



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 L131

MANUFACTURER'S SPECIFICATIONS

TRANSMITTER

RF Power Output:	4.0 Watts (AM)
SSB Suppressed Carrier:	Peak Envelope Power Output 12 Watts
Modulation Capability:	100%
Spurious Attenuation:	60 dB minimum
Output Impedance:	50 ohm
Filter Circuit:	Crystal Lattice 7.8 MHz filter
Carrier Suppression:	45 dB
Unwanted Sideband Suppression:	60 dB

RECEIVER

Sensitivity:	AM: Better than 0.5 μ V for 10 dB (S+N)/N SSB: Better than 0.18 μ V for 10 dB (S+N)/N
Bandwidth:	± 2 kHz @ -6 dB
AGC:	Change in audio output less than 12 dB from 10 μ V to 0.5 volts
Squelch:	Adjustable. Threshold less than 0.5 μ V Tight more than 250 μ V
Distortion:	10% at 3.5 watts output
Image Rejection:	Better than 60 dB
IF Rejection:	Better than 60 dB @ 7.8 MHz
Adjacent Channel Rejection:	Better than 60 dB @ ± 10 kHz
IF Frequency:	AM: 7.8 MHz SSB: 7.8 MHz
Clarifier Range:	AM: ± 800 Hz SSB: ± 800 Hz
Noise Blanker:	RF parallel gate type

P.A. SYSTEM

Power Output:	3.5 watts
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Courtesy of the Manufacturer

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

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CRAIG MODEL L131

ALIGNMENT INSTRUCTIONS

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

Suggested Alignment Tools: GC ELECTRONICS:
 L3 thru L6, T1, T102 thru T104, T201 thru T206, T301, T302,
 T303, L114, L404.....9440
 L111, L108.....9300, 9302, 9304
 L106, T101.....8728, 9304, 9089
 C101, C415.....5000, 8276, 9089

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Input of frequency counter to TP8 (IC2 Pin 3).	Ch. 19 AM Clarifier Midrange	L5	Adjust for 10.0000MHz.
Input of frequency counter to TP8 (IC2 Pin 3).	Ch. 19 USB Clarifier Midrange	L6	Adjust for 9.9987MHz.
Input of oscilloscope to TP7 (Q6 Gate 2).	Ch. 19	T1	Adjust for maximum RF (45mV p-p typical). (See Figure 1.)
Input of DC meter to TP6 (Junction of R13 and R16).	Ch. 1	L3	Adjust for 3.00 volts. Check for approximately 2.00 volts on channel 40.
Input of oscilloscope to TP9 (Junction of C11 and C140).	Ch. 19	L4	Adjust for maximum RF (300mV p-p typical). (See Figure 2.)
Input of oscilloscope to TP1 (Junction of C208 and C136).	Ch. 19	T104	Adjust for maximum RF. (150mV p-p typical). (See Figure 3.)
Input of frequency counter to TP9 (Junction of C11 and C140).	Ch. 1 AM Clarifier Midrange		Check for 19.1650MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP9 (Junction of C11 and C140).	Ch. 1 LSB Clarifier Midrange		Check for 19.1625MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP9 (Junction of C11 and C140).	Ch. 1 USB Clarifier Midrange		Check for 19.1675MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP10 (IC2 Pin 2).	Ch. 1 AM Clarifier Midrange		Check for .8350MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP10 (IC2 Pin 2).	Ch. 1 LSB Clarifier Midrange		Check for .8349MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP10 (IC2 Pin 2).	Ch. 1 USB Clarifier Midrange		Check for .8299MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP4 (Q401 Emitter).	Ch. 19 USB	L404	Adjust for 7.7975MHz.
Input of frequency counter to TP4 (Q401 Emitter).	Ch. 19 LSB	C415	Adjust for 7.8025MHz.
Input of frequency counter to antenna input.	Ch. 19 AM XMT	R706	Adjust for 27.185MHz.

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. Preset controls as follows, unless otherwise noted: Clarifier Midrange, Squelch MINIMUM, NB/ANL Off.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator to TP11 (Q203 Gate 2). 7.8MHz, 1000Hz @ 30% modulation.	Ch. 19 AM LOC/DX DX	T206, T205, T204, T203	Adjust for maximum audio output.
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% modulation.	Ch. 19 AM LOC/DX DX	T202, T201	Adjust for maximum audio output. Readjust T203, T204, T205 and T206 for maximum.
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Output 1uV. Input of oscilloscope to TP12 (Q302 Gate). Inject a 100pps, 1uSec pulse width signal at antenna input.	Ch. 19 AM NB/ANL NB LOC/DX DX	T301, T302, T303	Adjust for maximum pulse amplitude. (100mV peak typical). (See Figure 4.)

CRAIG MODEL L131

RECEIVER ADJUSTMENTS

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.
Preset controls as follows, unless otherwise noted: Clarifier Midrange, Squelch MINIMUM, NB/ANL Off.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Output 1uV.	Ch. 19 AM Volume Maximum LOC/DX DX	R309	AGC Adjust for 2.00 volts rms (.5 watts) audio output.
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Output 1000uV.	Ch. 19 Volume Maximum LOC/DX LOC	R307	RF GAIN RANGE Adjust for 2.00 volts rms (.5 watts) audio output.
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Output 1000uV.	Ch. 19 AM Squelch Maximum LOC/DX DX	R315	SQUELCH RANGE Adjust so squelch just breaks.
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Output 1000uV.	Ch. 19 AM LOC/DX DX	R229	AM "S" METER Adjust for 9 on S unit scale of meter.
Output of signal generator to antenna input. 27.186MHz, no modulation. Output 1000uV.	Ch. 19 USB LOC/DX DX	R240	SSB "S" METER Adjust for 9 on S unit scale of meter.

TRANSMITTER ALIGNMENT

Connect a 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	TRANSCIVER	ADJUST	REMARKS
Input of RF wattmeter to antenna input.	Ch. 19 AM XMT	T103,T102, T101,L111, L109	Adjust for maximum RF output.
Input of RF wattmeter to antenna input.	Ch. 19 AM XMT	L106	Adjust for 4.0 watts RF output maximum.
Input of spectrum analyzer or harmonic meter to antenna input.	Ch. 19 AM XMT	C101	Adjust for MINIMUM at 54MHz (2nd harmonic).
Input of oscilloscope and output of signal generator to TP13 (Q104 Collector). 15.600MHz, no modulation.	Power Off	L114	Adjust for MINIMUM response at 15.600MHz.

TRANSMITTER ADJUSTMENTS

Connect a 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 or RF wattmeter to antenna input. No modulation input.	Ch. 19 USB XMT	R414,R401	CARRIER BALANCE Adjust for MINIMUM RF output.
Input of RF wattmeter to antenna input. Inject a two-tone 20mV audio signal at mic input.	Ch. 19 USB XMT	R130	SSB ALC Adjust for 12.0 watts PEP RF output maximum.
Input of oscilloscope or modulation meter to antenna input. Inject a 1000Hz, 20mV audio signal at mic input.	Ch. 19 AM XMT	R605	AM AMC Adjust for 100% modulation maximum. (See Figure 5.)
Input of RF wattmeter to antenna input.	Ch. 19 AM XMT	R106	RF METER At 4.0 watts RF output adjust for 4 on RFO scale of meter.

MISCELLANEOUS ADJUSTMENTS

Connect an AC VTVM or AF wattmeter across speaker voice coil.

Adjust volume control to obtain a suitable indication.

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
	Ch. 19 CB/Dim/PA DIM	R711	DIMMER Adjust for desired brilliance of channel display.

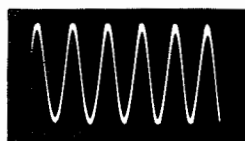


FIGURE 1

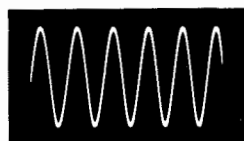


FIGURE 2

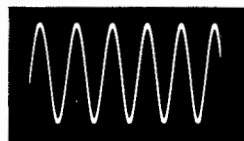


FIGURE 3

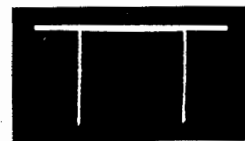


FIGURE 4

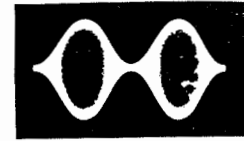
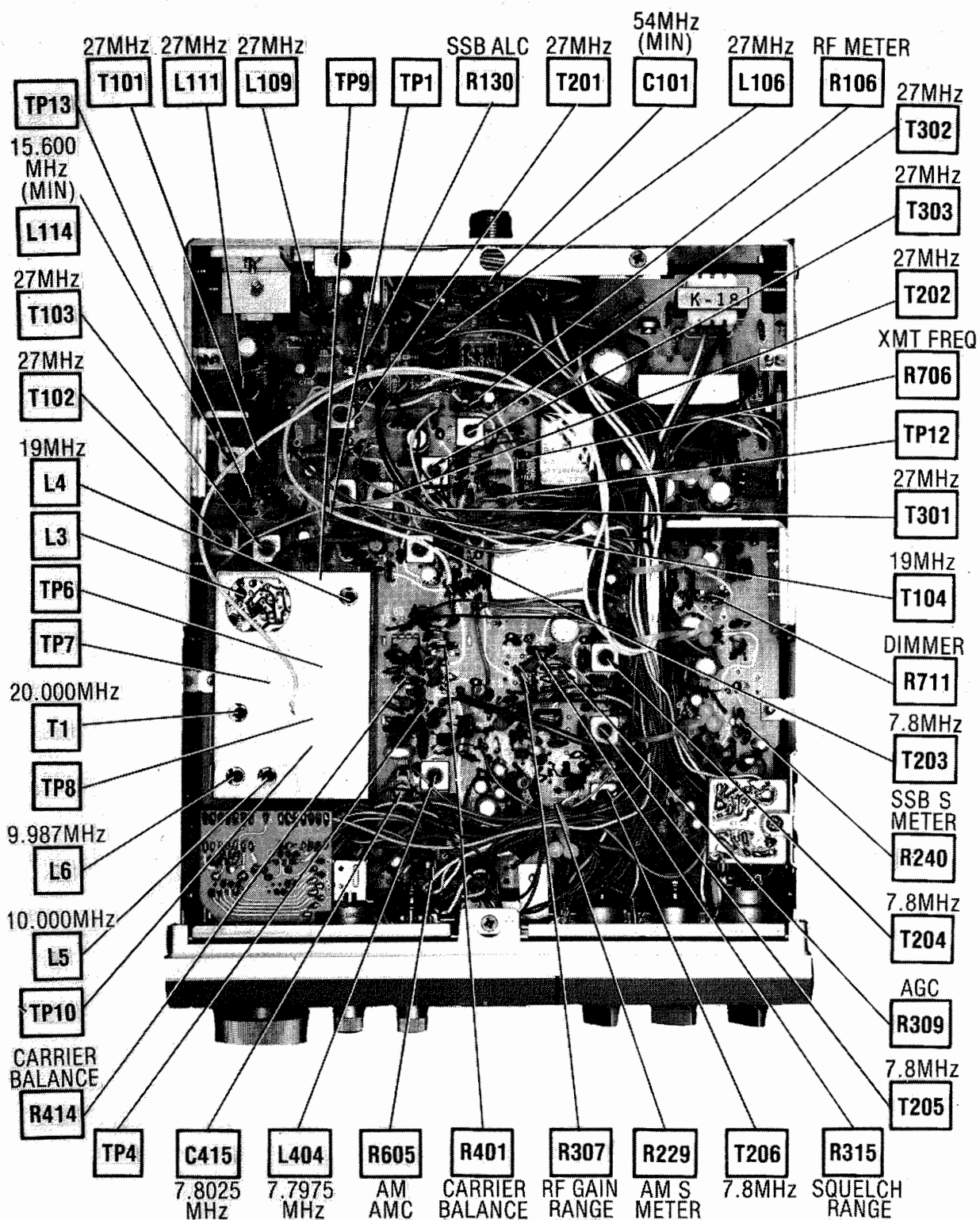


FIGURE 5

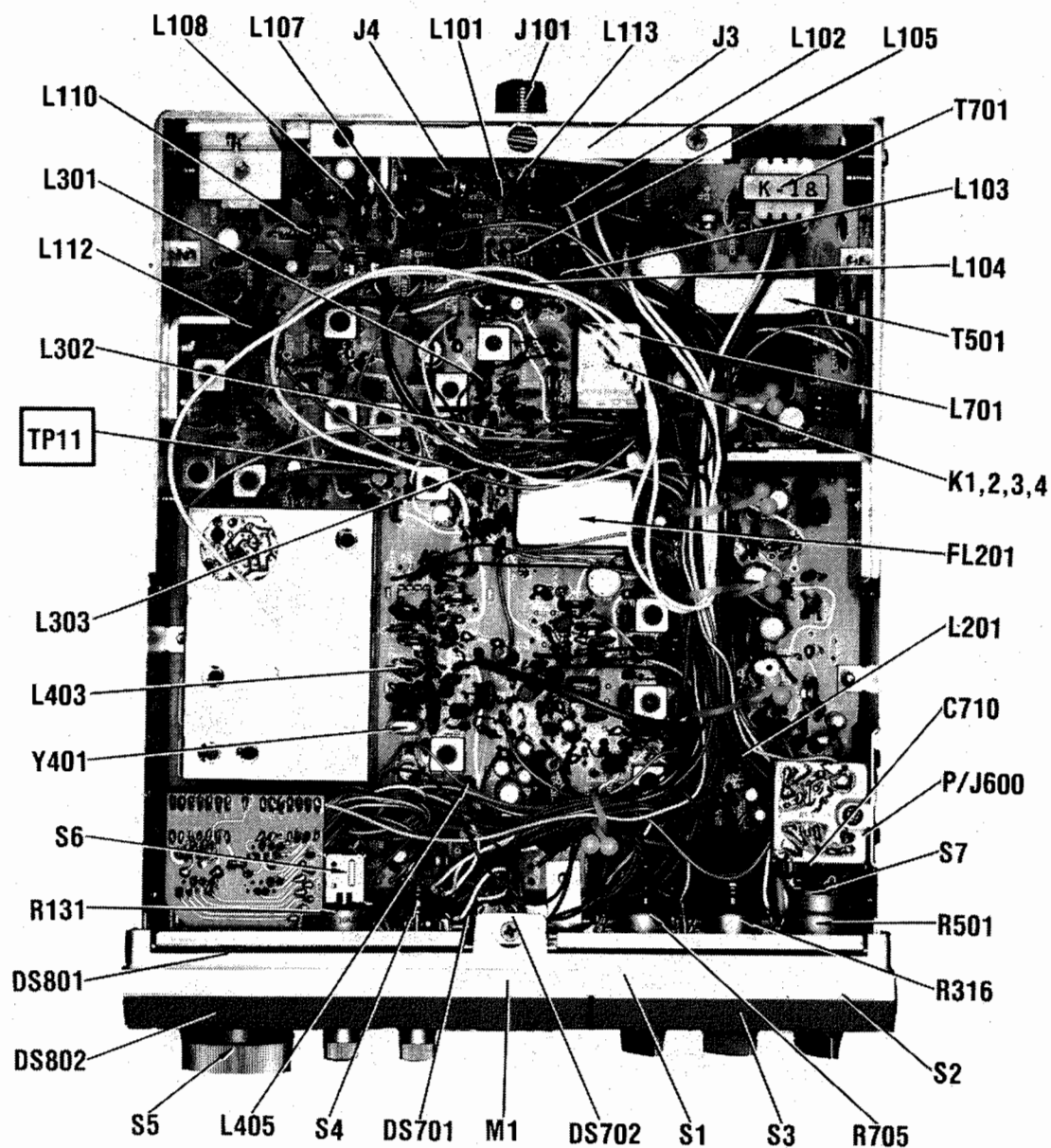
TRUTH CHART

C H A N N E L	1 = 5.00 Volts 0 = 0 Volts							AM REC SYNTH OUTPUT IN MHz AT TP9	USB REC & XMT SYNTH OUTPUT IN MHz AT TP9	LSB REC & AM XMT SYNTH OUTPUT IN MHz AT TP9	AM DIVIDER INPUT IN MHz AT TP10	USB DIVIDER INPUT IN MHz AT TP10	LSB DIVIDER INPUT IN MHz AT TP10
	IC2 PROGRAM DIVIDER												
	PINS												
	8	9	10	11	12	13	14						
1	1	0	1	0	0	1	1	19.165	19.1675	19.1625	.8350	.8299	.8349
2	1	0	1	0	0	1	0	19.175	19.1775	19.1725	.8250	.8199	.8249
3	1	0	1	0	0	0	1	19.185	19.1875	19.1825	.8150	.8099	.8149
4	1	0	0	1	1	1	1	19.205	19.2075	19.2025	.7950	.7899	.7949
5	1	0	0	1	1	1	0	19.215	19.2175	19.2125	.7850	.7799	.7849
6	1	0	0	1	1	0	1	19.225	19.2275	19.2225	.7750	.7699	.7749
7	1	0	0	1	1	0	0	19.235	19.2375	19.2325	.7650	.7599	.7649
8	1	0	0	1	0	1	0	19.255	19.2575	19.2525	.7450	.7399	.7449
9	1	0	0	1	0	0	1	19.265	19.2675	19.2625	.7350	.7299	.7349
10	1	0	0	1	0	0	0	19.275	19.2775	19.2725	.7250	.7199	.7249
11	1	0	0	0	1	1	1	19.285	19.2875	19.2825	.7150	.7099	.7149
12	1	0	0	0	1	0	1	19.305	19.3075	19.3025	.6950	.6899	.6949
13	1	0	0	0	1	0	0	19.315	19.3175	19.3125	.6850	.6799	.6849
14	1	0	0	0	0	1	1	19.325	19.3275	19.3225	.6750	.6699	.6749
15	1	0	0	0	0	1	0	19.335	19.3375	19.3325	.6650	.6599	.6649
16	1	0	0	0	0	0	0	19.355	19.3575	19.3525	.6450	.6399	.6449
17	0	1	1	1	1	1	1	19.365	19.3675	19.3625	.6350	.6299	.6349
18	0	1	1	1	1	1	0	19.375	19.3775	19.3725	.6250	.6199	.6249
19	0	1	1	1	1	0	1	19.385	19.3875	19.3825	.6150	.6099	.6149
20	0	1	1	1	0	1	1	19.405	19.4075	19.4025	.5950	.5899	.5949
21	0	1	1	1	0	1	0	19.415	19.4175	19.4125	.5850	.5799	.5849
22	0	1	1	1	0	0	1	19.425	19.4275	19.4225	.5750	.5699	.5749
23	0	1	1	0	1	1	0	19.455	19.4575	19.4525	.5450	.5399	.5449
24	0	1	1	1	0	0	0	19.435	19.4375	19.4325	.5650	.5599	.5649
25	0	1	1	0	1	1	1	19.445	19.4475	19.4425	.5550	.5499	.5549
26	0	1	1	0	1	0	1	19.465	19.4675	19.4625	.5350	.5299	.5349
27	0	1	1	0	1	0	0	19.475	19.4775	19.4725	.5250	.5199	.5249
28	0	1	1	0	0	1	1	19.485	19.4875	19.4825	.5150	.5099	.5149
29	0	1	1	0	0	1	0	19.495	19.4975	19.4925	.5050	.4999	.5049
30	0	1	1	0	0	0	1	19.505	19.5075	19.5025	.4950	.4899	.4949
31	0	1	1	0	0	0	0	19.515	19.5175	19.5125	.4850	.4799	.4849
32	0	1	0	1	1	1	1	19.525	19.5275	19.5225	.4750	.4699	.4749
33	0	1	0	1	1	1	0	19.535	19.5375	19.5325	.4650	.4599	.4649
34	0	1	0	1	1	0	1	19.545	19.5475	19.5425	.4550	.4499	.4549
35	0	1	0	1	1	0	0	19.555	19.5575	19.5525	.4450	.4399	.4449
36	0	1	0	1	0	1	1	19.565	19.5675	19.5625	.4350	.4299	.4349
37	0	1	0	1	0	1	0	19.575	19.5775	19.5725	.4250	.4199	.4249
38	0	1	0	1	0	0	1	19.585	19.5875	19.5825	.4150	.4099	.4149
39	0	1	0	1	0	0	0	19.595	19.5975	19.5925	.4050	.3999	.4049
40	0	1	0	0	1	1	1	19.605	19.6075	19.6025	.3950	.3899	.3949

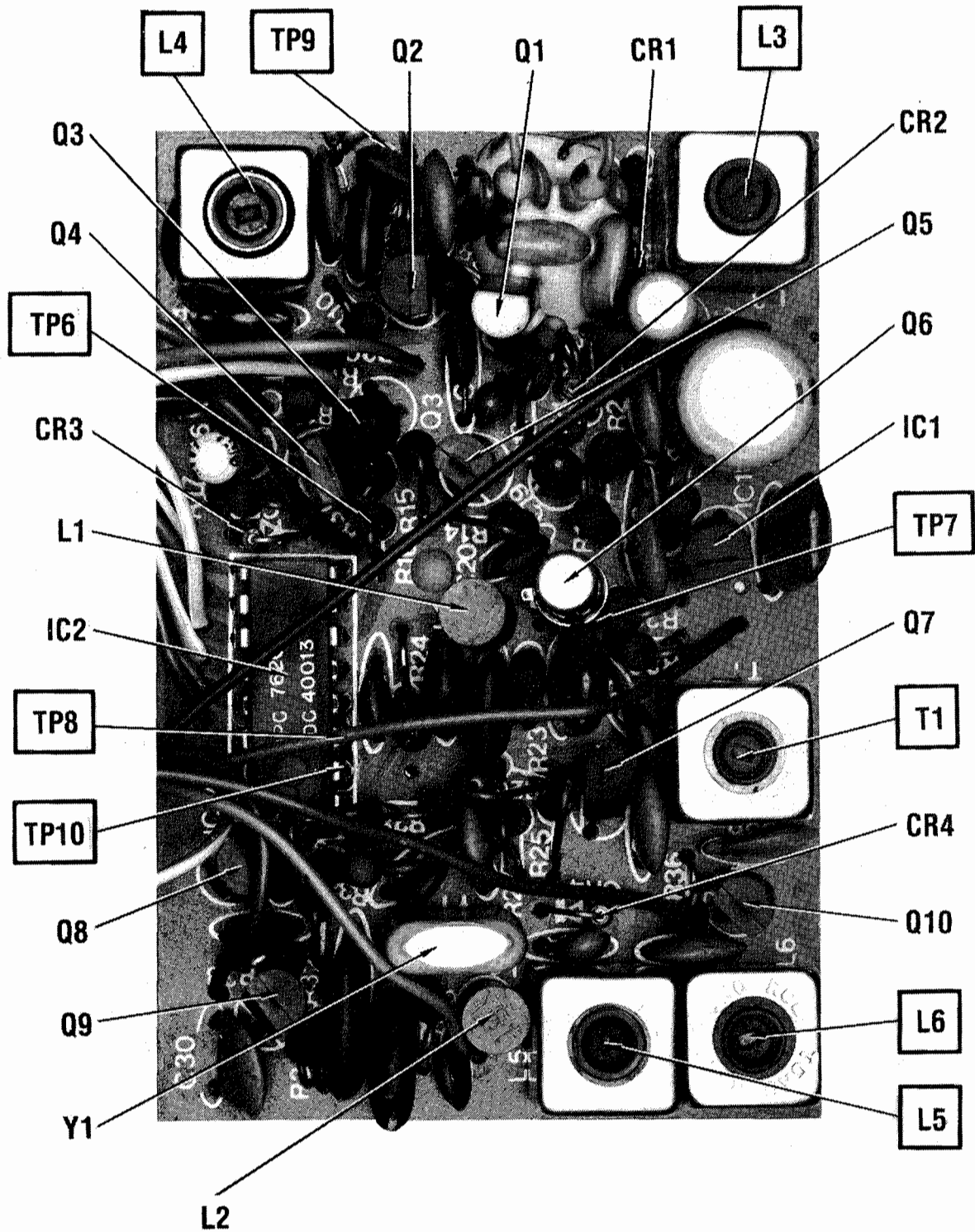
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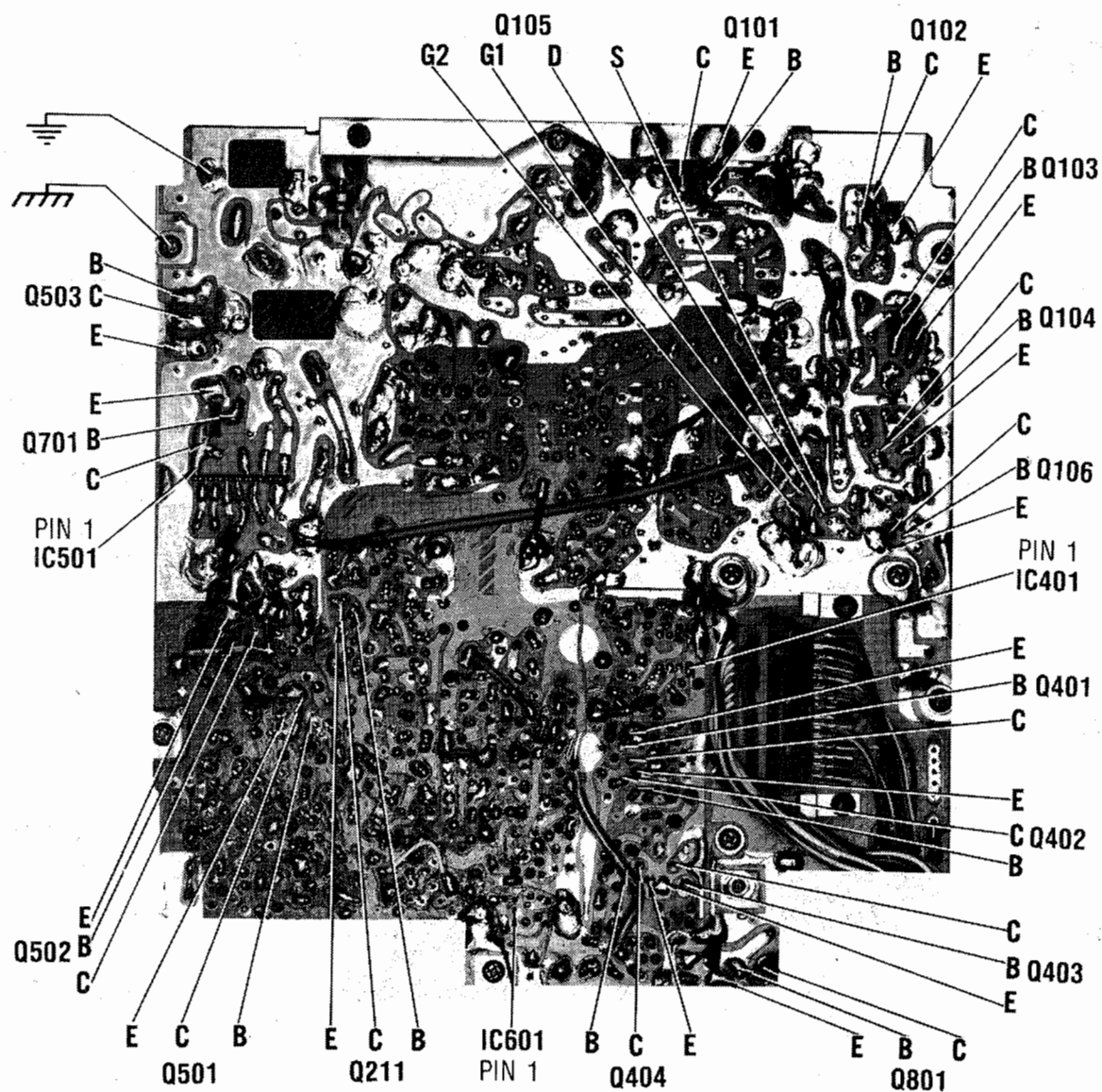
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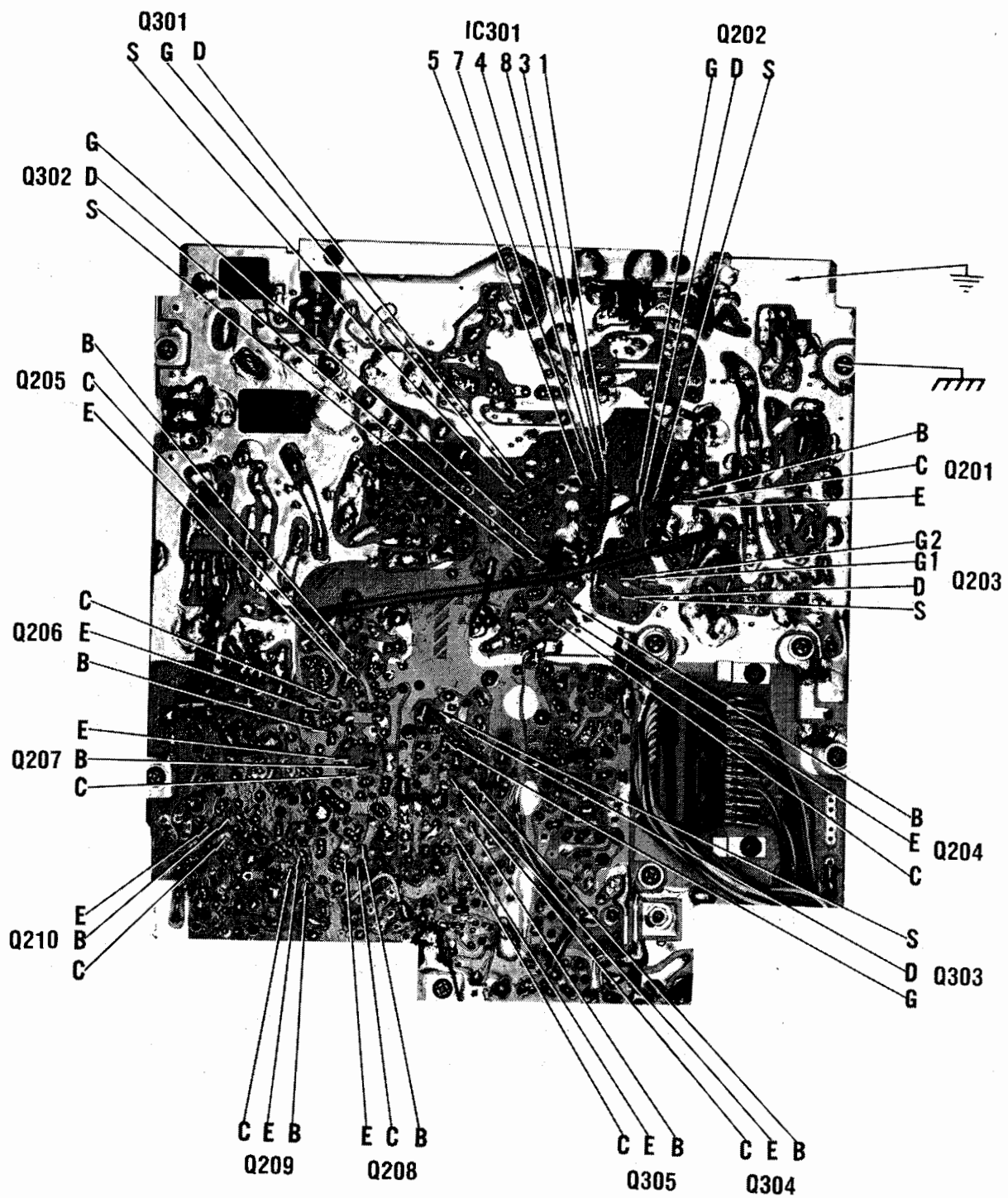
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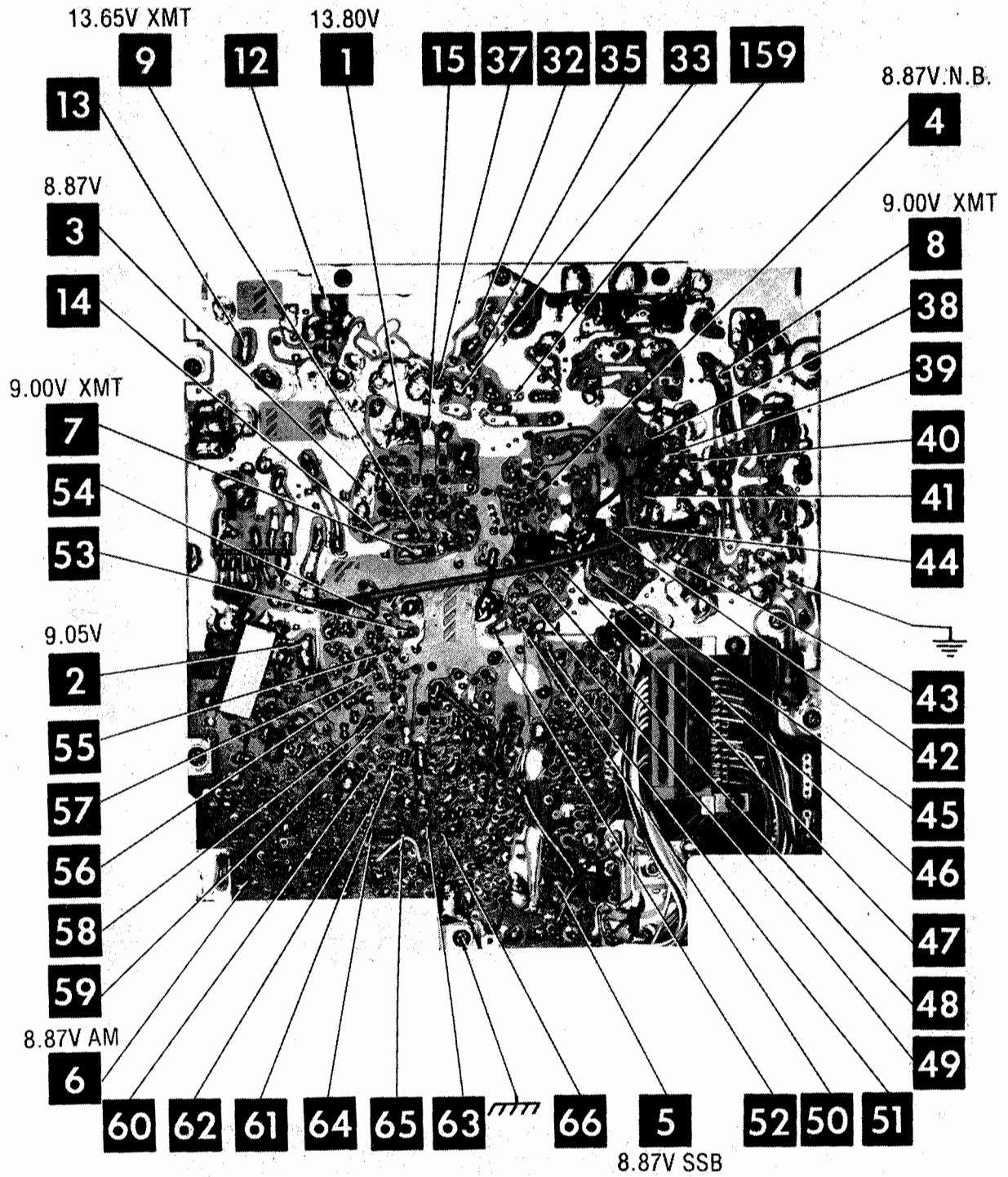
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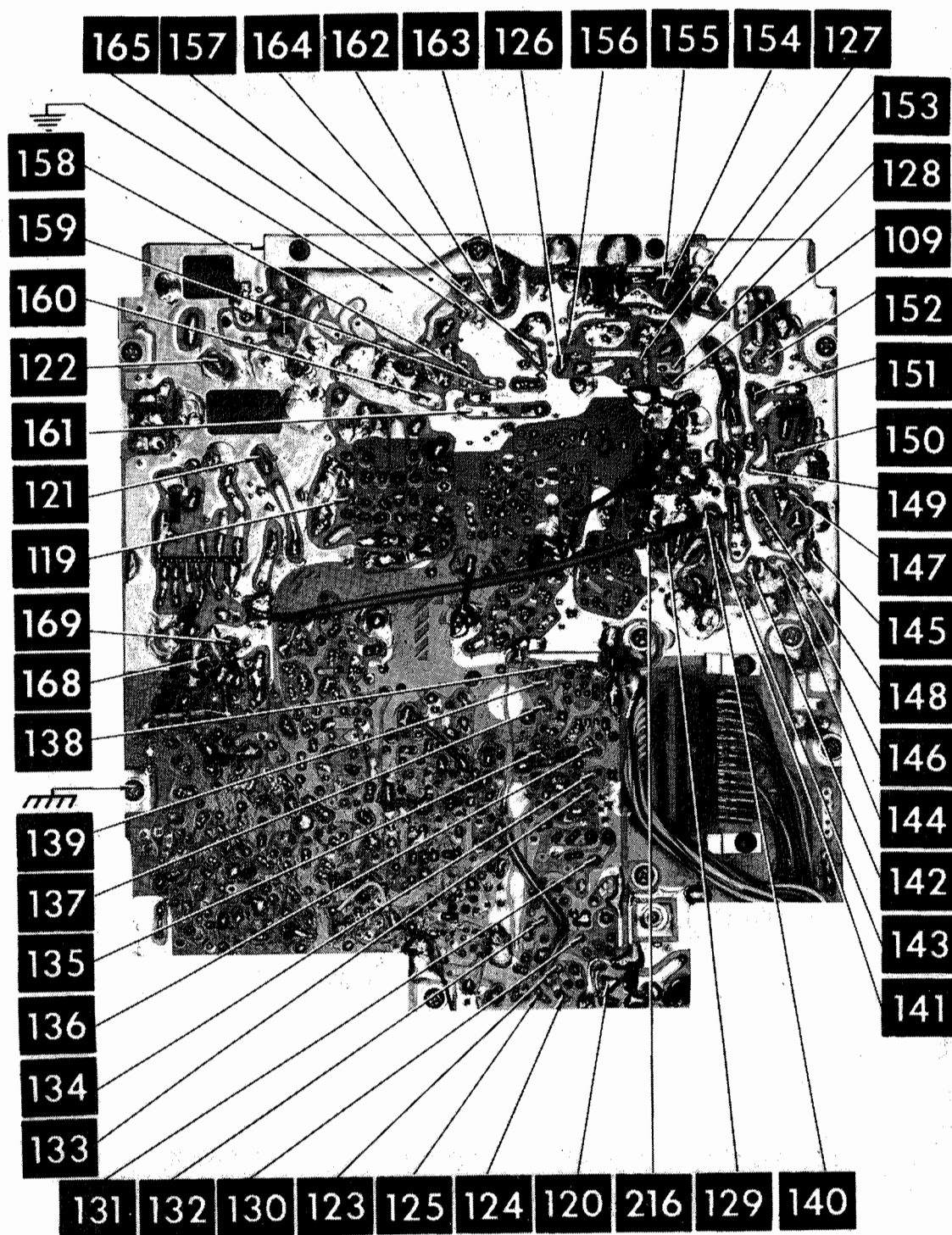
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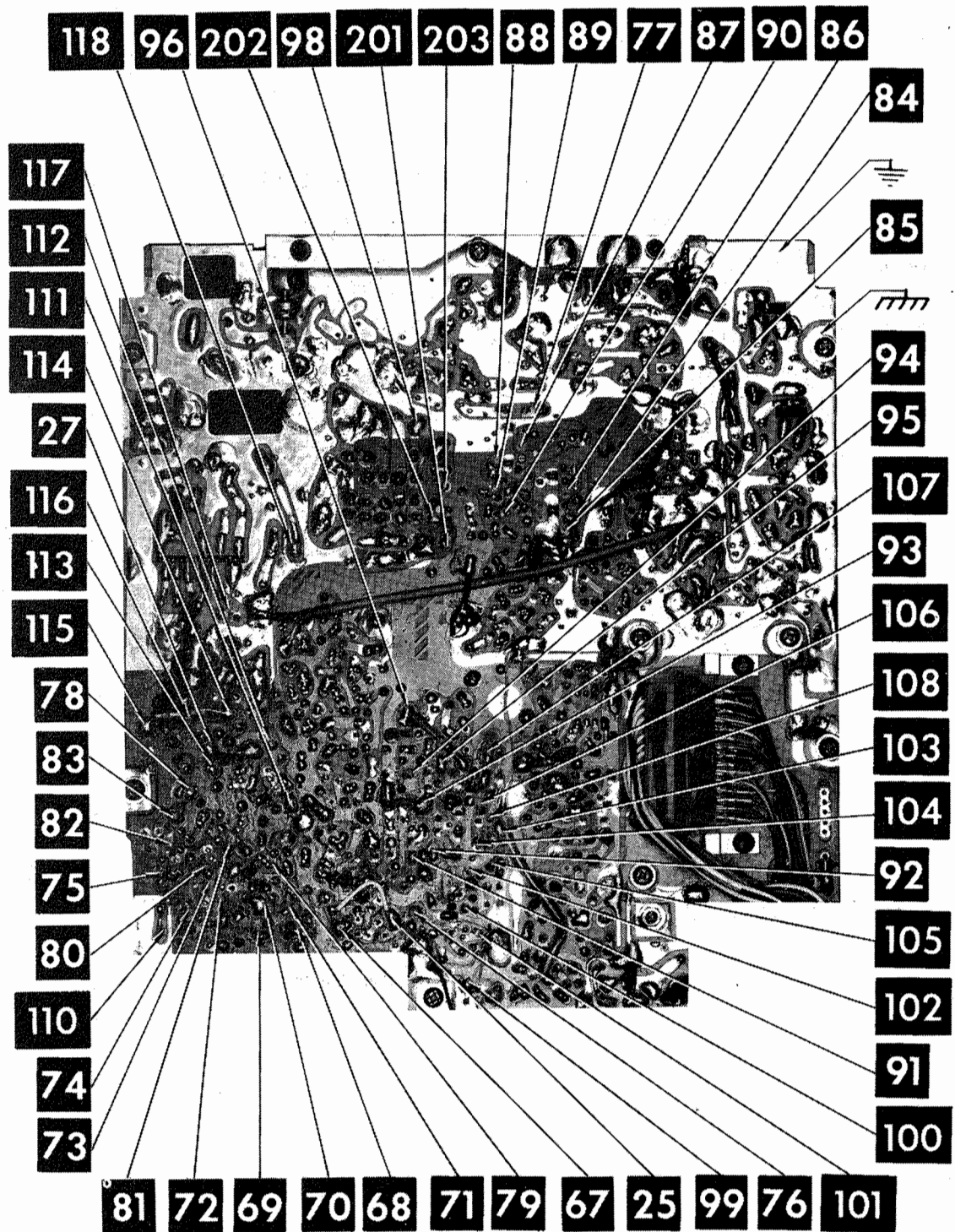
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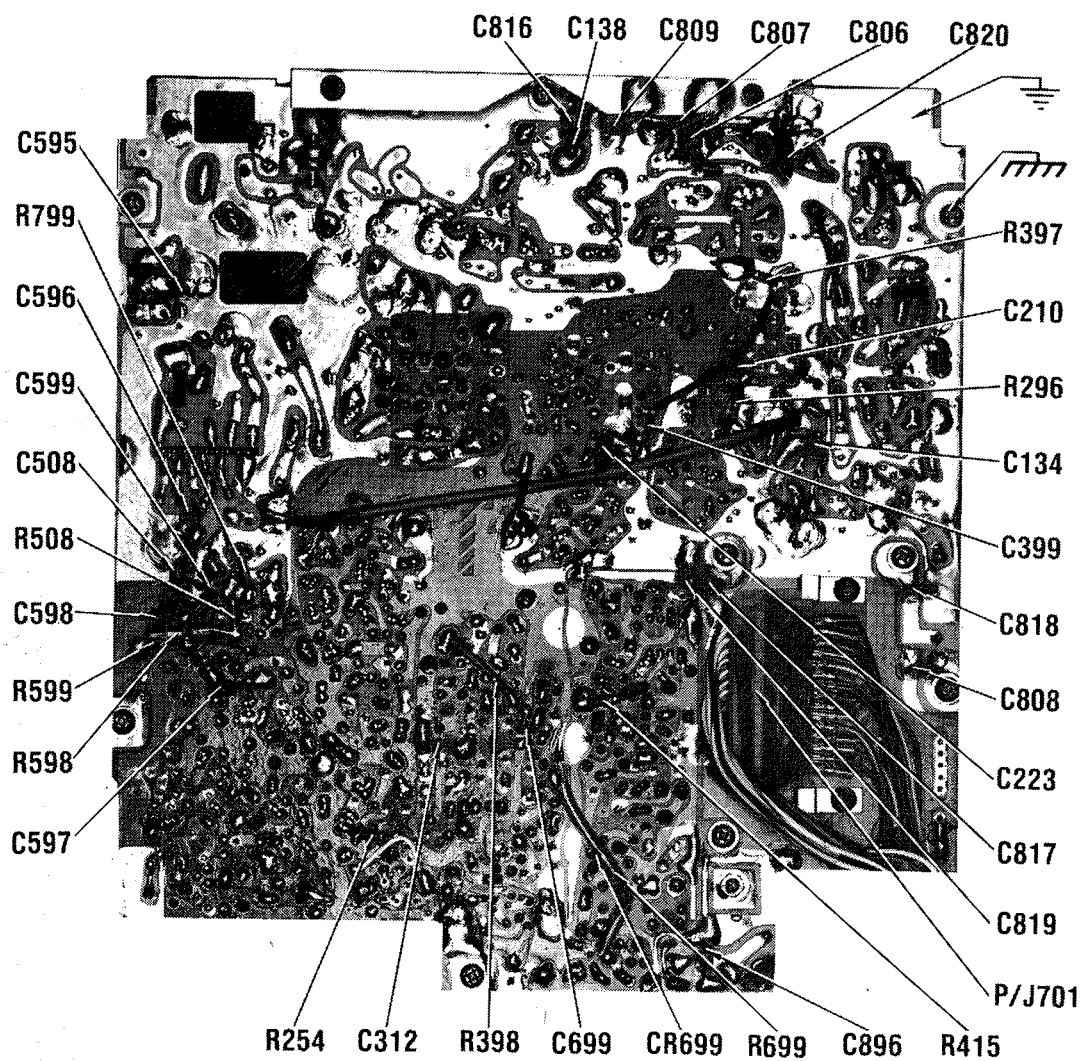


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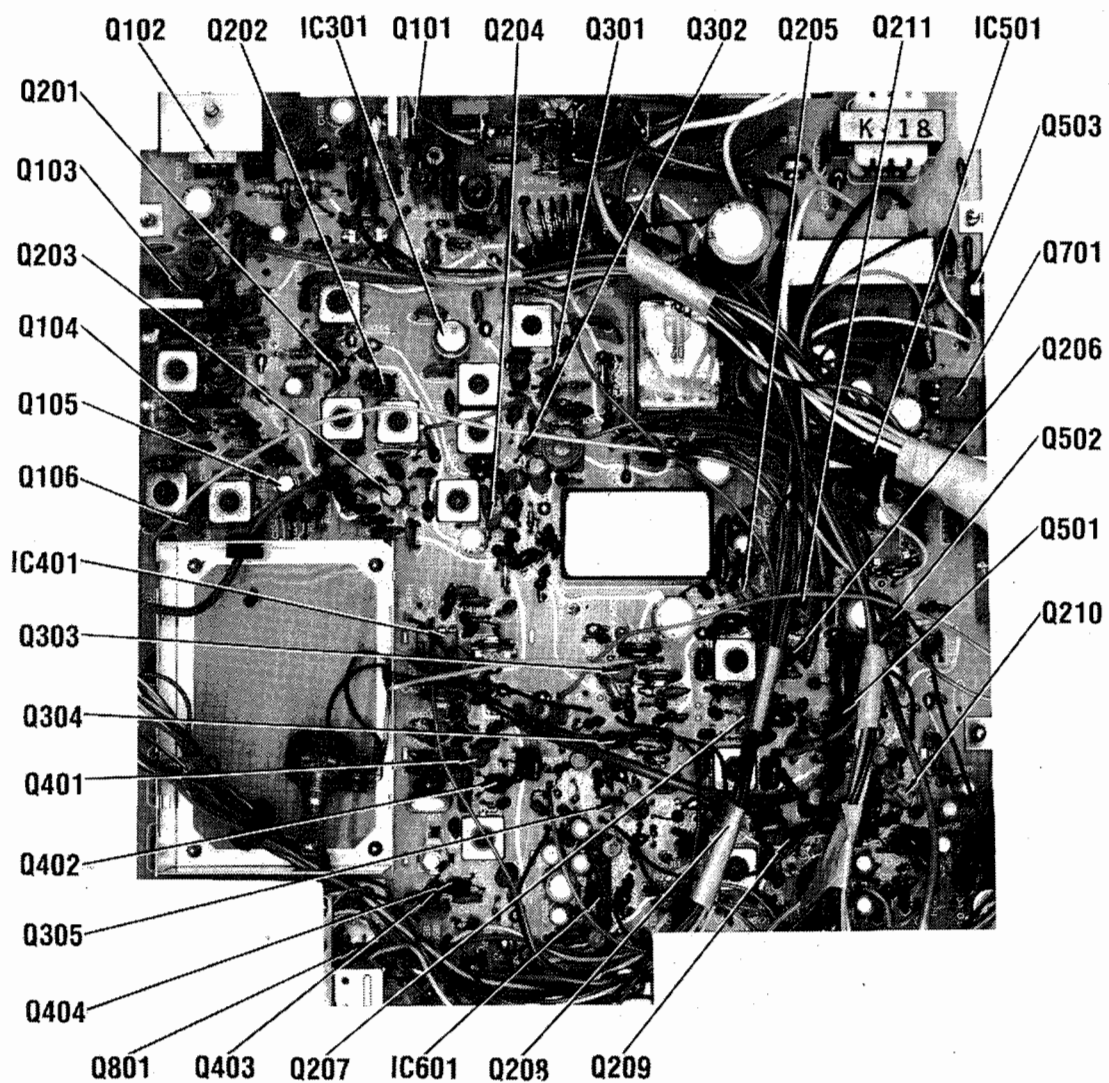


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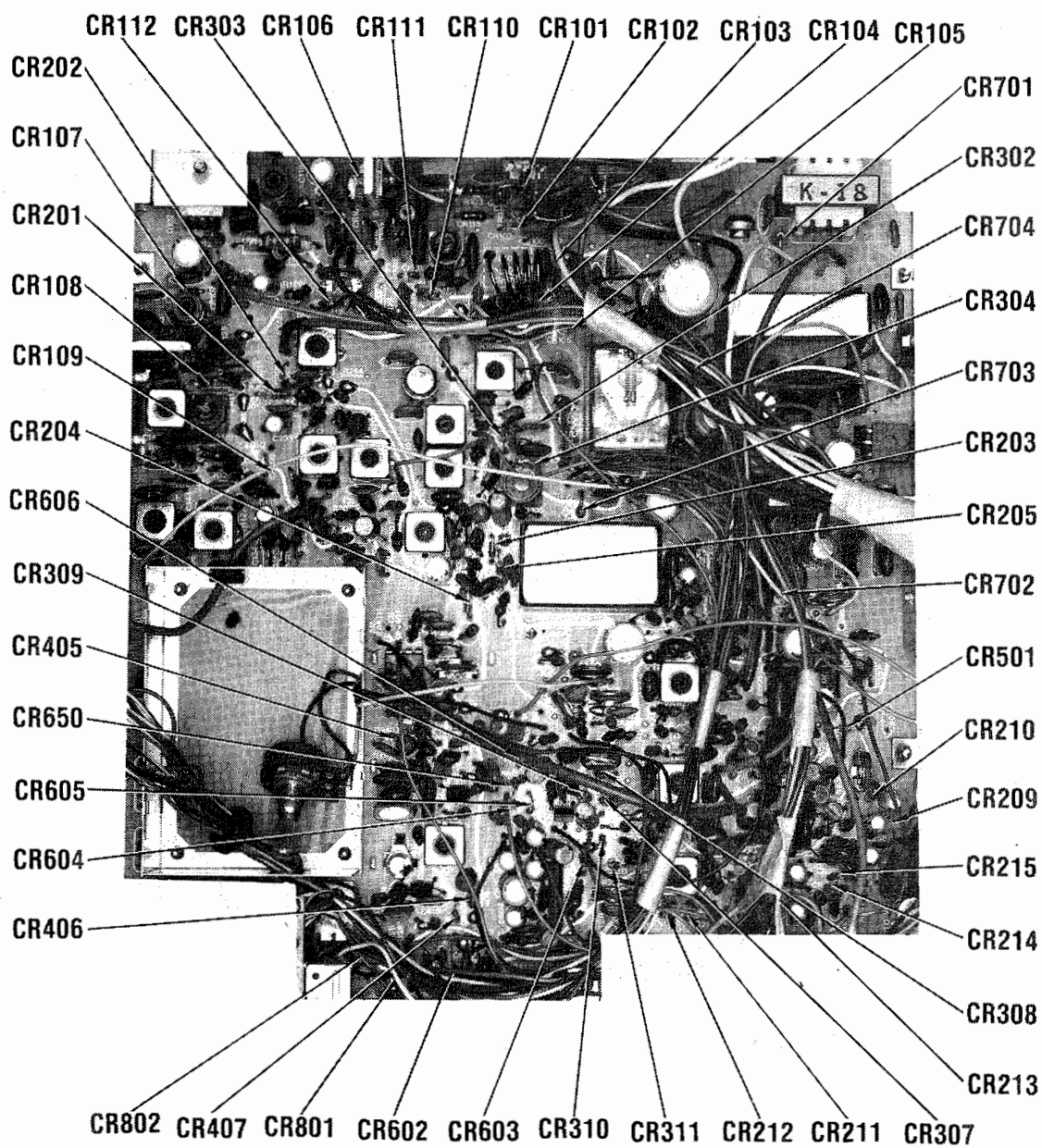
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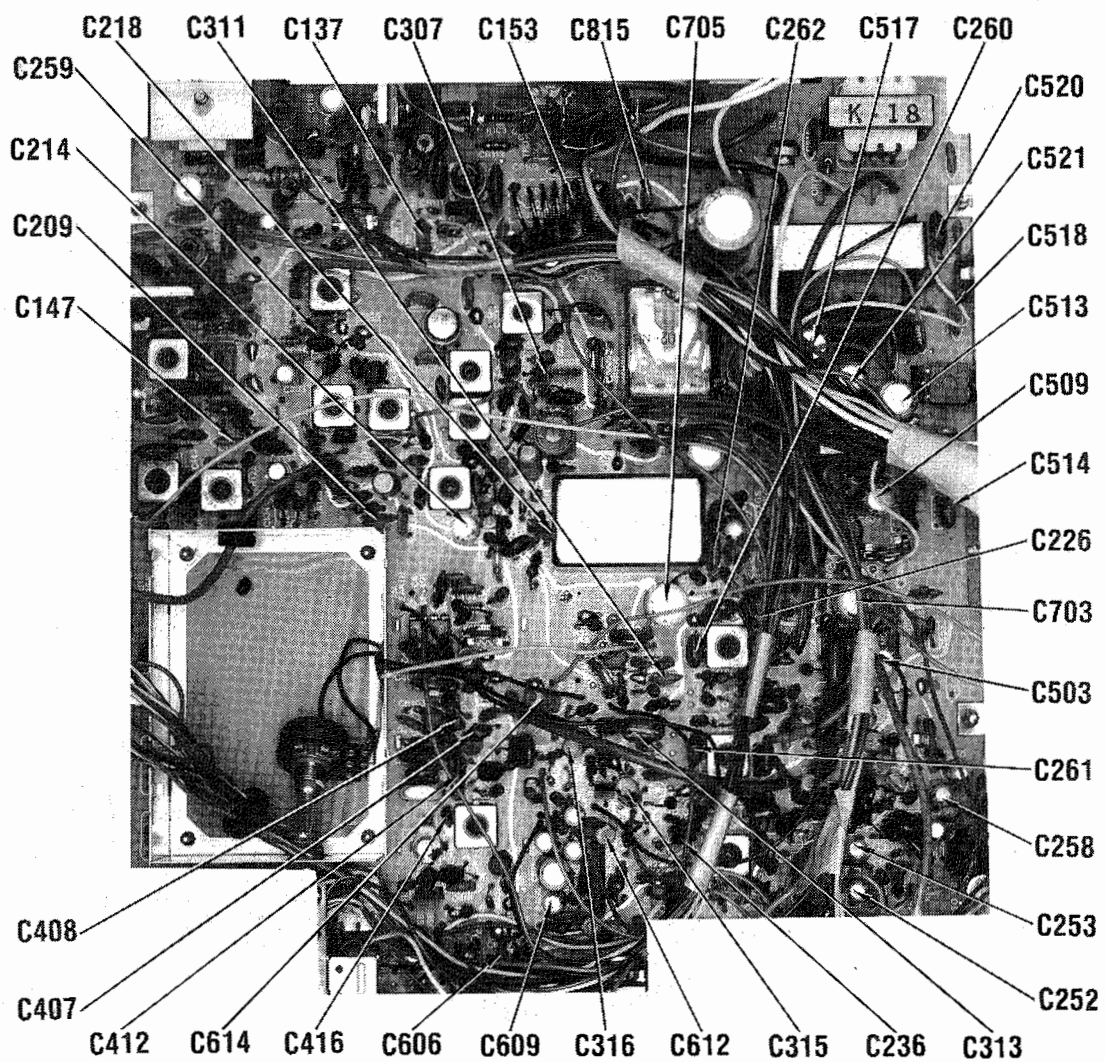
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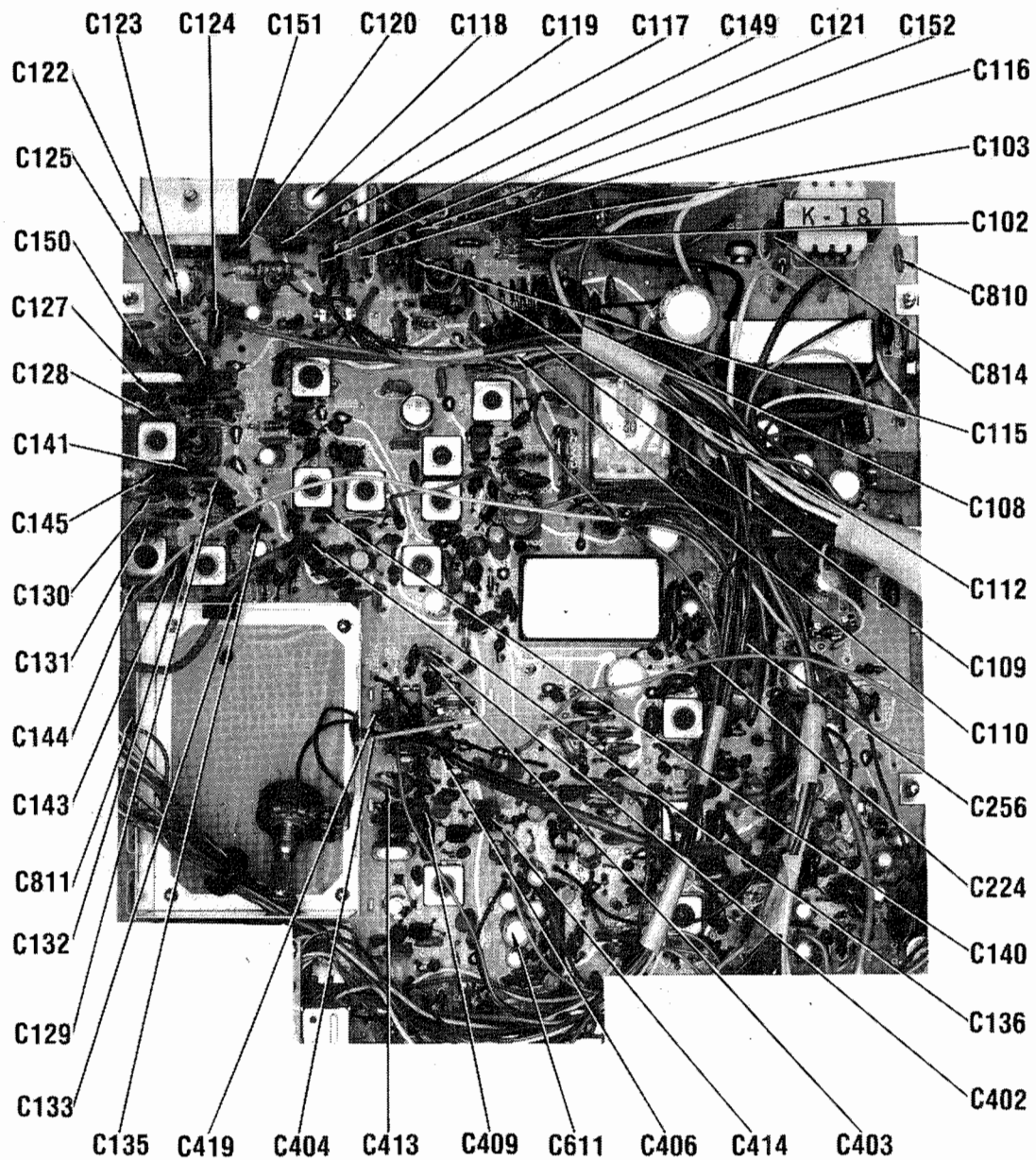
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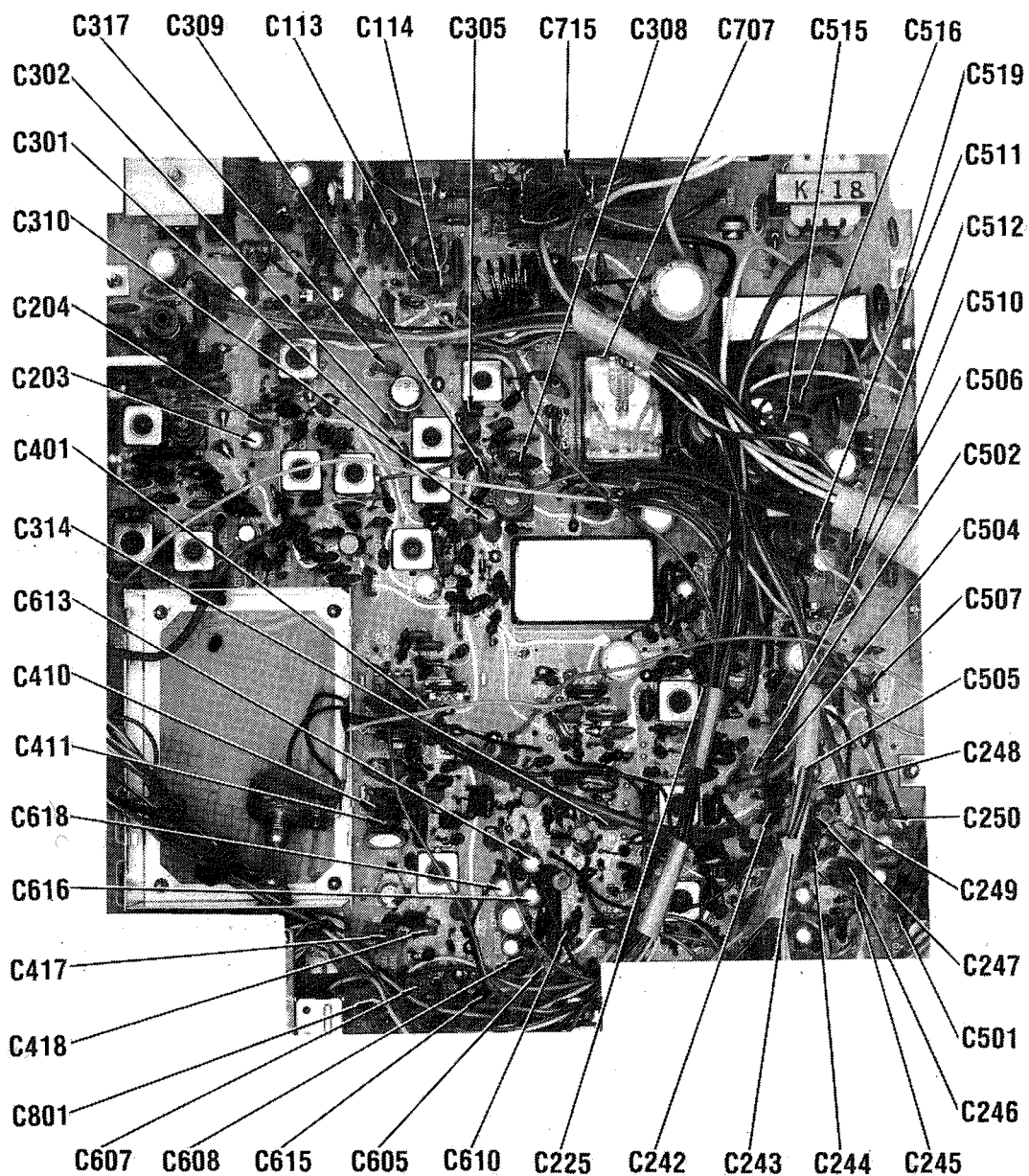
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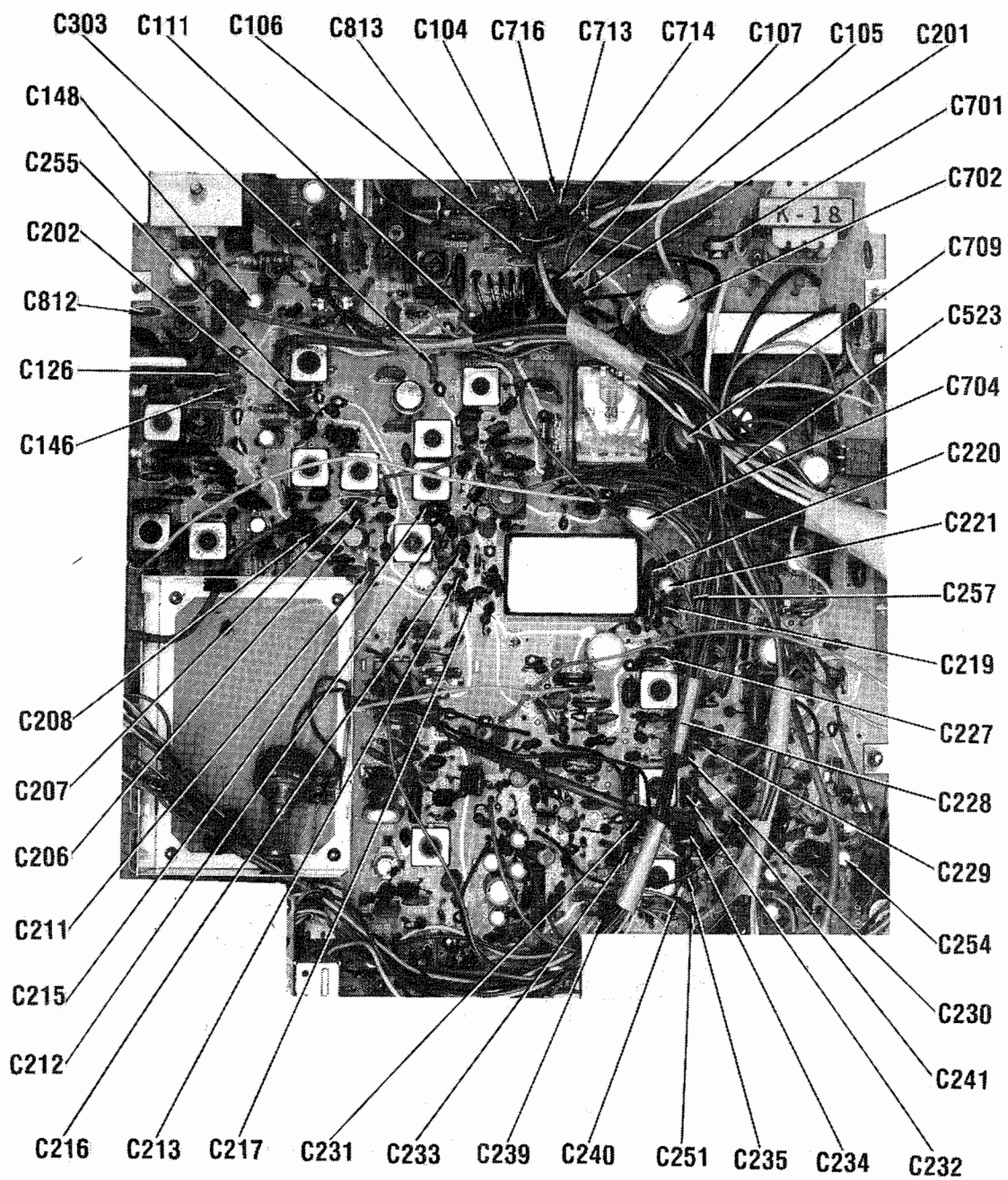
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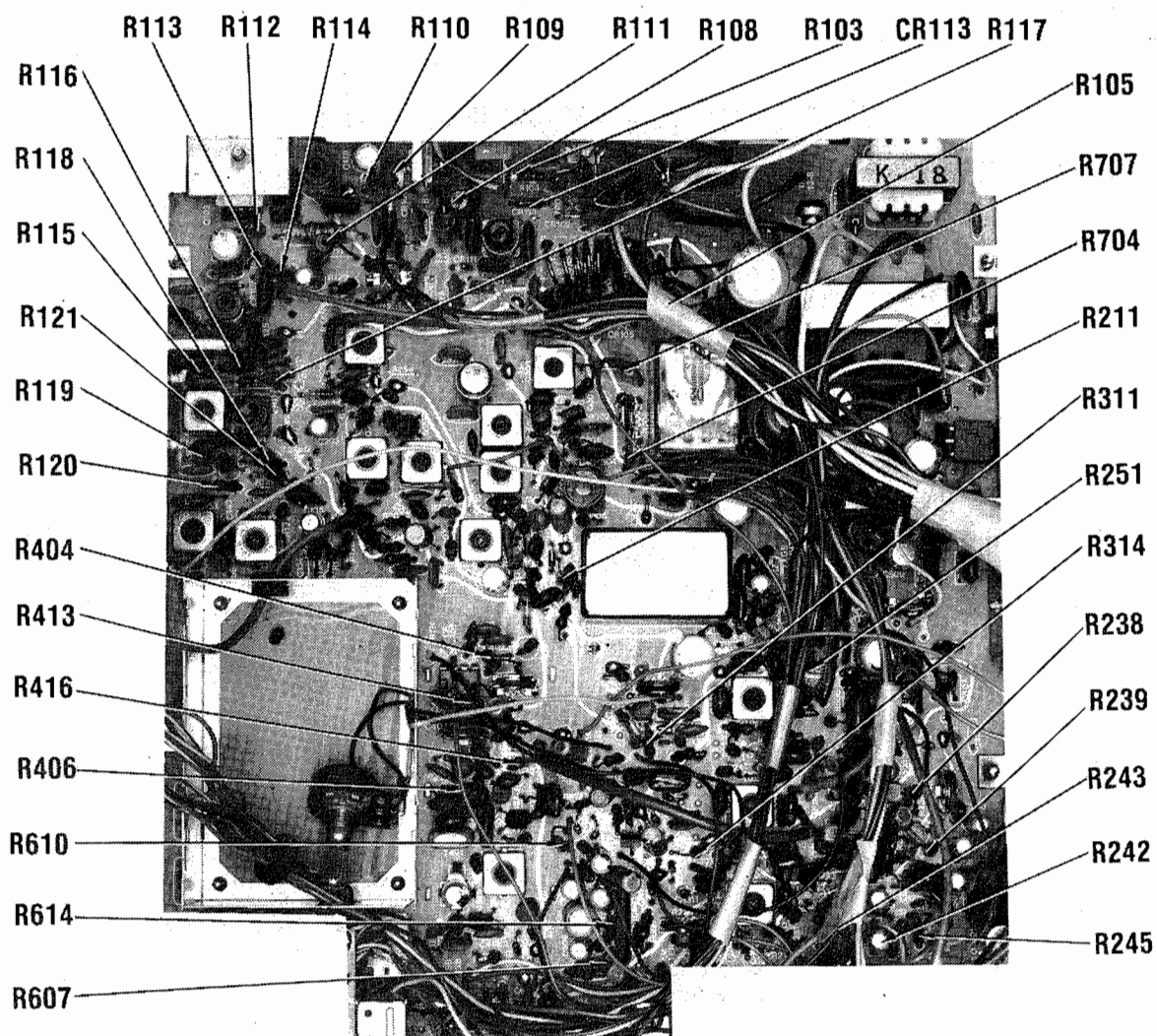
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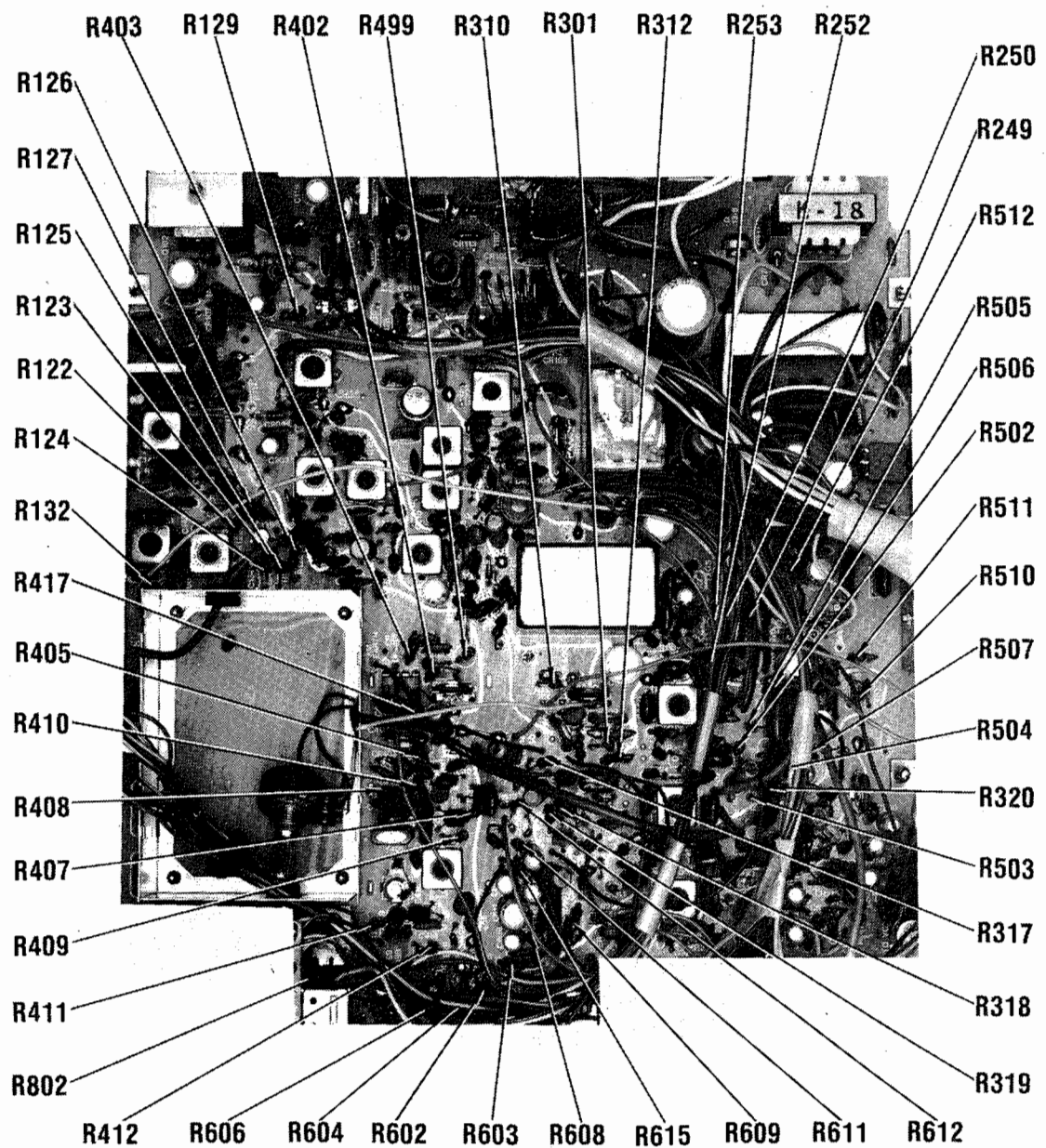
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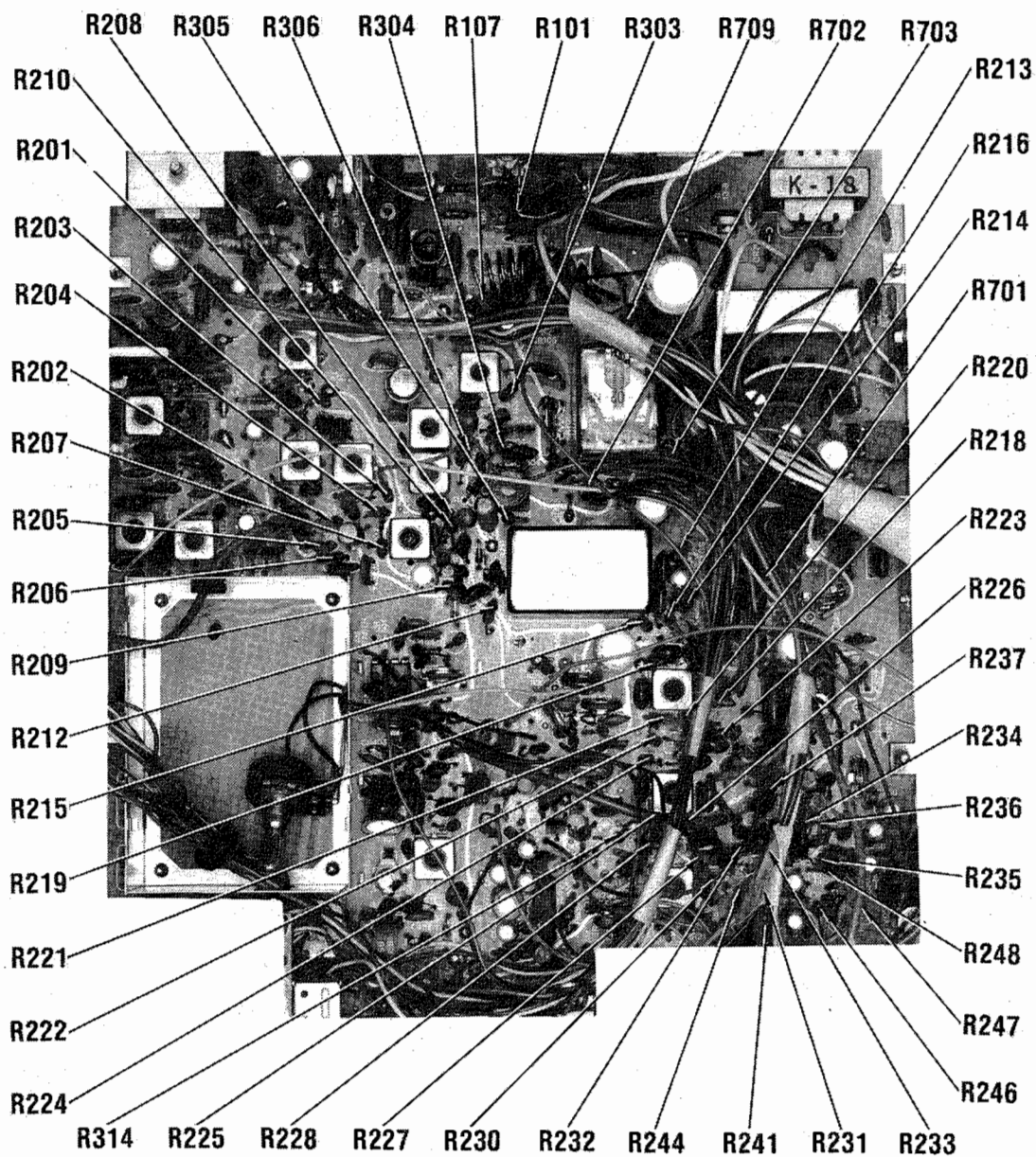
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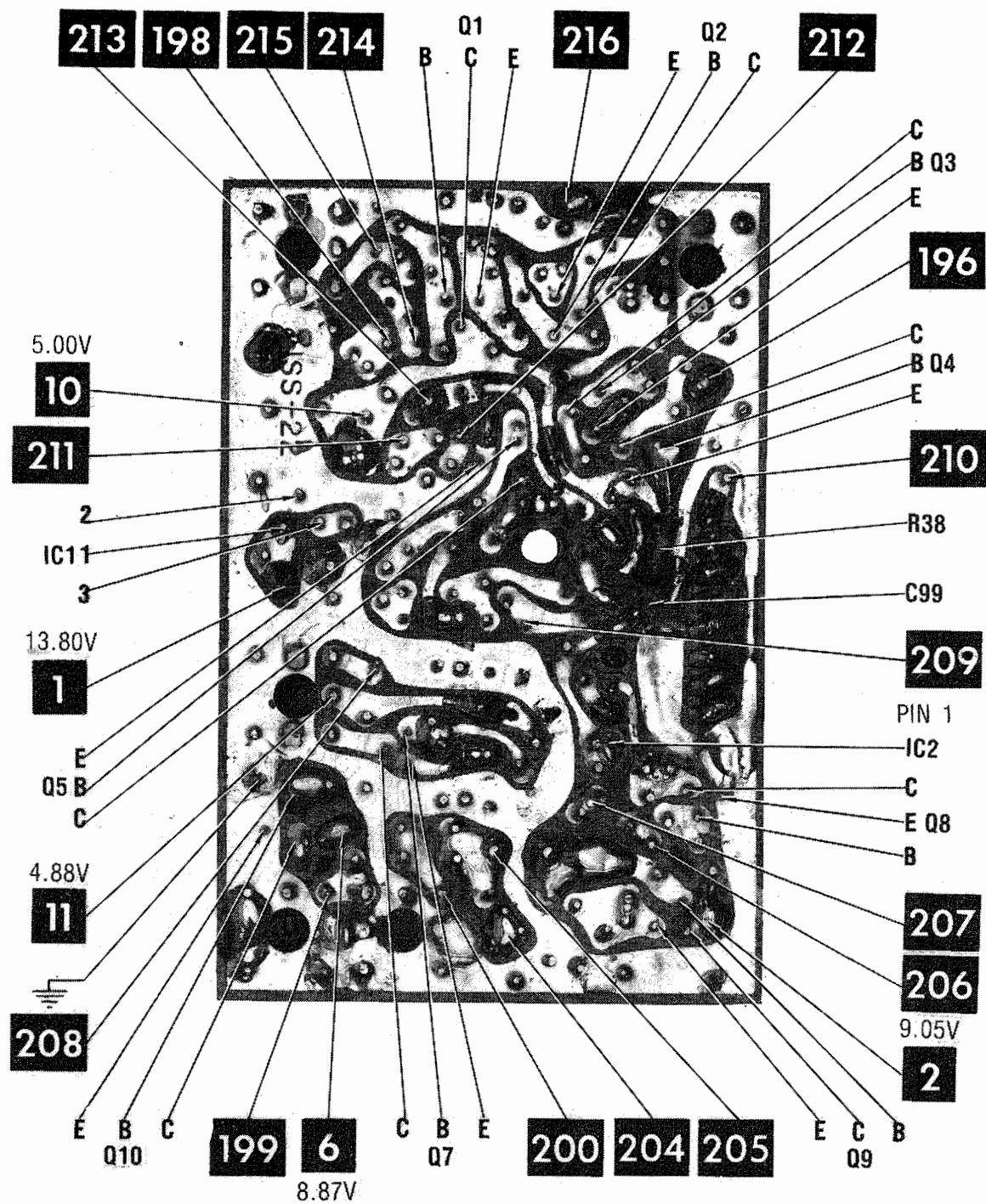
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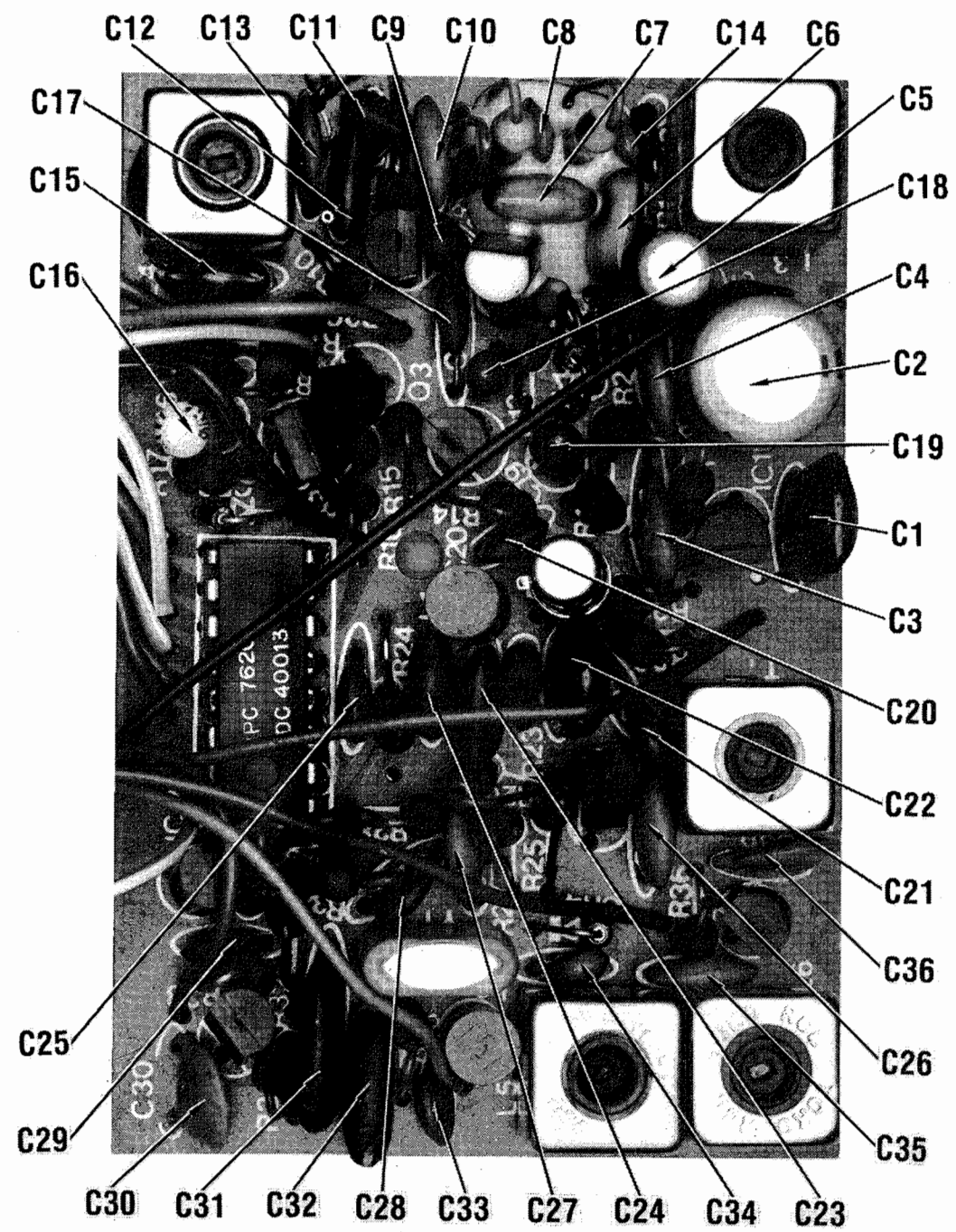
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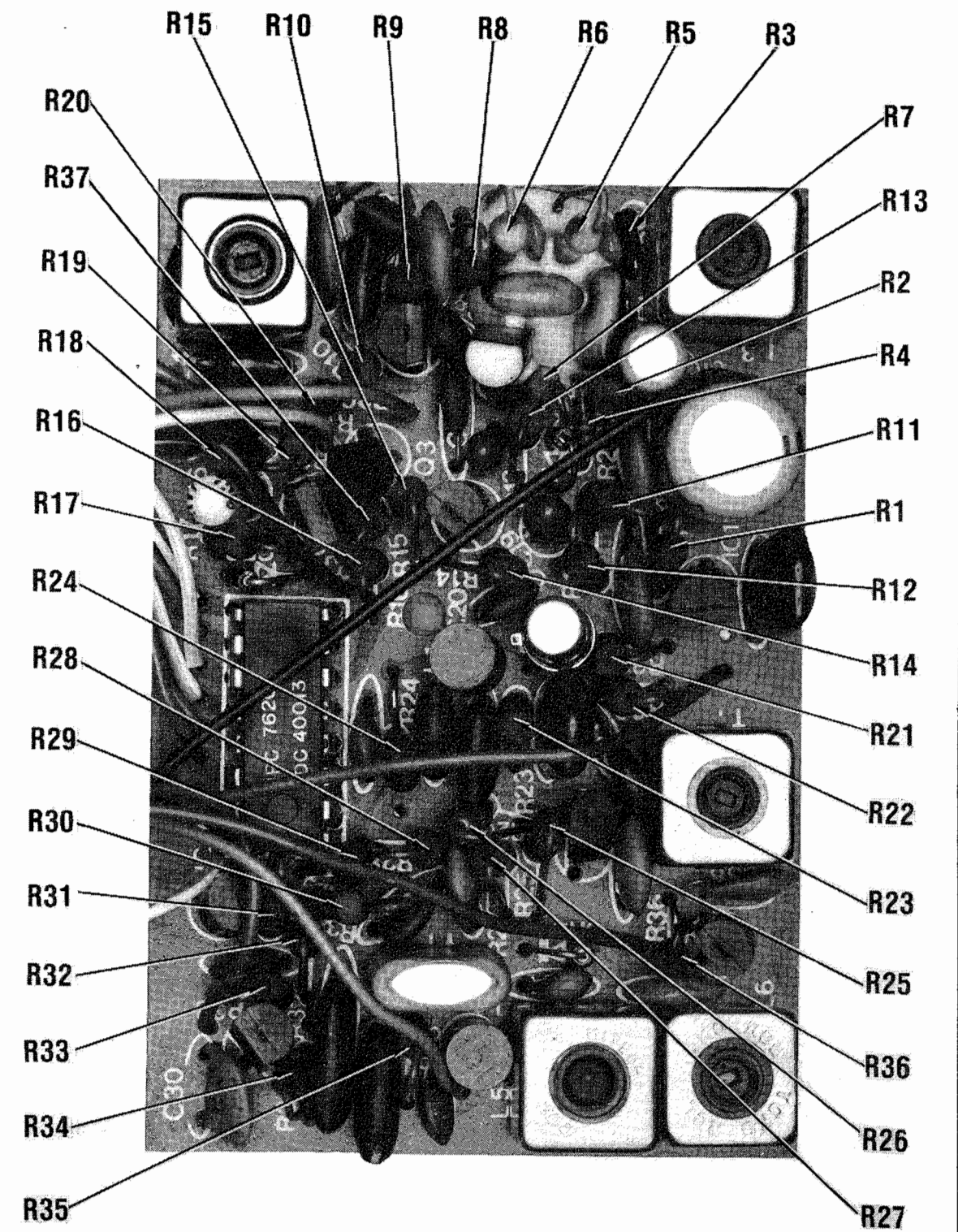
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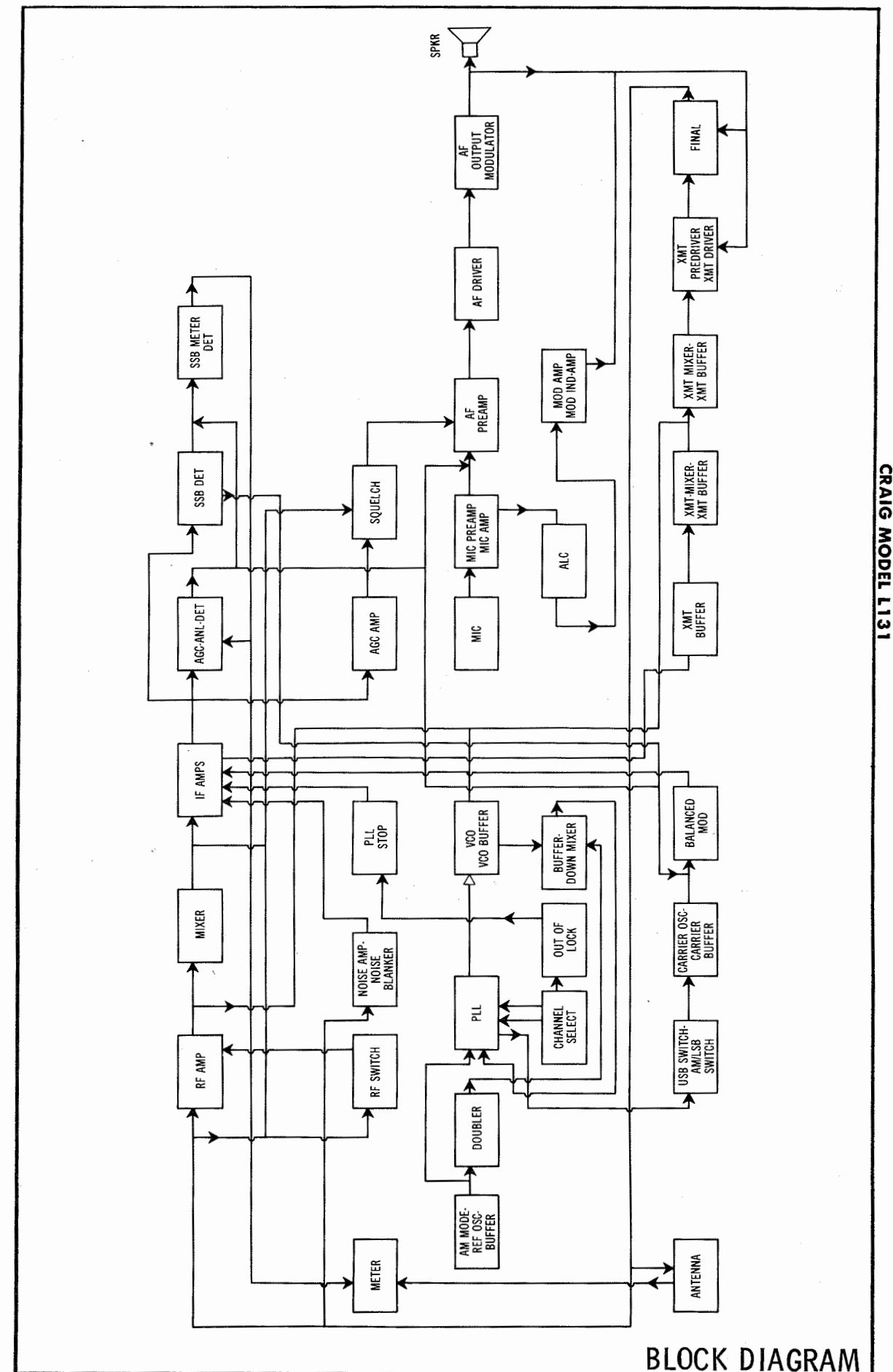
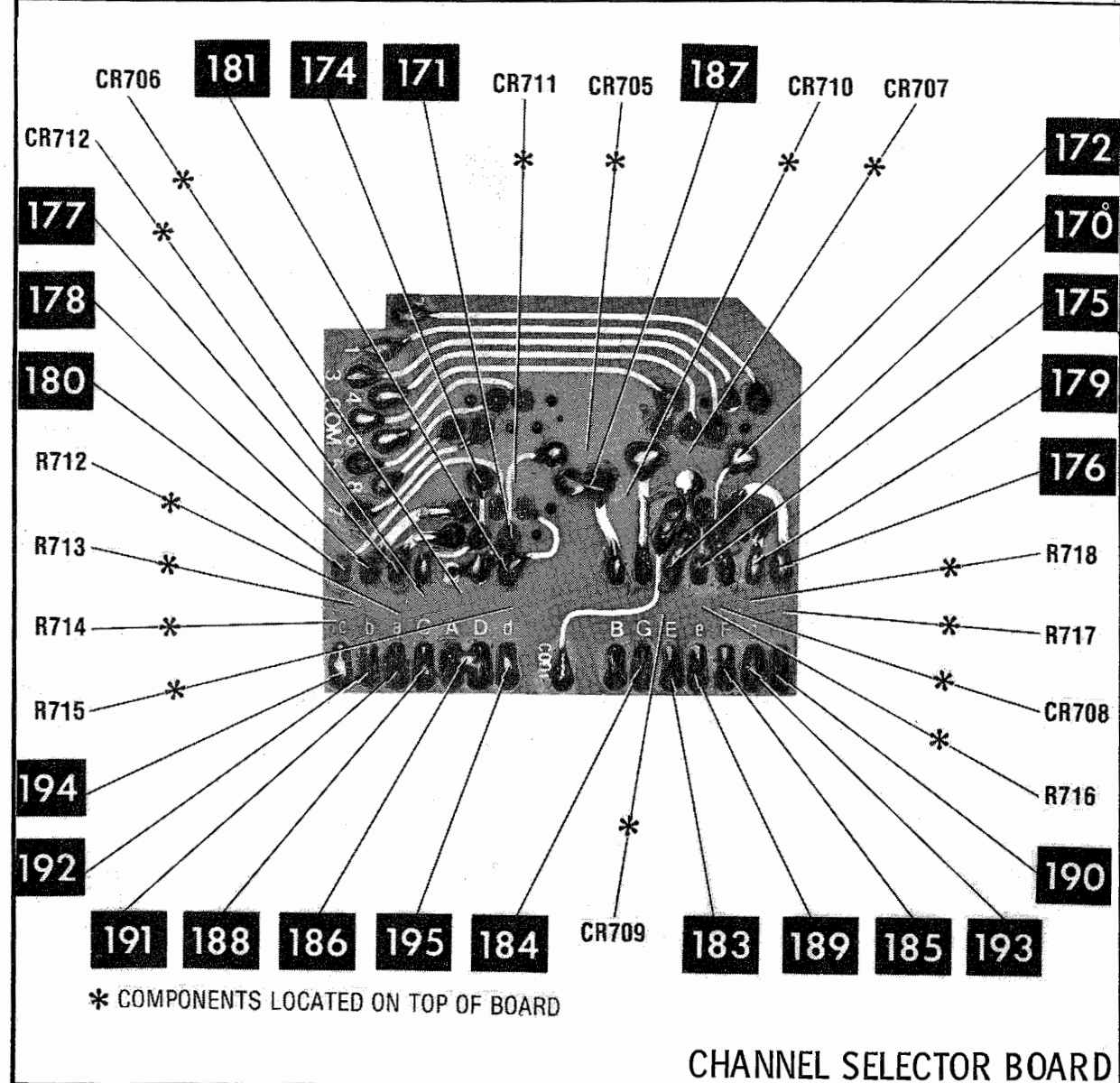
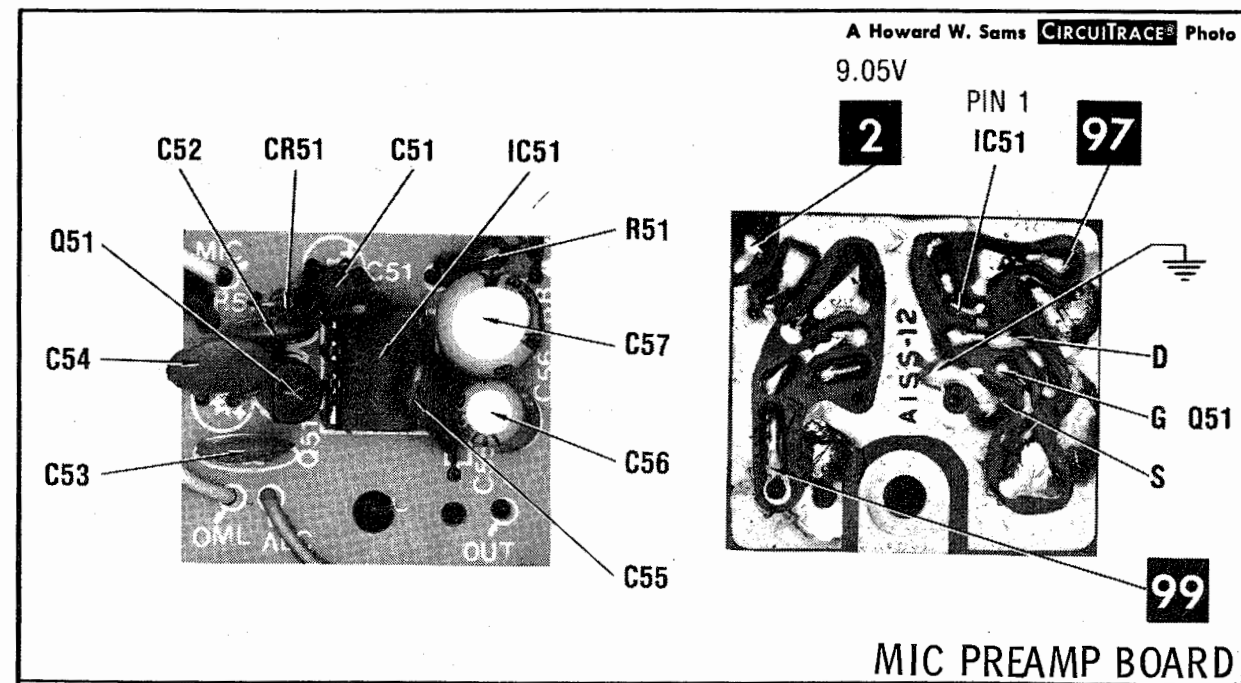
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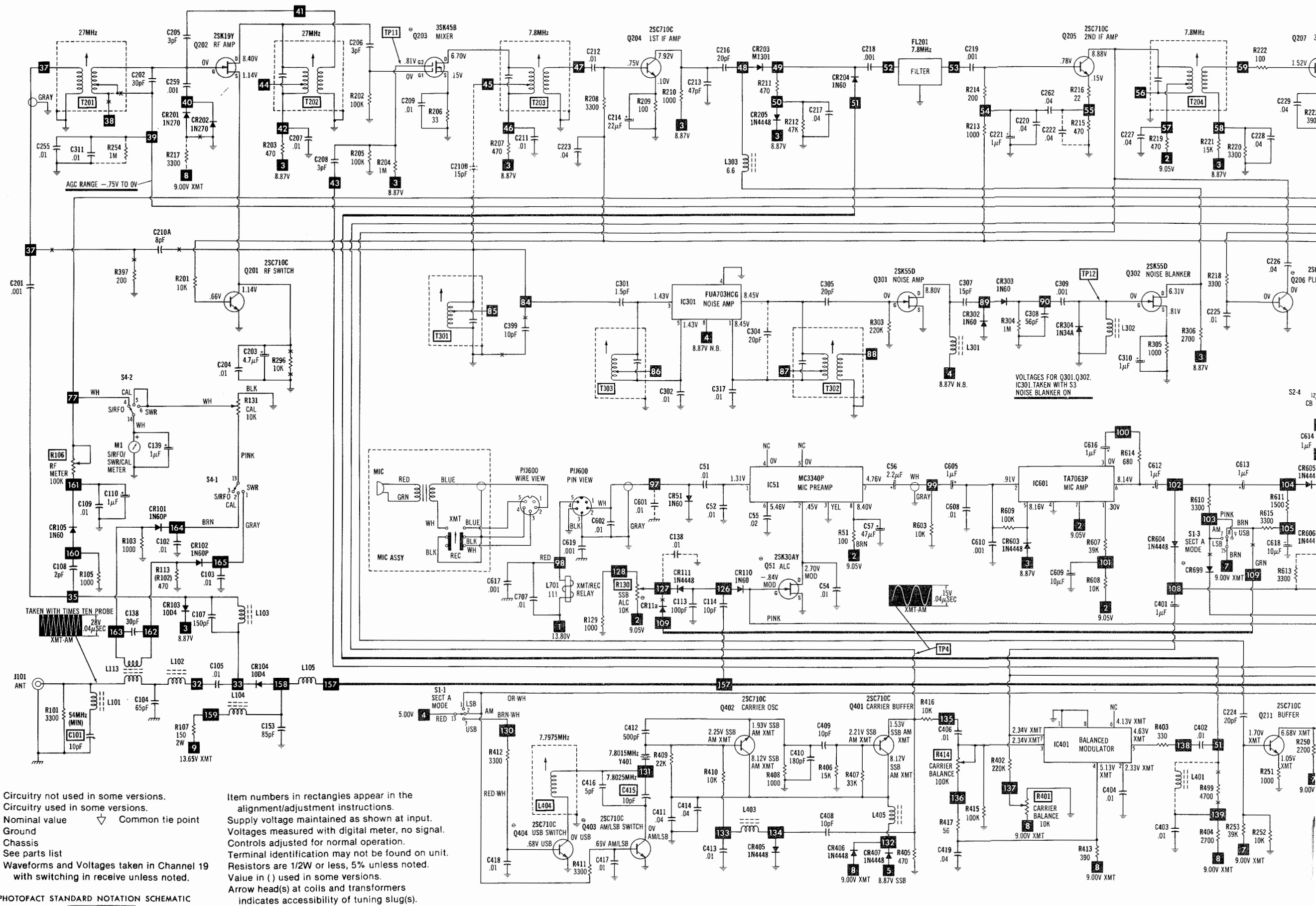


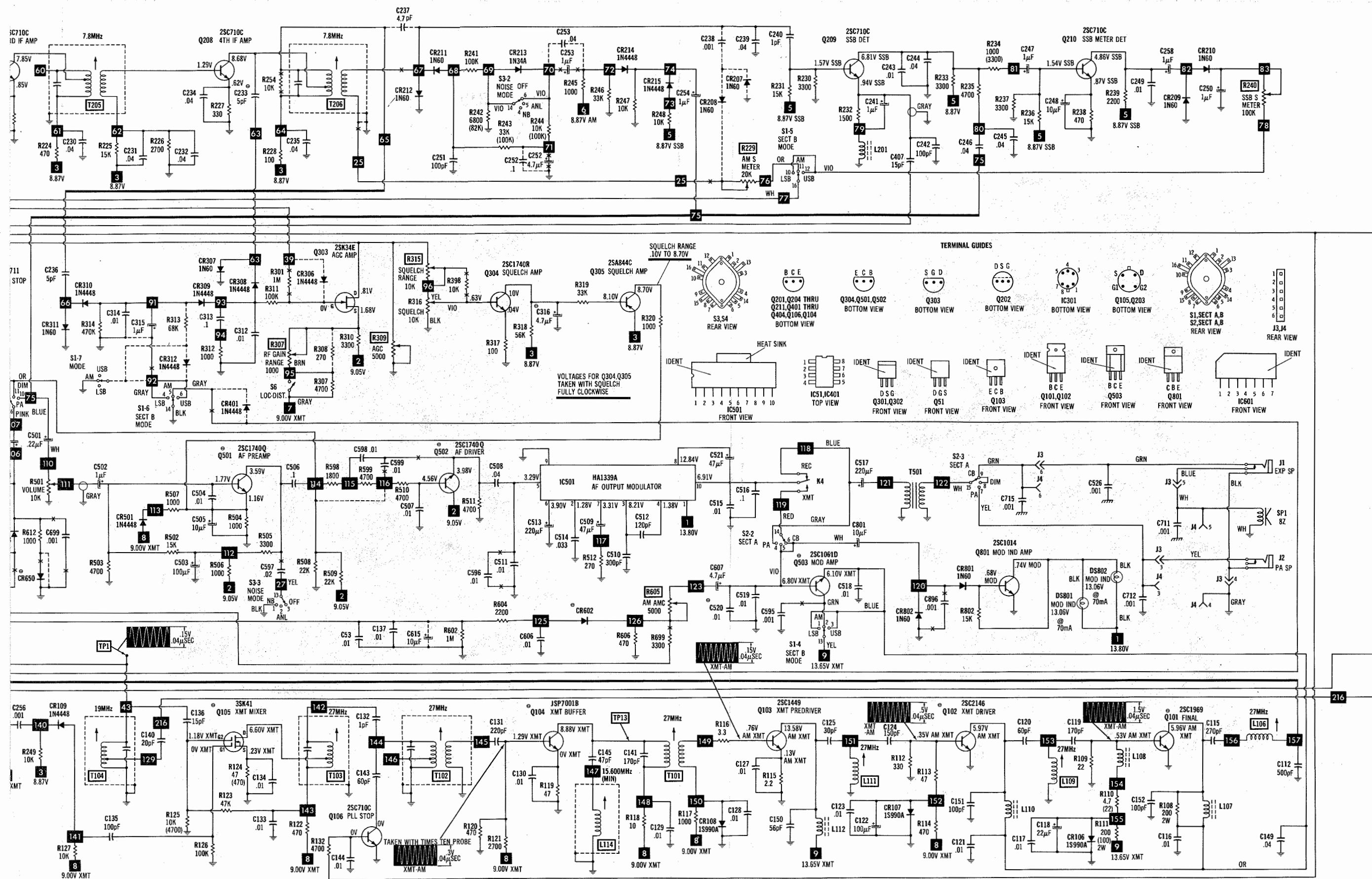
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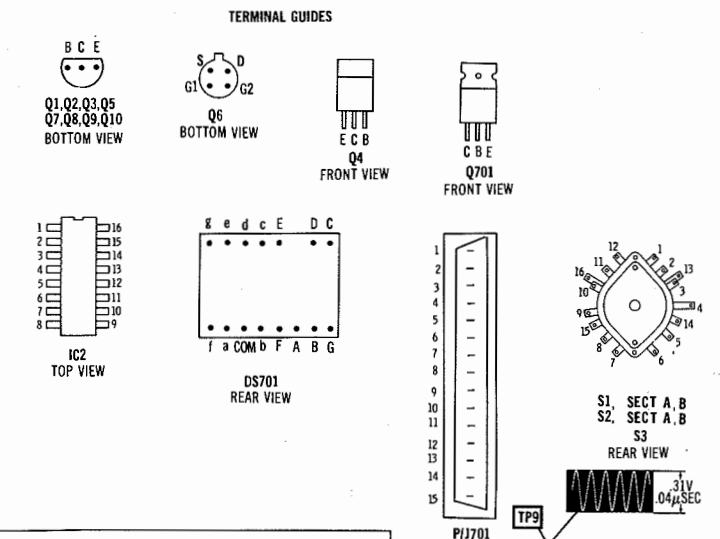
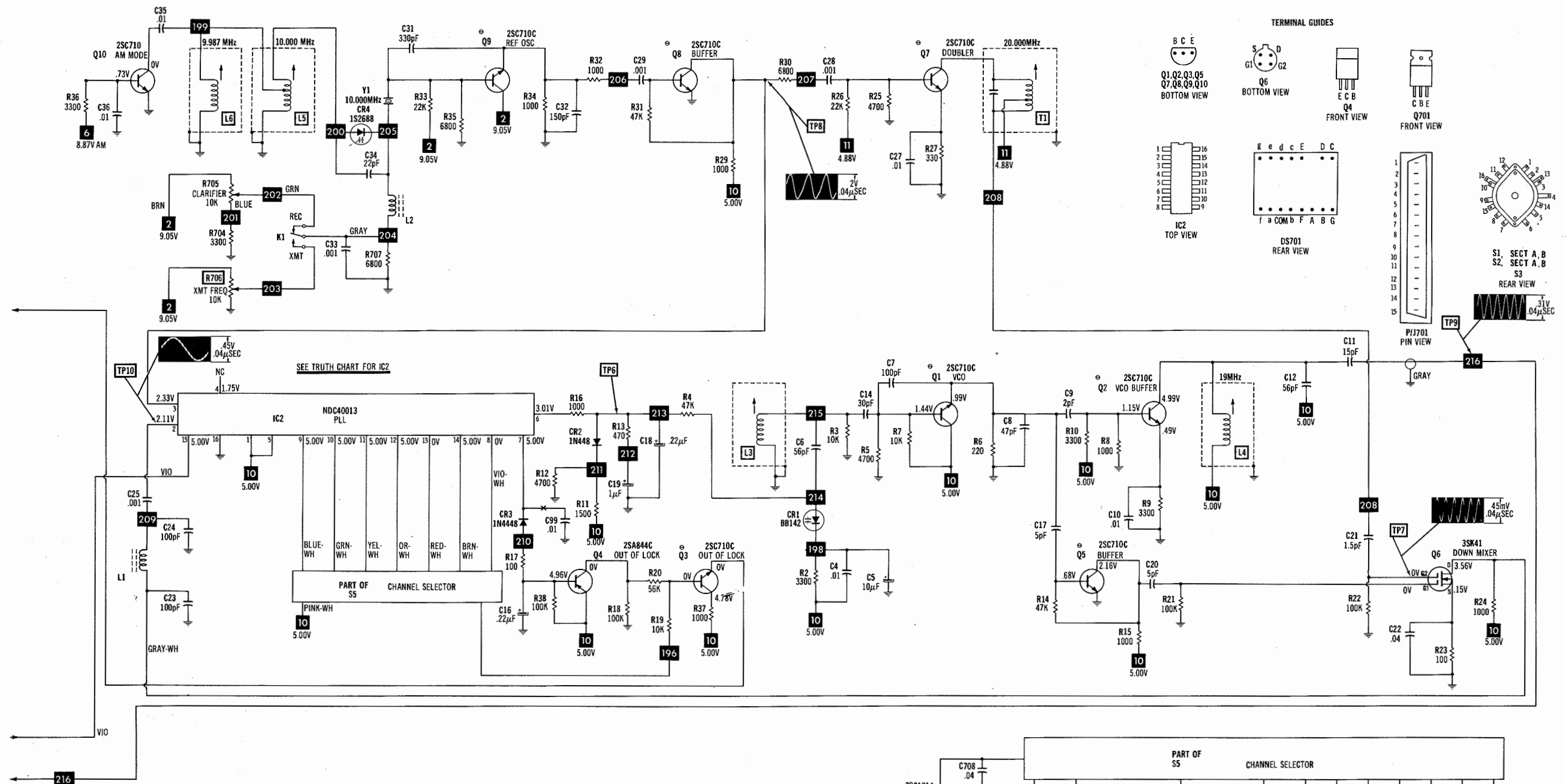


PLL BOARD

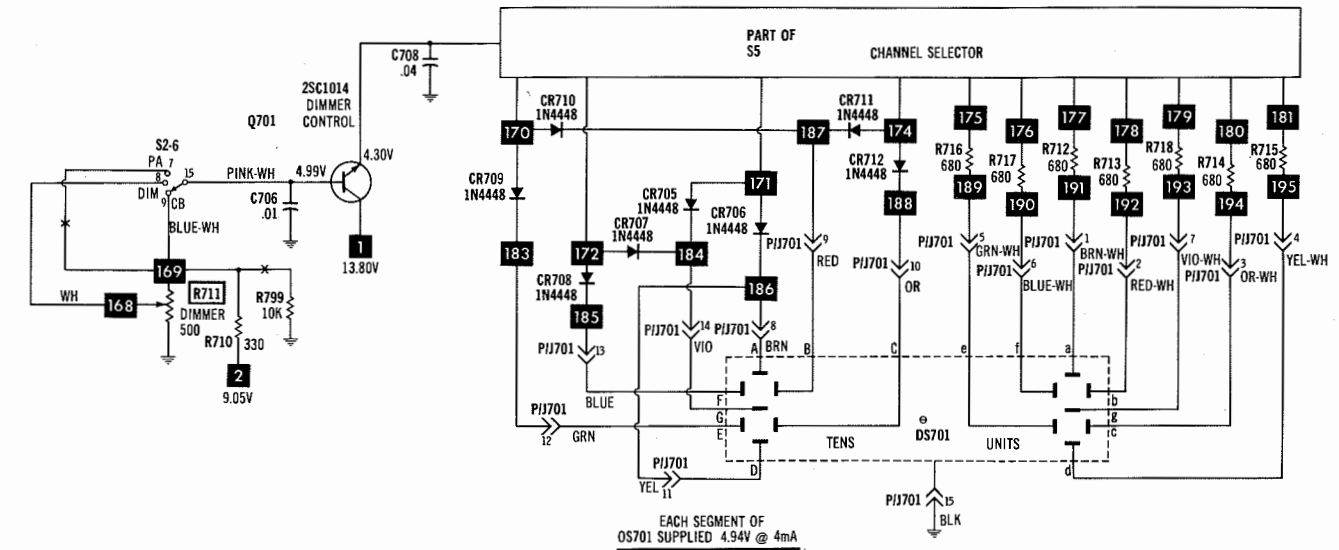




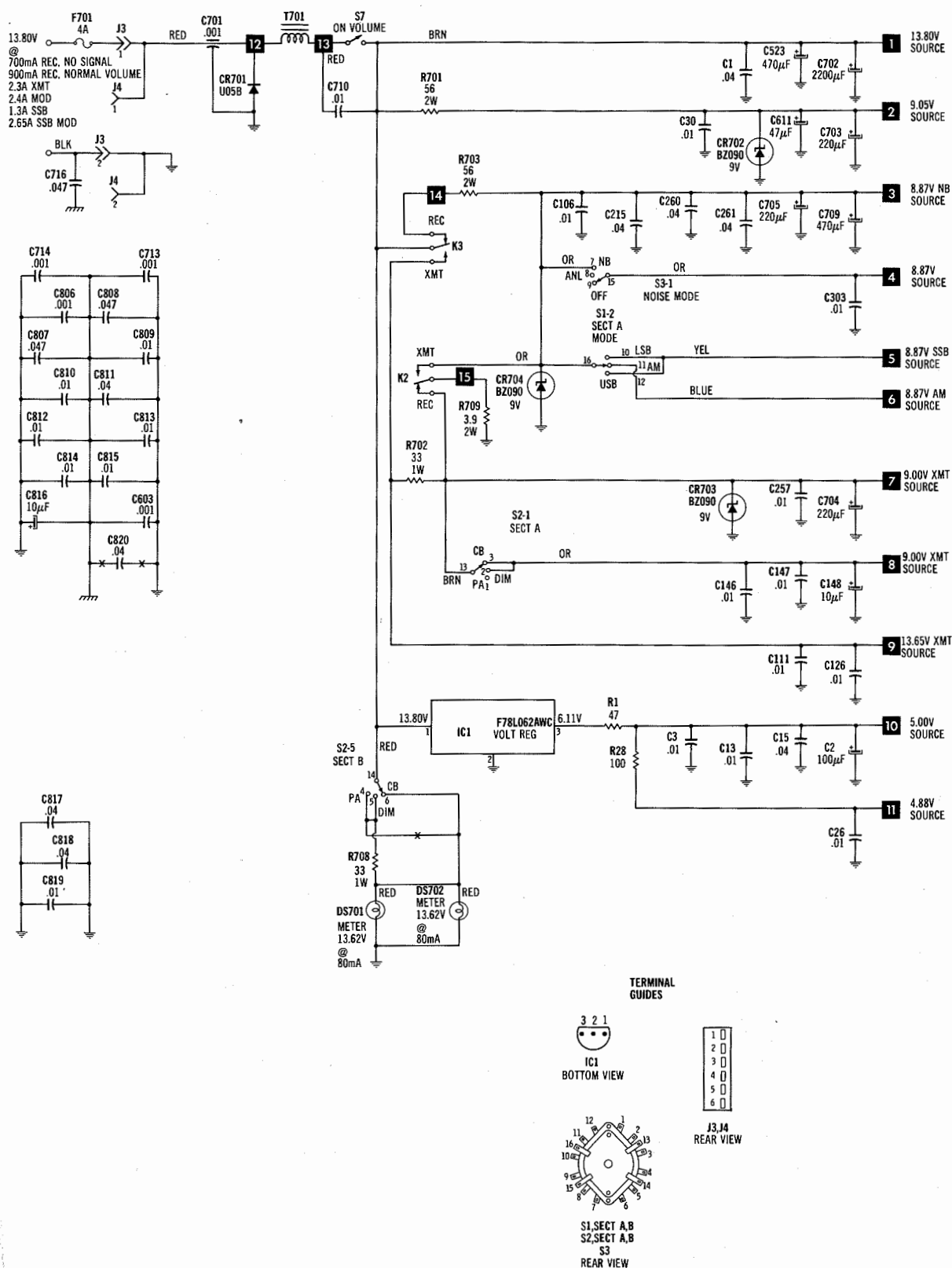




* Circuitry not used in some versions.
 --- Circuitry used in some versions.
 ※ Nominal value
 ⊕ Ground
 ⊕ Chassis
 e See parts list
 Waveforms and Voltages taken in Channel 19 with switching in receive unless noted. Item numbers in rectangles appear in the alignment/adjustment instructions. Supply voltage maintained as shown at input. Voltages measured with digital meter, no signal. Controls adjusted for normal operation. Terminal identification may not be found on unit. Resistors are 1/2W or less, 5% unless noted. Value in () used in some versions. Arrow head(s) at coils and transformers indicates accessibility of tuning slug(s).
 A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH **CIRCUITRACE®**
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PLL SCHEMATIC



POWER SUPPLY SCHEMATIC

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.	RAYTHEON PART No.	RCA PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
CR1	BB142				REN 612		ECG612	TM612		103-176
	MV201				REN 612		ECG612	TM612		103-176
CR2	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR3	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR4	1S2688				REN 614	SK3126	ECG613	TM613	WEP200/614	103-281
CR51	1N60		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
CR101	1N60P		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
CR102	1N60P		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
CR103	10D4		GE-504A	PTC201	REN 116	SK3312	ECG116	TM116	WEP157	212-76-02
	1N4004		GE-504A	1N4004	REN 116	SK3312	ECG116	TM116/**	WEP157	212-76-02
CR104	10D4		GE-504A	PTC201	REN 116	SK3312	ECG116	TM116	WEP157	212-76-02
	1N4004		GE-504A	1N4004	REN 116	SK3312	ECG116	TM116/**	WEP157	212-76-02
CR105	1N60		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
CR106	1S990A		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S990S		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
CR107	1S990A		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S990S		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
CR108	1S990A		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S990S		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
CR109	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR110	1N60		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
CR111	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR112	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR201	1N270		1N34AS	PTC207	REN 109	SK3087	ECG109	TM109/**	WEP134/109	103-Z9001
	1S1007S		1N34AS	PTC207	REN 109	SK3087	ECG109	TM109/**	WEP134/109	103-Z9001
CR202	1N270		1N34AS	PTC207	REN 109	SK3087	ECG109	TM109/**	WEP134/109	103-Z9001
	1S1007S		1N34AS	PTC207	REN 109	SK3087	ECG109	TM109/**	WEP134/109	103-Z9001
CR203	MI301		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
CR204	1N60		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
CR205	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR207	1N60(1)		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
CR208	1N60(1)		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
CR209	1N60		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
CR210	1N60		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
CR211	1N60		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
CR212	1N60		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
CR213	1N34A		1N34AS	PTC207	REN 109	SK3087	ECG109	TM109/**	WEP134/109	103-Z9001
CR214	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR215	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR302	1N60		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
CR303	1N60		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
CR304	1N34A		1N34AS	PTC207	REN 109	SK3087	ECG109	TM109/**	WEP134/109	103-Z9001
CR306	1N4448(1)		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR307	1N60		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
CR308	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR309	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR310	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR311	1N60		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
CR312	1N4448(1)		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR401	1N4448(1)		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR405	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR406	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR407	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR501	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR602	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR603	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR604	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR605	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR606	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR701	U05B		GE-512	PTC204	REN 156	SK3051/156	ECG156	TM156	WEP4008/5809	212-Z9000
CR702	BZ090		GEZD-9.1	ZB9.1B	REN 139	SK3060/139A	ECG139	TM139A/**	WEP1109/139A	103-272
	1N4739A		GEZD-9.1	ZB9.1B	REN 139	SK3060/139A	ECG139	TM139A/**	WEP1109/139A	103-272
CR703	BZ090		GEZD-9.1	ZB9.1B	REN 139	SK3060/139A	ECG139	TM139A/**	WEP1109/139A	103-272
	1N4739A		GEZD-9.1	ZB9.1B	REN 139	SK3060/139A	ECG139	TM139A/**	WEP1109/139A	103-272
CR704	BZ090		GEZD-9.1	ZB9.1B	REN 139	SK3060/139A	ECG139	TM139A/**	WEP1109/139A	103-272
	1N4739A		GEZD-9.1	ZB9.1B	REN 139	SK3060/139A	ECG139	TM139A/**	WEP1109/139A	103-272
CR705	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR706	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR707	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR708	1N4448		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
CR801	1N60		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
CR802	1N60		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-Z9001
IC1	F78L62AWC						ECG988	TM988		
	F78L062AC						ECG988	TM988		
	78L62AWC						ECG988	TM988		
IC2	NDC40013									
IC51	MC3340P									
IC301	MC3340		GEIC-12	PTC743	REN 703A	SK3157/703A	ECG703A	TM703A	WEP500	221-32
	FLA703HCG		GEIC-12	PTC743	REN 703A	SK3157/703A	ECG703A	TM703A	WEP500	221-32
IC401	UA703									
	SL1640C									
IC501	HA1339A		GEIC-94		REN 1103	SK3708/1169	ECG1169	TM1169		
IC601	TA7063P		GEIC-94		REN 1103	SK3281/1103	ECG1103	TM1103	WEP943	
	TA7063		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-Z9000A
Q1	2SC710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-Z9000A
	2SC710									

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.	RAYTHEON PART No.	RCA PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
Q2	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q3	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q4	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	25A844C		GE-244*	PTC103*	REN 129*	SK3114/290	ECG129A*	TM129*	WEP564	121-29005
Q5	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q6	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	35K41		GE-FET-4	PTC182*	REN 222	SK3065/222	ECG222	TM222	WEP905/222	121-826
Q7	35K41L		GE-FET-4	PTC182*	REN 222	SK3065/222	ECG222	TM222	WEP905/222	121-826
	35K45		GE-FET-4	PTC182*	REN 222	SK3065/222	ECG222	TM222	WEP905/222	121-826
Q8	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q9	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q10	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q51	25K30AY		GE-FET-1	PTC151*	REN 132*	SK3112	ECG132A*	TM132*	WEP801/133*	121-756*
	25K40C		GE-FET-2	PTC161	REN 132*	SK3112	ECG312*	TM312*	WEP920	121-756
Q101	25C1969		GE-216	PTC186	REN 236	SK3239/236	ECG236	TM236	WEP840/236	121-29040
	25C1307		GE-216	PTC186	REN 236	SK3239/236	ECG236	TM236	WEP840/236	121-29040
Q102	25C2146		GE-215	PTC186	REN 235	SK3239/236	ECG235	TM235/**	WEP785/235	121-29039
Q103	25C1306		GE-215	PTC186	REN 235	SK3239/236	ECG235	TM235/**	WEP785/235	121-29039
	25C1449		GE-270	PTC149	REN 295	SK3253/295	ECG295	TM295	WEP701	121-880
Q104	25C14491		GE-270	PTC180	REN 295	SK3253/295	ECG295	TM295	WEP701	121-880
	JSP7001B		GE-20*	PTC136*	REN 123A*	SK3246/229	ECG123A*	TM123A*	WEP736*	121-29000A*
Q105	JSP7001		GE-20*	PTC136*	REN 123A*	SK3246/229	ECG123A*	TM123A*	WEP736*	121-29000A*
Q106	35K41		GE-FET-4	PTC182*	REN 222	SK3065/222	ECG222	TM222	WEP905/222	121-826
	35K41L		GE-FET-4	PTC182*	REN 222	SK3065/222	ECG222	TM222	WEP905/222	121-826
Q201	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q202	25K19Y		GE-FET-2	PTC161	REN 132*	SK3834/132	ECG312 *	TM312*	WEP920/312*	121-756
	35K45E		GE-FET-4	PTC182*	REN 222	SK3065/222	ECG222	TM222	WEP905/222	121-826
Q203	35K41		GE-FET-4	PTC182*	REN 222	SK3065/222	ECG222	TM222	WEP905/222	121-826
	35K41L		GE-FET-4	PTC182*	REN 222	SK3065/222	ECG222	TM222	WEP905/222	121-826
Q204	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q205	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q206	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q207	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q208	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q209	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q210	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q211	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q301	25K55D		GE-FET-2	PTC161	REN 132*	SK3834/132	ECG312 *	TM312*	WEP920/312*	121-756
	25K55D		GE-FET-2*	PTC161*	REN 132*	SK3448	ECG312 *	TM312*	WEP920/312*	121-756*
Q302	25K34E		GE-62	PTC121*	REN 123A*	SK3122	ECG123AP*	TM123A*	WEP736*	121-29000A*
	25C1740R		GE-62	PTC121*	REN 123A*	SK3122	ECG123AP*	TM123A*	WEP736*	121-29000A*
Q303	25C1740		GE-244*	PTC103*	REN 129*	SK3114/290	ECG129A*	TM129*	WEP564	121-29005
	25A844C		GE-244*	PTC103*	REN 129*	SK3114/290	ECG129A*	TM129*	WEP564	121-29005
Q401	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q402	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q403	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q404	25C710C		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
	25C710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123AP*	TM123AP**	WEP710	121-29000A
Q501	25C1740Q		GE-62	PTC121*	REN 123A*	SK3122	ECG123AP*	TM123A*	WEP736*	121-29000A*
	25C1740		GE-62	PTC121*	REN 123A*	SK3122	ECG123AP*	TM123A*	WEP736*	121-29000A*
Q502	25C1740Q		GE-62	PTC121*	REN 123A*	SK3122	ECG123AP*	TM123A*	WEP736*	121-29000A*
	25C1740		GE-62	PTC121*	REN 123A*	SK3122	ECG123AP*	TM123A*	WEP736*	121-29000A*
Q503	25C1061D		GE-66	PTC167	REN 152	SK3054/196	ECG152	TM152/**	WEP745/152	121-29002
	25C1061		GE-66	PTC167	REN 152	SK3054/196	ECG152	TM152/**	WEP745/152	121-29002
Q701	25C1014		GE-273	PTC193	REN 300	SK3464/300	ECG300	TM300	WEP1014	
	25C1014		GE-273	PTC193	REN 300	SK3464/300	ECG300	TM300	WEP1014	

* Lead configuration may vary from original.
/** Also available as exact type replacement.

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
C2	220 16v		PC250-25	VTT220H16	QV1-117	EV-1240
C5	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C16	.22 16V			TDC224M050EL	QDT1-10	SD50-R229
C18	.22 35V			TDC224M050EL	QDT1-10	S050-R229
C19	1 25V			TDC105M035EL		SD35-19
C56	2.2 25V		PC2-100	VTT2R2A50	QV1-21	EV-1617.1
C57	47 16V		PC50-16	VTT47016	QV1-73	EV-1226
C110	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C118	22 16V		PC25-25	VTT22816	QV1-55	EV-1224
C122	100 16V		PC100-16	VTT100F16	QV1-95	EV-1231
C139	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C148	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C203	4.7 25V		PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C214	22 16V		PC25-25	VTT22816	QV1-55	EV-1224
C221	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C241	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C247	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C248	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C250	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C252	4.7 25V		PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C253	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C254	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C258	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C299	4.7 35V		PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C310	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C315	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C316	2.2 50V		PC2-100	VTT2R2A50	QV1-21	EV-1617.1
C401	1 50V					
C501	.22 35V			TDC224M050EL	QDT1-10	SD50-R229
C502	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C503	100 16V		PC100-16	VTT100F16	QV1-95	EV-1231
C505	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C509	47 16V		PC50-16	VTT47016	QV1-73	EV-1226
C513	220 16V		PC250-25	VTT220H16	QV1-117	EV-1240
C517	220 16V		PC250-25	VTT220H16	QV1-117	EV-1240
C521	47 16V		PC50-16	VTT47016	QV1-73	EV-1226
C523	470 16V		PC500-16	VTT470K16	QV1-151	EV-1251
C605	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C607	4.7 35V		PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C609	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C611	47 16V		PC50-16	VTT47016	QV1-73	EV-1226
C612	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C613	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C614	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C616	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C618	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C702	2200 16V		W8R2000-16*	TC1520C*	QEI-643*	TVA-1175.3*
C703	220 16V		PC250-25	VTT220H16	QV1-117	EV-1240
C704	220 16V		PC250-25	VTT220H16	QV1-117	EV-1240
C705	220 16V		PC250-25	VTT220H16	QV1-117	EV-1240
C709	470 16V		PC500-16	VTT470K16	QV1-151	EV-1251
C801	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C802	470					
C803	3300 35V		AA0155A			TVLU-1129
C816	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222

PARTS LIST AND DESCRIPTION (CONTINUED)

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

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA			
			CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C55	.02 50V 10%	131689	DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C99	.01 50V			MAG5011		
C101A	10					
C102	.01 50V			MAG5011		
C103	.01 50V			MAG5011		
C104	65 50V		NP068	CN0468		10TCC-Q68
C105	.01 50V			MAG5011		
C106	.01 50V			MAG5011		
C107	150 50V 10%		CD15FD151J03	SX315	QW1-31	MWA-151
C108	2 50V		CD15CD050D03		QW1-2	MWA-050
C109	.01 50V			MAG5011		
C111	.01 50V			MAG5011		
C112	500 50V 10%		CD15FD0511J03	SX351	QW1-43	MWA-511
C113	100 50V		CD15FD101J03	SX310	QW1-27	MWA-101
C114	10 50V		CD15CD100J03		QW1-6	MWA-100
C115	270 50V 5%		CD15FD271J03	SX327	QW1-37	MWB-271
C116	.01 50V			MAG5011		
C117	.01 50V			MAG5011		
C119	170 50V 10%		CD15FD181J03	SX318	QW1-33	MWA-181
C120	50V 10%		NP068	CN0468		10TCC-Q68
C121	.01 50V			MAG5011		
C123	.01 50V			MAG5011		
C124	150 50V 10%		CD15FD151J03	SX315	QW1-31	MWA-151
C125	30 50V		CD15ED300J03	SX430	QW1-14	MWA-300
C126	.01 50V			MAG5011		
C127	.01 50V			MAG5011		
C128	.01 50V			MAG5011		
C129	.01 50V			MAG5011		
C130	.01 50V			MAG5011		
C131	220 50V 10%		CD15FD221J03	SX322	QW1-35	MWA-221
C132	1 50V		GP5	GP533		
C133	.01 50V			MAG5011		
C134	.01 50V			MAG5011		
C135	100 50V 10%		CD15FD101J03	SX310	QW1-27	MWA-101
C136	15 50V		CD15CD150J03		QW1-8	MWA-150
C137	.01 50V			MAG5011		
C138	.01 50V			MAG5011		
C140	20 50V		CD15ED200J03	SX420	QW1-10	MWA-200
C141	170 50V		CD15FD181J03	SX318	QW1-33	MWA-181
C143	60 50V		CD15ED620J03	SX462	QW1-22	MWA-620
C144	.01 50V			MAG5011		
C145	47 50V		CD15ED470J03	SX447	QW1-19	MWA-470
C146	.01 50V			MAG5011		
C147	.01 50V			MAG5011		
C149	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	5GA-S40
C150	56 50V 10%		CD15ED560J03	SX456	QW1-21	1FT-S56
C151	100 50V 10%		CD15FD101J03	SX310	QW1-27	MWA-560
C152	100 50V 10%		CD15FD101J03	SX310	QW1-27	MWA-101
C153	82 50V 10%		CD15ED820J03	SX482	QW1-25	MWA-101
C155	65 50V		CD15ED680J03	SX468	QW1-23	MWA-820
C199	30 50V		CD15ED300J03	SX430	QW1-14	MWA-680
C201	.001 50V			GP210		MWA-300
C202	30 50V		CD15ED300J03	SX430	QW1-14	10TS-D10
C204	.01 50V			MAG5011		MWA-300
C205	3 50V		CD15CD050D03		QW1-2	MWA-050
C206	3 50V		CD15CD050D03		QW1-2	MWA-050
C207	.01 50V			MAG5011		
C208	3 50V		CD15CD050D03		QW1-2	MWA-050
C209	.01 50V			MAG5011		
C210A	8 50V		NP010	CN0410		10TCC-Q10
C210B	15 50V		CD15CD150J03		QW1-8	MWA-150
C211	.01 50V			MAG5011		
C212	.01 50V			MAG5011		
C213	47 50V		CD15ED470J03	SX447	QW1-19	MWA-470
C215	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C216	20 50V		CD15ED200J03	SX420	QW1-10	MWA-200
C217	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C218	.001 50V			GP210		10TS-D10
C219	.001 50V			GP210		10TS-D10
C220	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C222	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C223	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C224	20 50V		CD15ED200J03	SX420	QW1-10	MWA-200
C225	.01 50V			MAG5011		
C226	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C227	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C228	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C229	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C230	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C231	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C232	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C233	5 50V		CD15CD050D03		QW1-2	MWA-050
C234	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C235	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C236	5 50V		CD15CD050D03		QW1-2	MWA-050
C238	.001					
C239	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C240	1 50V		CD15CD010003		QW1-1	MWA-010
C242	100 50V 10%		CD15FD101J03	SX310	QW1-27	MWA-101
C243	.1 50V 10%		WMF05P1	EWFO5010	QFT2-215	1FT-P10
	.01 50V 10%		WMF151	M192P1039R8	QFT2-91	1FT-S10
C244	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C245	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C246	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C249	.01 50V			MAG5011		
C251	.001 50V			GP210		10TS-D10
C252	.1		WMF05P1	EWFO5010	QFT2-215	1FT-P10
C253	.04		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C255	.047 50V			MAG5015		
	.01			MAG5011		

CRAIG MODEL L131

PARTS LIST AND DESCRIPTION (CONTINUED)

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

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA			
			CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C256	.001 50V	L131689	OPMS2S47 OPMS2S47 OPMS2S47 C015CD050003	GP210		10TS-010
C257	.01 50V			MAG5011		
C259	.001 50V			GP210		10TS-010
C260	.04 50V 10%			EWFI1A147	QFT2-171	1FT-S47
C261	.04 50V 10%			EWFI1A147	QFT2-171	1FT-S47
C262	.04 50V 10%			EWFI1A147	QFT2-171	1FT-S47
C301	1.5 50V				QW1-2	MWA-050
C302	.01 50V			MAG5011		
C303	.01 50V			MAG5011		
C304	20 50V		C015E0200J03	SX420	QW1-10	MWA-200
C305	20 50V		C015E0200J03	SX420	QW1-10	MWA-200
C307	15 50V		C015CD150J03		QW1-8	MWA-150
C308	56 50V 10%		C015E0560J03	SX456	QW1-21	MWA-560
C309	.001 50V			GP210		10TS-D10
C311	.01 50V			MAG5011		
C312	.01 50V			MAG5011		
C313	.1 50V 10%		WMF05P1	EWFO5010	QFT2-215	1FT-P10
C314	.001 50V			GP210		10TS-D10
	.01 50V			MAG5011		
C317	.01 50V			MAG5011		
C399	10 50V		CD15CD100J03		QW1-6	MWA-100
C402	.01 50V			MAG5011		
C403	.01 50V			MAG5011		
C404	.01 50V			MAG5011		
C406	.001 50V			GP210		10TS-D10
C407	15 50V		CD15CD150J03		QW1-8	MWA-150
C408	10 50V		CD15CD100J03		QW1-6	MWA-100
C409	10 50V		CD15CD100J03		QW1-6	MWA-100
C410	180 50V 10%		CD15FD181J03	SX318	QW1-33	MWA-181
C411	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C412	500 50V 10%		CD15FD511J03	SX351	QW1-43	MWA-511
	550 50V		CD19FD561J03	SX356		MWC-561
C413	.01 50V			MAG5011		
C414	.04 50V 10%		OPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C415	10					
C416	5 NPO 50V		NP06P8	CN0568		10TCC-V68
C417	.01 50V			MAG5011		
C418	.01 50V			MAG5011		
C419	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C504	.01 50V			MAG5011		
C506	.1 50V 10%		WMF05P1	EWFO5010	QFT2-215	1FT-P10
C507	.01 50V			MAG5011		
C508	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C510	300 50V 10%		C015FD301J03	SX330	QW1-38	MWA-301
C511	.01 50V			MAG5011		
C512	120 50V 10%		CD15FD121J03	SX312	QW1-29	MWA-121
C514	.03 50V 10%		DPMS6S27	M192P2739R8	QFT2-148	1FT-S30
C515	.01 50V			MAG5011		
C516	.1 50V 10%		WMF05P1	EWFO5010	QFT2-215	1FT-P10
C518	.01 50V			MAG5011		
C519	.01 50V			MAG5011		
C520	.04 50V 10%		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C526	.001 50V			GP210		10TS-D10
	.01 50V			MAG5011		
C595	.001 50V			GP210		10TS-D10
C596	.01 50V			MAG5011		
C597	.02 50V 10%		DPMS2S22	MA2P2239R8	QFT2-127	1FT-S22
C598	.01 50V 10%		WMF1S1	EWFI1A110	QFT2-91	1FT-S10
C599	.01 50V 10%		WMF1S1	EWFI1A110	QFT2-91	1FT-S10
C602	.01 50V			MAG5011		
C603	.001 50V			GP210		10TS-D10
C606	.01 50V 10%			MAG5011		
C608	.01 50V 10%			MAG5011		
C610	.001 50V 10%			GP210		10TS-D10
C617	.001 50V			GP210		10TS-D10
C619	.001 50V			GP210		10TS-D10
C699	.001 50V			GP210		10TS-D10
C701	.001 500V					
C706	.01 50V			MAG5011		
C707	.01 50V			MAG5011		
C708	.04 50V		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C710	.01 50V			MAG5011		
C711	.001 50V			GP210		10TS-D10
C712	.001 50V			GP210		10TS-D10
C713	.001 50V			GP210		10TS-D10
C714	.001 50V			GP210		10TS-D10
C715	.001 50V			GP210		10TS-D10
C716	.047 50V		DPMS2S47	EWFI1A147	QF1-171	1PB-S47
C798	.01 50V 10%			MAG5011		
C799	.01 50V 10%			MAG5011		
C804	.0022 125V			GP222		10TS-D22
C805	.0022 125V			GP222		10TS-D22
C806	.001 50V			GP210		10TS-D10
C807	.047 50V			MAG5015		
C808	.047 50V			MAG5015		
C809	.01 50V			MAG5011		
C810	.01 50V			MAG5011		
C811	.01 50V			MAG5011		
C812	.01 50V			MAG5011		
C813	.01 50V			MAG5011		
C814	.01 50V			MAG5011		
C815	.01 50V			MAG5011		
C817	.04 50V		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C818	.04 50V		DPMS2S47	EWFI1A147	QFT2-171	1FT-S47
C819	.01 50V			MAG5011		
C898	.047 50V			MAG5015		
C899	.047 50V			MAG5015		

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA		
			MFGR. PART No.	MALLORY PART No.	TRW PART No.
R106	RF Meter	100K	L131573	MTC15L1 (2)	X201R104B (2)
R130	SSB ALC	10K		MTC14L1	X201R103B
R131	Calibrate/Local/DX Switch	10K			
R229	AM S Meter	20K		MTC24L1 (2)	X201R253B (2)
R240	SSB S Meter	100K		MTC15L1 (2)	X201R104B (2)
R307	RF Gain Range	1000	L131571	MTC13L1 (2)	X201R102B (2)
R309	AGC	5000		MTC53L1 (2)	X201R502B (2)
R315	Squelch Range	10K		MTC14L1 (2)	X201R103B (2)
R316	Squelch	10K			
R401	Carrier Balance	10K		MTC14L1	X201R103B
R414	Carrier Balance	100K	L131572	MTC15L1 (2)	X201R104B (2)
R501	Volume/Power Switch	10K			
R605	AM AHC	5000	L131570	MTC53L1 (2)	X201R502B (2)
R705	Clarifier	10K			
R706	XMT Frequency	10K		MTC14L1	X201R103B
R711	Dimmer	500		MTC52L1	X201R501B

(2) Cut off one of the end terminals and bend to fit P.C. Board.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	RF Choke (100uH)	L101671	101	9250-104	
L2	RF Choke (150uH)	L131685	151		
L3	VCO	L131671	368		
L4	VCO Buffer (19MHz)	L101673	354		
L5	AM Frequency (9.987MHz)	L131672			
L6	RF Osc (10.000MHz)	L131674	Y388N		
L101	TVI Trap (54MHz)	L131682	0.85uH	4594	
L102	RF Choke (.22uH)	L131680	0.22uH	4584	
L103	RF Choke (22uH)	L131683	22uH	4626	
L104	RF Choke (22uH)	L131683	22uH	4626	
L105	RF Choke	L131679			
L106	Final (27MHz)	L101675		CB140(34)	
L107	RF Choke (.22MHz)	L131680	.22uH	4584	
L108	RF Choke (1.2MHz)	L131684			
L109	Xmit Driver (27MHz)	L131678			
L110	RF Choke (.65uH)	L131681	.65uH		
L111	Predriver (27MHz)	L131677			
L112	RF Choke (.65uH)	L131681	.65uH		
L113	SWR Pick-up	L131676			
L114	TVI Trap (15.600MHz)	L131675			
L201	RF Choke (22uH)	L101674	220	9330-32	
L301	RF Choke (470uH)	L131686	471	9250-474	
L302	RF Choke	L131687			
L303	RF Choke (470uH)	L131686	471	9250-474	
L401	RF Choke (22uH)	L101674	220	9330-32	
L404	Carrier Oscillator (7.7975MHz)	L131673			
L405	RF Choke (150uH)	L131685	151		
T1	Doubler (20.00MHz)	L131641		CBS133-TC	
T101	XMT Buffer (27MHz)	L131648			
T102	XMT Mixer (27MHz)	L131643		CBS706-TC	
T103	XMT Mixer (27MHz)	L131642		CBS136-TC	
T104	VCO Buffer (19MHz)	L131641		CBS133-TC	
T201	Rec Antenna (27MHz)	L131647			
T202	RF Amp (27MHz)	L131645	C187AT		
T203	IF (7.8MHz)	L131644		CBS516-TTC	
T204	IF (7.8MHz)	L131644		CBS516-TTC	
T205	IF (7.8MHz)	L131644		CBS516-TTC	
T206	IF (7.8MHz)	L131646		CBS517-TTC	
T301	Noise Amp	L131650		CBS136-TC	
T302	Noise Amp	L131649			
T303	Noise Amp	L131649			

CRAIG MODEL L131

FILTER CHOKE

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.
T701	2.65A	.22	1.6mH	L131652 K-18 (1)	TR555	

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T501	18	8	L131651 L75 (1)			(1) Number on unit.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	3 1/2" PM 8 Ohms	L131702	3A0528R	

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
F701	4A Quick Acting	XFU004	L101800	MTN4	HRK	312-004	150145	

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	L101507	18-032	18-034	18-010	18-099	2	3	5	NC	NC	4

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
DS701	Lamp	L101552	Meter (13.62V @ 80mA)
DS702	Lamp	L101552	Meter (13.62V @ 80mA)
DS801	Lamp	L101550	Mod (13.06V @ 70mA)
DS802	Lamp	L101550	Mod (13.06V @ 70mA)
FL201	Filter	L131670	7.8MHz (Crystal)
J1	Jack	4101034	External Speaker
J2	Jack	4101034	PA Speaker
J3	Jack	4102014	Power Supply (6 Pin)
J101	Jack	L131620	Antenna
J601	Jack	4101020	Microphone (5 Pin)
L701	Relay	L131688	Rec-XMT
M1	Meter	L131604	S/RFO/CAL/SWR
S1	Switch	L131530	LSB/AM/USB
S2	Switch	L131530	CB/Dim/PA
S3	Switch	L101531	Off/ANL/NB
S4	Switch	L101531	S/RFO/CAL/SWR
S5	Switch	L131531	Channel Selector
Y1	Crystal	L131722	10.000MHz
Y401	Crystal	L131723	7.8015MHz
	P.C. Board	L131518	Channel Selector
	P.C. Board	L131519	Mic Amp
	P.C. Board	L131517	PLL

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

ITEM	PART No.	ITEM	PART No.
Cabinet, Top	L131052	Knob, Channel Selector (Assembly)	L101026
Cabinet, Bottom	L131053	Knob, Small (2 used)	L131026
Escutcheon, Front	L131010	Panel, Insert	L131061
Knob, Control (6 used)	L101028		

WIRING DATA

Cable (Speaker)(Unshielded).....	Use BELDEN No. 8782 (AWG24)(4 colors)
Shielding Strap.....	Use BELDEN No. 8660 (3/16" width)
Hook-up Wire (General Use).....	Use BELDEN No. 8524 (AWG22)(13 colors)
Hook-up Wire (Shielded).....	Use BELDEN No. 8401 (Braided Shield)(1 conductor)(AWG25)
	Use BELDEN No. 8421 (Spiral Shield)(1 conductor)(AWG25)
	Use BELDEN No. 8737 (Spiral Shield)(2 conductor)(AWG22)
Microphone Cable (Coiled).....	Use BELDEN No. 8491 (4 conductor-2 shielded)(6 ft.)(AWG23)
Microphone Cable (Coiled).....	Use BELDEN No. 9467 (5 conductor-1 shielded)(6 ft.)(AWG28)