
2. SPOT TIE WIRES FROM TB1 ON BATTERY PANEL TO PRESENT HARNESS. ASSEMBLE RED WIRE TO TB501-10, BLACK WIRE TO TB501-9.
3. ASSEMBLE JACK TO 4EP39A10, 12 WITH HARDWARE SUPPLIED WITH JACK.
4. ASSEMBLE V20-BR WIRE ON J10-3 TO TB501-9 AND V20-W WIRE ON J10-1 TO TB501-13.
5. ASSEMBLE C.O.R. KIT WITH HARDWARE SUPPLIED TO POWER SUPPLY AS SHOWN. CONNECT ORANGE WIRE FROM C.O.R. TB2-2 TO TB501-10 AND WHITE-GREEN-ORANGE WIRE FROM C.O.R. TB1-1 TO TB501-19 ON POWER SUPPLY.
6. MARK BELOW MODEL NO."MODF. 19A129012G2."

INSTALLATION INSTRUCTIONS FOR BATTERY HEATER PL19A128152G1

1. ASSEMBLE THERMOSTAT SUPPORT (PL19A122288G1) AND THERMOSTAT SWITCH (19A115687P1) TO 4EP39A11, 12 USING HARDWARE SHOWN.
2. ASSEMBLE HEATER (A4034002P1) USING HARDWARE SUPPLIED WITH HEATER TO BATTERY PANEL AS SHOWN.
3. ASSEMBLE BLACK WIRE (PL19A122209G4) TO HR1-1 AND RED WIRE (PL19A122209G2) TO HR1-2.
4. ASSEMBLE WIRES FROM HR1 AND TB1 INTO WIRE CLAMP AND SPOT TIE TO PRESENT HARNESS.
5. ASSEMBLE BLACK WIRE FROM HR1-1 TO TB501-1 ON 4EP39A11, A12.
6. ASSEMBLE RED WIRE FROM HR1-2 TO S1-1 AND RED WIRE (PL19A122209G3) FROM S1-2 TO TB501-2 ON 4EP39A11, 12

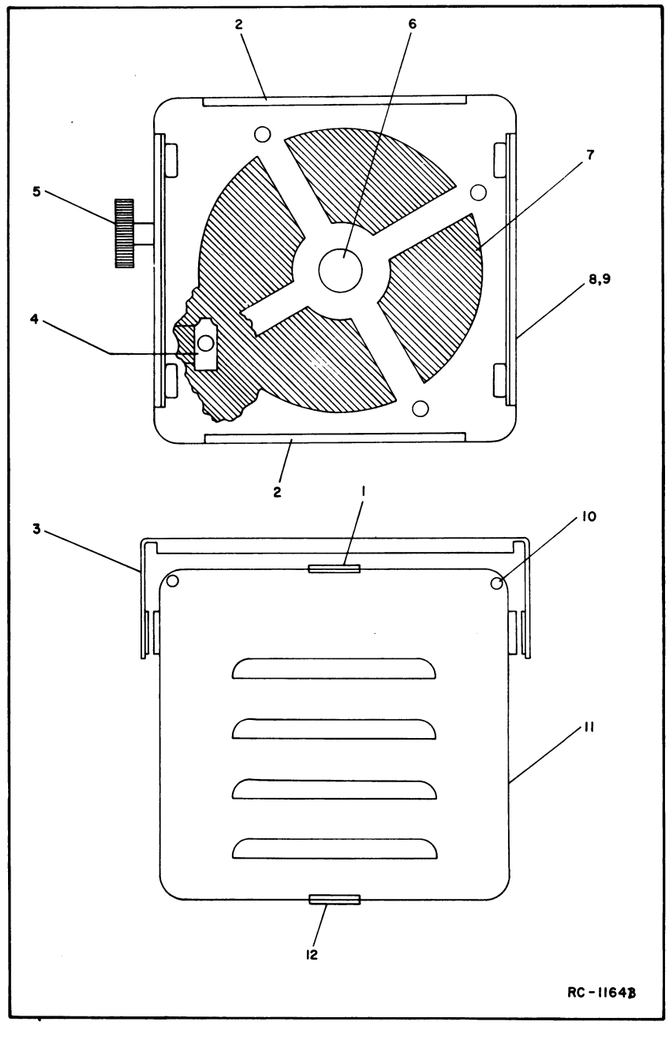
INSTALLATION INSTRUCTIONS TO MODIFY 4EP39A11, A12 POWER SUPPLY FOR CHANNEL GUARD-PL19A129012G3

1. ASSEMBLE JUMPER BETWEEN TB501-16 AND TB 501-7.
2. MARK BELOW MODEL NO. "MODF. 19A129012G3."

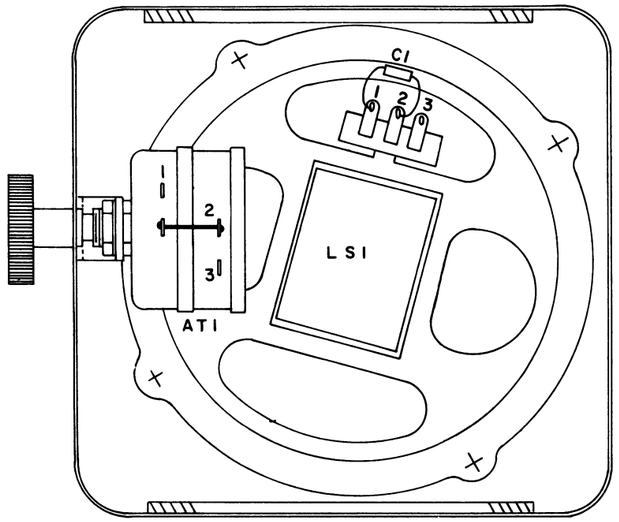
INSTALLATION INSTRUCTIONS TO MODIFY 4EP39A11, 12 POWER SUPPLY FOR FIELD INSTALLED STANDBY BATTERY PL 19A129012G4.

1. REMOVE RED WIRE THAT GOES TO TB3-5 FROM H1 AND SOLDER DIODE CR1 BETWEEN H8 AND TB3-5. (CATHODE END TO TB3-5).
2. SPOT TIE WIRES FROM TB1 ON BATTERY PANEL TO PRESENT HARNESS. ASSEMBLE RED WIRE TO TB501-10, BLACK WIRE TO TB501-9.

POWER SUPPLY MODIFICATION DIAGRAM

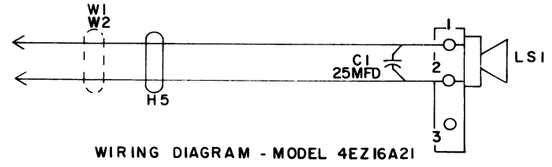


RC-1164B



NOTE: ATTENUATOR (AT1) USED ON MODEL 4EZ16A20 ONLY

RC-1363 B



WIRING DIAGRAM - MODEL 4EZ16A21

(RC-1118C)

PARTS LIST

LBI-4295

FIVE-WATT SPEAKER
MODEL 4EZ16A21 19D402449G14

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - CAPACITORS - - - - - - - - -
C1	19B209233P1	Electrolytic, non-polorized: 25 µf ±20%, 25 VDCW; sim to Sprague 41D.
		- - - - - - - - - LOUDSPEAKERS - - - - - - - - -
LS3	19B209422P1	Permanent magnet: 5 inch, 3.2 ohms ±10% imp, 2.98 ohms ±15% DC res, 7.5 w max operating.
		- - - - - - - - - - CABLES - - - - - - - - - -
W2	7484521G7	Speaker: 2 conductor with 2 spade tongue terminals, approx 4 feet long.
		SPEAKER MODIFICATION KIT 19A129011G1
	7119653P1	Plug, phenolic; sim to PR Mallory 75.
	4034444P3	Bushing, strain relief: sim to George Walker Co. Size No. 3.
		MECHANICAL PARTS (SEE RC-1164)
1	5490407P3	Neoprene grommet.
2	19A121623P1	(Not Used).
3	19A121521G1	Mounting support.
4	7160861P20	(Not Used).
5		(Not Used).
6	19A121467P1	(Not Used).
7	19C303500P1	(Not Used).
8		(Not Used).
9	19B216269G2	Can. (Used in Model 4EZ16A21).
10	4037072P10	(Not Used).
11	19A121550G3	Speaker cover.
12	19A115470P1	Rubber grommet: approx 3/4 inch dia; sim to Atlantic Rubber 2279 (without hole).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

PARTS LIST

LBI-4297

DESK-MATE CABINET
7354211G4

SYMBOL	GE PART NO.	DESCRIPTION
	7354211P8	Door: (fits either side).
	4035449P5	Bumper, door: rubber, sim to Atlantic India Rubber 1165.
	5491682P13	Lock and Key: sim to Yale and Towne F7678DX1.
		Key: Yale and Towne BF-10A.
	N529P38C	Plug. (for cable Knockouts at bottom of assembly).
	7354211P7	Mounting rack. (2 drilled angles).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PARTS LIST

LBI-4296

POLE MOUNT STATION CABINET
7132483G6

SYMBOL	GE PART NO.	DESCRIPTION
	7353495P5	Door Assembly: Weather seal: rubber, Manhatten Division of Raybestos Manhatten Inc.; Passiac, N.J. 1/2 " OD x 1/4" ID x 9'7". A12A2A.
	7769652G1	Hinge Assembly: (for swing out mounting bracket).
		Hinge, door: Stanley, cat No. 195 with leaves assembled reversed, no swage, without mounting holes. (give all above information when re-ordering).
		Pull-Latch: Corbin Cab Lock Co. No. 015642SD.
	7769631G1	Mounting bracket: (mounts on swing away hinge assembly).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PARTS LIST

LBI-4298

FLOOR MOUNT CABINET
7668242G14

SYMBOL	GE PART NO.	DESCRIPTION
	5495571G6	Front door. (Handle not included).
	7488490P4	Door handle, front: Includes Yale and Towne BF-10 Key.
	5495592G1	Rear door. (Lock not included).
	5491682P19	Lock and Key assembly, rear door: sim to Yale and Towne F6757KA. Includes (2) Yale and Towne BF-10A Keys.
	4031566P1	Rear door grille.
	5492222G1	Meter panel frame.
	7774537P1	Mounting rail.
	5493646G1	Instruction book holder.
		Ground lug. Ilsco SLU-70.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PARTS LIST

LBI-4299

WALL MOUNT CABINET
19D402658G1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - JACKS AND RECEPTACLES - - - - -
J501	19B209343P1	Receptacle, power: 15 amps at 125 v; sim to GE 7503-1.
		- - - - - - - - MISCELLANEOUS - - - - - - - -
	19D402644P4	Door.
	5491682P14	Lock Assembly: sim to Yale and Towne DF76288UX1. Includes Yale and Towne BF-10A Key.
	19A122184P1	Grille.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PARTS LIST

LBI-4312A

STANDBY BATTERY PANEL 19C317775G1
AND
HEATER ASSEMBLY 19A128152G1

SYMBOL	GE PART NO.	DESCRIPTION
		STANDBY BATTERY PANEL 19C317775G1
		- - - - - - - - - - BATTERIES - - - - - - - - - -
BT1	19A116574P1	Lead-Acid: 4.5 amp-Hr., 12 VDC; sim to Globe GC1245-1.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P1 and P2	4029484P1	Contact, electrical: sim to Amp 41772.
P3*	4029484P1	Contact, electrical: sim to Amp 41772. Deleted by REV A.
		- - - - - - - - - TRANSISTORS - - - - - - - -
Q1*	19A115123P1	Silicon, NPN; sim to Type 2N2712. Deleted by REV A.
		- - - - - - - - - - RESISTORS - - - - - - - -
R1	19B209022P115	Wirewound: 1.0 ohms ±10%, 2 w; sim to IRC Type BWH.
		- - - - - - - - TERMINAL BOARDS - - - - - - - -
TB1	7775500P3	Phen: 4 terminals.
		HEATER ASSEMBLY 19A128152G1
		- - - - - - - - - - HEATERS - - - - - - - - - -
HR1	4034002P1	Heater: 150 nominal watts, at 120 VAC; sim to G.E. 2A807A102.
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S1	19A115687P1	Thermostatic: contacts close at approx 3°F ±6°F and open at approx 18°F ±5°F; sim to Stevens Mfg Co. A-920.
		- - - - - - - - MISCELLANEOUS - - - - - - - - -
	4029851P4	Cable, clip: nylon.
	19A122288G1	Support. (Used with S1).
	7142162P121	Spacer: .6 inch long with 10-32 tap. (Used with HR1).
	N80P16005C13	Screw: 10-32 x 5/16. (Used with HR1).
	N403P16C13	Lockwasher: No. 10. (Used with HR1).
	N80P13005C13	Screw: 6-32 x 5/16. (Used with S1).
	N404P13C13	Lockwasher: No. 6. (Used with S1).
	7141225P3	Hex nut: No. 6-32. (Used with S1).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

PARTS LIST

HEATER
MODEL 4KZ3A1

SYMBOL	GE PART NO.	DESCRIPTION
HR901		Heater Strip: sim to General Electric 51-344.
S901		Thermo-switch: adjusted to +5°F, sim to Fenwall Inc. A-7300.

PRODUCTION CHANGES

Changes in the equipment to improve performance or to simplify circuits are identified by a ''Revision Letter'', which is stamped after the number of the assembly. The revision stamped on the assembly includes all previous revisions. Refer to the Parts List for descriptions of parts affected by these revisions.

REV. A - Battery Panel 19C317775G1 To prevent transistor failure. Deleted Q1 and P3

ORDERING SERVICE PARTS

Each component appearing on the schematic diagram is identified by a symbol number, to simplify locating it in the parts list. Each component is listed by symbol number followed by description and GE Part Number.

Service parts may be obtained from authorized GE Communication Equipment Service Stations or through any GE Radio Communication Equipment Sales Office. When ordering a part, be sure to give:

1. GE Part Number for component
2. Description of part
3. Model number of equipment
4. Revision letter stamped on unit.

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance.

Should further information be desired, or should particular problems arise which are not covered sufficiently for the purchaser's purposes, contact the nearest Radio Communication Equipment Sales Office of the General Electric Company.

MAINTENANCE MANUAL

LBI-4293

MOBILE RADIO DEPARTMENT
GENERAL ELECTRIC COMPANY • LYNCHBURG, VIRGINIA 24502

GENERAL ELECTRIC

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