

**MAINTENANCE MANUAL  
FOR  
MASTR DC & TONE REMOTE/REPEATER STATIONS  
WITH SATELLITE RECEIVER AND VOTING SELECTOR  
(OPTIONS 7758, 7759, 7760 & 7761)**

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**DESCRIPTION**

- 7758 - DC Remote/Repeater with Voting (without Channel Guard)
- 7759 - DC Remote/Repeater with Voting (with Channel Guard)
- 7760 - Tone Remote/Repeater with Voting (without Channel Guard)
- 7761 - Tone Remote/Repeater with Voting (with Channel Guard)

The above Options add the following assemblies to the Remote/Repeater Station.

**UNITS**

**MODIFICATION KITS**

Harness & Assembly	19A129631G1		
Tone/Audio Panel	19D413943G3	Back Plane	19A129630G1
Audio Board	19D416667G3*	Audio Board	19A129640G1
Power Supply	19D413917G1	Mute Driver Kit	19A129636G1
Audio Module	19D413958G1	4-Wire Audio	19A129508G1
Receiver Module	19D413994G1 (2)	Chan. Gd. Mod.	
Extender Board	19C317762G1	to Audio Bd.	19B219806P1**
Test Board	19D416003G1	Repeater Board	19B219907
Selector Cabinet	19E500936G1	Power Supply	19A129670G1
Repeater Board	19D416675G4**,***		

- \* Deletes 19D416667G2 Audio Board
- \*\* Used with Options 7759 & 7761 only
- \*\*\* Deletes 19D416675G6 Repeater Board

The Voting Selector panel is used with satellite receivers to form a receiver voting system. The Tone/Audio panel and Line Amplifier enables the station receiver to be used as a satellite receiver.

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 outputs are applied to the Voting Selector which selects the receiver with the best audio quality to be transmitted by the repeater station. All of the external satellite receivers are connected to the Voting Selector by AC or DC lines, or on RF link.

**VOTING SELECTOR PANEL**

The basic Voting Selector consists of an Interconnection Board, 117-Volt Power Supply, an Audio Module and up to six Receiver Modules (one for each satellite receiver). The Voting Selector provides continuous voting for the satellite receivers. The selected audio is amplified and applied to the repeater transmitter and to the Selector speaker.

Complete instructions for the Voting Selector are contained in Maintenance Manual LBI-4292.

## TONE/AUDIO PANEL

The tone/audio panel contains a 1950 Hz tone generator, a tone gate, and a line transformer. When the receiver is squelched, the 1950 Hz tone is applied to the telephone pair. When the receiver is unsquelched, the tone is removed and the receiver audio is applied to the Voting Selector panel.

Complete instructions for the tone/audio panel are contained in Maintenance Manual LBI-4582.

## SELECTOR AUDIO CONNECTIONS

All audio inputs from the satellite receivers must be connected to terminal boards mounted on the back of the Voting Selector Panel. A #22 AWG twisted pair is recommended for the audio leads. To gain access to the input terminals, remove the station back door and then remove the back plate on the Selector panel. Connect the audio pairs to the line input terminals as shown in the following chart:

Audio for Receiver Module:	Connect Audio Pair To:
1 (see note)	
2	TB9-12 and TB9-15
3	TB9-7 and TB9-10
4	TB9-2 and TB9-5
5	TB8-17 and TB8-20
6	TB8-12 and TB8-15

NOTE: Receiver Module 1 is connected to the station receiver by the receiver voting overlay harness.

## VOTING SELECTOR ADJUSTMENT

The adjustment procedure for the Voting Selector also includes adjustment of the satellite receivers. For complete instructions, refer to the Maintenance Manual for the Voting Selector.

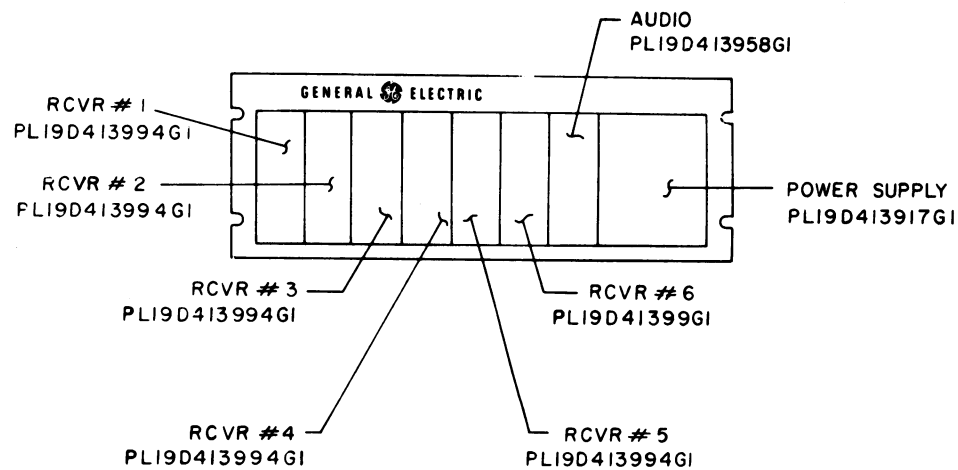
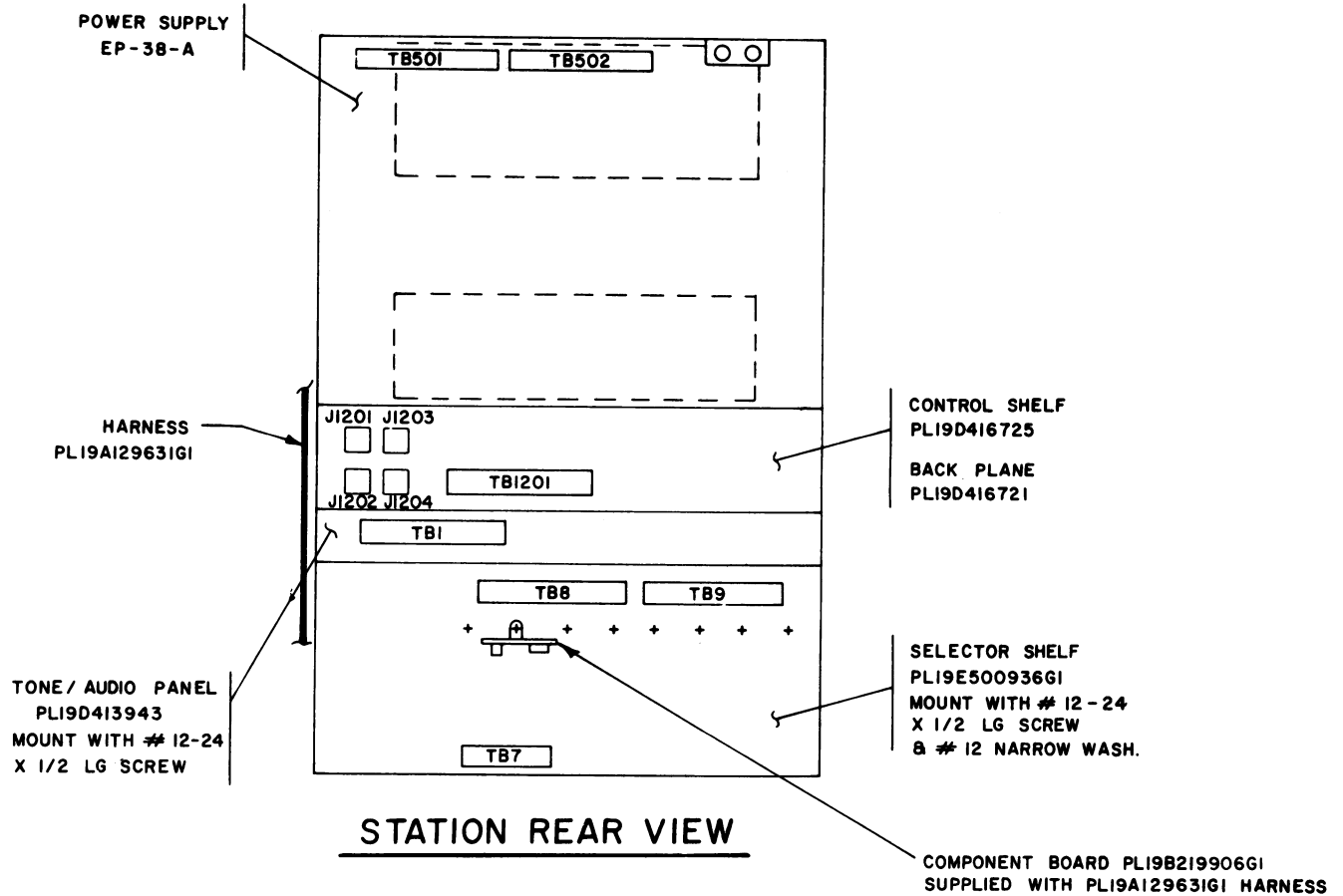
## MODIFICATIONS

For receiver voting applications, modifications are required to the station, Voting Selector and the station Interconnection wiring.

1. Install the 19D413943G3 Tone/Audio Panel as shown in Figure 1.
2. Install the 19E500936G1 Voting Selector Cabinet as shown in Figure 1
3. Mount the 19B219906G1 component Board under the existing screw as shown in Figure 1.
4. For Receiver Voting applications with CHANNEL GUARD, remove the jumper wire between H16 and H17 on the 19D416675G4 Repeater Control Board.
5. Install the 19A129631G1 overlay harness and make connections as shown on the Wiring Diagram 19D416883.
6. Spot tie the overlay harness to the existing cabinet harness.
7. Install the following boards in the Voting Selector Panel as shown in Figure 1.
  - A. Power Supply 19D413917G1
  - B. Audio Board 19D413958G1
  - C. Receiver Board 19D419994G1

## NOTE

The telephone pair (line to line keying) is connected to TB1201-8 and TB1201-9 on the Control Shelf.



**FRONT VIEW SELECTOR SHELF**  
**( PARTIAL )**

RC - 2526

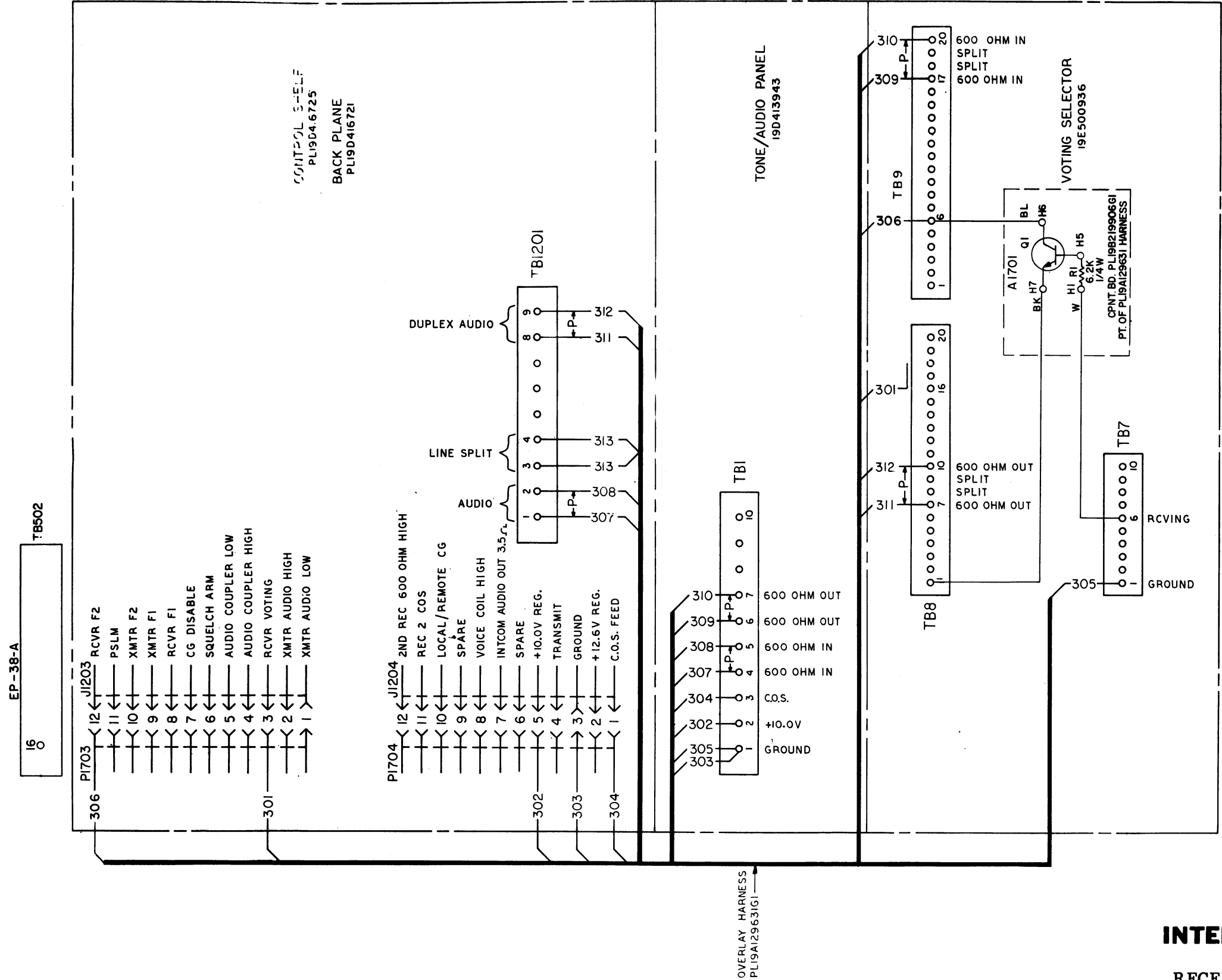
Figure 1 - Installation Diagram



PARTS LIST  
LBI-4687B  
HARNESS AND ASSEMBLY  
19A129631G1

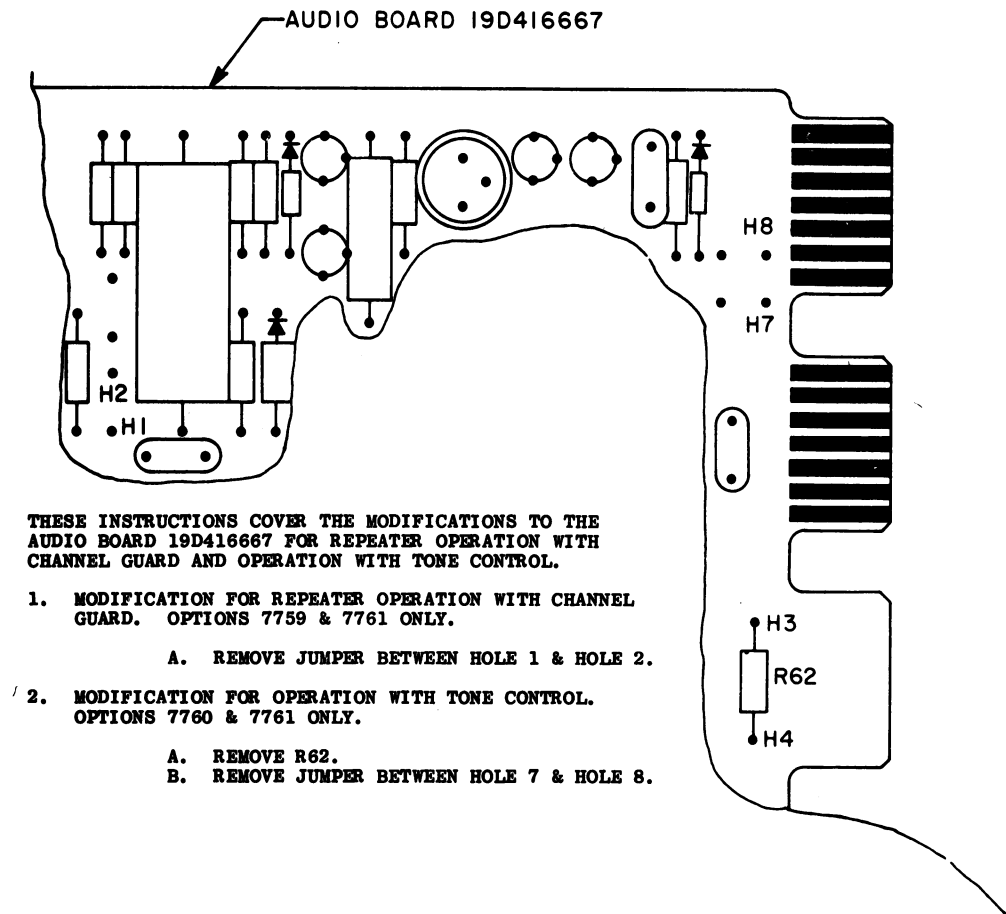
SYMBOL	GE PART NO.	DESCRIPTION
A1701		COMPONENT BOARD 19B219906G1
Q1	19A115889P1	TRANSISTORS Silicon, NPN.
R1	3R152P622J	RESISTORS Composition: 6200 ohms ±5%, 1/4 w.
P1703	5496809P17	PLUGS Connector. Includes: Contact, electrical: female; sim to Molex Products 1381-T.
P1704	19B209288P20	Connector. Includes: Contact, electrical: female, wire size No. 18-28 AWG; sim to Molex Products 1381-T.
	5496809P17	Shell: sim to Molex 1360R-1.
	5496809P18	Contact, electrical: male, wire size No. 18-28 AWG; sim to Molex Products 1380T.
	19B209288P20	Shell: sim to Molex 1360R-1.
	19B209260P102	MISCELLANEOUS Terminal, solderless: 16-20 AWG, No. 6 stud hole; sim to AMP 40763.
	19B209260P103	Terminal, solderless: 20-24 AWG, No. 6 stud hole; sim to AMP 60495-1.
	19A116006P1	Spade terminal; sim to Kulka 410SL.

\*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.



(19D416883, Rev. 5)

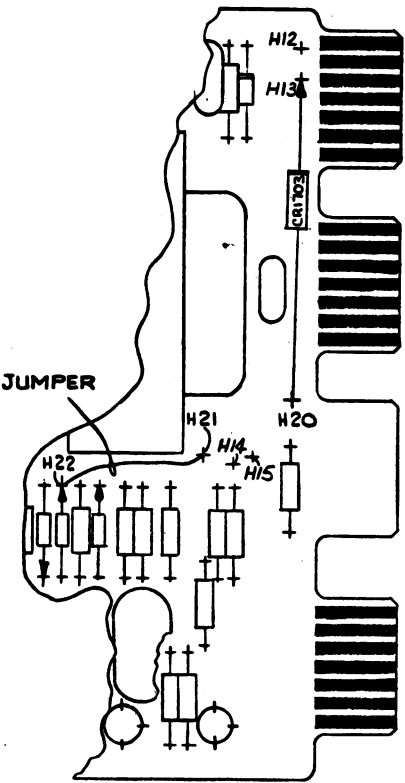
INTERCONNECTION DIAGRAM  
RECEIVER VOTING OVERLAY HARNESS  
FOR REMOTE/REPEATER STATIONS



THESE INSTRUCTIONS COVER THE MODIFICATIONS TO THE AUDIO BOARD 19D416667 FOR REPEATER OPERATION WITH CHANNEL GUARD AND OPERATION WITH TONE CONTROL.

1. MODIFICATION FOR REPEATER OPERATION WITH CHANNEL GUARD. OPTIONS 7759 & 7761 ONLY.
  - A. REMOVE JUMPER BETWEEN HOLE 1 & HOLE 2.
2. MODIFICATION FOR OPERATION WITH TONE CONTROL. OPTIONS 7760 & 7761 ONLY.
  - A. REMOVE R62.
  - B. REMOVE JUMPER BETWEEN HOLE 7 & HOLE 8.

(19B219806, Rev. 1)



AUDIO BOARD  
PL 19D416667  
(COMPONENT SIDE)

THESE INSTRUCTIONS COVER THE INSTALLATION OF THE DIODE KIT PL19A12964061 ON THE AUDIO BOARD

INSTRUCTIONS FOR INSTALLING (PL19A12964061) DIODE KIT FOR RECEIVER YOTING APPLICATIONS

- 1-REMOVE JUMPER BETWEEN H12 & H13.
- 2-SOLDER IN CR1703 IN HOLES PROVIDED AS SHOWN.
- 3.SOLDER JUMPER BETWEEN H21 & H22.

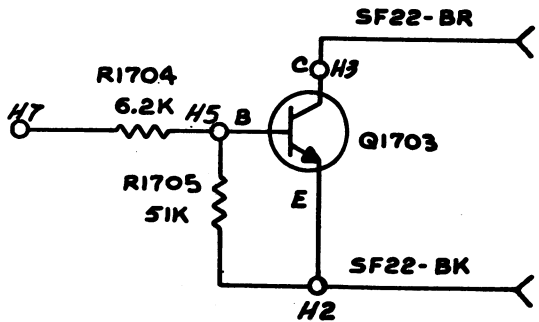
(19C320463, Rev. 3)

PARTS LIST  
LSI-4688  
MUTE DRIVER KIT  
19A129636G1

SYMBOL	GE PART NO.	DESCRIPTION
Q1703	19A118880P1	----- TRANSISTORS ----- Silicon, NPN; sim to Type 2N2712.
		----- RESISTORS ----- Composition: 6200 ohms $\pm 5\%$ , 1/4 w. Composition: 51,000 ohms $\pm 5\%$ , 1/4 w.
R1704	3R152P622J	
R1705	3R152P513J	
	7487424P29	Terminal board: miniature, phen, 6 terminals.
	19A118006P1	Spade terminal: sim to Kulka 410SL.

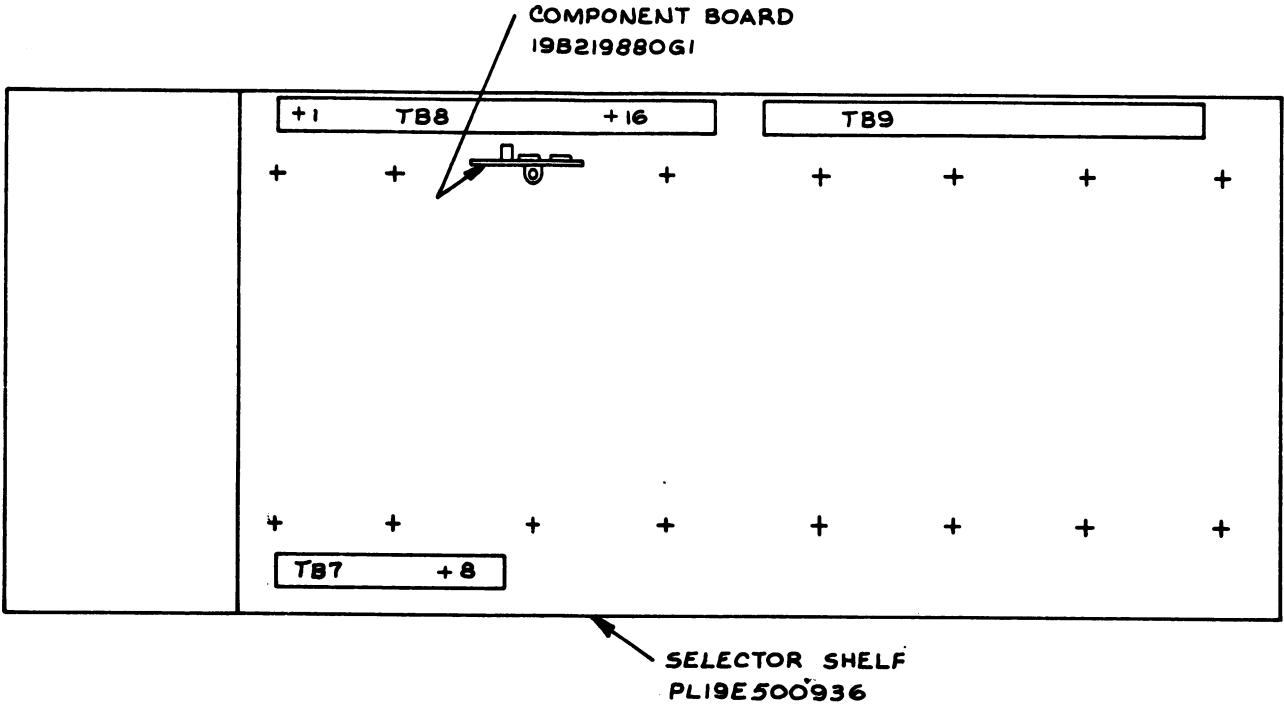
\*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

NOTES:  
1. TERMINATE ALL LET HANG WIRES WITH TERMINAL 19A116006P1.



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.

(19A129635, Rev. 3)

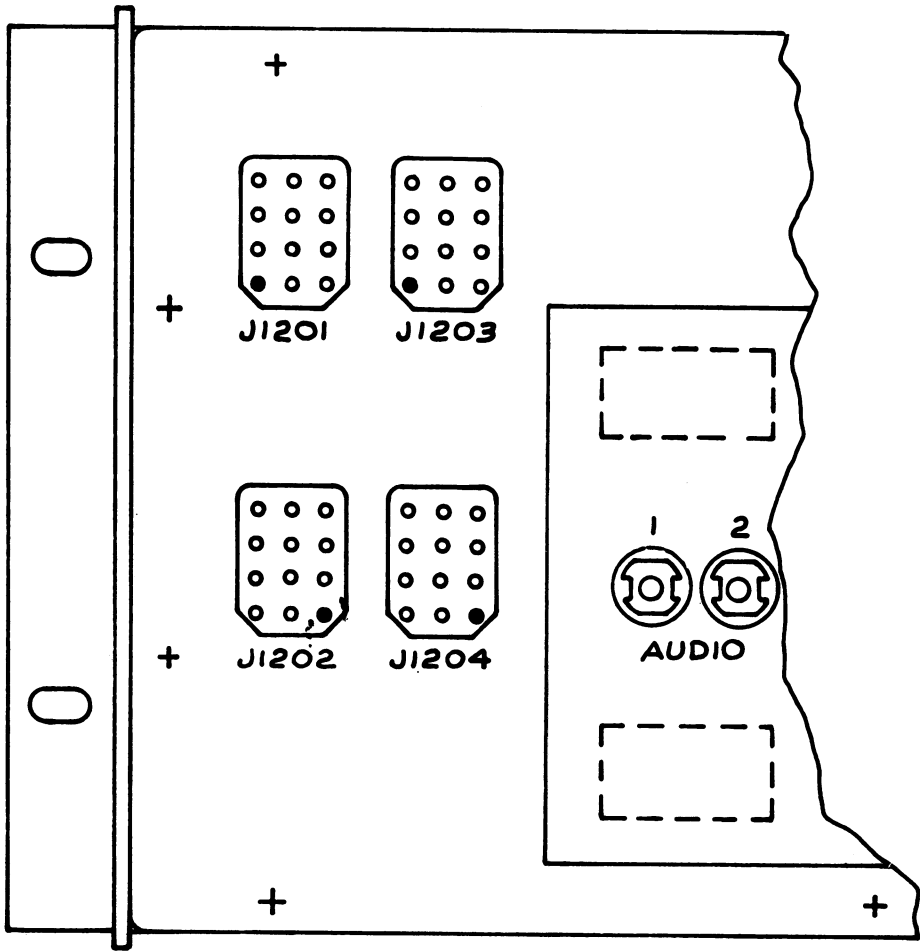


THESE INSTRUCTIONS COVER THE INSTALLATION OF THE MUTE DRIVER KIT PL19A129636G1 ON THE SELECTOR SHELF.

INSTRUCTIONS FOR INSTALLING (PL19A129636G1) MUTE DRIVER KIT IN REMOTE/REPEAT APPLICATIONS:

1. MOUNT COMPONENT BOARD UNDER EXISTING SCREW AS SHOWN.
2. STRIP & TIN WIRE 30" OF OVERLAY HARNESS 19A129631G1. SOLDER THIS WIRE TO COMPONENT BOARD 19B219880G1 H7
3. CONNECT BROWN WIRE TO TB7-8.
4. CONNECT BLACK WIRE TO TB8-1.

(19C320467, Rev. 1)



CONTROL SHELF PL19D416725

THESE INSTRUCTIONS COVER THE INSTALLATION OF THE OPTION JACK KIT PL19A129630 ON THE CONTROL SHELF.

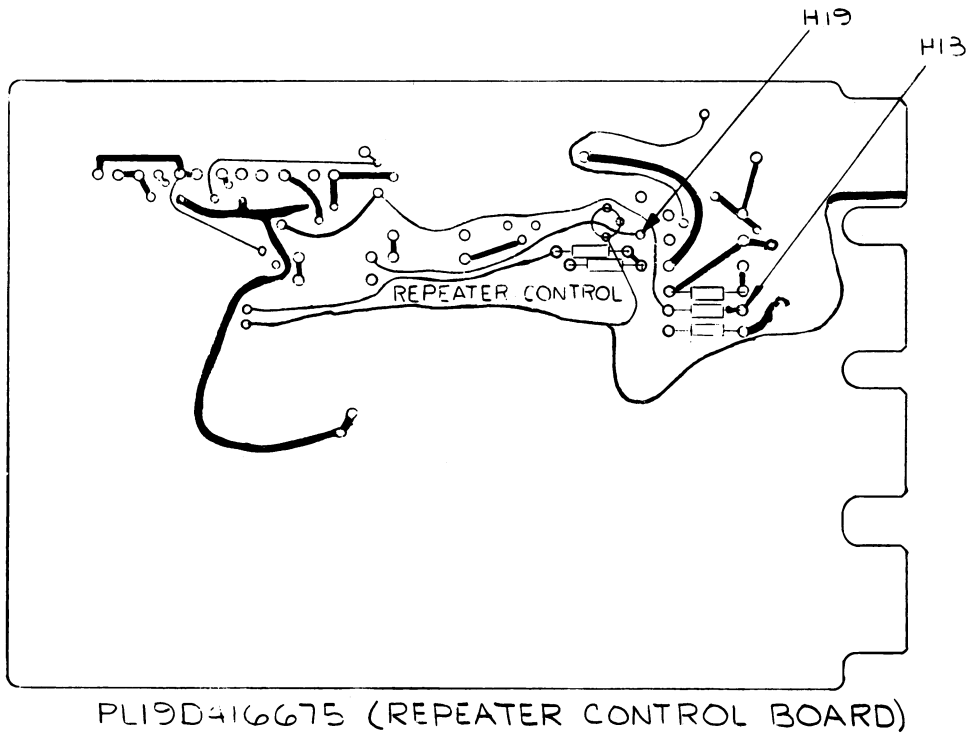
INSTRUCTIONS FOR INSTALLING (PL19A129630) OPTION JACK KIT.

1. INSTALL J1203 ON BACK PLANE BY SOLDERING IN PLACE. TAKE NOTICE OF THE ORIENTATION OF THE JACK AND ALSO THE LOCATION OF THE "KEY" PIN.
2. INSTALL J1204 ON BACK PLANE BY SOLDERING IN PLACE. TAKE NOTICE OF THE ORIENTATION OF THE JACK AND ALSO THE LOCATION OF THE KEY PIN.

(19B219883, Rev. 1)

MODIFICATION DRAWINGS

FOR SELECTOR PANEL 19E500936  
AND CONTROL SHELF 19D416725



THESE INSTRUCTIONS COVER THE MODIFICATION OF THE REPEATER CONTROL BOARD PL19D416675 FOR RECEIVER VOTING APPLICATION.

INSTRUCTIONS FOR MODIFICATION OF REPEATER CONTROL BOARD PL19D416675.

1. INSTALL #22 JUMPER BETWEEN H18 AND H19 AND SOLDER IN PLACE

(19B219907, Rev. 1)

**PARTS LIST**

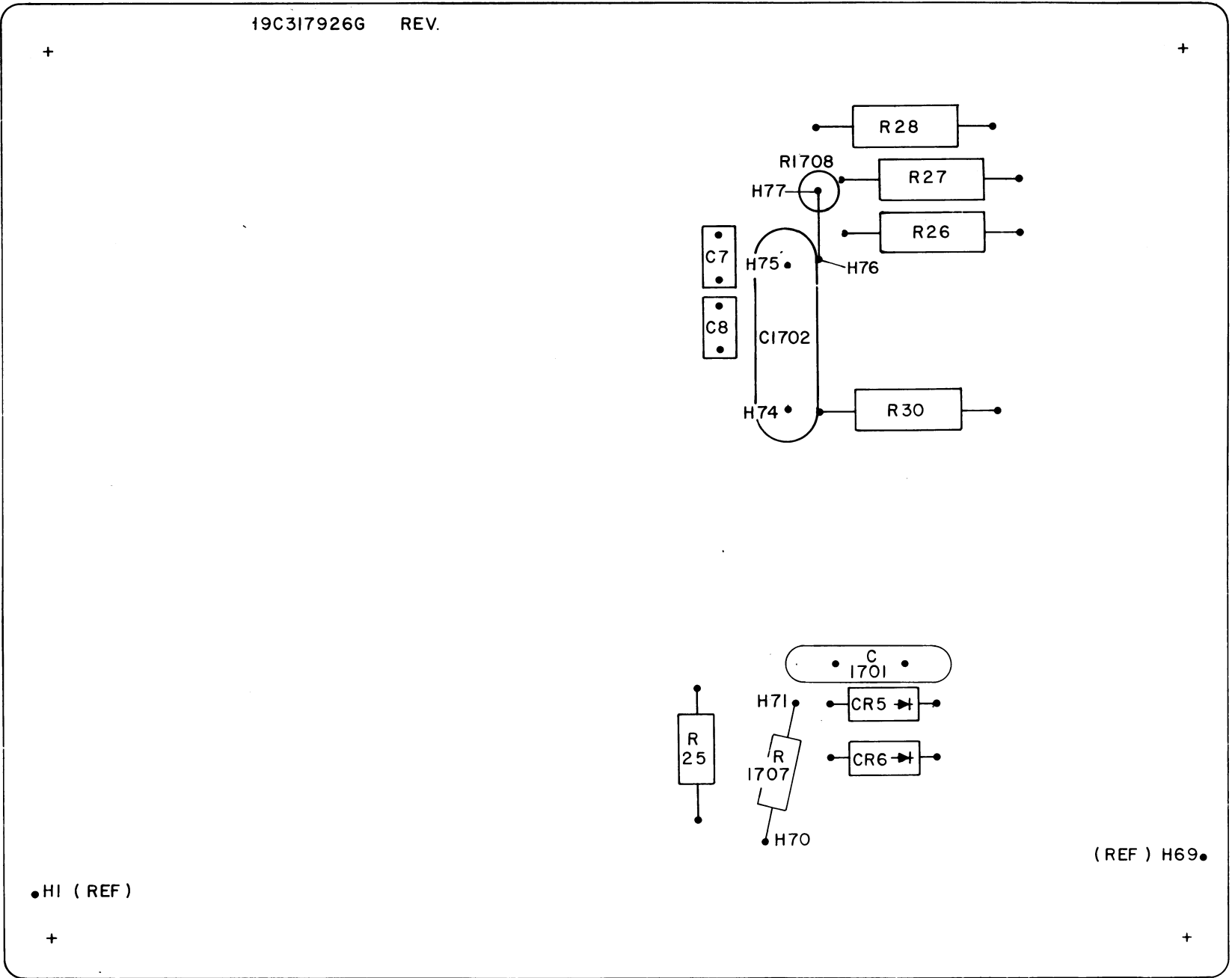
LBI-4644  
POWER SUPPLY (EP-38-A)  
MODIFICATION KIT

SYMBOL	GE PART NO.	DESCRIPTION
C1701 and C1702	5494481P21	----- CAPACITORS ----- Ceramic disc: 10,000 pf ±20%, 500 VDCW; sim to RMC Type JF Discap.
R1707 and R1708	3R77P100J	----- RESISTORS ----- Composition: 10 ohms ±5%, 1/2 w.

\*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

**MODIFICATION DRAWING**

FOR POWER SUPPLY EP-38-A  
19C317926G1 AND REPEATER CONTROL BOARD



(19C320505, Rev. 2)

- NOTES:
1. ADD C1701, C1702, R1707 & R1708 AS SHOWN.
  2. SOLDER ALL ELECTRICAL CONNECTIONS.