



PHOTOFACT[®] with

CIRCUITRACE[®]

For Supplier Address See PHOTOFACT Index

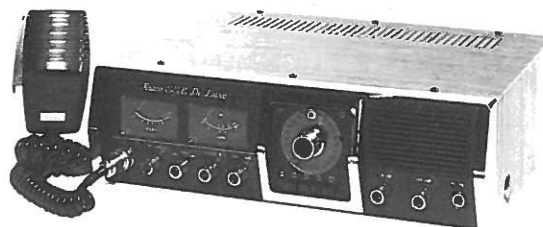
NOTE

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 KB-2355

MANUFACTURER'S SPECIFICATIONS

GENERAL

Circuitry	39 Transistors, 49 Diodes, 1 IC, 5 FET's 5 ZENER DIODES, 1 VARISTOR, 1 VARI-CAP
Frequency Control	Crystal Synthesizing System
Mode of Operation	AM, Upper Sideband and Lower Sideband
Built-in Speaker	3-3/4" x 2", 8 ohms
Microphone	Dynamic 500 ohms Press-to-Talk
Power Source	AC: 105-120V, 50/60 Hz DC: 11-16V, Negative Ground

RECEIVER SECTION

Receiving System	Single conversion superheterodyne for SSB & AM
Sensitivity	AM: 1 μ V for 10 dB (S+N)/N SSB: 0.25 μ V for 10 dB (S+N)/N
Bandwidth	4 KHz at 6 dB down for SSB & AM
Image Rejection	40 dB
Clarification	$\pm$ 1 KHz
Audio Output Power	3.0W at 8 ohms
Squelch Range	1 μ V to 500 μ V for SSB & AM
Intermediate Frequency	11.2735 MHz for SSB & AM

SSB TRANSMITTER

SSB Generation	Balanced ring modulator with crystal lattice filter
RF Output Power	PEP 12 Watts at 13.8V DC (F.C.C. Maximum)
Carrier Suppression	40 dB down
Harmonic Suppression	50 dB down

AM TRANSMITTER

Modulation	High level class B
RF Output Power	4 Watts at 13.8V DC (F.C.C. Maximum)
Harmonic Suppression	50 dB down

PA

Audio Output Power	3 Watts at 8 ohms
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KRACO MODEL KB-2355

Courtesy of the Manufacturer

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

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7CZ576

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.
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, 9440
TC1, TC2, TC201 thru TC205 5000

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of frequency counter to TP1.	Ch. 13, USB	TC1	Adjust for 11.275MHz $\pm$ 50Hz.
Input of frequency counter to TP2.	Ch. 1, USB Ch. 2, USB Ch. 3, USB Ch. 4, USB	TC201 TC202 TC203 TC204	Adjust for 14.910MHz $\pm$ 100Hz. Adjust for 14.920MHz $\pm$ 100Hz. Adjust for 14.930MHz $\pm$ 100Hz. Adjust for 14.950MHz $\pm$ 100Hz.
Input of frequency counter to TP2.	Ch. 1, AM Clarifier midrange	TC205	Adjust between 14.907MHz and 14.908MHz.
Input of frequency counter to TP3.	Ch. 23, AM Ch. 1, AM Ch. 5, AM Ch. 9, AM Ch. 13, AM Ch. 17, AM Ch. 21, AM	L201	Turn L201 counterclockwise until oscillator stops. Turn L201 clockwise until oscillator starts, then continue 1/2 turn further. Check for 23.330MHz $\pm$ 200Hz. Check for 23.380MHz $\pm$ 200Hz. Check for 23.430MHz $\pm$ 200Hz. Check for 23.480MHz $\pm$ 200Hz. Check for 23.530MHz $\pm$ 200Hz. Check for 23.580MHz $\pm$ 200Hz.
Input of RF VTVM to TP4.	Ch. 13, AM	L202, L203, L204	Adjust for maximum.
Input of oscilloscope to TP5.	Ch. 3, LSB	L12, L13, L14	Adjust for maximum.
Input of oscilloscope to TP6.	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. 11.2735MHz, 1000Hz @ 30% modulation.	Ch. 13, AM Clarifier midrange. RF Gain maximum.	L20, L10, L11	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.115MHz, 1000Hz @ 30% modulation.	Ch. 13, AM Fine tune center.	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.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
No signal input. Input of VTVM to TP41.	Ch. 13, USB RF Gain maximum.	RV6	SSB AGC Adjust for 2.0 volts.
No signal input. Input of VTVM to TP41.	Ch. 13, AM RF Gain maximum.	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 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 RF Gain maximum.	RV9	S METER Adjust RV9 for 9 on S scale of meter.

TRANSMITTER ALIGNMENT

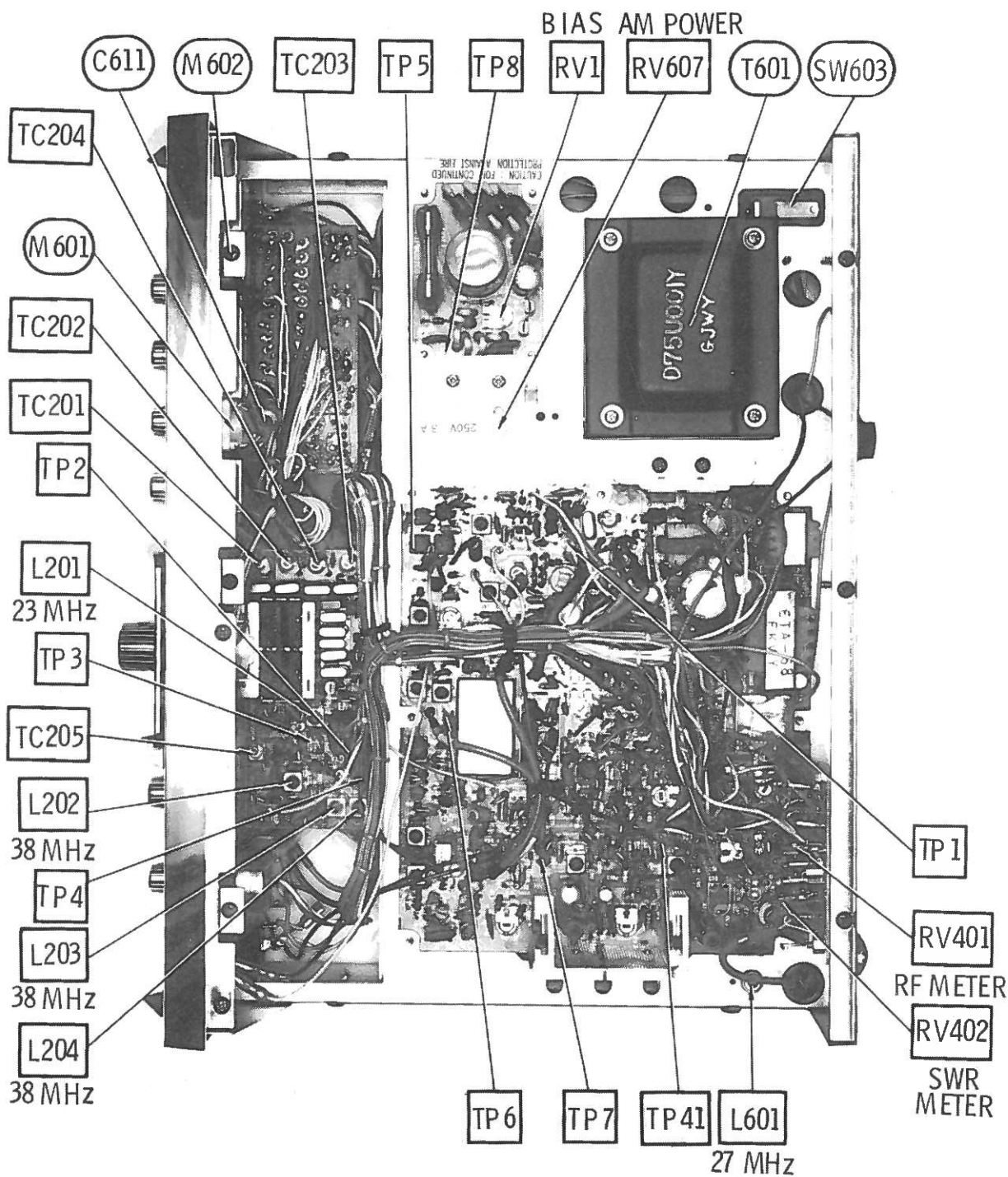
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.
NOTE: Be sure to check transmit frequency and power on all active channels
after alignment of transmitter.
See page 4 for channel frequencies.

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 midrange.	L1,L2,L3,L4, L5,L6,L7,L601	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 antenna jack.	Ch. 13, USB	TC2,RV4	Adjust for MINIMUM.
Inject a 2400Hz, 10mV signal at mic input.	Ch. 13, USB	L9	Adjust for maximum.

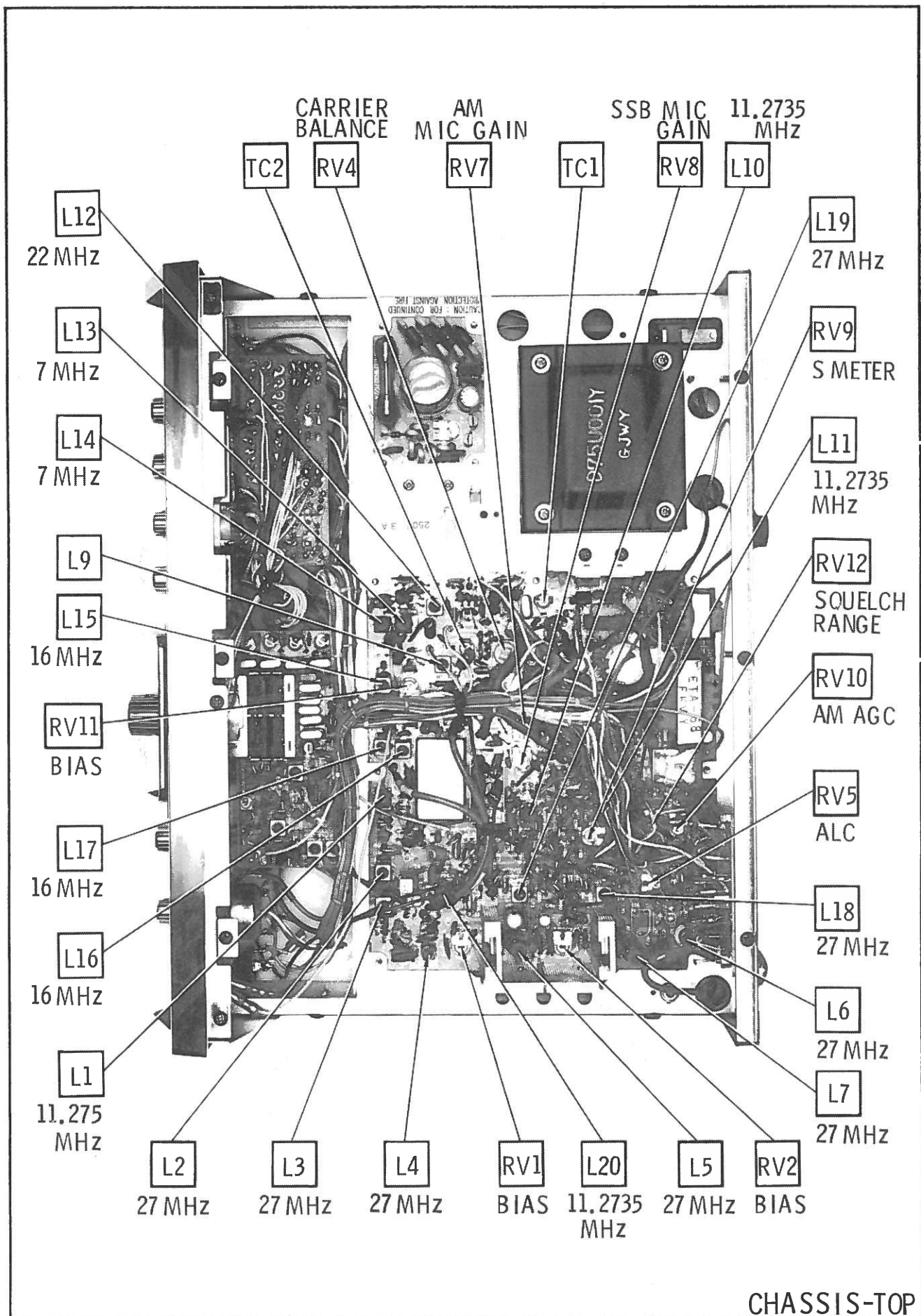
TRANSMITTER ADJUSTMENTS

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.
See page 4 for channel frequencies.

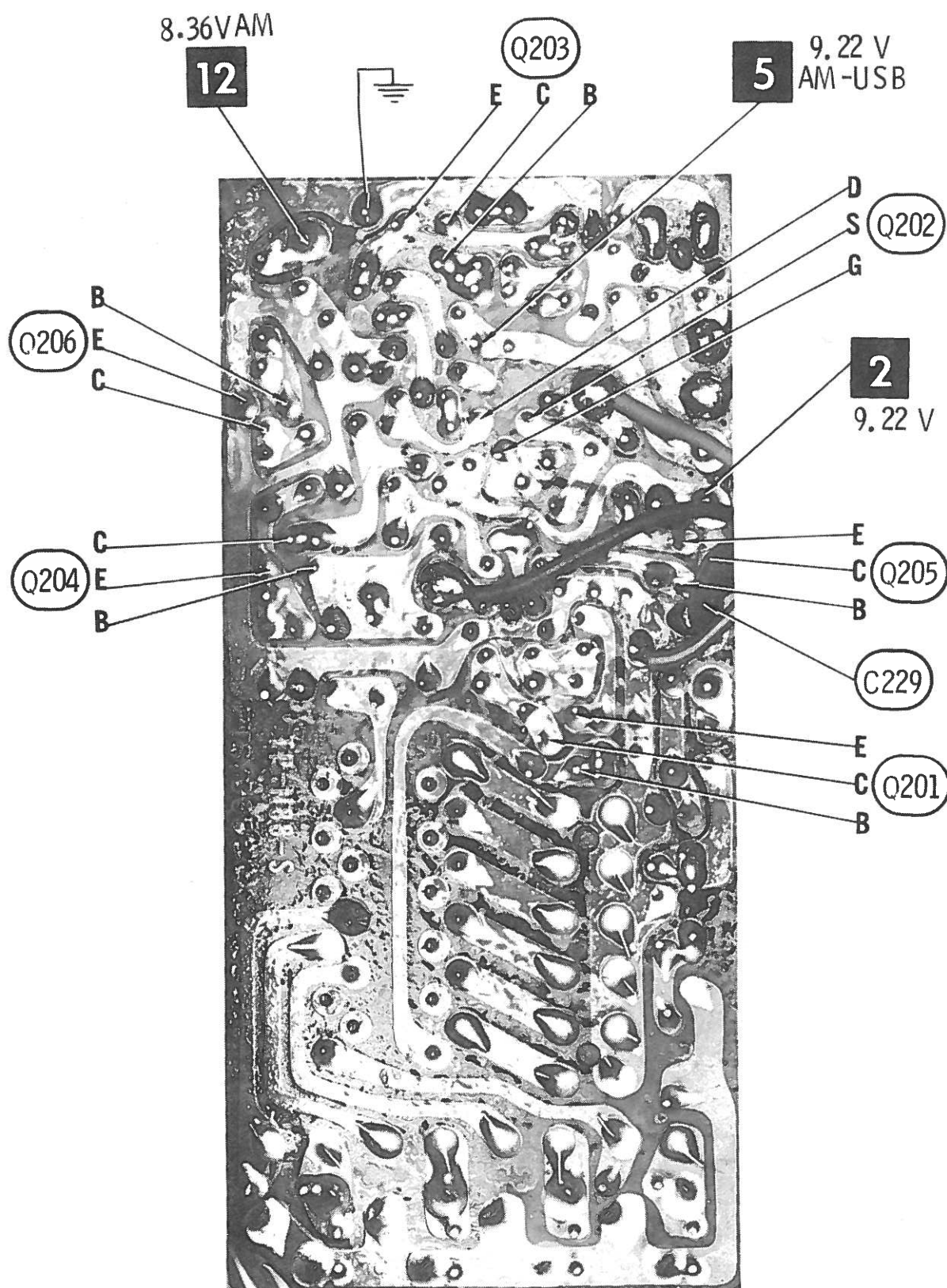
TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Input of VTVM to TP8.	Ch. 13, AM	RV501	VOLTAGE Adjust RV501 for 13.8 volts. Voltage should not vary when keying transmitter.
Output of 2 tone generator to mic input, 500Hz and 2400Hz. Output 5mV. Input of oscilloscope to antenna jack.	Ch. 13, USB	RV1,RV2	BIAS 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	RV607	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.
	Ch. 13, AM SWR/CAL switch-CAL position.	RV402	PANEL SWR METER Set SWR/CAL Control (RV605) to SET position on SWR meter. SWR/CAL switch to SWR position. Change 50-ohm load to 100 ohms. Adjust RV402 for 2 on SWR scale of meter.
	Ch. 13, AM	RV401	PANEL RF METER Set SWR/CAL Control (RV605) to RF position. Adjust RV401 so RF panel meter agrees with RF wattmeter.



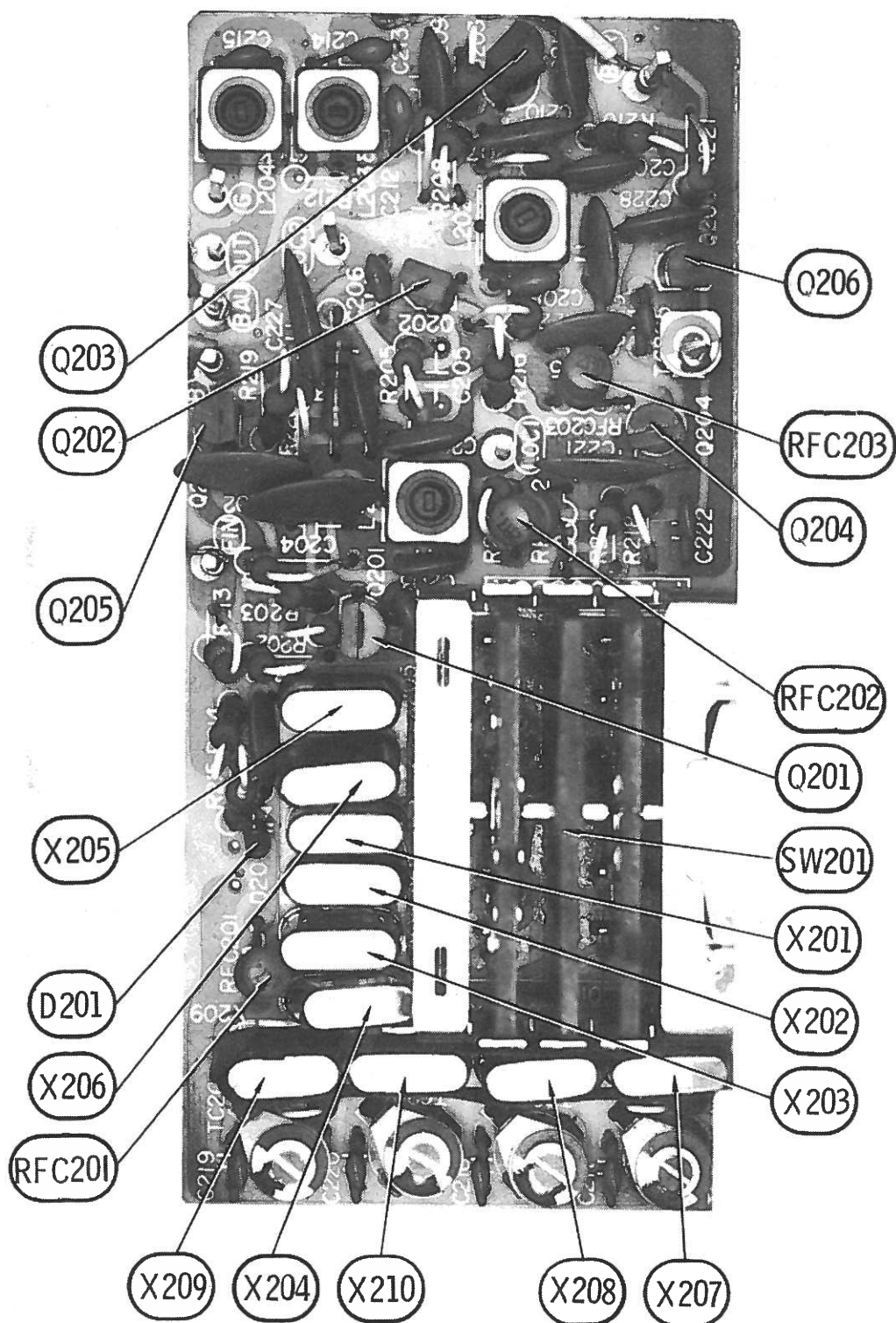
CHASSIS-TOP



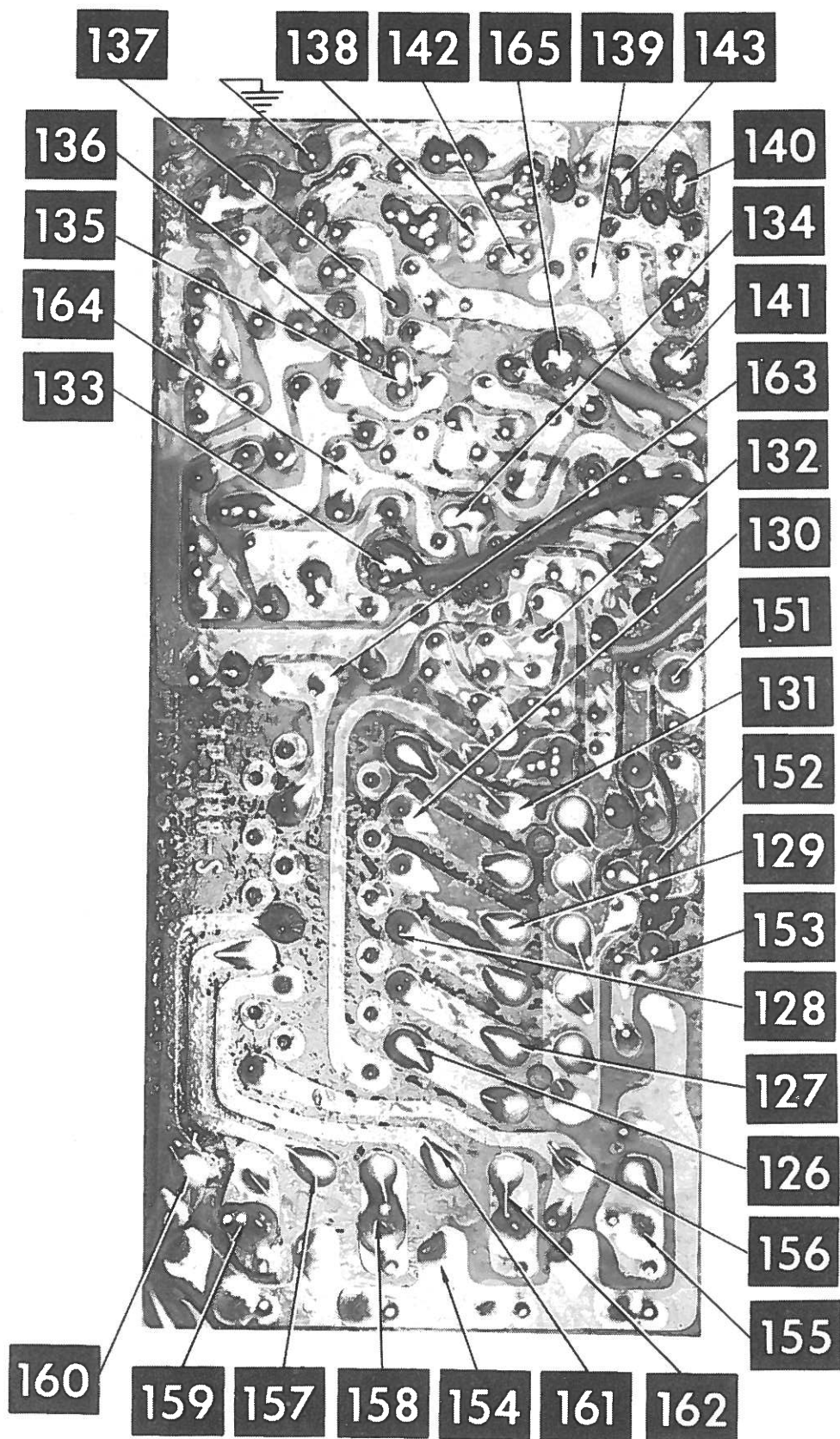
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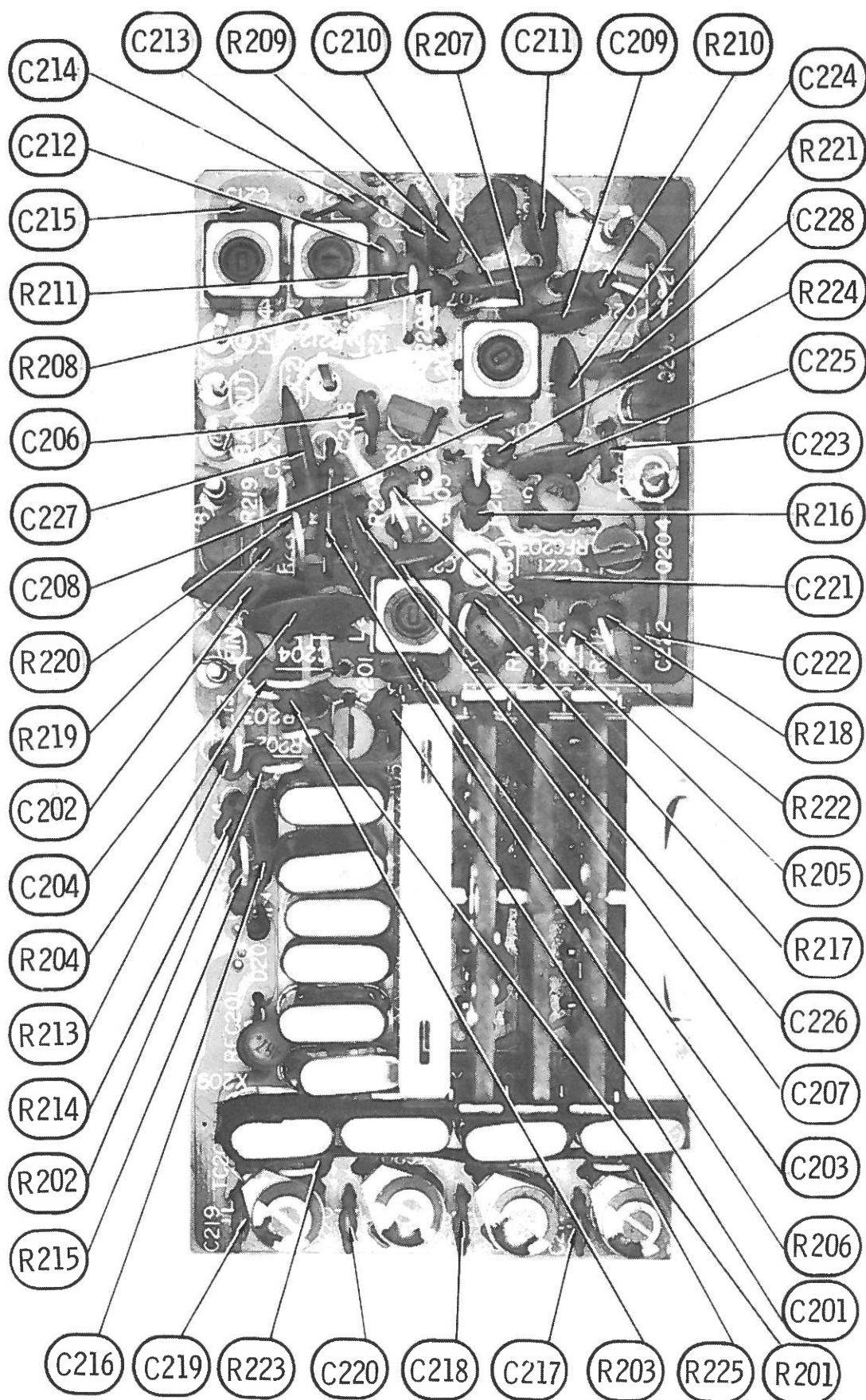
SYNTH BOARD



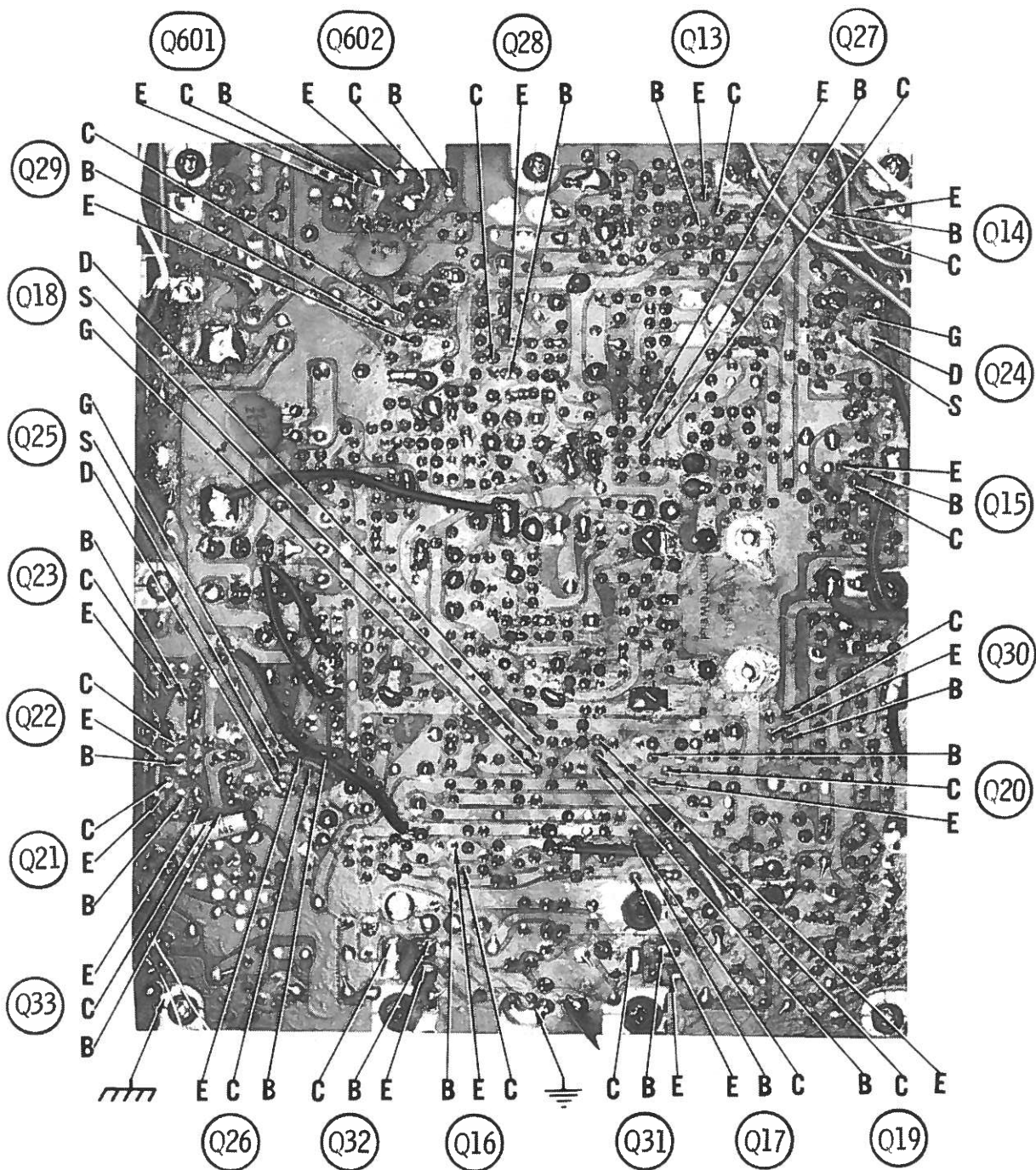
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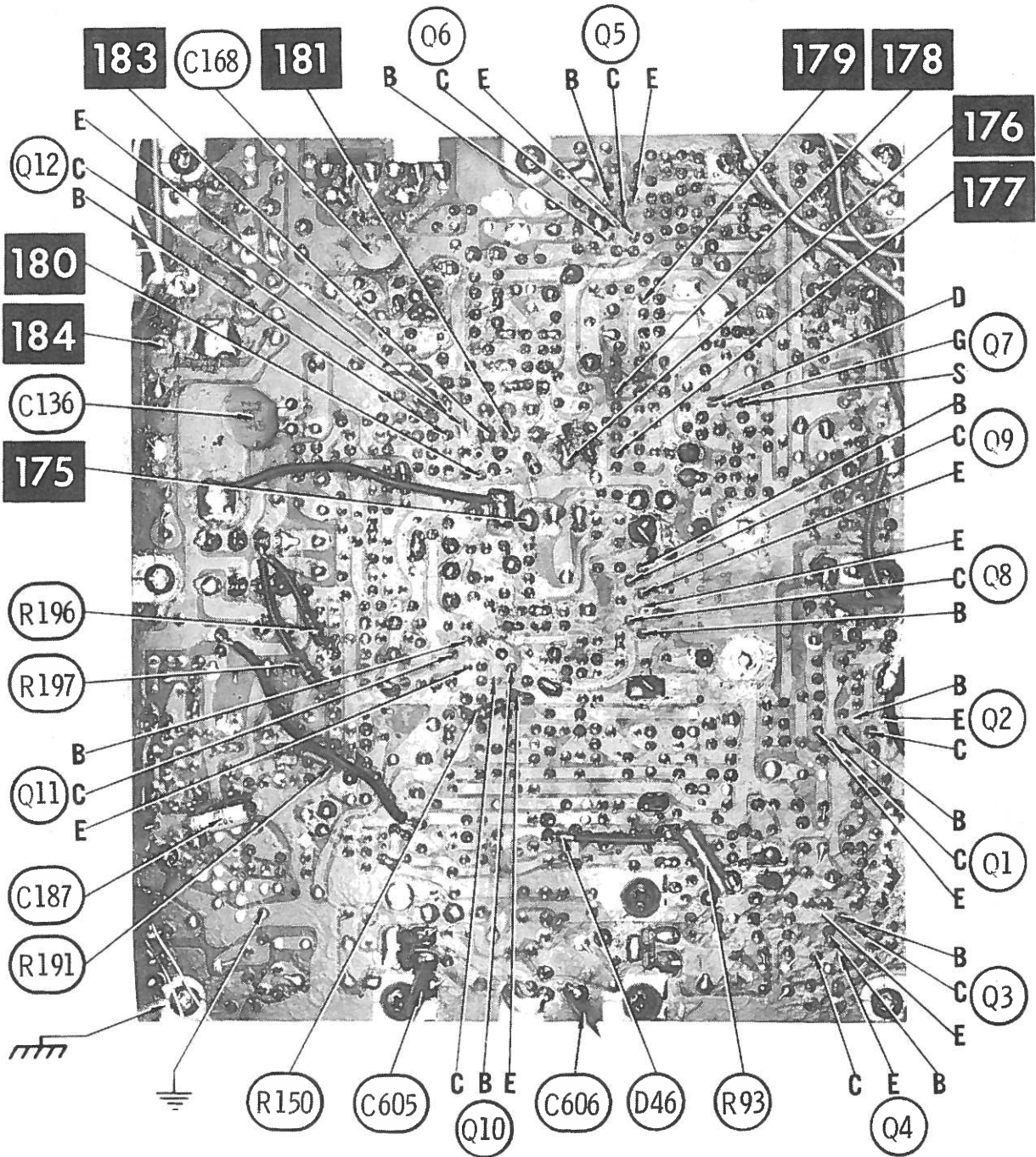
SYNTH BOARD



SYNTH BOARD

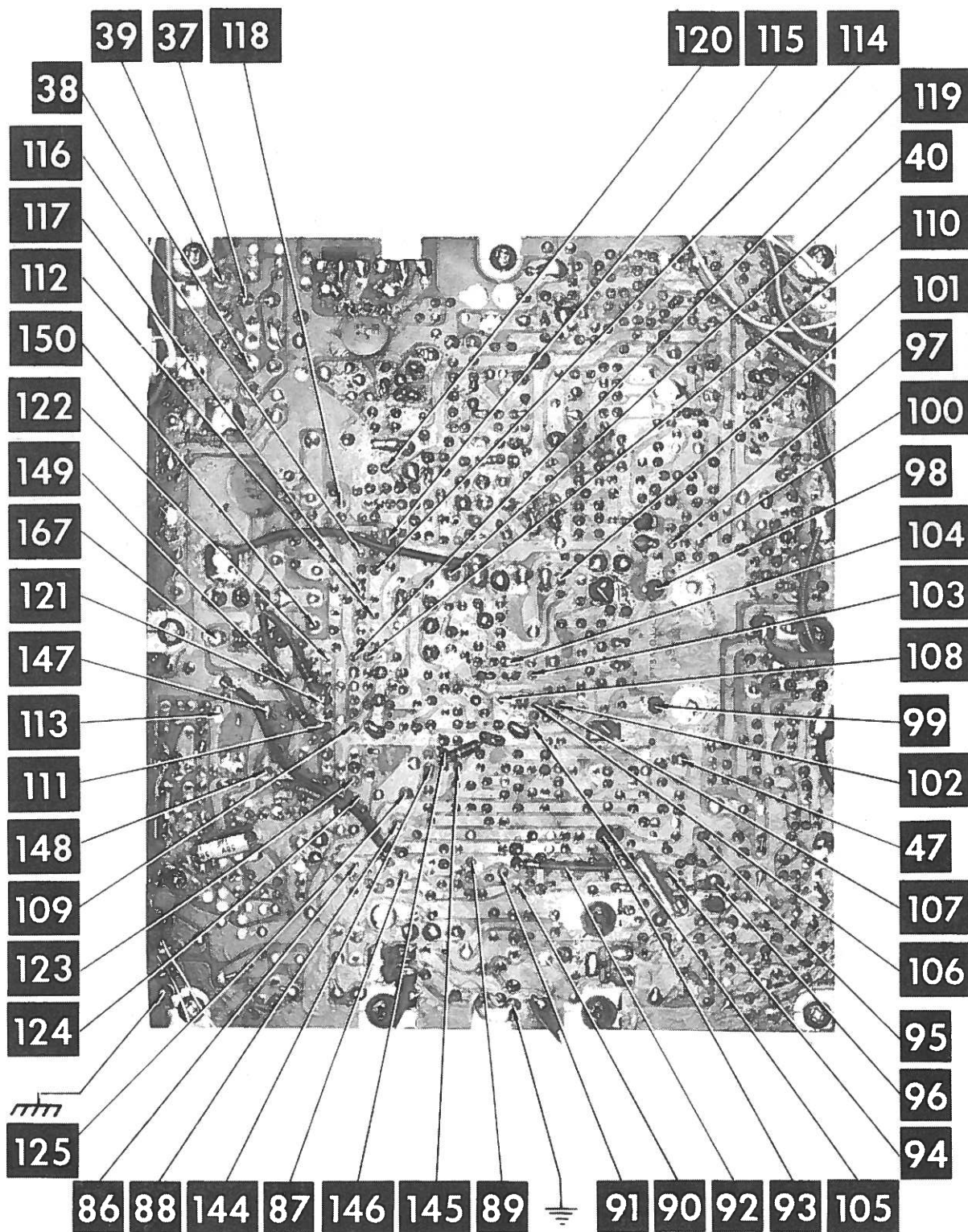


MAIN BOARD

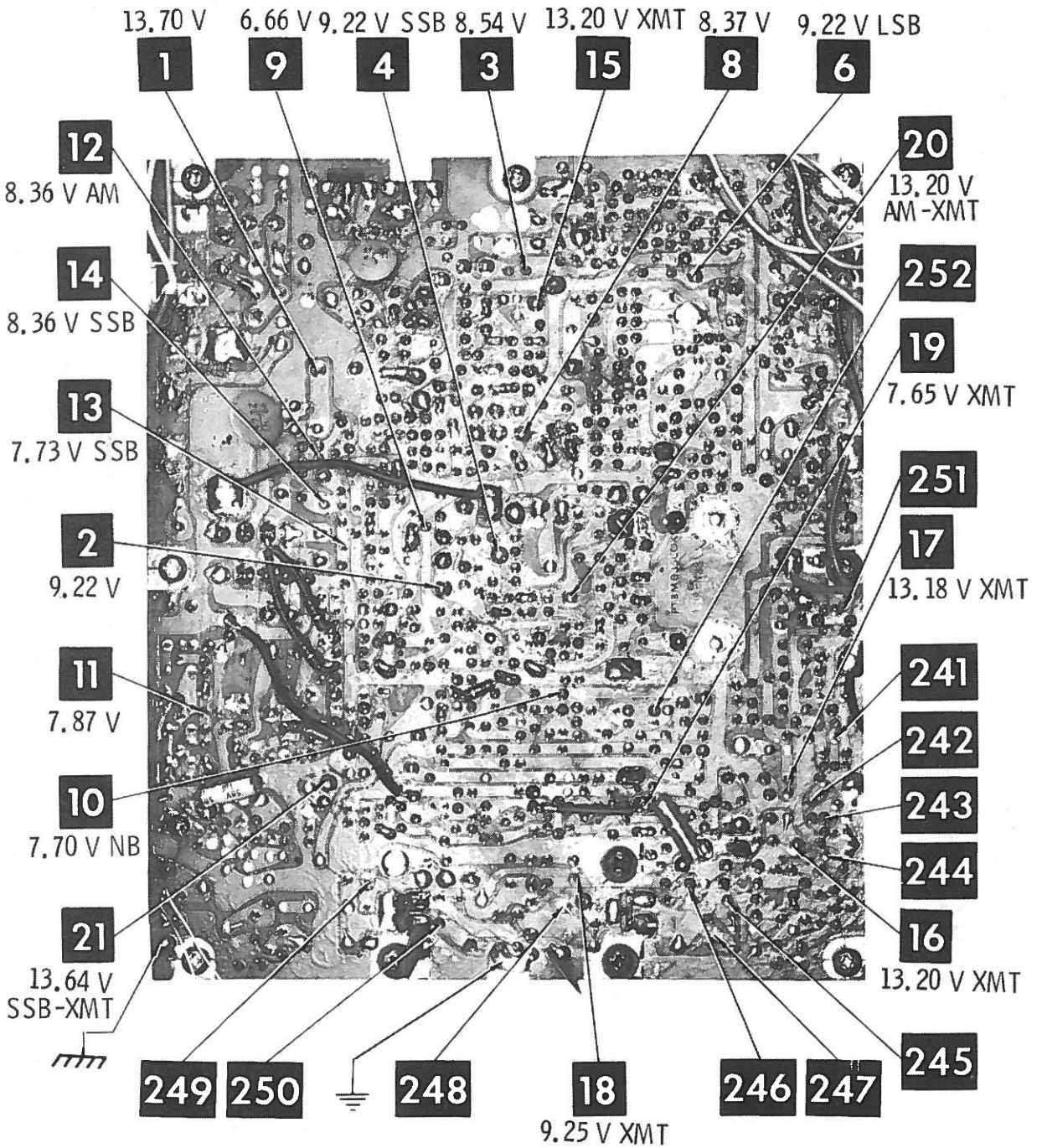


KRACO MODEL KB-2355

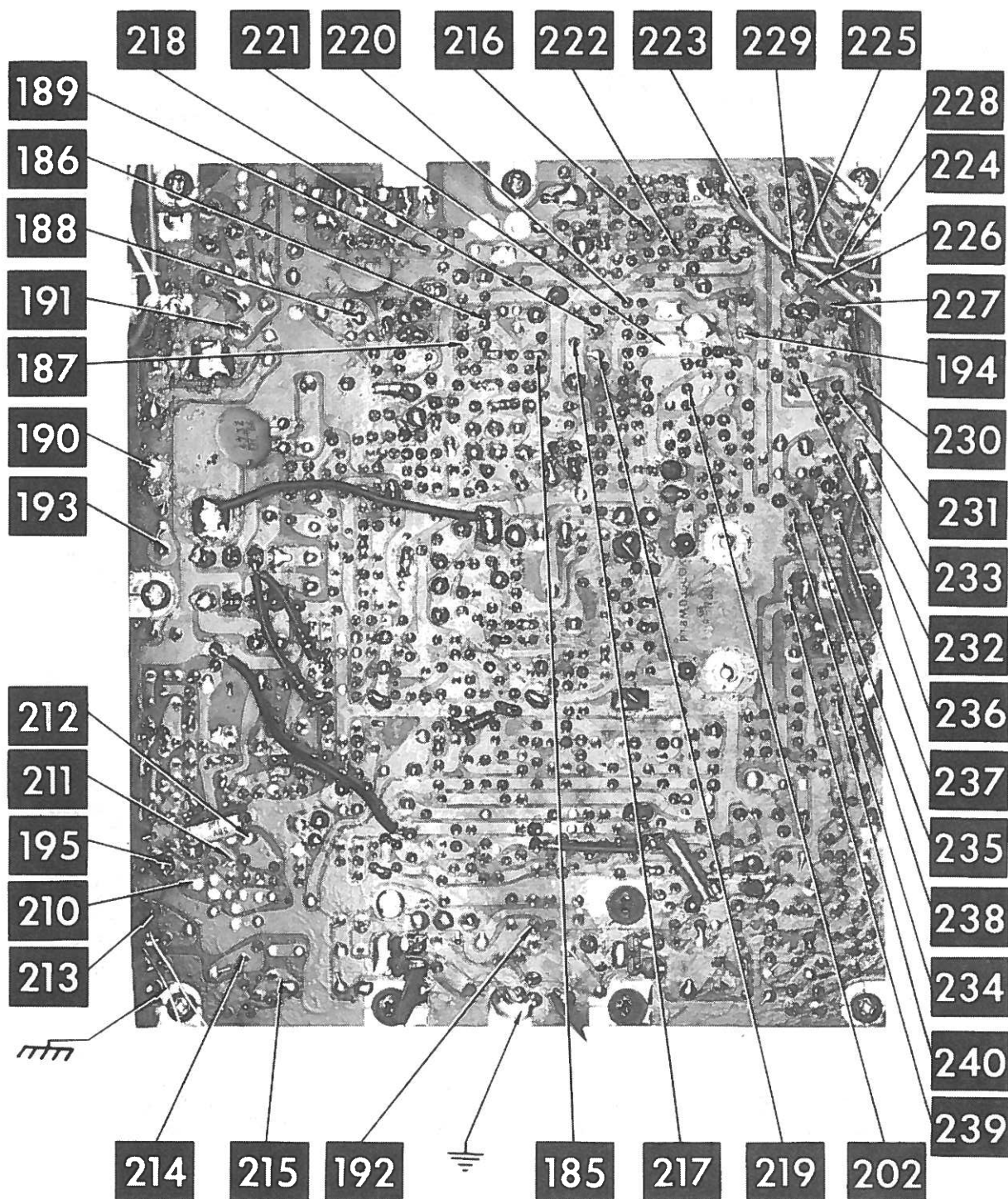
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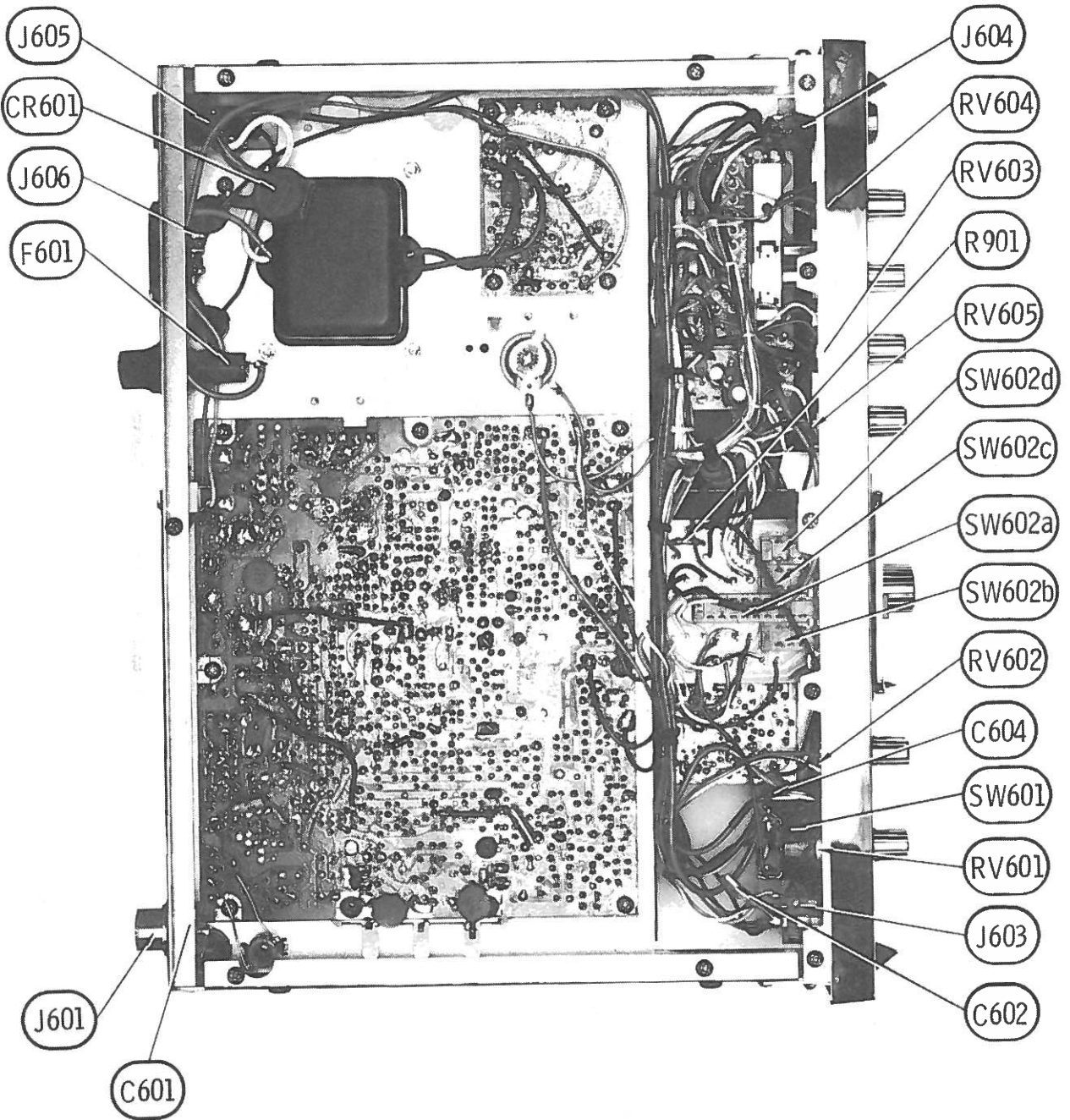
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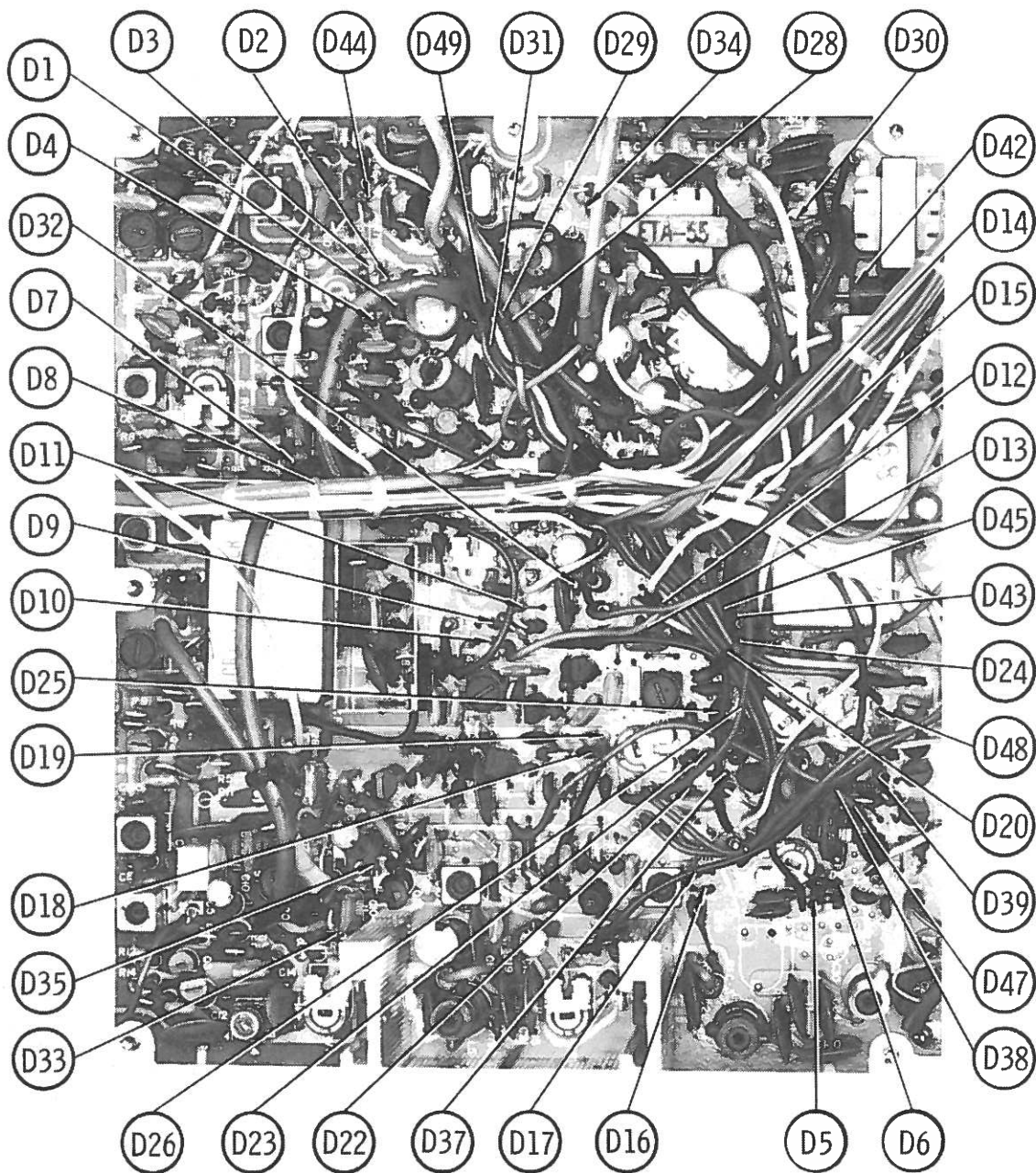
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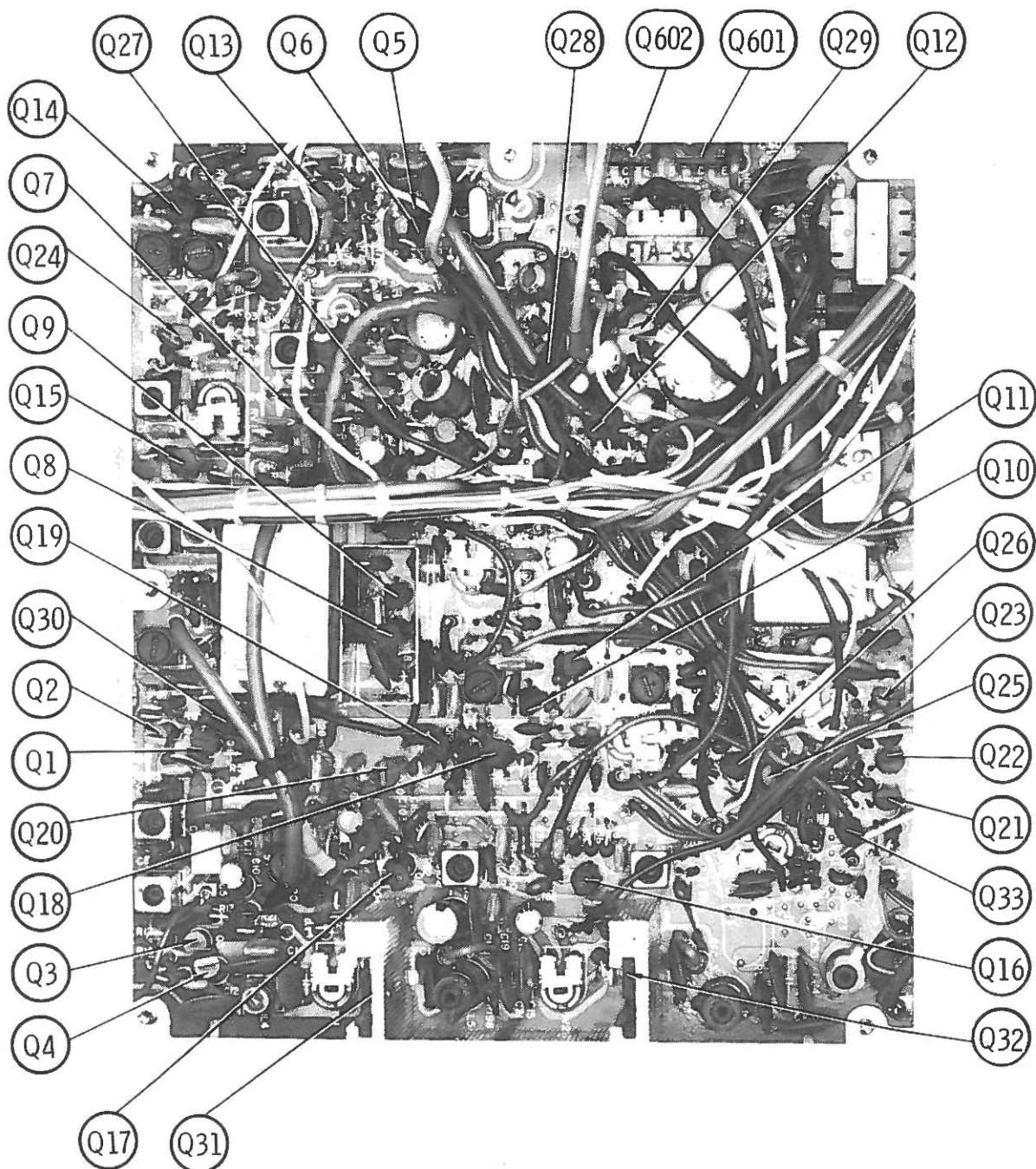
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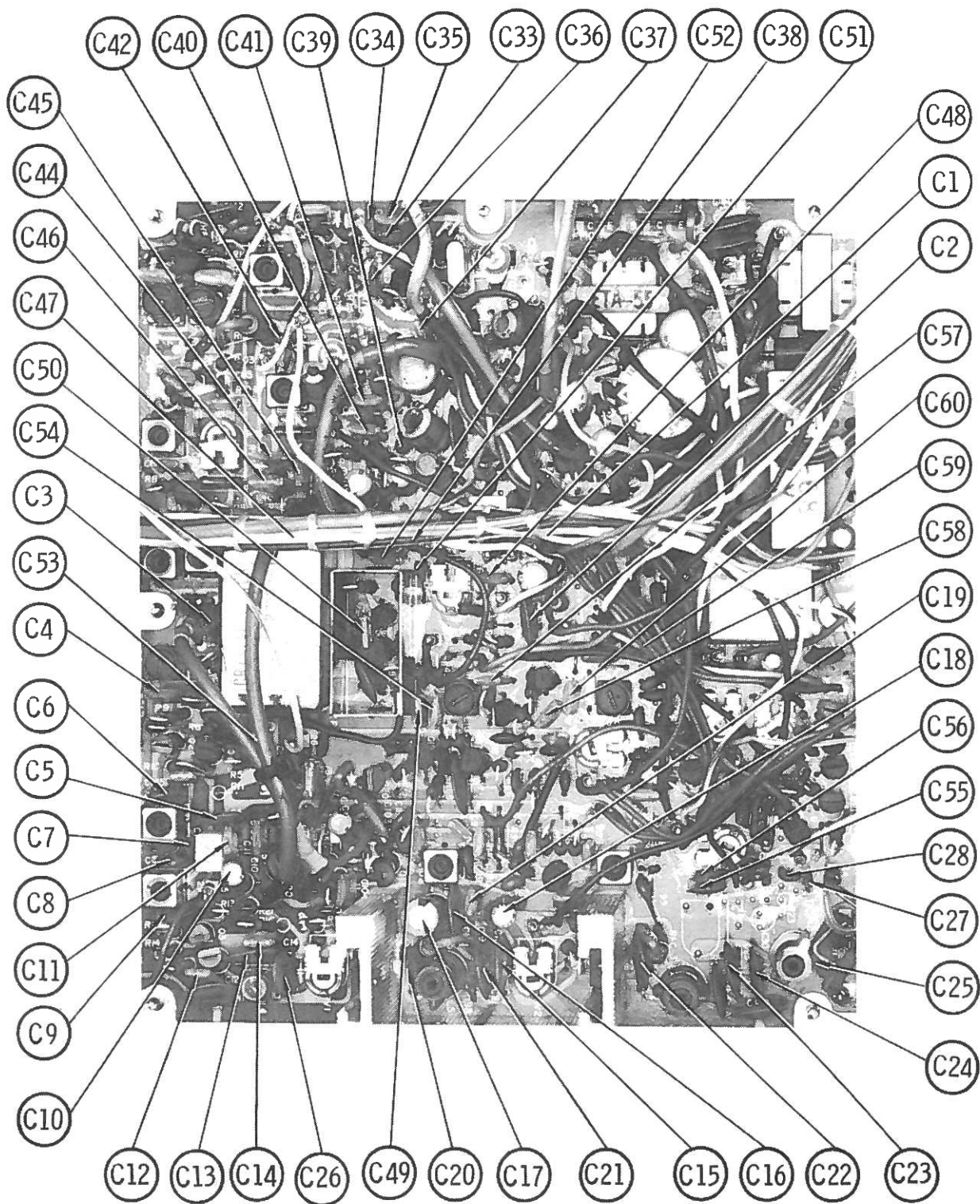
CHASSIS-BOTTOM



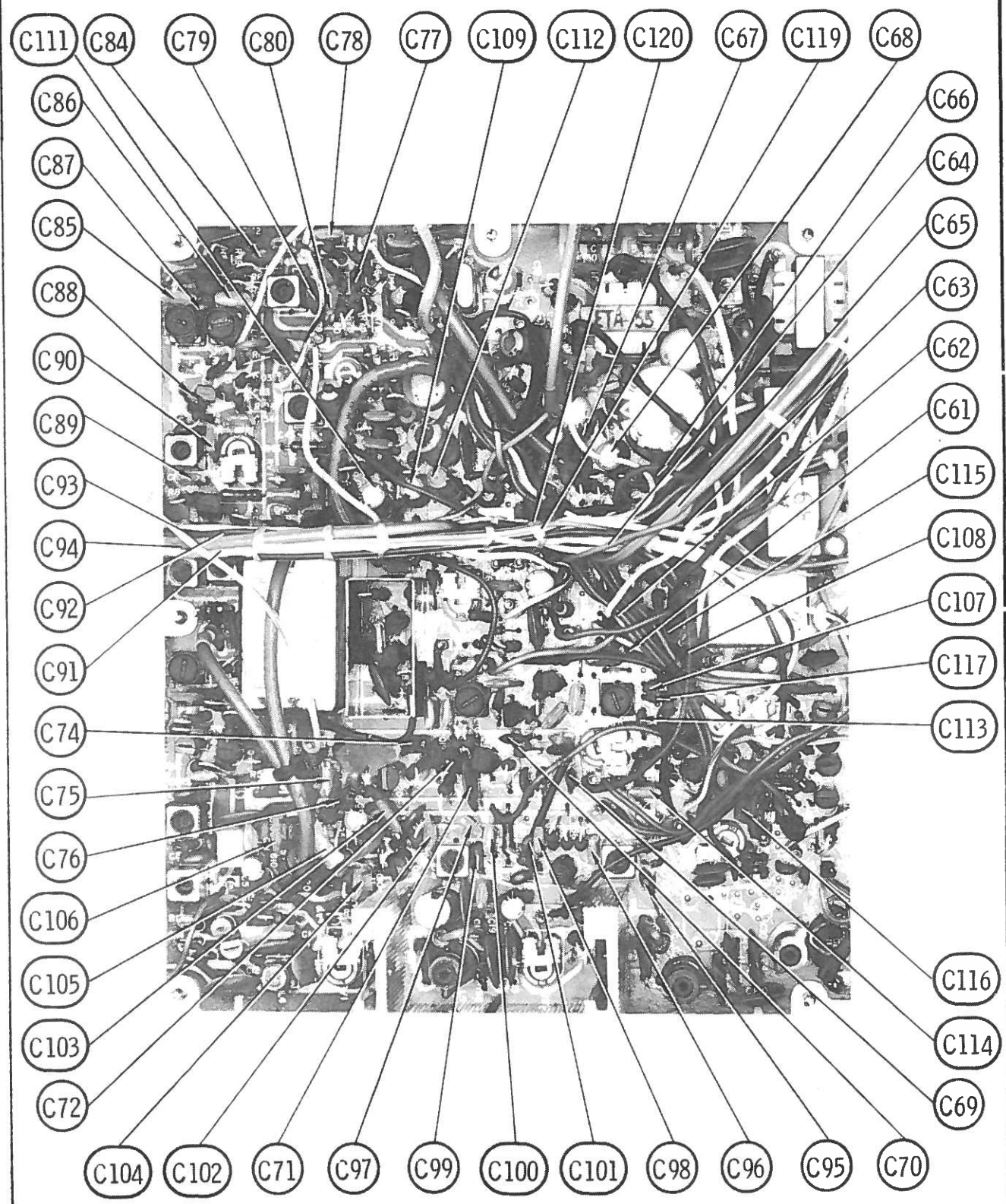
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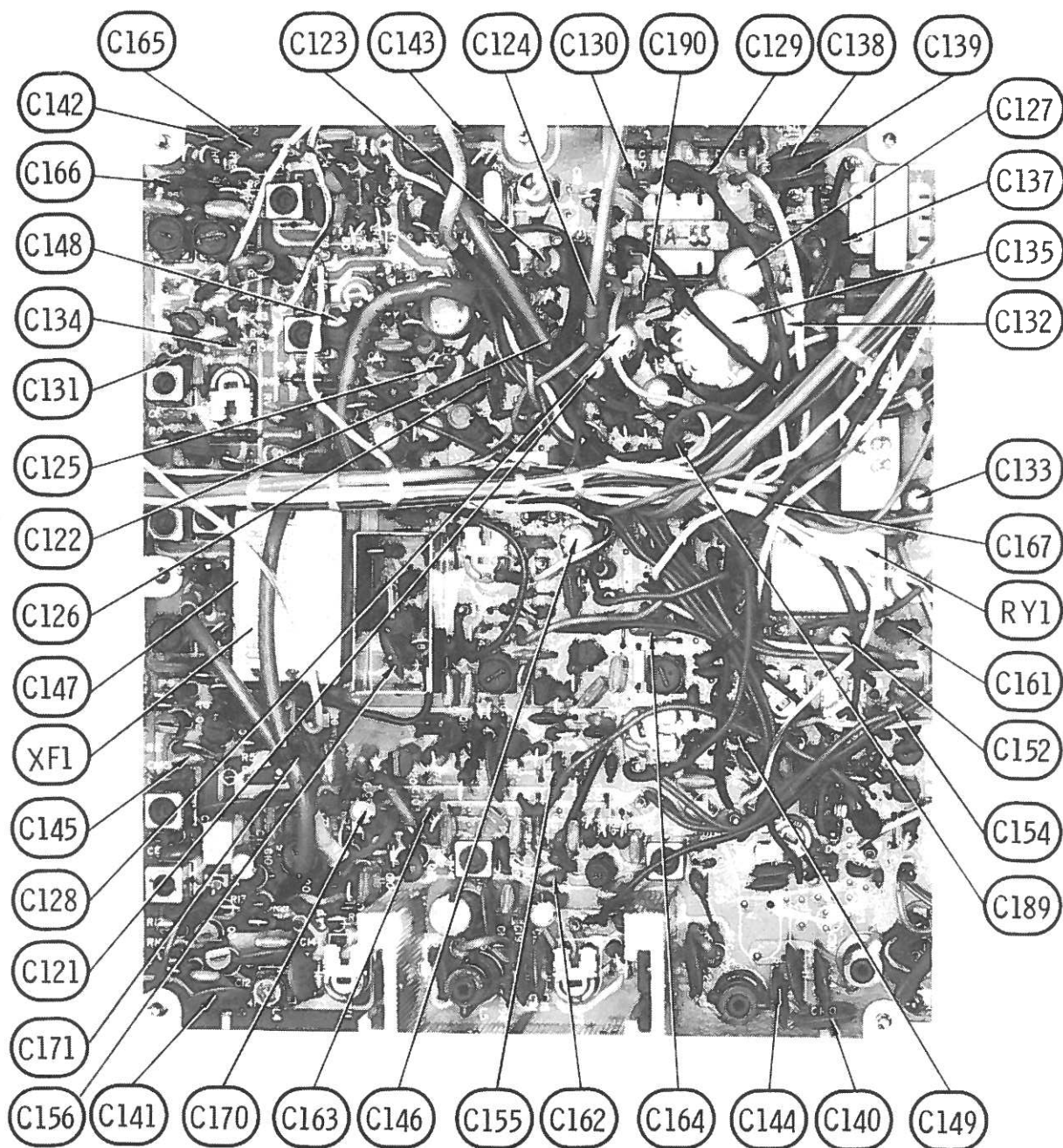
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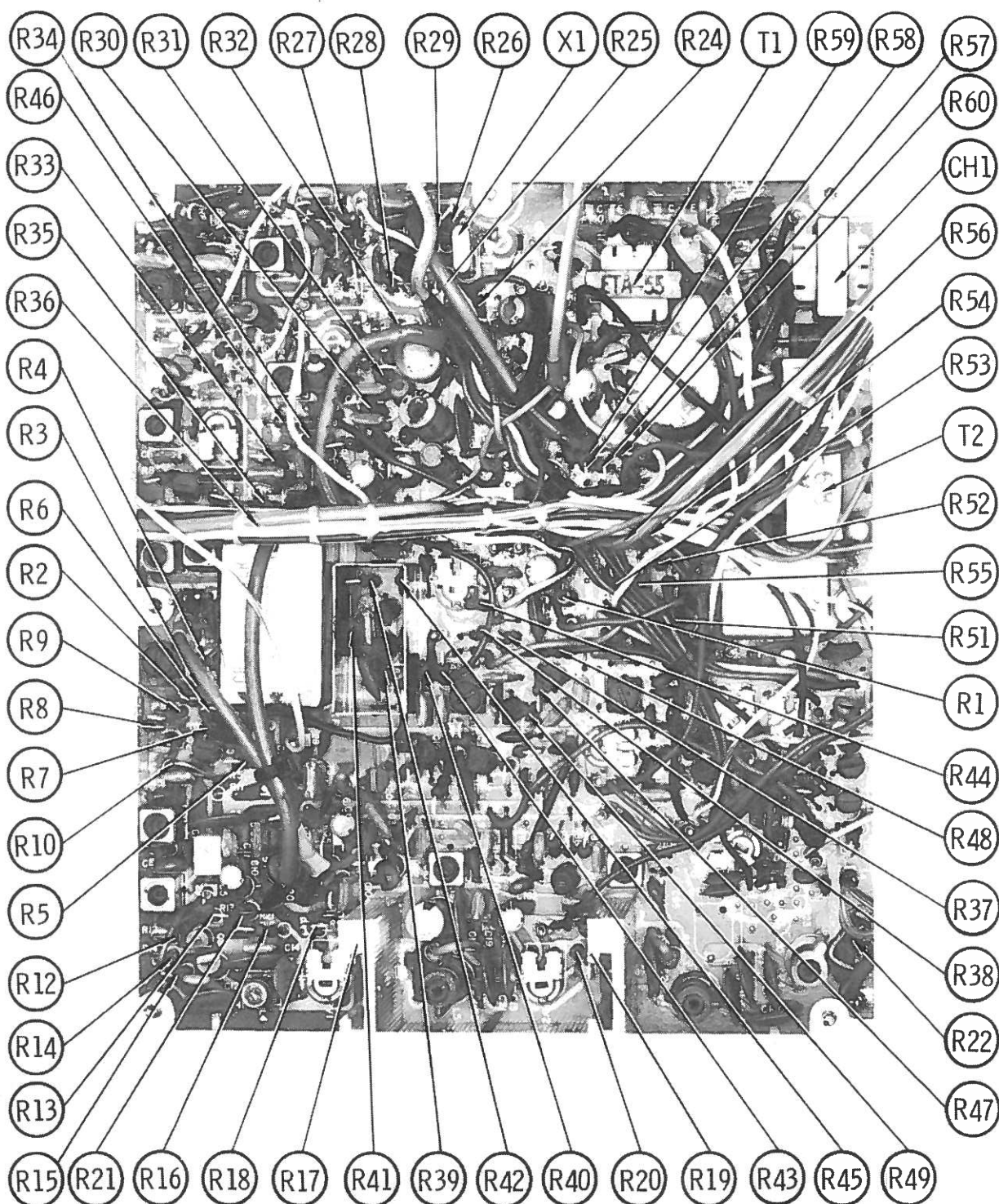
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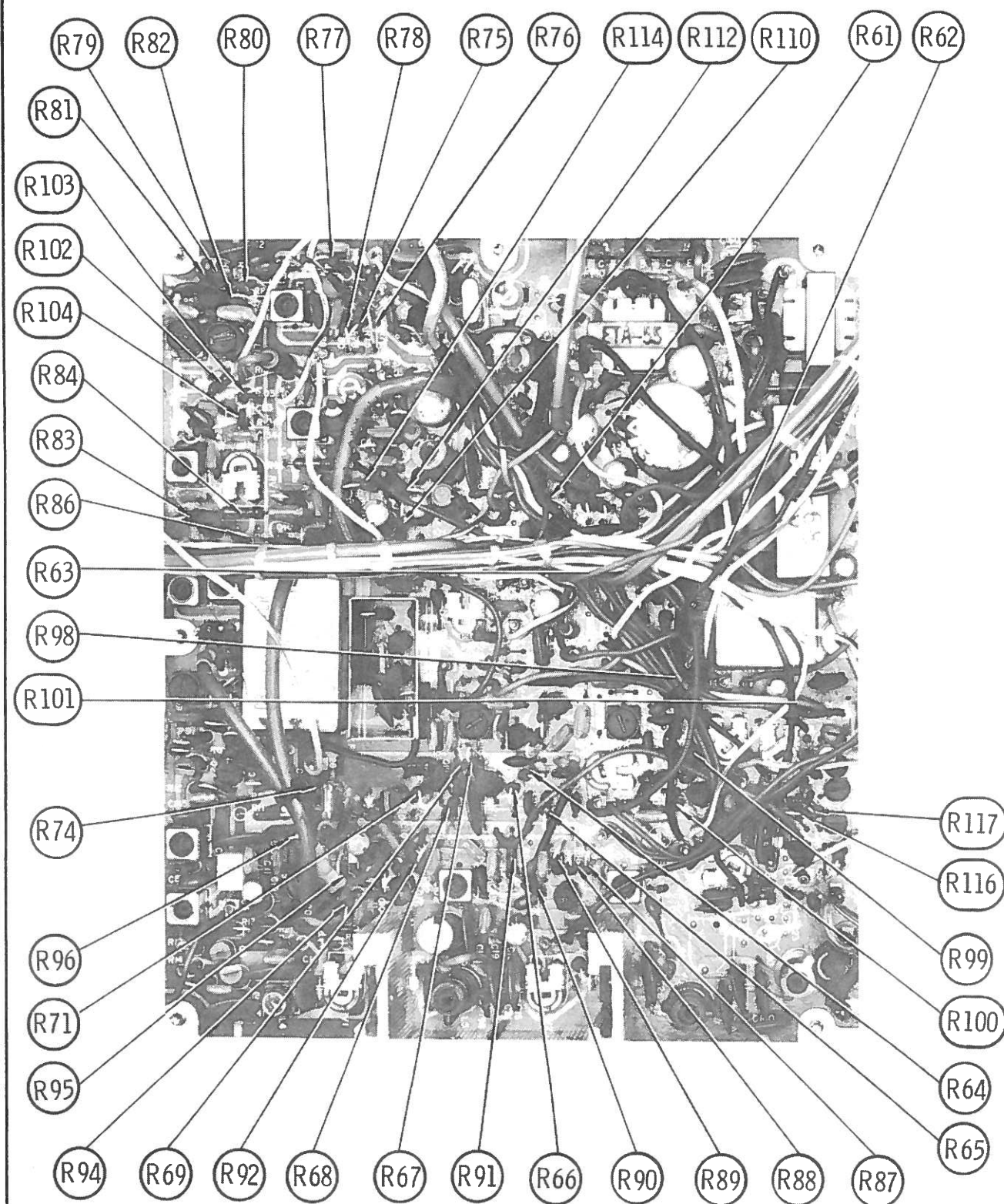
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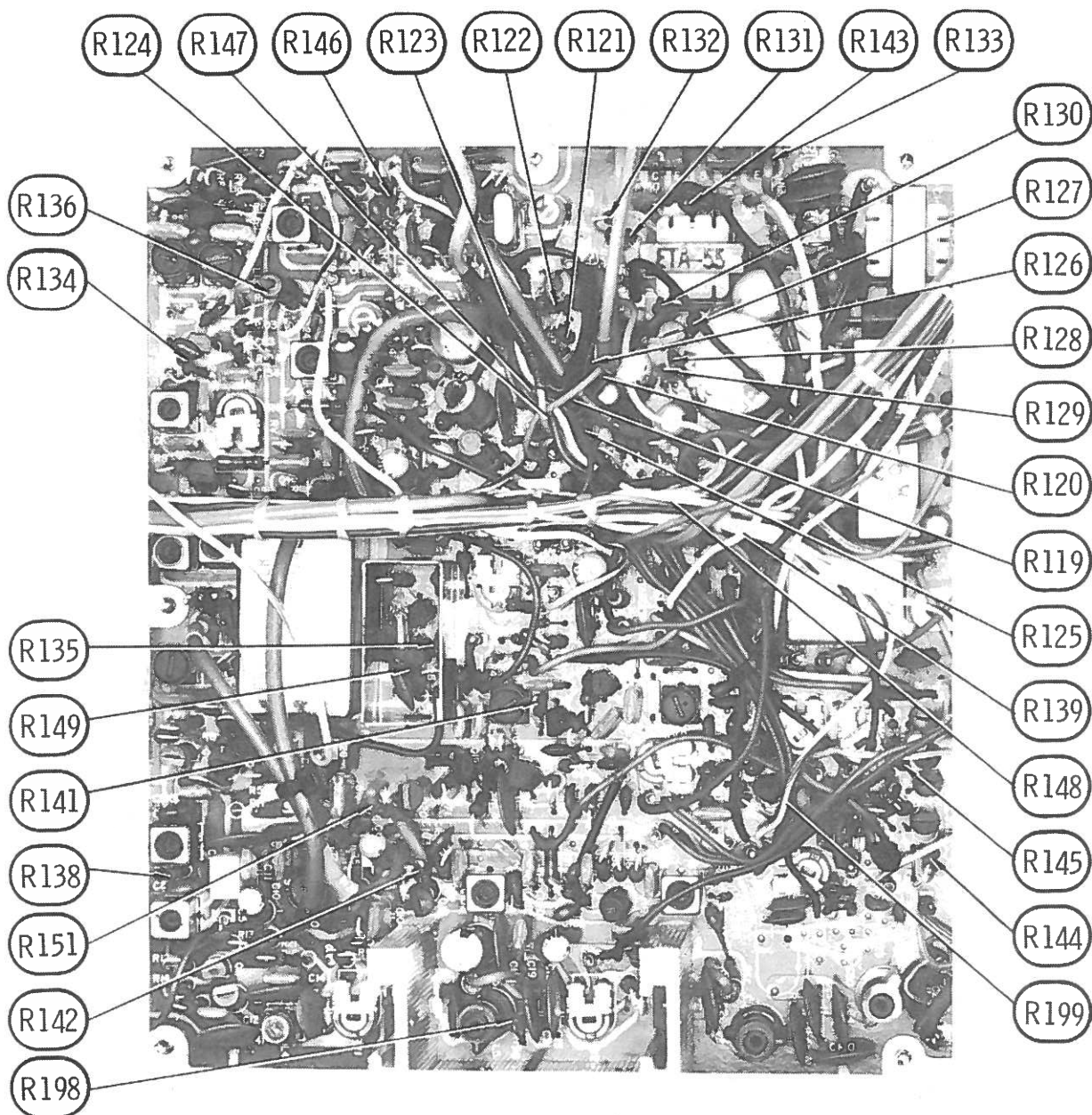
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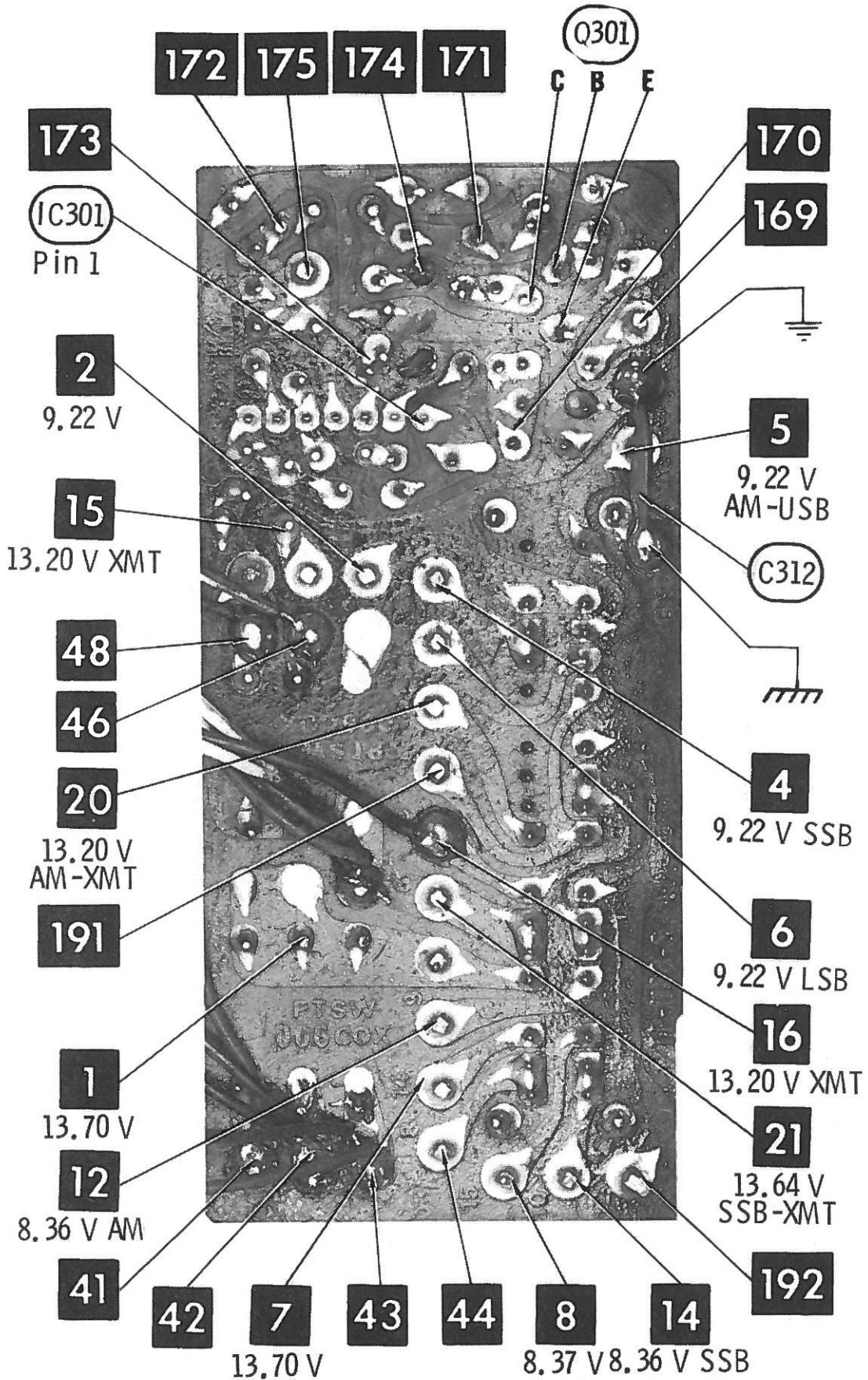
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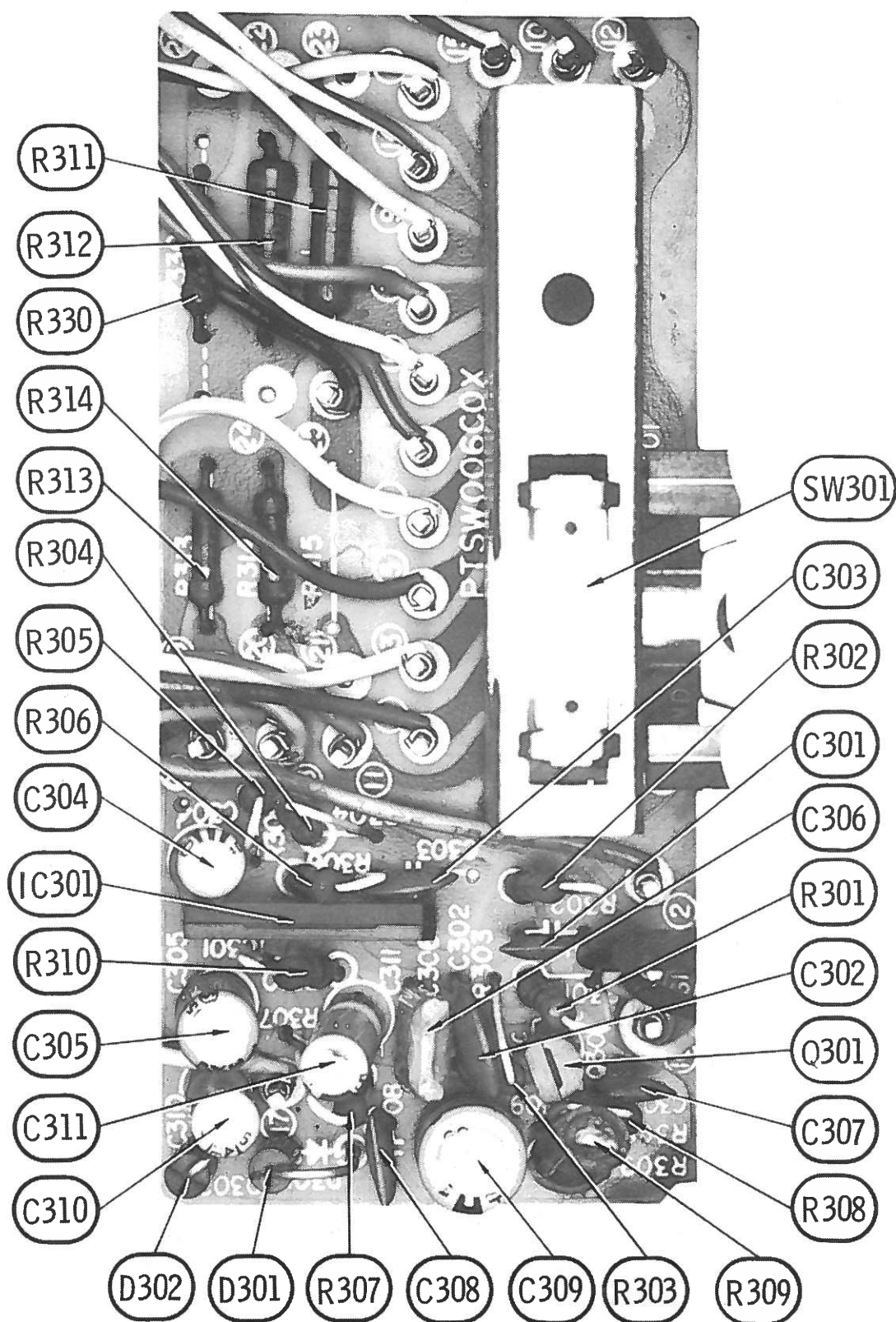
MAIN BOARD



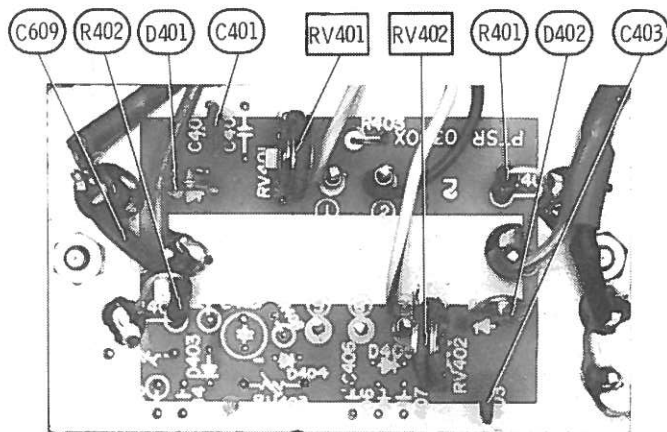
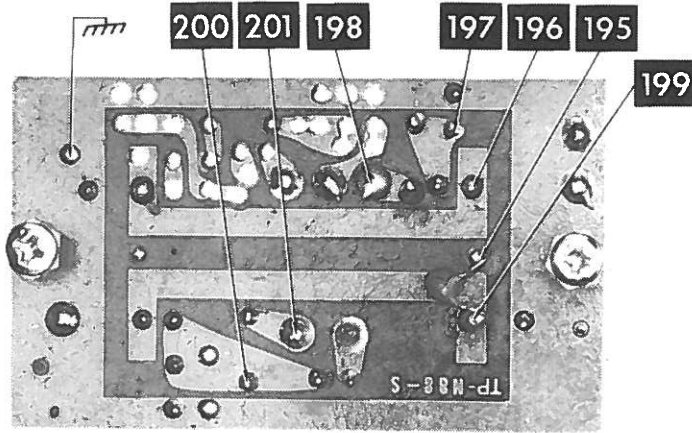
MAIN BOARD



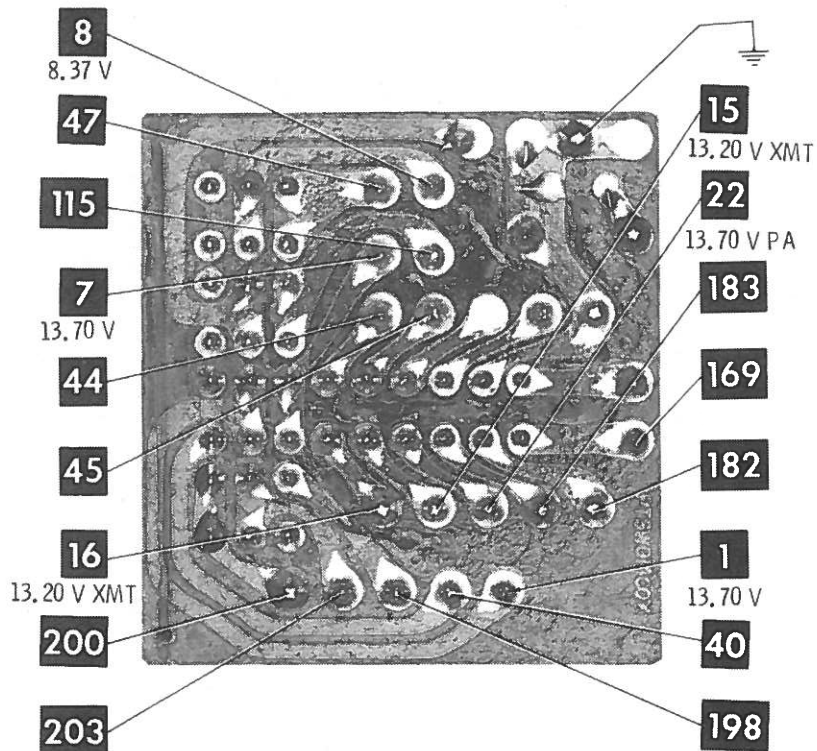
MIC AMP-AM SSB BOARD



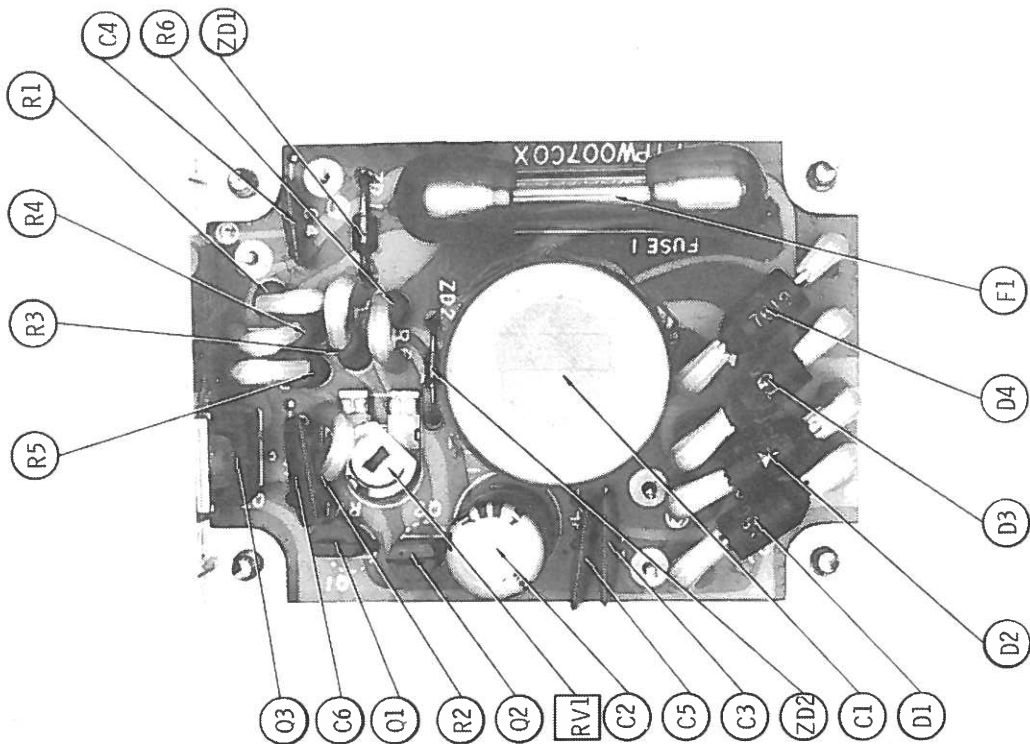
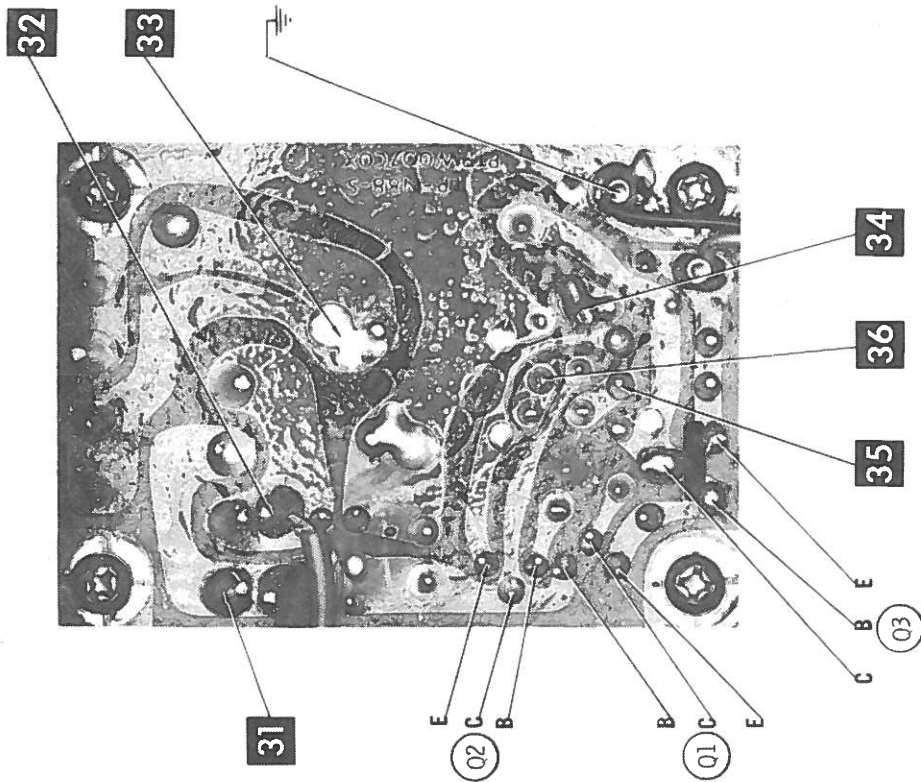
MIC AMP -AM SSB BOARD



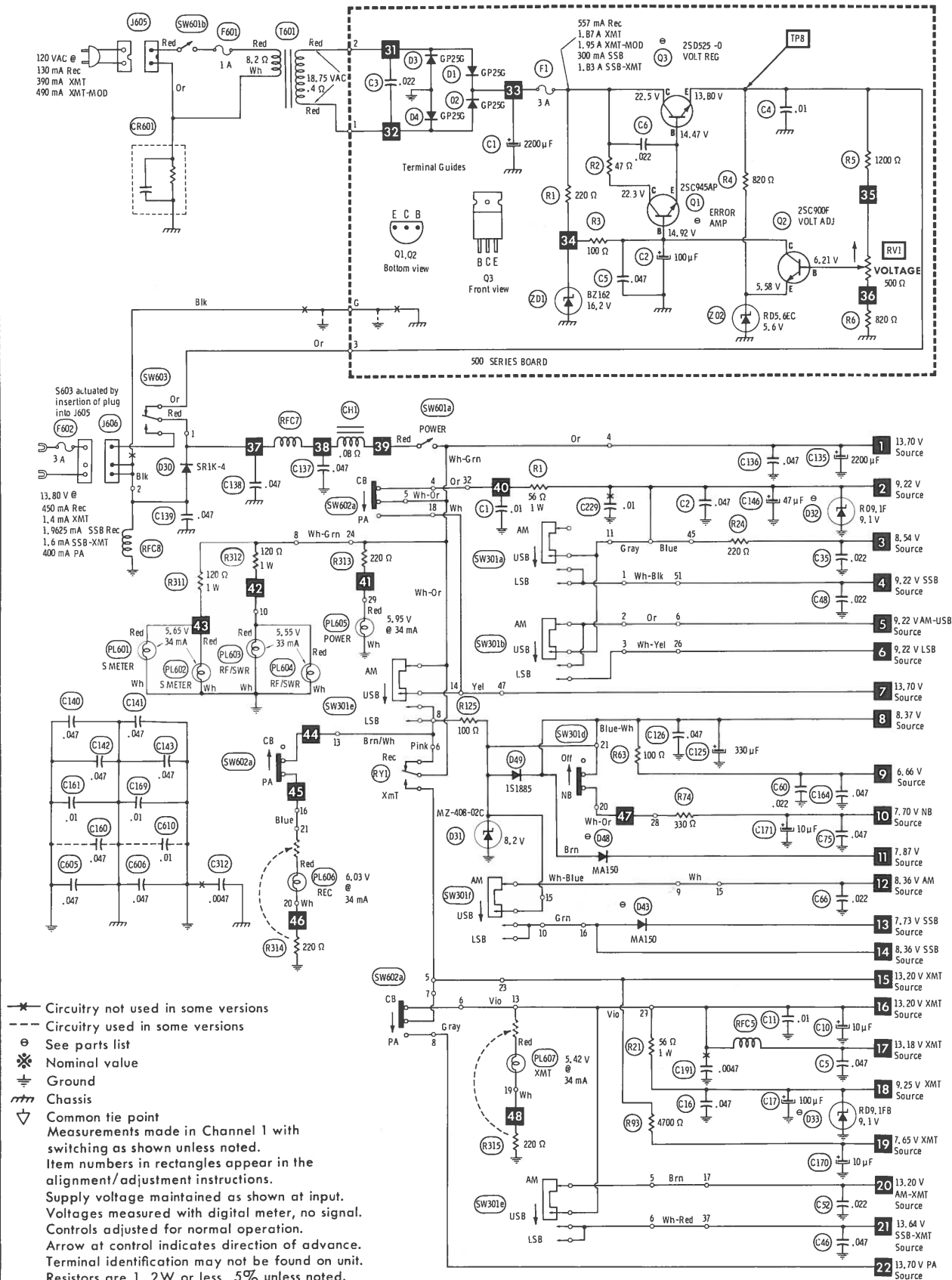
SWR BOARD



SWITCH BOARD



POWER SUPPLY BOARD



— Circuitry not used in some versions

- - - Circuitry used in some versions

⊙ See parts list

⊙ Nominal value

⊕ Ground

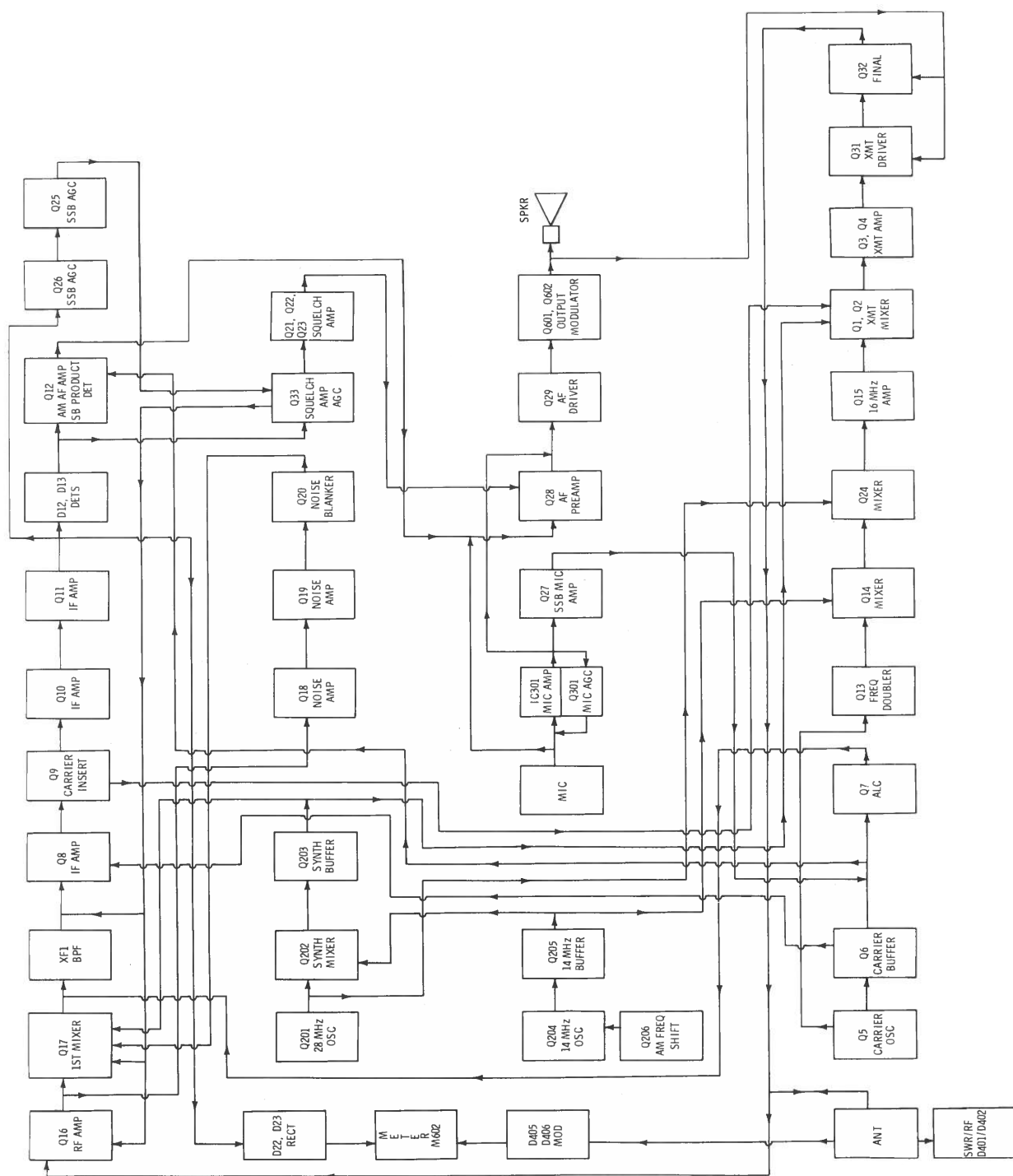
⊕ Chassis

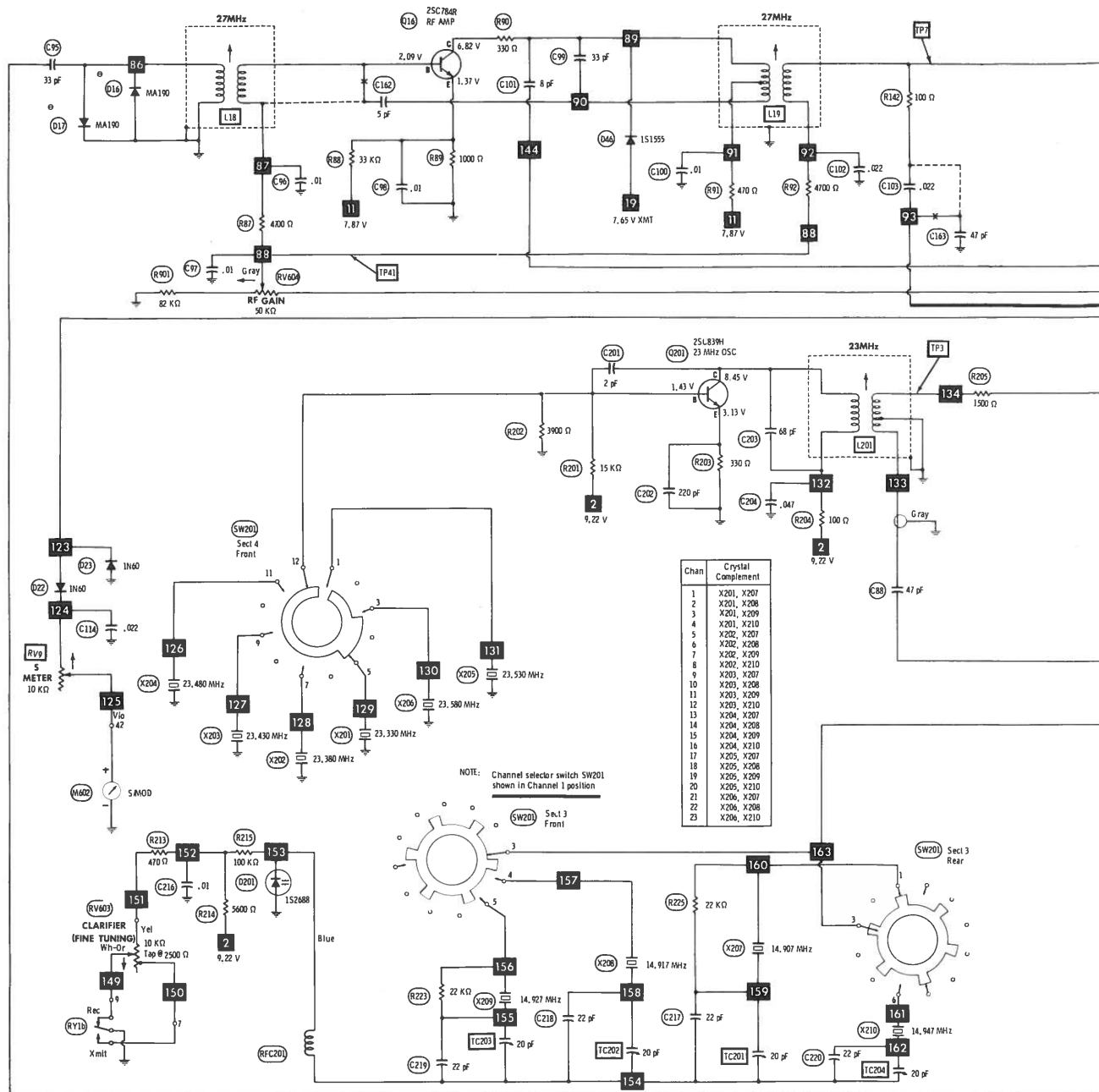
▽ Common tie point

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 1/2 W or less, 5% unless noted.
Value in () used in some versions.

A PHOTOFACIT STANDARD NOTATION SCHEMATIC
WITH CIRCUITACE®

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✱ Circuitry not used in some versions

--- Circuitry used in some versions

⊕ See parts list

⊗ Nominal value

⊥ Ground

Chassis

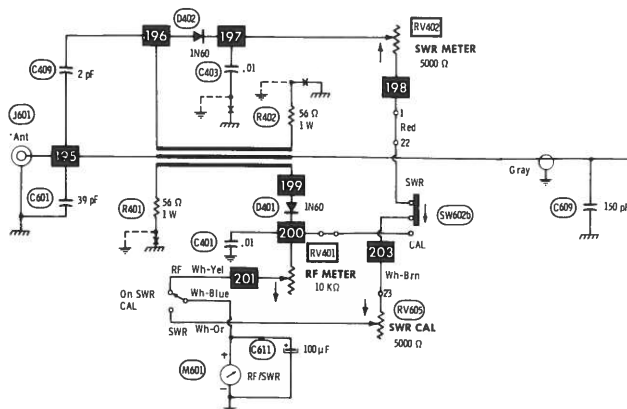
Common tie point

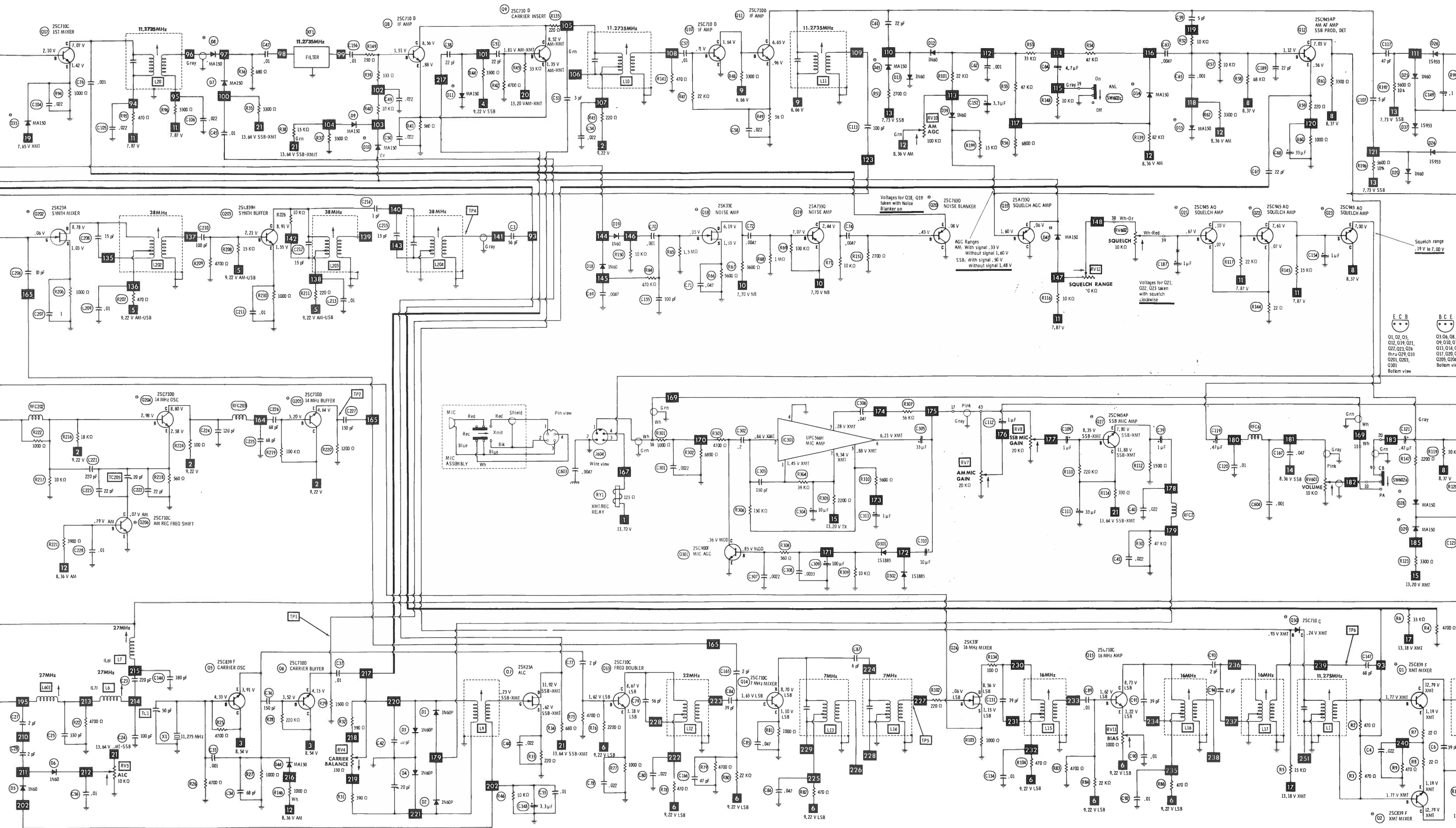
Measurements made in Channel 1 with switching as shown unless noted. Item numbers in rectangles appear in the alignment/adjustment instructions.

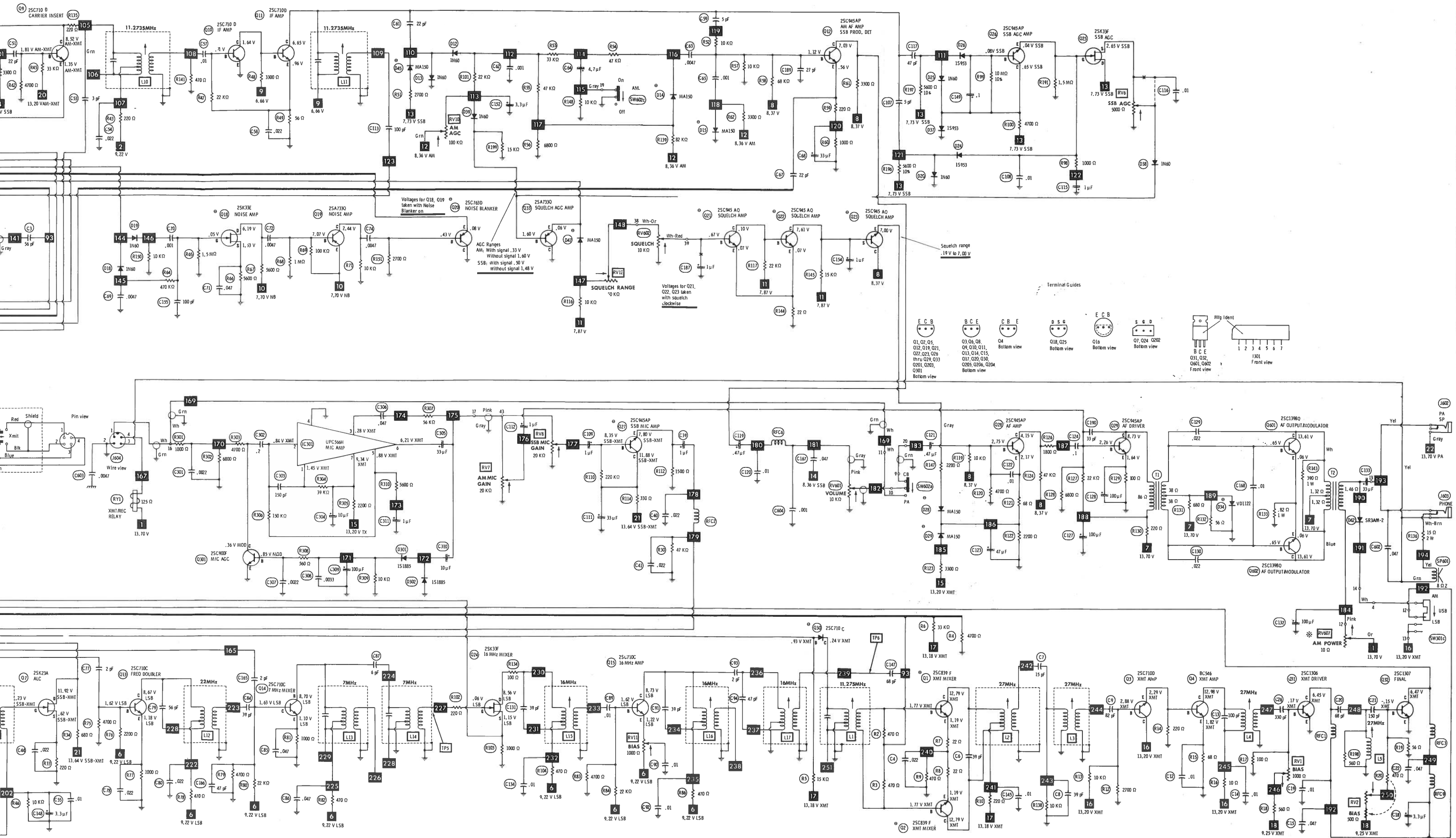
Supply voltage maintained as shown at input. Voltages measured with digital meter, no signal. Controls adjusted for normal operation. Arrow at control indicates direction of advance. Terminal identification may not be found on unit. Resistors are 1/2 W or less, 5% unless noted. Value in () used in some versions.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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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.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D1	1N60P	QD-G1N60PXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D2	1N60P	QD-G1N60PXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D3	1N60P	QD-G1N60PXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D4	1N60P	QD-G1N60PXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D5	1N60	QD-G1N60XXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D6	1N60	QD-G1N60XXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D7	MA150	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D8	MA150	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D9	MA150	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D10	MA150	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D11	MA150	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D12	1N60	QD-G1N60XXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D13	1N60	QD-G1N60XXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D14	MA150	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D15	MA150	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D16	MA150	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D17	MA150	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D18	1N60	QD-G1N60XXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D19	1N60	QD-G1N60XXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D20	1N60	QD-G1N60XXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D22	1N60	QD-G1N60XXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D23	1N60	QD-G1N60XXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D24	1S953	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D25	1N60	QD-G1N60XXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D26	1S953	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D28	MA150	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D29	MA150	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D30	SR1K-4	QD-SSR1KX4P	GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D31	MZ408-02C	QD-ZM408CE	GEZD-8.2		ZB8.2B		RE 112		RT-257	ECG5072A
D32	RD9.1FB	QD-ZM409BE	GEZD-9.1		ZB9.1B		RE 114		RT-240	ECG139A
	MZ409-02B	(1)	GEZD-9.1		ZB9.1B		RE 114		RT-240	ECG139A
D33	RD9.1FB	QD-ZM409BE	GEZD-9.1		ZB9.1B		RE 114		RT-240	ECG139A
	MZ409-02B	(1)	GEZD-9.1		ZB9.1B		RE 114		RT-240	ECG139A
D34	VD1122	QV-BD11246A			PTC301		RE 250			ECG601
	VD1124	(1)			PTC301		RE 250			ECG601
D35	MA150	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D36	1N60	QD-G1N60XXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D37	1S953	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D38	1N60	QD-G1N60XXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D39	1N60	QD-G1N60XXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D42	SR3AM-2	QD-SSA3AMBE	GE-512	R350	PTC204	HEPR0092	RE 92	SK3051	RT-201	ECG156
	1N5401(1)		GE-512	R350	PTC204	HEPR0092	RE 92	SK3051	RT-201	ECG156
D43	MA150	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D44	MA150	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D45	MA150	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D46	1S1555	QD-SS1555XT	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D47	MA150	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D48	MA150	QD-S1S953XA	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
	1S953	(1)	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D49	1S1885	QD-SS1885XT	GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D201	1S2688	QD-CS2688DJ	GE-90	D201	PTC311	HEPR2503	RE 195	SK3126	RT-262	ECG610
D301	1S1885	QD-SS1885XT	GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D302	1S1885	QD-SS1885XT	GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D401	1N60	QD-G1N60XXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D402	1N60	QD-G1N60XXT	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
IC301	UPC566H	QD-M00566AA	GEIC-135				RE 327-IC	SK3249	TVMC-82	ECG1052
Q1	2SC839F	QT-C0839XBA	GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
	2SC839H	(1)	GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
Q2	2SC839F	QT-C0839XBA	GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
	2SC839H	(1)	GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *

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.	MFG. 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.
Q3	25C710D	QT-C0710XBE	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q4	BC546	QT-CBC546AA	GE-20	TR-51	PTC136	HEPS0015	RE 192	SK3122	RT-108A	ECG199
Q5	25C839F		GE-61 *	(1R)25C644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
	25C839H	QT-C0839XBA (1)	GE-61 *	(1R)25C644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
Q6	25C710D	QT-C0710XBE	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q7	25K33F	QT-K0023AAS (1)	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	25K23A		GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
Q8	25K33E(1)		GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
Q9	25C710D	QT-C0710XBE	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q10	25C710D	QT-C0710XBE	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q11	25C710D	QT-C0710XBE	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q12	25C945AP	QT-C0945AAA	GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	25C945P(1)		GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q13	25C710C	QT-C0710XAE	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	25C710D	QT-C0710XBE (1)	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q14	25C710C	QT-C0710XAE	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	25C710D	QT-C0710XBE (1)	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q15	25C710C	QT-C0710XAE	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	25C710D	QT-C0710XBE (1)	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q16	25C784R	QT-C0784XET	GE-60 *	(1R)25C380A0	PTC132 *	HEPS0008 *	RE 28 *	SK3018 *	RT-187	ECG229 *
	25C784BN(1)		GE-60 *	(1R)25C380A0	PTC132 *	HEPS0008 *	RE 28 *	SK3018 *	RT-187	ECG229 *
Q17	25C710C	QT-C0710XAE	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	25C710D	QT-C0710XBE (1)	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q18	25K33E	QT-X0033XBE	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	25K34C,D(1)		GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
Q19	25A733Q	QT-A0733XAA	GE-48	TR-31	PTC103 *	HEPS0019 *	RE 26 *	SK3138	RT-303	ECG294
Q20	25C763D	QT-C0763XAE	GE-61 *	(1R)25C710	PTC115	HEPS0020 *	RE 10 *	SK3018 *	RT-309	ECG108 *
Q21	25C945AQ		GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	25C945P(1)		GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	25C945AP	QT-C0945AAA (1)	GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q22	25C945AQ		GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	25C945P(1)		GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	25C945AP	QT-C0945AAA (1)	GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q23	25C945AQ		GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	25C945P(1)		GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	25C945AP	QT-C0945AAA (1)	GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q24	25K33F	QT-K0033XAE								
	25K33E(1)									
	25K23A	QT-K0023AAS (1)	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
Q25	25K33F	QT-K0033XAE	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
Q26	25C945AP	QT-C0945AAA	GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	25C945P(1)		GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q27	25C945AP	QT-C0945AAA	GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	25C945P(1)		GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q28	25C945AP	QT-C0946AAA	GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	25C945P(1)		GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q29	25C1945AP	QT-C0945AAA	GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	25C945P(1)		GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q30	25C710C	QT-C0710XAE	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	25C710D	QT-C0710XBE (1)	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q31	25C1306	QT-C1306XZA	GE-215	WEP1306	PTC186		RE 203	SK3197	RT-146	ECG235
Q32	25C1307	QT-C1307XZA	GE-216	WEP1307	PTC186		RE 201	SK3197	RT-158	ECG236
Q33	25A733Q	QT-A0733XAA	GE-48	TR-31	PTC103 *	HEPS0019 *	RE 26 *	SK3138	RT-303	ECG294
Q201	25C839H	QT-C0839XBA	GE-61 *	(1R)25C644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
Q202	25K23A	QT-K0023AAS	GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
	25K33F,E(1)		GE-FET-2	FE-100	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312
Q203	25C839H	QT-C0839XBA	GE-61 *	(1R)25C644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
Q204	25C710D	QT-C0710XBE	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	25C839H	QT-C0839XBA (1)	GE-61 *	(1R)25C644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
Q205	25C710D	QT-C0710XBE	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	25C710C	QT-C0710XAE (1)	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q206	25C710C	QT-C0710XAE	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	25C710D	QT-C0710XBE (1)	GE-211 *	(1R)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q301	25C900F	QT-C0900XBA	GE-62	(1R)25C644	PTC139 *	HEPS0015 *	RE 192	SK3124	RT-302	ECG199
Q601	25C1398Q	(1)	GE-66	TR-76	PTC110	HEPS3024	RE 21	SK3054	RT-154	ECG152
	25C1226AC	(1)	GE-215		PTC186		RE 203	SK3197	RT-166	ECG186A
	25D325E	QT-D0325XAC (1)	GE-28	WEP1306	PTC110	HEPS5027	RE 42	SK3197	RT-197	ECG186
Q602	25C1398Q	(1)	GE-66	TR-76	PTC110	HEPS3024	RE 21	SK3054	RT-154	ECG152
	25C1226AC	(1)	GE-215	WEP900	PTC186		RE 203	SK3197	RT-166	ECG186A
	25D325E	QT-D0325XAC (1)	GE-28	WEP1306	PTC110	HEPS5027	RE 42	SK3197	RT-197	ECG186
POWER SUPPLY BOARD										
D1	GP25G	QD-SGP25GXG	GE-504A	5A4D	PTC201	HEPRO052	RE 49	SK3030	RT-213	ECG116
D2	GP25G	QD-SGP25GXG	GE-504A	5A4D	PTC201	HEPRO052	RE 49	SK3030	RT-213	ECG116
D3	GP25G	QD-SGP25GXG	GE-504A	5A4D	PTC201	HEPRO052	RE 49	SK3030	RT-213	ECG116
D4	GP25G	QD-SGP25GXG	GE-504A	5A4D	PTC201	HEPRO052	RE 49	SK3030	RT-213	ECG116
Q1	25C945AP	QT-C0945AAA	GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	25C945P(1)		GE-212	(1R)25C945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q2	25C900F	QT-C0900XBA	GE-62	(1R)25C644	PTC139 *	HEPS0015 *	RE 192	SK3124	RT-302	ECG199

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.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
Q3	2S0525-0 2SD525Y	QT-00525XOC QT-00525XDC (1)	GE-66 GE-66	TR-76 TR-76	PTC110 PTC110	HEP55027 HEP55027	RE 21 RE 21	SK3054 SK3054	RT-197 RT-197	ECG152 ECG152
ZD1 Z02	BZ162 RD5.6EC	QO-ZBZ162XJ QO-ZR056EAA	GEZO-16 GEZO-5.6	Z1204	ZB16B ZB5.6A	HEPZ0407	RE 122 RE 107	SK3057	RT-246 RT-236	ECG5075A ECG136

* Lead configuration may vary from original.
(1) Used in some versions.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C10	10 16V	CE-AD100ALN	PC10-25	VTT10B25	QV1-41	EV-1222
C17	100 10V	CE-AC101ALH	PC100-10	VTT100E10	QV1-93	EV-1130
C18	3.3 25V	CE-EE3R3ALN	PC5-50	VTT3R3A50	QV1-23	EV-1318
C39	1 25V	CS-SF010HDC		TOC105M035EL		S035-19
C64	4.7 25V	CE-AE4R7ALN	PC5-50	VTT4R7B50	QV1-27	EV-1319
C68	33 10V	CE-AC330ALN	PC30-25	VTT33B10	QV1-61	EV-1125
C109	1 50V	CE-AG010ALN	PC10-25	VTT10B25	QV1-43	EV-1322
C111	33 16V	CE-A0330ALN	PC30-25	VTT33025	QV1-63	EV-1325
C112	1 50V	CE-AG010ALN	PC1-50	VTT1A50	QV1-11	EV-1615
C115	1 25V	CS-SF010MOC		TOC105M035EL		S035-19
C119	.47 50V	CE-AGR47ALN	PC1-50	VTT4R7A63	QV1-3	EV-1610
C121	.47 50V	CE-AGR47ALN	PC1-50	VTT4R7A63	QV1-3	EV-1610
C123	47 10V	CE-AC470ALN	PC50-16	VTT47D16	QV1-73	EV-1226
C125	330 10V	CE-AC331ALN	WBR300-35	VTT330G10	QV1-131	EV-1145
C127	100 16V	CE-AD101ALN	PC100-16	VTT100F16	QV1-95	EV-1230
C128	100 10V	CE-AC101ALN	PC100-10	VTT100E10	QV1-93	EV-1130
C132	100 16V	CE-A0101ALN	PC100-16	VTT100F16	QV1-95	EV-1230
C133	33 16V	CE-A0330ALN	PC30-25	VTT33025	QV1-63	EV-1325
C135	2200 16V	CE-AD222ALN	WBR2000-16	TC1520C	QE1-643	TVA-1175.3
C146	47 10V	CE-AC470ALN	PC50-16	VTT47D16	QV1-73	EV-1226
C148	3.3 25V	CE-AE3R3ALN	PC5-50	VTT3R3A50	QV1-23	EV-1318
C149	.1 35V	CS-SF0R1HDC		TOC104M050EL	QDT1-2	S050-R109
C152	3.3 25V	CE-AE3R3ALN	PC5-50	VTT3R3A50	QV1-23	EV-1318
C154	1 50V	CE-AG010ALN	PC1-50	VTT1A50	QV1-11	EV-1615
C170	10 16V	CE-A0100ALN	PC10-25	VTT10B25	QV1-41	EV-1222
C171	10 16V	CE-A0100ALN	PC10-25	VTT10B25	QV1-41	EV-1222
C187	1 50V	CE-AG010ALN(1)	PC1-50	VTT1A50	QV1-11	EV-1615
C304	10 16V	CE-AD100ALN	PC10-25	VTT10B25	QV1-41	EV-1222
C305	33 10V	CE-AC330ALN	PC30-25	VTT33B10	QV1-61	EV-1125
C309	100 6.3V	CE-AB101ALN	PC100-10	VTT100E10	QV1-93	EV-1130
C310	10 16V	CE-AD100ALN	PC10-25	VTT10B25	QV1-41	EV-1222
C311	1 50V	CE-AG010ALN	PC1-50	VTT1A50	QV1-11	EV-1615
POWER SUPPLY BOARD						
C1	2200 25V	CE-T1E22201	WBR2000-25	TC2520A	QE1-645	TVA-1213.5
C2	100 25V	CE-AE101ALN	PC100-25	VTT100G25	QV1-97	EV-1330

(1) Used in some versions.

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE	PART No.
						Q-LINE	GENERAL LINE
C1	.01 50V 10%	CC-0B560KPM CC-0B680KPM(1)	UK50-503	WMF1S1	EWF1A110	QF1-91	1PB-S10
C2	.047				MAG5015		10TCP-Q56
C3	56 N150 10%				*		
C4	68 N150 10%						
C5	.022 50V 10%	CC-DB390KPM CC-0B150KPM CC-0B390KPM CC-0B820KPM	UK50-503		M192P2239RB		192P2239RB
C6	.047				MAG5015		
C7	39 N150 10%				*		10TCP-Q39
C8	15 N150				*		10TCP-Q15
C9	39 N150 10%			*		10TCP-Q39	
C10	B2 N150 10%			*		10TCP-Q82	
C11	.01 50V 10%	CC-DB101KPM		WMF1S1	EWF1A110	QF1-91	1PB-S10
C12	.01 50V 10%			WMF1S1	EWF1A110		1PB-S10
C13	100 N150 10%				*		10TCP-T10
C14	.01 50V 10%			WMF1S1	EWF1A110		1PB-S10
C15	.047	CC-DB680KPM CC-DB151KPM	UK50-503	WMF1S1	MAG5015	QF1-91	1PB-S10
C16	.047		UK50-503		MAG5015		10TCP-Q68
C19	.01 50V 10%				EWF1A110		10TCP-T15
C20	68 N150 10%				*		
C21	150 N150 10%	CC-DB221KPM CC-DB101KPM	UK50-503		MAG5015		10TCP-T22
C22	.047				*		10TCP-T10
C23	220 N150 10%				*		
C24	100 N150 10%				*		
C25	330 10%	CC-DB020CPM CC-DB020CPM	0D-331	GP330	GP333		10TS-T33
C26	330 10%		00-331	GP330	GP333		10TS-T33
C27	2 N150			*			10TCP-V22
C28	2 N150			*			10TCP-V22
C29	.001 10%	CC-0B680KPM	DD-102		GP210		10TS-O10
C34	68 N150 10%				*		10TCP-Q68
C35	.022 50V 10%				M192P2239RB		192P2239RB
C36	150 10%				GP315		10TS-T15
C37	.01 50V 10%	CC-0B220KPM	DO-151	WMF1S1	EWF1A110	QF1-91	1PB-S10
C38	22 N150				*		10TCP-Q22
C40	.022 50V 10%				M192P2239RB		192P2239RB
C41	.022 50V 10%				M192P2239RB		192P2239RB
C42	10 N150	CC-0B100FPM			*		10TCP-Q10

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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
C44	.022 50V 10%				M192P2239R8		192P2239R8
C45	.01 50V 10%			WMF1S1	EWFA1110	QF1-91	1PB-S10
C46	.047 50V 10%			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C47	.01 50V 10%			WMF1S1	EWFA1110	QF1-91	1PB-S10
C48	.022 50V 10%				M192P2239R8		192P2239R8
C49	.022 50V 10%				M192P2239R8		192P2239R8
C50	.022 50V 10%				M192P2239R8		192P2239R8
C51	22 N150	CC-DB220KPM			*		10TCP-Q22
C52	.022 50V 10%				M192P2239R8		192P2239R8
C53	3 N150	CC-DB030CPM			*		10TCP-V30
C54	.022 50V 10%				M192P2239R8		192P2239R8
C55	.01			GP10000	GP110		56A-S10
C56	.01		DD-1032	GP10000	GP110		56A-S10
C57	.01 50V 10%		DD-1032	WMF1S1	EWFA1110	QF1-91	1PB-S10
C58	.022 50V 10%				M192P2239R8		192P2239R8
C59	5 N150	CC-DB050CPM			*		10TCP-V50
C60	.022 50V 10%				M192P2239R8		192P2239R8
C61	22 N150	CC-DB220KPM			*		10TCP-Q22
C62	.001 100V			DPMS6D1	EWFA1A210	QF1-1	1PB-D10
C63	.0047 50V 10%						
C65	.001 100V			DPMS6D1	EWFA1A210	QF1-1	1PB-D10
C66	.022 50V 10%				M192P2239R8		192P2239R8
C67	22 N150	CC-DB220KPM			*		10TCP-Q22
C69	.0047 50V 10%				M192P4729R8		192P4729R8
C70	.001 100V			DPMS6D1	EWFA1A210	QF1-1	1PB-D10
C71	.047		UK50-503		MAG5015		
C72	.0047 50V 10%				M192P4729R8		192P4729R8
C74	.0047 50V 10%				M192P4729R8		192P4729R8
C75	.047 50V 10%			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C76	.001 100V			DPMS6D1	EWFA1A210	QF1-1	1PB-D10
C77	2 N150	CC-DB020CPM			*		10TCP-V22
C78	.022 50V 10%				M192P2239R8		192P2239R8
C79	56 N150 10%	CC-DB560KPM			*		10TCP-Q56
C80	.022 50V 10%				M192P2239R8		192P2239R8
C84	39 N150 10%	CC-DB101KPM			*		10TCP-Q39
C85	.047 50V 10%			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C86	.047 50V 10%			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C87	6 N150	CC-DB040DPM			*		10TCP-V56
C88	47 N150 10%	CC-DB470KPM			*		10TCP-Q47
C89	.01 50V 10%			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C90	.01 50V 10%			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C91	39 N150 10%	CC-DB390KPM			*		10TCP-Q39
C92	.01 50V 10%			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C93	2 N150	CC-DB020CPM			*		10TCP-V22
C94	47 N150 10%	CC-DB470KPM			*		10TCP-Q47
C95	33 N150	CC-DB330KPM			*		10TCP-Q33
C96	.01 50V 10%			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C97	.01 50V 10%			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C98	.01 50V 10%			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C99	33 N150 10%	CC-DB330KPM			*		10TCP-Q33
C100	.01 50V 10%			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C101	8 N150	CC-DB080CPM			*		10TCP-V8
C102	.022 50V 10%				M192P2239R8		192P2239R8
C103	.022 50V 10%				M192P2239R8		192P2239R8
C104	.022 50V 10%				M192P2239R8		192P2239R8
C105	.022 50V 10%				M192P2239R8		192P2239R8
C106	.022 50V 10%				M192P2239R8		192P2239R8
C107	5 N150	CC-DB050CPM			*		10TCP-V50
C108	.01 50V 10%			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C113	100 10%		DD-101	GP100	GP310		10TS-T10
C114	.022 50V 10%				M192P2239R8		192P2239R8
C116	.01 50V 10%			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C117	47 N150 10%	CC-DB470KPM			*		10TCP-Q47
C120	.01 50V 10%			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C122	.01 50V 10%			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C124	.1 50V 10%			WMF05P1	EWFO5010		431P1049R5
C126	.047		UK50-503		MAG5015		
C129	.022 50V 10%				M192P2239R8		192P2239R8
C130	.022 50V 10%				M192P2239R8		192P2239R8
C131	39 N150 10%	CC-DB390KPM			*		10TCP-Q39
C134	.01 50V 10%			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C136	.047		UK50-503		MAG5015		
C137	.047		UK50-503		MAG5015		
C138	.047		UK50-503		MAG5015		
C139	.047		UK50-503		MAG5015		
C140	.047		UK50-503		MAG5015		
C141	.047		UK50-503		MAG5015		
C142	.047		UK50-503		MAG5015		
C143	.047		UK50-503		MAG5015		
C144	180 N150 10%	CC-DB181KPM			*		10TCP-T18
C145	.01 50V 10%			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C147	68 N150 10%	CC-DB680KPM			*		10TCP-Q68
C155	100 10%		DD-101	GP100	GP310		10TS-T10
C156	.01		DD-1032	GP10000	GP110		56A-S10
C160	.047	(1)		DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C161	.01		DD-1032	GP10000	GP110		56A-S10
C162	5 N150	CC-DB050CPM			*		10TCP-V50
C163	47 10%		DTZ-47	NP047	CN0447		10TCC-Q47
C164	.047 50V 10%			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C165	10 N150				*		10TCP-Q10
C166	220 N150				*		10TCP-T22
C167	.047 50V 10%			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C168	.01		DD-1032	WMF1S1	EWFA1A110	QF1-91	1PB-S10
C169	.01			GP10000	GP110		56A-S10
C188	68 50V	(1)	DTZ-68	NP068	CN0468		10TCC-Q68
C189	27 N150	CC-DB270KPM			*		10TCP-Q27
C190	33 N150	CC-DB330KPM			*		10TCP-Q33
C191	.0047 10%			WMF1D47	EWFA1A247	QF1-57	1PB-D47
C201	2 N150	CC-DB020CPM			*		10TCP-V22

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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
C202	220 N150 10%	CC-DB221KPM			*		10TCP-T22
C203	68 N150	CC-DB680KPM			*		10TCP-Q68
C204	.047 50V 10%			DPMS2S47	EWFTA147	QF1-171	1PB-S47
C206	10 N150	CC-DB100DPM			*		10TCP-Q10
C207	.01		DD-1032	GP10000	GP110		5GA-S10
C208	15 N150	CC-DB150KPM			*		10TCP-Q15
C209	.01		DD-1032	GP10000	GP110		5GA-S10
C210	100 N150 5%	CC-DB101KPM			*		10TCP-T10
C211	.01		DD-1032	GP10000	GP110		5GA-S10
C212	15 N150	CC-DB150KPM			*		10TCP-Q15
C213	.01		DD-1032	GP10000	GP110		5GA-S10
C214	1 N150	CC-DB010CPM			*		
C215	15 N150	CC-DB150KPM			*		10TCP-Q15
C216	.01		DD-1032	GP10000	GP110		5GA-S10
C217	22 N150	(1)			*		10TCP-Q22
C218	22 N150	(1)			*		10TCP-Q22
C219	22 N150	(1)			*		10TCP-Q22
C220	22 N150	(1)			*		10TCP-Q22
C221	220 N150 10%	CC-DB221KPM			*		
C222	22 N150	CC-DB220KPM			*		10TCP-Q22
C223	22 N150	CC-DB220KPM			*		10TCP-T12
C224	120 N150 10%	CC-DB121KPM			*		10TCP-Q68
C225	68 N150 10%	CC-DB680KPM			*		10TCP-Q68
C226	68 N150 10%	CC-DB680KPM			*		10TCP-T15
C227	150 N150 10%	CC-DB151KPM			*		5GA-S10
C228	.01		DD-1032	GP10000	GP110		5GA-S10
C229	.01		DD-1032	GP10000	GP110		10TS-D22
C301	.0022				GP222		HY-470
C302	.2 12V		UK16-204				10TS-T15
C303	150 10%		DD-151		GP315	QF1-171	1PB-S47
C306	.047 50V 10%			DPMS2S47	EWFTA147		10TS-D22
C307	.0022				GP222		5GA-D33
C308	.0033		DD-332	GP3300	GP233	QC2-107	5GA-D47
C312	.0047	(1)	DD-472	GP4700	GP247		1PB-S10
C401	.01 50V 10%			WMF1S1	EWFTA110	QF1-91	1PB-S10
C403	.01 50V 10%			WMF1S1	EWFTA110	QF1-91	10TCP-V22
C409	2 N150	CC-DB020CPM			*		10TCP-Q39
C601	39 N150 10%	CC-DB390KPM			*		10TCP-T15
	150 N150	CC-DB151KPM(1)			*		1PB-S47
C602	.047 50V 10%			DPMS2S47	EWFTA147	QF1-171	192P4729R8
C603	.0047 10%				M192P4729R8		5GA-D10
C604	.001		DD-102G	GP1000	GP210	QC2-81	431P1049R5
C605	.1 50V 10%			WMF05P1	EWFO5010		
C610	.01						
TC1	50	CT-Z7500K01					
TC2	20	CT-Z7200K01					
TC201	20	CT-Z7200K01					
TC202	20	CT-Z7200K01					
TC203	20	CT-Z7200K01					
TC204	20	CT-Z7200K01					
TC205	20	CT-Z720N01					
POWER SUPPLY BOARD							
C3	.022			DPMS2S22	EWFTA122	QF1-127	1PB-S22
C4	.01		DD-1032	GP10000	GP110		5GA-S10
C5	.047		UK50-503		MAG5015		
C6	.022			DPMS2S22	EWFTA122	QF1-127	1PB-S22

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

(1) Used in some versions.

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

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
RV1	Bias	1000	RP-GNB10202				
RV2	Bias	500	RP-GNB50101				
RV4	Carrier Balance	330	RP-JNB33101				
RV5	ALC	10K	RP-GNB10302				
RV6	SSB AGC	5000	RP-DNB50201	T-2500 (3)	C-252 (3)	MTC252L4	U201R252B
RV7	AM Mic Gain	20K	RP-GNB20302				
RV8	SSB Mic Gain	20K	RP-GNB20302				
RV9	S Meter	10K	RP-GNB10302				
RV10	AM AGC	100K	RP-GNB10402				
RV11	Bias	1000	RP-GNB10202				
RV12	Squelch Range	50K	RP-GNB50302				
RV401	RF Meter	10K	RP-DNB10306	T-10K (2)	C-103 (2)	MTC14L1 (2)	X201R103B (2)
RV402	SWR Meter	5000	RP-DNB50204	T-5000 (2)	C-502 (2)	MTC53L1 (2)	X201R502B (2)
RV601	Volume/Power Switch	10K	RV-AD103A03	F2-10K,SSK012, KR7	NP-10K-Z, UP-B-012,NWE-20	RJ14A,SL38,SK750, US41	BU1,CF61,SS1,Wf
RV602	Squelch	10K	RV-NA103C09				
RV603	Clarifier (Fine Tuning)	10K Tap @ 2700	RV-NA103U06				
RV604	Rec RF Gain	50K	RV-NA503B04				
RV605	Calibrate/RF Switch	5000	RV-NC502B05				
RV607	AM Power	10 4W	RW-VA100B01				
POWER SUPPLY BOARD							
RV1	Vol tage	500	RP-ANB50102				

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

(3) For horizontal mounting, bend the two outside terminals to fit PC board. Use jumper to connect center terminal to PC board.

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	Xmit Oscillator (11.275MHz)	TR-07MA004T			
L2	Xmit Mixer	TR-07CN004T			
L3	Xmit Mixer	TR-07CN005T			
L4	Xmit Amp	TR-07CP010S			
L5	Xmit Driver	TR-A5CZ004M			
L6	Pi Filter	TR-A5CZ005M			
L7	Final Amp	TR-A5CZ004M			
L9	Carrier Buffer	TR-07DP003T			
L10	IF (11MHz)	TR-07MA004T			
L11	IF (11MHz)	TR-07MA005T			
L12	Frequency Doubler(23MHz)	TR-07DN001T			
L13	7MHz Oscillator (7MHz)	TR-07DA002T			
L14	7MHz Oscillator (7MHz)	TR-07DA002T			
L15	16MHz Mixer	TR-07DN003T			
L16	16MHz Amp	TR-07DN003T			
L17	16MHz Amp	TR-07DN003T			
L18	Rec Antenna	TR-07MP005T			
L19	Rec RF	TR-07CH003T			
L20	Rec Mixer (11.2735MHz)	TR-07MB005T			
L201	23MHz Oscillator	TR-07DN002T			
L202	Synth Mixer (38MHz)	TR-07NN001T			
L203	Synth Buffer (38MHz)	TR-07NN001T			
L204	Synth Buffer (38MHz)	TR-07NN001T			
L601	Ant Match	LT-DLG5004A			
RFC1	RF Choke	LD-ADA3038J			
RFC2	RF Choke (1mH)	LF-102KB01S			
RFC3	RF Choke	LD-ADB4024B			
RFC5	RF Choke (2.2uH)	LF-2R2KD01N			
RFC6	RF Choke (68uH)	LF-680KD01N			
RFC7	RF Choke	LD-AEC3808A			
RFC8	RF Choke	LD-AEC3808A			
RFC9	RF Choke	LD-ADB4024B			
RFC201	RF Choke (4.3uH)	LF-4R3JA01S			
RFC202	RF Choke (2.7uH)	LF-2R7JA01S			
RFC203	RF Choke (2uH)	LF-020JA01S			

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	1.9A	.24	3.72mH	LJ-119H004W			

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	1		TA-Y19A001W 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	8	TB-G37B001Y ETA-68(1)			(1) Number on unit.

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T601	120V AC @ 490mA AC	18.75V AC @ 1.95A DC	TP-D75U001Y			

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	2" X 3 1/2" PM, 8 Ohms	ZQ-B0950801		

KRACO MODEL KB-2355

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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
F601	1A Fast Acting	ZF-BQ10202U	YH-F1S3001U	AGC1	HKP	312001	342012AL	FG1-2
F602	3A	VV-L311GE12	AC-DC037ULA	AGCB	HDJ	312003	150145	FG3-2
POWER SUPPLY BOARD								
F1	3A Fast Acting	ZF-AQ30202U		GJV3		318003		

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	ZG-AAZ50103	18-032	18-034	18-000	18-092	1	2	4	3	NC	2

CRYSTALS

ITEM No.	CRYSTAL FREQUENCY IN MHz	MFGR. PART No.	CTS KNIGHTS PART No.	CHANNEL	ITEM No.	CRYSTAL FREQUENCY IN MHz	MFGR. PART No.	CTS KNIGHTS PART No.	CHANNEL
X1	11.275	XA-Z1A7001A	ATD110W11275	Carrier Osc.	X206	23.580	XA-S1A8006T	ATA20W23580	21,22,23
X201	23.330	XA-S1A8001T	ATA20W23330	1,2,3,4	X207	14.907	XA-S1A7001T	ATC32W14907	1,5,9,13,17,21
X202	23.380	XA-S1A8002T	ATA20W23380	5,6,7,8	X208	14.917	XA-S1A7002T	ATC32W14917	2,6,10,14,18,22
X203	23.430	XA-S1A8003T	ATA20W23430	9,10,11,12	X209	14.927	XA-S1A7003T	ATC32W14927	3,7,11,15,19
X204	23.480	XA-S1A8004T	ATA20W23480	13,14,15,16	X210	14.947	XA-S1A7004T	ATC32W14947	4,8,12,16,20,23
X205	23.530	XA-S1A8005T	ATA20W23530	17,18,19,20					

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CR1	Component Combination	CR-B103A01K	Used in some versions.
CR601	Component Combination	CR-E471A01M	Isolation
J601	Jack	YJ-C02S002Z	Antenna
J602	Jack	YJ-T03S003Z	PA
J603	Jack	YJ-S03S010Z	Phone
J604	Jack	YJ-Z04S003Z	Microphone
J605	Jack	YJ-A02S001U	AC
J606	Jack	YJ-B02S001U	DC
M601	Meter	ZM-J1050N01	S
M602	Meter	ZM-J1050N02	RF/SWR
PL601	Lamp	ZP-A064102U	S Meter (34mA @ 5.65V)
PL602	Lamp	ZP-A064102U	S Meter (34mA @ 5.65V)
PL603	Lamp	ZP-A064102U	RF/SWR Meter (33mA @ 5.55V)
PL604	Lamp	ZP-A064102U	RF/SWR Meter (33mA @ 5.55V)
PL605	Lamp	ZP-A064102U	Channel Indicator (34mA @ 5.95V)
PL606	Lamp	ZP-A064102U	Rec (34mA @ 6.03V)
PL607	Lamp	ZP-A064102U	Xmit (34mA @ 5.42V)
RY	Relay	ZR-A236102Z	Xmit/Rec
SW201	Switch	SR-0424205H	Channel Selector
SW301	Switch	SH-080301ZA	AM/USB/LSB
SW601	Switch		Power (Part of Volume Control)
SW602A	Switch	SP-04ZAA01A	CB/PA
B	Switch	SP-04ZAA01A	SWR/CAL
C	Switch	SP-04ZAA01A	ANL
D	Switch	SP-04ZAA01A	NB
	Cord Assembly	AC-DC037ULA	DC
	Cord Assembly	AC-AC008ULA	AC
	Printed Circuit Board	AP-TBMO35BA	Main
	Printed Circuit Board	AP-TSR003BA	SWR
	Printed Circuit Board	AP-TSW006AA	Mic Amp
	Printed Circuit Board	AP-TSY008BA	Synthesizer
	Printed Circuit Board	AP-TPW006AA	Power
	Printed Circuit Board	AP-TSW014AA	Push Switch

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

ITEM	PART No.	ITEM	PART No.
Escutcheon	AM-KB235501	Knob, Control	VN-2765P009
Cabinet, Top	MU-886SX004	Knob, Channel	AV-KNOB#018
Cabinet, Bottom	MS-881SZ001	Knob, Switch	VN-2765P007
Channel Indicator Disc	VE-90XAC005		

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')