

5040

**INSTALLATION INSTRUCTIONS  
FOR  
MASTR TRANSMITTER CHANNEL GUARD  
MODIFICATION KIT 19A122376-G1 thru G10  
(Includes Exciter Board Modification Kit 19A122313-G1 thru G12)**

Channel Guard Modification Kit 19A122313-G1 thru G12 provides the Channel Guard Encoder Board, wiring harness and modification components for installing Channel Guard in standard MASTR Professional Progress Line transmitters. The exciter board on the transmitter is the only board that requires modification for Channel Guard operation.

**NOTE**

Channel Guard Encoder reed FL1 is not included in the Modification Kit. The reed must be ordered separately.

The application of the different kits is shown in the following chart:

MODIFICATION KIT	USED WITH	FREQ RANGE
19A122376-G1	4ET54A10,13,16 REV. D & earlier; 4ET55A10,13,16 REV. D & earlier	25—33 MHz
19A122376-G2	4ET54A11,14 REV. C & earlier; 4ET54A17 REV. B & earlier; 4ET55A11,14 REV. C & earlier; 4ET55A17 REV. B & earlier.	33—42 MHz
19A122376-G3	4ET54A12,15,18 REV. B & earlier; 4ET55A12,15,18 REV. C & earlier.	42—50 MHz
19A122376-G4	4ET56A10-15 REV. C & earlier.	66—88 MHz
19A122376-G5	4ET57A10,12,14 4ET58A10,12,14	132-150.8 MHz
	4ET59B10,12,14; 4ET59D10,12,14 4ET60B10,12,14; 4ET60D10,12,14	406-420 MHz
19A122376-G6	4ET57A11,13,15 4ET58A11,13,15	150.8-174 MHz
	4ET59B11,13,15; 4ET59D11,13,15 4ET60B11,13,15; 4ET60D11,13,15	450-470 MHz
19A122376-G7	4ET54A10,13,16 REV. E & later 4ET55A10,13,16 REV. E & later	25—33 MHz
19A122376-G8	4ET54A11,14 REV. D & later 4ET54A17 REV. C & later 4ET55A11,14 REV. E & later 4ET55A17 REV. D & later	33—42 MHz
19A122376-G9	4ET54A12,15,18 REV. C & later 4ET55A12,15,18 REV. D & later	42—50 MHz
19A122376-G10	4ET56A10-15 REV. D & later	66—88 MHz

## INSTALLATION INSTRUCTIONS (19A122377 Sheets 1 thru 3)

Remove the top and bottom covers of the transmitter, and install the Modification Kit according to the following instructions.

1. Install the Exciter Board Modification Kit (19A122313-G1 thru -G12) according to the modification instructions provided by 19B205440 or 19B205583 (Pages 4-8).
2. Install wiring harness PL-19B205480G1 as follows:
  - a. Solder black lead (ground) to J101-1.
  - b. Solder white-red lead (+10 volts) to J101-6 for single frequency, or to J101-14 for multi-frequency.
  - c. Solder orange lead (system negative) to J101-13.
  - d. Connect center conductor of shielded wire to J8, and shield to J7 on exciter board. (See 19B205440 or 19B205583).
  - e. Tie the wiring harness to the main harness.
3. Install Channel Guard Board G101 and Encoder Reed FL1 as shown in Figure 1. Connect the wiring as follows:
  - a. Connect plug on white-red lead to J1.
  - b. Connect plug on black lead to J2.
  - c. Connect plug on orange lead to J5.
  - d. Connect center conductor of shielded wire to J3, and shield to J4.

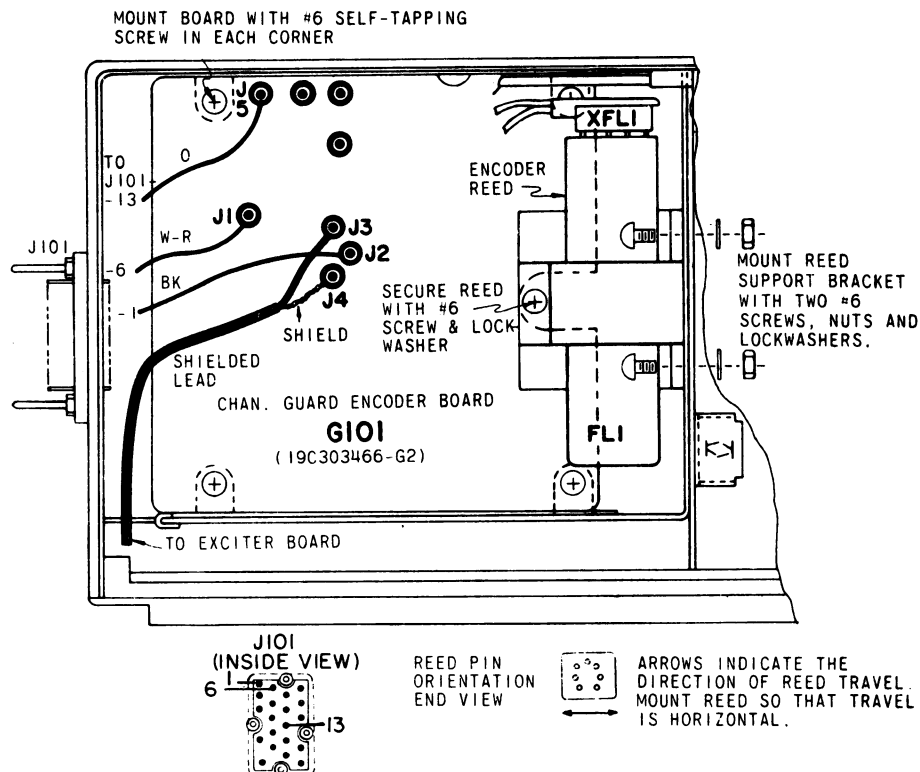
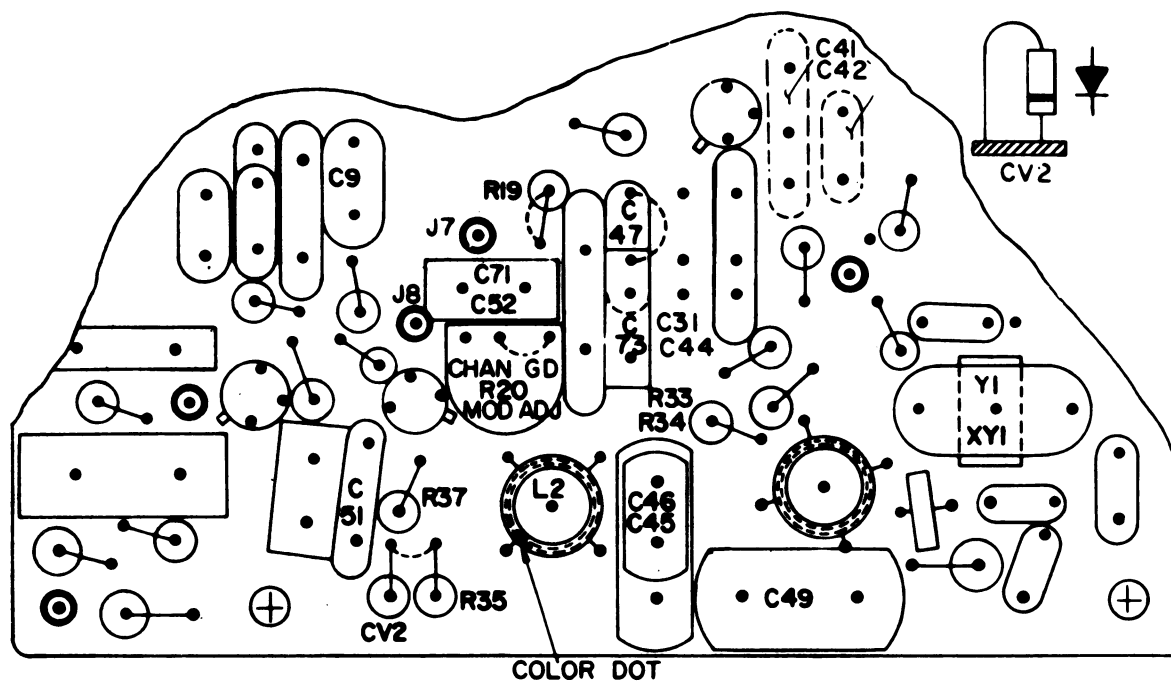


FIGURE 1

4. Realign the exciter board, set the modulation level, and check the transmitter tuning and frequency as described in the applicable Maintenance Manual.
5. Change the transmitter model number:

FROM	TO	FROM	TO
4ET54A10 or 4ET55A10	A19	4ET56A10, 4ET57A10 or 4ET58A10	A16
4ET54A11 or 4ET55A11	A20	4ET56A11, 4ET57A11 or 4ET58A11	A17
4ET54A12 or 4ET55A12	A21	4ET56A12, 4ET57A12 or 4ET58A12	A18
4ET54A13 or 4ET55A13	A22	4ET56A13, 4ET57A13 or 4ET58A13	A19
4ET54A14 or 4ET55A14	A23	4ET56A14, 4ET57A14 or 4ET58A14	A20
4ET54A15 or 4ET55A15	A24	4ET56A15, 4ET57A15 or 4ET58A15	A21
4ET54A16 or 4ET55A16	A25	4ET59 or 4ET60B10, D10	B16, D16
4ET54A17 or 4ET55A17	A26	4ET59 or 4ET60B11, D11	B17, D17
4ET54A18 or 4ET55A18	A27	4ET59 or 4ET60B12, D12	B18, D18
		4ET59 or 4ET60B13, D13	B19, D19
		4ET59 or 4ET60B14, D14	B20, D20
		4ET59 or 4ET60B15, D15	B21, D21

## 25-50MHZ EXCITER BOARD MODIFICATION

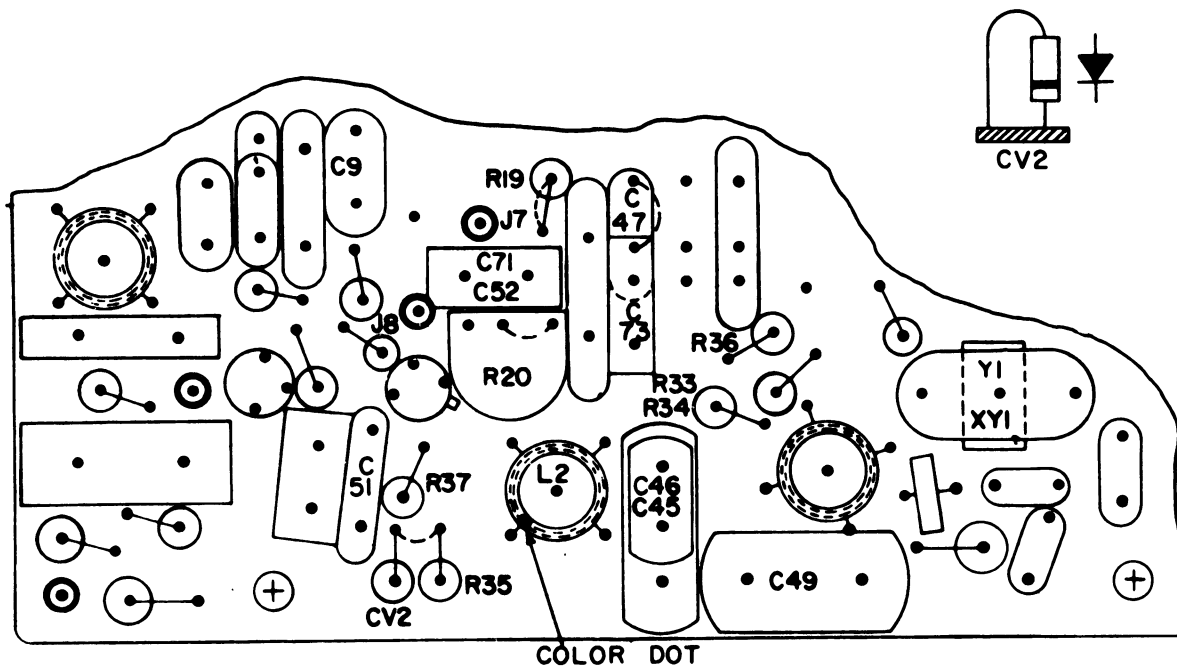


For Frequency Range Of:	25 - 33 MHz	33 - 42 MHz	42 - 50 MHz
Use Exciter Modification Kit:	PL-19A122313-G1	PL-19A122313-G2	PL-19A122313-G3
Apply to Exciter Board:	19D402385-G1, 6, 11	19D402385-G2, 7, 12	19D402385-G3, 8, 13
1. Remove Jumper From:	C51 to R35	C51 to R35	C51 to R35
2. Remove Jumper From Location Of:	C47	C47	C47
3. Remove Jumper From Location Of:	R20	R20	R20
4. Remove:	C9, C45A, C71A, C73A, R19, R33A	C9, C45B, C71A, C73A, R19, R33B	C9, C41B, C44B, C45B, C71B, C73B, R19, R33C
5. Insert Jumper in Place Of:	R19	R19	R19
6. Insert:	C46A, C47, C49, C52A, R20, R34A, C35A, R37	C46B, C47, C49, C52A, R20, R34B, R35A, R37	C31, C42, C46B, C47, C49, C52B, R20, R34C, R35B, R37
7. Insert:	CV2 and L2A	CV2 and L2B	CV2 and L2C
8. Change Board Number From:	G1 to G16 G6 to G21 G11 to G26	G2 to G17 G7 to G22 G12 to G27	G3 to G18 G8 to G23 G13 to G28

NOTE: Refer to Wiring Diagram 19R620712

MODIFICATION KITS 19A122313-G1 thru G3

# 66-88MHZ EXCITER BOARD MODIFICATION



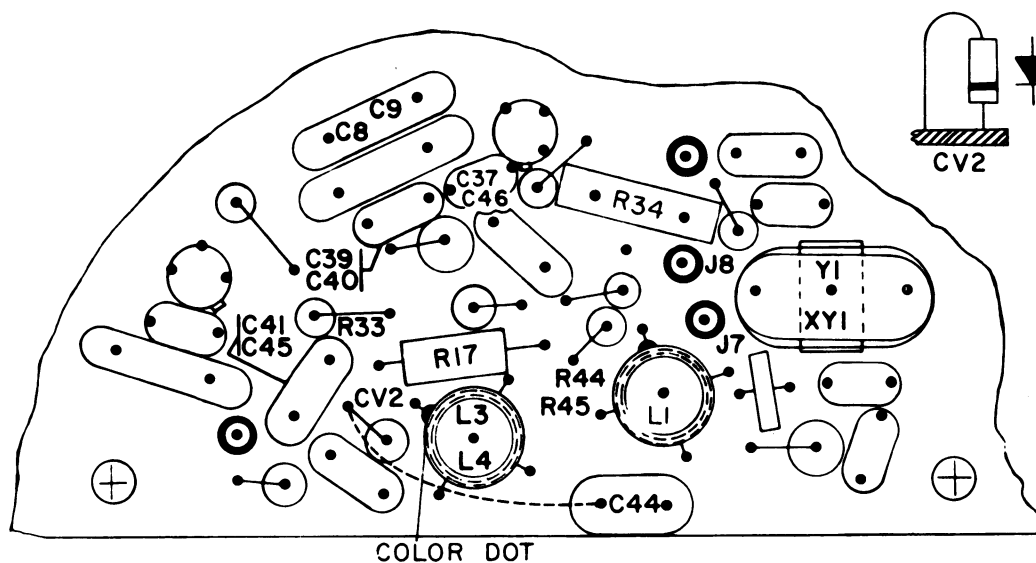
For Frequency Range Of:	66 - 88 MHz
Use Exciter Modification Kit:	PL-19A122313-G4
Apply to Exciter Board:	19D402385-G4, 5, 9, 10, 14, 15
1. Remove Jumper From:	C51 to R35
2. Remove Jumper From Location Of:	C47
3. Remove Jumper From Location Of:	R20
4. Remove:	C9, C45B, C71B, C73C, R19, R33D
5. Insert Jumper in Place Of:	R19
6. Insert:	C46B, C47, C49, C52B, R20, R34C, R35B, R37
7. Insert:	CV2 and L2D
8. Change Board Number From:	G4 to G19      G10 to G25 G5 to G20      G14 to G29 G9 to G24      G15 to G30

NOTE: Refer to Wiring Diagram 19R620714

MODIFICATION KIT 19A122313-G4

(19B205440, Sh. 2, Rev. 2) 5

## 132-470MHZ EXCITER BOARD MODIFICATION

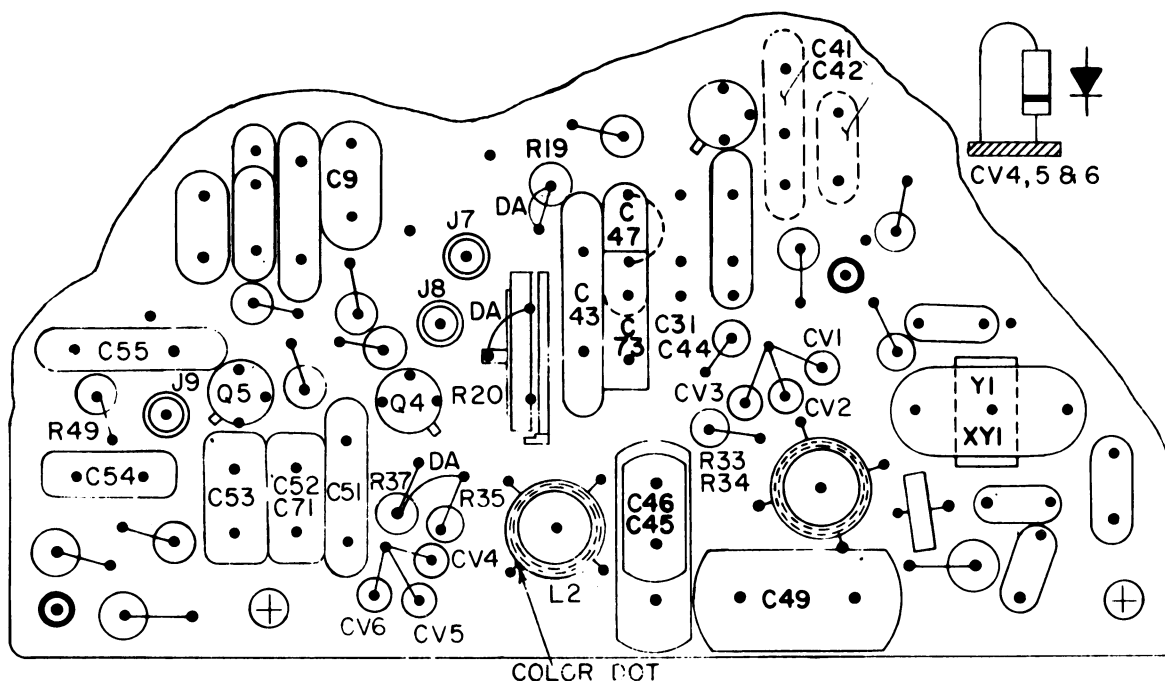


For Frequency Range Of:	132 - 150.8 MHz 406 - 420 MHz	150.8 - 174 MHz 450 - 470 MHz
Use Exciter Modification Kit:	PL-19A122313-G5	PL-19A122313-G6
Apply to Exciter Board:	19D402308-G1, 3, 5	19D402308-G2, 4, 6
1. Remove Jumper From:	L1 to C41	L1 to C41
2. Remove Jumper From Location Of:	R34	R34
3. Remove:	C9, C37, C39, C41, R44	C9, C37, C39, C41, R44
4. Insert:	C8, C40, C44, C45, C46, R33, R34, R45	C8, C40, C44, C45, C46, R33, R34, R45
5. Insert:	CV2 and L4	CV2 and L3
6. Change Board Number From:	G1 to G7 G3 to G9 G5 to G11	G2 to G8 G4 to G10 G6 to G12

NOTE: For 132-174 MHz, Refer to 19R620703  
For 406-470 MHz, Refer to 19R620707

MODIFICATION KITS 19A122313-G5 & G6

# 25-50MHZ EXCITER BOARD MODIFICATION



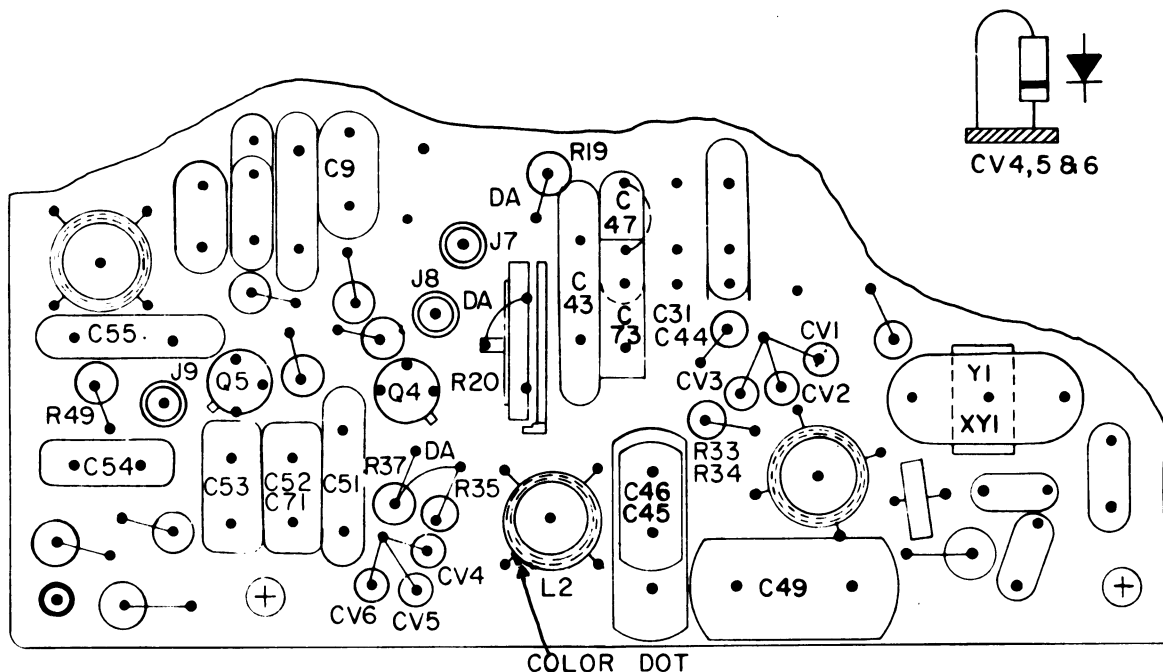
For Frequency Range Of:	25 - 33 MHz	33 - 42 MHz	42 - 50 MHz
Use Exciter Modification Kit:	PL-19A122313-G7	PL-19A122313-G8	PL-19A122313-G9
Apply To Exciter Board:	19D402385-G1,6,11	19D402385-G2,7,12	19D402385-G3,8,13
1. Remove Jumper From:	R37 to R35	R37 to R35	R37 to R35
2. Remove Jumper From Location Of:	C47	C47	C47
3. Remove Jumper From Location Of:	R20	R20	R20
4. Remove:	C9, C45A, C71A, C73A, R19, R33A	C9, C45B, C71A, C73A, R19, R33B	C9, C41B, C44B, C45B, C71B, C73B, R19, R33C
5. Insert Jumper in Place Of:	R19	R19	R19
6. Insert:	C46A, C47, C49, C52A, R20, R34A, R35A, R37	C46B, C47, C49, C52A, R20, R34B, R35A, R37	C31, C42A, C46B, C47, C49, C52B, R20, R34C, R35B, R37
7. Insert:	CV4, CV5, CV6, and L2A	CV4, CV5, CV6, and L2B	CV4, CV5, CV6, and L2C
8. Change Board Number From:	G1 to G16 G6 to G21 G11 to G26	G2 to G17 G7 to G22 G12 to G27	G3 to G18 G8 to G23 G13 to G28

NOTE: Refer to Wiring Diagram 19R620712

MODIFICATION KITS 19A122313-G7 thru G9

(19B205583, Sh. 1, Rev. 2)

## 66-88MHZ EXCITER BOARD MODIFICATION



For Frequency Range Of:	66 - 88 MHz
Use Exciter Modification Kit:	PL-19A122313-G10
Apply to Exciter Board:	19D402385-G4, 5, 9, 10, 14, 15
1. Remove Jumper From:	R37 to R35
2. Remove Jumper From Location Of:	C47
3. Remove Jumper From Location Of:	R20
4. Remove:	C9, C45B, C71B, C73C, R19, R33D
5. Insert Jumper in Place Of:	R19
6. Insert:	C46B, C47, C49, C52B, R20, R34C, R35B, R37
7. Insert:	CV4, CV5, CV6 and L2D
8. Change Board Number From:	G4 to G19    G9 to G24    G14 to G29 G5 to G20    G10 to G25    G15 to G30

NOTE: Refer to Wiring Diagram 19R620714.

MODIFICATION KIT 19A122313-G10

(19B205583, Sh. 2, Rev. 2)

MOBILE RADIO DEPARTMENT  
GENERAL ELECTRIC COMPANY  
LYNCHBURG, VIRGINIA 24502