



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 SBE-45CB
(TRINIDAD III)

SBE MODEL SBE-45CB

MANUFACTURER'S SPECIFICATIONS

TRANSMITTER

Power Output	4 watts (Maximum)
Modulation	95-100%
Modulator Response	300 Hz to 3000 Hz, +3 -10db
Output Impedance	50 Ω , unbalanced
Output Indicator	Back lit front panel meter

RECEIVER

Sensitivity	1.0 μ V for 10db S+N/N ratio
Selectivity	55db @ $\pm$ 10kHz, 60db @ $\pm$ 20kHz, 65db @ $\pm$ 30kHz
IF Frequencies	10.695 MHz, 455 kHz
Automatic Gain Control	Less than 10db change in audio output for signal inputs from 10-500,000 μ V
Squelch Threshold	0.5 μ V
Audio Power Output	Greater than 2.0 watts @ 10% T.H.D.
Built-in Speaker	8 Ω
External Speaker	(Not Supplied) 4 or 8 Ω . Disables internal speaker when connected.
Power Consumption	13.8 VDC Receive (squelch) 0.25 amp Receive (2 watts audio) 0.7 amp Transmit (95% modulation) 1.5 amp

Courtesy of the Manufacturer

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

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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. Adjust R404 for 13.80 volts at TP7 in AC power supply. Connect low sides of test equipment to ground unless specified otherwise. Connect 50-ohm dummy load or antenna before keying transmitter. Suggested Alignment Tools: GC ELECTRONICS
T103 thru T107, T301 5009, 8728-A, 8728
T302, L305, L308, L309 9091, 8728-A, 8728
L1, L3, L4, L302, L303, T1, T101, T102 9440

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of frequency counter to TP1 (Q1, Emitter).	Ch. 19, XMT	L1	Adjust for 10.238MHz.
	Ch. 19, DELTA TUNE 0	R11	Adjust for 10.240MHz.
Input of oscilloscope to TP2 (Q5, G2).	Ch. 19, DELTA TUNE 0	T1	Adjust for maximum RF.
Input of DC meter to TP3 (U3, pin 13).	Ch. 19, DELTA TUNE 0	L3	Adjust for 3.50 volts.
	Ch. 19, XMT		Check for 2.12 volts.
Input of oscilloscope to TP4 (Q9, Collector).	Ch. 19, XMT	L4	Adjust for maximum RF.
Input of frequency counter to TP4 (Q9, Collector)	Ch. 1, XMT		Check for 16.270MHz. Check all channels. (See Truth Chart for correct frequencies.)
	Ch. 1, XMT		Check for 16.727MHz. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP5 (U2, pin 6).	Ch. 1, DELTA TUNE 0		Check for .910MHz. Check all channels. (See Truth Chart for correct frequencies.)
	Ch. 1, XMT		Check for 1.370MHz. Check all channels. (See Truth Chart for correct 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. DELTA TUNE 0, Squelch MINIMUM, ANL Switch off.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP6 (Q15, gate) 455kHz, 1000Hz @ 30% modulation.	Ch. 19	T107, T106, T105	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation.	Ch. 19	T104, T103, T102, T101	Adjust for maximum output. If necessary readjust T105, T106 and T107.

RECEIVER ADJUSTMENTS

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.
Delta Tune 0, ANL 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 Maximum	R118	SQUELCH RANGE Adjust to that squelch just breaks.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 100uV.	Ch. 19 SQUELCH MINIMUM RF/S/SWR RF/S	R128	S METER Adjust for 9 on 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.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
	Ch. 19	T301,L302, L303,T302, L305,L308, L309	Adjust for maximum.
	Ch. 19	L308,L309	Adjust for 4 watts maximum.

SBE MODEL SBE-45CB

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 DC meter to TP7 (Q32 Emitter)	Ch. 19	R404	VOLT REG Adjust for 13.80 volts.
Input of oscilloscope on modulation meter to antenna jack. Inject a 1000Hz, 20mV signal at MIC input.	Ch. 19	R226	AMC Adjust for 100% modulation maximum.
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.	Ch. 19 RF/S/SWR RF/S	R319	RFO METER Adjust so that RFO meter agrees with RF wattmeter.
Connect a 150 ohm 5 watt non-inductive resistor to antenna jack.	Ch. 19 RF/S/SWR SWR	R324	SWR METER Place CAL/REV switch to CAL position adjust SWR SENS R322 to CAL on SWR scale of meter. Place CAL/REV switch to REV. Adjust R324 for 3 on SWR scale of meter while maintaining correct adjustment of the SWR SENS control in the CAL position.

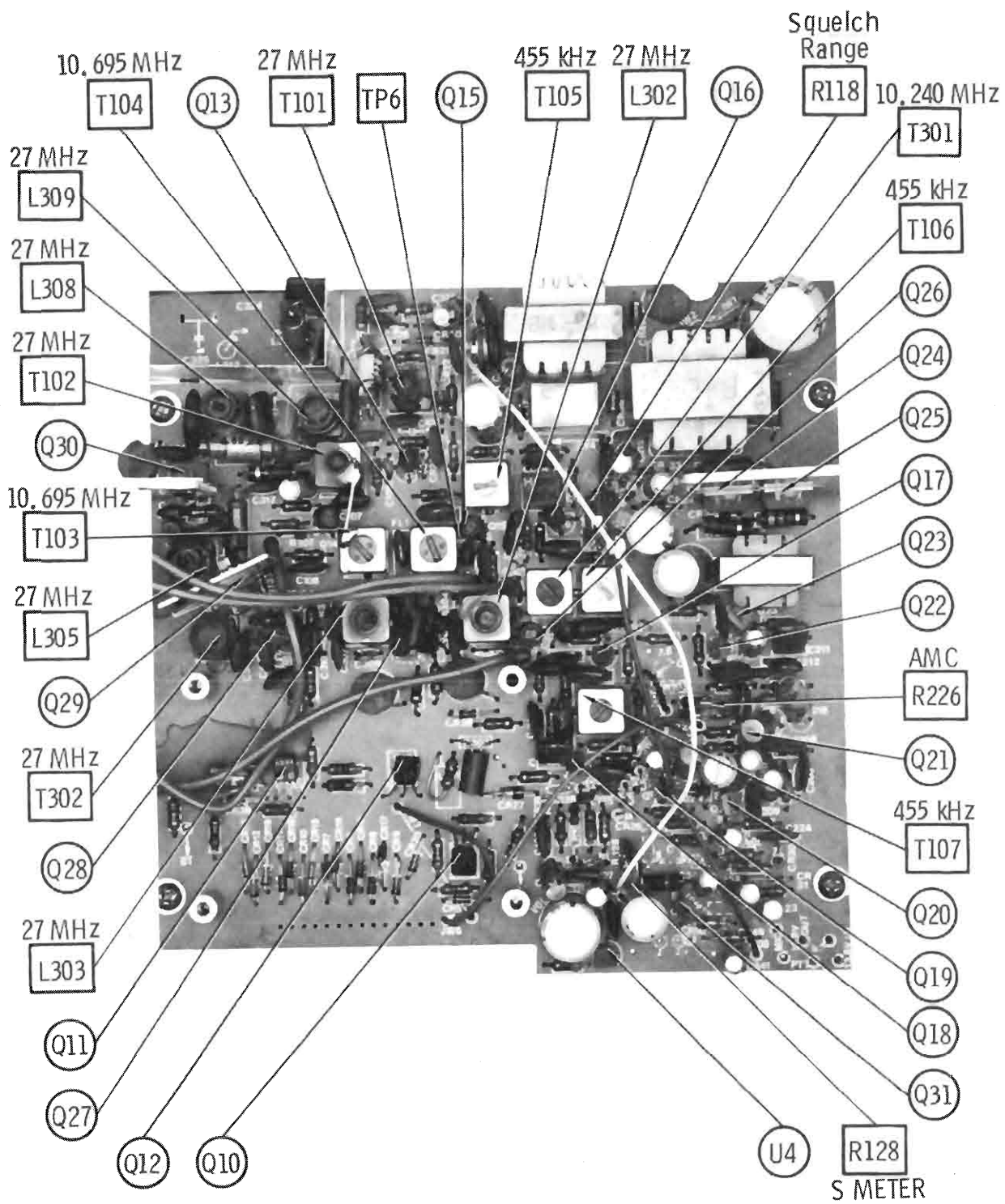
TRUTH CHART

C H A N N E L	1 = 6.30 Volts 0 = 0 Volts XMT PROGRAM DIVIDER								REC VCO OUTPUT IN MHz AT TP4	XMT VCO OUTPUT IN MHz AT TP4	
	PINS										
	U3				U2						
	4	5	6	7	2	14	5	11			
1	1	0	0	0	1	0	1	0	16.270	16.727	
2	1	0	0	0	1	0	0	1	16.280	16.737	
3	1	0	0	0	1	0	1	1	16.290	16.747	
4	1	0	0	0	1	1	1	0	16.310	16.767	
5	1	0	0	0	1	1	0	1	16.320	16.777	
6	1	0	0	0	1	1	1	1	16.330	16.787	
7	1	0	0	1	0	0	0	0	16.340	16.797	
8	1	0	0	1	0	0	0	1	16.360	16.817	
9	1	0	0	1	0	0	1	1	16.370	16.827	
10	1	0	0	1	0	1	0	0	16.380	16.837	
11	1	0	0	1	0	1	1	0	16.390	16.847	
12	1	0	0	1	0	1	1	1	16.410	16.867	
13	1	0	0	1	1	0	0	0	16.420	16.877	
14	1	0	0	1	1	0	1	0	16.430	16.887	
15	1	0	0	1	1	0	0	1	16.440	16.897	
16	1	0	0	1	1	1	0	0	16.460	16.917	
17	1	0	0	1	1	1	1	0	16.470	16.927	
18	1	0	0	1	1	1	0	1	16.480	16.937	
19	1	0	0	1	1	1	1	1	16.490	16.947	
20	1	0	1	0	0	0	1	0	16.510	16.967	
21	1	0	1	0	0	0	0	1	16.520	16.977	
22	1	0	1	0	0	0	1	1	16.530	16.987	
23	1	0	1	0	0	1	0	1	16.560	17.017	
24	1	0	1	0	0	1	0	0	16.540	16.997	
25	1	0	1	0	0	1	1	0	16.550	17.007	
26	1	0	1	0	0	1	1	1	16.570	17.027	
27	1	0	1	0	1	0	0	0	16.580	17.037	
28	1	0	1	0	1	0	1	0	16.590	17.047	
29	1	0	1	0	1	0	0	1	16.600	17.057	
30	1	0	1	0	1	0	1	1	16.610	17.067	
31	1	0	1	0	1	1	0	0	16.620	17.077	
32	1	0	1	0	1	1	1	0	16.630	17.087	
33	1	0	1	0	1	1	0	1	16.640	17.097	
34	1	0	1	0	1	1	1	1	16.650	17.107	
35	1	0	1	1	0	0	0	0	16.660	17.117	
36	1	0	1	1	0	0	1	0	16.670	17.127	
37	1	0	1	1	0	0	0	1	16.680	17.137	
38	1	0	1	1	0	0	1	1	16.690	17.147	
39	1	0	1	1	0	1	0	0	16.700	17.157	
40	1	0	1	1	0	1	1	0	16.710	17.167	

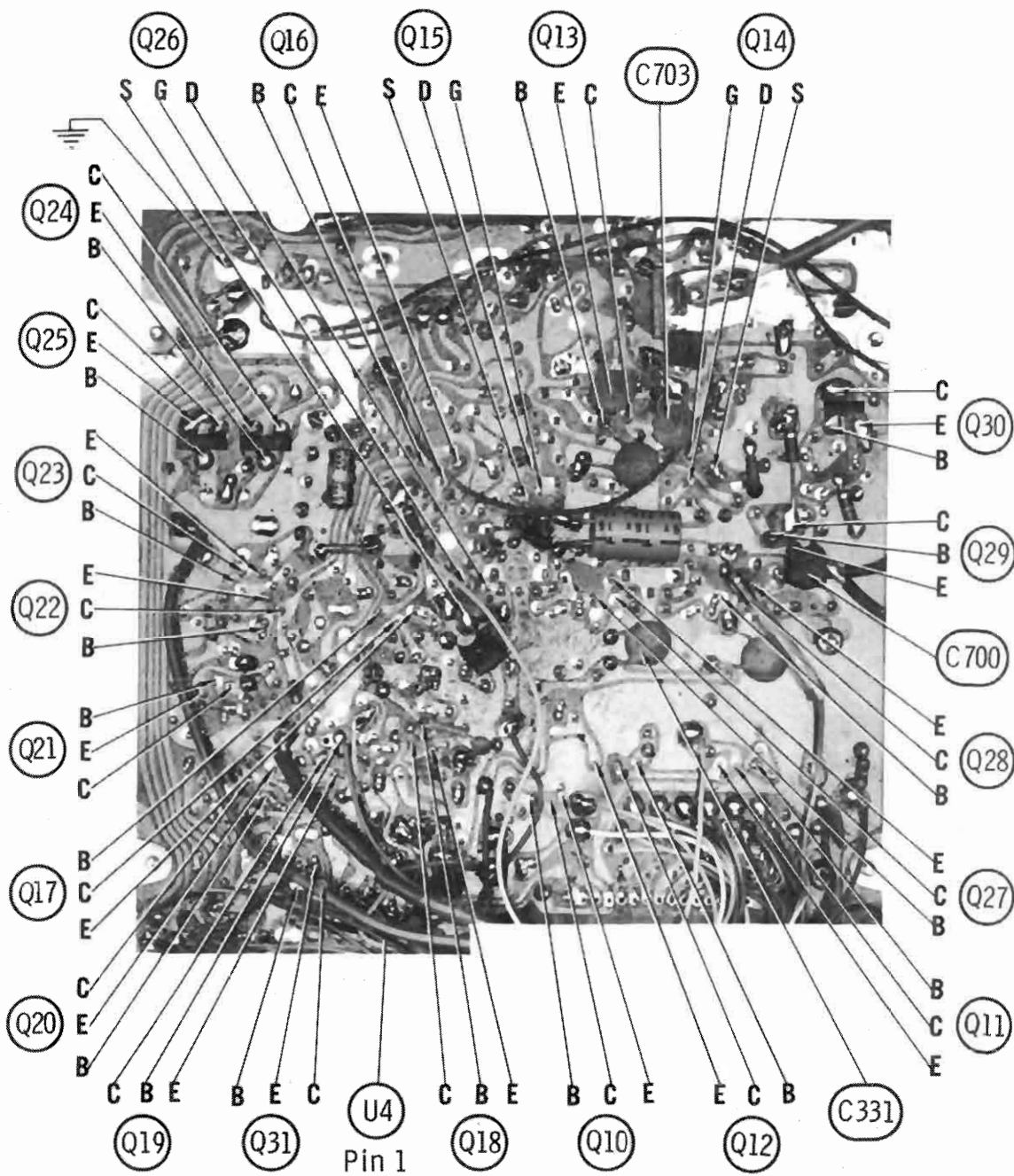
TRUTH CHART

C H A N N E L	1 = 6.30 Volts 0 = 0 Volts REC PROGRAM DIVIDER								DIFFERENCE FREQ. REC VCO OUTPUT IN MHz AT TP5	DIFFERENCE FREQ. XMT VCO OUTPUT IN MHz AT TP5	
	PINS										
	U3				U2						
	4	5	6	7	2	14	5	11			
1	0	1	0	1	1	0	1	1	.910	1.370	
2	0	1	0	1	1	1	0	0	.920	1.380	
3	0	1	0	1	1	1	1	0	.930	1.390	
4	0	1	0	1	1	1	1	1	.950	1.410	
5	0	1	1	0	0	0	0	0	.960	1.420	
6	0	1	1	0	0	0	1	0	.970	1.430	
7	0	1	1	0	0	0	0	1	.980	1.440	
8	0	1	1	0	0	1	0	0	1.000	1.460	
9	0	1	1	0	0	1	1	0	1.010	1.470	
10	0	1	1	0	0	1	0	1	1.020	1.480	
11	0	1	1	0	0	1	1	1	1.030	1.490	
12	0	1	1	0	1	0	1	0	1.050	1.510	
13	0	1	1	0	1	0	0	1	1.060	1.520	
14	0	1	1	0	1	0	1	1	1.070	1.530	
15	0	1	1	0	1	1	0	0	1.080	1.540	
16	0	1	1	0	1	1	0	1	1.100	1.560	
17	0	1	1	0	1	1	1	1	1.110	1.570	
18	0	1	1	1	0	0	0	0	1.120	1.580	
19	0	1	1	1	0	0	1	0	1.130	1.590	
20	0	1	1	1	0	0	1	1	1.150	1.610	
21	0	1	1	1	0	1	0	0	1.160	1.620	
22	0	1	1	1	0	1	1	0	1.170	1.630	
23	0	1	1	1	1	0	0	0	1.200	1.660	
24	0	1	1	1	0	1	0	1	1.180	1.640	
25	0	1	1	1	0	1	1	1	1.190	1.650	
26	0	1	1	1	1	0	1	0	1.210	1.670	
27	0	1	1	1	1	0	0	1	1.220	1.680	
28	0	1	1	1	1	0	1	1	1.230	1.690	
29	0	1	1	1	1	1	0	0	1.240	1.700	
30	0	1	1	1	1	1	1	0	1.250	1.710	
31	0	1	1	1	1	1	0	1	1.260	1.720	
32	0	1	1	1	1	1	1	1	1.270	1.730	
33	1	0	0	0	0	0	0	0	1.280	1.740	
34	1	0	0	0	0	0	1	0	1.290	1.750	
35	1	0	0	0	0	0	0	1	1.300	1.760	
36	1	0	0	0	0	0	1	1	1.310	1.770	
37	1	0	0	0	0	1	0	0	1.320	1.780	
38	1	0	0	0	0	1	1	0	1.330	1.790	
39	1	0	0	0	0	1	0	1	1.340	1.800	
40	1	0	0	0	0	1	1	1	1.350	1.810	

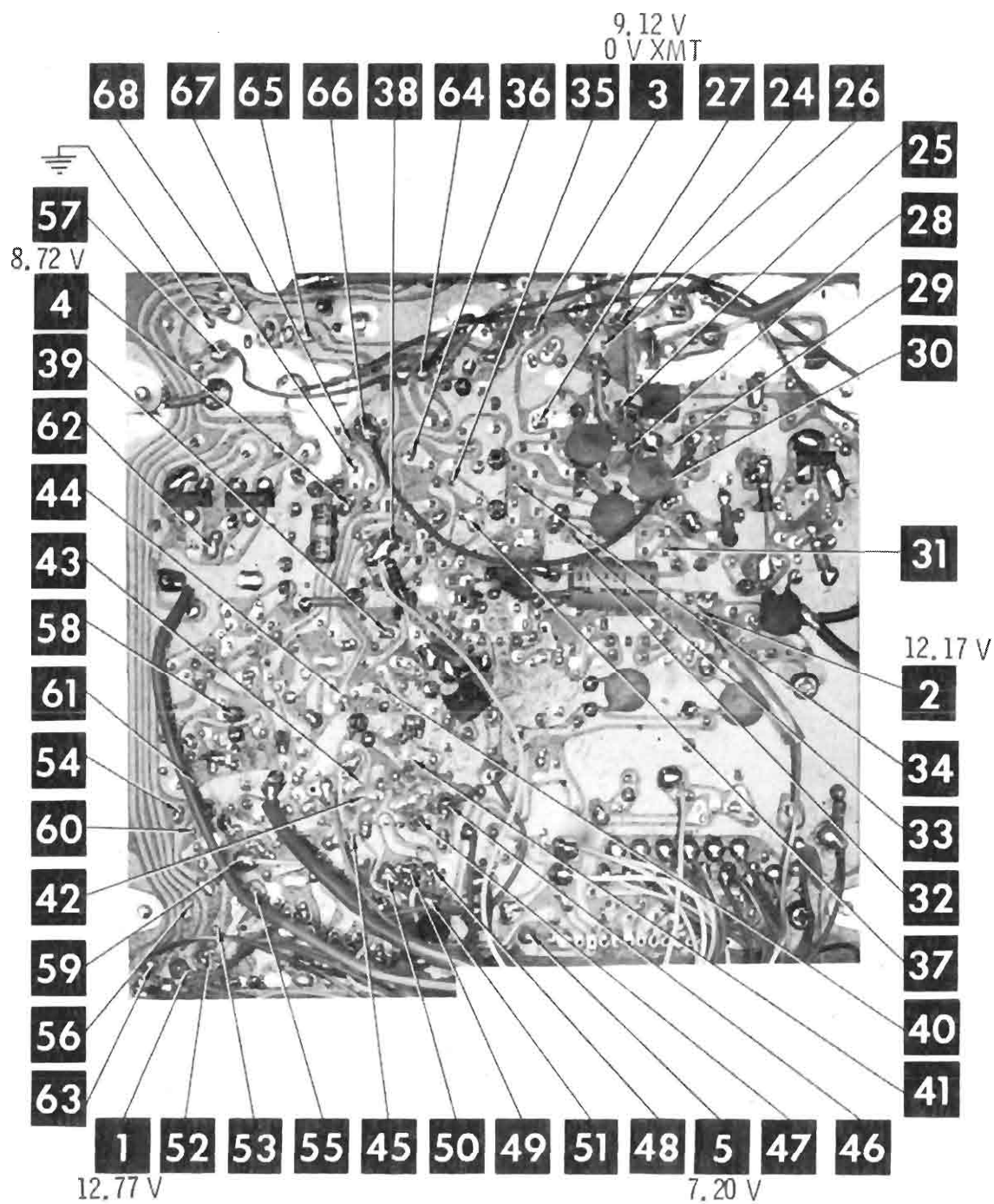
SBE MODEL SBE-45CB



MAIN BOARD



MAIN BOARD

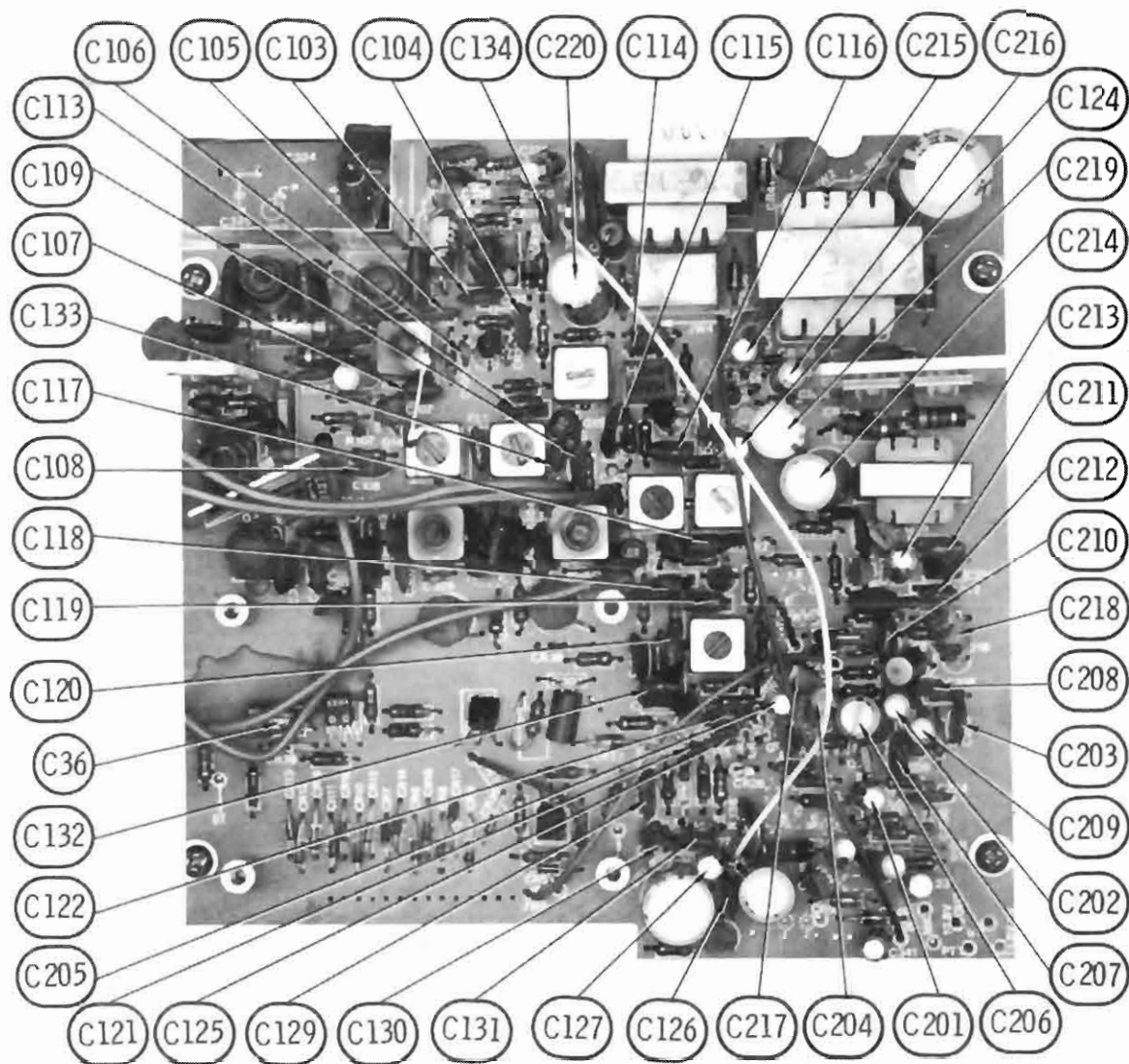


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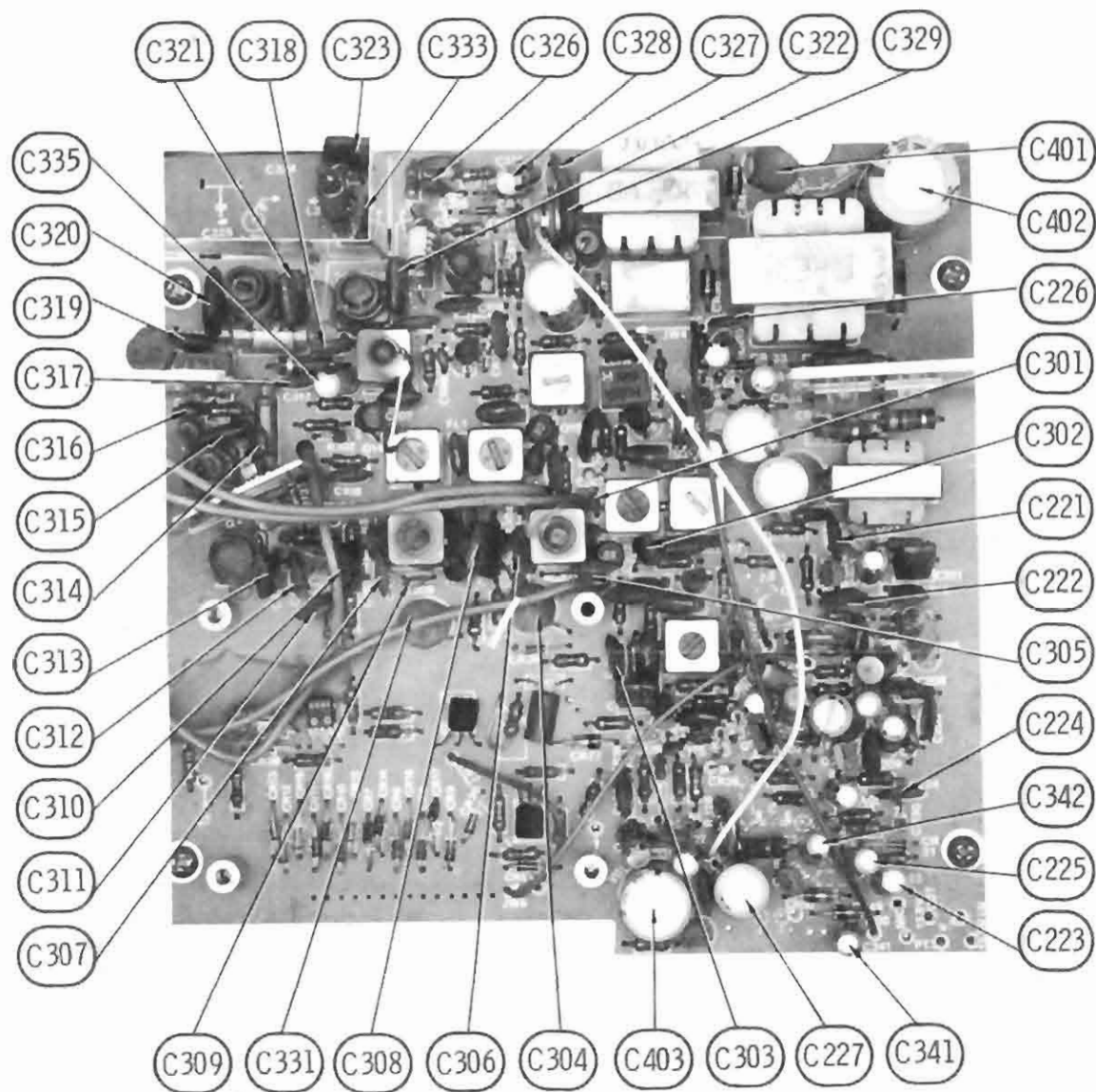


SBE MODEL SBE-45CB

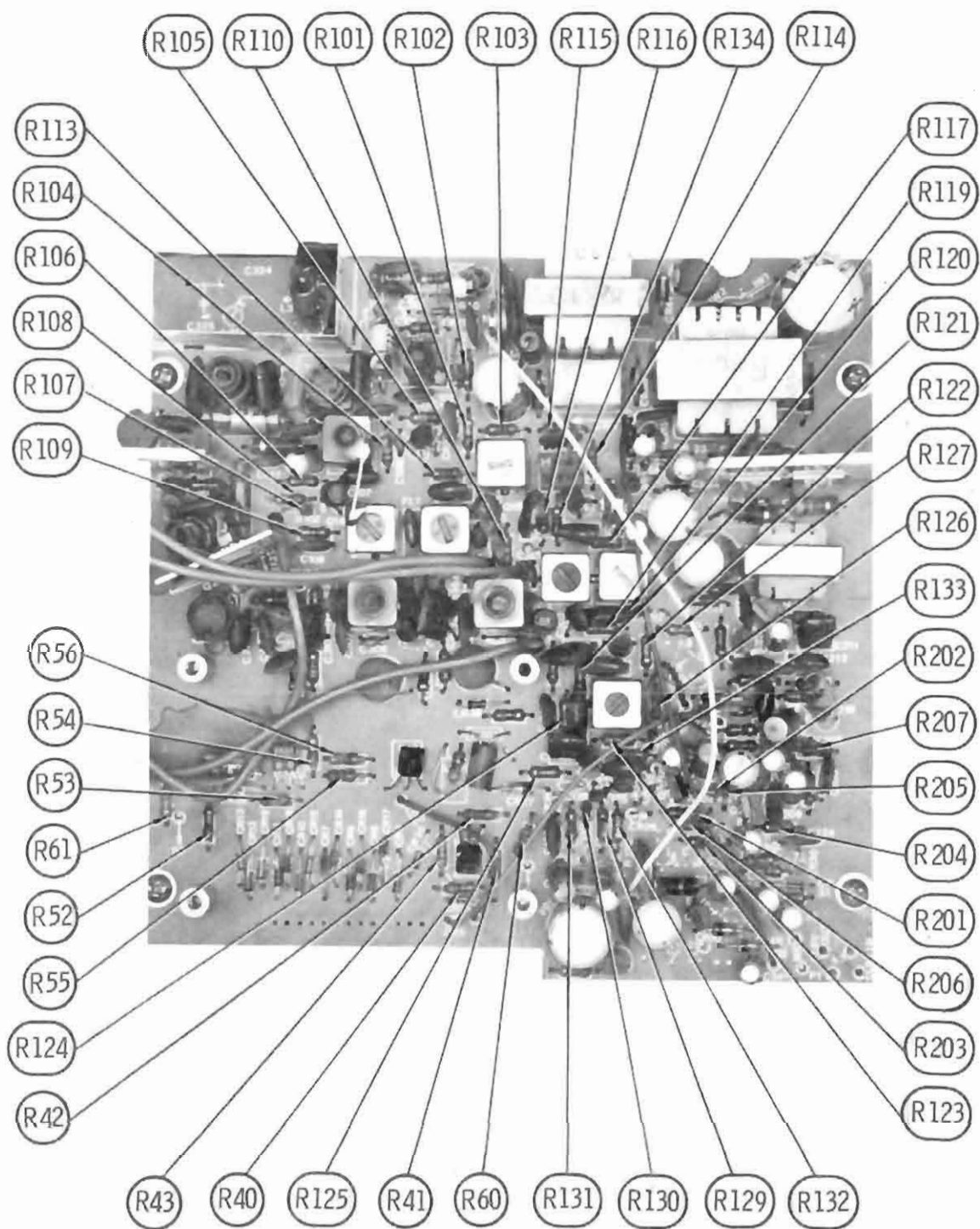
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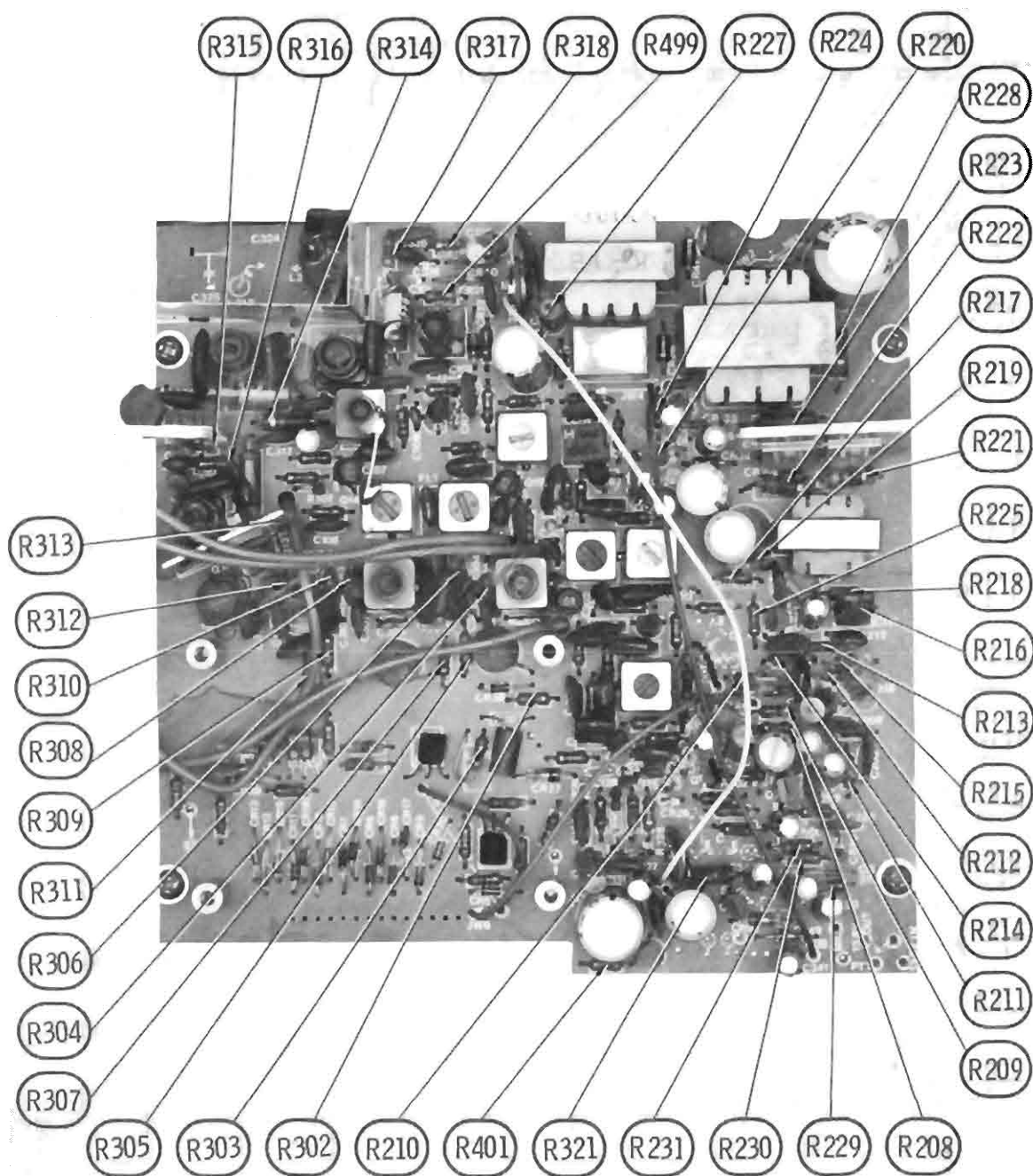
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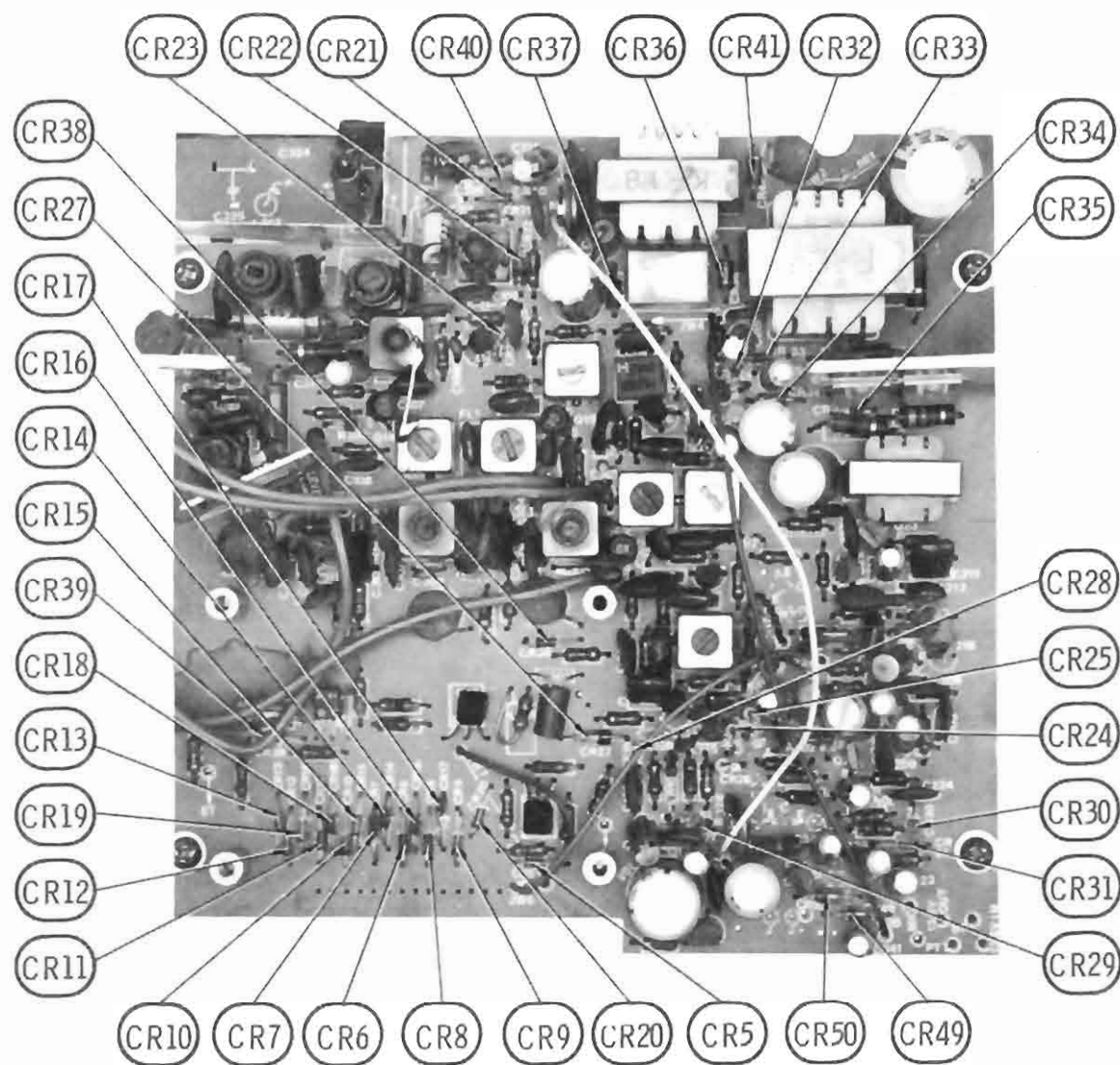
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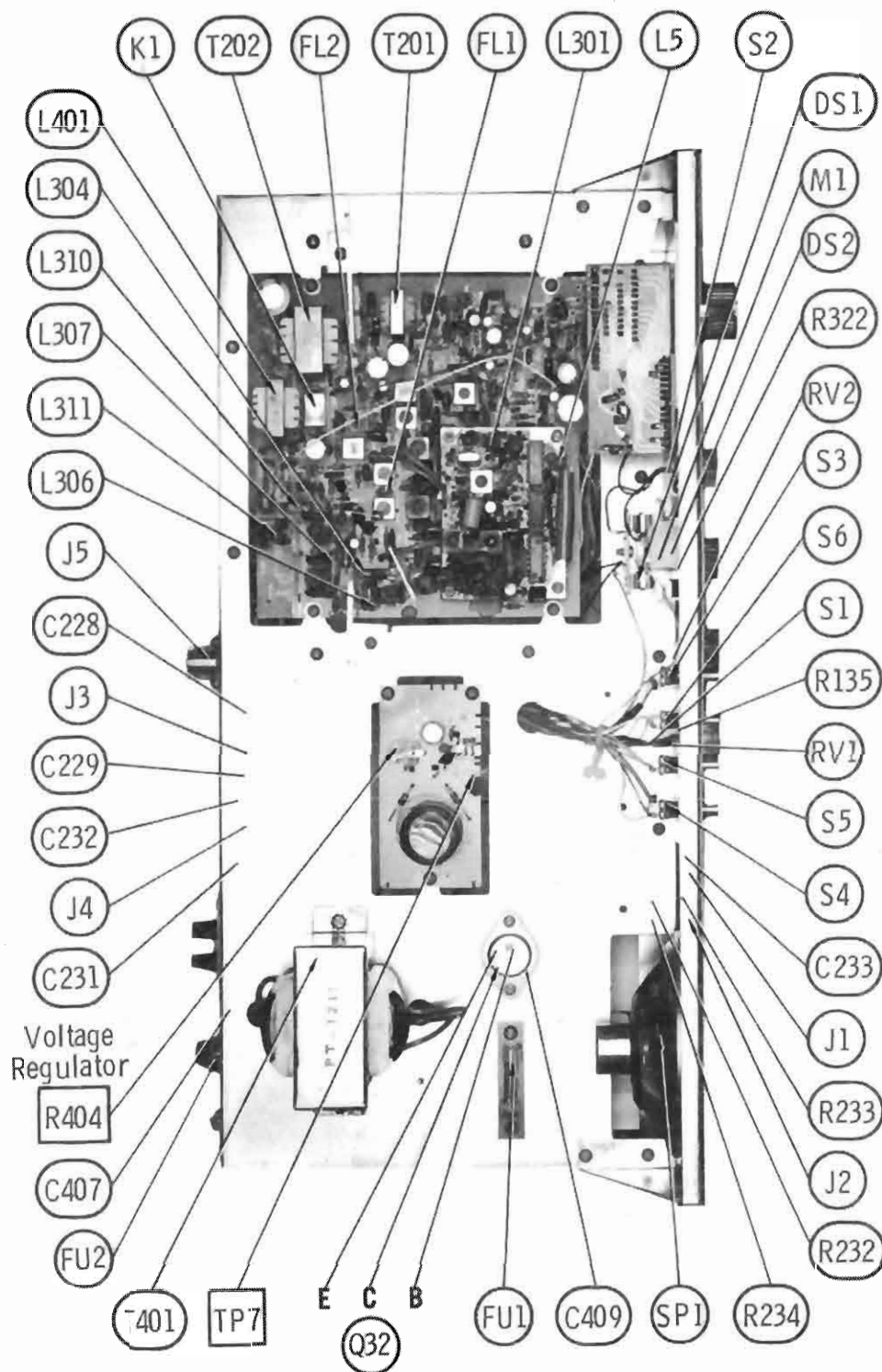
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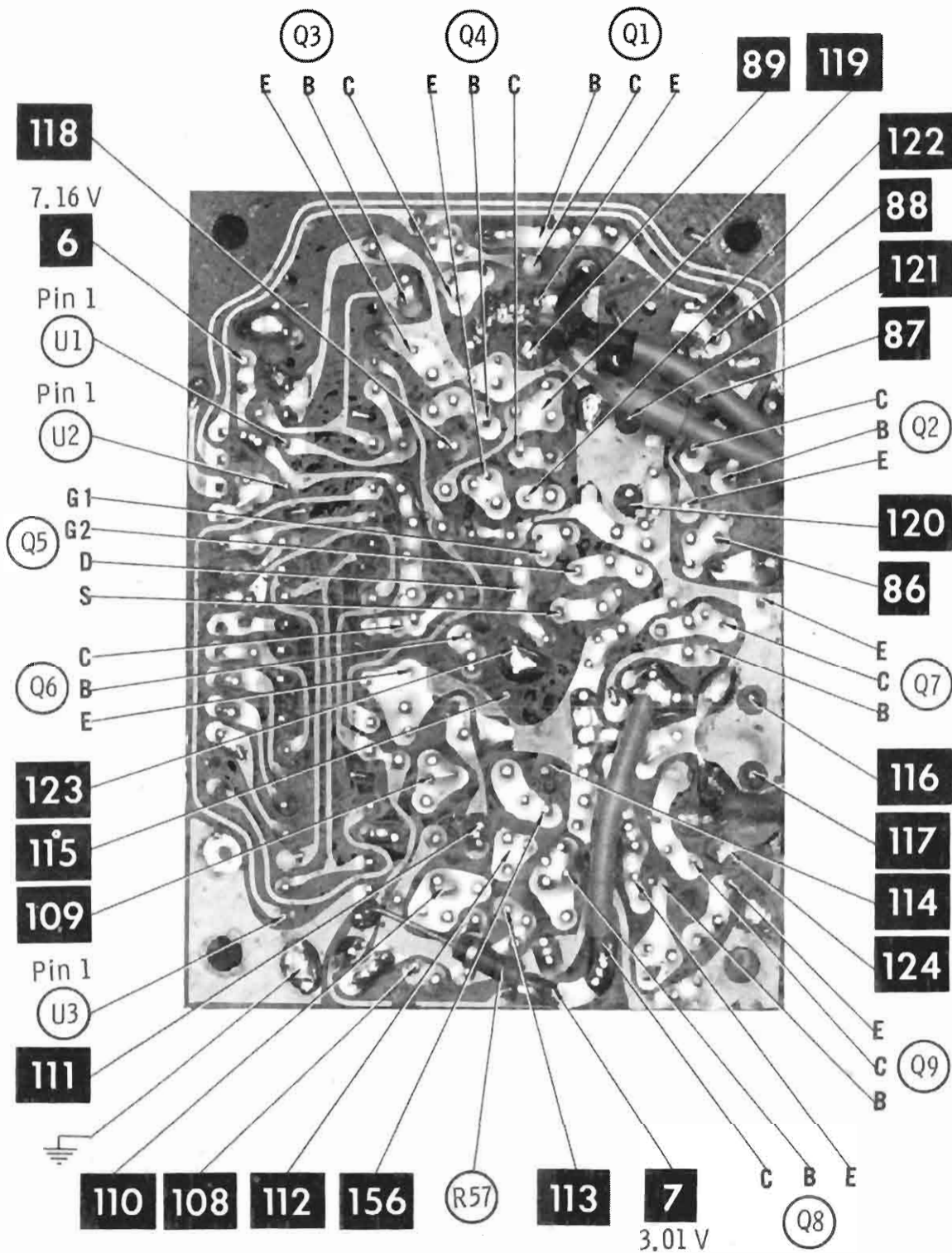
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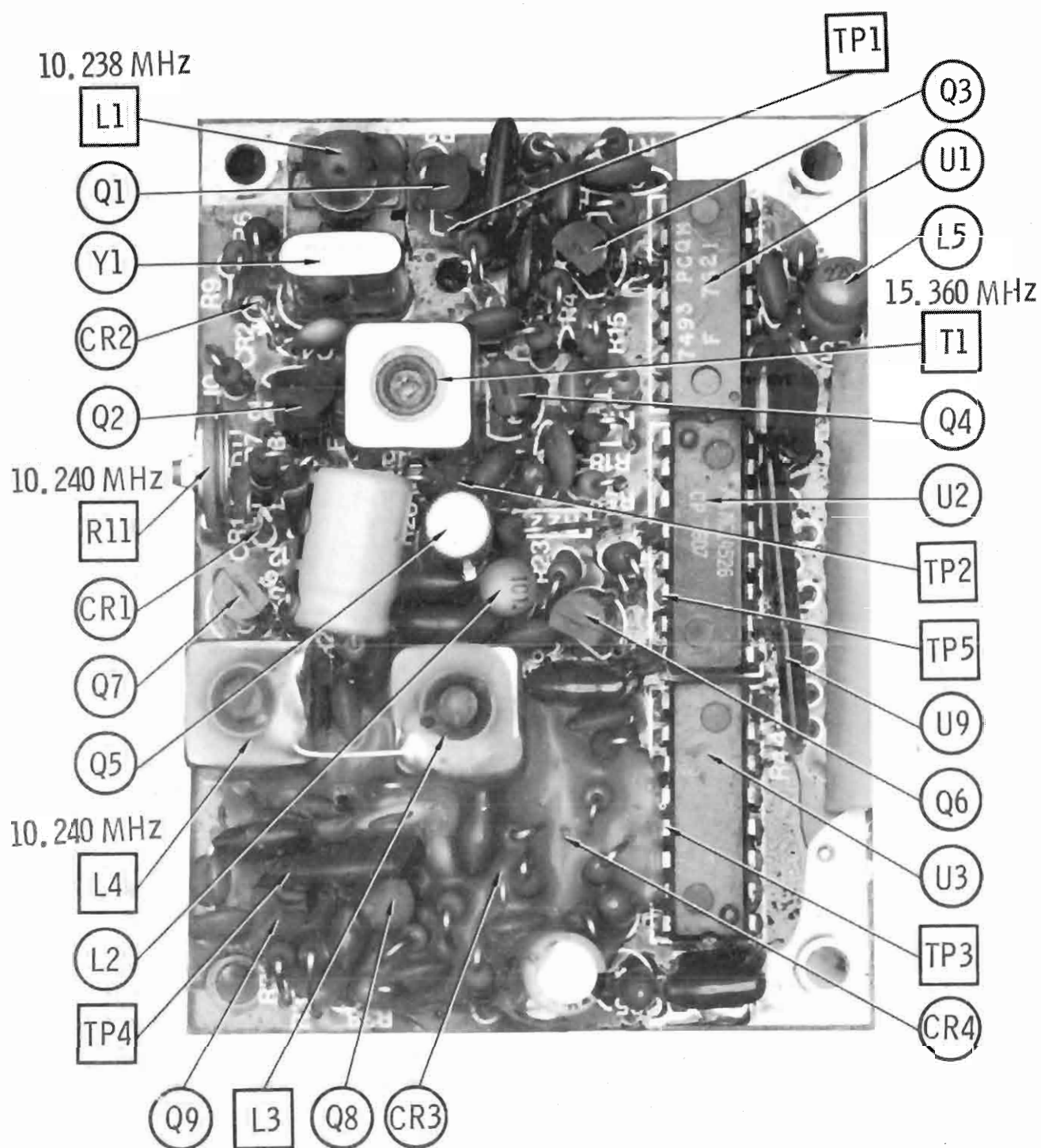
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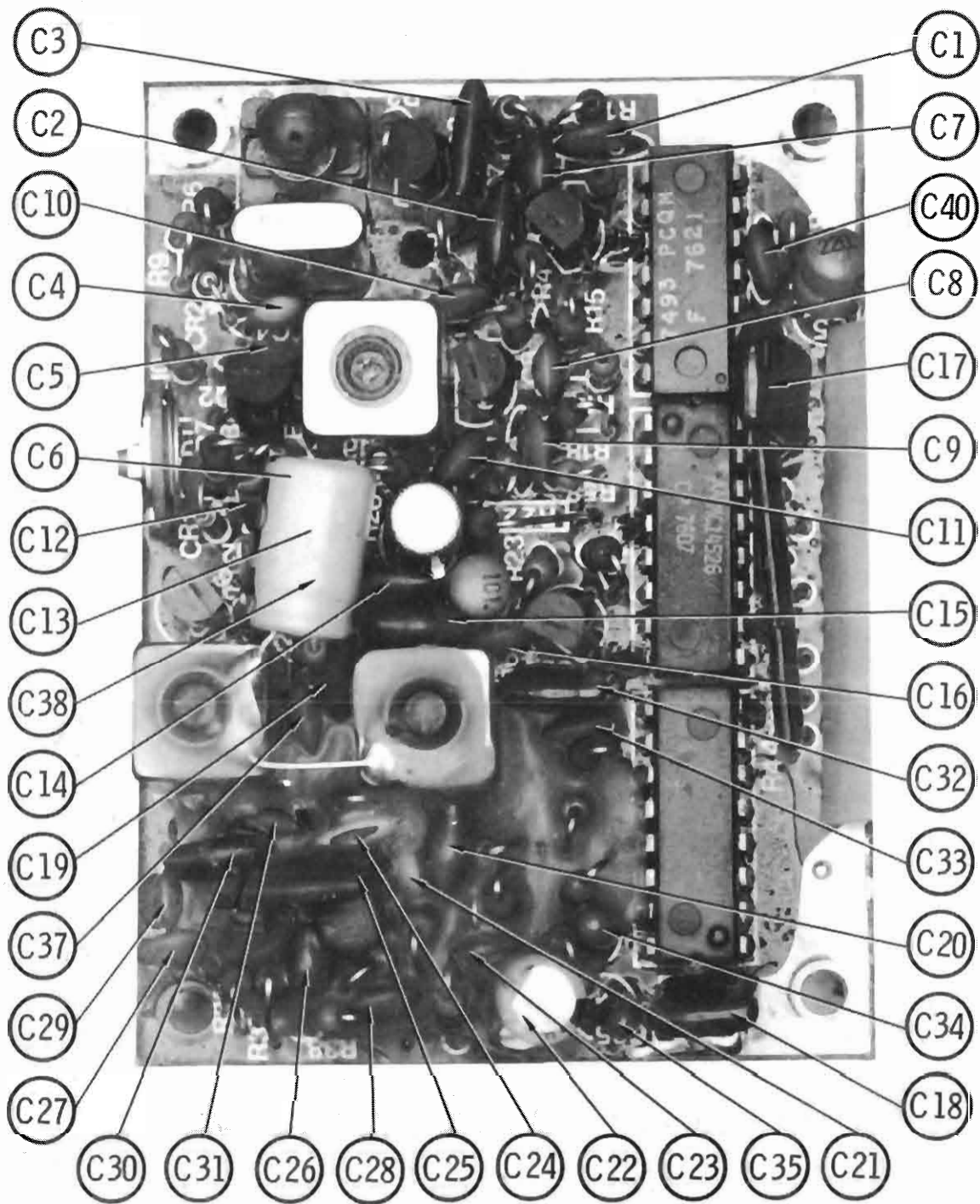
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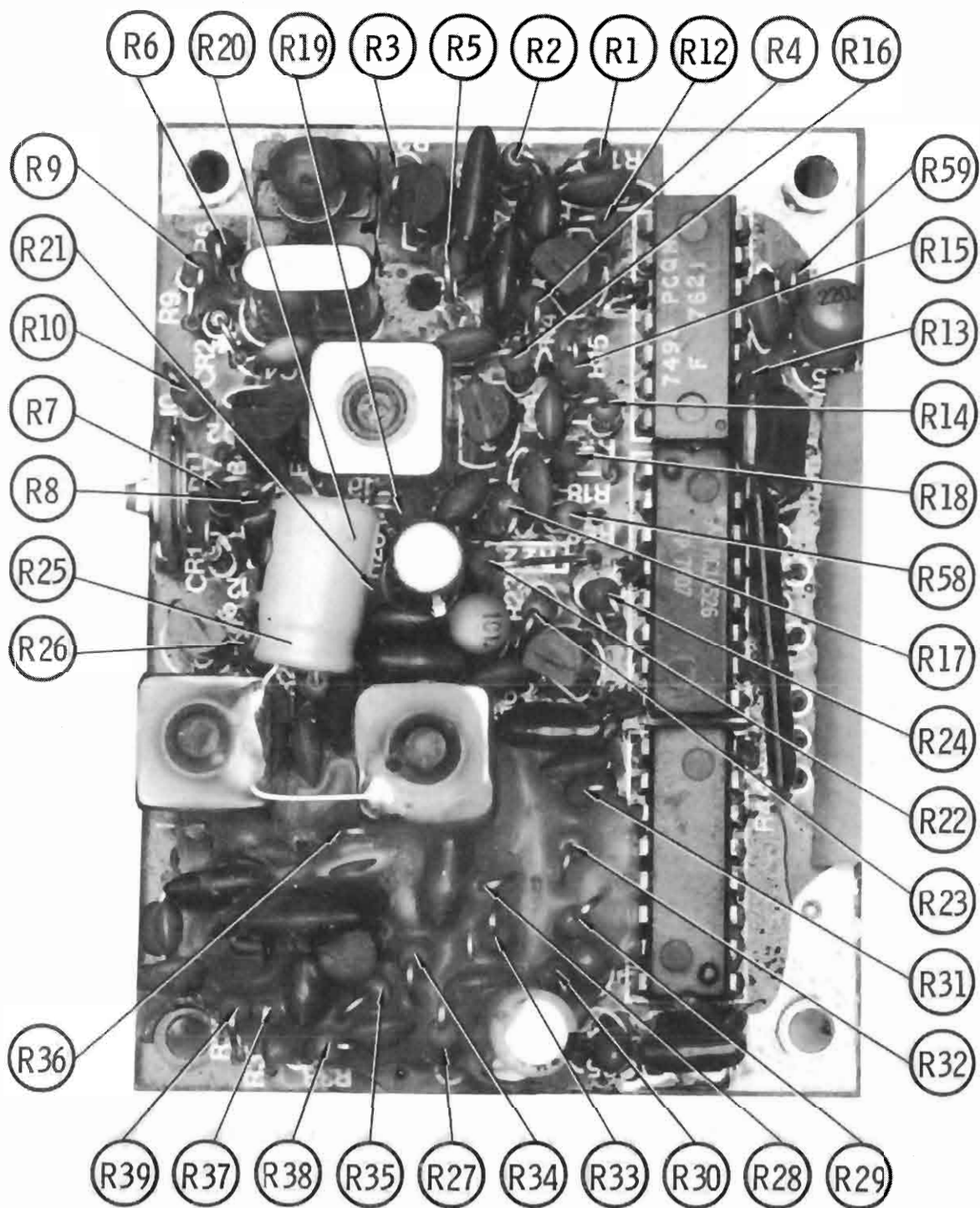
PLL BOARD



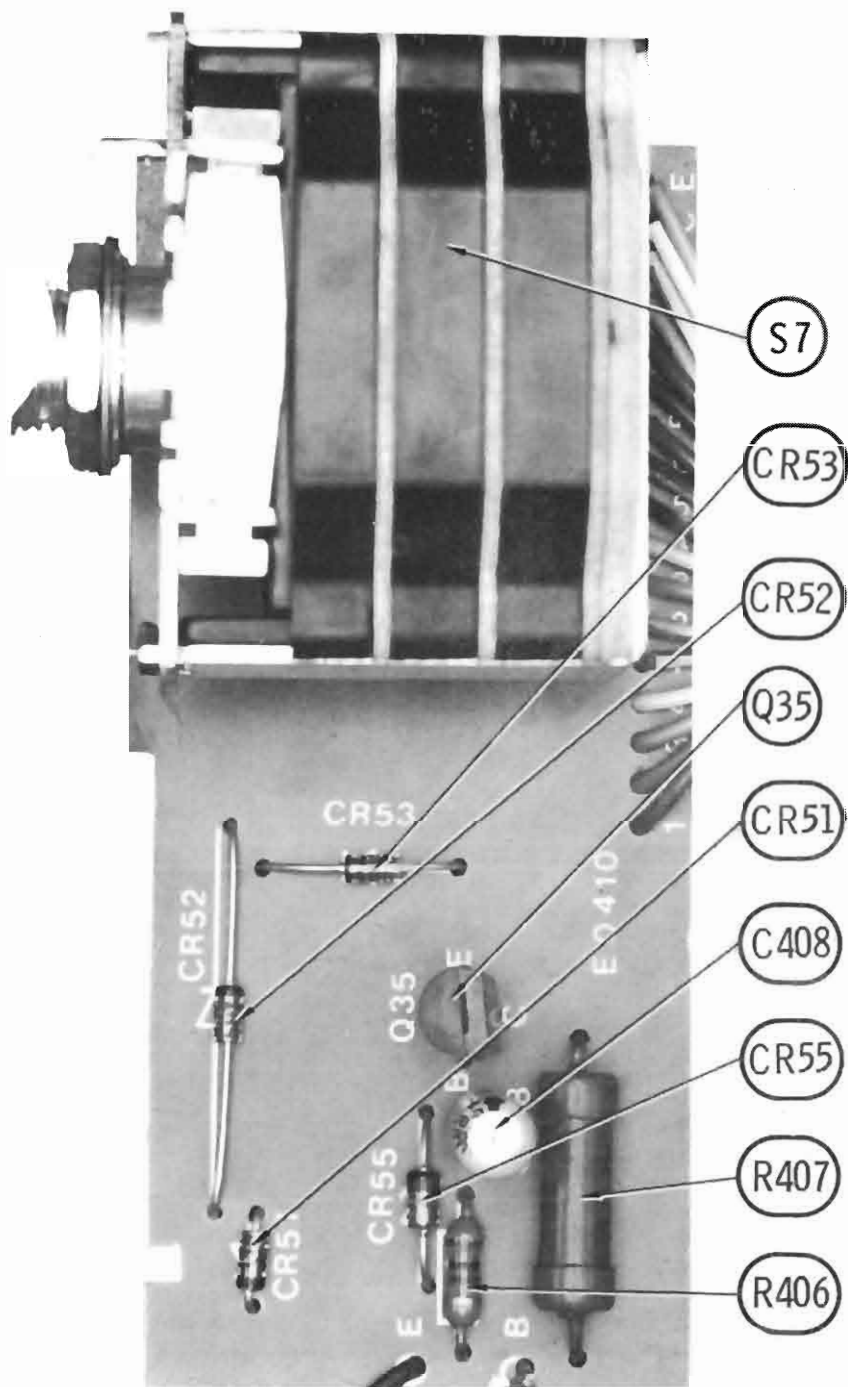
PLL BOARD



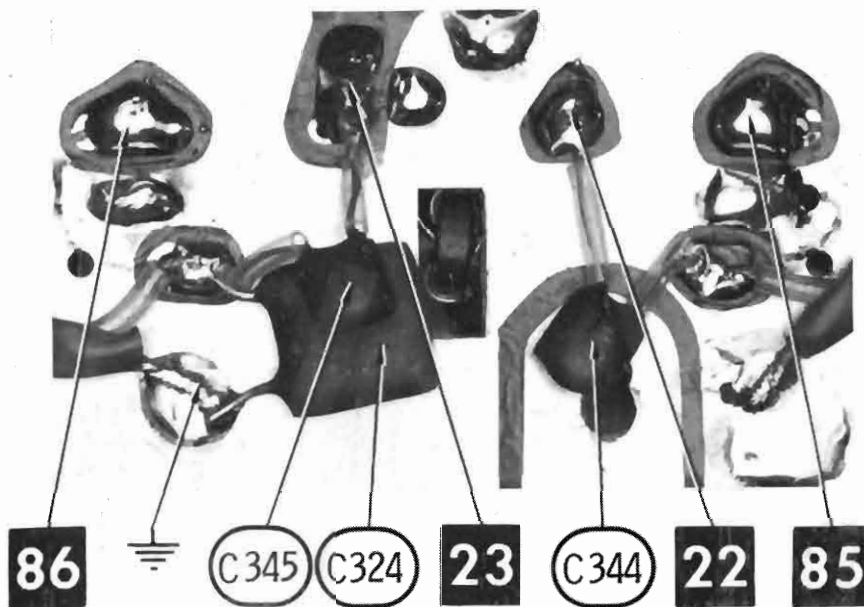
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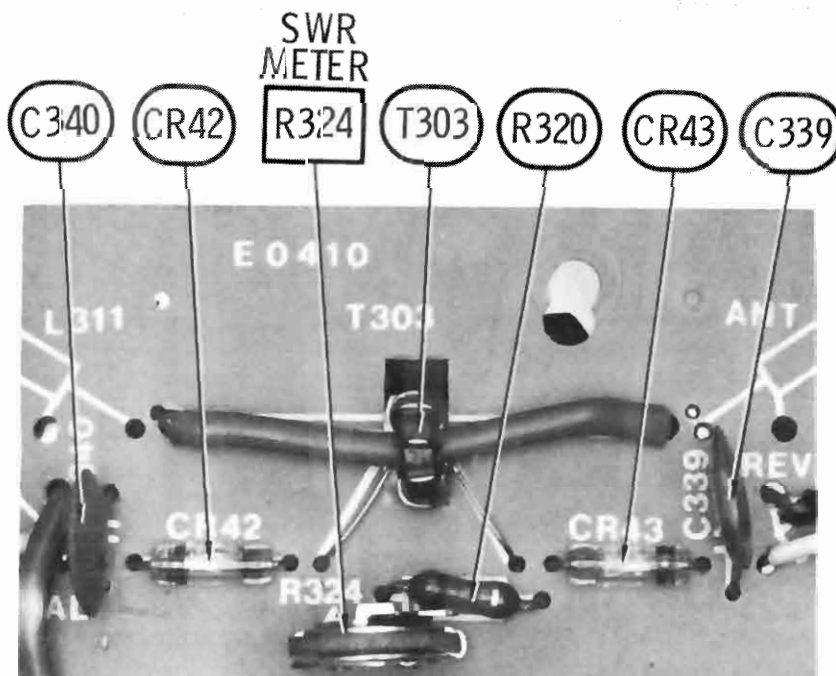
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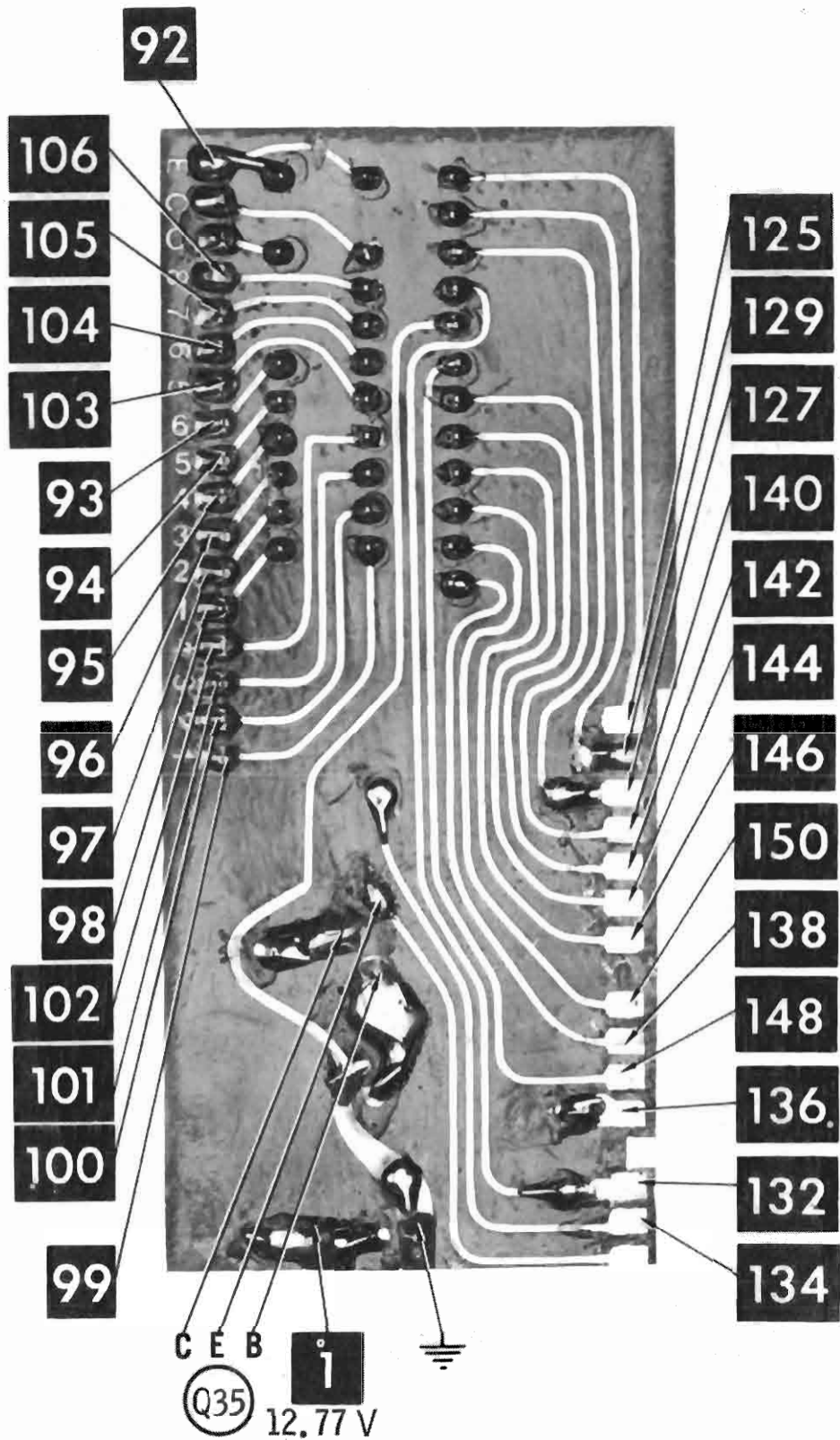
CH. SELECTOR BOARD



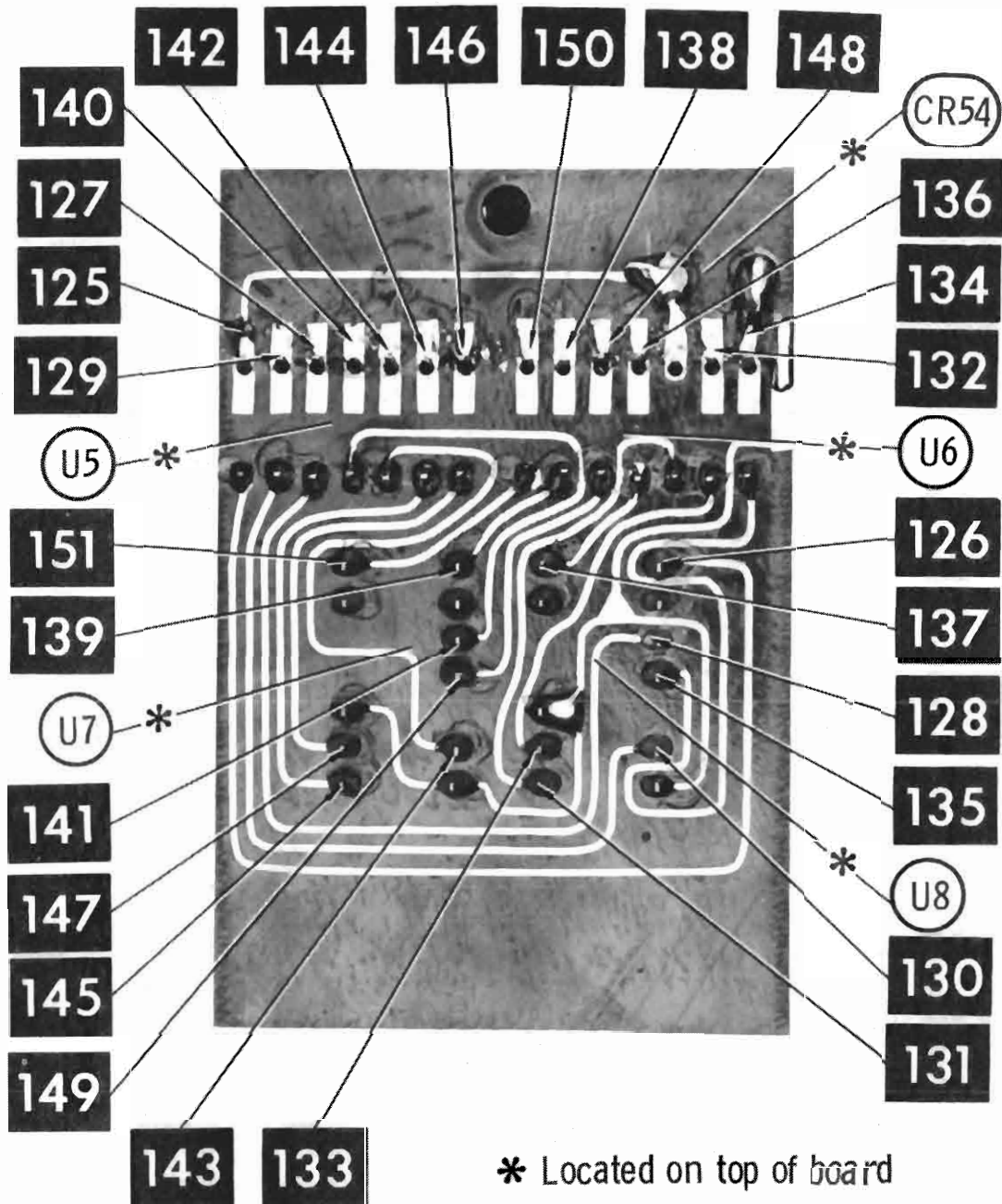
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SWR BOARD

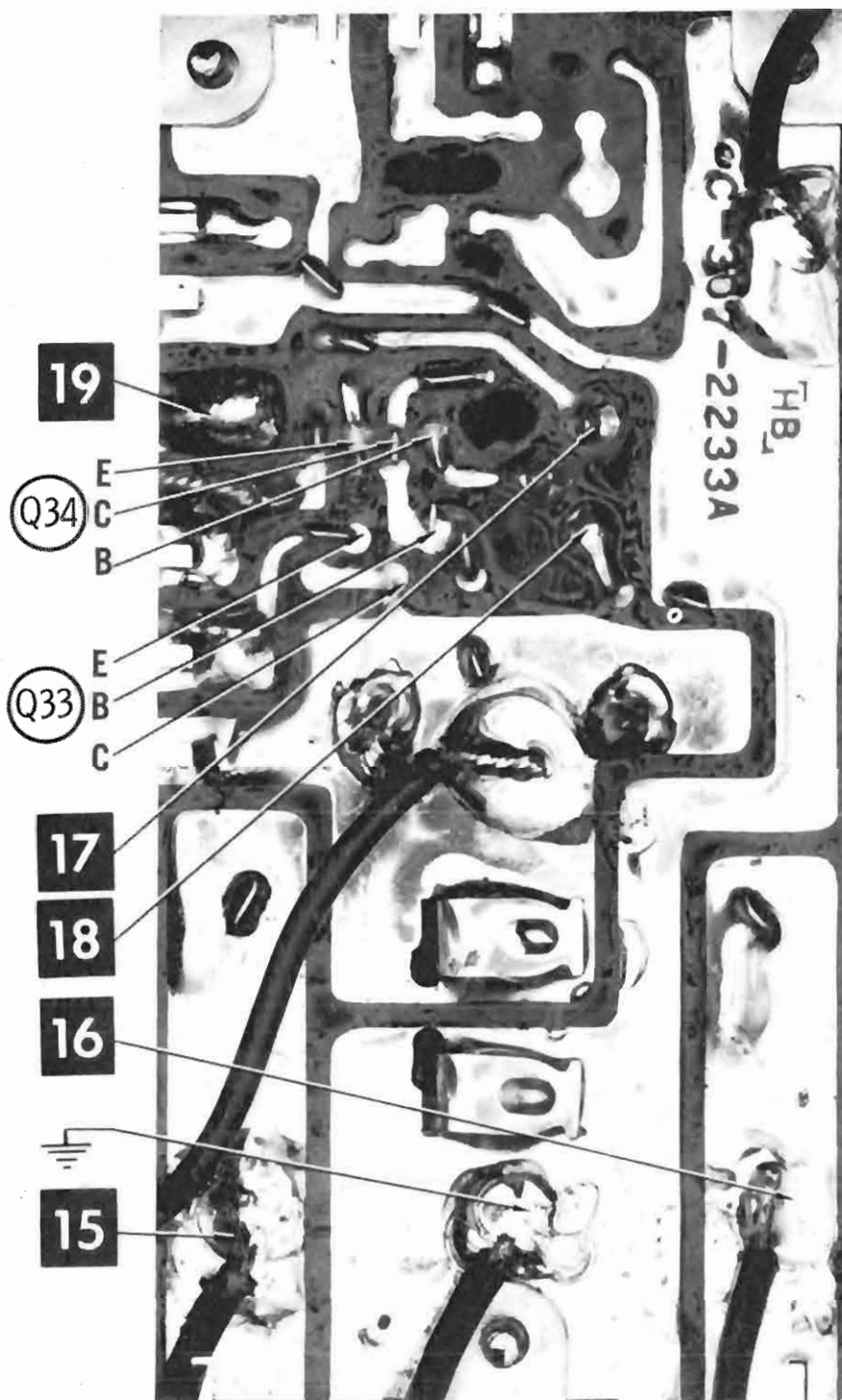


LED BOARD

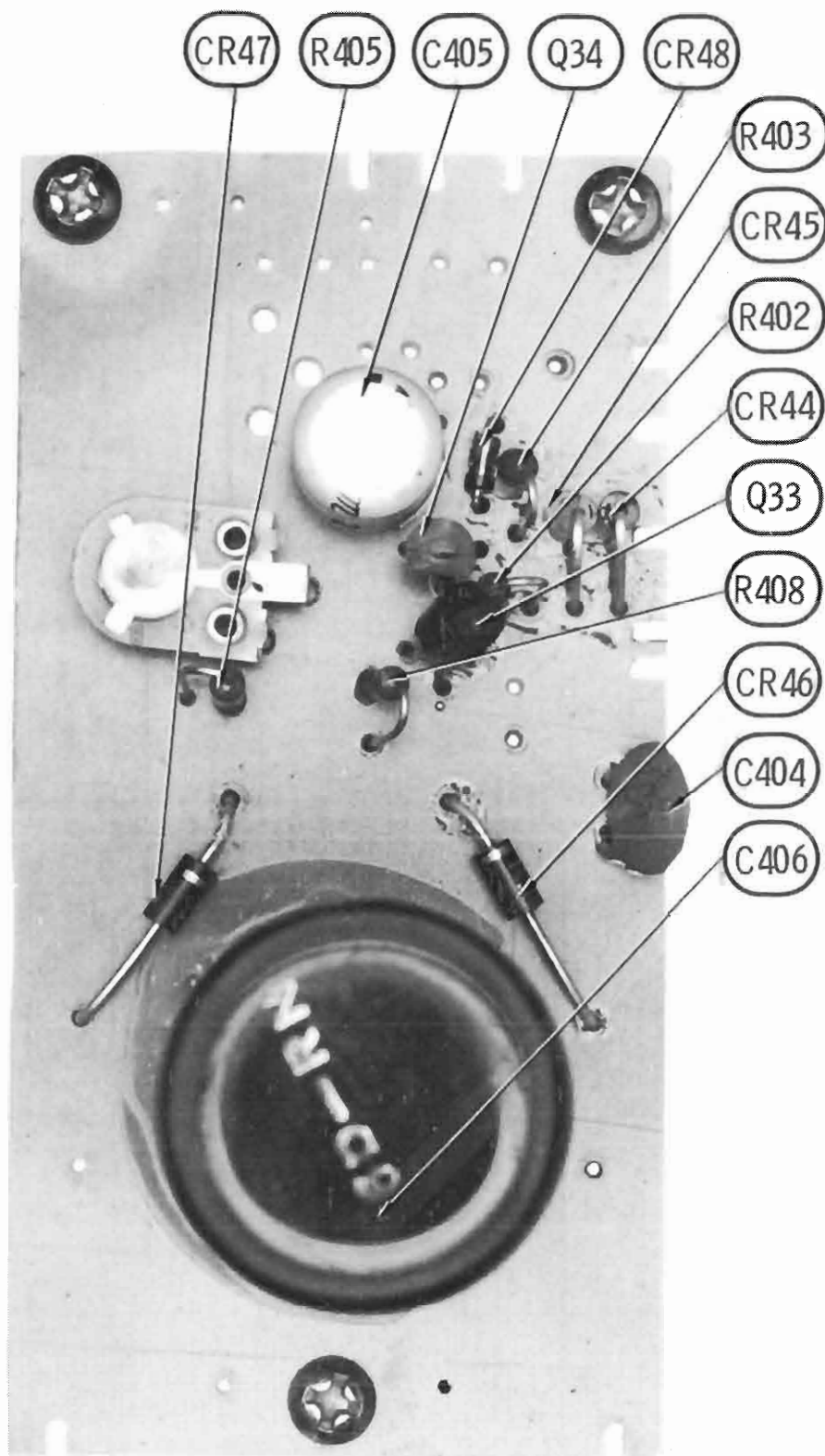


SBE MODEL SBE-45CB

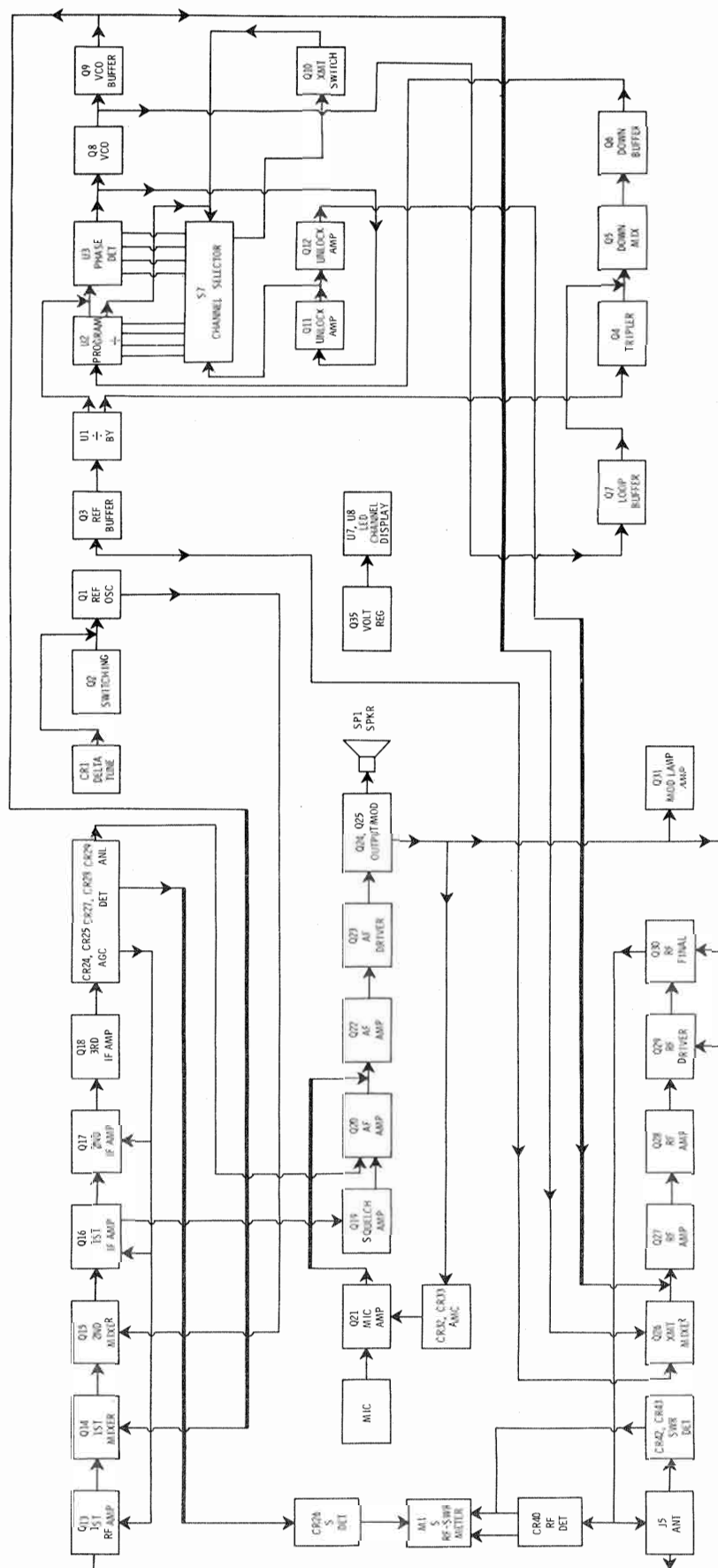
LED READOUT BOARD



POWER SUPPLY BOARD



POWER SUPPLY BOARD



BLOCK DIAGRAM

PARTS LIST AND DESCRIPTION

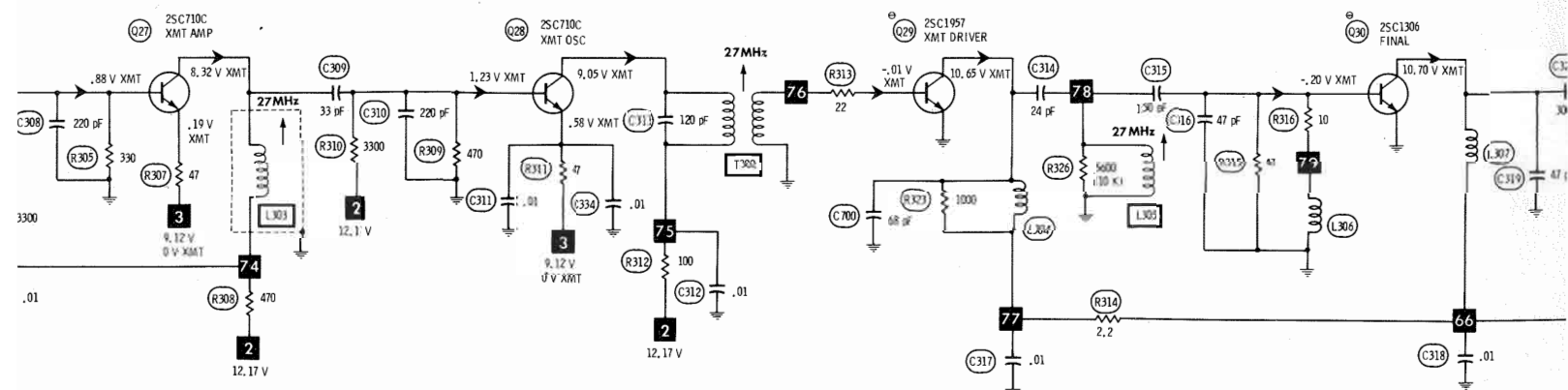
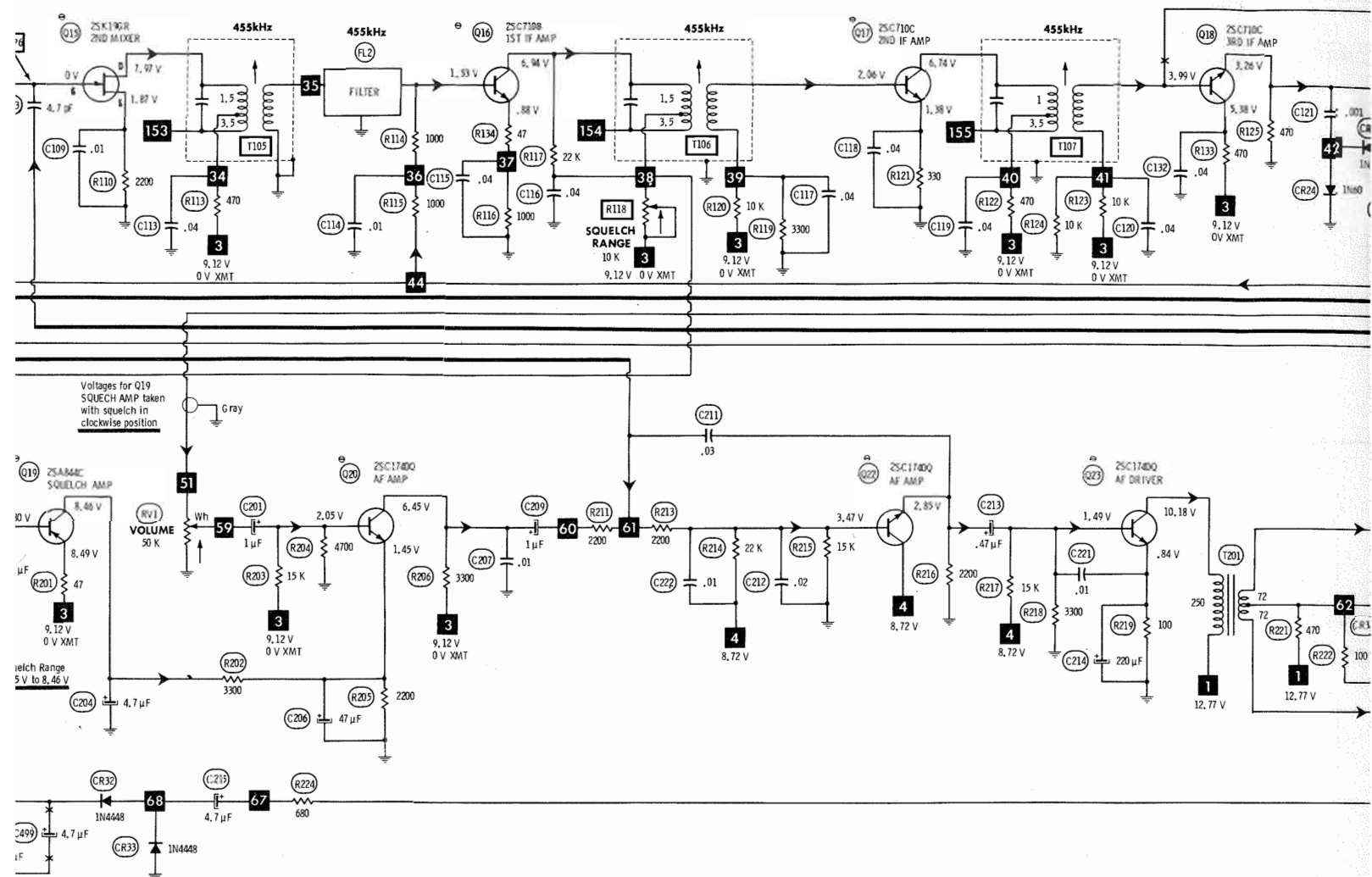
(When ordering parts, state Model, Part Number, and Description.)

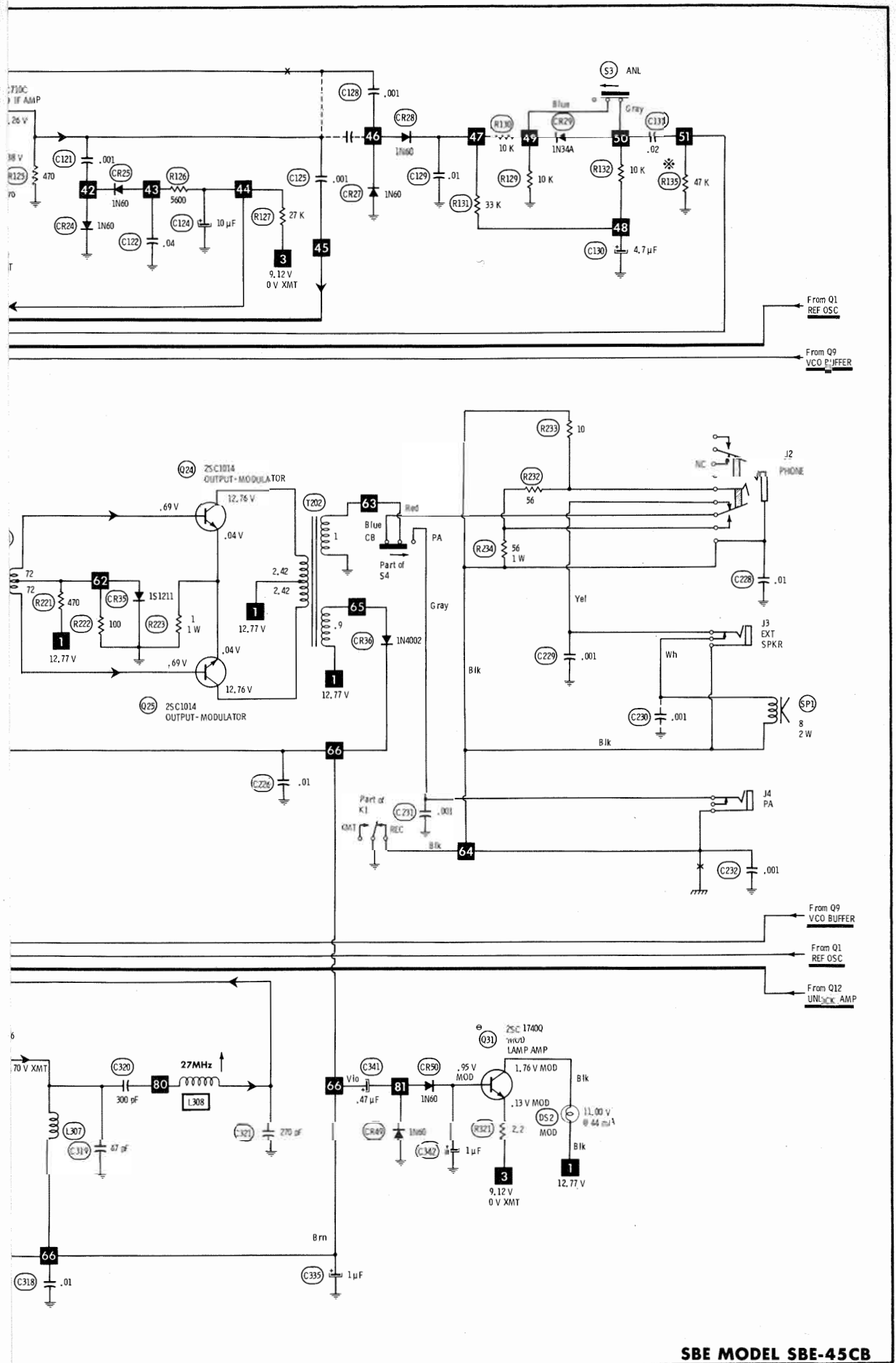
WIRING DATA

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')
(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')

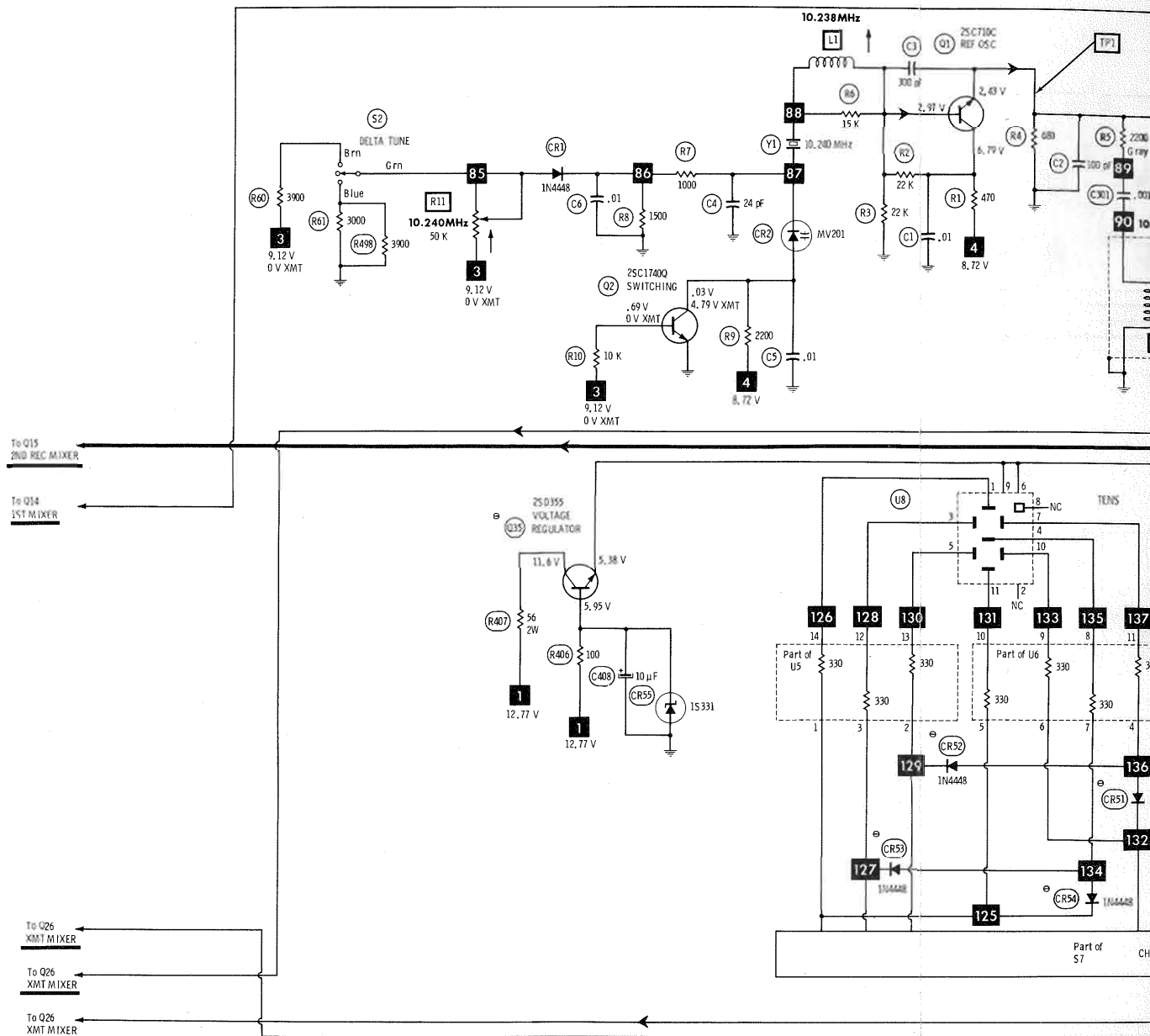
SEMICONDUCTORS (Select replacement transistor for best results)

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.
CR1	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	ZEN-452 ZEN-452
CR2	MY201	8000-00038-010			HEPR2502	REN 612			ECG612			
CR3	MY201	8000-00038-010			HEPR2502	REN 612			ECG612			
CR4	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR5	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR6	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR7	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR8	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR9	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR10	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR11	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR12	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR13	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR14	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR15	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR16	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR17	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR18	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR19	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR20	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR21	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR22	1N60	8000-00006-007	1N60	PTC206	HEPR135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
CR23	1N60	8000-00006-007	1N60	PTC206	HEPR135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
CR24	1N60	8000-00006-007	1N60	PTC206	HEPR135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
CR25	1N60	8000-00006-007	1N60	PTC206	HEPR135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
CR26	1N60	8000-00006-007	1N60	PTC206	HEPR135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
CR27	1N60	8000-00006-007	1N60	PTC206	HEPR135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
CR28	1N60	8000-00006-007	1N60	PTC206	HEPR135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
CR29	1N34A	8000-00004-060	1N34AS	PTC207	HEPR134A	REN 109	SK3087	RT-200	ECG109	1N34A	WEP134	ZEN-430
CR30	1N34A	8000-00004-060	1N34AS	PTC207	HEPR134A	REN 109	SK3087	RT-200	ECG109	1N34A	WEP134	ZEN-430
CR31	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR32	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR33	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR34	BZ090	8000-00011-043	GEZD-9,1	ZB9,18	HEPR052	REN 139	SK3312	RT-240	ECG139A	1N4739A	WEP1109	103-272
CR35	151211	8000-00011-045	GEZD-9,1	PTC301	HEPR052	REN 601	SK3463		ECG601			
CR36	1N4002	8000-00030-010	GE-504A	1N4002	HEPR052	REN 116	SK3312	RT-213	ECG116	1N4004	WEP156	212-76
CR37	BZ090	8000-00011-043	GEZD-9,1	ZB9,18	HEPR052	REN 139	SK3312	RT-240	ECG139A	1N4739A	WEP1109	103-272
CR38	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR39	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR40	1N60	8000-00006-007	1N60	PTC206	HEPR135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
CR41	1N4002	8000-00030-010	GE-504A	1N4002	HEPR052	REN 116	SK3312	RT-213	ECG116	1N4004	WEP156	212-76
CR42	1N60	8000-00006-007	1N60	PTC206	HEPR135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
CR43	1N60	8000-00006-007	1N60	PTC206	HEPR135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
CR44	1N4002	8000-00030-010	GE-504A	1N4002	HEPR052	REN 116	SK3312	RT-213	ECG116	1N4004	WEP156	212-76
CR45	1N4002	8000-00030-010	GE-504A	1N4002	HEPR052	REN 116	SK3312	RT-213	ECG116	1N4004	WEP156	212-76
CR46	1N4002	8000-00030-010	GE-504A	1N4002	HEPR052	REN 116	SK3312	RT-213	ECG116	1N4004	WEP156	212-76
CR47	1N4002	8000-00030-010	GE-504A	1N4002	HEPR052	REN 116	SK3312	RT-213	ECG116	1N4004	WEP156	212-76
CR48	15331	8000-00006-007	GEZD-6,0	ZM6A	HEPR052	REN 5070	SK3312	RT-213	ECG5012		WEP1413	
CR49	1N60	8000-00006-007	1N60	PTC206	HEPR135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
CR50	1N60	8000-00006-007	1N60	PTC206	HEPR135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
CR51	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR52	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR53	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR54	1N4448	8000-00042-007	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
CR55	15331	8000-00006-007	GEZD-6,0	ZM6A	HEPR052	REN 5070	SK3312	RT-213	ECG5012		WEP1413	
Q1	25C710C	8000-00011-047	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	FT-308*	ECG123A*	25C710	WEP710	121-2900*
Q2	25C1740Q	8000-00050-015	GE-62	PTC121*	HEPS0015*	REN 123A*	SK3122	FT-109*	ECG123A*	25C710	WEP736*	121-972
	25C1647		GE-62	PTC136	HEPS0015	REN 192	SK3124	FT-302	ECG199	25C372	WEP66	121-972
	25C372Y		GE-61*	PTC121*	HEPS0015*	REN 123A*	SK3444	FT-308	ECG123A*	25C710	WEP372	121-2900*
Q3	25C710C	8000-00011-047	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	FT-308*	ECG123A*	25C710	WEP710	121-2900*
Q4	25C710C	8000-00011-047	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	FT-308*	ECG123A*	25C710	WEP710	121-2900*
Q5	35K458	8000-00042-013	GE-FET-4	PTC182	HEPF2007	REN 222	SK3065	FT-181	ECG222	25C710	WEP905	121-826
Q6	25C710C	8000-00011-047	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	FT-308*	ECG123A*	25C710	WEP710	121-2900*
Q7	25C710C	8000-00011-047	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	FT-308*	ECG123A*	25C710	WEP710	121-2900*
Q8	25C710C	8000-00011-047	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	FT-308*	ECG123A*	25C710	WEP710	121-2900*
Q9	25C710C	8000-00011-047	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	FT-308*	ECG123A*	25C710	WEP710	121-2900*
Q10	25C1740Q	8000-00050-015	GE-62	PTC121*	HEPS0015*	REN 123A*	SK3122	FT-109*	ECG123A*	25C710	WEP736*	121-972
	25C1647		GE-62	PTC136	HEPS0015	REN 192	SK3124	FT-302	ECG199	25C372	WEP66	121-972
	25C372Y		GE-61*	PTC121*	HEPS0015*	REN 123A*	SK3444	FT-308	ECG123A*	25C710	WEP372	121-2900*
Q11	25A844C	8000-00050-016	GE-244*	PTC103*	HEPS0019*	REN 129*	SK3114	RT-126A*	ECG129*	25C372	WEP60*	121-972
	25A844		GE-244*	PTC103*	HEPS0019*	REN 129*	SK3114	RT-126A*	ECG129*	25C372	WEP60*	121-972
Q12	25C1740Q	8000-00050-015	GE-62	PTC121*	HEPS0015*	REN 123A*	SK3122	FT-109*	ECG123A*	25C710	WEP736*	121-972
	25C1647		GE-62	PTC136	HEPS0015	REN 192	SK3124	FT-302	ECG199	25C372	WEP66	121-972
	25C372Y		GE-61*	PTC121*	HEPS0015*	REN 123A*	SK3444	FT-308	ECG123A*	25C710	WEP372	121-2900*
Q13	25C710B	8000-00011-004	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	FT-308*	ECG123A*	25C710	WEP710	121-2900*
Q14	25K196R	8000-00009-178	3E-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312	25C710	WEP710	121-2900*
	25K41F		3E-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312	25C710	WEP710	121-2900*
	25K55E		3E-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312	25C710	WEP710	121-2900*
Q15	25K196R	8000-00009-178	3E-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312	25C710	WEP710	121-2900*
	25K41F		3E-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175				





SBE MODEL SBE-45CB



—X— 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.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

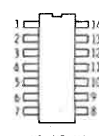
WITH **CIRCUITRACE**

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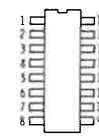
Terminal Guides



U7, U8
Bottom view



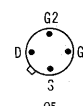
U1, U5, U6
Top view



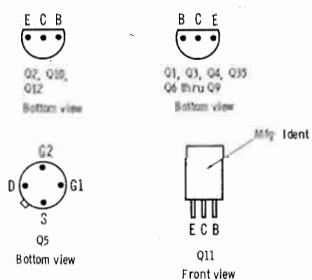
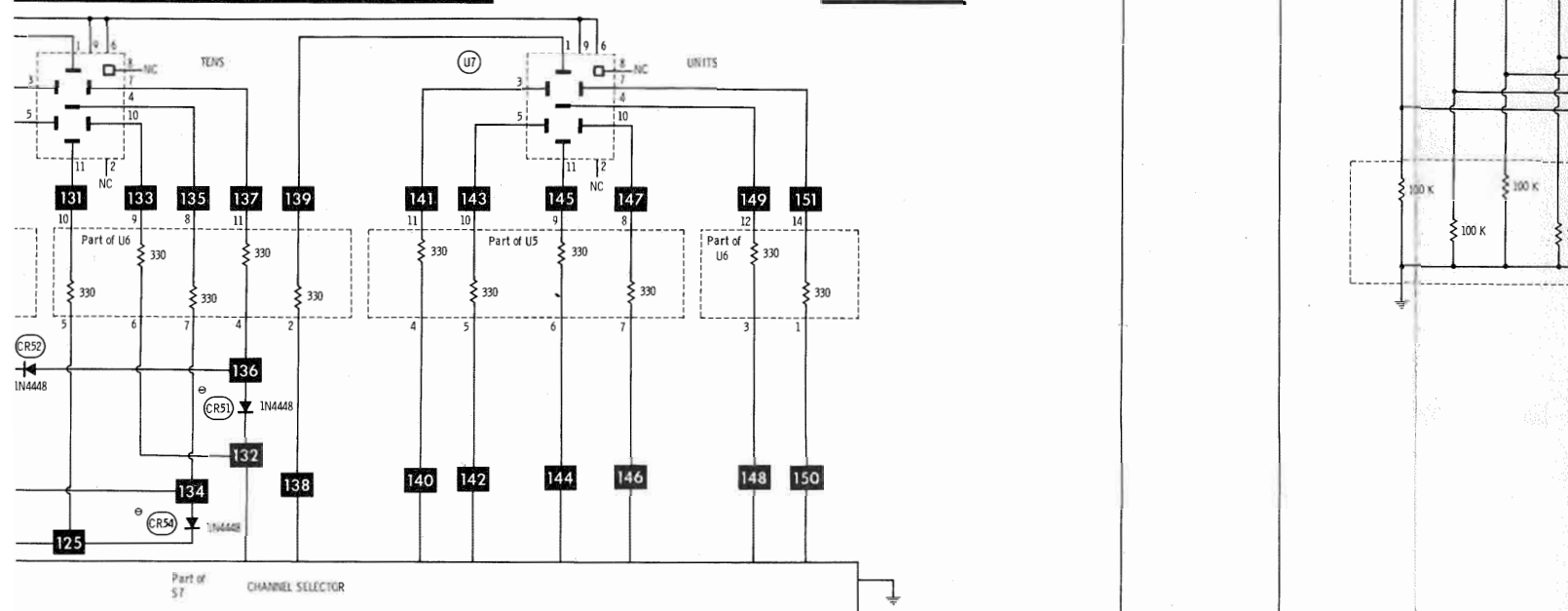
U2, U3
Top view



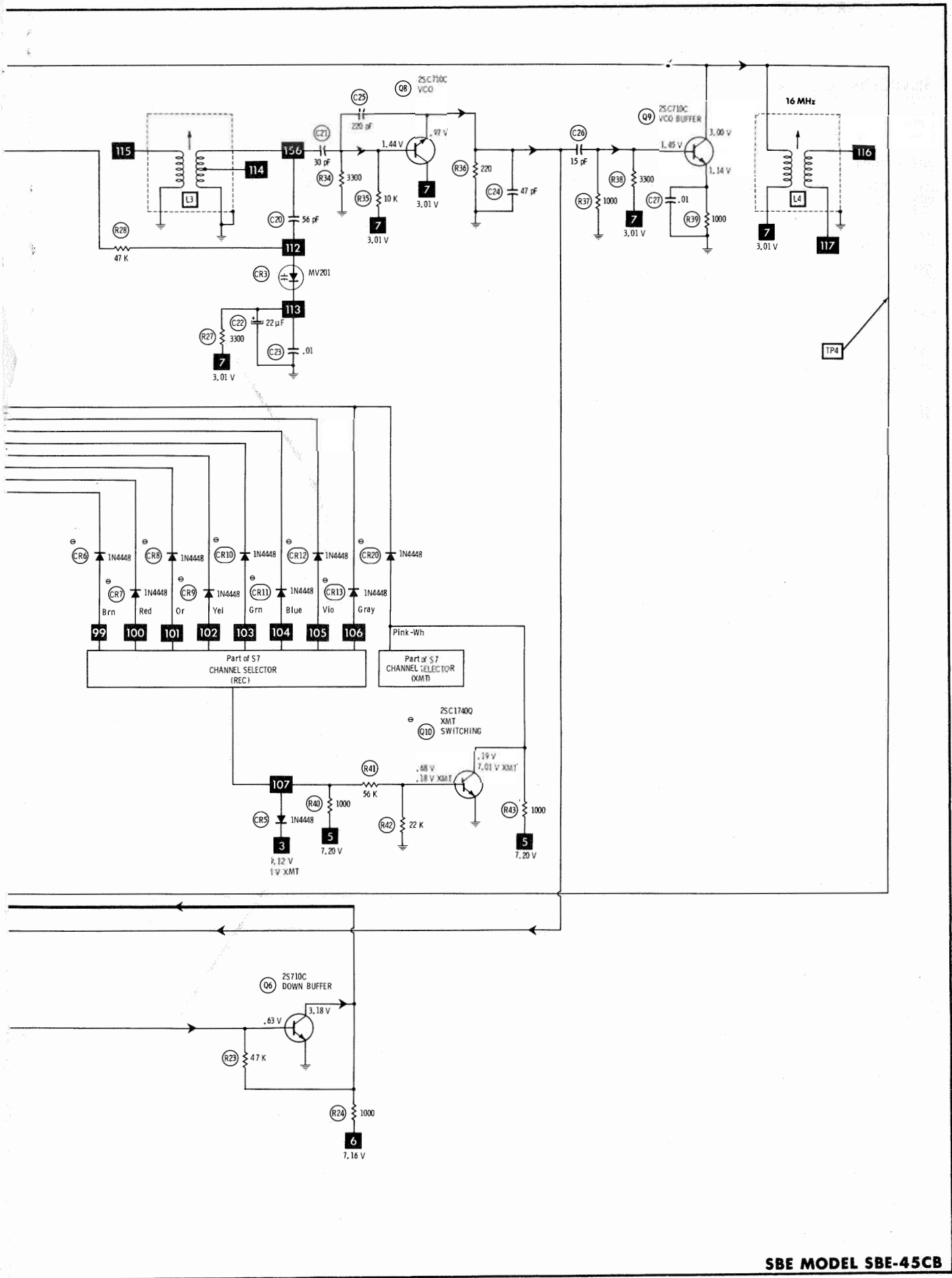
Q2, Q3, Q12
Bottom view



Q5
Bottom view







SBE MODEL SBE-45CB

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.
Q16	2SC710B	8000-00011-004	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-29000*
	2SC710C	8000-00011-047	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-29000*
Q17	2SC710C	8000-00011-047	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-29000*
Q18	2SC710C	8000-00011-047	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-29000*
Q19	2SA844C		GE-244*	PTC103*	HEPS0019*	REN 129*	SK3114	RT-126A*	ECG129*		WEP60*	
	2SA844	8000-00050-016	GE-244*	PTC103*	HEPS0019*	REN 129*	SK3114	RT-126A*	ECG129*		WEP60*	
Q20	2SC1740Q		GE-62	PTC121*	HEPS0015*	REN 123A*	SK3122	RT-109*	ECG123A*		WEP736*	121-972
	2SC1647	8000-00050-015	GE-62	PTC136	HEPS0015	RE 192	SK3124	RT-302	ECG199		WEP66	121-972
	2SC372Y		GE-61*	PTC121*	HEPS0015*	REN 123A*	SK3444	RT-308	ECG123A*	2SC372	WEP372	121-29000*
Q21	2SD187	8000-00030-009	GE-59	PTC134	HEPS0011	REN 103A	SK3010	RT-119	ECG103A	2SD187	WEP641B	
Q22	2SC1740Q		GE-62	PTC121*	HEPS0015*	REN 123A*	SK3122	RT-109*	ECG123A*		WEP736*	121-972
	2SC1647	8000-00050-015	GE-62	PTC136	HEPS0015	RE 192	SK3124	RT-302	ECG199		WEP66	121-972
	2SC372Y		GE-61*	PTC121*	HEPS0015*	REN 123A*	SK3444	RT-308	ECG123A*	2SC372	WEP372	121-29000*
Q23	2SC1740Q		GE-62	PTC121*	HEPS0015*	REN 123A*	SK3122	RT-109*	ECG123A*		WEP736*	121-972
	2SC1647	8000-00050-015	GE-62	PTC136	HEPS0015	RE 192	SK3124	RT-302	ECG199	2SC372	WEP66	121-972
	2SC372Y		GE-61*	PTC121*	HEPS0015*	REN 123A*	SK3444	RT-308	ECG123A*		WEP372	121-29000*
Q24	2SC1014	8000-00004-087	GE-273	PTC193		REN 300	SK3464	RT-137	ECG300		WEP1014	
Q25	2SC1014	8000-00004-087	GE-273	PTC193		REN 300	SK3464	RT-137	ECG300		WEP1014	
Q26	2SK196R	8000-00009-178	GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312			ZEN-123
	2SK41F		GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312			ZEN-123
Q27	2SC710C	8000-00011-047	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-29000*
Q28	2SC710C	8000-00011-047	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-29000*
Q29	2SC1957	8000-00041-047	GE-270	PTC180	HEPS3044	REN 295	SK3197		ECG295		WEP913	
	(12)											
	2SC495T		GE-270	PTC180		REN 295	SK3253	RT-162	ECG295		WEP913	ZEN-209
	2SC2091		GE-270	PTC180		REN 295	SK3253	RT-162	ECG295		WEP913	
Q30	2SC1306	8000-00038-001	GE-215	PTC186		REN 235	SK3197	RT-146	ECG235	2SC1306	WEP785	
	(13)											
	2SC1975		GE-338	PTC186		REN 235	SK3197	RT-146	ECG235	2SC1306	WEP785	
	2SC2092		GE-337	PTC186		REN 235	SK3197	RT-146	ECG235	2SC1306	WEP785	
Q31	2SC1740Q		GE-62	PTC121*	HEPS0015*	REN 123A*	SK3122	RT-109*	ECG123A*		WEP736*	121-972
	2SC372	8000-00050-015	GE-61*	PTC121*	HEPS0015*	REN 123A*	SK3444	RT-308	ECG123A*	2SC372	WEP372	121-29000*
	2SC1647		GE-62	PTC136	HEPS0015	RE 192	SK3124	RT-302	ECG199		WEP66	121-972
Q32	SDT9308		GE-77	PTC119*	HEPS7004*	REN 162	SK3027*	RT-131*	ECG130		WEP770	
	EC961	8000-00006-190	GE-14*	PTC119*	HEPS7004*	REN 130	SK3027*	RT-131*	ECG130*		WEP704	
Q33	2SC710C	8000-00011-047	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-29000*
	2SC710		GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-29000*
	2SC710D	8000-00011-048	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-29000*
Q34	2SC710C	8000-00011-048	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-29000*
	2SC710		GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-29000*
Q35	2SD355	8000-00054-001	GE-271	PTC143*	HEPS3011*	REN 297	SK3024*	RT-114*	ECG297		WEP914	
U1	7493	8000-00038-006				REN 7493A	SK7493	TVCM-504	ECG7493A			
U2	MC14526											
	14526	8000-00047-003										
U3	MC14568B											
	14568	8000-00047-002										
U4	78L08A								ECG981			
	78L82AC								ECG981			
	78L08AC	8000-00054-002							ECG981			
U5	RB7M-37											
	RB7M-331	8000-00054-003										
U6	RB7M-37											
	RB7M-331	8000-00054-003										
U9	IAM1048	8000-00054-004										

* Lead configuration may vary from original.

(12) 750 MW @ 1.0 A.

(13) 12 W @ 3.0 A.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C22	22 50V	4-22M50	PC30-50	VTT22663	QV1-59	EV-1624
C34	.22 35V	8000-00051-010	PC50-16	VTT47D16	QV1-73	EV-1226
C35	1 25V	8000-00040-134		TDC105M035EL		SD35-19
C36	.22 25V	4-22M25	PC50-16	VTT47D16	QV1-73	EV-1226
C38	47 50V	4-47M50	PC50-50	VTT47J63	QV1-79	EV-1626
C124	10 50V	4-10M50	PC10-50	VTT10D63	QV1-45	EV-1622
C127	1 50V	4-1M50	PC1-50	VTT1A50	QV1-11	EV-1615
C130	4.7 50V	4-4.7M50	PC5-50	VTT47R750	QV1-29	EV-1519
C201	1 50V	4-1M50	PC1-50	VTT1A50	QV1-11	EV-1615
C202	1 50V	4-1M50	PC1-50	VTT1A50	QV1-11	EV-1615
C204	4.7 50V	4-4.7M50	PC5-50	VTT47R750	QV1-29	EV-1519
C205	4.7 50V	4-4.7M50	PC5-50	VTT47R750	QV1-29	EV-1519
C206	47 50V	4-47M50	PC50-50	VTT47J63	QV1-79	EV-1626
C209	1 50V	4-1M50	PC1-50	VTT1A50	QV1-11	EV-1615
C210	1 50V	4-1M50	PC1-50	VTT1A50	QV1-11	EV-1615
C213	.47 50V	4-4.7M50	PC1-50	VTT47A63	QV1-3	EV-1610
C214	220 16V	4-220M16	PC250-25	VTT220H16	QV1-117	EV-1240
C215	4.7 50V	4-4.7M50	PC5-50	VTT47R750	QV1-29	EV-1519
C216	10 50V	4-10M50	PC10-50	VTT10D63	QV1-45	EV-1622
C217	4.7 50V	4-4.7M50	PC5-50	VTT47R750	QV1-29	EV-1519
	1 50V	4-1M50	PC1-50	VTT1A50	QV1-11	EV-1615
C218	10 50V	4-10M50	PC10-50	VTT10D63	QV1-45	EV-1622
C219	220 16V	4-220M16	PC250-25	VTT220H16	QV1-117	EV-1240
C220	220 16V	4-220M16	PC250-25	VTT220H16	QV1-117	EV-1240
C223	1 50V	4-1M50	PC1-50	VTT1A50	QV1-11	EV-1615
C225	10 50V	4-10M50	PC10-50	VTT10D63	QV1-45	EV-1622

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
C227	220 16V	4-220M16	PC250-25	VTT220H16	QV1-117	EV-1240
C328	1 50V	4-1M50	PC1-50	VTT1A50	QV1-11	EV-1615
C335	1 50V	4-1M50	PC1-50	VTT1A50	QV1-11	EV-1615
C341	.47 50V	4-.47M50	PC1-50	VTT47A63	QV1-3	EV-1610
C342	1 50V	4-1M50	PC1-50	VTT1A50	QV1-11	EV-1615
C346	220 16V	4-220M16	PC250-25	VTT220H16	QV1-117	EV-1240
C402	1000 16V	4-1000M16	PC1000-16	VTT1000L16	QV1-183	EV-1260
C403	470 16V	4-470M16	PC500-16	VTT470K16	QV1-151	EV-1250
C405	100 25V	4-100M25	PC100-25	VTT100G25	QV1-97	EV-1330
C406	2200 35V	4-2200M35	WBR2000-50	TC50200A	QE1-648	TVA-1318.3
C408	10 50V	4-10M50	PC10-50	VTT10D63	QV1-45	EV-1622
C499	4.7 50V	4-4.7M50	PC5-50	VTT47B50	QV1-29	EV-1519

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
C1	.01		UK50-103		MAG5011		
C2	100 10%			CD15FD101J03	SX310	QW1-27	MMA-101
C3	300 10%			CD15FD301J03	SX330	QW1-38	MMA-301
C4	24 N750		DTN-25				10TCU-Q25
C5	.01		UK50-103		MAG5011		
C6	.01		UK50-103		MAG5011		
C7	.47			CD15ED470J03	SX447	QW1-19	MMA-470
C8	.001		DD-102		GP210		10TS-D10
C9	.01		UK50-103		MAG5011		
C10	.01		UK50-103		MAG5011		
C11	2						
C12	4.7			CD15CD050D03		QW1-2	MMA-050
C13	.01		UK50-103		MAG5011		
C14	100 10%			CD15FD101J03	SX310	QW1-27	MMA-101
C15	100 10%			CD15FD101J03	SX310	QW1-27	MMA-101
C16	.01		UK50-103		MAG5011		
C17	.04 10%			WMF05P39	EWFO5039	QFT2-281	1FT-P39
C18	.04 10%			WMF05P39	EWFO5039	QFT2-281	1FT-P39
C19	.47			CD15ED470J03	SX447	QW1-19	MMA-470
C20	56 10%			CD15ED560J03	SX456	QW1-21	MMA-560
C21	30 N750		DTN-33	N33	CN7433		10TCU-Q33
C23	.01		UK50-103		MAG5011		
C24	47 NPO		DTZ-47	NP047	CN0447		10TCC-Q47
C25	220 10%			CD15FD221J03	SX322	QW1-35	MMA-221
C26	15			CD15CD150J03		QW1-8	MMA-150
C27	.01		UK50-103		MAG5011		
C28	.01		UK50-103		MAG5011		
C29	.001		DD-102		GP210		10TS-D10
C30	100 10%			CD15FD101J03	SX310	QW1-27	MMA-101
C31	4.7			CD15CD080D03		QW1-5	MMA-080
C32	.04 10%			CD15CD050D03		QW1-2	MMA-050
C33	.01		UK50-103	WMF05P39	EWFO5039	QFT2-281	1FT-P39
C37	.01		UK50-103		MAG5011		
C40	.01		UK50-103		MAG5011		
C101	30 N750		DTN-33	N33	CN7433		10TCU-Q33
C102	200						
C103	.01		UK50-103		MAG5011		
C104	.01		UK50-103		MAG5011		
C105	.01		UK50-103		MAG5011		
C106	20 N470	1-20P50-UJ			*		10TCT-Q20
C107	100 10%			CD15FD101J03	SX310	QW1-27	MMA-101
C108	.01		UK50-103		MAG5011		
C109	.01		UK50-103		MAG5011		
C113	.04 10%			WMF05P39	EWFO5039	QFT2-281	1FT-P39
C114	.01		UK50-103		MAG5011		
C115	.04 10%			WMF05P39	EWFO5039	QFT2-281	1FT-P39
C116	.04 10%			WMF05P39	EWFO5039	QFT2-281	1FT-P39
C117	.04 10%			WMF05P39	EWFO5039	QFT2-281	1FT-P39
C118	.04 10%			WMF05P39	EWFO5039	QFT2-281	1FT-P39
C119	.04 10%			WMF05P39	EWFO5039	QFT2-281	1FT-P39
C120	.04 10%			WMF05P39	EWFO5039	QFT2-281	1FT-P39
C121	.001		DD-102		GP210		10TS-D10
C122	.04 10%			WMF05P39	EWFO5039	QFT2-281	1FT-P39
C125	.001		DD-102		GP210		10TS-D10
C126	.01		UK50-103		MAG5011		
C128	.001		DD-102		GP210		10TS-D10
C129	.01		UK50-103		MAG5011		
C131	.02 50V 10%			DPMS2S2	PVC212		2PS-S20
C132	.04 10%			WMF05P39	EWFO5039	QFT2-281	1FT-P39
C133	4.7				CN7547		10TCU-V47
C134	.01		UK50-103		MAG5011		
C203	.01		UK50-103		MAG5011		
C207	.01		UK50-103		MAG5011		

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
C208	.01	3-.03M50	UK50-103	DPMS2S47	MAG5011	QFT2-171 QFT2-148	1FT-S47 1FT-S30 2PS-S20
C210	.047 10%				EW1A147		
C211	.03 50V 10%			DPMS2S2	PVC212		
C212	.02 50V 10%				MAG5011		
C221	.01		UK50-103		MAG5011		
C222	.01		UK50-103		MAG5011		
C224	.01		UK50-103		MAG5011		
C226	.01		UK50-103		MAG5011		
C228	.001		DD-102		GP210		10TS-D10
C229	.001		DD-102		GP210		10TS-D10
C231	.001	1-33P50-TH	DD-102		GP210	QW1-10	10TS-D10
C232	.001		DD-102		GP210		10TS-D10
C233	.01		UK50-103		MAG5011		10TS-D10
C301	.001		DD-102		GP210		10TS-D10
C302	20			CD15ED200J03	SX420		MMA-200
C303	.01		UK50-103		MAG5011		
C304	.01		UK50-103		MAG5011		
C305	33 N470				*		10TCT-Q33
C306	.01		UK50-103		MAG5011		
C307	.01		UK50-103		MAG5011		
C308	220 10%	1-33P50		CD15FD221J03	SX322	QW1-35	MMA-221
C309	33 N470				*		10TCT-Q33
C310	220 10%			CD15FD221J03	SX322		MMA-221
C311	.01		UK50-103		MAG5011		
C312	.01		UK50-103		MAG5011		
C313	120 10%			CD15FD121J03	SX312		MMA-121
C314	24			CD15ED470J03	SX447		MMA-470
C315	150 10%			CD15ED240J03	SX424		MMA-240
C316	47			CD15FD151J03	SX315		MMA-151
C317	.01		UK50-103		SX447		MMA-470
C318	.01		UK50-103		MAG5011	QW1-25 QW1-19 QW1-38 QW1-37 QW1-38 QW1-35 QW1-32	MMA-820
C319	78 10%			CD15ED820J03	SX482		MMA-470
C320	47			CD15ED470J03	SX447		MMA-301
C321	300 10%			CD15FD301J03	SX330		MMA-271
C322	270 10%			CD15FD271J03	SX327		MMA-301
C323	300 10%			CD15FD301J03	SX330		MMA-221
C324	220 10%			CD15FD221J03	SX322		MMA-161
C326	160 10%			CD15FD161J03	SX316		
C327	3						
C329	.01		UK50-103		MAG5011		
C330	.01		UK50-103		MAG5011	QW1-21 QW1-7	MMA-560
C331	.01			CD15ED560J03	SX456		MMA-120
C332	56 10%			CD12CD120J03			
C333	12						
C334	.01		UK50-103		MAG5011		
C336							
C339	.01		UK50-103		MAG5011		
C340	.01		UK50-103		MAG5011		
C344	1			CD15CD010D03			MMA-010
C345	1			CD15CD010D03			MMA-010
C401	.001		DD-102		GP210	QW1-1 QW1-1	10TS-D10
C404	.001		DD-102		GP210		10TS-D10
C407	.001						
C409	.001		DD-102		GP210		10TS-D10
C497	.01		UK50-103		MAG5011		
C498	.01		UK50-103		MAG5011		
C700	68 10%			CD15ED680J03	SX468		MMA-680
C701	.01		UK50-103		MAG5011		
C702	100 10%			CD15FD101J03	SX310		MMA-101
C703	.01		UK50-103		MAG5011		

*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.
R11	Rec. Reference	50K	8000-00004-093	T-50K(2)	MTCS4L1(2)	X201R503B(2)
R118	Squelch Range	10K	8000-00004-096	T-10K	MTCL14L1	X201R103B
R128	S Meter	10K	8000-00004-096	T-10K	MTCL14L1	X201R103B
R226	AMC	10K	8000-00004-096	T-10K	MTCL14L1	X201R103B
R319	RF Meter	100K	8000-00004-094	T-100K(2)	MTCL15L1(2)	X201R104B(2)
R322	SWR SENS	5000	8000-00006-044	F1-5000(1), SSK104	UA535(1),SK1000	BU1(1),CF8, SS1,DC1
R324	SWR Meter	500	8000-00004-095	T-500(2)	MTCS5L1	X201R501B(2)
R404	Voltage Reg.	1000	8000-00006-159	T-1000(2)	MTCL13L1(2)	X201R102B(2)
RV1	Volume/Power Switch	50K	8000-00006-199			
RV2	Squelch	5000	8000-00006-044	F1-5000(1), SSK104	UA53L(1),SK1000	BU1(1),CF8, SS1,DC1

(1) Enlarge Mounting hole.

(2) Cut off one of the end terminals and bend to fit PC board.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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.
U5	Resistor Network		8000-00054-0003(1)				
U6	Resistor Network		8000-00054-0003(1)				
U9	Resistor Network		8000-00054-0004(2)				

- (1) Consists of seven 330 ohm resistors
(2) Consists of eight 100K ohm resistors

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	OSC (10.238MHz)	8000-00052-004	Z176IT6735	CBS131-TC	(34) Rotate to proper two terminals and cut off unused leads
L2	RF Choke (100uH)	8000-00052-007			
L3	VCO	8000-00052-005			
L4	VCO Buffer (16MHz)	8000-00038-017	354		
L5	RF Choke (22uH)	8000-00011-019		9330-32	
L301	RF Choke (22uH)	8000-00011-019		9330-32	
L302	XMT Mixer (27MHz)	8000-00038-017	354		
L303	XMT Amp (27MHz)	8000-00038-017	354		
L304	RF Choke (2.5uH)	8000-00030-011			
L305	Final Loading (27MHz)	8000-00004-075		CB140(34)	
L306	RF Choke (8.2uH)	8000-00004-206		9310-34	
L307	RF Choke (.65uH)	8000-00004-055		45-90	
L308	Final (27MHz)	8000-00004-077		CB144(34)	
L309	Final (27MHz)	8000-00004-077		CB144(34)	
L310	RF Choke (.22uH)	8000-00004-263			
L311	RF Choke (.22uH)	8000-00004-263			
T1	Down Mixer (15.360MHz)	8000-00011-026		CBS131-TC	
T101	Rec RF (27MHz)	8000-00006-287			
T102	Mixer (27MHz)	8000-00050-012	C337		
T103	IF (10.695MHz)	8000-00050-014	F001AM66C3		
T104	IF (10.695MHz)	8000-00050-014	F001AM66C3		
T105	IF (455kHz)	8000-00012-034	EIA227B	2067	
T106	IF (455kHz)	8000-00012-034	EIA227B	2067	
T107	IF (455kHz)	8000-00038-021	293AD		
T301	Ref Buffer (10.240MHz)				
T302	XMT Driver (27MHz)	8000-00004-118		CB746	
T303	RF Choke	8000-00054-005			

SBE MODEL SBE-45CB

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFR. PART No.	THORDARSON PART No.	TRIAD PART No.	
L401	1.3A	.223	1.6mH	K-18(1)			(1) Number on unit

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	SEC. 2	MFR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T201	2	1.5		8000-00030-019 A-31(1)			(1) Number on unit

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T202	32	1 8 2 15.68	8000-00050-013 E-67(1)			(1) Number on unit

PARTS LIST AND DESCRIPTION (CONTINUED)

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

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T401	120V AC @ 520mA	39.0V AC @ 1.56A AC	PT-1215(1)			(1) Number on unit

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	4" PM 8 ohms	8000-00006-152	4A1Z8	

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
FU1	2A Quick Acting	8000-00004-152		AGC2	3998	312002	357001	F62-2
FU2	1A Quick Acting	8000-00004-213		AGC1	HKP	312001	342048L	F61-2

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	8000-00004-153	18-032	18-034	18-010	18-092	2	1	3	NC	NC	4	

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
FL1	Filter	8000-00028-209	10.697MHz
FL2	Filter	8000-00006-291	455kHz
DS1	Lamp	8000-00054-010	Meter 120V @ 180mA
DS2	Lamp	8000-00006-094	Mod 11.00 V @ 44mA
J1	Jack	8000-00004-070	Mic
J2	Jack	8000-00006-155	Phone
J3	Jack	8000-00030-021	Ext Spk
J4	Jack	8000-00030-021	PA
J5	Jack	8000-00004-069	Antenna
K1	Relay	8000-00050-020	XMT
M1	Meter	8000-00054-009	S/RF
S3	Switch	8000-00006-154	ANL
S4	Switch	8000-00006-154	PA/CB
S5	Switch	8000-00006-154	RF/SWR
S6	Switch	8000-00006-154	REV/CAL
S7	Switch	8000-00054-008	Channel Selector
U7	LED		Channel Readout
U8	LED		Channel Readout
Y1	Crystal	8000-00038-011	10.240MHz
	Cord	8000-00006-157	AC Power
	PC Board	8000-00054-012	Channel
	PC Board	8000-00054-011	LED
	PC Board	8000-00054-013	SWR

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

ITEM	PART No.	ITEM	PART No.
Cabinet	8000-00006-178	Chassis, Bottom	8000-00006-171
Cabinet, Rear	8000-00006-172	Chassis, Front	8000-00054-015
Chassis	8000-00050-014	Front Panel	8000-00054-023