

5.5.4 RECEIVER

A. FRONT END TUNING

1. The radio should be programmed with 148 and 174 MHz. Select 174 MHz. Open the squelch. Adjust the volume control to mid range.
2. Set the RF signal generator to 174 MHz. Adjust modulation for a 1000 Hz tone with 3000 Hz deviation.
3. Connect the RF generator to the RF input. Connect a distortion analyzer to the speaker audio output.
4. Increase the RF level until 6 to 12 dB SINAD is observed on the distortion analyzer.
5. Adjust L2, L3, L4, and L5 alternately to obtain the best SINAD reading while reducing the RF input level to maintain 6 to 12 dB SINAD.
6. Adjust the front end slope variable using a computer, EPH RX/TX Tuning software, and a programming cable.

NOTE: Because of RF interference from the computer, the radio may not meet the sensitivity specifications until disconnected and removed from the immediate vicinity of the computer.

7. Adjust T1 and T2 for the lowest audio distortion with an RF input level of 1 mVRMS. Note that T3 will have little affect on the tuning. T1 and T2 exhibit two peaks as the core is rotated into the coil. Preset the cores to the top of the coil before making the adjustment. When adjusted for lowest distortion, the top of the core should be in the upper half of the coil. This will prevent coil breakage. Note also that if T3 is adjusted to the bottom then loading of the LO may occur which can affect output power or synthesizer locking at some frequencies.

B. SQUELCH ADJUSTMENT

1. Set the radio to a channel programmed with no guard enabled.
2. Open the squelch. Adjust volume control to a medium position.
3. Connect the RF generator to the RF input. Connect a distortion analyzer to the speaker audio output.
4. Increase the RF level until 8 dB SINAD is observed on the distortion analyzer.
5. Set the radio squelch knob to the Code Guard position (on the detent).
6. Turn R28 on the RX/TX board clockwise until the audio turns off.
7. Turn R28 slowly counterclockwise until the audio turns on.

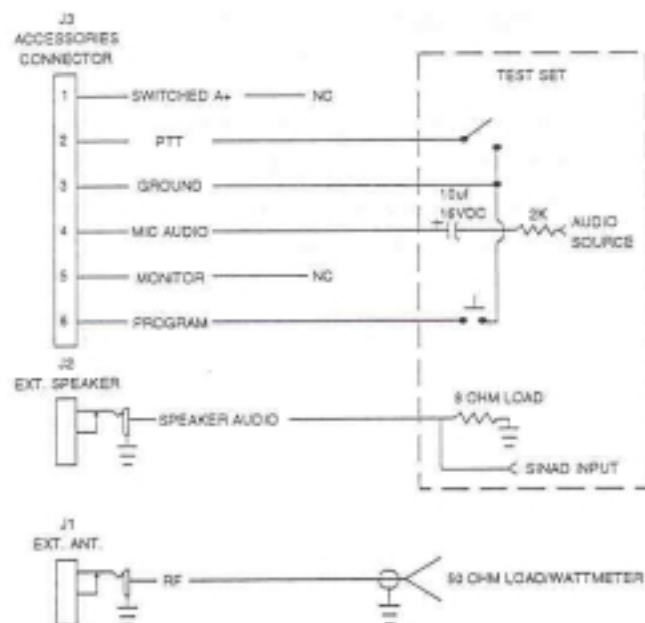
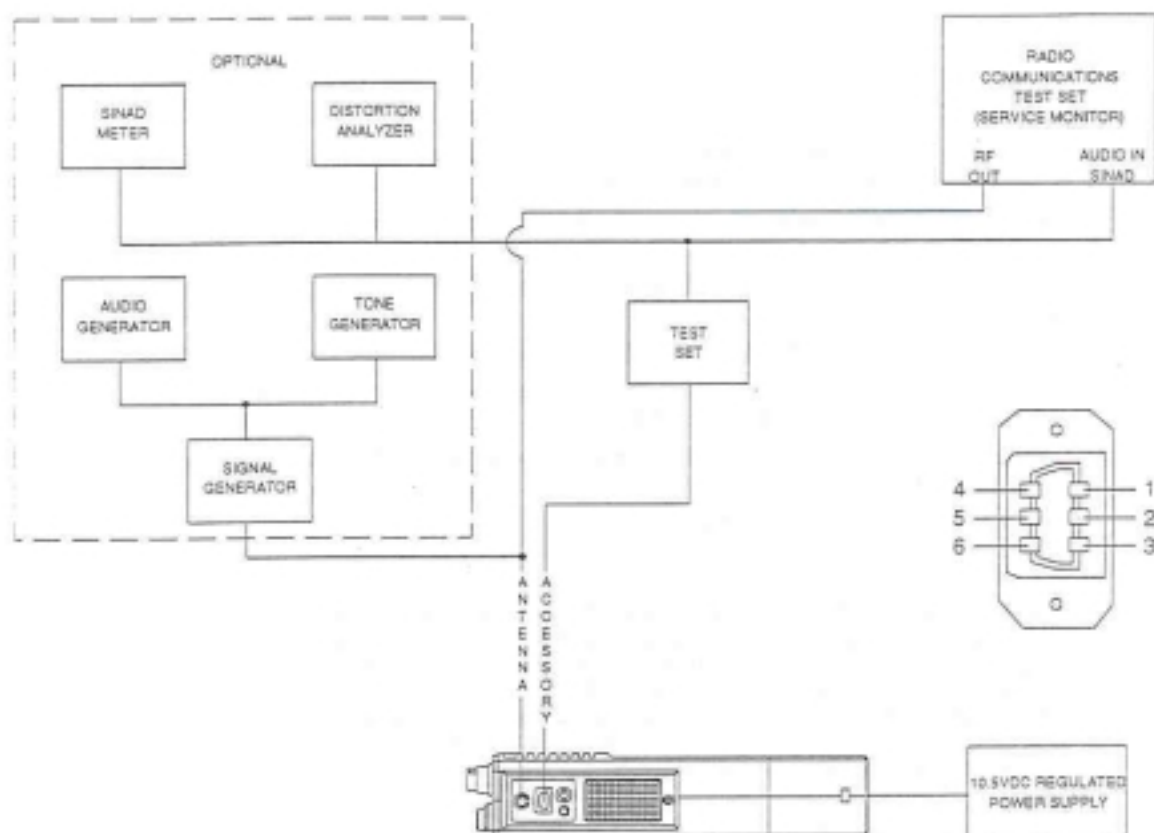


FIGURE 5-3 RECEIVER TEST SET-UP

5.6 TROUBLESHOOTING

Radio will not transmit (Red LED does not light)	Invalid TX frequency programmed Weak battery VCO TX bandshift circuit failing Open PTT path to microprocessor Broken PTT switch
Radio will not turn on	Exhausted battery Open fuse Broken on/off switch Failing 5 volt regulator Improper information in EEPROM
Radio will not unmute	Invalid RX frequency programmed Internal squelch trimmer adjusted improperly CARRIER PRESENT signal to microprocessor shorted or open Audio amplifier failing DISC AUDIO path open or shorted RX AUDIO path open or shorted
Transmit power below specification	Software power adjustment incorrect HI/LO switch shorted RF side connector jack failing Harmonic filter failing Power amplifier failing Power control circuit failing Antenna switch failing VCO buffer failing
Code Guard signal not being transmitted	No Code Guard signal programmed on transmit channel Code Guard buffer (I4, I14, RN1) failing
Poor battery life	Transmitter power adjusted too high Battery saver not programmed Audio amplifier not switching off Weak battery
Will not enter keyboard programming mode	Improper password being entered Open or shorted -PROGRAM signal Keyboard / Display unit failing Invalid hardware data in the EEPROM
Radio unmutes with no carrier present when in preset condition	Squelch trimmer adjusted improperly Open or shorted CARRIER PRESENT signal
Radio does not unmute when proper Code Guard signal is present	Tone filter on options board failing Code Guard clipper failing
Sensitivity does not meet specification	Front end filters misaligned or failing Software front end tuning adjusted improperly RF amplifier failing IF filter or amplifier failing VCO buffer failing
Receiver distortion out of specification	IF transformers mistuned (Adjustable models only) Audio amplifier failing Receiver audio filter on options board failing

Low or no transmitter audio modulation	TX audio trimmer misadjusted Microphone failing TX audio amplifier/filter chain on options board failing VCO modulation circuit failing
TX modulation is too high	TX audio trimmer misadjusted Deviation compensation network (R42 thru R45 on systems board) failing VCO modulation circuit failing
Audio output power does not meet specification	Squelch trimmer on RX/TX board adjusted improperly Audio power amplifier failing Audio filter on options board failing FM demodulator IC failing
Transmitted digital Code Guard will not unsquelch other radios	DCG not programmed or not set for proper polarity Reference modulation trimmer adjusted improperly Reference modulation circuit (CR1 and CR2) failing
Radio always gives low battery indication (flashing LED and "Lobat" message displayed)	Failing or shorted 8.2 volt regulator
Radio will not function properly at band edges	VCO tuning voltage (T1) misadjusted Shorted or open HI BAND signal to synthesizer loop amplifier
Transmitter frequency out of 5 ppm specification	XTAL frequency misadjusted Failing temperature compensation network on systems board Failing XTAL
ANI or DTMF tones not being transmitted	Radio not programmed for ANI or DTMF Tone path to I9 from RN1 on systems board shorted or open
Transmitter modulation varying across frequency band	Failing compensation network (R42 through R45 on systems board)
Audio opening without receiving the programmed Code Guard	Monitor switch failing Monitor switch buffer (I5 on systems board) failing
Insufficient transmit range	Improper antenna for VHF frequencies Open antenna jack Failing antenna match circuit

SECTION VI ILLUSTRATED PARTS LIST

6.1 INTRODUCTION

This section helps you identify parts used in BENDIX/KING EPH Series portable VHF radios. It includes Bills Of Material (BOM) for all major assemblies arranged from Final Assembly down to individual part level. Each BOM is followed by the corresponding Assembly Drawing and Schematic Diagram.

Parts listed in the BOMs meet BENDIX/KING design specifications and are the recommended replacement parts.

6.2 BILLS OF MATERIAL

Bills of Material contain specific information on each part in the corresponding Assembly Drawing and Schematic Diagram. Sub-assemblies are listed by BOM number, helping you find the correct sub-assembly parts for each specific radio model.

BOM NUMBER

The Bill of Material Number, which is also the 12-digit Part Number for the assembly, appears at the top of the BOM. If the assembly is available in a variety of "flavors", the BOM Number for each flavor appears at the top of the BOM. Parts common to more than one flavor are often listed in a Common BOM, ending with -0099. The last four digits of each BOM Number appear above a flavor column at the right side of the BOM.

SYMBOL COLUMN

This column contains the Reference Designators of parts as labelled in the Assembly Drawing and Schematic Diagram. The Reference Designator consists of an abbreviation for type of component and a number assigned to that part (ITM 4, R 31, etc). Common Reference Designator abbreviations are listed below.

ASY	Assembly	MK	Microphone
B	Motor or Synchro	P	Plug
C	Capacitor	Q	Transistor
CJ	Circuit Jumper	R	Resistor
CR	Diode	REF	Reference
DS	Lamp	RN	Resistor Network
F	Fuse	RT	Thermistor
FL	Filter	S	Switch
I	Integrated Circuit	T	Transformer
ITM	Item	TP	Test Point
J	Jack	U	Resistor/Capacitor Network
L	Inductor	V	Photocell/Vacuum Tube
LS	Speaker	WG	Waveguide
M	Meter	Y	Crystal

PART NUMBER COLUMN

This column contains the individual Part Numbers used when ordering replacement parts. If the part is listed as an assembly (ASY), the BOM and drawings for that assembly follow after the current BOM and drawings.

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	MY	Mylar
ASSY	Assembly	PC	Polycarbonate
BIFLR	Bifilar	PF	Precision Film
BOM	Bill of Material	PP	Paper
CC	Carbon Composite	PS	Polystyrene
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	Electrode	SW	Switch
EW	Eighth Watt	TERM	Terminal
FC	Fixed Composition	TN	Tantalum
FERR	Ferrite	TST PT	Test Point
FLTR	Filter	TW	Tenth Watt
FT	Feedthru	VA	Variable
HV	High Voltage	WW	Wire Wound
HW	Half Watt	XFMR	Transformer
IC	Integrated Circuit	XSTR	Transistor
MC	Monolithic Ceramic	XTAL	Crystal

ASSEMBLY COLUMN

An "A" in this column indicates that the part is an assembly. If the P/N and description reads "200-0XXXX-0099 COMMON BOM" the parts for that assembly are included in the current BOM. The parts breakdown for an assembly with any other P/N will be found in the BOM with the same number. Those assemblies with BOMs and drawings included in this manual are indicated by "ASY" in the Symbol Column.

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	RF	For Reference Only
FT	Foot	IN	Inch
AR	As Required		

QUANTITY COLUMNS

These columns indicate the part quantities for each flavor of the assembly. The four-digit number above each column corresponds to the last four digits of a BOM Number at the top of the BOM. Parts common to more than one flavor are often listed in Common BOMs, ending with -0098 or -0099.

FINAL ASSEMBLY

062-00137-0000	EPH 502 0A													
062-00137-0001	EPH 514 0A													
062-00137-0002	EPH 514 1A													
062-00137-0003	EPH 542 1A													
062-00137-0004	EPH 599 1A													
062-00137-0005	EPH 599 1K													
062-00137-0006	EPH 599 SL													
062-00137-0007	EPH 514 2A													
062-00137-0008	EPH 514 CM													
062-00137-0009	EPH 514 2M													
SYMBOL	PART NUMBER	DESCRIPTION	A	UM	QUANTITY									
					0000	0001	0002	0003	0004	0005	0006	0007	0008	0009
	062-00137-0004	FINAL ASSY	A	EA	-	-	1.00	1.00	-	-	-	-	-	-
	062-00137-0011	FINAL ASSY	A	EA	-	-	-	-	-	-	-	1.00	-	-
	062-00137-0059	FINAL ASSY COMMON	A	EA	1.00	1.00	-	-	1.00	1.00	1.00	-	1.00	1.00
ASY 1	200-05042-0000	EPH R/T	A	EA	1.00	1.00	-	-	1.00	1.00	1.00	-	1.00	1.00
ASY 2	200-03477-0004	FT CVR W/O KYBD	A	EA	-	-	-	-	-	-	-	-	-	-
ASY 2	200-03477-0006	FRONT CVR	A	EA	1.00	1.00	-	-	-	-	-	-	1.00	-
ASY 2	200-03477-0007	FRONT CVR W/KBD	A	EA	-	-	-	-	-	-	-	-	-	-
ASY 2	200-03477-0009	EPH CVR W/ALPHA	A	EA	-	-	-	-	1.00	1.00	-	-	-	-
ASY 2	200-03477-0021	EPH METAL W/ALPHA	A	EA	-	-	-	-	-	-	1.00	-	-	-
ASY 3	200-05039-0000	SYS/FRAME ASSY	A	EA	1.00	-	-	-	-	-	-	-	-	1.00
ASY 3	200-05039-0001	SYS/FRAME ASSY	A	EA	-	1.00	-	-	-	-	-	-	-	-
ASY 3	200-05039-0004	SYS/FRAME ASSY	A	EA	-	-	-	-	1.00	-	1.00	-	-	-
ASY 3	200-05039-0005	SYS/FRM ASSY	A	EA	-	-	-	-	-	1.00	-	-	-	-
ASY 3	200-05039-0006	SYS/FRM ASSY	A	EA	-	-	-	-	-	-	-	-	1.00	-
ASY 3	200-05039-0007	SYS/FRM ASSY	A	EA	-	-	-	-	-	-	-	-	-	1.00
ITM 2	073-00609-0004	MOD COVER	A	EA	-	-	-	-	-	-	-	-	1.00	1.00
ITM 2	088-02078-0010	BACK CVR METAL 2W	A	EA	1.00	1.00	-	-	1.00	1.00	1.00	-	-	-
ITM 3	089-07070-0003	SCR BHC 4-40X3/16		EA	1.00	1.00	1.00	-	-	1.00	1.00	1.00	-	1.00
1.00														
ITM 8	088-02089-0000	PLATE	A	EA	1.00	1.00	-	-	1.00	1.00	1.00	-	1.00	1.00
ITM 10	089-07074-0006	SCR FHP M2 5X5.0	A	EA	2.00	2.00	-	-	2.00	2.00	1.00	-	2.00	1.00
ITM 15	016-01013-0000	VAC GREASE DC 976		AR	-	-	-	-	-	-	-	-	1.00	1.00
ITM 16	187-01331-0000	TEFLON CORD GASKET		IN	-	-	-	-	-	-	-	-	7.00	7.00
ITM 17	091-00187-0001	WASHER SHOULDER		EA	-	-	-	-	-	-	-	-	4.00	4.00
ITM 18	187-01333-0000	HEAT SINK GASKET		EA	-	-	-	-	-	-	-	-	1.00	1.00
ITM 19	195-00137-0000	SFTWR OPTIONS	A	EA	-	-	-	-	-	1.00	-	-	-	-

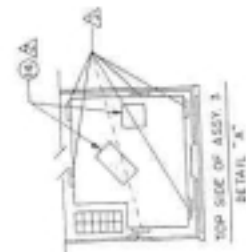
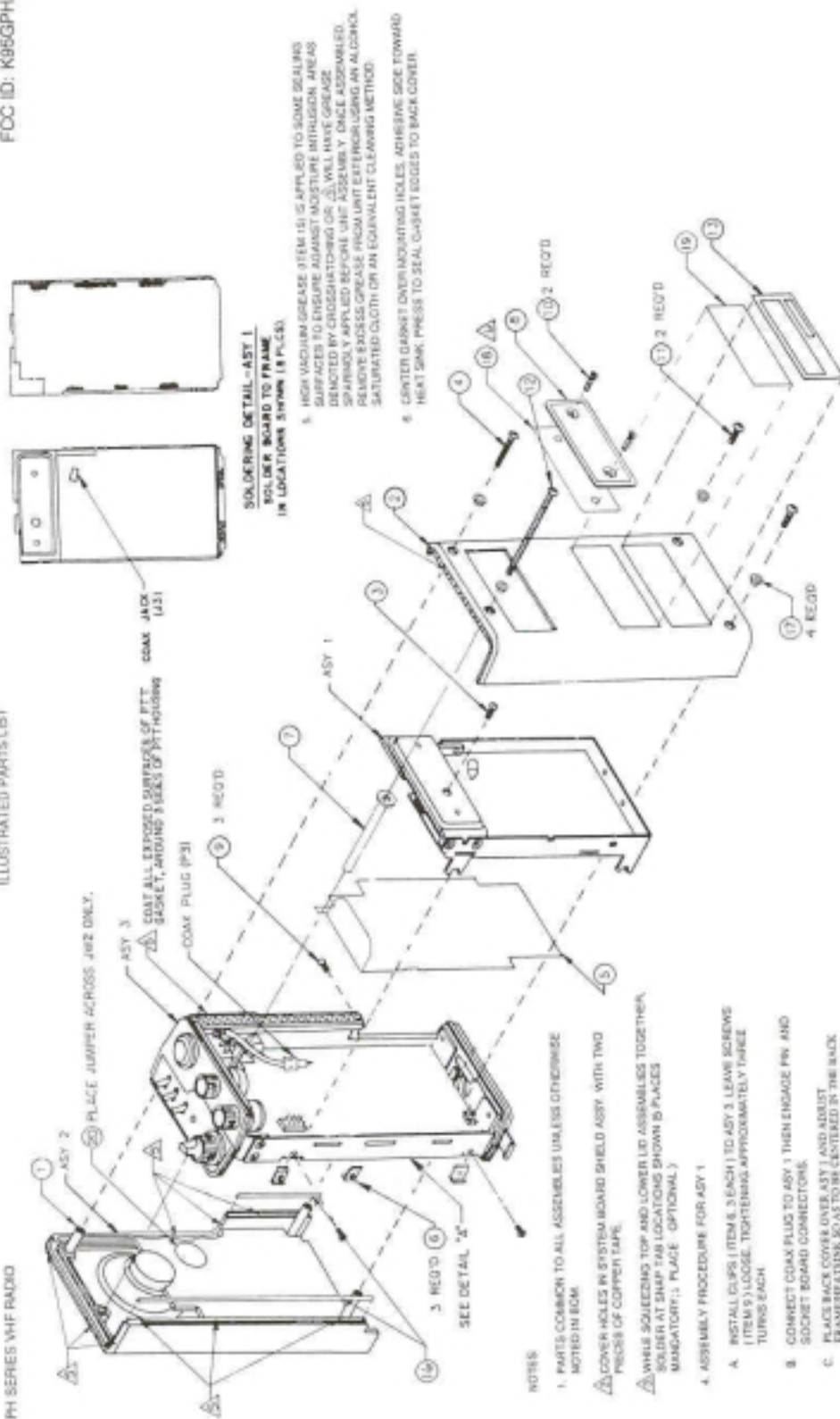
FINAL ASSEMBLY

062-00137-0010 EPH 599 SM
 062-00137-0011 EPH 599 2A
 062-00137-0012 EPH 599 2D
 062-00137-0013 EPH 599 DM
 062-00137-0014 EPH 514 1M
 062-00137-0015 EPH 599 1M
 062-00137-0020 EPH 214 2A
 062-00137-0099 COMMON BOM

SYMBOL	PART NUMBER	DESCRIPTION	A	UM	QUANTITY							
					0010	0011	0012	0013	0014	0015	0020	0099
	005-01203-0000	EPH OWNERS MANUAL	A	EA	-	-	-	-	-	-	-	1.00
	062-00137-0015	RNL ASSY EPH 5991M	A	EA	-	-	-	-	1.00	-	-	-
	062-00137-0099	FINAL ASSY COMMON	A	EA	1.00	1.00	1.00	1.00	-	1.00	1.00	-
ASY 1	200-06042-0000	EPH R/T	A	EA	1.00	1.00	-	-	-	1.00	-	-
ASY 1	200-06042-0001	EPH R/T DES	A	EA	-	-	-	-	-	-	1.00	-
ASY 1	200-06042-0050	EPH R/T DES	A	EA	-	-	1.00	1.00	-	-	-	-
ASY 2	200-03477-0005	FRT CVR WKYBD	A	EA	-	-	-	-	-	1.00	-	-
ASY 2	200-03477-0008	EPH CVR WIALPHA	A	EA	-	-	-	-	-	-	1.00	-
ASY 2	200-03477-0010	A-N E STD OPT	A	EA	-	1.00	-	-	-	-	-	-
ASY 2	200-03477-0022	EPH METAL WIALPHA	A	EA	1.00	-	-	-	-	-	-	-
ASY 2	200-03477-0023	NM E DES	A	EA	-	-	1.00	-	-	-	-	-
ASY 2	200-03477-0024	NM E MTL DES	A	EA	-	-	-	1.00	-	-	-	-
ASY 3	200-06039-0001	SYS/FRAME ASSY	A	EA	-	1.00	-	-	-	-	1.00	-
ASY 3	200-06039-0004	SYS/FRAME ASSY	A	EA	-	-	-	-	-	1.00	-	-
ASY 3	200-06039-0008	SYS/FRM ASSY	A	EA	1.00	-	-	-	-	-	-	-
ASY 3	200-06039-0010	SYS FRM DES MTL	A	EA	-	-	1.00	1.00	-	-	-	-
ITM 1	075-01440-0000	STANDOFF 550		EA	-	-	-	-	-	-	-	1.00
ITM 2	073-00609-0004	MOD COVER	A	EA	1.00	-	-	1.00	-	1.00	-	-
ITM 2	085-02078-0010	BACK CVR METAL 2W	A	EA	-	1.00	1.00	-	-	-	1.00	-
ITM 2	085-02078-0016	BACK CVR METAL 2W	A	EA	-	-	-	-	-	-	-	-
ITM 3	089-07070-0003	SCR BHC 4-40X3/16	A	EA	1.00	1.00	1.00	1.00	-	1.00	-	1.00
ITM 4	089-07071-0023	SCR PHP M2.5X23	A	EA	-	-	-	-	-	-	-	1.00
ITM 6	012-01494-0000	INSULATOR SYS BD	A	EA	-	-	-	-	-	-	-	3.00
ITM 6	047-08958-0001	CLIP 25W/FIN	A	EA	-	-	-	-	-	-	-	1.00
ITM 7	075-01466-0000	STANDOFF	A	EA	1.00	1.00	1.00	1.00	-	1.00	-	3.00
ITM 8	089-02089-0000	PLATE	A	EA	-	-	-	-	-	-	-	-
ITM 9	089-06004-0003	SCR PHP 2-56X3/16	A	EA	2.00	2.00	2.00	2.00	-	2.00	-	2.00
ITM 10	089-07074-0005	SCR PHP M2.5X5 0	A	EA	-	-	-	-	-	-	-	1.00
ITM 11	089-07071-0008	SCR PHP M2.5X8	A	EA	-	-	-	-	-	-	-	1.00
ITM 12	089-07071-0035	SCR PHP M2.5X35	A	EA	-	-	-	-	-	-	-	1.00
ITM 13	195-00018-0000	FCC DECAL OPTIONS	A	EA	-	-	-	-	-	-	-	0.75
ITM 14	016-01134-0003	COPPER TAPE	A	IN	-	-	-	-	-	-	-	-
ITM 15	016-01013-0000	VAC GREASE DC 976	AR	EA	1.00	-	-	1.00	-	1.00	-	-
ITM 16	187-01331-0000	TEFLON CORD GASKET	IN	EA	7.00	-	-	7.00	-	7.00	-	-
ITM 17	091-00187-0001	WASHER SHOULDER	EA	EA	4.00	-	-	4.00	-	4.00	-	-
ITM 18	187-01333-0000	HEAT SINK GASKET	EA	EA	1.00	-	-	1.00	-	1.00	-	-
REF 1	300-06038-0000	FINAL ASSY EPH	A	RF	-	-	-	-	-	-	-	X
REF 2	002-01004-0000	SCH INTERCONNECT	A	RF	-	-	-	-	-	-	-	X

ILLUSTRATED PARTS LIST

EPH SERIES VHF RADIO



NOTES

1. PARTS COMMON TO ALL ASSEMBLIES UNLESS OTHERWISE NOTED IN BOM.
2. COVER HOLES IN SYSTEM BOARD SHIELD ASSY WITH TWO PICES OF COPPER TAPE.
3. WHILE SQUEEZING TOP AND LOWER LIT ASSEMBLIES TOGETHER, SOLDER AT SHAP TAB LOCATIONS SHOWN IN PLACES MANDATORY (PLACE OPTIONAL).
4. ASSEMBLY PROCEDURE FOR ASSY 1
 - A. INSTALL CLIPS (ITEM 8, 3 EACH) TO ASSY 3. LEAVE SCREWS (ITEM 9) LOOSE, TIGHTENING APPROXIMATELY THREE TURNS EACH.
 - B. CONNECT COAX PLUG TO ASSY 1 THEN ENGAGE PIN AND SOCKET BOARD CONNECTIONS.
 - C. PLACE BACK COVER OVER ASSY 1 AND ADJUST FRAMERATE/CLK SO AS TO BE CENTERED IN THE BACK COVER OPENING.
 - D. INSTALL AND TIGHTEN CNF SCREEN (ITEM 1).
 - E. REMOVE ASSY 1 AND SOLDER BOARD TO FRAME SEVEN PLACES AS SHOWN IN SOLDERING DETAIL.
 - F. REPEAT STEP "E" ABOVE.
 - G. REPLACE BACK COVER (ITEM 2) OVER ASSY 1 AND HOLD FIRMLY IN PLACE. WHILE HOLDING COVER, TIGHTEN THE THREE SCREWS (ITEM 9) WHICH WERE INSTALLED IN STEP "A".
- NOTE: PROCEDURE STEPS "C" THROUGH "F" ABOVE ARE REQUIRED ONLY FOR INITIAL ASSEMBLY. FOR REPAIRS, THE BOARD IS REMOVED FROM THE FRAME IN SERVICE. THESE STEPS MAY BE ELIMINATED BY USE OF A PICTURE PROVIDED BY MANUFACTURING. STEPS "B" AND "C" ABOVE HOWEVER MUST ALWAYS BE FOLLOWED WHENEVER ASSY 1 IS REMOVED FROM THE FRAME.
- NOTE: PROCEDURE STEPS "C" THROUGH "F" ARE REQUIRED FOR SW UNITS ONLY.

REWORKING

FINAL ASSEMBLY
300-05038-0003

SYSTEMS FRAME ASSEMBLY

200-05039-0000	EPH 502 0A
200-05039-0001	EPH 214 2A, 514 0A
200-05039-0002	EPH 514 1A, 514 2A
200-05039-0003	EPH 542 1A
200-05039-0004	EPH 599 1A, 599 SL, 599 2A
200-05039-0005	EPH 599 1K
200-05039-0006	EPH 514 CM
200-05039-0007	EPH 514 2M
200-05039-0008	EPH 599 5M
200-05039-0009	EPH 499 2D, 499 DM

SYMBOL	PART NUMBER	DESCRIPTION	A	UM	QUANTITY									
					0000	0001	0002	0003	0004	0005	0006	0007	0008	0009
	200-05039-0009	COMMON BCM	A	EA	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ASY 1	200-08291-0000	EPH SYS 14 CH	A	EA	1.00	1.00	1.00				1.00	1.00		
ASY 1	200-08291-0001	EPH SYS 42 CH	A	EA				1.00						
ASY 1	200-08291-0002	EPH SYS 210 CH	A	EA					1.00	1.00			1.00	
ASY 1	200-08291-0050	EPH SYS DES	A	EA										1.00
ASY 2	200-06909-0001	CTRL BD 14CH WK	A	EA			1.00	1.00	1.00			1.00	1.00	
ASY 2	200-06909-0002	CTRL BD 2 CH 4W	A	EA	1.00									
ASY 2	200-06909-0004	CTRL BD EPH	A	EA		1.00					1.00			
ASY 2	200-06909-0005	CTRL BD TEXAS EPH	A	EA						1.00				
ASY 2	200-06909-0050	CTRL BD DES	A	EA										1.00
ASY 3	200-03475-0002	TOP FRAME ASSY	A	EA	1.00	1.00	1.00	1.00	1.00	1.00				1.00
ASY 3	200-03475-0003	TOP FRM ASSY	A	EA							1.00	1.00	1.00	
ITM 13	047-07465-0000	WSHR CHNL SLCT		EA	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
ITM 14	076-01461-0000	SPACER SWITCH		EA	1.00	2.00	3.00	3.00	3.00	1.00	2.00	3.00	3.00	3.00
ITM 15	076-01439-0000	NUT SLOT M5X0.50		EA	1.00	2.00	3.00	3.00	3.00	1.00	2.00	3.00	3.00	3.00
ITM 16	088-01311-0000	LED BUSHING		EA		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
ITM 17	067-03551-0009	TOP INLAY		EA	1.00									
ITM 17	067-03551-0011	INLAY SPECIAL		EA		1.00					1.00			
ITM 17	067-03551-0012	INLAY SPECIAL		EA			1.00	1.00	1.00			1.00	1.00	
ITM 17	067-03551-0016	TOP INLAY	A	EA										1.00
ITM 17	067-03551-0019	TOP INLAY	A	EA						1.00				
ITM 20	088-02052-0001	SWITCH BEZEL WIDCR	A	EA		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
ITM 20	088-02072-0001	SW BZL 2CH WIDCR	A	EA	1.00									
ITM 21	090-00492-0000	PIN DOW .047X.165	A	EA		2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00
ITM 22	076-01439-0002	NUT SLOT 1/4-40		EA	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
ITM 23	088-02085-0001	CHANNEL KNOB MLED	A	EA	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
ITM 31	088-01301-0000	ANTENNA BUSHING		EA	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ITM 32	088-01310-0000	ANTENNA NUT		EA	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ITM 35	088-02058-0000	SWITCH BOOT		EA		1.00	1.00	1.00				1.00	1.00	
ITM 35	088-02058-0001	SWITCH BOOT		EA		1.00				1.00	1.00			
ITM 35	088-02058-0003	SWITCH BOOT		EA	1.00									1.00
ITM 35	088-02058-0007	SWITCH BOOT		EA							1.00	1.00	1.00	
ITM 42	187-01321-0000	GSKT LTCH PLT HSG		EA							2.00	2.00	2.00	
ITM 43	012-01421-0000	MICROTHIN TAPE		IN							0.50	0.50	0.50	
ITM 44	035-08373-0002	SEALING TAPE TAN	A	IN							0.50	0.50	0.50	
ITM 45	016-01013-0000	VAC GREASE DC 978		AR							1.00	1.00	1.00	
ITM 46	088-03016-0000	SPACER	A	EA						1.00				
REF 1	300-05039-0010	MOD SYS FRAME ASSY	A	RF							X	X	X	

SYSTEMS FRAME ASSEMBLY

200-05039-0010
200-05039-0099EPH 500 2D, 500 OM
COMMON BCM

SYMBOL	PART NUMBER	DESCRIPTION	A	UM	QUANTITY
					0010 0099

		200-05039-0099	COMMON BCM	A	EA	1.00
ASY 1		200-08291-0050	EPH SYS DES	A	EA	1.00
ASY 2		200-06909-0050	CTRL BC DES	A	EA	1.00
ASY 3		200-03475-0003	TOP FRM ASSY	A	EA	1.00
C 1	111-00001-0015	CAP CR 330PF 50V		EA		1.00
C 2	109-00012-0001	CAP DC 4.7PF 100V		EA		1.00
F 1	028-00057-0009	FUSE 275 125V 4A		EA		1.00
TM 1	089-07394-0000	SCR PHP 2-56X3/32	A	EA		4.00
TM 2	047-06702-0000	BTRY LATCH PLATE		EA		1.00
TM 3	078-01446-0000	POSITIVE CONTACT		EA		1.00
TM 4	089-09335-0000	WSHR CURVED SPRING	A	EA		1.00
TM 5	010-00019-0093	TERM STOP WHT	A	EA		2.00
TM 6	088-01304-0010	LTCH PLT HSG MOD	A	EA		1.00
TM 7	047-06703-0000	LATCH SPRING	A	EA		1.00
TM 8	090-00019-0000	RING RTNR 125		EA		1.00
TM 9	028-00030-0000	WIRE CU24AWG TIN	A	IN		0.50
TM 10	047-07478-0003	LOWER FRAME	A	EA		1.00
TM 11	047-07479-0003	SIDE FRAME	A	EA		1.00
TM 12	089-06004-0002	SCR PHP 2-56X1/8		EA		3.00
TM 13	047-07465-0000	WSHR CHNL SLCT		EA	1.00	
TM 14	078-01461-0000	SPACER SWITCH		EA	3.00	
TM 15	075-01439-0000	NUT SLOT M5X0.50		EA	3.00	
TM 16	057-03551-0016	TOP INLAY	A	EA	1.00	
TM 17	075-01439-0001	NUT SLOT M6X0.70		EA		2.00
TM 18	088-02087-0001	KNOB MOLDED	A	EA		2.00
TM 19	088-02052-0001	SWITCH BEZEL WIDCR	A	EA	1.00	
TM 20	090-00492-0000	PIN COW .047X .165	A	EA	2.00	
TM 21	078-01439-0002	NUT SLOT 1/4-40		EA	1.00	
TM 22	088-02085-0001	CHANNEL KNOB MLED	A	EA	1.00	
TM 23	025-00001-0002	WIRE 25 RED		IN		6.50
TM 24	047-06518-0000	LOWER LID ASSY	A	EA		1.00
TM 25	047-06519-0000	TOP LID ASSY	A	EA		1.00
TM 26	089-05595-0006	SCR PHP 0-80X3/8	A	EA		1.00
TM 27	088-01301-0000	ANTENNA BUSHING		EA	1.00	
TM 28	088-01310-0000	ANTENNA NUT		EA	1.00	
TM 29	088-02087-0001	TOP PLT SPEC	A	EA		1.00
TM 30	187-01755-0000	O-RING	A	EA		1.00
TM 31	088-02058-0007	SWITCH BOOT		EA	1.00	
TM 32	089-06004-0003	SCR PHP 2-56X3/16		EA	1.00	
TM 33	018-01124-0005	FOAM TAPE		IN		0.50
TM 34	150-00104-0004	TBG HT SHRNK 3/32		IN		0.25
TM 35	015-01412-0000	LOCTITE 425	A	AR		1.00
TM 36	089-08335-0001	SPRING WASHER	A	EA		2.00
TM 37	089-08341-0000	WASHER FLAT	A	EA		2.00
TM 38	187-01321-0000	GSKT LTCH PLT HSG		EA	1.00	
TM 39	012-01421-0000	MICROTHIN TAPE		IN	2.00	
TM 40	035-08373-0002	SEALING TAPE TAN	A	IN	0.50	
TM 41	015-01013-0000	VAC GREASE DC 978		AR	1.00	
J 13	075-01438-0000	ADAPTER ANTENNA		EA		1.00
L 1	019-02401-0006	COIL 6T	A	EA		1.00
P 3	155-02655-0000	COAXIAL PLUG CBL	A	EA		1.00
REF 1	300-05039-0000	SYS FRAME ASSY	A	EA		1.00
REF 1	300-05039-0010	MOD SYS FRAME ASSY	A	RF	X	

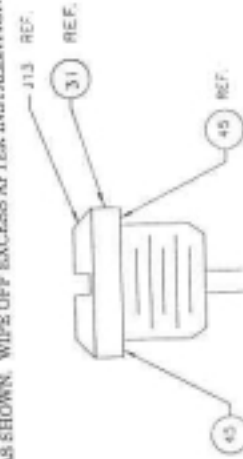
NOTES

1. UNDERCOAT BOTTOM SURFACE OF BEZEL (ITEM 20) WITH VACUUM GREASE (ITEM 45) BEFORE INSTALLATION INTO TOP PLATE RECESS. ALLOW GREASE TO FILL ALL STOP PIN HOLES. KNOB WILL CONCEAL EXCESS GREASE.



UNDERCOAT ENTIRE SURFACE
AS SHOWN

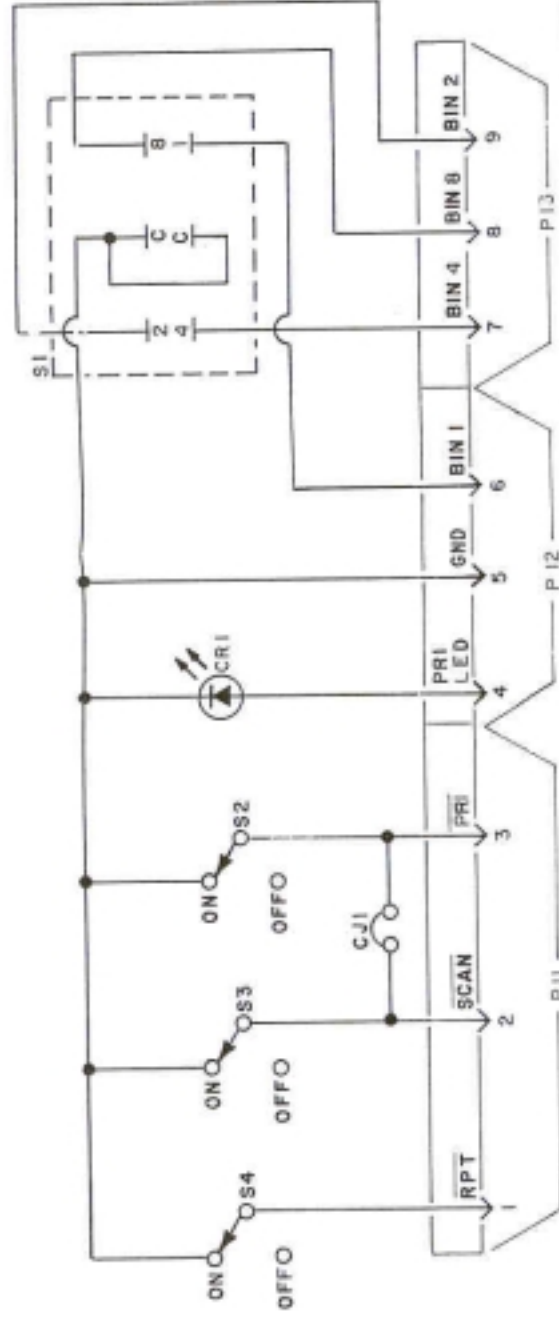
2. APPLY VACUUM GREASE (ITEM 45) TO THREADED BUSHING. FILL ALL THREADS BEFORE INSTALLING SPANNER NUT. INSTALLATION OF SPANNER NUT WILL FORCE VACUUM GREASE INTO RECESSES SEALING ALL POINTS OF MOISTURE ENTRY.
3. COAT FLANGE SURFACE WITH VACUUM GREASE (ITEM 45) AS SHOWN. WIPE OFF EXCESS AFTER INSTALLATION.



ALL O-RINGS, GROMMETS
THIS AND ONLY THIS, Wipe OFF
EXCESS AFTER ASSEMBLY.

ASSY 2 (REF.)
CHANNEL SELECT
SWITCH ONLY
SEE NOTE 2.

ASSY 1
SEE NOTE 2
(REF.)



PARTS REQUIRED

	-00	-01	-02	-03	-04
CJ1				X	
CR1		X		X	X
S1	X	X	X	X	X
S2		X		X	X
S3		X		X	X
S4		X	X	X	
P11	X	X	X	X	X
P12	X	X	X	X	X
P13		X		X	X

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
3000																
1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

S1 SWITCH POSITION