



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 49

MANUFACTURER'S SPECIFICATIONS

TRANSMITTER

Power Input:	4 Watts Max (Maximum Level Output)
Modulation:	High and low level Class B amplitude modulation
Frequency Response:	300-2500 Hz
Output Impedance:	50 Ohms, unbalanced
Output Indicators:	Meter shows relative RF output power, Tx lamp gives RF output indication, and MOD. lamp shows modulation

RECEIVER

Sensitivity:	1 μ V for 10 dB(S+N)/N
Selectivity:	6 dB @ 4 kHz, 40 dB @ 20 kHz
Image Rejection:	30 dB
I. F. Frequencies:	Double conversion, 1st: 10.695 MHz 2nd: 455 kHz
Automatic Gain Control: (AGC)	Less than 10 dB change in audio output for inputs from 10 to 50,000 microvolts
RF Gain Control:	Adjustable for optimum signal reception
Noise Blanker:	RF type,
Delta Tune Range:	± 1 KHz continuously adjustable
Squelch:	Adjustable: threshold less than 1 μ V
Audio Output Power:	2.5 Watts into 8 Ohms
Frequency Response:	300-3000 Hz
Distortion:	Less than 10% @ 2.5 Watts @ 1000 Hz
Built-in Speaker	8 Ohms, round
External Speaker:	8 Ohms: disables internal speaker when connected
(Not Supplied)	

PA SYSTEM

Power Output:	3 Watts into external speaker
External Speaker for PA:	8 Ohms: when PA-CB switch is in PA, the PA speaker also monitors the receiver, separate jack provided.
(Not Supplied)	

Courtesy of the Manufacturer

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

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PALOMAR MODEL 49

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:
T101 thru T104, T301 thru T307 9440
T105 thru T108 5009, 8728, 8728A
L401, L403, L406, L408 9440

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of frequency counter to TP1 (Q104, Base).	Ch. 19 Delta Tune Midrange	T305	Adjust for 10.240MHz.
Input of frequency counter to TP2 (T301, Secondary).	Ch. 19 Delta Tune Midrange	T301	Adjust for 35.740MHz.
Input of DC meter to TP3 (IC1, Pin 9).	Ch. 1 Delta Tune Midrange	T307	Adjust for 2.60 volts
Input of oscilloscope to TP4 (T306, Secondary).	Ch. 19 Delta Tune Midrange	T306	Adjust for maximum RF output.
Input of frequency counter to TP4 (T306, Secondary).	Ch. 1 Delta Tune Midrange		Check for 37.660MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP5 (IC1 Pin 11).	Ch. 1 Delta Tune Midrange		Check for 1.920MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP6 (Junction of R306 and R307).	Ch. 19, XMT		Check for 10.695MHz.
Input of oscilloscope to TP7 (T302, Secondary).	Ch. 19, XMT	T304,T303, T302	Adjust for maximum RF output.
Input of frequency counter to TP7 (T302, Secondary).	Ch. 1, XMT		Check for 26.965MHz. Check all channels. See page 4 for channel frequencies.

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. RF Gain Maximum, Squelch MINIMUM, ANL/NB Switch Off.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP1 (Q104, Base). 455kHz,1000Hz @ 30% modulation.	Ch. 19	T108,T107, T106,T105	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.185MHz,1000Hz @ 30% modulation.	Ch. 19	T101,T102, T103,T104	Adjust for maximum output. If necessary readjust T105, T106, T107 and T108.

RECEIVER ADJUSTMENTS

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

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna jack. 27.185MHz,1000Hz @ 30% modulation. Output 50,000uV.	Ch. 19 Squelch MINIMUM	VR102	AGC Set volume VR103 for 0db. Decrease generator output to 10uV. Adjust so that audio does not drop more than 10db.
Output of signal generator thru .01uF to antenna jack. 27.185MHz,1000Hz @ 30% modulation. Output 1000uV.	Ch. 19 Squelch Maximum	VR301	SQUELCH RANGE Adjust so that squelch just breaks.
Output of signal generator thru .01uF to antenna jack. 27.185MHz,1000Hz @ 30% modulation. Output 100uV.	Ch. 19 Squelch MINIMUM	VR401	S METER Adjust for 9 on signal scale of panel 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.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of spectrum analyzer or harmonic meter to antenna jack.	Ch. 19	L401,L403, L406	Adjust for maximum RF output.
	Ch. 19	L406	Readjust for 4.0 watts RF output maximum.
	Ch. 19	L408	Adjust for MINIMUM at 54MHz (2nd Harmonic).

TRANSMITTER ADJUSTMENTS

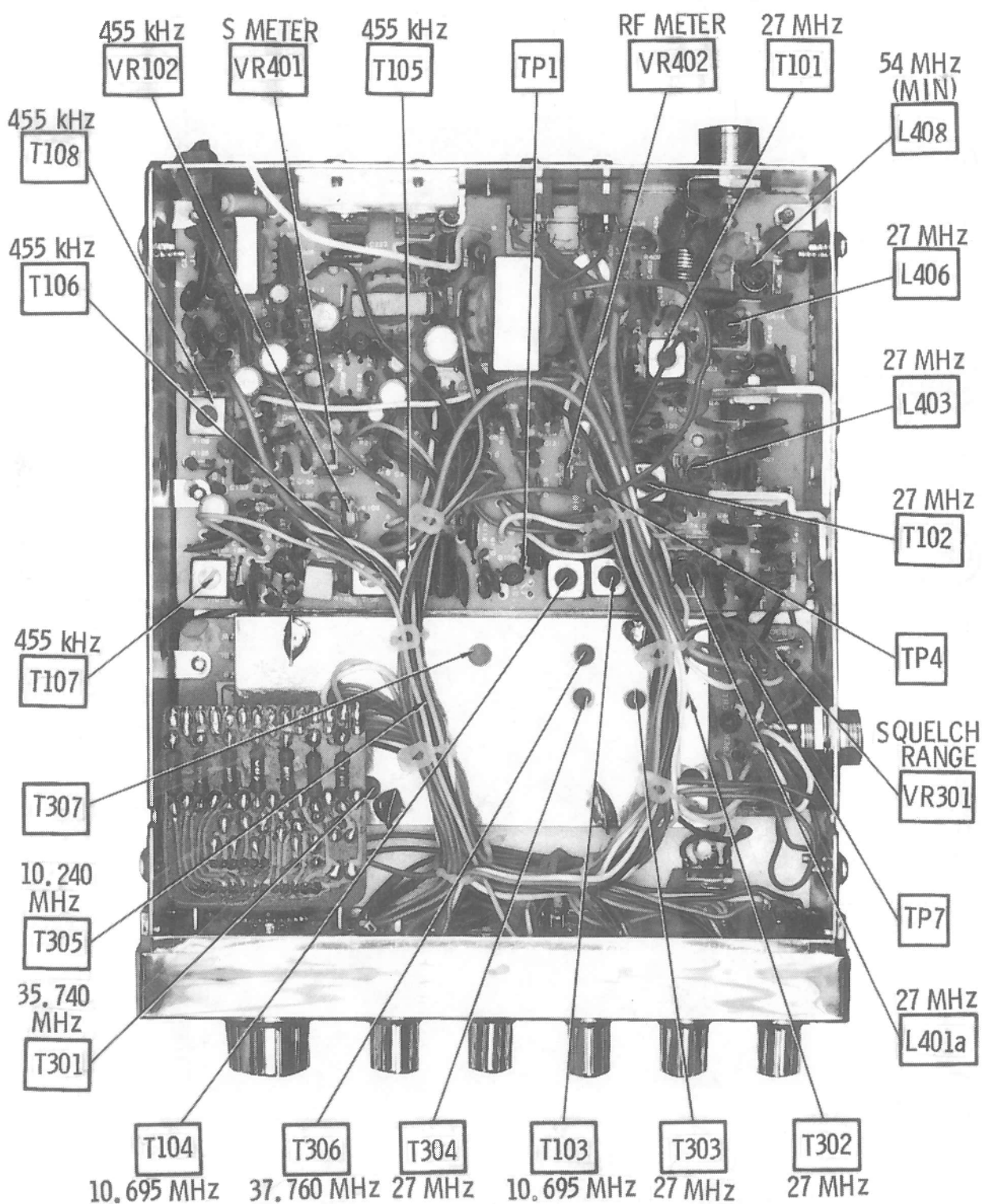
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.
NOTE: Be sure to check transmit frequency and power on all active channels after adjustment of transmitter.
See page 4 for channel frequencies.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
	Ch. 19	VR402	RF METER Adjust for left edge of red scale on TX power scale of panel meter.

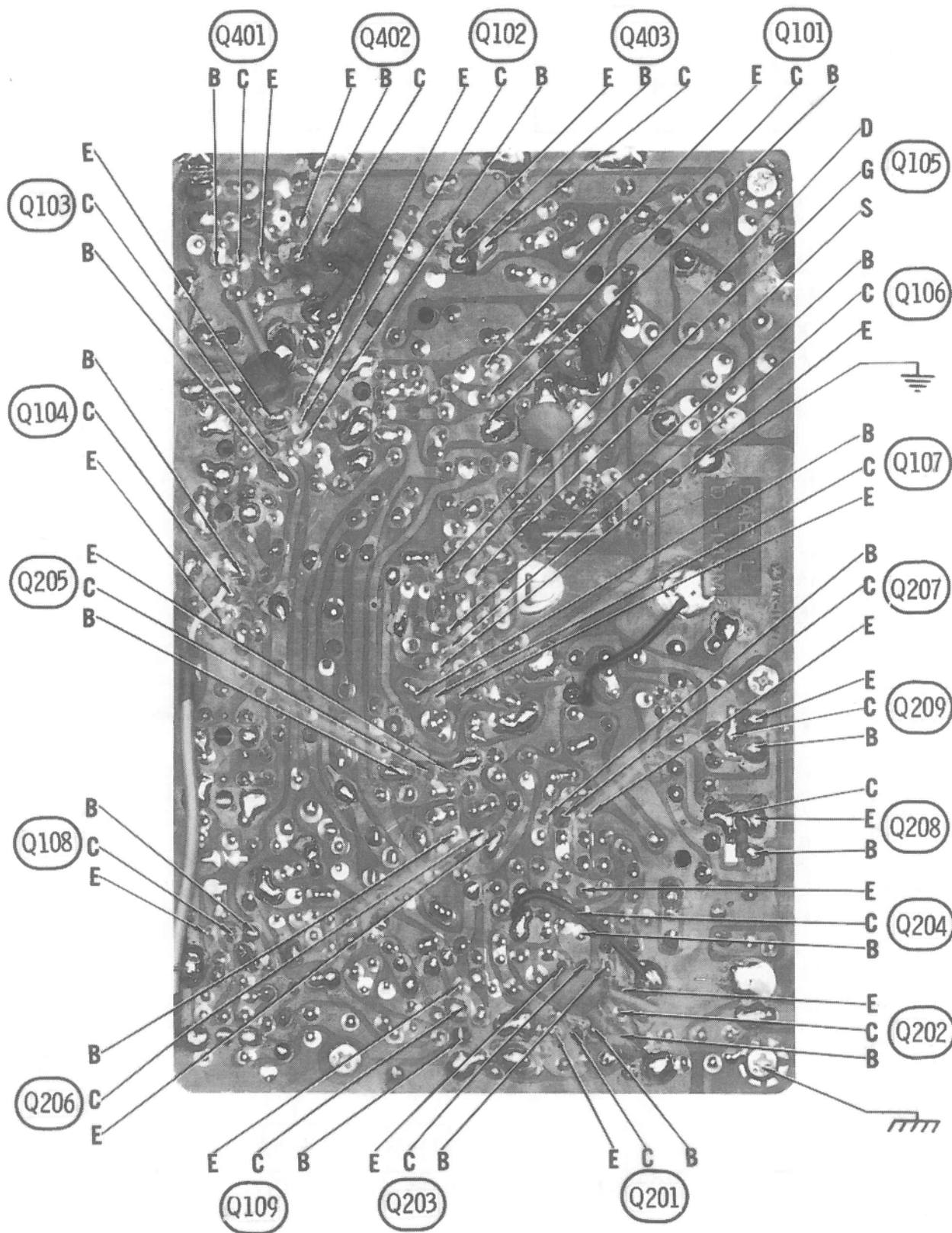
PALOMAR MODEL 49

TRUTH CHART

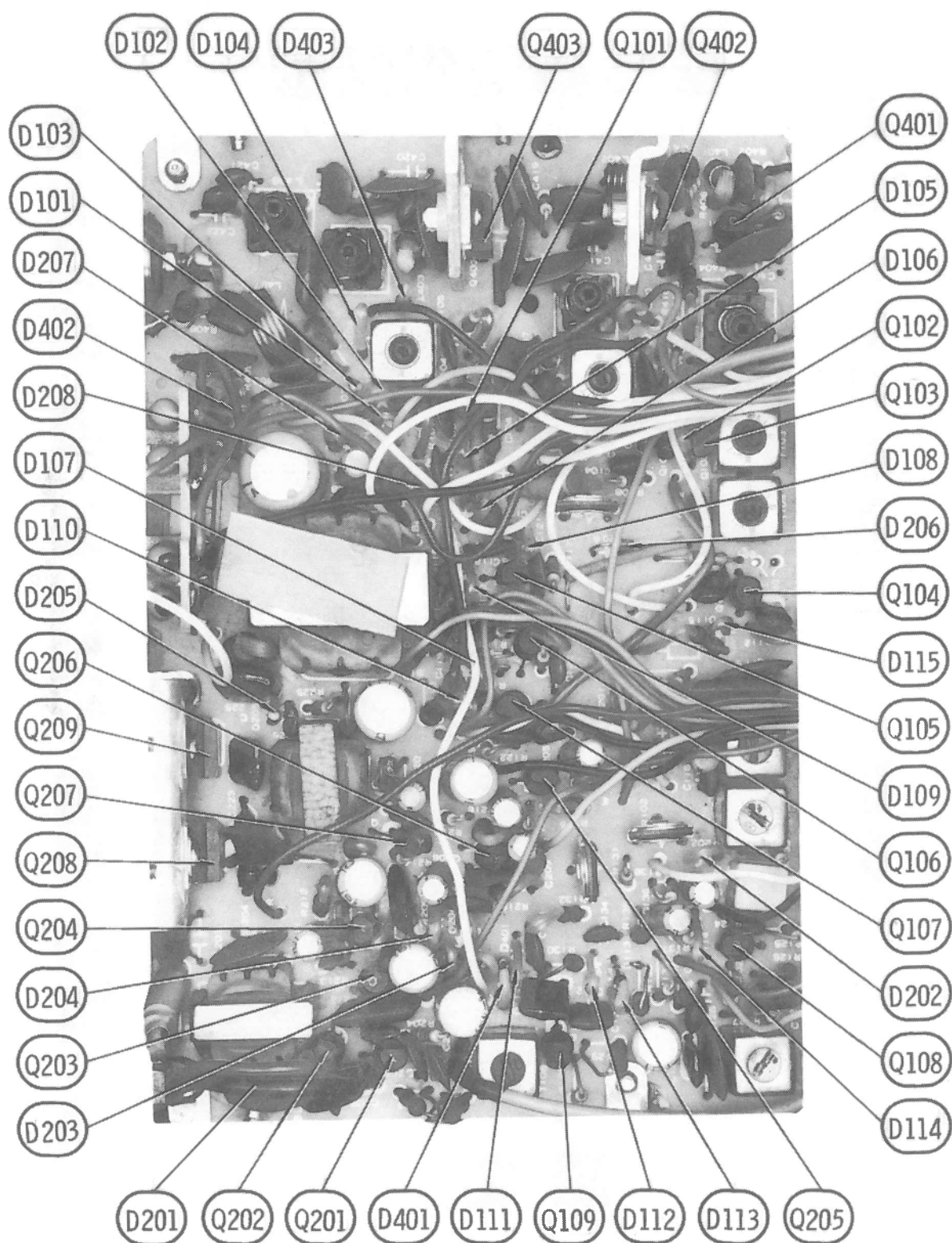
C H A N N E L	1 = 6.24 Volts 0 = 0 Volts								REC & XMT VCO OUTPUT IN MHz AT TP4	DIVIDER INPUT IN MHz AT TP5	
	IC1 PROGRAM DIVIDER										
	PINS										
	2	1	15	14	13	12					
1	0	0	0	0	0	0			37.660	1.920	
2	0	0	0	0	0	1			37.670	1.930	
3	0	0	0	0	1	0			37.680	1.940	
4	0	0	0	1	0	0			37.700	1.960	
5	0	0	0	1	0	1			37.710	1.970	
6	0	0	0	1	1	0			37.720	1.980	
7	0	0	0	1	1	1			37.730	1.990	
8	0	0	1	0	0	1			37.750	2.010	
9	0	0	1	0	1	0			37.760	2.020	
10	0	0	1	0	1	1			37.770	2.030	
11	0	0	1	1	0	0			37.780	2.040	
12	0	0	1	1	1	0			37.800	2.060	
13	0	0	1	1	1	1			37.810	2.070	
14	0	1	0	0	0	0			37.820	2.080	
15	0	1	0	0	0	1			37.830	2.090	
16	0	1	0	0	1	1			37.850	2.110	
17	0	1	0	1	0	0			37.860	2.120	
18	0	1	0	1	0	1			37.870	2.130	
19	0	1	0	1	1	0			37.880	2.140	
20	0	1	1	0	0	0			37.900	2.160	
21	0	1	1	0	0	1			37.910	2.170	
22	0	1	1	0	1	0			37.920	2.180	
23	0	1	1	1	0	1			37.950	2.210	
24	0	1	1	0	1	1			37.930	2.190	
25	0	1	1	1	0	0			37.940	2.200	
26	0	1	1	1	1	0			37.960	2.220	
27	0	1	1	1	1	1			37.970	2.230	
28	1	0	0	0	0	0			37.980	2.240	
29	1	0	0	0	0	1			37.990	2.250	
30	1	0	0	0	1	0			38.000	2.260	
31	1	0	0	0	1	1			38.010	2.270	
32	1	0	0	1	0	0			38.020	2.280	
33	1	0	0	1	0	1			38.030	2.290	
34	1	0	0	1	1	0			38.040	2.300	
35	1	0	0	1	1	1			38.050	2.310	
36	1	0	1	0	0	0			38.060	2.320	
37	1	0	1	0	0	1			38.070	2.330	
38	1	0	1	0	1	0			38.080	2.340	
39	1	0	1	0	1	1			38.090	2.350	
40	1	0	1	1	0	0			38.100	2.360	



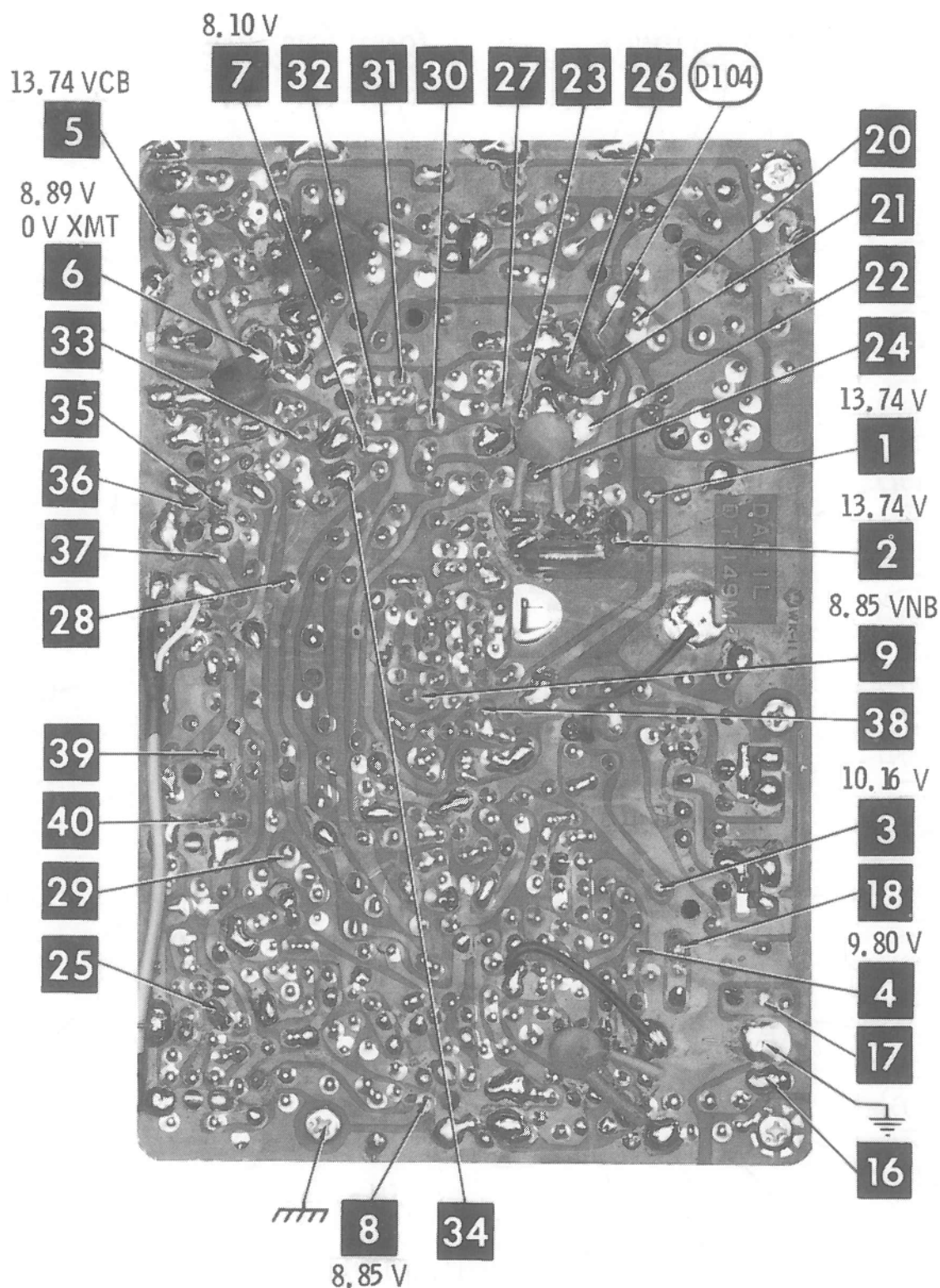
CHASSIS - BOTTOM



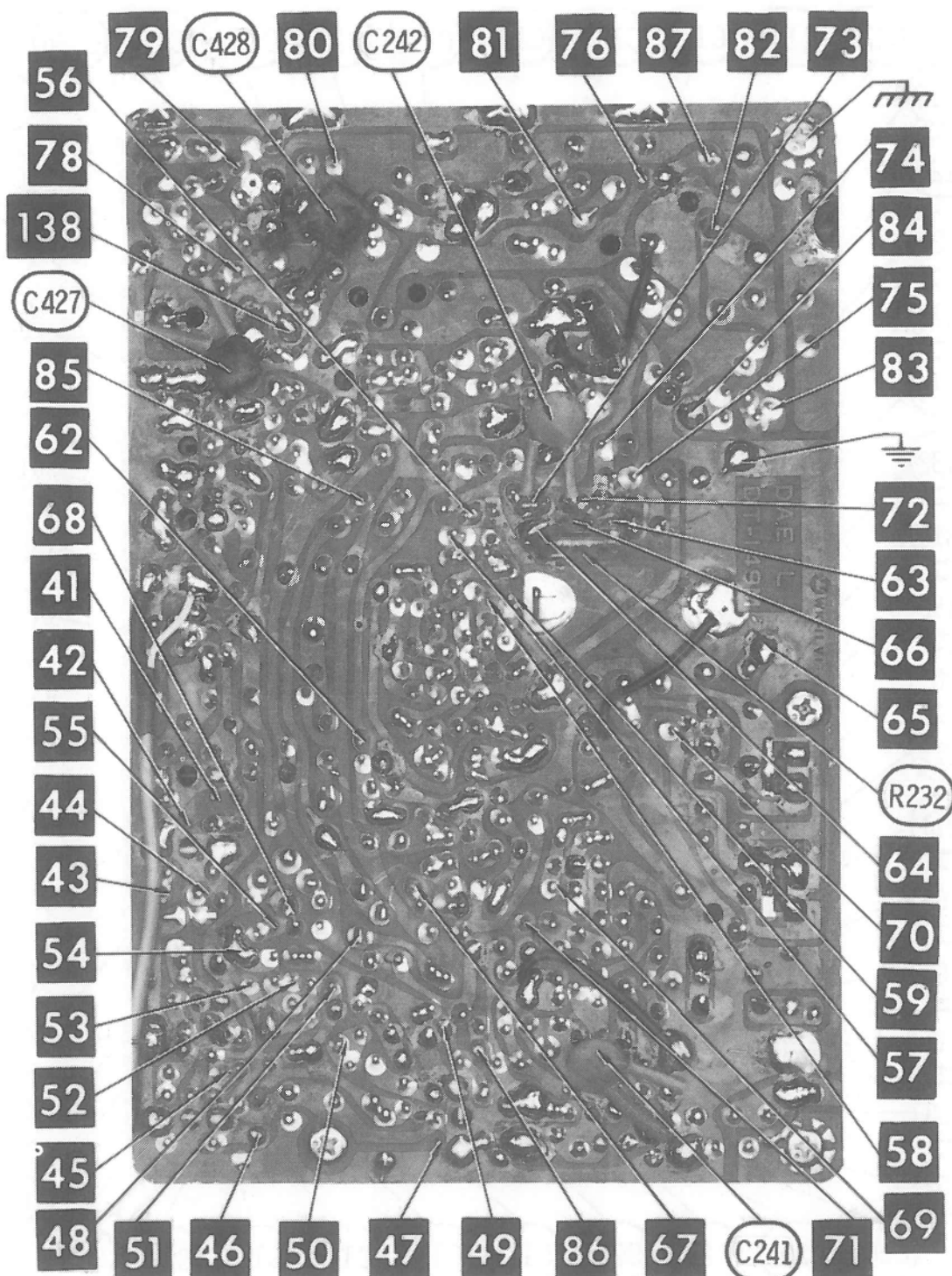
MA IN BOARD



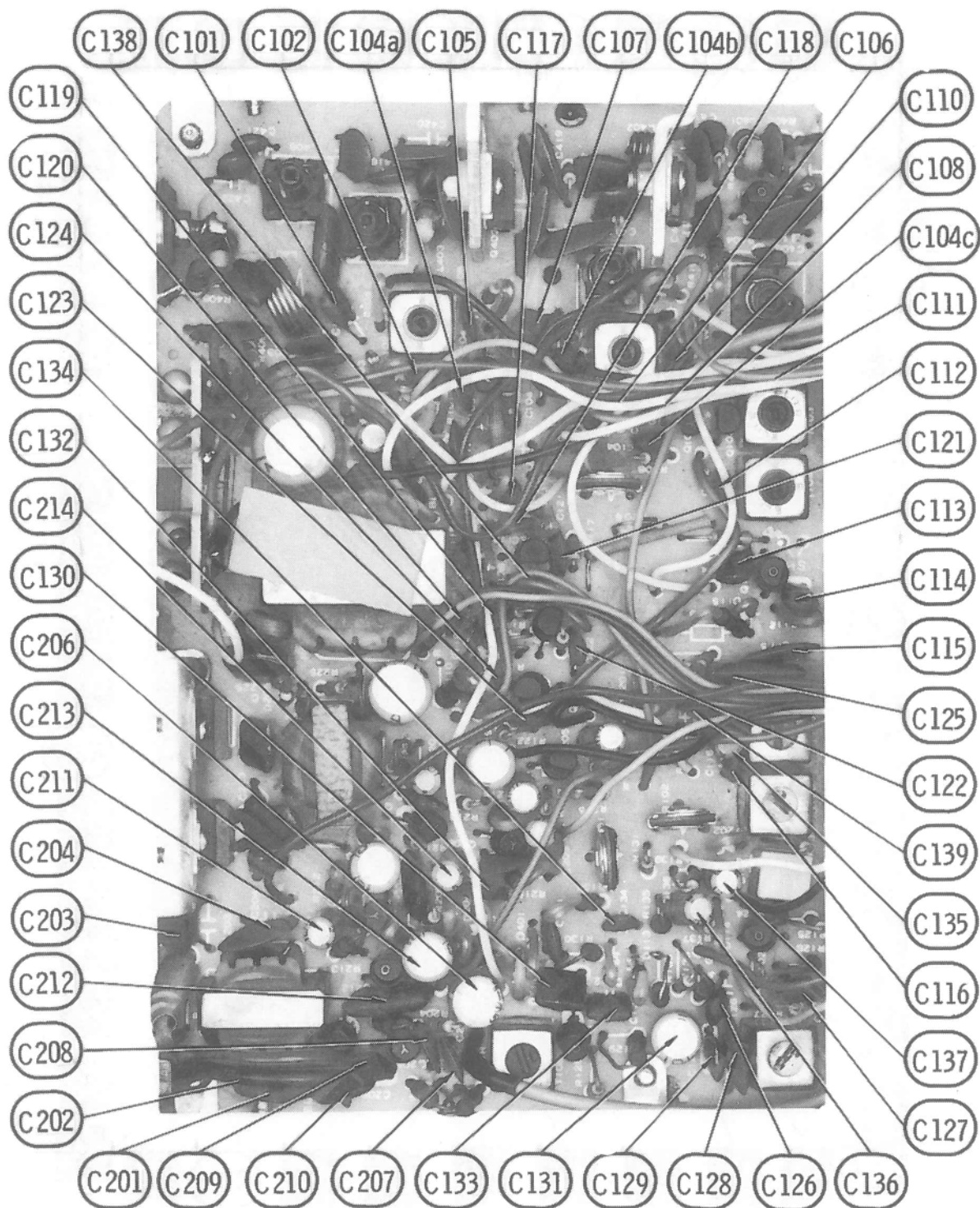
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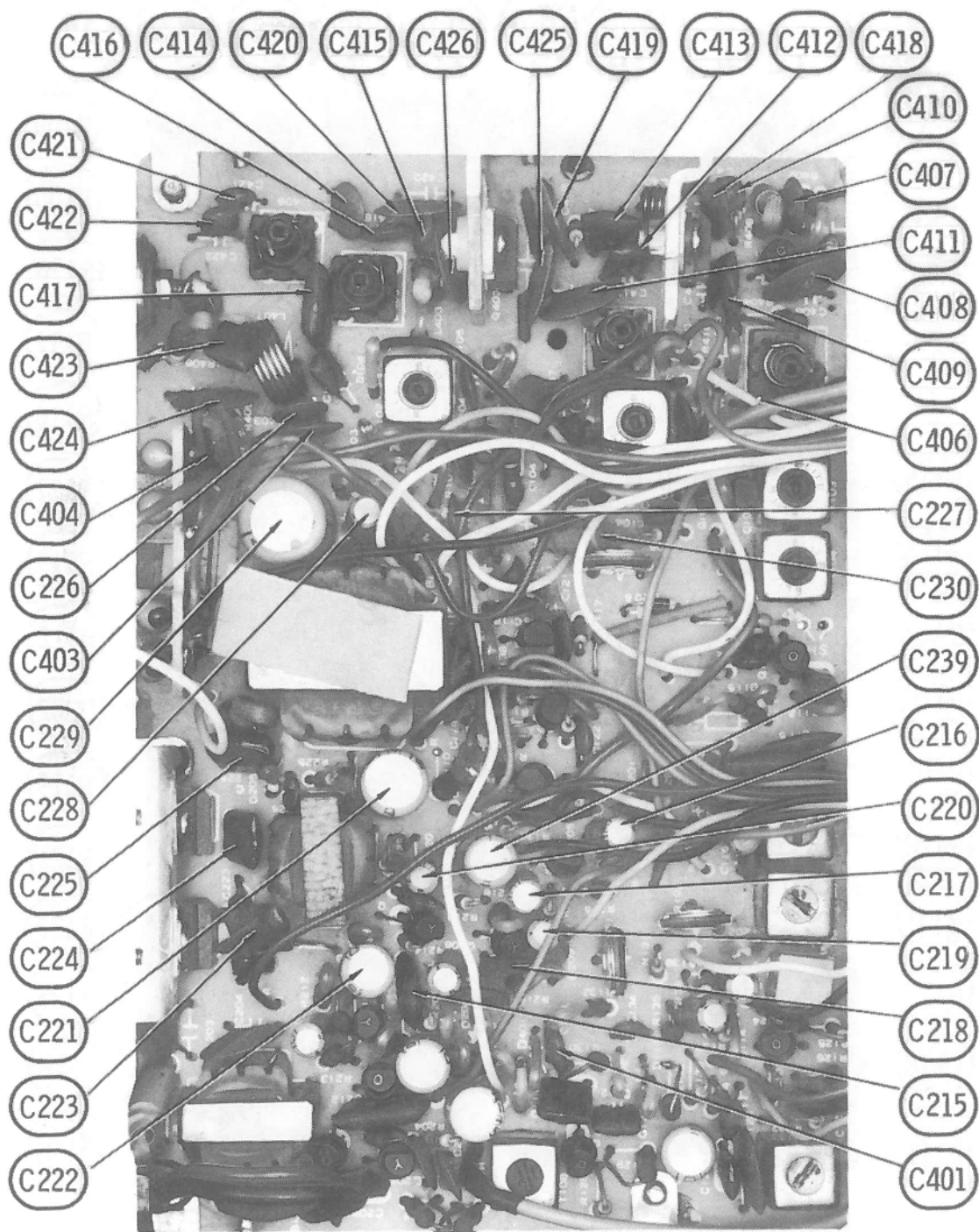
MAIN BOARD



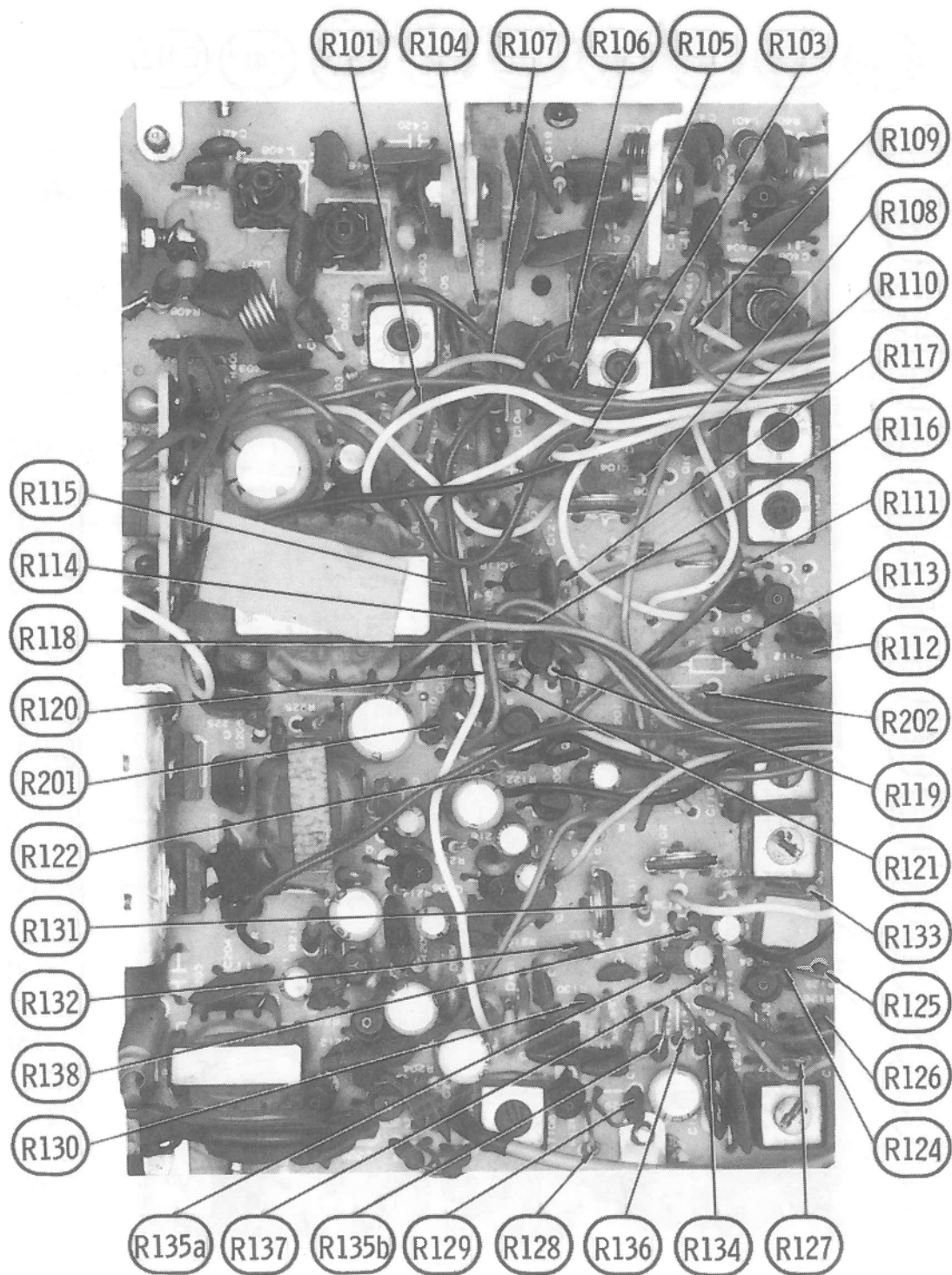
MAIN BOARD



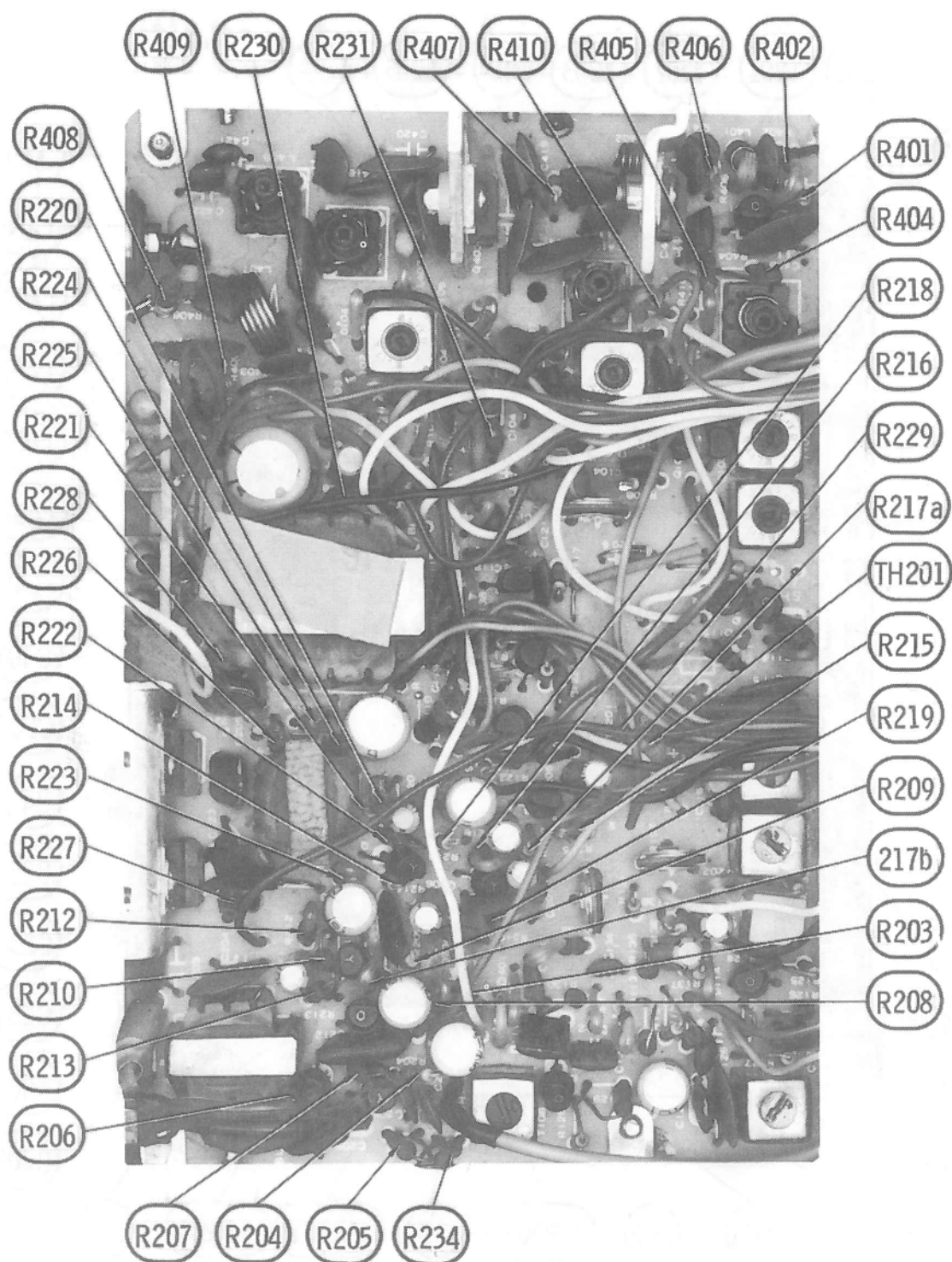
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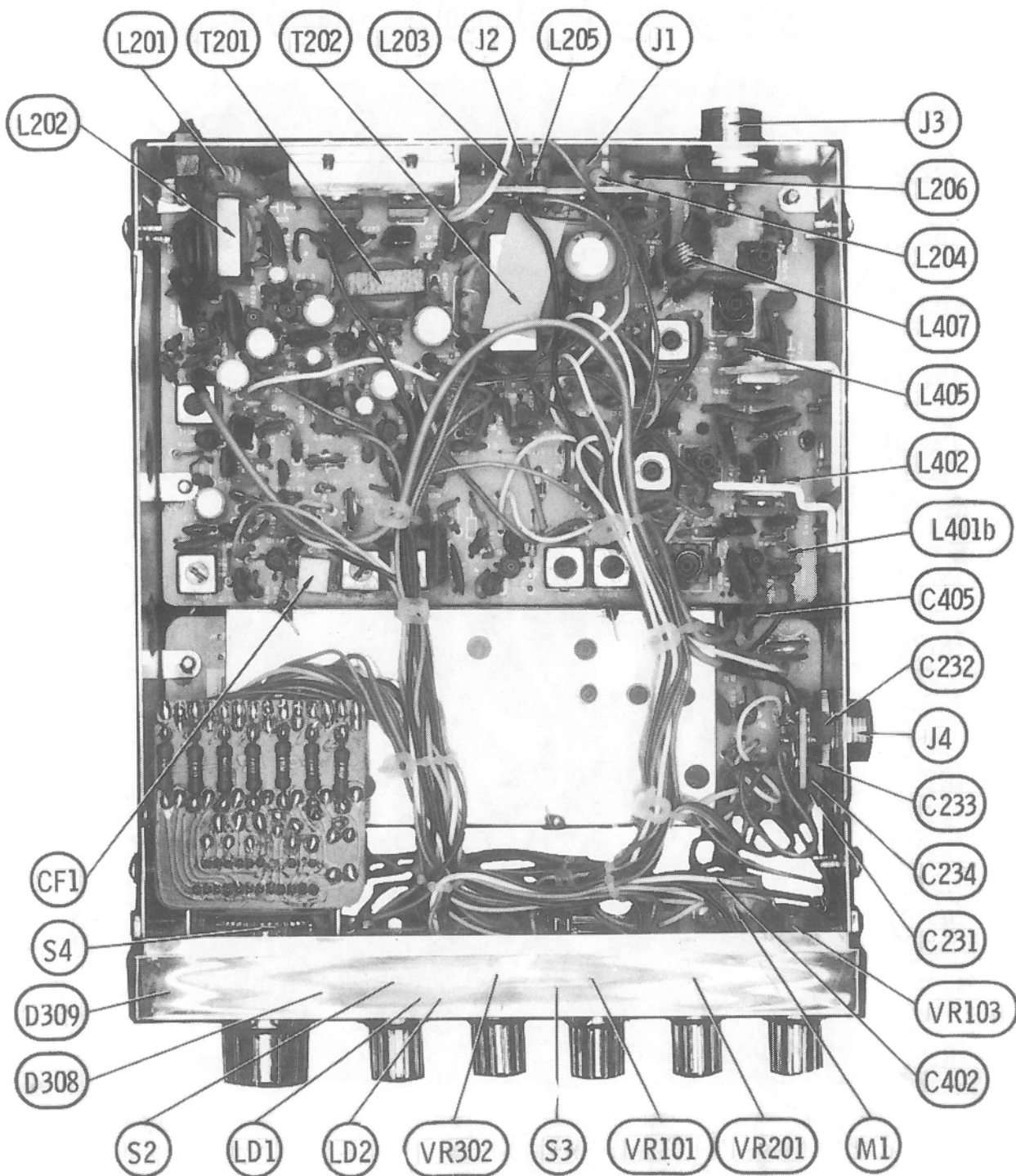
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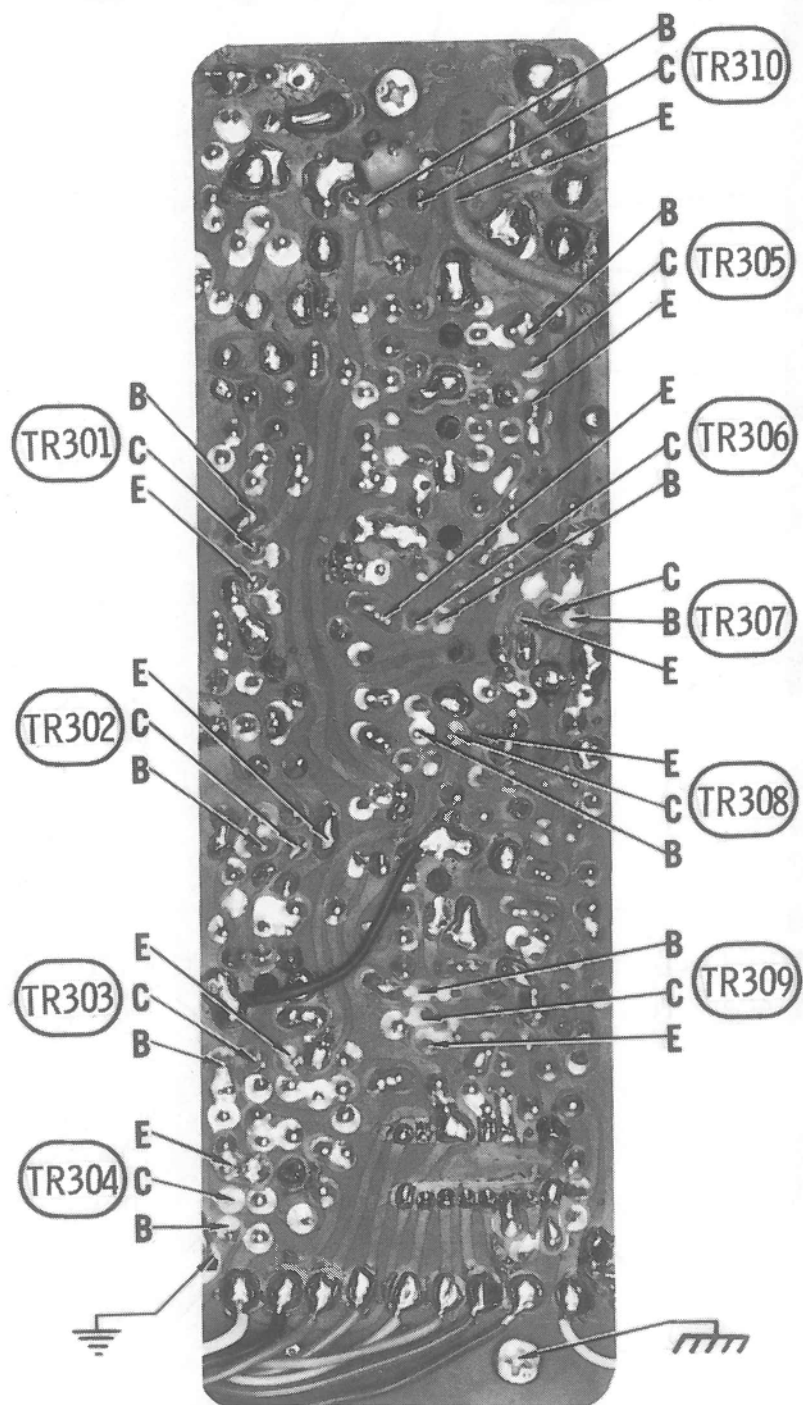
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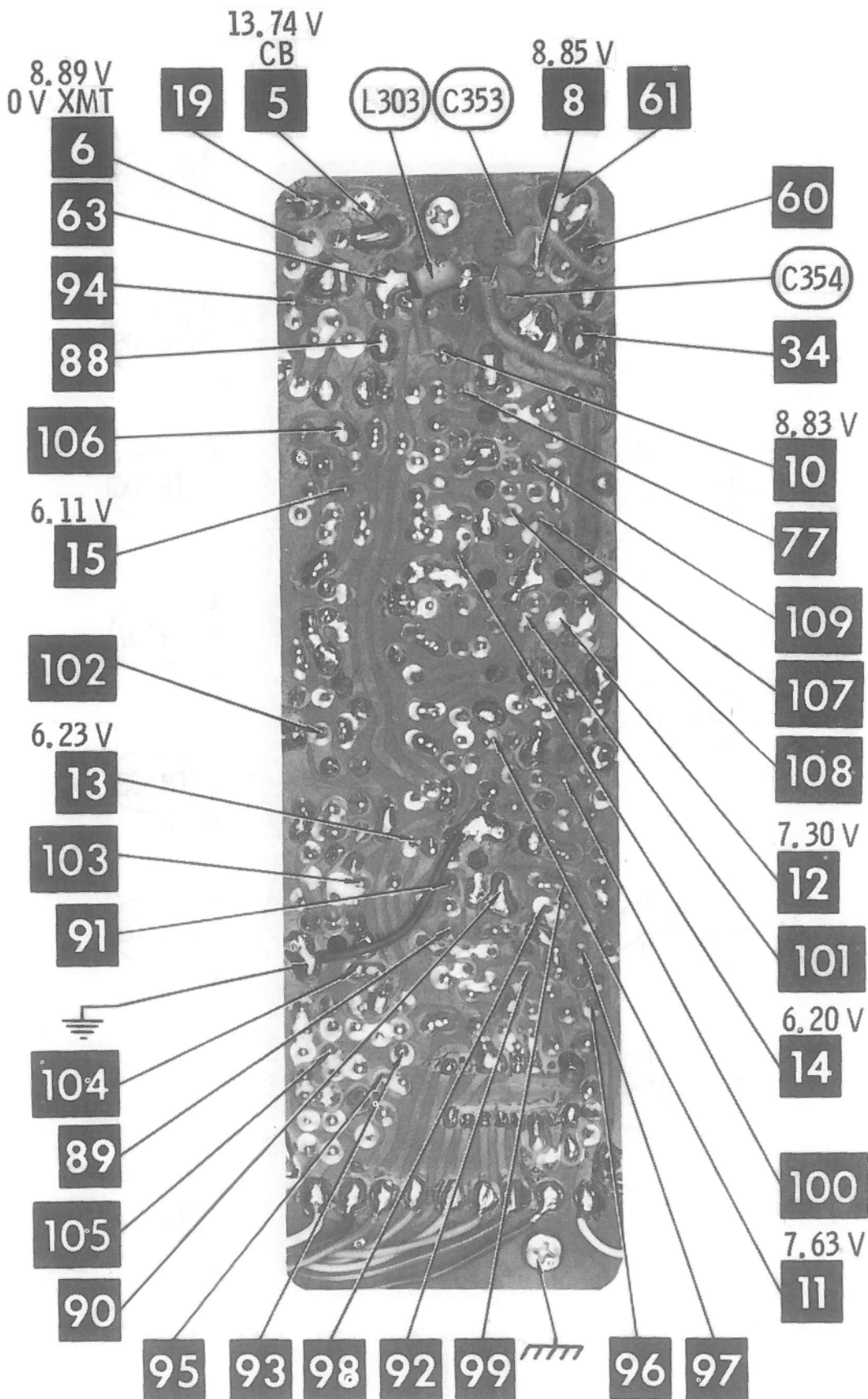
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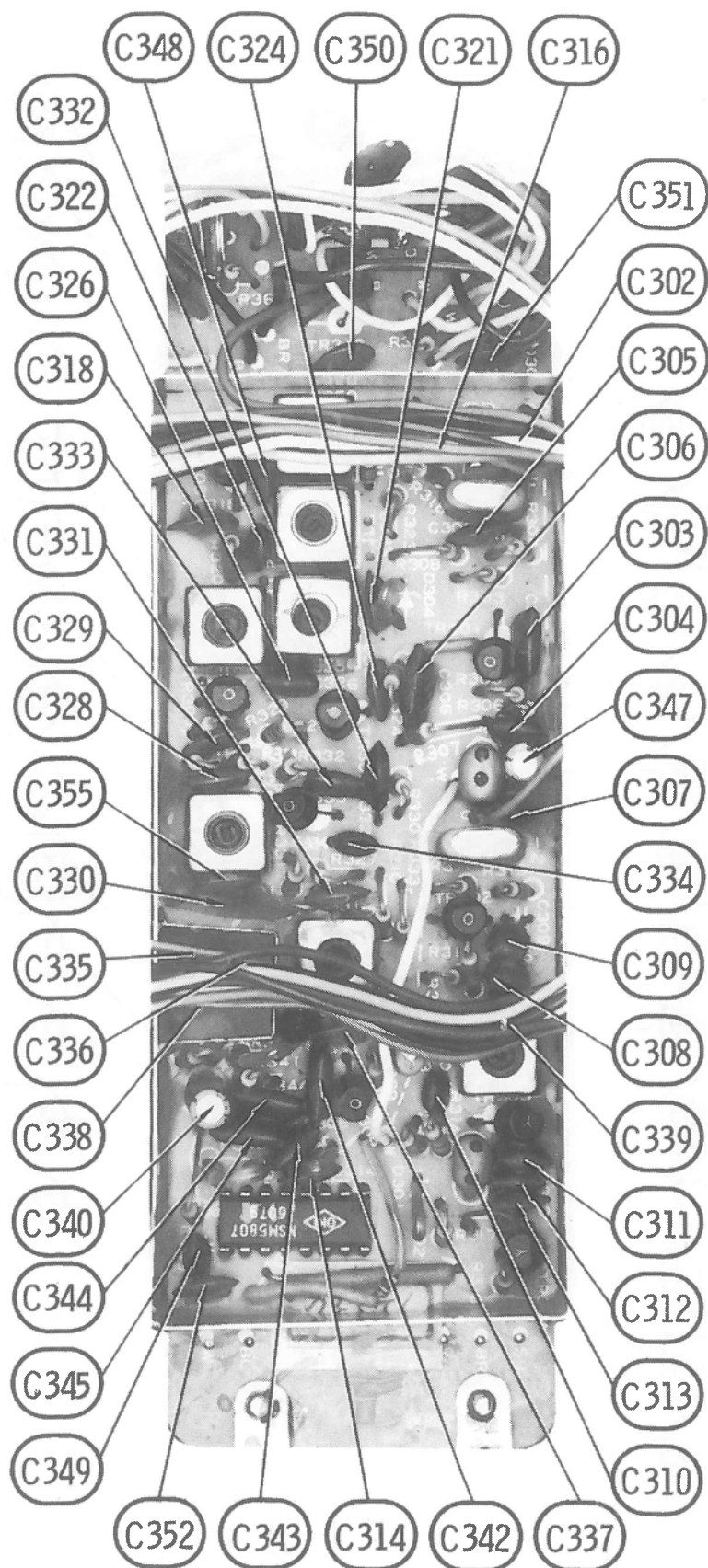
CHASSIS - BOTTOM



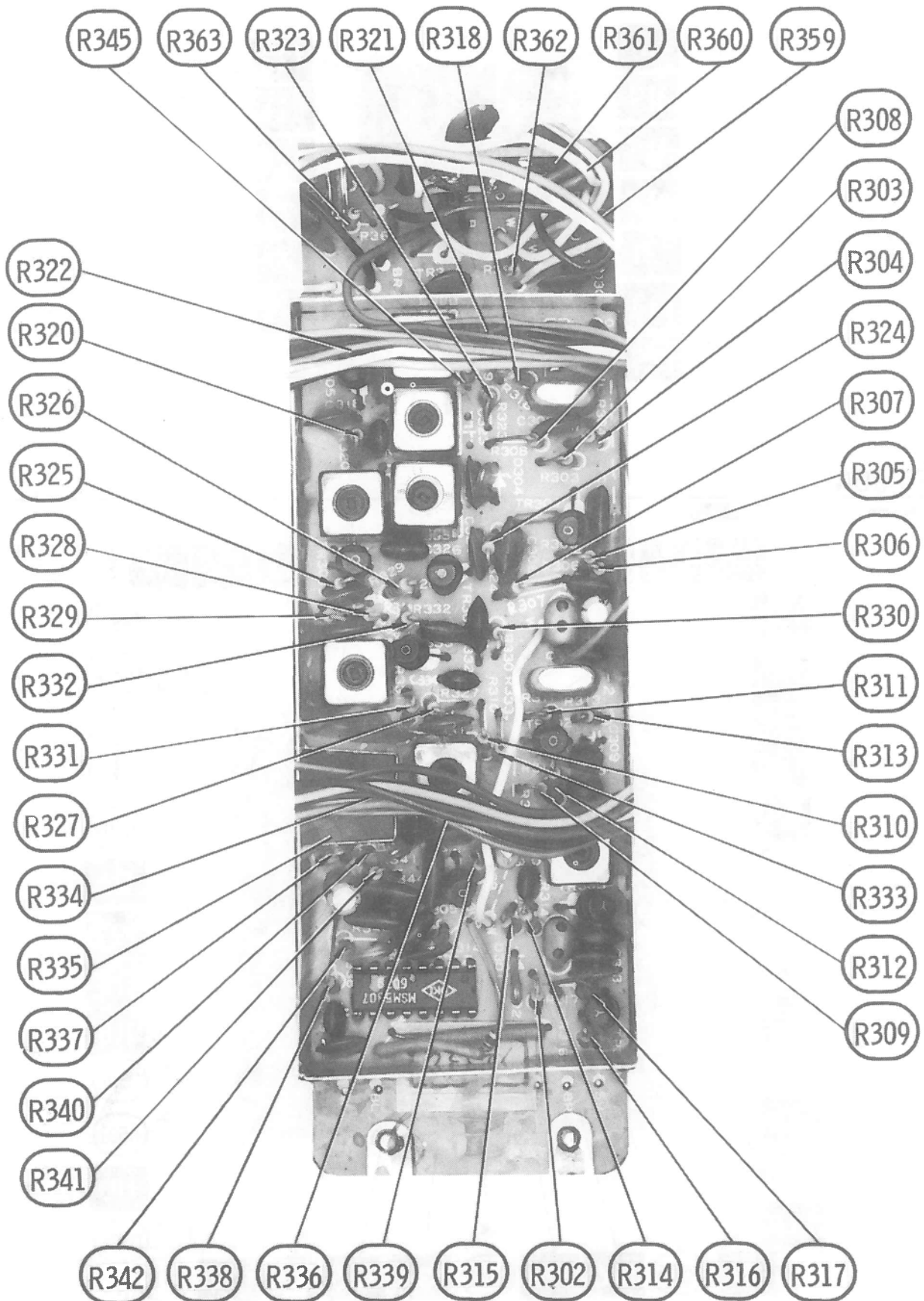
PLL BOARD



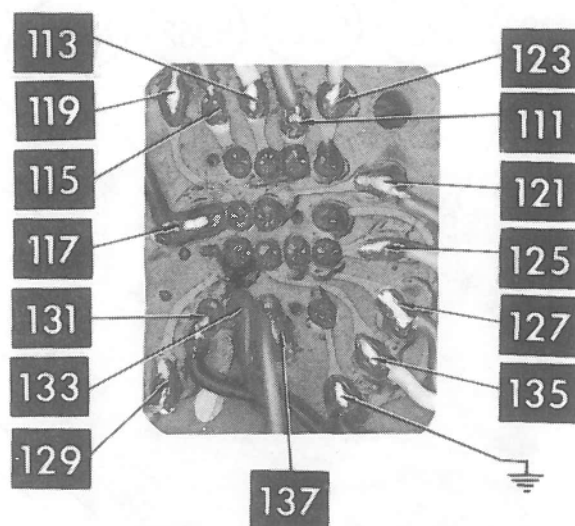




PLL BOARD

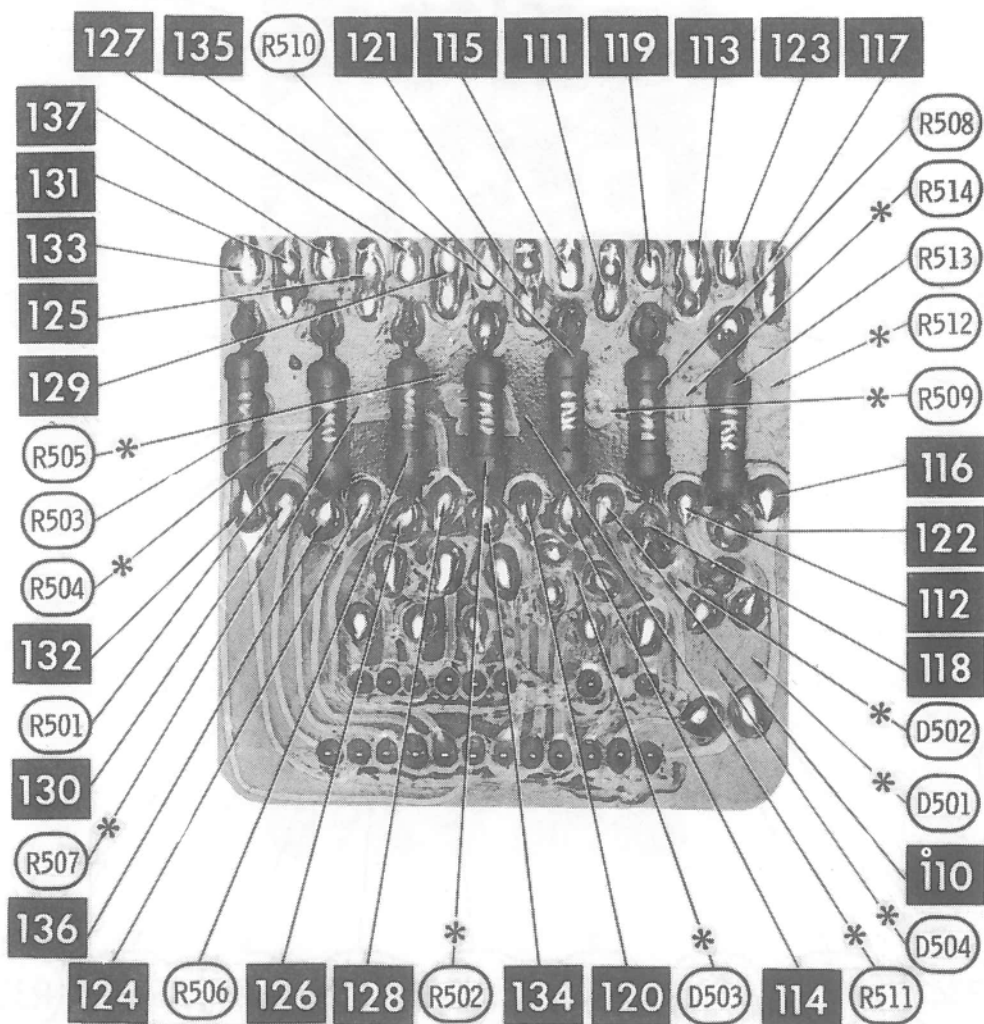


PLL BOARD



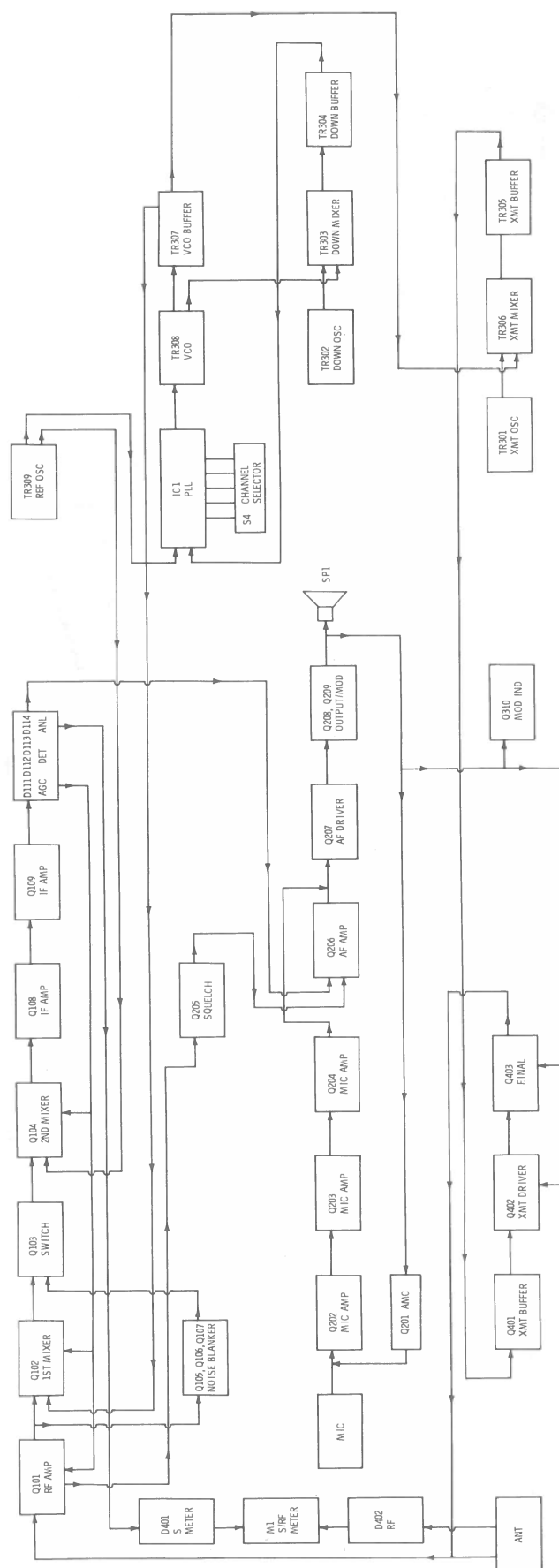
LED BOARD

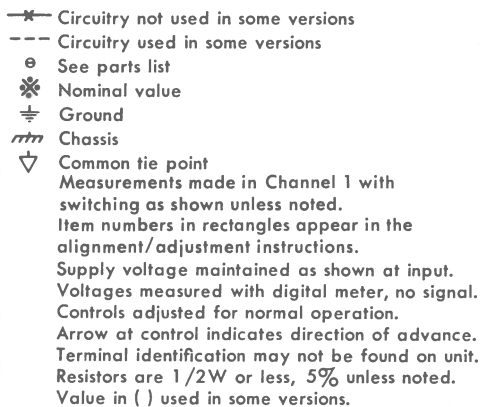
A Howard W. Sams **CIRCUITRACE®** Photo



* COMPONENT ON TOP

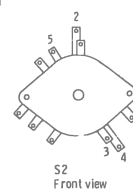
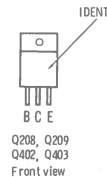
CH. SELECTOR BOARD

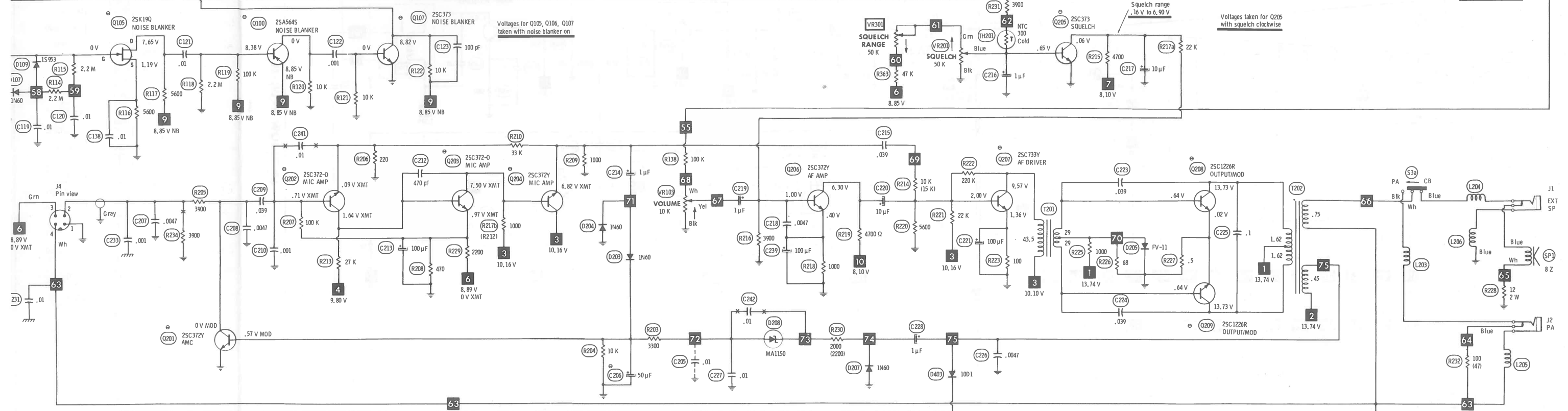


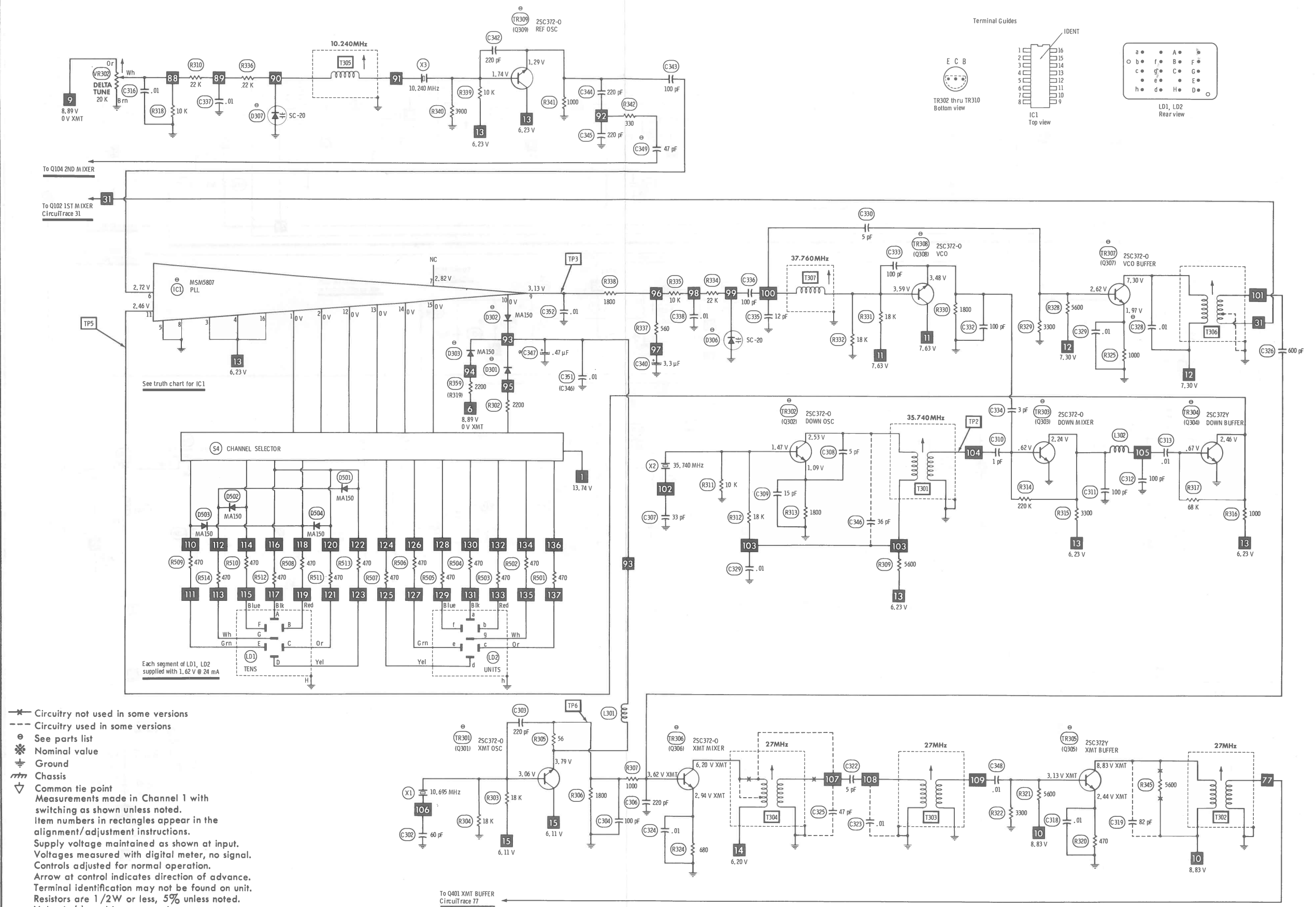


WITH **CIRCUITRACE[®]**

Terminal Guides







PARTS LIST AND DESCRIPTION

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

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')
Speaker Cable (available in 4 colors)	BELDEN No. 8401		BELDEN No. 8497 (6')
Bonding Strap	BELDEN No. 8782		BELDEN No. 9472 (7-1/2')
AC Power Cord	BELDEN No. 8672		BELDEN No. 9466 (6')
	(6') BELDEN No. 17106		28AWG 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')

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.
D101	1S953	600000150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	1N60	WEP1062	ZEN-430
D102	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D103	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D104	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D105	1S953	600000150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	1N60	WEP1062	ZEN-430
D106	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D107	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D108	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D109	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D110	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D111	1S953	600000150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	1N60	WEP1062	ZEN-430
D112	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D113	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D114	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D115	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D201	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D202	1S953	600000150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	1N60	WEP1062	ZEN-430
D203	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D204	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D205	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D206	1N60	600000150	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D207	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D208	1S953	600000150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	1N60	WEP1062	ZEN-430
D209	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D210	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D211	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D212	1S953	600000150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	1N60	WEP1062	ZEN-430
D213	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D214	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D215	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D216	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D217	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D218	1S953	600000150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	1N60	WEP1062	ZEN-430
D219	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D220	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D221	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D222	1S953	600000150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	1N60	WEP1062	ZEN-430
D223	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D224	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D225	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D226	1N60	600000150	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D227	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D228	1S953	600000150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	1N60	WEP1062	ZEN-430
D229	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D230	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D231	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D232	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D233	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D234	1S953	600000150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	1N60	WEP1062	ZEN-430
D235	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D236	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D237	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D238	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D239	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D240	1S953	600000150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	1N60	WEP1062	ZEN-430
D241	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D242	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D243	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D244	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D245	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D246	1S953	600000150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	1N60	WEP1062	ZEN-430
D247	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D248	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D249	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D250	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D251	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D252	1S953	600000150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	1N60	WEP1062	ZEN-430
D253	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D254	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D255	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D256	1N60	600000150	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D257	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D258	1S953	600000150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	1N60	WEP1062	ZEN-430
D259	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D260	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D261	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D262	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D263	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D264	1S953	600000150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	1N60	WEP1062	ZEN-430
D265	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D266	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D267	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D268	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D269	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D270	1S953	600000150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	1N60	WEP1062	ZEN-430
D271	MA150		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
D272	1N60	600000090	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D273	0A90		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	WEP134		
D274												

PARTS LIST AND DESCRIPTION (CONTINUED)

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

SEMICONDUCTORS (Select replacement transistor for best results) (cont)

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.
Q109	2SC372-0 2SC372 2SC1675 2SC829	632037210	GE-61* GE-61* GE-213 GE-20*	PTC121* PTC121* PTC132* PTC139*	HEPS0015* HEPS0015* HEPS0025* HEPS0015*	REN 123A* REN 123A* REN 123A* REN 123A*	SK3444 SK3444 SK3124 SK3444	RT-308 RT-308 RT-308 RT-308	ECG123A* ECG123A* ECG229* ECG229*	2SC372 2SC372 2SC829 2SC372	WEP372 WEP372 WEP956* WEP829	121-Z9000* 121-Z9000* ZEN-127 121-Z9000*
Q201	2SC372Y 2SC372 2SC945 2SC828	632037218	GE-61* GE-61* GE-212 GE-61*	PTC121* PTC121* PTC139* PTC139*	HEPS0015* HEPS0015* HEPS0015* HEPS0015*	REN 123A* REN 123A* REN 199 REN 199	SK3444 SK3444 SK3124 SK3444	RT-308 RT-308 RT-107A RT-302	ECG123A* ECG123A* ECG199 ECG199	2SC372 2SC372 2SC945 2SC828	WEP372 WEP372 WEP1945 WEP828	121-Z9000* 121-Z9000* 121-Z9000* ZEN-119
Q202	2SC372-0 2SC372 2SC945 2SC828	632037210	GE-61* GE-61* GE-212 GE-61*	PTC121* PTC121* PTC139* PTC139*	HEPS0015* HEPS0015* HEPS0015* HEPS0015*	REN 123A* REN 123A* REN 199 REN 199	SK3444 SK3444 SK3124 SK3444	RT-308 RT-308 RT-107A RT-302	ECG123A* ECG123A* ECG199 ECG199	2SC372 2SC372 2SC945 2SC828	WEP372 WEP372 WEP1945 WEP828	121-Z9000* 121-Z9000* 121-Z9000* ZEN-119
Q203	2SC372-0 2SC372 2SC945 2SC828	632037210	GE-61* GE-61* GE-212 GE-61*	PTC121* PTC121* PTC139* PTC139*	HEPS0015* HEPS0015* HEPS0015* HEPS0015*	REN 123A* REN 123A* REN 199 REN 199	SK3444 SK3444 SK3124 SK3444	RT-308 RT-308 RT-107A RT-302	ECG123A* ECG123A* ECG199 ECG199	2SC372 2SC372 2SC945 2SC828	WEP372 WEP372 WEP1945 WEP828	121-Z9000* 121-Z9000* 121-Z9000* ZEN-119
Q204	2SC372Y 2SC372 2SC945 2SC828	632037218	GE-61* GE-61* GE-212 GE-61*	PTC121* PTC121* PTC139* PTC139*	HEPS0015* HEPS0015* HEPS0015* HEPS0015*	REN 123A* REN 123A* REN 199 REN 199	SK3444 SK3444 SK3124 SK3444	RT-308 RT-308 RT-107A RT-302	ECG123A* ECG123A* ECG199 ECG199	2SC372 2SC372 2SC945 2SC828	WEP372 WEP372 WEP1945 WEP828	121-Z9000* 121-Z9000* 121-Z9000* ZEN-119
Q205	2SC373 2SC945 2SC828	632037300	GE-61* GE-212 GE-212	PTC121* PTC139* PTC139*	HEPS0015* HEPS0015* HEPS0015*	REN 199 REN 199 REN 199	SK3122 SK3122 SK3124	RT-105 RT-105 RT-107A	ECG199 ECG199 ECG199	2SC373 2SC373 2SC945	WEP373 WEP373 WEP1945	121-Z9000* 121-Z9000* ZEN-119
Q206	2SC372Y 2SC372 2SC945 2SC828	632037318	GE-61* GE-61* GE-212 GE-61*	PTC121* PTC121* PTC139* PTC139*	HEPS0015* HEPS0015* HEPS0015* HEPS0015*	REN 123A* REN 123A* REN 199 REN 199	SK3444 SK3444 SK3124 SK3444	RT-308 RT-308 RT-107A RT-302	ECG123A* ECG123A* ECG199 ECG199	2SC372 2SC372 2SC945 2SC828	WEP372 WEP372 WEP1945 WEP828	121-Z9000* 121-Z9000* 121-Z9000* ZEN-119
Q207	2SC733Y 2SC733 2SC945 2SC1347	632073318	GE-62 GE-62 GE-212 GE-88	PTC139* PTC139* PTC121* PTC178	HEPS0025* HEPS0025* HEPS0015* HEPS3002*	REN 199 REN 199 REN 199 REN 199	SK3122 SK3122 SK3124 SK3137	RT-302 RT-302 RT-107A RT-182*	ECG199 ECG199 ECG199 ECG192*	2SC733 2SC733 2SC945 2SC1226	WEP66 WEP66 WEP1945 WEP751	ZEN-114 ZEN-114 121-Z9000* 121-Z9000*
Q208	2SC1226R 2SC1226 2SC1173 2SC1096	632122617(13)	GE-215 GE-215 GE-215 GE-28	PTC186 PTC186 PTC110 PTC110	HEPS3041	REN 186A REN 186A REN 236 REN 186	SK3197 SK3197 SK3197 SK3197	RT-166 RT-166 RT-160 RT-166	ECG186A ECG186A ECG236 ECG186A	2SC1226 2SC1226 2SC1173 2SC1096	WEP751 WEP751 WEP840 WEP1096	
Q209	2SC1226R 2SC1226 2SC1173 2SC1096	632122617(13)	GE-215 GE-215 GE-215 GE-28	PTC186 PTC186 PTC110 PTC110	HEPS3041	REN 186A REN 186A REN 236 REN 186	SK3197 SK3197 SK3197 SK3197	RT-166 RT-166 RT-160 RT-166	ECG186A ECG186A ECG236 ECG186A	2SC1226 2SC1226 2SC1173 2SC1096	WEP751 WEP751 WEP840 WEP1096	
Q401	2SC735-0 2SC735 2SC945A 2SC829	632073510	GE-210* GE-210* GE-212 GE-20*	PTC123* PTC123* PTC121* PTC139*	HEPS0014* HEPS0014* HEPS0015* HEPS0015*	REN 289 REN 289 REN 199 REN 123A	SK3122 SK3122 SK3124 SK3444	RT-308* RT-308* RT-107A RT-308	ECG289 ECG289 ECG199 ECG229*	2SC735 2SC735 2SC945 2SC829	WEP375A WEP375A WEP1945 WEP829	ZEN-127 ZEN-127 121-Z9000* 121-Z9000*
Q402	2SC1226A 2SC1226 2SC495T 2SC1957	632122617(13)	GE-215 GE-215 GE-270 GE-270	PTC186 PTC186 PTC180 PTC180	HEPS3044	REN 186A REN 186A REN 295 REN 295	SK3197 SK3197 SK3253 SK3197	RT-166 RT-166 RT-162 RT-146	ECG186A ECG186A ECG295 ECG295	2SC1226 2SC1226 2SC1306 2SC1306	WEP751 WEP751 WEP913 WEP913	ZEN-209
Q403	2SC1974 2SC1306 2SC1678	632197406(12)	GE-337 GE-215 GE-322	PTC186 PTC186 PTC186	HEPS3044	REN 235 REN 235 REN 235	SK3197 SK3197 SK3197	RT-146 RT-146 RT-146	ECG235 ECG235 ECG235	2SC1306 2SC1306 2SC1306	WEP785 WEP785 WEP785	
TR301	2SC372-0 2SC372 2SC1675 2SC829	632037210	GE-61* GE-61* GE-213 GE-20*	PTC121* PTC121* PTC132* PTC139*	HEPS0015* HEPS0015* HEPS0025* HEPS0015*	REN 123A* REN 123A* REN 123A* REN 123A*	SK3444 SK3444 SK3124 SK3444	RT-308 RT-308 RT-308 RT-308	ECG123A* ECG123A* ECG229* ECG229*	2SC372 2SC372 2SC829 2SC372	WEP372 WEP372 WEP956* WEP829	121-Z9000* 121-Z9000* ZEN-127 121-Z9000*
TR302	2SC372-0 2SC372 2SC1675 2SC829	632037210	GE-61* GE-61* GE-213 GE-20*	PTC121* PTC121* PTC132* PTC139*	HEPS0015* HEPS0015* HEPS0025* HEPS0015*	REN 123A* REN 123A* REN 123A* REN 123A*	SK3444 SK3444 SK3124 SK3444	RT-308 RT-308 RT-308 RT-308	ECG123A* ECG123A* ECG229* ECG229*	2SC372 2SC372 2SC829 2SC372	WEP372 WEP372 WEP956* WEP829	121-Z9000* 121-Z9000* ZEN-127 121-Z9000*
TR303	2SC372-0 2SC372 2SC1675 2SC829	632037210	GE-61* GE-61* GE-213 GE-20*	PTC121* PTC121* PTC132* PTC139*	HEPS0015* HEPS0015* HEPS0025* HEPS0015*	REN 123A* REN 123A* REN 123A* REN 123A*	SK3444 SK3444 SK3124 SK3444	RT-308 RT-308 RT-308 RT-308	ECG123A* ECG123A* ECG229* ECG229*	2SC372 2SC372 2SC829 2SC372	WEP372 WEP372 WEP956* WEP829	121-Z9000* 121-Z9000* ZEN-127 121-Z9000*
TR304	2SC372Y 2SC372 2SC1675 2SC829	632037218	GE-61* GE-61* GE-213 GE-20*	PTC121* PTC121* PTC132* PTC139*	HEPS0015* HEPS0015* HEPS0025* HEPS0015*	REN 123A* REN 123A* REN 123A* REN 123A*	SK3444 SK3444 SK3124 SK3444	RT-308 RT-308 RT-308 RT-308	ECG123A* ECG123A* ECG229* ECG229*	2SC372 2SC372 2SC829 2SC372	WEP372 WEP372 WEP956* WEP829	121-Z9000* 121-Z9000* ZEN-127 121-Z9000*
TR305	2SC372Y 2SC372 2SC1675 2SC829	632037218	GE-61* GE-61* GE-213 GE-20*	PTC121* PTC121* PTC132* PTC139*	HEPS0015* HEPS0015* HEPS0025* HEPS0015*	REN 123A* REN 123A* REN 123A* REN 123A*	SK3444 SK3444 SK3124 SK3444	RT-308 RT-308 RT-308 RT-308	ECG123A* ECG123A* ECG229* ECG229*	2SC372 2SC372 2SC829 2SC372	WEP372 WEP372 WEP956* WEP829	121-Z9000* 121-Z9000* ZEN-127 121-Z9000*
TR306	2SC372-0 2SC372 2SC1675 2SC829	632037210	GE-61* GE-61* GE-213 GE-20*	PTC121* PTC121* PTC132* PTC139*	HEPS0015* HEPS0015* HEPS0025* HEPS0015*	REN 123A* REN 123A* REN 123A* REN 123A*	SK3444 SK3444 SK3124 SK3444	RT-308 RT-308 RT-308 RT-308	ECG123A* ECG123A* ECG229* ECG229*	2SC372 2SC372 2SC829 2SC372	WEP372 WEP372 WEP956* WEP829	121-Z9000* 121-Z9000* ZEN-127 121-Z9000*
TR307	2SC372-0 2SC372 2SC1675 2SC829	632037210	GE-61* GE-61* GE-213 GE-20*	PTC121* PTC121* PTC132* PTC139*	HEPS0015* HEPS0015* HEPS0025* HEPS0015*	REN 123A* REN 123A* REN 123A* REN 123A*	SK3444 SK3444 SK3124 SK3444	RT-308 RT-308 RT-308 RT-308	ECG123A* ECG123A* ECG229* ECG229*	2SC372 2SC372 2SC829 2SC372	WEP372 WEP372 WEP956* WEP829	121-Z9000* 121-Z9000* ZEN-127 121-Z9000*
TR308	2SC372-0 2SC372 2SC1675 2SC829	632037210	GE-61* GE-61* GE-213 GE-20*	PTC121* PTC121* PTC132* PTC139*	HEPS0015* HEPS0015* HEPS0025* HEPS0015*	REN 123A* REN 123A* REN 123A* REN 123A*	SK3444 SK3444 SK3124 SK3444	RT-308 RT-308 RT-308 RT-308	ECG123A* ECG123A* ECG229* ECG229*	2SC372 2SC372 2SC829 2SC372	WEP372 WEP372 WEP956* WEP829	121-Z9000* 121-Z9000* ZEN-127 121-Z9000*
TR309	2SC372-0 2SC372 2SC1675 2SC829	632037210	GE-61* GE-61* GE-213 GE-20*	PTC121* PTC121* PTC132* PTC139*	HEPS0015* HEPS0015* HEPS0025* HEPS0015*	REN 123A* REN 123A* REN 123A* REN 123A*	SK3444 SK3444 SK3124 SK3444	RT-308 RT-308 RT-308 RT-308	ECG123A* ECG123A* ECG229* ECG229*	2SC372 2SC372 2SC829 2SC372	WEP372 WEP372 WEP956* WEP829	121-Z9000* 121-Z9000* ZEN-127 121-Z9000*
TR310	2SC372-0 2SC372 2SC1675 2SC829	632037210	GE-61* GE-61* GE-213 GE-20*	PTC121* PTC121* PTC132* PTC139*	HEPS0015* HEPS0015* HEPS0025* HEPS0015*	REN 123A* REN 123A* REN 123A* REN 123A*	SK3444 SK3444 SK3124 SK3444	RT-308 RT-308 RT-308 RT-308	ECG123A* ECG123A* ECG229* ECG229*	2SC372 2SC372 2SC829 2SC372	WEP372 WEP372 WEP956* WEP829	121-Z9000* 121-Z9000* ZEN-127 121-Z9000*

* Lead configuration may vary from original.

(12) 15 WATTS @ 3.0 AMP.

(13) 10 WATTS @ 3.0 AMP.

ELECTROLYTIC CAPACITORS

REPLACEMENT DATA						
ITEM No.	RATING	MFR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C131	47 16V	820041470	PC50-16	VTT47D16	QV1-73	EV-1226
C135	10 10V	820031100	PC10-25	VTT10B25	QV1-41	EV-1222
C136	1 50V	820011109	PC1-50	VTT1A50	QV1-11	EV-1615
C137	1 50V	820011109	PC1-50	VTT1A50	QV1-11	EV-1615

PARTS LIST AND DESCRIPTION (CONTINUED)

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

ELECTROLYTIC CAPACITORS (cont)

ITEM No.	RATING	REPLACEMENT DATA				
		MFR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C206	47 10V	820031470	PC50-16	VTT47D16	QV1-73	EV-1226
C211	10 10V	820031100	PC10-25	VTT10B25	QV1-41	EV-1222
C213	100 10V	820031101	PC100-10	VTT100E10	QV1-93	EV-1130
C214	1 50V	820011109	PC1-50	VTT1A50	QV1-11	EV-1615
C216	1 50V	820011109	PC1-50	VTT1A50	QV1-11	EV-1615
C217	10 10V	820031100	PC10-25	VTT10B25	QV1-41	EV-1222
C219	1 50V	820011109	PC1-50	VTT1A50	QV1-11	EV-1615
C220	10 10V	820031100	PC10-25	VTT10B25	QV1-41	EV-1222
C221	100 10V	820031101	PC100-10	VTT100E10	QV1-93	EV-1130
C222	100 16V	820041101	PC100-16	VTT100F16	QV1-95	EV-1230
C228	1 50V	820011109	PC1-50	VTT1A50	QV1-11	EV-1615
C229	470 16V	820041471	PC500-16	VTT470K16	QV1-151	EV-1250
C230	10 16V	820041100	PC10-25	VTT10B25	QV1-41	EV-1222
C239	100 10V	820031101	PC100-10	VTT100E10	QV1-93	EV-1130
C340	3.3 10V	820031339	PC5-50	VTT3R3A50	QV1-23	EV-1318
C347	.47 10V	820011478	PC1-50	VTT47A63	QV1-3	EV-1610
C402	3.3 16V	820031339	PC5-50	VTT3R3A50	QV1-23	EV-1318

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
C101	33			CD15ED330J03	SX433	QW1-15	MWA-330
C102	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C104A	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C104B	3			CD15CD050D03		QW1-2	MWA-050
C104C	5			CD15CD050D03		QW1-2	MWA-050
C105	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C106	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C107	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C108	.01			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C110	.04				GP140		5GA-S40
C111	.04		DC-503	MGP05	TA150	QC2-207	TG-S50
C112	1			CD15CD010D03		QW1-1	MWA-010
C113	.01			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C114	.01			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C115	.04				GP140		5GA-S40
C116	2			CD15CD010D03		QW1-1	MWA-010
C117	25			CD15ED240J03	SX424	QW1-12	MWA-240
C118	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C119	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C120	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C121	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C122	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C123	100			CD15FD101J03	SX310	QW1-27	MWA-101
C124	5			CD15CD050D03		QW1-2	MWA-050
C125	500			CD15FD511J03	SX351	QW1-43	MWA-511
C126	3			CD15CD050D03		QW1-2	MWA-050
C127	.039			DPMS6S39	PVC6139		6PS-S39
C128	.04				GP140		5GA-S40
C129	.01			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C130	.039			DPMS6S39	PVC6139		6PS-S39
C132	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C133	100			CD15FD101J03	SX310	QW1-27	MWA-101
C134	.002		DD-202	GP2000	GP220	QC2-93	5GA-D20
C138	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C139	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C201	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C202	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C203	.04				GP140		5GA-S40
C204	.04				GP140		5GA-S40
C205	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C207	.0047		DD-472	GP4700	GP247		5GA-D47
C208	.0047		DD-472	GP4700	GP247		5GA-D47
C209	.039			DPMS6S39	PVC6139		6PS-S39
C210	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C212	470			CD15FD471J03	SX347	QW1-42	MWA-471
C215	.039			DPMS6S39	PVC6139		6PS-S39
C218	.0047		DD-472	GP4700	GP247		5GA-D47
C223	.039			DPMS6S39	PVC6139		6PS-S39
C224	.039			DPMS6S39	PVC6139		6PS-S39
C225	.1			DPMS2P1	EWFA010	QF1-215	1PB-P10
C226	.0047		DD-472	GP4700	GP247		5GA-D47
C227	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C231	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C232	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C233	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C234	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C240	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C241	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C242	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C302	60			CD15ED620J03	SX462	QW1-22	MWA-620
C303	220			CD15FD221J03	SX322	QW1-35	MWA-221
C304	100			CD15FD101J03	SX310	QW1-27	MWA-101
C305	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C306	220			CD15FD221J03	SX322	QW1-35	MWA-221
C307	33			CD15ED330J03	SX433	QW1-15	MWA-330
C308	5			CD15CD050D03		QW1-2	MWA-050
C309	15			CD15CD150J03		QW1-8	MWA-150
C310	1			CD15CD010D03		QW1-1	MWA-010
C311	100			CD15FD101J03	SX310	QW1-27	MWA-101
C312	100			CD15FD101J03	SX310	QW1-27	MWA-101
C313	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C314	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C316	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C317	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C318	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C319	82			CD15ED820J03	SX482	QW1-25	MWA-820
C321	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C322	5			CD15CD050D03		QW1-2	MWA-050

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
C323	47		DC-103	CD15ED470J03	SX447	QW1-19	MWA-470
C324	.01			MGPO1	TA110	QC2-141	TG-S10
C325	47			CD15ED470J03	SX447	QW1-19	MWA-470
C326	33		DC-103	CD15ED330J03	SX433	QW1-15	MWA-330
C327	.01			MGPO1	TA110	QC2-141	TG-S10
C328	47			NPO47	CN0447		10TCC-Q47
C329	.01		DC-103	MGPO1	TA110	QC2-141	TG-S10
C330	5			CD15CD050D03		QW1-2	MWA-050
C331	.01			MGPO1	TA110	QC2-141	TG-S10
C332	100		DC-103	CD15FD101J03	SX310	QW1-27	MWA-101
C333	100			CD15FD101J03	SX310	QW1-27	MWA-101
C334	3			CD15CD050D03		QW1-2	MWA-050
C335	12		DC-103	CD12CD120J03		QW1-7	MWA-120
C336	100			CD15FD101J03	SX310	QW1-27	MWA-101
C337	.01			MGPO1	TA110	QC2-141	TG-S10
C338	.01		DC-103	MGPO1	TA110	QC2-141	TG-S10
C339	.01			MGPO1	TA110	QC2-141	TG-S10
C342	220			CD15FD221J03	SX322	QW1-35	MWA-221
C343	100		DC-103	CD15FD101J03	SX310	QW1-27	MWA-101
C344	220			CD15FD221J03	SX322	QW1-35	MWA-221
C345	220			CD15FD221J03	SX322	QW1-35	MWA-221
C346	36		DC-103	CD15ED360J03	SX436		MWA-360
C348	.01			MGPO1	TA110	QC2-141	TG-S10
C349	100			CD15FD221J03	SX322	QW1-35	MWA-221
C350	.01		DC-103	MGPO1	TA110	QC2-141	TG-S10
C351	.01			MGPO1	TA110	QC2-141	TG-S10
C352	.01			MGPO1	TA110	QC2-141	TG-S10
C353	.01		DC-103	MGPO1	TA110	QC2-141	TG-S10
C354	.01			MGPO1	TA110	QC2-141	TG-S10
C355	.01			MGPO1	TA110	QC2-141	TG-S10
C401	.01		DC-103	MGPO1	TA110	QC2-141	TG-S10
C403	.04				GP140		5GA-S40
C404	2			CD15CD010D03		QW1-1	MWA-010
C405	100		DC-103	CD15FD101J03	SX310	QW1-27	MWA-101
C406	.01			MGPO1	TA110	QC2-141	TG-S10
C407	.01			MGPO1	TA110	QC2-141	TG-S10
C408	.04		DC-103		GP140		5GA-S40
C409	150			CD15FD151J03	SX315	QW1-31	MWA-151
C410	100			CD15FD101J03	SX310	QW1-27	MWA-101
C411	.04		DC-103		GP140		5GA-S40
C412	100			CD15FD101J03	SX310	QW1-27	MWA-101
C413	220			CD15FD221J03	SX322	QW1-35	MWA-221
C414	.01		DC-103	MGPO1	TA110	QC2-141	TG-S10
C415	33			CD15ED330J03	SX433	QW1-15	MWA-330
C416	.01			MGPO1	TA110	QC2-141	TG-S10
C417	270		DC-103	CD15FD271J03	SX327	QW1-37	MWB-271
C418	.04				GP140		5GA-S40
C419	.04				GP140		5GA-S40
C420	.04		DC-103		GP140		5GA-S40
C421	33			CD15ED330J03	SX433	QW1-15	MWA-330
C422	47			CD15ED470J03	SX447	QW1-19	MWA-470
C423	100		DC-103	CD15FD101J03	SX310	QW1-27	MWA-101
C424	.04				GP140		5GA-S40
C425	.04				GP140		5GA-S40
C426	.04		DC-103		GP140		5GA-S40
C427	600			CD19FD621J03	SX362		MWC-621
C428	150			CD15FD151J03	SX315	QW1-31	MWA-151
C450	.01		DC-103	MGPO1	TA110	QC2-141	TG-S10

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA			
			MFR. PART No.	CENTRALAB PART No.	MALLORY PART No.	TRW PART No.
VR101	RF Gain	5000	960000005			
VR102	AGC	30K	960000002	T-50K	MTC54L1	X201R503B
VR102	Volume/Power Switch	10K	960000006			
VR201	Squelch	50K	960000005			
VR301	Squelch Range	50K	960000001	T-50K	MTC54L1	X201R503B
VR302	Delta Tune	20K	960000009			
VR401	S Meter	5000	960000008	T-5000	MTC53L1	X201R502B
VR402	RF Meter	5000	960000008	T-5000	MTC53L1	X201R502B

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.
TH201	300 Cold NTC		660000001				

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L201	RF Choke	501000002	LD027		
L203	RF Choke (10uH)	501000007	LZ-004		
L204	RF Choke (10uH)	501000007	LZ-004		
L205	RF Choke (10uH)	501000007	LZ-004		
L206	RF Choke (10uH)	501000007	LZ-004		
L301	RF Choke (100uH)	501000008	LZ-005		
L302	RF Choke (10uH)	501000007	LZ-004		
L303	RF Choke (10uH)	501000007	LZ-004		
L401A	XMT Buffer (27MHz)	500000004	LC-020		
L401B	RF Choke			CB306	
L402	RF Choke	501000004	LE-026		
L403	XMT Driver (27MHz)	500000005	LC-016		

PARTS LIST AND DESCRIPTION (CONTINUED)

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

COILS (RF-IF) (cont)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L405	RF Choke	501000001	LD-018	CB306	
L406	Final (27MHz)	500000004	LC-020		
L407	Antenna Match	501000004	LE-006	CB303	
L408	TVI Trap (54MHz)	500000003	LC-017		
T101	Rec Antenna (27MHz)	537000001			
T102	Mixer (27MHz)	537000002			
T103	IF (10.695MHz)	534000001			
T104	IF (10.695MHz)	534000002			
T105	IF (455kHz)	534000003			
T106	IF (455kHz)	534000004			
T107	IF (455kHz)	534000004			
T108	IF (455kHz)	534000005			
T301	Down Mixer (35.740MHz)	537000008			
T302	XMT Buffer (27MHz)	537000009			
T303	XMT Mixer (27MHz)	537000010			
T304	XMT Mixer (27MHz)	537000011			
T305	PLL Input	537000012			
T306	VCO Buffer	537000013			
T307	VCO (37.760MHz)	537000014			

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.	
L202	1.1A	.164	.9	502000001	TR578		

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	SEC. 2	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T201	2	1.3		530000001			

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T202	32	1 1.12 2 1.14	532000002			

SPEAKER

ITEM No.	TYPE		REPLACEMENT DATA		NOTES
			MFGR. PART No.	QUAM PART No.	
SP	3" PM	8 Ohms	403000002 77P06(1)	30A05Z8R	(1) Number on unit.

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA					
		PART No.		BUSS PART No.		LITTELFUSE PART No.	
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER
F1	3 Amp	421000004	429000001	AGC 3	HDJ	312003	150145
							F63-2

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	404000001	18-032	18-034	18-010	18-092	2	1	3	4	NC	1

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF1	Filter	413000001	455kHz
D308	LED	610000002	Mod 1.68V @ 17.5mA
D309	LED	610000002	XMT 1.68V @ 17.5mA
J3	Jack	424000001	Antenna
J4	Jack	424000002	Mic
LD1	LED	610000001	Channel Readout (Tens)
LD2	LED	610000001	Channel Readout (Units)
M1	Meter	411000001	RF/S
P4	Plug	424000004	Mic
PL1	Lamp	426000002	Meter 14V @ 50mA
S2	Switch	420000006	ANL/NB
S3	Switch	420000004	CB/PA
S4	Switch	420000005	Channel Selector
X1	Crystal	413000014	10.695MHz
X2	Crystal	413000016	35.74MHz
X3	Crystal	413000015	10.24MHz
	Printed Circuit Board	415000005	LED
	Printed Circuit Board	415000003	Main
	Printed Circuit Board	415000004	PLL
	Printed Circuit Board	415000006	Switch

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

ITEM	PART No.	ITEM	PART No.
Cabinet, Top	374000003	Escutcheon	377000003
Cabinet, Bottom	374000004	Knob, Channel	383000003
Mounting Bracket	301000003	Knob, Control	383000002