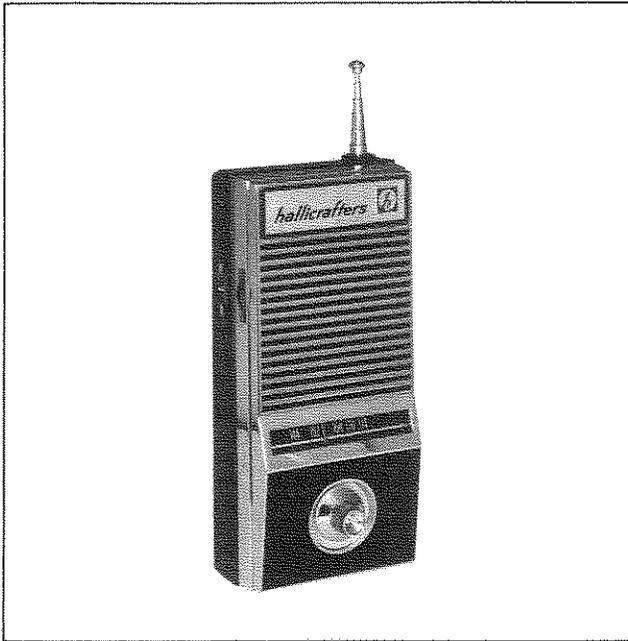


SERVICE DATA MODEL CRX-107



156-017575

Figure 1. Hallicrafters Model CRX-107 Monitor Receiver.

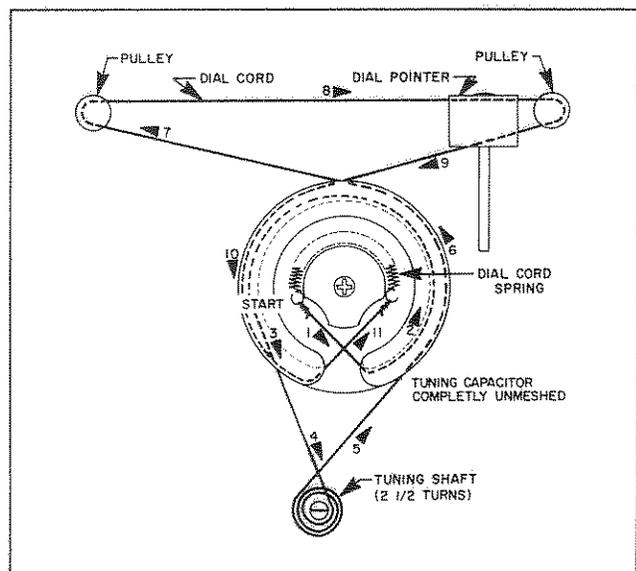
SPECIFICATIONS

Circuit:	Single band superheterodyne with untuned RF stage. Circuit contains 12 transistors and 4 diodes.
Tuning Range:	144 - 174 MHz
Input Impedance (external antenna):	50 ohms
Sensitivity:	5.0 μ V for 10 dB S/N
Selectivity (IF):	120 kHz at 6 dB
IF Rejection:	45 dB minimum
AGC Figure of Merit:	40 dB minimum
IF Frequency:	10.7 MHz
Audio Output:	150 milliwatts
Audio Distortion:	7% maximum at 50 milliwatts
Power Source:	9 Vdc (one Burgess 2U6 or equivalent)
Battery Drain:	15 mA (without input signal)

DIAL CORD RESTRINGING

To restring the dial cord, remove the receiver from the cabinet. Remove the dial plate from the receiver printed circuit board and rotate the tuning capacitor pulley to completely unmesh the capacitor plates. Refer to figure 2 while using the following procedure:

1. Remove the cover plate over the dial cord spring and replace the screw to secure the tuning capacitor pulley to the tuning capacitor shaft.
2. Tie one end of the dial cord to one end of the dial cord spring.
3. Hold the spring in place with one hand, while stringing the dial cord with the other hand. Start at location 1 (figure 2) and continue stringing along the direction of the arrows in sequence to location 11. Finish by tying the dial cord to the free end of the spring.
4. Replace the dial pointer on the dial cord in the position shown in figure 2. Replace the cover plate over the dial cord spring and mount the dial plate on the printed circuit board.
5. Rotate the tuning shaft to completely mesh the tuning capacitor plates and position the dial pointer exactly 1/2 inch from the left edge of the dial plate.



156-011896

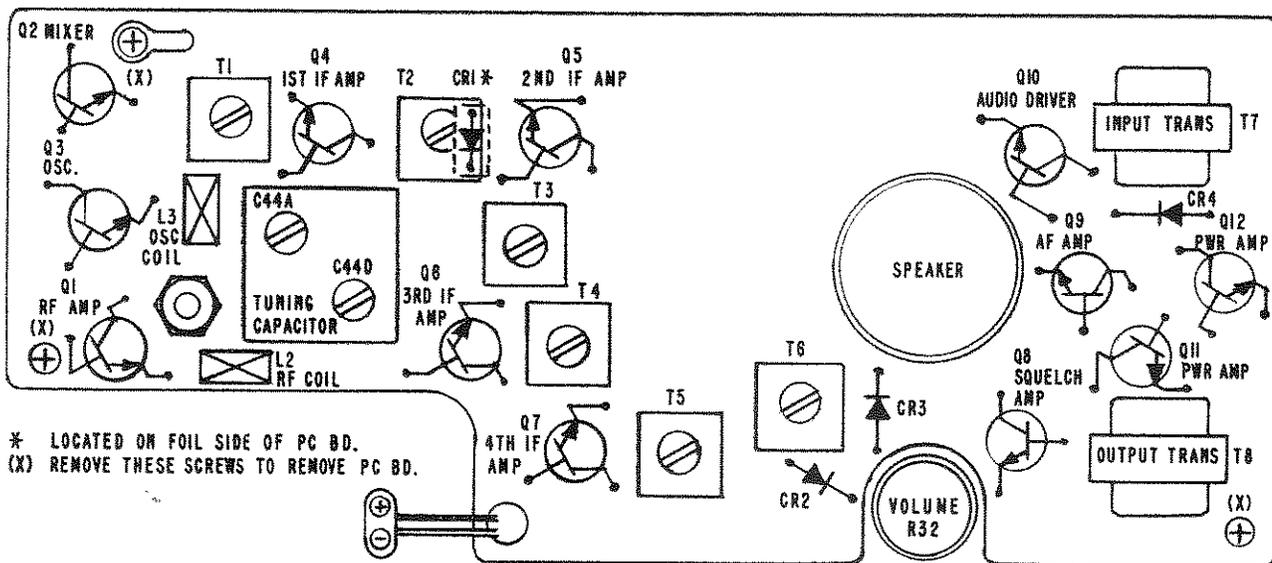
Figure 2. Dial Cord Restringing Diagram.

TEST INSTRUMENTS REQUIRED:

1. VHF Signal Generator Covering 10.7 MHz and 143-176 MHz Range With FM Modulation
 2. Vacuum Tube Voltmeter
 3. Nonmetallic Alignment Tool
- Note: Steps 1-6 IF Circuitry
Steps 7-11 RF and OSC Circuitry

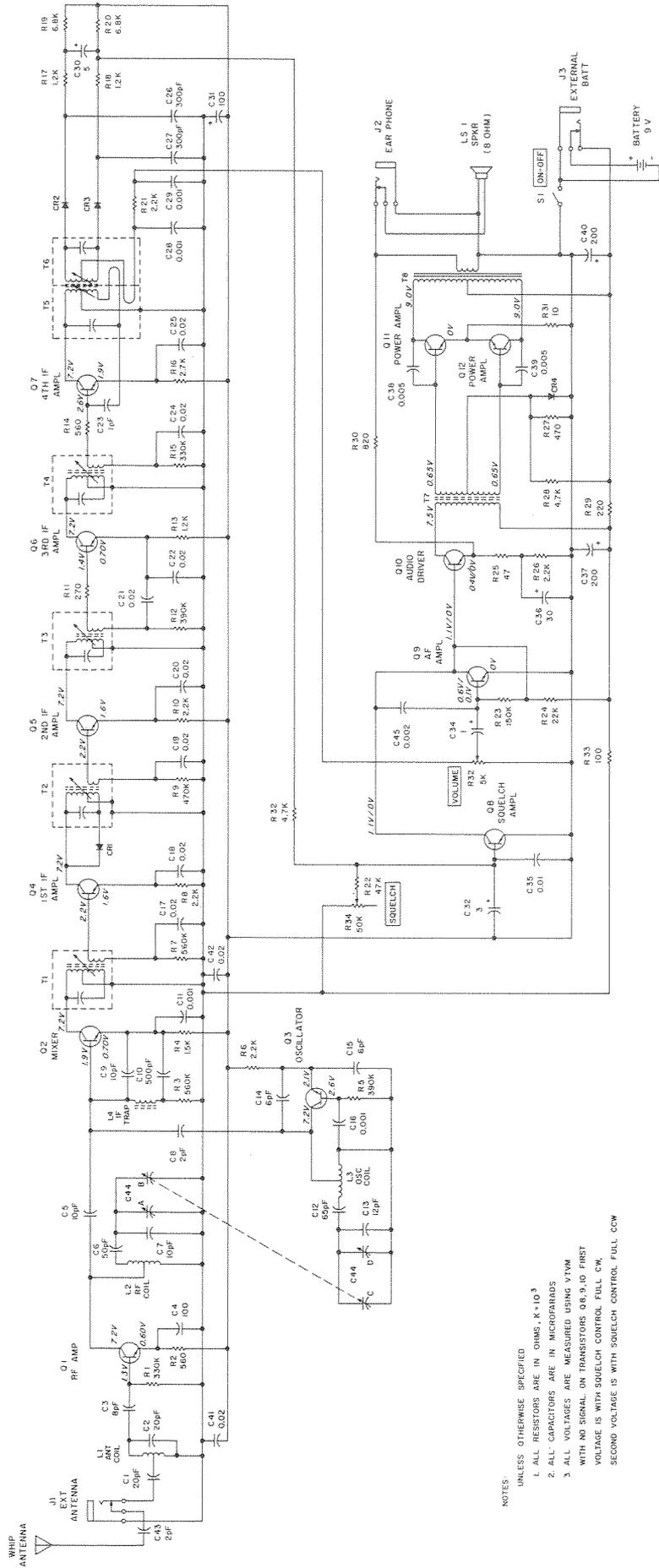
ALIGNMENT CHART

STEP	INSTRUMENT CONNECTION	GENERATOR OUTPUT	MAIN TUNING DIAL SETTING	ADJUST	ADJUST FOR
1	10.7-MHz generator through 0.01 capacitor to base of Q2 and ground. VTVM to junction R17 and R19 and ground.	10.7 MHz	Quiet Point	T1	Maximum deflection on DC Volts Scale.
2				T2	
3				T3	
4				T4	
5				T5	
6	Generator same as above. VTVM to junction R21 and C29 and ground.			T6	0 volts on lowest DC Volts Scale.
7	VHF signal generator between telescopic antenna (folded in) and chassis ground. VTVM across speaker voice coil.	1 kHz Audio, 5 kHz Deviation	Tuning gang full closed Tuning gang full open 152 MHz 164 MHz	L3	Maximum on VTVM.
8		145 MHz		C-44D	
9		176 MHz		L2	
10		152 MHz		C-44A	
11	Repeat 1 through 4 for best sensitivity.				



156-017369

Figure 3. Alignment Points and Transistor Locations.



155-001961

Figure 4. Model CRX-107 Schematic Diagram.

- NOTES:
- UNLESS OTHERWISE SPECIFIED
 - 1. ALL RESISTORS ARE IN OHMS, K*10³
 - 2. ALL CAPACITORS ARE IN MICROFARADS
 - 3. ALL VOLTAGES ARE MEASURED USING VTVM
- WITH NO SIGNAL ON TRANSISTORS Q6, 9, 10 FIRST VOLTAGE IS WITH SQUELCH CONTROL FULL CW. SECOND VOLTAGE IS WITH SQUELCH CONTROL FULL CCW

SERVICE REPAIR PARTS LIST

Schematic Symbol	Description	Hallicrafters Part Number
CAPACITORS		
C1,2	20 pF, $\pm 10\%$, Ceramic	120-006691
C3	8 pF, Ceramic	120-006687
C4	100 pF, $\pm 10\%$, Ceramic	120-006694
C5,7,9	10 pF, ± 0.5 pF, Ceramic	120-006688
C6	50 pF, $\pm 10\%$, Ceramic	120-006692
C8,43	2 pF, ± 0.5 pF, Ceramic	120-006685
C10	500 pF, $\pm 10\%$, Ceramic	120-006696
C11,16,28,29	0.001 μ F, YY, Ceramic	120-006697
C12	65 pF, $\pm 10\%$, Ceramic	120-006693
C13	12 pF, $\pm 10\%$, Ceramic	120-006689
C14,15	6 pF, ± 0.5 pF, Ceramic	120-006686
C17,18,19,20,21,22,23,24,25,41,42	0.02 μ F, Ceramic	120-006699
C23	1 pF, ± 0.5 pF, Ceramic	120-006684
C26,27	300 pF, $\pm 10\%$, Ceramic	120-006695
C30	4.7/5.0 μ F, 6.3 V, Electrolytic	120-006678
C31	100 pF, 10 V, Electrolytic	120-006680
C32	3.0/3.3 μ F, 6.3 V, Electrolytic	120-006677
C34	1 μ F, 6.3 V, Electrolytic	120-006676
C35	0.01 μ F, Ceramic	120-006698
C36	30/33 μ F, 6.3 V, Electrolytic	120-006679
C37,40	200/220 μ F, 10 V, Electrolytic	120-006681
C38,39	0.005 μ F, Mylar	120-006683
C44	Poly Variable, Tuning	120-006657
C45	0.002 μ F, Mylar	120-006682

*SOLID RESISTORS

R1,15	330 K ohm	120-006717
R2,14	560 ohm	120-006706
R3,7	560 K ohm	120-006720
R4	1.5 K ohm	120-006709
R5,12	390 K ohm	120-006718
R6,8,10,21,26	2.2 K ohm	120-006710
R9	470 K ohm	120-006719
R11	270 ohm	120-006704
R13,17,18	1.2 K ohm	120-006708
R16	2.7 K ohm	120-006711
R19,20	6.8 K ohm	120-006713
R22	47 K ohm	120-006740
R23	150 K ohm	120-006716
R24	22 K ohm	120-006715
R25	47 ohm	120-006702
R27	470 ohm	120-006705
R28,32	4.7 K ohm	120-006712
R29	220 ohm	120-006703
R30	820 ohm	120-006707
R31	10 ohm	120-006701
R32/S1	5 K ohm, VOLUME Control with on-off Switch	120-006663
R33	100 ohm	120-006741
R34	50 K ohm, SQUELCH Control	120-006662

*NOTE: All solid resistors are 1/4 watt, carbon composition.

SERVICE REPAIR PARTS LIST

(Continued)

Schematic Symbol	Description	Hallicrafters Part Number
COILS AND TRANSFORMERS		
L1	VHF Coil (Ant)	120-006653
L2	VHF Coil (RF)	120-006654
L3	VHF Coil (OSC)	120-006655
L4	Coil, IF Trap	120-006656
T1	Transformer, IF	120-006658
T2,3,4	Transformer, IF	120-006659
T5	Transformer, IF	120-006660
T6	Transformer, Discriminator	120-006661
T7	Transformer, Audio Input	120-006664
T8	Transformer, Audio Output	120-006665
TRANSISTORS AND DIODES		
Q1	Transistor, CCS 6225F	120-006640
Q2	Transistor, CCS 6225E	120-006641
Q3	Transistor, CCS 6225G	120-006642
Q4	Transistor, CCS 6226G	120-006643
Q5	Transistor, CCS 6226F	120-006644
Q6	Transistor, CCS 6226E	120-006645
Q7	Transistor, CCS 6227E	120-006646
Q8	Transistor, CCS 6168G	120-006647
Q9	Transistor, CCS 6168H	120-006648
Q10	Transistor, CCS 6168I	120-006649
Q11,12	Transistor, CCS 6229F	120-006650
CR2,3	Diode, IS-188FM	120-006651
CR4	Diode, DS-49	120-006652
MISCELLANEOUS		
	Antenna, Telescopic Whip	120-006621
	Badge	120-006613
	Cabinet	120-006615
	Cover, Back	120-006616
	Cover, Battery	120-006617
	Cushion, Battery	120-006625
	Drum, Tuning Drive	120-006669
J1, J3	Jack	120-006668
J2	Jack	120-006667
	Knob, Tuning	120-006620
	Knob, Volume	120-006614
	Label, Battery	120-006626
	Label, "FCC Certificate"	120-006612
	Nameplate, "Hallicrafters"	120-006611
	Pointer, Dial	120-006619
	Scale, Dial	120-006610
	Shaft, Tuning	120-006670
LS1	Speaker	120-006666
	Spring, Dial Cord	120-006673
	Washer, Felt Knob	120-006622
	Window, Dial	120-006618

156-016320

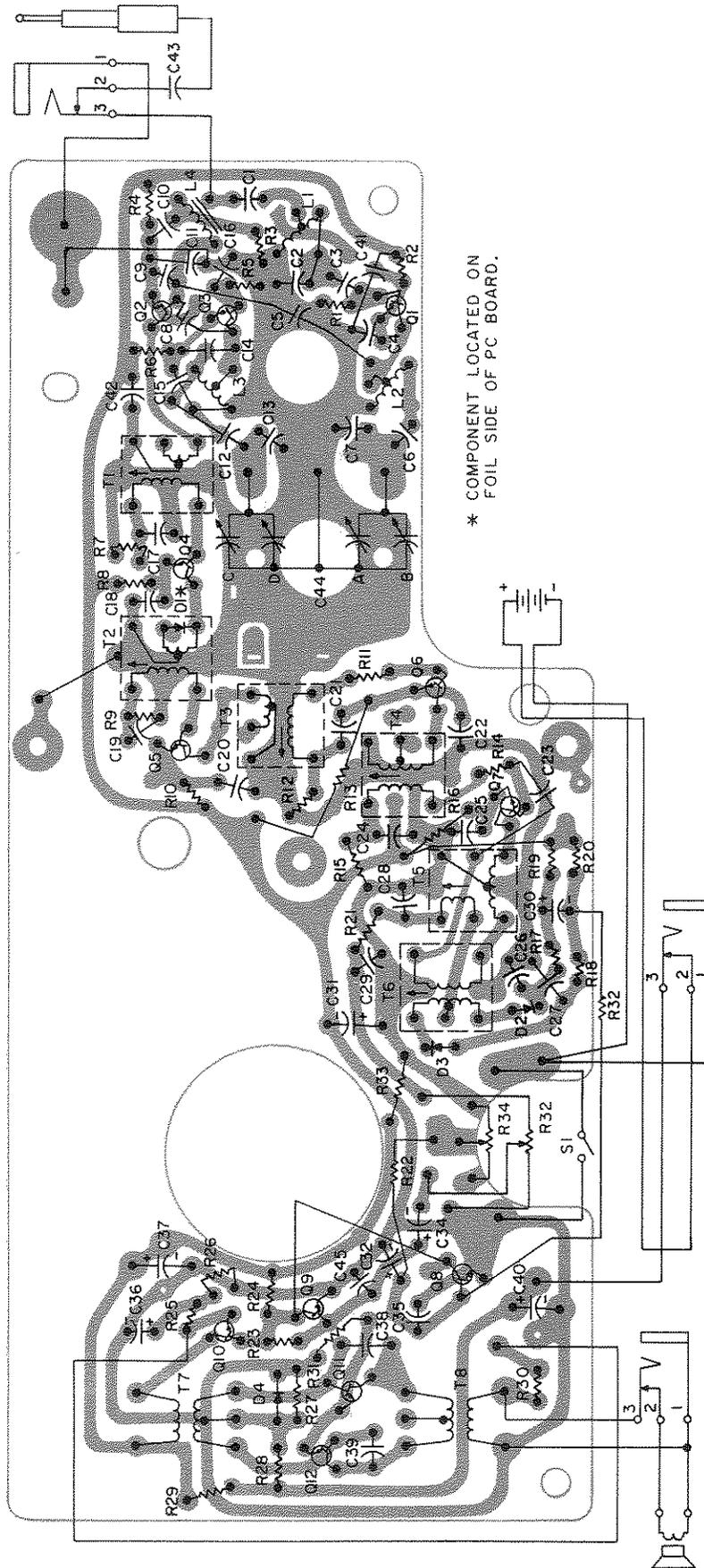


Figure 5. Model CRX-107 Wiring Diagram.

