

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 13-892

MIDLAND MODEL 13-892

MANUFACTURER'S SPECIFICATIONS

GENERAL

Circuitry:	1 IC, 37 Transistors, 5 FETs, 44 Diodes
Frequency Control:	Crystal Synthesizing System
Channels:	23 channels all installed
Mode of Operations:	AM, Lower Sideband-Upper Sideband
Controls:	RF Gain, Clarifier, Volume/PA, Squelch Controls, LSB-USB-AM, Channel Selector, PA-CB, NB-OFF, Tone Hi-Lo Switches
Jacks and Connectors:	Microphone, Antenna, PA speaker, External speaker, DC power connectors
Power Source:	DC 13.8V
Speaker:	3" dynamic, 8 ohms
Microphone:	Dynamic CB mike
PA Audio Output:	More than 3 W
Size:	2½ (H) x 7¼ (W) x 9½ (D) inches
Weight:	4.4 lbs.
Accessories:	DC Power Cord, Microphone, Mounting Bracket

RECEIVER

Receiving System:	Single conversion superheterodyne
Sensitivity:	More than 1uV (S/N 10 dB)
Selectivity:	More than 50 dB
Clarifier:	+ 600 Hz (receiving only)
Audio output power:	More than 3 W (into 8 ohm)
Squelch range:	1uV - 500uV (AM & SSB)
Intermediate Frequency:	11.275 MHz

SSB TRANSMITTER

SSB Generation:	Balance Modulation
RF Output Power:	12 Watts PEP (F.C.C. Maximum)
Carrier Suppression:	More than 40 dB
Unwanted Sideband Suppression:	More than 50 dB
Harmonic Suppression:	More than 50 dB

AM TRANSMITTER

Modulation:	High Level
RF Output Power:	4.0 watts (F.C.C. Maximum)
Harmonic Suppression:	More than 50 dB

Courtesy of the Manufacturer

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

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7CZ554

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 input. 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:

L1,L10,L11,L13,L14,L20.....5009
L5,L6,L7.....9304
L2,L3,L4,L9,L12,L15 thru L19,L201 thru L204.....9440
L601.....8282
TC201 thru TC204,TC1,TC2,TC205.....5000

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of frequency counter to TP1 (Q6 Emitter).	Ch. 13, USB	TC1	Adjust for 11.275MHz ± 50 Hz.
Input of frequency counter to TP2 (Emitter Q204).	Ch. 1, USB Ch. 2, USB Ch. 3, USB Ch. 4, USB	TC201 TC202 TC203 TC204	Adjust for 14.910MHz ± 50 Hz. Adjust for 14.920MHz ± 50 Hz. Adjust for 14.930MHz ± 50 Hz. Adjust for 14.950MHz ± 50 Hz.
Input of frequency counter to TP2 (Q204 Emitter).	Ch. 1, AM Clarifier midrange	TC205	Adjust between 14.907MHz and 14.908MHz.
Input of frequency counter to TP3. (L201 Secondary).	Ch. 23, AM	L201	Turn L201 counterclockwise until oscillator stops. Turn L201 clockwise until oscillator starts, then continue 1/2 turn further.
	Ch. 1, AM Ch. 5, AM Ch. 9, AM Ch. 13, AM Ch. 17, AM Ch. 21, AM		Check for 23.330MHz ± 350 Hz. Check for 23.380MHz ± 350 Hz. Check for 23.430MHz ± 350 Hz. Check for 23.480MHz ± 350 Hz. Check for 23.530MHz ± 350 Hz. Check for 23.580MHz ± 350 Hz.
Input of RF VTVM to TP4 (L204 Secondary).	Ch. 13, AM	L202,L203, L204	Adjust for maximum.
Input of oscilloscope to TP5. (L14 Secondary).	Ch. 13, LSB	L12,L13,L14	Adjust for maximum.
Input of oscilloscope to TP6 (L17 Secondary).	Ch. 13, LSB	RV11, L15,L16,L17	Adjust for maximum without distortion.

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.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP7 (Q17, Base). 11.2735MHz, 1000Hz @ 30% modulation.	Ch. 13, AM Clarifier midrange RF Gain Maximum NB Off	L20, L10, L11	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.115MHz, 1000Hz @ 30% modulation.	Ch. 13, AM	L19, L18	Adjust for maximum output. Repeat above steps if necessary.

RECEIVER ADJUSTMENTS

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

MIDLAND MODEL 13-892

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
No signal input. Input of VTVM to TP41 (Q33, Emitter).	Ch. 13, USB RF Gain Maximum	RV6	SSB AGC Adjust for 2.0 volts.
No signal input. Input of VTVM to TP41 (Q33, Emitter).	Ch. 13, AM	RV10	AM AGC Adjust for 1.9 volts.
Output of signal generator thru .01uF to antenna jack. 27.115MHz, 1000Hz @ 30% modulation. Output 100uV.	Ch. 13, AM Clarifier midrange RF Gain Maximum	RV12	SQUELCH RANGE Set Squelch Control RV602 fully clockwise. Adjust RV12 so that squelch just breaks.
Output of signal generator thru .01uF to antenna jack. 27.115MHz, 1000Hz @ 30% modulation. Output 100uV.	Ch. 13, AM Clarifier midrange RF Gain Maximum	RV9	S METER Adjust RV9 for 9 on S scale of meter.

TRANSMITTER ALIGNMENT

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

AM

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of Spectrum analyzer to antenna jack.	Ch. 13	L301	Adjust for MINIMUM at 54MHz.

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.

SSB

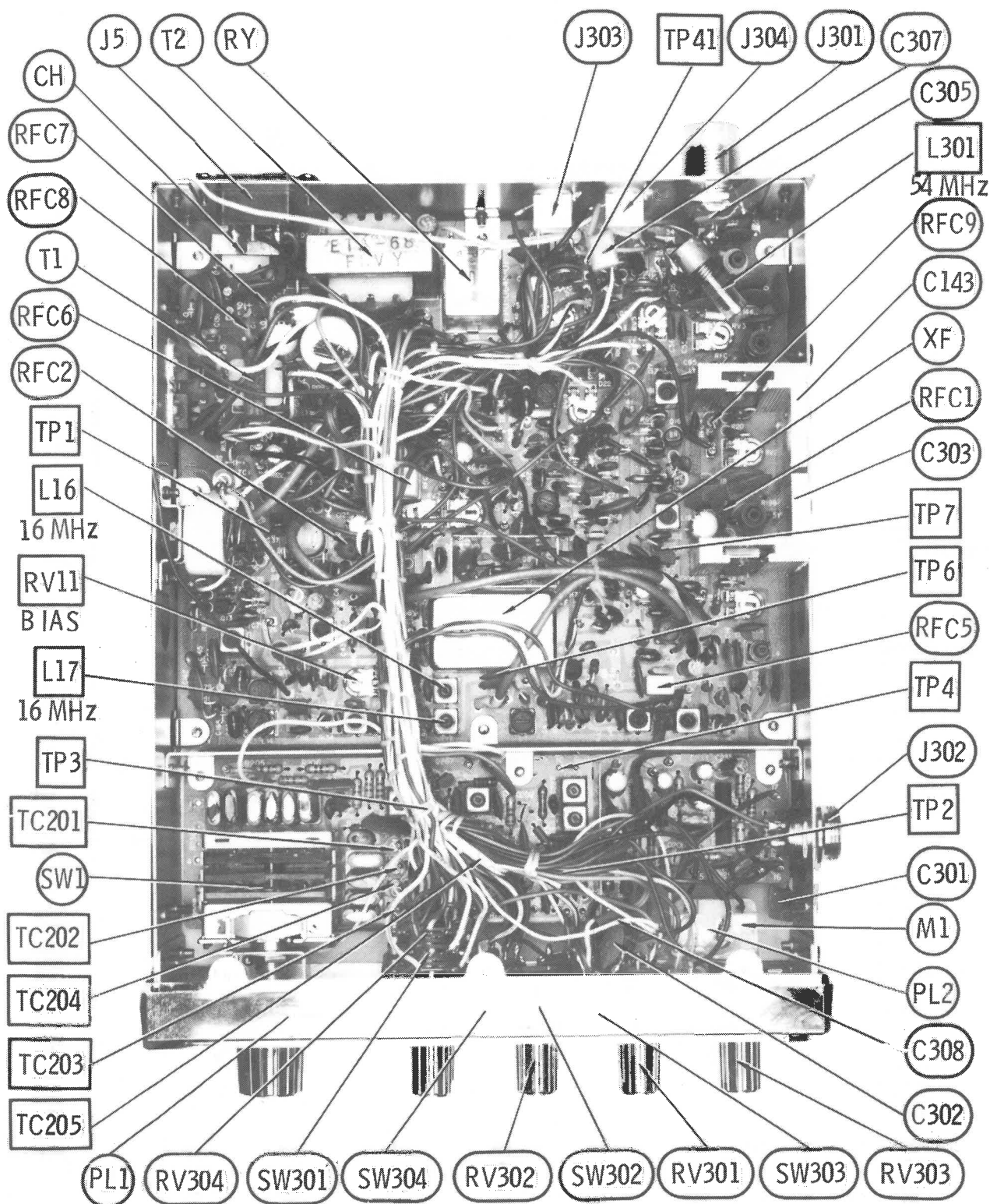
TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Inject a 2400Hz, 10mV signal at MIC input.	Ch. 13, USB Turn Bias (RV1 and RV2), and SSB MIC Gain (RV8) to mid-range.	L1,L2,L3 L4,L5,L6 L7	Adjust for maximum.
Inject a 2400Hz, 10mV signal at MIC input.	Ch. 13, USB	L6, RV5	Adjust for 11 watts.
Inject a 2400Hz, 10mV signal at MIC input. Input of oscilloscope to antenna jack.	Ch. 13, USB	L9	Adjust for maximum.
No modulation. Input of oscilloscope to antenn jack.	Ch. 13, USB	TC2, RV4	Adjust for MINIMUM.
Inject a 2400Hz, 10mV signal at MIC input. Input of oscilloscope to antenna jack.	Ch. 13, USB	L9	Adjust for maximum.

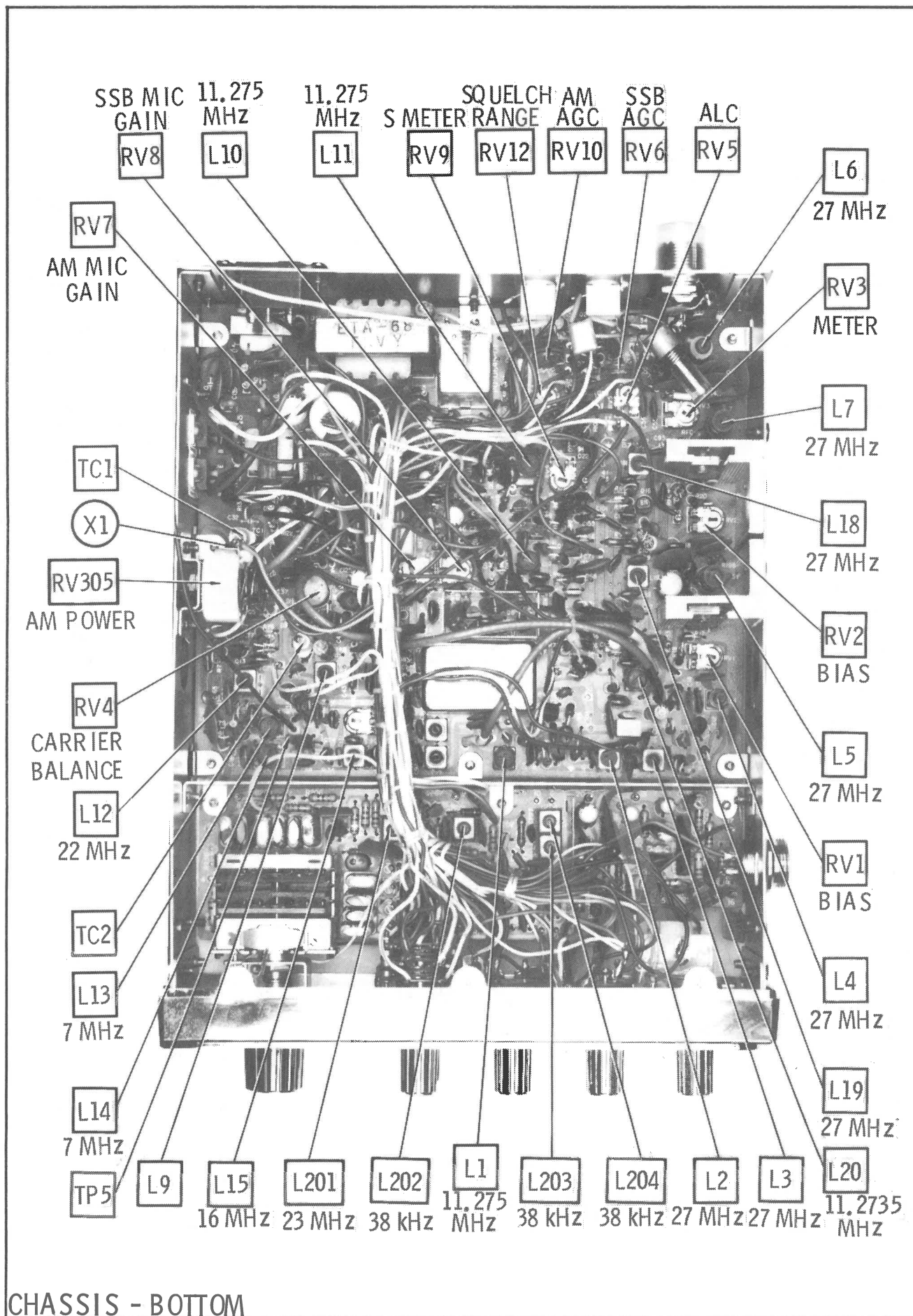
TRANSMITTER ADJUSTMENTS

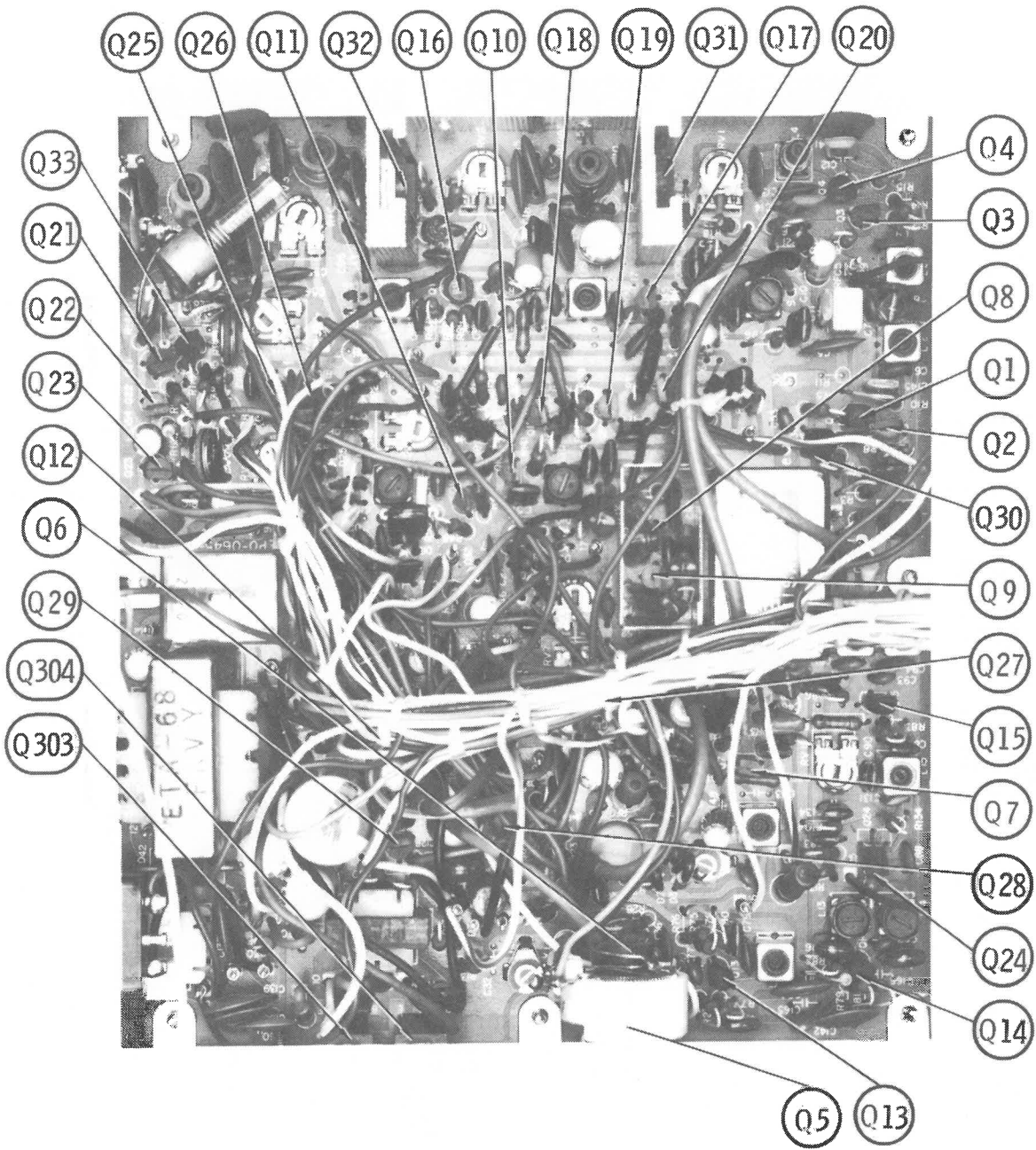
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.
NOTE: Be sure to check transmit frequency and power on all active channels after adjustments of transmitter.

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Output of 2-tone generator to MIC input, 500Hz and 2400Hz. Output 5mV. Input of oscilloscope to antenna jack.	Ch. 13, USB	RV1, RV2	BIAS Adjust for 100% modulation.
Output of 2-tone generator to MIC input, 500Hz and 2400Hz. Output 5mV. Input of oscilloscope to antenna jack.	Ch. 13, USB	RV8	SSB MIC GAIN Adjust for 100% modulation.
No modulation.	Ch. 13, AM	RV305	AM POWER Adjust for 3.8 watts.
Inject a 2500Hz, 7mV signal at MIC input.	Ch. 13, AM	RV7	AM MIC GAIN Adjust for 90% modulation.
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.	Ch. 13, AM	RV3	PANEL POWER METER Adjust RV3 so panel power meter agrees with RF wattmeter.

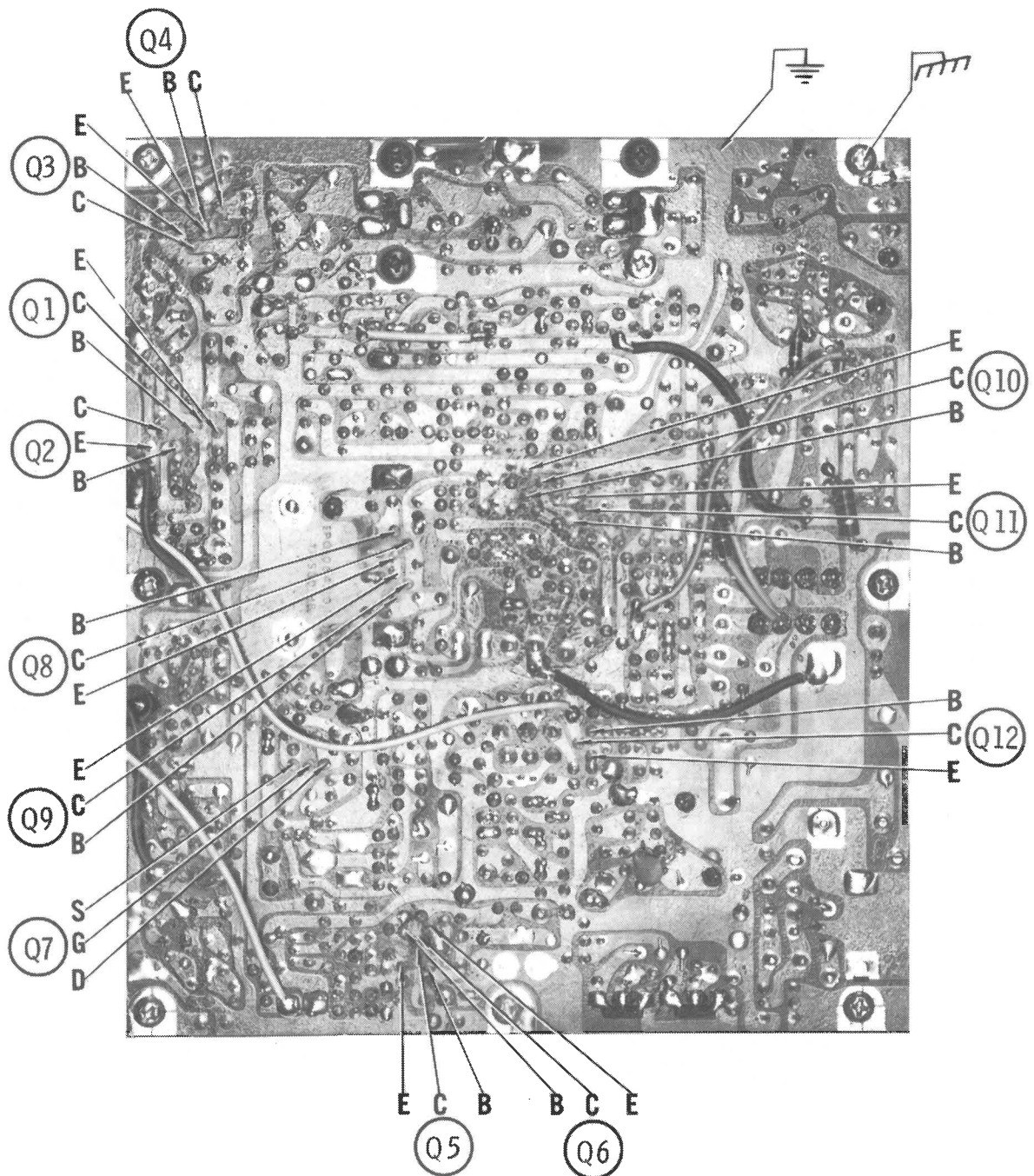
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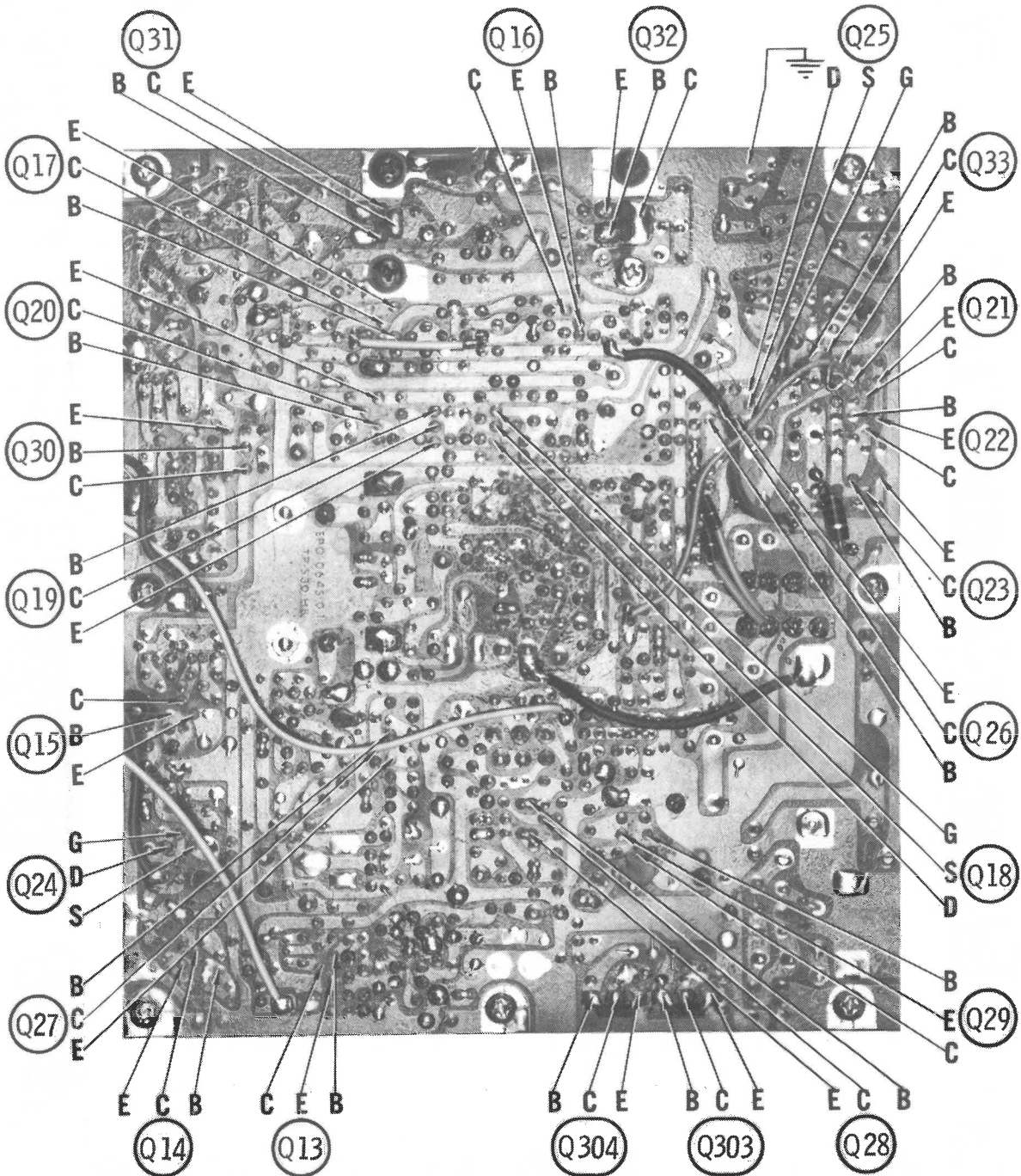




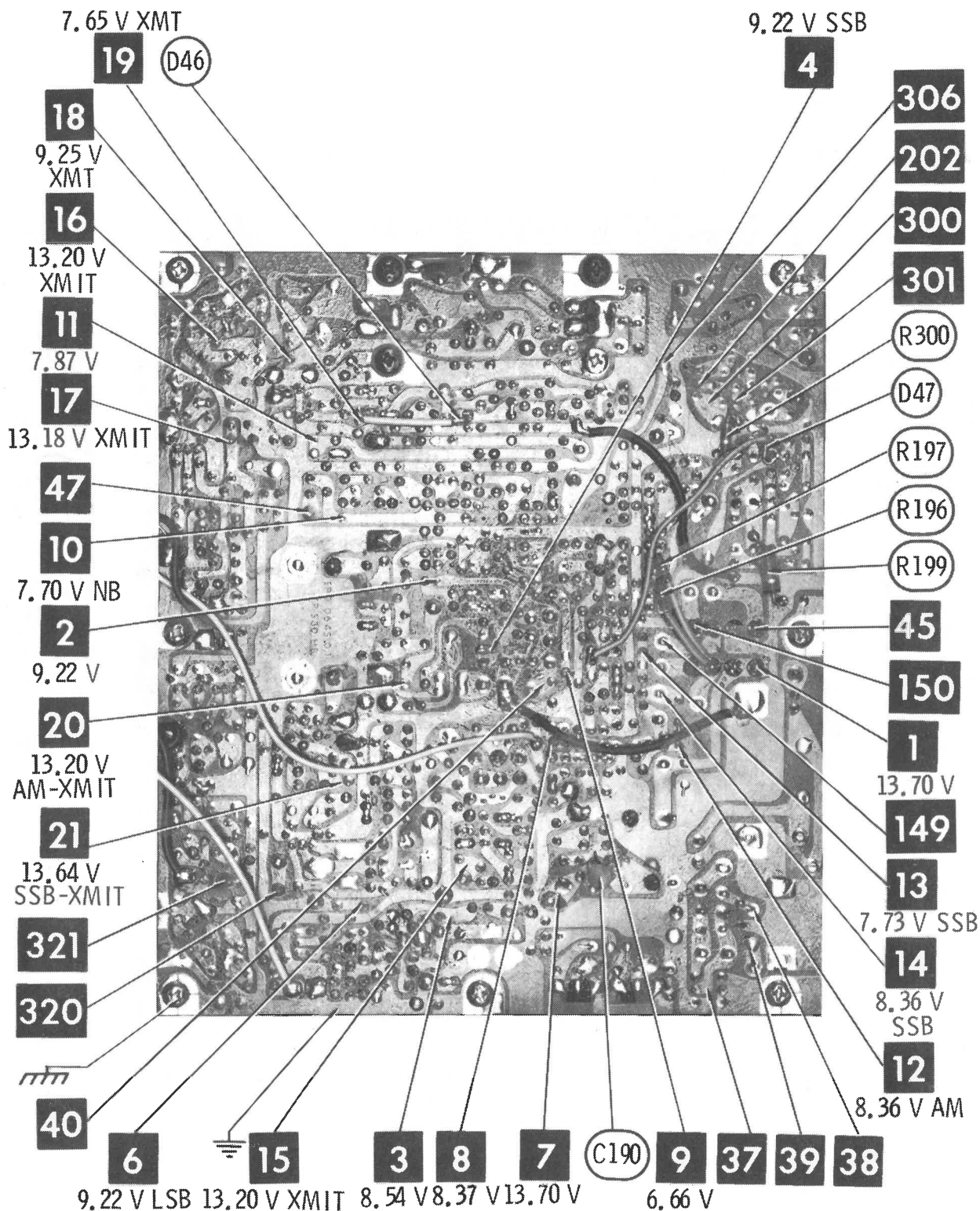
MAIN BOARD



MAIN BOARD

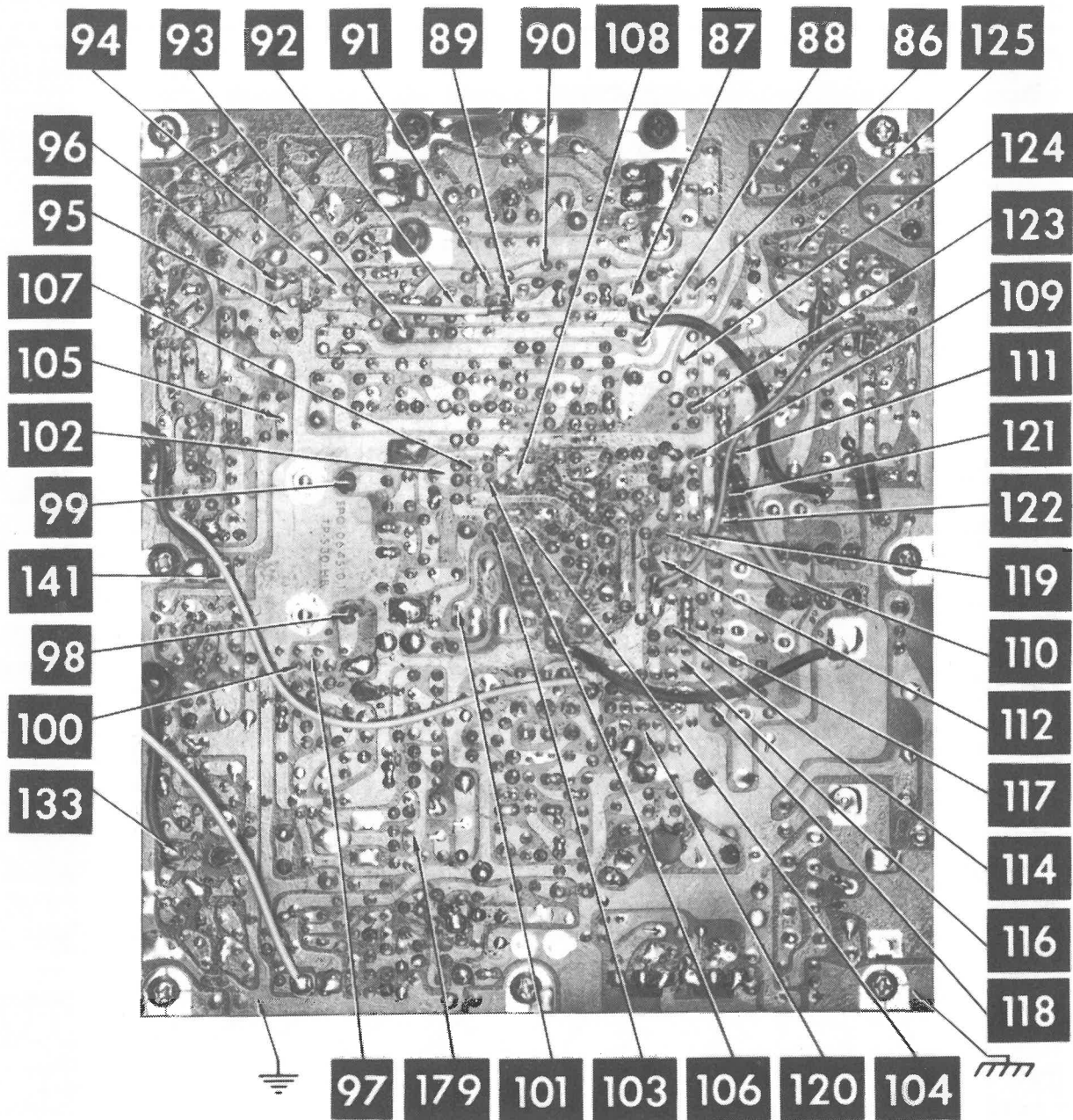


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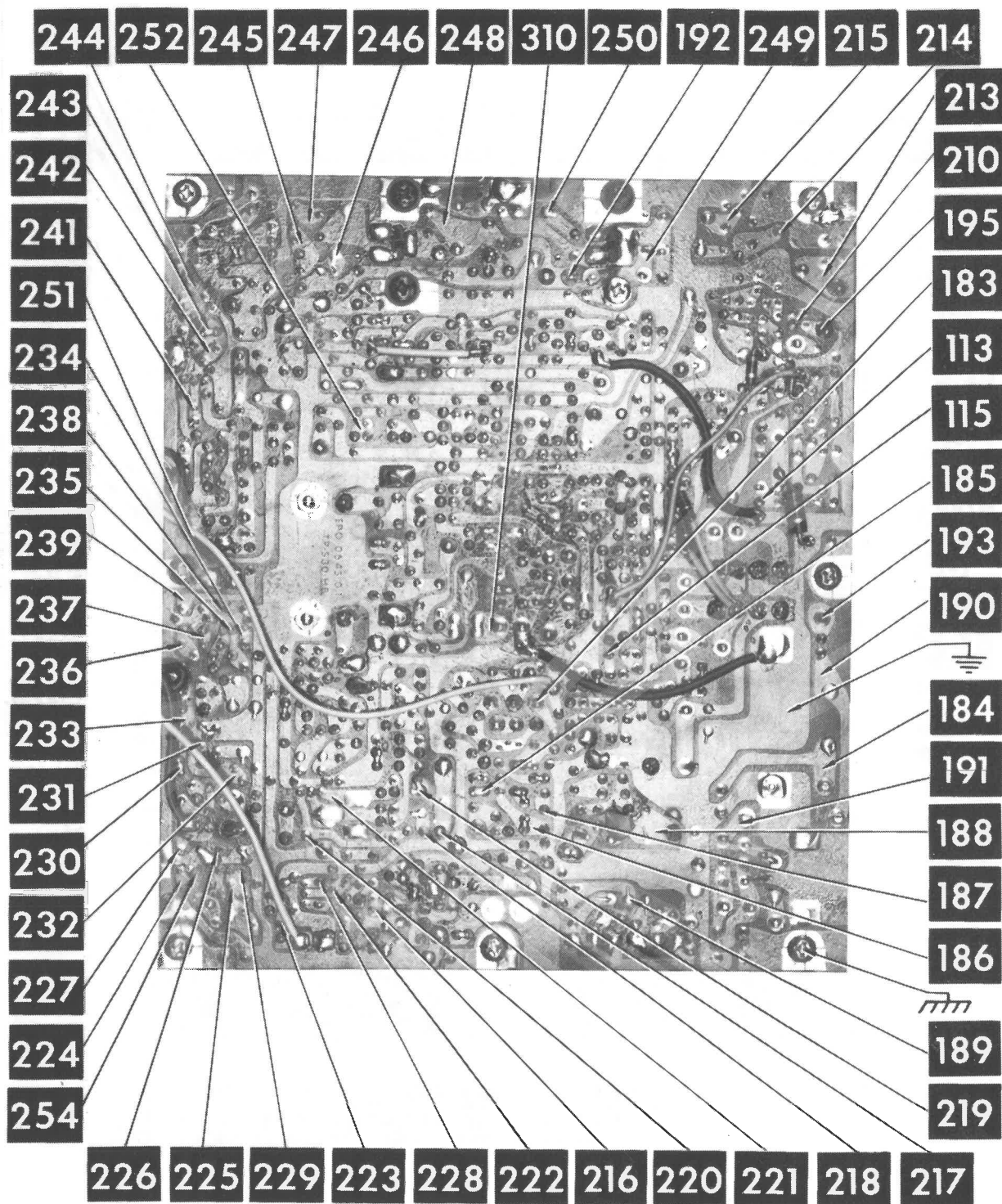


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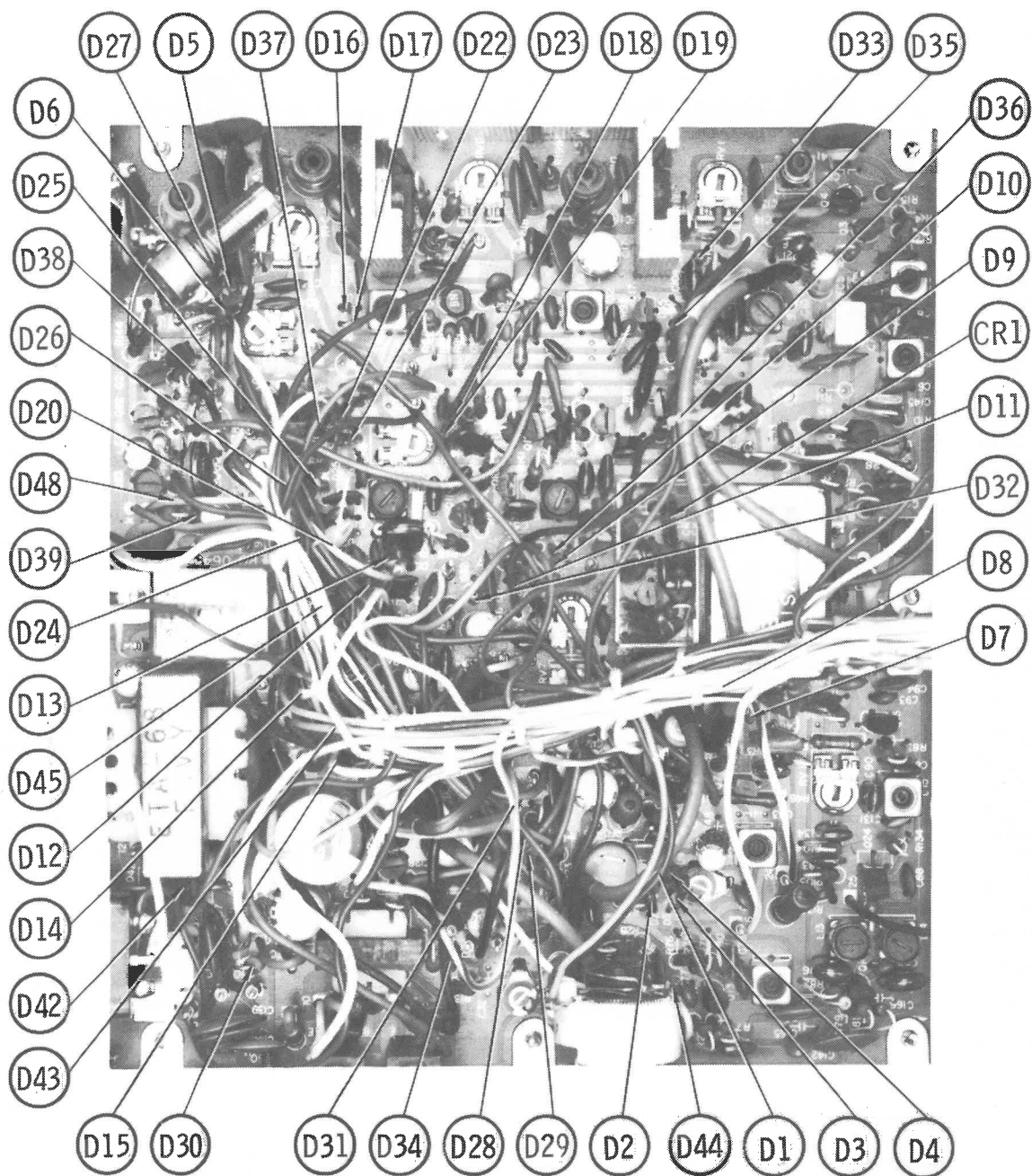
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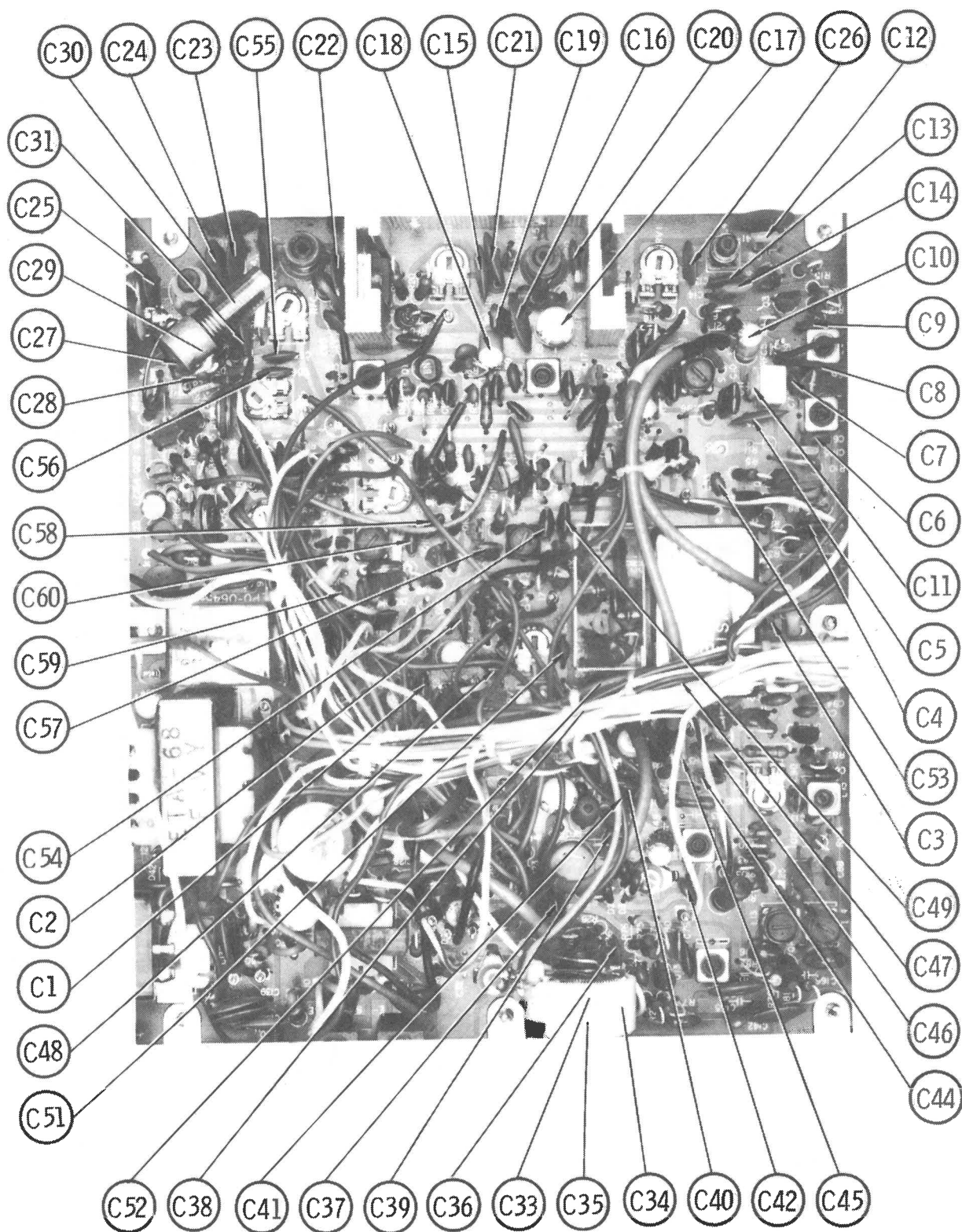
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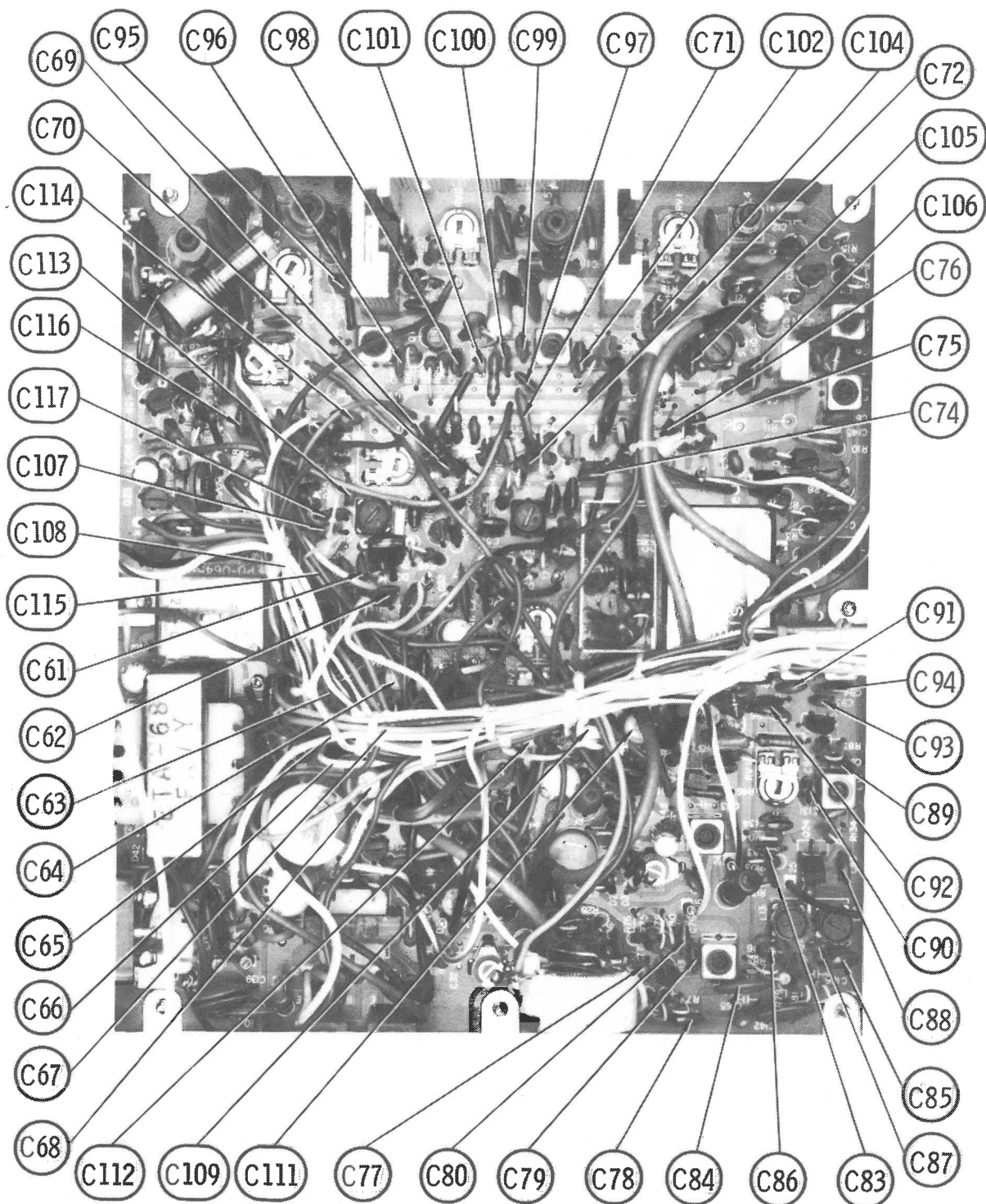
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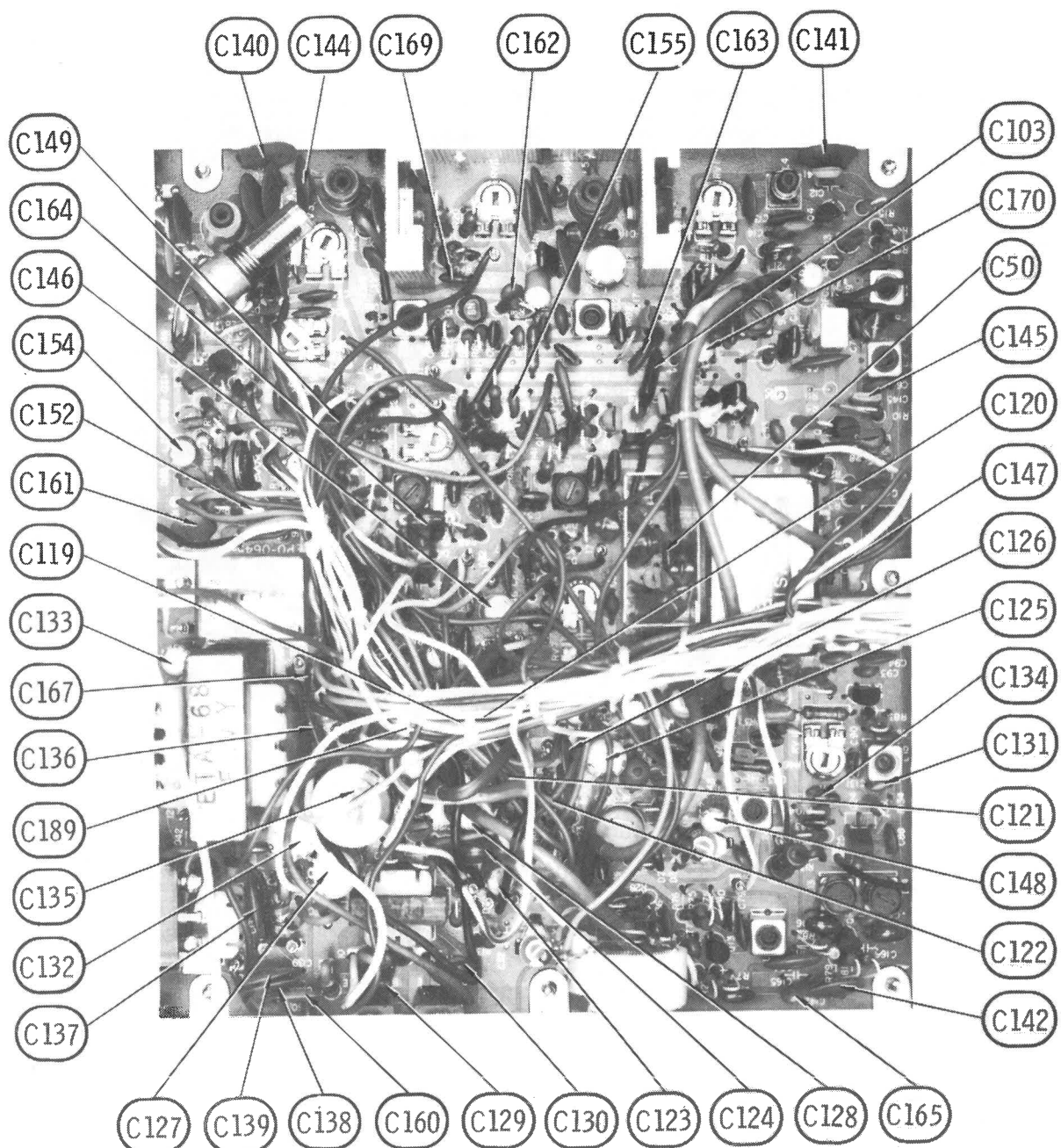
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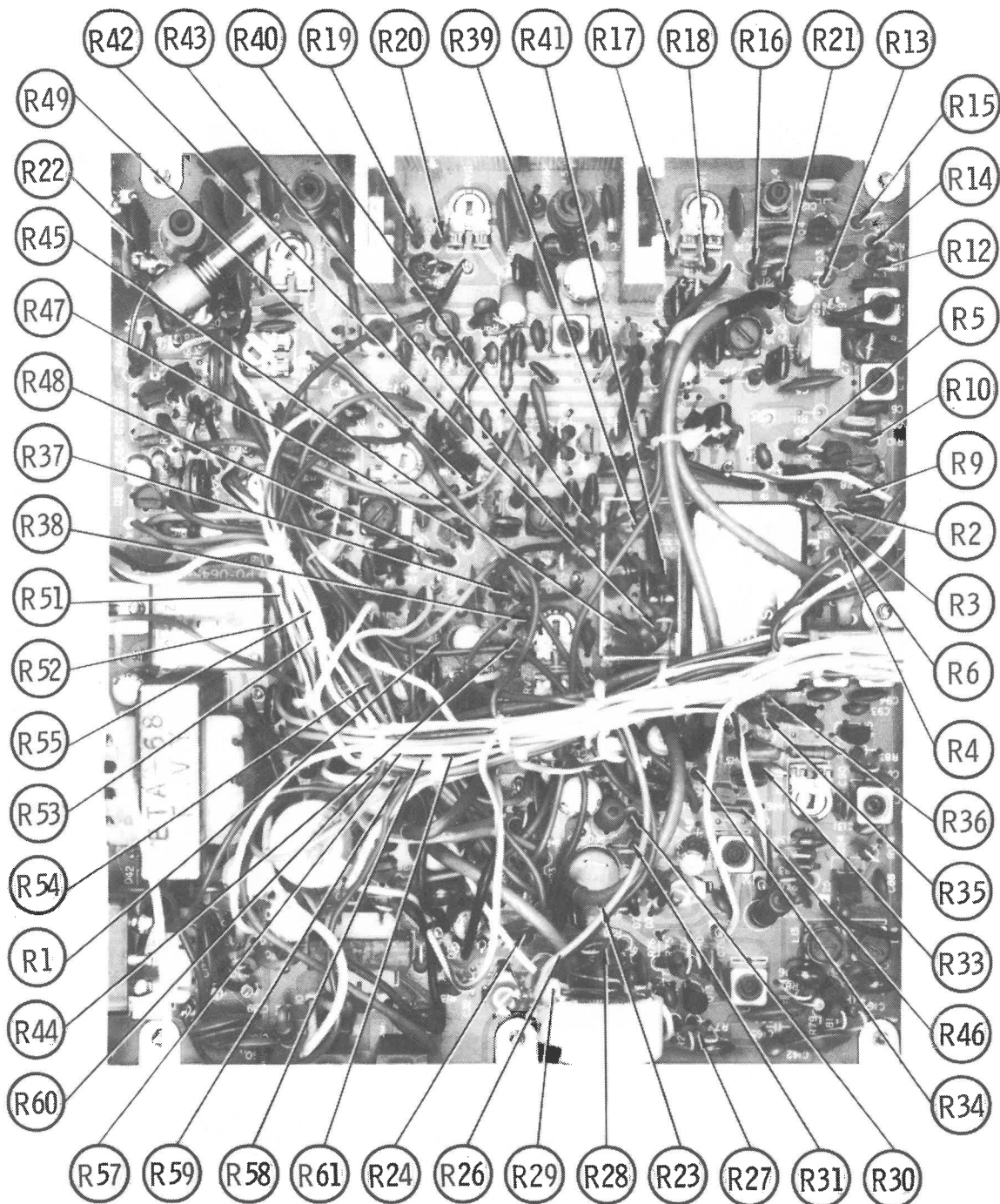
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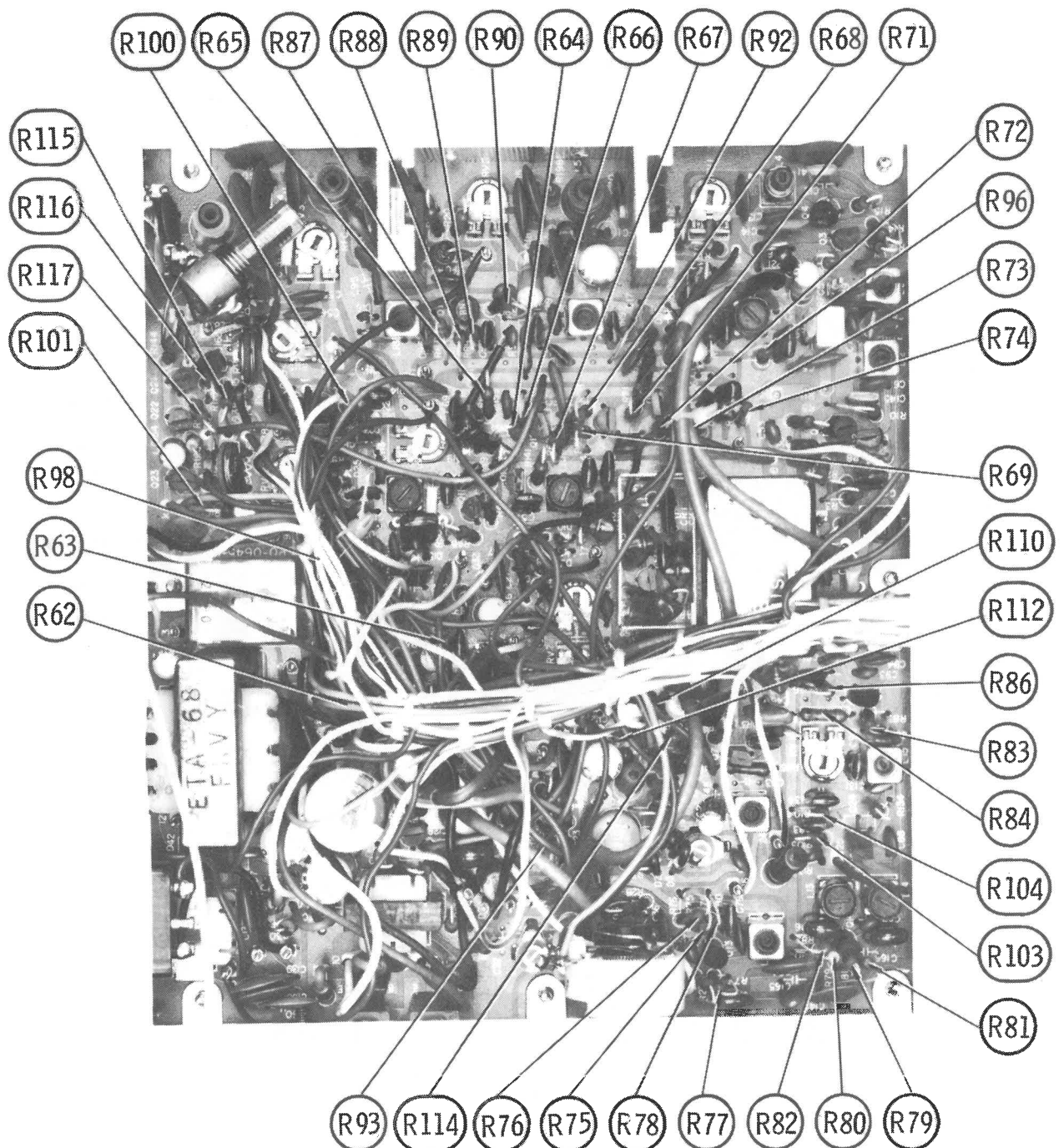
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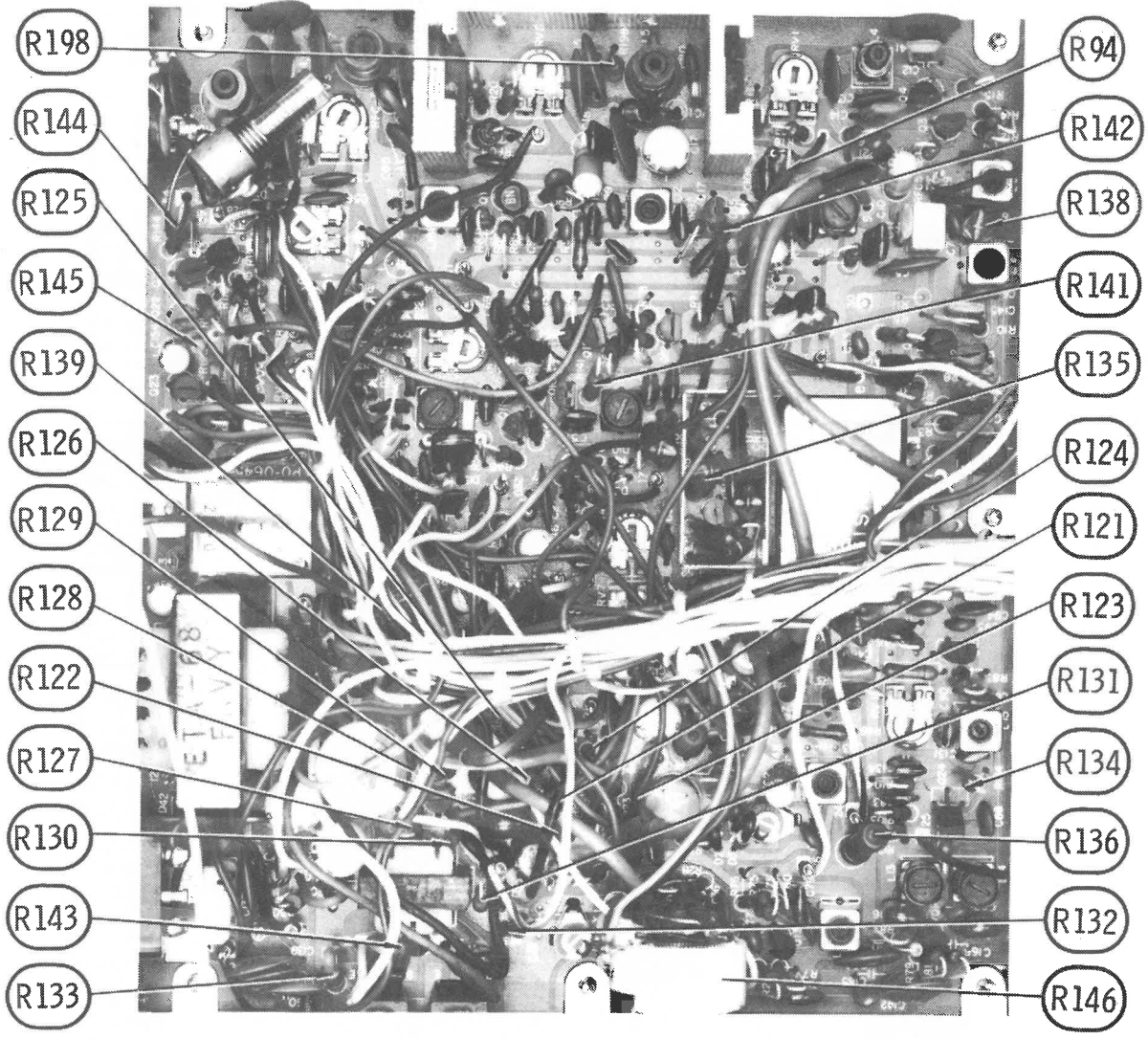
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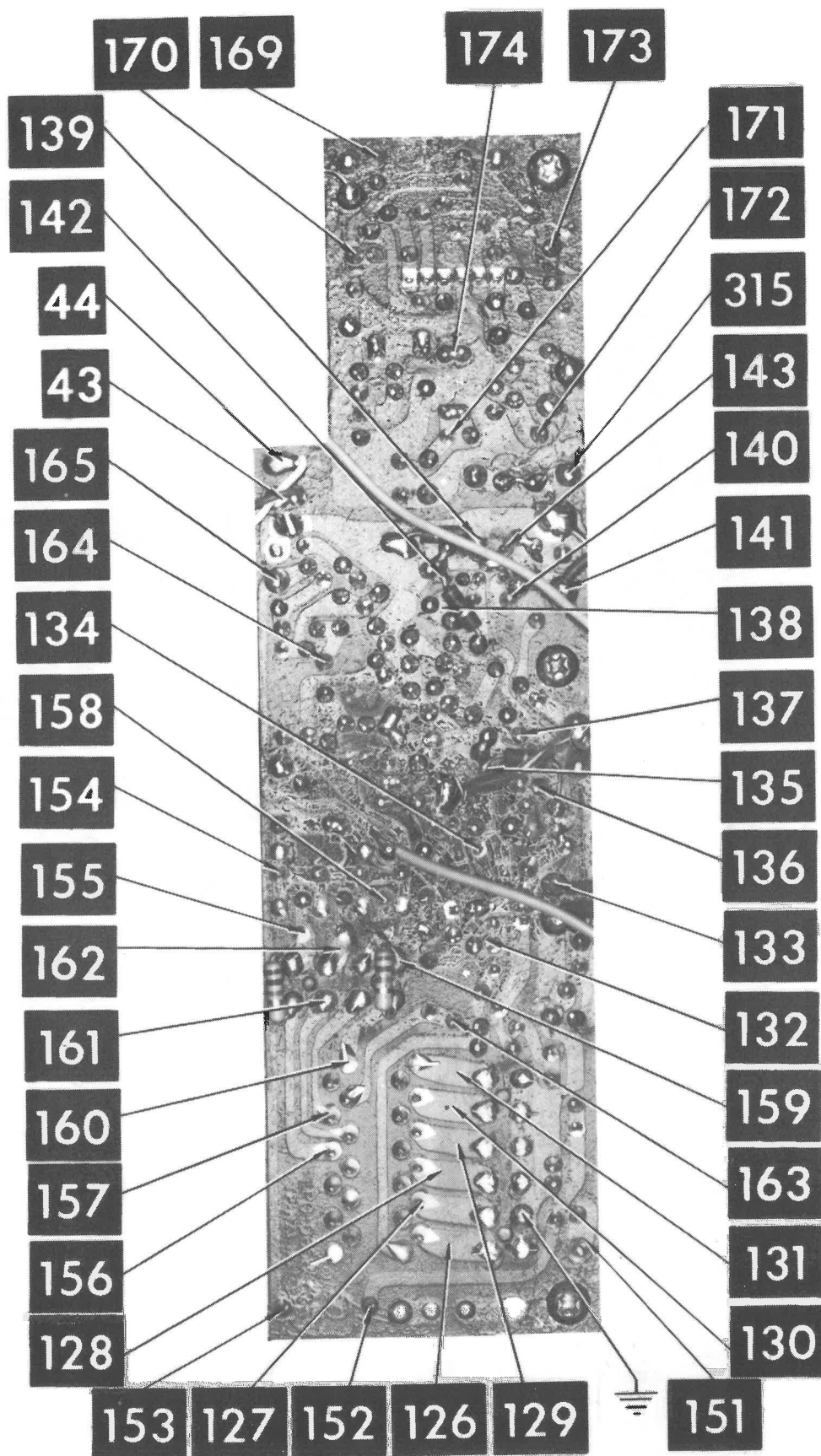
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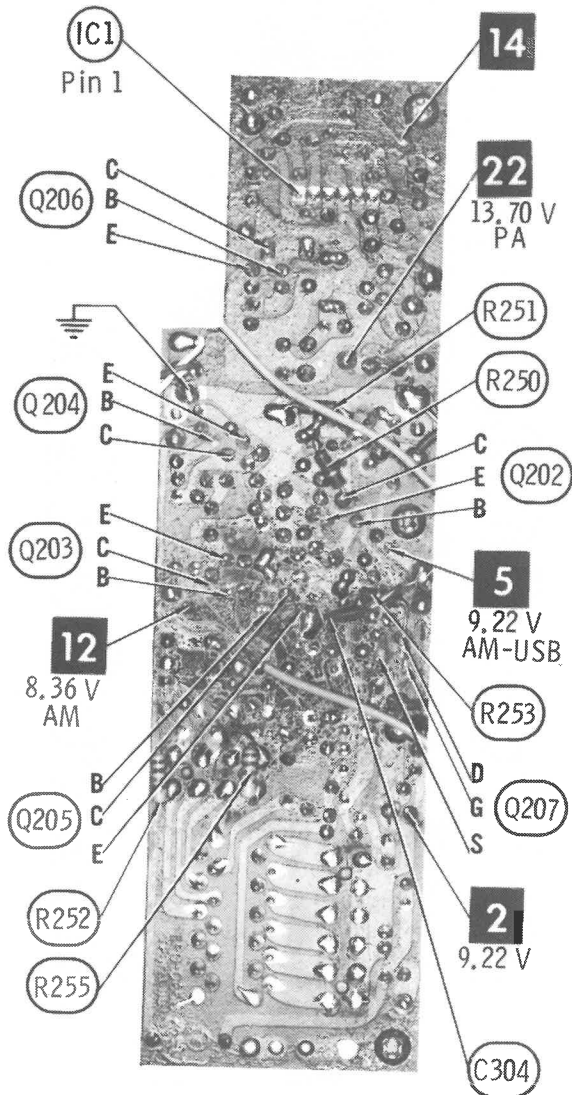
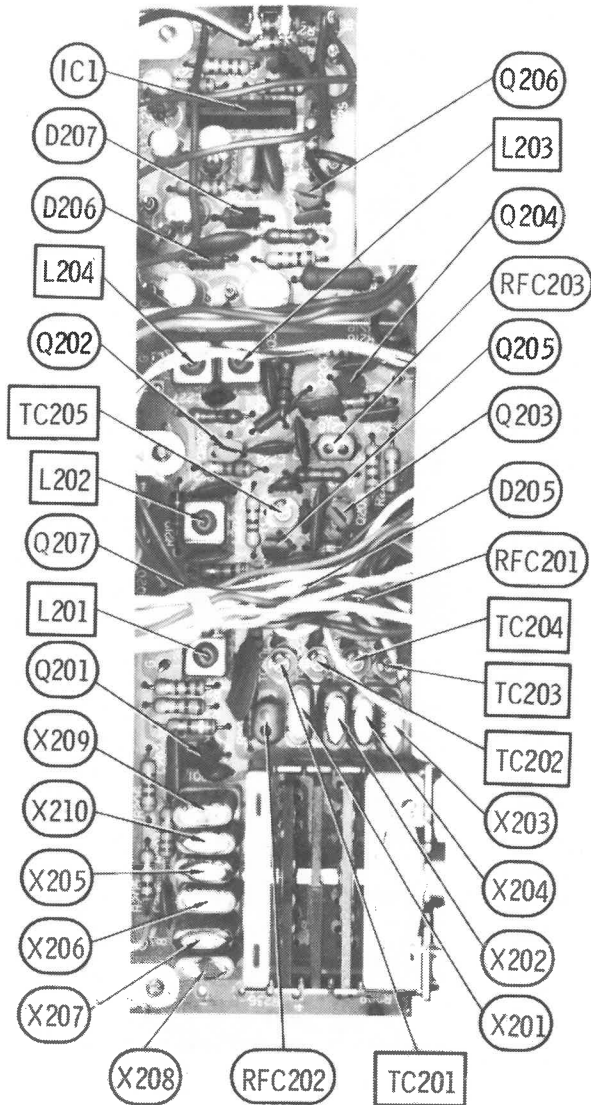
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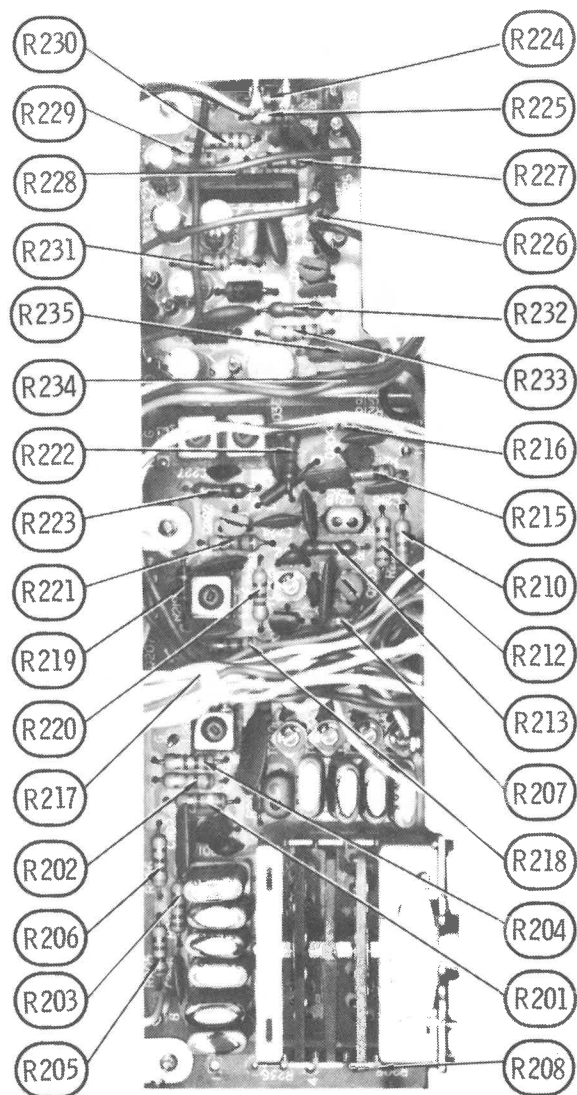
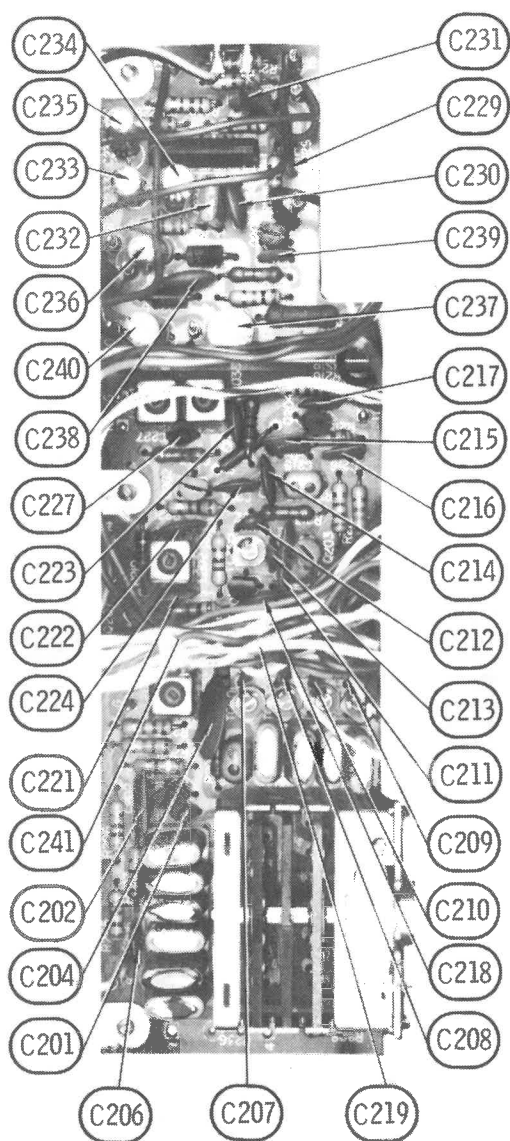
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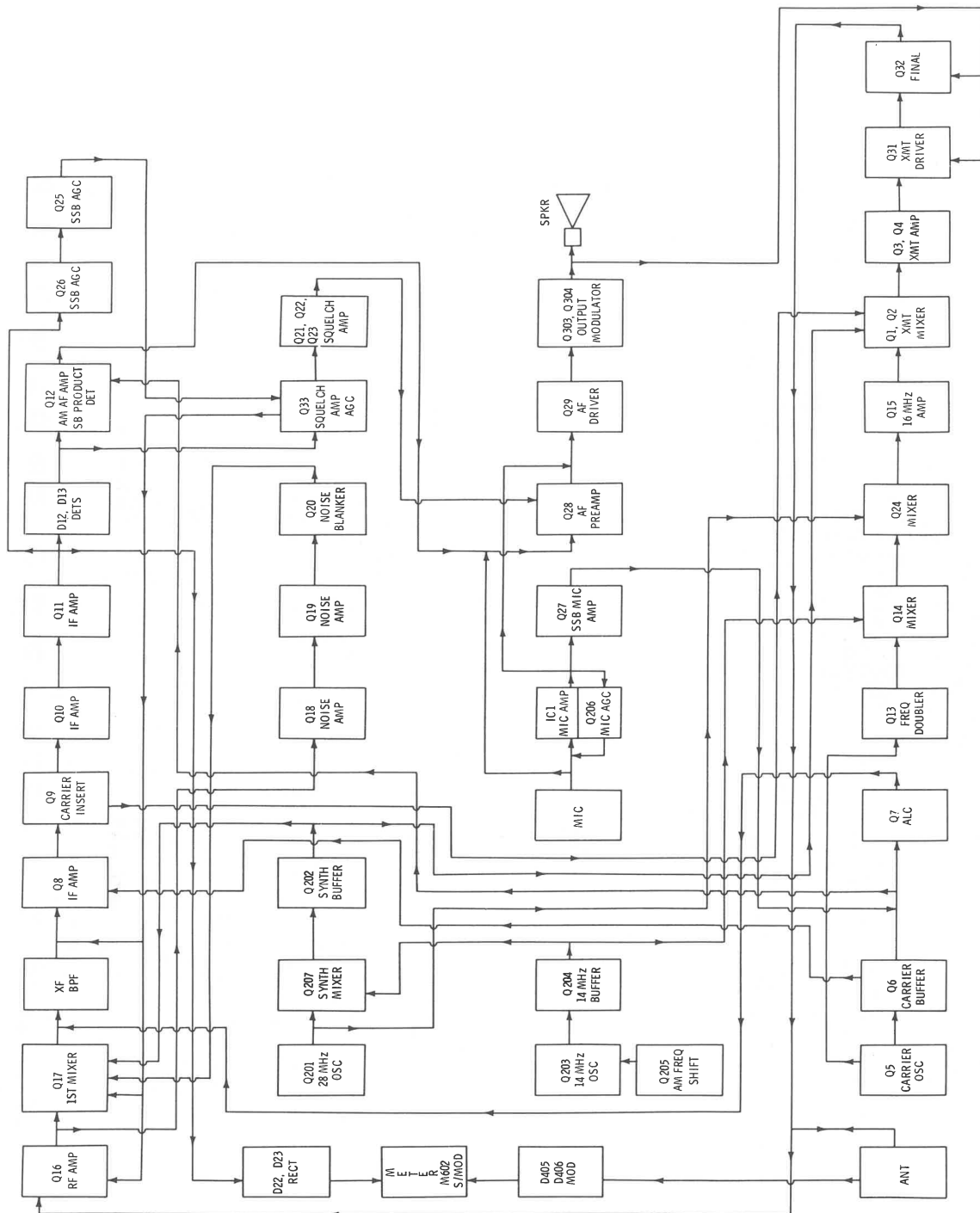
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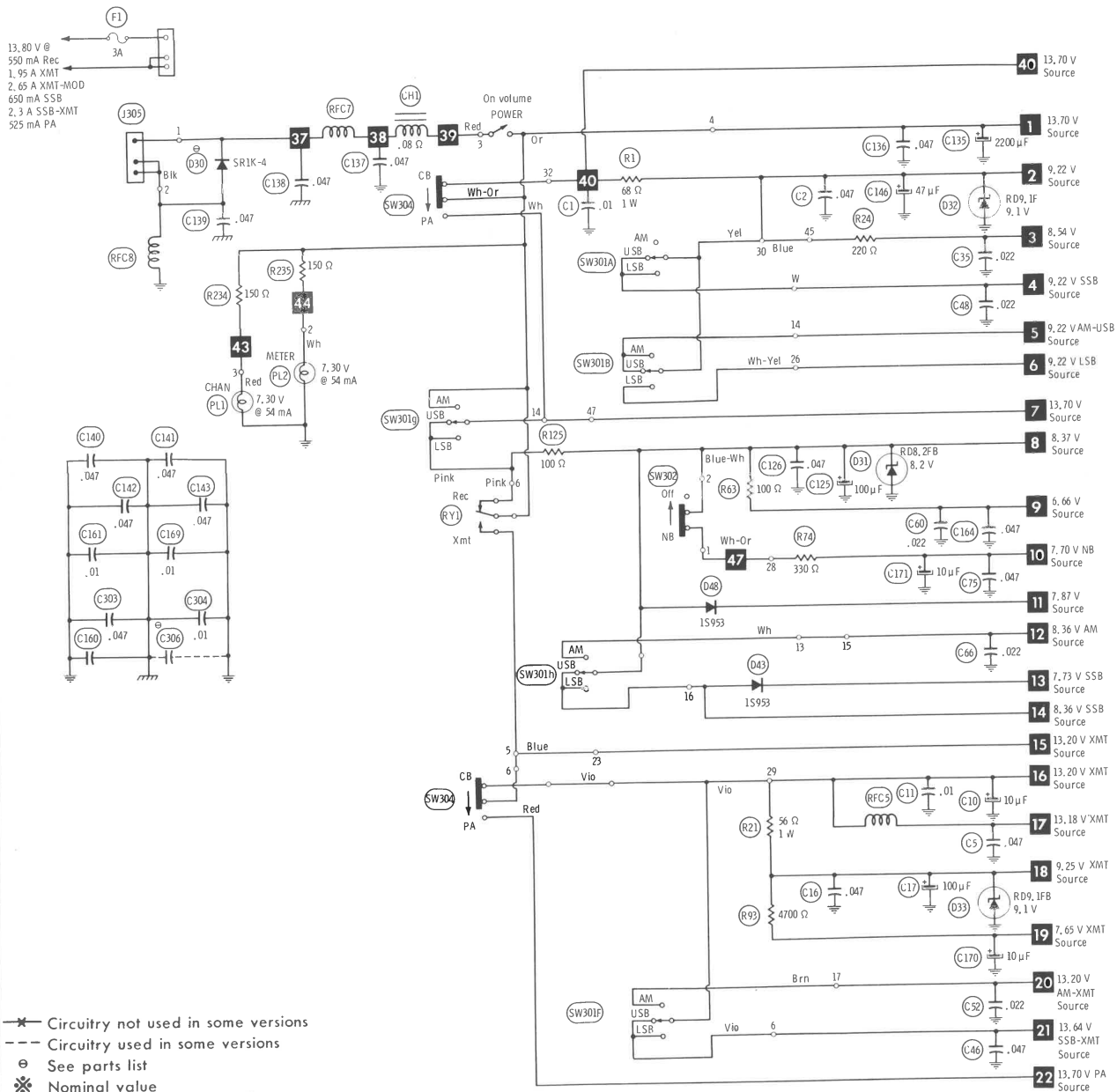
SYNTH BOARD



SYNTH BOARD



BLOCK DIAGRAM



✱ Circuitry not used in some versions

--- Circuitry used in some versions

⊖ See parts list

✱ Nominal value

⊕ Ground

⏏ Chassis

▽ Common tie point

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

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

Supply voltage maintained as shown at input.

Voltages measured with digital meter, no signal.

Controls adjusted for normal operation.

Arrow at control indicates direction of advance.

Terminal identification may not be found on unit.

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

Value in () used in some versions.

A PHOTOFAC STANDARD NOTATION SCHEMATIC

WITH CIRCUITRACE™

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PARTS LIST AND DESCRIPTION

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

out of order

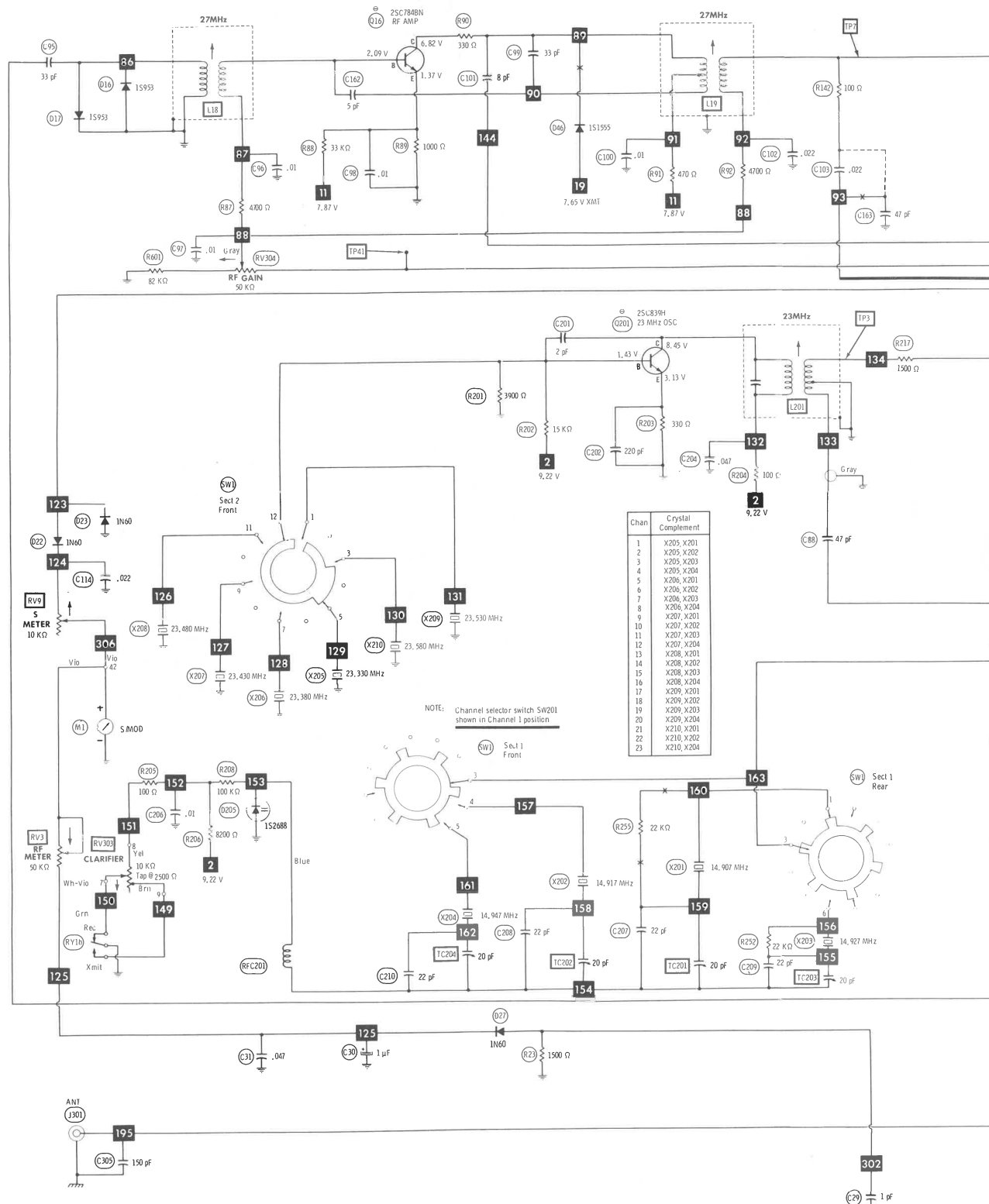
WIRING DATA

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	4-conductor (unshielded)	31AWG BELDEN No. 9468 (10')
	(9') BELDEN No. 17109	5-conductor (1 shielded)	23AWG BELDEN No. 8415 (6')
			28AWG BELDEN No. 9467 (6')
			BELDEN No. 9465 (7-1/2')

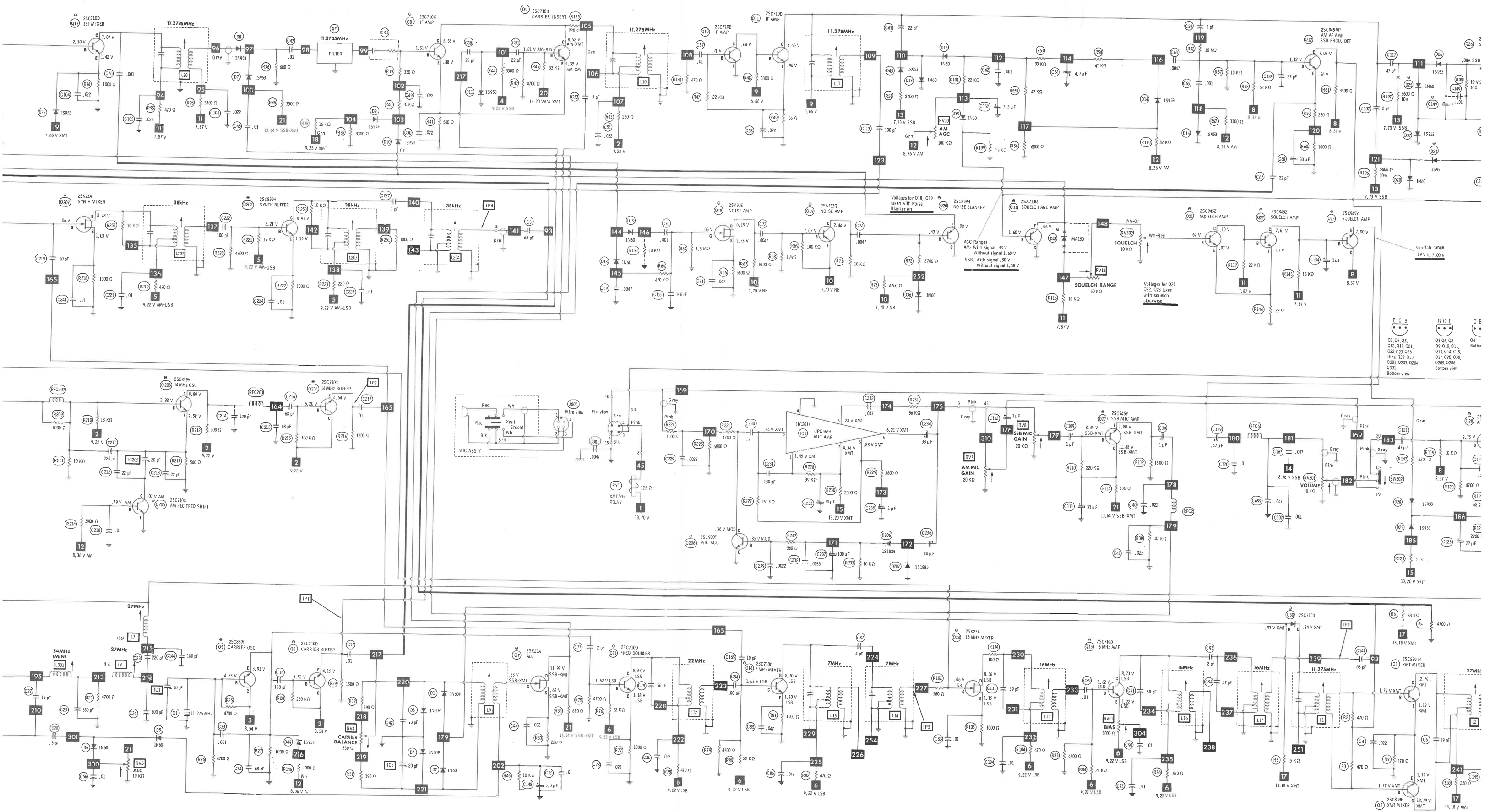
SEMICONDUCTORS (Select replacement transistor for best results)

MIDLAND MODEL 13-892

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
Q14	2SC710	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC710D	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q15	2SC710	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC710D	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q16	2SC784BN	(1)	GE-60 *	(IR)2SC380A0	PTC132 *	HEPS0008 *	RE 28 *	SK3018 *	RT-187	ECG229 *
	2SC784	(1)	GE-60 *	(IR)2SC380A0	PTC132 *	HEPS0008 *	RE 28 *	SK3018 *	RT-187	ECG229 *
Q17	2SC710D	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC710	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q18	2SK33E	(1)	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	2SK33	(1)	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
Q19	2SA733Q	(1)	GE-48	TR-31	PTC103 *	HEPS0019 *	RE 26 *	SK3138	RT-303	ECG294
	2SA733	(1)	GE-48	TR-31	PTC103 *	HEPS0019 *	RE 26 *	SK3138	RT-303	ECG294
Q20	2SC839H	(1)	GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
	2SC839	(1)	GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
Q21	2SC945Z	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q22	2SC945Z	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q23	2SC945Y	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q24	2SK23A	(1)	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	2SK23	(1)	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
Q25	2SK33F	(1)	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	2SK33	(1)	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
Q26	2SC945	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945Y	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q27	2SC945R	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q28	2SC945Y	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945R	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q29	2SC945Y	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945R	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q30	2SC710	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC710D	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q31	2SC1306	(12)	GE-215	WEPI306	PTC186	HEPR0135	RE 203	SK3197	RT-146	ECG235
	2SC1307	(13)	GE-216	WEPI307	PTC186	HEPR0135	RE 201	SK3197	RT-158	ECG236
Q33	2SA733Q	(1)	GE-48	TR-31	PTC103 *	HEPS0019 *	RE 26 *	SK3138	RT-303	ECG294
	D1	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D2	1N60P	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
	D3	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D4	1N60P	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
	D5	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D6	1N60	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
	D7	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D8	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	D9	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D10	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	D11	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D12	1N60	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
	D13	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D14	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	D15	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D16	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	D17	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D18	1N60	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
	D19	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D20	1N60	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
	D21	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D22	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	D23	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D24	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	D25	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D26	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	D27	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D28	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	D29	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D30	SR1K-4	(1)	GE-504A	5A40	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
	10D1	(1)	GE-504A	5A40	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D31	RD8.2FB	(1)	GEZD-8.2		ZB8.2B		RE 112		RT-257	ECG5072A
	D32	(1)	GEZD-9.1		ZB9.1B		RE 114		RT-240	ECG139A
D33	RD9.1FB	(1)	GEZD-9.1		ZB9.1B		RE 114		RT-240	ECG139A
	D34	(1)			PTC301		RE 250			ECG601
D35	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	D36	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D37	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	D38	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D39	1N60	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
	D40	(1)	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D41	SR3AM	(1)	GE-510	R210	PTC205	HEPR0170	RE 51	SK3051	RT-201	ECG125
	SR3AM-2	(1)	GE-510	R210	PTC205	HEPR0170	RE 51	SK3051	RT-201	ECG125
D42	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	D43	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177



* Circuitry not used in some versions
 --- Circuitry used in some versions
 See parts list
 * Nominal value
 Ground
 Chassis
 Common tie point
 A PHOTOFACT STANDARD NOTATION SCHEMATIC
 WITH CIRCUITRACE[®]
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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.	MFGR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D44	1S953		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D45	1S953		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D46	1S1553	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D47	MA150	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D48	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D205	1S2688		GE-90			HEPR2503	RE 262	ECG614		
D206	1S1885		GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D207	1S1885		GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
IC1	UPC566H		GEIC-135				RE 327-IC	SK3249	TVCN-82	ECG1052
Q1	2SC839H	(1)	GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
	2SC839		GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
Q2	2SC839H	(1)	GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
	2SC839		GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
Q3	2SC710D	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC710		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q4	BC546B	(1)	GE-61 *	TR-24	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
	BC546H		GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
Q5	2SC839H	(1)	GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
	2SC839		GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
Q6	2SC710D	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC710		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q7	2SK23A	(1)	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	2SK23		GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
Q8	2SC710D	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC710		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q9	2SC710D	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC710		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q10	2SC710D	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC710		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q11	2SC710D	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC710		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q12	2SC945Y	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945R		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q13	2SC710D	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SA733		GE-48	TR-31	PTC103 *	HEPS0019 *	RE 26 *	SK3138	RT-303	ECG294
Q201	2SC839H	(1)	GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
	2SC839		GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
Q202	2SC839H	(1)	GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
	2SC839		GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
Q203	2SC839H	(1)	GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
	2SC839		GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
Q204	2SC710C	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC710D		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q205	2SC710D	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC710		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q206	2SC900F	(1)	GE-62	(IR)2SC644	PTC139 *	HEPS0015 *	RE 192	SK3124	RT-302	ECG199
	2SC900		GE-62	(IR)2SC644	PTC139 *	HEPS0015 *	RE 192	SK3124	RT-302	ECG199
Q207	2SK23A	(1)	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	2SK23		GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
Q303	2SD325E	(14)	GE-28	WEPT306	PTC110	HEPSS027	RE 42	SK3197	RT-197	ECG186
	2SD325	(1)	GE-28	WEPT306	PTC110	HEPSS027	RE 42	SK3197	RT-197	ECG186
Q304	2SD325E	(14)	GE-28	WEPT306	PTC110	HEPSS027	RE 42	SK3197	RT-197	ECG186
	2SD325	(1)	GE-28	WEPT306	PTC110	HEPSS027	RE 42	SK3197	RT-197	ECG186

* Lead configuration may vary from original.
(1) Used in some versions.
(12) Rating 12 W @ 3 A.
(13) Rating 25 W @ 8 A.
(14) Rating 10W @ 1.5 A.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA					
		MFGR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.		
					Q-LINE	GENERAL LINE	
C10	10 16V	(1)	PC10-25	VTT10B25	QV1-41	EV-1222	
C17	100 10V		PC100-10	VTT100E10	QV1-93	EV-1130	
C18	3.3 16V		PC5-50	VTT3R3A50	QV1-23	EV-1318	
C30	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615	
C39	1 25V			TDCT05M035EL		SD35-19	
C64	4.7 25V			PC5-50	VTT4R7B50	QV1-27	EV-1319
C68	33 10V			PC30-25	VTT33B10	QV1-61	EV-1125
C109	1 50V			PC1-50	VTT1A50	QV1-11	EV-1615
C111	33 16V			PC30-25	VTT33D25	QV1-63	EV-1325
C112	1 50V			PC1-50	VTT1A50	QV1-11	EV-1615
C115	1 25V				TDCT05M035EL		SD35-19
C119	.47 50V			PC1-50	VTT4R7A63	QV1-3	EV-1610
C121	.47 50V			PC1-50	VTT4R7A63	QV1-3	EV-1610
C123	22 16V			PC25-25	VTT22B16	QV1-55	EV-1224
C125	100 10V			PC100-10	VTT100E10	QV1-93	EV-1130
C127	100 16V			PC100-16	VTT100F16	QV1-95	EV-1230
C128	100 10V			PC100-10	VTT100E10	QV1-93	EV-1130
C132	100 16V			PC100-16	VTT100F16	QV1-95	EV-1230
C133	33 16V			PC30-25	VTT33D25	QV1-63	EV-1325
C135	2200 16V			WBR2000-16	TC1520C	QET-643	TVA-1175.3
C146	47 10V			PC50-16	VTT47D16	QV1-73	EV-1226
C148	3.3 25V			PC5-50	VTT3R3A50	QV1-23	EV-1318
C149	.1 35V				TDCT04M05OEL	QDT1-2	SD50-R109
C152	3.3 25V			PC5-50	VTT3R3A50	QV1-23	EV-1318
C154	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615	
C170	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222	
C233	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222	
C234	33 10V		PC30-25	VTT33B10	QV1-61	EV-1125	
C235	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615	
C236	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222	
C237	100 6.3V		PC100-10	VTT100E10	QV1-93	EV-1130	
C240	33 16V		PC30-25	VTT33D25	QV1-63	EV-1325	

(1) Used in some versions.

PARTS LIST AND DESCRIPTION (CONTINUED)
(When ordering parts, state Model, Part Number, and Description.)

CAPACITORS

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE	PART No.
						Q-LINE	GENERAL LINE
C1	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C2	.047		UK25-503		MAG2515		HY-735
C3	68 N150				*		10TCP-Q68
C4	.022		UK25-503	DPMS2S22	EWF1A122	QF1-127	1PB-S22
C5	.047				MAG2515		HY-735
C6	39 N150				*		10TCP-Q39
C7	15 N150				*		10TCP-Q15
C8	39 N150				*		10TCP-Q39
C9	39 N150				*		10TCP-Q39
C11	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C12	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C13	100 N150				*		10TCP-T10
C14	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C15	.047		UK25-503		MAG2515		HY-735
C16	.047		UK25-503		MAG2515		HY-735
C19	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C20	68 N150				*		10TCP-Q68
C21	150 N150				*		10TCP-T15
C22	.047		UK25-503		MAG2515		HY-735
C23	220 N150				*		10TCP-T22
C24	100 N150				*		10TCP-T10
C25	330		DD-331	GP330	GP333		10TS-T33
C26	330		DD-331	GP330	GP333		10TS-T33
C27	15 N150				*		10TCP-Q15
C28	.5						
C29	1						
C31	.047		UK25-503		CN0510		10TCC-V10
C33	.001		DD-1026	GP1000	MAG2515		HY-735
C34	68 N150				GP210	QC2-81	5GA-D10
C35	.022			DPMS2S22	*		10TCP-Q68
C36	150		DD-151		EWF1A122	QF1-127	1PB-S22
C37	.01			WMF1S1	GP315		10TS-T15
C38	22 N150				EWF1A110	QF1-91	1PB-S10
C40	.022			DPMS2S22	*		10TCP-Q68
C41	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C42	10 N150				EWF1A122	QF1-127	1PB-S22
C44	.022			DPMS2S22	*		10TCP-Q10
C45	.01			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C46	.047			WMF1S1	EWF1A110	QF1-91	1PB-S10
C47	.01			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C48	.022			WMF1S1	EWF1A110	QF1-91	1PB-S10
C49	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C50	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C51	22 N150				*		10TCP-Q22
C52	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C53	3 N150				*		10TCP-V30
C54	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C55	.01		DC-103	DPMS2S22	MGPO1	QC2-141	TG-S10
C56	.01		DC-103	MGPO1	TA110	QC2-141	TG-S10
C57	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C58	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C59	5 N150				*		10TCP-V50
C60	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C61	.22 N150				*		10TCP-Q22
C62	.001			DPMS6D1	EWF1A210	QF1-1	1PB-D10
C63	.0047			WMF1D47	EWF1A247	QF1-57	1PB-D47
C65	.001			DPMS6D1	EWF1A210	QF1-1	1PB-D10
C66	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C67	22 N150				*		10TCP-Q22
C69	.0047			WMF1D47	EWF1A247	QF1-57	1PB-D47
C70	.001			DPMS6D1	EWF1A210	QF1-1	1PB-D10
C71	.047		UK25-503		MAG2515		HY-735
C72	.0047			WMF1D47	EWF1A247	QF1-57	1PB-D47
C74	.0047			WMF1D47	EWF1A247	QF1-57	1PB-D47
C75	.047			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C76	.001			DPMS6D1	EWF1A210	QF1-1	1PB-D10
C77	2 N150				*		10TCP-V22
C78	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C79	56 N150				*		10TCP-Q56
C80	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C83	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C84	100 N150				*		10TCP-T10
C85	.047			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C86	.047			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C87	4 N150				*		10TCP-V39
C88	47 N150				*		10TCP-Q47
C89	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C90	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C91	39 N150				*		10TCP-Q47
C92	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C93	2 N150				*		10TCP-V22
C94	47 N150				*		10TCP-Q47
C95	33 N150				*		10TCP-Q47
C96	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C97	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C98	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C99	33 N150				*		10TCP-Q33
C100	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C101	8 N150				*		10TCP-V82
C102	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C103	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C104	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C105	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C106	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C107	2 N150				*		10TCP-V22
C108	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C113	100		DD-101	GP100	GP310		10TS-T10
C114	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C116	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10

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PARTS LIST AND DESCRIPTION (CONTINUED)
(When ordering parts, state Model, Part Number, and Description.)

CAPACITORS

AGUE RT No.	SYLVANIA PART No.
218	ECG177
218	ECG177
218	ECG177
218	ECG177
218	ECG177
262	ECG614
213	ECG116
213	ECG116
M-82	ECG1052
308	ECG123A *
308	ECG123A *
308	ECG123A *
308	ECG123A *
308 *	ECG123A *
308 *	ECG123A *
308	ECG123A
308	ECG123A
308	ECG123A *
308	ECG123A *
308 *	ECG123A *
175	ECG312
175	ECG312
308 *	ECG123A *
308 *	ECG123A *
308 *	ECG123A *
308 *	ECG123A *
308 *	ECG123A *
308 *	ECG123A *
308 *	ECG123A *
107A	ECG199
107A	ECG199
107A	ECG199
308 *	ECG123A *
303	ECG294
308	ECG123A *
308	ECG123A *
308	ECG123A *
308	ECG123A *
308	ECG123A *
308	ECG123A *
308 *	ECG123A *
308 *	ECG123A *
308 *	ECG123A *
308 *	ECG123A *
302	ECG199
302	ECG199
175	ECG312
175	ECG312
197	ECG186
197	ECG186
197	ECG186
197	ECG186

AGUE	PART No.
	GENERAL LINE
	EV-1222
	EV-1130
	EV-1318
	EV-1615
	SD35-19
	EV-1319
	EV-1125
	EV-1615
	EV-1325
	EV-1615
	SD35-19
	EV-1610
	EV-1610
	EV-1224
	EV-1130
	EV-1230
	EV-1130
	EV-1230
	EV-1325
	TVA-1175.3
	EV-1226
	EV-1318
	SD50-R109
	EV-1318
	EV-1615
	EV-1222
	EV-1222
	EV-1125
	EV-1615
	EV-1222
	EV-1130
	EV-1325

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL- DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C1	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C2	.047		UK25-503		MAG2515		HY-735
C3	68 N150			DPMS2S22	*		10TCP-Q68
C4	.022		UK25-503		EWF1A122	QF1-127	1PB-S22
C5	.047				MAG2515		HY-735
C6	39 N150				*		10TCP-Q39
C7	15 N150				*		10TCP-Q15
C8	39 N150				*		10TCP-Q39
C9	39 N150				*		10TCP-Q39
C11	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C12	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C13	100 N150			WMF1S1	EWF1A110	QF1-91	10TCP-T10
C14	.01		UK25-503		MAG2515		HY-735
C15	.047		UK25-503		MAG2515		HY-735
C16	.047			WMF1S1	EWF1A110	QF1-91	1PB-S10
C19	.01				*		10TCP-Q68
C20	68 N150				*		10TCP-T15
C21	150 N150		UK25-503		MAG2515		HY-735
C22	.047				*		10TCP-T22
C23	220 N150				*		10TCP-T10
C24	100 N150		DD-331	GP330	GP333		10TS-T33
C25	330		DD-331	GP330	GP333		10TS-T33
C26	330				*		10TCP-Q15
C27	15 N150						
C28	.5				CN0510		10TCC-V10
C29	1				MAG2515		HY-735
C31	.047		UK25-503		GP210	QC2-81	56A-D10
C33	.001		DD-102G	GP1000	*		10TCP-Q68
C34	68 N150			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C35	.022				GP315		10TS-T15
C36	150		DD-151	WMF1S1	EWF1A110	QF1-91	1PB-S10
C37	.01				*		10TCP-Q68
C38	22 N150			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C40	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C41	.022				*		10TCP-Q10
C42	10 N150			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C44	.022			WMF1S1	EWF1A110	QF1-91	1PB-S10
C45	.01			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C46	.047			WMF1S1	EWF1A110	QF1-91	1PB-S10
C47	.01			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C48	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C49	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C50	.022			DPMS2S22	*		10TCP-Q22
C51	22 N150			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C52	.022			*	10TCP-V30		1PB-S22
C53	3 N150			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C54	.022		DC-103	MGPO1	TA110	QC2-141	TG-S10
C55	.01		DC-103	MGPO1	TA110	QC2-141	TG-S10
C56	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C57	.01			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C58	.022			*	10TCP-V50		10TCP-Q22
C59	5 N150			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C60	.022			*	10TCP-Q22		10TCP-Q22
C61	.22 N150			DPMS6D1	EWF1A210	QF1-1	1PB-D10
C62	.001			WMF1D47	EWF1A247	QF1-57	1PB-D47
C63	.0047			DPMS6D1	EWF1A210	QF1-1	1PB-D10
C65	.001			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C66	.022			*	10TCP-Q22		10TCP-Q22
C67	22 N150			WMF1D47	EWF1A247	QF1-57	1PB-D47
C69	.0047			DPMS6D1	EWF1A210	QF1-1	1PB-D10
C70	.001				MAG2515	HY-735	
C71	.047		UK25-503		EWF1A247	QF1-57	1PB-D47
C72	.0047			WMF1D47	EWF1A247	QF1-57	1PB-D47
C74	.0047			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C75	.047			DPMS6D1	EWF1A210	QF1-1	1PB-D10
C76	.001			*	10TCP-V22		10TCP-V22
C77	2 N150			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C78	.022			*	10TCP-Q56		10TCP-Q56
C79	56 N150			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C80	.022			WMF1S1	EWF1A110	QF1-91	1PB-S10
C83	.01			*	10TCP-T10		10TCP-T10
C84	100 N150			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C85	.047			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C86	.047			*	10TCP-V39		10TCP-V39
C87	4 N150			*	10TCP-Q47		10TCP-Q47
C88	47 N150			WMF1S1	EWF1A110	QF1-91	1PB-S10
C89	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C90	.01			*	10TCP-Q47		10TCP-Q47
C91	39 N150			WMF1S1	EWF1A110	QF1-91	1PB-S10
C92	.01			*	10TCP-V22		10TCP-V22
C93	2 N150			*	10TCP-Q47		10TCP-Q47
C94	47 N150			*	10TCP-Q47		10TCP-Q47
C95	33 N150			WMF1S1	EWF1A110	QF1-91	1PB-S10
C96	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C97	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C98	.01			*	10TCP-Q33		10TCP-Q33
C99	33 N150			WMF1S1	EWF1A110	QF1-91	1PB-S10
C100	.01			*	10TCP-VB2		10TCP-VB2
C101	8 N150			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C102	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C103	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C104	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C105	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C106	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C107	2 N150			*	10TCP-V22		10TCP-V22
C108	.01		DD-101	WMF1S1	EWF1A110	QF1-91	1PB-S10
C113	100			GP100	GP310		10TS-T10
C114	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C116	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10

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PARTS LIST AND DESCRIPTION (CONTINUED)
(When ordering parts, state Model, Part Number, and Description.)

CAPACITORS (cont)

PART FACTORS (CONT.)			REPLACEMENT DATA				
ITEM No.	RATING	MFR. PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C117	47 N150	(1)	UK25-503	WMF1S1	*		10TCP-Q47
C120	.01			EWF1A110	QF1-91	1PB-S10	
C122	.01			EWF1A110	QF1-91	1PB-S10	
C124	.1			EWF1A010	QF1-215	1PB-P10	
C126	.047			MAG2515		HY-735	
C129	.022			EWF1A122	QF1-127	1PB-S22	
				DPMS2S22	QF1-127	1PB-S22	
C130	.022			*		10TCP-Q39	
C131	39 N150			WMF1S1	QF1-91	1PB-S10	
C134	.01					HY-735	
C136	.047		UK25-503		HY-735		
C137	.047		UK25-503		HY-735		
C138	.047		UK25-503		HY-735		
C139	.047		UK25-503		HY-735		
C140	.047		UK25-503		HY-735		
C141	.047		UK25-503		HY-735		
C142	.047		UK25-503		HY-735		
C143	.047		UK25-503		HY-735		
C144	180 N150				10TCP-T18		
C145	.01		WMF1S1	QF1-91	1PB-S10		
C147	68 N150				10TCP-Q68		
C149	.01		WMF1S1	QF1-91	1PB-S10		
C155	100		GP100		10TS-T10		
C160	.047		MAG2515		HY-735		
C161	.01		TA110	QC2-141	TG-S10		
C162	5 N150		*		10TCP-V50		
C163	47 N150		*		10TCP-Q47		
C164	.047		DPMS2S47	QF1-171	1PB-S47		
C165	10 N150		*		10TCP-Q10		
C167	.047		DPMS2S47	QF1-171	1PB-S47		
C169	.01		WMF1S1	QF1-91	1PB-S10		
C189	27 N150		*		10TCP-Q27		
C190	33 N150		*		10TCP-Q33		
C201	2 N150		*		10TCP-V22		
C202	220 N150		*		10TCP-T22		
C204	.047		DPMS2S47	QF1-171	1PB-S47		
C206	.01		MGPO1	QC2-141	TG-S10		
C207	22 N150		*		10TCP-Q22		
C208	22 N150		*		10TCP-Q22		
C209	22 N150		*		10TCP-Q22		
C210	22 N150	*		10TCP-Q22			
C211	220 N150	*		10TCP-T22			
C212	22 N150	*		10TCP-Q22			
C213	22 N150	*		10TCP-Q22			
C215	68 N150	*		10TCP-Q68			
C216	68 N150	*		10TCP-Q68			
C217	.01	DC-103	MGPO1	TA110			
C218	.01	DC-103	MGPO1	TA110			
C219	10 N150	*		QC2-141			
C221	.01	DC-103	MGPO1	TA110			
C222	100 N150	*		QC2-141			
C223	.01	DC-103	MGPO1	TA110			
C224	.01	DC-103	MGPO1	TA110			
C227	1 NPO			CNO510			
C229	.0022	DD-222		GP222			
C230	.2 12V	UK16-204					
C231	150	DD-151					
C232	.047		DPMS2S47	GP315			
C238	.0033	DD-332	GP3300	EWF1A147			
C239	.0022	DD-222		GP233			
C241	.01	DC-103	MGPO1	GP222			
C301	.0047	DD-472	GP4700	TA110			
C302	.001	DD-102G	GP210	GP247			
C303	.047	UK25-503		GP210			
C304	.01	DC-103	MGPO1	MAG2515			
C305	150	DD-151		TA110			
C306	.01		WMF1S1	GP315			
C307	.047		DPMS2S47	EWF1A110			
C308	.01		WMF1S1	EWF1A147			
				EWF1A110			
TC1	50	13-123065					
TC2	20	13-123066					
TC201	20	13-123067					
TC202	20	13-123067					
TC203	20	13-123067					
TC204	20	13-123067					
TC205	20	13-123067					

PARTS LIST AND DESCRIPTION (CONTINUED)

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

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	XMT Oscillator (11.275MHz)	13-090389			
L2	XMT Mixer (27MHz)	13-094207			
L3	XMT Mixer (27MHz)	13-094224			
L4	XMT Amp (27MHz)	13-094225			
L5	XMT Driver (27MHz)	13-176553			
L6	Pi Filter (27MHz)	13-176553			
L7	Final (27MHz)	13-176554			
L9	Carrier Buffer	13-094226			
L10	IF (11.257MHz)	13-090389			
L11	IF (11.275MHz)	13-090390			
L12	Frequency Doubler (23MHz)	13-094204			
L13	Mixer (7MHz)	13-090391			
L14	Mixer (7MHz)	13-090391			
L15	Mixer (16MHz)	13-094227			
L16	16MHz Amp (16MHz)	13-094227			
L17	16MHz Amp (16MHz)	13-094227			
L18	Rec Antenna (27MHz)	13-094228			
L19	Rec RF (27MHz)	13-094229			
L20	IF (11.27MHz)	13-094213			
L201	Synth Oscillator (23MHz)	13-170222		CBS408-1C	
L202	Synth Mixer (38MHz)	13-094230			
L203	Synth Buffer (38MHz)	13-094230			
L204	Synth Buffer (38MHz)	13-094230			
L301	TVI Trap (54MHz)	13-176555			
RFC1	RF Choke	13-178220			
RFC2	RF Choke	13-178191			
RFC3	RF Choke	13-178195			
RFC5	RF Choke (2.2uH)	13-178221			
RFC6	RF Choke (68uH)	13-178222			
RFC7	RF Choke	13-178195			
RFC8	RF Choke	13-178195			
RFC9	RF Choke	13-178195			
RFC201	RF Choke	13-178223			
RFC202	RF Choke	13-178224			
RFC203	RF Choke	13-178225			

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FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
CH1	2300mA	.076	.296mH	13-178219 ELA-17 (1)			(1) Number on unit.

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	SEC. 2	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	1.5	1CT		13-096175 ETA-55 (1)	TR667		(1) Number on unit.

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	23.12	8	13-096207 ETA-68 (1)		MCB-32	(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.	
SP	3" PM 8 Ohms	13-060105	30A05Z8R	

FUSE DEVICES

ITEM No.		DESCRIPTION	REPLACEMENT DATA						
			PART No.		BUSS PART No.		LITTELFUSE PART No.		WORKMAN PART No.
			DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE
F1	3A			AGC3	HDJ	312003	150145	FG3-2	

MICROPHONE

ITEM No.	REPLACEMENT DATA				CONNECTION DATA						
	MFGR. PART No.	GC PART No.	GC NOISE CANCEL	GC POWER	GC CONNECTOR	GC Red	GC Shield	GC Yellow	GC Blue	GC White	GC Black
MIC	13-038074	18-032	18-034	18-010	18-092	1	2	4	3	NC	2

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CR1	Component Combination	13-130015	Antenna
J301	Jack	13-159220	Microphone
J302	Jack	13-159221	PA
J303	Jack	13-153164	External Speaker
J304	Jack	13-153164	Power
J305	Jack	13-159222	S/RF
M1	Meter	13-200072	Channel Indicator
PL1	Lamp	13-201072	Meter
PL2	Lamp	13-201072	XMT/Rec
RY	Relay	13-105026	Channel Selector
SW1	Switch	13-180101	Mode (AM-SSB)
SW301	Switch	13-180111	NB
SW302	Switch	13-183225	Tone
SW303	Switch	13-183225	CB-PA
SW304	Switch	13-183226	11.275MHz (Carrier Osc)
X1	Crystal	13-128124	14.907MHz
X201	Crystal	13-128260	14.917MHz
X202	Crystal	13-128261	14.927MHz
X203	Crystal	13-128262	14.947MHz
X204	Crystal	13-128263	23.330MHz
X205	Crystal	13-128250	23.380MHz
X206	Crystal	13-128251	23.430MHz
X207	Crystal	13-128252	23.480MHz
X208	Crystal	13-128253	23.530MHz
X209	Crystal	13-128254	23.580MHz
X210	Crystal	13-128255	11.2735MHz
XF	Crystal Filter	13-179064	

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

ITEM	PART No.	ITEM	PART No.
Cabinet Top	13-010303	Knob, Control	13-110198
Cabinet Bottom	13-013138	Channel Indicator Disc	13-115133
Escutcheon	13-010304	Microphone Hanger	13-158419
Knob, Channel	13-115134		