

PHOTOFACT[®] with

CIRCUITRACE[®]

For Supplier Address See PHOTOFACT Index

NOTE

Repair or adjustment of transmitter circuits must be under supervision of a person with first-or second-class radiotelephone license.
(Refer to FCC Rules and Regulations Part 95, Subpart C & D.)

The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

Connect either 50-ohm dummy load or the normally used antenna system.



MODEL 981-6218 (981-8394)

MANUFACTURER'S SPECIFICATIONS

Transmitter

RF Output Power : 4 W, FCC max.,
at 13.8 V dc

Modulation Capability : +90%, -100%

Frequency Stability : 0.005%

Current Drain at
no Modulation : 550 mA

Current Drain at Maximum
Modulation : 1.2 A

Measurement Condition

Audio Output Power : 0.5 W

Audio Output Load : 8 ohms

Modulation Frequency : 1000 Hz

Modulation : 30%

Test Temperature : 25°C

Power Supply : 13.8 V dc

Squelch Control : Defeat

ANL Switch : OFF position

Noise Blanker Switch : OFF position

PA switch (Squelch knob) : Out of PA position

Antenna Impedance : 50 ohms

Microphone

Cartridge Type : Dynamic

Output Impedance : 700 ohms

Output Level : 0 dB = 0.4 millivolt/
microbar at 1 kHz

Frequency Range : 300 Hz ~ 3.5 kHz

Receiver

Sensitivity : 0.7 μ V

Image Rejection Ratio
at fo - 910 MHz : 40 dB

Spurious Rejection Ratio : 40 dB

Squelch Sensitivity
at Maximum : 500 μ V

Squelch Sensitivity
at Threshold : 1 μ V

A.G.C. (As measured
to EIA specs) : 80 dB

I-F Response at 6 dB
down bandwidth : ± 2.8 kHz

Adjacent Channel
Selectivity : -40 dB

Frequency Stability : 0.005%

Audio Output Power
at Maximum : 4 W

Audio Output Power
at 10% Distortion : 3 W

Audio Fidelity at 400 Hz : -15 dB

Audio Fidelity at 3000 Hz : -15 dB

S-Meter Sensitivity for S-9 : 100 μ V

Current Drain at no signal : 250 mA

Current Drain at Maximum
Audio Output : 950 mA

Hum & Noise : -45 dB

Courtesy of the Manufacturer

HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

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JCPenney MODEL 981-6218

ALIGNMENT INSTRUCTIONS

CAUTION: Use isolation transformer or observe polarity when connecting test equipment. Maintain line voltage at 120V AC. Allow a 15-minute warm-up period. Adjustments made with 13.8-volt DC input. Connect low sides of test equipment to ground unless specified otherwise. Connect 50-ohm dummy load or antenna before keying transmitter. Connect Microphone

Suggested Alignment Tools: GC Electronics:
L1,L2,L5,T1 thru T6.....9440
L7,L11,L12.....9300,9302,9304
L14,T7.....5000,5009,8276,8728,8728A
T8,T9.....5000,5009,8276,8728,8728A
CT1.....5000,8276

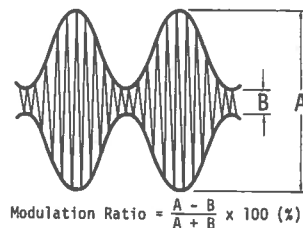


FIGURE 1

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of frequency counter to TP1 (IC1 Pin 3).	Ch. 19 Delta Tune 0	CT1	Adjust for 10.240MHz +50Hz.
Input of oscilloscope to TP2 (T1 Secondary).	Ch. 19	T1	Adjust for maximum RF output.
Input of DC meter to TP8.	Ch. 1 Delta Tune 0	L1	Adjust for 3.60 volts +.1 volts.
Input of frequency counter to TP3 (IC1 Pin 2).	Ch. 1 Delta Tune 0		Check for 3.300MHz. Check all channels. (See Truth Chart for correct frequencies).
Input of oscilloscope to TP4 (Junction of C22 and C57).	Ch. 19 Delta Tune 0	L2,T2	Adjust for maximum RF output.
Input of frequency counter to TP4 (Junction of C22 and C57).	Ch. 19 Delta Tune 0		Check for 37.660MHz. Check all channels. (See Truth Chart for correct frequencies).
Input of frequency counter to TP5 (IC3 Pin 2).	Ch. 19, XMT		Check for 10.695MHz.

RECEIVER ALIGNMENT

Connect an AC VTVM or AF wattmeter across speaker voice coil. Adjust volume control to obtain a suitable indication. Set generator output low enough to prevent AGC limiting. Delta Tune 0, RF Gain Maximum, Squelch MINIMUM, ANL Switch Off, NB Switch Off.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP6 (Q10 Emitter). 455kHz,1000Hz @ 30% modulation.	Ch. 19	T10,T9,T8	Adjust for maximum output.
Output of signal generator thru .01uF to antenna input. 27.185MHz,1000Hz @ 30% modulation.	Ch. 19	T7,L14,T6, T5	Adjust for maximum output. If necessary readjust T8, T9 and T10 for maximum.

RECEIVER ADJUSTMENTS

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.
Delta Tune 0, RF Gain Maximum, Squelch MINIMUM, ANL Switch Off, NB Switch Off.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna input. 27.185MHz,1000Hz @ 30% modulation. Output 1000uV.	Ch. 19	RV1	SQUELCH RANGE Adjust so that squelch just breaks.
Output of signal generator thru .01uF to antenna input. 27.185MHz,1000Hz @ 30% modulation. Output 100uV.	Ch. 19	RV3	S METER Adjust for 9 on S scale of meter.

TRANSMITTER ALIGNMENT

Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.
NOTE: Be sure to check transmit frequency and power on all active channels after alignment of transmitter.
See page 4 for channel frequencies. SWR/CAL/RF Switch RF.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of RF wattmeter and 50-ohm, 25-watt dummy load to antenna input.	Ch. 19	L5,T3,T4,	Adjust for maximum RF output.
Input of RF wattmeter and 50-ohm, 25-watt dummy load to antenna input.	Ch. 19	L7,L11,L12	Adjust for 4.0 watts RF output maximum.

TRANSMITTER ADJUSTMENTS

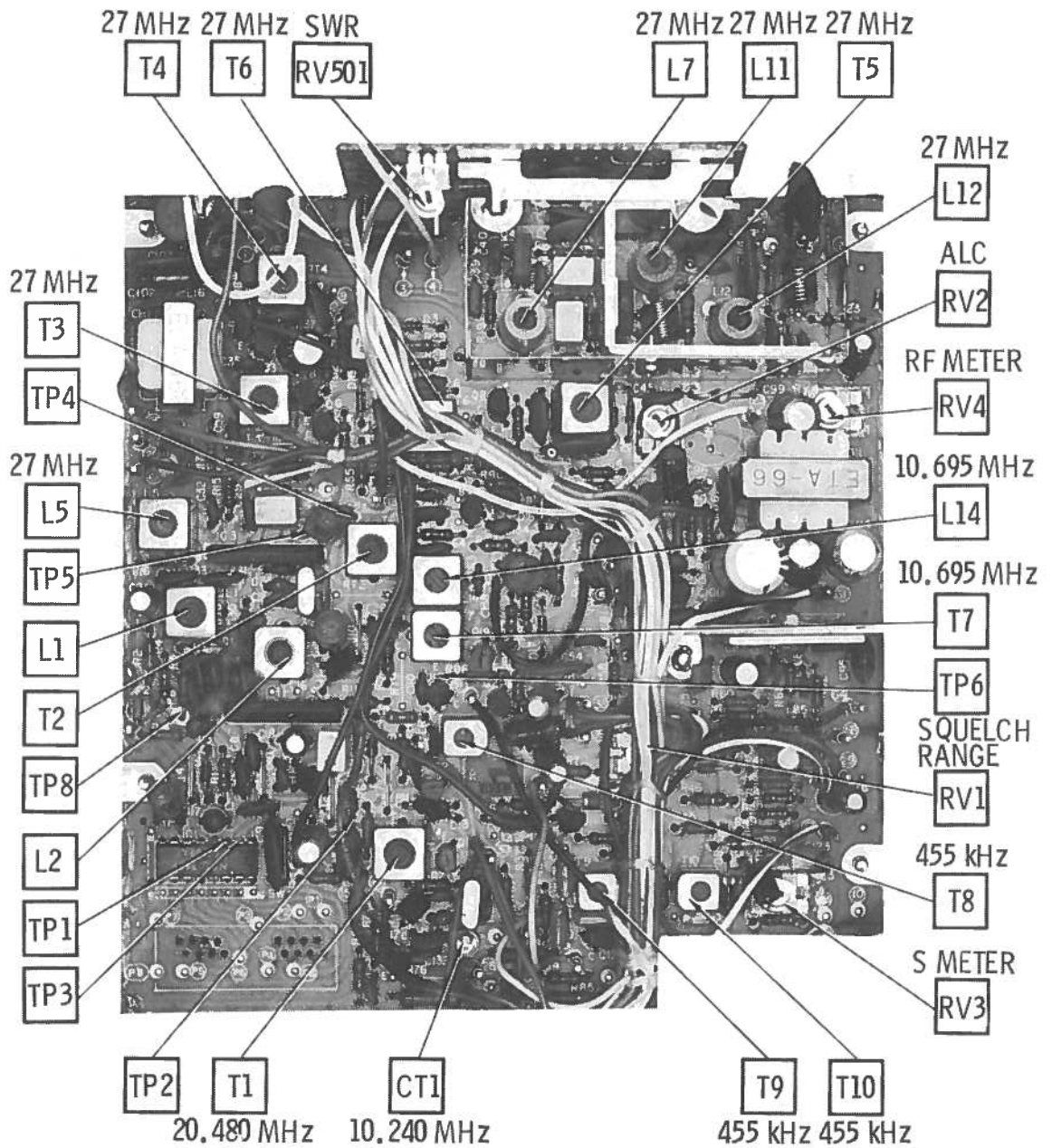
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.
NOTE: Be sure to check transmit frequency and power on all active channels after adjustment of transmitter.
See page 4 for channel frequencies.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of oscilloscope or modulation meter to antenna input. Inject a 1000Hz,20mV signal at MIC input.	Ch. 19	RV2	AMC Adjust for 85% modulation maximum. See Figure 1.
Connect a 150 ohm, 5 watt non-inductive resistor to antenna input.	Ch. 19	RV501	SWR CA1 Set SWR/CA1/RF switch to CAL. Key transmitter and adjust CAL control, VR4 so that needle rests over SET mark on meter. Set SWR/CAL/RF switch to SWR and adjust for 3 on SWR scale of meter.
Input of RF wattmeter and 50-ohm, 25-watt dummy load to antenna input.	Ch. 19, SWR/CAL/RF RF	RV4	RF METER Adjust so that needle rests at left edge of red area on POWER scale of meter.

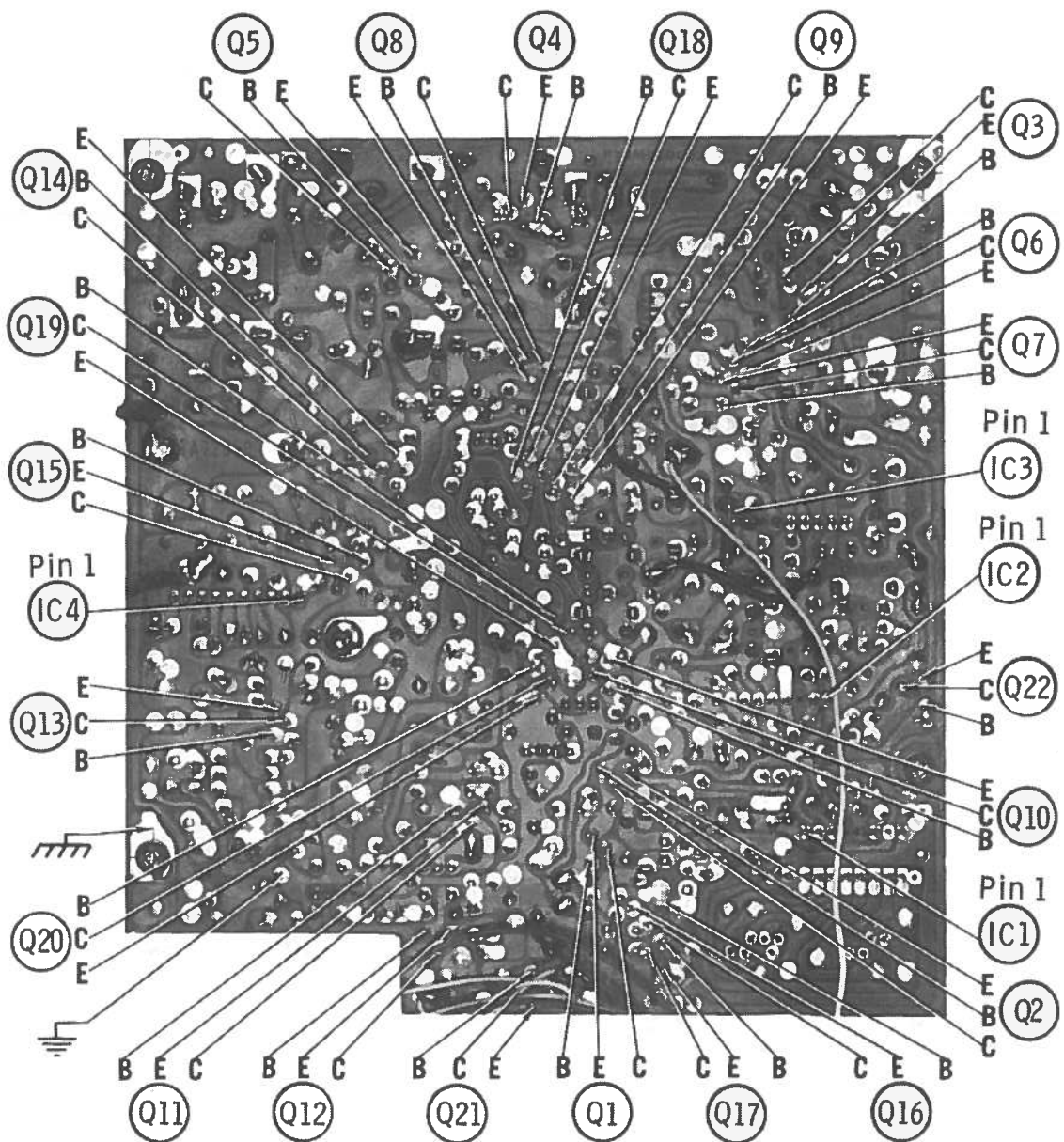
JC Penney MODEL 981-0218

TRUTH CHART

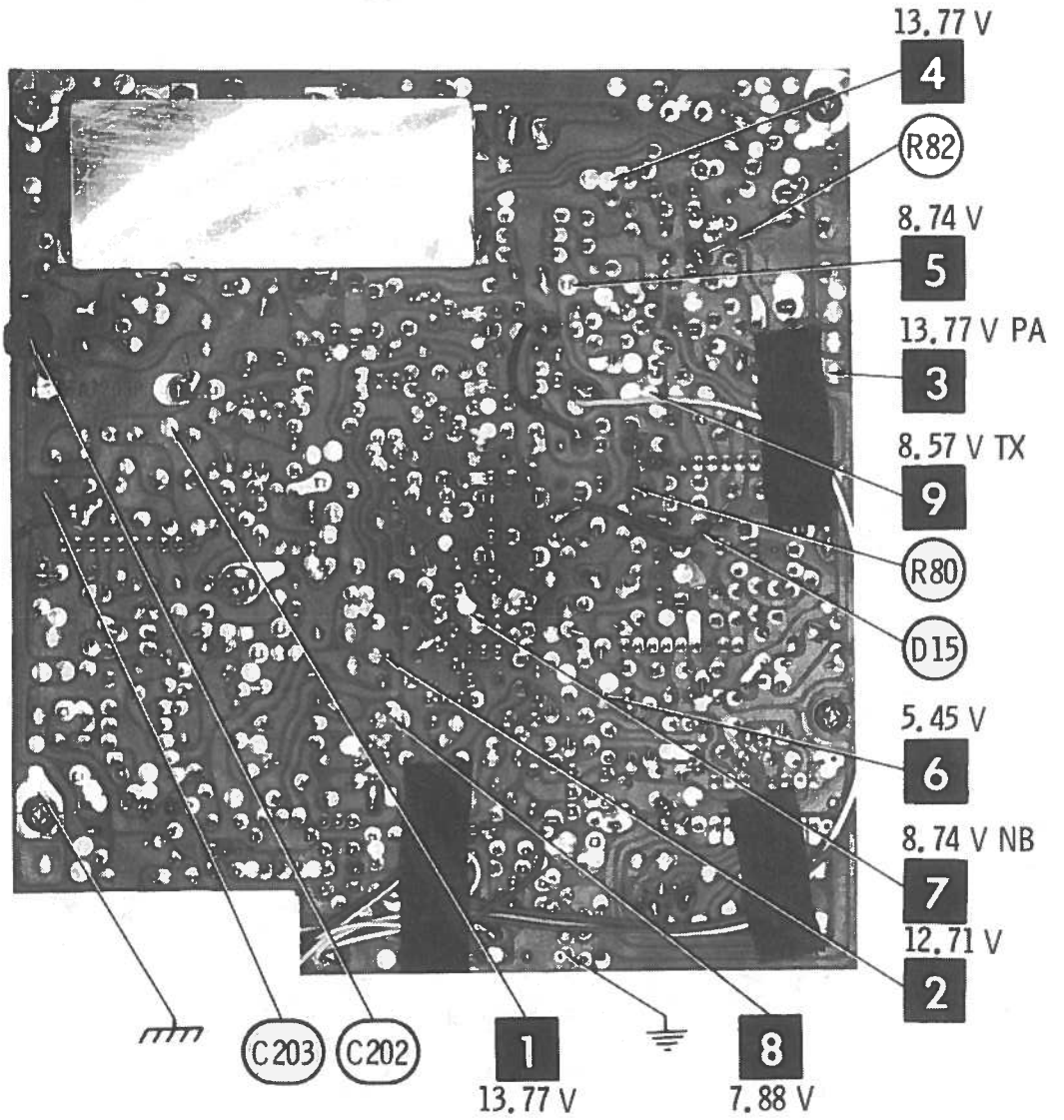
CHANNEL	1 = 5.40 Volts 0 = 0 Volts								REC VCO OUTPUT IN MHz AT TP4		
	IC1 PROGRAM DIVIDER										
	PINS										
	9	10	11	12	13	14	15				
1	1	0	0	1	0	1	0		37.660		
2	1	0	0	1	0	0	1		37.670		
3	1	0	0	1	0	0	0		37.680		
4	1	0	0	0	1	1	0		37.700		
5	1	0	0	0	1	0	1		37.710		
6	1	0	0	0	1	0	0		37.720		
7	1	0	0	0	0	1	1		37.730		
8	1	0	0	0	0	0	1		37.750		
9	1	0	0	0	0	0	0		37.760		
10	0	1	1	1	1	1	1		37.770		
11	0	1	1	1	1	1	0		37.780		
12	0	1	1	1	1	0	0		37.800		
13	0	1	1	1	0	1	1		37.810		
14	0	1	1	1	0	1	0		37.820		
15	0	1	1	1	0	0	1		37.830		
16	0	1	1	0	1	1	1		37.850		
17	0	1	1	0	1	1	0		37.860		
18	0	1	1	0	1	0	1		37.870		
19	0	1	1	0	1	0	0		37.880		
20	0	1	1	0	0	1	0		37.900		
21	0	1	1	0	0	0	1		37.910		
22	0	1	1	0	0	0	0		37.920		
23	0	1	0	1	1	0	1		37.950		
24	0	1	0	1	1	1	1		37.930		
25	0	1	0	1	1	1	0		37.940		
26	0	1	0	1	1	0	0		37.960		
27	0	1	0	1	0	1	1		37.970		
28	0	1	0	1	0	1	0		37.980		
29	0	1	0	1	0	0	1		37.990		
30	0	1	0	1	0	0	0		38.000		
31	0	1	0	0	1	1	1		38.010		
32	0	1	0	0	1	1	0		38.020		
33	0	1	0	0	1	0	1		38.030		
34	0	1	0	0	1	0	0		38.040		
35	0	1	0	0	0	1	1		38.050		
36	0	1	0	0	0	1	0		38.060		
37	0	1	0	0	0	0	1		38.070		
38	0	1	0	0	0	0	0		38.080		
39	0	0	1	1	1	1	1		38.090		
40	0	0	1	1	1	1	0		38.100		



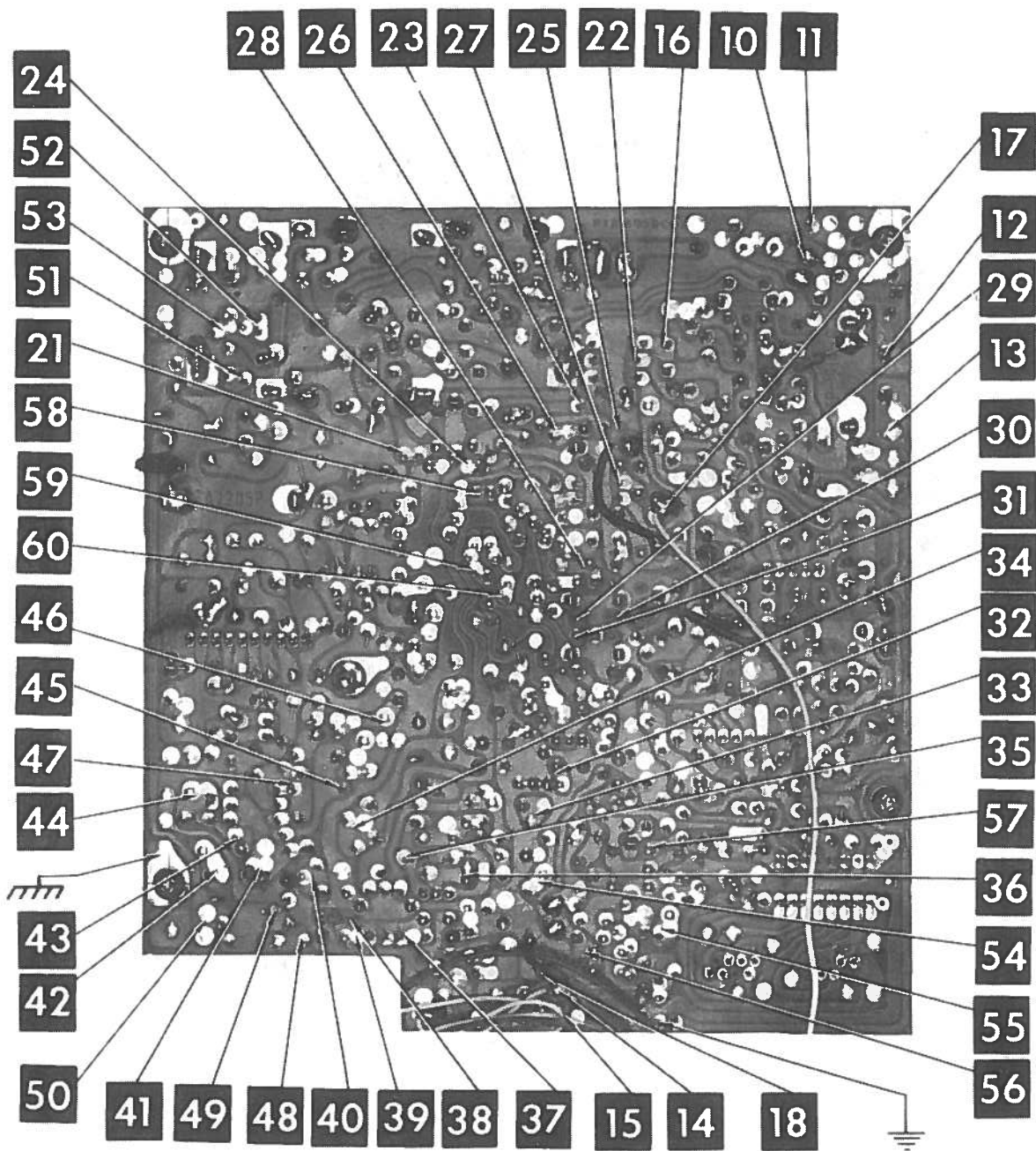
MAIN BOARD



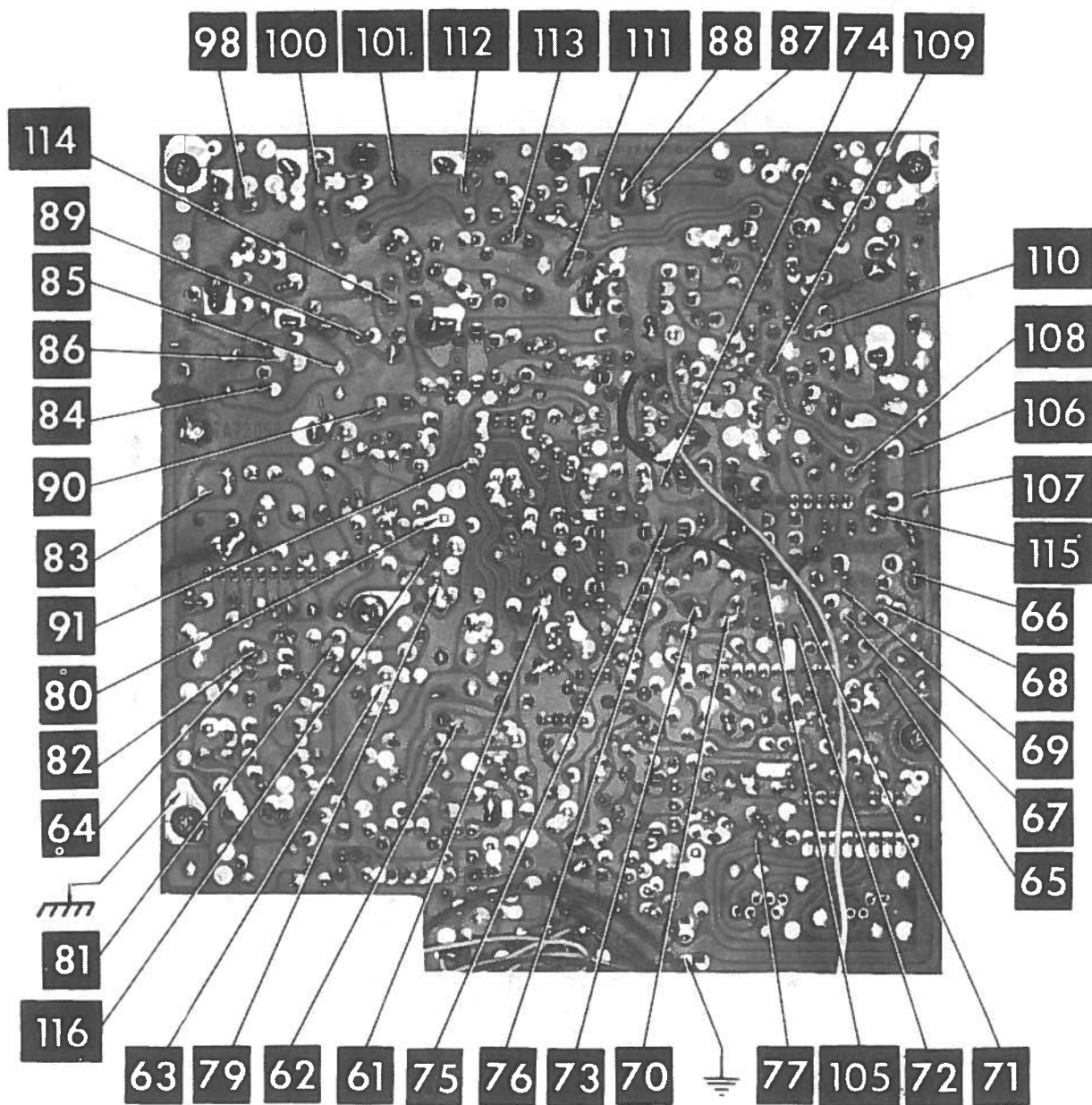
MAIN BOARD



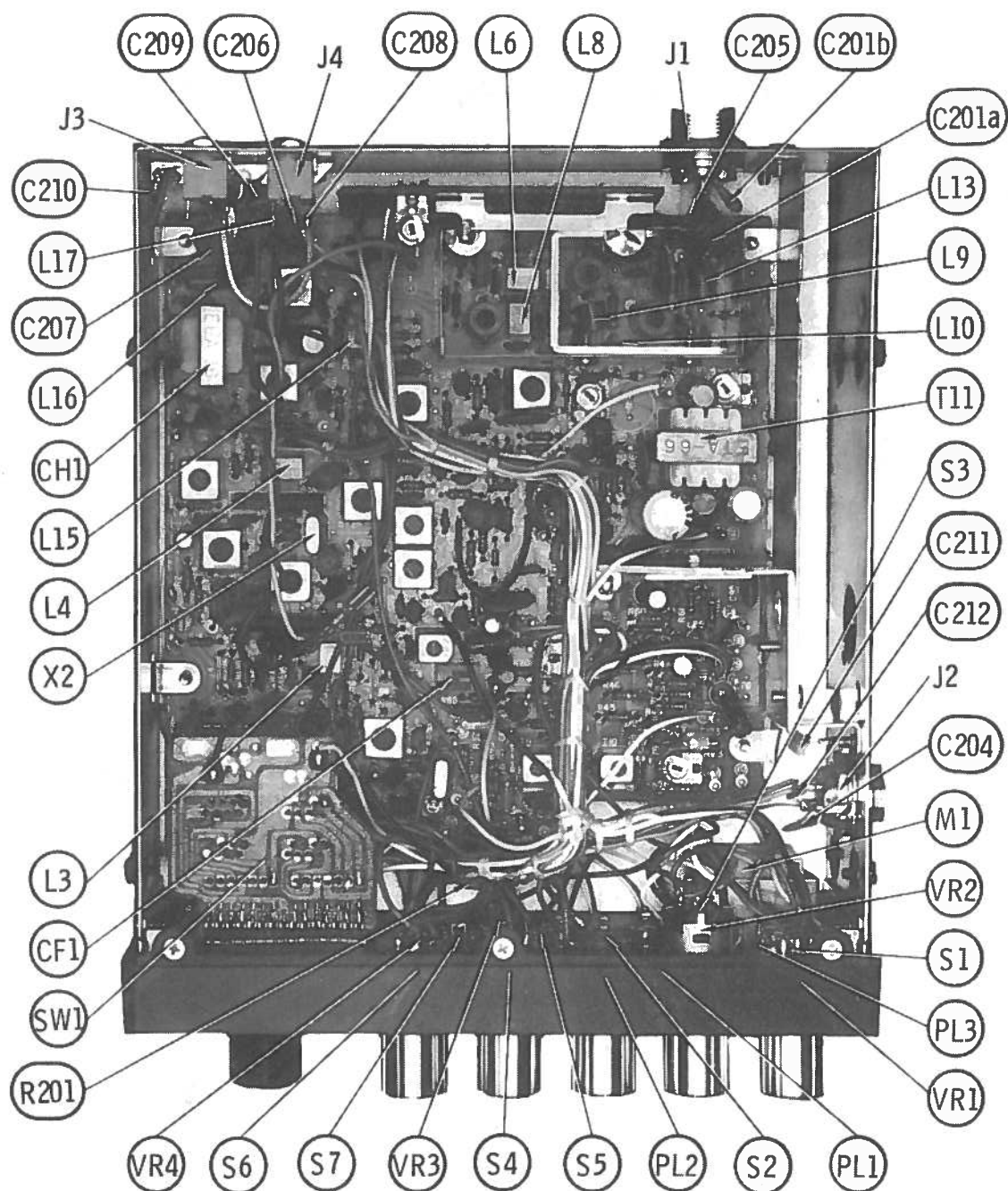
MAIN BOARD



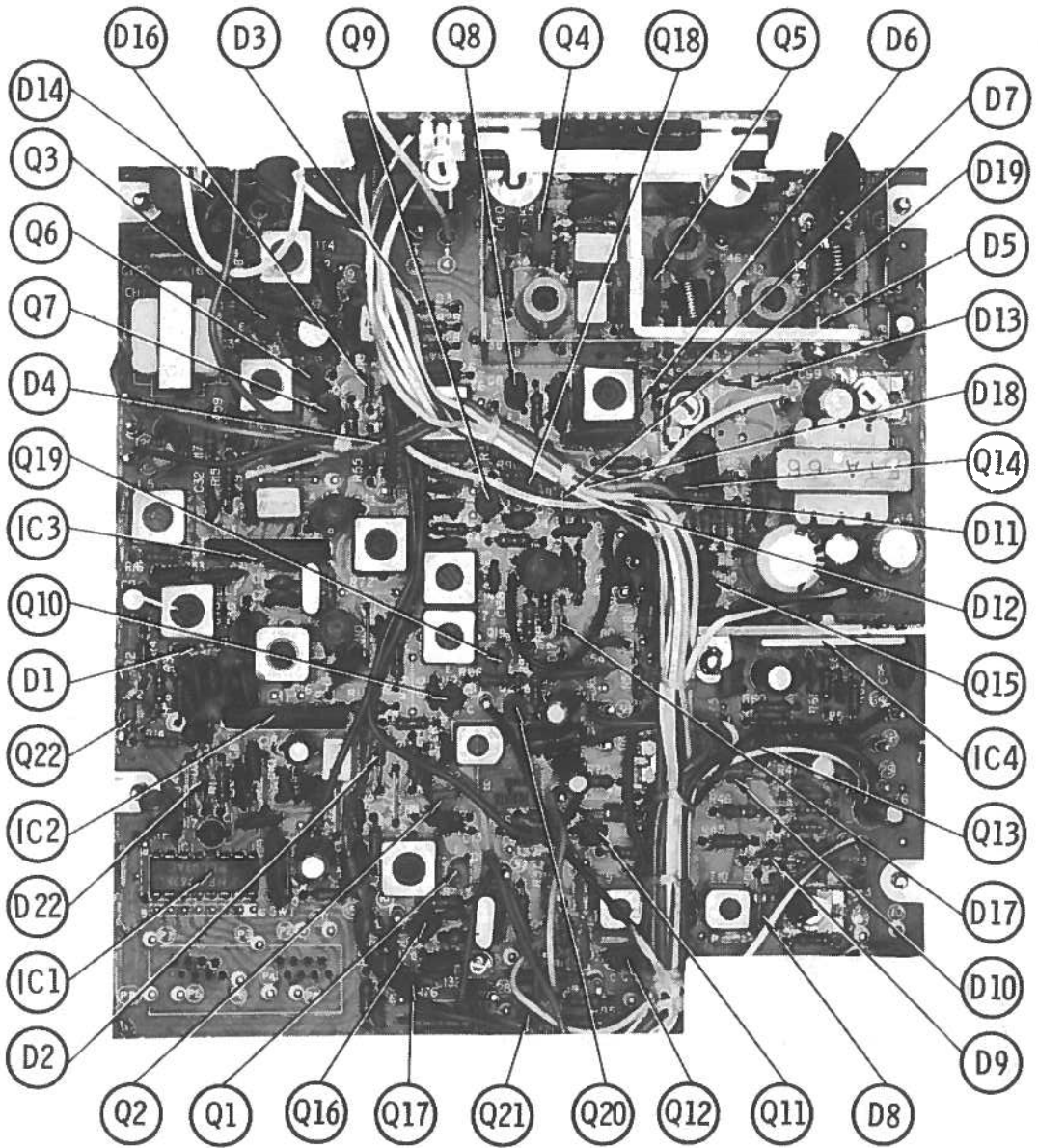
MAIN BOARD



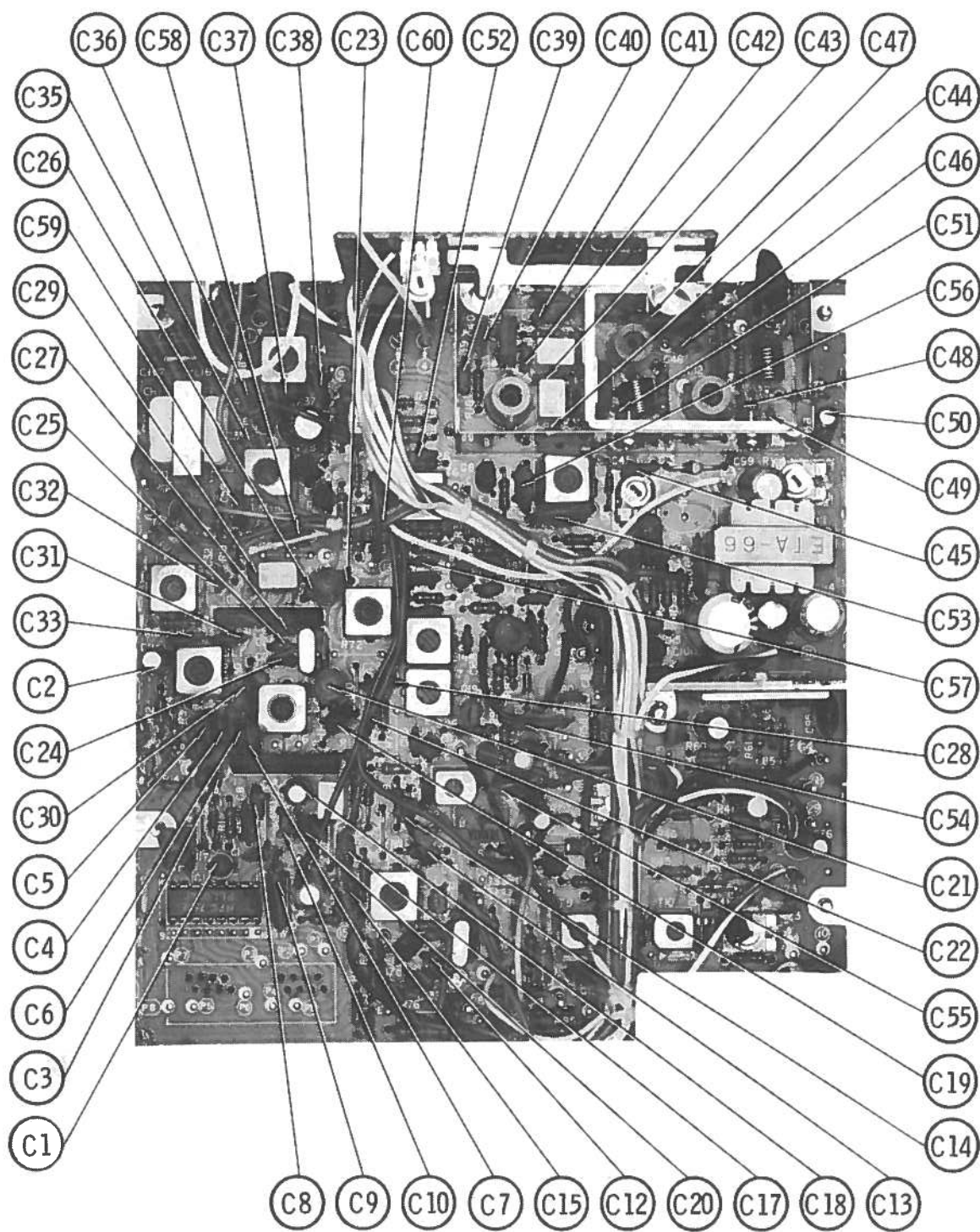
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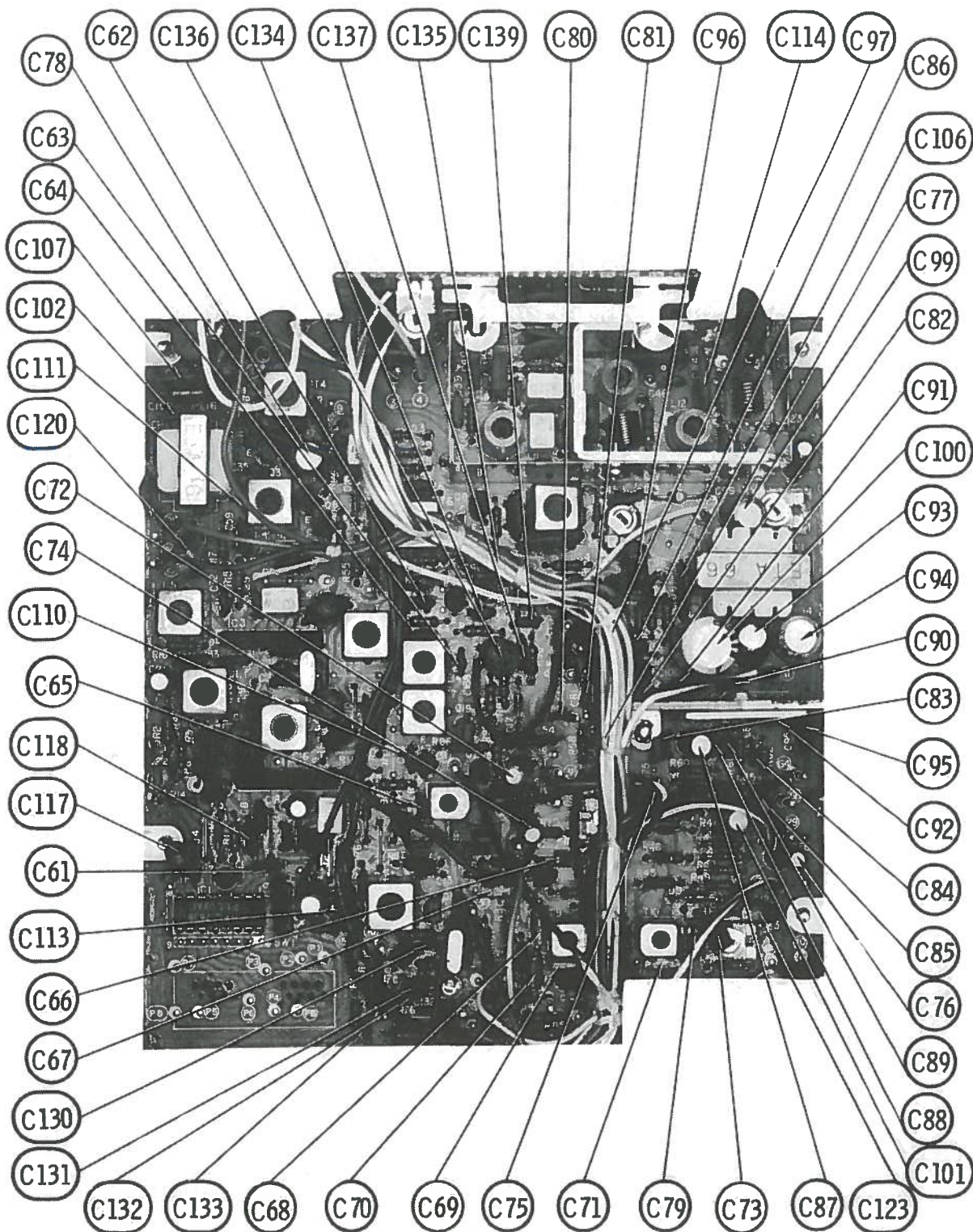
CHASSIS - BOTTOM



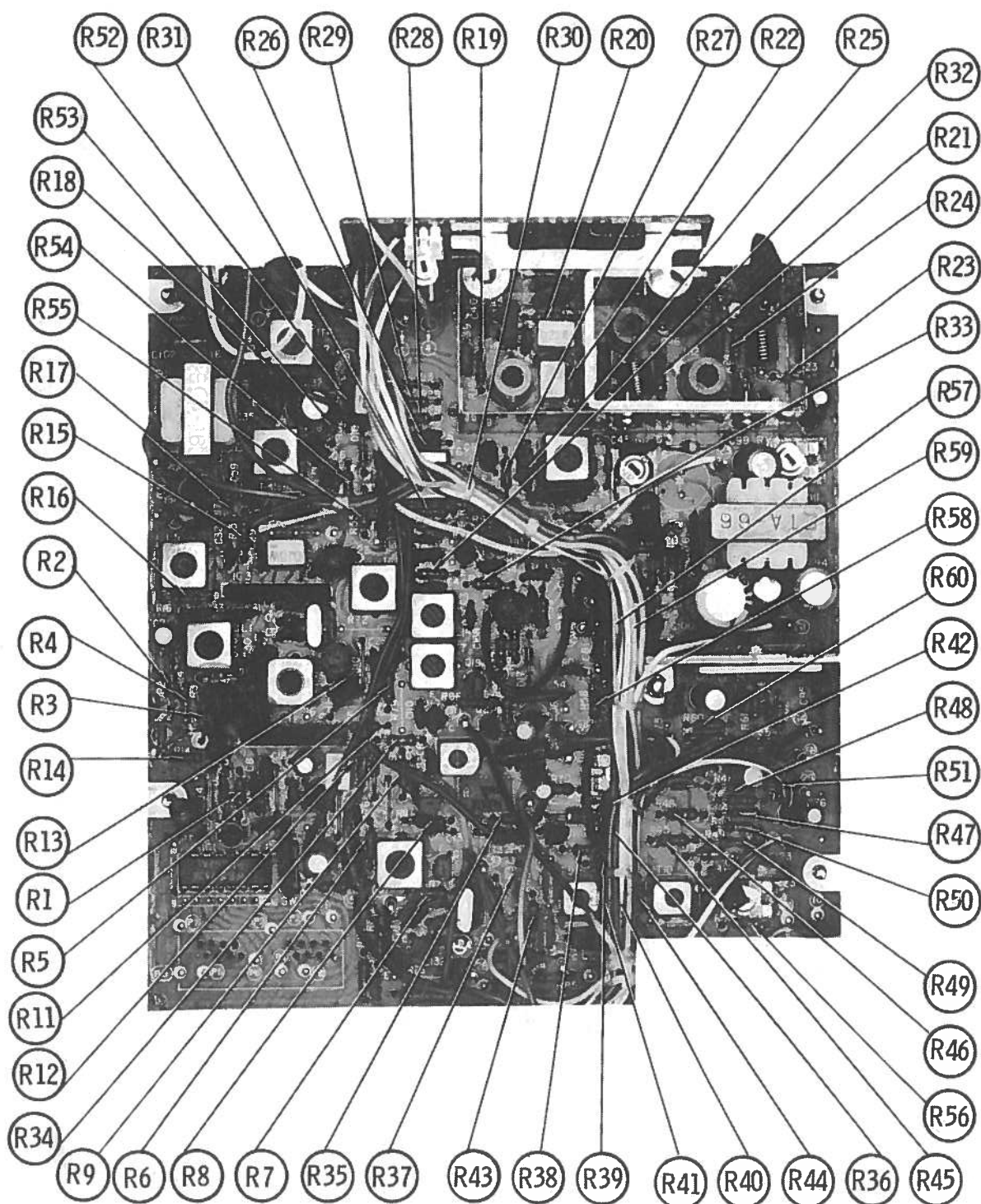
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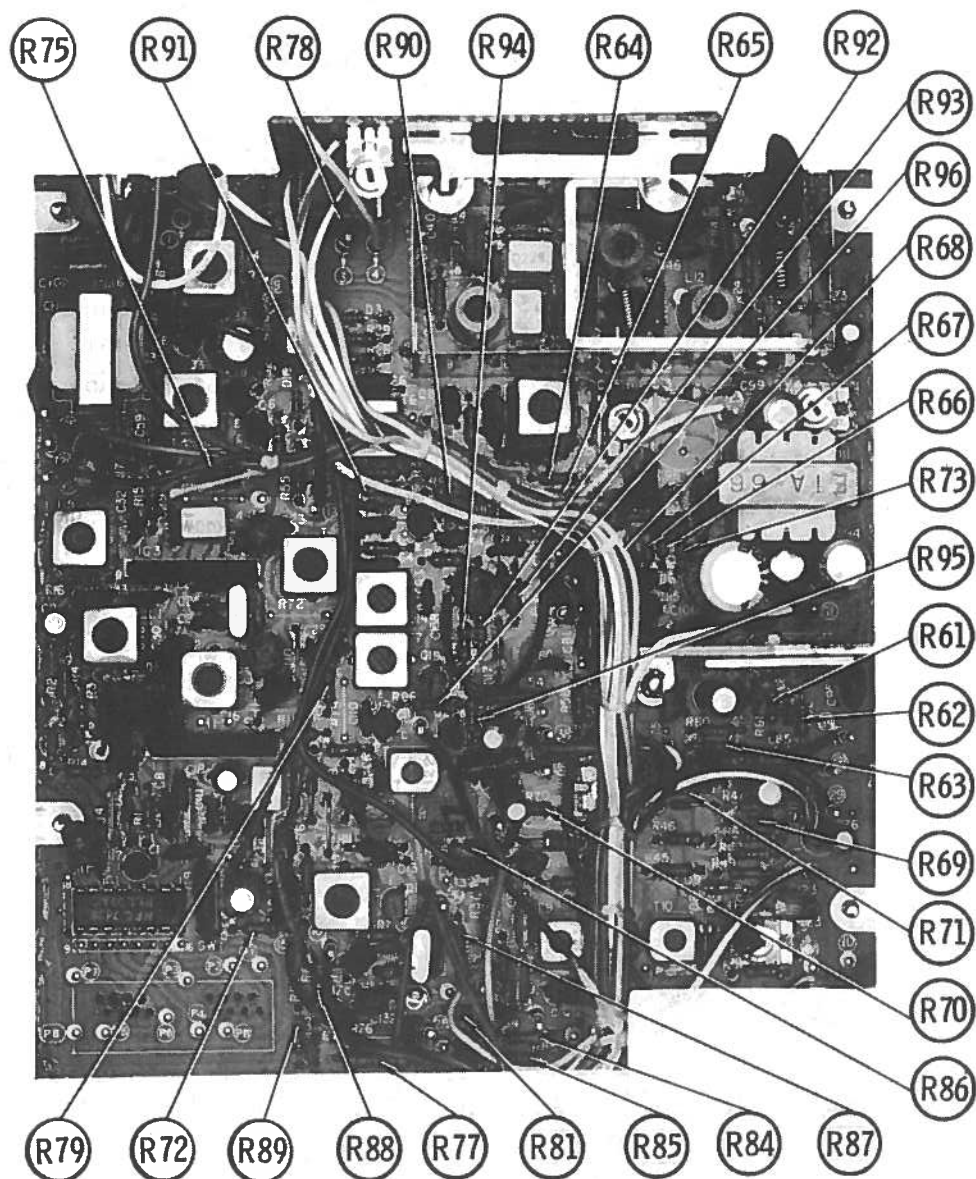
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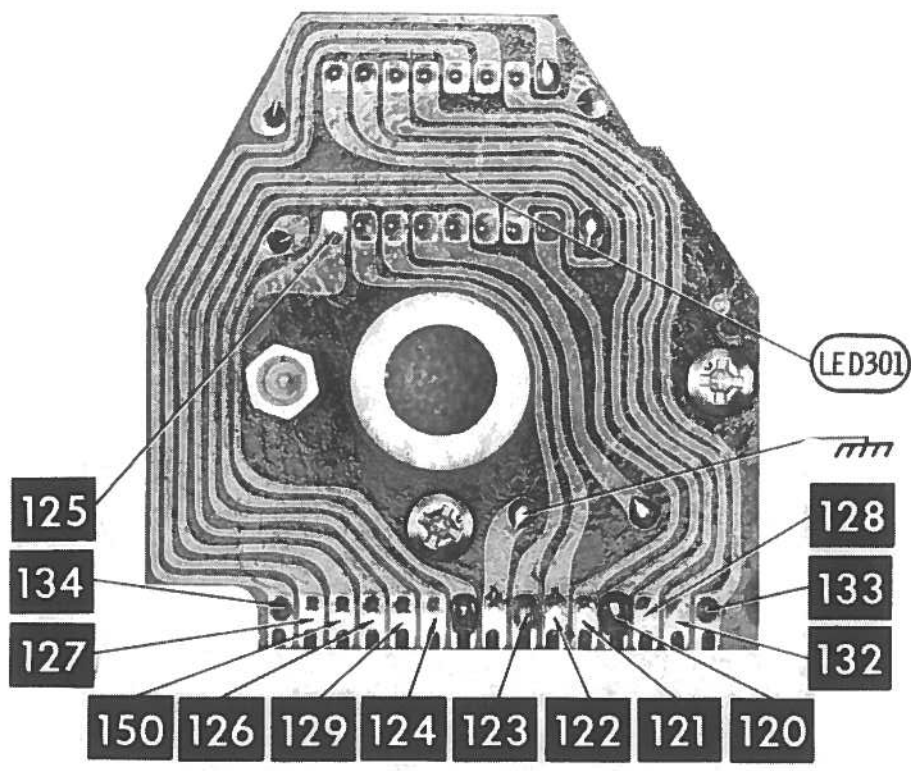
MAIN BOARD



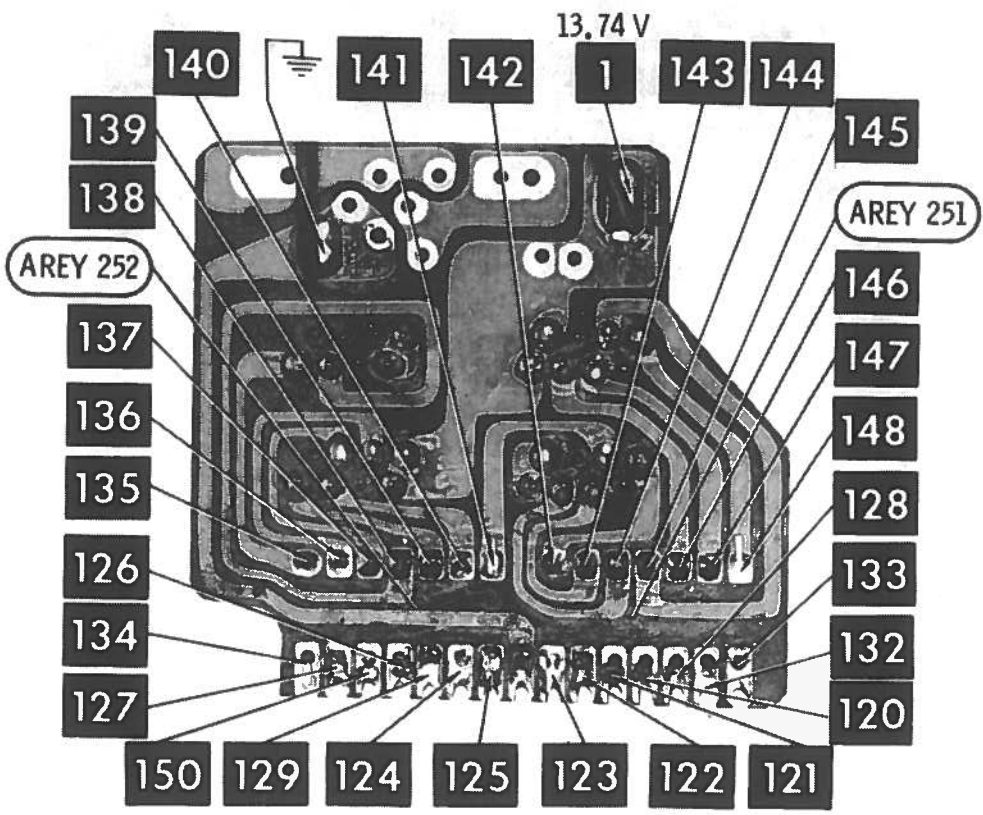
MAIN BOARD



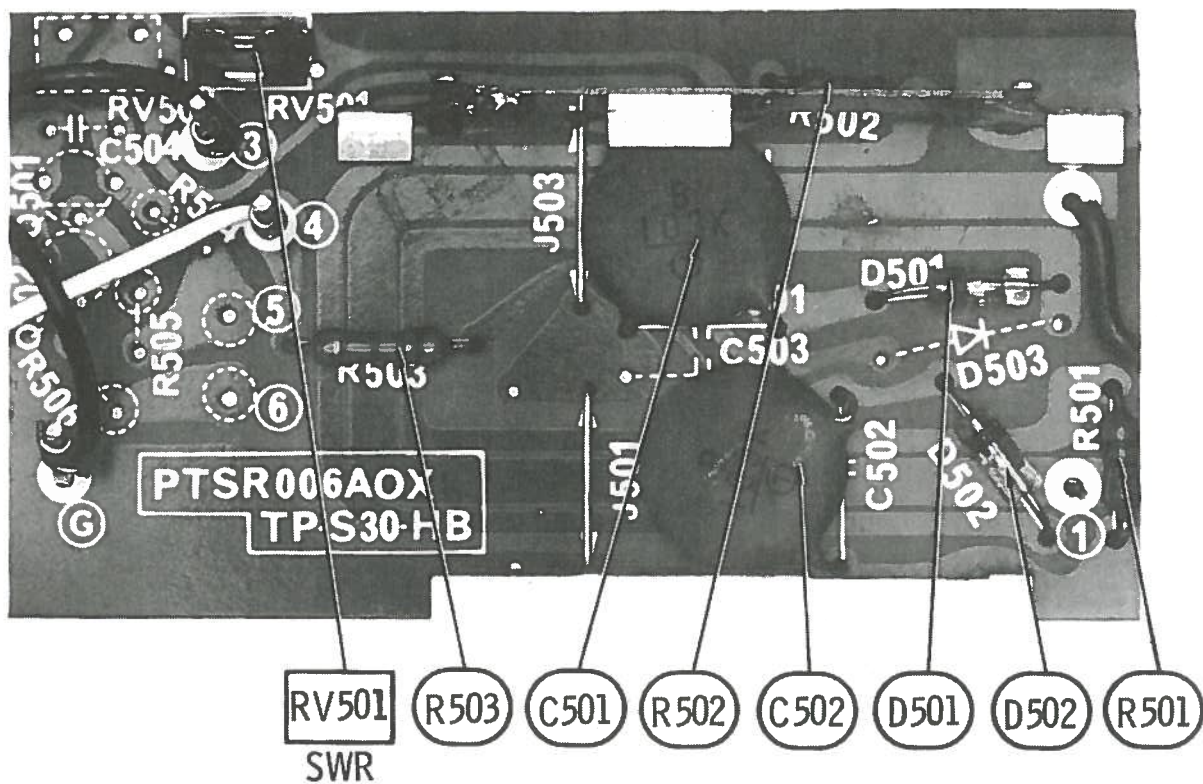
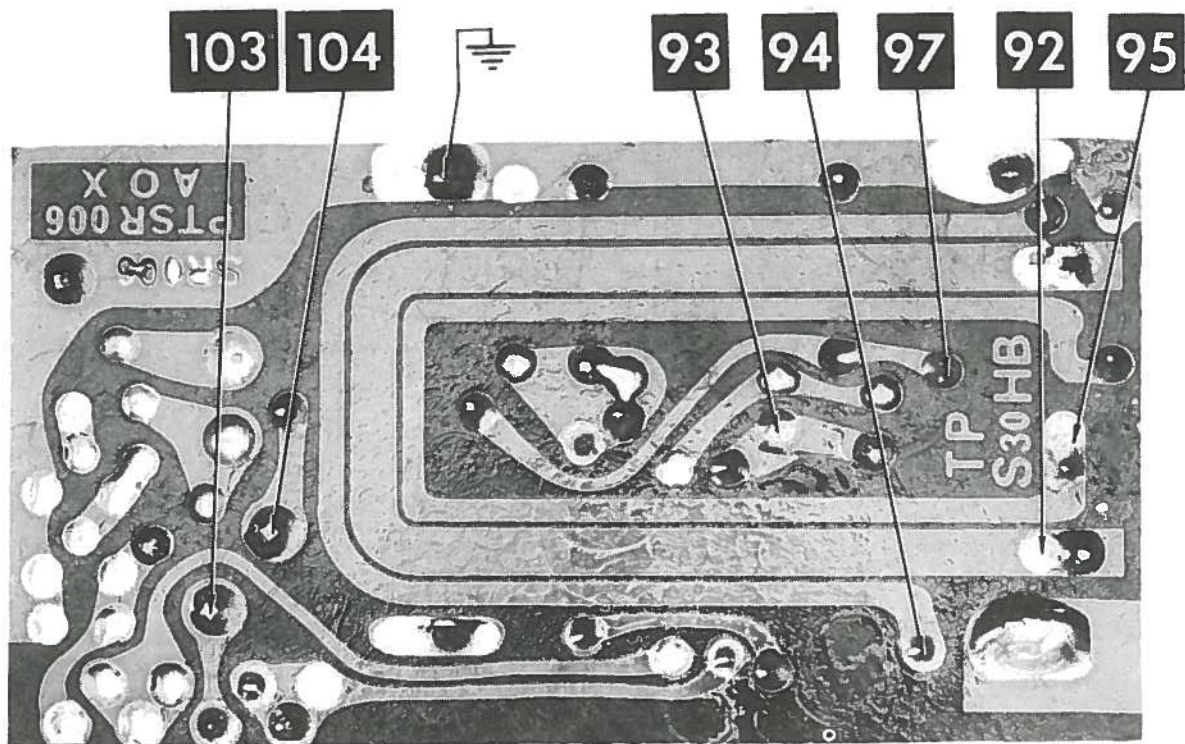
MAIN BOARD



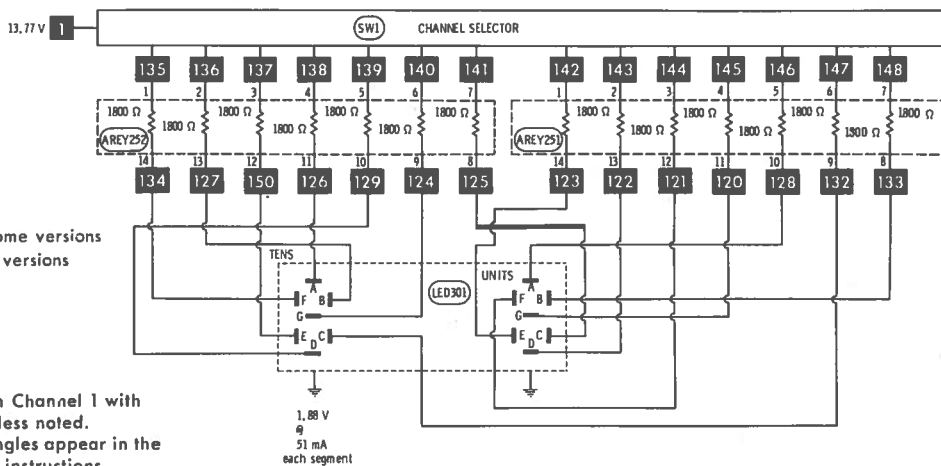
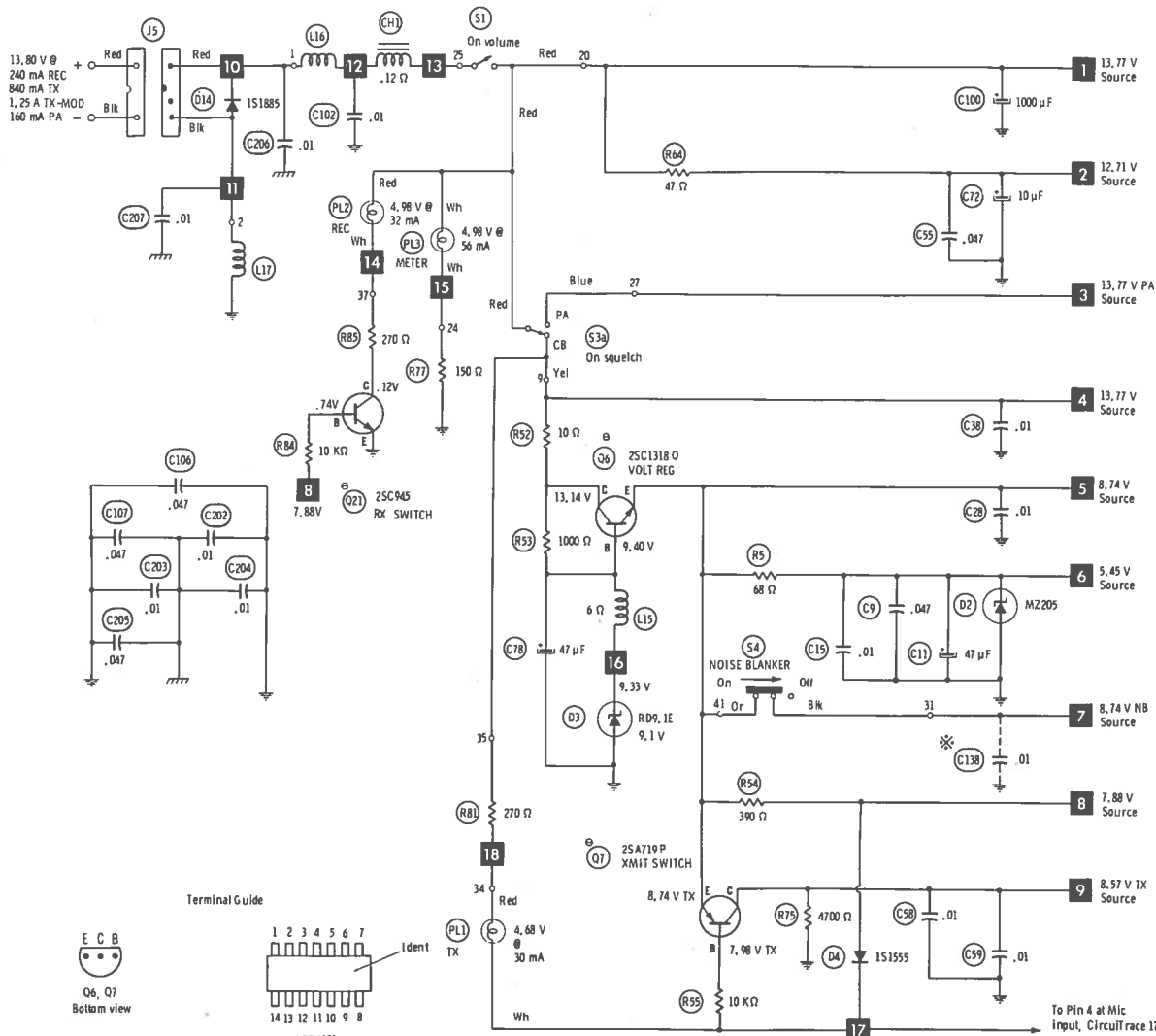
LED BOARD



SWITCH BOARD



SWR BOARD

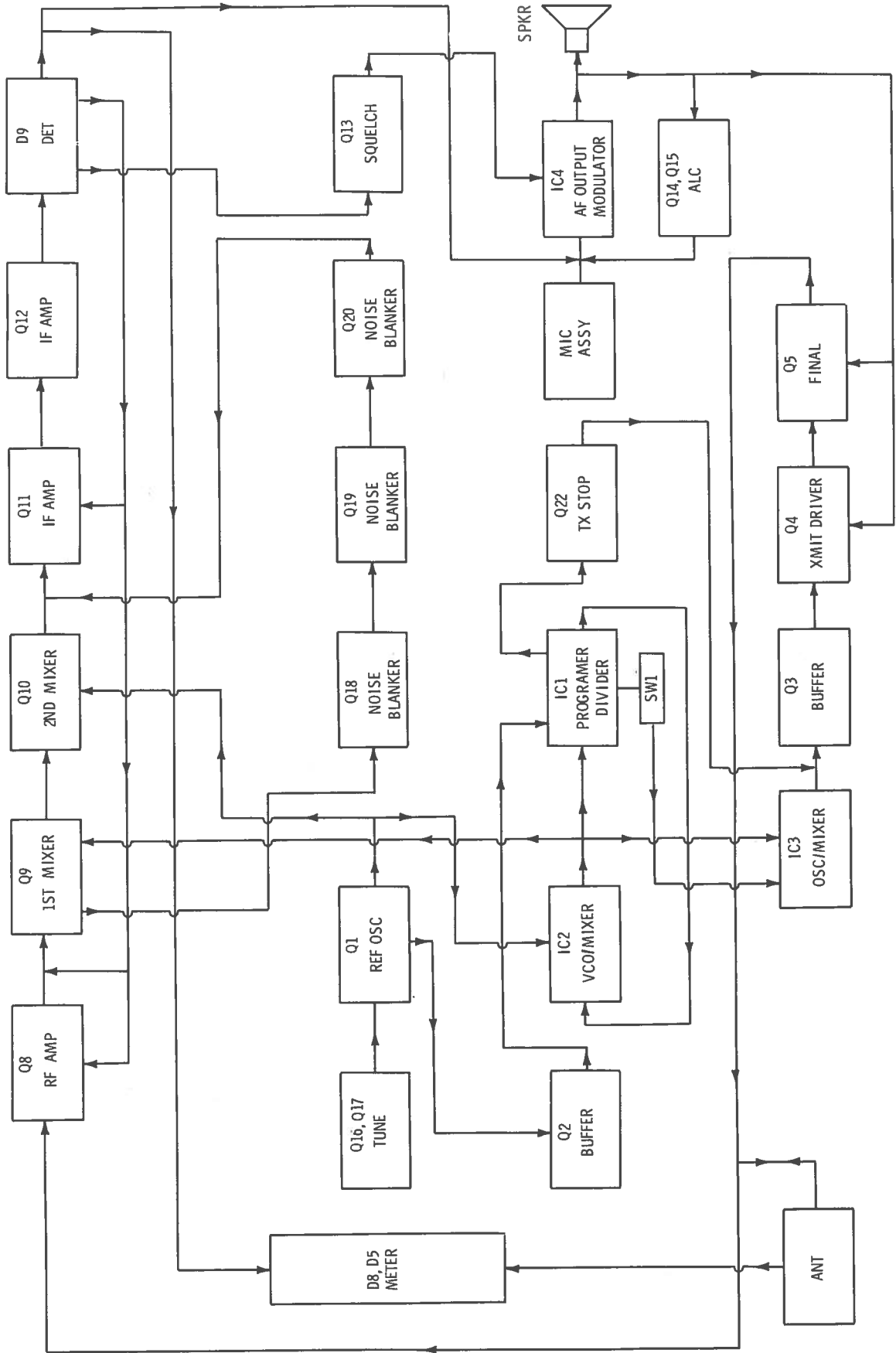


- ✗ Circuitry not used in some versions
 - Circuitry used in some versions
 - ⊙ See parts list
 - ✱ Nominal value
 - ⊥ Ground
 - ⏏ Chassis
 - ▽ Common tie point
- Measurements made in Channel 1 with switching as shown unless noted.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltage maintained as shown at input.
Voltages measured with digital meter, no signal.
Controls adjusted for normal operation.
Arrow at control indicates direction of advance.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 5% unless noted.
Value in () used in some versions.

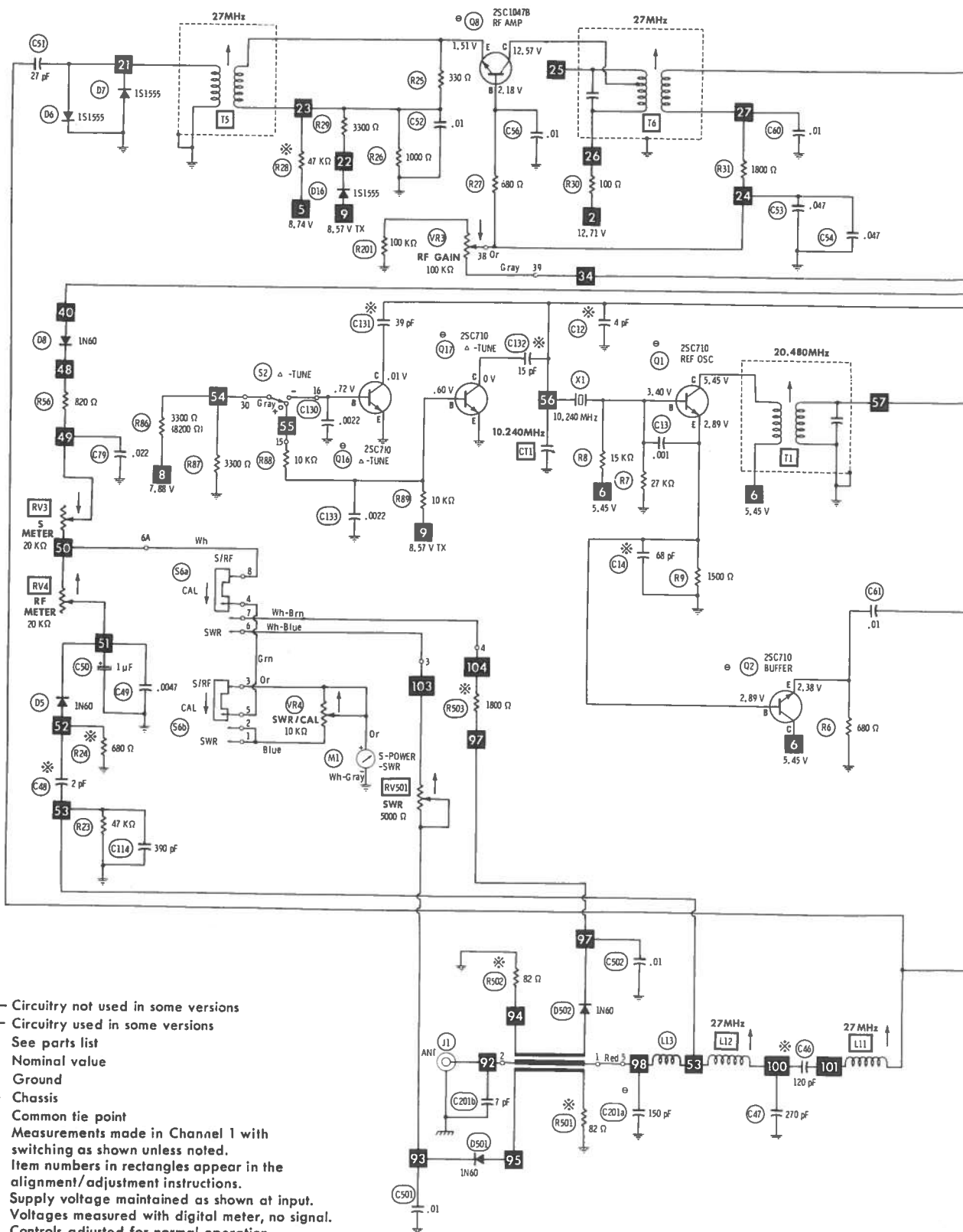
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WITH CIRCUITACE®

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JCPenney MODEL 981-6218



BLOCK DIAGRAM



— Circuitry not used in some versions

- - - Circuitry used in some versions

⊙ See parts list

* Nominal value

⊥ Ground

Chassis

▽ Common tie point

Measurements made in Channel 1 with switching as shown unless noted.

Item numbers in rectangles appear in the alignment/adjustment instructions.

Supply voltage maintained as shown at input.

Voltages measured with digital meter, no signal.

Controls adjusted for normal operation.

Arrow at control indicates direction of advance.

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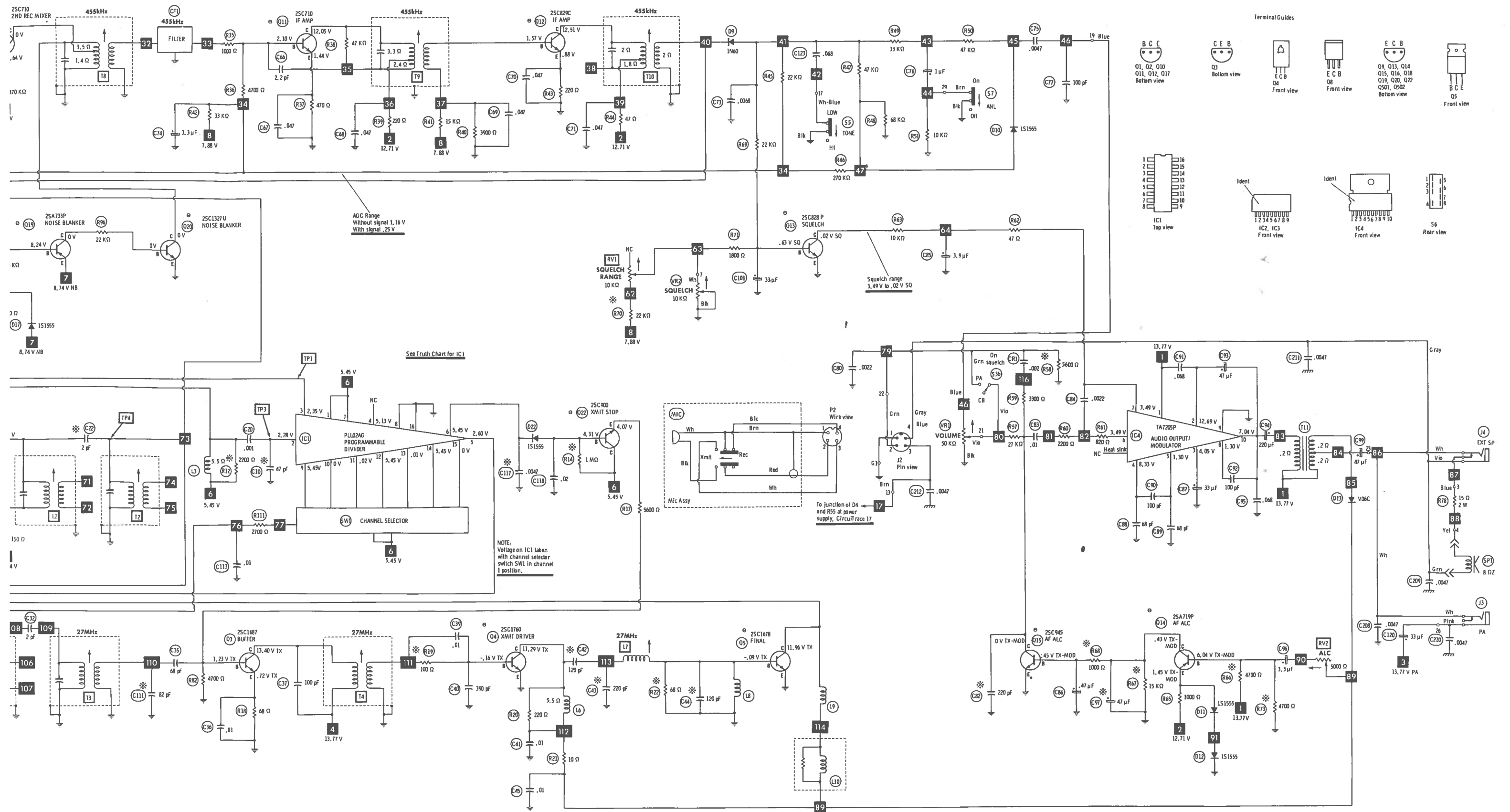
Resistors are 1/2W or less, 5% unless noted.

Value in () used in some versions.

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PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA									
			GENERAL ELECTRIC PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
D1	1TT410 BB121 MV201	QD-CTT410XQ			HEPR2502 HEPR2502 HEPR2502	REN 612 REN 612 REN 612			ECG612 ECG612 ECG612			ZEN-452 ZEN-452 ZEN-452
D2	MZ205	QD-AM205XE	GEZD-5.1	ZM5.1B				RT-235	ECG5010	1N4733A	WEP1411	103-279-10
D3	R09.1E	QD-ZR09EXAA	GEZD-9.1	ZM9.1B				RT-240	ECG5018	1N4739A	WEP1419	103-279-18
D4	1S1555	QD-S51555XT	GE-300	PTC214	HEPR0602	REN 139	SK3060	RT-218	ECG177		WEP1062	
D5	1N60	QD-G1N60XXT	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D6	1S1555	QD-S51555XT	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D7	1S1555	QD-S51555XT	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D8	1N60	QD-G1N60XXT	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D9	1N60	QD-G1N60XXT	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D10	1S1555	QD-S51555XT	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D11	1S1555	QD-S51555XT	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D12	1S1555	QD-S51555XT	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D13	V06C	QD-SVD6CSSB	GE-504A	PTC201	HEPR0052	REN 116	SK3030	RT-213	ECG116	1N4004	WEP156	212-76-02
D14	1S1885	QD-S51885XT	GE-504A	PTC201	HEPR0052	REN 116	SK3030	RT-213	ECG116	1N4004	WEP156	212-76-02
D15	1S1555	QD-S51555XT	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D16	1S1555	QD-S51555XT	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D17	1S1555	QC-S51555XT	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D18	1N60	QD-G1N60XXT	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D19	1N60	QD-G1N60XXT	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D22	1S1555	QD-S51555XT	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D501	1N60	QD-G1N60XXT	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D502	1N60	QD-G1N60XXT	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
IC1	PLLO2AG PLLO2A	QQ-OPPL02AO				REN 1167 REN 1167			ECG1233 ECG1233		WEP2007 WEP2007	
IC2	C3001A C3001	QQ-MC3001AT	GEIC-181 GEIC-181 GEIC-181			REN 1192 REN 1192 REN 1192	SK3445 SK3445 SK3445		ECG1192 ECG1192 ECG1192			
IC3	TA7310P C3001A C3001	QQ-MC3001AT	GEIC-181 GEIC-181 GEIC-181			REN 1192 REN 1192 REN 1192	SK3445 SK3445 SK3445		ECG1192 ECG1192 ECG1192			
IC4	TA7205P 25C710	QQ-M07205AT	GEIC-179 GE-211*	PTC780 PTC132	HEPS0016*	REN 1155 REN 123A*	SK3231 SK3444	TVMC-81 RT-308*	ECG1155 ECG123A*	TA7205P 25C710	WEP949 WEP710	121-29000*
Q1	25C710	QT-C0710XEE	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	25C710	WEP710	121-29000*
Q2	25C1687	QT-C0710XEE	GE-20*	PTC121*	HEPS0015*	REN 123A*	SK3444	RT-107A*	ECG123A*	25C536	WEP736*	121-29000*
Q3	25C1760		GE-276	PTC180		REN 306	SK3197	RT-310	ECG306		WEP771	
Q4	25C1846 25C2036	QT-C1846XAN	GE-336 GE-336	PTC904		REN 295 REN 295	SK3253		ECG295	25C496 25C1018	WEP913 WEP771	800-767
Q5	25C1678 25C1306 25C2075 25C1974		GE-322 GE-215 GE-215 GE-337	PTC186 PTC186 PTC186 PTC186		REN 235 REN 235 REN 235 REN 235	SK3197 SK3197 SK3197 SK3197	RT-146 RT-146 RT-146 RT-146	ECG235 ECG235 ECG235 ECG235	25C1306 25C1306 25C1306	WEP785 WEP785 WEP785 WEP785	
Q6	25C1318Q 25C1318	QT-1318XDN	GE-210*	PTC123	HEPS0015*	REN 128	SK3122	RT-302	ECG297		WEP59*	121-722
Q7	25A719R 25A719	QT-A0719XHN	GE-269 GE-269	PTC103*	HEPS0019*	REN 290	SK3114	RT-305	ECG290	25A562	WEP911	121-879
Q8	25A720 25C1047B 25C1047	QT-C1047XBN	GE-60*	PTC132*	HEPS0016*	REN 229*	SK3018*	RT-107	ECG229*	25C535 25C535	WEP63*	ZEN-109
Q9	25C1359 25C1359	QT-C1359XBN	GE-212 GE-212	PTC121*	HEPS0014*	REN 107	SK3122	RT-134	ECG107	25C460	WEP460	121-722
Q10	25C710 25C829	QT-C0710XBE	GE-211*	PTC132	HEPS0016*	REN 199	SK3122	RT-308	ECG229*	25C930 25C930	WEP66	121-29000*
Q11	25C839 25C710 25C829	QT-C0710XBE	GE-211*	PTC132	HEPS0016*	REN 199	SK3122	RT-308	ECG229*	25C710 25C710	WEP710 WEP710	121-29000*
Q12	25C829C 25C829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	25C829 25C829	WEP829 WEP829	121-29000*
Q13	25C828P 25C828		GE-211*	PTC132	HEPS0016*	REN 123A	SK3444	RT-308	ECG123A*	25C710 25C710	WEP710 WEP710	121-29000*
Q14	25C945 25C372		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	25C828 25C828	WEP828 WEP828	ZEN-119
Q15	25A719P 25A719		GE-269	PTC103*	HEPS0019*	REN 290	SK3114	RT-305	ECG290	25C945 25C945	WEP1945 WEP1945	121-29000*
Q16	25A720 25A564		GE-269	PTC103*	HEPS0019*	REN 290	SK3114	RT-305	ECG290	25A562 25A562	WEP911 WEP911	121-879
Q17	25C900 25C945		GE-65	PTC103*	HEPS0019*	REN 234	SK3114	RT-303	ECG234	25A564 25A564	WEP564 WEP564	121-879
Q18	25C900 25C710	QT-C0710XEE	GE-62	PTC139*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C900 25C900	WEP66 WEP66	121-29000*
Q19	25C829 25C829		GE-211*	PTC132	HEPS0016*	REN 123A	SK3444	RT-308	ECG123A*	25C710 25C710	WEP710 WEP710	121-29000*
Q20	25C829 25C839		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	25C829 25C829	WEP829 WEP829	121-29000*
Q21	25C710 25C829C	QT-C0829XBN	GE-211*	PTC132	HEPS0016*	REN 123A	SK3444	RT-308	ECG123A*	25C710 25C710	WEP710 WEP710	121-29000*
Q22	25C829 25C829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	25C829 25C829	WEP829 WEP829	121-29000*
Q23	25C839 25C839		GE-61*	PTC132*	HEPS0015*	REN 123A	SK3444	RT-308	ECG123A*	25C839 25C839	WEP736*	121-29000*
Q24	25C829C 25C829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	25C829 25C829	WEP829 WEP829	121-29000*
Q25	25A733P 25A733Q	QT-A0733XDA	GE-48	PTC144*	HEPS3012*	REN 129*	SK3114	RT-115*	ECG129*		WEP60*	
Q26	25A733 25A733	QT-A0733XDA	GE-48	PTC144*	HEPS3012*	REN 129*	SK3114	RT-115*	ECG129*		WEP60*	
Q27	25C1327U 25C1327T	QT-C1327XAN	GE-85*	PTC139*	HEPS0024*	REN 199	SK3245	RT-107A	ECG199	25C900	WEP66	121-972
Q28	25C900 25C945		GE-62	PTC139*	HEPS0015*	REN 199	SK3124	RT-302	ECG199	25C900	WEP66	121-972
Q29	25C945 25C828	QT-C0945ADA	GE-212 GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945 25C945	WEP1945 WEP1945	121-29000
Q30	25C900 25C900	QT-C0900XEA	GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	25C828 25C900	WEP828 WEP66	ZEN-119
Q31	25C900 25C900		GE-62	PTC139*	HEPS0015*	REN 199	SK3124	RT-302	ECG199	25C900	WEP66	ZEN-119

* Lead configuration may vary from original.

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C1	.1 10V	CD-A1A0R1ME		TDC104M050EL	QDT1-2	SD50-R109
C2	10 16V	CE-ED100ZMN	PC10-25	VTT10B25	QV1-41	EV-1222
C3	.22 10V	CD-A1AR22HE		TDC224M050EL	QDT1-10	SD50-R229
C11	47 10V	CE-EC470ALN	PC50-16	VTT47D16	QV1-73	EV-1226
C18	1 50V	CE-EG010ALN	PC1-50	VTT1A50	QV1-11	EV-1615
C50	1 50V	CE-EG010ALN	PC1-50	VTT1A50	QV1-11	EV-1615
C72	10 16V	CE-VD100ALN	PC10-25	VTT10B25	QV1-41	EV-1222
C74	3.3 25V	CE-EE3R3ALN	PC5-50	VTT3R3A50	QV1-23	EV-1318
C76	1 50V	CE-EG010ALN	PC1-50	VTT1A50	QV1-11	EV-1615
C78	47 16V	CE-ED470ALN	PC50-16	VTT47D16	QV1-73	EV-1226
C85	3.9 25V	CS-SE3R9MDN		TDC475M010EL	QDT1-48	SD35-3R99
C86	.47 10V	CD-A1AR47HE		TDC474M050EL	QDT1-19	SD50-R479
C87	33 6.3V	CE-EB330ALN	PC30-25	VTT33B10	QV1-61	EV-1125
C93	47 16V	CE-ED470ALN	PC50-16	VTT47D16	QV1-73	EV-1226
C94	220 16V	CE-AD221ZLS	PC250-25	VTT220H16	QV1-117	EV-1240
C96	3.3 25V	CE-EE3R3ALN	PC5-50	VTT3R3A50	QV1-23	EV-1318
C97	47 10V	CE-EC470ALN	PC50-16	VTT47D16	QV1-73	EV-1226
C99	47 25V	CE-AE470ZLS	PC50-25	VTT47E25	QV1-75	EV-1326
C100	1000 16V	CR-ED102ZUH	PC1000-16	VTT1000L16	QV1-183	EV-1260
C101	33 6.3V	CE-EB330ALN	PC30-25	VTT33B10	QV1-61	EV-1125
C120	33 16V	CE-VD330ALN	PC30-25	VTT33D25	QV1-63	EV-1325

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C4	68 N150 10% 50V				*		10TCP-Q68
C5	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C6	22 N150 10% 50V				*		10TCP-Q22
C7	330 50V		DD-331	GP330	GP333		10TS-T33
C8	150 50V		DD-151		GP315		10TS-T15
C9	.047 50V		UK50-503		MAG5015		
C10	47 50V		DTZ-47	NP047	CN0447		10TCC-Q47
C12	4 N150 50V				*		10TCP-V47
C13	.001 50V			DPMS6D1	EWFA1A210	QF1-1	1PB-D10
C14	68 N150 10% 50V				*		10TCP-Q68
C15	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C16	33 50V		DTZ-33	NP033	CN0433		10TCC-Q33
C17	47 N150 10% 50V				*		10TCP-Q47
C19	.001 50V			DPMS6D1	EWFA1A210	QF1-1	1PB-D10
C20	.001 50V			DPMS6D1	EWFA1A210	QF1-1	1PB-D10
C21	.001 100V			CD19FD102J03	SK210		MWC-102
C22	2 5% 50V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C23	7 50V		DTZ-6R8	NP06P8	CN0568		10TCC-V68
C24	33 N150 10% 50V				*		10TCP-Q33
C25	4 NPO 50V		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C26	560 100V			CD19FD561J03	SK356		MWC-561
C27	390 50V		DD-391	GP390	GP339		10TS-T39
C28	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C29	68 50V		DD-680	GP68	GP468		10TS-Q68
C30	56 50V		DD-560	GP68	GP456		10TS-Q56
C31	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C32	2 5% 50V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C33	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C35	68 50V		DD-680	GP68	GP468		10TS-Q68
C36	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C37	100 N150 10% 50V				*		10TCP-T10
C38	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C39	.01 50V			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C40	390 50V		DD-391	GP390	GP339		10TS-T39
C41	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C42	120 50V		DTZ-120		CN0312		10TCC-T12
C43	220 50V		DD-221		GP322		10TS-T22
C44	120 50V		DTZ-120		CN0312		10TCC-T12
C45	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C46	120 50V		DTZ-120		CN0312		10TCC-T12
C47	270 10% 500V			CD15FD271J03	SK327	QW1-37	MWB-271
C48	2 500V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C49	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C51	27 50V				CN0427		10TCC-Q27
C52	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C53	.047 50V		UK50-503		MAG5015		
C54	.047 50V		UK50-503		MAG5015		
C55	.047 50V				*		
C56	.01 50V		DC-103	MGP01	TA110	QC2-141	1PB-S47
C57	10 50V		DTZ-10	NP010	CN0410		TG-S10
C58	.01 50V		DC-103	MGP01	TA110	QC2-141	10TCC-Q10
C59	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C60	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C61	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C62	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C63	2 5% 50V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C64	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C65	18 10% N150 50V				*		10TCP-Q18
C66	2.2 10% 500V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C67	.047 50V			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C68	.047 50V			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C69	.047 50V			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C70	.047 50V			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C71	.047 50V			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C73	.0068 50V			WMF1D68	EWFA1A268	QF1-73	1PB-D68
C75	.0047 50V			WMF1D47	EWFA1A247	QF1-57	1PB-D47
C77	100 50V		DD-101	GP100	GP310		10TS-T10
C79	.022 50V			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C80	.0022 50V		DD-222		GP222	QC2-97	5GA-D22
C81	.022 50V			DPMS2S22	EWFA1A122	QF1-127	1PB-S22

JC Penney MODEL 981-6218

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C82	220 50V		DD-221	WMF1S1	GP322		10TS-T22
C83	.01 50V				EMF1A110	QF1-91	1PB-S10
C84	.0022 50V		DD-222		GP222	QC2-97	5GA-D22
C88	68 50V		DD-680	GP68	GP468		10TS-Q68
C89	68 50V		DD-680	GP68	GP468		10TS-Q68
C90	100 50V		DD-101	GP100	GP310		10TS-T10
C91	.068 50V			WMF1S68	EMF1A168	QF1-195	1PB-S68
C92	100 50V		DD-101	GP100	GP310		10TS-T10
C95	.068 50V			WMF1S68	EMF1A168	QF1-195	1PB-S68
C102	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C106	.047 50V		UK50-503		MAG5015		
C107	.047 50V		UK50-503		MAG5015		
C110	18 50V				CN0418		10TCC-Q18
C111	82 50V				GP482		10TS-Q82
C112	39 50V		DD-820		CN0439		10TCC-Q39
C113	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C114	390 500V		DD-391	GP390	GP339		10TS-T39
C117	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C118	.022 50V		DC-253	MGP025	TA125		TG-S25
C123	.068 50V			WMF1S68	EMF1A168	QF1-195	1PB-S68
C130	.0022 50V		DD-222		GP222	QC2-97	5GA-D22
C131	39 N150 50V				*		10TCP-Q39
C132	15 N150 50V				*		10TCP-Q15
C133	.0022 50V		DD-222		GP222	QC2-97	5GA-D22
C134	3 50V		DTZ-3R3	NP03P3	CN0533		10TCC-V33
C135	220 50V		DD-221		GP322		10TS-T22
C136	.0033 50V			CD19FD332J03	SX233		MHC-332
C137	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C138	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C139	220 50V		DD-221		GP322		10TS-T22
C201A	150 50V			CD15FD151J03	SX315	QM1-31	MMA-151
C201B	7 50V		DTZ-6R8	NP06P8	CN0568		10TCC-V68
C202	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C203	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C204	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C205	.047 50V		UK50-503		MAG5015		
C206	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C207	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C208	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C209	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C210	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C211	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C212	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C501	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C502	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
CT1	20	CT-27200H01					

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA			
			MFR. PART No.	CENTRALAB PART No.	MALLORY PART No.	TRW PART No.
RV1	Squelch Range	10K	RP-CNB10301	T-10K (3)	MTC14L1 (3)	U260R103B
RV2	ALC	5000	RP-CNB50202			U260R502B
RV3	S Meter	20K	RP-GNB20301			U260R253B
RV4	RF Meter	20K	RP-GNB20301			U260R253B
RV501	SWR	5000	RP-FNB20201	T-5000	MTC53L1	X260R502B
VR1	Volume/Power Switch	50K	RV-NB503A04			
VR2	Squelch/PA Switch	10K	RV-NET03B02			
VR3	RF Gain	100K	RV-NA104B02			
VR4	SWR/CAL	10K	RV-NA103B06			

(3) For horizontal mounting, bend the two outside terminals to fit PC board. Use jumper to connect center terminal to PC board.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFR. PART No.			WORKMAN PART No.	MFR. PART No.
AREY 251	Resistor Network		RA-C182M07N (1)	AREY 252	Resistor Network		RA-C182M07N (1)

(1) Consists of seven 1.8K Resistors.

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	VCO	TR-10DD003S			
L2	VCO Mixer (38MHz)	TR-10MB003T			
L3	RF Choke (68uH)	LF-680KD01N		4602	
L4	RF Choke (1uH)	LF-1R0KD01N			
L5	XMT Oscillator (27MHz)	TR-10CB002M		70F226A1	
L6	RF Choke (2.2uH)	LF-2R2KD01N			
L7	XMT Driver (27MHz)	TR-A5CZ001M			
L8	RF Choke (68uH)	LF-680KD01N			
L9	RF Choke (.55uH)	LA-1KE1011A			
L10	RF Choke (1uH)	LD-ADX3825M			
L11	Final (27MHz)	TR-A5CA002M			
L12	Pi Filter (27MHz)	TR-A5CA003M			
L13	RF Choke (.4uH)	LA-1JG1010A			
L14	IF (10.695MHz)	TR-10MA017S			
L15	RF Choke (68uH)	LF-680KD01N			
L16	RF Choke (.75uH)	LD-ADB4024B			
L17	RF Choke (.75uH)	LD-ADB4024B			
T1	Rec Oscillator (20.480MHz)	TR-10DB002S			
T2	VCO Mixer (38MHz)	TR-10MB005S			
T3	XMT Mixer (27MHz)	TR-10CB001S			
T4	XMT Buffer (27MHz)	TR-10CP005S			
T5	Rec Antenna (27MHz)	TR-10MP003T			
T6	Rec RF (27MHz)	TR-10CA003T			
T7	IF (10.695MHz)	TR-10MA017S			
T8	IF (455kHz)	TR-07LA004N			
T9	IF (455kHz)	TR-07LA005N			
T10	IF (455kHz)	TR-07LA023N			

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
CH1	1.25 A	.116	.48mH	LJ-110H001Y ELA-16	TR523		

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T11	32	1 8 2 128	TB-G25B001W ETA-66 (1)	TR723	MCB-16	(1) Number on unit.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP	3" PM 8 Ohms	ZG-A0770802	30A05Z8R	

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA						
		PART No.		BUSS PART No.		LITTELFUSE PART No.		WORKMAN PART No.
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE
F1	2 Amp		AC-DC308GEA	AGC2	HDJ	312002	150145	FG2-2

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

MICROPHONE

ITEM No.	REPLACEMENT DATA				CONNECTION DATA						
	MFGR. PART No.	GC PART No.	GC NOISE CANCEL	GC POWER	GC CONNECTOR	GC Red	GC Shield	GC Yellow	GC Blue	GC White	GC Black
MIC	ZG-AAZ70111	18-032	18-034	18-010	18-092	2	1	3	4	NC	1

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF1	Ceramic Filter	FB-R455A13M	455kHz
J1	Jack	YJ-C02S009Z	Antenna
J2	Jack	YJ-Z04S002Z	Microphone
J3	Jack	YJ-T03S003Z	PA
J4	Jack	YJ-T03S003Z	External Speaker
J5	Jack	YJ-B02S007Z	Power
LED301	LED	QL-LSL1222C	Channel Display (SL1222)
M1	Meter	ZM-J2030N13	S/R/F/SWR
PL1	Lamp	ZP-A064102U	TX (4.68V @ 30mA)
PL2	Lamp	ZP-A064102U	RX (4.98V @ 32mA)
PL3	Lamp		Meter (4.98V @ 56mA)
S1	Switch		Power (Part of Volume Control)
S2	Switch	SR-0303103E	Delta Tune
S3	Switch		CB/PA (Part of Squelch Control)
S4	Switch	SS-020227ZL	NB
S5	Switch	SS-020227ZL	Tone
S6	Switch	SS-020311ZL	S/R/F/CAL/SWR
S7	Switch	SS-020227ZL	ANL
SW1	Switch		Channel Selector
X1	Crystal	XA-S1B9001T	10.240MHz
X2	Crystal	XA-S1B9002T	10.695MHz
	Printed Circuit Board	PT-BM050COX	Main
	Printed Circuit Board	PT-SM020COX	Switch
	Printed Circuit Board	PT-LD010COX	LED
	Printed Circuit Board	PT-SR006A0X	SWR

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

ITEM	PART No.	ITEM	PART No.
Cabinet, Top	MU-776SX002	Knob, Channel	MN-276XA008
Cabinet, Bottom	MU-772SX007	Mounting Bracket	MU-763SE001
Escutcheon	AM-6218-01	Microphone Hanger	MZ-331SZ002
Knob, Control	MN-276XA007		

WIRING DATA

General-use Hook-up Wire (available in 5 colors)	BELDEN No. 8523	Coiled Microphone Cable	
Shielded Hook-up Wire (spiral wrapped)	BELDEN No. 8421	3-conductor (1 shielded)	23AWG BELDEN No. 9471 (5')
(braided)	BELDEN No. 8401		BELDEN No. 8497 (6')
Speaker Cable (available in 4 colors)	BELDEN No. 8782		BELDEN No. 9472 (7-1/2')
Bonding Strap	BELDEN No. 8672	28AWG	BELDEN No. 9466 (6')
AC Power Cord	(6') BELDEN No. 17106	31AWG	BELDEN No. 9468 (10')
	(9') BELDEN No. 17109	4-conductor (unshielded)	23AWG BELDEN No. 8415 (6')
		5-conductor (1 shielded)	28AWG BELDEN No. 9467 (6')
			BELDEN No. 9465 (7-1/2')