5040

INSTALLATION INSTRUCTIONS FOR MASTR RECEIVER CHANNEL GUARD MODIFICATION KITS

19A122382-G1 (Low Tone 71.9 to 156.7 Hz)
19A122382-G2 (High Tone 152.2 to 203.5 Hz)
19A122382-G3 (Low & High Tone Installation)
19A122382-G4 (450 MHz Stations with 2 watt receivers)

Receiver Channel Guard Modification Kits 19A122382-G1, G2 & G3 provide the Channel Guard Decoder Board, wiring harness and modification components for installing Channel Guard in standard MASTR Professional Receivers. The Audio Squelch Board is the only board requiring modification when installing these kits.

Modification Kit 19A122382-G4 is needed only when one of the above Kits is to be installed in a 450 MHz station receiver with 2-watt audio. This Kit includes a coil (L1) and two eyelets for mounting the coil on the Channel Guard Board.

INSTALLATION INSTRUCTIONS (19A122383 & 19C311752)

Remove the bottom cover of the receiver and install the Modification Kit according to the following instructions:

1. Make the following modification on the Audio Squelch Board: (See 19D402727)
   a. On narrow band receivers: Remove C28 (1 μF), R41 (200K) and replace R32 (1 K) with R61 (220).
   b. On wide band receivers: Remove R78 (1 K), R79 (1 K) and C76 (.002 μF) and replace with R61 (220) a part of Mod. Kit 382-G3.

2. On late Models change the Audio Board number:

From	To
19D402327-G1	19D402327-G2
19D402327-G3	19D402327-G4
19D402327-G5	19D402327-G6
19D402327-G7	19D402327-G8
19D402327-G9	19D402327-G10
19D402327-G11	19D402327-G12

3. Install the Channel Guard board 19C303550, the Decoder Reed and mounting bracket as shown on 19D402727.

4. Install wiring harness 19B205484-G1 according to the Connections Chart on 19D402727.

5. Mount Microphone Hookswitch 19C303571-G2 and insert the pine in holes 5 and 8 of the 13-pin Vehicle Systems Plug P701.

6. On early Models change the Receiver Model number:

From Model No.	To Model No.	
	Low Tone	High Tone
4ER39A10	4ER39A19	4ER39A46
4ER39A11	4ER39A20	4ER39A47
4ER39A12	4ER39A21	4ER39A48
4ER39A13	4ER39A22	4ER39A49
4ER39A14	4ER39A23	4ER39A50
4ER39A15	4ER39A24	4ER39A51
4ER39A16	4ER39A25	4ER39A52
4ER39A17	4ER39A26	4ER39A53
4ER39A18	4ER39A27	4ER39A54
4ER39A28	4ER39A37	4ER39A55
4ER39A29	4ER39A38	4ER39A56
4ER39A30	4ER39A39	4ER39A57
4ER39A31	4ER39A40	4ER39A58
4ER39A32	4ER39A41	4ER39A59
4ER39A33	4ER39A42	4ER39A60
4ER39A34	4ER39A43	4ER39A61
4ER39A35	4ER39A44	4ER39A62
4ER39A36	4ER39A45	4ER39A63
4ER40A10	4ER40A16	4ER40A22
4ER40A11	4ER40A17	4ER40A23
4ER40A12	4ER40A18	4ER40A24
4ER40A13	4ER40A19	4ER40A25
4ER40A14	4ER40A20	4ER40A26
4ER40A15	4ER40A21	4ER40A27
4ER41A10	4ER41A16	4ER41A34
4ER41A11	4ER41A17	4ER41A35
4ER41A12	4ER41A18	4ER41A36
4ER41A13	4ER41A19	4ER41A37
4ER41A14	4ER41A20	4ER41A38
4ER41A15	4ER41A21	4ER41A39
4ER41A22	4ER41A28	4ER41A40
4ER41A23	4ER41A29	4ER41A41
4ER41A24	4ER41A30	4ER41A42
4ER41A25	4ER41A31	4ER41A43
4ER41A26	4ER41A32	4ER41A44
4ER41A27	4ER41A33	4ER41A45
4ER42B10	4ER42B16	4ER42B34
4ER42B11	4ER42B17	4ER42B35
4ER42B12	4ER42B18	4ER42B36
4ER42B13	4ER42B19	4ER42B37
4ER42B14	4ER42B20	4ER42B38
4ER42B15	4ER42B21	4ER42B39
4ER42B22	4ER42B28	4ER42B40
4ER42B23	4ER42B29	4ER42B41
4ER42B24	4ER42B30	4ER42B42
4ER42B25	4ER42B31	4ER42B43
4ER42B26	4ER42B32	4ER42B44
4ER42B27	4ER42B33	4ER42B45

MOBILE RADIO DEPARTMENT
GENERAL ELECTRIC COMPANY
LYNCHBURG, VIRGINIA 24502

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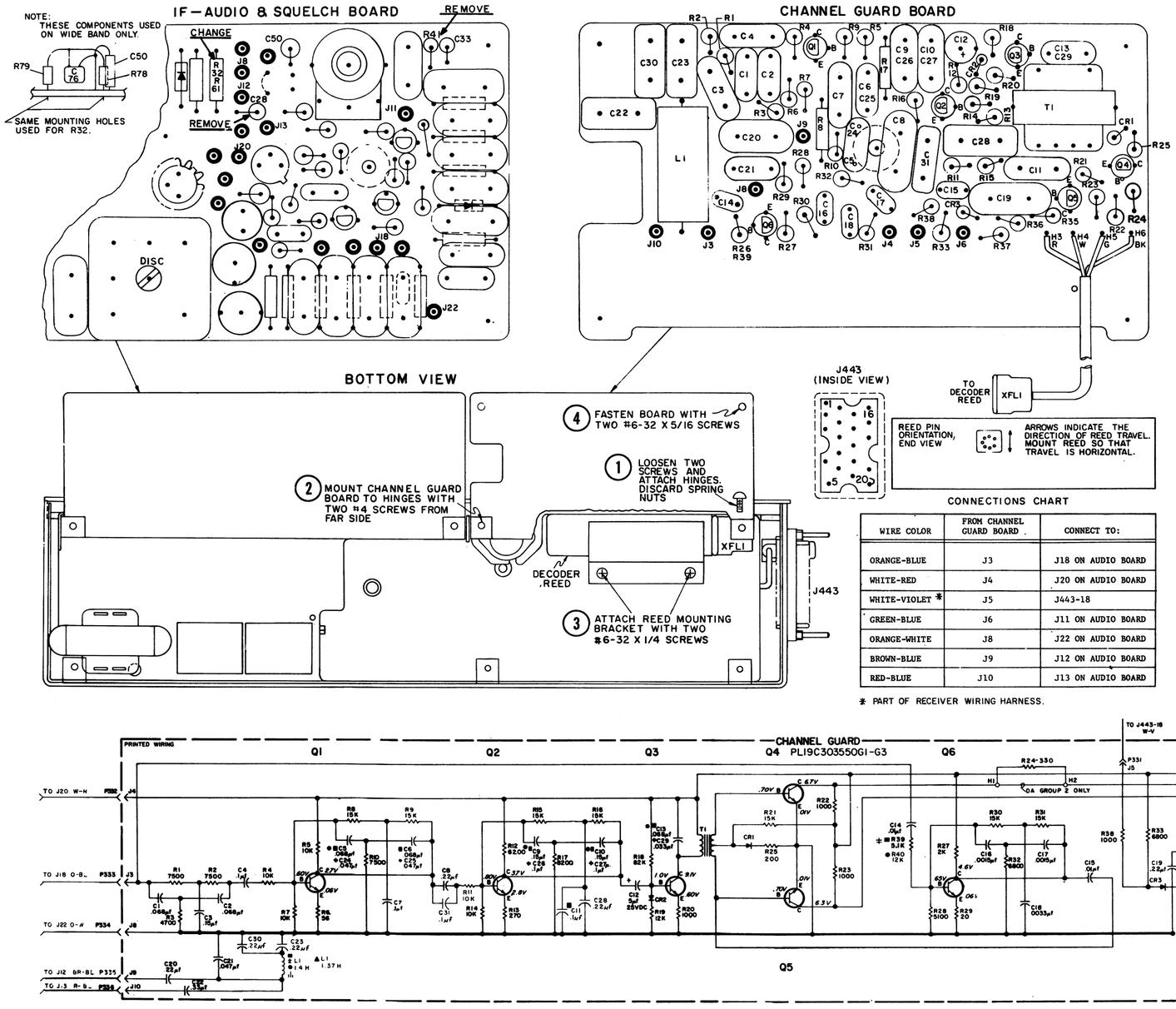
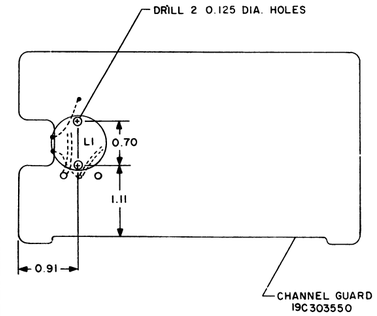


THIS MODIFICATION OF THE CHANNEL GUARD BOARD IS NECESSARY ONLY ON 450 MHz STATIONS WITH 2 WATT (AUDIO) RECEIVERS.

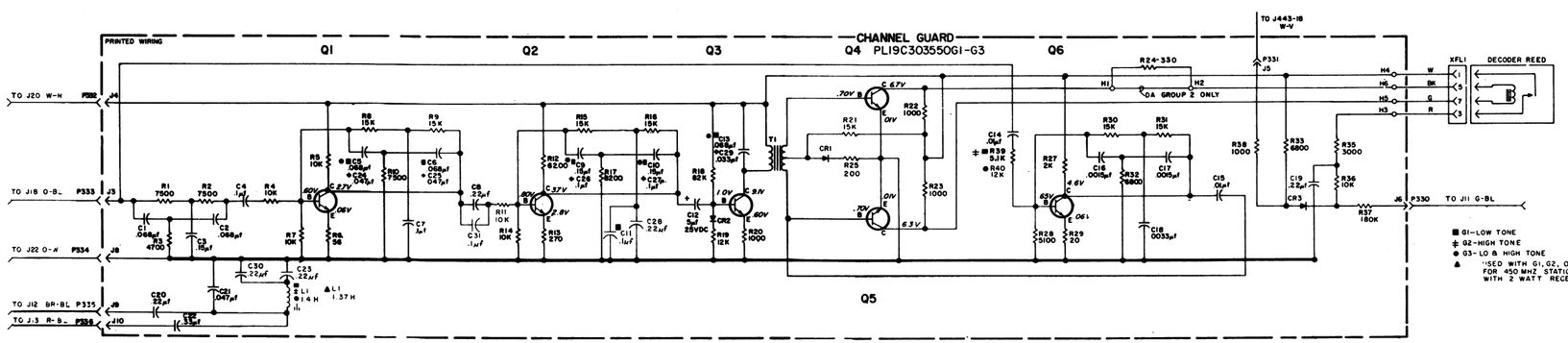


1. REMOVE L1 (19A115690P2) AND DISCARD.
2. DRILL TWO HOLES AND ADD EYELETS AS SHOWN ABOVE.
3. MOUNT NEW L1 (19B204554G1) INTO EYELETS.
4. USE INSULATED JUMPER WIRE AND CONNECT COIL TERMINALS TO HOLES FROM WHICH OLD L1 WAS REMOVED.
5. REMOVE AND DISCARD BRACKET FROM RECEIVER USED TO FASTEN BACK COVER.

CONNECTIONS CHART

WIRE COLOR	FROM CHANNEL GUARD BOARD	CONNECT TO:
ORANGE-BLUE	J3	J18 ON AUDIO BOARD
WHITE-RED	J4	J20 ON AUDIO BOARD
WHITE-VIOLET *	J5	J443-18
GREEN-BLUE	J6	J11 ON AUDIO BOARD
ORANGE-WHITE	J8	J22 ON AUDIO BOARD
BROWN-BLUE	J9	J12 ON AUDIO BOARD
RED-BLUE	J10	J13 ON AUDIO BOARD

* PART OF RECEIVER WIRING HARNESS.



Installation Instructions

MASTR RECEIVER CHANNEL GUARD MODIFICATION KIT

(19D402727, Rev. 3)

PARTS LIST

LBI-3698A

CHANNEL GUARD MODIFICATION KIT
19A122382-G1 THRU G4

SYMBOL	GE PART NO.	DESCRIPTION
		19A122382-G1 LOW TONE 19A122382-G2 HIGH TONE 19A122382-G3 LOW AND HIGH TONE
		- - - - - - - - - CAPACITORS - - - - - - - - -
C1 and C2	5491459-P104	Polyester: 0.068 µf ±10%, 50 VDCW.
C3	5491459-P102	Polyester: 0.15 µf ±10%, 50 VDCW.
C4	5491459-P105	Polyester: 0.1 µf ±10%, 50 VDCW.
C5 and C6	5491459-P104	Polyester: 0.068 µf ±10%, 50 VDCW.
C7	5491459-P105	Polyester: 0.1 µf ±10%, 50 VDCW.
C8*	5491459-P103	Polyester: 0.22 µf ±10%, 50 VDCW. Earlier than REV E in G1, REV D in G2:
	5491459-P109	Polyester: 0.33 µf ±10%, 50 VDCW.
C9 and C10	5491459-P102	Polyester: 0.15 µf ±10%, 50 VDCW.
C11*	5491459-P105	Polyester: 0.1 µf ±10%, 50 VDCW. Earlier than REV E in G1:
	5491459-P109	Polyester: 0.33 µf ±10%, 50 VDCW.
C12	5495670-P14	Electrolytic: 5 µf +75% -10%, 25 VDCW; sim to Sprague 30D.
C13	5491459-P104	Polyester: 0.068 µf ±10%, 50 VDCW.
C14 and C15	5491459-P106	Polyester: 0.01 µf ±10%, 50 VDCW.
C16 and C17	5491459-P110	Polyester: 0.0015 µf ±10%, 50 VDCW.
C18	5491459-P111	Polyester: 0.0033 µf ±10%, 50 VDCW.
C19*	5491459-P103	Polyester: 0.22 µf ±10%, 50 VDCW. Earlier than REV E in G1, REV D in G2:
	5491459-P109	Polyester: 0.33 µf ±10%, 50 VDCW.
C20	5491459-P103	Polyester: 0.22 µf ±10%, 50 VDCW.
C21*	5491459-P108	Polyester: 0.047 µf ±10%, 50 VDCW. Earlier than REV D in G1, REV C in G2:
	5491459-P104	Polyester: 0.068 µf ±10%, 50 VDCW.
C22	5491459-P109	Polyester: 0.33 µf ±10%, 50 VDCW.
C23*	5491459-P103	Polyester: 0.22 µf ±10%, 50 VDCW. Earlier than REV E in G1, REV D in G2:
	5491459-P112	Polyester: 0.47 µf ±10%, 50 VDCW.
C24 and C25	5491459-P108	Polyester: 0.047 µf ±10%, 50 VDCW.
C26 and C27	5491459-P105	Polyester: 0.1 µf ±10%, 50 VDCW.
C28*	5491459-P103	Polyester: 0.22 µf ±10%, 50 VDCW. Added to G1 by REV E.
C29	5491459-P101	Polyester: 0.033 µf ±10%, 50 VDCW.
C30*	5491459-P103	Polyester: 0.22 µf ±10%, 50 VDCW. Added to REV E, G2 by REV D.
C31*	5491459-P105	Polyester: 0.1 µf ±10%, 50 VDCW. Added to REV E, G2 by REV D.
		- - - - - - - DIODES AND RECTIFIERS - - - - - -
CR1 and CR2	4038056-P1	Germanium.
CR3	19A115250-P1	Silicon.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

SYMBOL	GE PART NO.	DESCRIPTION
		- - - - - - - - - - FILTERS - - - - - - - - - -
FL1		Recd, detector: coil-600 ohms ±10%, standard 7-pin tube socket mounting.
	19C307140-P719	71.9 Hz
	19C307140-P770	77.0 Hz
	19C307140-P825	82.5 Hz
	19C307140-P885	88.5 Hz
	19C307140-P948	94.8 Hz
	19C307140-P1000	100.0 Hz
	19C307140-P1035	103.5 Hz
	19C307140-P1072	107.2 Hz
	19C307140-P1109	110.9 Hz
	19C307140-P1148	114.8 Hz
	19C307140-P1188	118.8 Hz
	19C307140-P1230	123.0 Hz
	19C307140-P1273	127.3 Hz
	19C307140-P1318	131.8 Hz
	19C307140-P1365	136.5 Hz
	19C307140-P1413	141.3 Hz
	19C307140-P1462	146.2 Hz
	19C307140-P1514	151.4 Hz
	19C307140-P1567	156.7 Hz
	19C307140-P1622	162.2 Hz
	19C307140-P1679	167.9 Hz
	19C307140-P1738	173.8 Hz
	19C307140-P1799	179.9 Hz
	19C307140-P1862	186.2 Hz
	19C307140-P1928	192.8 Hz
	19C307140-P2035	203.5 Hz
		- - - - - - - - JACKS AND RECEPTACLES - - - - - - -
J3 thru J6	4033513-P4	Contact, electrical: sim to Bead Chain L93-3.
J8 thru J10	4033513-P4	Contact, electrical: sim to Bead Chain L93-3.
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L1*	19A115690-P2	Coil, RF: 1.4 HY ±5%, sim to Artted AC5910. Earlier than REV E in G1, REV D in G2:
	19B204554-G1	Coil.
		- - - - - - - - - TRANSISTORS - - - - - - - - -
Q1 thru Q6	19A115123-P1	Silicon, NPN; sim to Type 2N2712.
		- - - - - - - - - - RESISTORS - - - - - - - - - -
R1 and R2	3R77-P752J	Composition: 7500 ohms ±5%, 1/2 w.
R3	3R77-P472J	Composition: 4700 ohms ±5%, 1/2 w.
R4 and R5	3R77-P103J	Composition: 10,000 ohms ±5%, 1/2 w.
R6	3R77-P560J	Composition: 56 ohms ±5%, 1/2 w.
R7	3R77-P103J	Composition: 10,000 ohms ±5%, 1/2 w.
R8 and R9	3R77-P153J	Composition: 15,000 ohms ±5%, 1/2 w.
R10	3R77-P752J	Composition: 7500 ohms ±5%, 1/2 w.
R11	3R77-P103J	Composition: 10,000 ohms ±5%, 1/2 w.
R12	3R77-P622J	Composition: 6200 ohms ±5%, 1/2 w.
R13	3R77-P271J	Composition: 270 ohms ±5%, 1/2 w.
R14	3R77-P103J	Composition: 10,000 ohms ±5%, 1/2 w.
R15 and R16	3R77-P153J	Composition: 15,000 ohms ±5%, 1/2 w.
R17	3R77-P822J	Composition: 8200 ohms ±5%, 1/2 w.
R18	3R77-P823J	Composition: 82,000 ohms ±5%, 1/2 w.
R19	3R77-P123J	Composition: 12,000 ohms ±5%, 1/2 w.
R20	3R77-P102J	Composition: 1000 ohms ±5%, 1/2 w.
R21	3R77-P153J	Composition: 15,000 ohms ±5%, 1/2 w.
R22 and R23	3R77-P102J	Composition: 1000 ohms ±5%, 1/2 w.
R24*	3R77-P331J	Composition: 330 ohms ±5%, 1/2 w. Added to G1 by REV C, G2 by REV E.

SYMBOL	GE PART NO.	DESCRIPTION
R25	3R77-P201J	Composition: 200 ohms ±5%, 1/2 w.
R26*	3R77-P203J	Composition: 20,000 ohms ±5%, 1/2 w. Deleted in G1 by REV C, G2 by REV E.
R27	3R77-P202J	Composition: 2000 ohms ±5%, 1/2 w.
R28	3R77-P512J	Composition: 5100 ohms ±5%, 1/2 w.
R29	3R77-P200J	Composition: 20 ohms ±5%, 1/2 w.
R30 and R31	3R77-P153J	Composition: 15,000 ohms ±5%, 1/2 w.
R32 and R33	3R77-P682J	Composition: 6800 ohms ±5%, 1/2 w.
R34	3R77-P102J	Composition: 1000 ohms ±5%, 1/2 w.
R35	3R77-P302J	Composition: 3000 ohms ±5%, 1/2 w.
R36	3R77-P103J	Composition: 10,000 ohms ±5%, 1/2 w.
R37*	3R77-P184J	Composition: 0.18 megohms ±5%, 1/2 w. Earlier than REV A:
	3R77-P204J	Composition: 0.20 megohms ±5%, 1/2 w.
R38	3R77-P102J	Composition: 1000 ohms ±5%, 1/2 w.
R39*	3R77-P512J	Composition: 5100 ohms ±5%, 1/2 w. Added to G1 by REV C, G2 by REV E.
R40	3R77-P123J	Composition: 12,000 ohms ±5%, 1/2 w.
R61	3R77-P221K	Composition: 220 ohms 10%, 1/2 w.
		- - - - - - - - - TRANSFORMERS - - - - - - - - -
T1	5490525-P2	Audio freq: 100 to 10,000 Hz. Pri: 35,000 ohms ±10% imp, 1200 ohms ±15% DC res Sec 1: 2000 ohms imp, 250 ohms ±10% DC res. Sec 2: 2000 ohms imp, 250 ohms ±10% DC res.
		- - - - - - - - - - SOCKETS - - - - - - - - - -
XFL1	19A121920-G2	Reed, mica-filled phen: 7 pins rated at 1 amp at 500 VRMS with 3-11/32 inches of cable.
		450 MHz STATION WITH 2 WATT RECEIVER 19A122382-G4
		- - - - - - - - - - INDUCTORS - - - - - - - - - -
L1	19B204554-G1	Coil.
		- - - - - - - - - MISCELLANEOUS - - - - - - - - -
	N330P1203-P22	Eyelet, bronze.
		* *