

 **MOBILE RADIO**

MPS (SYNTHESIZED) RADIO

**PRIORITY SEARCH LOCK MONITOR KIT
19A148548G1-G4**

Maintenance Manual LBI-31473

**PRIORITY SEARCH LOCK MONITOR KIT
19A148548G1-G4**

GENERAL  ELECTRIC

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DESCRIPTION

Priority Search Lock Monitor (PSLM) is a software option in the MPS Personal Synthesized Radio. The PSLM function is performed inside the controller module (refer to Maintenance Manual LBI31413 for high band or LBI31461 for UHF). This function is controlled by a toggle switch to turn the PSLM ON and OFF or ON/OFF and LOAD.

In the MPS radio with a Channel Guard (CG) or Digital Channel Guard (DCG) option, the software will disable CG or DCG when the PSLM is on and all activity on the two channels will be monitored.

The priority channel for PSLM is a fixed (programmed) channel and the non-priority channel is controlled by where the Channel Select and Mode (Area) switches are set. The PSLM alternately searches between the priority channel and the selected non-priority channel and locks on the first channel receiving a call. If a call is received on the non-priority channel the PSLM continues to search the priority channel approximately four times a second. If a call is received on the priority channel while the non-priority channel is active, the PSLM switches to and locks on the priority channel and remains there until the priority transmission is terminated. A priority call will NOT be missed, while it is possible to miss a non-priority call.

The radio ALWAYS transmits on the channel selected by the channel select and mode switches.

There are three different ways to set the priority channel:

Fixed Priority

This PSLM option has a toggle on/off switch marked PSLM, OFF. The priority channel for this option is programmed into the EEPROM in the controller module. The radio reads that pre-programmed data when the radio is turned on and ALWAYS uses that channel as the priority channel.

Turn-on Priority

This PSLM option also has a toggle on/off switch marked PSLM, OFF. The priority channel is the channel selected by the Channel Select and Mode switches at the time the radio is turned on. This channel will then be the priority channel until the radio is turned off. This option is NOT compatible with the fixed priority option.

Load Priority

This PSLM option has a three position toggle switch marked PSLM, OFF and LOAD. To load the priority channel, the Channel Select and Mode switches are set on the desired priority channel. The PSLM toggle switch is then pushed to the LOAD position (momentary contact). A popping sound will be heard in the speaker. The Channel Select and Mode switches are then set to a non-priority channel. The channel loaded as the priority channel will remain the priority channel until a different channel is loaded or until the radio is turned off.

If the PSLM fixed priority or the turn-on priority options have a LOAD switch, the priority will come up in the programmed priority. However, the priority channel can be changed by the PSLM LOAD switch.

This publication provides Installation Instructions, Schematic Diagram, and Parts List for installing PSLM kit 19A148548G1 thru G4 in a MPS Personal Synthesized Radio. Each group of this kit consists of a toggle switch mounted in one of the option panels in the top plate of the radio and a LED PSLM indicator, also mounted in the top plate of the radio.

CIRCUIT ANALYSIS

The PSLM function in the MPS Synthesized radio is controlled by TOGGLE, PSLM/OFF switch (S2401) or TOGGLE, PSLM/OFF/LOAD switch (S2402). Either switch can be located in the center option panel of the radio or the left option panel of the radio. Schematic Diagram 19B234620 shows switches S2401 and S2402 connected in the center option panel and Schematic Diagram 19B234621 shows the switches in the left option panel.

With the controlling switch in the left option panel, a jumper must be connected between holes H20 and H22 on system flex circuit A702. An additional jumper, for S2402, must be added between holes H18 and H29 on A702.

With the controlling switch in the center option panel a jumper must be connected between holes H15 and H16 on system flex circuit A702. An additional jumper for switch S2402 must be added between holes H13 and H14 on A720.

When the PSLM function is disabled, the controlling toggle switch is in the OFF position. Pin 4 of the TONE processor integrated circuit, located in the controller module of the radio, is grounded.

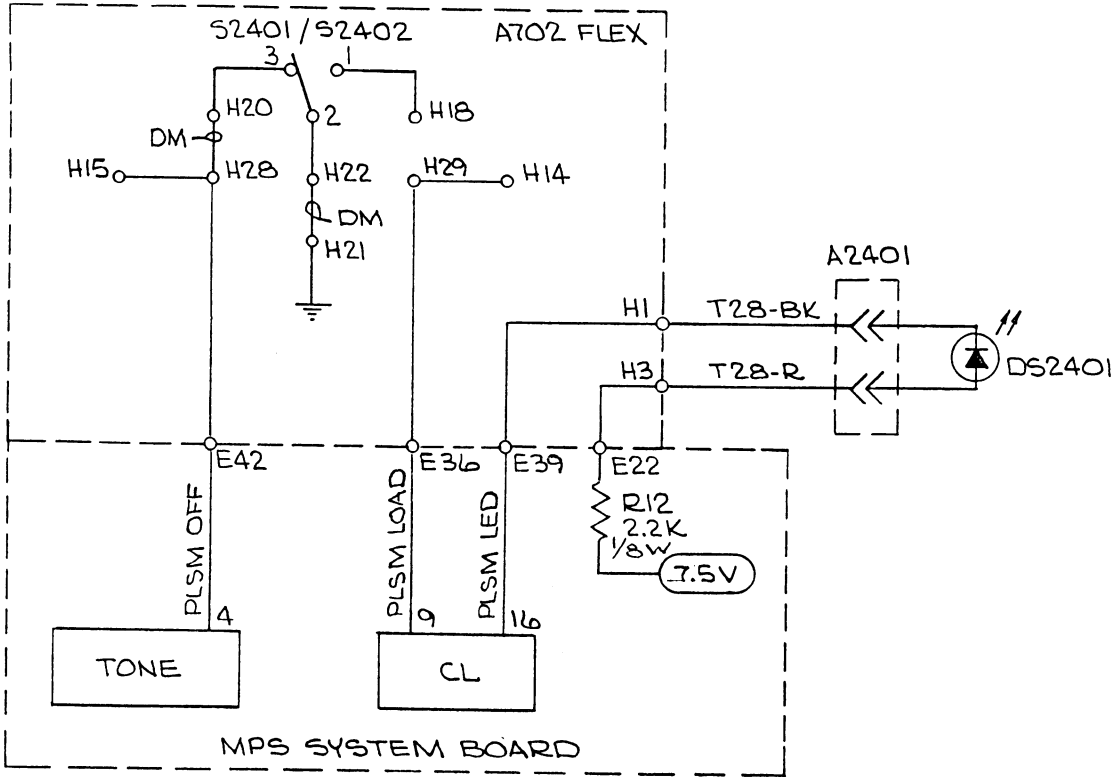
When the PSLM function is activated, S2401/S2404 in the PSLM position, Pin 4 of the TONE circuit is high and the PSLM function searches between the priority channel and the selected channel or non-priority channel. While searching PSLM LED indicator DS2401 blinks at a fast rate.

The cathode of the PSLM LED indicator connects to Pin 16 of the microcomputer module (CL), located in the controller module of the radio. The

anode of SD2401 connects through 2.2 K ohm resistor R12 to 7.5 volts. When Pin 16 of CL goes low the LED will turn on and when Pin 16 goes high the LED will turn off.

Placing switch S2402 in the LOAD position momentarily grounds Pin 9 of microcomputer module CL. The microcomputer is now programmed for a new priority channel determined by the location of the Mode and Frequency Select switches.

LEFT SIDE MOUNTING POSITION

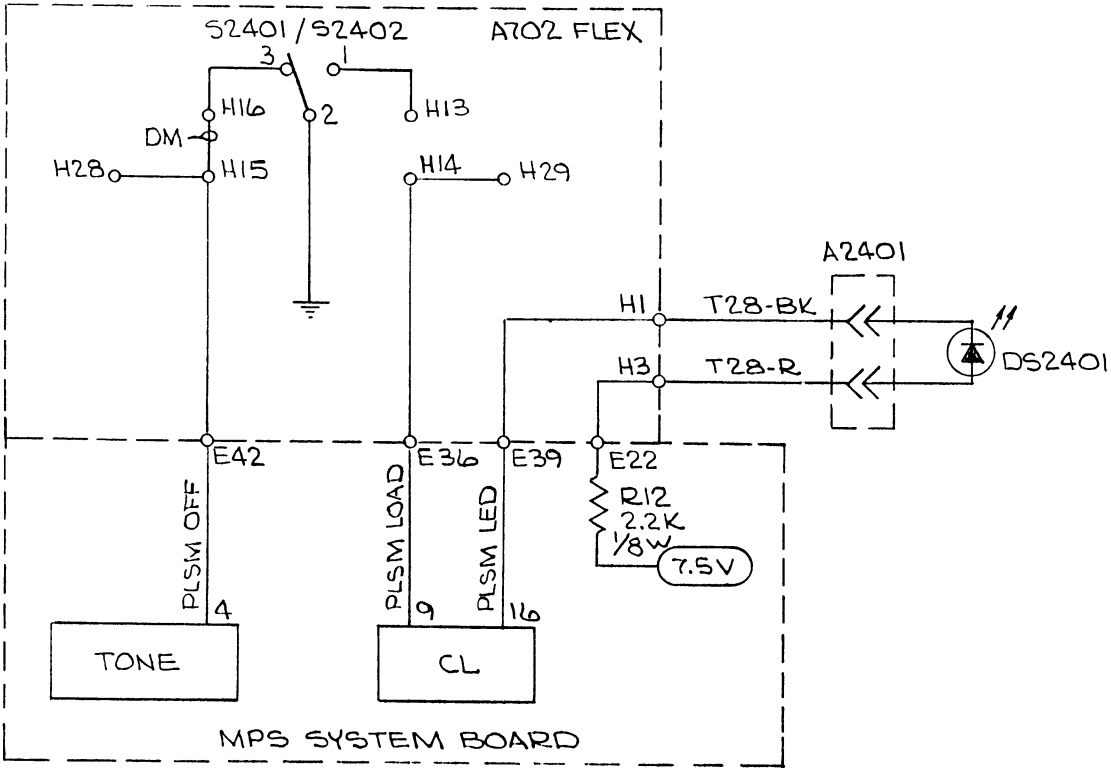


(19B234621, Rev. 0)

- NOTES:
1. S2401 SHOWN CONNECTED. WHEN S2402 IS USED A JUMPER (DM) IS CONNECTED FROM H18 TO H29 AND FROM H20 TO H28.
 2. SWITCH IS IN THE LEFT MOUNTING POSITION.

CENTER MOUNTING POSITION

LBI-31473



(19B234620, Rev. 0)

- NOTES:
1. S2401 SHOWN CONNECTED. WHEN S2402 IS USED A JUMPER (DM) IS CONNECTED FROM H13 TO H14 AND FROM H15 TO H16.
 2. SWITCH IS IN THE CENTER MOUNTING POSITION.

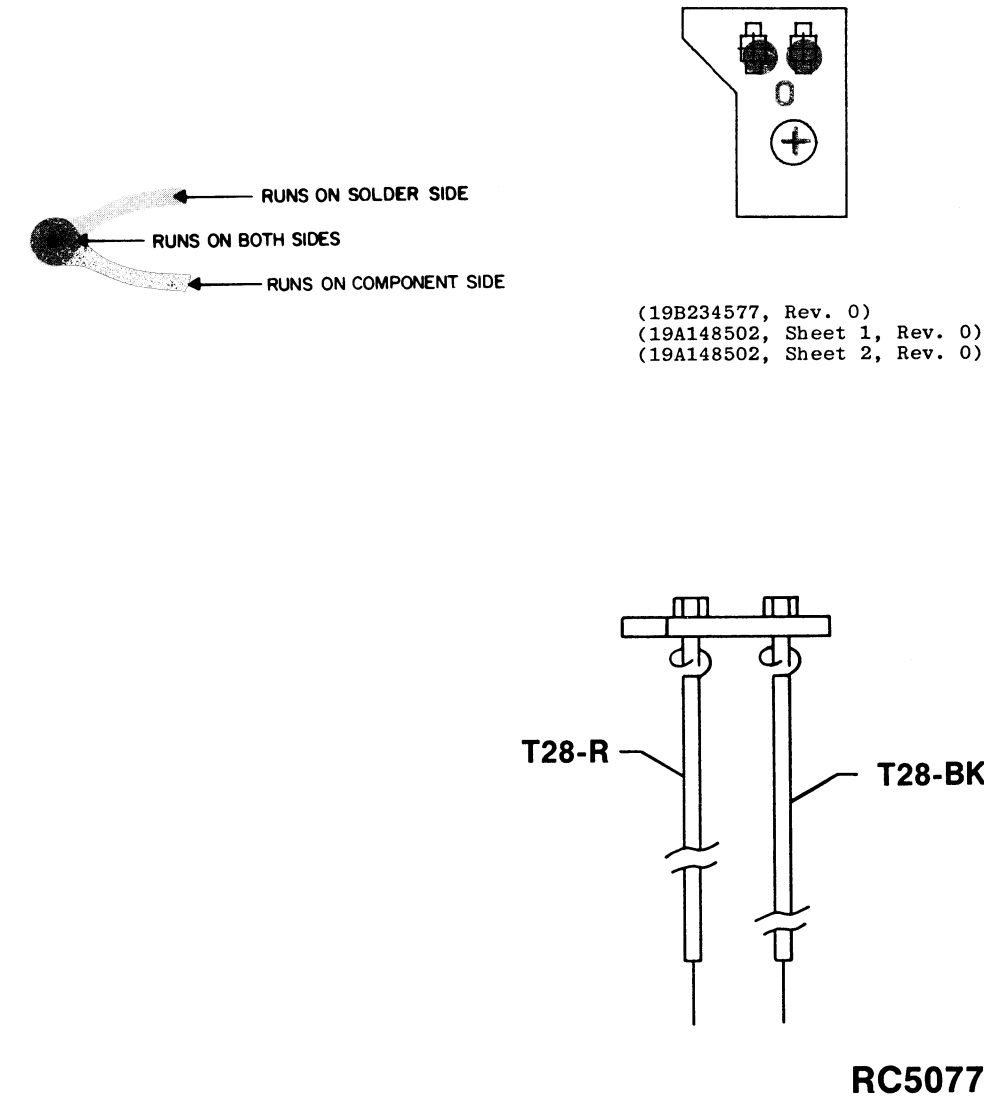
ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG=1,000,000 OHMS. CAPACITOR VALUES IN PICO FARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF= MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH= MILLIHENRYS OR H=HENRYS.

SCHEMATIC DIAGRAM

PSLM KIT 19A148548 G1-G4

Issue 1

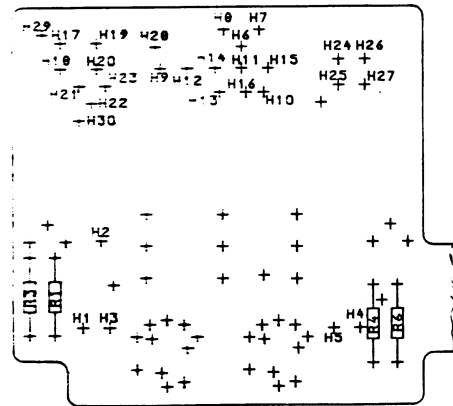
DISPLAY BOARD
A2401



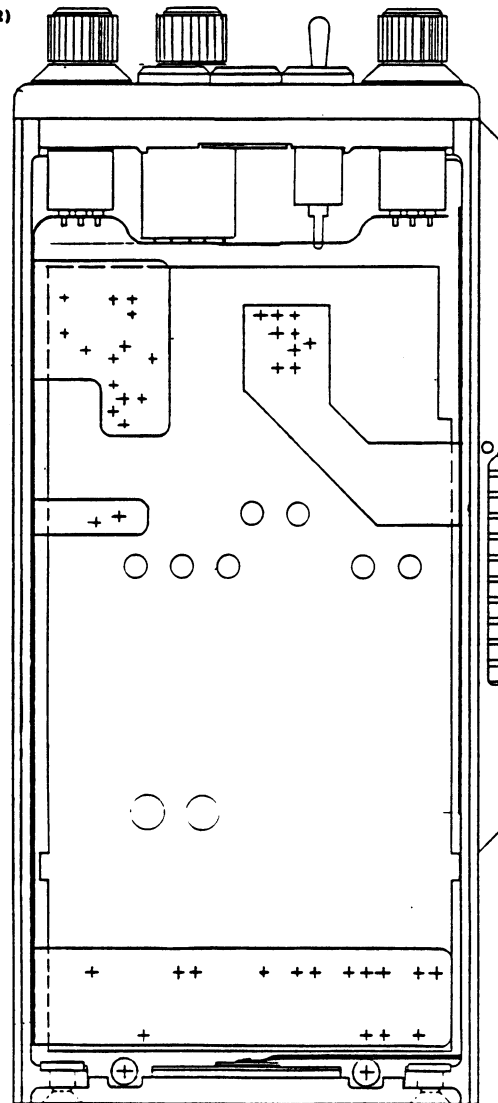
PARTS LIST

PRIORITY SEARCH LOCK MONITOR KIT
19A148548G1 OFF CENTER POSITION
19A148548G2 OFF/LOAD CENTER POSITION
19A148548G3 OFF LEFT POSITION
19A148548G4 OFF/LOAD LEFT POSITION
ISSUE 1

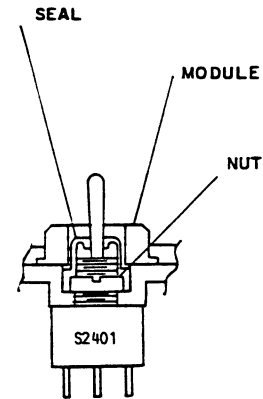
SYMBOL	GE PART NO.	DESCRIPTION
A2401	19B234576G1 19B209648P1	Display Board. Includes: Contact, electrical.
D2401	19A134323P1	----- DIODES ----- Optoelectronic: red, sim to Opcoa LLL-7A.
S2401	19C850845P26 19C850845P25	----- SWITCHES ----- Toggle, switch, SPDT; sim to C & K 7101SDCG. (G1 & G3). Toggle, switch, SPDT; sim to C & K 7107SDCG. (G2 & G4).
	19A127319P6 19B232508P1 19A700134P8 N84P5004C6 N210P5C6 N404P8C6 19B232996G6 19B232996G22	----- MISCELLANEOUS ----- Nut: No. thd. size 1/4-40. Seal. Wire, solid. Screw, flathead: No. 2-56 x 1/4. Hex nut: No. 2-56. Lockwasher, internal tooth: No. 2. Decorative module. (G1 & G3). Decorative module. (G2 & G4).



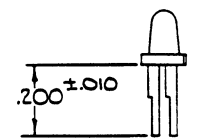
VIEW "A"
PARTIAL (A702)



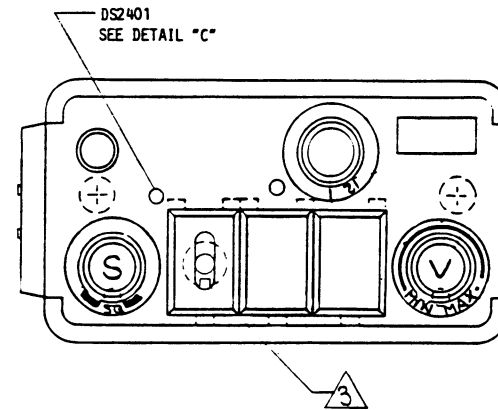
REAR VIEW
COVER REMOVED



TYPICAL SWITCH MOUNTING



DETAIL "C"



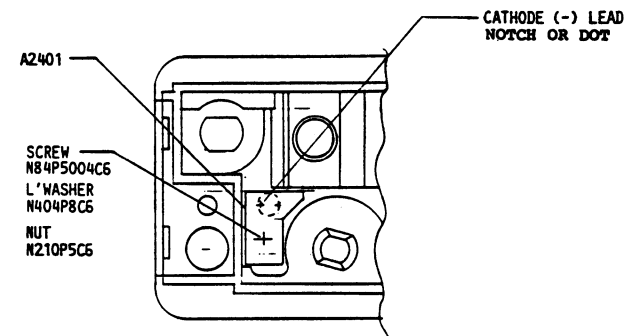
FRONT VIEW
COVER REMOVED

3

THESE INSTRUCTIONS COVER THE INSTALLATION OF HARDWARE KIT PL19A148548G3 FOR APPLICATION OF PSLM IN MPS WITH TOGGLE OFF.

1. REMOVE TOP PLATE (IN THIS ORDER REMOVE KNOBS, TOP COVER, FRONT AND BACK COVERS, LED AND NUT AND SCREW HOLDING THE LED BOARD AND NUTS HOLDING VOL AND SQ POTS, FREQ BCD SWITCH AND ANY TOGGLES), IF PRESENT
2. ON A702 FLEX CIRCUIT JUMPER (DM) FROM H20 TO H28 AND FROM H21 TO H22.
3. ASSEMBLE TOGGLE SWITCH S2401 IN LEFT POSITION OF A702 (FLEX CIRCUIT) WITH KEYWAY ON THE SWITCH TOWARD THE FLAP OR JUMPER HOLES ON FLEX CIRCUIT AS SHOWN.
4. PUNCH OUT HOLES IN TOP PLATE FOR S2401, SCREW HOLE FOR MOUNTING LED BOARD A2401 AND FOR DS2401 IN POSITION SHOWN. ALSO PUNCH OUT HOLE IN TOP COVER FOR DS2401 AS SHOWN.
5. MOUNT A2401 WITH HARDWARE SUPPLIED IN THE KIT ALSO CONNECT BK LEAD FROM A2401 TO H1 ON FLEX AND RED LEAD FROM A2401 TO H3 ON FLEX.
6. SOLDER ALL ELECTRICAL CONNECTIONS AND TRIM LEADS FLUSH TO .020.
7. CUT LEADS OF DS2401 AS SHOWN.
8. IF ALL OTHER OPTIONS THAT REQUIRE REMOVAL OF THE TOP PLATE HAVE BEEN INSTALLED THEN MOUNT THE PSLM SWITCH (S2401) IN LEFT POSITION. ASSEMBLE SEAL OVER S2401 AND REPLACE BLANK MODULE WITH PSLM MODULE. PLUG LED DS2401 WITH DOT OR NOTCH AWAY FROM TOGGLE SWITCH AS SHOWN.
9. REASSEMBLE THE ITEMS REMOVED IN STEP 1.

- DISCARD HARDWARE SUPPLIED WITH SWITCH AND USE NUT SUPPLIED IN KIT.

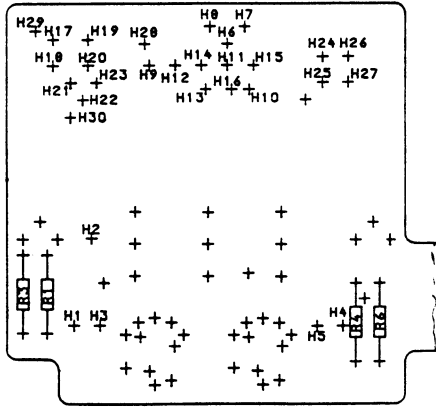


VIEW "B"

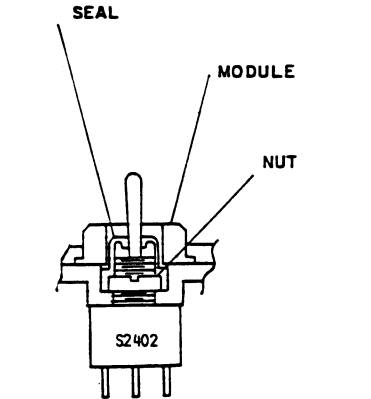
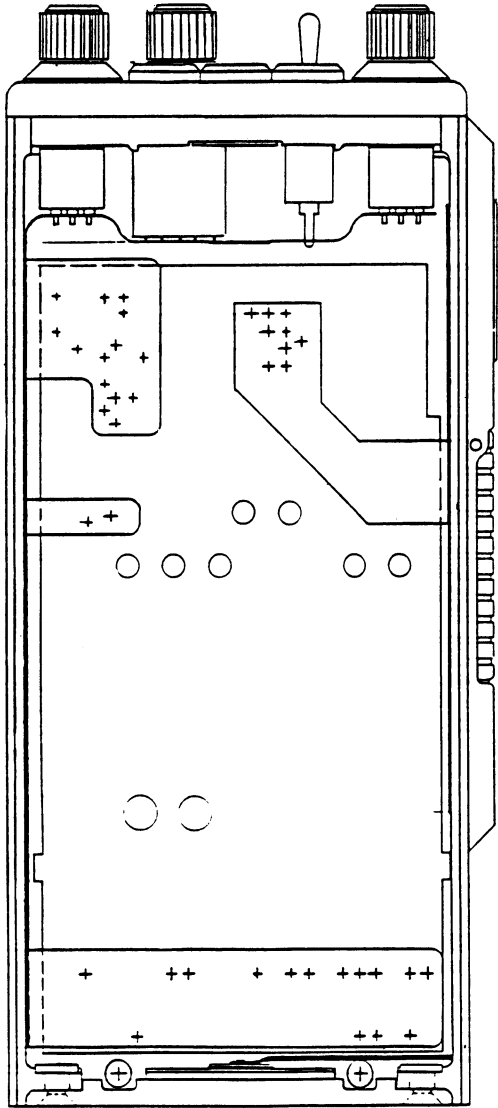
INSTALLATION INSTRUCTIONS

PSLM KIT 19A148548G1

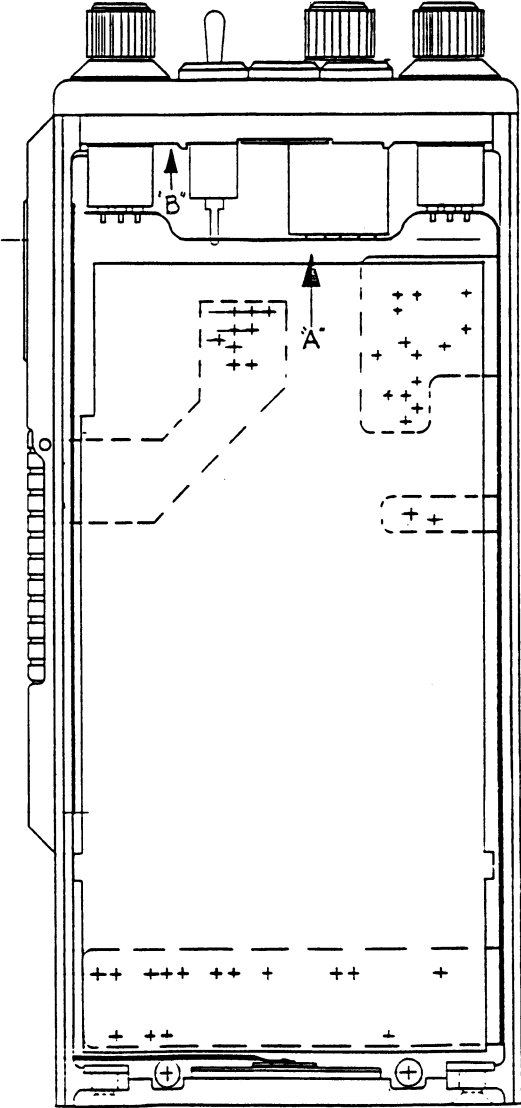
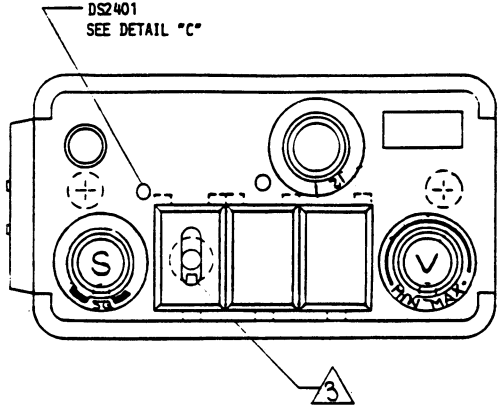
Issue 1



VIEW "A"
PARTIAL (A702)

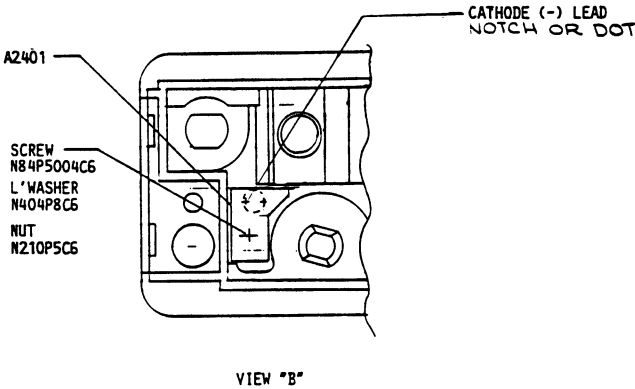


TYPICAL SWITCH MOUNTING



4

- THESE INSTRUCTIONS COVER THE INSTALLATION OF HARDWARE KIT PL19A148548G4 FOR APPLICATION OF PSLM IN MPS WITH TOGGLE OFF/LOAD.
1. REMOVE TOP PLATE (IN THIS ORDER REMOVE KNOBS, TOP COVER, FRONT AND BACK COVERS, LED AND NUT AND SCREW HOLDING THE LED BOARD AND NUTS HOLDING VOL AND SQ POTS, FREQ BCD SWITCH AND ANY TOGGLES), IF PRESENT
 2. ON A702 FLEX CIRCUIT JUMPER (DM) FROM H20 TO H28, FROM H18 TO H29, AND FROM H21 TO H22.
 3. ASSEMBLE TOGGLE SWITCH S2402 IN LEFT POSITION OF A702 (FLEX CIRCUIT) WITH KEYWAY ON THE SWITCH TOWARD THE FLAP OR JUMPER HOLES ON FLEX CIRCUIT AS SHOWN.
 4. PUNCH OUT HOLES IN TOP PLATE FOR S2402, SCREW HOLE FOR MOUNTING LED BOARD A2401 AND FOR DS2401 IN POSITION SHOWN. ALSO PUNCH OUT HOLE IN TOP COVER FOR DS2401 AS SHOWN.
 5. MOUNT A2401 WITH HARDWARE SUPPLIED IN THE KIT ALSO CONNECT BK LEAD FROM A2401 TO H1 ON FLEX AND RED LEAD FROM A2401 TO H3 ON FLEX.
 6. SOLDER ALL ELECTRICAL CONNECTIONS AND TRIM LEADS FLUSH TO .020.
 7. CUT LEADS OF DS2401 AS SHOWN.
 8. IF ALL OTHER OPTIONS THAT REQUIRE REMOVAL OF THE TOP PLATE HAVE BEEN INSTALLED THEN MOUNT THE PSLM SWITCH (S2402) IN LEFT POSITION, ASSEMBLE SEAL OVER S2402 AND REPLACE BLANK MODULE WITH PSLM MODULE. PLUG LED DS2401 WITH DOT OR NOTCH AWAY FROM TOGGLE SWITCH AS SHOWN.
 9. REASSEMBLE THE ITEMS REMOVED IN STEP 1.
- DISCARD HARDWARE SUPPLIED WITH SWITCH AND USE NUT SUPPLIED IN KIT.



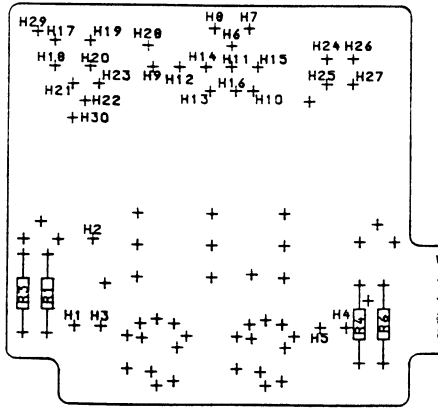
INSTALLATION INSTRUCTIONS

PSLM KIT 19A148548G2

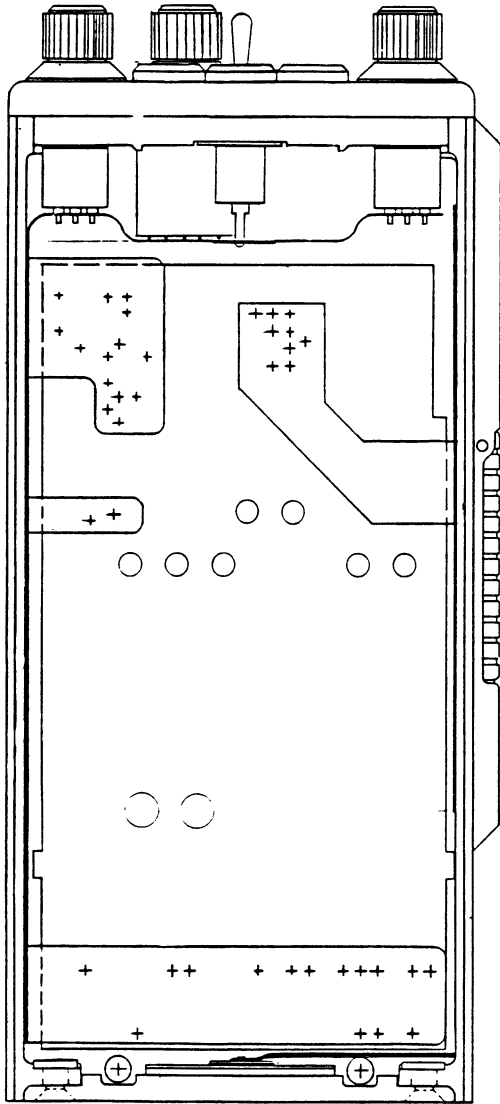
Issue 1

REAR VIEW
COVER REMOVED

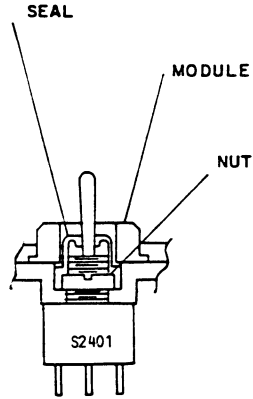
FRONT VIEW
COVER REMOVED



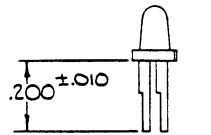
VIEW "A"
PARTIAL (A702)



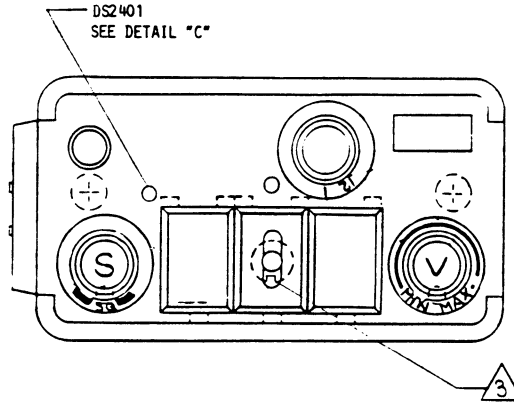
REAR VIEW
COVER REMOVED



TYPICAL SWITCH MOUNTING



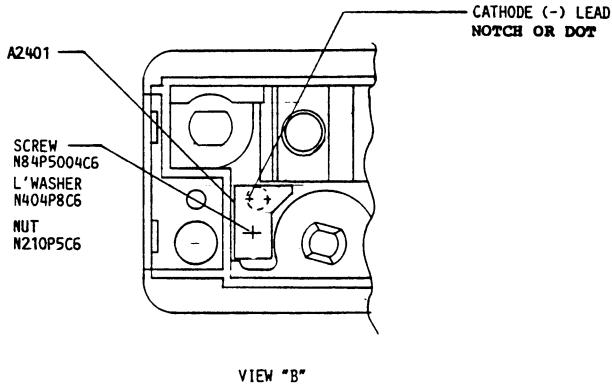
DETAIL "C"



FRONT VIEW
COVER REMOVED

1

- THESE INSTRUCTIONS COVER THE INSTALLATION OF HARDWARE KIT PL19A148548G1 FOR APPLICATION OF PSLM IN MPS WITH TOGGLE OFF.
1. REMOVE TOP PLATE (IN THIS ORDER REMOVE KNOBS, TOP COVER, FRONT AND BACK COVERS, LED AND NUT AND SCREW HOLDING THE LED BOARD AND NUTS HOLDING VOL AND SQ POTS, FREQ BCD SWITCH AND ANY TOGGLES), IF PRESENT
 2. ON A702 FLEX CIRCUIT JUMPER (DM) FROM H16 TO H15
 3. ASSEMBLE TOGGLE SWITCH S2401 IN CENTER POSITION OF A702 (FLEX CIRCUIT) WITH KEYWAY ON THE SWITCH TOWARD THE FLAP OR JUMPER HOLES ON FLEX CIRCUIT AS SHOWN.
 4. PUNCH OUT HOLES IN TOP PLATE FOR S2401, SCREW HOLE FOR MOUNTING LED BOARD A2401 AND FOR DS2401 IN POSITION SHOWN. ALSO PUNCH OUT HOLE IN TOP COVER FOR DS2401 AS SHOWN.
 5. MOUNT A2401 WITH HARDWARE SUPPLIED IN THE KIT ALSO CONNECT BK LEAD FROM A2401 TO H1 ON FLEX AND RED LEAD FROM A2401 TO H3 ON FLEX.
 6. SOLDER ALL ELECTRICAL CONNECTIONS AND TRIM LEADS FLUSH TO .020.
 7. CUT LEADS OF DS2401 AS SHOWN.
 8. IF ALL OTHER OPTIONS THAT REQUIRE REMOVAL OF THE TOP PLATE HAVE BEEN INSTALLED THEN MOUNT THE PSLM SWITCH (S2401) IN CENTER POSITION. THIS SWITCH IS USED TO MOUNT THE TX/BAT.IND. BOARD AS SHOWN. DISCARD SCREW AND NUT USED TO MOUNT BOARD WITHOUT SWITCH IN CENTER POSITION, ASSEMBLE SEAL OVER S2401 AND REPLACE BLANK MODULE WITH PSLM MODULE. PLUG LED DS2401 WITH DOT OR NOTCH AWAY FROM TOGGLE SWITCH AS SHOWN.
 9. REASSEMBLE THE ITEMS REMOVED IN STEP 1.
- DISCARD HARDWARE SUPPLIED WITH SWITCH AND USE NUT SUPPLIED IN KIT.

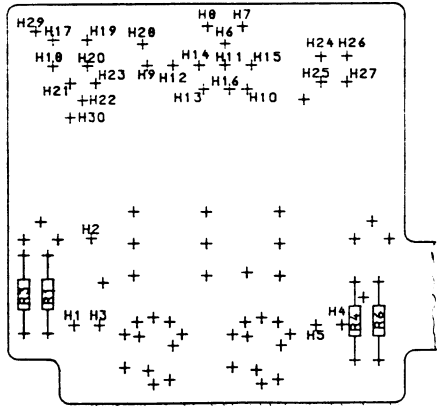


VIEW "B"

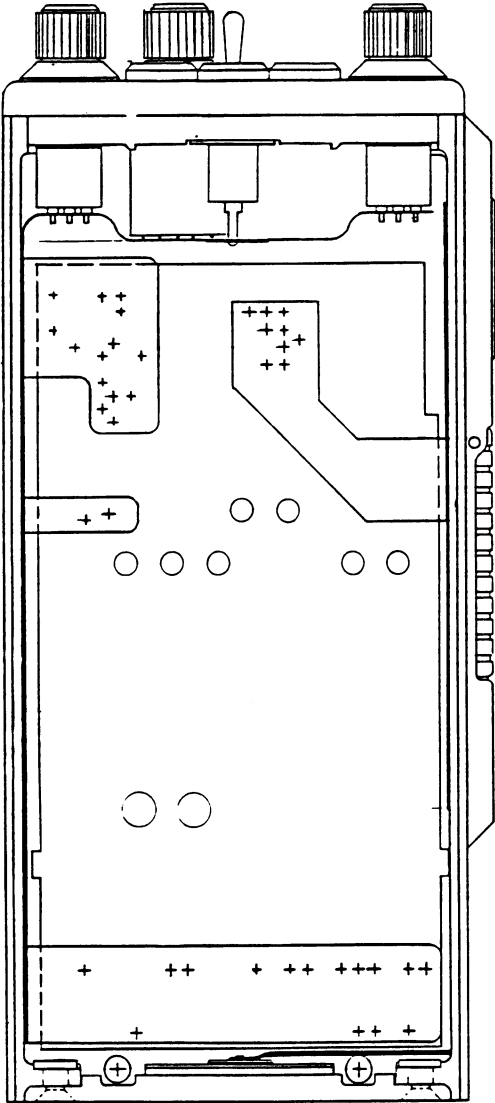
INSTALLATION INSTRUCTIONS

PSLM KIT 19A148548G3

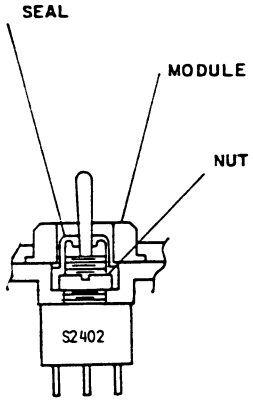
Issue 1



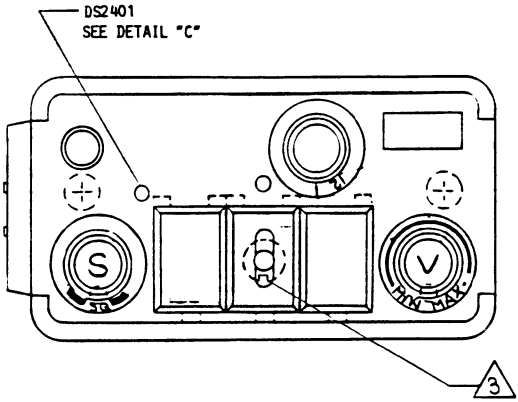
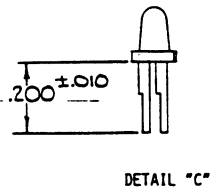
VIEW "A"
PARTIAL (A703)



REAR VIEW
COVER REMOVED

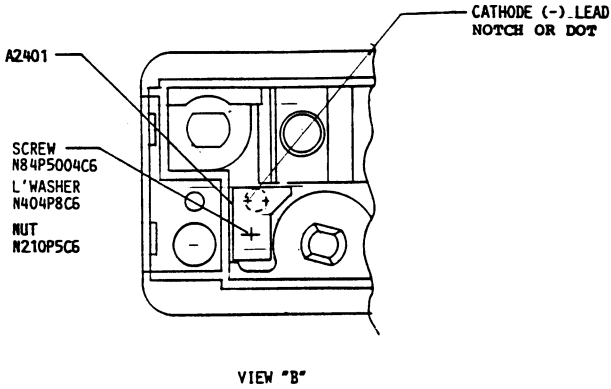


TYPICAL SWITCH MOUNTING



FRONT VIEW
COVER REMOVED

2. THESE INSTRUCTIONS COVER THE INSTALLATION OF HARDWARE KIT PL19A148548G2 FOR APPLICATION OF PSLM IN MPS WITH TOGGLE OFF/LOAD.
1. REMOVE TOP PLATE (IN THIS ORDER REMOVE KNOBS, TOP COVER, FRONT AND BACK COVERS, LED AND NUT AND SCREW HOLDING THE LED BOARD AND NUTS HOLDING VOL AND SQ POTS, FREQ BCD SWITCH AND ANY TOGGLES), IF PRESENT
 2. ON A702 FLEX CIRCUIT JUMPER (DM) FROM H16 TO H15 AND FROM H13 TO H14.
 3. ASSEMBLE TOGGLE SWITCH S2402 IN CENTER POSITION OF A702 (FLEX CIRCUIT) WITH KEYWAY ON THE SWITCH TOWARD THE FLAP OR JUMPER HOLES ON FLEX CIRCUIT AS SHOWN.
 4. PUNCH OUT HOLES IN TOP PLATE FOR S2402, SCREW HOLE FOR MOUNTING LED BOARD A2401 AND FOR DS2401 IN POSITION SHOWN. ALSO PUNCH OUT HOLE IN TOP COVER FOR DS2401 AS SHOWN.
 5. MOUNT A2401 WITH HARDWARE SUPPLIED IN THE KIT ALSO CONNECT BK LEAD FROM A2401 TO H1 ON FLEX AND RED LEAD FROM A2401 TO H3 ON FLEX.
 6. SOLDER ALL ELECTRICAL CONNECTIONS AND TRIM LEADS FLUSH TO .020.
 7. CUT LEADS OF DS2401 AS SHOWN.
 8. IF ALL OTHER OPTIONS THAT REQUIRE REMOVAL OF THE TOP PLATE HAVE BEEN INSTALLED THEN MOUNT THE PSLM SWITCH (S2402) IN CENTER POSITION. THIS SWITCH IS USED TO MOUNT THE TX/BAT. IND. BOARD AS SHOWN. DISCARD SCREW AND NUT USED TO MOUNT BOARD WITHOUT SWITCH IN CENTER POSITION. ASSEMBLE SEAL OVER S2402 AND REPLACE BLANK MODULE WITH PSLM MODULE. PLUG LED DS2401 WITH DOT OR NOTCH AWAY FROM TOGGLE SWITCH AS SHOWN.
 9. REASSEMBLE THE ITEMS REMOVED IN STEP 1.
- DISCARD HARDWARE SUPPLIED WITH SWITCH AND USE NUT SUPPLIED IN KIT.



VIEW "B"

INSTALLATION INSTRUCTIONS

PSLM KIT 19A148548G4

Issue 1