

## SECTION V MAINTENANCE

### 5.1 INTRODUCTION

The maintenance section contains test and alignment procedures for an operational LPH 202/214/502/514. This section also contains troubleshooting and assembly/disassembly procedures. Before maintenance is attempted it is advisable to have thorough understanding of the theory of operation of the unit.

### 5.2 TEST AND ALIGNMENT

#### 5.2.1 TEST EQUIPMENT REQUIRED

- A. RF Signal Generator HP8640B or equivalent.
- B. Distortion Analyzer HP334A or equivalent.
- C. RF Voltmeter (optional) Booton 92C or equivalent.
- D. RF Power meter Bird Termaline 6104 or equivalent.
- E. Service Monitor Cushman 4000 Radio Communications Test Set or equivalent.
- F. Digital Multimeter Fluke 8012A or equivalent.
- G. Programmer (for non-keyboard/display units only) Companion radio with keyboard display.
- H. Portable Tool Kit LAA 0600. KPN 050-2567-00. This tool kit consists of the following parts:
  - 1. RF Cable Assembly, KPN 155-2268-00.
  - 2. Audio Cable Assembly, KPN 155-2269-00.
  - 3. Accessory Test Cable, KPN 155-2260-00.
  - 4. Battery Eliminator, KPN 017-5087-00.
  - 5. Antenna Adapter Key, KPN 047-6745-00.
  - 6. Spanner, KPN 076-1451-00.

#### 5.2.2 STANDARD TEST SIGNAL

NONE

#### 5.2.3 DISASSEMBLY/ASSEMBLY

##### 5.2.3.1 Battery Removal

- A. To remove the battery, turn the radio off. Press up the metal tab on the side of the case while twisting the battery pack approximately 30° and remove it from the radio.

##### 5.2.3.2 Unit Disassembly

- A. Remove the four (4) screws from the rear cover (the side opposite from the speaker grill).
- B. Remove the two screws from the bottom end of the Receiver frame assembly to free the Transmitter frame assembly.
- C. The unit should now be able to be folded out to expose both halves of it.
- D. Remove the four (4) screws on the System board to access the keyboard assembly.
- E. To gain access to the top of the unit remove the squelch, volume and channel select knobs. Remove the two (2) retaining nuts that secure the volume and squelch potentiometers. Remove the antenna connector in the follow manner:
  - 1. Perform steps A and B.
  - 2. Unsolder the coil and capacitor that connects to the antenna connector.
  - 3. Remove the antenna connector using the special antenna adapter key, KPN 047-6745-00, included in the portable tool kit, KPN 050-2567-00.
- F. Lift off the top housing assembly to complete disassembly.

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### 5.2.3.3 Assembly

To assemble the unit perform the disassembly procedures in reverse order.

### 5.2.4 TEST AND ALIGNMENT PROCEDURES

#### 5.2.4.1 8.3 Volt Power Supply

Adjust R100 on the system board for 8.3VDC as read with a DVM between E5 and ground.

#### 5.2.4.2 Receiver

##### A. Front End Tuning (Rev 0 PC Assembly)

1. Channel the radio to a frequency, near 148MHz. Set the squelch to open and the volume at approximately 1/2 level.
2. Set the signal generator to the frequency selected in step 1 with modulation set at 1000Hz at 3KHz deviation.
3. Using the RF cable assembly connect the signal generator to the antenna input. Connect the distortion analyzer to the audio output with the Audio cable assembly.
4. Increase the RF level until an improvement is observed in the SINAD reading (6-12dB SINAD).
5. Adjust L7, L8, L9, and L10 alternately for best SINAD while reducing the RF input level to maintain approximately 10dB SINAD.
6. Adjust T1 and T2 for best audio signal with a RF input level of 1 millivolt RMS.  
NOTE: T3 is primarily for coupling and will have little or no effect on the tuning.

##### B. Front End Tuning (Rev 1 and up PC Assemblies)

1. Channel the radio to a frequency, near 174MHz. Set the squelch to open and the volume at approximately 1/2 level.
2. Set the signal generator to the frequency selected in step 1 with modulation set at 1000Hz at 3KHz deviation.
3. Using the RF cable assembly connect the signal generator to the antenna input. Connect the distortion analyzer to the audio output with the Audio cable assembly.
4. Increase the RF level until an improvement is observed in the SINAD reading (6-12dB SINAD).
5. Adjust L7, L8, L9, and L10 alternately for best SINAD while reducing the RF input level to maintain approximately 10dB SINAD.
6. Select a channel and receive frequency near 148MHz and adjust R101 for best SINAD.
7. Adjust T1 and T2 for best audio signal with a RF input level of 1 millivolt RMS.  
NOTE: T3 is primarily for coupling and will have little or no effect on the tuning.

##### C. Squelch Adjustment (Rev 2 and up PC Assemblies)

1. Turn the RF generator all the way down and set the squelch control to the tight position (counterclockwise all the way but not in the CG position)
2. Rotate R19 fully clockwise.
3. Set the RF input level to 6db above 12db measured SINAD (approx. .4 to .5 $\mu$ volt).
4. Slowly adjust R19 counterclockwise until the squelch opens.

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#### 5.2.4.3 Transmitter

##### A. High Power Set (5 Watt Version)

1. Connect the antenna output to the power meter with the RF cable assembly.
2. Set the radio to the lowest available frequency.
3. Key the transmitter and adjust R22 for a 5 watt reading on the power meter.
4. Recheck the output power on the remaining frequencies, and on any channel that has a power output less than 5 watts adjust R22 to increase the power output to 5 watts.

##### B. Low Power Set (5 Watt Version)

1. This adjustment should only be performed after the high power level has been set.
2. Connect the Antenna Output to the power meter as above.
3. Set the radio to the lowest available frequency.
4. Key the transmitter and adjust R21 for a 2 watt reading on the power meter.
5. Recheck the output power on the remaining channels. If any frequency has an output power of more than 2.4 watts, adjust R21 to decrease the output power to 2.4 watts.

##### C. Power Set (2 Watt Version)

1. Connect the antenna output to the power meter as above.
2. Set the radio to the lowest available frequency.
3. Key the transmitter and adjust R47 for a 2 watt reading on the power meter.
4. Recheck the output power on the remaining channels. If any frequency has an output power of less than 2 watts, adjust R47 to increase the output power to 2 watts.

#### 5.2.4.4 SYNTHESIZER

##### A. VCO Adjustment

1. The following test frequencies should be programmed into the EEPROM as needed (Refer to paragraph 2.3.3 in Section 2 of this manual for programming information):

148MHz  
160.595MHz  
160.6MHz  
174MHz

2. Set the radio to receive on 148 MHz.
3. Connect a digital multimeter between TP1 and ground.
4. Adjust L1 for a reading of 3VDC with the synthesizer locked.
5. Set the radio to receive on 160.6MHz.
6. If the voltage at TP1 is less than 3VDC, adjust L1 to increase the reading to 3VDC.
7. Set the radio to receive at 160.595MHz.
8. If the voltage at TP1 is greater than 6.5VDC, or the synthesizer does not lock up, adjust L1 to obtain a reading of 6.5VDC.
9. Set the radio to receive at 174MHz.
10. If the voltage at TP1 is greater than 6.5VDC, or if the synthesizer does not lock up, adjust L1 to obtain a reading of 6.5VDC.

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**B. Reference Oscillator Adjustment**

1. Connect the antenna output to the RF input jack of the Service Monitor.
2. Set the radio for any valid transmit frequency, and set the Service Monitor to receive on the same frequency.
3. Key the transmitter and adjust C28 for zero frequency error.

**C. Deviation Adjustment**

1. Connect the antenna output to the RF input jack of the Service Monitor using the RF cable assembly.
2. Connect the modulation output of the Service Monitor to the mic high input of the radio using the accessory test cable.
3. Adjust the audio modulation output level from the Service Monitor for 0.25 VRMS at 1000Hz.
4. Select a transmit test frequency as follows: If the radio will be transmitting with CODE GUARD™, select a frequency where CODE GUARD™ will be operational. If both tone and digital CODE GUARD™ are used, select a frequency using digital CODE GUARD™.
5. Set the Service Monitor to receive this transmitter frequency.
6. Adjust R49 to the center of it's range.
7. Key the transmitter and adjust R46 to obtain a deviation reading of 4.75KHz on the Service Monitor.
8. For radios using digital CODE GUARD™, perform the following additional adjustments.

**Reference modulation Adjustment:**

- a. Adjust the modulation output level from the Service Monitor to 0 volts.
  - b. Key the transmitter and observe the resulting waveform on the CRT display of the Service Monitor.
  - c. Adjust R49 to obtain the flattest waveform as shown in Figure 5-1 below.
  - d. Return the modulation output level from the Service Monitor to .25 VRMS.
9. Check the deviation reading on all the other transmit frequencies. On any frequency where the deviation is greater than 5 KHz adjust R46 to reduce the deviation to 5KHz.

**NOTE**

If readjustment of R46 is required in this step, return to step 8 for radios containing digital CODE GUARD™.

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### 5.2.5 TROUBLESHOOTING

Refer to the Troubleshooting flowcharts at the end of this section and the schematics in the Illustrated Parts List for troubleshooting information.

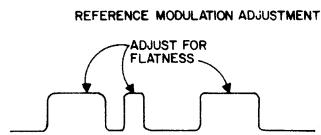


FIGURE 5-1 REFERENCE MODULATION ADJUSTMENT

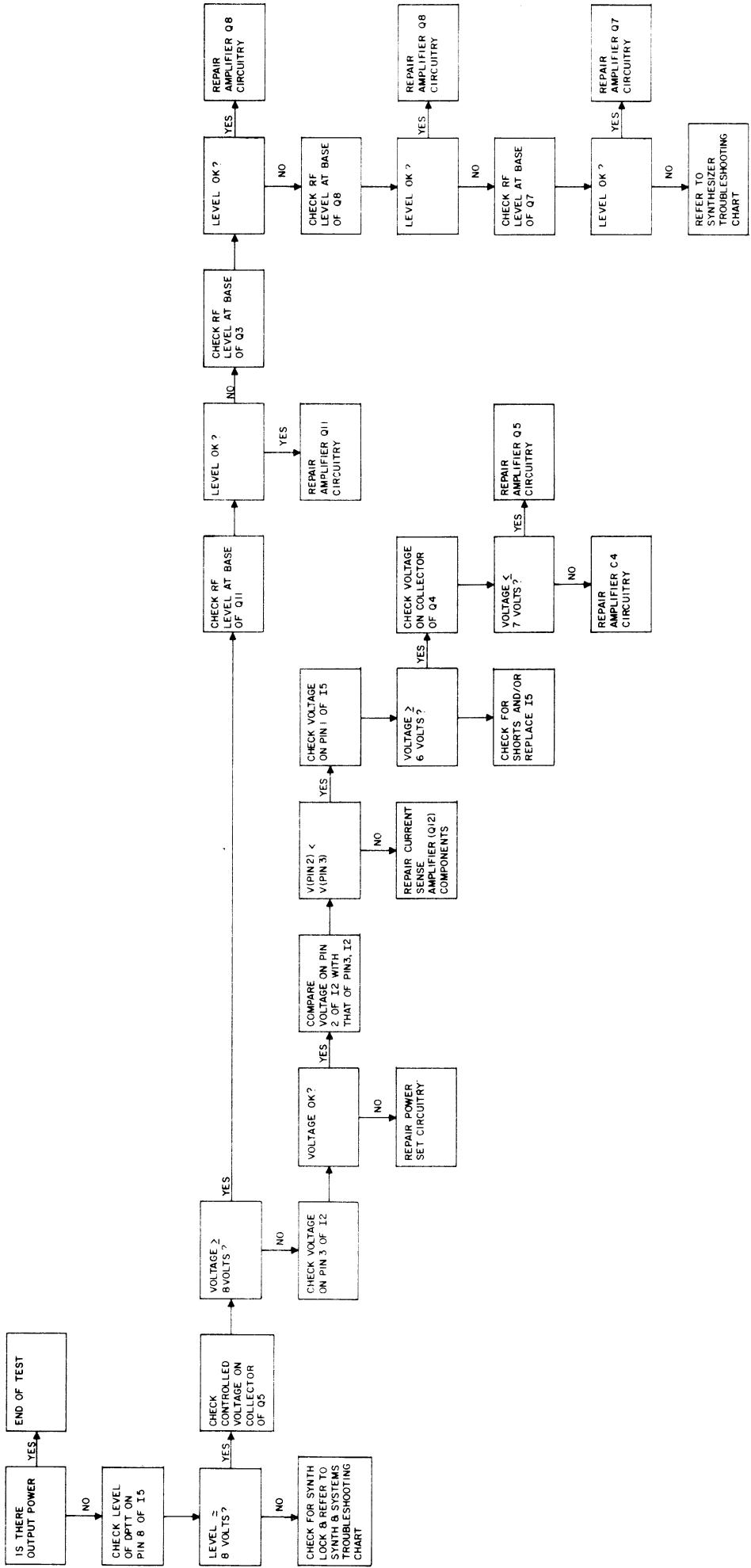
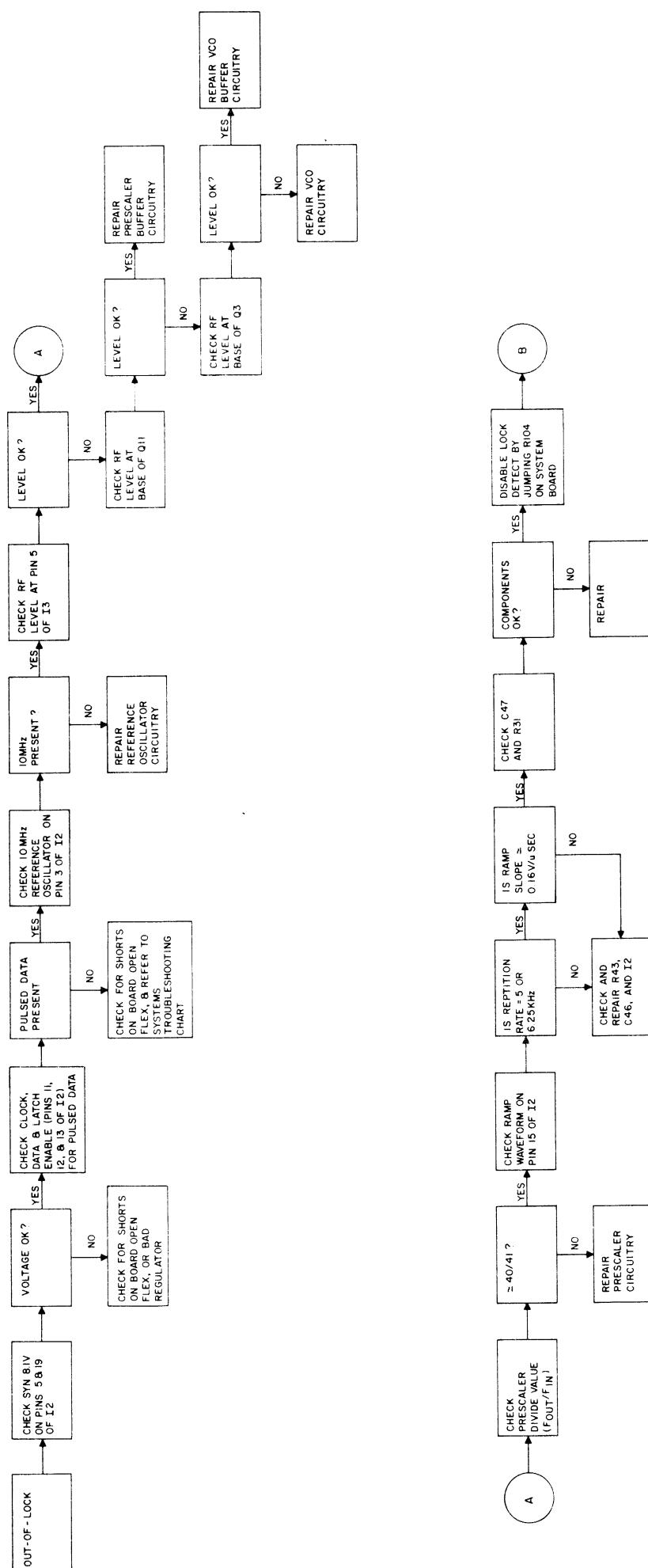


FIGURE 5-2 TRANSMITTER TROUBLESHOOTING FLOWCHART  
(Dwg No 696-0775-01 Rev 0)



**FIGURE 5-3 SYNTHESIZER TROUBLESHOOTING FLOWCHART**  
(Dwg No 696-0775-02 Rev 0)  
(Sheet 1 of 2)

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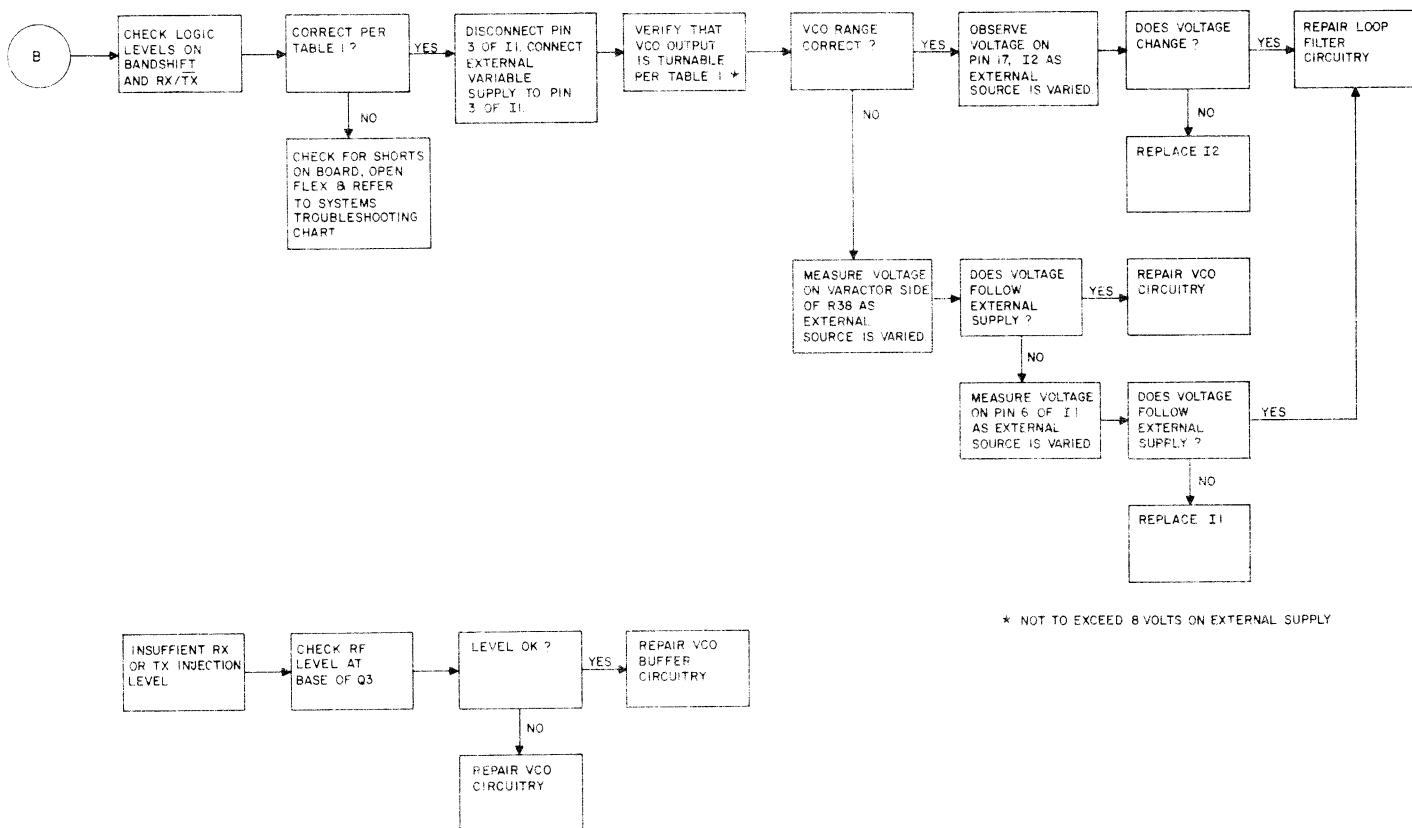
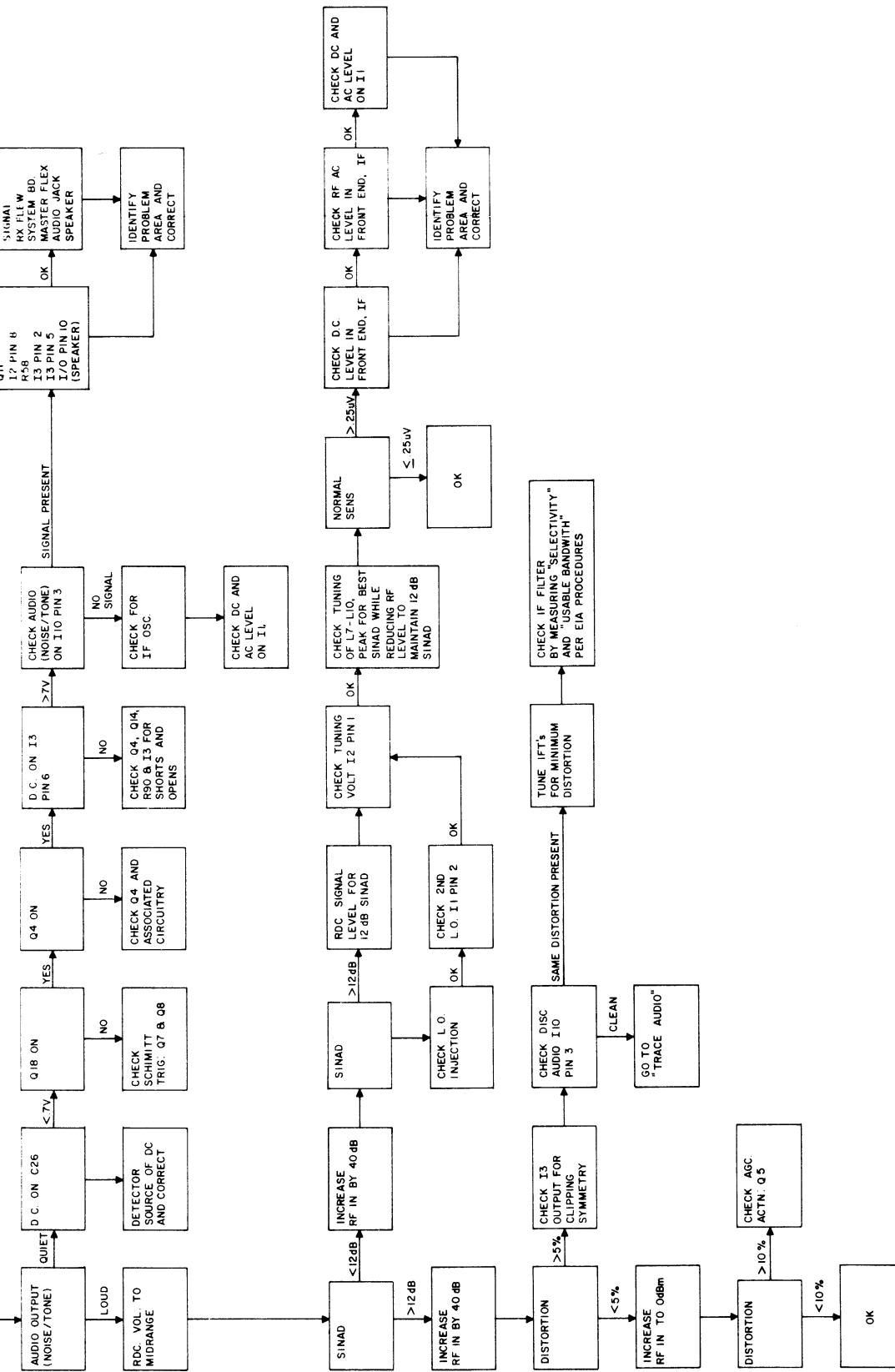


TABLE I

<u>PROGRAMMED GREATER THAN</u>	<u>FREQUENCY LESS THAN</u>	<u>MODE</u>	<u>BANDSHIFT</u>	<u>RX/TX</u>	<u>STEERING VOLTAGE (APPROXIMATE)</u>	<u>MINIMUM TURNABLE FREQUENCY RANGE</u>
148 000 MHz	160 5975 MHz	RX	+ 8V	+ 8V	2.5V - 6.5V	131 MHz - 144 MHz
160 600 MHz	174 000 MHz	RX	+ 0V	+ 8V	2.5V - 6.5V	143 MHz - 158 MHz
148 000 MHz	160 5975 MHz	TX	+ 8V	+ 0V	2.5V - 6.5V	148 MHz - 161 MHz
160 600 MHz	174 000 MHz	TX	+ 0V	+ 0V	2.5V - 6.5V	160 MHz - 174 MHz

**FIGURE 5-3 SYNTHESIZER TROUBLESHOOTING FLOWCHART**  
(Dwg No 696-0775-02 Rev 0)  
(Sheet 2 of 2)



**FIGURE 5-4 LPH RECEIVER TROUBLESHOOTING FLOWCHART**  
(Dwg No 696-0775-03 Rev 0)

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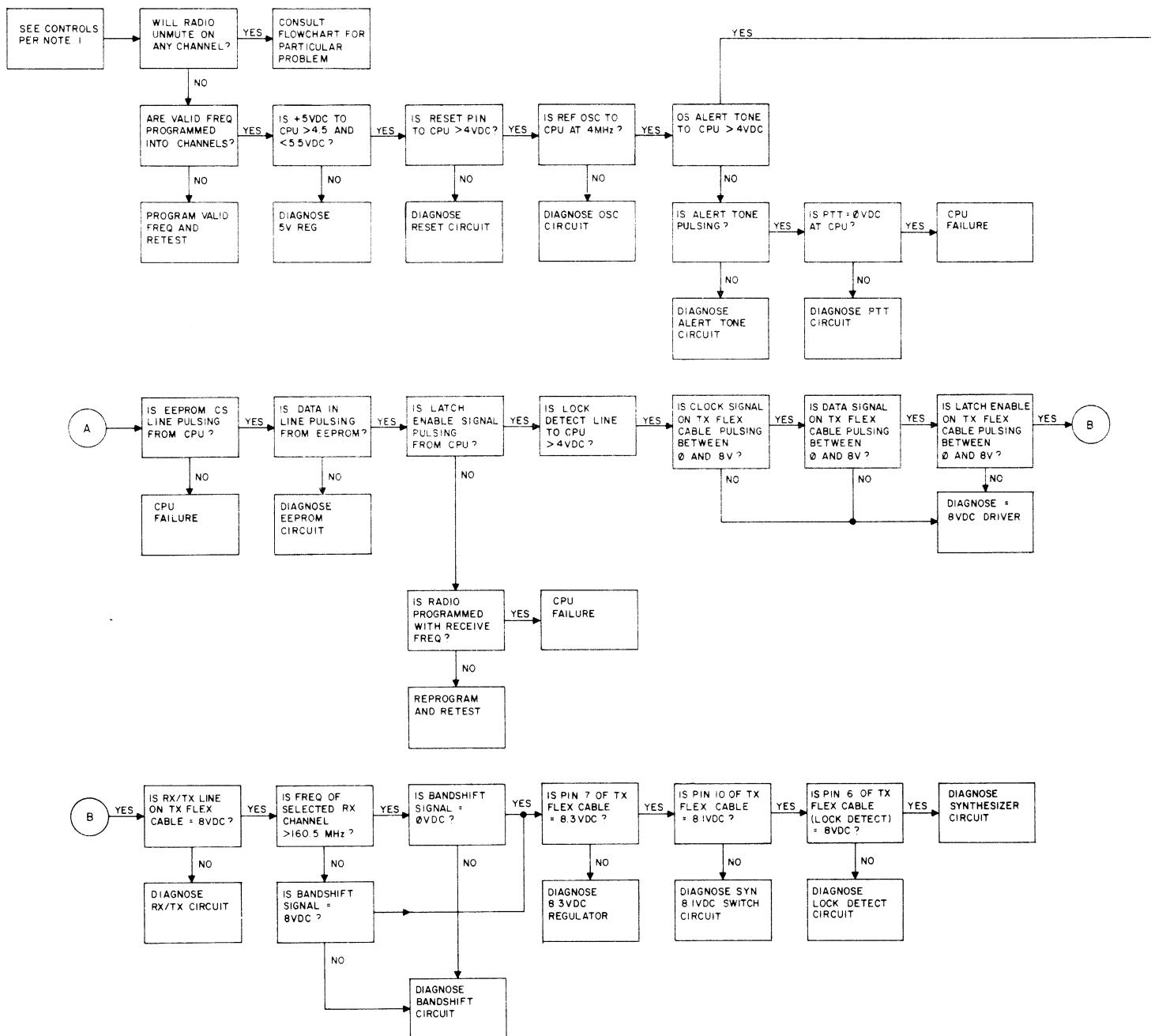
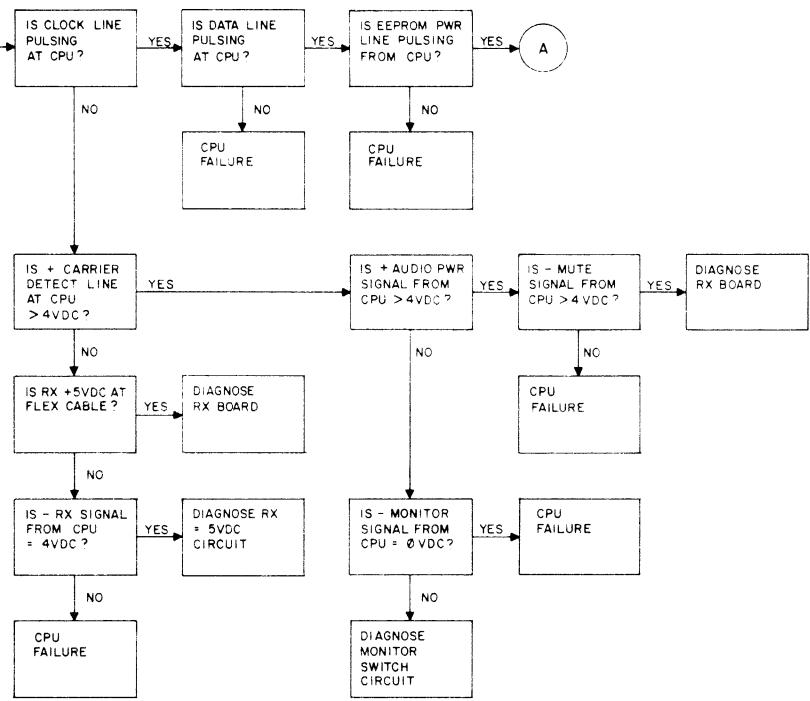


FIGURE 5-5 LPH SYSTEM TROUBLESHOOTING FLOWCHART  
(Dwg No 696-0775-09 Rev 0)  
(Sheet 1 of 2)



NOTES:

1. SET RADIO CONTROLS AS FOLLOWS:

VOLUME	HALF
SQUELCH	CW
PWR	LOW
SCAN	OFF
PRIORITY	OFF

2. SET RADIO CONTROLS AS FOLLOWS:

VOLUME	HALF
SQUELCH	CCW
PWR	LOW
SCAN	ON
PRIORITY	OFF

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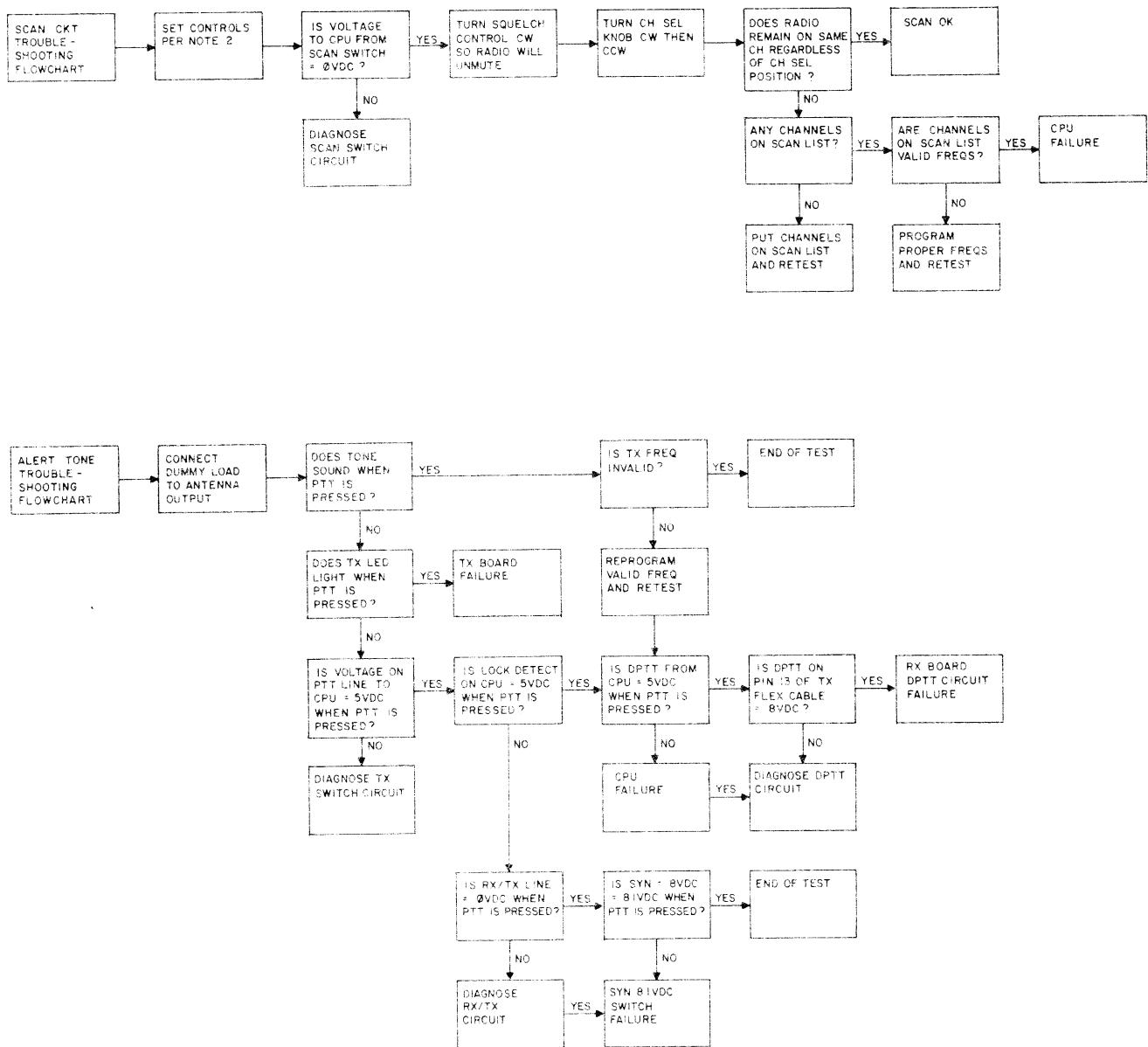


FIGURE 5-5 LPH SYSTEM TROUBLESHOOTING FLOWCHART  
(Dwg No 696-0775-09 Rev 0)  
(Sheet 2 of 2)

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ILLUSTRATED PARTS LIST

## INTRODUCTION

This Illustrated Parts List (IPL) provides for the proper identification of replacement parts. Individual Bills of Material (BOM) within this IPL are arranged in numerical order by BOM number. Each BOM is followed by the Assembly Drawing and Schematic Diagram for that assembly.

Parts identified in this IPL by King Part Number meet design specifications for this equipment and are the recommended replacement parts. Warranty information concerning King replacement parts are contained in Service Memo #1, KPN 600-8001-XX.

## BILL OF MATERIAL DESCRIPTION

This section describes the various items that appear on the Bills of Material. A sample BOM is included in this section as Figure 6-1.

### 1. BOM Number

The Bill of Material Number appears at the top of the BOM as a 9-digit number which is also the King Part Number for the assembly. The BOM Number is followed by the assembly description and the revision level of the BOM.

### 2. Symbol Column

This column contains the Reference Designators of the electrical components of the assembly. Mechanical parts are not assigned Reference Designators. The Reference Designator consists of a letter abbreviation which indicates the type of component followed by the number assigned to that part (C101, Q101, etc). Common Reference Designator abbreviations are listed below.

C	Capacitor	P	Plug
CJ	Circuit Jumper	R	Resistor
CR	Diode	S	Switch
DS	Lamp	T	Transformer
F	Fuse	TP	Test Point
FL	Filter	U	Resistor/Capacitor Network
I	Integrated Circuit	V	Photocell/Vacuum Tube
J	Jack	WG	Waveguide
L	Inductor	Y	Crystal
Q	Transistor		

### 3. Part Number Column

This column contains the King Part Number for each part. Special purpose 999-9999-XX series part numbers may appear in the BOM and are described below.

#### 1. CR401 999-9999-96 RESERVED

The Reference Designator CR 401 has been reserved for future use; the assembly does not currently include a CR401.

#### 2. CR401 999-9999-97 SEE NEXT ASSEMBLY

CR401 is a part of the electrical circuit but due to assembly or testing requirements is actually part of a different assembly.

#### 3. CR401 999-9999-98 NOT USED

The Reference Designator CR401 is available for future assignment. The assembly does not currently include a CR 401.

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4. CR401 999-9999-99 DO NOT USE

The Reference Designator CR401 has been previously used for this assembly and later deleted. It may not be reassigned on this assembly.

4. Description Column

This column contains the description of each part in the assembly. Common abbreviations which may appear in this column are listed below.

AL	Aluminum	PC	Polycarbonate
BIFLR	Bifilar	PF	Precision Film
BOM	Bill of Material	PP	Paper
CC	Carbon Composite	PS	Polystrene
CF	Carbon Film	QW	Quarter Watt
CH	Choke	RES	Resistor
CAP	Capacitor	S	Silicon
CR	Ceramic	SCR	Screw
DC	Disc Ceramic	SM	Silver Mica
DIO	Diode	STDF	Standoff
EL	Electrolytic	SW	Switch
FC	Fixed Composition	TERM	Terminal
FERR	Ferrite	TN	Tantalum
FLTR	Filter	TST PT	Test Point
FT	Feedthru	TW	Tenth Watt
HV	High Voltage	VA	Variable
HW	Half Watt	WW	Wire Wound
IC	Integrated Circuit	XFMR	Transformer
MC	Monolithic Ceramic	XSTR	Transistor
MY	Mylar	XTAL	Crystal

5. Assembly (A) Column

An "A" in this column indicates that the part indicated is an assembly. If the KPN and description reads "200-XXXX-99 COMMON BOM" the parts for that assembly are included in the same BOM. The parts breakdown for an assembly with any other KPN will be found in the BOM with the same number.

6. Unit of Measure (UM) Column

This column indicates the Unit of Measure for each part. Common abbreviations found in this column are listed below.

EA	Each
FT	Foot
AR	As Required

7. Quantity and Flavor Columns

Individual flavors of an assembly are identified by the last two digits of the KPN. Part quantities for each flavor will be indicated under headings numbered 00 through 99 as required. The parts indicated in the 99 Column are common to all other flavors of the assembly and are considered the Common Bill of Material for the assembly.

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BOM NUMBER		ASSEMBLY FLAVOR								
SYMBOL	PART NUMBER	DESCRIPTION	A	UW	00	10	11	30	31	UNIT OF MEASURE
	003-5178-00	PC BD CONV/DISPLAY	EA	1.00						
	009-5178-10	PC BD CONV/DISPLAY-YOR	EA		1.00	1.00	1.00	1.00		
	200-5178-11	Rev. 17 CONV/DSP-YOR/WNB	KNS0081							
	200-5178-30	Rev. 17 CONV/DSPLY-TAC	KNS0081							
	200-5178-31	Rev. 16 CONV/DSPLY-TAC/WNB	KNS0081							
REFERENCE DESIGNATOR		QUANTITY								
C	300	096-1082-08	CAP TN 100UF 15V	EA	1.00	1.00	1.00	1.00	1.00	
C	301	096-1082-08	CAP TN 100UF 15V	EA	1.00	1.00	1.00	1.00	1.00	
C	302	108-6005-10	CAP TRKG SET/4 IDC	EA	1.00	1.00	1.00	1.00	1.00	
C	303	999-9999-99	DO NOT USE	EA	0.00	0.00	0.00	0.00	0.00	
C	304	096-1082-08	CAP TN 47UF 15V	EA	1.00	1.00	1.00	1.00	1.00	
C	305	111-0001-17	CAP CR 180PF 50V	EA	1.00	1.00	1.00	1.00	1.00	
C	306	109-0007-00	CAP DC .01UF 25V	EA	1.00	1.00	1.00	1.00	1.00	
C	307	109-0007-00	CAP DC .01UF 25V	EA	1.00	1.00	1.00	1.00	1.00	
C	308	109-0007-00	CAP DC .01UF 25V	EA	1.00	1.00	1.00	1.00	1.00	
C	309	111-0001-13	CAP CR .1UF 50V	EA	1.00	1.00	1.00	1.00	1.00	
C	310	108-6001-03	CAP PF .002UF 50V	EA	1.00	1.00	1.00	1.00	1.00	
C	311	114-5222-01	CAP DC 2200PF 500V	EA	1.00	1.00	1.00	1.00	1.00	
C	312	999-9999-99	DO NOT USE	EA	0.00	0.00	0.00	0.00	0.00	
C	313	999-9999-99	DO NOT USE	EA	0.00	0.00	0.00	0.00	0.00	
C	314	109-0007-00	CAP DC .01UF 25V	EA	1.00	1.00	1.00	1.00	1.00	
C	315	096-1082-08	CAP TN 47UF 15V	EA	1.00	1.00	1.00	1.00	1.00	
C	316	105-0031-89	CAP MY 1UF 80V	EA	1.00	1.00	1.00	1.00	1.00	
C	317	111-0001-17	CAP CR 180PF 50V	EA	1.00	1.00	1.00	1.00	1.00	
C	318	108-8001-02	CAP PF .001UF 50V	EA	1.00	1.00	1.00	1.00	1.00	
C	319	096-1082-18	CAP TN 2.2UF 20V	EA	1.00	1.00	1.00	1.00	1.00	
C	320	108-5013-04	CAP PC .33UF 100V	EA	1.00	1.00	1.00	1.00	1.00	
C	321	105-0031-89	CAP MY .008UF 80V	EA	1.00	1.00	1.00	1.00	1.00	

FIGURE 6-1 TYPICAL BILL OF MATERIAL

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**MODEL NUMBER**

L P H	L P H	L P H	L P H
2 0 2	2 1 4	5 0 2	5 1 4

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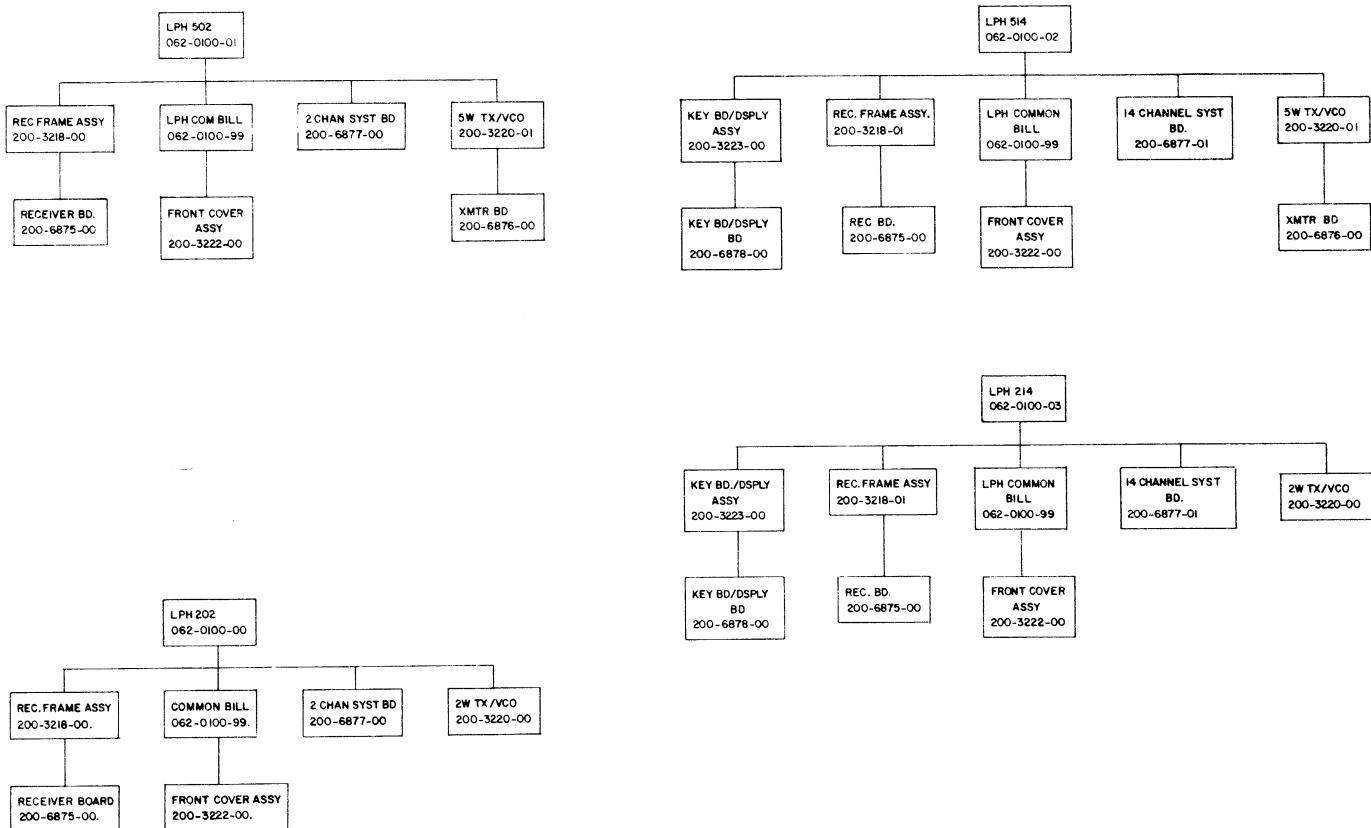
**SUBASSEMBLY NUMBER**

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REC. FRAME ASS. KPN 200-3218-00	X		X
REC. FRAME ASSY KPN 200-3218-01		X	X
2 WATT TX/VCO ASSY KPN 200-3220-00	X	X	
5 WATT TX/VCO ASSY KPN 200-3220-01			X X
FRONT COVER ASSY KPN 200-3222-00	X	X	X X
KEYBRD/DSPLY ASSY KPN 200-3223-00		X	X
2 CHAN SYSTEM BRD KPN 200-6877-00	X		X
14 CHAN SYSTEM BRD KPN 200-6877-01		X	X

**FIGURE 6-2 MODEL VERSUS SUBASSEMBLY CHART**  
**(Dwg No 696-0775-04 Rev 0)**

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**FIGURE 6-3 ASSEMBLY FLOWCHARTS**  
**(Dwg No 696-0775-05 Rev 0)**

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062-0100-00 REV 5 FINAL ASSY LPH2020  
 062-0100-01 REV 4 FINAL ASSY LPH5020  
 062-0100-02 REV 5 FINAL ASSY LPH5141  
 062-0100-03 REV 7 FINAL ASSY LPH2141  
 062-0100-04 REV 5 FINAL ASSY LPH5140  
 062-0100-05 REV 5 FINAL ASSY LGH214A  
 062-0100-06 REV 6 FINAL ASSY LGH2142A  
 062-0100-07 REV 6 FINAL ASSY LGH5143A  
 062-0100-08 REV 5 FINAL ASSY LQH5142A  
 062-0100-09 REV 1 FINAL ASSY

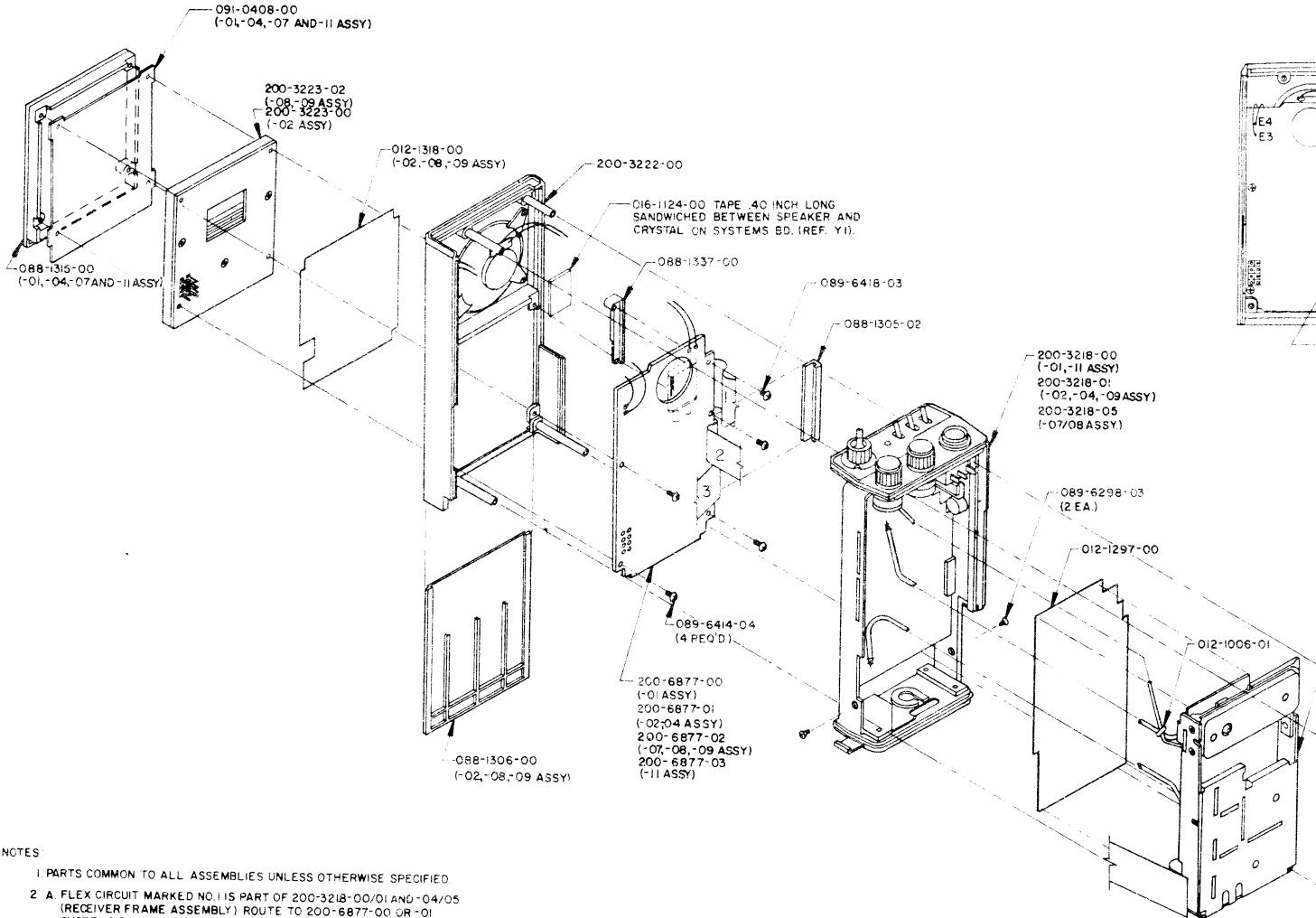
SYMBOL	PART NUMBER	DESCRIPTION	A	U/M	00	01	02	03	04	05	06	07	08	09
	012-1318-00	INSULATOR MYLAR		EA	.	.	1.00	1.00	.	.	1.00	.	1.00	1.00
	062-0100-99	COMMON BOW	A	EA	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	088-1293-00	BACK CVR W/HS BLK		EA	.	1.00	1.00	.	1.00	.	1.00	1.00	1.00	1.00
	088-1293-04	BACK COVER ASSY	A	EA	1.00	.	.	1.00	.	1.00	1.00	.	.	.
	088-1306-00	DOOR KEYBOARD BLK		EA	.	.	1.00	1.00	.	.	1.00	.	1.00	1.00
	088-1315-00	INSRT FRNT CVR BLK		EA	1.00	1.00	.	.	1.00	1.00	.	1.00	.	.
	091-0408-00	SPACER BD		EA	1.00	1.00	.	.	1.00	1.00	.	1.00	.	.
	200-3218-00	RX FRAME ASSY	A	EA	.	1.00	.	.	.	.	.	.	.	1.00
	200-3218-01	RX FRAME ASSY	A	EA	.	.	1.00	.	1.00	.	.	.	1.00	1.00
	200-3218-05	RX FRAME ASSY	A	EA	.	.	.	.	.	.	.	1.00	1.00	.
	200-3218-06	RX FRAME ASSY	A	EA	1.00	.	.	.	.	.	.	.	.	.
	200-3218-07	RX FRAME ASSY	A	EA	.	.	.	1.00	.	.	.	.	.	.
	200-3218-10	RX FRAME ASSY	A	EA	.	.	.	.	.	1.00	1.00	.	.	.
	200-3220-00	2W TX/VCO	A	EA	1.00	.	.	1.00	.	1.00	1.00	.	.	.
	200-3220-01	XMTR SBFRAME	A	EA	.	1.00	1.00	.	1.00	.	.	1.00	1.00	1.00
	200-3223-02	KBD/DSPL ASSY-TONE	A	EA	.	.	1.00	1.00	.	.	1.00	.	1.00	1.00
	200-6877-00	2 CH SYSTEM BD	A	EA	1.00	1.00	.	.	.	.	.	.	.	.
	200-6877-01	14 CH SYSTEM BD	A	EA	.	.	1.00	1.00	1.00	.	.	.	.	.
	200-6877-02	14 CH/TONE SYS BD	A	EA	.	.	.	.	1.00	1.00	1.00	1.00	1.00	.
REF 1	300-3219-00	FINAL ASSY		RF	.	X.	X.	.	X.	.	X.	X.	X.	X.
REF 1	300-3219-01	FINAL ASSY		RF	X.	.	.	X.	.	X.	X.	.	.	.
REF 2	002-0675-00	PORT XCVR INTCON		RF	X.									
REF 4	004-0483-00	MPS LPH		RF	X.									

**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**

062-0100-10 REV 2 FINAL ASSY  
 062-0100-11 REV 1 FINAL ASSY LPH 5023  
 062-0100-12 REV 1 FINAL ASSY LPH 2023  
 062-0100-99 REV 13 COMMON BOM LPH0000

SYMBOL	PART NUMBER	DESCRIPTION	A	U	10	11	12	99
	006-8401-00	*OPERATORS MANUAL	EA	.	.	.	1.00	
	012-1006-01	LACING CORD 20DR	AR	.	.	.	1.00	
	012-1297-00	INSULATOR	EA	.	.	.	1.00	
	012-1318-00	INSULATOR MYLAR	EA	1.00	.	.	.	
	012-1353-00	COPPER TAPE SHLD	EA	.	.	.	2.00	
	012-1354-00	INSUL MYLAR	EA	.	.	.	2.00	
	016-1008-04	GLYPTAL 7526 BL	AR	.	.	.	1.00	
	016-1124-00	FOAM TAPE V1002	IN	.	.	.	0.40	
	026-0030-00	WIRE CU24AWG TIN	IN	.	.	.	2.00	
	035-1560-00	LPH PKG INSTR	EA	.	.	.	1.00	
	062-0100-99	COMMON BOM	A	EA	1.00	1.00	1.00	.
	088-1293-00	BACK CVR W/HS BLK	EA	.	1.00	.	.	
	088-1293-04	BACK COVER ASSY	A	EA	1.00	.	1.00	.
	088-1305-02	EXT STRN RLF 1.50	EA	.	.	.	1.00	
	088-1306-00	DOOR KEYBOARD BLK	EA	1.00	.	.	.	
	088-1315-00	INSRT FRNT CVR BLK	EA	.	1.00	1.00	.	
	088-1337-00	STRAIN RELIEF	EA	.	.	.	1.00	
	089-6298-03	SCR FPHP 3-48X3/16	EA	.	.	.	2.00	
	089-6414-04	SCR PHP 2-28X1/4	EA	.	.	.	4.00	
	089-6418-03	SCR PHP 0-40X3/16	EA	.	.	.	1.00	
	089-7071-08	PHP M2.5-.45X8 BK	EA	.	.	.	3.00	
	089-7071-20	PH[ M2.5-.45X20 BK	EA	.	.	.	1.00	
	091-0408-00	SPACER BD	EA	.	1.00	1.00	.	
	195-0018-00	FCC DCL OPTIONS	EA	.	.	.	1.00	
	200-3218-00	RX FRAME ASSY	A	EA	.	1.00	.	
	200-3218-08	RX FRAME ASSY	A	EA	.	.	1.00	
	200-3218-07	RX FRAME ASSY	A	EA	1.00	.	.	
	200-3220-00	2W TX/VCO	A	EA	1.00	.	1.00	
	200-3220-01	XMTR SBFRAME	A	EA	.	1.00	.	
	200-3222-00	FRONT COVER ASSY	A	EA	.	.	1.00	
	200-3223-02	KBD/DSPL ASSY-TONE	A	EA	1.00	.	.	
	200-6877-02	14 CH/TONE SYS BD	A	EA	1.00	.	.	
	200-6877-03	2 CHNL/TONE SYS BD	A	EA	.	1.00	1.00	.
REF	1	300-3219-00	FINAL ASSY	RF	.	X.	.	X.
REF	1	300-3219-01	FINAL ASSY	RF	X.	.	X.	.
REF	2	002-0675-00	PORT XCVR INTCON	RF	X.	X.	X.	.
REF	4	004-0483-00	MPS LPH	RF	X.	X.	X.	.

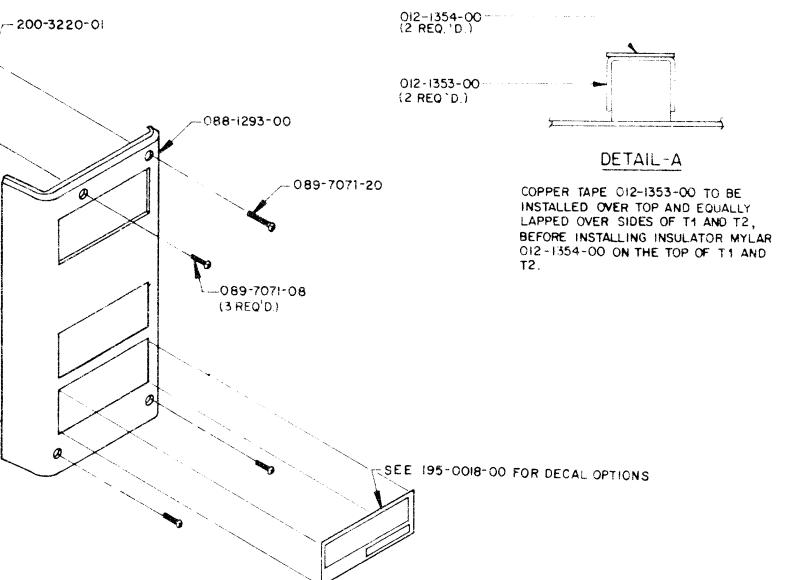
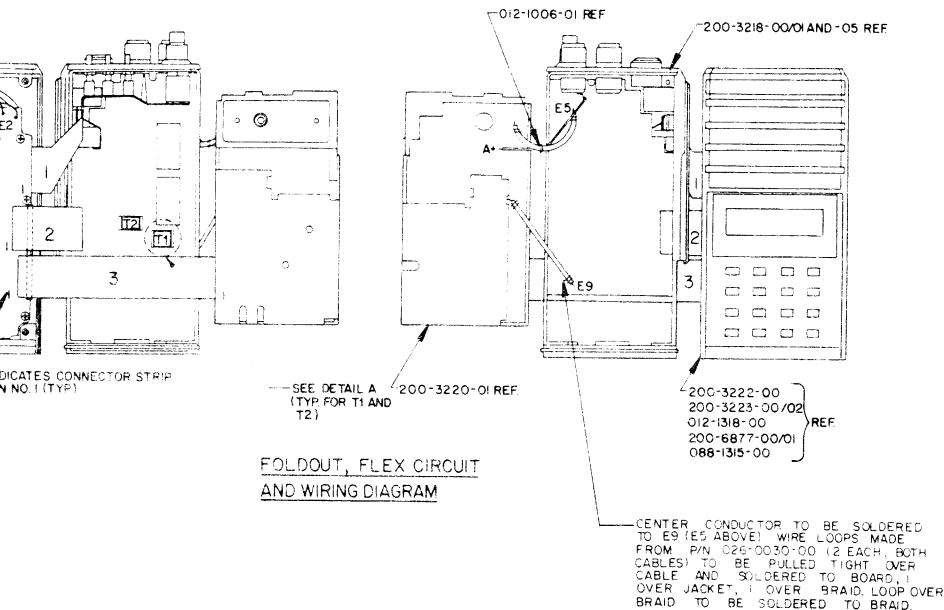
**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**



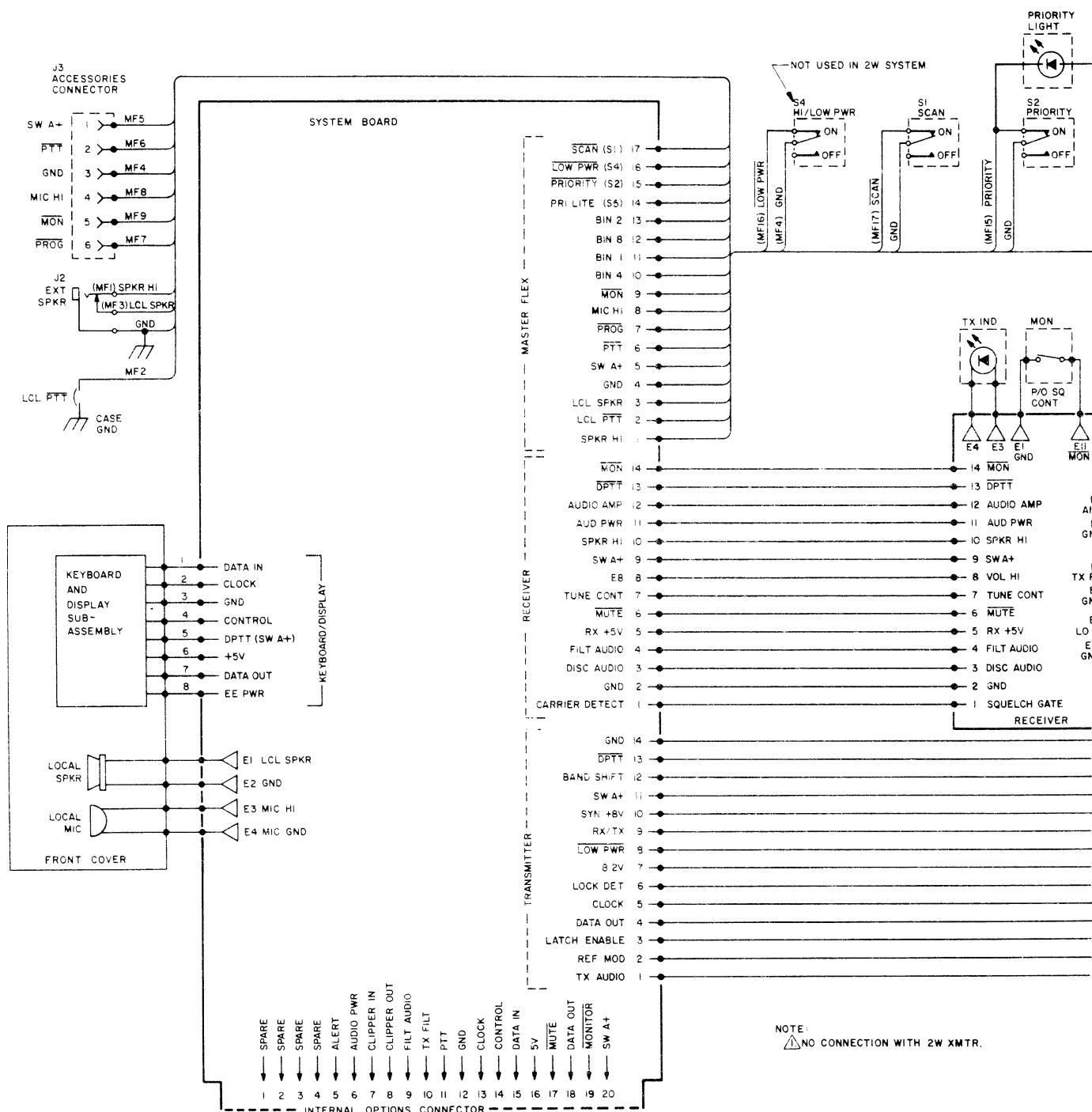
NOTES:

- 1 PARTS COMMON TO ALL ASSEMBLIES UNLESS OTHERWISE SPECIFIED
- 2 A FLEX CIRCUIT MARKED NO.1 IS PART OF 200-3218-00/01 AND -04/05 (RECEIVER FRAME ASSEMBLY) ROUTE TO 200-6877-00 OR -01 SYSTEMS BOARD AND SOLDER TO CONNECTOR PADS.
- B FLEX CIRCUIT MARKED NO.2 IS PART OF 200-3218-00/01 AND -04/05 (RECEIVER FRAME ASSEMBLY) ROUTE TO 200-6877-00 OR -01 SYSTEMS BOARD AND SOLDER TO CONNECTOR PADS.
- C FLEX CIRCUIT MARKED NO.3 IS PART OF 200-3220-01(TRANSMITTER FRAME ASSEMBLY) ROUTE TO 200-6877-00 OR -01 SYSTEMS BOARD AND SOLDER TO CONNECTOR PADS
- 3 REFERENCE- OPERATORS MANUAL KPN 006-8401-00
- 4 REFERENCE-PORTABLE TRANSCEIVER INTERCONNECTION DIAGRAM KPN 002-0675-00
- 5. REFERENCE- LPH PACKING INSTRUCTIONS KPN 035-1560-00.
- 6 REFERENCE- MINIMUM PERFORMANCE SPECIFICATIONS KPN 004-0483-00.

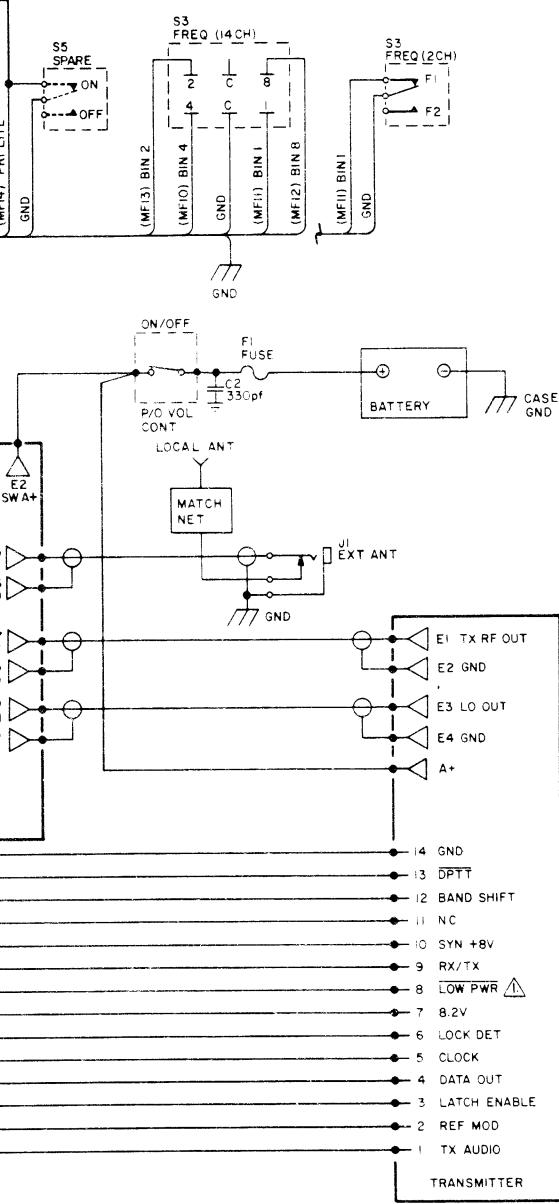
**FIGURE 6-4 FINAL ASSEMBLY**  
**(Dwg No 300-3219-00 Rev 6)**



**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**



**FIGURE 6-5 PORTABLE TRANSCEIVER INTERCONNECT**  
(Dwg No 002-0675-00 Rev 3)



**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**

200-3218-00 REV 13 RX FRAME ASSY LPH0000  
 200-3218-01 REV 14 RX FRAME ASSY LPH0000  
 200-3218-02 REV 12 RX/FRAME ASSY  
 200-3218-03 REV 14 RX/FRAME ASSY  
 200-3218-04 REV 8 RX FRAME ASSY LPH 202 LPH 514  
 200-3218-05 REV 9 RX FRAME ASSY LPH 202 LPH 514  
 200-3218-06 REV 5 RX FRAME ASSY  
 200-3218-07 REV 6 RX FRAME ASSY  
 200-3218-08 REV 5 RX FRAME ASSY  
 200-3218-09 REV 5 RX FRAME ASSY

SYMBOL	PART NUMBER	DESCRIPTION	A	U/M	00	01	02	03	04	05	06	07	08	09
	030-0242-00	RCPT BNC CONN		EA	.	.	.	.	1.00	1.00	.	.	.	1.00
	047-6739-01	BNC ANT NUT W/F		EA	.	1.00	.	1.00	1.00	1.00	.	.	1.00	.
	047-7465-00	WSHR CHNL SLCT		EA	.	1.00	.	1.00	.	1.00	.	1.00	.	.
	057-3100-00	INLAY LPH514		EA	1.00	1.00	.	.	1.00	1.00	.	.	.	.
	057-3100-01	INLAY LPH502		EA	1.00	.	.	.	1.00	.	.	.	.	.
	057-3100-02	INLAY LPH202		EA	.	.	.	.	.	.	1.00	.	.	1.00
	057-3100-03	INLAY LPH214		EA	.	.	.	.	.	.	.	1.00	.	.
	057-3101-00	INLAY JPH514		EA	.	.	.	1.00	.	.	.	.	.	.
	057-3101-01	INLAY JPH502		EA	.	.	1.00	.	.	.	.	.	1.00	.
	057-3101-02	INLAY JPH202		EA	.	.	.	.	.	.	.	.	1.00	.
	073-0601-03	KNOB ASSY	A	EA	2.00	2.00	.	.	2.00	2.00	2.00	2.00	.	2.00
	073-0602-03	CHNL KNOB ASSY	A	EA	.	2.00	.	.	.	1.00	.	.	.	.
	073-0604-03	KNOB ASSY	A	EA	.	.	2.00	2.00	.	.	.	.	2.00	.
	076-1438-00	ADAPTER ANTENNA		EA	1.00	1.00	1.00	1.00	.	.	1.00	1.00	1.00	.
	076-1439-00	NUT SLOT M5X0.50		EA	1.00	3.00	1.00	3.00	1.00	3.00	.	3.00	.	.
	076-1439-02	NUT SLOW 1/4-40		EA	.	1.00	.	1.00	.	.	.	1.00	.	.
	076-1444-00	NUT ALIGNMENT		EA	1.00	.	1.00	.	1.00	.	1.00	.	1.00	1.00
	076-1449-01	BSHG BNC ANT W/F	A	EA	.	.	.	.	1.00	1.00	.	.	.	1.00
	088-1294-00	PTT HOUSING		EA	1.00	1.00	.	.	1.00	1.00	1.00	1.00	.	1.00
	088-1294-01	PTT HOUSING		EA	.	.	1.00	1.00	.	.	.	.	1.00	.
	088-1301-00	ANTENNA BUSHING		EA	1.00	1.00	1.00	1.00	.	.	1.00	1.00	1.00	.
	088-1304-00	LTCH PLT HSG BLK		EA	1.00	1.00	.	.	1.00	1.00	1.00	1.00	.	1.00
	088-1304-01	LTCH PLT HSG BRN		EA	.	.	1.00	1.00	.	.	.	.	1.00	.
	088-1307-00	TOP PLATE		EA	1.00	1.00	.	.	1.00	1.00	1.00	1.00	.	1.00
	088-1310-00	ANTENNA NUT		EA	1.00	1.00	1.00	1.00	.	.	1.00	1.00	1.00	.
	088-1311-00	LED BUSHING		EA	.	1.00	.	1.00	.	1.00	.	1.00	.	.
	088-1325-00	TOP PLATE		EA	.	.	1.00	1.00	.	.	.	.	1.00	.
	088-1328-08	KNOB INSERT ASSY	A	EA	.	.	1.00	.	.	.	.	.	.	.
	088-2052-01	SWITCH BEZEL W/DCR	A	EA	.	1.00	.	.	1.00	.	1.00	.	.	.
	088-2052-03	SWITCH BESEL W/DCR	A	EA	.	.	.	1.00	.	.	.	.	.	.
	089-6004-05	SCR FHP 2-56X5/16		EA	.	.	1.00	1.00	.	.	.	1.00	.	.
	089-6159-05	SCR FHP 2-56X5/16		EA	1.00	1.00	.	.	1.00	1.00	1.00	1.00	.	1.00
	090-0492-00	STOP PIN		EA	.	2.00	.	2.00	.	2.00	.	2.00	.	.
	150-0002-10	TUBING TFLN 26AWG	IN	0.60	1.20	0.60	1.20	0.60	1.20	0.60	1.20	0.60	0.60	0.60
	200-3218-99	COMMON B/M	A	EA	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
C	1	109-0012-01	CAP DC 4.7PF 100V	EA	1.00	1.00	1.00	1.00	.	.	1.00	1.00	1.00	.
C	1	111-0001-52	CAP CR 3.9PF 100V	EA	.	.	.	.	1.00	1.00	.	.	.	1.00
DS	2	007-6176-02	DIO MW5374C	EA	.	1.00	.	1.00	.	1.00	.	1.00	.	.
L	1	019-2401-03	COIL 6T	EA	.	1.00	.	1.00	.	1.00	.	1.00	.	1.00
L	1	019-2401-06	COIL 6T	EA	1.00	1.00	1.00	1.00	.	.	1.00	1.00	1.00	.
REF	1	300-3218-00	RCVR ASSY LPH 2CH	RF	X.	.	X.	.	X.	.	X.	.	X.	X.
REF	1	300-3218-01	RCVR ASSY 14CH	RF	.	X.								
S	1	031-0473-00	SWITCH TOGGLE	EA	.	1.00	.	1.00	.	1.00	.	1.00	.	.
S	2	031-0473-00	SWITCH TOGGLE	EA	.	1.00	.	1.00	.	1.00	.	1.00	.	.
S	3	031-0473-00	SWITCH TOGGLE	EA	1.00	.	1.00	.	1.00	.	1.00	.	1.00	1.00
S	3	031-0474-10	DIP SW MOD	A	EA	1.00	.	1.00	.	1.00	.	1.00	1.00	.
S	4	031-0473-00	SWITCH TOGGLE	EA	1.00	1.00	1.00	1.00	1.00	1.00	.	.	.	.

**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**

200-3218-10 REV 6 RX FRAME ASSY  
 200-3218-99 REV 3 COMMON B/M LPH

SYMBOL	PART NUMBER	DESCRIPTION	A	UM	10	99
	009-6881-00	PCB PTT SWITCH		EA	.	1.00
	009-6883-00	FLEX CKT TOP CONT		EA	.	1.00
	009-6884-00	FLEX CIRCUIT		EA	.	1.00
	010-0019-93	TERM STDF WHT		EA	.	2.00
	012-1021-08	TAPE ELEC 1/2 WD		IN	.	1.00
	012-1037-00	TAPE POLY FILM		IN	.	1.25
	012-1277-01	SNAP DOME ALGNWNT		EA	.	1.00
	012-1317-00	INSULATOR MYLAR		EA	.	1.00
	025-0001-01	WIRE 26 BRN		IN	.	1.00
	025-0001-19	WIRE 26 PNK		IN	.	7.00
	026-0002-00	WIRE COP TIN 24G		IN	.	2.00
	030-0242-00	RCPT BNC CONN		EA	1.00	.
	031-0475-00	SNAP DOME SWITCH		EA	.	2.00
	047-6701-02	RCVR SUBFRAME W/F		EA	.	1.00
	047-6702-00	BTRY LATCH PLATE		EA	.	1.00
	047-6703-00	LATCH SPRING		EA	.	1.00
	047-6739-01	BNC ANT NUT W/F		EA	1.00	.
	047-7465-00	WSHR CHNL SLCT		EA	1.00	.
	057-3100-03	INLAY LPH214		EA	1.00	.
	073-0601-03	KNOB ASSY	A	EA	2.00	.
	073-0602-03	CHNL KNOB ASSY	A	EA	1.00	.
	076-1437-00	BLIND PRESS NUT		EA	.	1.00
	076-1439-00	NUT SLOT M5X0.50		EA	2.00	.
	076-1439-01	NUT SLOT M6X0.70		EA	.	2.00
	076-1446-00	POSITIVE CONTACT		EA	.	1.00
	076-1449-01	BSHG BNC ANT W/F	A	EA	1.00	.
	088-1294-00	PTT HOUSING		EA	1.00	.
	088-1295-00	PTT SWITCH BOOT		EA	.	1.00
	088-1303-00	PTT ACTUATOR		EA	.	1.00
	088-1304-00	LTCR PLT HSG BLK		EA	1.00	.
	088-1305-01	EXT STRN RLF .75		EA	.	1.00
	088-1307-00	TOP PLATE		EA	1.00	.
	088-1311-00	LED BUSHING		EA	1.00	.
	088-1313-00	OPTIONS PLUG COVER		EA	.	1.00
	088-1321-00	OPTIONS PLUG SPCR		EA	.	1.00
	088-2052-01	SWITCH BEZEL W/DCR	A	EA	1.00	.
	089-6004-05	SCR FHP 2-56X5/16		EA	.	4.00
	089-6159-05	SCR FHP 2-56X5/16		EA	1.00	.
	089-6615-05	SCR PHP 2MX5MM		EA	.	2.00
	089-8335-00	WSHR CURVED SPRING		EA	.	1.00
	090-0019-00	RING RTNR .125		EA	.	1.00
	090-0492-00	STOP PIN		EA	2.00	.
	092-5099-00	RIVET .125 L		EA	.	2.00
	150-0002-10	TUBING TFLN 26AWG		IN	1.20	.
	150-0042-10	SHRINK TUBING .187		IN	.	0.25
	155-2219-00	CABLE COAX 1.15		EA	.	1.00
ASY 1	200-3218-99	COMMON B/M	A	EA	1.00	.
	200-6875-00	RECEIVER BOARD	A	EA	.	1.00

**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**

SYMBOL	PART NUMBER	DESCRIPTION	A	U/M	10	99
C	1 111-0001-52	CAP CR 3.9PF 100V	EA	1.00	.	
C	2 111-0001-15	CAP CR 330PF 50V	EA	.	1.00	
DS	1 007-6176-03	DIO MV5774C	EA	.	1.00	
DS	2 007-6176-02	DIO MV5374C	EA	1.00	.	
F	1 036-0057-09	FUSE 275 125V 4A	EA	.	1.00	
J	1 033-0128-00	JACK 3.5MM	EA	.	1.00	
J	2 033-0127-00	JACK 2.5MM	EA	.	1.00	
J	3 030-2529-00	CONN RECEPTACLE	EA	.	1.00	
L	1 019-2401-03	COIL 6T	EA	1.00	.	
REF	1 300-3218-01	RCVR ASSY 14CH	RF	X.	.	
S	1 031-0473-00	SWITCH TOGGLE	EA	1.00	.	
S	2 031-0473-00	SWITCH TOGGLE	EA	1.00	.	
S	3 031-0474-10	DIP SW MOD	A EA	1.00	.	

KING  
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VHF FM COMM TRANSCIEVER

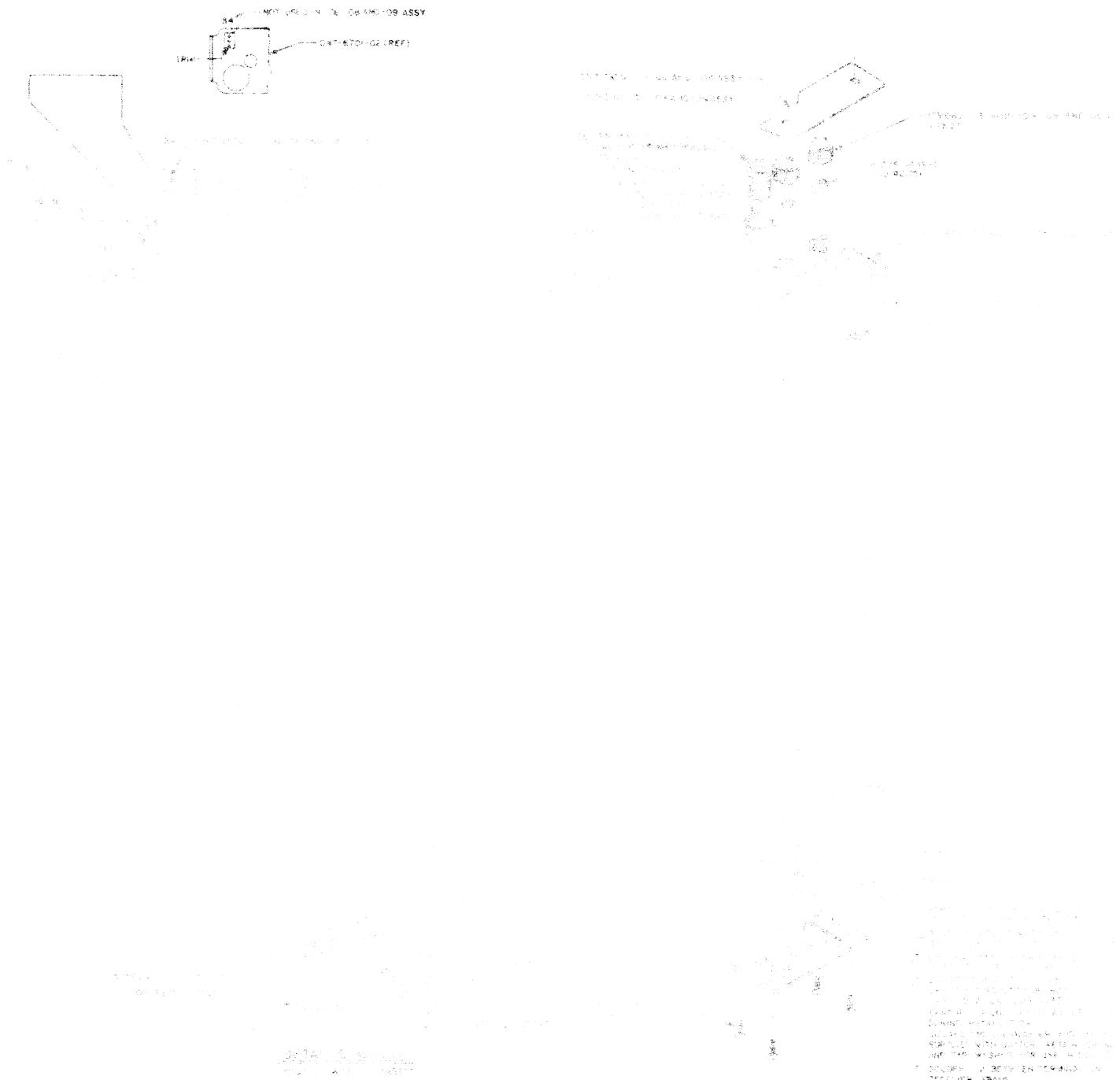


FIGURE 6-6 RECEIVER FRAME ASSEMBLY, LPH 2 CHANNEL  
(Dwg No 300-3218-00/02/04 Rev 7)



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VHF FM COMM TRANSCEIVER

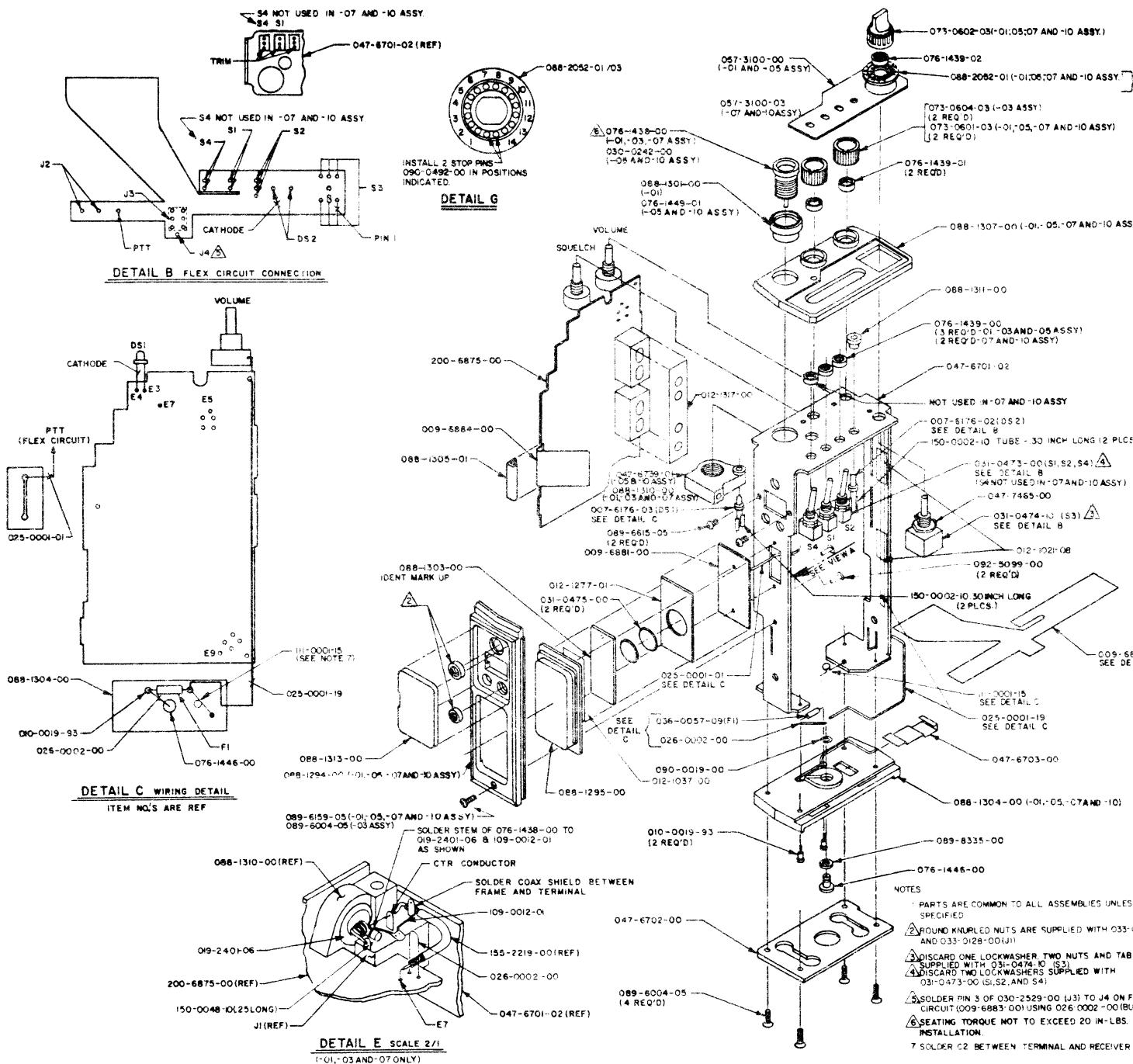
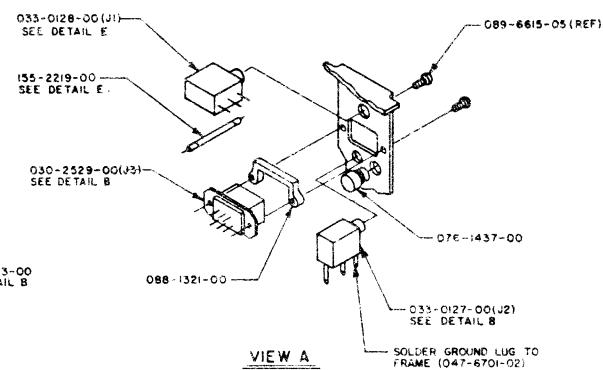
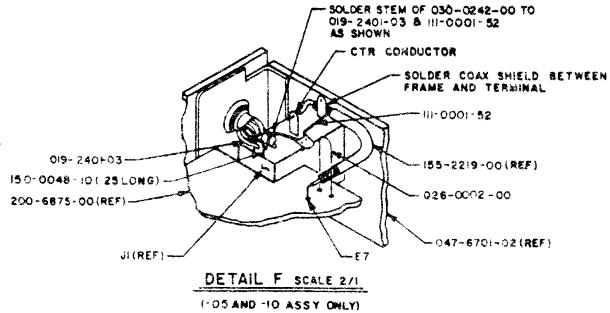


FIGURE 6-7 RECEIVER FRAME ASSEMBLY, LPH 14 CHANNEL  
(Dwg No 300-3218-01/03/05 Rev 8)

SEE DETAIL G  
FOR STOP PIN DETAILS.



OTHERWISE

27-00(U2)

VASHER

EX  
WIRE)  
URING

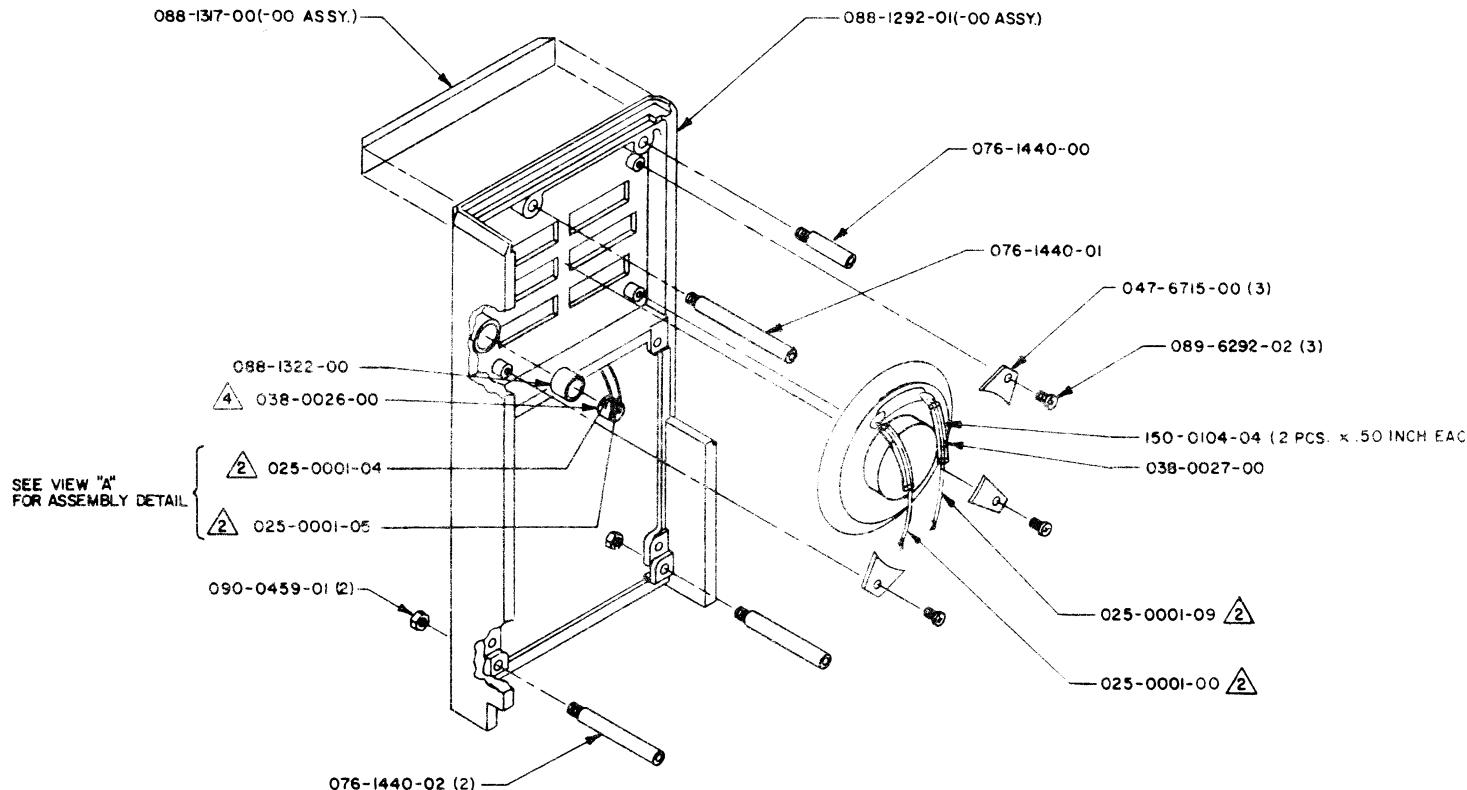
RAME

**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**

200-3222-00 REV 7 FRONT COVER ASSY LPH0000

SYMBOL	PART NUMBER	DESCRIPTION	A	UM	00
	016-1112-00	HOT WELT 1943	AR		1.00
	025-0001-00	WIRE 26 BLK	IN		2.50
	025-0001-09	WIRE 26 WHT	IN		2.50
	025-0017-04	WIRE INSUL YL	IN		2.50
	025-0017-05	WIRE 30 GRN	IN		2.50
	047-6715-00	SPEAKER CLIP	EA		3.00
	076-1440-00	STANDOFF .550	EA		1.00
	076-1440-01	STANDOFF 1.125	EA		1.00
	076-1440-02	STANDOFF 1.105	EA		2.00
	088-1292-01	FRT PLASTIC COVER	EA		1.00
	088-1317-00	NAMEPLATE INLAY	EA		1.00
	088-1322-00	BUSHING MICROPHONE	EA		1.00
	089-6292-02	SCR PHP 2-56X1/8	EA		3.00
	090-0459-01	NUT HEX M2.5X0.45	EA		2.00
	150-0042-10	SHRINK TUBING .187	IN		1.00
LS	1 038-0027-00	SPEAKER 45MM	EA		1.00
MK	1 038-0028-00	WIC CARTRIDGE	EA		1.00
REF	1 300-3222-00	FRONT COVER ASSY	RF		X.

KING  
LPH 202/214/502/514  
VHF FM COMM TRANSCEIVER



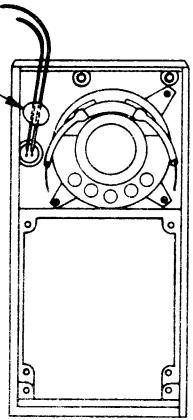
NOTES:

- ②** WIRES ON MICROPHONE AND SPEAKER TO BE 2.5" LONG MIN.
- 3. PARTS ARE COMMON TO ALL ASSEMBLIES UNLESS OTHERWISE SPECIFIED.
- ④** WIRING DIAGRAM FOR MICROPHONE 038-0026-00



- ⑤** USE HOT MELT ADHESIVE 016-1112-00 AS REQUIRED TO SECURE MICROPHONE WIRES TO COVER.

FIGURE 6-8 FRONT COVER ASSEMBLY  
(Dwg No 300-3222-00 Rev 5)



VIEW "A"

**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**

200-3223-00 REV 5 KBD/DSPLY ASSY LPH0000  
 200-3223-01 REV 7 KYDB/DISPLAY ASSY  
 200-3223-02 REV 1 KBD/DSPL ASSY-TONE  
 200-3223-99 REV 2 KYDB/DSPLY ASSY LPH0000

SYMBOL	PART NUMBER	DESCRIPTION	A	U	M	00	01	02	99
	030-2530-00	ZEBRA CONNECTOR		EA	.	.	.	.	1.00
	031-0472-02	KEYPAD	A	EA	.	.	.	.	1.00
	043-0011-00	LAND MOBILE LCD		EA	.	.	.	.	1.00
	057-2846-00	OVERLAY KYBD BLK	EA	1.00	.		1.00	.	
	057-2846-01	OVERLAY KYBD BRN	EA	.		1.00	.	.	
	088-1299-00	DISPLAY LENS		EA	.	.	.		1.00
	088-1308-00	INSR KYBD/DSPL BLK	EA	1.00	.		1.00	.	
	088-1308-01	INSR KYBD/DSPL BRN	EA	.		1.00	.	.	
	088-1327-00	DISPLAY SPACER		EA	.	.	.		1.00
	089-6297-03	SCR FPHF 2-56X3/16		EA	.	.	.		3.00
ASY 1	200-3223-99	KYDB/DSPLY ASSY	A	EA	1.00	1.00	1.00	.	
ASY 1	200-6878-01	KYBD/DSPL BD TONE	A	EA	.		1.00	.	
ASY 1	200-6878-00	KYBD/DSPLY BD	A	EA	1.00	.	.	.	
ASY 1	200-6878-01	KYBD/DSPL BD TONE	A	EA	.	1.00	.	.	
REF 1	300-3223-00	KBD/DSPLY ASSY	RF	X.	.	.	.	.	
REF 1	300-3223-01	*KYBD/DSPL ASSY	RF	.	X.	.	.	.	
REF 1	300-3223-02	*KYBD/DSPL ASSY	EA	.	.		1.00	.	

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VHF FM COMM TRANSCEIVER

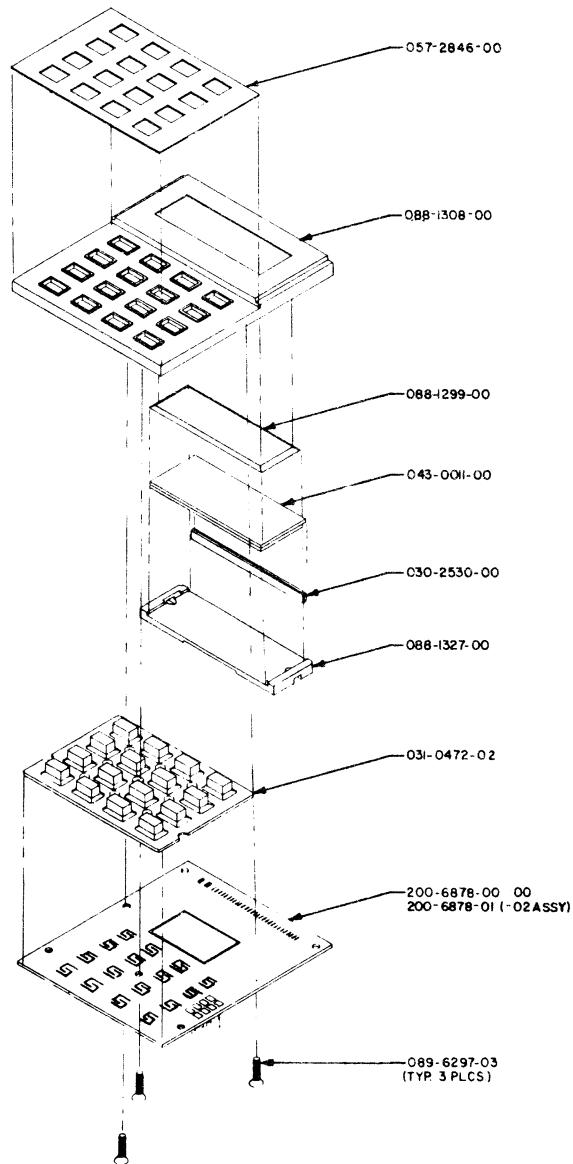


FIGURE 6-9 KEYBOARD/DISPLAY ASSEMBLY  
(Dwg No 300-3223-00 Rev 3)

**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**

200-6875-00 REV 14 RECEIVER BOARD LPH0000

SYMBOL	PART NUMBER	DESCRIPTION	A	U	M	00
	009-6875-00	PC BD RECEIVER	EA			1.00
	012-1316-00	INSULATOR MYLAR	EA			1.00
	016-1124-00	FOAM TAPE V1002	AR			1.00
	025-0001-19	WIRE 26 PNK	IN			4.00
	026-0002-00	WIRE COP TIN 24G	IN			2.00
	047-6735-00	CAN DUAL-COIL	EA			2.00
	047-6737-01	SHLD DSCRWNTR W/F	EA			1.00
C	1	106-0072-63 *CAP CH 18PF 50V 2%	EA			1.00
C	2	106-0072-64 *CAP CH 33PF 50V 2%	EA			1.00
C	3	106-0072-64 *CAP CH 33PF 50V 2%	EA			1.00
C	4	106-0072-62 *CAP CH 12PF 50V 2%	EA			1.00
C	6	106-0072-63 *CAP CH 18PF 50V 2%	EA			1.00
C	7	106-0072-64 *CAP CH 33PF 50V 2%	EA			1.00
C	8	106-0072-62 *CAP CH 12PF 50V 2%	EA			1.00
C	9	106-4103-47 CAP CH 10K X7R/50V	EA			1.00
C	12	106-0072-32 CAP CH 47PFNP0/50V	EA			1.00
C	14	106-0072-11 CAP CH8.2PFNP0/50V	EA			1.00
C	15	106-0072-11 CAP CH8.2PFNP0/50V	EA			1.00
C	16	106-4102-47 CAP CH 1K X7R/50V	EA			1.00
C	17	106-4102-47 CAP CH 1K X7R/50V	EA			1.00
C	18	096-1113-19 CAP CH10.0UF10%15V	EA			1.00
C	19	106-4121-16 CAP CH120PFNP0/50V	EA			1.00
C	20	106-0072-42 CAP CH 33PFNP0/50V	EA			1.00
C	21	106-4473-48 CAP CH 47K X7R/50V	EA			1.00
C	22	106-4473-48 CAP CH 47K X7R/50V	EA			1.00
C	23	106-4121-16 CAP CH120PFNP0/50V	EA			1.00
C	24	097-0109-06 CAP EL 100UF 18V	EA			1.00
C	25	106-4102-47 CAP CH 1K X7R/50V	EA			1.00
C	26	106-4103-47 CAP CH 10K X7R/50V	EA			1.00
C	27	106-4103-47 CAP CH 10K X7R/50V	EA			1.00
C	28	106-4121-16 CAP CH120PFNP0/50V	EA			1.00
C	29	106-4682-46 CAP CH 6.8K 50V 5%	EA			1.00
C	30	106-4682-46 CAP CH 6.8K 50V 5%	EA			1.00
C	31	106-4682-46 CAP CH 6.8K 50V 5%	EA			1.00
C	32	106-4103-46 CAP CH 10K X7R/50V	EA			1.00
C	33	106-4102-47 CAP CH 1K X7R/50V	EA			1.00
C	34	106-4103-47 CAP CH 10K X7R/50V	EA			1.00
C	35	113-3220-00 CAP DC 22PF 500V	EA			1.00
C	36	106-4103-46 CAP CH 10K X7R/50V	EA			1.00
C	37	106-4104-78 CAP CH 100KZSU/50V	EA			1.00
C	39	113-3220-00 CAP DC 22PF 500V	EA			1.00
C	42	106-4102-46 CAP CH 1K 50V 5%	EA			1.00
C	44	106-0072-01 CAP CH1.8PFNP0/50V	EA			1.00
C	45	106-4102-47 CAP CH 1K X7R/50V	EA			1.00
C	46	106-4102-47 CAP CH 1K X7R/50V	EA			1.00
C	47	113-3220-00 CAP DC 22PF 500V	EA			1.00
C	48	106-4104-78 CAP CH 100KZSU/50V	EA			1.00
C	49	106-4102-47 CAP CH 1K X7R/50V	EA			1.00
C	51	113-3220-00 CAP DC 22PF 500V	EA			1.00
C	53	106-4104-78 CAP CH 100KZSU/50V	EA			1.00
C	55	096-1113-71 CAP CH .47UF20%20V	EA			1.00
C	56	106-4682-46 CAP CH 6.8K 50V 5%	EA			1.00
C	57	106-4104-78 CAP CH 100KZSU/50V	EA			1.00
C	58	096-1113-71 CAP CH .47UF20%20V	EA			1.00
C	59	106-4222-46 CAP CH 2.2K 50V 5%	EA			1.00
C	60	106-4104-78 CAP CH 100KZSU/50V	EA			1.00
C	61	097-0109-00 CAP EL 2.2UF 50V	EA			1.00
C	62	106-4473-48 CAP CH 47K X7R/50V	EA			1.00
C	63	097-0109-07 CAP EL 100UF 25V	EA			1.00
C	66	106-4102-45 CAP CH 1K 50V 5%	EA			1.00
C	67	097-0109-08 CAP EL 1UF 50V	EA			1.00
C	70	106-4223-46 CAP CH 22K X7R/50V	EA			1.00

**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**

SYMBOL	PART NUMBER	DESCRIPTION	A	UM	OO
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C	71	106-4223-46	CAP CH 22K X7R/50V	EA	1.00
C	72	106-4223-46	CAP CH 22K X7R/50V	EA	1.00
C	73	106-4563-46	CAP CH 56K X7R/50V	EA	1.00
C	74	106-4333-46	CAP CH 33K X7R/50V	EA	1.00
C	75	106-4393-46	CAP CH 39K X7R/50V	EA	1.00
C	76	106-4822-46	CAPCH.0082MX7R/50	EA	1.00
C	77	106-4273-46	CAP CH 27K X7R/50V	EA	1.00
C	79	106-4102-47	CAP CH 1K X7R/50V	EA	1.00
C	81	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	82	106-4102-46	CAP CH 1K 50V 5%	EA	1.00
C	83	097-0109-07	CAP EL 100UF 25V	EA	1.00
C	84	106-4102-47	CAP CH 1K X7R/50V	EA	1.00
C	88	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	89	106-4102-47	CAP CH 1K X7R/50V	EA	1.00
C	90	106-4100-16	CAP CH 10PF NPO/50	EA	1.00
C	92	106-4102-47	CAP CH 1K X7R/50V	EA	1.00
C	93	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	94	106-4101-16	CAP CH100PFNPO/50V	EA	1.00
C	95	106-4561-46	CAP CH 560 50V 5%	EA	1.00
C	96	106-4561-46	CAP CH 560 50V 5%	EA	1.00
C	97	106-4561-46	CAP CH 560 50V 5%	EA	1.00
C	98	106-4101-16	CAP CH100PFNPO/50V	EA	1.00
C	99	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	100	097-0109-02	CAP EL 10UF 35V	EA	1.00
C	101	097-0109-02	CAP EL 10UF 35V	EA	1.00
C	102	106-4473-47	CAP CH 47K X7R/50V	EA	1.00
C	103	106-4561-46	CAP CH 560 50V 5%	EA	1.00

CR	1	007-6191-00	DIO PIN	EA	1.00
CR	2	007-6191-00	DIO PIN	EA	1.00
CR	3	007-6184-00	DIO DUAL SWITCHING	EA	1.00
CR	4	007-4058-00	DIO VARI MW209W4	EA	1.00
CR	8	007-6177-00	SWD DIO SI WMBD914	EA	1.00
CR	10	007-6188-00	DIO HOT CARRIER	EA	1.00
CR	11	007-6188-00	DIO HOT CARRIER	EA	1.00
CR	12	007-6188-00	DIO HOT CARRIER	EA	1.00
CR	13	007-6188-00	DIO HOT CARRIER	EA	1.00
CR	14	007-6188-00	DIO HOT CARRIER	EA	1.00
CR	15	007-6180-00	DIO SW WMBD8050	EA	1.00

FL	1	017-0106-00	FLTR CR 455KHZ	EA	1.00
FL	2	017-0131-00	CERAMIC DSCRWNTR	EA	1.00
FL	4	017-0096-00	XTAL FLTR 16.9MHZ	EA	1.00

I	1	120-3193-00	IC FW/IF MC3357D	EA	1.00
I	2	120-3196-00	IC LM2902D	EA	1.00
I	3	120-3129-02	IC LM386N-3	EA	1.00

L	1	019-2401-06	COIL 6T	EA	1.00
L	2	019-2401-14	*COIL 2TX.08	EA	1.00
L	3	019-2084-21	CH 1UH 10%	EA	1.00
L	4	019-2401-01	COIL 6T	EA	1.00
L	5	019-2401-01	COIL 6T	EA	1.00
L	6	019-2401-02	COIL 6T	EA	1.00
L	7	019-3157-02	COIL MOD IND	EA	1.00
L	8	019-3157-03	COIL MOD IND	EA	1.00
L	9	019-3157-03	COIL MOD IND	EA	1.00
L	10	019-3157-01	COIL MOD IND	EA	1.00
L	12	019-2401-15	*COIL 3TX.08	EA	1.00

Q	2	007-0529-00	XSTR NPN WMBTH24	EA	1.00
Q	4	007-0530-00	XSTR NPN WMBT3903	EA	1.00
Q	5	007-0537-00	XSTR PNP WMBT5087	EA	1.00
Q	7	007-0530-00	XSTR NPN WMBT3903	EA	1.00
Q	8	007-0530-00	XSTR NPN WMBT3903	EA	1.00
Q	9	007-0539-00	XSTR WMBTH10	EA	1.00
Q	10	007-0538-00	XSTR WMBR920	EA	1.00
Q	11	007-0535-00	XSTR JFET WMBF4393	EA	1.00

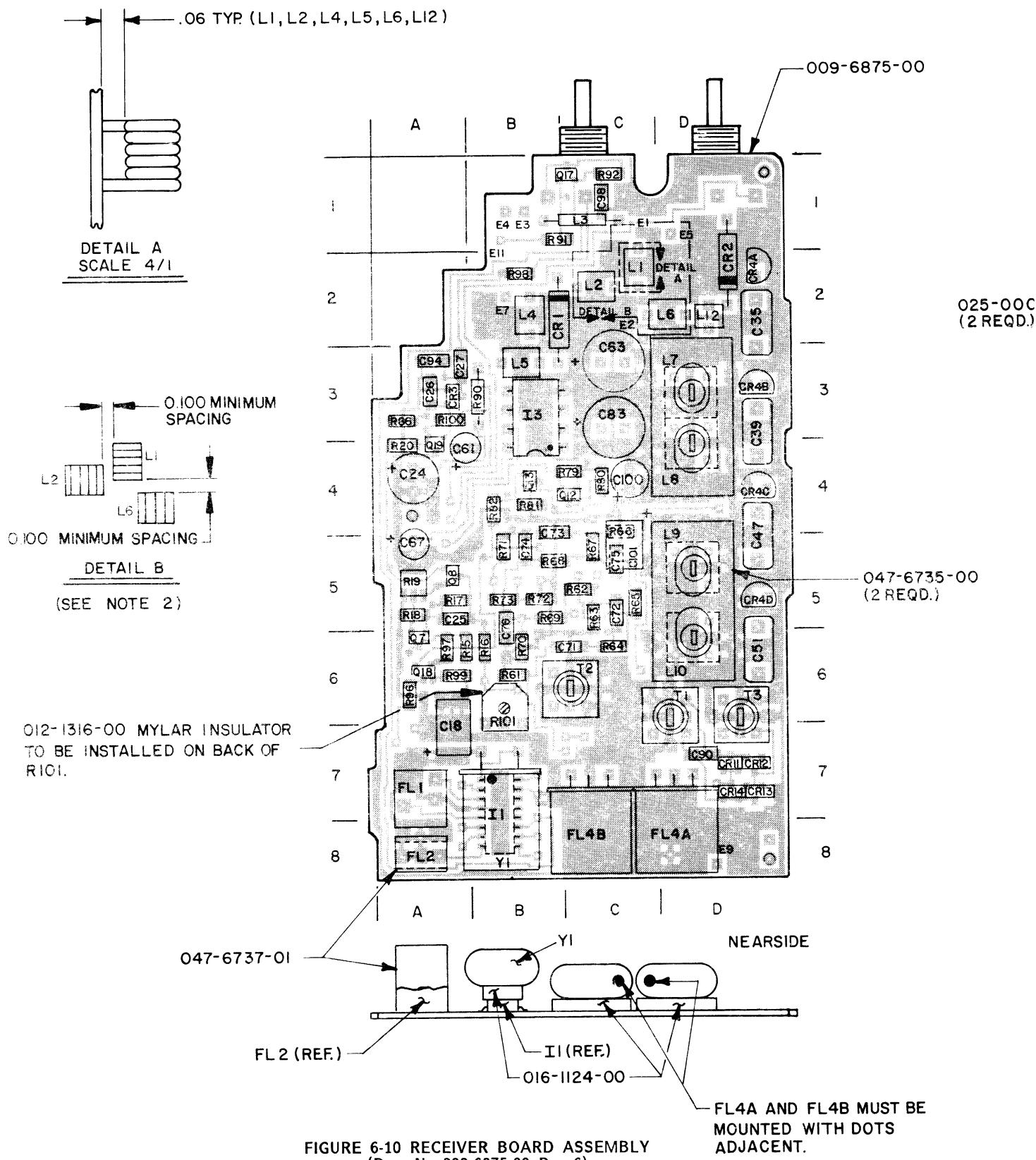
**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**

SYMBOL	PART NUMBER	DESCRIPTION	A	UW	OO
Q	12 007-0537-00	XSTR PNP WMBT5087	EA	1.00	
Q	13 007-0530-00	XSTR NPN WMBT3903	EA	1.00	
Q	14 007-0542-00	XSTR PNP WMBTA64	EA	1.00	
Q	15 007-0065-01	XSTR 2N3906 (SOT)	EA	1.00	
Q	16 007-0187-02	XSTR SOT-23 2N5089	EA	1.00	
Q	17 007-0065-01	XSTR 2N3906 (SOT)	EA	1.00	
Q	18 007-0065-01	XSTR 2N3906 (SOT)	EA	1.00	
Q	19 007-0537-00	XSTR PNP WMBT5087	EA	1.00	
R	3 130-5274-23	RES CHIP 270KEW5%	EA	1.00	
R	4 130-5472-23	RES CHIP 4.7KEW5%	EA	1.00	
R	5 130-5360-23	RES CHIP 36.0EW5%	EA	1.00	
R	6 130-5202-23	RES CHIP 2K5%EW	EA	1.00	
R	7 130-5202-23	RES CHIP 2K5%EW	EA	1.00	
R	8 130-5473-23	RES CHIP 47KEW5%	EA	1.00	
R	9 130-5152-23	RES CHIP 1.5KEW5%	EA	1.00	
R	10 130-5104-23	RES CH 100K EW 5%	EA	1.00	
R	11 130-5203-23	RES CHIP 20K EW 5%	EA	1.00	
R	13 130-5103-23	RES CH 10K EW 5%	EA	1.00	
R	14 130-5563-23	RES CHIP 56K5%EW	EA	1.00	
R	15 130-5563-23	RES CHIP 56K5%EW	EA	1.00	
R	16 130-5823-23	RES CHIP 62KEW5%	EA	1.00	
R	17 130-5104-23	RES CH 100K EW 5%	EA	1.00	
R	18 130-5104-23	RES CH 100K EW 5%	EA	1.00	
R	19 133-0271-13	RES VAS 15K 100V	EA	1.00	
R	20 130-5473-23	RES CHIP 47KEW5%	EA	1.00	
R	22 133-0270-00	RES VA 20K .08%20%	EA	1.00	
R	23 130-5104-23	RES CH 100K EW 5%	EA	1.00	
R	24 130-5391-23	RES CHIP 390EW5%	EA	1.00	
R	25 130-5103-23	RES CH 10K EW 5%	EA	1.00	
R	26 130-5431-23	RES CHIP 430EW5%	EA	1.00	
R	27 130-5202-23	RES CHIP 2K5%EW	EA	1.00	
R	28 130-5223-22	RES CHIP 22K EW 2%	EA	1.00	
R	29 130-5273-23	RES CHIP 27K EW 5%	EA	1.00	
R	30 130-5433-22	RES CHIP 43K EW 2%	EA	1.00	
R	31 130-5204-23	RES CHIP 200KEW5%	EA	1.00	
R	32 130-5103-23	RES CH 10K EW 5%	EA	1.00	
R	33 130-5124-23	RES CHIP 120KEW5%	EA	1.00	
R	34 130-5124-23	RES CHIP 120KEW5%	EA	1.00	
R	35 130-5471-23	RES CHIP 470EW5%	EA	1.00	
R	39 130-5203-23	RES CHIP 20K EW 5%	EA	1.00	
R	41 130-5471-23	RES CHIP 470EW5%	EA	1.00	
R	42 130-5103-23	RES CH 10K EW 5%	EA	1.00	
R	44 130-5124-23	RES CHIP 120KEW5%	EA	1.00	
R	45 130-5124-23	RES CHIP 120KEW5%	EA	1.00	
R	47 130-5101-23	RES CH 100 EW 5%	EA	1.00	
R	48 130-5103-23	RES CH 10K EW 5%	EA	1.00	
R	49 130-5474-23	RES CHIP 470KEW5%	EA	1.00	
R	50 130-5223-23	RES CHIP 22K EW 5%	EA	1.00	
R	51 130-5273-23	RES CHIP 27K EW 5%	EA	1.00	
R	52 130-5124-23	RES CHIP 120KEW5%	EA	1.00	
R	53 130-5153-23	RES CHIP 15K EW 5%	EA	1.00	
R	54 130-5104-23	RES CH 100K EW 5%	EA	1.00	
R	55 130-5273-23	RES CHIP 27K EW 5%	EA	1.00	
R	56 130-5122-23	RES CHIP 1.2KEW5%	EA	1.00	
R	57 130-5100-23	RES CH 10 EW 5%	EA	1.00	
R	58 133-0270-01	RES VA 10K .08%20%	EA	1.00	
R	60 130-5102-23	RES CH 1K EW 5%	EA	1.00	
R	61 130-5153-23	RES CHIP 15K EW 5%	EA	1.00	
R	62 130-5564-23	RES CHIP 560KEW5%	EA	1.00	
R	63 130-5564-23	RES CHIP 560KEW5%	EA	1.00	
R	64 130-5362-23	RES CHIP 3.6K5%EW	EA	1.00	
R	65 130-5102-23	RES CH 1K EW 5%	EA	1.00	
R	66 130-5622-23	RES CHIP 6.2KEW5%	EA	1.00	
R	67 130-5203-23	RES CHIP 20K EW 5%	EA	1.00	
R	68 130-5433-23	RES CHIP 43KEW5%	EA	1.00	

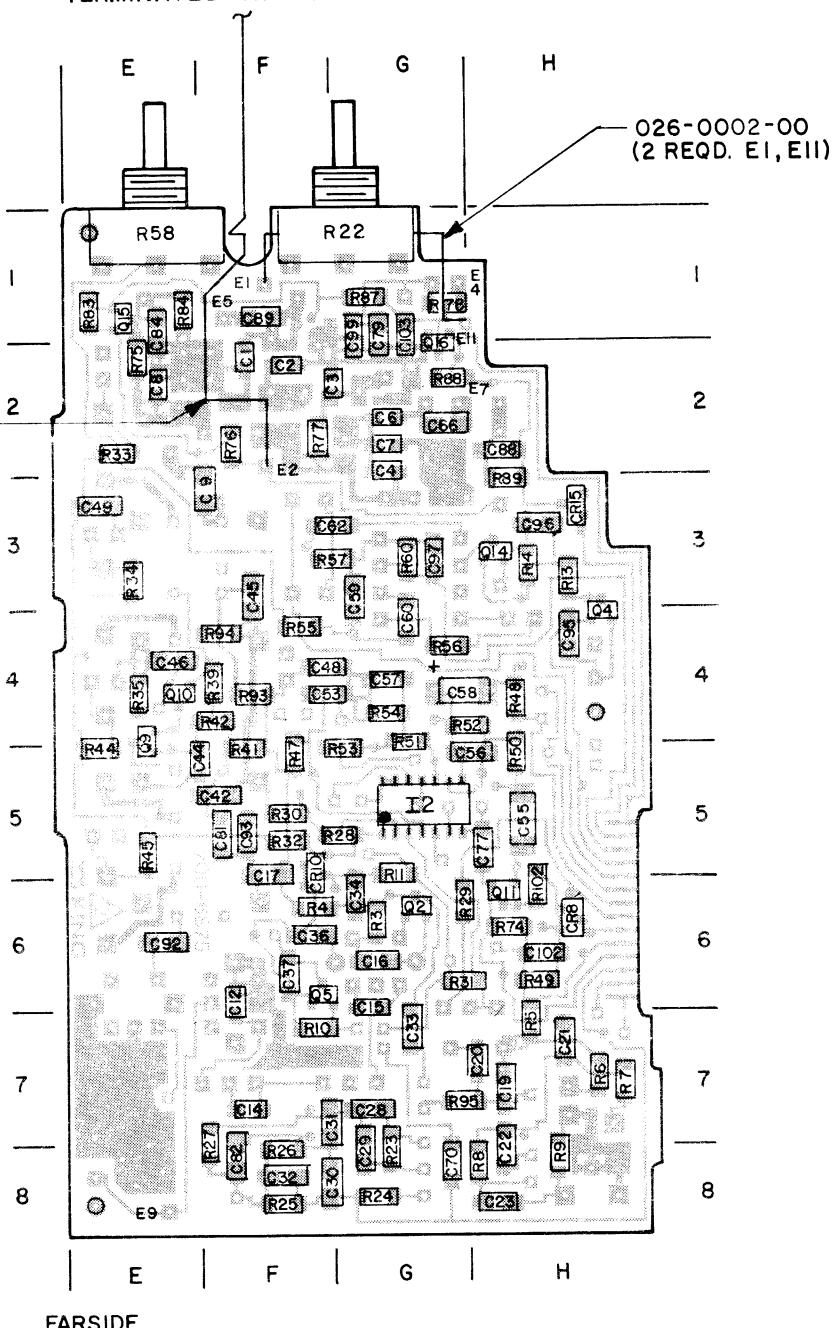
**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**

SYMBOL	PART NUMBER	DESCRIPTION	A	UN	00
R	69	130-5623-23	RES CHIP 62KEW5%	EA	1.00
R	70	130-5823-23	RES CHIP 82KEW5%	EA	1.00
R	71	130-5562-23	RES CHIP 5.6KEW5%	EA	1.00
R	72	130-5133-22	RES CHIP 13K EW 2%	EA	1.00
R	73	130-5123-22	RES CHIP 12K EW 2%	EA	1.00
R	74	130-5133-23	RES CHIP 13KEW5%	EA	1.00
R	75	130-5334-23	RES CHIP 330KEW5%	EA	1.00
R	76	130-5471-23	RES CHIP 470EW5%	EA	1.00
R	77	130-5334-23	RES CHIP 330KEW5%	EA	1.00
R	78	130-5334-23	RES CHIP 330KEW5%	EA	1.00
R	79	130-5104-23	RES CH 100K EW 5%	EA	1.00
R	80	130-5153-23	RES CHIP 15K EW 5%	EA	1.00
R	81	130-5393-23	RES CHIP 39K EW 5%	EA	1.00
R	82	130-5104-23	RES CH 100K EW 5%	EA	1.00
R	83	130-5203-23	RES CHIP 20K EW 5%	EA	1.00
R	84	130-5203-23	RES CHIP 20K EW 5%	EA	1.00
R	86	130-5104-23	RES CH 100K EW 5%	EA	1.00
R	87	130-5203-23	RES CHIP 20K EW 5%	EA	1.00
R	88	130-5104-23	RES CH 100K EW 5%	EA	1.00
R	89	130-5474-23	RES CHIP 470EW5%	EA	1.00
R	90	131-0033-13	RES CF 3.3 EW 5%	EA	1.00
R	91	130-5103-23	RES CH 10K EW 5%	EA	1.00
R	92	130-5682-23	RES CHIP 6.8KEW5%	EA	1.00
R	93	130-5822-23	RES CHIP 8.2KEW5%	EA	1.00
R	94	130-5382-23	RES CHIP 3.6K5%EW	EA	1.00
R	95	130-5753-23	RES CHIP 75KEW 5%	EA	1.00
R	96	130-5101-23	RES CH 100 EW 5%	EA	1.00
R	97	130-5154-23	RES CHIP 150K5%EW	EA	1.00
R	98	130-5471-23	RES CHIP 470EW5%	EA	1.00
R	99	130-5104-23	RES CH 100K EW 5%	EA	1.00
R	100	130-5433-23	RES CHIP 43KEW5%	EA	1.00
R	101	133-0141-11	RES VA 100K 20%	EA	1.00
R	102	130-5244-23	RES CHIP 240K5%EW	EA	1.00
REF	1	300-6875-00	RECEIVER BD ASSY	RF	X.
T	1	019-8134-00	XFWR IF T	EA	1.00
T	2	019-8133-00	XFWR IF	EA	1.00
T	3	019-8135-00	XFWR MIXER	EA	1.00
Y	1	044-0152-00	XTAL 17.355MHZ	EA	1.00

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LPH 202/214/502/514  
VHF FM COMM TRANSCEIVER



LOOSE WIRE TO BE  
TERMINATED AT TOP ASSY.

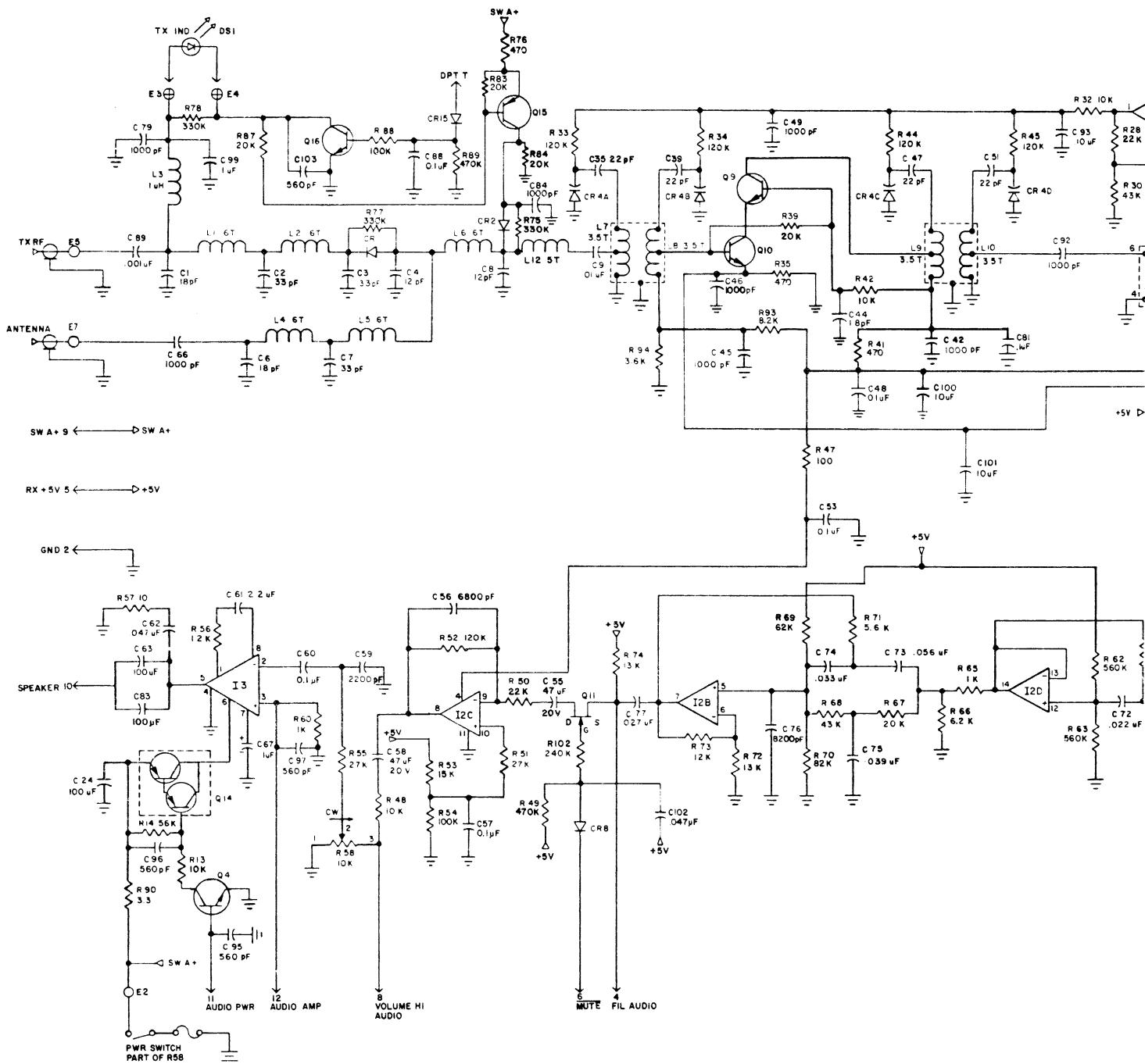


FARSIDE

NOTES: UNLESS OTHERWISE SPECIFIED ;

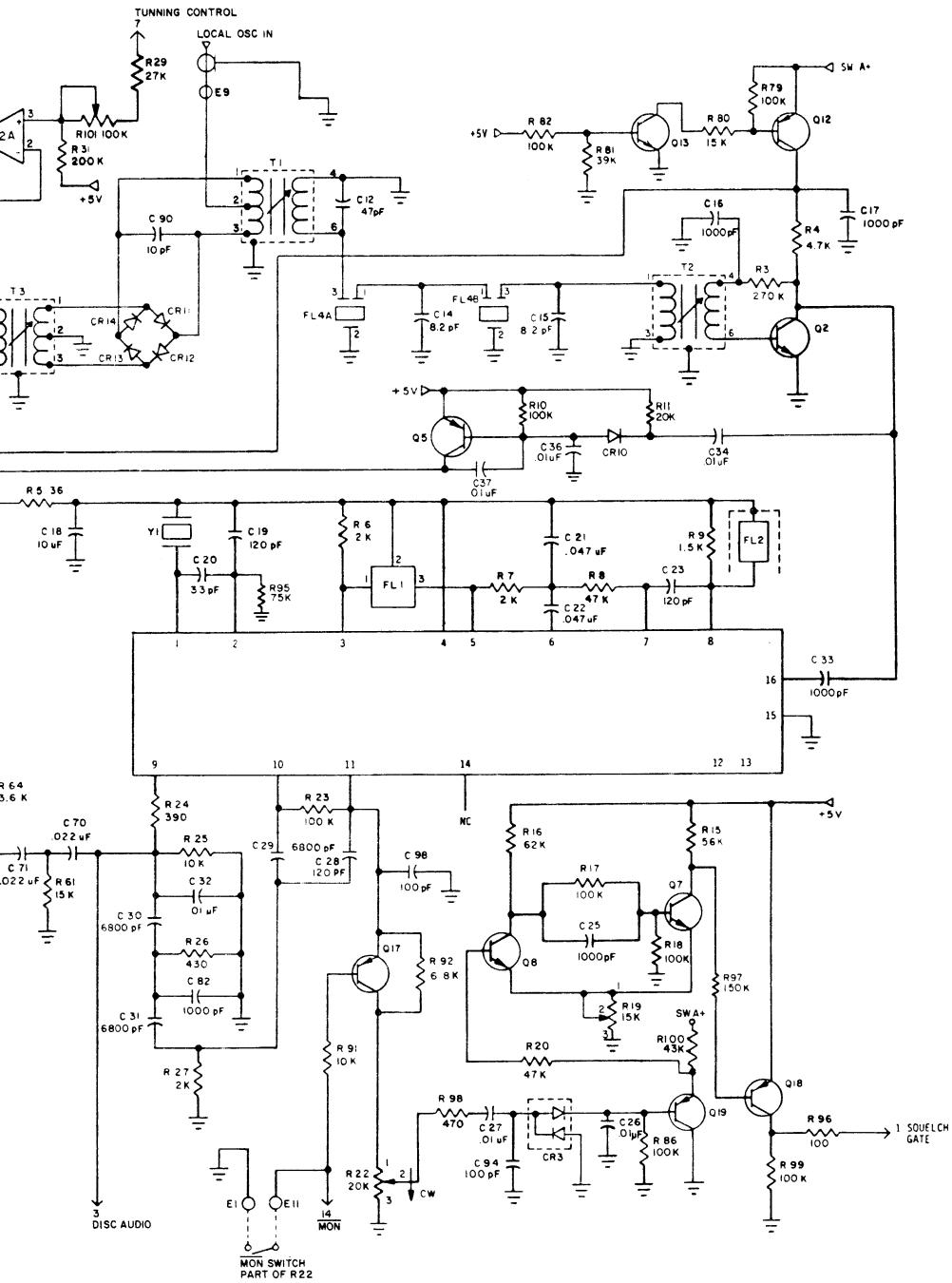
1. DUE TO HEIGHT RESTRICTIONS ALL LEADED DEVICES MUST BE MOUNTED AS CLOSE TO BOARD SURFACE AS POSSIBLE CR4A,B,C & D CONSTITUTE A MATCHED SET AND MUST BE MOUNTED IN THIS MANNER FOR ELECTRICAL REASONS AS WELL.
  2. COILS MUST BE AXIALLY ALIGNED WITH PADS. IN ADDITION L1 MUST BE PERPENDICULAR TO L2.

**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**



**FIGURE 6-11 RECEIVER BOARD SCHEMATIC**  
(Dwg No 002-6875-00 Rev 4)

RECEIVER BRD



**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**

200-6876-00 REV 17 TRANSMITTER BOARD LPH0000

SYMBOL	PART NUMBER	DESCRIPTION	A	UW	00
	009-6876-00	PC BD TRANSMITTER	EA	1.00	
	016-1004-00	COMPOUND THRML JNT	AR	1.00	
	016-1124-00	FOAM TAPE V1002	AR	1.00	
	016-1184-00	ELASTOMERIC ADHES	AR	1.00	
	026-0002-00	WIRE COP TIN 24G	IN	5.00	
	047-6714-01	ADAPTER HEAT SINK	EA	1.00	
	047-6716-02	SHIELD ASSY W/F	EA	1.00	
	047-6717-01	SHIELD VCO W/F	EA	1.00	
	047-6718-01	SHIELD L/L AMP W/F	EA	1.00	
	047-6720-01	SHIELD NEARSIDE	EA	1.00	
	047-6722-01	SHIELD BUFFER W/F	EA	1.00	
	090-0307-00	HEAT SINK FOR TO-5	EA	1.00	
	091-0320-00	INSUL TO-5	EA	1.00	
	155-2219-01	CABLE COAX .020	EA	1.00	
	155-2219-03	CABLE COAX .020	EA	1.00	
	195-0011-00	CRYSTAL KIT	EA	1.00	
C	1	106-5102-48	CAP CH 1K X7R/50V	EA	1.00
C	2	097-0109-02	CAP EL 10UF 35V	EA	1.00
C	3	106-5102-48	CAP CH 1K X7R/50V	EA	1.00
C	4	106-0072-34	CAP CH 56PFNPO/50V	EA	1.00
C	5	097-0109-08	CAP EL 1UF 50V	EA	1.00
C	6	106-5102-48	CAP CH 1K X7R/50V	EA	1.00
C	7	106-5102-48	CAP CH 1K X7R/50V	EA	1.00
C	8	106-0072-13	CAP CH 10PFNPO/50V	EA	1.00
C	9	106-0072-44	CAP CH 1.5PF	EA	1.00
C	10	106-0072-32	CAP CH 47PFNPO/50V	EA	1.00
C	11	106-0072-01	CAP CH1.8PFNPO/50V	EA	1.00
C	12	106-4102-47	CAP CH 1K X7R/50V	EA	1.00
C	13	106-4102-47	CAP CH 1K X7R/50V	EA	1.00
C	14	106-4102-47	CAP CH 1K X7R/50V	EA	1.00
C	15	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	16	106-4102-47	CAP CH 1K X7R/50V	EA	1.00
C	17	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	18	106-0072-24	CAP CH 22PFNPO/50V	EA	1.00
C	20	106-5102-48	CAP CH 1K X7R/50V	EA	1.00
C	21	106-5102-48	CAP CH 1K X7R/50V	EA	1.00
C	22	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	23	106-5102-48	CAP CH 1K X7R/50V	EA	1.00
C	24	097-0109-02	CAP EL 10UF 35V	EA	1.00
C	25	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	26	106-0072-31	CAP CH 39PFNPO/50V	EA	1.00
C	27	106-0072-32	CAP CH 47PFNPO/50V	EA	1.00
C	28	102-0054-01	CAP CERAMIC TRIM	EA	1.00
C	29	106-5102-48	CAP CH 1K X7R/50V	EA	1.00
C	30	106-5102-48	CAP CH 1K X7R/50V	EA	1.00
C	31	106-5102-48	CAP CH 1K X7R/50V	EA	1.00
C	32	106-0072-04	CAP CH4.7PFNPO/50V	EA	1.00
C	33	106-0072-12	CAP CH10PF NPO/50V	EA	1.00
C	34	106-4102-47	CAP CH 1K X7R/50V	EA	1.00
C	35	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	36	106-5102-48	CAP CH 1K X7R/50V	EA	1.00
C	37	106-0072-15	CAP CH 12PFNPO/50V	EA	1.00
C	38	106-5102-48	CAP CH 1K X7R/50V	EA	1.00
C	39	106-0072-24	CAP CH 22PFNPO/50V	EA	1.00
C	40	106-0072-21	CAP CH 20PFNPO/50V	EA	1.00
C	41	106-0072-32	CAP CH 47PFNPO/50V	EA	1.00
C	42	106-5102-48	CAP CH 1K X7R/50V	EA	1.00
C	43	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	44	106-0072-32	CAP CH 47PFNPO/50V	EA	1.00

**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**

SYMBOL	PART NUMBER	DESCRIPTION	A	UN	00
C	45	097-0109-02	CAP EL 10UF 35V	EA	1.00
C	46	106-4222-46	CAP CH 2.2K 50V 5%	EA	1.00
C	47	106-5101-16	CAP CH100PFNPO/50V	EA	1.00
C	48	097-0109-02	CAP EL 10UF 35V	EA	1.00
C	49	106-0072-38	CAP CH 82PFNPO/50V	EA	1.00
C	50	106-5102-48	CAP CH 1K XTR/50V	EA	1.00
C	51	106-5103-48	CAP CH 10K XTR/50V	EA	1.00
C	52	106-5102-48	CAP CH 1K XTR/50V	EA	1.00
C	53	106-4221-47	CAP CH220PFX7R/50V	EA	1.00
C	54	106-0072-06	CAP CH5.6PFNPO/50V	EA	1.00
C	56	106-4102-47	CAP CH 1K XTR/50V	EA	1.00
C	57	106-4102-47	CAP CH 1K XTR/50V	EA	1.00
C	58	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	59	106-5221-48	CAP CH 220X7R/50V	EA	1.00
C	60	106-5102-48	CAP CH 1K XTR/50V	EA	1.00
C	61	106-4102-47	CAP CH 1K XTR/50V	EA	1.00
C	62	106-0072-36	CAP CH 68PFNPO/50V	EA	1.00
C	63	106-0072-36	CAP CH 68PFNPO/50V	EA	1.00
C	64	106-5102-48	CAP CH 1K XTR/50V	EA	1.00
C	65	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	66	106-0072-32	CAP CH 47PFNPO/50V	EA	1.00
C	67	106-0072-21	CAP CH 20PFNPO/50V	EA	1.00
C	68	096-1113-28	CAP CH.22UF10X35V	EA	1.00
C	69	108-5077-01	CAP PC 1.0UF30V10%	EA	1.00
C	70	106-0072-24	CAP CH 22PFNPO/50V	EA	1.00
C	72	106-5102-48	CAP CH 1K XTR/50V	EA	1.00
C	74	097-0109-08	CAP EL 1UF 50V	EA	1.00
C	75	097-0109-02	CAP EL 10UF 35V	EA	1.00
C	76	097-0109-08	CAP EL 1UF 50V	EA	1.00
C	77	097-0109-08	CAP EL 1UF 50V	EA	1.00
C	78	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	79	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	80	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	81	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	83	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	84	106-5102-48	CAP CH 1K XTR/50V	EA	1.00
C	85	106-4561-47	CAP CH560PFX7R/50V	EA	1.00
C	86	106-4561-47	CAP CH560PFX7R/50V	EA	1.00
C	87	106-4561-47	CAP CH560PFX7R/50V	EA	1.00
C	88	106-5561-48	CAP CH 560 X7R/50V	EA	1.00
C	89	106-5561-48	CAP CH 560 X7R/50V	EA	1.00
C	90	106-5561-48	CAP CH 560 X7R/50V	EA	1.00
C	91	106-5561-48	CAP CH 560 X7R/50V	EA	1.00
C	92	106-5561-48	CAP CH 560 X7R/50V	EA	1.00
C	93	106-4561-47	CAP CH560PFX7R/50V	EA	1.00
C	94	106-4561-47	CAP CH560PFX7R/50V	EA	1.00
C	95	106-5561-48	CAP CH 560 X7R/50V	EA	1.00
C	96	106-5561-48	CAP CH 560 X7R/50V	EA	1.00
C	97	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	98	097-0109-08	CAP EL 1UF 50V	EA	1.00
C	99	106-5102-48	CAP CH 1K XTR/50V	EA	1.00
C	100	106-5102-48	CAP CH 1K XTR/50V	EA	1.00
CR	1	007-4057-00	DIO V MMBV105G	EA	1.00
CR	2	007-6178-00	DIO PIN MMBV3401	EA	1.00
CR	3	007-6178-00	DIO PIN MMBV3401	EA	1.00
CR	4	007-4016-15	DIO V MV2115	EA	1.00
CR	6	007-4016-15	DIO V MV2115	EA	1.00
CR	7	007-4056-00	DIO V MMBV109	EA	1.00
CR	8	007-6180-00	DIO SW MMBD6050	EA	1.00
CR	9	007-6177-00	SWD DIO SI MMBD914	EA	1.00
CR	10	007-6178-00	DIO PIN MMBV3401	EA	1.00
I	1	120-3194-00	IC OP AMP MC1741CD	EA	1.00
I	2	120-6132-02	IC FREQ SYN	EA	1.00
I	3	120-0203-00	VHF PRESCALER	EA	1.00
I	4	120-6131-00	IC QUAD ANLG SW	EA	1.00
I	5	120-3195-00	IC LM2904D	EA	1.00

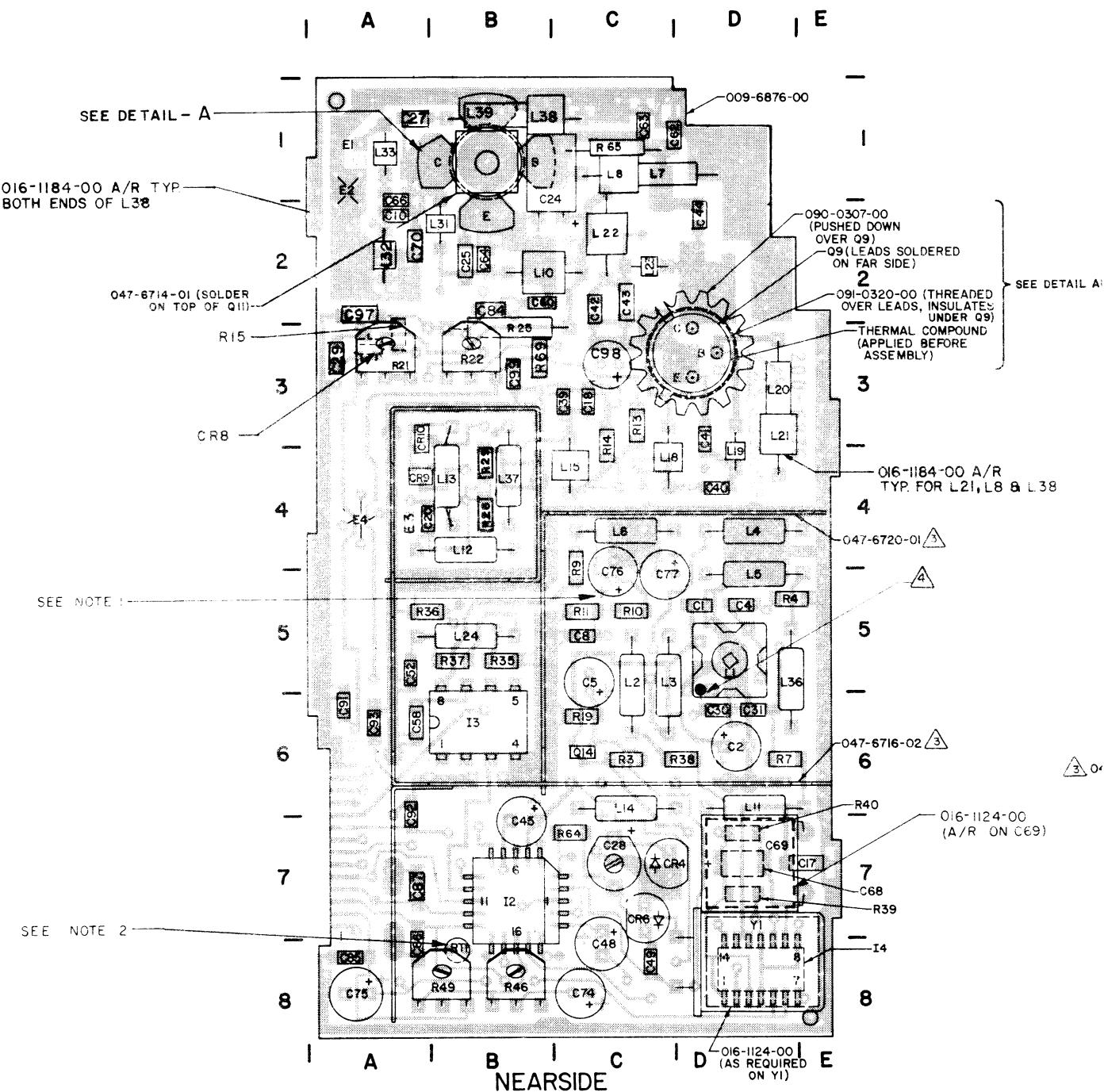
**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**

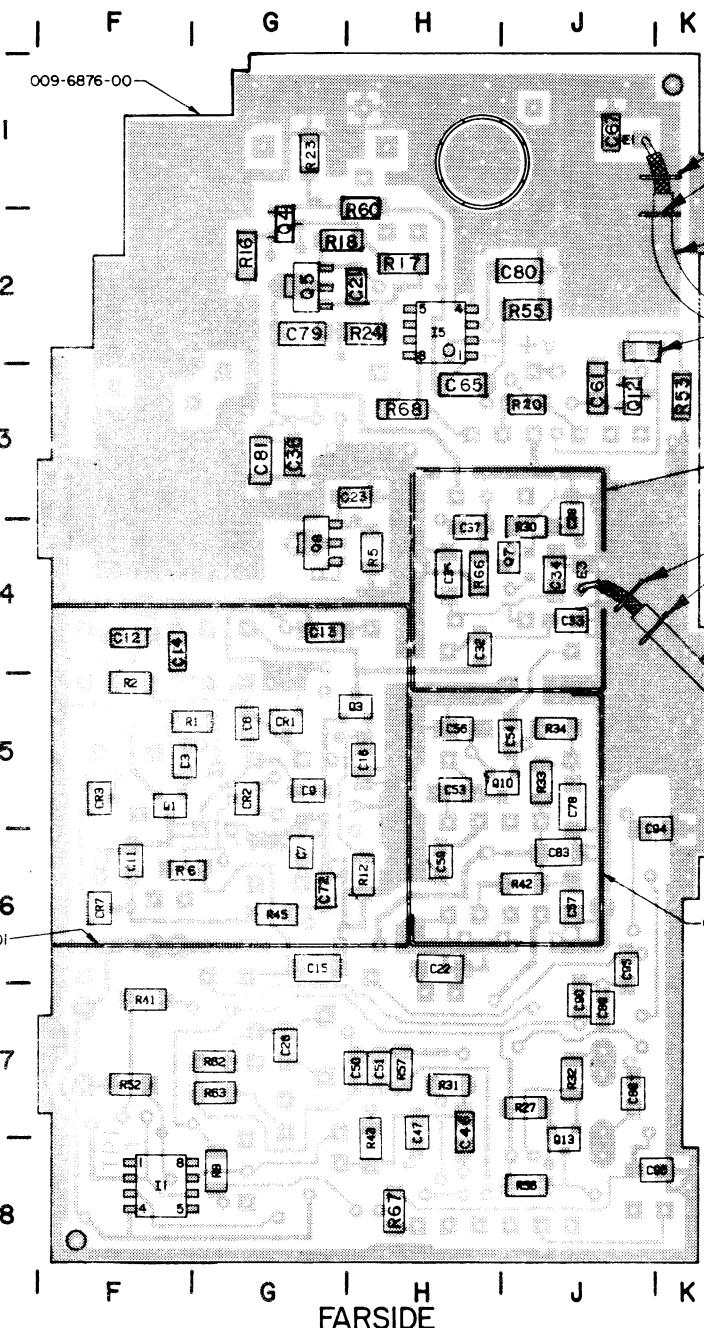
SYMBOL	PART NUMBER	DESCRIPTION	A	UW	OO
L	1 019-3156-00	COIL ADJ	EA	1.00	
L	2 019-2084-21	CH 1UH 10%	EA	1.00	
L	3 019-2084-04	CH .22UH 5%	EA	1.00	
L	4 019-2084-06	CH .27UH 5%	EA	1.00	
L	5 019-2084-06	CH .27UH 5%	EA	1.00	
L	6 019-2084-04	CH .22UH 5%	EA	1.00	
L	7 019-2099-04	CHOKE .027UH 10%	EA	1.00	
L	8 013-0006-00	FERR BEAD	EA	1.00	
L	10 019-2400-06	COIL 9T	EA	1.00	
L	11 019-2084-21	CH 1UH 10%	EA	1.00	
L	12 019-2099-02	CHOKE .10UH 5%	EA	1.00	
L	13 019-2099-02	CHOKE .10UH 5%	EA	1.00	
L	14 019-2084-21	CH 1UH 10%	EA	1.00	
L	15 019-2400-02	COIL 3T	EA	1.00	
L	18 019-2400-09	COIL 5T	EA	1.00	
L	19 019-2400-07	COIL 3T	EA	1.00	
L	20 019-2099-04	CHOKE .027UH 10%	EA	1.00	
L	21 013-0006-00	FERR BEAD	EA	1.00	
L	22 019-2400-06	COIL 9T	EA	1.00	
L	23 019-2400-07	COIL 3T	EA	1.00	
L	24 019-2084-04	CH .22UH 5%	EA	1.00	
L	31 019-2400-02	COIL 3T	EA	1.00	
L	32 019-2400-08	COIL 4T	EA	1.00	
L	33 019-2400-02	COIL 3T	EA	1.00	
L	36 019-2084-00	CH .15UH 5%	EA	1.00	
L	37 019-2084-06	CH .27UH 5%	EA	1.00	
L	38 013-0006-00	FERR BEAD	EA	1.00	
L	39 019-2099-02	CHOKE .10UH 5%	EA	1.00	
Q	1 007-0539-00	XSTR WMBTH10	EA	1.00	
Q	3 007-0539-00	XSTR WMBTH10	EA	1.00	
Q	4 007-0530-00	XSTR NPN WMBT3903	EA	1.00	
Q	5 007-0540-00	XSTR WXT3906	EA	1.00	
Q	7 007-0539-00	XSTR WMBTH10	EA	1.00	
Q	8 007-0541-00	XSTR RF WX3866	EA	1.00	
Q	9 007-0545-00	XSTR RF PWR 2N6255	EA	1.00	
Q	10 007-0539-00	XSTR WMBTH10	EA	1.00	
Q	11 007-0538-00	XSTR RF POWER	EA	1.00	
Q	12 007-0537-00	XSTR PNP WMBT5087	EA	1.00	
Q	13 007-0537-00	XSTR PNP WMBT5087	EA	1.00	
Q	14 007-0187-02	XSTR SOT-23 2N5089	EA	1.00	
R	1 130-5753-23	RES CHIP 75KEW 5%	EA	1.00	
R	2 130-5473-23	RES CHIP 47KEW5%	EA	1.00	
R	3 130-5243-23	RES CHIP 24K EW 5%	EA	1.00	
R	4 130-5152-23	RES CHIP 1.5KEW5%	EA	1.00	
R	5 130-5100-23	RES CH 10 EW 5%	EA	1.00	
R	6 130-5112-23	RES CERAMIC CHIP	EA	1.00	
R	7 130-5112-23	RES CERAMIC CHIP	EA	1.00	
R	8 130-5104-23	RES CH 100K EW 5%	EA	1.00	
R	9 130-5101-23	RES CH 100 EW 5%	EA	1.00	
R	10 130-5103-23	RES CH 10K EW 5%	EA	1.00	
R	11 130-5392-23	RES CHIP 3.9KEW5%	EA	1.00	
R	12 130-5561-23	RES CHIP 580EW5%	EA	1.00	
R	13 130-5102-23	RES CH 1K EW 5%	EA	1.00	
R	14 130-5271-23	RES CHIP 270EW5%	EA	1.00	
R	15 130-5331-23	RES CHIP 380 EW5%	EA	1.00	
R	16 130-5102-23	RES CH 1K EW 5%	EA	1.00	
R	17 130-5471-23	RES CHIP 470EW5%	EA	1.00	
R	18 130-5103-23	RES CH 10K EW 5%	EA	1.00	
R	19 130-5563-23	RES CHIP 58K5EW	EA	1.00	
R	20 130-5363-23	RES CHIP 38KEW5%	EA	1.00	
R	21 133-0141-11	RES VA 100K 20%	EA	1.00	
R	22 133-0141-11	RES VA 100K 20%	EA	1.00	
R	23 130-5433-23	RES CHIP 43KEW5%	EA	1.00	
R	24 130-5472-23	RES CHIP 4.7KEW5%	EA	1.00	
R	25 132-0135-00	RES WW .18 1W 5%	EA	1.00	
R	28 130-5682-23	RES CHIP 6.8KEW5%	EA	1.00	
R	29 130-5202-23	RES CHIP 2K5%EW	EA	1.00	

**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**

SYMBOL	PART NUMBER	DESCRIPTION	A	UW	OO
R	30	130-5151-23	RES CHIP 150EW5%	EA	1.00
R	31	130-5104-23	RES CH 100K EW 5%	EA	1.00
R	32	130-5683-23	RES CHIP 68K EW 5%	EA	1.00
R	33	130-5102-23	RES CH 1K EW 5%	EA	1.00
R	34	130-5753-23	RES CHIP 75KEW 5%	EA	1.00
R	35	130-5682-23	RES CHIP 6.8KEW5%	EA	1.00
R	36	130-5473-23	RES CHIP 47KEW5%	EA	1.00
R	37	130-5102-23	RES CH 1K EW 5%	EA	1.00
R	38	130-5103-23	RES CH 10K EW 5%	EA	1.00
R	39	130-5624-23	RES CHIP 620KEW5%	EA	1.00
R	40	130-5163-23	RES CHIP 16KEW5%	EA	1.00
R	41	130-5303-23	RES CHIP 30KEW5%	EA	1.00
R	42	130-5472-23	RES CHIP 4.7KEW5%	EA	1.00
R	43	130-5623-23	RES CHIP 62KEW5%	EA	1.00
R	45	130-5103-23	RES CH 10K EW 5%	EA	1.00
R	46	133-0141-06	RES VA 47K 20%	EA	1.00
R	49	133-0141-11	RES VA 100K 20%	EA	1.00
R	52	130-5302-23	RES CHIP 3K EW 5%	EA	1.00
R	53	130-5103-23	RES CH 10K EW 5%	EA	1.00
R	55	130-5622-23	RES CHIP 6.2KEW5%	EA	1.00
R	56	130-5104-23	RES CH 100K EW 5%	EA	1.00
R	57	130-5104-23	RES CH 100K EW 5%	EA	1.00
R	60	130-5472-23	RES CHIP 4.7KEW5%	EA	1.00
R	62	130-5333-23	RES CHIP 38K EW 5%	EA	1.00
R	63	130-5333-23	RES CHIP 33K EW 5%	EA	1.00
R	64	130-5332-23	RES CHIP 3.3KEW5%	EA	1.00
R	65	131-0030-23	RES CF 3 QW 5%	EA	1.00
R	66	130-5202-23	RES CHIP 2K5%EW	EA	1.00
R	87	130-5513-23	RES CHIP 51K EW 5%	EA	1.00
R	88	130-5303-23	RES CHIP 30KEW5%	EA	1.00
R	89	130-5153-23	RES CHIP 15K EW 5%	EA	1.00
REF	1	300-6876-00	XMT BD ASSY	RF	X.
RT	1	134-1012-01	THMS 1K 10%	EA	1.00
Y	1	044-0151-00	XTAL 10.00MHZ QRTZ	EA	1.00

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LPH 202/214/502/514  
VHF FM COMM TRANSCEIVER





026-0002-00 NOTE: WIRE LOOPS TO BE PULLED  
TIGHT AND SOLDERED TO BOARD. LOOP OVER BRAID  
TO BE SOLDERED TO BRAID. TYP 2 PLCS.

155-2219-01

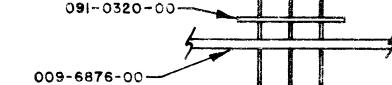
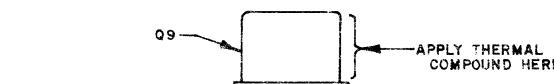
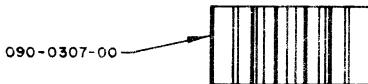
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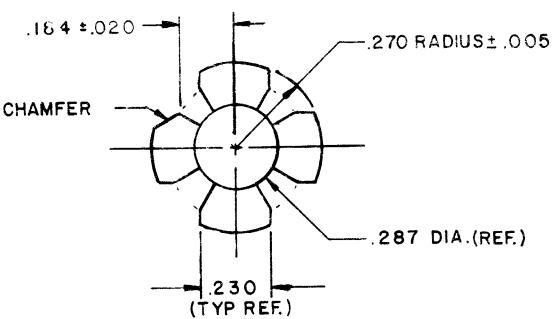
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026-0002-00

155-2219-03  
CABLE END STRIPPED BACK FURTHEST  
IS ATTACHED HERE AS SHOWN.



DETAIL BEFORE  
ASSEMBLY



#### NOTES:

1 C2, C5, C45, C48, C74, C75, C76, C77, CR4, CR6 AND Q9 HEIGHT SHOULD NOT EXCEED .315 INCH ABOVE BOARD SURFACE.

2 RTI - USE HEAT SINK DEVICE WHILE SOLDERING TO PREVENT THERMAL DAMAGE.

3 SOLDER BOTTOM EDGES OF FENCES TO GROUND PLANE ON BOARD WHERE SOLDERMASK IS OPEN TO ENSURE GOOD ELECTRICAL CONTINUITY THRUOUT. FENCES TO BE SNUGGED DOWN ON BOARD SURFACE. GAP BETWEEN FENCE EDGE AND BOARD SURFACE NOT TO EXCEED .007 INCH.



● DENOTES PIN #1 OF LI.

#### DETAIL-A

SCALE: 2 / 1  
KPN 007-0538-00 MODIFIED

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VHF FM COMM TRANSCEIVER

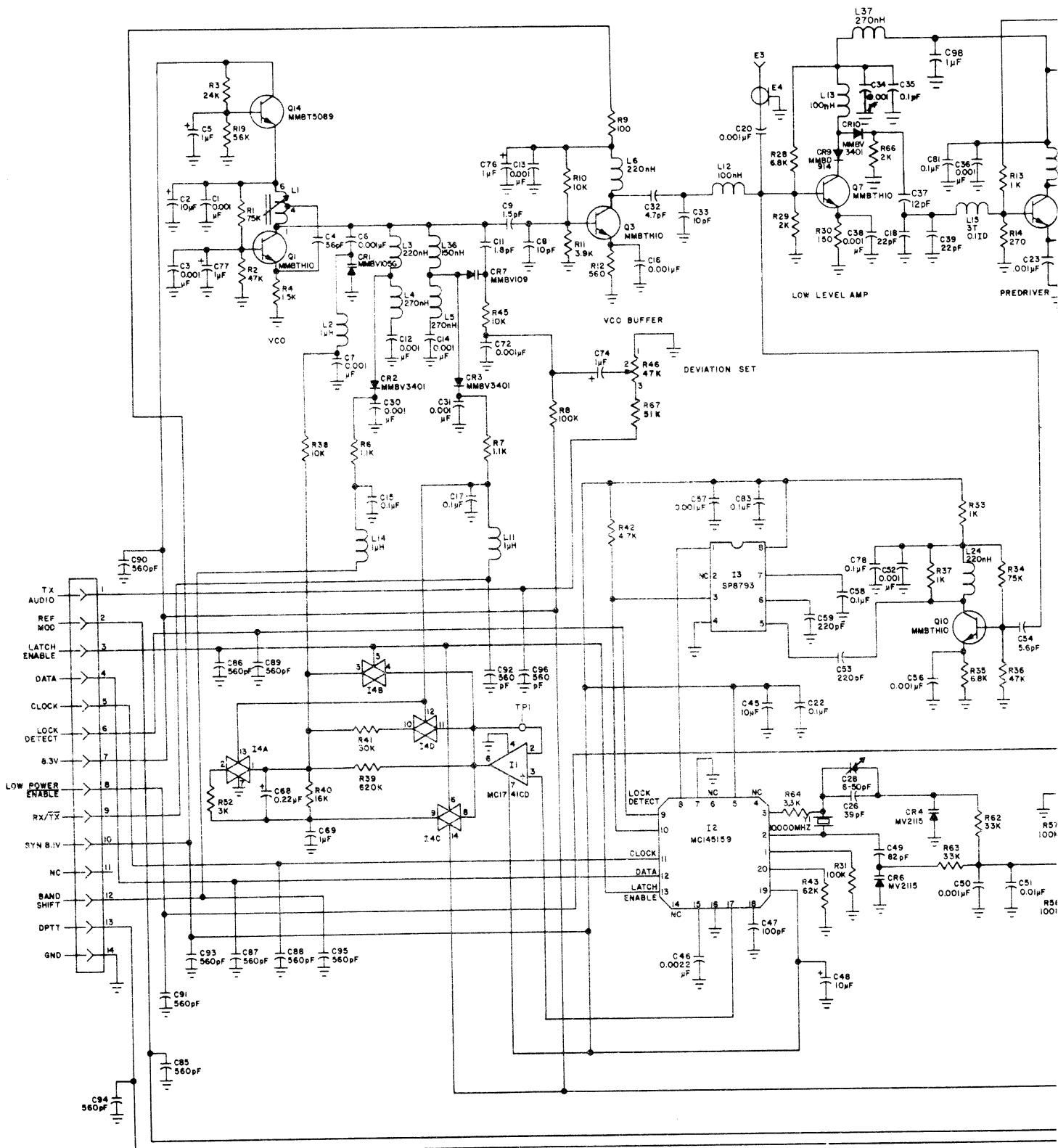
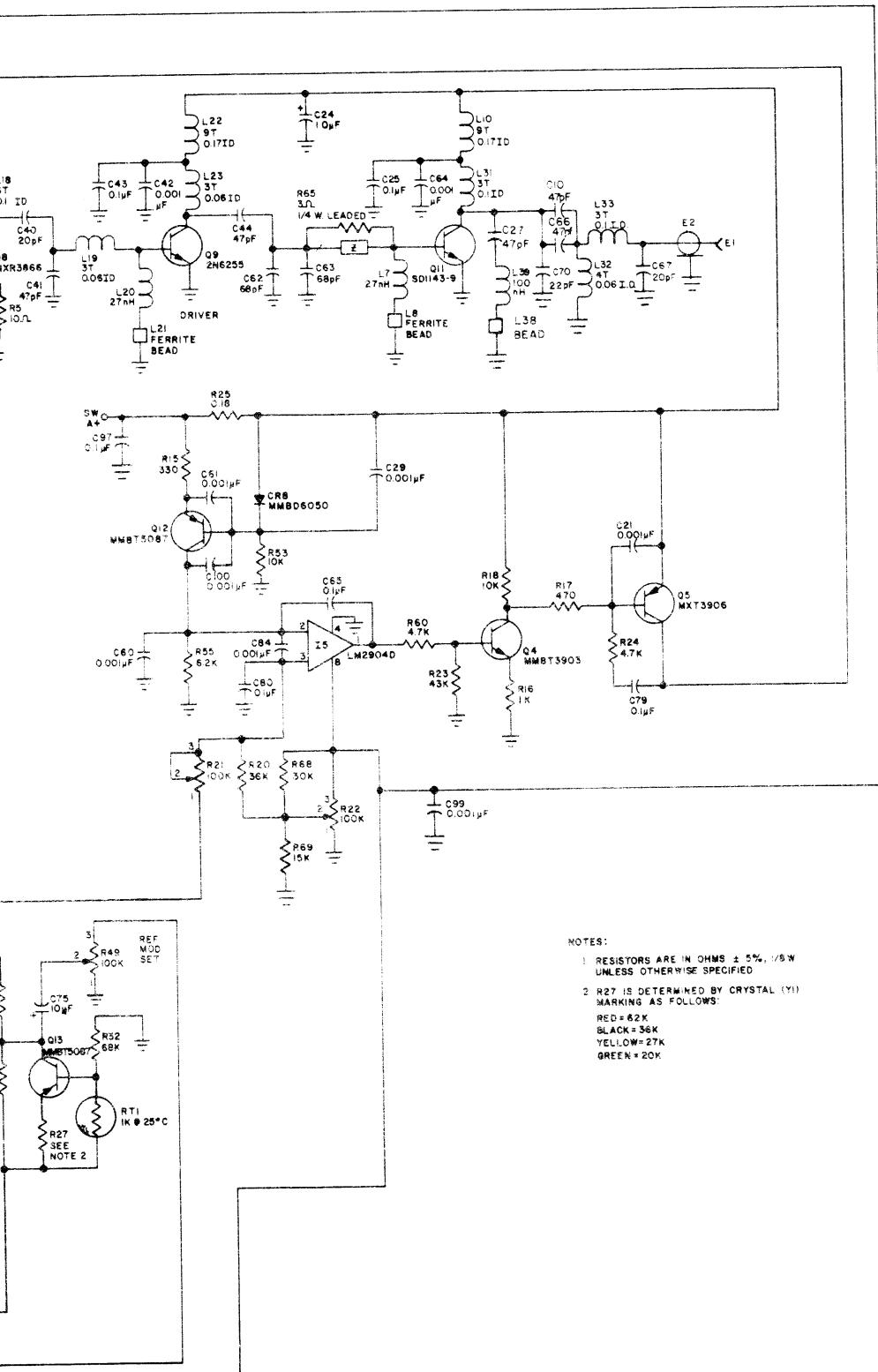


FIGURE 6-13 5 WATT TRANSMITTER BOARD SCHEMATIC  
(Dwg No 002-6876-00 Rev 3)



**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**

200-6880-00 REV 5 2W TX PC LPH0000

SYMBOL	PART NUMBER	DESCRIPTION	A	UW	00
	009-6880-00	PC BD 2W TX	EA	1.00	
	016-1004-00	COMPOUND THRML JNT	AR	1.00	
	016-1124-00	FOAM TAPE V1002	AR	1.00	
	016-1184-00	ELASTOMERIC ADHES	AR	1.00	
	026-0002-00	WIRE COP TIN 24G	IN	1.00	
	047-6716-02	SHIELD ASSY W/F	EA	1.00	
	047-6717-01	SHIELD VCO W/F	EA	1.00	
	047-6718-01	SHIELD L/L AMP W/F	EA	1.00	
	047-6720-01	SHIELD NEARSIDE	EA	1.00	
	047-6722-01	SHIELD BUFFER W/F	EA	1.00	
	090-0307-00	HEAT SINK FOR TO-5	EA	1.00	
	091-0320-00	INSUL TO-5	EA	2.00	
	155-2219-01	CABLE COAX .020	EA	2.00	
	155-2219-03	CABLE COAX .020	EA	1.00	
	195-0011-00	CRYSTAL KIT	EA	1.00	
C 1	097-0109-08	CAP EL 1UF 50V	EA	1.00	
C 2	097-0109-02	CAP EL 10UF 35V	EA	1.00	
C 3	106-5102-48	CAP CH 1K X7R/50V	EA	1.00	
C 4	106-5102-48	CAP CH 1K X7R/50V	EA	1.00	
C 5	097-0109-08	CAP EL 1UF 50V	EA	1.00	
C 6	106-0072-34	CAP CH 56PFNPO/50V	EA	1.00	
C 7	106-5102-48	CAP CH 1K X7R/50V	EA	1.00	
C 8	106-5102-48	CAP CH 1K X7R/50V	EA	1.00	
C 9	106-4102-47	CAP CH 1K X7R/50V	EA	1.00	
C 10	106-4102-47	CAP CH 1K X7R/50V	EA	1.00	
C 11	106-5102-48	CAP CH 1K X7R/50V	EA	1.00	
C 12	106-5102-48	CAP CH 1K X7R/50V	EA	1.00	
C 13	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00	
C 14	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00	
C 15	097-0109-08	CAP EL 1UF 50V	EA	1.00	
C 16	106-5102-48	CAP CH 1K X7R/50V	EA	1.00	
C 17	106-0072-01	CAP CH1.8PFNPO/50V	EA	1.00	
C 18	106-0072-44	CAP CH 1.5PF	EA	1.00	
C 19	106-0072-13	CAP CH 10PFNPO/50V	EA	1.00	
C 20	097-0109-08	CAP EL 1UF 50V	EA	1.00	
C 21	106-4102-47	CAP CH 1K X7R/50V	EA	1.00	
C 22	106-4102-47	CAP CH 1K X7R/50V	EA	1.00	
C 23	106-0072-04	CAP CH4.7PFNPO/50V	EA	1.00	
C 24	106-0072-12	CAP CH10PF NPO/50V	EA	1.00	
C 25	106-5102-48	CAP CH 1K X7R/50V	EA	1.00	
C 26	106-0072-15	CAP CH 12PFNPO/50V	EA	1.00	
C 27	106-4102-47	CAP CH 1K X7R/50V	EA	1.00	
C 28	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00	
C 29	106-5102-48	CAP CH 1K X7R/50V	EA	1.00	
C 30	106-0072-30	CAP CH 39PFNPO/50V	EA	1.00	
C 32	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00	
C 33	106-4102-47	CAP CH 1K X7R/50V	EA	1.00	
C 34	106-0072-26	CAP CH 27PFNPO/50V	EA	1.00	
C 35	106-5102-48	CAP CH 1K X7R/50V	EA	1.00	
C 36	106-0072-19	CAP CH 18PFNPO/50V	EA	1.00	
C 37	106-0072-34	CAP CH 56PFNPO/50V	EA	1.00	
C 38	106-0072-34	CAP CH 58PFNPO/50V	EA	1.00	
C 39	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00	
C 40	106-4102-47	CAP CH 1K X7R/50V	EA	1.00	
C 41	106-0072-26	CAP CH 27PFNPO/50V	EA	1.00	
C 42	106-4102-47	CAP CH 1K X7R/50V	EA	1.00	
C 43	106-0072-32	CAP CH 47PFNPO/50V	EA	1.00	
C 44	106-0072-30	CAP CH 39PFNPO/50V	EA	1.00	
C 46	106-5561-48	CAP CH 560 X7R/50V	EA	1.00	
C 47	106-4561-47	CAP CH560PFX7R/50V	EA	1.00	
C 48	106-5561-48	CAP CH 560 X7R/50V	EA	1.00	
C 49	106-5561-48	CAP CH 560 X7R/50V	EA	1.00	

**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**

SYMBOL	PART NUMBER	DESCRIPTION	A	UM	OO
C	50	106-5561-48	CAP CH 560 X7R/50V	EA	1.00
C	51	096-1113-28	CAP CH.22UF10%35V	EA	1.00
C	52	106-5077-01	CAP PC 1.0UF30V10%	EA	1.00
C	53	106-4561-47	CAP CH560PFX7R/50V	EA	1.00
C	54	106-4561-47	CAP CH560PFX7R/50V	EA	1.00
C	56	106-4561-47	CAP CH560PFX7R/50V	EA	1.00
C	57	106-4561-47	CAP CH560PFX7R/50V	EA	1.00
C	58	106-5561-48	CAP CH 560 X7R/50V	EA	1.00
C	59	106-5561-48	CAP CH 560 X7R/50V	EA	1.00
C	60	106-4102-47	CAP CH 1K X7R/50V	EA	1.00
C	61	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	62	106-5221-48	CAP CH 220X7R/50V	EA	1.00
C	63	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	64	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	65	106-5102-48	CAP CH 1K X7R/50V	EA	1.00
C	66	106-4221-47	CAP CH220PFX7R/50V	EA	1.00
C	67	097-0109-02	CAP EL 10UF 35V	EA	1.00
C	68	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	69	106-4102-47	CAP CH 1K X7R/50V	EA	1.00
C	70	106-0072-06	CAP CH5.6PFNPO/50V	EA	1.00
C	71	106-4222-47	CAPCH2200PFX7R/50V	EA	1.00
C	72	106-5101-18	CAP CH100PFNPO/50V	EA	1.00
C	73	097-0109-02	CAP EL 10UF 35V	EA	1.00
C	74	102-0054-01	CAP CERAMIC TRIM	EA	1.00
C	75	106-0072-31	CAP CH 39PFNPO/50V	EA	1.00
C	76	106-0095-20	CAP CH 82PF 5%	EA	1.00
C	77	106-5102-48	CAP CH 1K X7R/50V	EA	1.00
C	78	106-5103-48	CAP CH 10K X7R/50V	EA	1.00
C	79	097-0109-02	CAP EL 10UF 35V	EA	1.00
C	80	106-4102-47	CAP CH 1K X7R/50V	EA	1.00
C	81	106-4102-47	CAP CH 1K X7R/50V	EA	1.00
C	82	106-5102-48	CAP CH 1K X7R/50V	EA	1.00
C	83	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	84	106-5102-48	CAP CH 1K X7R/50V	EA	1.00
C	85	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	86	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
C	87	106-4102-47	CAP CH 1K X7R/50V	EA	1.00
C	88	106-4104-78	CAP CH 100KZ5U/50V	EA	1.00
CR	1	007-4057-00	DIO V MMBV105G	EA	1.00
CR	2	007-6178-00	DIO PIN MMBV3401	EA	1.00
CR	3	007-6178-00	DIO PIN MMBV3401	EA	1.00
CR	4	007-4056-00	DIO V MMBV109	EA	1.00
CR	5	007-6178-00	DIO PIN MMBV3401	EA	1.00
CR	6	007-4016-15	DIO V MV2115	EA	1.00
CR	7	007-4016-15	DIO V MV2115	EA	1.00
CR	8	007-6180-00	DIO SW MMBD6050	EA	1.00
CR	9	007-6177-00	SMD DIO SI MMBD914	EA	1.00
I	1	120-3194-00	IC OP AMP MC1741CD	EA	1.00
I	2	120-6132-02	IC FREQ SYN	EA	1.00
I	3	120-0203-00	VHF PRESCALER	EA	1.00
I	4	120-6131-00	IC QUAD ANLG SW	EA	1.00
I	5	120-3195-00	IC LM2904D	EA	1.00
L	1	019-3156-00	COIL ADJ	EA	1.00
L	2	019-2084-21	CH 1UH 10%	EA	1.00
L	3	019-2084-04	CH .22UH 5%	EA	1.00
L	4	019-2084-06	CH .27UH 5%	EA	1.00
L	5	019-2084-00	CH .15UH 5%	EA	1.00
L	6	019-2084-06	CH .27UH 5%	EA	1.00
L	7	019-2084-21	CH 1UH 10%	EA	1.00
L	8	019-2084-21	CH 1UH 10%	EA	1.00
L	9	019-2084-04	CH .22UH 5%	EA	1.00
L	10	019-2099-02	CHOKE .10UH 5%	EA	1.00
L	11	019-2099-02	CHOKE .10UH 5%	EA	1.00
L	12	019-2084-04	CH .22UH 5%	EA	1.00
L	13	019-2400-16	COIL 4T	EA	1.00
L	14	019-2400-14	COIL 1T	EA	1.00
L	15	019-2400-11	COIL 4T	EA	1.00
L	16	019-2099-03	CH .047UH 5%	EA	1.00

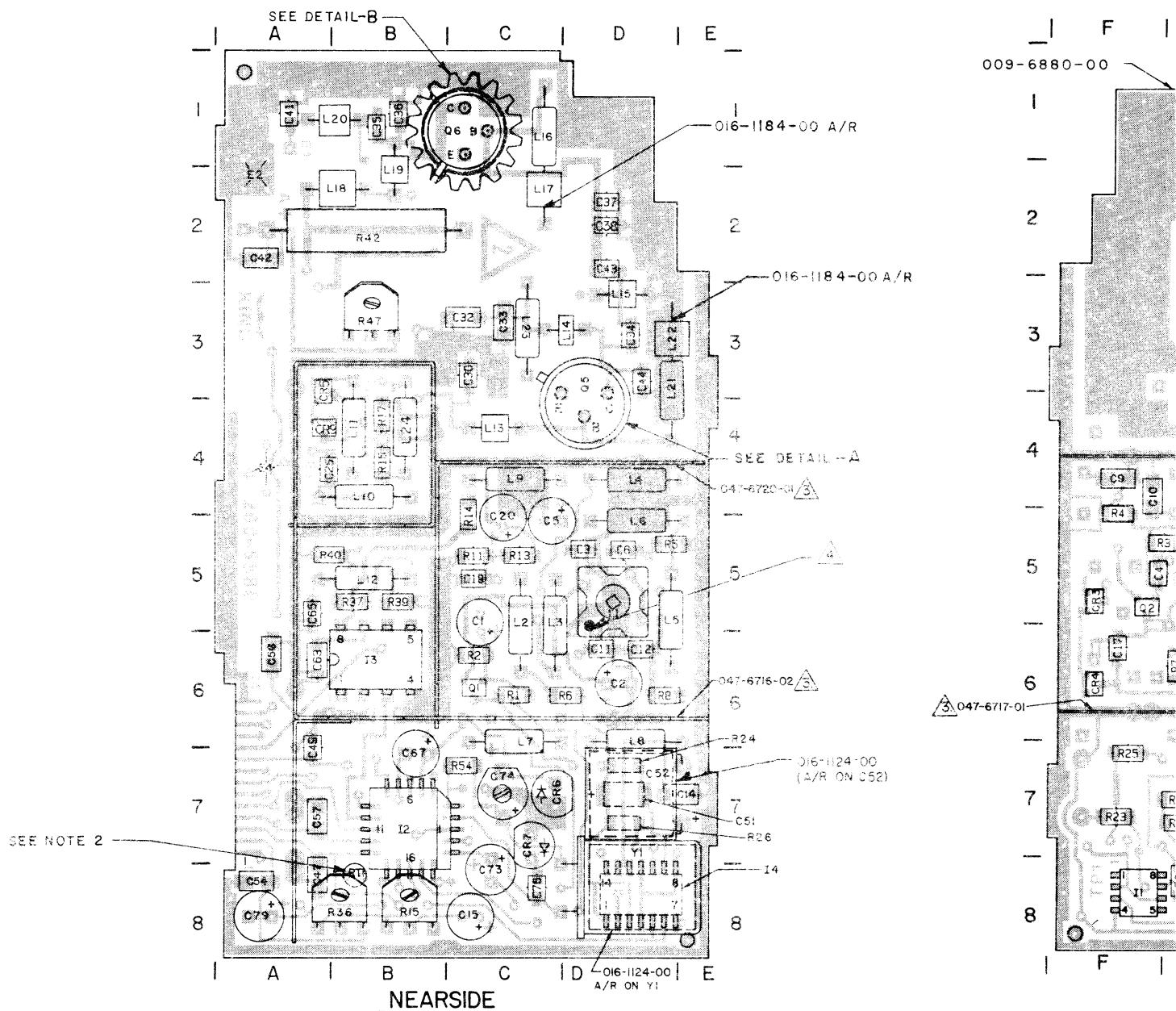
**KING**  
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**VHF FM COMM TRANSCEIVER**

SYMBOL	PART NUMBER	DESCRIPTION	A	UN	00
L	17	013-0006-00	FERR BEAD	EA	1.00
L	18	019-2400-12	COIL 8T	EA	1.00
L	19	019-2400-02	COIL 3T	EA	1.00
L	20	019-2400-02	COIL 3T	EA	1.00
L	21	019-2084-02	CH .18UH 5%	EA	1.00
L	22	013-0006-00	FERR BEAD	EA	1.00
L	23	019-2084-06	CH .27UH 5%	EA	1.00
L	24	019-2084-06	CH .27UH 5%	EA	1.00
D	1	007-0187-02	XSTR SOT-23 2N5089	EA	1.00
D	2	007-0539-00	XSTR WMBTH10	EA	1.00
D	3	007-0539-00	XSTR WMBTH10	EA	1.00
D	4	007-0539-00	XSTR WMBTH10	EA	1.00
D	5	007-0250-00	XSTR 2N4427	EA	1.00
D	6	007-0545-00	XSTR RF PWR 2N6255	EA	1.00
D	7	007-0539-00	XSTR WMBTH10	EA	1.00
D	8	007-0537-00	XSTR PNP WMBT5087	EA	1.00
D	9	007-0537-00	XSTR PNP WMBT5087	EA	1.00
D	10	007-0530-00	XSTR NPN WMBT3903	EA	1.00
D	11	007-0540-00	XSTR MXT3906	EA	1.00
R	1	130-5248-23	RES CHIP 24K EW 5%	EA	1.00
R	2	130-5563-23	RES CHIP 56KEW5%	EA	1.00
R	3	130-5753-23	RES CHIP 75KEW 5%	EA	1.00
R	4	130-5473-23	RES CHIP 47KEW5%	EA	1.00
R	5	130-5152-23	RES CHIP 1.5KEW5%	EA	1.00
R	6	130-5103-23	RES CH 10K EW 5%	EA	1.00
R	7	130-5112-23	RES CERAMIC CHIP	EA	1.00
R	8	130-5112-23	RES CERAMIC CHIP	EA	1.00
R	9	130-5104-23	RES CH 100K EW 5%	EA	1.00
R	10	130-5103-23	RES CH 10K EW 5%	EA	1.00
R	11	130-5392-23	RES CHIP 3.9KEW5%	EA	1.00
R	12	130-5391-23	RES CHIP 390EW5%	EA	1.00
R	13	130-5103-23	RES CH 10K EW 5%	EA	1.00
R	14	130-5101-23	RES CH 100 EW 5%	EA	1.00
R	15	133-0141-06	RES VA 47K 20%	EA	1.00
R	16	130-5472-23	RES CHIP 4.7KEW5%	EA	1.00
R	17	130-5182-23	RES CHIP 1.8KEW5%	EA	1.00
R	18	130-5151-23	RES CHIP 150EW5%	EA	1.00
R	23	130-5302-23	RES CHIP 3K EW 5%	EA	1.00
R	24	130-5183-23	RES CHIP 16KEW5%	EA	1.00
R	25	130-5303-23	RES CHIP 30KEW5%	EA	1.00
R	26	130-5624-23	RES CHIP 620KEW5%	EA	1.00
R	28	130-5623-23	RES CHIP 62KEW5%	EA	1.00
R	29	130-5104-23	RES CH 100K EW 5%	EA	1.00
R	30	130-5333-23	RES CHIP 33K EW 5%	EA	1.00
R	31	130-5333-23	RES CHIP 33K EW 5%	EA	1.00
R	32	130-5104-23	RES CH 100K EW 5%	EA	1.00
R	33	130-5104-23	RES CH 100K EW 5%	EA	1.00
R	34	130-5472-23	RES CHIP 4.7KEW5%	EA	1.00
R	35	130-5683-23	RES CHIP 68K EW 5%	EA	1.00
R	36	133-0141-11	RES VA 100K 20%	EA	1.00
R	37	130-5102-23	RES CH 1K EW 5%	EA	1.00
R	38	130-5753-23	RES CHIP 75KEW 5%	EA	1.00
R	39	130-5682-23	RES CHIP 6.8KEW5%	EA	1.00
R	40	130-5473-23	RES CHIP 47KEW5%	EA	1.00
R	41	130-5331-23	RES CHIP 330 EW5%	EA	1.00
R	42	132-0116-10	RES WW .47 3W 10%	EA	1.00
R	43	130-5103-23	RES CH 10K EW 5%	EA	1.00
R	44	130-5622-23	RES CHIP 6.2KEW5%	EA	1.00
R	45	130-5202-23	RES CHIP 2K5EW	EA	1.00
R	46	130-5822-23	RES CHIP 8.2KEW5%	EA	1.00
R	47	133-0141-11	RES VA 100K 20%	EA	1.00
R	48	130-5472-23	RES CHIP 4.7KEW5%	EA	1.00
R	49	130-5433-23	RES CHIP 43KEW5%	EA	1.00
R	50	130-5102-23	RES CH 1K EW 5%	EA	1.00
R	51	130-5103-23	RES CH 10K EW 5%	EA	1.00
R	52	130-5471-23	RES CHIP 470EW5%	EA	1.00

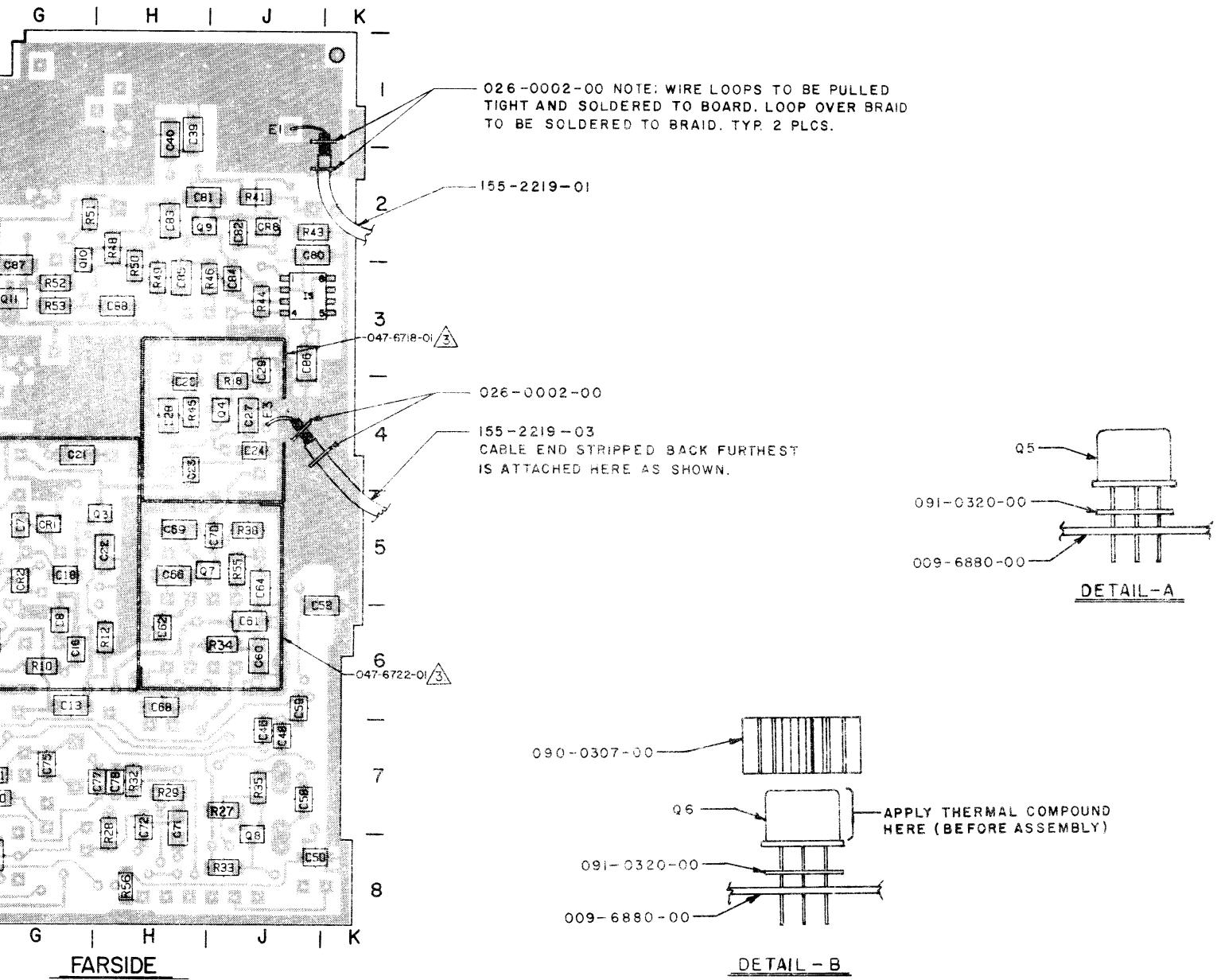
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SYMBOL	PART NUMBER	DESCRIPTION	A	UW	00
R	53	130-5472-23	RES CHIP	4.7KEW5%	EA 1.00
R	54	130-5332-23	RES CHIP	3.3KEW5%	EA 1.00
R	55	130-5102-23	RES CH	1K EW 5%	EA 1.00
R	56	130-5513-23	RES CHIP	51K EW 5%	EA 1.00
REF	1	300-6880-00	2W TX BD ASSY		RF X.
REF	2	002-6880-00	SCH XWTR BD		RF X.
RT	1	134-1012-01	THMS	1K 10%	EA 1.00
Y	1	044-0151-00	XTAL	10.00MHZ QRTZ	EA 1.00

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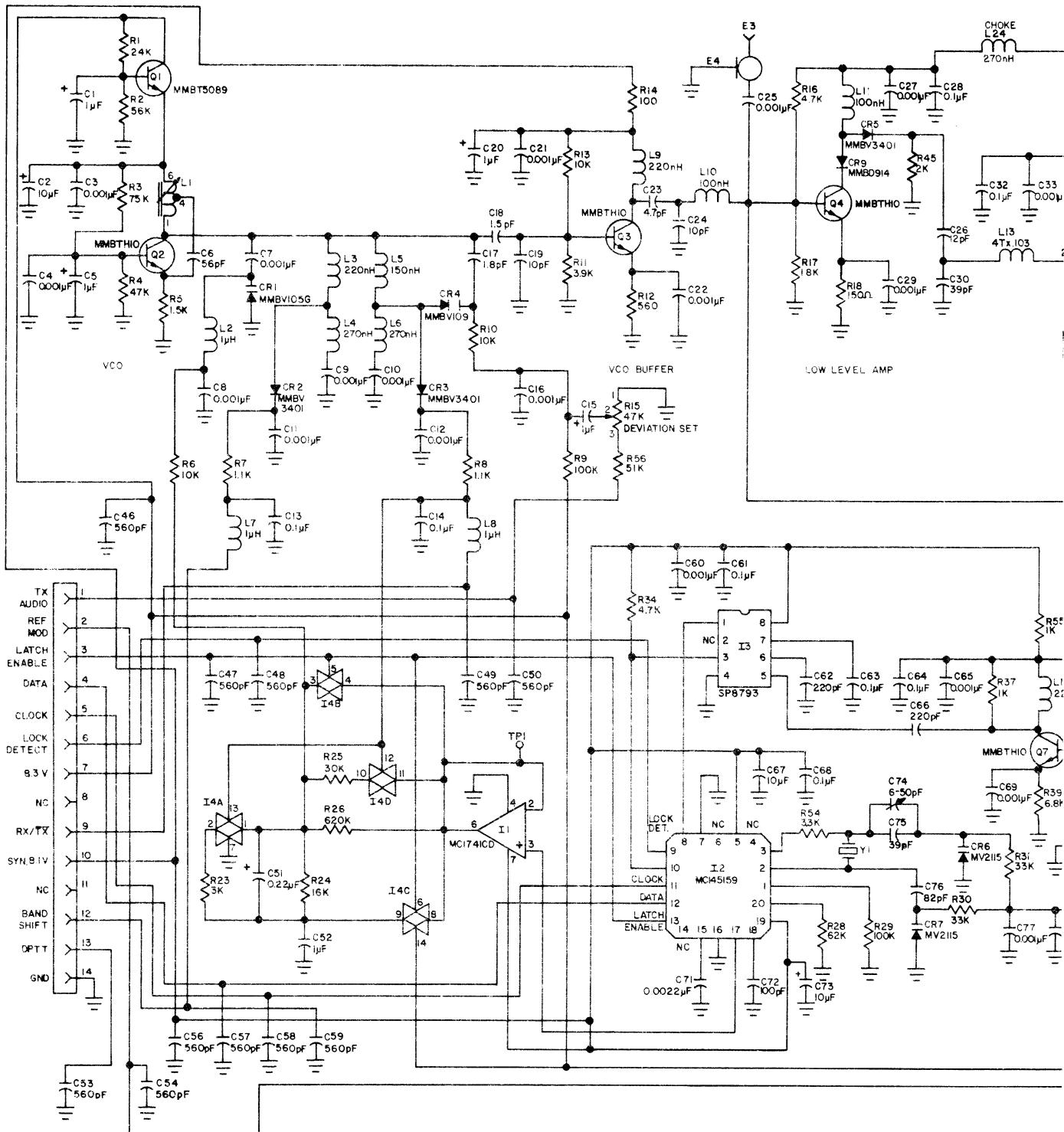
**FIGURE 6-14 2 WATT TRANSMITTER ASSEMBLY  
(Dwg No 300-6880-00 Rev 4)**



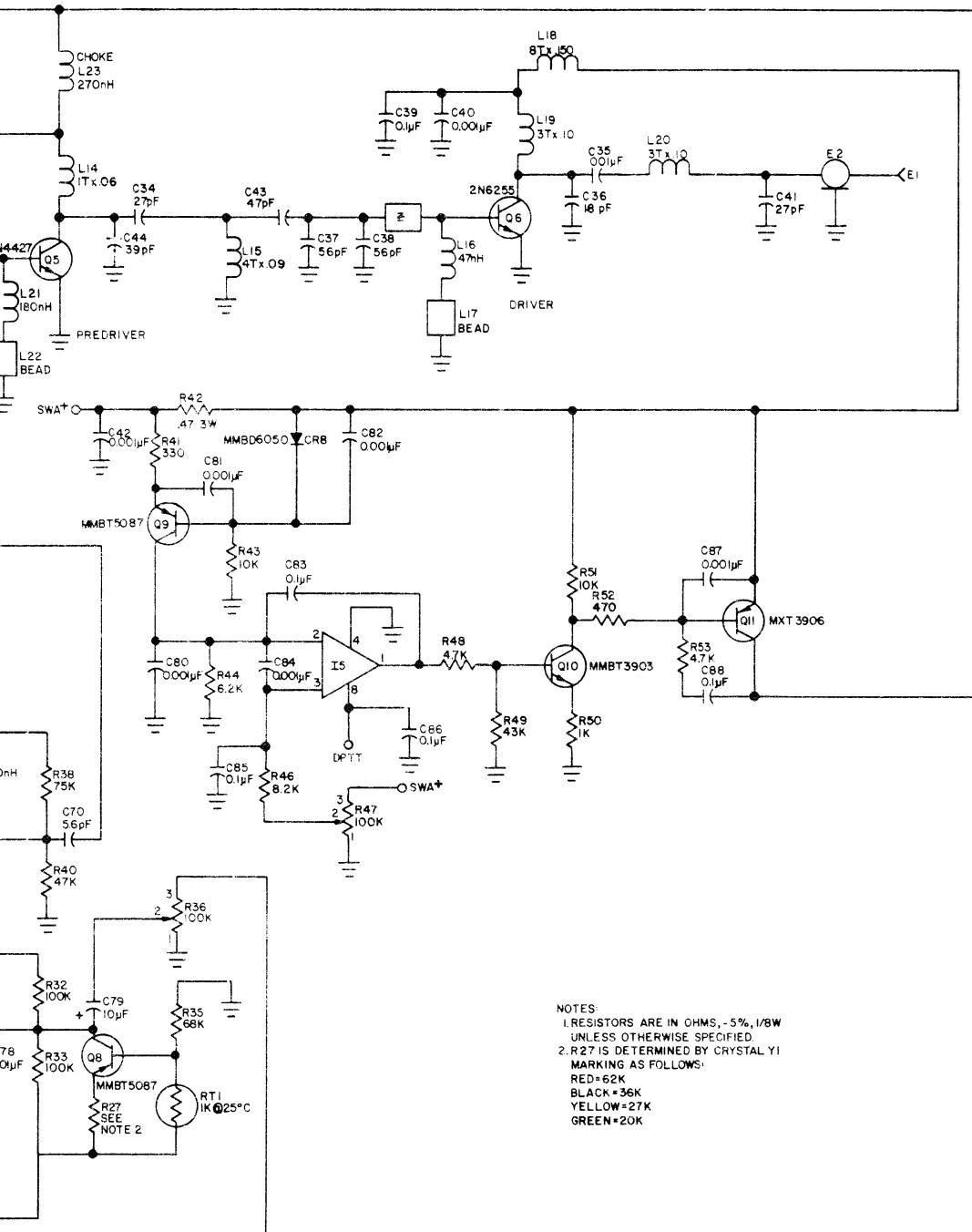
#### NOTES:

1. C1, C2, C5, C15, C20, C67, C73, C79, CR6, CR7 AND Q5 HEIGHT SHOULD NOT EXCEED .315 INCH ABOVE BOARD SURFACE.
  2. RTI USE HEAT SINK DEVICE WHILE SOLDERING TO PREVENT THERMAL DAMAGE.
  3. SOLDER BOTTOM EDGES OF FENCES TO GROUND PLANE ON BOARD WHERE SOLDERMASK IS OPEN TO INSURE GOOD ELECTRICAL CONTINUITY THRUOUT. FENCES WILL BE SNUGGED DOWN ON BOARD SURFACE. GAP BETWEEN FENCE EDGE AND BOARD SURFACE NOT TO EXCEED .007 INCHES.
- 4** ● DENOTES PIN#1 OF LI.

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VHF FM COMM TRANSCEIVER**



**FIGURE 6-15 2 WATT TRANSMITTER SCHEMATIC  
(Dwg No 002-6880-00 Rev 5)**



**KING**  
**LPH 202/214/502/514**  
**VHF FM COMM TRANSCEIVER**

200-6877-00 REV 16 2 CH SYSTEM BD LPH0000  
 200-6877-01 REV 18 14 CH SYSTEM BD LPH0000

SYMBOL	PART NUMBER	DESCRIPTION	A	UW	00	01
	009-6877-00	PC BD SYSTEM	EA	1.00	1.00	
	012-1316-00	INSULATOR MYLAR	EA	1.00	1.00	
	016-1124-00	FOAM TAPE Y1002	IN	.	0.30	
	026-0012-08	WIRE COP 30G	IN	.	2.00	
C	1 106-4333-46	CAP CH 33K X7R/50V	EA	1.00	1.00	
C	2 106-4222-46	CAP CH 2.2K 50V 5%	EA	1.00	1.00	
C	3 106-4563-46	CAP CH 56K X7R/50V	EA	1.00	1.00	
C	4 097-0109-08	CAP EL 1UF 50V	EA	1.00	1.00	
C	5 106-4104-78	CAP CH 100KZ5U/50V	EA	1.00	1.00	
C	6 106-4104-78	CAP CH 100KZ5U/50V	EA	1.00	1.00	
C	7 106-4104-78	CAP CH 100KZ5U/50V	EA	1.00	1.00	
C	8 106-4100-16	CAP CH 10PF NPO/50	EA	1.00	1.00	
C	9 106-4100-16	CAP CH 10PF NPO/50	EA	1.00	1.00	
C	12 106-6683-48	CAPCH68KX7R50V20%	EA	1.00	1.00	
C	13 106-4561-47	CAP CH560PFX7R/50V	EA	1.00	1.00	
C	14 106-4153-47	CAP CH 15K X7R/50V	EA	1.00	1.00	
C	16 106-4103-47	CAP CH 10K X7R/50V	EA	1.00	1.00	
C	17 106-4104-78	CAP CH 100KZ5U/50V	EA	1.00	1.00	
C	18 096-1113-71	CAP CH .47UF20%20V	EA	1.00	1.00	
C	20 097-0109-08	CAP EL 1UF 50V	EA	1.00	1.00	
C	25 097-0109-08	CAP EL 1UF 50V	EA	1.00	1.00	
C	27 106-5223-48	CAP CH 22K X7R/50V	EA	1.00	1.00	
C	28 106-4821-47	CAP CH820PFX7R/50V	EA	1.00	1.00	
C	29 106-4104-78	CAP CH 100KZ5U/50V	EA	1.00	1.00	
C	30 106-4103-47	CAP CH 10K X7R/50V	EA	1.00	1.00	
C	31 106-4104-78	CAP CH 100KZ5U/50V	EA	1.00	1.00	
C	35 106-4561-47	CAP CH560PFX7R/50V	EA	1.00	1.00	
C	36 096-1113-72	CAP CH1.0UF20%20V	EA	1.00	1.00	
C	37 106-4101-16	CAP CH100PFNPO/50V	EA	1.00	1.00	
C	38 106-4101-16	CAP CH100PFNPO/50V	EA	1.00	1.00	
C	39 106-4101-16	CAP CH100PFNPO/50V	EA	1.00	1.00	
C	40 106-4101-16	CAP CH100PFNPO/50V	EA	1.00	1.00	
C	41 106-4101-16	CAP CH100PFNPO/50V	EA	1.00	1.00	
C	42 106-4561-47	CAP CH560PFX7R/50V	EA	1.00	1.00	
C	43 106-4101-18	CAP CH100PFNPO/50V	EA	1.00	1.00	
C	44 106-4102-47	CAP CH 1K X7R/50V	EA	1.00	1.00	
C	45 106-4821-47	CAP CH820PFX7R/50V	EA	1.00	1.00	
C	46 106-4561-47	CAP CH560PFX7R/50V	EA	1.00	1.00	
C	47 106-5581-48	CAP CH 560 X7R/50V	EA	1.00	1.00	
C	48 106-4561-47	CAP CH560PFX7R/50V	EA	1.00	1.00	
C	49 106-4561-47	CAP CH560PFX7R/50V	EA	1.00	1.00	
C	50 106-4561-47	CAP CH560PFX7R/50V	EA	1.00	1.00	
C	51 106-4822-46	CAPCH .0082WX7R/50	EA	1.00	1.00	
C	52 106-4103-46	CAP CH 10K X7R/50V	EA	1.00	1.00	
C	53 106-4103-46	CAP CH 10K X7R/50V	EA	1.00	1.00	
CR	1 007-5117-07	DIO Z 8.2V SOT	EA	1.00	1.00	
CR	2 007-5117-07	DIO Z 8.2V SOT	EA	1.00	1.00	
CR	3 007-6184-00	DIO DUAL SWITCHING	EA	1.00	1.00	
CR	4 007-8181-00	DIO DUAL WMBD2835	EA	1.00	1.00	
CR	7 007-5117-09	DIO Z 7.5V SOT	EA	1.00	1.00	
CR	8 007-6181-00	DIO DUAL WMBD2835	EA	1.00	1.00	
I	1 122-0059-00	LMR/VHF/SYS/PROC	EA	1.00	1.00	
I	2 120-3196-00	IC LM2902D	EA	1.00	1.00	
I	3 120-2156-00	16X18 BIT EEPROM	EA	1.00	.	
I	3 120-2157-00	64X16 BIT EEPROM	EA	.	1.00	
I	4 120-3126-04	IC LM317LZ	EA	1.00	1.00	
I	5 120-3196-00	IC LM2902D	EA	1.00	1.00	
I	6 120-3192-00	OP AMP MC4558CD	EA	1.00	1.00	
I	7 120-6135-00	QUAD VOLTAGE SHFTR	EA	1.00	1.00	

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**VHF FM COMM TRANSCEIVER**

SYMBOL	PART NUMBER	DESCRIPTION	A	U/M	00	01
J	1 030-1249-04	SCKT MIN SPRING	EA	.	8.00	
Q	1 007-0065-01	XSTR 2N3906 (SOT)	EA	1.00	1.00	
Q	2 007-0530-00	XSTR NPN MBT3903	EA	1.00	1.00	
Q	3 007-0065-01	XSTR 2N3906 (SOT)	EA	1.00	1.00	
Q	4 007-0065-01	XSTR 2N3906 (SOT)	EA	1.00	1.00	
Q	6 007-0537-00	XSTR PNP MBT5087	EA	1.00	1.00	
Q	7 007-0065-01	XSTR 2N3906 (SOT)	EA	1.00	1.00	
Q	8 007-0530-00	XSTR NPN MBT3903	EA	1.00	1.00	
Q	9 007-0530-00	XSTR NPN MBT3903	EA	1.00	1.00	
Q	11 007-0065-01	XSTR 2N3906 (SOT)	EA	1.00	1.00	
Q	13 007-0530-00	XSTR NPN MBT3903	EA	1.00	1.00	
Q	14 007-0065-01	XSTR 2N3906 (SOT)	EA	1.00	1.00	
Q	15 007-0530-00	XSTR NPN MBT3903	EA	1.00	1.00	
Q	16 007-0530-00	XSTR NPN MBT3903	EA	1.00	1.00	
Q	17 007-0065-01	XSTR 2N3906 (SOT)	EA	1.00	1.00	
R	1 130-5102-23	RES CH 1K EW 5%	EA	1.00	1.00	
R	2 130-5223-23	RES CHIP 22K EW 5%	EA	1.00	1.00	
R	3 130-5102-23	RES CH 1K EW 5%	EA	1.00	1.00	
R	4 130-5823-23	RES CHIP 82KEW5%	EA	1.00	1.00	
R	5 130-5104-23	RES CH 100K EW 5%	EA	1.00	1.00	
R	6 130-5913-23	RES CHIP 91KEW5%	EA	1.00	1.00	
R	7 130-5204-23	RES CHIP 200KEW5%	EA	1.00	1.00	
R	8 130-5752-22	RES CHIP 7.5KEW2%	EA	1.00	1.00	
R	13 130-5153-22	RES CHIP 15KEW2%	EA	1.00	1.00	
R	14 130-5303-22	RES CHIP 30KEW2%	EA	1.00	1.00	
R	15 130-5623-22	RES CHIP 62KEW2%	EA	1.00	1.00	
R	16 130-5124-22	RES CHIP 120KEW2%	EA	1.00	1.00	
R	17 130-5103-23	RES CH 10K EW 5%	EA	1.00	1.00	
R	20 130-5203-23	RES CHIP 20K EW 5%	EA	1.00	1.00	
R	22 130-5152-23	RES CHIP 1.5KEW5%	EA	1.00	1.00	
R	23 130-5472-23	RES CHIP 4.7KEW5%	EA	1.00	1.00	
R	24 130-5473-23	RES CHIP 47KEW5%	EA	1.00	1.00	
R	25 130-5103-23	RES CH 10K EW 5%	EA	1.00	1.00	
R	26 130-5622-23	RES CHIP 6.2KEW5%	EA	1.00	1.00	
R	27 130-5103-23	RES CH 10K EW 5%	EA	1.00	1.00	
R	28 130-5104-23	RES CH 100K EW 5%	EA	1.00	1.00	
R	29 130-5105-23	RES CHIP 1M EW 5%	EA	1.00	1.00	
R	31 130-5104-23	RES CH 100K EW 5%	EA	1.00	1.00	
R	32 130-5104-23	RES CH 100K EW 5%	EA	1.00	1.00	
R	33 130-5223-23	RES CHIP 22K EW 5%	EA	1.00	1.00	
R	34 130-5104-23	RES CH 100K EW 5%	EA	1.00	1.00	
R	35 130-5104-23	RES CH 100K EW 5%	EA	1.00	1.00	
R	36 130-5104-23	RES CH 100K EW 5%	EA	1.00	1.00	
R	37 130-5104-23	RES CH 100K EW 5%	EA	1.00	1.00	
R	39 130-5163-23	RES CHIP 16KEW5%	EA	1.00	1.00	
R	40 130-5223-23	RES CHIP 22K EW 5%	EA	1.00	1.00	
R	41 130-5153-23	RES CHIP 15K EW 5%	EA	1.00	1.00	
R	42 130-5433-23	RES CHIP 43KEW5%	EA	1.00	1.00	
R	43 130-5913-23	RES CHIP 91KEW5%	EA	1.00	1.00	
R	44 130-5184-23	RES CH 180K EW 5%	EA	1.00	1.00	
R	45 130-5304-23	RES CHIP 300KEW5%	EA	1.00	1.00	
R	46 130-5153-23	RES CHIP 15K EW 5%	EA	1.00	1.00	
R	47 130-5473-23	RES CHIP 47KEW5%	EA	1.00	1.00	
R	48 130-5822-23	RES CHIP 8.2KEW5%	EA	1.00	1.00	
R	50 130-5303-23	RES CHIP 30KEW5%	EA	1.00	1.00	
R	51 130-5822-23	RES CHIP 8.2KEW5%	EA	1.00	1.00	
R	52 130-5912-23	RES CHIP 9.1K5EW	EA	1.00	1.00	
R	53 130-5913-23	RES CHIP 91KEW5%	EA	1.00	1.00	
R	54 130-5163-23	RES CHIP 16KEW5%	EA	1.00	1.00	
R	55 130-5223-23	RES CHIP 22K EW 5%	EA	1.00	1.00	
R	56 130-5184-23	RES CHIP 180K EW5%	EA	1.00	1.00	
R	57 130-5154-23	RES CHIP 150K5EW	EA	1.00	1.00	
R	58 130-5102-23	RES CH 1K EW 5%	EA	1.00	1.00	
R	59 130-5113-23	RES CHIP 11K EW 5%	EA	1.00	1.00	
R	60 130-5302-23	RES CHIP 3K EW 5%	EA	1.00	1.00	
R	61 130-5562-23	RES CHIP 5.6KEW5%	EA	1.00	1.00	
R	62 130-5304-23	RES CHIP 300KEW5%	EA	1.00	1.00	
R	65 130-5513-22	RES CHIP 51K EW 2%	EA	1.00	1.00	

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SYMBOL	PART NUMBER	DESCRIPTION	A	UW	00	01
R	66	130-5333-22	RES CHIP 33KEW2%	EA	1.00	1.00
R	72	130-5823-23	RES CHIP 82KEW5%	EA	1.00	1.00
R	73	130-5103-23	RES CH 10K EW 5%	EA	1.00	1.00
R	74	130-5103-23	RES CH 10K EW 5%	EA	1.00	1.00
R	76	130-5101-23	RES CH 100 EW 5%	EA	.	1.00
R	78	130-5104-23	RES CH 100K EW 5%	EA	1.00	1.00
R	79	130-5104-23	RES CH 100K EW 5%	EA	1.00	1.00
R	80	130-5104-23	RES CH 100K EW 5%	EA	1.00	1.00
R	81	130-5472-23	RES CHIP 4.7KEW5%	EA	.	1.00
R	82	130-5103-23	RES CH 10K EW 5%	EA	1.00	1.00
R	83	130-5752-23	RES CHIP 7.5KEW5%	EA	1.00	1.00
R	85	130-5154-23	RES CHIP 150K5%EW	EA	1.00	1.00
R	86	130-5683-23	RES CHIP 68K EW 5%	EA	1.00	1.00
R	87	130-5683-23	RES CHIP 68K EW 5%	EA	1.00	1.00
R	88	130-5222-23	RES CHIP 2.2KEW5%	EA	1.00	1.00
R	89	130-5473-23	RES CHIP 47KEW5%	EA	1.00	1.00
R	91	130-5103-23	RES CH 10K EW 5%	EA	1.00	1.00
R	92	130-5104-23	RES CH 100K EW 5%	EA	1.00	1.00
R	93	130-5562-23	RES CHIP 5.6KEW5%	EA	1.00	1.00
R	94	130-5104-23	RES CH 100K EW 5%	EA	1.00	1.00
R	96	130-5103-23	RES CH 10K EW 5%	EA	1.00	1.00
R	97	130-5274-23	RES CHIP 270KEW5%	EA	1.00	1.00
R	98	130-5244-23	RES CHIP 240K5%EW	EA	1.00	1.00
R	99	130-5244-23	RES CHIP 240K5%EW	EA	1.00	1.00
R	100	133-0141-05	RES VA 500 20%	EA	1.00	1.00
R	101	130-5102-23	RES CH 1K EW 5%	EA	1.00	1.00
R	102	130-5103-23	RES CH 10K EW 5%	EA	1.00	1.00
R	103	130-5104-23	RES CH 100K EW 5%	EA	1.00	1.00
R	104	130-5104-23	RES CH 100K EW 5%	EA	1.00	1.00
R	105	130-5104-23	RES CH 100K EW 5%	EA	1.00	1.00
R	106	130-5103-23	RES CH 10K EW 5%	EA	1.00	1.00
R	107	130-5103-23	RES CH 10K EW 5%	EA	1.00	1.00
R	108	130-5753-23	RES CHIP 75KEW 5%	EA	1.00	1.00
R	109	130-5913-23	RES CHIP 91KEW5%	EA	1.00	1.00
REF	1	300-6877-00	SYSTEM BD ASSY	RF	X.	X.
Y	1	044-0150-00	XTAL 3.994375MHZ	EA	1.00	1.00

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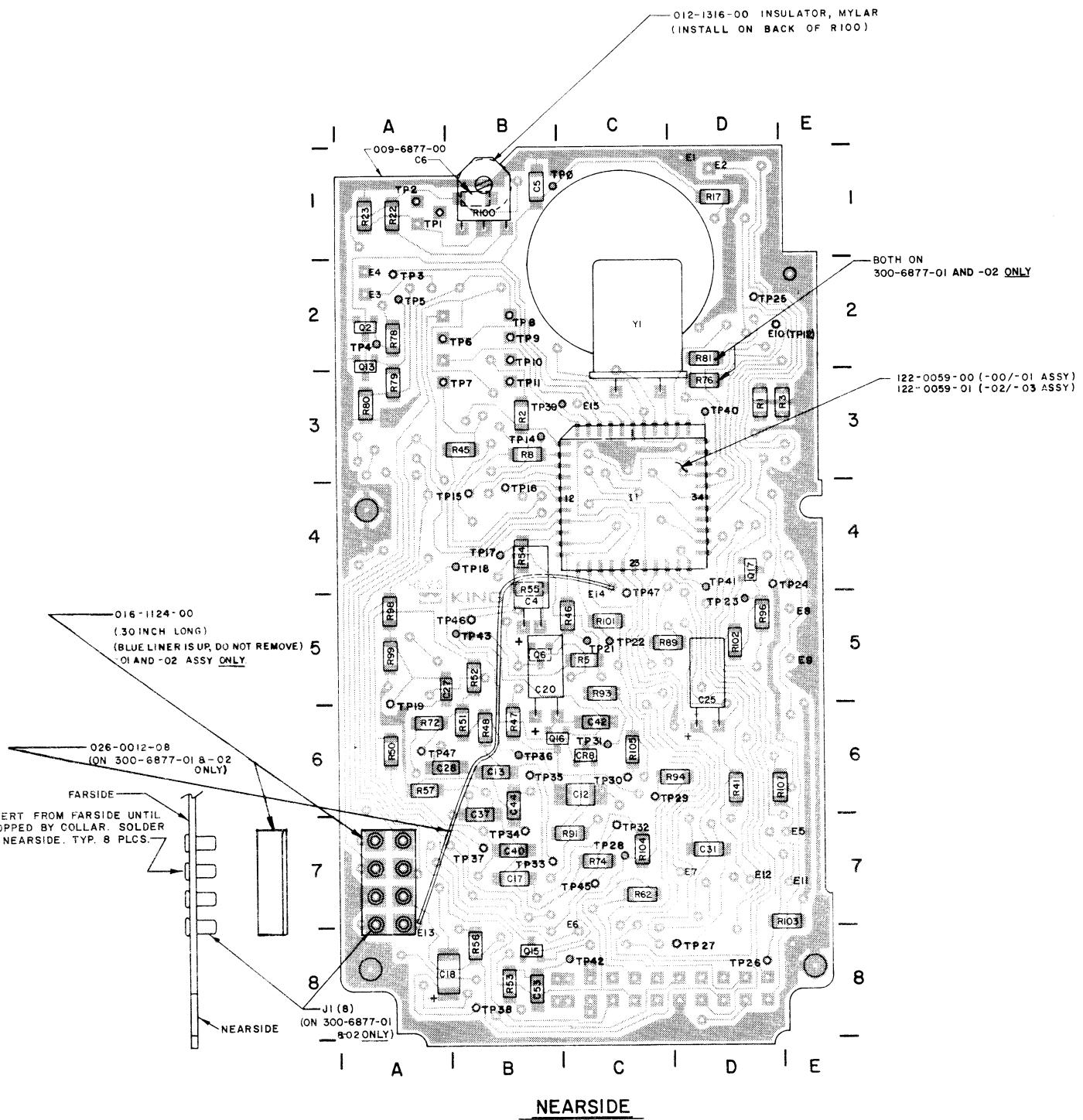
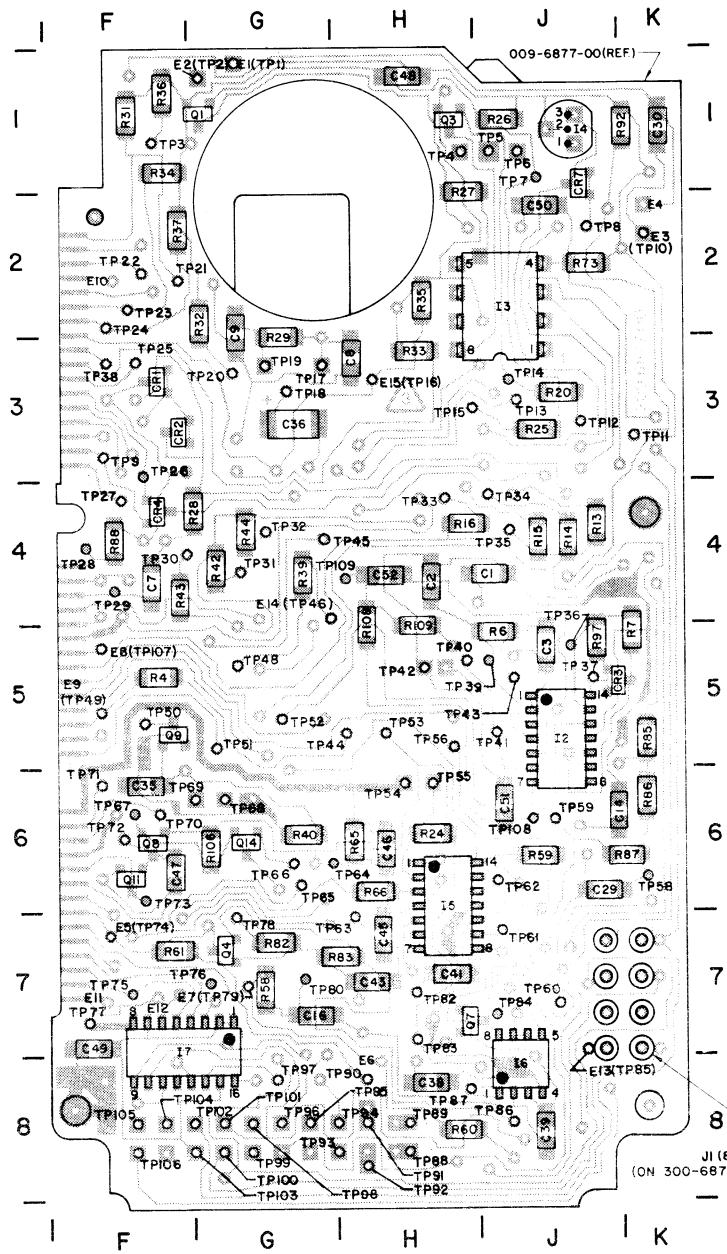


FIGURE 6-16 SYSTEM BOARD ASSEMBLY  
(Dwg No 300-6877-00 Rev 7)



FARSIDE

## NOTES:

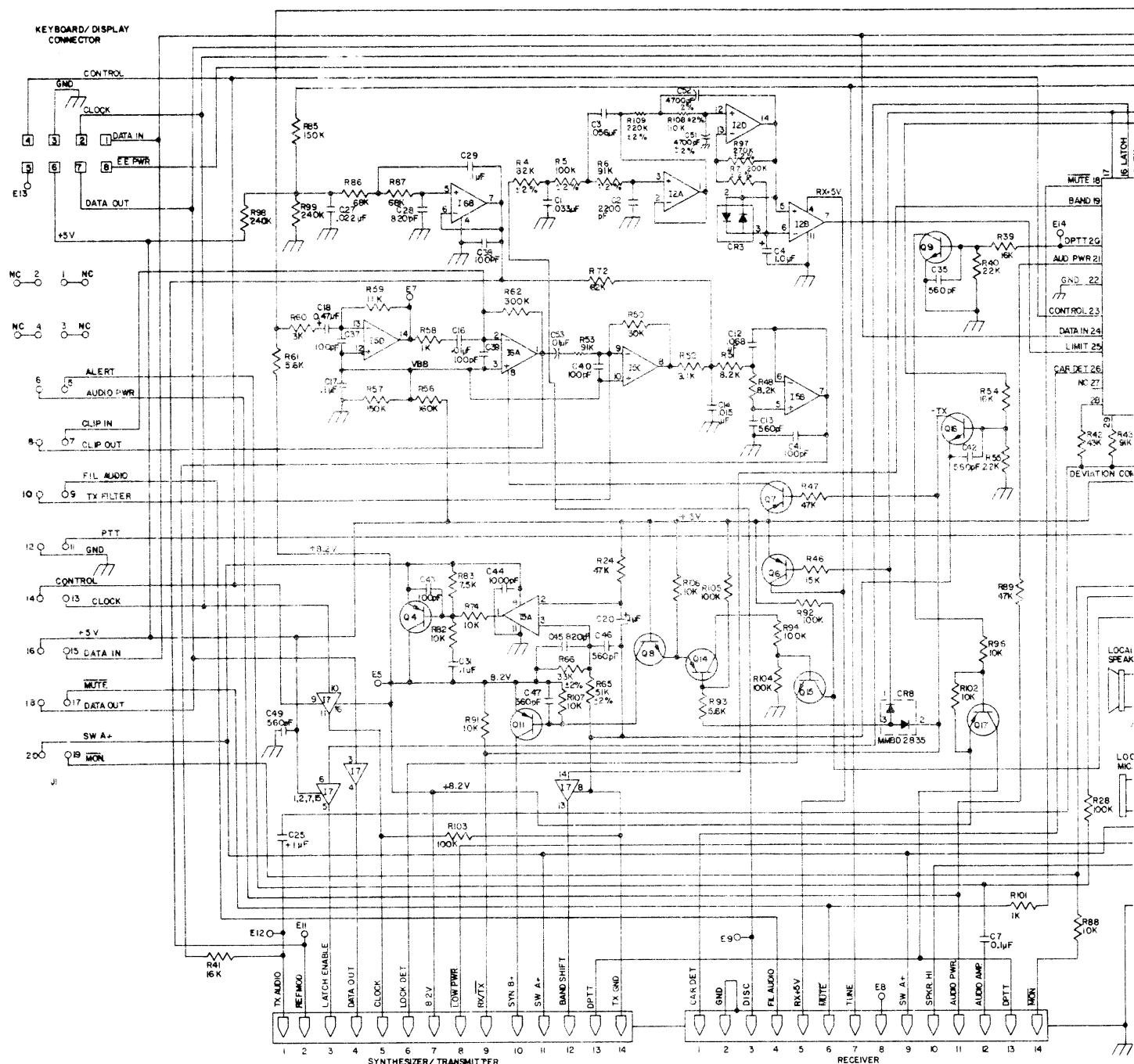
- I. ALL PARTS USED ON THE 300-6877-00 THRU -03 ASSY'S WITH THE FOLLOWING EXCEPTIONS:

  - A. ON -00 AND -01 ASSY'S ONLY -  
    I22-0059-00
  - B. ON -02 AND -03 ASSY'S ONLY -  
    I22-0059-01
  - C. ON -01 AND -02 ASSY'S ONLY -  
    J1 (8 PLCS.)  
    R81  
    R76  
    026-0012-08  
    016-II24-00

2. ADD 200 TO ALL TEST POINTS (TP) NUMBERS ON NEARSIDE ONLY.

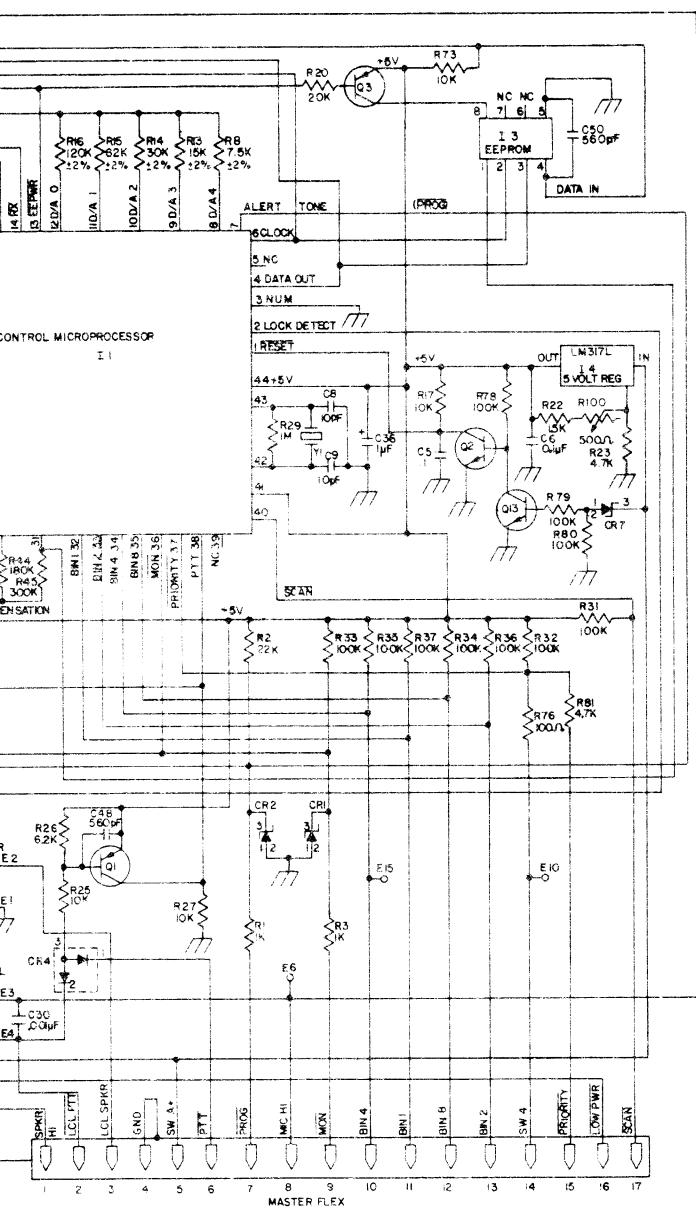
3. 300-6877-00 AND -03 ASSY'S GO IN 2 CHANNEL RADIOS.  
    300-6877-01 AND -02 ASSY'S GO IN 4 CHANNEL RADIOS.

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**FIGURE 6-17 SYSTEM BOARD SCHEMATIC  
(Dwg No 002-6877-00 Rev 7)**

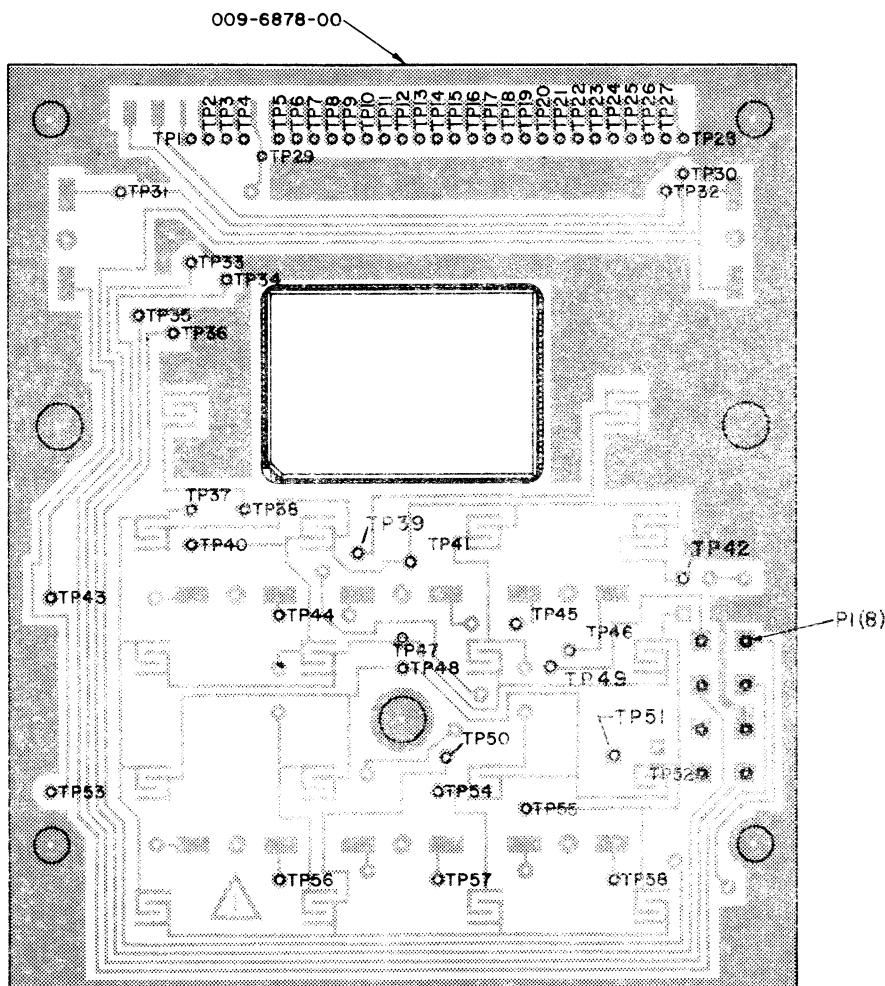
# SYSTEM BRD



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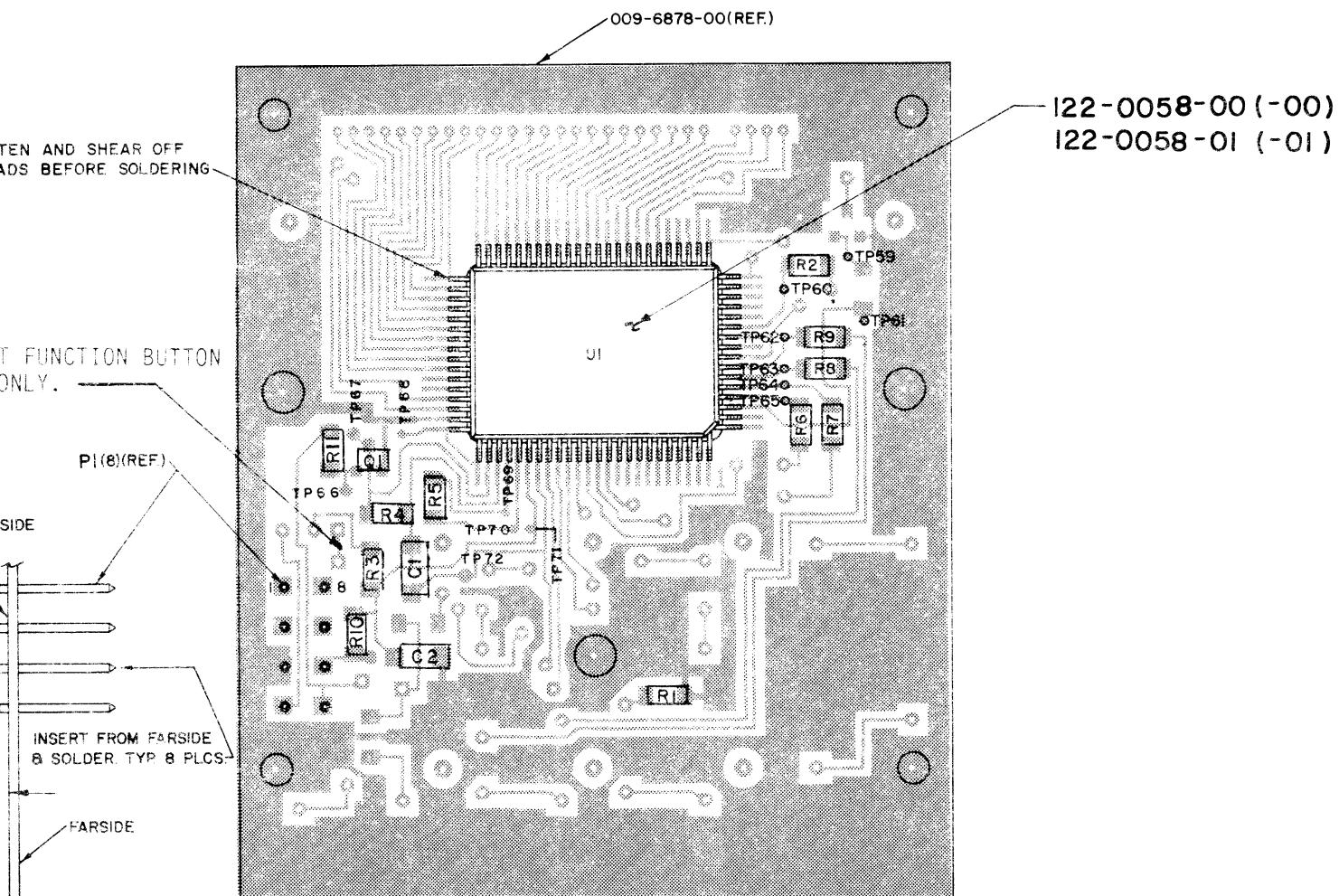
200-6878-00	REV 7 KEYBOARD/DISPLAY BD	LPH0000						
200-6878-01	REV 1 KYBD/DISPLAY BD TONE	LPH 514						
200-6878-99	REV 1 KEYBOARD/DISPLAY BD	LPH0000						
SYMBOL	PART NUMBER	DESCRIPTION	A	U	M	00	01	99
	009-6878-00	PC BD KYBD/DSPLY	EA	.	.	1.00		
	030-2174-04	PIN CONTACT	EA	.	.	8.00		
	200-6878-99	KYBD/DSPLY BD	A	EA	1.00	1.00	.	
C	1	106-4104-78	CAP CH 100KZ5U/50V	EA	.	.	1.00	
C	2	106-4104-78	CAP CH 100KZ5U/50V	EA	.	.	1.00	
I	1	122-0058-00	LWR/KYBD/DSPL/PROC	A	EA	1.00	.	
I	1	122-0058-01	LWR/KYBD/DSPL/PROC	A	EA	.	1.00	
Q	1	007-0530-00	XSTR NPN MMET3903	EA	.	.	1.00	
R	1	130-5103-23	RES CH 10K EW 5%	EA	.	.	1.00	
R	2	130-5202-23	RES CHIP 2K5%EW	EA	.	.	1.00	
R	3	130-5103-23	RES CH 10K EW 5%	EA	.	.	1.00	
R	4	130-5103-23	RES CH 10K EW 5%	EA	.	.	1.00	
R	5	130-5104-23	RES CH 100K EW 5%	EA	.	.	1.00	
R	6	130-5202-23	RES CHIP 2K5%EW	EA	.	.	1.00	
R	7	130-5202-23	RES CHIP 2K5%EW	EA	.	.	1.00	
R	8	130-5202-23	RES CHIP 2K5%EW	EA	.	.	1.00	
R	9	130-5202-23	RES CHIP 2K5%EW	EA	.	.	1.00	
R	10	130-5101-23	RES CH 100 EW 5%	EA	.	.	1.00	
R	11	130-5203-23	RES CHIP 20K EW 5%	EA	.	.	1.00	
REF	1	300-6878-00	KYBD/DSPLY BD ASSY	RF	X.	.	.	

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VHF FM COMM TRANSCEIVER



NEAR SIDE

FIGURE 6-18 KEYBOARD/DISPLAY BOARD ASSEMBLY  
(Dwg No 300-6878-00 Rev 4)

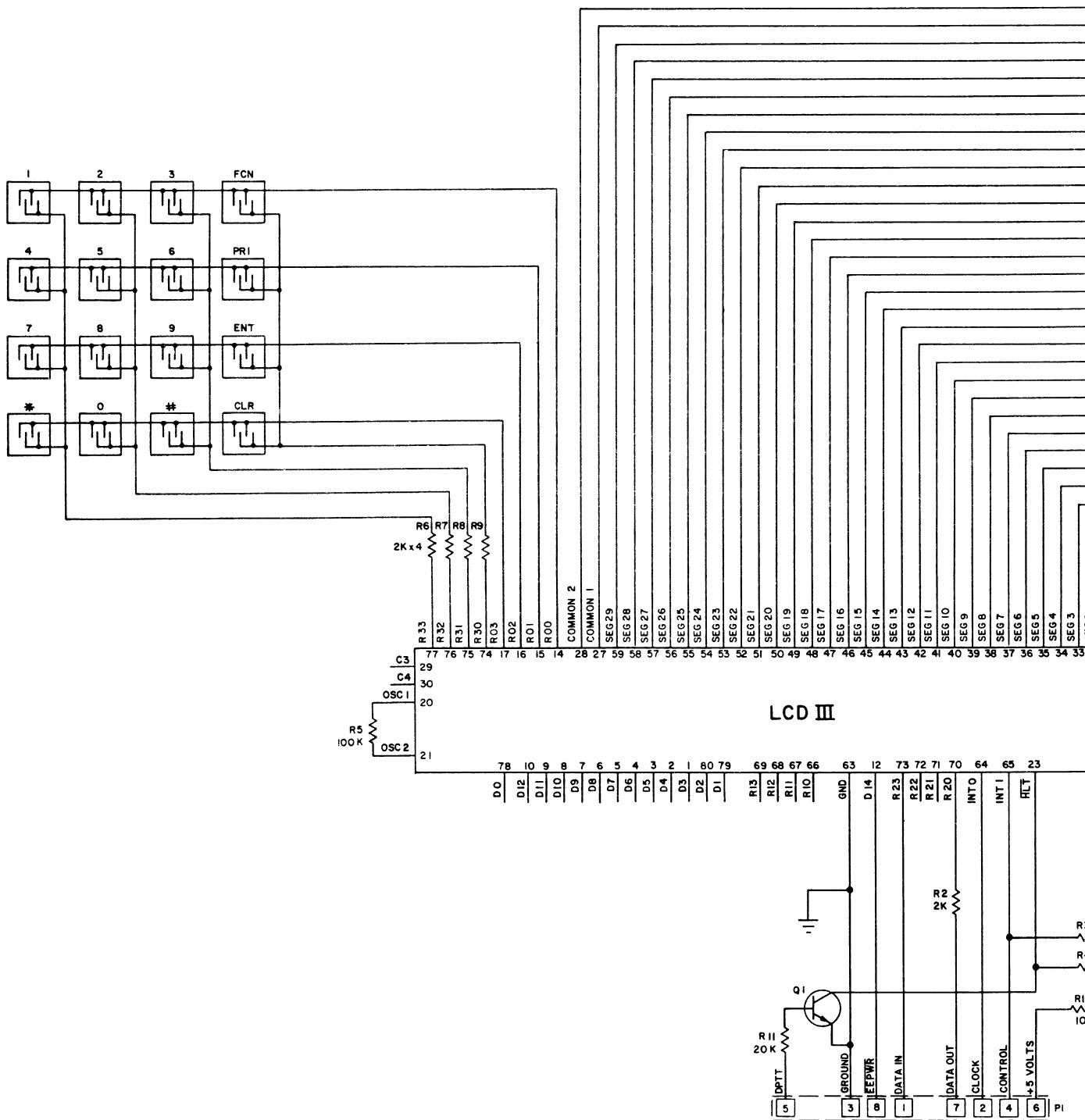


FARSIDE

**NOTE:**

- I. ALL PARTS ARE COMMON TO -00 AND -01 ASSYS  
UNLESS OTHERWISE SPECIFIED.

**KING**  
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**VHF FM COMM TRANSCEIVER**



**FIGURE 6-19 KEYBOARD/DISPLAY BOARD SCHEMATIC  
(Dwg No 002-6878-00 Rev 2)**

Rev 1 2/86  
MMLPH

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## KEYBOARD/DISPLAY BRD

