MOBILE RADIO

LBI30776D
(DF9043)

DESCRIPTION AND MAINTENANCE

MASTR® II HIGH POWER STATION COMBINATIONS

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GENERAL ELECTRIC

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.

Hi-level RF energy in the transmitter Power Amplifier assembly can cause RF burns. KEEP AWAY FROM THESE CIRCUITS WHEN THE TRANSMITTER IS ENERGIZED!

COMBINATION NOMENCLATURE

1st Digit	2nd Digit	3rd Digit	4th Digit	5th Digit	6th Digit	7th Digit	8th & 9th Digits	10th Digit
Mechanical Package	Duty Cycle	Power Output	Channel Spacing	Control	Number of Freq.	Options	Frequency Range MHz	Oscillator Stability
V Floor Mount Cabinet	**C** Continuous Duty	**8** 128-256 Watts	**4** 20 kHz	**E** Extended Local	**A** 1 TX 1 RX	**D*** Duplex	**12** 25 - 30 MHz	**A** ±5 PPM
		9 256-UP Watts	**5** 25 kHz	**J** Local/ Tone Remote	**B** 2 TX 1 RX	**G** CG & UHS	**13** 30 - 36 MHz	**B** ±2 PPM
			6 30 kHz	**K** Local DC Remote	**C** 2 TX 2 RX	**L**** CG & Duplex	**23** 36 - 42 MHz	
				N Local/ Repeat	**D** 1 TX 2 RX	**N** Noise Blanker	**33** 42 - 50 MHz	
				R DC Remote	**E** 3 TX 3 RX	**P** UHS	**56** 138 - 150.8 MHz	
				T Tone Remote	**F** 4 TX 4 RX	**S** Standard	**66** 150.8 - 174 MHz	
				U DC Remote Repeat	**R** 3 TX 1 RX	**U** Channel Guard	**77** 406-420 MHz	
				V Tone Remote/ Repeat	**S** 4 TX 1 RX	**W** CG & NB	**78** 420-450 MHz	
				Y Repeat			**88** 450-470 MHz	
							89 470-494 MHz	
							91 494-512 MHz	

* D & L Combinations are PTT with separate receiver antenna cables.

** L Station Combination have simultaneous Encode/Decode Channel Guard.

SPECIFICATIONS

EIA DIMENSIONS (H X W X D)	69" X 23" X 25.5"
WEIGHT	403 lbs.
INPUT VOLTAGE	117/220 VAC, 60 Hertz Only (50 Hertz Optional); 220 VAC with optional step-down transformer.

	AC INPUT POWER		
RF OUTPUT POWER	TRANSMIT	RECEIVE	STANDBY
LOW BAND			
250 Watts	870 Watts	200 Watts	176 Watts
300 Watts	960 Watts	200 Watts	176 Watts
HIGH BAND			
250 Watts	725 Watts	200 Watts	176 Watts
300 Watts	810 Watts	200 Watts	176 Watts
UHF BAND			
200 Watts	1000 Watts	200 Watts	176 Watts

TEMPERATURE RANGE	$-30^{o}C$ to $+60^{o}C$ ($-22^{o}F$ to $+140^{o}F$) A cabinet blower is required for continuous duty operation above $40^{o}C$ ambient.

FCC FILING NUMBERS

MODEL SERIES	DUTY CYCLE (EIA)	POWER OUTPUT (Internally Adjustable)	FREQUENCY	FCC FILING NUMBER	
				5 ppm Freq. Stab.	2 ppm Freq. Stab.
VC94___	Continuous	150-300 W	25-50 MHz	KT-39-A	KT-39-A
VC96___	Continuous	250-300 W	138-174 MHz	KT-79-A	KT-79-A
VC86___	Continuous	200-250 W	150.8-174 MHz	KT-78-J*	KT-78-J*
VC96___	Continuous	250-300 W	150.8-174 MHz	KT-79-J*	KT-79-J*
VC85___	Continuous	100-200 W	406-512 MHz		KT-88-C

NOTE: FCC Type Acceptance not relevant to equipment operating in 406 to 420 MHz frequency range.

* Phase-Lock-Loop Exciter

DESCRIPTION

The General Electric MASTR® II High Power Radio Combinations are designed for either DC or tone remote control, extended local control or repeater operation. A typical rack-up of the equipment in the high power station is shown in Figure 1 and 2. The station receiver is mounted in a shielded enclosure on the radio panel front door, along with a receiver system board which accommodates Channel Guard and other option boards. Jacks are provided on the system board for plug-in interface with the options and control functions. The transmitter exciter is located in a separate shielded compartment on the radio panel front door. See Figure 3.

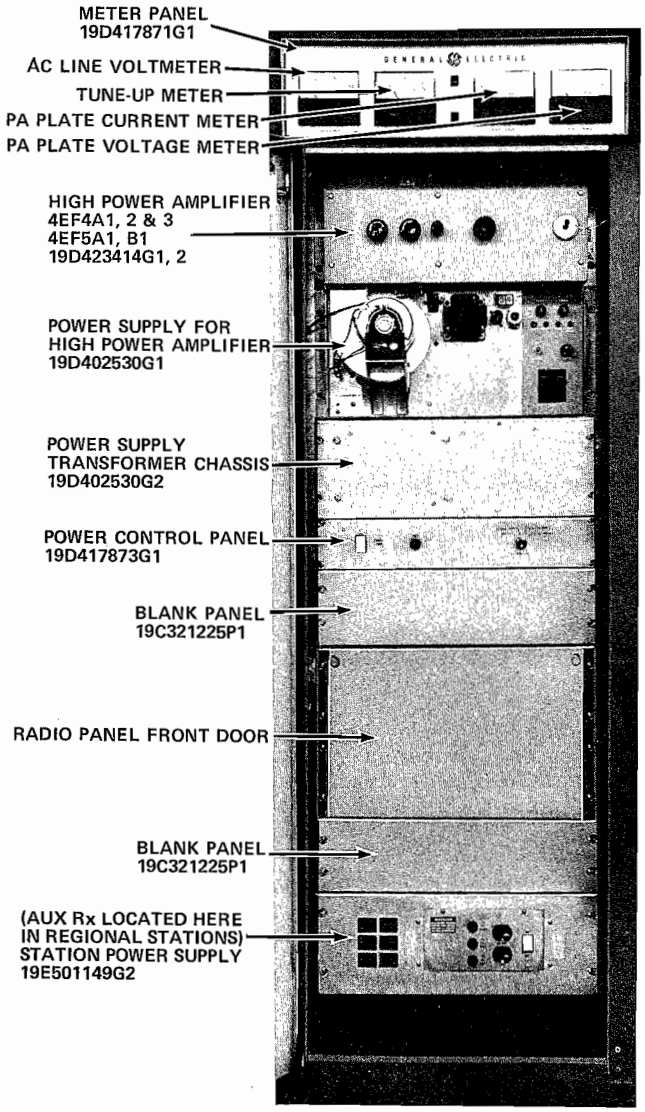

Figure 1 - Front View of Station with Door removed.

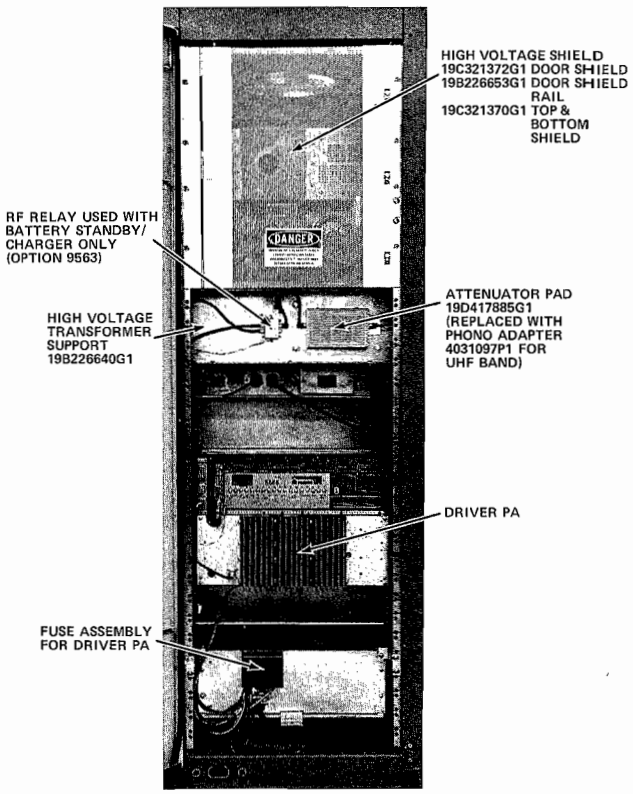

Figure 2 - Rear View of Station with Door removed.

The transmitter Driver power amplifier hinges from the bottom of the radio housing. The Driver PA assembly consists of a frame mounted to a heat sink. A cover snaps over the frame to form an RF-tight enclosure for the Driver PA board assembly.

The RF High Power Amplifier mounts at the top of the rack under the meter panel. A blower is used to cool the PA tubes in the Power Amplifier and is mounted on the front of the PA Power Supply.

Directly above the Driver PA assembly is the station control shelf. A mother board is mounted to this shelf which accomodates the 10-Volt Regulator/Control and DC or Tone Control Modules. The 10-Volt Regulator/Control Module supplies the regulated 10 Volts DC for station operation. The module contains the transmit/receive switching controls and a station microphone preamplifier. Front panel controls include the REM PTT and INTERCOM switches along with the TX LIGHT Light Emitting Diode (LED). External control connections are made to TB1201, located on the back of the mother board. See Figure 4.

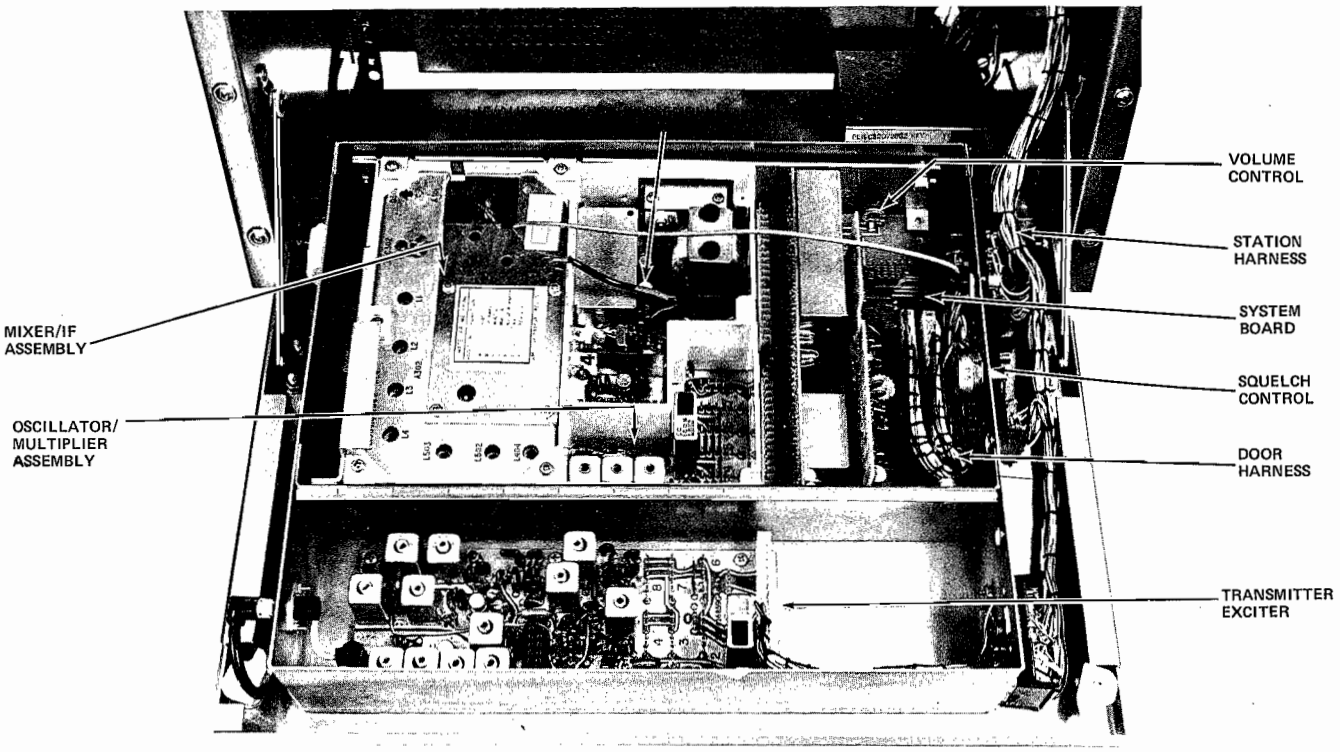

Figure 3 - Radio Panel Front Door

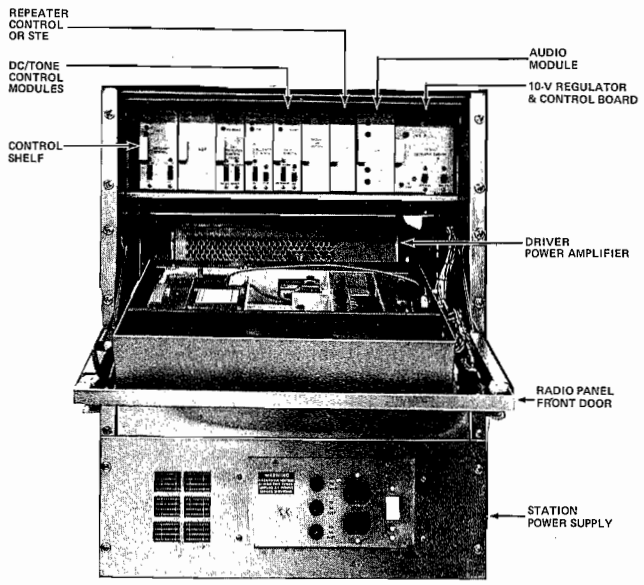

Figure 4 - Station Assemblies

For ease of servicing the station contains centralized metering. A meter panel at the top of the station operates in conjunction with the Meter Function switch on the Power Panel and the transmit and Receive switches inside the Radio Panel Front Door.

The station power supply and the PA Power supply are connected through the Power Panel to a 117 VAC power source. The station power supply contains a power switch, primary and secondary fuses and two AC outlets located on the front panel. A high current fuse is located on the back panel for the Driver PA. The station power supply provides input voltage for the station Receiver, Control, Exciter and PA Driver.

The PA Power Supply provides the filament, grid, antenna relay and High Voltage for the RF Power Amplifiers. The power supply consists of a main chassis and a transformer chassis, mounted separately in the station cabinet.

NOTE

Converting the High Power Station from 117 VAC power input to 220 VAC input requires a special stepdown transformer (Option 9578). This transformer has taps for 205 and 235 VAC operation. The modification for 220 VAC operation outlined in the low Power Supply Maintenance manual should not be performed in High-Power station applications.

INITIAL ADJUSTMENT

After the MASTR II High Power Station has been installed, the transmitter and receiver must be adjusted by an electronics technician who holds a First or Second Class FCC Radiotelephone or Radiotelegraph license before the station can be placed in operation.

Make sure that a RADIO TRANSMITTER IDENTIFICATION Form (FCC FORM 452-C or General Electric Form NP270303) has been filled out and attached to the transmitter.

TRANSMITTER ADJUSTMENT

The adjustment for the transmitter includes measuring the forward and reflected power and adjusting the antenna length for optimum ratio, then setting the transmitter to rated power output (or to the specific power output which may be required by the FCC station authorization). Next, measuring the frequency and modulation and centering these measurements on the FCC-required station records.

For the complete transmitter adjustment, refer to the ALIGNMENT PROCEDURE in the MAINTENANCE MANUAL for the transmitter.

Local Control Modulation Adjustment

1. Set the MIC GAIN control R14 on the 10-Volt Regulator/Control Board to its fully clockwise position.
2. Apply a 1000 Hertz, 30 millivolt RMS signal across B1 and B2 of the 10-Volt Regulator/Control Board. Connect a 0.5 microfarad (or larger) DC blocking capacitor in series with the MIC HI lead (B1).
3. Set MOD ADJUST control R127 on the transmitter exciter for a 4.5 kHz deviation as indicated on a frequency modulation monitor.
4. While talking in a normal voice at the station microphone, adjust MIC GAIN Control R14 for a deviation of 3 kHz as measured on the deviation monitor.

Repeater Control Modulation Adjustment

1. Apply a 1000 microvolt on-frequency signal modulated with 1000 Hz tone at ±3 kHz deviation to the station receiver.
2. Adjust the TX MOD control R14 on the Repeater Audio Board to its maximum clockwise position.
3. Set the MOD ADJUST control R127 on the transmitter exciter for a 4.5 kHz deviation as indicated on a frequency modulation monitor.
4. Adjust TX MOD control R14 on the Repeater Audio Board for a 3.0 kHz deviation as indicated on the deviation monitor.
5. While talking in a normal voice at the station microphone, adjust MIC GAIN control R14 on the 10-Volt Regulator Board for a deviation of 4.5 kHz as measured on the deviation monitor.

RECEIVER ADJUSTMENT

The initial adjustment for the receiver includes tuning the input circuit to match the antenna. Refer to the FRONT END ALIGNMENT PROCEDURE in the MAINTENANCE MANUAL for the receiver.

To set the station VOLUME control (R3 on the System Board) use the following procedure:

1. Apply a 1000 microvolt on-frequency test signal modulated by 1,000 Hertz with ±3 kHz deviation to the receiver antenna jack J937.
2. Turn service speaker switch (S1) to desired RCVR position.
3. Connect an AC VTVM across J905 terminals 1 & 2 and adjust R3 for a reading of 6.3 Volts RMS on the meter.

CAUTION

Adjustment of VOLUME control to settings higher than instructed in the INITIAL ADJUSTMENT will result in blowing the station service speaker fuse or damage to the Local Controller Speaker.

4. Set VOLUME switch S2 on the Service Speaker to the desired listening level.

To set the station SQUELCH control (R901 on the Receiver/Exciter door) use the following procedure:

1. Turn the SQUELCH control clockwise (to the right) as far as possible.
2. Turn the SQUELCH control counterclockwise (to the left) until the noise just disappears, then advance control another 20 degrees.

REMOTE CONTROL ADJUSTMENTS

The transmitter modulation gain, the remote audio input and line output must be adjusted before placing the station in operation. Refer to the MASTR II DC Remote Control MAINTENANCE MANUAL or the Tone Remote Control MAINTENANCE MANUAL for these adjustments.

REPEATER CONTROL ADJUSTMENT

The repeater drop-out delay timing and 3-minute limit timing must be adjusted before placing the station in operation. Refer to the MASTR II Repeater Station Control Shelf MAINTENANCE MANUAL for these adjustments.

MAINTENANCE

To insure high operating efficiency and to prevent mechanical and electrical failures from interrupting system operations, routine checks should be made of all mechanical and electrical parts at regular intervals. This preventive maintenance should include the checks as listed in the table of Maintenance Checks.

Test and Troubleshooting Procedures

The individual Maintenance Manual for the transmitter and receiver describe standard test procedures which the serviceman can use to compare the actual performance of the transmitter or receiver against the specifications of the unit when shipped from the factory. In addition, specific troubleshooting procedures are available to assist the serviceman in troubleshooting the transmitter and receiver.

REMOVING IC'S (and all other soldered-in components) can be easily accomplished by using a de-soldering tool such as a SOLDA-PULLT® or equivalent. To remove an IC, heat each lead separately on the solder side and remove the old solder with the de-soldering tool.

An alternate method is to use a special soldering tip that heats all of the pins simultaneously.

MAINTENANCE CHECK	INTERVAL BETWEEN CHECKS	
	Every 6 Months	As Required
Transmitter Alignment - Compare meter readings at transmitter multiplier metering jacks with voltages read during initial tune up. Touch up multiplier tuning. Check power output. (See Alignment Procedure for Transmitter).		X
Receiver - While receiving an unmodulated signal on the station frequency(s), adjust OSC-1 trimmer for each operating frequency for a zero discriminator reading. (See the Receiver Alignment Procedure MAINTENANCE Section).		X
Transmission Line - Check for positive indication of pressure on transmission line pressure gauge (if pressurized line is used).	X	
Antenna - Check antenna & mast for mechanical stability.	X	
Mechanical Inspection - Visually check cables, plugs, sockets, terminal boards & components for good electrical connections. Check for tightness of nuts, bolts & screws to make sure that nothing is working loose from its mounting.	X	
Cleaning - Use a vacuum cleaner to remove dust which has accumulated inside the cabinet.	X	
Frequency Check - Check transmitter frequency & deviation as required by FCC.		X

SYSTEM DESCRIPTION

Receiver

The station receiver consists of an oscillator/multiplier assembly (OSC/MULT), RF Assembly, Mixer/IF Assembly (MIF) and IF-Audio-Squelch Assembly (IFAS). In receivers with noise blankers, the noise blanker circuit replaces the standard MIF board. Refer to the Receiver MAINTENANCE MANUAL for a complete description of the station receiver.

Transmitter

The station transmitter consists of three separate assemblies, the exciter board assembly, the PA driver assembly, and the High Power PA assembly. The transmitter exciter is located in the Radio Panel Front Door. The driver PA assembly is located at the rear of the cabinet behind the Radio Panel Front Door. The High Power PA assembly is located in front of the cabinet at the top, below the Meter Panel. Refer to the High Power PA and the PA Driver MAINTENANCE MANUALS for complete description of the station transmitters.

System Board A901

The station System Board is located on the Radio Panel Front Door and the receiver modules plug directly into the board. Along the edge of the System Board are two connectors which interconnect with the Remote Control Shelf and Power Supply. Plug-in Channel Guard and Carrier Control Timer option jacks are provided. A metering jack is provided for accommodating the General Electric Model 4EX3A11 Test Set. VOLUME Control R3 is located on the System Board. SQUELCH Control R901 is located on the Radio Panel Front Door.

A jumper is normally present between J933-4 and J933-8 in single-frequency transmit stations. A jumper is also present between H47 and H48 on A901 in single-frequency receive stations. In multiple-frequency receive stations, selecting a particular receive frequency at the remote control unit applies a ground to the particular pin at J931 corresponding to the frequency selected. The ground is then connected via the System Board printed wiring to the receiver OSC/MULT to select the desired oscillator.

VOLUME/SQUELCH from the receiver Audio Pre-Amp is connected via J904-12 to the VOLUME (R3) and SQUELCH (R901) controls. The VOLUME arm is returned to the receiver IFAS board where the audio is amplified by the receiver audio power amplifier circuit. The audio output of the PA is then connected to the speaker leads at J904-18 & 19. The station VOLUME control (R3) is normally adjusted for 1 Watt output and the station speaker level is controlled by the service speaker VOLUME control.

DC Remote Control

In DC Remote Control systems, the control modules on the control shelf utilize DC currents selectively applied to a telephone pair at a remote control console. These DC currents activate circuits in the control modules to perform the desired functions. Refer to the MASTR II DC Remote Station Control Shelf MAINTENANCE MANUAL for a complete description of this system.

Tone Remote Control

A maximum of twelve different functions can be performed in the Tone Remote Control system. This is accomplished by applying two or three tones in sequence at the prescribed level to the transmission medium at a remote control console for detection at the control modules on the control shelf. Refer to the MASTR II Tone Remote Station Control Shelf MAINTENANCE MANUAL for a complete description of this system.

Channel Guard

In stations equipped with Channel Guard, Channel Guard Board 19D417261G1 is plugged into the System Board at P908 and P909. Each MASTR II receiver is equipped with a tone reject filter to prevent the CG tone from being heard in the speaker. In addition, all transmitters have a Channel Guard Modulation control to adjust for proper deviation.

Channel Guard is a continuous-tone controlled squelch system that provides communications control in accordance with EIA standard RS-220. The system utilizes standard tone frequencies from 71.9 to 203.5 Hertz with both the encoder and decoder operating on the same frequency. The STE circuit (Squelch Tail Eliminator) employs a phase shift of approximately 180° in the encode function to eliminate undesirable noise bursts after each transmission.

The decoder operates in conjunction with the receiver to inhibit all calls that are not tone coded with the proper Channel Guard tone frequency. The VOLUME/SQUELCH output of the receiver is applied to the Channel Guard decoder at P908-1. As long as no signal is received properly coded with the CG tone, a ground is supplied through P908-5 to mute the receiver. When a properly coded signal is received, the receiver unsquelches and the desired signal is heard. In duplex combinations, a separate encoder is used in the exciter and a separate decoder is used in the receiver.

A Channel Guard Filter (19C320627G1) is used in the Remote Audio Board to attenuate frequencies below 203.5 Hertz to

prevent the Channel Guard tone from being applied to the remote audio pair.

In duplex combinations (7th Digit L) a separate Channel Guard Encoder board (19C321162G1) is located in the exciter compartment. This allows simultaneous Encode and Decode function.

A Repeater will not key in Channel Guard systems unless the received signal is coded with the proper Channel Guard tone. The CG MONITOR function when selected at the Local Controller in Local/Repeater stations will not allow the Repeater to key on an uncoded signal but will allow the operator to hear all channel activity.

Meter Panel

The Meter Panel is mounted at the top of the cabinet and contains four meters and two indicator lamps. The function of the four meters are; AC Line Voltmeter, Tune-up Meter, PA Plate Current Meter and PA Plate Voltage Meter. The meter panel is operated in conjunction with the Tune-up meter switch on the Power Panel to meter all the necessary Tune-up functions of the station. The green indicator lamp glows when the station is turned on. The red indicator lamp glows when the station transmitter is keyed.

Power Control Panel

The Power Control Panel mounts above the Radio Panel Front Door and contains two switches, a fuse and an AC outlet. S1 is the cabinet power switch that supplies power to the AC outlet J1 through the main 15 amp fuse F1. The power cords for the station Power Supply and the High Power PA Power Supply plug into J1. S2 is the Tune-up Function switch for the Meter Panel.

Attenuator Pad

The 19D417885G1 RF attenuator pad mounts on the back of the transformer chassis and provides 3.5 dB attenuation between the Driver PA and the High Power PA. The Attenuator pad is used in Low and High Band stations.

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

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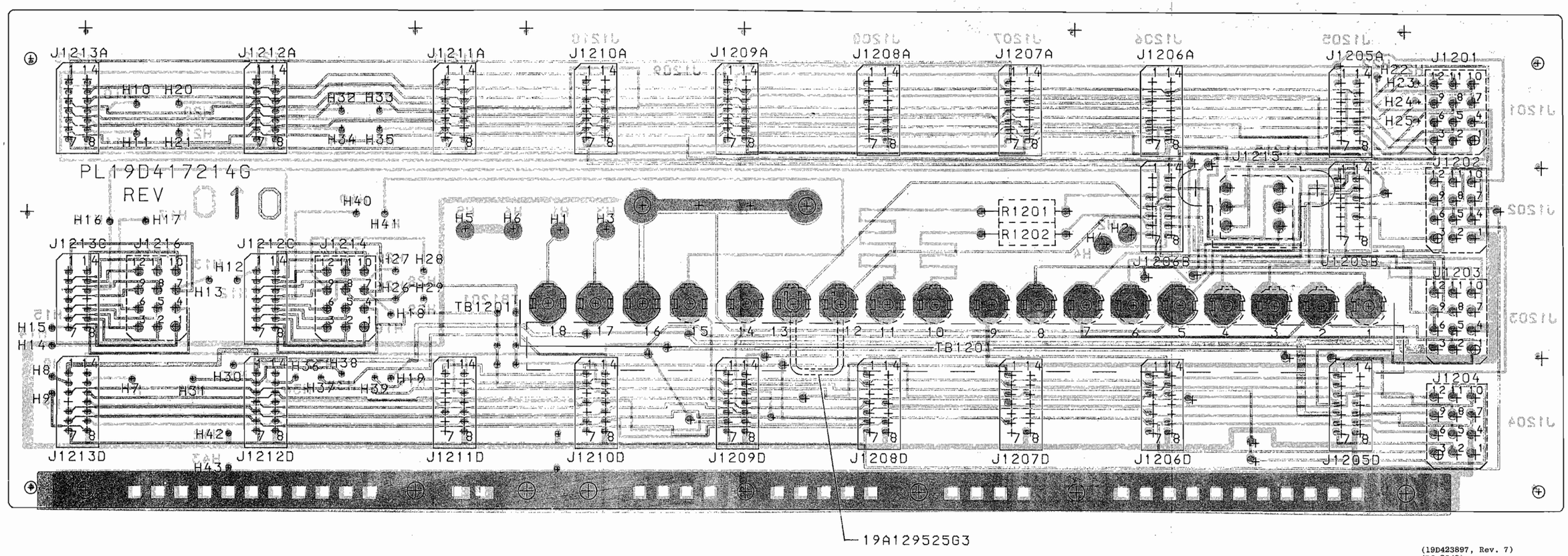
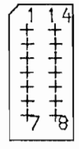
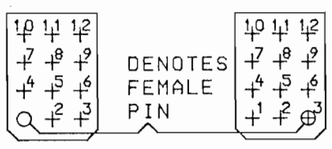


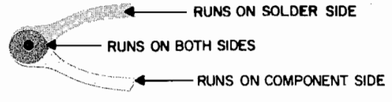
(19D423897, Rev. 7)
(RC-2943)
(19D423597, Sh. 1, Rev. 10)
(19D423597, Sh. 2, Rev. 10)



TYP. MOUNTING
FOR J1205-J1213



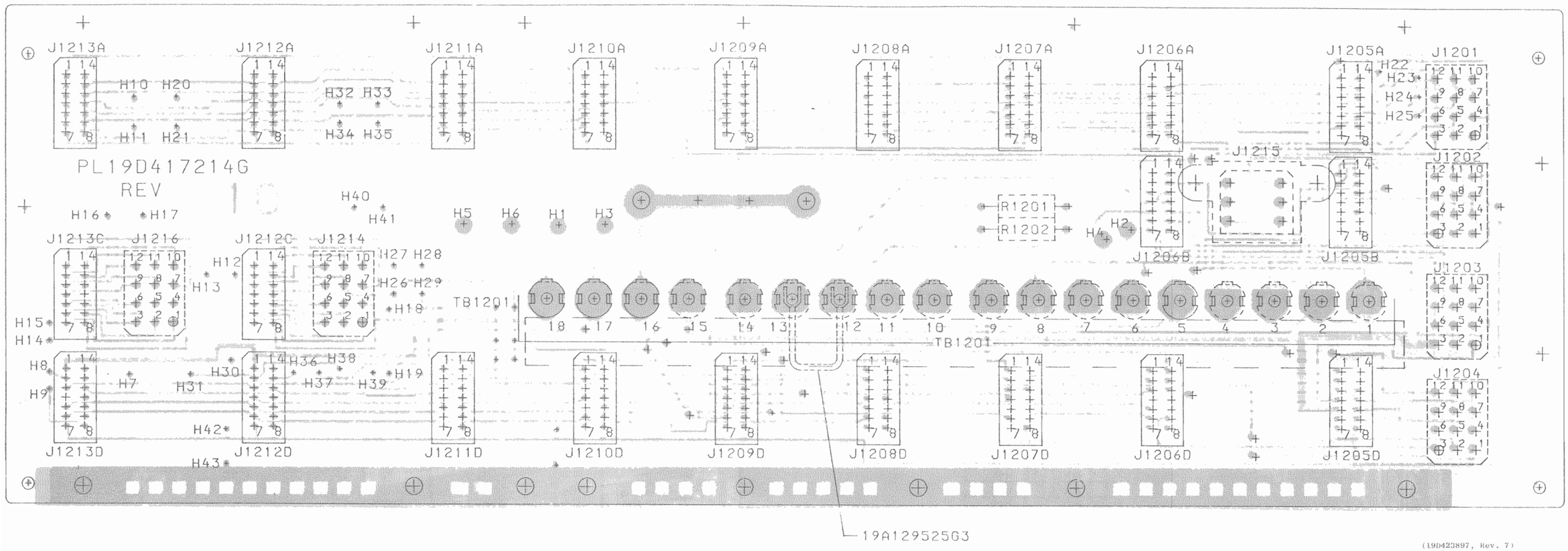
TYP. MOUNTING
FOR J1202&1204
FARSIDE VIEW



OUTLINE DIAGRAM

CONTROL SHELF MOTHER BOARDS
19D417214G1 and G2

Issue 3



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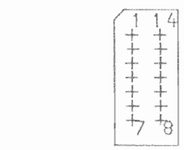
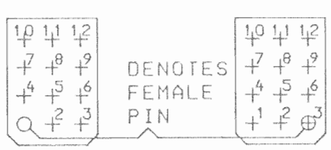
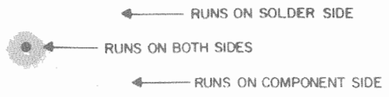
(19D423597, Sh. 1, Rev. 10)
(19D423597, Sh. 2, Rev. 10)



TYP. MOUNTING
FOR J1205-J1213



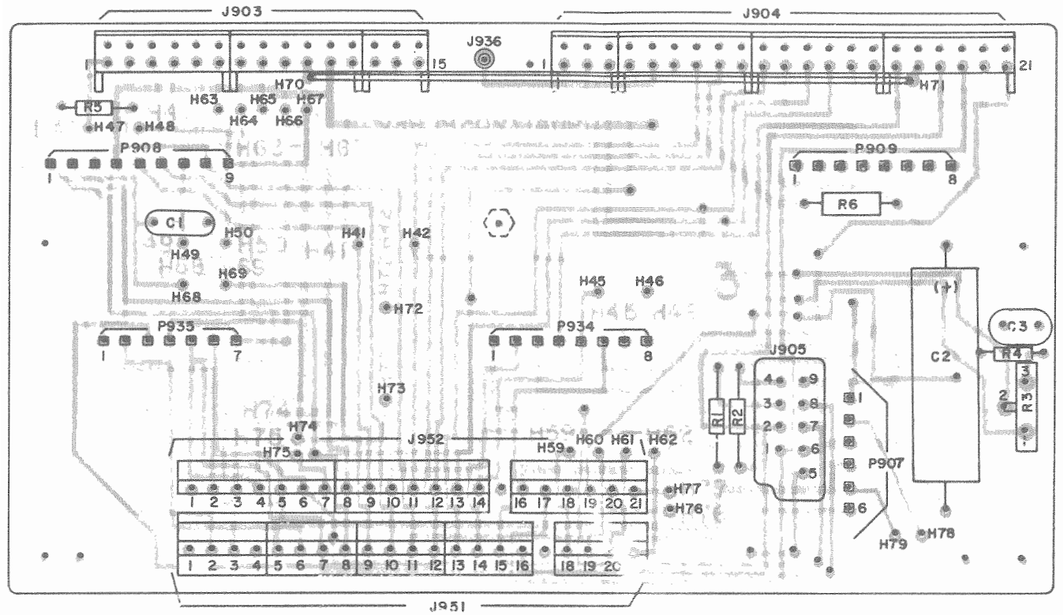
TYP. MOUNTING
FOR J1202&1204
FARSIDE VIEW



OUTLINE DIAGRAM

CONTROL SHELF MOTHER BOARDS
19D417214G1 and G2

SYSTEM BOARD A901

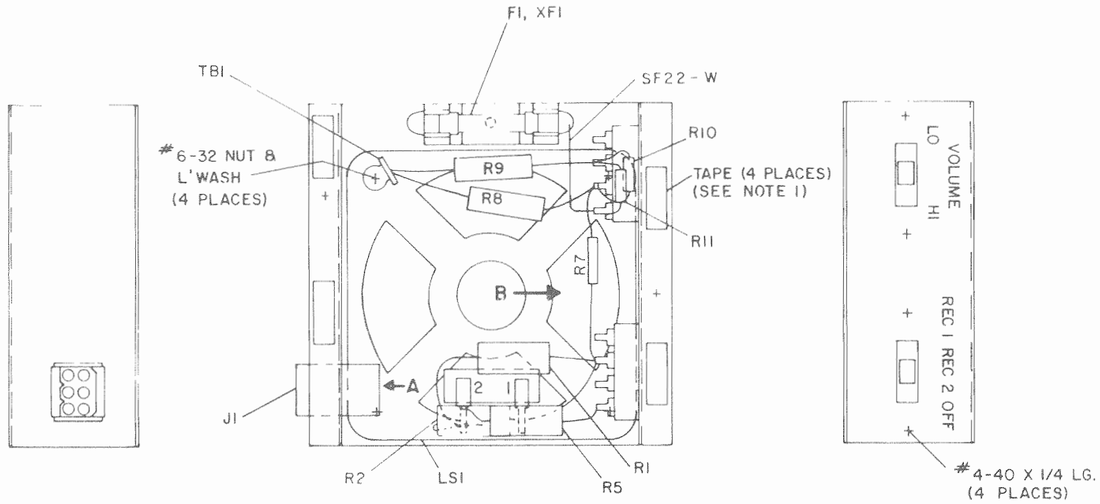


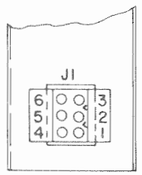
(19D417205, Sh. 2, Rev. 3)
(19D417205, Sh. 3, Rev. 3)

REFER TO WIRING DIAGRAM FOR THE FOLLOWING CONNECTIONS	
FROM	TO
H41	H42
H50	H77
H45	H46
H47	H48
H68	H69
H49	H76

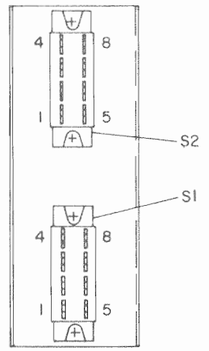
RUNS ON SOLDER SIDE
RUNS ON BOTH SIDES
RUNS ON COMPONENT SIDE

(19D423147, Rev. 2)





VIEW A



VIEW B

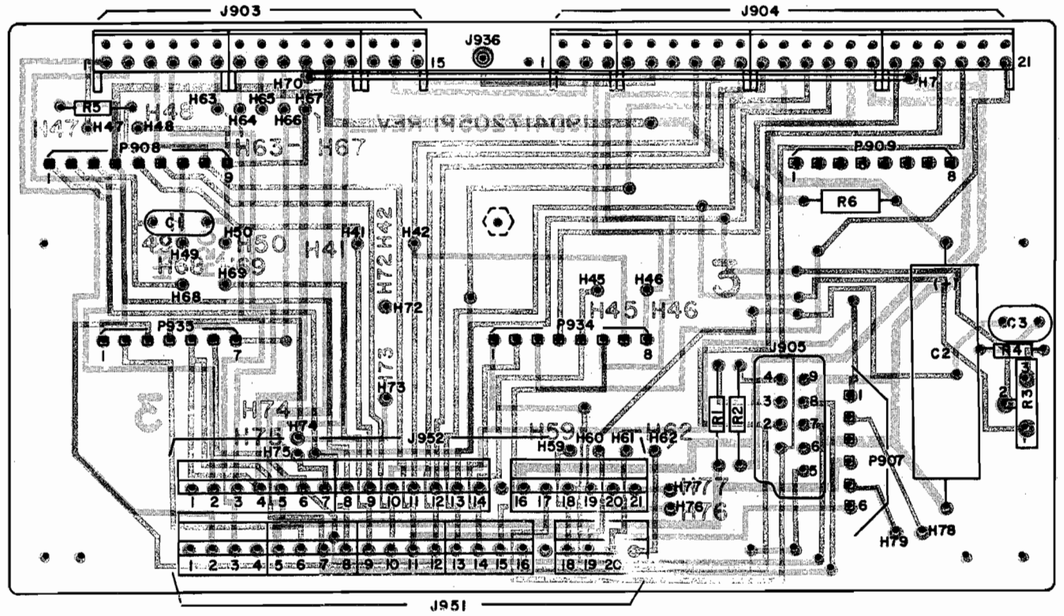
NOTES
1. INSTALL TAPE ALONG FLANGE, ONE ON EACH SIDE OF MOUNTING HOLES.

(19C328482, Rev. 3)

OUTLINE DIAGRAMS

SYSTEM BOARD A901 AND
SERVICE SPEAKER 19C320782G2

SYSTEM BOARD A901

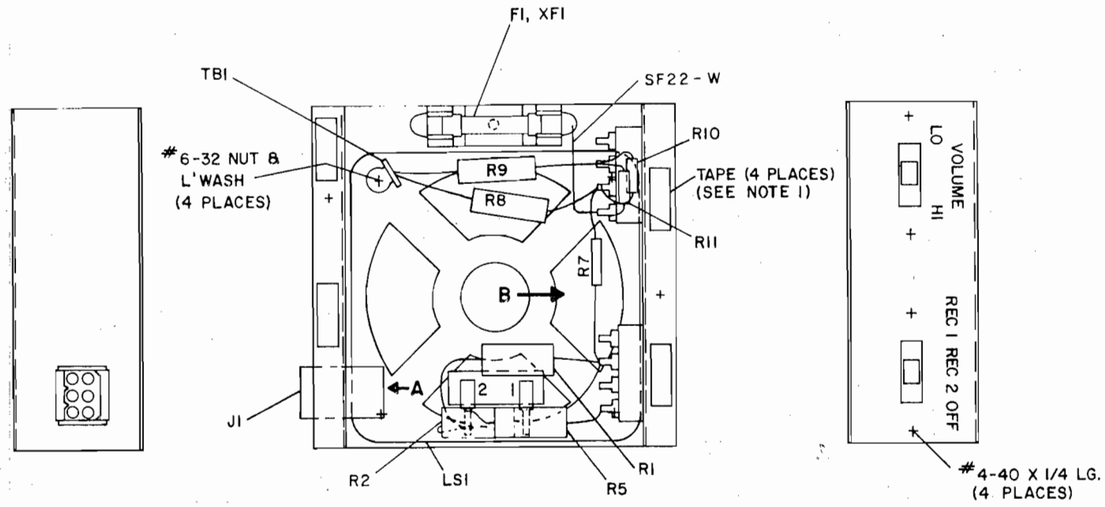


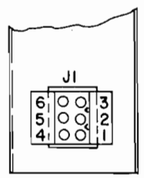
(19D417205, Sh. 2, Rev. 3)
(19D417205, Sh. 3, Rev. 3)

REFER TO WIRING DIAGRAM FOR THE FOLLOWING CONNECTIONS	
FROM	TO
H41	H42
H50	H77
H45	H46
H47	H48
H68	H69
H49	H76

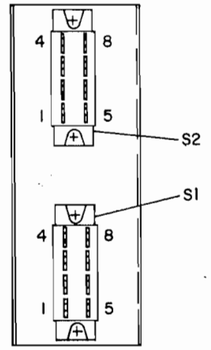
RUNS ON SOLDER SIDE
RUNS ON BOTH SIDES
RUNS ON COMPONENT SIDE

(19D423147, Rev. 2)





VIEW A



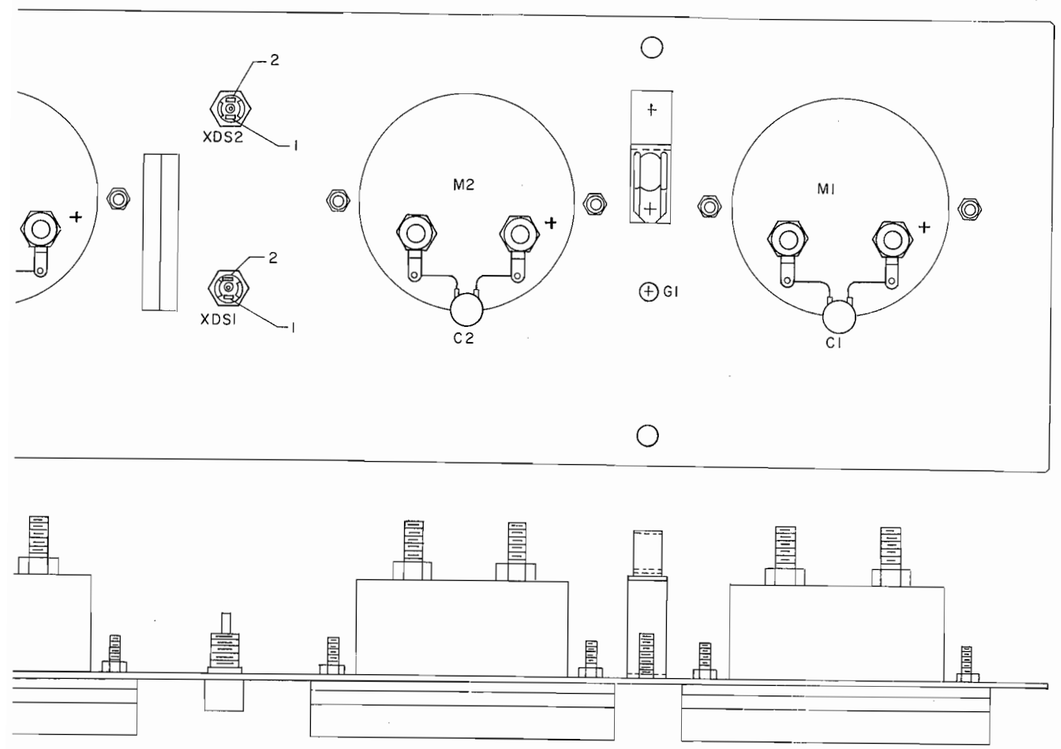
VIEW B

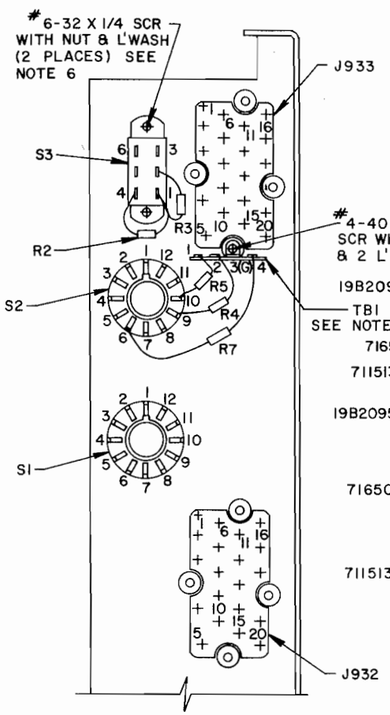
NOTES:
1. INSTALL TAPE ALONG FLANGE, ONE ON EACH SIDE OF MOUNTING HOLES.

(19C328482, Rev. 3)

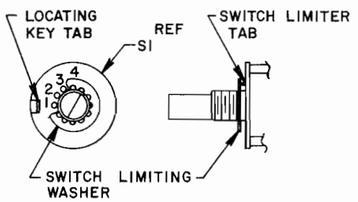
OUTLINE DIAGRAMS

SYSTEM BOARD A901 AND
SERVICE SPEAKER 19C320782G2

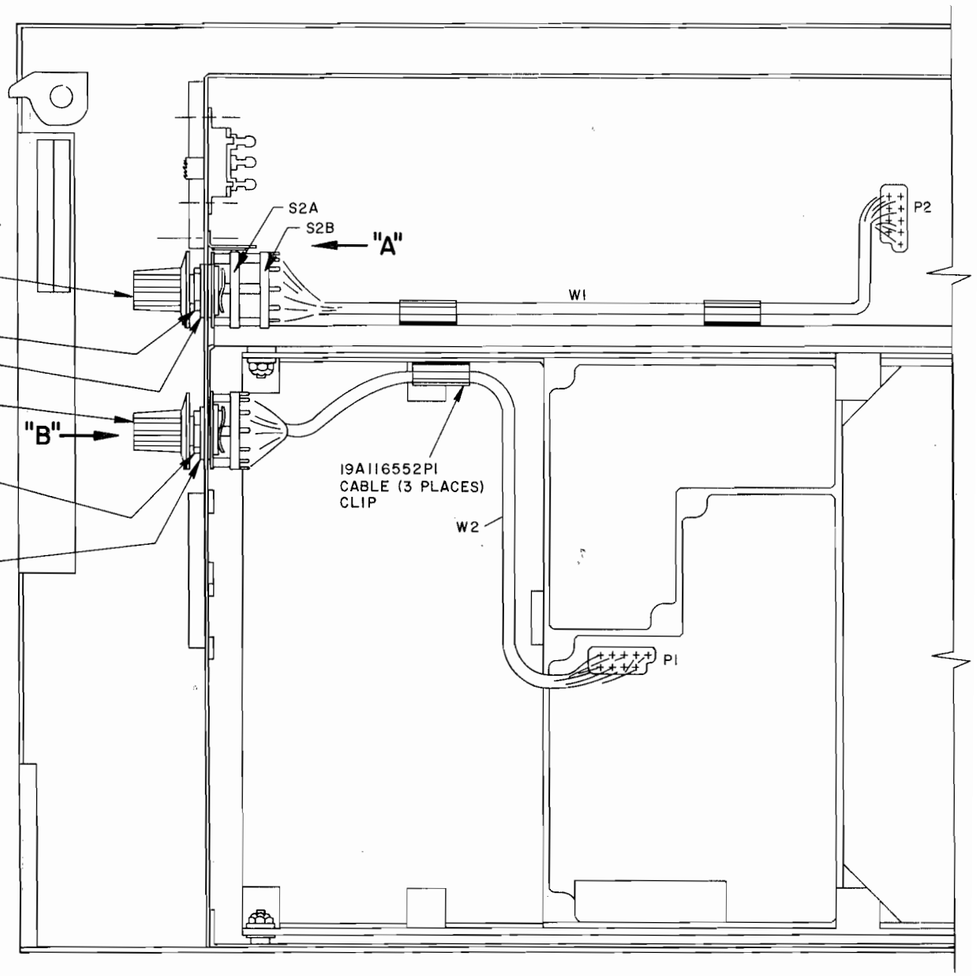




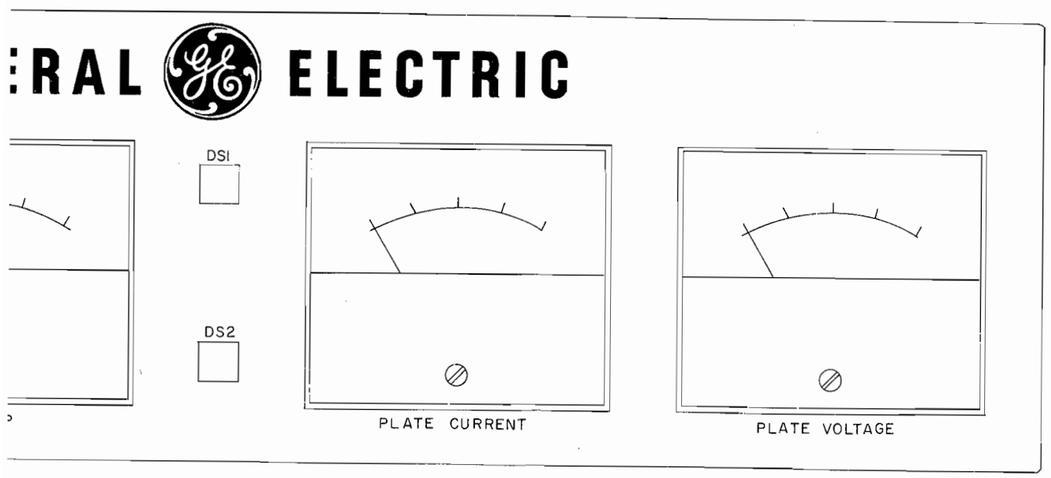
VIEW "A"



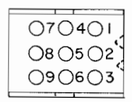
VIEW "B"



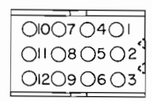
RC-2813



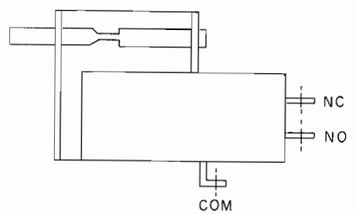
(19D423567, Rev. 0)



VIEW OF WIRING END OF P2



VIEW OF WIRING END OF P3

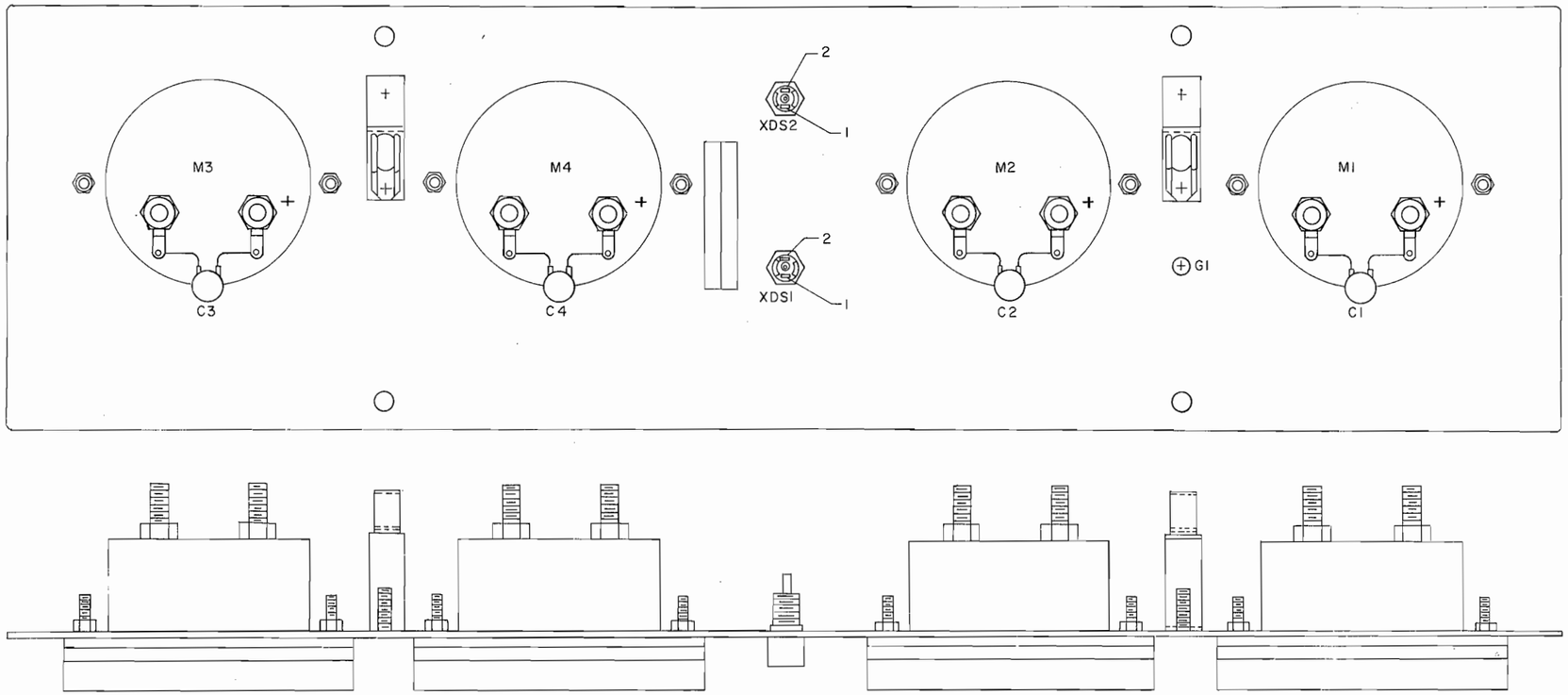


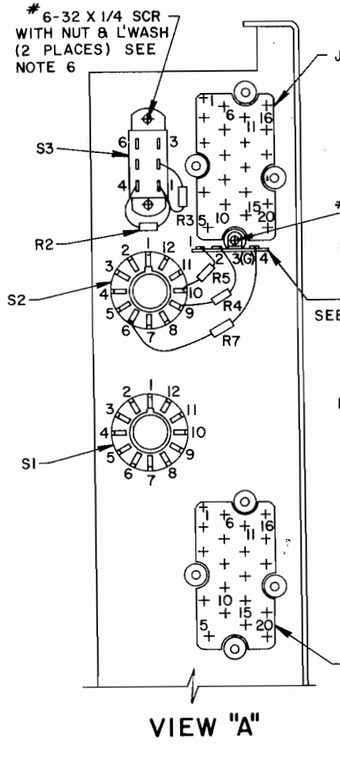
VIEW OF S3

OUTLINE DIAGRAM

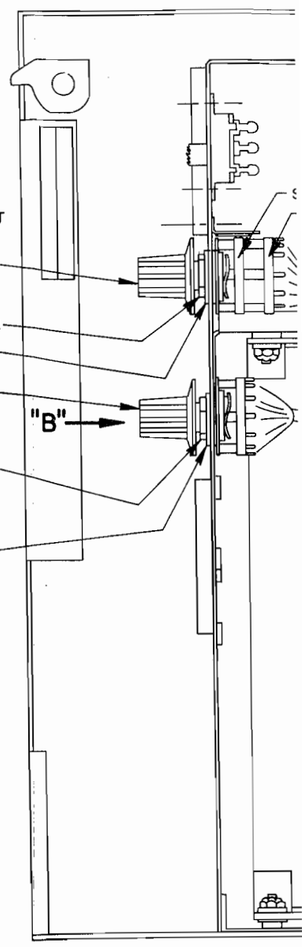
METER PANEL & METER SWITCHING KIT

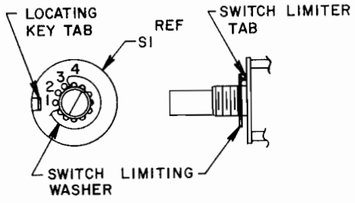
Issue 1



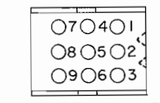


VIEW "A"

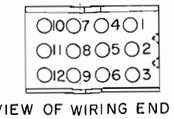




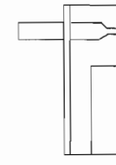
VIEW "B"



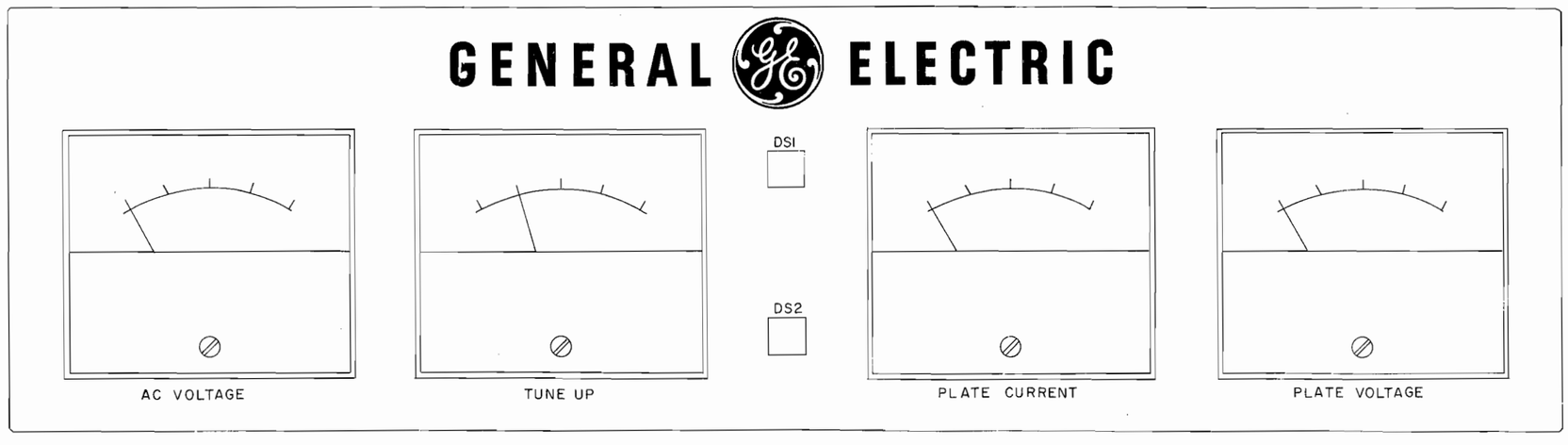
VIEW OF WIRING END OF P2



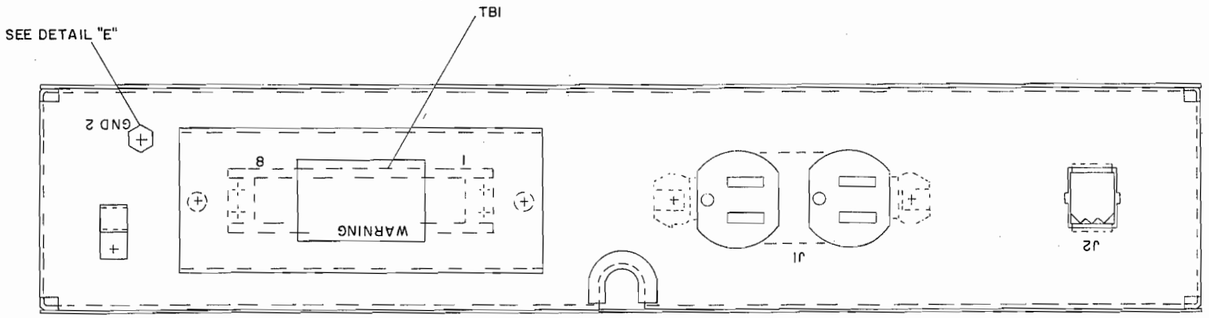
VIEW OF WIRING END OF P3



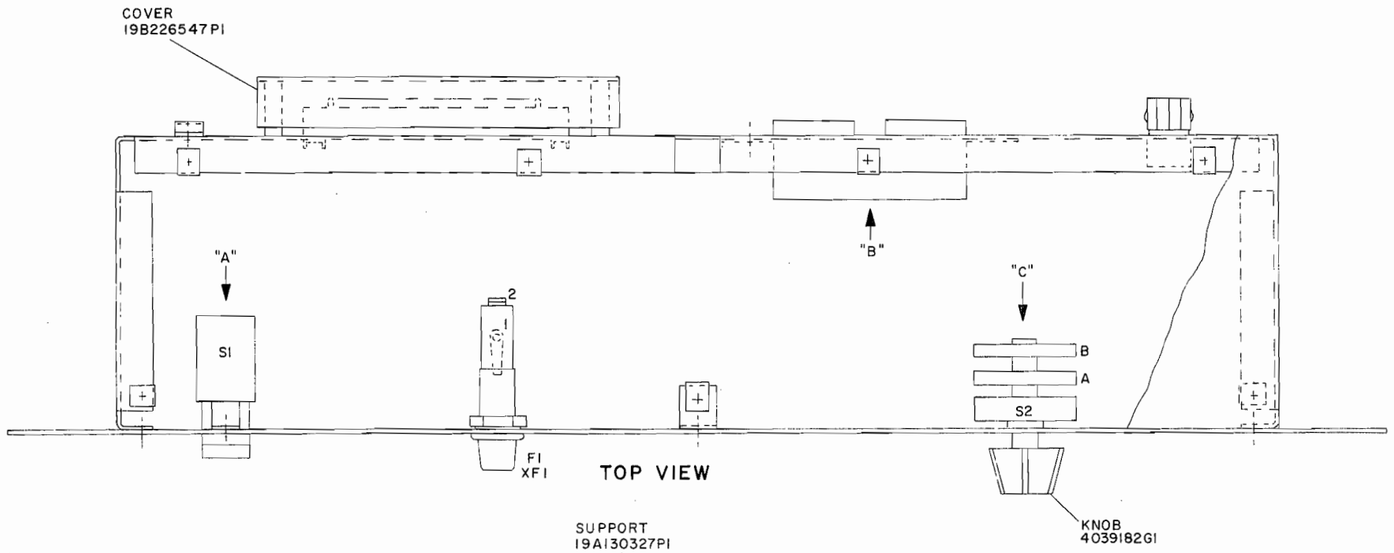
VI



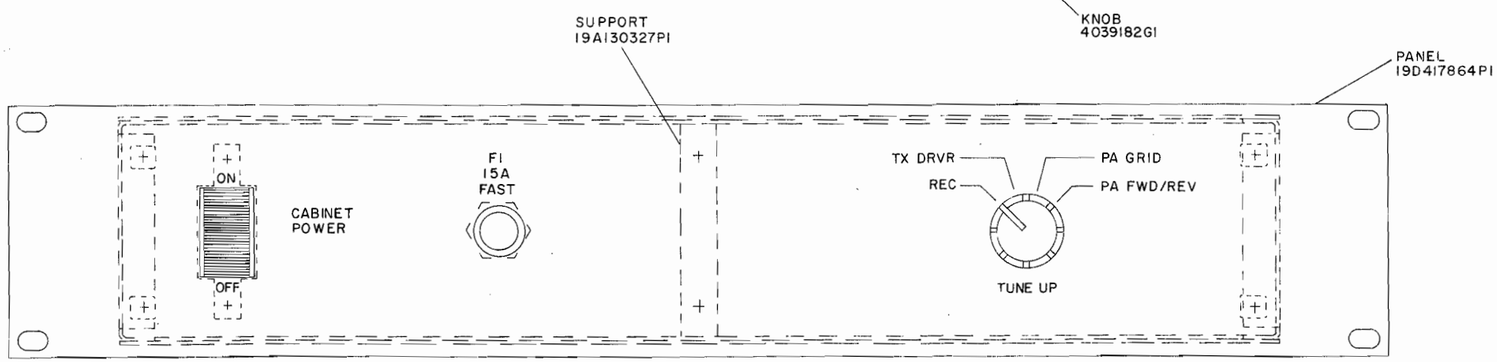
(19D423567, Rev. 0)



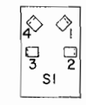
BACK VIEW



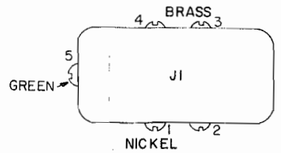
TOP VIEW



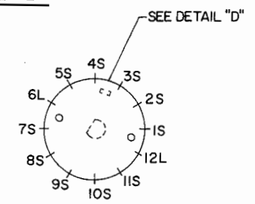
FRONT VIEW



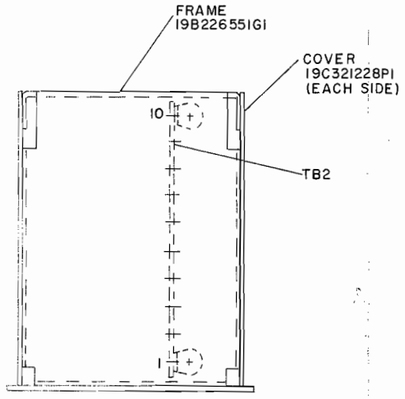
DETAIL-"A"

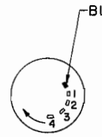


DETAIL-"B"



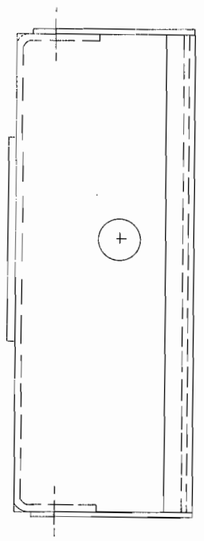
DETAIL-"C"

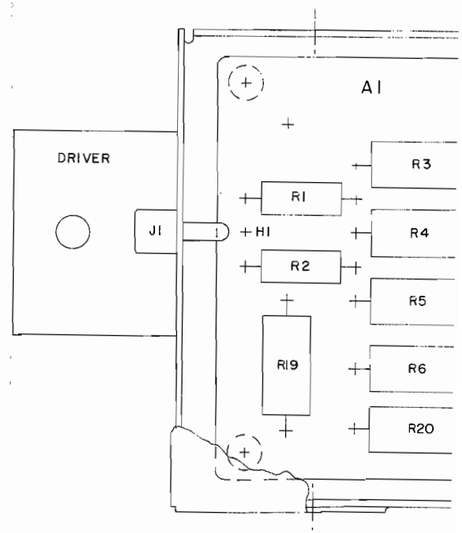




DETAIL-"D"

(VIEWED FROM KNOB END)
ASM LOCKING WASHER IN POSITION 4

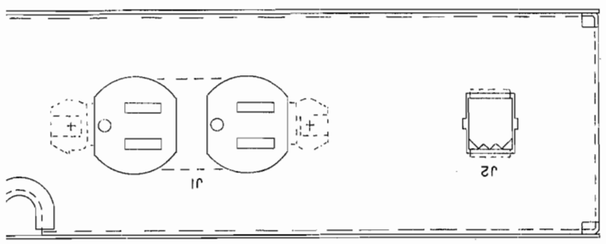




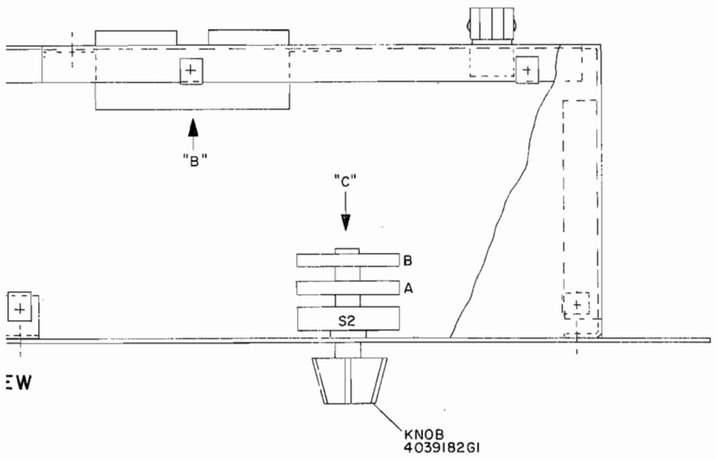
OUTLINE DIAGRAM

POWER CONTROL PANEL
AND ATTENUATOR PAD

(19D423573, Rev. 0)



V



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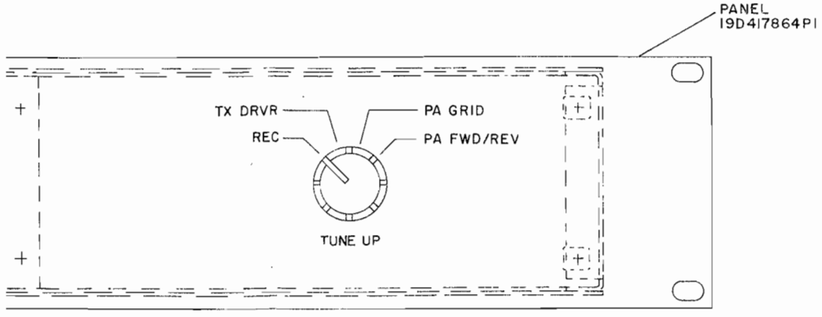
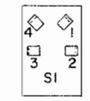
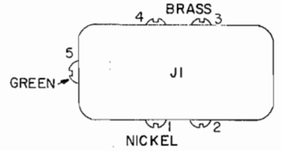


VIEW

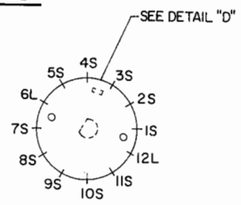
(19D423573, Rev. 0)



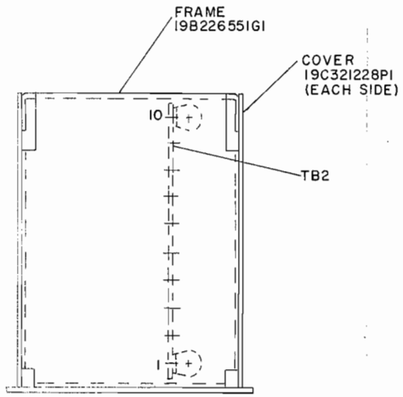
DETAIL-"A"

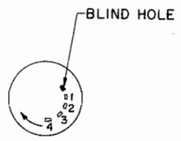


DETAIL-"B"



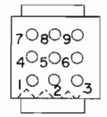
DETAIL-"C"



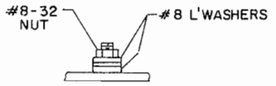


DETAIL-"D"

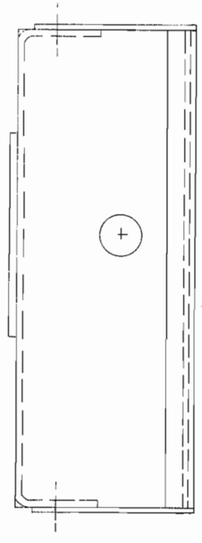
(VIEWED FROM KNOB END)
ASM LOCKING WASHER IN POSITION 4

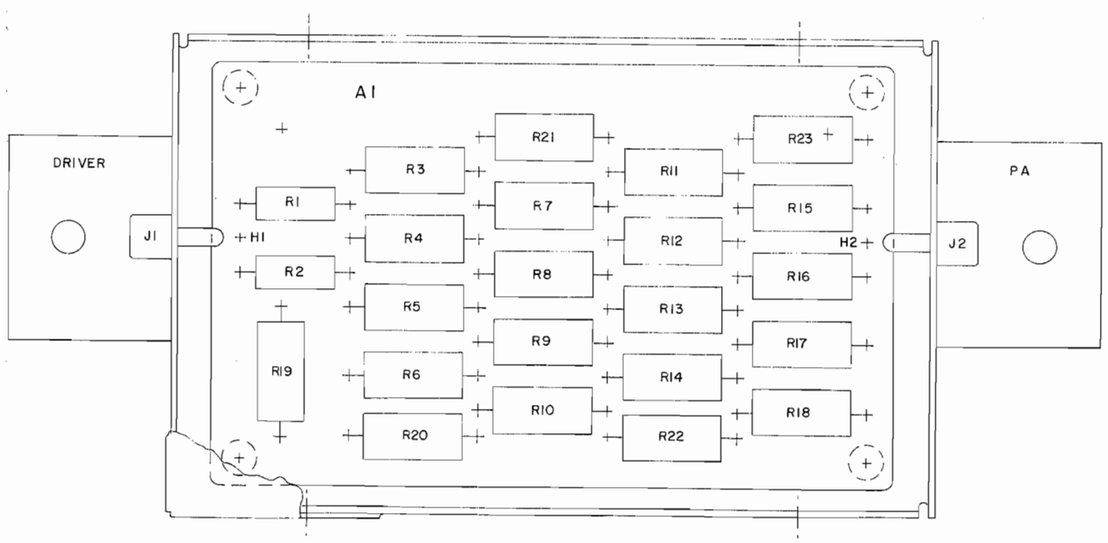


VIEW OF WIRING
END OF J2



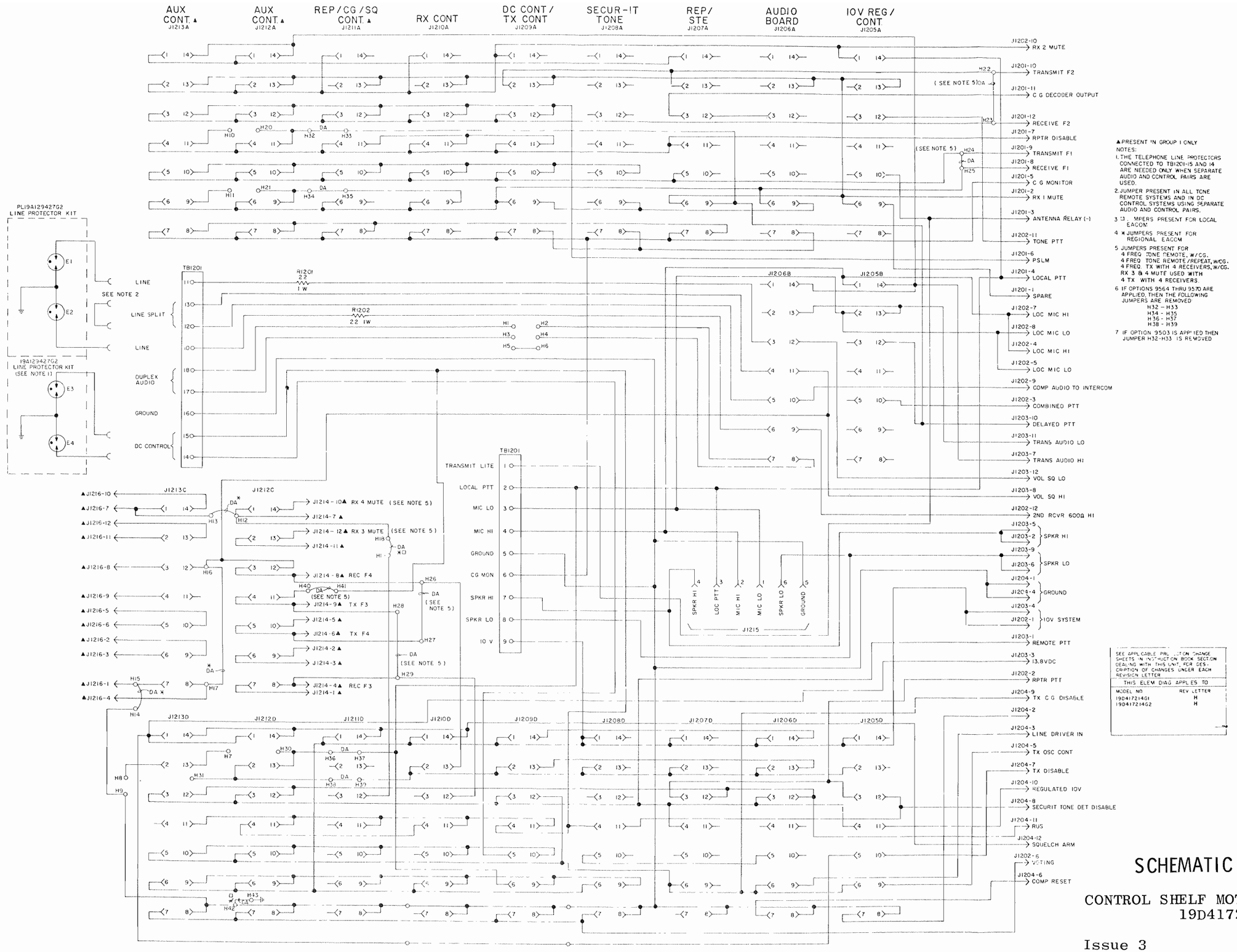
DETAIL-"E"





CONNECTION CHART		
FROM	TO	WIRE
A1-H1	J1	DB
A1-H2	J2	DB

(19D423572, Rev. 0)



▲PRESENT IN GROUP 1 ONLY

NOTES:

1. THE TELEPHONE LINE PROTECTORS CONNECTED TO TB1201-15 AND 14 ARE NEEDED ONLY WHEN SEPARATE AUDIO AND CONTROL PAIRS ARE USED.
2. JUMPER PRESENT IN ALL TONE REMOTE SYSTEMS AND IN DC CONTROL SYSTEMS USING SEPARATE AUDIO AND CONTROL PAIRS.
3. JUMPERS PRESENT FOR LOCAL EACOM.
4. * JUMPERS PRESENT FOR REGIONAL EACOM.
5. JUMPERS PRESENT FOR
   4 FREQ TONE REMOTE, W/CG.
   4 FREQ TONE REMOTE/REPEAT, W/CG.
   4 FREQ TX WITH 4 RECEIVERS, W/CG.
   RX 3 & 4 MUTE USED WITH
   4 TX WITH 4 RECEIVERS
6. IF OPTIONS 9564 THRU 9570 ARE APPLIED, THEN THE FOLLOWING JUMPERS ARE REMOVED
   H32 - H33
   H34 - H35
   H36 - H37
   H38 - H39
7. IF OPTION 9503 IS APPLIED THEN JUMPER H32-H33 IS REMOVED

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
19D417214G1	H
19D417214G2	H

SCHEMATIC DIAGRAM

CONTROL SHELF MOTHER BOARD 19D417214G1 & G2

Issue 3

(19E501157, Rev. 16)

PARTS LIST

LBI4811B

CONTROL SHELF MOTHER BOARD
19D417214G1, G2

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - JACKS AND RECEPTACLES - - - - - -
J1201	19A116647P4	Connector, printed wiring: 12 terminals; sim to Molex 09-18-5121.
J1202	19A116647P6	Connector, printed wiring: 12 terminals; sim to Molex 09-18-5927.
J1203	19A116647P4	Connector, printed wiring: 12 terminals; sim to Molex 09-18-5121.
J1204	19A116647P6	Connector, printed wiring: 12 terminals; sim to Molex 09-18-5927.
J1205A	19A116446P5	Connector, printed wiring: 14 contacts.
J1205B	19A116446P5	Connector, printed wiring: 14 contacts.
J1205D	19A116446P5	Connector, printed wiring: 14 contacts.
J1206A	19A116446P5	Connector, printed wiring: 14 contacts.
J1206B	19A116446P5	Connector, printed wiring: 14 contacts.
J1206D	19A116446P5	Connector, printed wiring: 14 contacts.
J1207A	19A116446P5	Connector, printed wiring: 14 contacts.
J1207D	19A116446P5	Connector, printed wiring: 14 contacts.
J1208A	19A116446P5	Connector, printed wiring: 14 contacts.
J1208D	19A116446P5	Connector, printed wiring: 14 contacts.
J1209A	19A116446P5	Connector, printed wiring: 14 contacts.
J1209D	19A116446P5	Connector, printed wiring: 14 contacts.
J1210A	19A116446P5	Connector, printed wiring: 14 contacts.
J1210D	19A116446P5	Connector, printed wiring: 14 contacts.
J1211A	19A116446P5	Connector, printed wiring: 14 contacts.
J1211D	19A116446P5	Connector, printed wiring: 14 contacts.
J1212A	19A116446P5	Connector, printed wiring: 14 contacts.
J1212C	19A116446P5	Connector, printed wiring: 14 contacts.
J1212D	19A116446P5	Connector, printed wiring: 14 contacts.
J1213A	19A116446P5	Connector, printed wiring: 14 contacts.
J1213C	19A116446P5	Connector, printed wiring: 14 contacts.
J1213D	19A116446P5	Connector, printed wiring: 14 contacts.
J1214	19A116647P4	Connector, printed wiring: 12 terminals; sim to Molex 09-18-5121.
J1215	19B219627G1	Connector: 6 contacts.
J1216	19A116647P4	Connector, printed wiring: 12 terminals; sim to Molex 09-18-5121.
		- - - - - - - - - - RESISTORS - - - - - - - - -
R1201* and R1202*	19A700112P23	Composition: 22 ohms ±5%, 1 w. Added by REV A.
		- - - - - - - - TERMINAL BOARDS - - - - - - - -
TB1201	19A116667P3	Plate nut. (Quantity 18).
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	19A129525G3	Cable: approx 3 inches long.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

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 - To provide line surge protection and change polarity of DC Control leads. Added R1201 and R1202. Reversed connections to J1209-4 and J1209-5.

REV. B - Changed printed board to provide outputs for EACOM Systems.

REV. C - Changed board for use in 4-frequency remote systems.

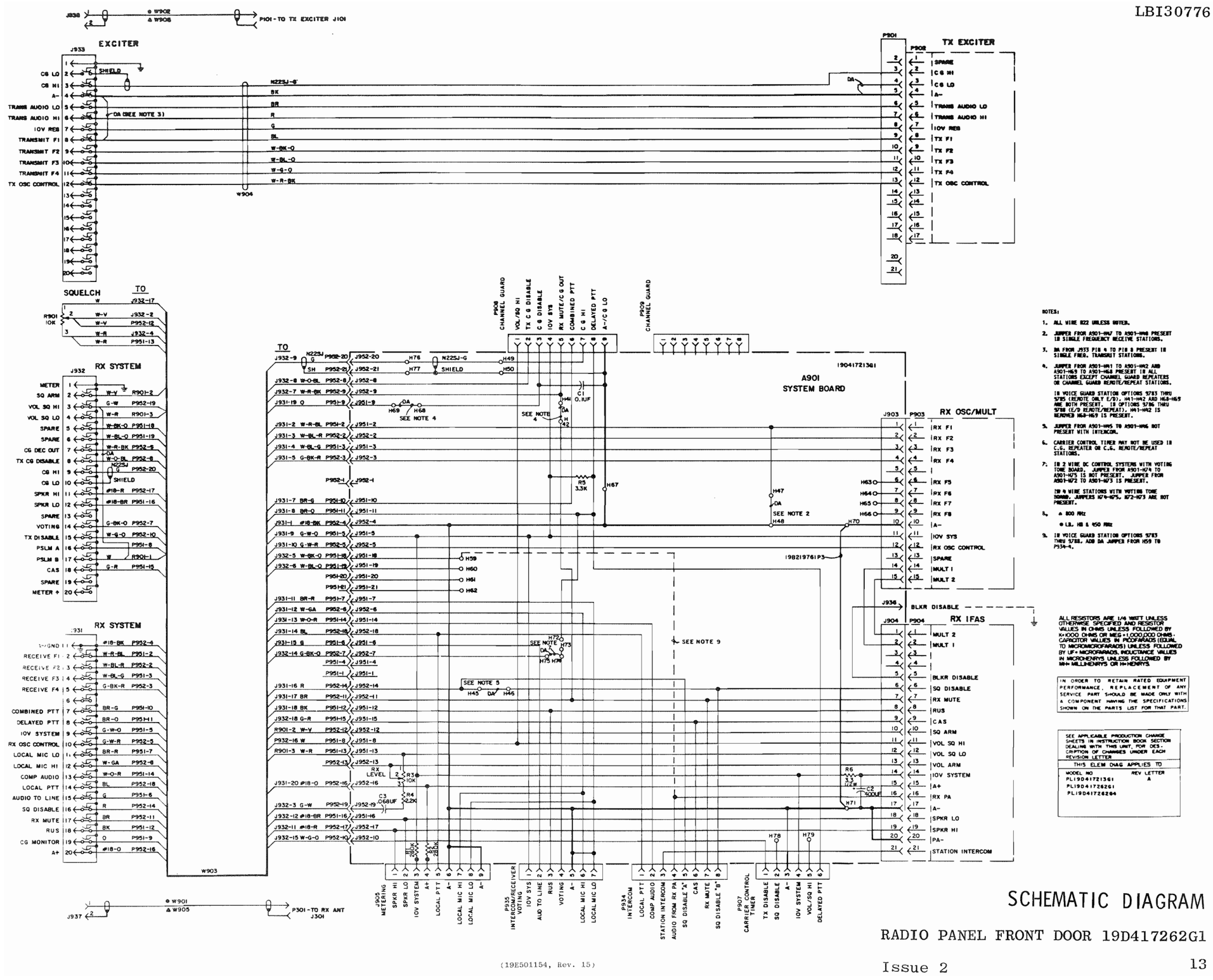
REV. D - To reduce falsing on noise. Changed printed pattern by interconnecting J1209D-4, TB1201-14 and J1208D-4.

REV. E - To make both Auxiliary positions functional with station options. Added H32 thru H39 to the printed pattern.

REV. F - To supply 10 Volts to J1210D-6. Changed printed pattern.

REV. G - To solve falsing problem, added printed wiring run from 3 & 4 frequency Tx control to the Secur-it Tone Board.

REV. H - To improve noise floor in EACOM station applications, added identification to H42 and H43 ground run holes.



NOTES:

1. ALL WIRE #22 UNLESS NOTED.
2. JUMPER FROM A901-HN7 TO A901-HN8 PRESENT IN SINGLE FREQUENCY RECEIVE STATIONS.
3. DA FROM J933 PIN 4 TO PIN 8 PRESENT IN SINGLE FREQ. TRANSMIT STATIONS.
4. JUMPER FROM A901-HN1 TO A901-HN2 AND A901-H69 TO A901-H68 PRESENT IN ALL STATIONS EXCEPT CHANNEL GUARD REPEATERS OR CHANNEL GUARD REMOTE/REPEAT STATIONS.

   IN VOICE GUARD STATION OPTIONS 5783 THRU 5785 (REMOTE ONLY E/D), HN1-HN2 AND H68-H69 ARE BOTH PRESENT. IN OPTIONS 5786 THRU 5788 (E/D REMOTE/REPEAT), HN1-HN2 IS REMOVED H68-H69 IS PRESENT.
5. JUMPER FROM A901-HN5 TO A901-HN6 NOT PRESENT WITH INTERCOM.
6. CARRIER CONTROL TIMER MAY NOT BE USED IN C.G. REPEATER OR C.G. REMOTE/REPEAT STATIONS.
7. IN 2 WIRE DC CONTROL SYSTEMS WITH VOTING TONE BOARD, JUMPER FROM A901-H74 TO A901-H75 IS NOT PRESENT. JUMPER FROM A901-H72 TO A901-H73 IS PRESENT.

   IN 4 WIRE STATIONS WITH VOTING TONE BOARD, JUMPERS H74-H75, H72-H73 ARE NOT PRESENT.
8. Δ 800 MHz

   ⊕ LB, HB & 450 MHz
9. IN VOICE GUARD STATION OPTIONS 5783 THRU 5788, ADD DA JUMPER FROM H59 TO P534-4.

ALL RESISTORS ARE 1/4 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG=1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF= MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH= MILLIHENRYS OR H=HENRYS.

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

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

THIS ELEM DWG APPLIES TO	
MODEL NO	REV LETTER
PL19041721361	A
PL19041726261	
PL19041726264	

SCHEMATIC DIAGRAM

RADIO PANEL FRONT DOOR 19D417262G1

Issue 2

PARTS LIST

LBI-4801A

MASTR II STATION RADIO PANEL
FRONT DOOR ASSEMBLY
19D417262G1

SYMBOL	GE PART NO.	DESCRIPTION
		DOOR ASSEMBLY 19D417262G1
A901		COMPONENT BOARD 19D417213G1
		- - - - - - - - - CAPACITORS - - - - - - - - -
C1	19A116080P7	Polyester: 0.1 µf ±20%, 50 VDCW.
C2	19A115680P24	Electrolytic: 400 µf +150% -10%, 18 VDCW; sim to Mallory Type TTX.
C3	19A116080P106	Polyester: 0.068 µf ±10%, 50 VDCW.
		- - - - - - - JACKS AND RECEPTACLES - - - - - -
J903		Connector. Includes:
	19A116659P1	Connector: 3 contacts; sim to Molex 09-52-32. (Quantity 1).
	19A116659P4	Connector: 6 contacts; sim to Molex 09-52-3062. (Quantity 2).
J904		Connector. Includes:
	19A116659P1	Connector: 3 contacts; sim to Molex 09-52-3032. (Quantity 1).
	19A116659P4	Connector: 6 contacts; sim to Molex 09-52-3062. (Quantity 3).
J905	19B219374G2	Connector: 9 contacts.
J936	4033513P4	Contact, electrical: sim to Bead Chain L93-3.
J951		Connector. Includes:
	19A116659P13	Connector: 4 contacts; sim to Molex 09-56-1041. (Quantity 5).
J952		Connector. Includes:
	19A116659P11	Connector: 7 contacts; sim to Molex 09-56-1071. (Quantity 2).
	19A116659P12	Connector: 6 contacts; sim to Molex 09-56-1061. (Quantity 1).
		- - - - - - - - - - PLUGS - - - - - - - - - -
P907	19A116779P1	Contact, electrical: sim to Molex 08-54-0404. (Quantity 6).
P908	19A116779P1	Contact, electrical: sim to Molex 08-54-0404. (Quantity 9).
P909	19A116779P1	Contact, electrical: sim to Molex 08-54-0404. (Quantity 8).
P934	19A116779P1	Contact, electrical: sim to Molex 08-54-0404. (Quantity 8).
P935	19A116779P1	Contact, electrical: sim to Molex 08-54-0404. (Quantity 7).
		- - - - - - - - - - RESISTORS - - - - - - - - -
R1 and R2	19C314256P22803	Metal film: 280,000 ohms ±1%, 1/4 w.
R3	19B209358P106	Variable, carbon film: approx 75 to 10,000 ohms ±10%, 0.25 w; sim to CTS Type X-201.
R4	3R152P222J	Compositon: 2200 ohms ±5%, 1/4 w.
R5	3R152P332J	Composition: 3300 ohms ±5%, 1/4 w.
R6	7147161P15	Composition: 3.3 ohms ±5%, 1/2 w.
		- - - - - - - - - - CABLES - - - - - - - - - -
W901	5491689P105	Cable, RF: approx 12 inches long, 350 VRMS, 500 VDC operating voltage. Includes J937, P301.
W902	5491689P104	Cable, RF: approx 3-5/8 inches long, 350 VRMS, 500 VDC operating voltage. Includes J938, P101.
W903		CABLE ASSEMBLY 19D417262G2
		- - - - - - - JACKS AND RECEPTACLES - - - - - -
J931 and J932	19C303426G1	Connector: 20 pin contacts.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P951 and P952		Connector. Includes:
	19A116659P25	Shell.
	19A116781P5	Contact, electrical: wire No. 16-20 AWG; sim to Molex 08-50-0106.
	19A116781P6	Contact, electrical: wire No. 22-26 AWG; sim to Molex 08-50-0108.
		- - - - - - - - - - RESISTORS - - - - - - - - -
R901	5496870P31	Variable, carbon film: 10,000 ohms ±20%; sim to Mallory LC(10K).
W904		EXCITER CABLE 19D417262G3
		- - - - - - - JACKS AND RECEPTACLES - - - - - -
J933	19C303426G1	Connector: 20 pin contacts.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P901		Connector. Includes:
	19A116659P25	Shell.
	19A116781P5	Contact, electrical: wire No. 16-20 AWG; sim to Molex 08-50-0106.
	19A116781P6	Contact, electrical: wire No. 22-26 AWG; sim to Molex 08-50-0108.
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	19C320679G1	Door.
	19B218178P1	Pawl. (Part of door latch).
	19C318151P1	Knob. (Part of door latch).
	N193P1208C6	Tap screw: No. 6 x 1/2. (Part of door latch).
	5493361P8	Washer, spring tension. (Part of door latch).
	19A121676P1	Guide pin. (Used with J931-J933).
	19B209519P1	Polarizing tab. (Used with P901, P951, P952).
	7115130P9	Lockwasher: sim to Shakeproof 1220-2. (Used with R901 mounting).
	7165075P2	Hex nut, brass: No. 3/8-32. (Used with R901 mounting).
	19A115874P1	Catch, friction. (Latches A901).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

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.

19D417213G1 Component Board

REV. A - To provide Carrier Control Alarm Tone capability. Added H78 and H79.

PARTS LIST

LBI4816D

SERVICE SPEAKER
19C320728G2

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - - FUSES - - - - - - - - - - -
F1*	1R16P3	Quick blowing: 1 amp at 250 v; sim to Littelfuse 312001 or Bussmann AGC-1.
		In REV E & earlier:
	1R16P1	Quick blowing: 1/2 amp at 250 v; sim to Littelfuse 312.500 or Bussmann AGC-1/2.
		In REV D:
	1R16P14	Quick blowing: 3/8 amp 250 v; sim to Littelfuse 312.375 or Bussmann AGC-3/8. Added by REV D.
		- - - - - - - JACKS AND RECEPTACLES - - - - - -
J1		Connector. Includes:
	19B209288P22	Shell.
	5496809P18	Contact, electrical: male; sim to Molex 1380-T.
		- - - - - - - - - LOUDSPEAKERS - - - - - - - - -
LS1	19A115964P1	Permanent magnet: 3.5 inch, 18 ohms ±10% imp, 15 to 19 ohms ±20% DC res, resonant frequency 290 Hz; sim to Oaktron S-9847.
		- - - - - - - - - RESISTORS - - - - - - - - -
R1	5493035P53	Wirewound: 18 ohms ±5%, 5 w; sim to Hamilton Hall Type HR.
R2*	5493035P3	Wirewound: 2 ohms ±5%, 5 w; sim to Hamilton Hall Type HR. Added by REV F.
	5493035P53	Wirewound: 18 ohms ±5%, 5 w; sim to Hamilton Hall Type HR. Deleted by REV D.
R3*	19B209490P1	Variable, wirewound: 35 ohms ±20%, 2.25 w; sim to CTS Type 118. Deleted by REV D.
R4*	5493035P52	Wirewound: 8.2 ohms ±10%, 5 w; sim to Hamilton Hall Type HR. Deleted by REV C.
R5	5493035P53	Wirewound: 18 ohms ±5%, 5 w; sim to Hamilton Hall Type HR. Added by REV B.
R6*	5493035P27	Wirewound: 10 ohms ±5%, 5 w; sim to Hamilton Hall Type HR. Added by REV C. Deleted by REV D.
R7*	19A700050P21	Wirewound: 4.7 ohms ±10%, 2 w. Added by REV D.
R8*	5493035P17	Wirewound: 63 ohms ±5%, 5 w; sim to Hamilton Hall Type HR.
		In REV D:
	3R78P620J	Composition: 62 ohms ±5%, 1 w. Added by REV D.
R9*	5493035P44	Wirewound: 25 ohms ±5%, 10 w; sim to Hamilton Hall Type HR.
		In REV D:
	19B209022P48	Wirewound: 24 ohms ±5%, 2 w; sim to IRC Type BWH. Added by REV D.
R10*	19A700113P47	Composition: 220 ohms ±5%, 1/2 w. Added by REV D.
R11*	19A700113P33	Composition: 56 ohms ±5%, 1/2 w. Added by REV D.
		- - - - - - - - - SWITCHES - - - - - - - - -
S1	19B209261P5	Slide: DPTT, 2 poles, 3 positions, 0.5 amp VDC or 3 amps VAC at 125 v; sim to Switchcraft 11D1033B.
S2*	19B209261P5	Slide: DPTT, 2 poles, 3 positions, 0.5 amp VDC or 3 amps VAC at 125 v; sim to Switchcraft 11D1033B. Added by REV D.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - TERMINAL BOARDS - - - - - - - - -
TB1	7775500P44	Phen: 1 insulated, 1 grounded terminal. Added by REV D.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XF1*	7141008P1	Fuseholder: 30 amps at 125 v; sim to Bussman 2863. Added by REV D.
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	4032480P1	Nut, sheet spring: sim to Vector Electronic Co. No. 440. (Secures S1, S2).
	19B201074P204	Tap screw, Phillips POZIDRIV®: No. 4-40 x 1/4. (Secures S1, S2).
	N80P13005C6	Machine, screw: No. 6-32 x 5/16. (Secures Service Speaker).
	7141225P3	Hex nut: 6-32. (Secures Service Speaker).
	N404P13C6	Lockwasher, internal tooth: No. 6. (Secures Service Speaker).

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 - To eliminate factory wiring errors caused by duplication of wire colors.

Change wire connections on:
J1-1 from SF22-O to SF22-R
J1-2 from SF22-BR to SF22-BK
(No Parts List Changes)

REV. B - To provide load for receiver when service speaker switch is in "OFF" position. Added R5 and DA Jumper between S1-1 and S1-3.

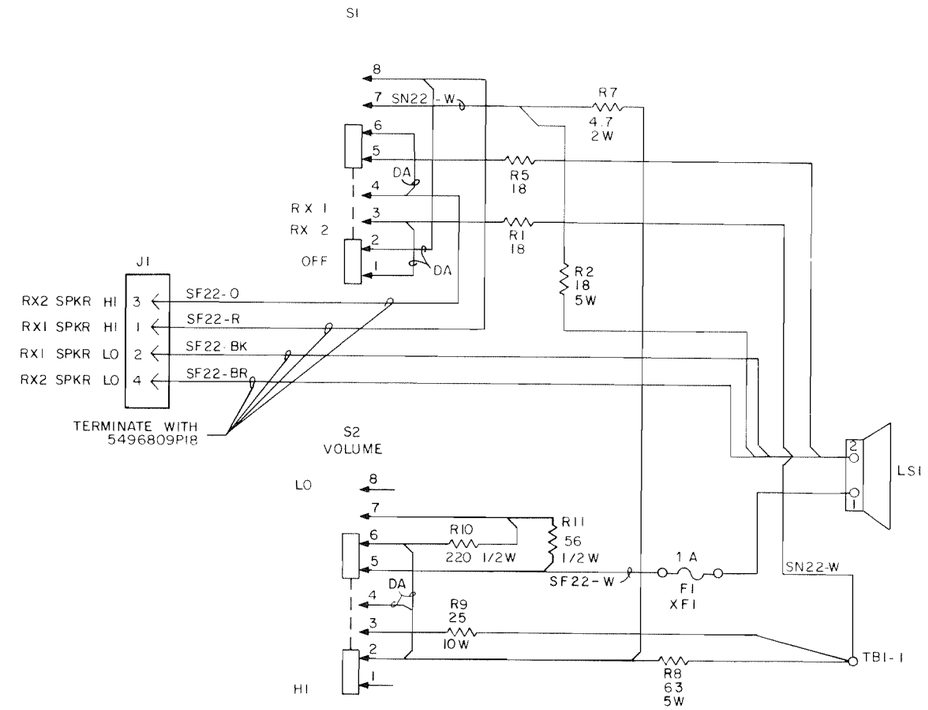
REV. C - To prevent oscillation and to protect R3 from overload. Deleted R4 and added R6.

REV. D - To prevent component damage due to excessive voltage. Deleted R2, R3 and R6. Added F1, XF1, R7-11, S2 and TB1.

REV. E - To protect speaker from excessive drive. Changed F1, R8 and R9.

REV. F - To prevent mechanical oscillation of speaker when excessive drive occurs. Added R2.

REV. G - To eliminate audio oscillation. Relocated R2 in circuit.



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

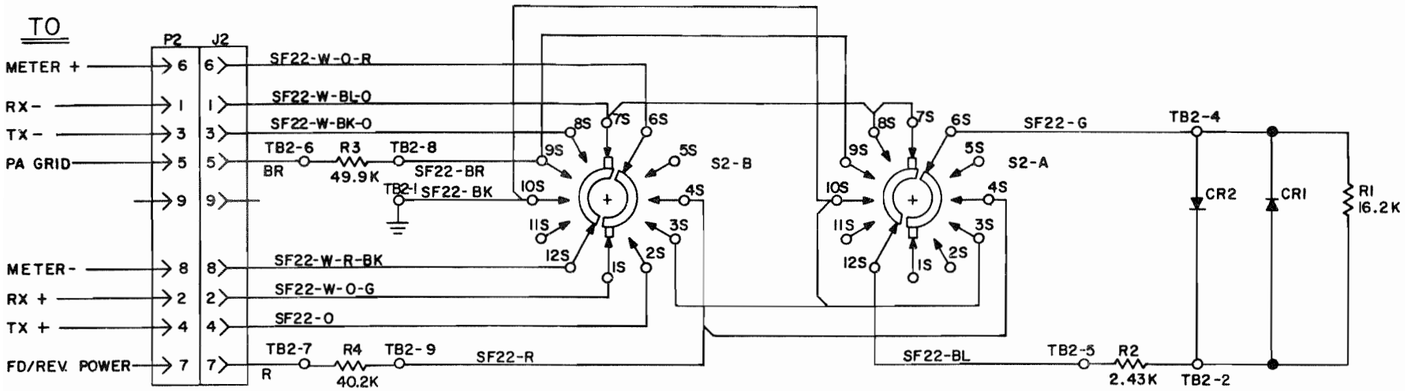
THIS ELEM DIAG APPLIES TO	
MODEL NO	REV LETTER
PL19C320728G2	G

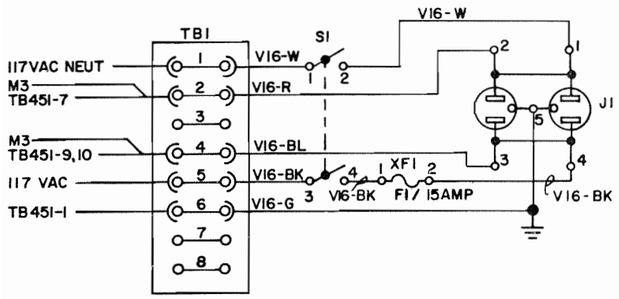
ALL RESISTORS ARE 5 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG = 1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF= MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH= MILLIHENRYS OR H= HENRYS.

(19C320731, Rev. 9)

SCHEMATIC DIAGRAM

SERVICE SPEAKER 19C320728G2





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.

NOTES:

1. TERMINATE WIRES AT TB1 WITH 19B209268P101.
2. TERMINATE WIRES AT J1 WITH 19B209268P106.
3. TERMINATE WIRES AT S1 WITH 4029484P2.

(19C321241, Rev. 3)

SCHEMATIC DIAGRAM

POWER CONTROL PANEL

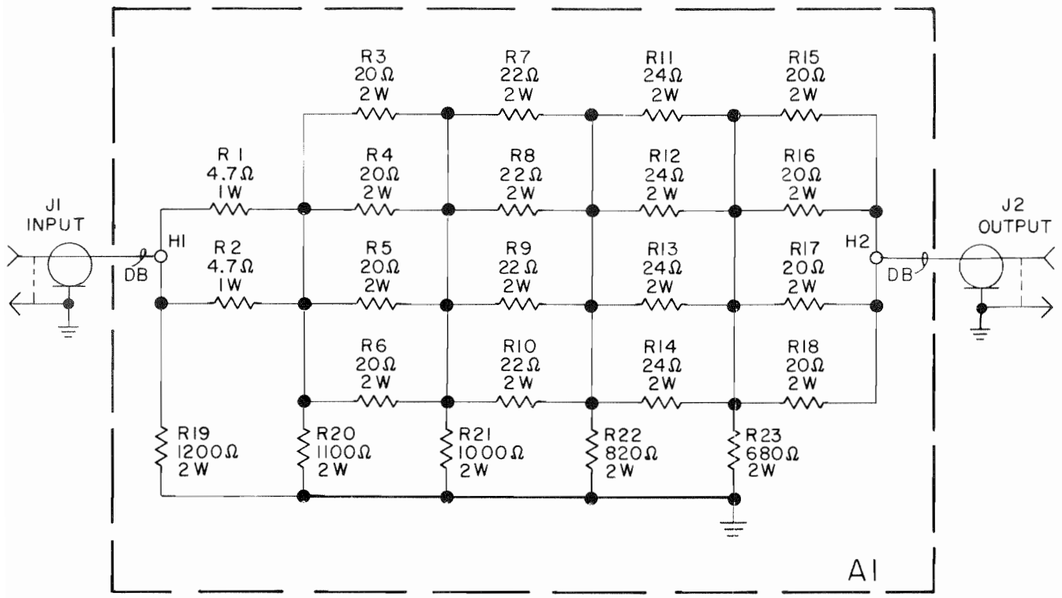
PARTS LIST

LBI-4905

POWER PANEL
19D417873G1

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - DIODES AND RECTIFIERS - - - - - - -
CR1 and CR2	5494922P1	Silicon: sim to 1N456.
		- - - - - - - - - - - FUSES - - - - - - - - - -
F1	7484390P3	Quick blowing: 15 amp 250 v; sim to Littelfuse 314015 or Bussmann ABC-15.
		- - - - - - - - JACKS AND RECEPTACLES - - - - - - -
J1	19B209395P1	Receptacle, power: 3 wire grounding type, 15 amps at 125 v; sim to Circle F Mfg. 1517-2.
J2		Connector. Includes:
	19B209288P3	Shell.
	5496809P17	Connector: female contact: sim to Molex Products 1381-T.
		- - - - - - - - - - RESISTORS - - - - - - - - -
R1	19C314256P31622	Metal film: 16,200 ohms ±1%, 1/2 w.
R2	19C314256P32431	Metal film: 2430 ohms ±1%, 1/2 w.
R3	19C314256P34992	Metal film: 49,900 ohms ±1%, 1/2 w.
R4	19C314256P34022	Metal film: 40,200 ohms ±1%, 1/2 w.
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S1	19B209498P1	Push: DPST, 20 amps and 220 VRMS; sim to McGill 0811-0188.
S2	5495227P30	Rotary: 2 sections, 4 poles, 2 to 5 adj stop positions, non-shorting contacts, 2 amps at 28 VDC or 1 amp at 110 VAC; sim to Oak Type "F".
		- - - - - - - - TERMINAL BOARDS - - - - - - - -
TB1	19C301087P4	Phen: 8 terminals; sim to GE CR151D.
TB2	7775500P20	Phen: 10 terminals.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XF1	4037402P2	Fuseholder: 15 amps at 250 v; sim to Littelfuse 342001.
		HARNESS ASSEMBLY 19D417873G2 (Includes J2)
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	19C321228P1	Cover. (Power Panel).
	19B226547P1	Cover. (Located over TB1).
	5491480P4	Clip loop: sim to Adel Precision Type 754E.
	4039182G1	Knob. (S2).
	7160508P2	Nut, sheet spring: sim to Tinnerman C1356-632-24. (Used with TB1).
	7160861P2	Nut, sheet spring: sim to Tinnerman C880-632-157. (J1 and frame).
	7165075P2	Hex nut, brass: No. 3/8-32. (Used with S2).
	7115130P9	Lockwasher: sim to Shakeproof 1220-2. (Used with S2).
	19B209268P106	Terminal, solderless: sim to AMP 41184. (Used with TB2).
	19B226664G1	Power cord.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

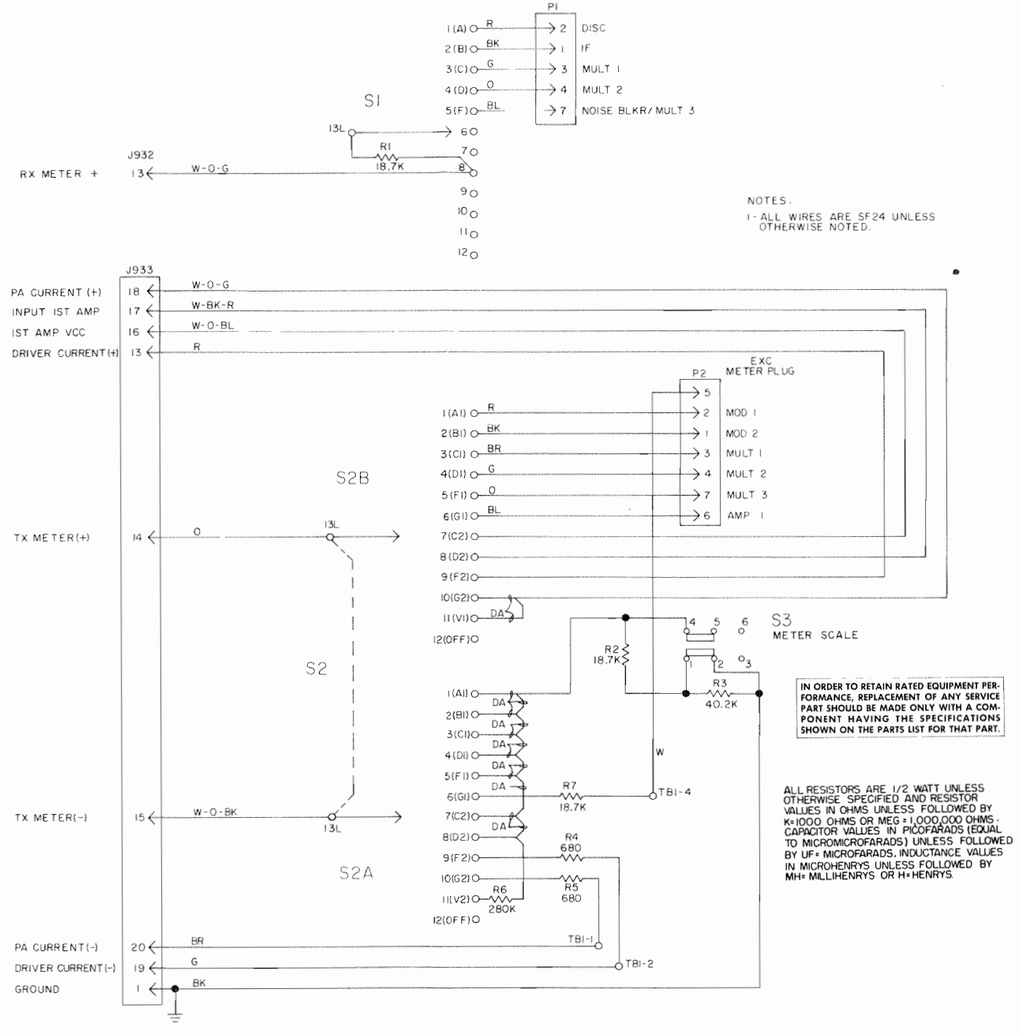


IN ORDER TO RETAIN RATED EQUIPMENT PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

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
PLI9D417885G1	

(19B226573, Rev. 1)



(19D417597, Rev. 4)

PARTS LIST

LBI-4904

ATTENUATOR PAD
19D417885G1

SYMBOL	GE PART NO.	DESCRIPTION
A1		COMPONENT BOARD 19C321246G1
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1 and R2	5490205P8	Composition: 4.7 ohms ±5%, 1 w.
R3 thru R6	3R79P200J	Composition: 20 ohms ±5%, 2 w.
R7 thru R10	3R79P220J	Composition: 22 ohms ±5%, 2 w.
R11 thru R14	3R79P240J	Composition: 24 ohms ±5%, 2 w.
R15 thru R18	3R79P200J	Composition: 20 ohms ±5%, 2 w.
R19	3R79P122J	Composition: 1200 ohms ±5%, 2 w.
R20	3R79P112J	Composition: 1100 ohms ±5%, 2 w.
R21	3R79P102J	Composition: 1000 ohms ±5%, 2 w.
R22	3R79P821J	Composition: 820 ohms ±5%, 2 w.
R23	3R79P681J	Composition: 680 ohms ±5%, 2 w.
		- - - - - - - - JACKS AND RECEPTACLES - - - - - -
J1 and J2	7104941P16	Connector, phono: Jack; sim to National Tel. Barrel Ceramic.
		- - - - - - - - - MISCELLANEOUS - - - - - - -
	19B201074P304	Tap screw, Phillips POZIDRIV®: No. 6-32 x 1/4.

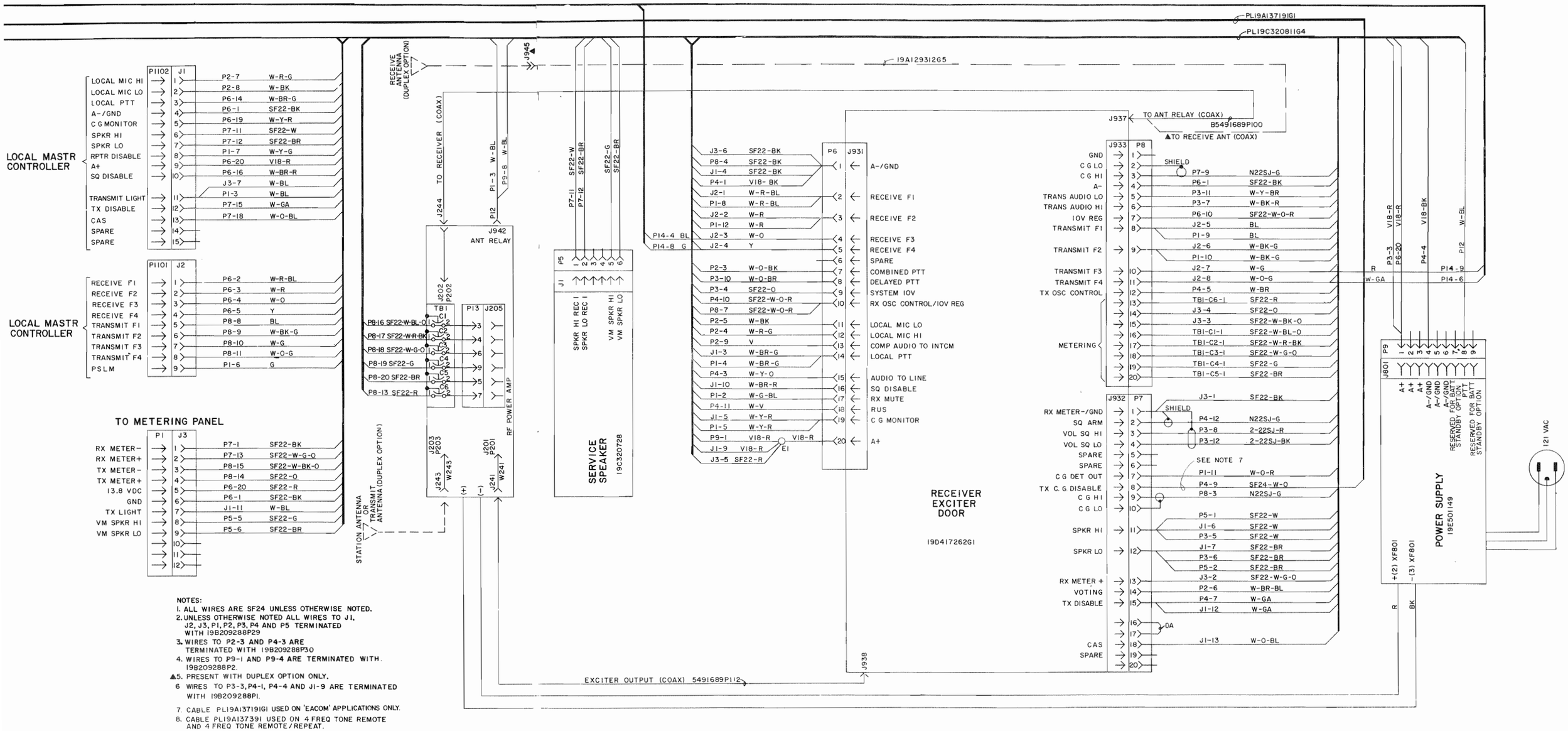
PARTS LIST

LBI4846A

METERING KIT
19B226293G1 STANDARD
19B226293G4 800 MHz SOLID STATE
ISSUE 2

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - - PLUGS - - - - - - - - - - -
P1 and P2	19B219534P1	Connector: 9 pin, male.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1 and R2	19C314256P31872	Metal film: 18.7K ohms ±1%, 1/2 w.
R3	19C314256P34022	Metal film: 40.2K ohms ±1%, 1/2 w.
R4 and R5	19A700106P59	Composition: 680 ohms ±5%, 1/4 w.
R6	19C314256P22803	Metal film: 280K ohms ±1%, 1/4 w.
R7	19C314256P31872	Metal film: 18.7K ohms ±1%, 1/2 w.
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S1	5495454P39	Rotary: 1 section, 1 pole, 2 to 12 position (adj stop), non-shorting contacts, 2 amps at 25 VDC or 1 amp at 110 VAC; sim to Oak Type A.
S2	5495454P38	Rotary: 2 sections, 2 poles, 2 to 12 position (adj stop), non-shorting contacts, 2 amps at 25 VDC or 1 amp at 110 VAC; sim to Oak Type A.
S3	19B209261P8	Slide: DPDT, 2 poles, 2 positions, .5 amp VDC or 3 amps VAC at 125 v; sim to Switchcraft 46206L.
		- - - - - - - - - TERMINAL BOARDS - - - - - - -
TB1	7487424P18	Miniature, phen: 3 terminals.
		- - - - - - - - - - CABLES - - - - - - - - - -
W1		HARNESS ASSEMBLY 19B226293G2 (Includes P1, R1, S1)
W2		HARNESS ASSEMBLY 19B225293G3 (Includes P2, R6, S2)
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	7165075P2	Hex nut, brass: No. 3/8-32. (Used with S1 & S2).
	7115130P9	Lockwasher, internal tooth: No. 3/8; sim to Shakeproof 1220-2. (Used with S1 & S2).
	19B209532P1	Knob, screw on. (Used with S1 & S2).
	19A116552P1	Cable clip.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES



NOTES:
1. ALL WIRES ARE SF24 UNLESS OTHERWISE NOTED.
2. UNLESS OTHERWISE NOTED ALL WIRES TO J1, J2, J3, P1, P2, P3, P4 AND P5 TERMINATED WITH 19B209288P29
3. WIRES TO P2-3 AND P4-3 ARE TERMINATED WITH 19B209288P30
4. WIRES TO P9-1 AND P9-4 ARE TERMINATED WITH 19B209288P2.
▲5. PRESENT WITH DUPLEX OPTION ONLY.
6. WIRES TO P3-3, P4-1, P4-4 AND J1-9 ARE TERMINATED WITH 19B209288P1.
7. CABLE PLI9AI37191G1 USED ON 'EACOM' APPLICATIONS ONLY.
8. CABLE PLI9AI37391 USED ON 4 FREQ TONE REMOTE AND 4 FREQ TONE REMOTE/REPEAT.

(19R622055, Rev. 10)

INTERCONNECTION DIAGRAM

CONTINUOUS DUTY STATION HARNESS WITH METERING 19C320811G4

Issue 2

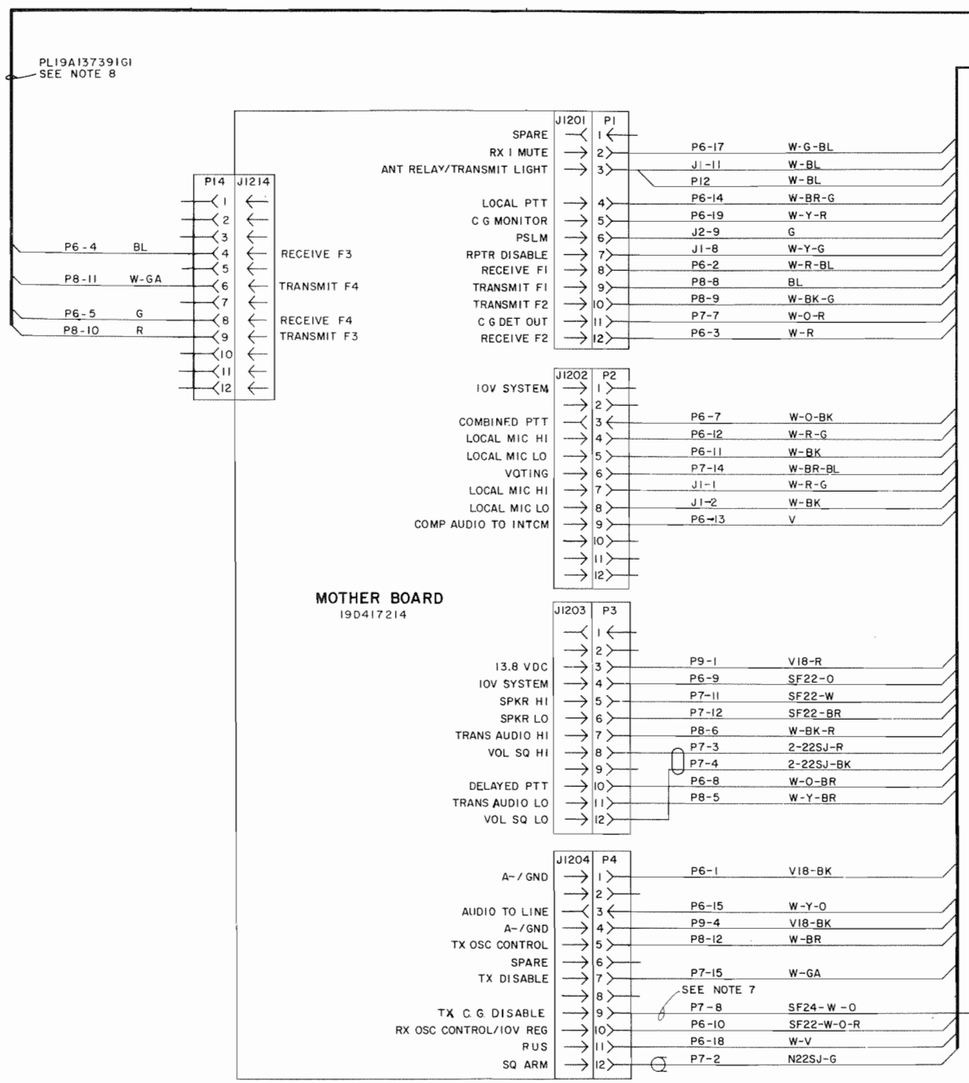
PARTS LIST

LB14799A

MASTR II CONTINUOUS DUTY
STATION HARNESS WITH METERING
19C320811G4

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - CONDUCTORS - - - - - - - - - -
E1	19A115370P1	In line splice, conductor: sim to AMP 35653.
		- - - - - - - JACKS AND RECEPTACLES - - - - - -
J1		Connector. Includes:
	19B209288P5	Shell.
	19B209288P29	Contact, electrical: female; sim to Molex 02-09-1141. (Quantity 13).
J2		Connector. Includes:
	19B209288P3	Shell.
	19B209288P29	Contact, electrical: female; sim to Molex 02-09-1141. (Quantity 9).
J3		Connector. Includes:
	19B209288P25	Shell.
	19B209288P29	Contact, electrical: female; sim to Molex 02-09-1141. (Quantity 9).
		- - - - - - - - - - PLUGS - - - - - - - - - -
P1		Connector. Includes:
	19B209288P20	Shell.
	19B209288P29	Contact, electrical: female; sim to Molex 02-09-1141. (Quantity 11).
P2		Connector. Includes:
	19B209288P20	Shell.
	19B209288P29	Contact, electrical: female; sim to Molex 02-09-1141. (Quantity 6).
	19N209288P30	Contact, electrical: male; sim to Molex 02-09-2141. (Quantity 1).
P3		Connector. Includes:
	19B209288P20	Shell.
	19B209288P29	Contact, electrical: female; sim to Molex 02-09-1141. (Quantity 9).
P4		Connector. Includes:
	19B209288P20	Shell.
	19B209288P29	Contact, electrical: female; sim to Molex 02-09-1141. (Quantity 7).
	19B209288P30	Contact, electrical: male; sim to Molex 02-09-2141. (Quantity 1).
P5		Connector. Includes:
	19B209288P23	Shell.
	19B209288P29	Contact, electrical: female; sim to Molex 02-09-1141. (Quantity 4).
P6 thru P8	19C703506P1	Connector, phen: 20 contacts.
P9		Connector. Includes:
	19B209288P4	Shell.
	19B209288P30	Contact, electrical: male; sim to Molex 02-09-2141. (Quantity 1).
	19B209288P2	Contact, electrical: male; sim to Molex 02-09-2101. (Quantity 1).
P12	19A115793P1	Contact, electrical: sim to Malco 2700.
P13	19B219534P1	Plug: 9 pins.
P15	19B209288P30	Contact, electrical: male; sim to Molex 02-09-2141.
		- - - - - - - - TERMINAL BOARDS - - - - - - - -
TB1	19A130051G1	Plate.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES



NOTES:
1. ALL WIRES ARE SF24 UNLESS OTHERWISE NOTED.
2. UNLESS OTHERWISE NOTED ALL WIRES TO J1, J2, J3, P1, P2, P3, P4 AND P5 TERMINATED WITH 19B209288P29
3. WIRES TO P2-3 AND P4-3 ARE TERMINATED WITH 19B209288P30
4. WIRES TO P9-1 AND P9-4 ARE TERMINATED WITH 19B209288P2.
▲5. PRESENT WITH DUPLEX OPTION ONLY.
6 WIRES TO P3-3, P4-1, P4-4 AND J1-9 ARE TERMINATED WITH 19B209288P1.
7. CABLE PL19A137191G1 USED ON 'EACOM' APPLICATIONS ONLY.
8. CABLE PL19A137391 USED ON 4 FREQ TONE REMOTE AND 4 FREQ TONE REMOTE/REPEAT.

INSTRUCTIONS:

1. WIRE #3 SHOULD BE CONSTRUCTED IN ACCORDANCE WITH WIRE INSTRUCTION 19A121850.
2. WIRE #13 IS PART OF S4.
3. WIRE #3 SHOULD BE CONSTRUCTED IN SUCH A WAY AS TO ALLOW ENOUGH SLACK TO PERMIT MOUNTING A 3 RACK-UNIT BLANK PANEL.
4. TERMINATE WIRES AS FOLLOWS:

   ALL WIRES AT S3 WITH TERMINAL 19B209268P110
   ALL WIRES AT P2 & P3 WITH TERMINAL 5496809P18
   ALL WIRES AT TB1 & TB451 WITH TERMINAL 19B209268P101
   WIRE #36 AT G2 WITH TERMINAL 7491823P7
   WIRE #36 AT CABINET GND WITH TERMINAL 7491823P8
   WIRE #35 AT C451-1 WITH TERMINAL 19B209260P26
   WIRE #35 AT PO #2 WITH TERMINAL 19B209268P106
   WIRES 7 & 10 AT G1 IN ONE TERMINAL 19B209260P11.
   WIRE #43 AT BOTH ENDS WITH 7491823P8

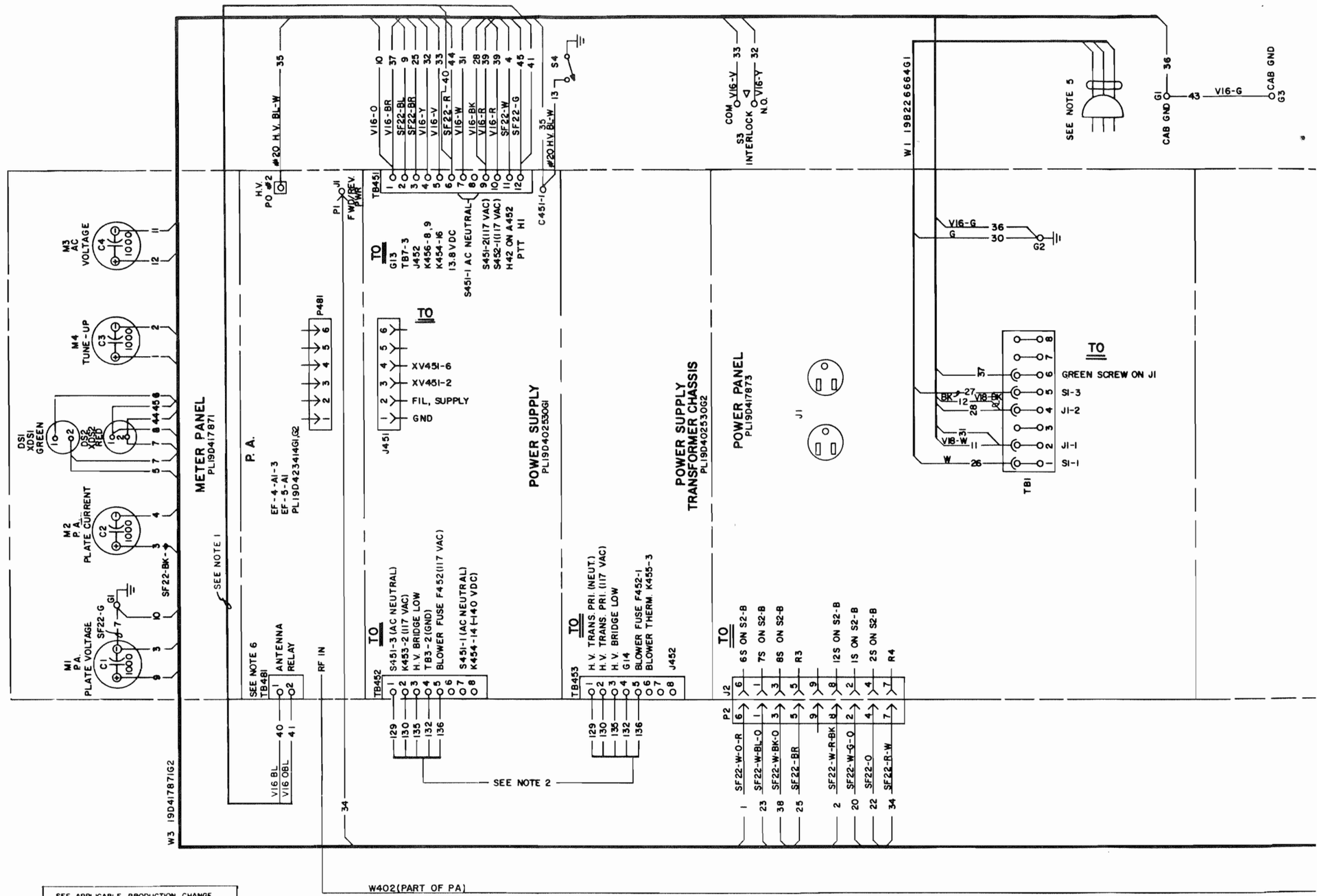
   CONNECTIONS TO THE FOLLOWING COMPONENTS ARE SOLDER CONNECTIONS: M1, M2, M3, M4, XDS1 & XDS2

NOTES:

1. WIRES #40 AND #41 ARE PART OF EF-4, EF-5, OR ANTENNA RELAY KIT (UHF).
2. WIRES #129-132, 135 & 136 ARE PART OF EP-6 RUNNING LIST.
3. IN UHF APPLICATIONS SUBSTITUTE IN LINE PHONO CONNECTOR (4031097P1) FOR ATTENUATOR (19D417885G1).
4. IN COMBINATIONS DESIGNED FOR USE ON 50 Hz MAINS (POWER SUPPLY 19E501149G3) THE POWER CABLE IS TERMINATED WITH RING TERMINALS INSTEAD OF A PLUG. THE TERMINALS ARE CONNECTED TO TB1 ON THE PL19D417873 POWER PANEL AS FOLLOWS:

   WHITE LEAD TO TB1-2
   BLACK LEAD TO TB1-4
   GREEN LEAD TO G2

5. IN 50 Hz UNITS, W1(19B226664G1) HAS NO PLUG AND MUST BE PROPERLY TERMINATED AT THE TIME OF INSTALLATION.
6. TB481 IS NOT PRESENT ON 19D423414G1-G2 POWER AMPLIFIERS.



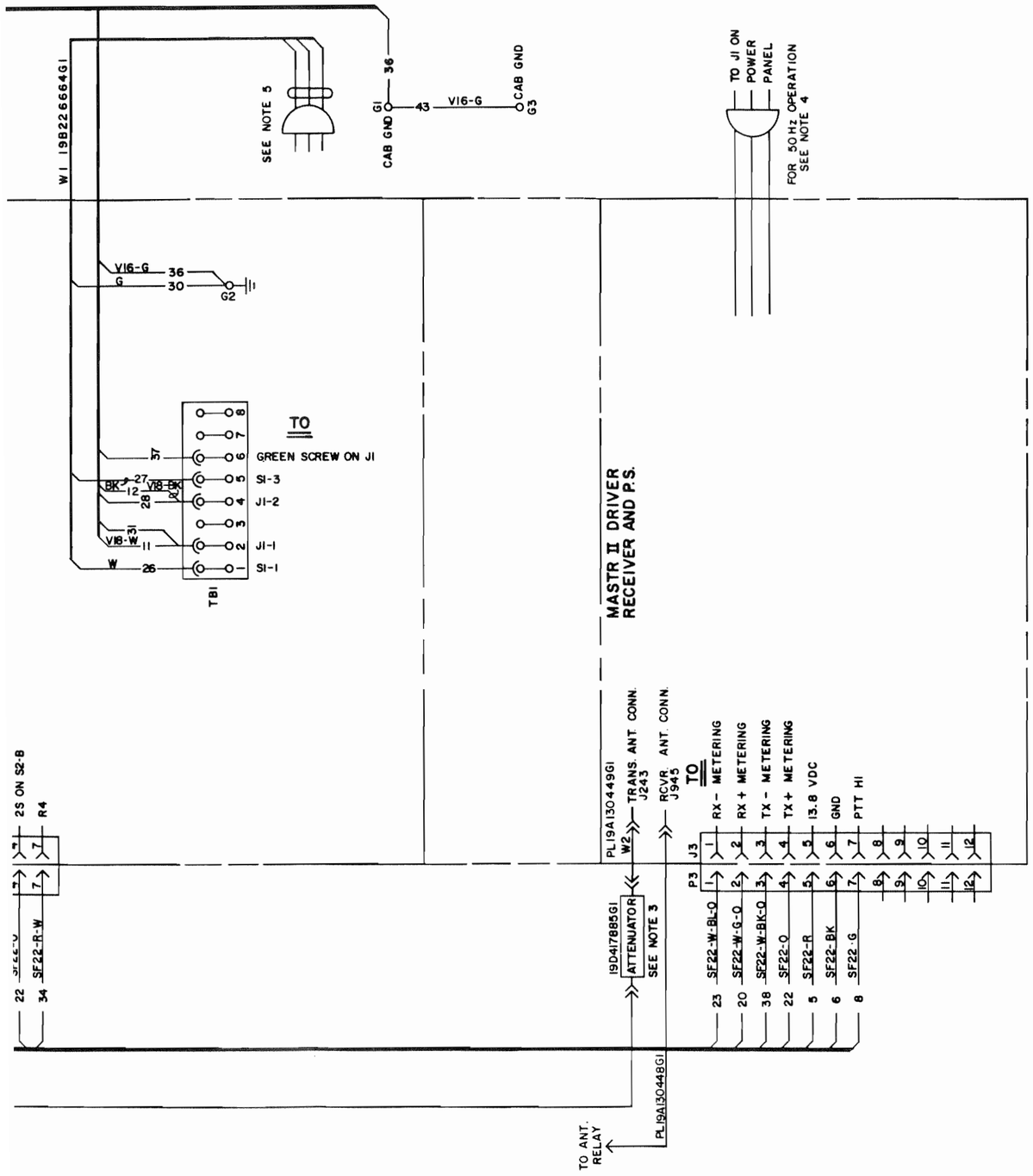
SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT, FOR DESCRIPTION OF CHANGES UNDER EACH REVISION LETTER.
THIS ELEM DIAG APPLIES TO
MODEL NO PL19D417871G1 — REV LETTER

CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF= MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH= MILLIHENRYS OR H=HENRYS.

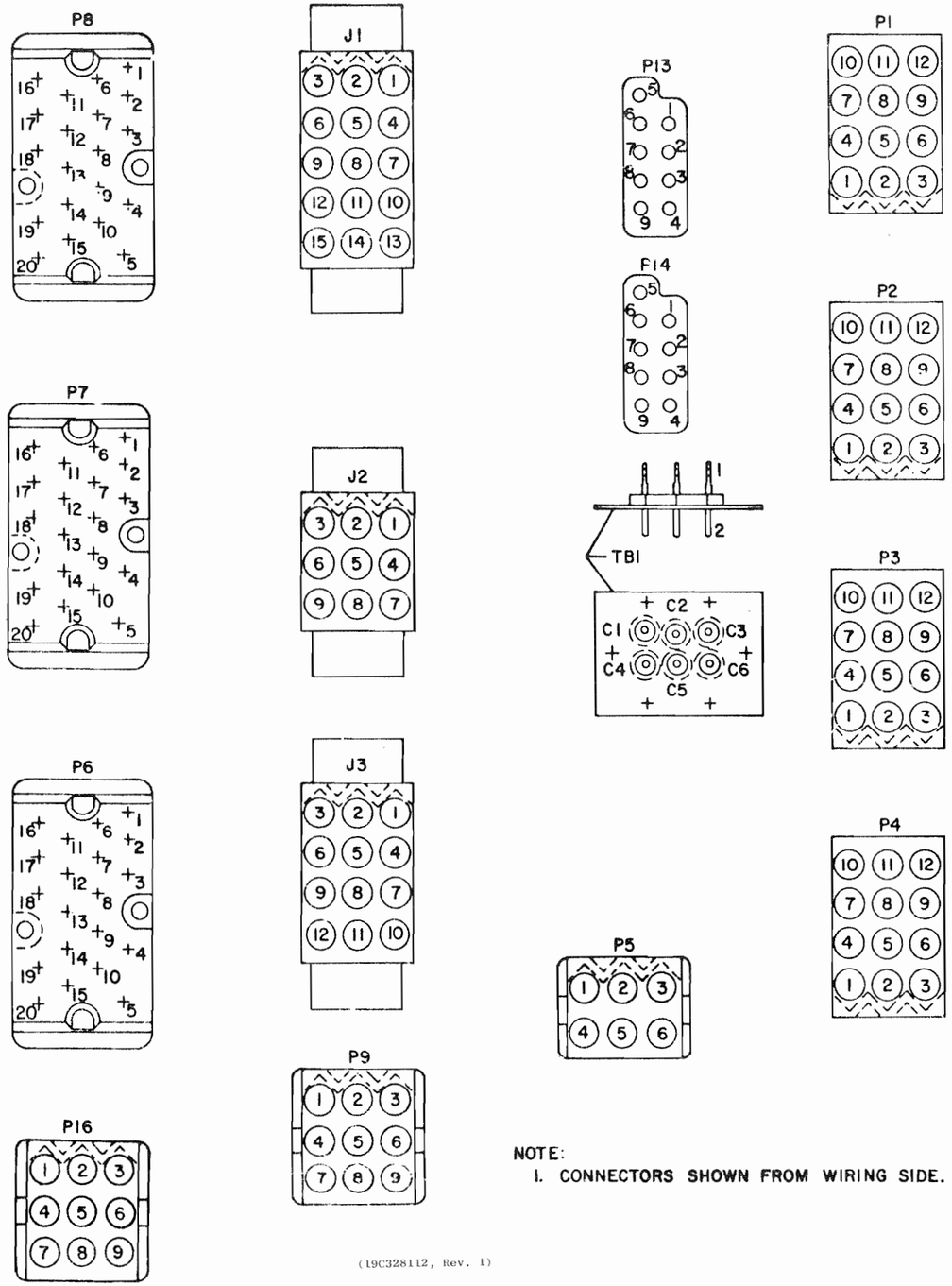
(19R622094, Rev. 6)

INTERCONNECTION DIAGRAM

HIGH POWER OVERLAY HARNESS
19D417871G2



(19R622094, Rev. 6)



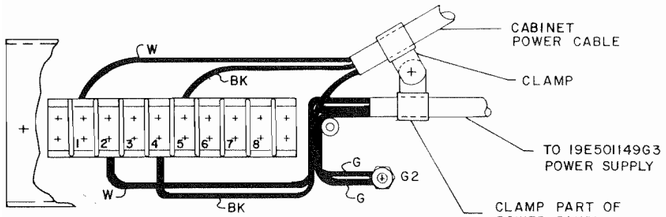
NOTE:
1. CONNECTORS SHOWN FROM WIRING SIDE.

(19C328112, Rev. 1)

OUTLINE DIAGRAM

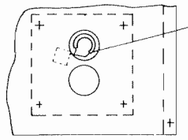
HARNESS 19C320811

Issue 2

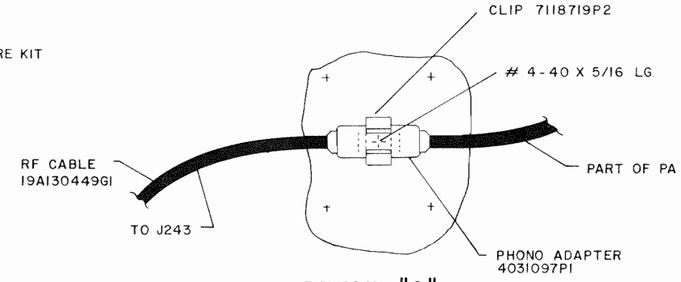


TB1 ON POWER PANEL

VIEW "B"

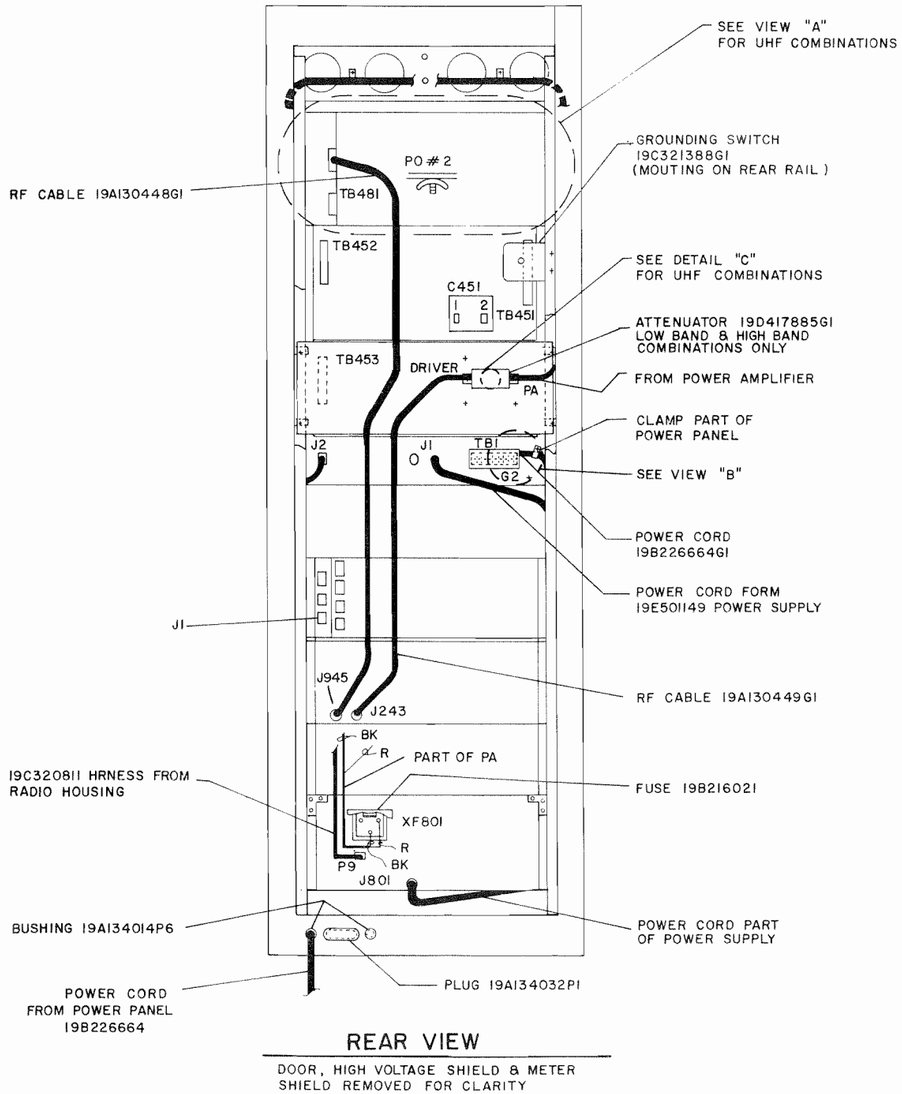


VEIW "D"



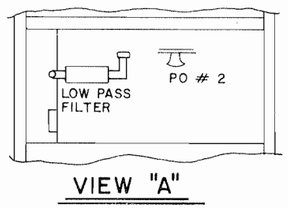
DETAIL "C"

UHF COMBINATIONS ONLY

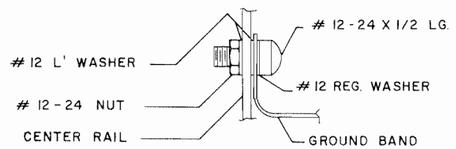


REAR VIEW

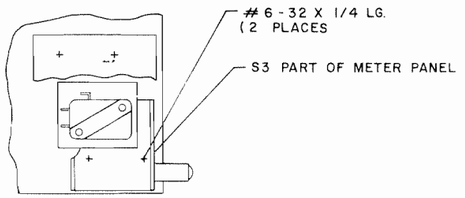
DOOR, HIGH VOLTAGE SHIELD & METER
SHIELD REMOVED FOR CLARITY



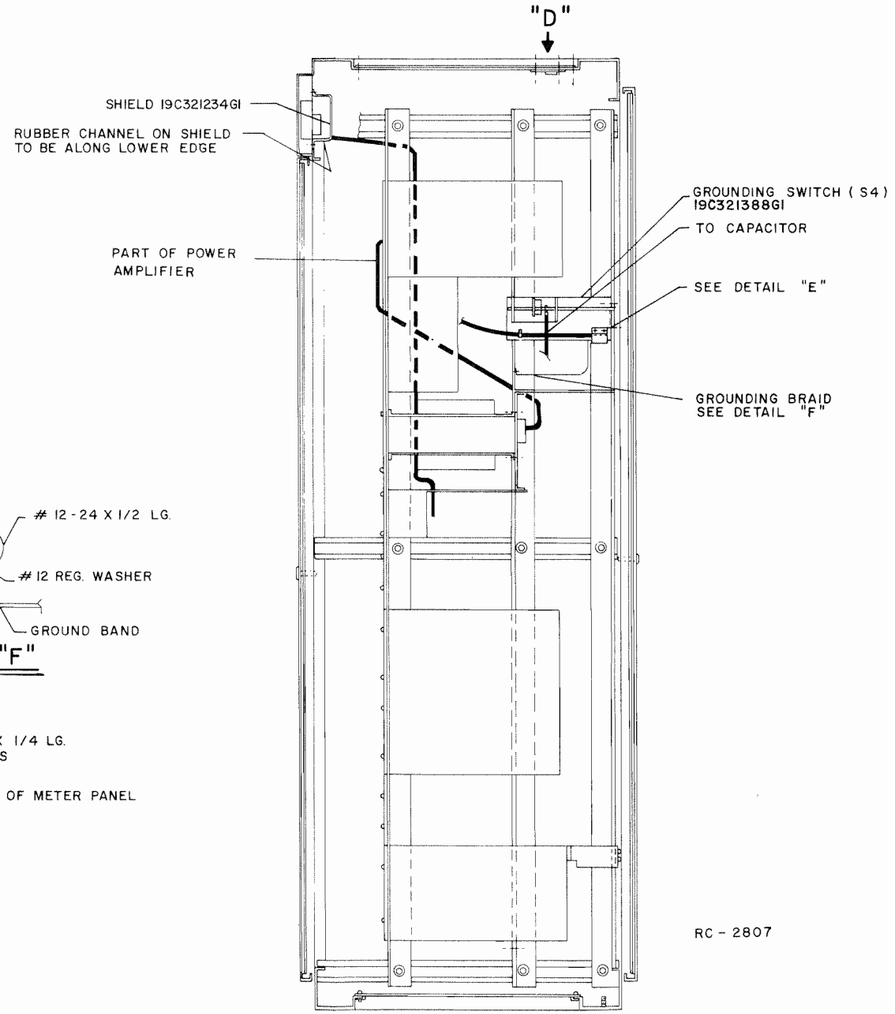
VIEW "A"



DETAIL "F"



DETAIL "E"



REAR VIEW

DOOR REMOVED

RC-2807

RF CABLING DIAGRAM

PARTS LIST

LBI-4970

MASTR II HIGH POWER STATION
(SEE RC-2819)

SYMBOL	GE PART NO.	DESCRIPTION
1	NP275660	Nameplate. (GE monogram).
2	19C311298P1	Frame. (Used with monogram).
3	4031053P7	Nut, sheet spring; sim to Tinnerman C12046-012-67.
4	19B226092G1	Frame.
5	19A130126G1	Card holder. (FCC license).
6	N80P16006C6	Screw, phillips: No. 10-32 x 3/8.
7	7160861P5	Nut, sheet spring: sim to Tinnerman C1505-1032-157.
8	19B226559P2	Top cover.
9	19A129903P1	Door support.
10	19A129903P2	Door support.
11	7118719P2	Clip, spring tension: sim to Prestole E-50001-041.
12	N80P9005C6	Screw, phillips: No. 4-40 x 5/16.
13	5491480P4	Clamp: sim to Adel Precision Products Corp. Type 754E. (Cabinet Power Cable).
14	19B209539P2	Lock, rim: sim to Chicago Lock Co. No. 1703-6T.
15	19B209539P3	Key: No. 1000 GE.
16	19C320756G2	Rear door.
17	19B226094P2	Mounting bar.
18	N80P21012PC6	Screw, phillips: No. 1/4-20 x 3/4.
19	N402P41C6	Flatwasher: 1/4 inch.
20	N403P25C6	Lockwasher, external tooth: 1/4 inch.
21	19B226559P1	Bottom cover.
22	19B226094P1	Mounting bar.
23	19A116496P1	Cable clamp.
24	19B209539P1	Lock: sim to Chicago Lock Co. No. 4260-1.
25	N80P16007C6	Screw, phillips: No. 10-32 x 7/16.
26	N210P16C6	Hexnut: No. 10-32.
27	N403P19C6	Lockwasher, external tooth: No. 10.
28	19C320756G1	Front door.
29	19B226572G2	Door support.
30	19B226572G1	Door support.
31	19A129902P1	Spring.
32	4035237P1	Washer.
33	19B226088P1	Hinge pin.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

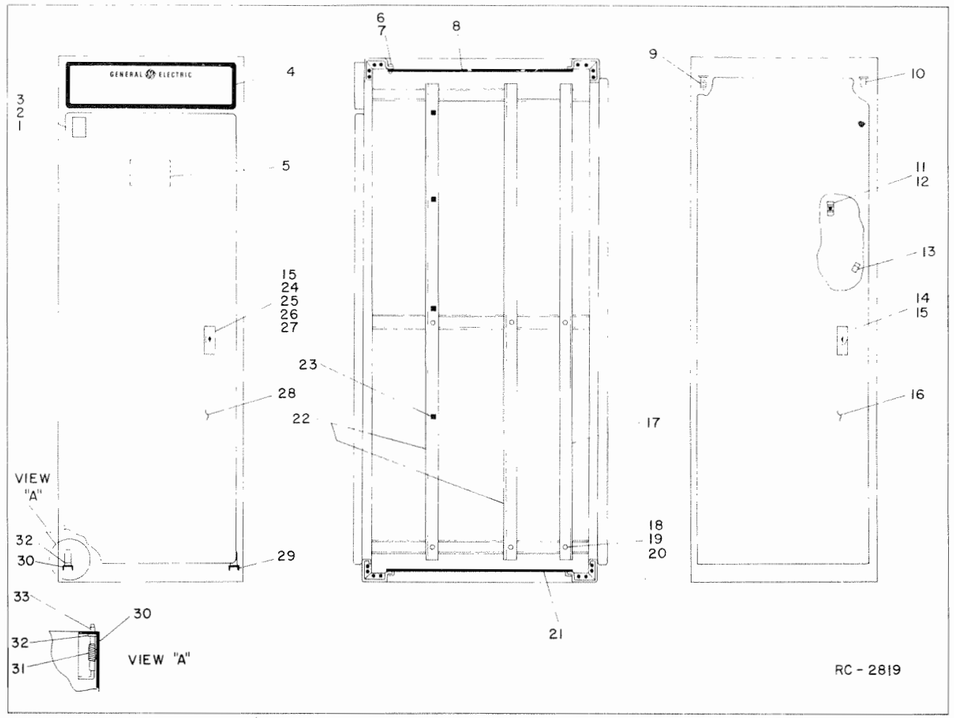
PARTS LIST

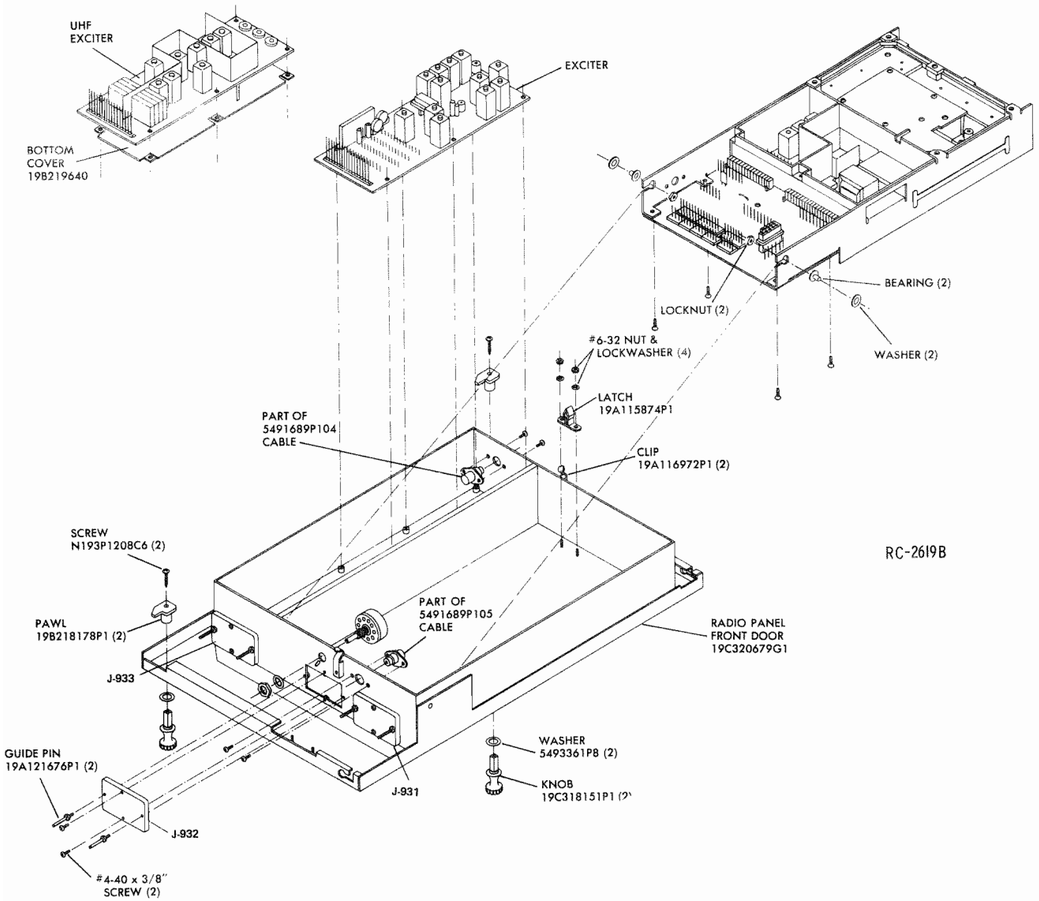
LBI-4971

METER PANEL
19D417871G1

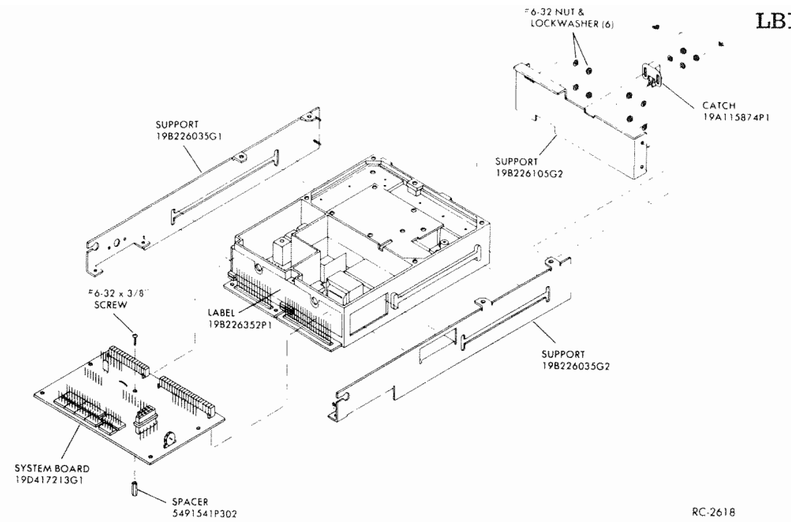
SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - CAPACITORS - - - - - - - - - -
C1 thru C4	5494481P11	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
		- - - - - - - - INDICATING DEVICES - - - - - - - -
DS1 and DS2	19C307037P35	Lamp, incandescent: 14.00 v; sim to GE 382.
		- - - - - - - - - - METERS - - - - - - - - - -
M1	19A134035P4	Meter, panel: 1.0 MADC movement; sim to GE 50-251300FAFA1JBM.
M2	19A134035P3	Meter, panel: 500 MADC movement; sim to GE 50-251300KMKM1JBL.
M3	19A134035P2	Meter, panel: 100 ohm/volt mechanism, AC movement; sim to GE 50-251344PZPZ1JAD.
M4	19A134035P1	Meter, panel: -10/0/50 µa DC movement; sim to GE 50251300CMCM1JAA.
		- - - - - - - - - - PLUGS - - - - - - - - - -
P1	7165458P2	Tip plug, solderless: red; sim to E.F. Johnson 105-302.
P2		Connector. Includes:
	19B209288P4	Shell.
	5496809P18	Connector: male contact: sim to Molex Products 1380-T.
P3		Connector. Includes:
	19B209288P24	Shell.
	5496809P18	Connector: male contact: sim to Molex Products 1380-T.
		- - - - - - - - - - SWITCHES - - - - - - - - - -
S3	5490346P1	Push, door interlock: SPDT, 10 amps at 125 or 240 VAC, 0.5 amp at 125 VDC or 0.25 amp at 250 VDC; sim to Micro Switch Type 2AC5.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XDS1 and XDS2	19B209509P1	Lampholder: sim to Dialco 183-9730-14-602.
		HARNESS ASSEMBLY 19D417871G2 (Includes P1-P3, and S3)
		- - - - - - - - - MISCELLANEOUS - - - - - - - -
	NP279836	Nameplate.
	19B209509P2	Lens, red. (Used with DS2).
	19B209509P3	Lens, green. (Used with DS1).
	4029851P7	Cable clamp, nylon: sim to Weckesser 3/8-4-128.
	19A130299P1	Support. (Used with cable clamps).
	4033714P2	Terminal. (Used on terminals of M1-M4).
	19B209268P106	Terminal. (PO No. 2).
	19B209268P110	Terminal. (Used with S3).
	19B209268P101	Terminal. (Used with TB1 and TB451).
	19B209260P26	Terminal, soldless. (Located at C451-1).
	7491823P7	Terminal, solderless: wire size No. 16-14 AWG. (Located on wires 7 and 10 at cabinet ground).
	7491823P8	Terminal, solderless: wire size No. 16-14 AWG. (Located on wire 36 ground, and both ends of wire 43).

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

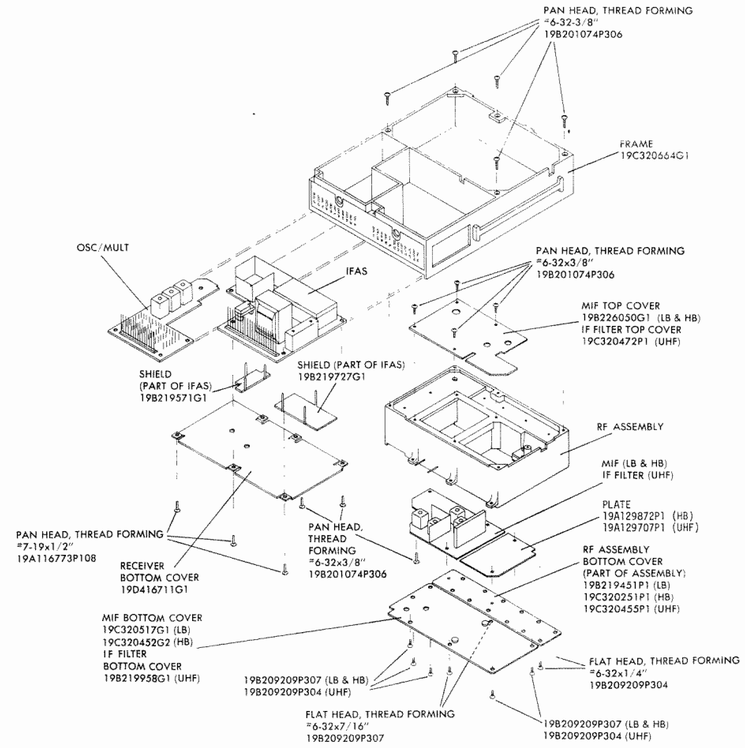




RC-2619B



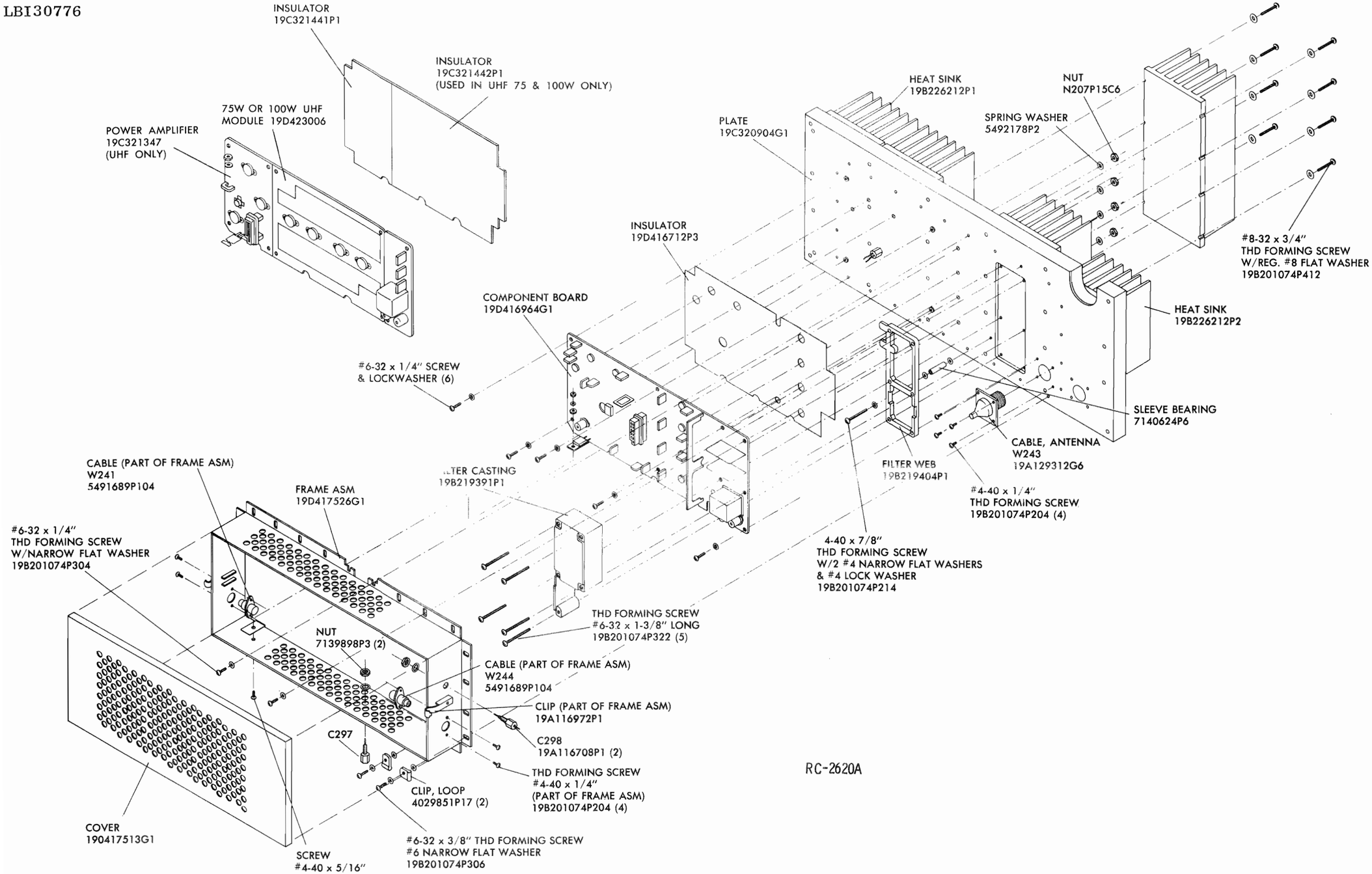
RC-2618



RC-2762B

MECHANICAL PARTS BREAKDOWN

RADIO PANEL FRONT DOOR



MECHANICAL PARTS BREAKDOWN

TRANSMITTER DRIVER POWER AMPLIFIER