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SECTION 6 ALIGNMENT

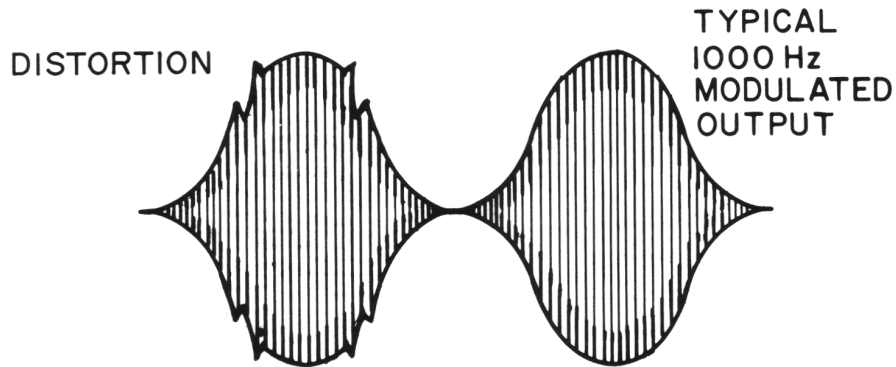
6.1 GENERAL

The transceivers are carefully aligned at the factory. Complete re-alignment is not recommended except by technicians familiar with transistorized transceivers, possessing a 2nd class FCC license and who have the necessary test equipment, then only if absolutely necessary. Replacement of defective components in any stage should require re-alignment of that particular stage only.

6.2 RECEIVER ALIGNMENT CHART

ALIGNMENT	CONNECTIONS AND SETTINGS	ADJUSTMENTS
455 kHz IF	Connect the test equipment as in Section 5.2.5. Set the output of the signal generator to about 10 dB signal - to - noise ratio. Inject modulated 455 kHz signal to base of Q6 through a 0.1 μ F capacitor.	Peak L7, L6, and L5 top and bottom cores for maximum on the AC-VTVM. NOTE: For alignment purposes consider the component side of the circuit board as the top.
4.3 MHz IF	Connect the test equipment as in Section 5.2.5. Inject modulated 4.3 MHz signal to the base of Q4 through a 0.1 μ F capacitor.	Tune top and bottom cores of L4 to the outside peak as viewed from the top and bottom, respectively, of the transceiver to obtain maximum output on the AC-VTVM.
1st Mixer	Connect the test equipment as in Section 5.2.5. Connect an RF probe to the emitter of Q4. Set channel selector to channel 11. Injection voltage on the emitter of Q3 should be 0.15 volt RF typical.	Adjust L3 to 1/8 of a turn beyond (into coil) the peak reading. Check for proper oscillator starting on the other existing channels.
RF Amplifier	Connect the test equipment as in Section 5.2.5. Set to channel 11 and set level to 1 microvolt modulated 30% at 1000 Hz. Increase volume control until 0.8 VAC on the AC-VTVM is obtained.	Peak L2 at point where the core is nearest the top of the coil form. For L1, turn the core to the second peak as viewed from the top of the transceiver. Detune L1 about 1 dB from peak on the maximum signal-to-noise side of resonance.

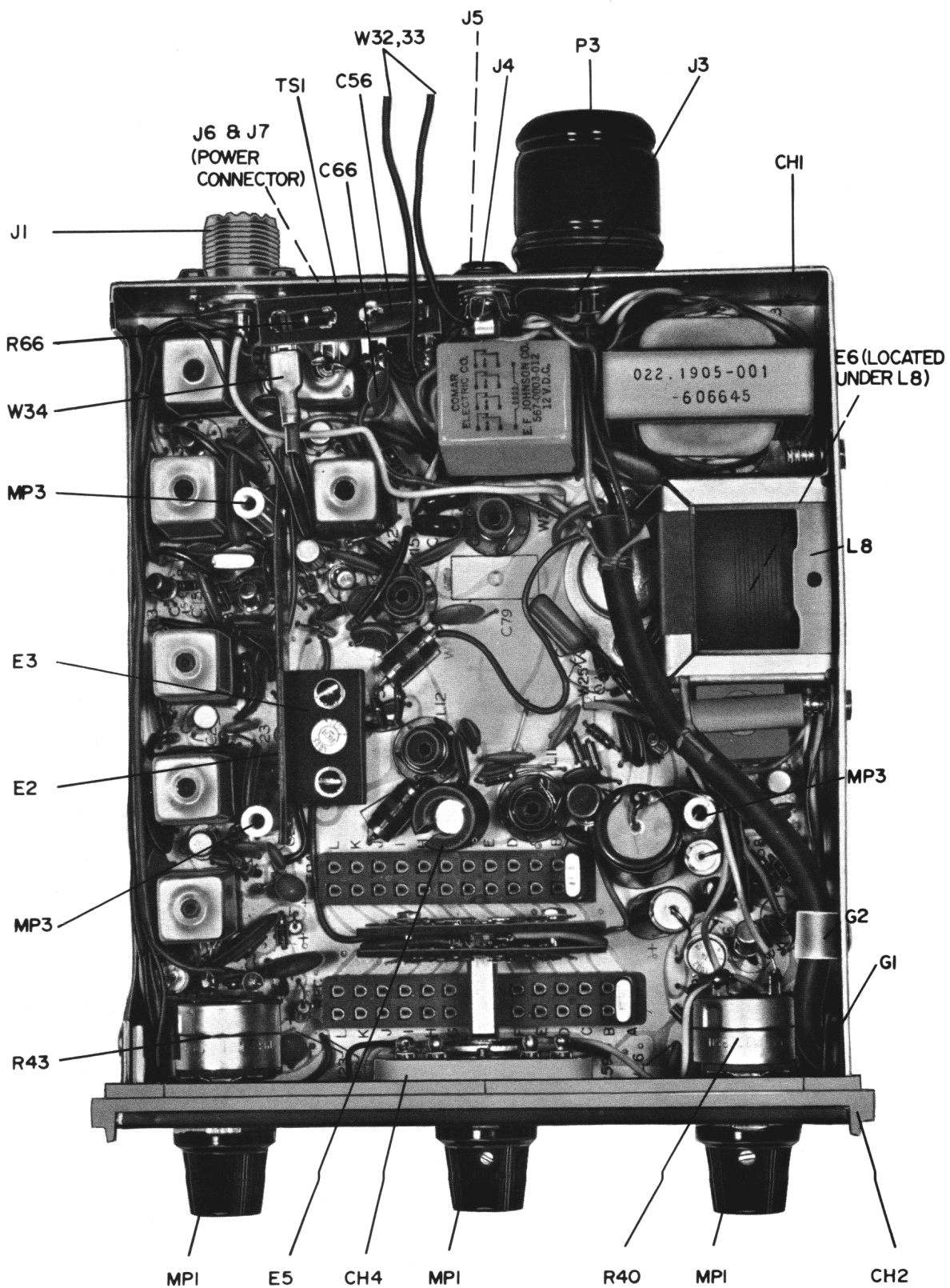
ALIGNMENT (cont'd)



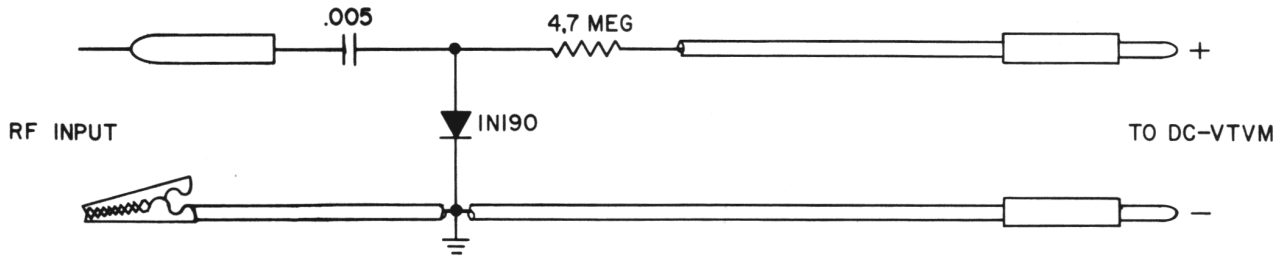
RF WAVEFORM DISTORTION
FIGURE 18

6.3 TRANSMITTER ALIGNMENT CHART

ALIGNMENT	CONNECTIONS AND SETTINGS	ADJUSTMENTS
Oscillator	Connect the circuit as in Section 5.3.2.	Adjust L11, if Q16 were replaced, to assure oscillator starting on all channels. Adjust L11 for absence of distortion (Figure 18). If distortion appears, refer to additional adjustments for notching at the end of this chart.
Driver-Power Amplifier	Connect the test equipment as in Section 5.3.2. Set audio generator to zero output.	Adjust C79 and L16 for peak power output. Adjust L12 for maximum power output. This is a broad adjustment, tune for center of maximum. Adjust L15, L16, and C79 for maximum power output while not exceeding 415 mA of Q18 collector current (See Figure 14 for DC Ammeter Connections). Adjust L15, L16, and C79 for maximum power output with minimum current -- see power curve, Figure 20.
Distortion Adjustment	Connect the test equipment as in Section 5.3.2. Set audio generator for 1000 Hz. Increase audio input level slowly to point of maximum modulation without clipping.	Readjust L11 and L12 to eliminate distortion. Check for symmetrical waveform and oscillator starting on all channels. NOTE: C79 has been deleted on late models to simplify tuning.



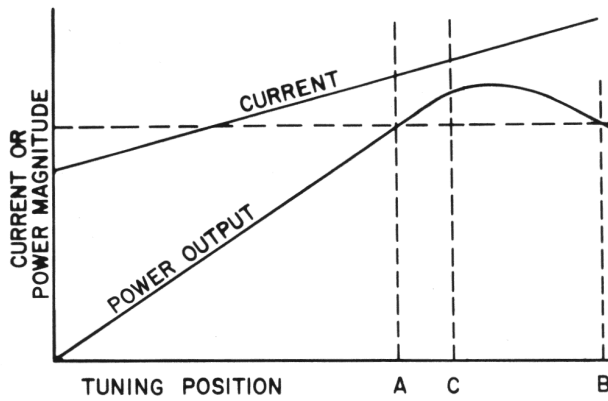
TOP VIEW SHOWING PARTS NOT LISTED
ON THE TRANSPARENCY
FIGURE 22



CONNECTIONS SHOULD BE MADE AS SHORT AS POSSIBLE TO AVOID STRAY CAPACITANCE WHICH WILL AFFECT THE FREQUENCY RESPONSE OF THE PROBE

THE MAXIMUM INPUT MUST NOT EXCEED 30 VOLTS OF RF. THE OUTPUT OF THE PROBE IS NEGATIVE DC AND THE VTVM FUNCTION SHOULD BE SET ACCORDINGLY

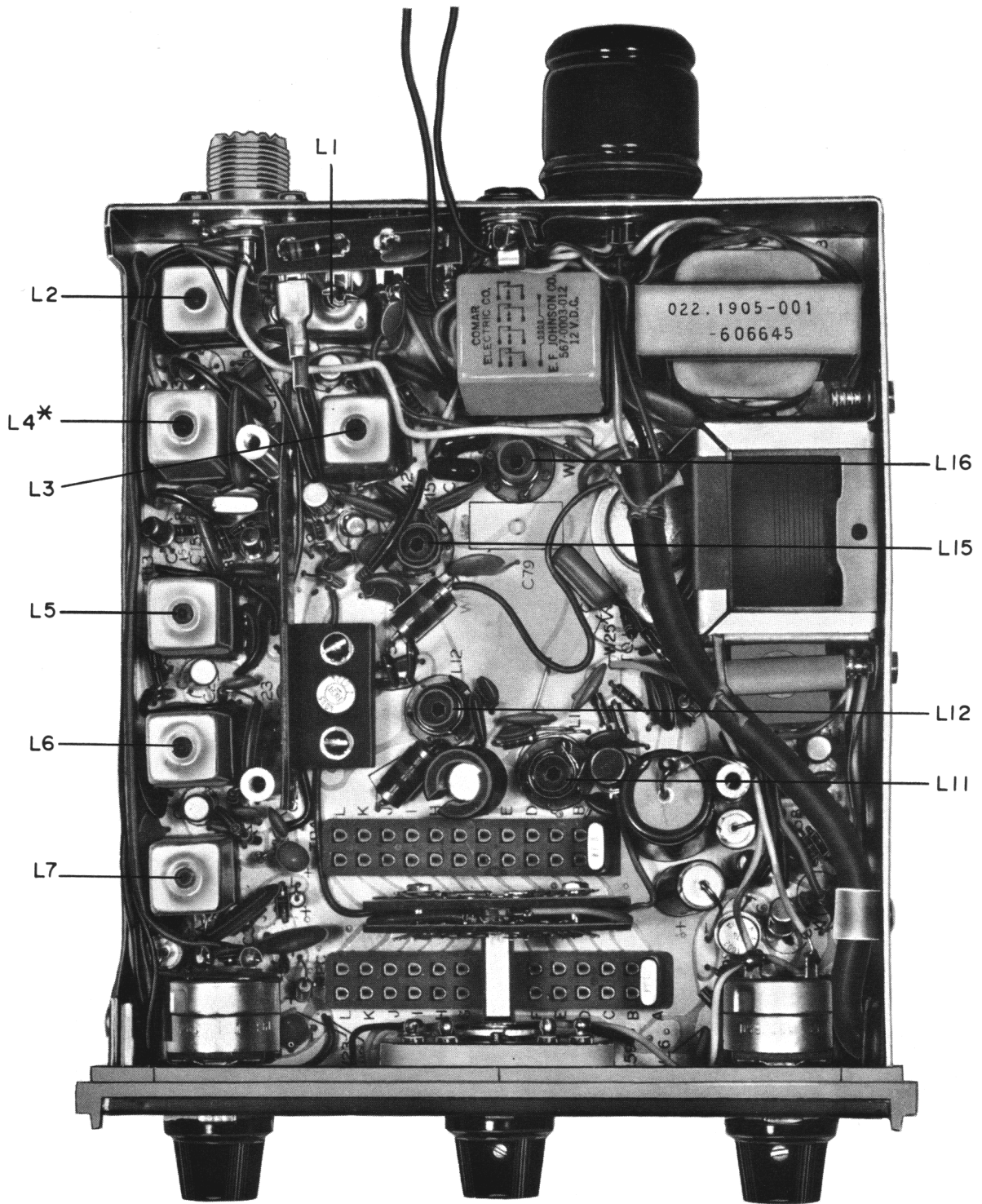
RF PROBE FOR DC-VTVM
FIGURE 19



TRANSMITTER
CURRENT-POWER CURVE
FIGURE 20

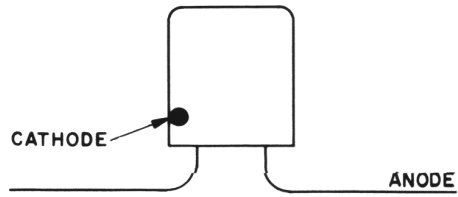
NOTE:

This illustration shows two points (A and B) which give the same power output. One point (B) requires more input current or input power than the other (A) for the same amount of output power. Therefore point A is more efficient than point B. Point C shows the place where maximum efficiency is obtained.



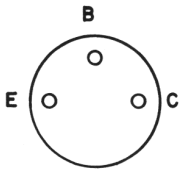
* REPLACED BY CRYSTAL FILTER
 IN MESSENGER 300, MODEL
 242-149

ALIGNMENT POINTS
 FIGURE 21

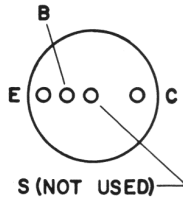


DIODES

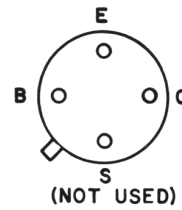
4006
4001
4011
1002
1003
1009
3010



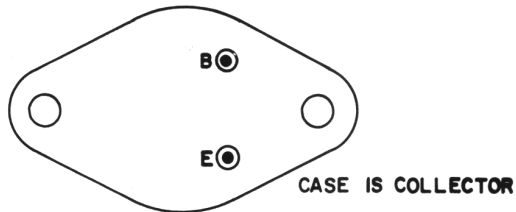
3008
3009



3008
3009



2002



SEMICONDUCTOR CASE DIAGRAMS
(BOTTOM VIEW)

SECTION 7 PARTS LIST

SCHEMATIC SYMBOL NO.	DESCRIPTION	PART NO.	SCHEMATIC SYMBOL NO.	DESCRIPTION	PART NO.
	BRACKET				
	Mobile mounting bracket assembly includes:	023-1648-001	C24	0.01 +80% -20% μ F - 25 V	510-3007-103
	Dash mounting bracket	017-1249-001	C25	0.01 +80% -20% μ F - 25 V	510-3007-103
	Cushion washer	018-0822-001	C26	0.22 +80% -20% μ F - 3 V	510-3009-224
	CAPACITORS		C27	0.01 +80% -20% μ F - 25 V	510-3007-103
C1	0.005 \pm 20% μ F - 125 VAC disc	510-3001-502	C28	5.6 μ F - 35 V	510-2005-569
C2	100 pF \pm 5% N150 disc	510-3016-101	C30	50 μ F +100% -10% - 25 V	510-4008-006
C3	0.01 +80% -20% μ F - 50 V	510-3003-103	C31	190 \pm 5% pF N080 - 200 V	510-3015-191
C4	0.01 +80% -20% μ F - 50 V	510-3003-103	C31	210 pF \pm 5% N080 (Messenger 300, Model 242-149 only)	510-3015-211
C5	0.01 +80% -20% μ F - 50 V	510-3003-103	C32	0.1 +80% -20% μ F - 25 V .600" dia. max.	510-3007-104
C6	100 pF \pm 5% N150 disc	510-3016-101	C33	190 \pm 5% pF N080 - 200 V	510-3015-191
C8	0.01 +80% -20% μ F - 50 V	510-3003-103	C33	210 pF \pm 5% N080 (Messenger 300, Model 242-149 only)	510-3015-211
C9	0.01 +80% -20% μ F - 50 V	510-3003-103	C34	0.05 +80% -20% μ F - 25 V	510-3007-503
C10	0.22 \pm 20% - 50 V (Alternate * 510-3051-224)	510-1004-224	C35	0.03 \pm 20% disc	510-3010-303
C11	330 pF \pm 5% N150, 200 V (for Messenger III, Models 242-143 and 242-150)	510-3016-331	C36	1 μ F - 35 V	510-2005-109
C12	430 pF \pm 5% N150, 200 V (for Messenger III, Models 242-143 and 242-150)	510-3016-431	C37	1 μ F - 35 V	510-2005-109
C13	0.01 +80% -20% μ F - 50 V	510-3003-103	C38	0.05 +80% -20% μ F - 25 V	510-3007-503
C14	0.05 +80% -20% μ F - 25 V	510-3007-503	C39	18 pF \pm 5% N750 disc	510-3020-180
C15	0.05 +80% -20% μ F - 25 V	510-3007-503	C40	6.8 pF \pm 5% N750 disc	510-3020-689
C16	270 pF \pm 5%	510-0001-271	C41	39 pF \pm 5% N750 disc	510-3020-390
C17	270 pF \pm 5%	510-0001-271	C42	0.01 +80% -20% μ F - 50 V	510-3003-103
C18	0.01 +80% -20% μ F - 50 V	510-3003-103	C43	0.01 +80% -20% μ F - 50 V	510-3003-103
C19	0.01 +80% -20% μ F - 25 V	510-3007-103	C44	0.05 +80% -20% μ F - 25 V	510-3007-503
C20	1 μ F - 35 V	510-2005-109	C45	150 \pm 10% pF - 50 V	022-1803-001
C21	0.22 +80% -20% μ F - 3 V	510-3009-224	C45	39 pF \pm 5% NPO (Messenger 300, Model 242-149)	510-3013-390
C22	190 \pm 5% pF N080 - 200 V	510-3015-191	C46	330 pF \pm 5%	510-0001-331
C22	210 pF \pm 5% N080 (Messenger 300, Model 242-149 only)	510-3015-211	C47	68 \pm 5% pF N150 disc	510-3016-680
C23	190 \pm 5% pF N080 - 200 V	510-3015-191	C47	150 pF \pm 5% mica (for Messenger 300)	510-0001-151
C23	210 pF \pm 5% N080 (Messenger 300, Model 242-149 only)	510-3015-211	C48	0.01 +80% -20% μ F 25 V	510-3007-103
			C49	0.01 +80% -20% μ F 25 V	510-3007-103
			C50	500 μ F - 2.5 V	510-4001-006

PARTS LIST (cont'd)

SCHEMATIC SYMBOL NO.	DESCRIPTION	PART NO.	SCHEMATIC SYMBOL NO.	DESCRIPTION	PART NO.
C51	0.02 $\pm 20\%$ μ F - 50 V	510-3002-203	CH1	Chassis rail for Messenger 300, Model 242-149)	017-1242-012
C52	5.6 μ F - 35 V	510-2005-569			
C53	0.05 $\pm 20\%$ μ F - 25 V Y5S	510-3010-503	CH1	Chassis rail (for Messenger III, Model 242-143)	017-1242-032
C55	1000 $+100\%$ -10% μ F - 16 V	510-4006-005			
C56	0.01 $+80\%$ -20% μ F - 50V	510-3003-103	CH2	Front panel assembly includes:	023-1644-001
C57	0.02 $\pm 20\%$ μ F - 50 V	510-3002-203		Front panel die casting	015-0722-003
C58	0.01 $\pm 20\%$ μ F - 25 V	510-3010-103		Light bulb - clear	549-3001-003
C59	22 μ F - 15 V	510-2003-220		Light bulb - red	549-3001-004
				Bulb holder	018-0844-001
				Feedthru	260-0202-001
				Flatwasher #4 NPB	029-0060-002
C60	22 pF $\pm 5\%$ NPO disc	510-3013-220		Shaft index assembly	022-1934-002
C61	50 μ F $+100\%$ -10% - 25 V	510-4008-006		Machine screw #4-40	011-0012-006
C62	5.6 μ F - 35 V	510-2005-569		BDG. HD. NPB	
C63	0.02 $\pm 20\%$ μ F - 50 V	510-3002-203		Internal Tooth lockwasher #4 NPB	029-0116-003
C64	56 μ F - 6 V	510-2001-560	CH3	Overlay (Messenger III)	023-1694-001
C66	0.01 $+80\%$ -20% μ F - 50V	510-3003-103	CH3	Overlay (Messenger 300)	023-1694-006
C67	22 pF $\pm 5\%$ NPO disc	510-3013-220	CH4	Channel indicator assembly includes:	023-2207-001
C68	150 pF $\pm 5\%$ N750 disc	510-3020-151		Dial, channel indicator	032-0149-001
C69	0.005 $+80\%$ -20% μ F - 500 V	510-3005-502		Label, channel indicator	559-3006-001
C70	0.001 $\pm 20\%$ μ F - 50 V	510-3002-102	CH6	Cabinet assembly includes:	023-1643-001
C71	0.005 $+80\%$ -20% μ F - 500 V	510-3005-502		Cabinet shell	017-1247-001
C72	47 pF $\pm 5\%$ NPO disc	510-3013-470		Cabinet end wall	017-1248-001
C73	33 pF $\pm 5\%$ N150 disc	510-3016-330		Captive nut	013-1003-002
C74	0.005 $+80\%$ -20% μ F - 500 V	510-3005-502		Insulation sheet	018-0817-001
C75	0.001 $\pm 20\%$ μ F - 1kV, Y5S	510-3061-102			
C76	27 pF $\pm 5\%$ NPO disc	510-3013-270			
C77	100 pF $\pm 5\%$ N150 disc	510-3016-101			
C78	390 pF $\pm 5\%$ 500 V mica	510-0004-391			
C80	330 pF $\pm 5\%$ 500 V mica	510-0004-331			
C81	0.05 $+80\%$ -20% μ F - 25 V	510-3007-503			
C82	0.05 $+80\%$ -20% μ F - 50 V	510-3003-503			
C83	470 pF $\pm 20\%$, 500 V, Y5U	510-3004-471			
	CHASSIS PARTS				
CH1	Chassis rail (for Messenger III, Model 242-150)	017-1242-002			
				DIODES	
			D1	1N67A	523-1000-067
			D2	1N67A	523-1000-067
			D3	1N881	523-1000-881
			D4	1N881	523-1000-881
			D5	1N2326	523-1002-326
			D6	1N67A	523-1000-067
			D7	1N67A	523-1000-067
			D8	1N67A	523-1000-067
			D9	1N881	523-1000-881
			D10	10 V zener	523-2003-100
				HEAT SINKS	
			E2	Heat sink base (Q18)	016-1539-001
			E3	Heat sink cover (Q18)	016-1540-001
			E5	Heat sink (Q17)	013-1074-001

PARTS LIST (cont'd)

SCHEMATIC SYMBOL NO.	DESCRIPTION	PART NO.	SCHEMATIC SYMBOL NO.	DESCRIPTION	PART NO.
E6	Clamp, heat sink: for D5	017-1288-001	HW	#4-40 NPB hex nut (Antenna connector -2) (Transistors -4)	012-0001-001
	GROMMET		HW	#6-32 NPB hex nut (Cable clamp)	012-0002-001
G1	Rubber grommet (Mic cable through chassis rail)	574-0002-007	HW	3/8-32 NPB hex nut (Potentiometers)	012-0040-003
	CLAMP		HW	Retainer ring	515-0004-001
G2	1/4" cable clamp (Mic cable to chassis rail)	572-0001-003	HW	3/8 x 11/16 x .020 NPB flatwasher (Potentiometers)	029-0098-002
	HARDWARE		HW	Screw, #8-18 x 3/8 CPS sheet metal (L8 to chassis rail)	011-0823-012
HW	Rivet, 1/8 dia x 3/8" long (Heat sink to posts) (Solder terminal to post)	031-0182-001	HW	#4 NPB internal tooth lock-washer (All #4 screws except at solder terminal)	029-0116-003
HW	#6-32 x 1/8" BH CPS machine screw (cabinet to rail)	011-0280-004	HW	#6 NPB internal tooth lock-washer (Between board & posts -3) (Cable clamp -1) (Heat sink to posts -2)	029-0069-003
HW	#4-40 x 1/4 RH NPB machine screw (Antenna connector)	011-0011-008	HW	Shoulder bushing (Phono jacks - outside)	029-0209-001
HW	#4-40 x 5/16 RH NPB machine screw (Heat sink cover)	011-0011-010	HW	Insulating washer (Phono jacks - inside)	029-0213-001
HW	#4-40 x 1/4 BH NPB machine screw (Transistors to board)	011-0012-008	HW	Spacer washer (Between channel dial and overlay)	029-0426-001
HW	#4-40 x 3/16 BH NPB machine screw (Board to rails & casting -3)	011-0012-006		NOTE: BH - Binding Head RH - Round Head NPB - Nickel Plated Brass CPS - Cadmium Plated Steel	
HW	#6-32 x 5/16 RH NPB machine screw (Posts to board)	011-0016-010		JACKS	
HW	#6-32 x 3/16 BH CPS machine screw (Rail to casting -4) (Cabinet to rail -4)	011-0280-006	J1	Antenna	515-3003-001
HW	#6-32 x 3/8 BH CPS machine screw (Choke to rail)	011-0280-012	J2	8 pin male (with ring) (Messenger III, Model 242-150 only)	515-0004-001
HW	#6-32 x 5/16 BH NPB machine screw (Speaker to posts -3) (Cable clamp -1)	011-0114-010	J3	11 pin male plug	515-0005-011
HW	1/4-20 x 3/8" hex head cap screw CPS (Dash mounting bracket)	011-0322-012	J4	Phono	515-2001-002
HW	#8-32 x 3/16 set screw (Knobs)	011-0022-006	J5	Phono (circuit opening)	515-2001-001
HW	Solder terminal (Antenna connector) (C55)	586-0005-006	J6	Terminal bushing (Messenger III, Model 242-143 and Messenger 300, Model 242-149 only)	
			J7	Terminal tab, solder type (Messenger III, Model 242-143 and Messenger 300, Model 242-149 only)	

PARTS LIST (cont'd)

SCHEMATIC SYMBOL NO.	DESCRIPTION	PART NO.	SCHEMATIC SYMBOL NO.	DESCRIPTION	PART NO.
	TRANSFORMERS AND CHOKES		Q2	3010	576-0003-010
L1	27 MHz - input	592-5016-001	Q3	3008	576-0003-008
L2	27 MHz - output	592-5016-002	Q4	3009	576-0003-009
L3	27 MHz - oscillator	592-5016-003			
L4	4.3 MHz - interstage	592-5016-004	Q5	3010	576-0003-010
L4	4.3 MHz interstage (for Messenger III, Models 242-143 and 242-150)	592-5016-004	Q6	3025 (Messenger 300 only)	576-0003-025
			Q6	3025 (Alternate*576-0003-009)	576-0003-025
L5	455 kHz - input	592-5016-005	Q7	3009	576-0003-009
L6	455 kHz - interstage	592-5016-006	Q8	3010	576-0003-010
L7	455 kHz - output	592-5016-007	Q9	3010	576-0003-010
L8	20 mH filter choke	542-5007-001	Q10	1002 squelch	576-0001-002
L11	Oscillator coil	592-5014-001	Q11	1003 audio	576-0001-003
L12	Driver coil	592-5014-002	Q12	1013 audio	576-0001-013
L13	13 μ H coil	542-3003-001	Q13	1013 driver	576-0001-013
L14, 17	13 μ H coil	542-3003-001	Q14	2002 audio output	576-0002-002
L15	Series output coil	542-1005-010	Q15	2002 audio output	576-0002-002
L16	Pi-output coil	542-1005-004	Q16	4006 oscillator	576-0004-006
T1	Driver	592-1007-004	Q17	4004 driver	576-0004-004
T2	Audio output and modulation	592-1013-003	Q18	4005 power output	576-0004-005
	SPEAKER				
LS	3" x 5" speaker	589-1005-001			
	MICROPHONE				
M	Microphone	023-2708-003			
	MECHANICAL PARTS				
MP1	Knobs channel selector, squelch and volume)	547-0001-004			
MP2	Speaker post with holes	014-0564-002			
MP3	Spacer rod (speaker post)	014-0564-004			
MP4	Standoff stud	013-1013-002			
	JUMPER PLUG				
P3	11 pin jumper plug	023-1659-001			
	TRANSISTORS				
Q1	3008	576-0003-008	R1	33,000 \pm 10% ohm 1/4 W	569-1002-333
			R2	3900 \pm 10% ohm 1/4 W	569-1002-392
			R3	39,000 \pm 10% ohm 1/4 W	569-1002-393
			R4	680 \pm 10% ohm 1/4 W	569-1002-681
			R5	470 \pm 10% ohm 1/4 W	569-1002-471
			R6	4700 \pm 10% ohm 1/4 W	569-1002-472
			R7	39,000 \pm 10% ohm 1/4 W	569-1002-393
			R8	1000 \pm 10% ohm 1/4 W	569-1002-102
			R9	4700 \pm 10% ohm 1/4 W	569-1002-472
			R11	33,000 \pm 10% ohm 1/4 W	569-1002-333
			R12	1000 \pm 10% ohm 1/4 W	569-1002-102

* Transistor number 3025 calls out a special size 3009. Number 3025 cannot be substituted with a 3009 in the Messenger 300. Numbers 3009 and 3025 can be interchanged in the Messenger III.

PARTS LIST (cont'd)

SCHEMATIC SYMBOL NO.	DESCRIPTION	PART NO.	SCHEMATIC SYMBOL NO.	DESCRIPTION	PART NO.
R13	1000 ±10% ohm 1/4 W	569-1002-102	R46	3300 ±10% ohm 1/4 W	569-1002-332
R14	8200 ±10% ohm 1/4 W	569-1002-822	R47	120 ±10% ohm 1/4 W	569-1002-121
R15	180,000 ±10% ohm 1/4 W	569-1002-184	R48	62 ±5% ohm 1/2 W	569-1003-620
R16	680 ±10% ohm 1/4 W	569-1002-681	R49	10,000 ±10% ohm 1/4 W	569-1002-103
R17	1000 ±10% ohm 1/4 W	569-1002-102	R50	22,000 ±10% ohm 1/4 W	569-1002-223
R18	4700 ±10% ohm 1/4 W	569-1002-472	R51	3900 ±10% ohm 1/4 W	569-1002-392
R19	22,000 ±10% ohm 1/4 W	569-1002-223	R52	680 ±10% ohm 1/4 W	569-1002-681
R20	6800 ±10% ohm 1/4 W	569-1002-682	R53	22,000 ±10% ohm 1/4 W	569-1002-223
R21	4000 ohm resistor thermistor assembly includes: 8000 ohm thermistor 8200 ohm resistor	023-2042-002 569-3001-001 569-1002-822	R54	2700 ±10% ohm 1/4 W	569-1002-272
R22	680 ±10% ohm 1/4 W	569-1002-681	R55	330 ±10% ohm 1/4 W	569-1002-331
R23	5600 ±10% ohm 1/4 W	569-1002-562	R56	470 ±10% ohm 1/4 W	569-1002-471
R24	5600 ±10% ohm 1/4 W	569-1002-562	R57	1500 ±10% ohm 1/4 W	569-1002-152
R26	75,000 ±5% ohm 1/4 W	569-1001-753	R58	2.2 ±10% ohm 1/2 W	569-2003-229
R27	5600 ±10% ohm 1/4 W	569-1002-562	R59	22 ±10% ohm 1/4 W	569-1002-220
R28	10,000 ±10% ohm 1/4 W	569-1002-103	R60	47,000 ±10% ohm 1/4 W	569-1002-473
R29	15,000 ±10% ohm 1/4 W	569-1002-153	R61	510 ±5% ohm 1/4 W	569-1001-511
R30	10,000 ±10% ohm 1/4 W	569-1002-103	R62	5100 ±5% ohm 1/4 W	569-1001-512
R31	2700 ±10% ohm 1/4 W	569-1002-272	R63	51 ±5% ohm 1/4 W	569-1001-510
R32	470 ±10% ohm 1/4 W	569-1002-471	R64	120 ±10% ohm 1/4 W	569-1002-121
R33	680 ±10% ohm 1/4 W	569-1002-681	R65	47 ±10% ohm 1/4 W	569-1002-470
R34	1000 ±10% ohm 1/4 W	569-1002-102	R66	33 ohm ±10% 1/2 W (for Messenger III, Model 242-143 and 300)	
R35	1000 ±10% ohm 1/4 W	569-1002-102	R69	4.7 ±10% ohm 1/4 W	569-1002-479
R36	4700 ±10% ohm 1/4 W	569-1002-472		RELAY	
R37	12,000 ±10% ohm 1/4 W	569-1002-123	RY	Relay	567-0003-012
R38	3300 ±10% ohm 1/4 W	569-1002-332		SWITCH	
R39	1000 ±10% ohm 1/4 W	569-1002-102	SW	Printed circuit switch, Msgr III Model No. 242-050	583-2027-001
R40	10,000 ohm potentiometer with SPST switch	562-0001-006	SW	Printed circuit switch, Msgr III, Model No. 242-143, and Msgr 300	583-2027-004
R42	330,000 ±10% ohm 1/4 W	569-1002-334		TERMINAL STRIP	
R43	5,000 ohm potentiometer with SPDT switch	562-0001-007	TS1	Terminal strip, 4 terminal, 1 mounting foot (for Messenger III, Model 242-143 and 300)	586-1001-023
R45	10,000 ohm resistor-thermistor assembly includes: 8000 ohm thermistor 1800 ohm resistor	023-2042-001 569-3001-001 569-1002-182		WIRE	
			W32, W33	Speaker lead assembly	022-2336-001

PARTS LIST (cont'd)

SCHEMATIC SYMBOL NO.	DESCRIPTION	PART NO.	SCHEMATIC SYMBOL NO.	DESCRIPTION	PART NO.
W34	Quick-disconnect	022-2336-002		Power lead assembly (Fused) (for Messenger III, Model 242-143 and 300) NOTE: See battery cables for Messenger III, Model 242-150	023-1652-001
	SOCKETS				
XY1	Relay socket	515-9002-003		Microphone holder (with extra 1/4" dia hole)	537-9004-002
XY2	11 position crystal socket (Messenger III, Model 242-150 only)	126-0110-002		Screws for microphone holder #4 sheet metal)	011-0807-006
XY3	11 position crystal socket (Messenger III, Model 242-150 only)	126-0110-003		Channel number stickers	022-2327-001
				Screws for dash mtg. bracket	011-0229-020
XY2	12 position crystal socket Messenger III, Model 242-143 and Messenger 300, Model 242-149 only)	126-0110-005		Nuts for dash mtg. bracket	012-0109-002
				Internal tooth lockwashers	029-0001-003
XY3	12 position crystal socket Messenger III, Model 242-143 and Messenger 300, Model 242-149 only)	126-0110-006		Tap connector package	023-2209-001
	CRYSTALS			NOTE: A complete accessory package may be ordered under the following part numbers:	
YR	4.755 MC crystal	519-0012-001		023-1661-004 - Messenger III, Model 242-143 023-1661-003 - Messenger 300, Model 242-149 The Messenger III, Model 242-150 has been discontinued; its accessory package is no longer available	
	CRYSTAL FILTER ASSEMBLY				
Z1	Crystal filter assembly (Messenger 300 only) includes:	023-2041-001		12 VDC battery cable assembly Positive ground (for Messenger III, Model 242-150) includes:	023-1658-001
	Printed circuit board, PC2	035-0021-001		8 pin noval socket	515-1005-008
	Capacitor, foil trimmer, C86	512-3001-002		Wire, black, plastic #18, stranded copper	071-0912-050
	Capacitor, variable foil C85 & 88	512-3001-004		Wire, black, plastic #18, stranded copper	071-0912-050
	Capacitor, .01 +80% -20%, C83	510-3003-103		Fuseholder for 1/4 dia x 1 1/4 L fuse	534-1004-005
	Crystal set, YF1, 2	519-0007-001		Fuse, 2 ampere	534-0003-024
	Crystal set, YF3, 4	519-0007-001		0.01 μF disc capacitor,	510-3003-103
	Resistor, 6800 ohm ±10%, 1/4 W, R25	569-1002-682		50 VDC RF choke	542-3003-001
	Toroid, input, T3	592-9002-001		Tag	559-4014-002
	Toroid, output, T4	592-9002-002		33 ±10% ohm 1/4 W resistor	569-1002-330
	ACCESSORY PACKAGE ITEMS			Socket shell	515-6002-003
	Operating Manual, Messenger III	002-0046-001		12 VDC battery cable assembly Negative ground (for Messenger III, Model 242-150) includes:	023-1657-001
	Operating Manual, Messenger 300	002-0037-001		8 pin socket	515-1005-008
	Part 95 - FCC Rules - Citizens Radio Service	022-1635-001		Wire, red plastic #18, stranded copper	071-0912-042
	FCC Form 505 - License Appli- cation form	022-1636-001		Wire, red plastic #18, stranded copper	071-0912-042
	FCC identification card	022-1598-004		Fuseholder for 1/4 dia x 1 1/4 L fuse	534-1004-005
	Warranty registration card	041-0419-014			

PARTS LIST (cont'd)

SCHEMATIC SYMBOL NO.	DESCRIPTION	PART NO.	SCHEMATIC SYMBOL NO.	DESCRIPTION	PART NO.
	Fuse, 2 ampere	534-0003-024		RF choke	542-3003-001
	33 ±10% ohm 1/4 W resistor	569-1002-330		Tag	559-4014-001
	0.01 μF disc capacitor, 50 VDC	510-3003-103		Socket shell	515-6002-003

CRYSTALS

CHANNEL	OPERATING FREQUENCY MEGAHERTZ	Y2 TRANSMITTER CRYSTAL PART NO.	Y1 RECEIVER CRYSTAL PART NO.	CHANNEL	OPERATING FREQUENCY MEGAHERTZ	Y2 TRANSMITTER CRYSTAL PART NO.	Y1 RECEIVER CRYSTAL PART NO.
1	26.965	519-0011-001	519-0011-101	13	27.115	519-0011-013	519-0011-113
2	26.975	-002	-102	14	27.125	-014	-114
3	26.985	-003	-103	15	27.135	-015	-115
4	27.005	-004	-104	16	27.155	-016	-116
5	27.015	-005	-105	17	27.165	-017	-117
6	27.025	-006	-106	18	27.175	-018	-118
7	27.035	-007	-107	19	27.185	-019	-119
8	27.055	-008	-108	20	27.205	-020	-120
9	27.065	-009	-109	21	27.215	-021	-121
10	27.075	-010	-110	22	27.225	-022	-122
11	27.085	-011	-111	23	27.255	-023	-123
12	27.105	-012	-112				