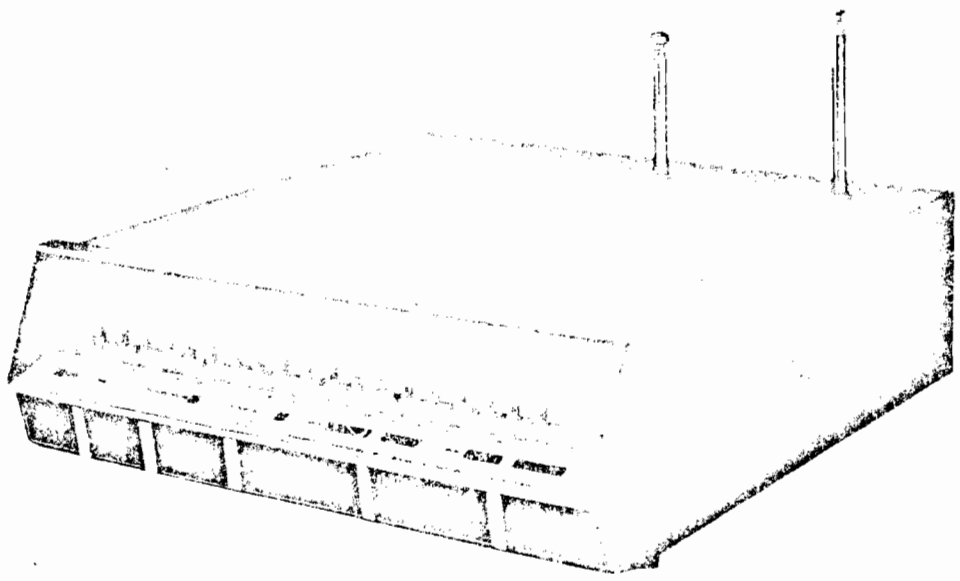
Regency® ELECTRONICS INC.

SERVICE MANUAL



MODEL ACT-R20/6
MONITORADIO RECEIVER

7707 RECORDS STREET
INDIANAPOLIS, INDIANA 46226

PRINTED IN U.S.A.
1-77

PRICE $5.00
SM-11-200

CONTENTS

SECTION 1 GENERAL INFORMATION

1-1 SPECIFICATIONS (Subject To Change Without Notice)

RECEIVER

Frequency Range	Low Band (Band 1); 30-38 MHz Low Band (Band 2); 38-50 MHz High Band (Band 3); 148-160 MHz High Band (Band 4); 160-174 MHz UHF Band (Band 5); 450-480 MHz UHF Band (Band 6); 480-512 MHz
Antenna Impedance	50 Ohms
Channels	20, Crystal Controlled
Sensitivity (at Tune-Up)	Low Band; 0.5 μV High Band; 0.5 μV UHF Band; 0.7 μV
Selectivity (R.F.): Low Band	6 DB Bandwidth 30-38 MHz 6 DB Bandwidth 38-50 MHz
High Band	6 DB Bandwidth 148-160 MHz 6 DB Bandwidth 160-174 MHz
UHF Band	10 DB Bandwidth 450-480 MHz 10 DB Bandwidth 480-512 MHz
Selectivity (I.F.)	6 DB Down; ±7 KHz (min.) 50 DB Down; ±18 KHz (max.)
Spurious Rejection (excluding Primary Image)	50 DB
AFC Range (UHF Band Only)	Approx. ±5 KHz
Modulation Acceptance	±7 KHz (min.)
Intermediate Frequencies	1st I.F.: -10.7 MHz 2nd I.F.: -455 KHz
Squelch System	"Noise Operated"
Audio Output (8 Ω Speaker)	1 Watt @ 10%, or less, Distortion; 2 Watts, maximum

SCANNER

Scan Rate..... Approx. 15 Channels per sec.

Scan Delay..... Approx. 0.300 sec.

POWER

Voltage Requirement..... 117 VAC (±10%)
60 Hz, 13 Watts max.
13.8 VDC (±10%)

Current Requirements (typical)..... @ 13.8 VDC

Receiver (Squelched)..... 390 mA

Receiver (max. Audio Output)..... 550 mA

1-2 CRYSTAL SPECIFICATIONS

Crystals are not normally supplied with the receiver. These are usually obtained from the dealer where the receiver was purchased. When the crystals are ordered from the recommended supplier, (Shepherd Industries, Inc.), the ordering information should include the model number of the radio and the desired receive frequency.

When the crystals are ordered from a supplier who is not familiar with the specifications for the crystals used in Regency receivers, the following information should be included.

High Band Crystals

a. Crystal Frequency = $\frac{\text{Channel Frequency} - 10.7 \text{ MHz}}{3}$

b. Frequency Tolerance .001%
c. 3rd Overtone
d. Series resonance minus 450 Hz
e. Maximum equivalent series resistance 35 ohms
f. Drive Level: 2 MW
g. Holder: HC-25/U

Low Band Crystals

a. Crystal Frequency = Channel Frequency +10.7 MHz

b. Frequency Tolerance .001%
c. 3rd Overtone
d. Series resonance minus 450 Hz

1-3 CRYSTAL INSTALLATION AND PROGRAMMING

Programming is a process of connecting together all of the channels to be used in each band segment and then connecting the group to the proper band segment pin.

Each channel has one program wire and one program pin. Refer to the diagram on page for location of the wires and pins. Channels of the same group are connected together by connecting the program wire from one channel to the program pin for another channel. The group of channels is connected to the proper band segment pin by connecting the program wire from the first channel in each group to the band segment pin which covers the frequencies in that group.

The program wire of any channel should never be connected to the program pin of the same channel. The program wire of any channel must be connected to another channel's program pin or to a band segment pin.

Upon completion of programming the desired channels, Step 7 must be performed to insure proper scanner operation. The channels may be programmed in any order desired, however, the programming can be simplified by starting with channel one and progressing towards channel 20.

All UHF crystals (both band segments) must be installed in the two rows of crystal sockets nearest the front of the radio. All VHF crystals including both low bands, and both high bands must be plugged into the two rows of crystal sockets nearest the rear of the radio. Crystals are never plugged into the two center rows of sockets. Do not install two crystals in any one channel.

STEP 1

Group all of the crystals to be used in each band segment together. Refer to the frequency on the crystals and the chart on page to determine the proper band segment for each group. There may be any number from one to twenty crystals in each group. The number of groups may be any number from one to six.

STEP 2

Select the group of crystals to be installed. This may be any one of the groups and the crystals may be installed in any order within the group.

STEP 3

Install the first crystal from the selected group in the desired channel crystal sockets. See page for Crystal Location Diagram.

e. Maximum equivalent series resistance 35 ohms
f. Drive Level: 2 MW
g. Holder: HC-25/U

UHF Band Crystal (450-480 MHz)

a. Crystal Frequency = $\frac{\text{Receive Frequency -10.7 MHz}}{9}$

b. Frequency Tolerance .001%
c. 3rd Overtone
d. Series resonance minus 450 Hz
e. Maximum equivalent series resistance 35 ohms
f. Drive Level: 2 MW
g. Holder: HC-25/U

UHF Band Crystal (480-512 MHz)

a. Crystal Frequency = $\frac{\text{Receive Frequency -10.7 MHz}}{10}$

b. Frequency Tolerance .001%
c. 3rd Overtone
d. Series resonance minus 450 Hz
e. Maximum equivalent series resistance 35 ohms
f. Drive Level: 2 MW
g. Holder: HC-25/U

STEP 4

Connect the program wire for the channel selected in Step 3 to the proper band segment pin. If this group has only one crystal, proceed with the next group by starting over with Step 2. If the group has more than one crystal, proceed with Step 5.

STEP 5

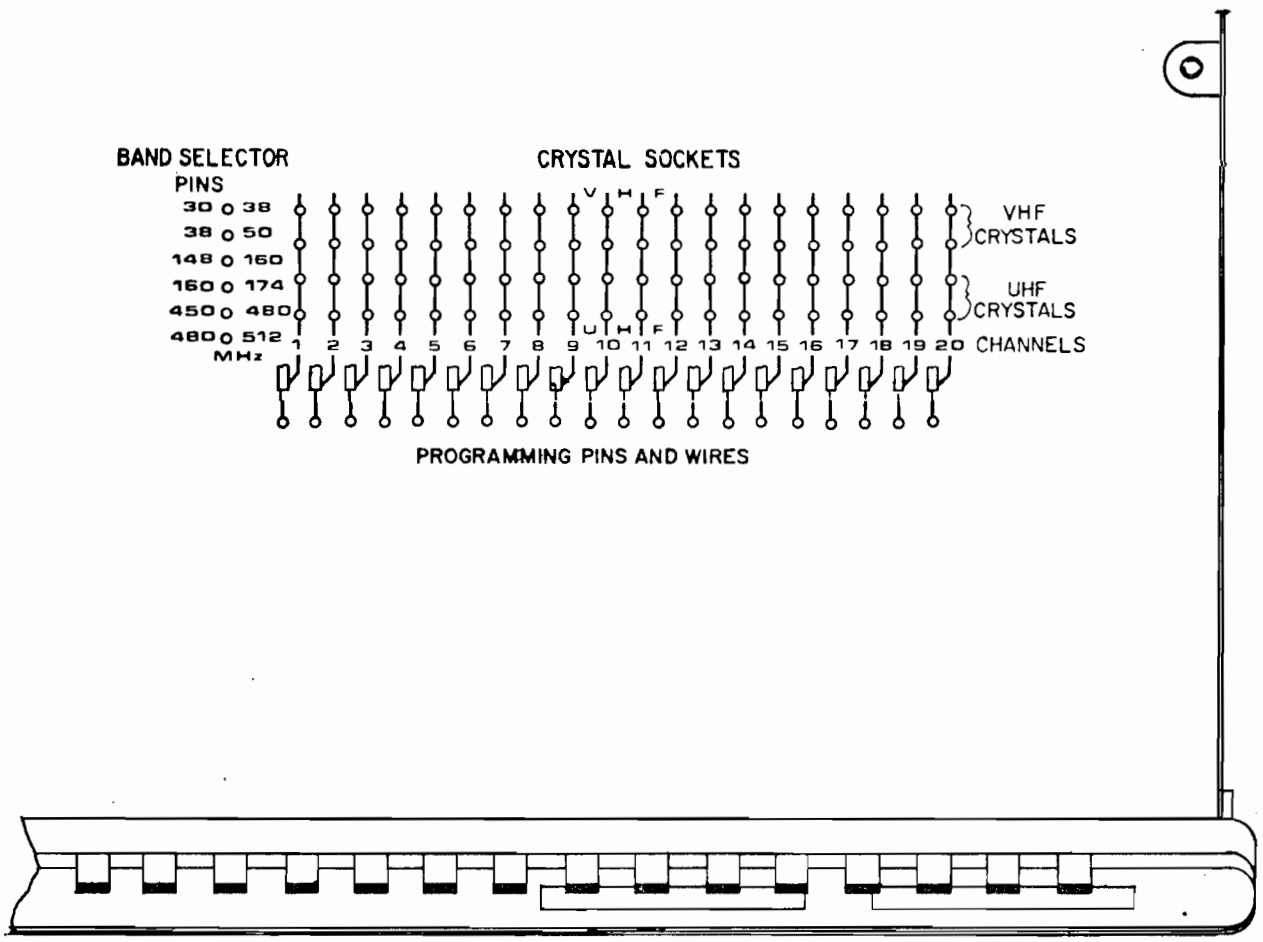
Install the second crystal of the group in the desired channel crystal socket. Connect the program wire for this channel to the program pin of the channel selected in Step 4. This connects the two channels in this segment together. If the group has only two crystals, proceed to the next group by starting over with Step 2. If the group has more than two crystals, proceed with Step 6.

STEP 6

Continue the process of installing crystals and connecting the channels together until the group programming is complete. Repeat Step 2 through 6 for each of the remaining groups. If there are any unused channels remaining at the completion of programming, continue with Step 7.

STEP 7

Connect all of the unused channels together by connecting the program wire for each unused channel to the program pin of another unused channel. Upon completion of connecting all of the unused channels together, connect the program wire from the last channel either to the program pin of any used channel that has been programmed, or to any unused band segment pin.



CRYSTAL LOCATION DIAGRAM

SECTION 2 ALIGNMENT AND TUNING PROCEDURES

2-1 EQUIPMENT REQUIRED

FM Signal Generator
Oscilloscope
AC VTVM capable of measuring 455 KHz

NOTE: During all steps of alignment, up to AFC alignment, the squelch control knob should be put back in open squelch.

2-2 QUADRATURE DETECTOR

1. Connect the FM Signal Generator to the VHF antenna input jack. Accurately set the frequency to the center of the channel being used for alignment. Modulate the Signal Generator with 1000 Hz signal at 3 KHz deviation.

2. Connect the Oscilloscope to the Junction of R205 and C161.

3. Adjust the Signal Generator's output until all the noise in the scope pattern just disappears.

4. Adjust L119 for maximum peak to peak amplitude, while maintaining symmetry of the detected signal. When L119 is properly aligned, the signal at the above junction should be approximately 0.2 volts RMS.

2-3 IF ALIGNMENT

1. Connect AC voltmeter to the Junction of L118 and Pin 4 of IC102.

2. Set AC voltmeter to the 300 millivolt scale.

3. With the generator set accurately to the frequency of the center of the channel being used for alignment, increase Signal Generator's output until the AC voltmeter reading is mid-range.

4. Adjust L115 for maximum AC voltmeter reading. Readjust the Signal Generator's output to maintain a voltmeter reading approximately in the mid-range.

2-4 RF ALIGNMENT

Low Band Section

1. Set the cores of L102 and L103 flush with the top of the coil form. Due to the broadness of the Low Band Section, no further tuning is required.

High Band Section

1. Connect AC voltmeter Pin 4 of IC102.

2. Set AC voltmeter to the 300 millivolts scale.

3. Activate High Band channel nearest to center of High Band frequencies being used.

4. Set the Signal Generator to the frequency of the center of the channel being used for alignment. Connect generator's output to H/L antenna input jack. Adjust Signal Generator's output until AC voltmeter reading is mid-range.

5. Adjust L113, L104, L105 and L106 (in that order) for maximum AC voltmeter reading. Readjust Signal Generator's output to maintain voltmeter reading approximately in the mid-range. Repeat adjustment until no further improvements can be made.

UHF Band Section

1. Connect AC voltmeter across the speaker terminals.

2. With Signal Generator's output reduced to zero, adjust the Volume Control until AC voltmeter reads 1.0 volt of noise.

3. Activate UHF channel nearest to center of UHF frequencies being used.

4. Set Signal Generator's frequency to the channel being used and adjust output of Signal Generator until AC voltmeter reads .2 volts.

5. Adjust trimmers C114, C129 for maximum quieting (lowest meter reading). Adjust the Signal Generator's output to maintain voltmeter reading between .1 and .2 volts. Repeat adjustments until no further improvements can be made.

2-5 AFC ALIGNMENT

NOTE: This adjustment requires an accurate 10.7 MHz ±1 KHz oscillator or 455 KHz ±500 Hz oscillator to be used as a reference signal. If neither is available, proceed with Step 4.

1. With a coupling loop, inject "Reference" Signal (either 10.7 MHz or 455 KHz) to produce good quieting (more than 30 DB quieting). Adjust R175 for reading of 2.4 to 2.7 volts at the collector of Q114.

2. Remove the "Reference" Signal and have the unit squelched and receiving no signal. The voltage on the collector of Q114 should be between 2.2 and 3.4 volts. If not, note voltage and proceed to Step 3. If voltage is between 2.2 and 3.4 volts, AFC Alignment is complete.

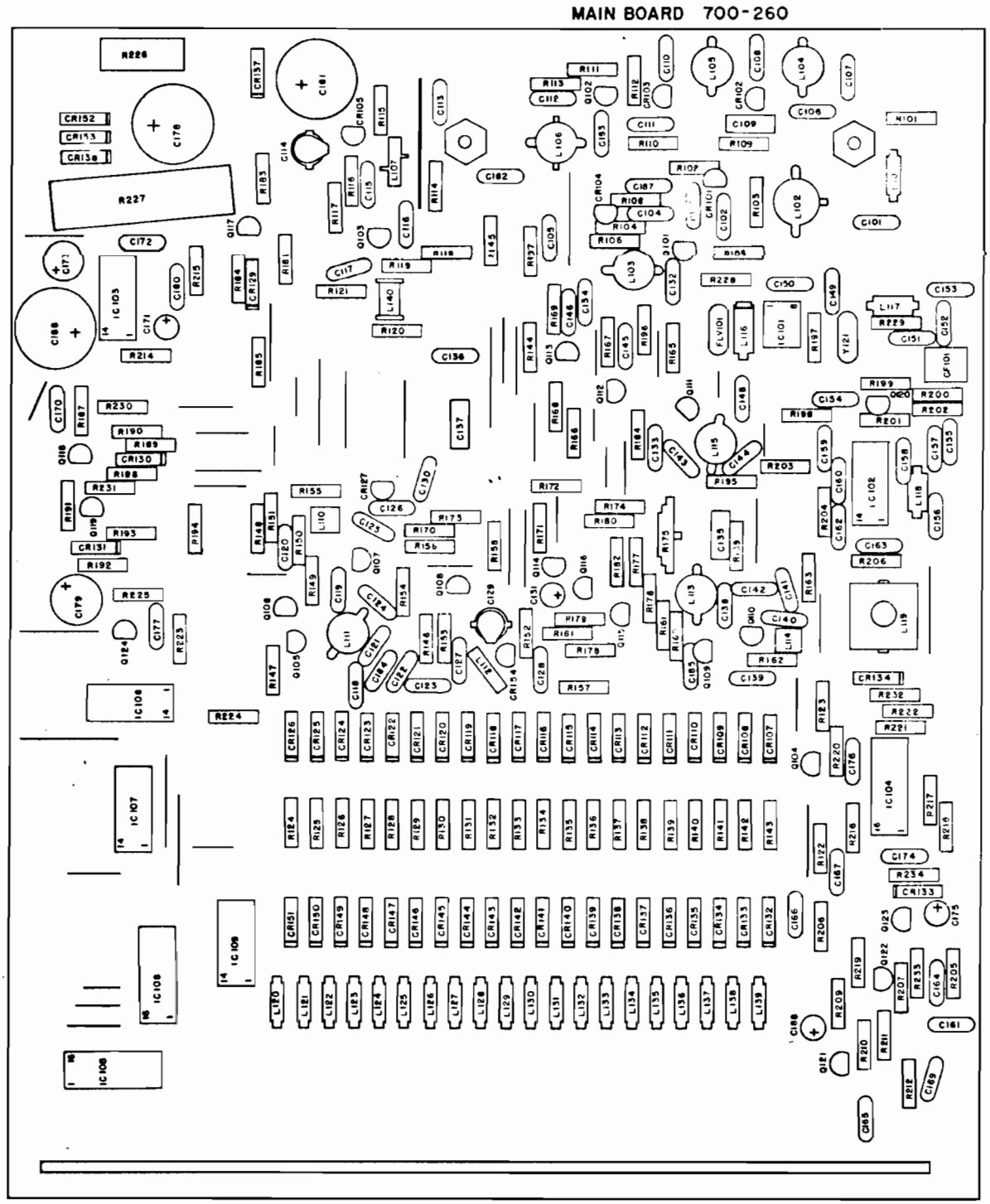
NOTE: Any further adjustments made to L119 or R175 will require AFC to be re-adjusted.

3. Inject "Reference" Signal and monitor voltage on collector of Q114. Adjust L119 for same voltage as noted in Step 3. Re-adjust R175 for a voltmeter reading of 2.4 to 2.7 volts. Repeat Step 2.

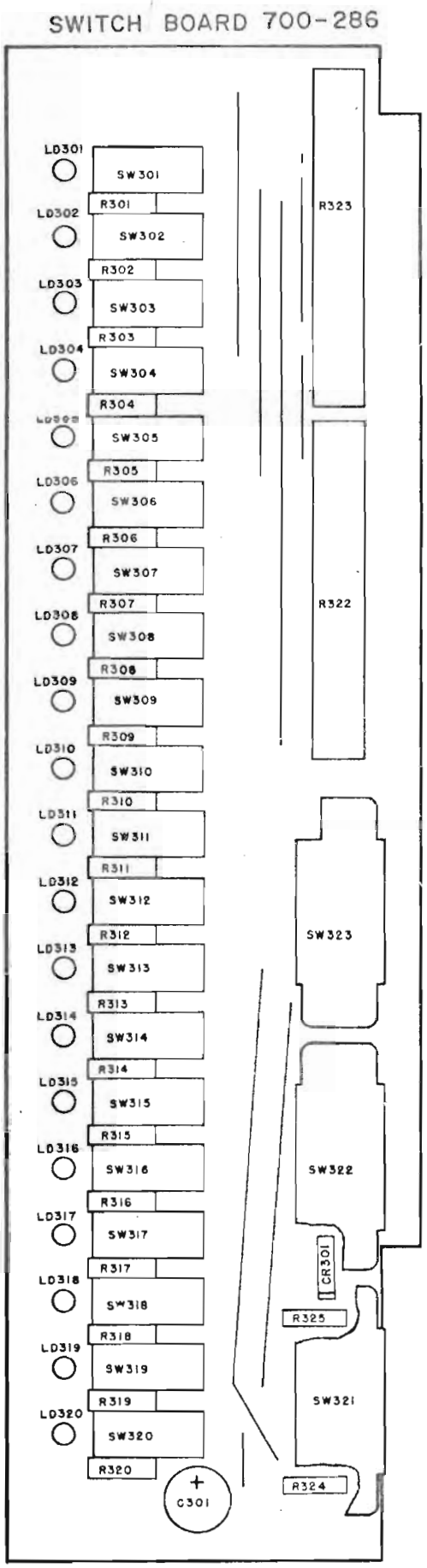
NOTE: Do not adjust L119 for more than 1/4 turn at a time.

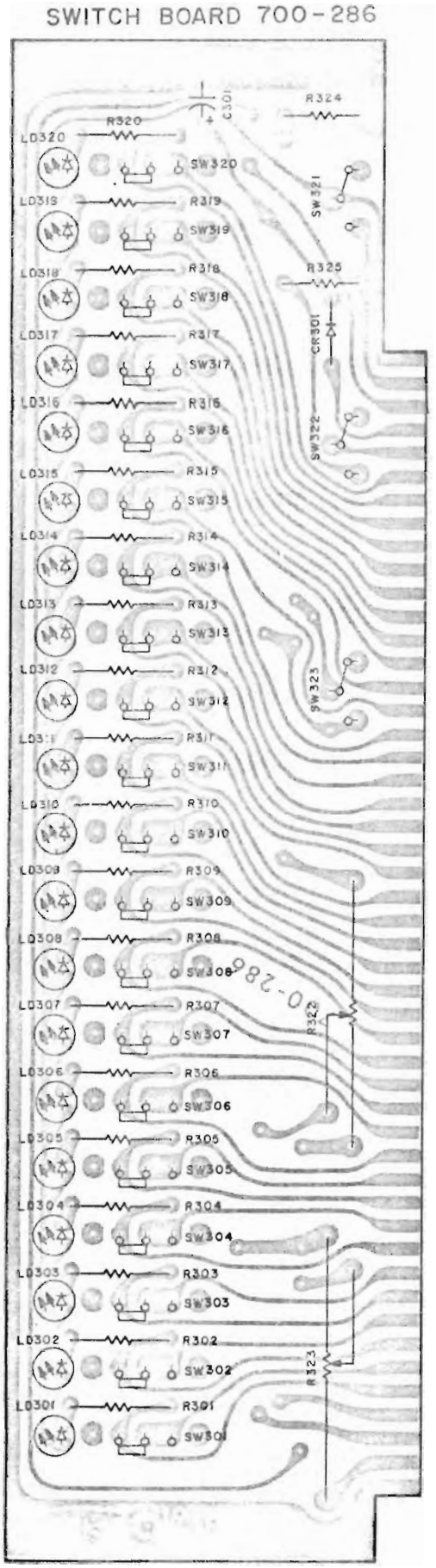
4. If an accurate I.F. signal source is not available, an approximate AFC alignment can be made by adjusting L119 on a High Band or Low Band crystal as specified in Quadrature Detector Alignment (Section), and with the unit squelched and receiving no signal, adjust R175 for voltmeter reading of 2.2 to 3.4 on the collector of Q114.

NOTE: Units equipped with a 10.245 MHz crystal have the jumper in the AFC circuit connected between the base of Q114 and collector of Q116. When a 11.155 MHz crystal is used, the jumper is connected between the base of Q114 and the collector of Q115. If the crystal is changed from one frequency to the other, the jumper must be changed.

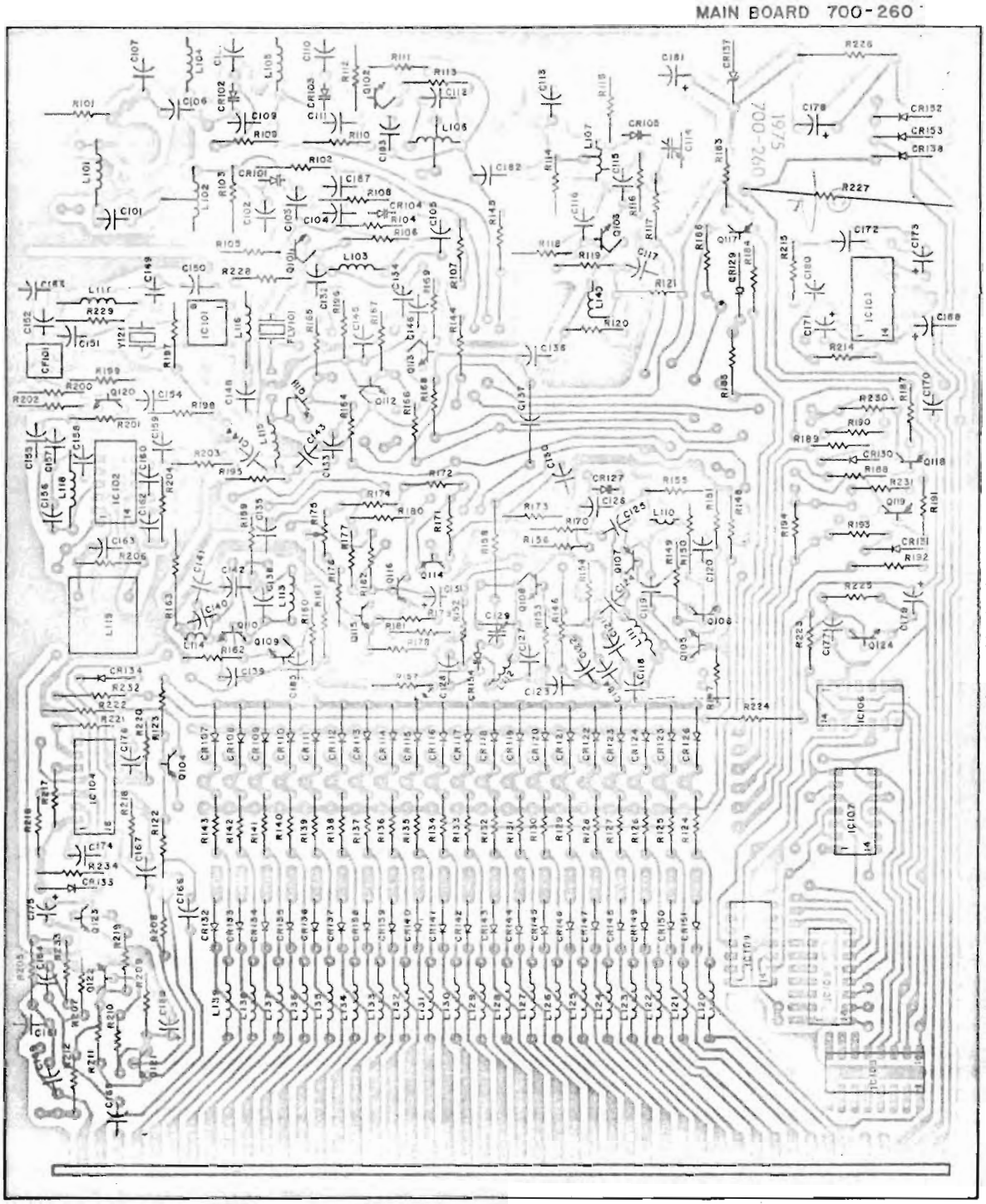


3-1 RECEIVER BOARD PARTS PLACEMENT DIAGRAM



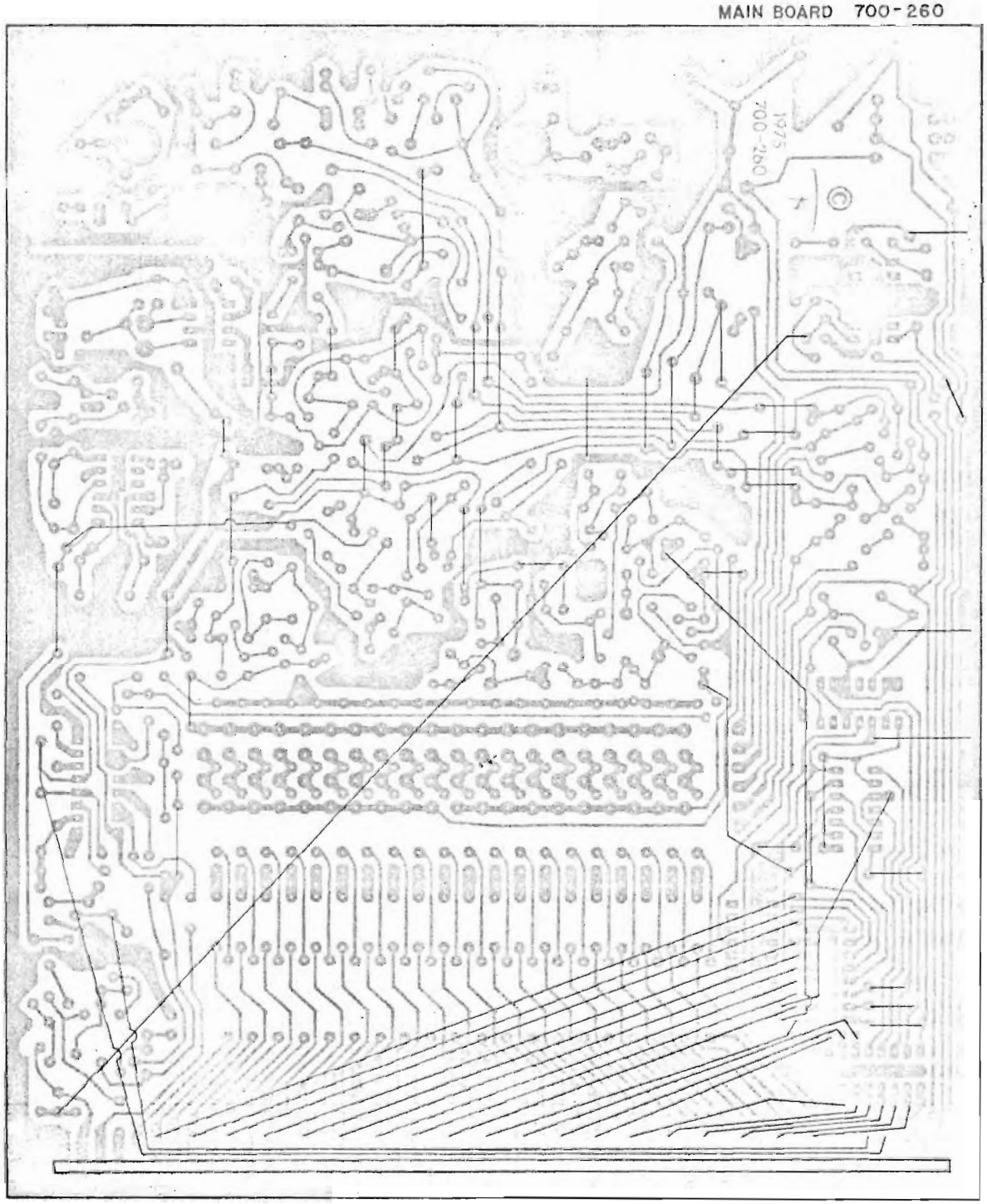


3-2 SWITCH BOARD PARTS PLACEMENT DIAGRAM



3-3 RECEIVER BOARD PARTS OVERLAY DIAGRAM

MAIN BOARD 700-260

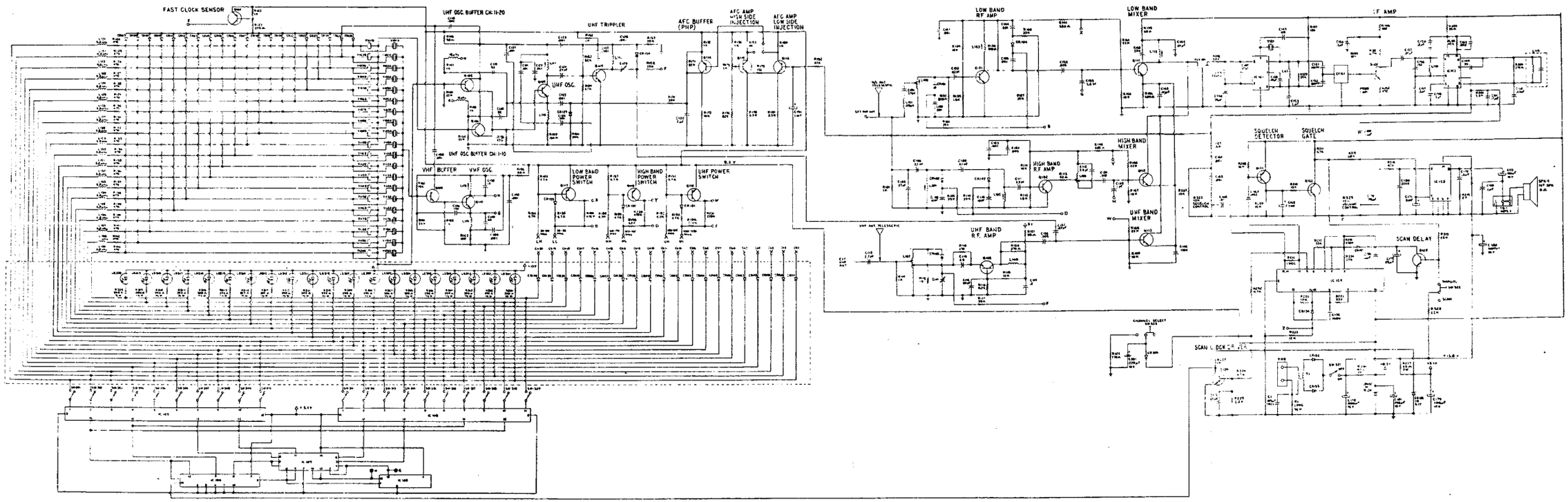


3-4 VOLTAGE DATA

ALL VOLTAGES ARE NOMINAL.
TAKEN WITH VTM
NO SIGNAL APPLIED

	EMITTER	BASE	COLLECTOR	CONDITION
Q101	0	0.7	5.2	Channel Programmed Low Band
Q102	0	0.7	5.0	Channel Programmed High Band
Q103	1.1	1.8	7.7	
Q104	8.2	7.6	8.2	Unsquelched Channel Activated
Q105	3.0	3.4	6.8	
Q106	3.0	3.4	6.8	
Q107	2.4	3.2	6.8	
Q108	0	0.2	4.6	
Q109	2.0	2.5	4.2	
Q110	1.2	2.0	4.2	
Q111	1.8	2.5	8.0	Channel Programmed Low Band
Q112	1.8	2.5	8.0	Channel Programmed High Band
Q113	1.8	2.5	8.0	Channel Programmed UHF
Q114	8.2	7.6	2.4	UHF Only
Q115	3.5	4.0	7.2	UHF Only
Q116	3.5	3.9	7.6	UHF Only
Q117	8.2	7.6	8.2	Low Band Only
Q118	8.2	7.6	8.2	High Band Only
Q119	8.2	7.6	8.2	UHF Only
Q120	.37	1.0	3.4	
Q121	8.2	8.2	0	Unsquelched
	8.2	8.2	7.7	Tight Squelch
Q122	0	0	6.1	Unsquelched
	0	0.7	0	Tight Squelch
Q123	0	0.7	0	Unsquelched
	0	0	8.0	Tight Squelch
Q124	0	.7	0	Manual
	0	0.4 Pulsing	2.4 Pulsing	Scan

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC 101	4.3	0.7	0.7	4.2	7.8	0	4.3	7.8								
IC 102	4.0	3.6	0	1.4	1.4	1.4	0	0	0.2	1.5	NC	3.6	8.0	4.9		
IC 103	6.3	0	0	0	0	0	0	6.0	0.3	0	0	0	0.4	13.8		
IC 104	8.2	0.7	0.7	7.8	7.8	0.6	0	0	7.8	7.8	7.2	7.2	2.6	0.7	0.7	8.2
IC 105	0.3	12.6	12.6	12.6	12.6	12.6	12.6	0	12.6	12.6	12.6	0.1	0.1	0.1	0.1	5.1
IC 106	0.1	0	0	0.3	5.1	0	0	0.1	0.1	0	0.1	0.1	0	0		
IC 107	0.1	3.7	3.9	3.7	0.1	3.9	0	0.1	0.1	0.1	0.1	0.1	0.1	5.1		
IC 108	12.6	12.6	12.6	12.6	12.6	12.6	12.6	0	12.6	12.6	12.6	3.9	3.9	0.1	0.1	5.1
IC 109	0.1	NC	NC	5.1	NC	NC	NC	NC	NC	NC	0	3.7	0.1	8.2		



3-5 SCHEMATIC

SECTION 4 PARTS LIST

4-1 RECEIVER BOARD

RESISTORS

All Resistors ¼W, 10% unless otherwise indicated

Item No.	Description	Part No.
R101	1K	4701-0102-042
R102	39K	4701-0393-042
R103	820	4701-0821-042
R104	10K	4701-0103-042
R105	1.8K	4701-0182-042
R106	820	4701-0821-042
R107	39K	4701-0393-042
R108	39K	4701-0393-042
R109	39K	4701-0393-042
R110	39K	4701-0393-042
R111	10K	4701-0103-042
R112	1.8K	4701-0182-042
R113	33 Ohm	4701-0330-042
R114	1K	4701-0102-042
R115	1K	4701-0102-042
R116	270 Ohm	4701-0271-042
R117	39K	4701-0393-042
R118	3.3K	4701-0332-042
R119	10K	4701-0103-042
R120	270 Ohm	4701-0271-042
R121	68 Ohm	4701-0680-042
R122	1K	4701-0102-042
R123	220 Ohm	4701-0221-042
R124	470 Ohm	4701-0471-042
R125	470 Ohm	4701-0471-042
R126	470 Ohm	4701-0471-042
R127	470 Ohm	4701-0471-042
R128	470 Ohm	4701-0471-042
R129	470 Ohm	4701-0471-042
R130	470 Ohm	4701-0471-042
R131	470 Ohm	4701-0471-042
R132	470 Ohm	4701-0471-042
R133	470 Ohm	4701-0471-042
R134	470 Ohm	4701-0471-042
R135	470 Ohm	4701-0471-042
R136	470 Ohm	4701-0471-042
R137	470 Ohm	4701-0471-042
R138	470 Ohm	4701-0471-042
R139	470 Ohm	4701-0471-042
R140	470 Ohm	4701-0471-042
R141	470 Ohm	4701-0471-042
R142	470 Ohm	4701-0471-042
R143	470 Ohm	4701-0471-042
R144	680 Ohm	4701-0681-042
R145	680 Ohm	4701-0681-042
R146	68 Ohm	4701-0680-042
R147	1K	4701-0102-042
R148	22K	4701-0223-042
R149	1K	4701-0102-042
R150	22K	4701-0223-042
R151	470 Ohm	4701-0471-042
R152	1K	4701-0102-042
R153	82K	4701-0823-042
R154	4.7K	4701-0472-042
R155	150 Ohm	4701-0151-042
R156	39K	4701-0393-042
R157	39K	4701-0393-042
R158	39K	4701-0393-042
R159	470 Ohm	4701-0471-042
R160	12K	4701-0123-042
R161	22K	4701-0223-042
R162	1K	4701-0102-042
R163	150 Ohm	4701-0151-042
R164	22K	4701-0223-042
R165	10K	4701-0103-042
R166	22K	4701-0223-042
R167	10K	4701-0103-042
R168	22K	4701-0223-042
R169	10K	4701-0103-042
R170	39K	4701-0393-042
R171	82K	4701-0823-042
R172	1K	4701-0102-042
R173	10K	4701-0103-042
R174	1K	4701-0102-042
R175	Variable 1K (AFC)	4751-0102-005
R176	820 Ohm	4701-0821-042
R177	1K	4701-0102-042
R178	3.3K	4701-0332-042
R179	150 Ohm	4701-0151-042
R180	1K	4701-0102-042
R181	3.3K	4701-0332-042
R182	47K	4701-0473-042
R183	4.7K	4701-0472-042
R184	4.7K	4701-0472-042
R185	4.7K	4701-0472-042
R186	470K	4701-0474-042
R187	4.7K	4701-0472-042
R188	4.7K	4701-0472-042
R189	4.7K	4701-0472-042
R190	68K	4701-0683-042
R191	4.7K	4701-0472-042
R192	4.7K	4701-0472-042
R193	4.7K	4701-0472-042
R194	150K	4701-0154-042
R195	68 Ohm	4701-0680-042
R196	680 Ohm	4701-0681-042
R197	180 Ohm	4701-0181-042
R198	180 Ohm	4701-0181-042
R199	12K	4701-0123-042
R200	1.8K	4701-0182-042
R201	4.7K	4701-0472-042
R202	470 Ohm	4701-0471-042
R203	33 Ohm	4701-0330-042
R204	47K	4701-0473-042
R205	2.2K	4701-0222-042
R206	270K	4701-0274-042
R207	10K	4701-0103-042
R208	10K	4701-0103-042
R209	10K	4701-0103-042
R210	10K	4701-0103-042
R211	4.7K	4701-0472-042
R212	1.8K	4701-0182-042
R213		

Item No.	Description	Part No.
R214	47K	4701-0473-042
R215	2.2 Ohm	4701-0229-042
R216	1 Meg	4701-0105-042
R217	33K	4701-0333-042
R218	330K	4701-0334-042
R219	22K	4701-0223-042
R220	15K	4701-0153-042
R221	33K	4701-0333-042
R222	12K	4701-0123-042
R223	1K	4701-0102-042
R224	4.7K	4701-0472-042
R225	2.2K	4701-0222-042
R226	43 Ohm 2W 5%	4710-0430-031
R227	43Ohm 7W 10%	4707-0430-044
R228	1.8K	4701-0182-042
R229	22K	4701-0223-042
R230	470K	4701-0474-042
R231	220K	4701-0224-042
R232	4.7K	4701-0472-042
R233	5.6K	4701-0562-042
R234	27K	4701-0273-042

CAPACITORS

C101	27 pf 10% NPO 50V	1500-0270-650
C102	.001 mf Disc	1503-0102-001
C103	82 pf 5% NPO 50V	1524-0820-002
C104	.001 mf Disc	1503-0102-001
C105	.001 mf Disc	1503-0102-001
C106	3.9 pf 10% NPO 500V	1500-0399-905
C107	27pf 10% NPO 50V	1500-0270-650
C108	10 pf 10% NPO 500V	1500-0100-605
C109	.47 pf	1510-0478-900
C110	10 pf 10% NPO 500V	1500-0100-605
C111	3.9 pf 10% NPO 500V	1500-0399-905
C112	3.9 pf 10% NPO 500V	1500-0399-905
C113	2.7 pf ± .25 pf NPO 500V	1500-0279-205
C114	Trimmer - 2-6 pf	1517-0000-018
C115	6.8 pf 10% NPO 500V	1500-0689-905
C116	82 pf 5% NPO 50V	1524-0820-002
C117	.001 mf Disc	1503-0102-001
C118	.001 mf Disc	1503-0102-001
C119	82 pf 5% NPO 50V	1524-0820-002
C120	82 pf 5% NPO 50V	1524-0820-002
C121	.001 mf Disc	1503-0102-001
C122	.001 mf Disc	1503-0102-001
C123	.001 mf Disc	1503-0102-001
C124	27 pf 10% NPO 50V	1500-0270-650
C125	.001 mf Disc	1503-0102-001
C126	.001 mf Disc	1503-0102-001
C127	.001 mf Disc	1503-0102-001
C128	.001 mf Disc	1503-0102-001
C129	Trimmer 2-6 pf	1517-0000-018
C130	.2 mf	1502-0204-006
C131	1 mf 50V	1513-0010-004
C132	.005 mf Disc	1503-0502-002
C133	5.6 pf 10% NPO 500V	1500-0569-905
C134	.005 mf Disc	1503-0502-002
C135	1 pf 10%	1510-0010-900
C136	.005 mf Disc	1503-0502-002
C137	.47 10%	1510-0478-900
C138	12 pf ± 5% NPO 500V	1500-0120-505
C139	82 pf 5% NPO 50V	1524-0820-002
C140	68 pf 5% NPO 50V	1524-0680-002
C141		
C142	.001 mf Disc	1503-0102-001
C143	390 pf 50V 5%	1506-0391-550
C144	.01 mf Disc	1503-0103-001
C145	.01 mf Disc	1503-0103-001
C146	.001 mf Disc	1503-0102-001
C147		
C148	.05 mf	1502-0503-004
C149	68 pf 5% NPO 50V	1524-0680-002
C150	.01 mf Disc	1503-0103-001
C151	180 pf 50V 5%	1506-0181-550
C152	390 pf 50V 5%	1506-0391-550
C153	.2 mf 12V	1502-0204-006
C154	.2 mf 12V	1502-0204-006
C155	.01 mf Disc	1503-0103-001
C156	150 pf 500V 5%	1504-0151-505
C157	.2 mf 12V	1502-0204-006
C158	.2 mf 12V	1502-0204-006
C159	.2 mf 12 V	1502-0204-006
C160	39 pf 10% NPO 50V	1500-0390-650
C161	.1 mf	1502-0104-005
C162	.002 mf Disc	1523-0202-002
C163	.05 mf	1502-0503-004
C164	.001 mf Disc	1503-0102-001
C165	.001 mf Disc	1503-0102-001
C166	.01 mf Disc	1503-0103-001
C167	.002 mf Disc	1523-0202-002
C168	1 mf 50V	1513-0010-004
C169	.1 mf	1502-0104-005
C170	.015 mf	1508-0153-610
C171	5 mf 10V	1513-0050-001
C172	.2 mf 12V	1502-0204-006
C173	100 mf 16V	1513-0101-002
C174	.1 mf	1502-0204-006
C175	25 mf 10V	1513-0250-001
C176	100 pf 5% 50V	1506-0101-550
C177	100 pf 5% 50V	1506-0101-550
C178	1000 mf 16V	1513-0102-002
C179	100 mf 16V	1513-0101-002
C180	.0033 mf 100V Mylar	1508-0332-610
C181	250 mf 10V	1513-0251-001
C182	.005 mf Disc	1503-0502-002
C183	.001 mf Disc	1503-0102-001
C184		
C185	.001 mf Disc	1503-0102-001
C186	.001 mf Disc	1503-0102-001
C187	.001 mf Disc	1503-0102-001
C188	1000 mf 16V	1513-0102-002
C189	47 pf 10% NPO	1500-0470-650
C190	.1 mf	1502-0204-006

Item No.	Description	Part No.
	COILS	
L101	Choke, 6.8μhy, ±10%	1802-0150-005
L102	RF input, low band	1800-5127-401
L103	RF output, low band (Grn)	1800-3152-005
L104	RF input, high band, (Red)	1800-3152-002
L105	RF, high band (Red)	1800-3152-002
L106	RF output, high band	1800-3152-011
L107	RF input, UHF	1800-3255-201
L108	Choke 15μhy	1802-0150-004
L109	Choke 15μhy	1802-0150-004
L110	Osc	1800-1236-900
L111	Osc	1800-3152-009
L112	UHF Tripler	1800-3160-003
L113	Osc	1800-3152-009
L114	Osc	1800-1236-900
L115	IF (10.7 MHz)	1800-3191-401
L116	3.3 μhy 10% Shielded	1802-0339-007
L117	Choke	1803-3238-600
L118	Choke	1803-3238-600
L119	Quadrature	1800-3151-700
L120 to L139	Choke, 6.8 μhy	1802-0689-003
L140	UHF RF	1800-5125-905
	INTEGRATED CIRCUIT	
IC101	10.7 IF & 2nd mixer	3130-3167-901
IC102	455 KHz, IF Limiter, Detector	3130-3157-603
IC103	Audio Amplifier	3130-3157-614
IC104	Hex Functional	3130-3193-509
IC105	Decoder Driver	3130-3193-501
IC106	Counter	3130-3157-608
IC107	Quad or Gate	3130-3157-623
IC108	Decoder Driver	3130-3193-501
IC109	JK Flip-Flop	3130-3157-607
	TRANSISTORS	
Q101	Silicon NPN (RT)	4801-0000-035
Q102	Silicon NPN (RT)	4801-0000-035
Q103	Silicon NPN (RT)	4801-0000-035
Q104	Silicon PNP (WHT T)	4801-0000-060
Q105	Silicon NPN	4801-0000-100
Q106	Silicon NPN	4801-0000-100
Q107	Silicon NPN	4801-0000-100
Q108	Silicon NPN (RT)	4801-0000-035
Q109	Silicon NPN (RT)	4801-0000-035
Q110	Silicon NPN	4801-0000-100
Q111	Silicon NPN (RT)	4801-0000-035
Q112	Silicon NPN (RT)	4801-0000-035
Q113	Silicon NPN (RT)	4801-0000-035
Q114	Silicon PNP (WHT T)	4801-0000-060
Q115	Silicon NPN	4801-0000-010
Q116	Silicon NPN	4801-0000-010
Q117	Silicon PNP (WHT T)	4801-0000-060
Q118	Silicon PNP (WHT T)	4801-0000-060
Q119	Silicon PNP (WHT T)	4801-0000-060
Q120	Silicon NPN	4801-0000-010
Q121	Silicon PNP (WHT T)	4801-0000-060
Q122	Silicon NPN	4801-0000-010
Q123	Silicon NPN	4801-0000-010
Q124	Silicon NPN	4801-0000-010
	DIODES	
CR101	Varactor MV209	4809-0000-005
CR102	Varactor MV2201	4809-0000-004
CR103	Varactor MV2201	4809-0000-004
CR104	Varactor MV2209	4809-0000-001
CR105	Varactor MV2201	4809-0000-004
CR106	Varactor MV2201	4809-0000-004
CR107 to CR126	Germanium Junction Signal	4807-1233-900
CR127	Varactor MV2108	4809-0000-006
CR128		
CR129	Silicon IN4148	4805-1241-200
CR130	Silicon IN4148	4805-1241-200
CR131	Silicon IN4148	4805-1241-200
CR132 to CR151	Silicon IN4148	4805-1241-200
CR152	Silicon Rectifier	4806-0000-004
CR153	Silicon Rectifier	4806-0000-004
CR154	Varactor MV2201	4809-0000-004
	FILTERS	
FLV101	Crystal 10.7 MHz	2705-3232-200
CF101	Ceramic 455 KHz	2700-3209-500
	CRYSTALS	
Y111	10.245 MHz	2301-3151-601
Y111	11.155 MHz (Alternate)	2301-3151-602

4-2 SWITCH BOARD

Item No.	Description	Part No.
RESISTORS		
R301 to R320 R321	390 Ohm½W 10%	4701-0391-044
R322	Var 7.5K, Squelch	4752-5107-502
R323	Var 10K, Volume	4752-5107-501
R324	270 Ohm	4701-0271-042
R325	22K	4701-0223-042
CAPACITOR		
C301	250 mf 10v	1513-0251-001
DIODE		
CR301	Silicon IN4148	4805-1241-200
LIGHT EMITTING DIODES		
LD301 to LD320	LED Red	4810-1282-900
SWITCHES		
SW301 to SW320	Channel Off-On	5113-3254-500
SW321	Power	5113-3231-501
SW322	Scan-Manual	5113-3231-601
SW323	Manual Select (Step)	5113-3231-601

4-3 CHASSIS ASSEMBLY

Item No.	Description	Part No.
ELECTRICAL COMPONENTS		
R1	Res, 1 Meg, ½W 10%	4701-0105-044
C1	Cap, .005 mf, 1.4Kv	1501-0502-002
SPK-1	Speaker 2"x6", 8 Ohm	1301-5101-000
Ant-1	Antenna, H/L Telescoping	1201-0000-002
Ant-2	Antenna, UHF Telescoping	1201-0000-003
T1	Power Transformer	5604-5100-600
MA-16	AC Power Cord	6041-3215-900
MA-17	DC Power Cord Assembly	7011-1047-800
MECHANICAL COMPONENTS		
	Front Panel (Bezel)	1411-7021-900
	Face Plate	2509-5129-201
	Knob Switches	2402-5127-703
	Knob Controls	2402-5127-603
	Cabinet/Wrap Assembly	1408-7024-000
	Feet, Rubber	1402-0000-001
	Bracket, Mobile Mounting	1400-5129-500