

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 135XLR

COBRA MODEL 135XLR

MANUFACTURER'S SPECIFICATIONS

TRANSMITTER

Power Output	AM, 4 watts. SSB, 12 watts PEP.
Modulation	AM, high and low-level Class B.
Intermodulation Distortion	SSB: 3rd order, more than -25 dB. 5th order, more than -35 dB.
SSB Carrier Suppression	More than -40 dB.
Unwanted Sideband	More than -40 dB.
Frequency Response	AM and SSB: 350 to 2500 Hz.
Output Impedance	50 ohms, unbalanced.
SSB Filter	7.8 MHz, crystal lattice type: 6 dB @ 4.2 KHz. 60 dB @ 7.0 KHz.
Output Indicators	Meters show relative RF output power and SWR.

Cross Modulation	More than 55 dB.
Image Rejection	More than 50 dB.
IF Frequency	AM and SSB: 7.8 MHz.
Adjacent Channel Rejection	AM: -65 dB; SSB: -70 dB.
AM and SSB RF Gain Control	Adjustable for optimum signal reception.
Automatic Gain Control (AGC)	Less than 12 dB change in audio output for inputs from 10 to 500,000 microvolts.
Squelch	Adjustable; threshold less than .5 μ V.
Noise Blanker	RF type, effective on AM and SSB.
Voice Lock Range	AM, ± 1.5 KHz, SSB, ± 1 KHz.
Audio Output Power	3 watts into 8 ohms.
Frequency Response	350 to 2500 Hz.
Distortion	Less than 10% at 4 watts output.

RECEIVER

Sensitivity	SSB: Less than .25 μ V for 10 dB (S+N)/N at greater than 1/2-watt of audio output. AM: Less than .5 μ V for 10 dB (S+N)/N at greater than 1/2-watt of audio output.
Selectivity	SSB and AM: 6 dB @ 3.8 KHz, 50 dB @ 10 KHz.
	Built-in Speaker: 8 ohms.
	External Speaker (Not Supplied): 8 ohms; disables internal speaker when connected.
	Input Voltage: 120VAC 60 Hz nominal, 132VAC maximum and 108VAC minimum.
	13.8VDC nominal, 15.9VDC maximum and 11.7VDC minimum (positive or negative ground).

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 R502 for 13.8-volts DC input at TP501.
 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:

L5, L7, L301, L302, L303, T1, T2, T3,
 T9 thru T12, T303 9440
 L304, T4 thru T8, T301, T302 5009, 8728-A, 8728
 L3 9091, 8728-A, 8728
 C56, C82 5000, 8276

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of frequency counter to TP314 (IC302 Pin 3).	Ch. 19, AM		Check for 5.120MHz.
Input of frequency counter to TP315 (Q304 Emitter).	Ch. 19, AM Voice Lock Midrange	L303	Adjust for 17.0555MHz.
Input of frequency counter to TP311 (Q305 Emitter).	Ch. 19, USB Voice Lock Midrange	R324	Adjust for 34.9875MHz.
Input of frequency counter to TP311 (Q305 Emitter).	Ch. 19, USB Voice Lock Fully Clockwise	R322	Adjust for 34.9885MHz.
	Ch. 19, USB Voice Lock Midrange	R324	Readjust for 34.9875MHz. Readjust R322 and R324 for a range of +1kHz while maintaining 34.9875MHz with clarifier at midrange.
	Ch. 1, USB Voice Lock Midrange		Check for 34.7675MHz. Check all channels. See Truth Chart for correct frequencies.
Input of frequency counter to TP311 (Q305 Emitter).	Ch. 19, AM Voice Lock Midrange	R328	Adjust for 34.985MHz.
	Ch. 1, AM Voice Lock Midrange		Check for 34.765MHz. Check all channels. See Truth Chart for correct frequencies.
	Ch. 1, LSB Voice Lock Midrange		Check for 19.1625MHz. Check all channels. See Truth Chart for correct frequencies.
Input of frequency counter and oscilloscope to TP311 (Q305 Emitter).	Ch. 19, AM Voice Lock Midrange	L302	Adjust for maximum at 34.985MHz.
	Ch. 19, LSB Voice Lock Midrange	L301	Adjust for maximum at 19.3825MHz.
Input of frequency counter to TP4 (Q17 Emitter).	Ch. 19, USB	C82	Adjust for 7.8025MHz.
Input of frequency counter and oscilloscope to TP308.	Ch. 19, LSB	T301, T302, T303	Adjust for maximum at 18.507MHz.
Input of oscilloscope to TP317 (Q310 Collector).	Ch. 19, AM	L304	Adjust for MINIMUM squaring.
Input of frequency counter to TP309 (Q317 Base).	Ch. 1, AM		Check for 655kHz. 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.

AM

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP318 (Q3 Base). 7.8MHz, 1000Hz @ 30% modulation.	Ch. 19, AM Voice Lock Midrange RF Maximum NB/ANL Off	T6,T5,T4	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation.	Ch. 19, AM Voice Lock Midrange RF Maximum NB/ANL Off	T1,T2,T3	Adjust for maximum output.

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.

SSB

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP318. 7.8015MHz unmodulated.	Ch. 19, USB Voice Lock Midrange RF Maximum NB/ANL Off	T5,T4	Adjust for maximum output.

COBRA MODEL 135XLR

RECEIVER ADJUSTMENTS

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 1000uV.	Ch. 19, AM Voice Lock Midrange RF Maximum NB/ANL Off	R49	SQUELCH RANGE Set Squelch Control R51 fully clockwise. Adjust R49 so that squelch just breaks.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 100uV.	Ch. 19, AM Voice Lock Midrange RF Maximum NB/ANL Off	R10	S METER Adjust R10 for 9 on S scale of meter.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 1uV. Input of oscilloscope to speaker voice coil.	Ch. 19, AM Voice Lock Midrange RF Maximum NB/ANL Off	R12	RF GAIN Adjust R12 for best signal to noise ratio.

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.

AM

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Input of frequency counter to antenna jack.	Ch. 19, AM	T8,T9,T10, T11,T12,L5, L7	Adjust for maximum.
	Ch. 19, AM	L3	Adjust for 4.0 watts maximum output.
	Ch. 1, AM	R317	Adjust R317 for 26.965MHz.

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.

SSB

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Inject a 1000Hz, 100mV signal at mic input.	Ch. 19, USB	T7	Adjust for maximum RF output.

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.

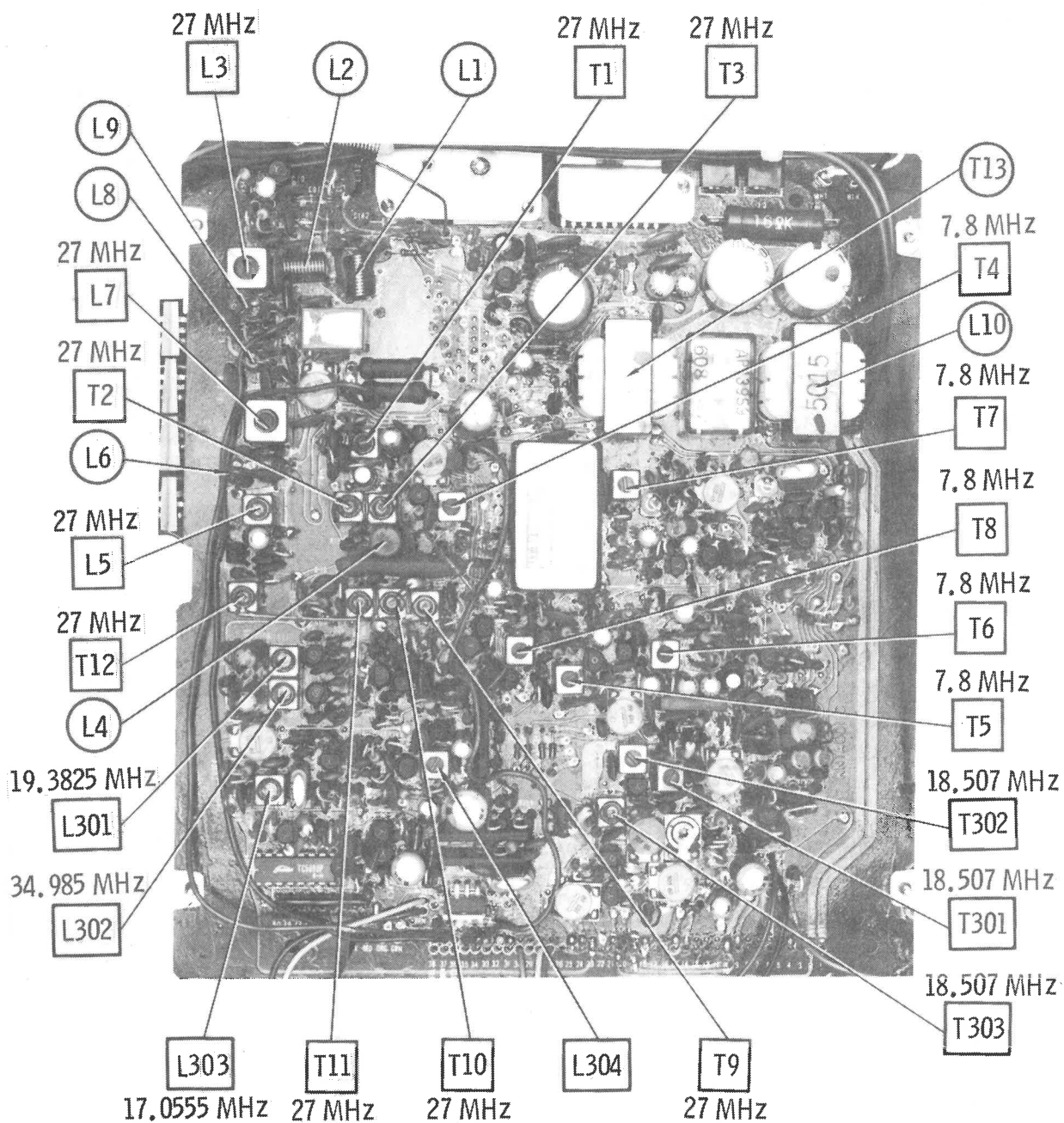
TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Input of oscilloscope to antenna jack. No signal input.	Ch. 19, USB	R72,C56	CARRIER BALANCE Adjust for MINIMUM RF output.
Inject a 1000Hz, 100mV signal at mic input.	Ch. 19, AM Dynamike Maximum	R134	AM ALC Adjust for 100% modulation maximum.
Inject a 1000Hz, 100mV signal at mic input.	Ch. 19, USB Dynamike Maximum	R86,R89	SSB BIAS Adjust for maximum.
	Ch. 19, AM	R9	RF PANEL METER Adjust R9 so that needle is at left side of red area on RF PWR scale of panel meter.
Inject a 1000Hz, 100mV signal at mic input.	Ch. 19, USB	R130	SSB ALC Adjust R130 for 12 watts maximum.

TRUTH CHART

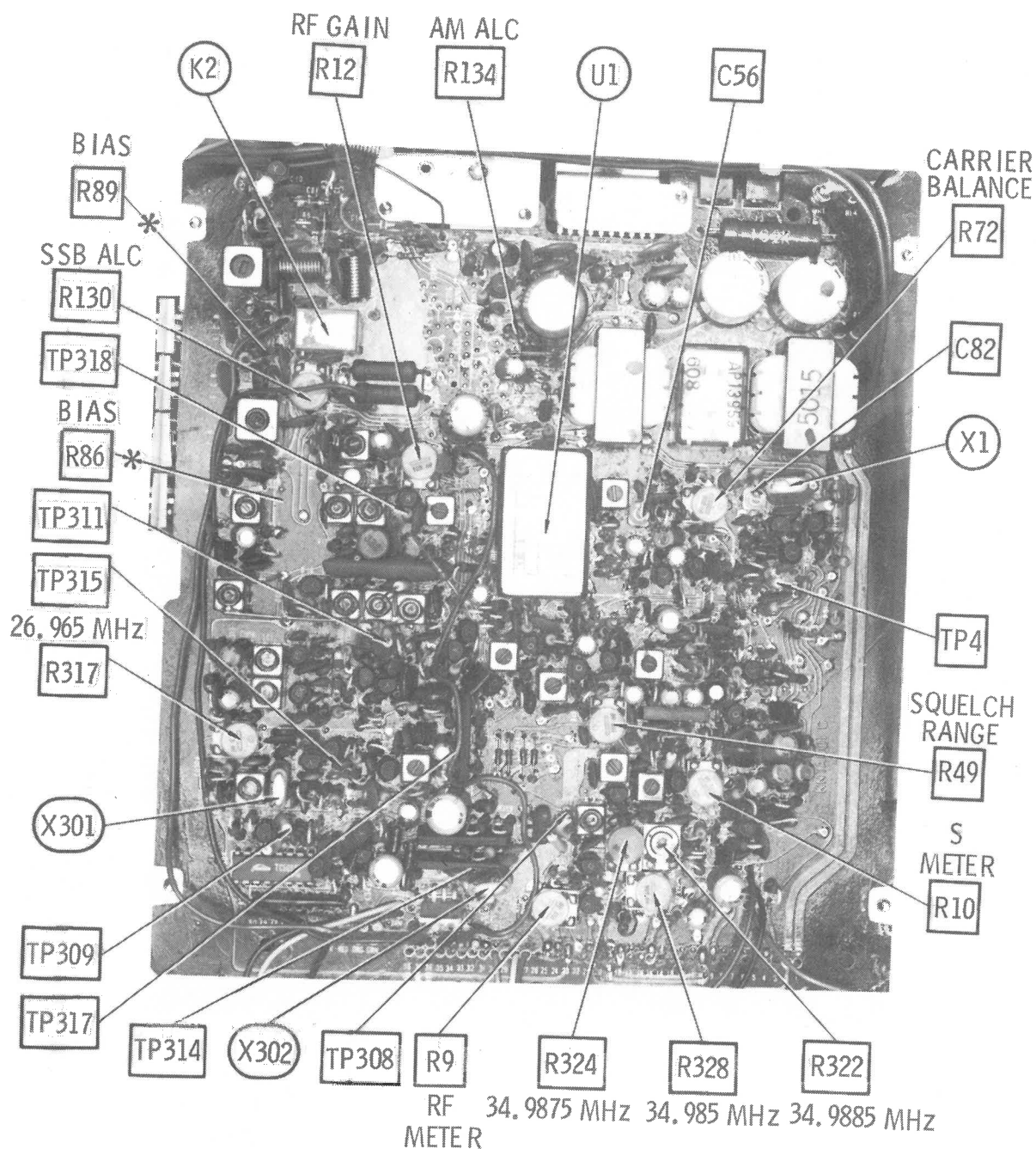
1 = 6.92 Volts 0 = 0 Volts

CHANNEL	IC304 PROGRAM DIVIDER PINS							AM REC & XMT VCO OUTPUT IN MHz AT TP311	USB REC & XMT VCO OUTPUT IN MHz AT TP311	LSB REC & XMT VCO OUTPUT IN MHz AT TP311	AM(REC&XMT) LSB(REC & XMT) USB(REC & XMT) VCM OUTPUT IN MHz AT TP309
	8	7	6	5	4	3	2				
1	1	0	0	0	0	0	1	34.765	34.7675	19.1625	.655
2	1	0	0	0	0	1	0	34.775	34.7775	19.1725	.665
3	1	0	0	0	0	1	1	34.785	34.7875	19.1825	.675
4	1	0	0	0	1	0	1	34.805	34.8075	19.2025	.695
5	1	0	0	0	1	1	0	34.815	34.8175	19.2125	.705
6	1	0	0	0	1	1	1	34.825	34.8275	19.2225	.715
7	1	0	0	1	0	0	0	34.835	34.8375	19.2325	.725
8	1	0	0	1	0	1	0	34.855	34.8575	19.2525	.745
9	1	0	0	1	0	1	1	34.865	34.8675	19.2625	.755
10	1	0	0	1	1	0	0	34.875	34.8775	19.2725	.765
11	1	0	0	1	1	0	1	34.885	34.8875	19.2825	.775
12	1	0	0	1	1	1	1	34.905	34.9075	19.3025	.795
13	1	0	1	0	0	0	0	34.915	34.9175	19.3125	.805
14	1	0	1	0	0	0	1	34.925	34.9275	19.3225	.815
15	1	0	1	0	0	1	0	34.935	34.9375	19.3325	.825
16	1	0	1	0	1	0	0	34.955	34.9575	19.3525	.845
17	1	0	1	0	1	0	1	34.965	34.9675	19.3625	.855
18	1	0	1	0	1	1	0	34.975	34.9775	19.3725	.865
19	1	0	1	0	1	1	1	34.985	34.9875	19.3825	.875
20	1	0	1	1	0	0	1	35.005	35.0075	19.4025	.895
21	1	0	1	1	0	1	0	35.015	35.0175	19.4125	.905
22	1	0	1	1	0	1	1	35.025	35.0275	19.4225	.915
23	1	0	1	1	1	1	0	35.055	35.0575	19.4525	.945
24	1	0	1	1	1	0	0	35.035	35.0375	19.4325	.925
25	1	0	1	1	1	0	1	35.045	35.0475	19.4425	.935
26	1	0	1	1	1	1	1	35.065	35.0675	19.4625	.955
27	1	1	0	0	0	0	0	35.075	35.0775	19.4725	.965
28	1	1	0	0	0	0	1	35.085	35.0875	19.4825	.975
29	1	1	0	0	0	1	0	35.095	35.0975	19.4925	.985
30	1	1	0	0	0	1	1	35.105	35.1075	19.5025	.995
31	1	1	0	0	1	0	0	35.115	35.1175	19.5125	1.005
32	1	1	0	0	1	0	1	35.125	35.1275	19.5225	1.015
33	1	1	0	0	1	1	0	35.135	35.1375	19.5325	1.025
34	1	1	0	0	1	1	1	35.145	35.1475	19.5425	1.035
35	1	1	0	1	0	0	0	35.155	35.1575	19.5525	1.045
36	1	1	0	1	0	0	1	35.165	35.1675	19.5625	1.055
37	1	1	0	1	0	1	0	35.175	35.1775	19.5725	1.065
38	1	1	0	1	0	1	1	35.185	35.1875	19.5825	1.075
39	1	1	0	1	1	0	0	35.195	35.1975	19.5925	1.085
40	1	1	0	1	1	0	1	35.205	35.2075	19.6025	1.095

COBRA MODEL 135XLR

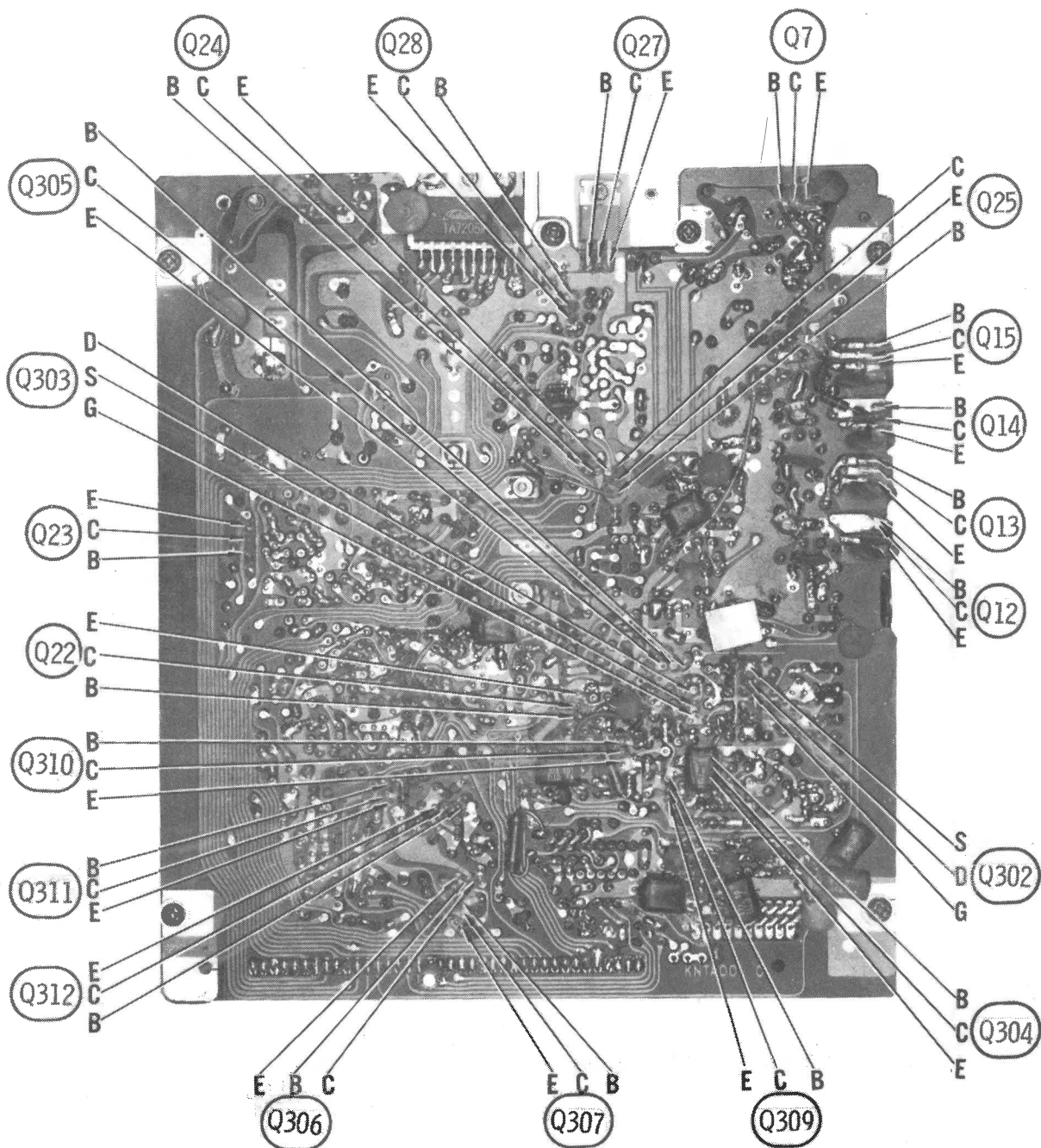


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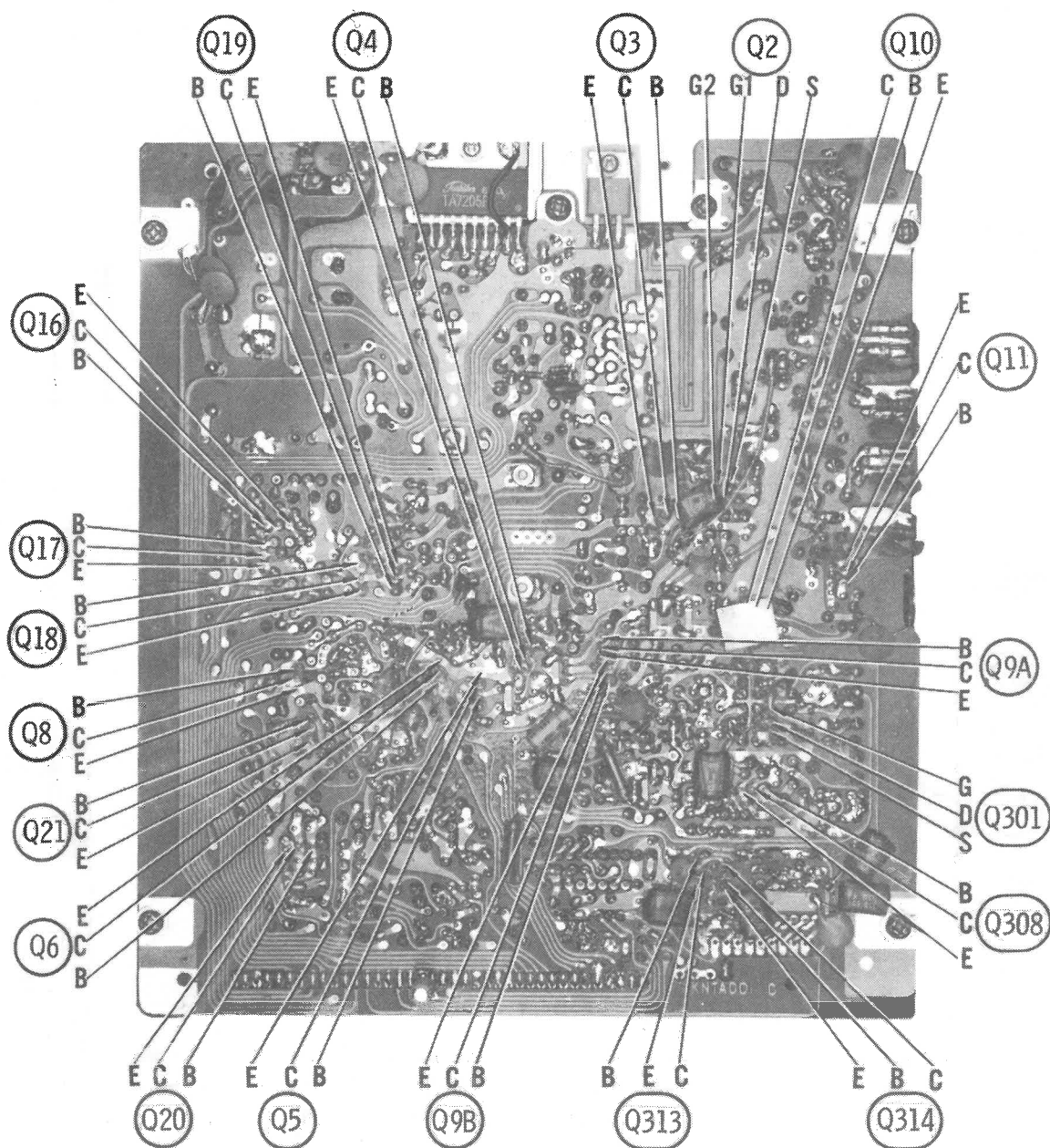


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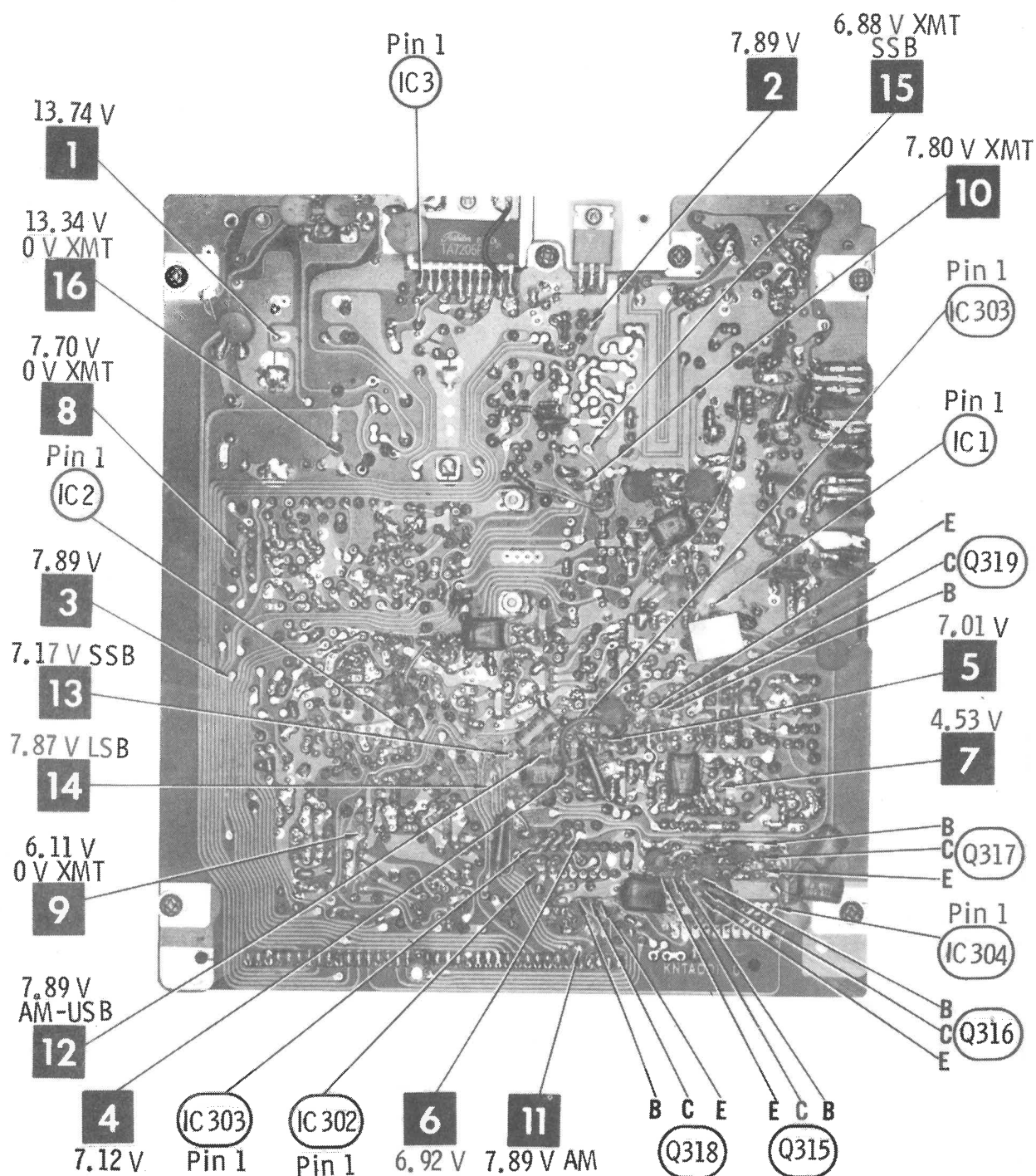
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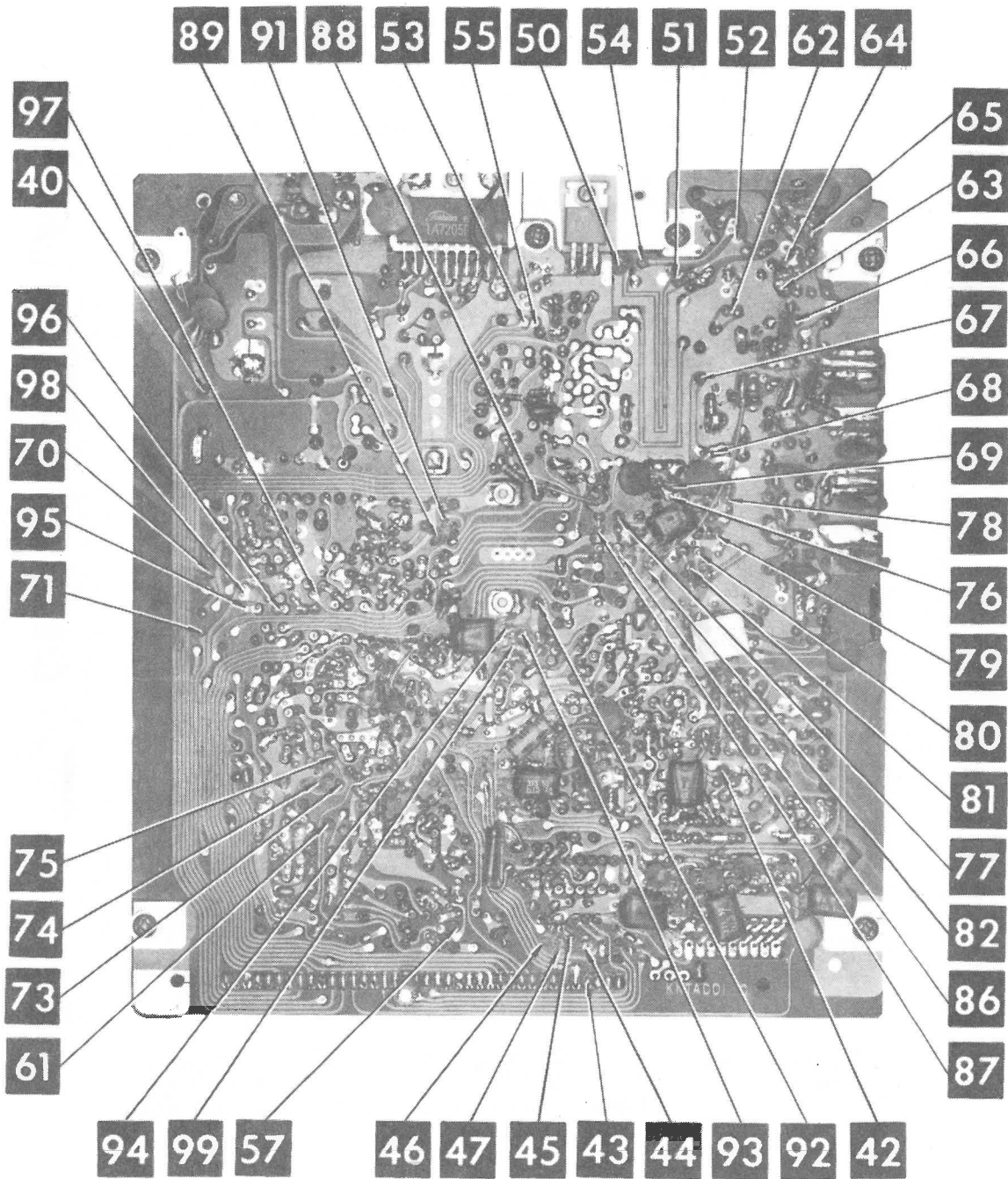
MAIN BOARD



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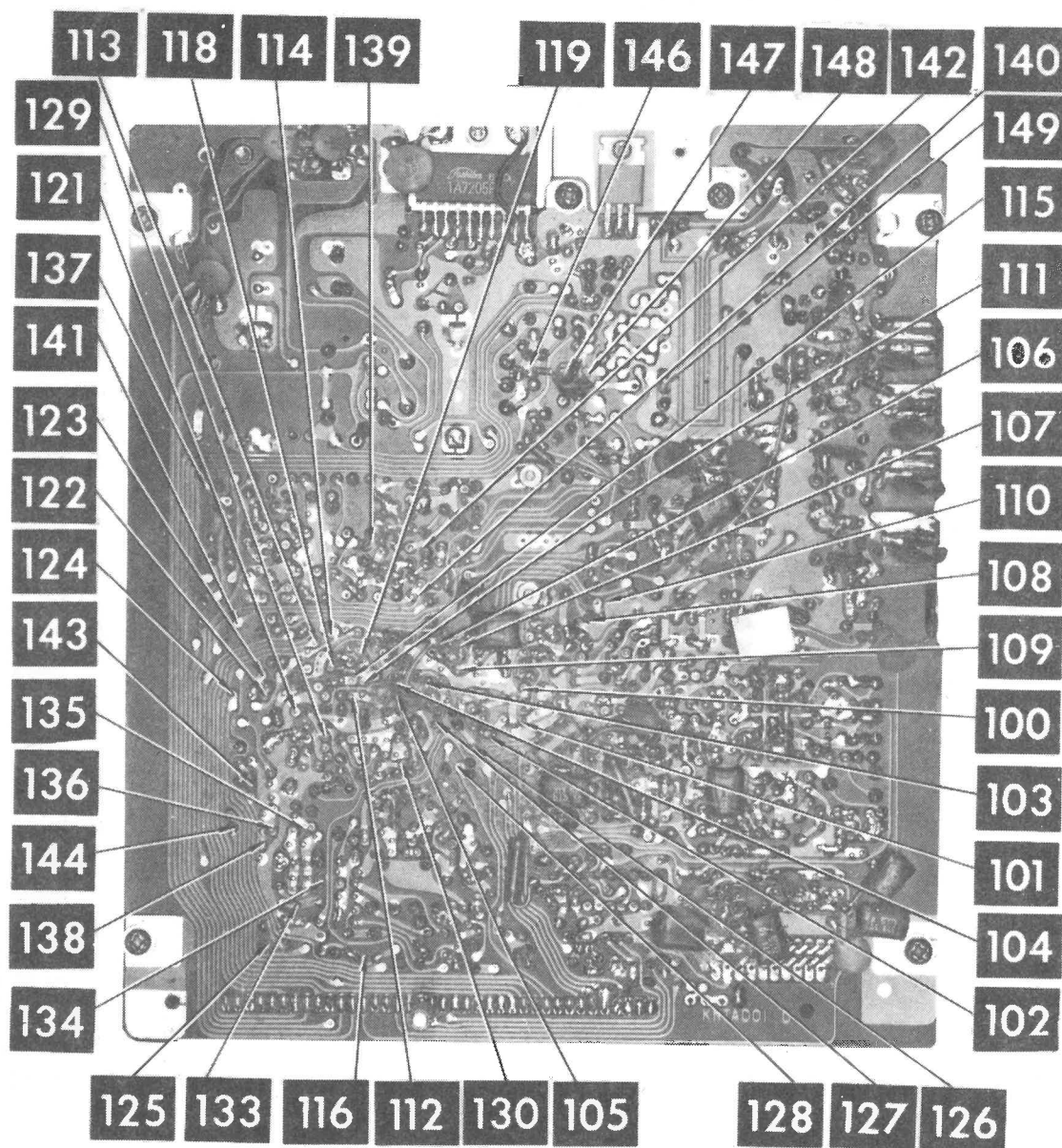


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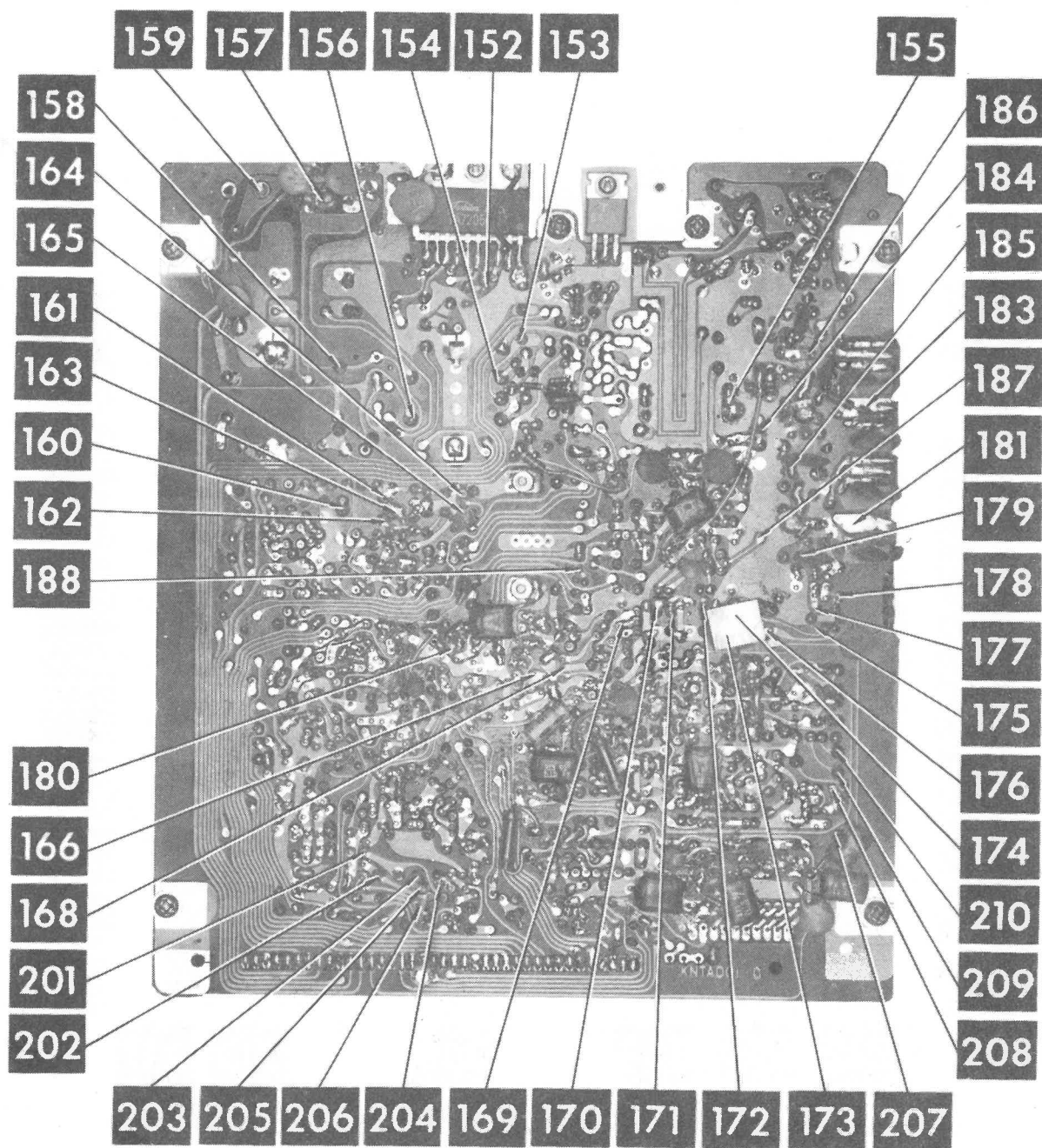
COBRA MODEL 135XLR

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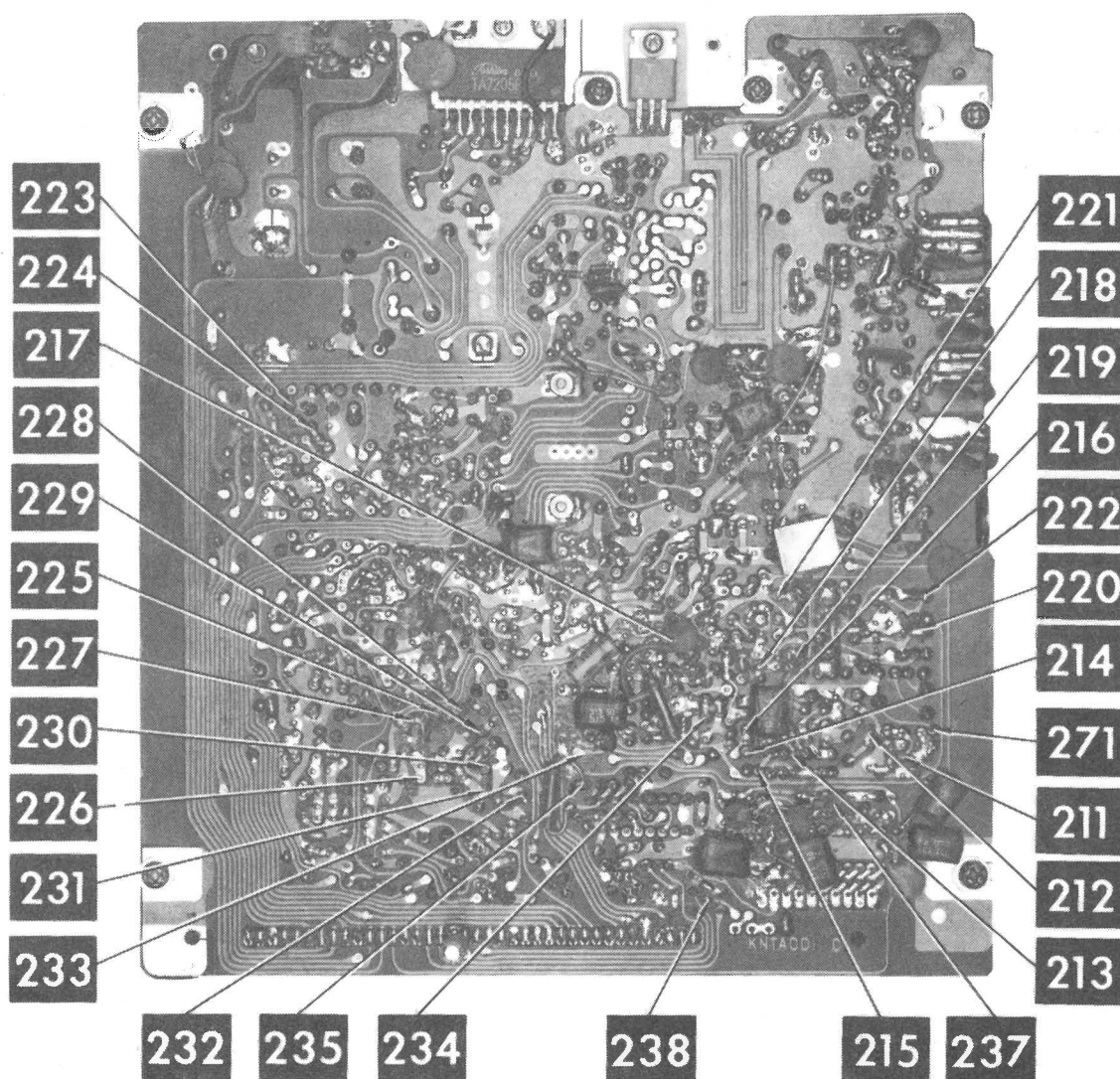


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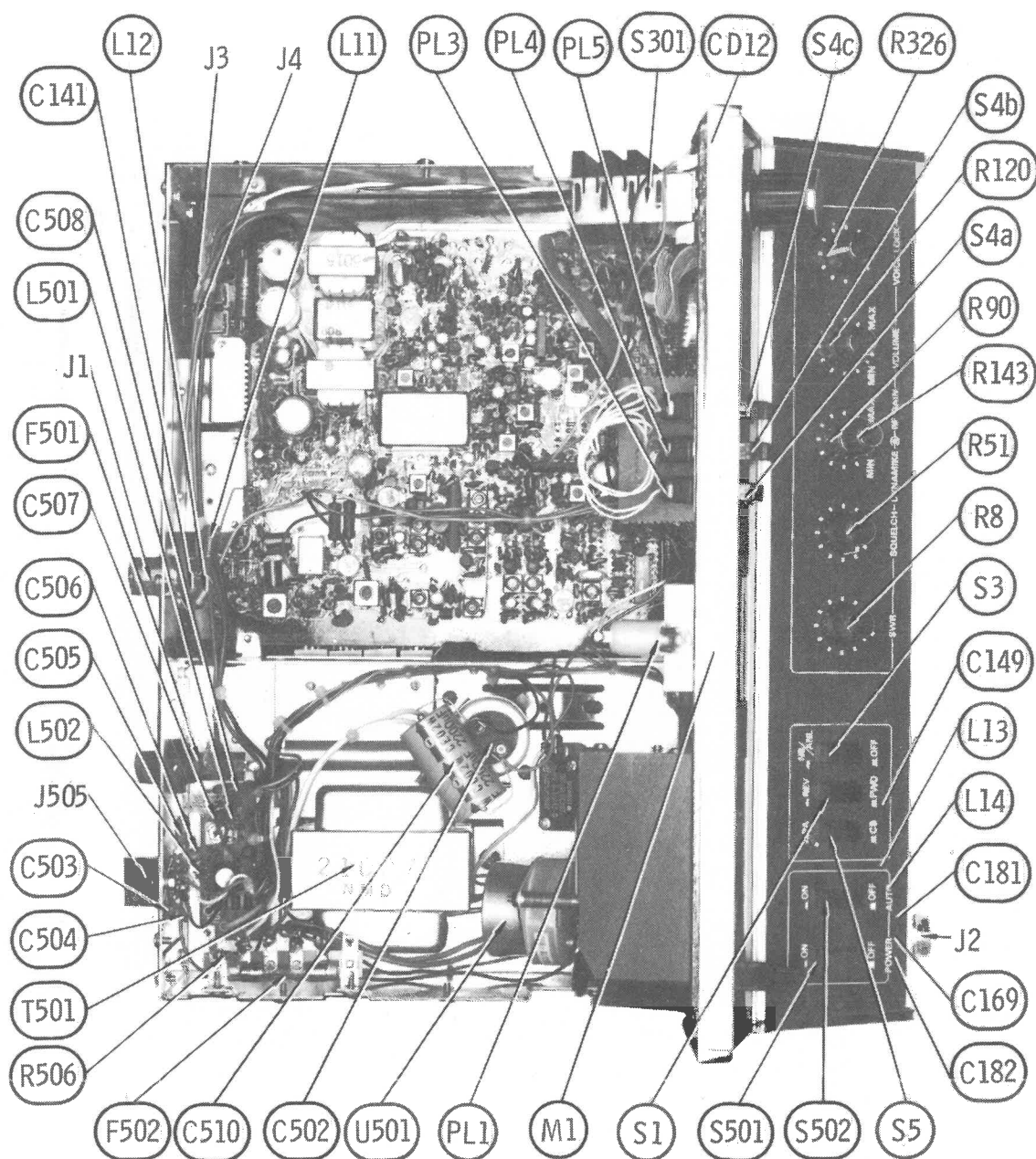
COBRA MODEL 135XLR



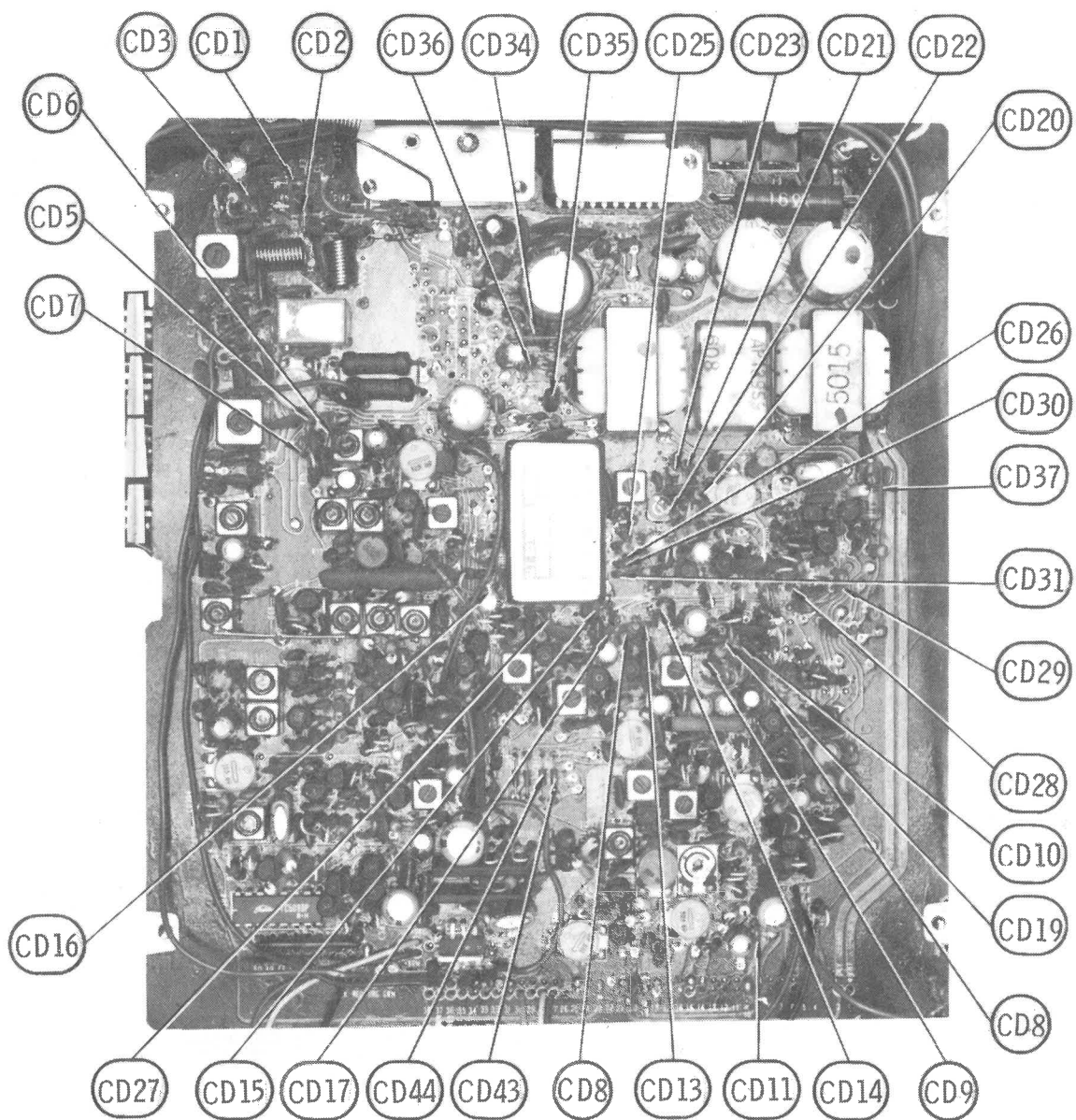
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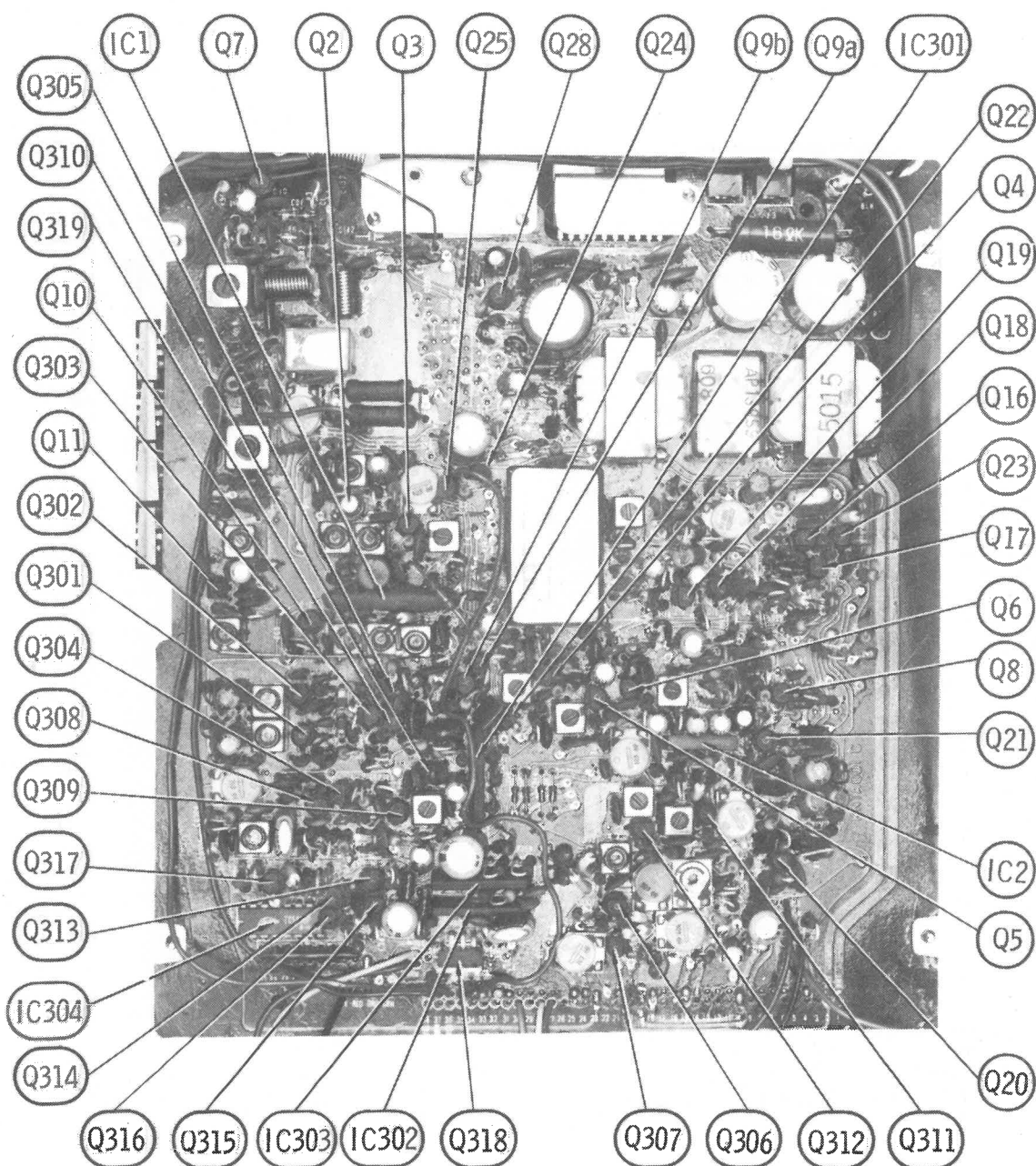
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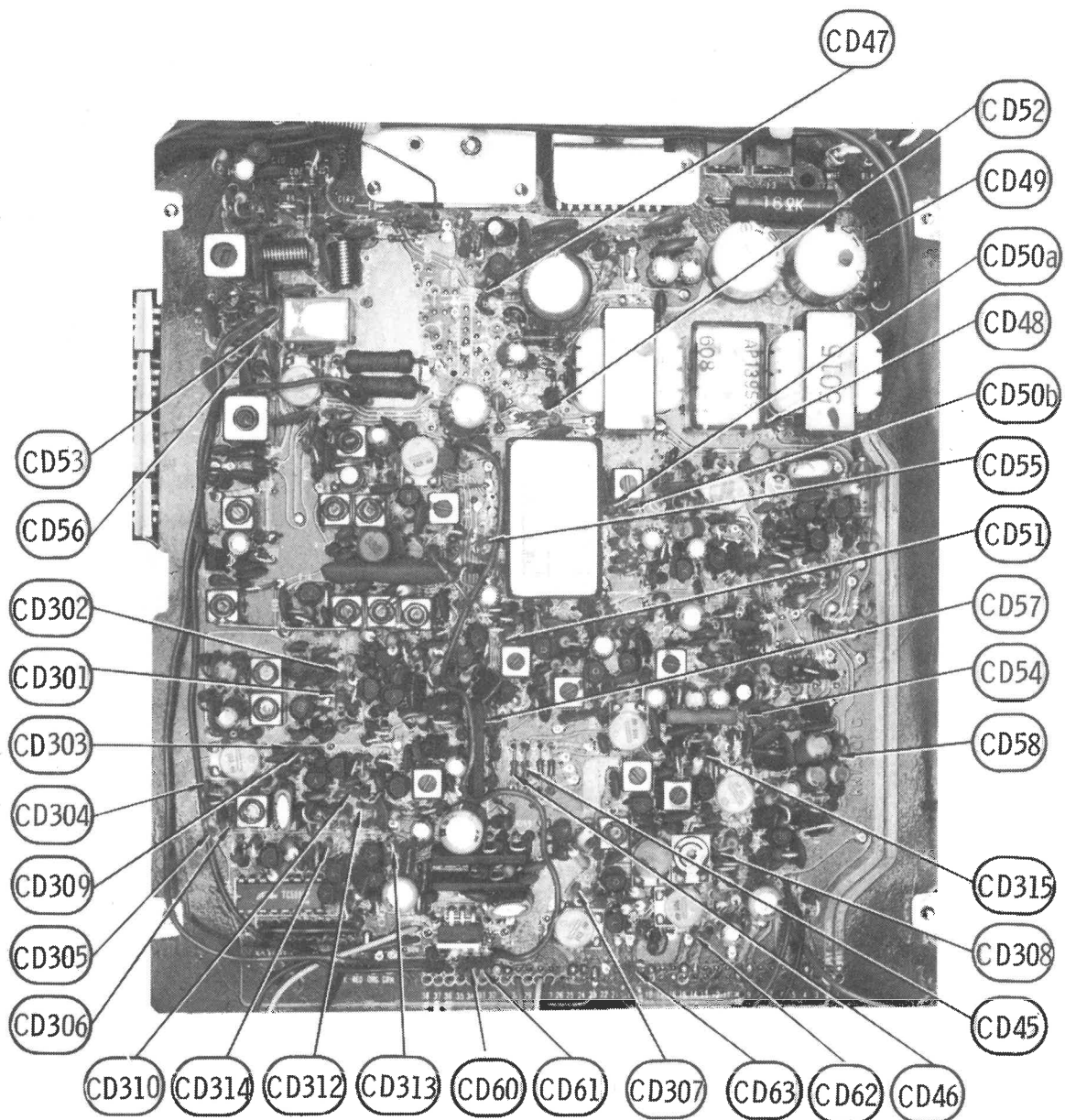
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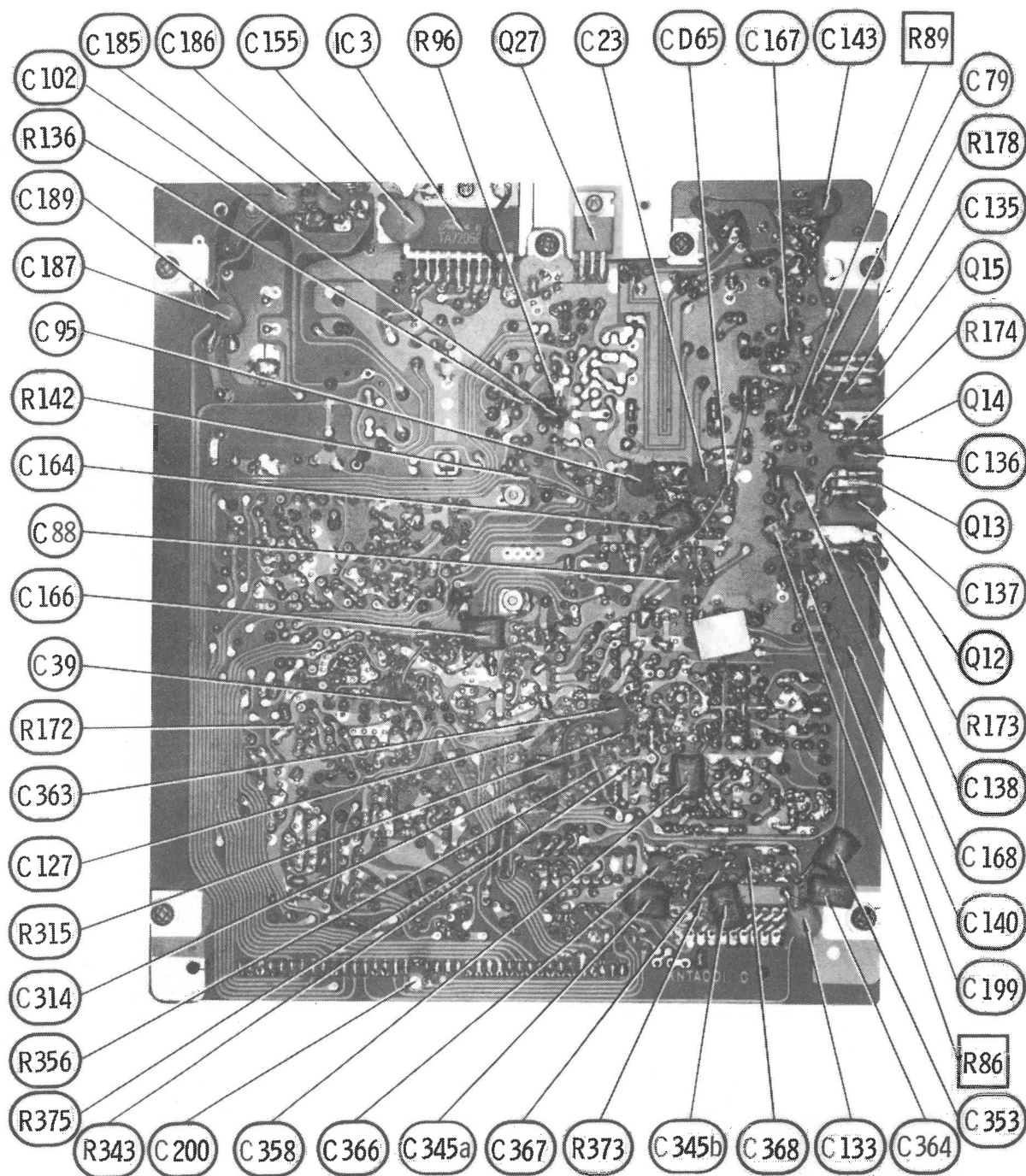
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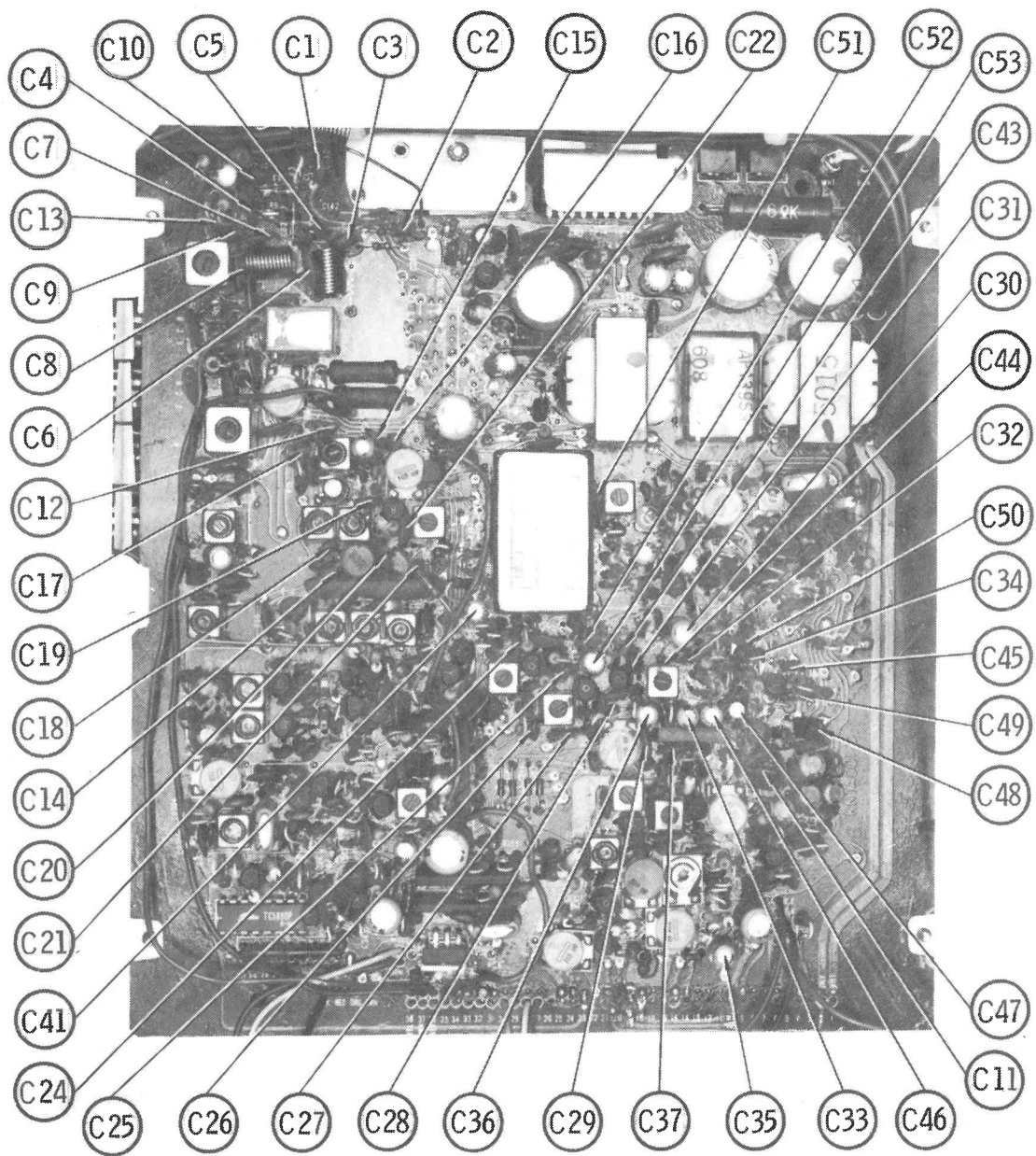
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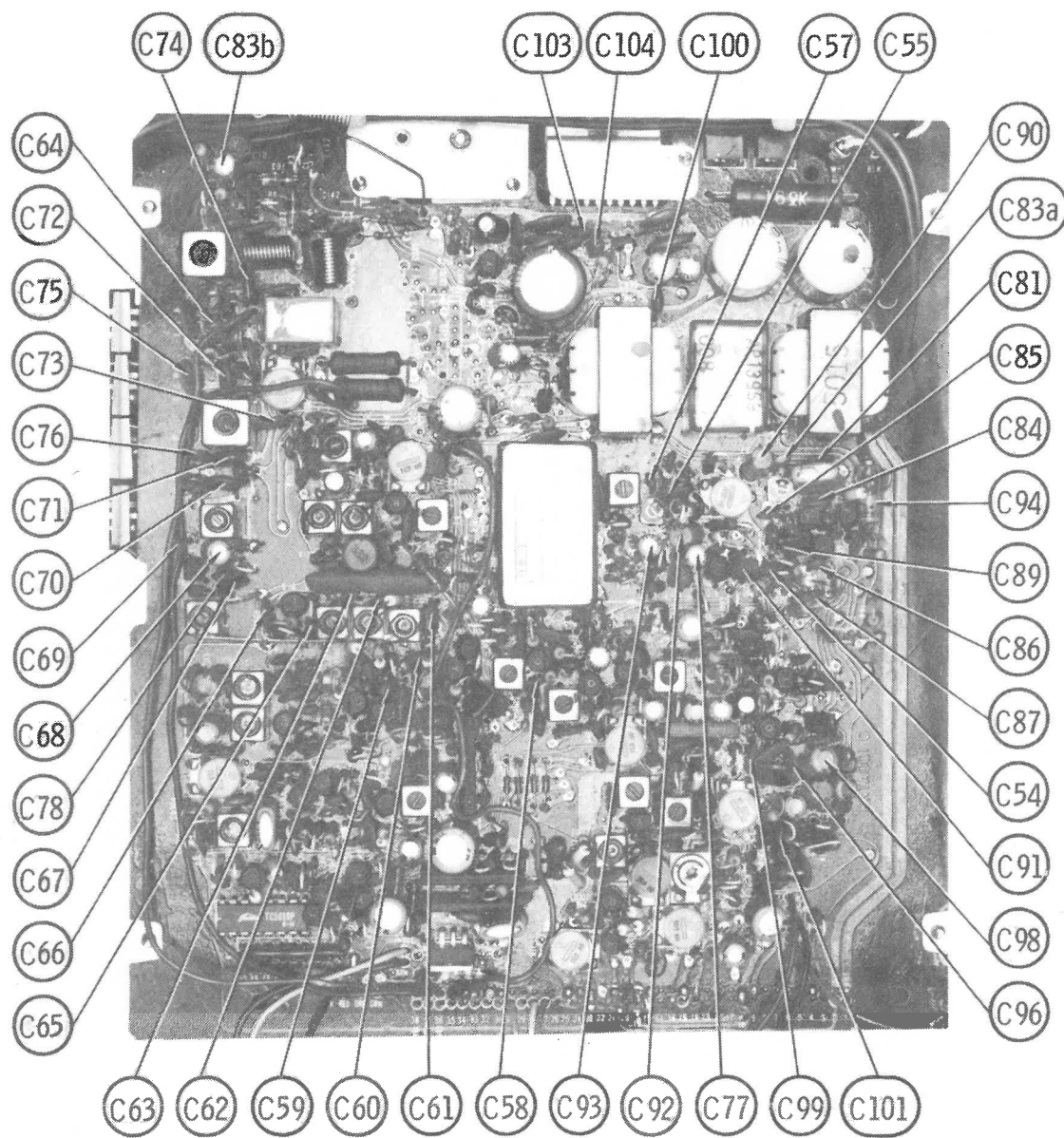
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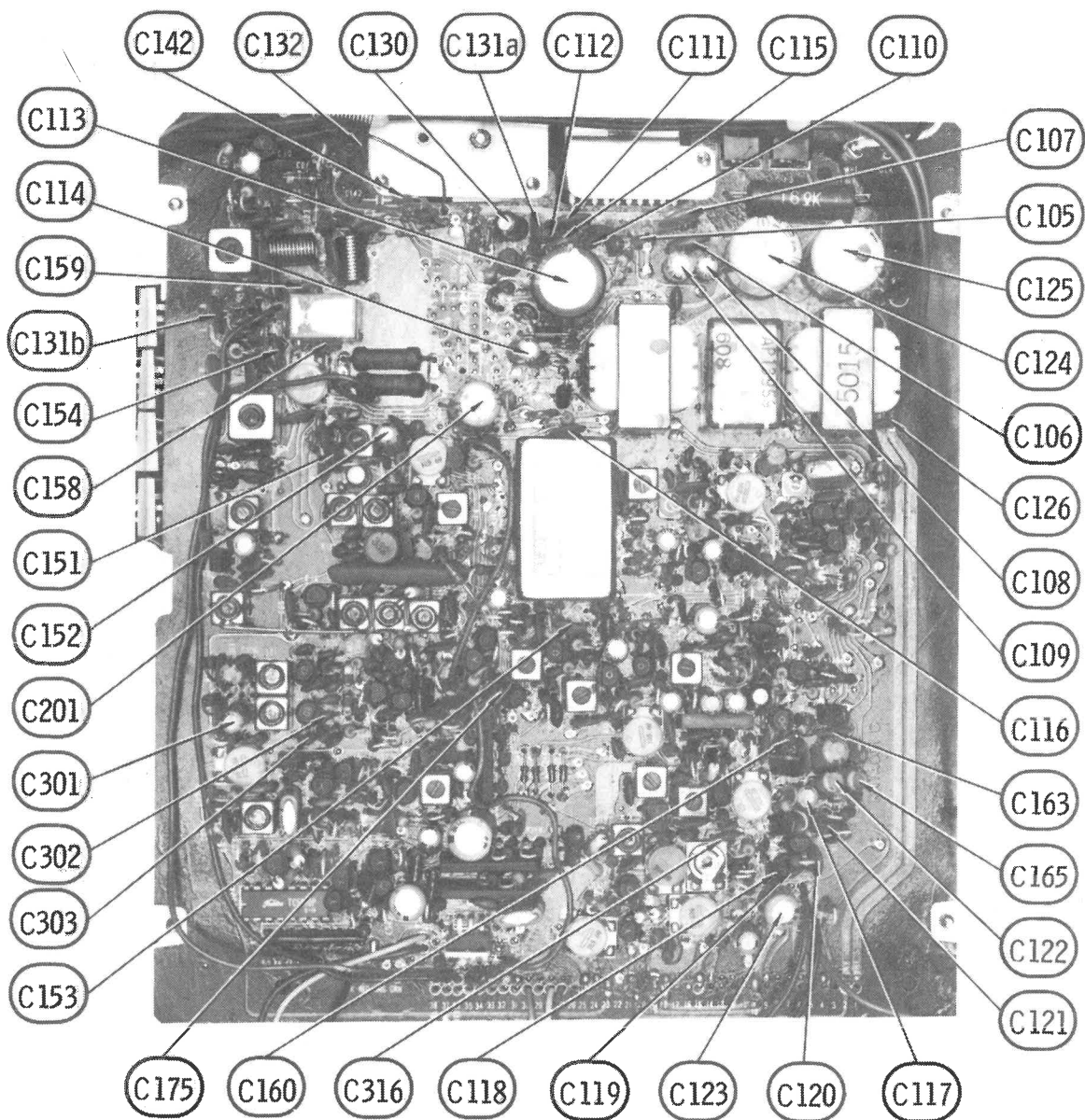
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MAIN BOARD



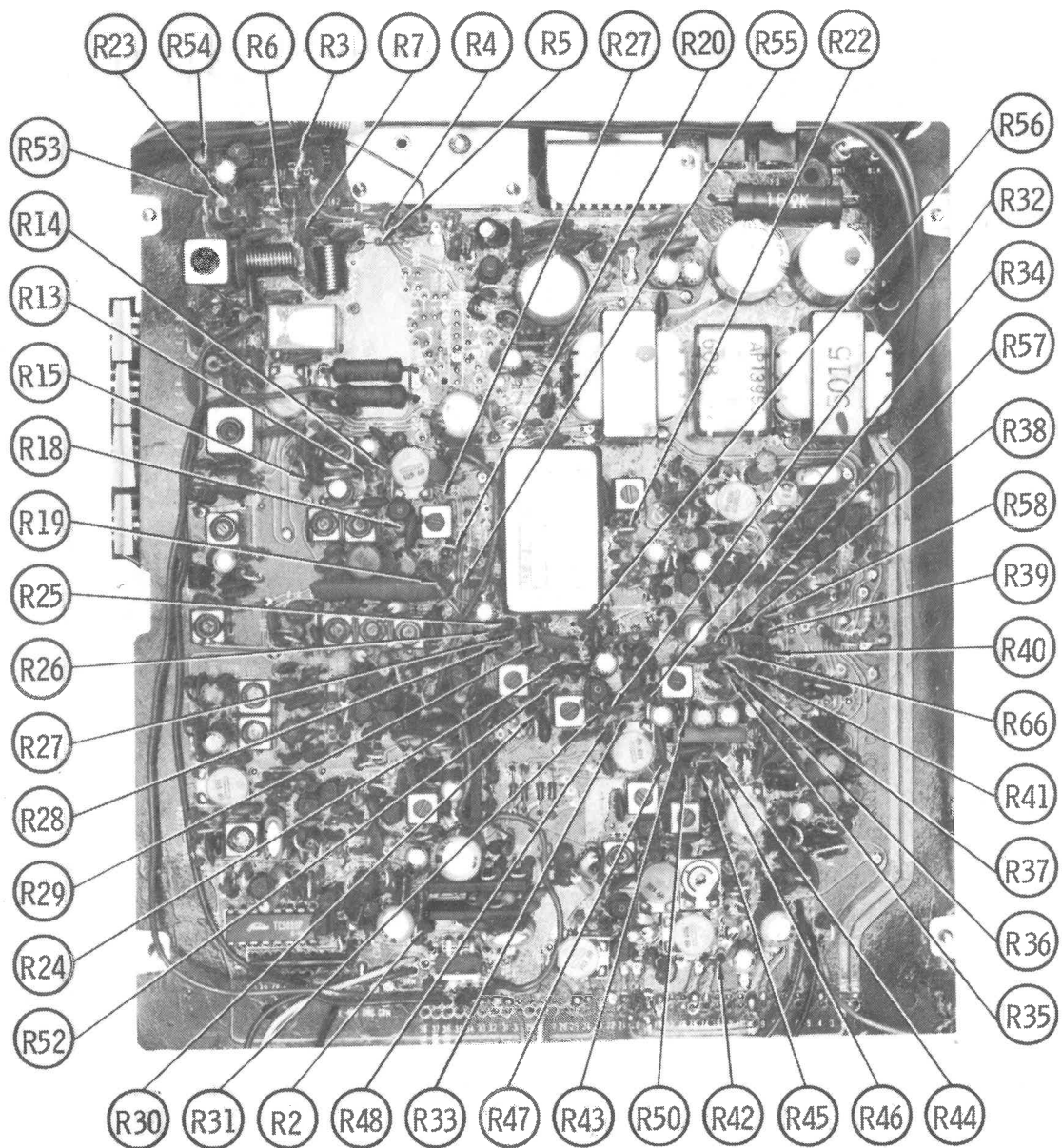
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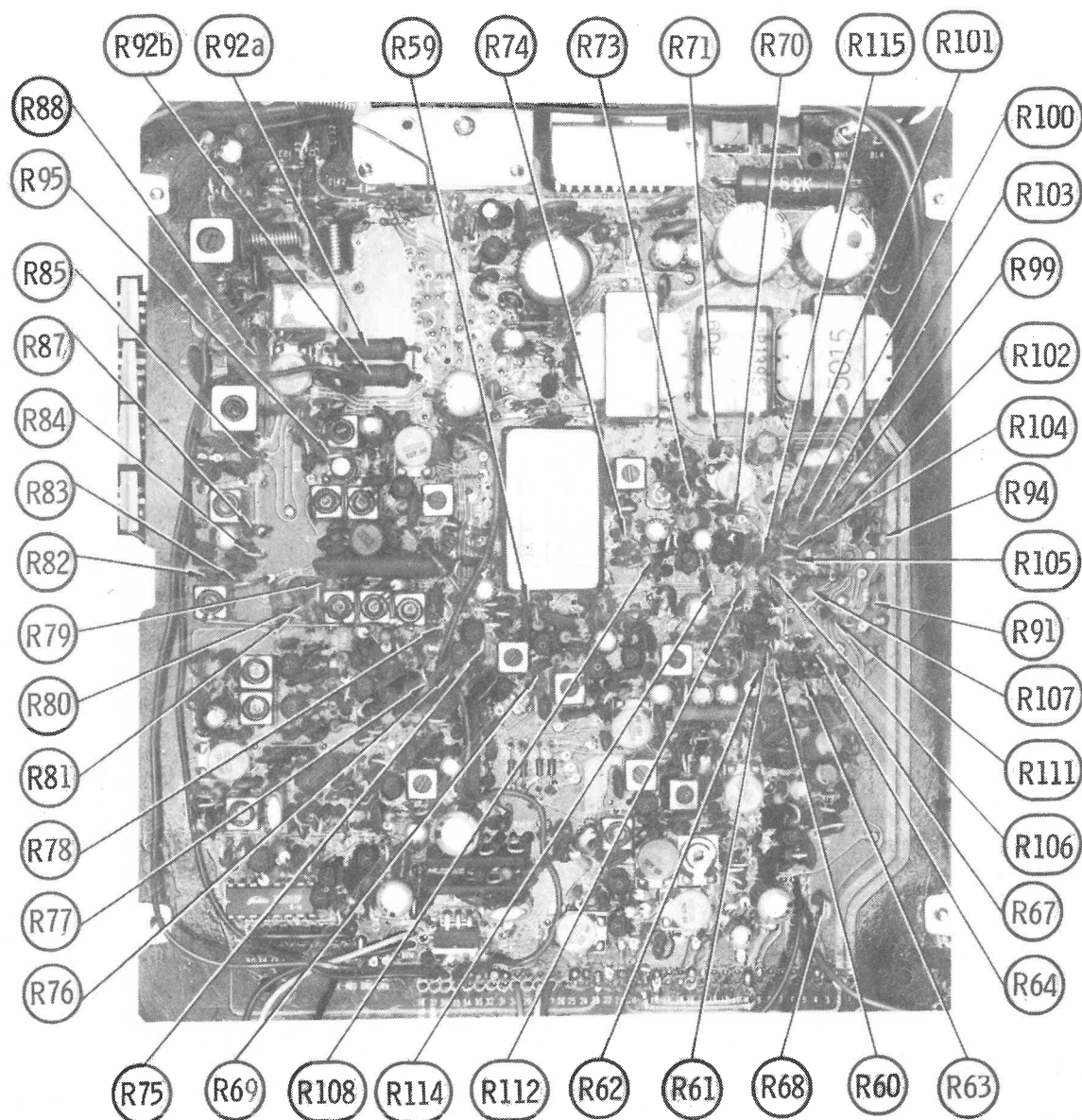
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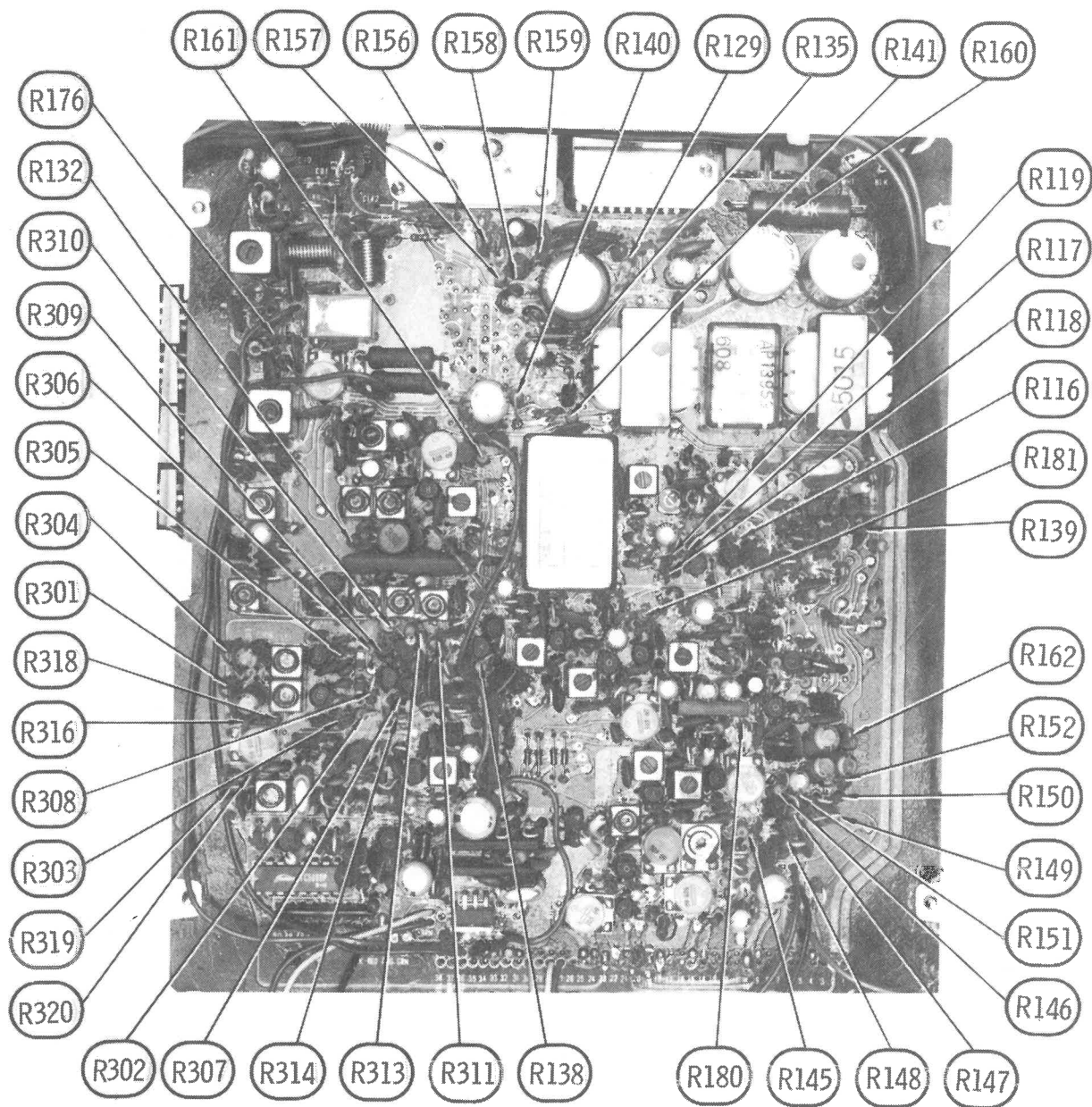
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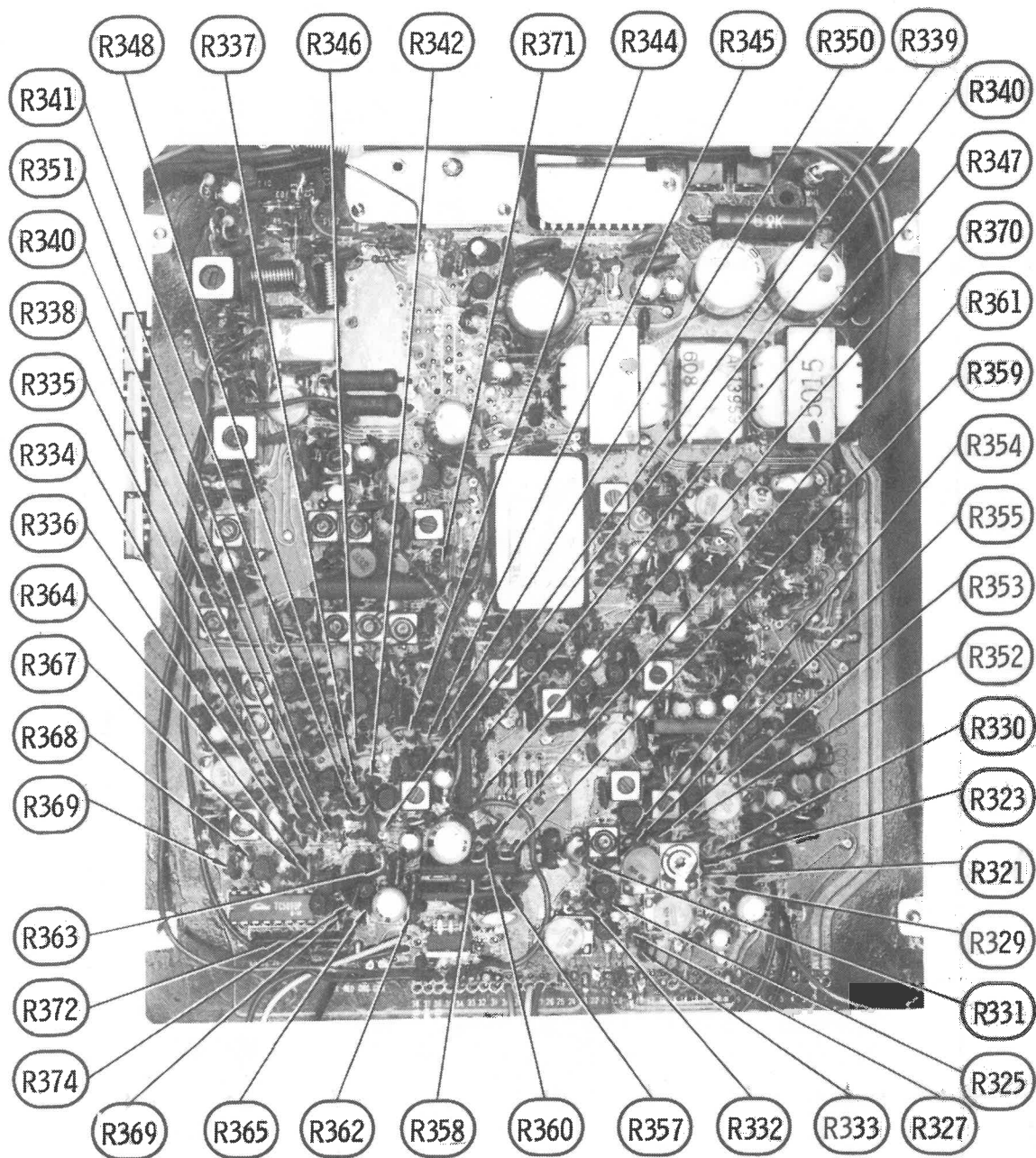
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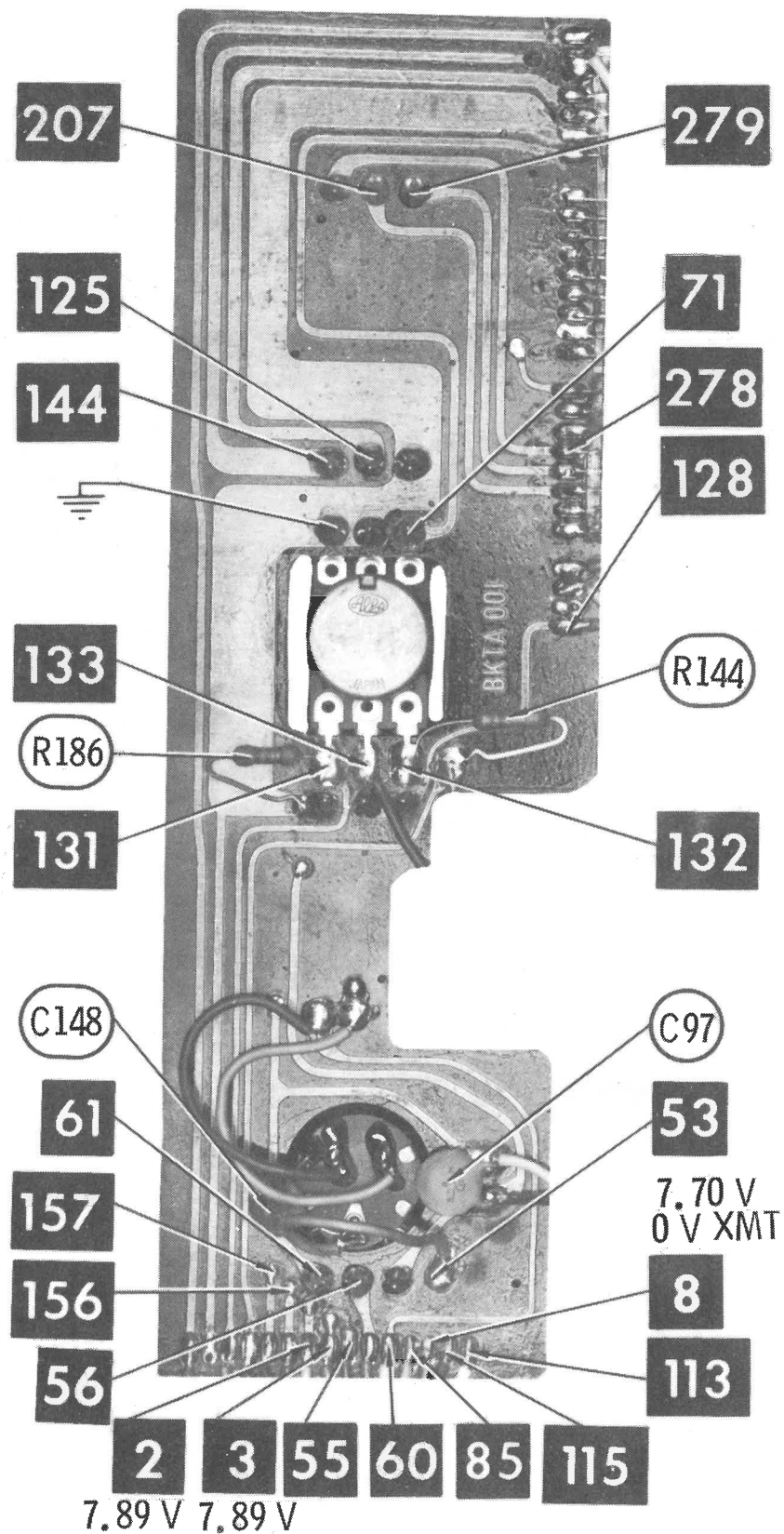
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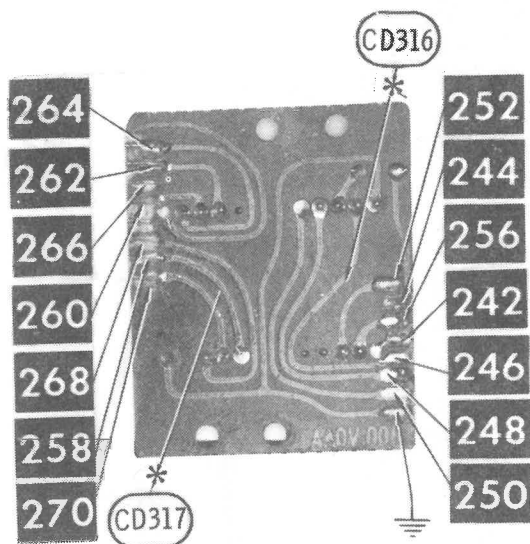
MAIN BOARD



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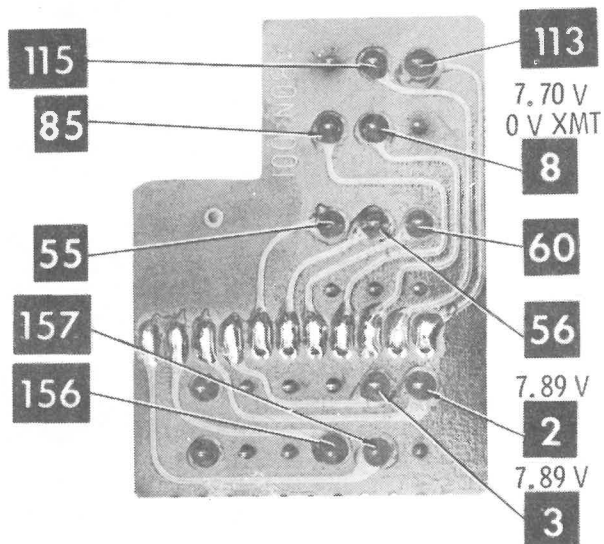


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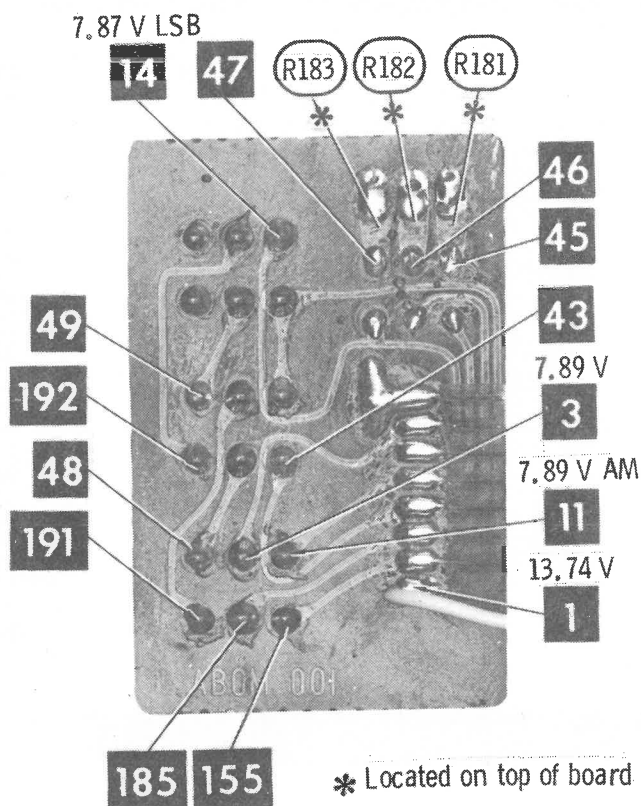
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LED BOARD



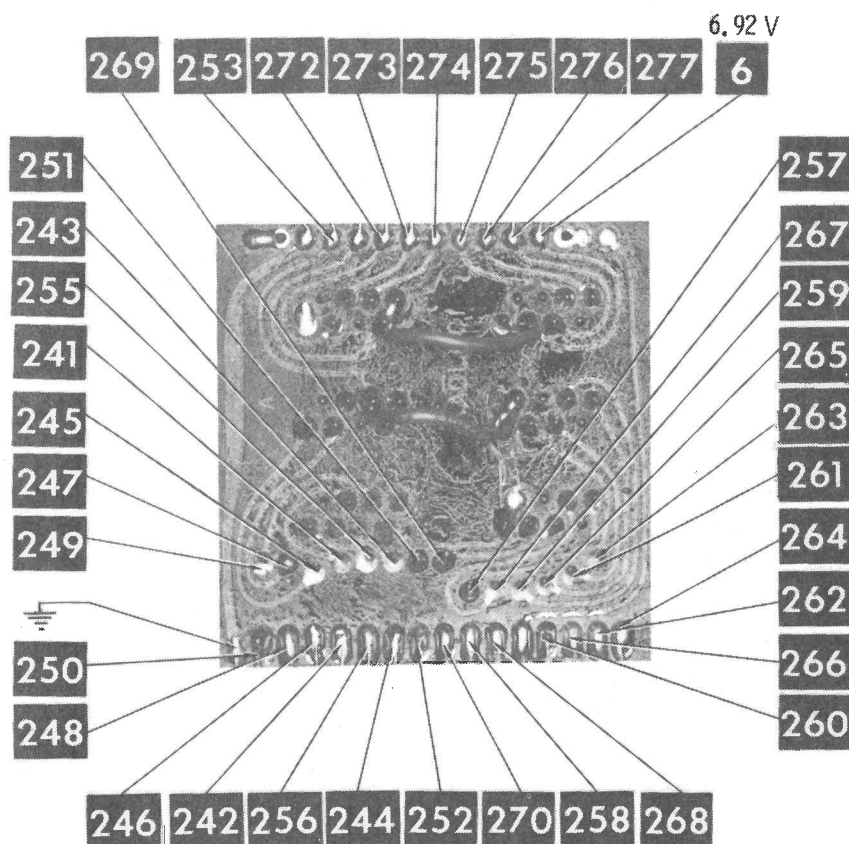
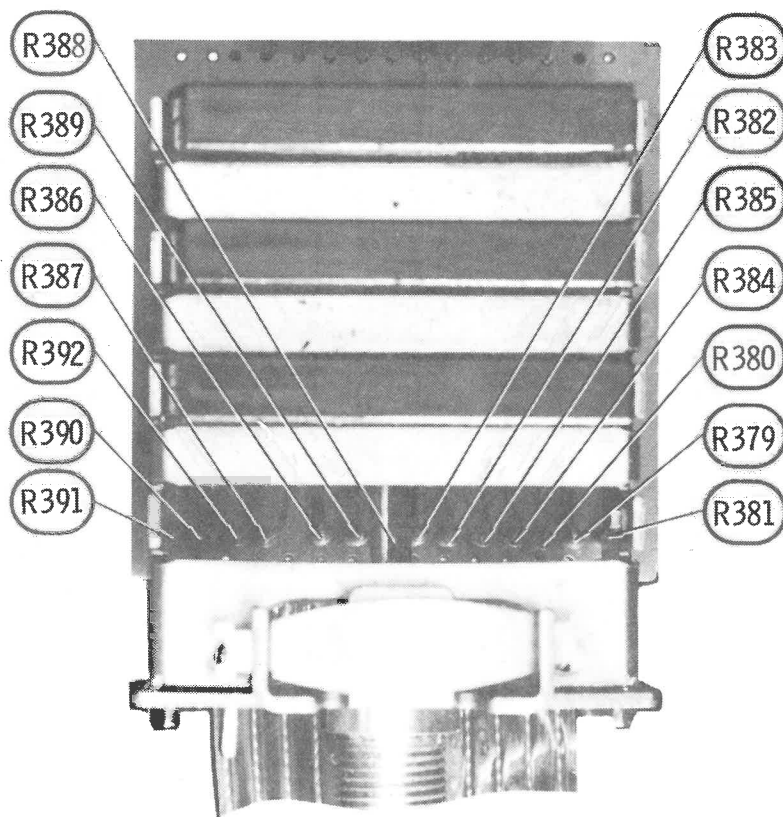
MODE SWITCH BOARD

COBRA MODEL 135XLR

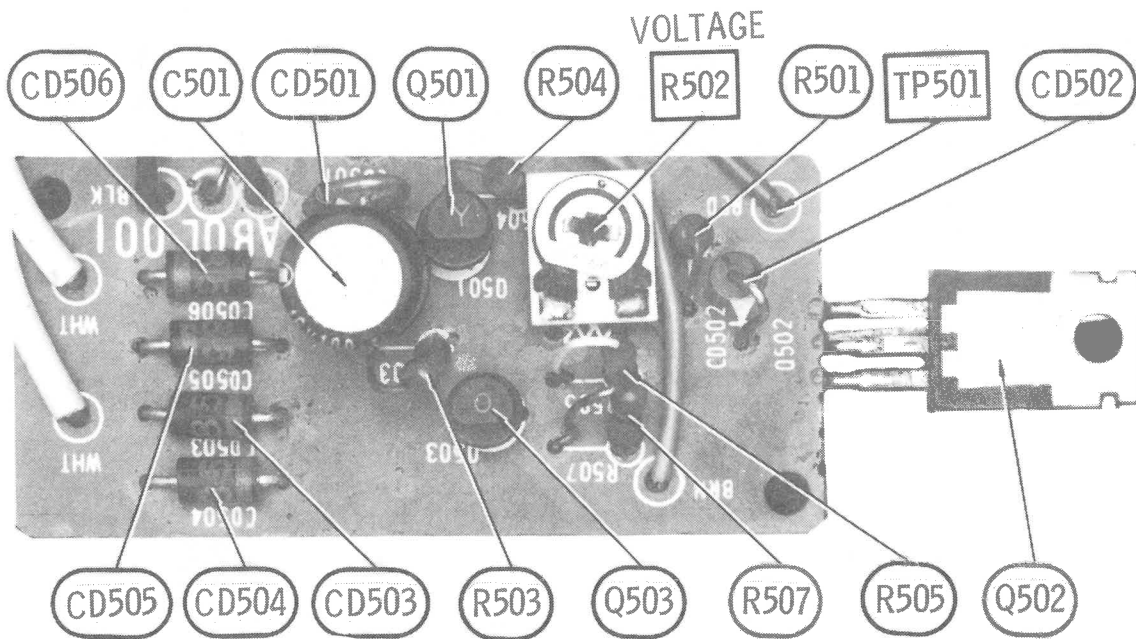
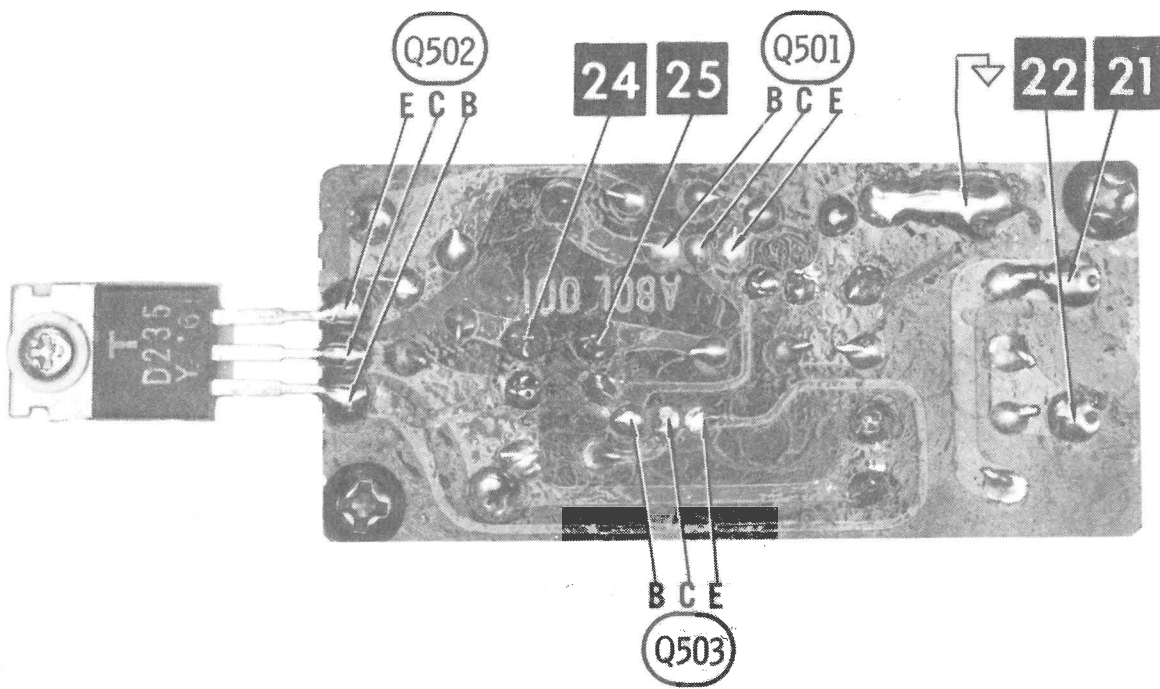


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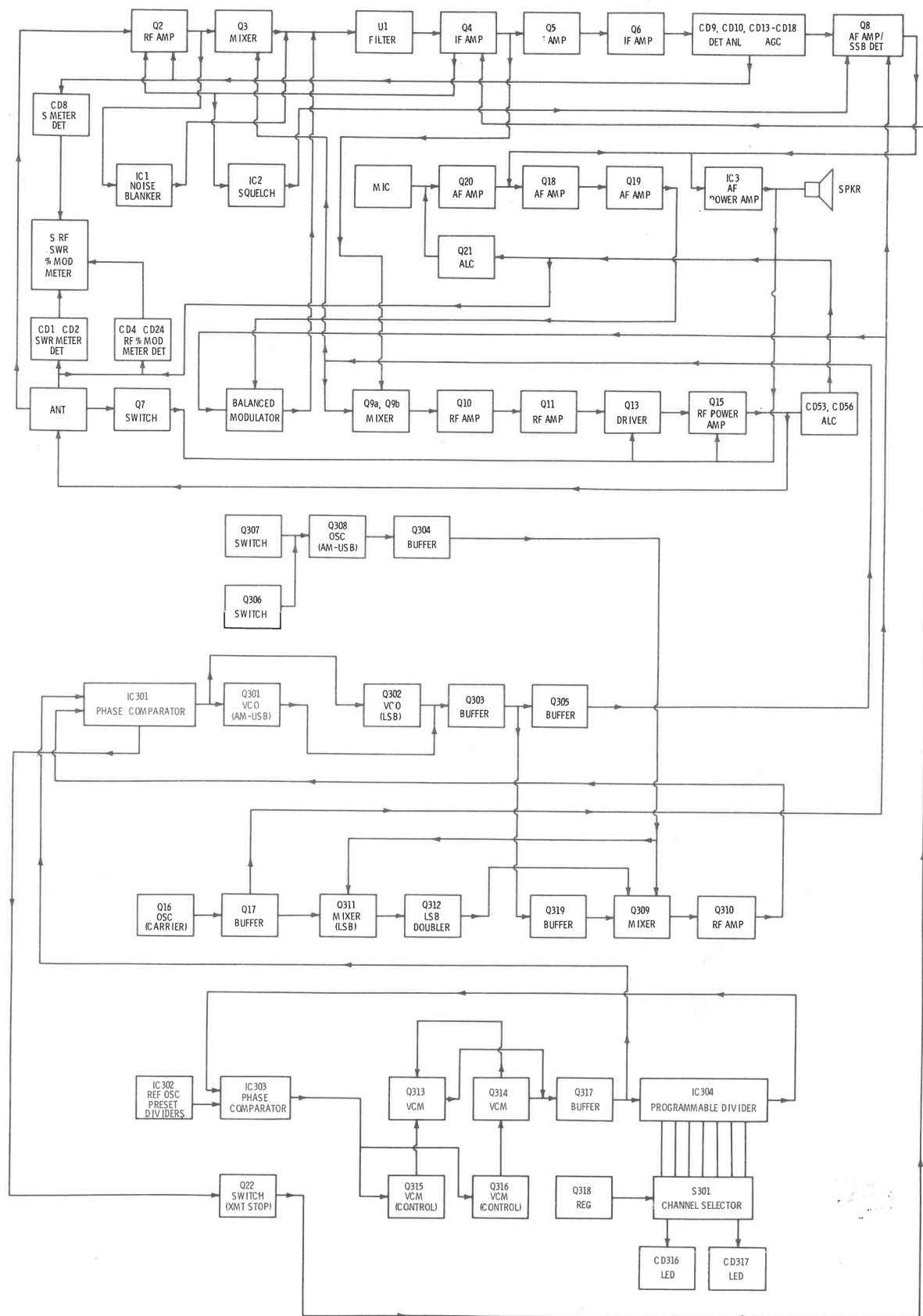
MODE SWITCH BOARD



CH. SELECTOR BOARD

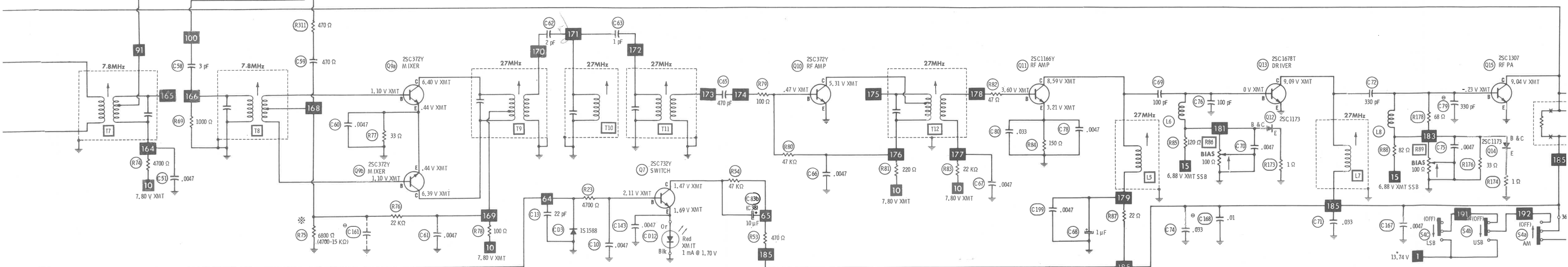
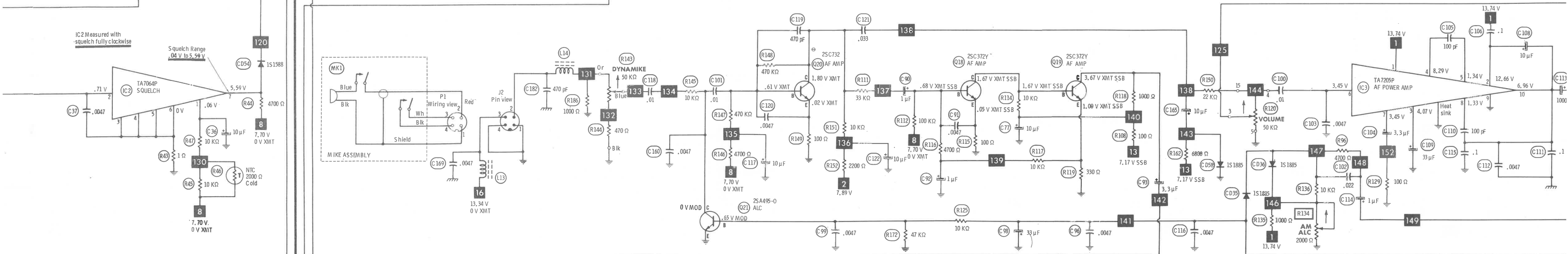
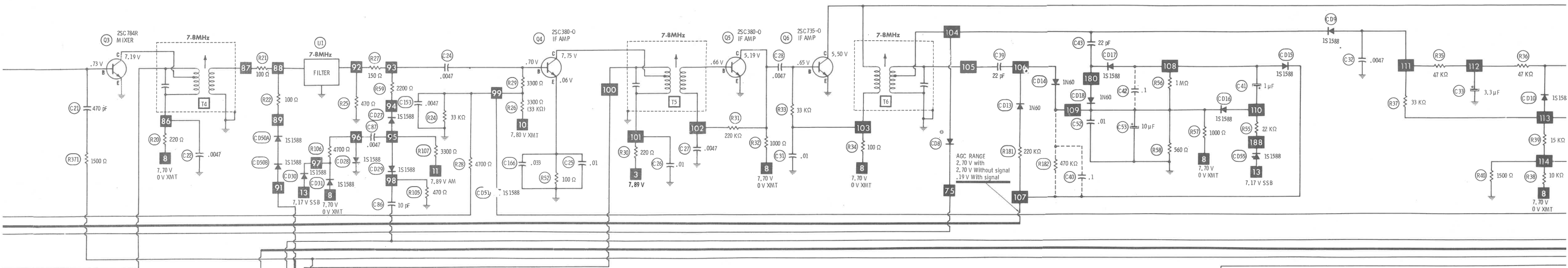


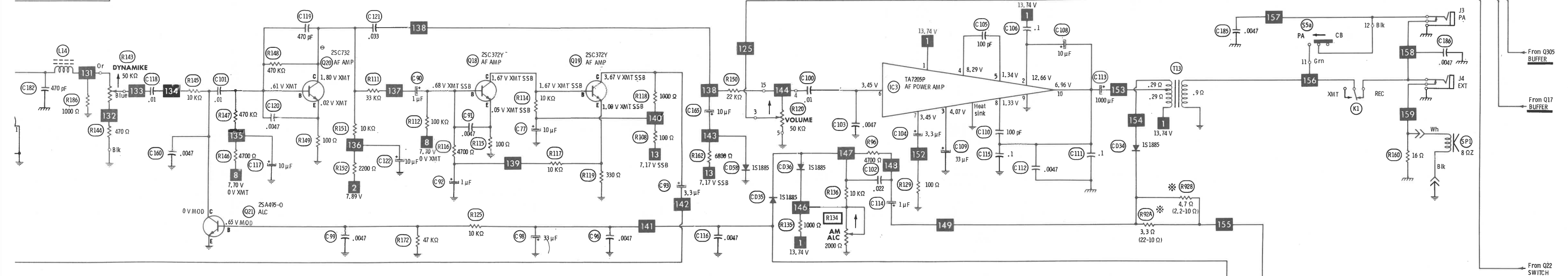
POWER SUPPLY BOARD

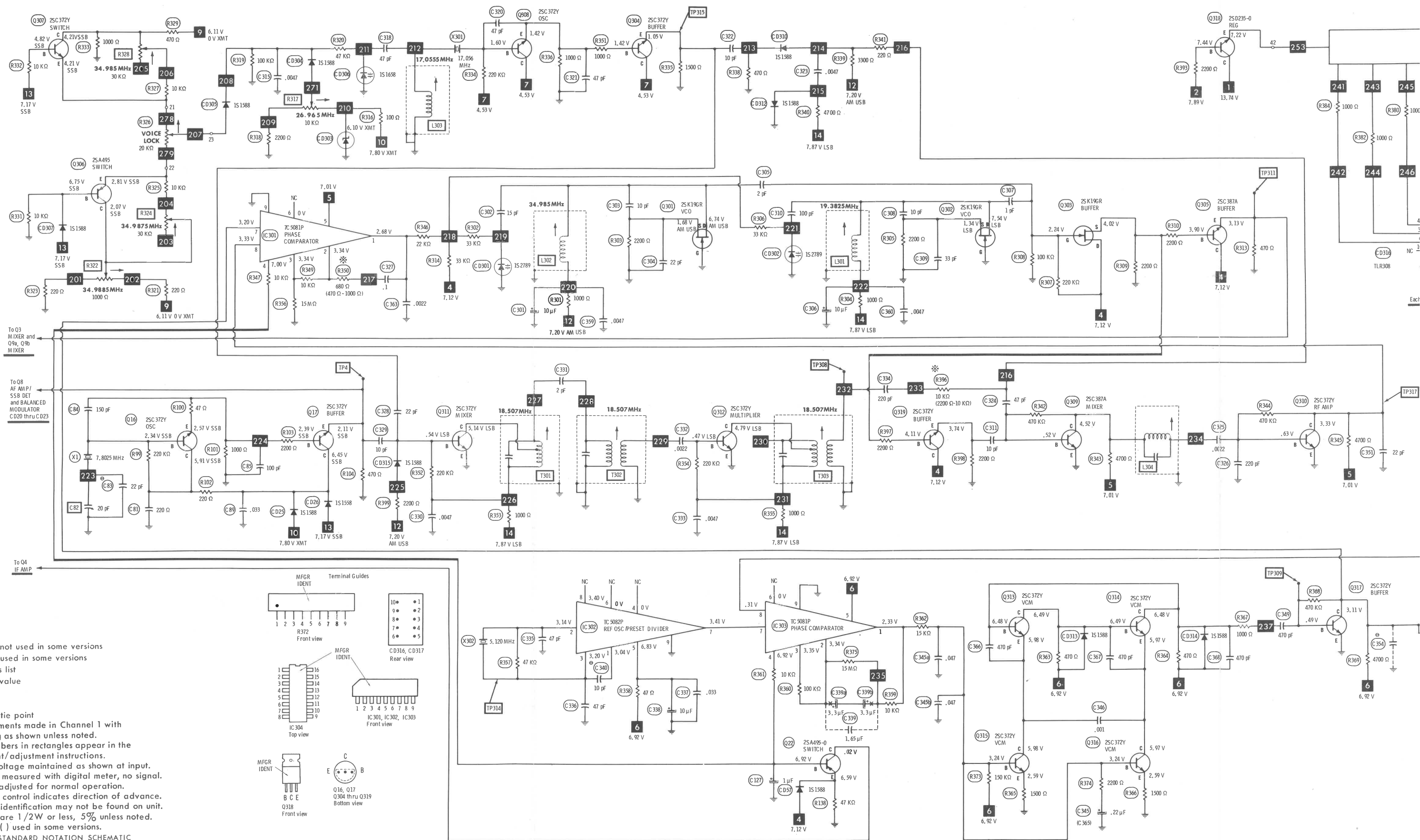


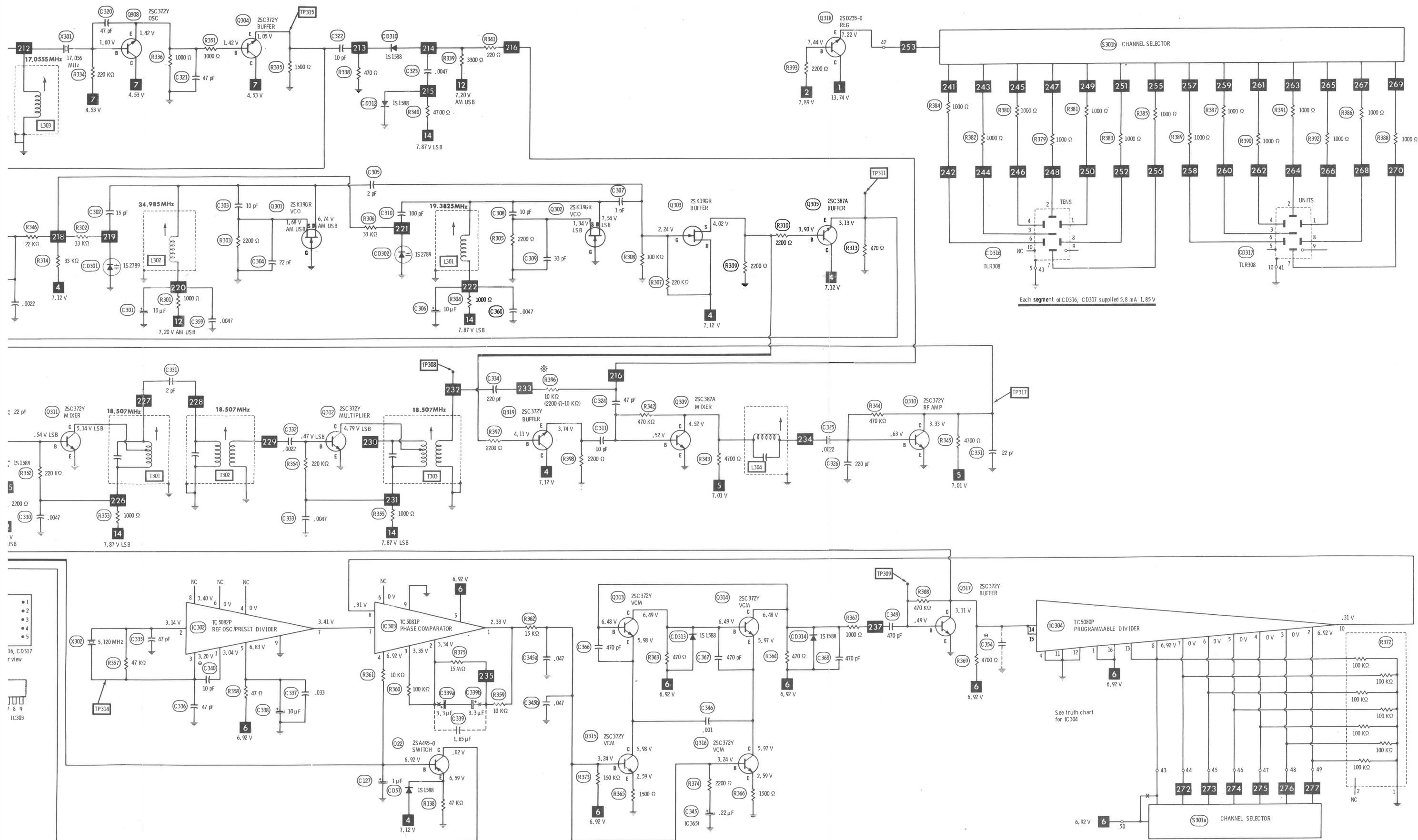
BLOCK DIAGRAM











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.
CD1	1N60	150-001-9-005	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
CD2	1N60	150-001-9-005	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
CD3	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD5	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD6	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD7	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD8	1N60	150-001-9-005	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
	1S1588		GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD9	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD10	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD11	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD13	1N60	150-001-9-005	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
CD14	1N60	150-001-9-005	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
CD15	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD16			GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD18			GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD19	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD20	1N60	157-007-9-001	1N60 (7)	PTC206M(6)	HEPR9135(7)	RE 86(6)	SK3088(7)	RT-263(7)	ECG110(6)	1N60(7)	WEP134(7)	ZEN-430(7)
CD21	1N60	157-007-9-001										
CD22	1N60	157-007-9-001	1N60 (7)	PTC206M(6)	HEPR9135(7)	RE 86(6)	SK3088(7)	RT-263(7)	ECG110(6)	1N60(7)	WEP134(7)	ZEN-430(7)
CD23	1N60	157-007-9-001										
CD25	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD26	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD27	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD28	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD29	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD30	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD31	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD34	1S1885	151-030-9-005	GE-504A	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116	1N4004	WEP156	
CD35	1S1885	151-030-9-005	GE-504A	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116	1N4004	WEP156	
CD36	1S1885	151-030-9-005	GE-504A	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116	1N4004	WEP156	
CD37	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD43	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD44	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD45	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD46	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD47	02Z6, 2A	152-047-9-001	GEZD-6, 2	ZM6, 2A	HEPZ0214A	RE 109	SK3058	RT-237	ECG5013	1N4735A	WEP1414	ZEN-500
CD48	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD49	1S1885	151-030-9-005	GE-504A	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116	1N4004	WEP156	
CD50a	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD50b	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD51	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD52	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD53	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD54	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD55	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD56	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD57	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD58	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD60	1S1885	151-030-9-005	GE-504A	PTC202	HEPR0054	RE 49	SK3017A	RT-215	ECG116	1N4007	WEP158	
CD61	1S1885	151-030-9-005	GE-504A	PTC202	HEPR0054	RE 49	SK3017A	RT-215	ECG116	1N4007	WEP158	
CD62	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD63	1S1885	151-030-9-005	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
	1S1555		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
CD64	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD301	1S2789				HEPR2502							ZEN-452
	1S2208				HEPR2502							ZEN-452
CD302	1S2789				HEPR2502							ZEN-452
	1S2208				HEPR2502							ZEN-452
CD303	02Z6, 2A	152-047-9-001	GEZD-6, 2	ZM6, 2A	HEPZ0214A	RE 109	SK3058	RT-237	ECG5013	1N4735A	WEP1414	ZEN-500
CD304	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD305	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD306	1S1658	151-030-9-003	GE-90		HEPR2503			RT-262	ECG614		WEP200	ZEN-453
CD307	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD308	02Z6, 2A	152-047-9-001	GEZD-6, 2	ZM6, 2A	HEPZ0214A	RE 109	SK3058	RT-237	ECG5013	1N4735A	WEP1414	ZEN-500
CD309	02Z6, 2A	152-047-9-001	GEZD-6, 2	ZM6, 2A	HEPZ0214A	RE 109	SK3058	RT-237	ECG5013	1N4735A	WEP1414	ZEN-500
CD310	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD312	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD313	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD314	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD315	1S1588	151-051-9-001	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
CD501	02Z6, 8A		GEZD-6, 2	ZM6, 2A	HEPZ0214A	RE 109	SK3058	RT-237	ECG5013	1N4735A	WEP1414	ZEN-500
CD502	1S1885	151-030-9-005	GE-504A	PTC202	HEPR0054	RE 49	SK3017A	RT-215	ECG116	1N4007	WEP158	
CD503	1R5BZ61		GE-512	PTC204	HEPR0098	RE 92	SK3051	RT-201	ECG156		WEP4008	
CD504	1R5BZ61		GE-512	PTC204	HEPR0098	RE 92	SK3051	RT-201	ECG156		WEP4008	
CD505	1R5BZ61		GE-512	PTC204	HEPR0098	RE 92	SK3051	RT-201	ECG156		WEP4008	
CD506	1R5BZ61		GE-512	PTC204	HEPR0098	RE 92	SK3051	RT-201	ECG156		WEP4008	
IC1	SV10052	307-107-9-002										
IC2	TA7064P	307-107-9-001										
IC3	TA7205P	307-107-9-003	GEIC-179	PTC780	TA7205P	RE 357-IC	SK3231	TVCM-81	ECG1155	TA7205P	WEP949	
IC301	TC5081P	307-107-9-004							ECG1208			
IC302	TC5082P	307-107-9-005							ECG1197			
IC303	TC5081P	307-107-9-004							ECG1208			
									ECG1197			
IC304	TC5080P	307-107-9-006							ECG1207			
Q2	35K40	182-049-9-001	GE-FET-4	PTC182	HEPF2004	RE 199	SK3050	RT-181	ECG222		WEP905	121-826
	35K44		GE-FET-4	PTC182	HEPF2004	RE 199	SK3050	RT-181	ECG222		WEP905	121-826
Q3	25C784R	176-056-9-003	GE-60*	PTC132*	25C784	RE 28*	SK3018*	RT-187	ECG229*	25C784	WEP784	ZEN-104
	25C784		GE-60*	PTC132*	25C784	RE 28*	SK3018*	RT-187	ECG229*	25C784	WEP784	ZEN-104
Q4	25C380-0	176-082-9-001	GE-61*	PTC136*	25C380	RE 9	SK3018*	RT-107A	ECG107	25C380	WEP380	ZEN-127
	25C380		GE-61*	PTC136*	25C380	RE 9	SK3018*	RT-107A	ECG107	25C380	WEP380	ZEN-127

COBRA MODEL 135XLR

PARTS LIST AND DESCRIPTION (CONTINUED)

(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.
Q5	2SC380-0	176-082-9-001	GE-61*	PTC136*	2SC380	RE 9	SK3018*	RT-107A	ECG107	2SC380	WEP380	ZEN-127
Q6	2SC380	176-031-9-001	GE-61*	PTC136*	2SC380	RE 9	SK3018*	RT-107A	ECG107	2SC380	WEP380	ZEN-127
	2SC735-0		GE-210*	PTC123*	2SC735	RE 13*	SK3122	RT-308*	ECG289	2SC735	WEP735A	ZEN-127
	2SC735		GE-210*	PTC123*	2SC735	RE 13*	SK3122	RT-308*	ECG289	2SC735	WEP735A	ZEN-127
Q7	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q8	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q9a	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q9b	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q10	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q11	2SC1166Y	176-056-9-005	GE-81*	PTC143	2SC1166	RE 210	SK3122	RT-141	ECG297	2SC1166	WEP914	
	2SC1166		GE-81*	PTC143	2SC1166	RE 210	SK3122	RT-141	ECG297	2SC1166	WEP914	
Q12	2SC1173	172-026-9-001	GE-215	PTC186	2SC1173	RE 201	SK3197	RT-160	ECG236	2SC1173	WEP840	
Q13	2SC1678	172-028-9-001	GE-322	PTC186		RE 203	SK3197	RT-146	ECG235	2SC1306		
Q14	2SC1173	172-026-9-001	GE-268	PTC123*	2SC1213	RE 17*	SK3024*	RT-134	ECG289		WEP910	121-1014
Q15	2SC1307	176-044-9-001	GE-216	PTC186		RE 201	SK3197	RT-158	ECG236		WEP840	
Q16	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q17	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q18	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q19	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q20	2SC732BL	176-056-9-006	GE-62	PTC139*	2SC732	RE 192	SK3122	RT-302	ECG199	2SC732	WEP66	ZEN-128
Q21	2SC732		GE-62	PTC139*	2SC732	RE 192	SK3122	RT-302	ECG199	2SC732	WEP66	ZEN-128
Q22	2SA495-0	177-019-9-003	GE-221*	PTC103*	2SA495	RE 26*	SK3114	RT-303	ECG159*	2SA495	WEP495	ZEN-106
	2SA495		GE-221*	PTC103*	2SA495	RE 26*	SK3114	RT-303	ECG159*	2SA495	WEP495	ZEN-106
Q23	2SA495-0	177-019-9-003	GE-221*	PTC103*	2SA495	RE 26*	SK3114	RT-303	ECG159*	2SA495	WEP495	ZEN-106
	2SA495		GE-221*	PTC103*	2SA495	RE 26*	SK3114	RT-303	ECG159*	2SA495	WEP495	ZEN-106
Q24	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q25	2SA950Y	177-032-9-001	GE-244	PTC144	HEPS3032	RE 18	SK3025	RT-115	ECG129		WEP242	
	2SA950		GE-244	PTC144	HEPS3032	RE 18	SK3025	RT-115	ECG129		WEP242	
Q26	2SA950Y	177-032-9-001	GE-244	PTC144	HEPS3032	RE 18	SK3025	RT-115	ECG129		WEP242	
	2SA950		GE-244	PTC144	HEPS3032	RE 18	SK3025	RT-115	ECG129		WEP242	
Q27	2SB435Y	175-010-9-001	GE-69	PTC162		RE 22	SK3083	RT-155	ECG153			
	2SB435		GE-69	PTC162		RE 22	SK3083	RT-155	ECG153			
Q28	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q301	2SK19-GR	182-029-9-001	GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP920	ZEN-123
	2SK19		GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP920	ZEN-123
Q302	2SC19GR	182-029-9-001	GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP920	ZEN-123
	2SK19		GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP920	ZEN-123
Q303	2SC19GR	182-029-9-001	GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP920	ZEN-123
	2SK19		GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP920	ZEN-123
Q304	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q305	2SC387A	176-044-9-003	GE-214	PTC132*	HEPS0020*	RE 10*	SK3039*	RT-134	ECG108*	2SC717*	WEP56*	ZEN-104
	2SC387		GE-214	PTC132*	HEPS0020*	RE 10*	SK3039*	RT-134	ECG108*	2SC717*	WEP56*	ZEN-104
Q306	2SA495-0	177-019-9-003	GE-221*	PTC103*	2SA495	RE 26*	SK3114	RT-303	ECG159*	2SA495	WEP495	ZEN-106
	2SA495		GE-221*	PTC103*	2SA495	RE 26*	SK3114	RT-303	ECG159*	2SA495	WEP495	ZEN-106
Q307	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q308	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q309	2SC387A	176-044-9-003	GE-214	PTC132*	HEPS0020*	RE 10*	SK3039*	RT-134	ECG108*	2SC717*	WEP56*	ZEN-104
	2SC387		GE-214	PTC132*	HEPS0020*	RE 10*	SK3039*	RT-134	ECG108*	2SC717*	WEP56*	ZEN-104
Q310	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q311	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q312	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q314	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q315	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q316	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q317	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q318	2SD235-0	172-031-9-003	GE-66	PTC121*	2SD235	RE 21	SK3054	RT-197	ECG152	2SD235	WEP745	
	2SD235T		GE-66	PTC121*	2SD235	RE 21	SK3054	RT-197	ECG152	2SD235	WEP745	
	2SD235		GE-66	PTC121*	2SD235	RE 21	SK3054	RT-197	ECG152	2SD235	WEP745	
Q501	2SC372Y	176-042-9-003	GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC372		GE-61*	PTC121*	2SC372	RE 13*	SK3122	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q502	2SC235Y		GE-66		2SD235	RE 21	SK3054	RT-197	ECG152	2SD235	WEP745	
Q503	2SC735-0		GE-210*	PTC123*	2SC735	RE 13*	SK3122	RT-308*	ECG289	2SC735	WEP735A	ZEN-127
	2SC735		GE-210*	PTC123*	2SC735	RE 13*	SK3122	RT-308*	ECG289	2SC735	WEP735A	ZEN-127

* Lead configuration may vary from original.

(6) Matched pair.

(7) Two required - select matched pair.

(12) 25 Watts @ 8 Amps.

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
C16	.33 35V			TDC334M050EL	QDT1-14	SD50-R339
C30	33 16V	022-074-9-005	PC30-25	VTT33D25	QV1-63	EV-1325
C33	3.3 50V	027-076-9-002	PC5-50	VTT3R3A50	QV1-25	EV-1618
C35	3.3 50V	027-076-9-002	PC5-50	VTT3R3A50	QV1-25	EV-1618
C36	10 16V	022-076-9-003	PC10-25	VTT10B25	QV1-41	EV-1222
C41	1 50V	022-076-9-001	PC1-50	VTT1A50	QV1-11	EV-1615
C46	1 50V	022-076-9-001	PC1-50	VTT1A50	QV1-11	EV-1615
C47	10 16V	022-076-9-003	PC10-25	VTT10B25	QV1-41	EV-1222
C53	10 16V	022-076-9-003	PC10-25	VTT10B25	QV1-41	EV-1222
C68	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C77	10 16V	022-076-9-003	PC10-25	VTT10B25	QV1-41	EV-1222
C83b	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C90	1 50V	022-076-9-001	PC1-50	VTT1A50	QV1-11	EV-1615
C92	1 50V	022-076-9-001	PC1-50	VTT1A50	QV1-11	EV-1615
C93	3.3 50V	027-076-9-002	PC5-50	VTT3R3A50	QV1-25	EV-1618
C94	10 16V		WBR10-25	TT15X10	QE1-177	TVA-1145
C98	33 16V		PC30-25	VTT33D25	QV1-63	EV-1325
C104	3.3 16V	022-074-9-005		TDC335M035FL		SD35-3R39
C108	10 16V	027-020-9-001	PC10-25	VTT10B25	QV1-41	EV-1222
C109	33 16V	022-076-9-003	PC30-25	VTT33D25	QV1-63	EV-1325
C113	1000 25V	022-074-9-005	WBR1000-25	VTT1000M25	QV1-185	EV-1360
C114	1 50V	022-150-9-002	PC1-50	VTT1A50	QV1-11	EV-1615
C117	10 16V	022-076-9-001	PC10-25	VTT10B25	QV1-41	EV-1222
C122	10 16V	022-076-9-003	PC10-25	VTT10B25	QV1-41	EV-1222
C123	100 10V	022-074-9-010	PC100-10	VTT100E10	QV1-93	EV-1130
C124	1000 16V	022-150-9-003	PC1000-16	VTT1000L16	QV1-183	EV-1260
C125	1000 16V	022-150-9-003	PC1000-16	VTT1000L16	QV1-183	EV-1260
C127	1 50V	022-076-9-001	PC1-50	VTT1A50	QV1-11	EV-1615
C130	10 16V	022-076-9-003	PC10-25	VTT10B25	QV1-41	EV-1222
C152	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C165	10 16V	022-076-9-003	PC10-25	VTT10B25	QV1-41	EV-1222
C200	1 50V	022-076-9-001	PC1-50	VTT1A50	QV1-11	EV-1615
C201	100 16V		PC100-16	VTT100F16	QV1-95	EV-1230
C301	10 16V	022-076-9-003	PC10-25	VTT10B25	QV1-41	EV-1222
C306	10					
C338	10 16V	022-076-9-003	PC10-25	VTT10B25	QV1-41	EV-1222
C339a	3.3 16V	027-020-9-001		TDC335M035FL		SD35-3R39
C339b	3.3 16V	027-020-9-001		TDC335M035FL		SD35-3R39
C343	100 10V	022-074-9-010	PC100-10	VTT100E10	QV1-93	EV-1130
C345	.22 35V			TDC224M050EL	QDT1-10	SD50-R229
C350	220 10V		PC250-10	VTT220F10	QV1-115	EV-1140
C357	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C361	10 16V	022-076-9-003	PC10-25	VTT10B25	QV1-41	EV-1222
C365	.22					
C501	100 16V		PC100-16	VTT100F16	QV1-95	EV-1230
C502	4700 25V		AA0140A	FP060.6A		TVL-1247
C510	2200 25V		WBR2000-25	TC2520A	QE1-645	TVA-1213.5

COBRA MODEL 135XL

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	.0022				GP222		10TS-D22
C2	470		DD-471	GP470	GP347		10TS-T47
C3	470		DD-471	GP470	GP347		10TS-T47
C4	.0022				GP222		10TS-D22
C5	100		DTZ-100	NP0100	CN0310		10TCC-T10
C6	220 5%		DTZ-220				10TCC-T22
C7	330 2%		DD-331	GP330	GP333		10TS-T33
C8	220 5%		DTZ-220				10TCC-T22
C9	10		DTZ-10	NP010	CN0410		10TCC-Q10
C10	.0022				GP222		10TS-D22
C11	.033	025-060-9-003				QFT2-149	1FT-S33
C12	22 N220	020-157-9-002			*		10TCR-Q22
C13	22		DTZ-22	NP022	CN0422		10TCC-Q22
C14	33		DTZ-33	NP033	CN0433		10TCC-Q33
C15	.0022				GP222		10TS-D22
C17	.0022				GP222		10TS-D22
C18	1				CN0510		10TCC-V10
C19	.0022				GP222		10TS-D22
C20	.0022				GP222		10TS-D22
C21	470		DD-471	GP470	GP347		10TS-T47
C22	.0047		DD-472	GP4700	GP247		5GA-D47
C23	.0047		DD-472	GP4700	GP247		5GA-D47
C24	.0047		DD-472	GP4700	GP247		5GA-D47
C25	.01	025-060-9-001				QFT2-91	1FT-S10
C26	.01	025-060-9-001				QFT2-91	1FT-S10
C27	.0047		DD-472	GP4700	GP247		5GA-D47
C28	.0047		DD-472	GP4700	GP247		5GA-D47
C29	.0047		DD-472	GP4700	GP247		5GA-D47
C31	.01 50V	025-060-9-001				QFT2-91	1FT-S10
C32	.0047		DD-472	GP4700	GP247		5GA-D47
C34	.01	025-060-9-001				QFT2-91	1FT-S10
C37	.0047		DD-472	GP4700	GP247		5GA-D47
C39	22		DTZ-22	NP022	CN0422		10TCC-Q22
C40	.1 25V	033-017-9-001					
C43	22		DTZ-22	NP022	CN0422		10TCC-Q22

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
C44	3 NPO		DTZ-3R3	NP03P3	CN0533		10TCC-V33
C45	5		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C48	.01 50V	025-060-9-001				QFT2-91	1FT-S10
C49	.01 50V	025-060-9-001				QFT2-91	1FT-S10
C50	.0022				GP222		10TS-D22
C51	.0047		DD-472	GP4700	GP247		5GA-D47
C52	.01	025-060-9-001				QFT2-91	1FT-S10
C54	.0022		DD-472	GP4700	GP222		10TS-D22
C55	.0047				GP247		5GA-D47
C56	20	028-026-9-001			*		10TCT-Q10
C57	10 N470	020-170-9-001			CN0515		10TCC-V15
C58	3		DTZ-1R5	NP01P5	GP333		10TS-T33
C59	470		DD-331	GP330	GP247		5GA-D47
C60	.0047		DD-472	GP4700	GP247		5GA-D47
C61	.0047		DD-472	GP4700	GP247		5GA-D47
C62	2		DTZ-2R2				
C63	1				CN0510		10TCC-V10
C64	3						
C65	470		DD-471	GP470	GP347		10TS-T47
C66	.0047		DD-472	GP4700	GP247		5GA-D47
C67	.0047		DD-472	GP4700	GP247		5GA-D47
C69	100		DTZ-100	NP0100	CN0310		10TCC-T10
C70	.0047		DD-472	GP4700	GP247		5GA-D47
C71	.033 50V	025-060-9-003				QFT2-149	1FT-S33
C72	330		DD-331	GP330	GP333		10TS-T33
C73	.0047		DD-472	GP4700	GP247		5GA-D47
C74	.033	025-060-9-003				QFT2-91	1FT-S33
C75	.0047		DD-472	GP4700	GP247		5GA-D47
C76	100		DTZ-100	NP0100	CN0310		10TCC-T10
C78	.0047		DD-472	GP4700	GP247		5GA-D47
C79	330 5%		DD-331	GP330	GP333		10TS-T33
C80	.033				M192P3339R8		192P3339R8
C81	.0047		DD-472	GP4700	GP247		5GA-D47
C82	20	028-026-9-001			*		10TCR-Q25
C83	22 N220	020-157-9-002			CN0315		10TCC-T15
C84	150		DTZ-150		CN0310		10TCC-T10
C85	100		DTZ-100	NP0100	CN0410		10TCC-Q10
C86	10		DTZ-10	NP010	GP247		5GA-D47
C87	.0047		DD-472	GP4700	GP222		10TS-D22
C88	.0022					QFT2-149	1FT-S33
C89	.033 50V	025-060-9-003					5GA-D47
C91	.0047		DD-472	GP4700	GP247		5GA-D47
C95	.0047		DD-472	GP4700	GP247		5GA-D47
C96	.0047		DD-472	GP4700	GP247		5GA-D47
C97	.0047 10%		DD-472	GP4700	GP247		5GA-D47
C99	.0047		DD-472	GP4700	GP247		5GA-D47
C100	.01 50V	025-060-9-001				QFT2-91	1FT-S10
C101	.01 50V	025-060-9-001				QFT2-91	1FT-S10
C102	.022 50V	025-071-9-002				QFT2-127	1FT-S22
C103	.0047		DD-472	GP4700	GP247		5GA-D47
C105	100		DTZ-100	NP0100	CN0310		10TCC-T10
C106	.1		CK-104		MAG5001		
C107	.1		CK-104		MAG5001		
C110	100		DTZ-100	NP0100	CN0310		10TCC-T10
C111	.1		CK-104		MAG5001		
C112	.0047		DD-472	GP4700	GP247		5GA-D47
C115	.1		CK-104		MAG5001		
C116	.0047		DD-472	GP4700	GP247		5GA-D47
C118	.01 50V	025-060-9-001				QFT2-91	1FT-S10
C119	470		DD-471	GP470	GP347		10TS-T47
C120	.0047		DD-472	GP4700	GP247		5GA-D47
C121	.033 50V	025-060-9-003				QFT2-149	1FT-S33
C126	.0047		DD-472	GP4700	GP247		5GA-D47
C131a	.0047		DD-472	GP4700	GP247		5GA-D47
C131b	.0047		DD-472	GP4700	GP247		5GA-D47
C132	.0047		DD-472	GP4700	GP247		5GA-D47
C133	.0047		DD-472	GP4700	GP247		5GA-D47
C135	.0047		DD-472	GP4700	GP247		5GA-D47
C136	.0047		DD-472	GP4700	GP247		5GA-D47
C137	.0047		DD-472	GP4700	GP247		5GA-D47
C138	.0047		DD-472	GP4700	GP247		5GA-D47
C139	.0047		DD-472	GP4700	GP247		5GA-D47
C140	.0047		DD-472	GP4700	GP247		5GA-D47
C141	100		DTZ-100	NP0100	CN0310		10TCC-T10
C142	100		DTZ-100	NP0100	CN0310		10TCC-T10
C143	.0047		DD-472	GP4700	GP247		5GA-D47
C144	.0047	020-088-9-008					
C145	.0047	020-088-9-008					
C147	.0047	020-088-9-008					
C148	.0047 10%		DD-472	GP4700	GP247		5GA-D47
C149	.0047 10%		DD-472	GP4700	GP247		5GA-D47
C151	.0022				GP222		10TS-D22
C153	.0047		DD-472	GP4700	GP247		5GA-D47
C154	.0047		DD-472	GP4700	GP247		5GA-D47
C155	.033		UK50-333		MAG50133		
C157	.033 50V	025-060-9-003					
C158	.0047		DD-472	GP4700	GP247		5GA-D47
C159	.0047		DD-472	GP4700	GP247		5GA-D47
C160	.0047		DD-472	GP4700	GP247		5GA-D47
C163	.0047		DD-472	GP4700	GP247		5GA-D47
C164	.033						
C166	.033 50V	025-060-9-003				QFT2-149	1FT-S33
C167	.0047		DD-472	GP4700	GP247	QFT2-149	1FT-S33
C168	.01	020-088-9-008	UK50-103		MAG5011		5GA-D47

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.	CORNEILL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE Q-LINE	PART No. GENERAL LINE
C169	.0047		DD-472	GP4700	GP247		5GA-D47
C173	.0047	020-088-9-008	DD-472	GP4700	GP247	QFT2-63	5GA-D47
C174	.0047						1FT-D47
C175	.0047	020-088-9-008					
C176	.0047				MAG50133		
C177	.033		UK50-333				
C180	.0047	020-088-9-008					5GA-D47
C181	.0047 10%		DD-472	GP4700	GP247		
C182	.470	020-097-9-022					
C185	.0047		DD-472	GP4700	GP247		5GA-D47
C186	.0047		DD-472	GP4700	GP247		5GA-D47
C187	.0047		DD-472	GP4700	GP247		5GA-D47
C195	.0047	020-088-9-008					
C199	.0047		DD-472	GP4700	GP247		5GA-D47
C302	15 N220				*		10TCR-Q15
C303	10 N750		DTN-10	N10	CN7410		10TCU-Q10
C304	22 N750		DTN-22	N22	CN7422		10TCU-Q22
C305	2		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C307	1				CN0510		10TCC-V10
C308	10 N220				*		10TCR-Q10
C309	33 N750		DTN-33	N33	CN7433		10TCU-Q33
C310	100 N750		DTN-100	N100	CN7310		10TCU-T10
C311	10		DTZ-10	NP010	CN0410		10TCC-Q10
C314	.033	025-060-9-003				QFT2-149	1FT-S33
C315	.0047	020-088-9-008					
C316	.0047		DD-472	GP4700	GP247		5GA-D47
C318	.47 N220	020-088-9-002			*		10TCR-Q47
C319	.0047		DD-472	GP4700	GP247		5GA-D47
C320	.47 N220	020-088-9-002			*		10TCR-Q47
C321	.47 N220	020-088-9-002			*		10TCR-Q47
C322	10		DTZ-10	NP010	CN0410		10TCC-Q10
C323	.0047		DD-472	GP4700	GP247		5GA-D47
C324	.47		DTZ-47	NP047	CN0447		10TCC-Q47
C325	.0022				GP222		10TS-D22
C326	220		DTZ-220			QFT2-215	10TCC-T22
C327	.1 50V	025-060-9-004					1FT-P10
C328	22		DTZ-22	NP022	CN0422		10TCC-Q22
C329	10		DTZ-10	NP010	CN0410		10TCC-Q10
C330	.0047		DD-472	GP4700	GP247		5GA-D47
C331	2		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C332	.0022				GP222		10TS-D22
C333	.0047		DD-472	GP4700	GP247		5GA-D47
C334	220		DTZ-220				10TCC-T22
C335	.47 N220	020-088-9-002			*		10TCR-Q47
C336	.47 N220	020-088-9-002			*		10TCR-Q47
C337	.033	025-060-9-003				QFT2-149	1FT-S33
C340	10		DTZ-10	NP010	CN0410		10TCC-Q10
C344a	.033	025-060-9-003				QFT2-149	1FT-S33
C344b	.033 50V	025-060-9-003					
C346	.001	025-112-9-002				QFT2-1	1FT-D10
C349	.470		DD-471	GP470	GP347		10TS-T47
C351	22		DTZ-22	NP022	CN0422		10TCC-Q22
C353	.033 50V	025-060-9-003				QFT2-149	1FT-S33
C354							
C359	.0047		DD-472	GP4700	GP247		5GA-D47
C360	.0047		DD-472	GP4700	GP247		5GA-D47
C363	.0022				GP222		10TS-D22
C366	.470		DD-471	GP470	GP347		10TS-T47
C367	.470		DD-471	GP470	GP347		10TS-T47
C368	.470		DD-471	GP470	GP347		10TS-T47
C503	.0047		DD-472	GP4700	GP247		5GA-D47
C504	.0047		DD-472	GP4700	GP247		5GA-D47
C505	.001		DD-102		GP210		10TS-D10
C506	.001		DD-102		GP210		10TS-D10
C507	.0047		DD-472	GP4700	GP247		5GA-D47
C508	.0047		DD-472	GP4700	GP247		5GA-D47

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

COBRA MODEL 135XLR

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA				
			MFR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
R8	SWR	20K					U260R103B
R9	RF Meter	10K	008-206-9-008				U260R102B
R10	S Meter	1000	008-206-9-010				U260R103B
R12	RF Gain	10K	008-206-9-008				U260R103B
R49	Squelch Range	10K	008-206-9-008				
R51	Squelch	20K	008-300-9-002				U260R502B
R51	Carrier Balance	5000	008-206-9-005				
R72	SSB Bias	100	008-206-9-004				
R86	SSB Bias	100	008-206-9-004				
R89	SSB Bias	5000	008-300-9-004				
R90	RF Gain	50K	(18)				
R143	Dynamike	100K	002-104-5-104				U260R105B
R93	MOD Meter	50K	008-300-9-003				
R120	Volume	20K	008-206-9-009				U260R253B
R130	SSB ALC	20K					U260R252B
R134	AM ALC	2000					U260R103B
R317	26.965MHz	10K	008-206-9-008				U260R102B
R322	34.9885MHz	1000	008-206-9-010				U260R504B
R324	34.9875MHz	30K	008-206-9-002				
R326	Voice Lock	20K	008-300-9-002				U260R504B
R328	34.985MHz	30K	008-206-9-002				U260R102B
R502	Voltage	1000					

(18) Includes R90 and R143.

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.
R46	2000 Cold NTC		004-099-9-002	R372	Resistor Network(1)		013-027-9-007

(1) Consist of seven 100K 1/4 watt resistors.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	Pi Filter	044-025-9-005			
L2	Pi Filter	044-025-9-005			
L3	Antenna Match	041-096-9-001			
L4	RF Choke	042-022-9-002			
L5	Xmt RF	041-096-9-002			
L6	RF Choke	042-027-9-001			
L7	Xmt Driver	041-096-9-003			
L8	RF Choke	042-027-9-001			
L9	RF Choke	042-009-9-003			
L11	Pi Filter	044-025-9-005			
L13	RF Choke	042-027-9-002			
L14	RF Choke	042-027-9-002			
L301	Input Buffer (17.0555MHz)	041-096-9-004	25095		
L302	Output Comparator Phase (34.985MHz)	041-096-9-005	25096		
L303	OSC (17.0555MHz)	041-096-9-006	25097		
L304	Xmt Mixer	041-084-9-003	25090		
L501	RF Choke				
L502	RF Choke				
T1	Rec Antenna (27MHz)	066-028-9-001	25099		
T2	RF Antenna (27MHz)	066-013-9-002	L1641	CBS815-TC	
T3	RF Antenna (27MHz)	066-013-9-002	L1641	CBS815-TC	
T4	IF (7.8MHz)	066-028-9-002	25091		
T5	IF (7.8MHz)	066-028-9-002	29051		
T6	IF (7.8MHz)	066-029-9-001	L1839		
T7	Input Mixer (7.8MHz)	066-015-9-001	L1786	CBS415-7TC	
T8	Input Mixer (7.8MHz)	066-015-9-002	L1787	CBS412-7TC	
T9	Xmt Mixer (27MHz)	066-015-9-003	L1785	CBS413-7TC	
T10	Xmt Mixer (27MHz)	066-013-9-002	L1641	CBS816-TC	
T11	Xmt Mixer (27MHz)	066-013-9-002	L1641	CBS815-TC	
T12	RF Amp (27MHz)	066-013-9-002	L1641	CBS815-TC	
T301	Mixer (18.507MHz)	066-028-9-003	25093		
T302	Input Multiplier (18.507MHz)	066-028-9-003	25093		
T303	Output Multiplier (18.507MHz)	066-028-9-004	25094		

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.	
L10	2.45A	.158	1.26mH	042-022-9-003 5015(1)	TR573		(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.	
T501	120V AC @ 510mA AC	14.50V AC @ 2.45A DC	21007(1)			(1) Number on Unit

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T13	8	1 8 2 6.12	STA-0105(1)			(1) Number on Unit

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	2" x 6" PM 16 ohms	580-012-9-001	25A07Z16	

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	3A Quick Acting	191-251-9-003		AGC-3	HDJ	312003	150145	FG3-2
F501	3A Quick Acting	191-251-9-003		AGC-3	HKD	312003	342038	FG3-2
F502	1A Quick Acting	191-251-9-003		AGC-1		312001		FG1-2

COBRA MODEL 135XLR

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
MK1	562-003-9-001	18-032	18-034	18-010	18-092	2	1	3	NC	NC	4

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CD316	LED	158-013-9-002	TLR-312
CD317	LED	158-013-9-002	TLR-312
J1	Jack	772-002-9-001	Antenna
J2	Jack	773-057-9-001	Mic
J3	Jack	773-084-9-001	PA
J4	Jack	773-084-9-001	Ext. Spk.
J505	Jack		AC/DC
K1	Relay	441-010-9-001	Xmt/Rec
K2	Relay	441-020-9-001	Xmt/Rec
M1	Meter	320-036-9-001	RF
PL1	Lamp		Meter
PL3	Lamp		AM
PL4	Lamp		USB
PL5	Lamp		LSB
P501	Socket		AC
P502	Socket		DC
S1	Switch	080-007-9-002	REV/FWD
S3	Switch	080-007-9-002	ANL/NB ANL
S4	Switch	080-007-9-002	LSB/Am/USB (Mode)
S5	Switch	080-007-9-001	CB-PA
S301	Switch	083-213-9-001	Channel Selector
S501	Switch		Power
S502	Switch		Auto (Clock)
U1	Filter	143-007-9-001	Crystal (7.8MHz)
U501	Clock		
W1	Cord	426-019-9-001	DC
X1	Crystal	133-017-9-001	7.8025MHz
X301	Crystal	133-017-9-002	17.05625MHz
X302	Crystal	133-012-9-001	5.12MHz

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

ITEM	PART No.	ITEM	PART No.
Knob, Control	751-144-9-002	Knob, SWR	751-1449-003
Knob, RF	751-144-9-004		

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')