

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 13-976

MIDLAND MODEL 13-976

MANUFACTURER'S SPECIFICATIONS

GENERAL

Circuitry: 40 transistors, 5 F.E.T.'s, 48 diodes, 11 C.

Frequency Control: Crystal synthesized system

Channels: 23—all supplied

Modes: AM, upper sideband, lower sideband

Controls: Power on/off, mode selector, channel selector, variable squelch, volume P.A., clarifier, RF gain, S RFO meter, hi-lo tone, noise blanker, P.A. CB

Jacks and Connections: Microphone, AC power, DC power, P.A. speaker, external speaker, antenna

Power Source: 115 volt 60 Hz AC, 13.8 volt negative ground DC

Speaker: 3" dynamic, 8 ohms

Microphone: Dynamic

P.A. Audio Output: More than 3 watts

Cabinet Size: 4³/₄" h. x 11¹/₄" w. x 8⁹/₁₆" d.

Unit Weight: 9 lbs.

Shipping Weight: 12 lbs.

Accessories Included: AC and DC power cords, microphone with coiled cord, owners manual

RECEIVER

Receiving System: Superheterodyne

Sensitivity: AM: More than 1 μ V for 10 db (S-N) N SSB: More than 0.25 μ V for 10 db (S-N) N

Selectivity: More than 50 db

Clarifier Range: $\pm$ 600 Hz

Squelch Range: 1.0 to 500 μ V

Intermediate Frequency: 11.2735 MHz

Audio Output Power: More than 3 watts

SSB TRANSMITTER

SSB Generation: Balanced modulator

Frequency Response: 350 Hz to 2.6 KHz at 6 db

RF Output: 12.0 Watts P.E.P. nominal (F.C.C. maximum)

Carrier Suppression: More than 40 db

Sideband Suppression: More than 50 db

Harmonic Suppression: 50 db down

AM TRANSMITTER

Modulation: High level

RF Output: 4.0 watts nominal (F.C.C. maximum)

Courtesy of the Manufacturer

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

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ALIGNMENT INSTRUCTIONS

CAUTION: Use isolation transformer or observe polarity when connecting test equipment.
 Maintain line voltage at 120V AC. Allow a 15-minute warm-up period.
 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:
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
TC1, TC2, TC201 Thru TC205	5000

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCIVER	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	TC201	Adjust for 14.910MHz $\pm$ 50Hz.
	Clarifier Midrange	TC202	Adjust for 14.920MHz $\pm$ 50Hz.
	Ch. 2, USB	TC203	Adjust for 14.930MHz $\pm$ 50Hz.
	Clarifier Midrange	TC204	Adjust for 14.950MHz $\pm$ 50Hz.
Input of frequency counter to TP2.	Ch. 3, USB		
	Clarifier Midrange		
Input of frequency counter to TP2.	Ch. 4, USB		
	Clarifier Midrange		
Input of frequency counter to TP2.	Ch. 1, AM	TC205	Adjust between 14.907MHz and 14.908MHz.
Input of frequency counter to TP3.	Clarifier Midrange		
	Ch. 23, AM	L201	Turn L201 counterclockwise until oscillator stops.
			Turn L201 clockwise until oscillator starts, then continue 1/2 turn more.
	Ch. 1, AM		Check for 23.330MHz $\pm$ 350Hz.
	Ch. 5, AM		Check for 23.380MHz $\pm$ 350Hz.
	Ch. 9, AM		Check for 23.430MHz $\pm$ 350Hz.
	Ch. 13, AM		Check for 23.480MHz $\pm$ 350Hz.
	Ch. 17, AM		Check for 23.530MHz $\pm$ 350Hz.
Input of oscilloscope to TP5.	Ch. 21, AM		Check for 23.580MHz $\pm$ 350Hz.
Input of oscilloscope to TP5.	Ch. 3, LSB	L12,L13,L14	Adjust for maximum.
Input of oscilloscope to TP6.	Ch. 13, LSB	RV11,L15,	Adjust for maximum without distortion.
		L16,L17	

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 Control Fully Clockwise	L20,L10,L11	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.115MHz, 1000Hz @ 30% modulation.	Ch. 13, AM Clarifier Midrange RF Gain Control Fully Clockwise	L19,L18	Adjust for maximum output. Repeat above steps, if necessary.

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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 Control Fully Clockwise	RV6	SSB AGC Adjust for 2.0 volts.
No signal input. Input of VTVM to TP41.	Ch. 13, AM RF Gain Control Fully Clockwise	RV10	AM AGC Adjust for 1.9 volts.
Output of signal generator thru .01uF to antenna jack. 27.115MHz, 1000Hz @ 30% modulation. Output 500uV.	Ch. 13, AM RF Gain Control Fully Clockwise	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 Control Fully Clockwise	RV9	S METER Adjust RV9 for 9 on S scale of meter.

TRANSMITTER ALIGNMENT

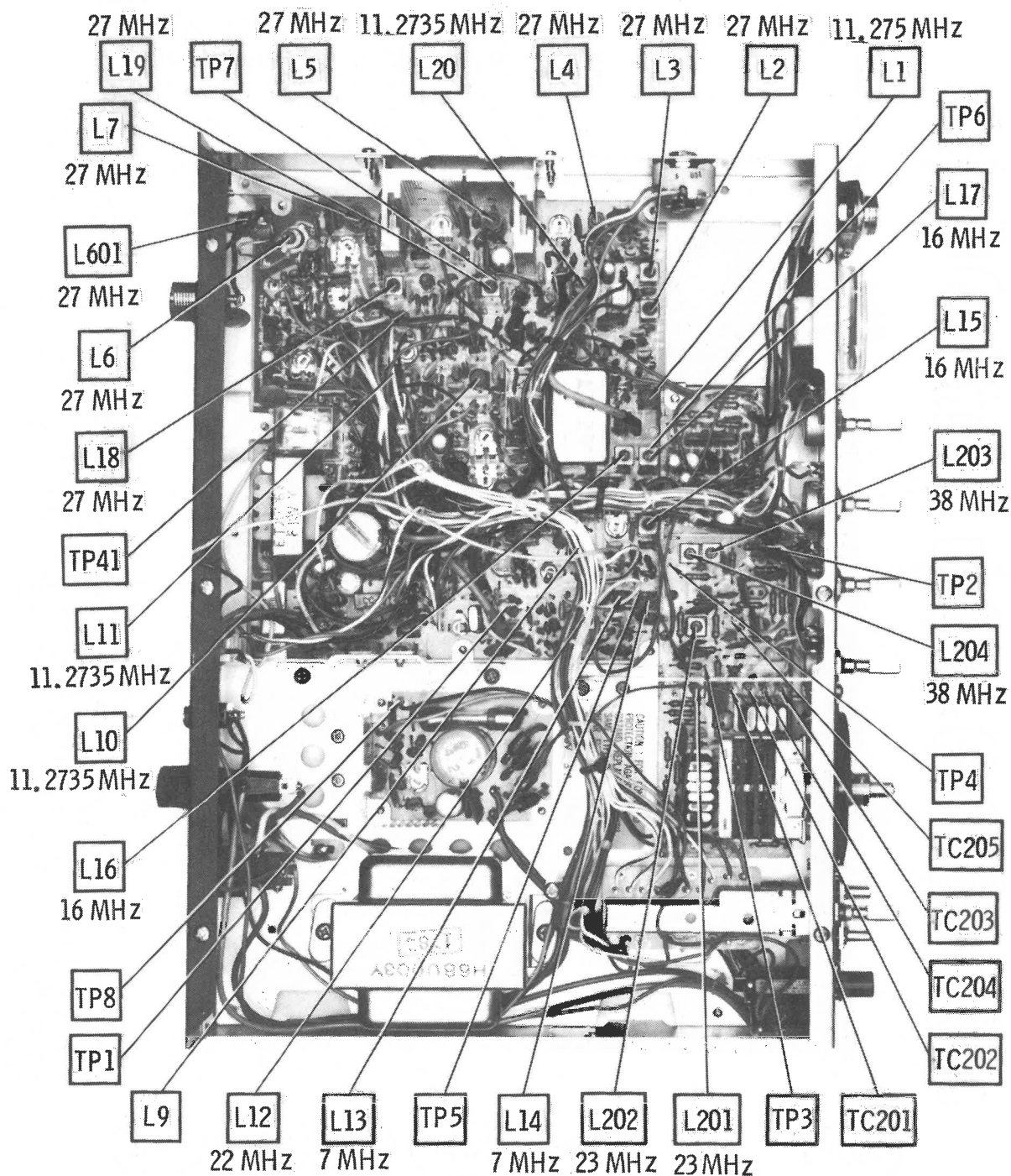
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.
 NOTE: Be sure to check transmit frequency and power on all active channels after alignment of transmitter.
 See page 4 for channel frequencies.

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. Input of oscilloscope to antenna jack.	Ch. 13, USB	L9	Adjust for maximum.

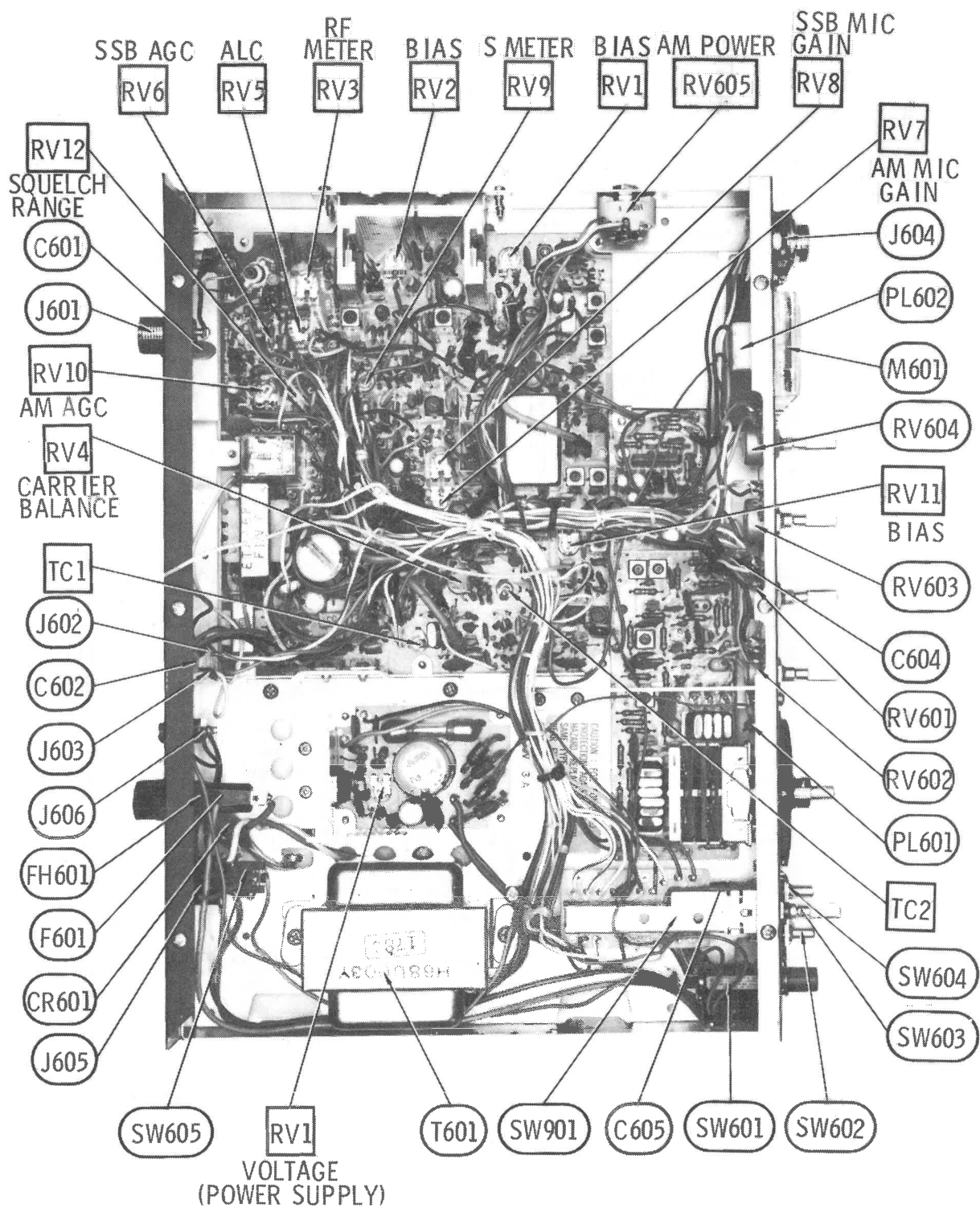
TRANSMITTER ADJUSTMENTS

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.
 See page 4 for channel frequencies.

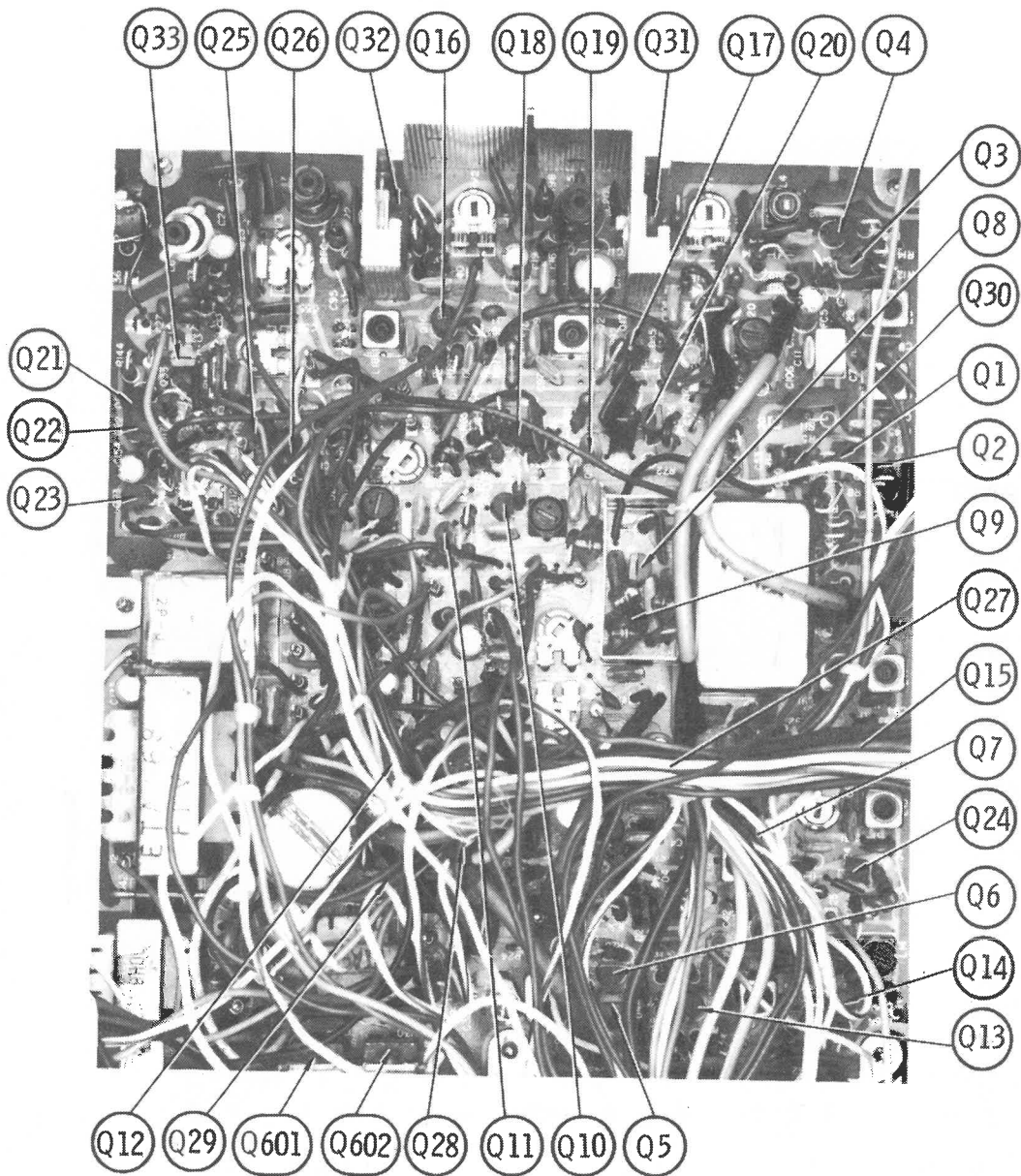
TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Input of VTVM to TP8.	Ch. 13, AM	RV1 (Power Supply Board)	VOLTAGE Adjust RV1 for 13.8 volts. Voltage should not vary when keying transmitter.
Output of 2 tone generator to MIC input, 500Hz and 2400Hz. Output 5mV. Input of oscilloscope to antenna jack.	Ch. 13, 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	RV605	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	RV3	RF PANEL METER Adjust RV3 so that RF panel meter agrees with RF wattmeter.



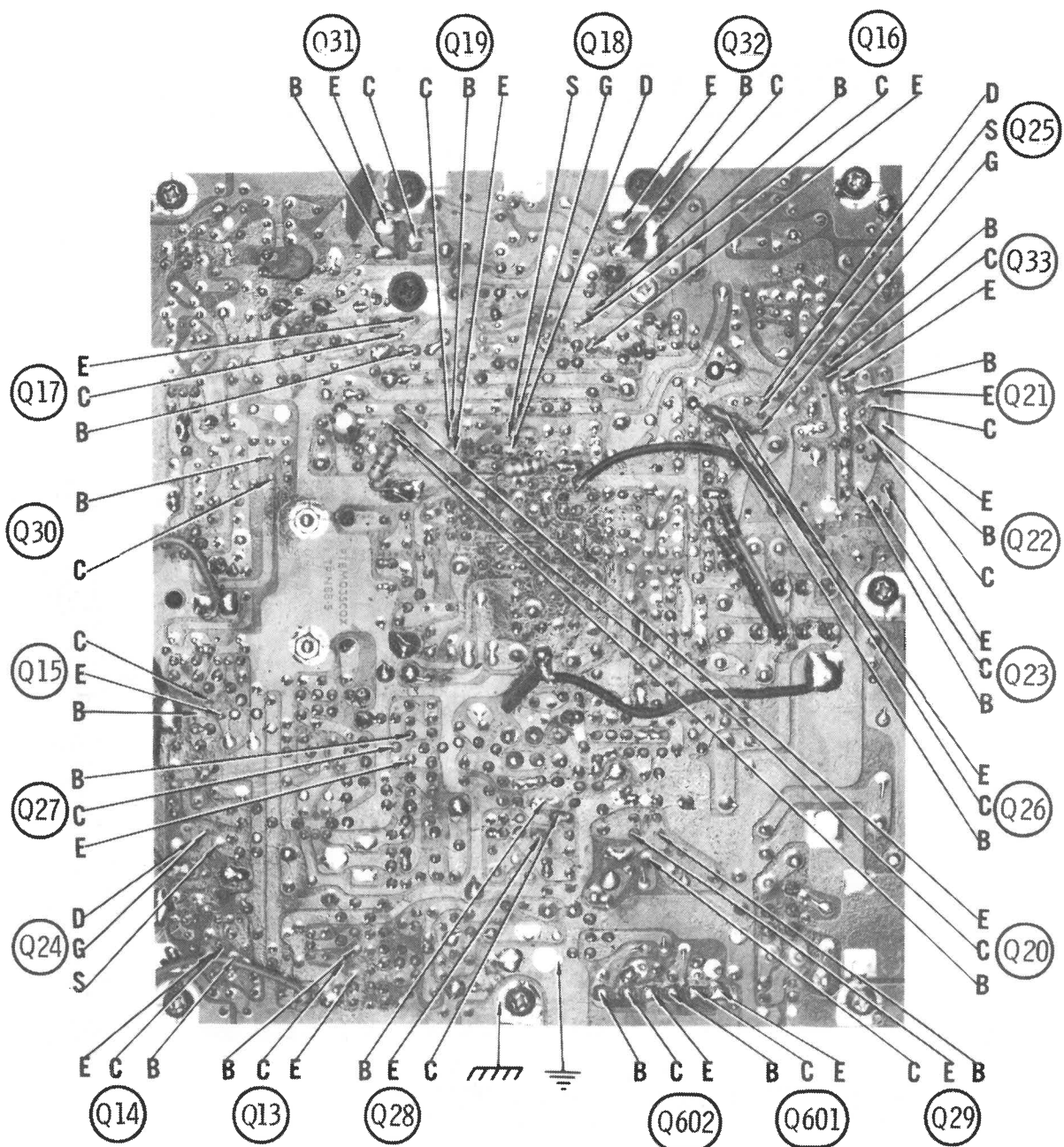
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CHASSIS - BOTTOM

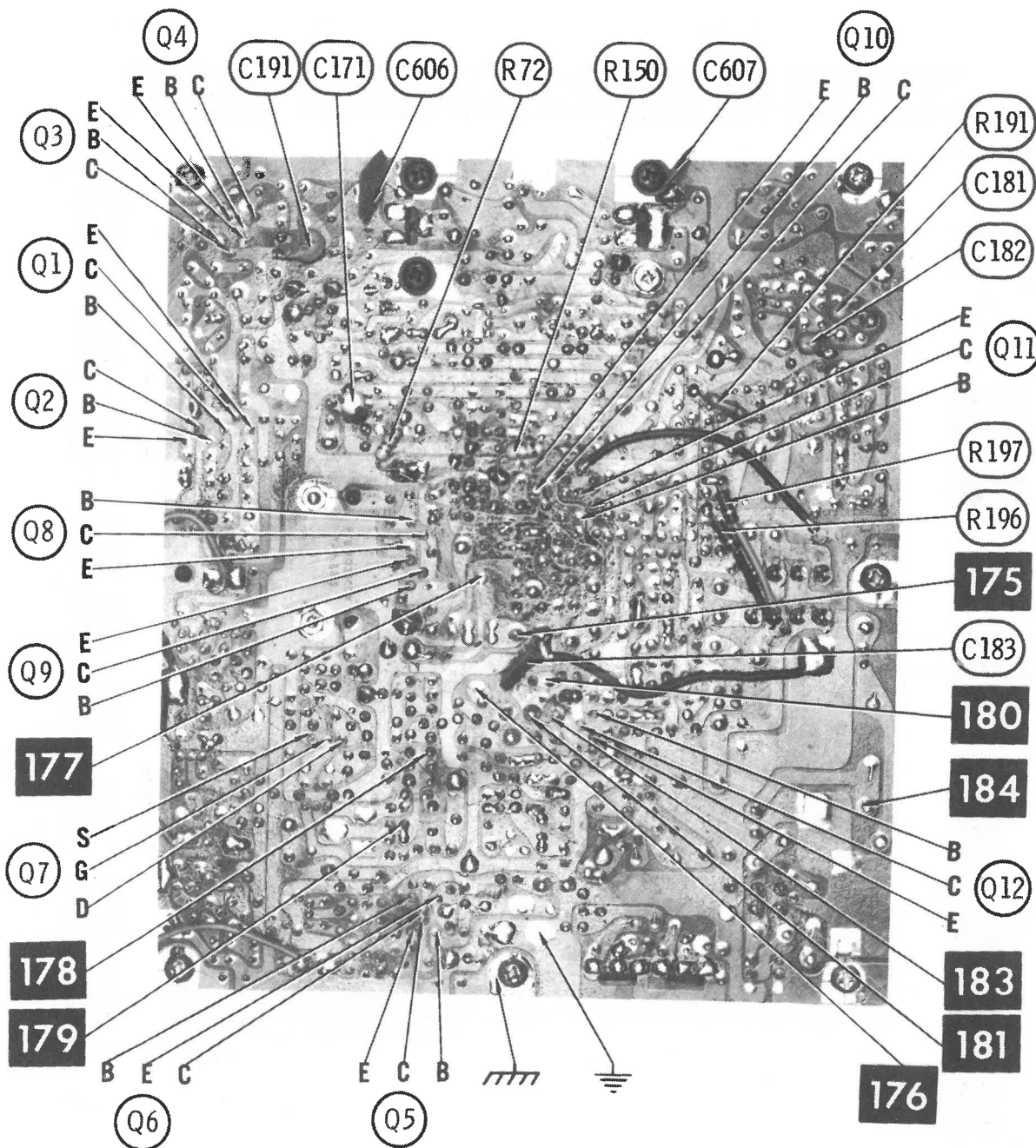


MAIN BOARD

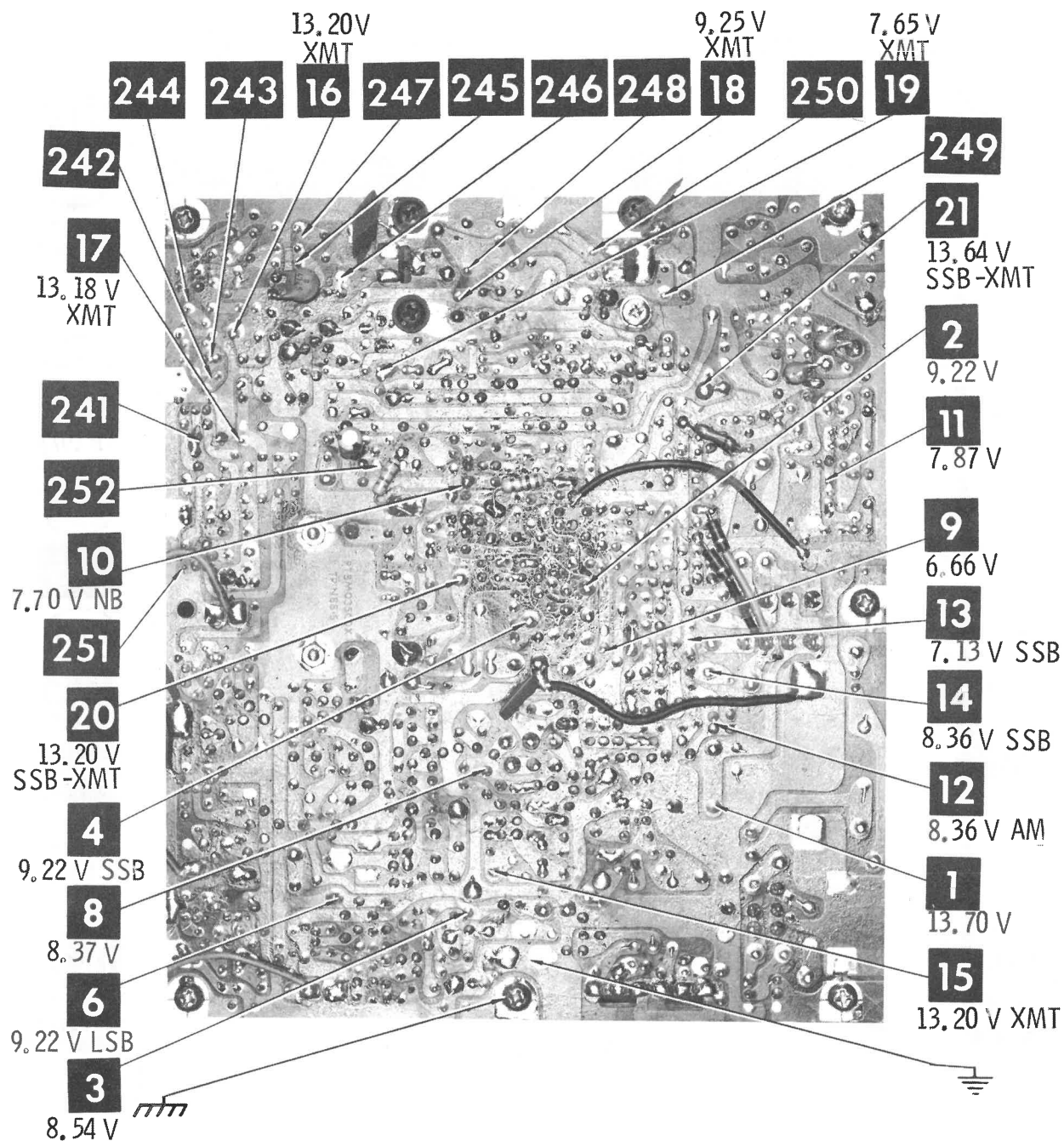


MAIN BOARD

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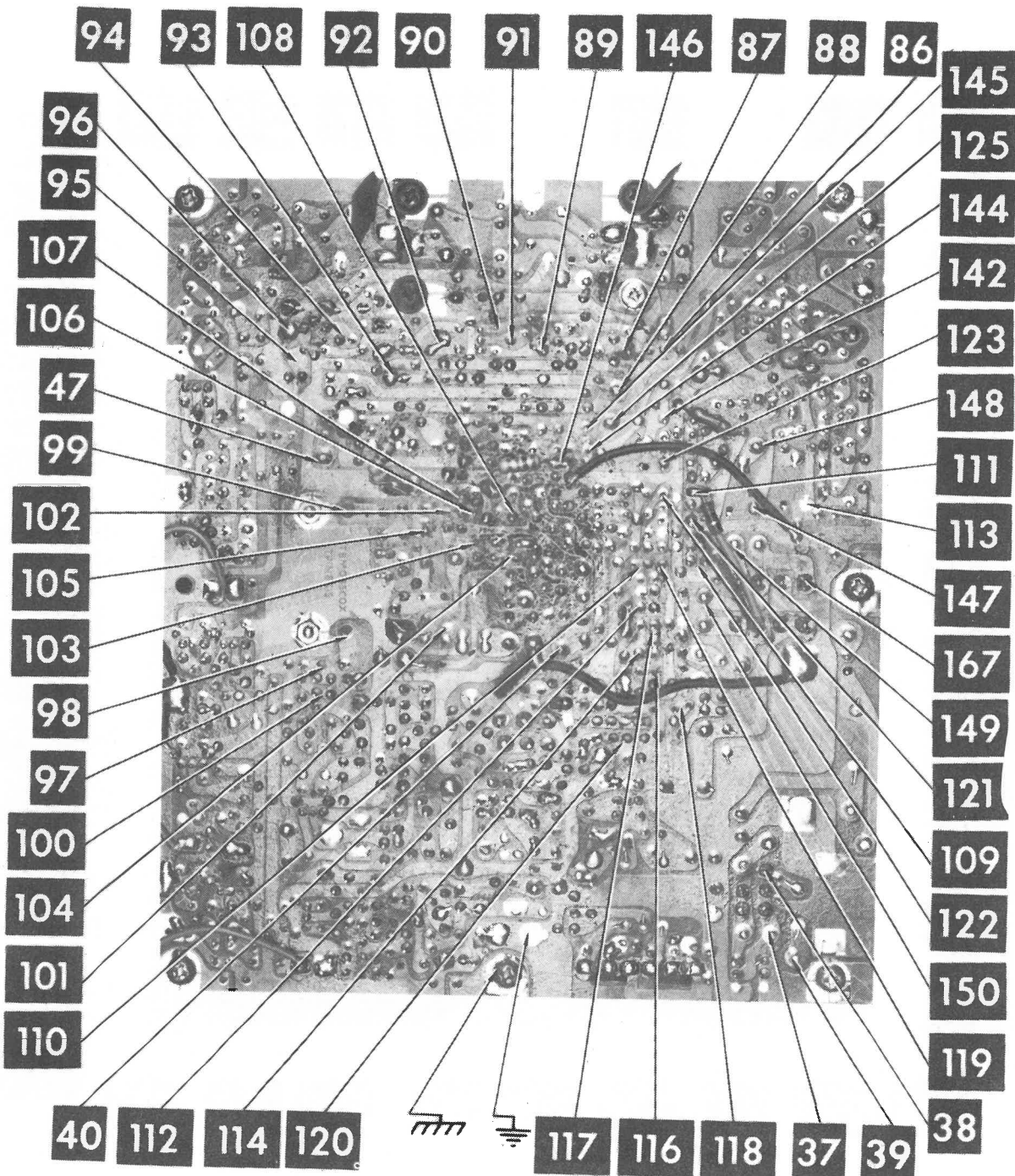


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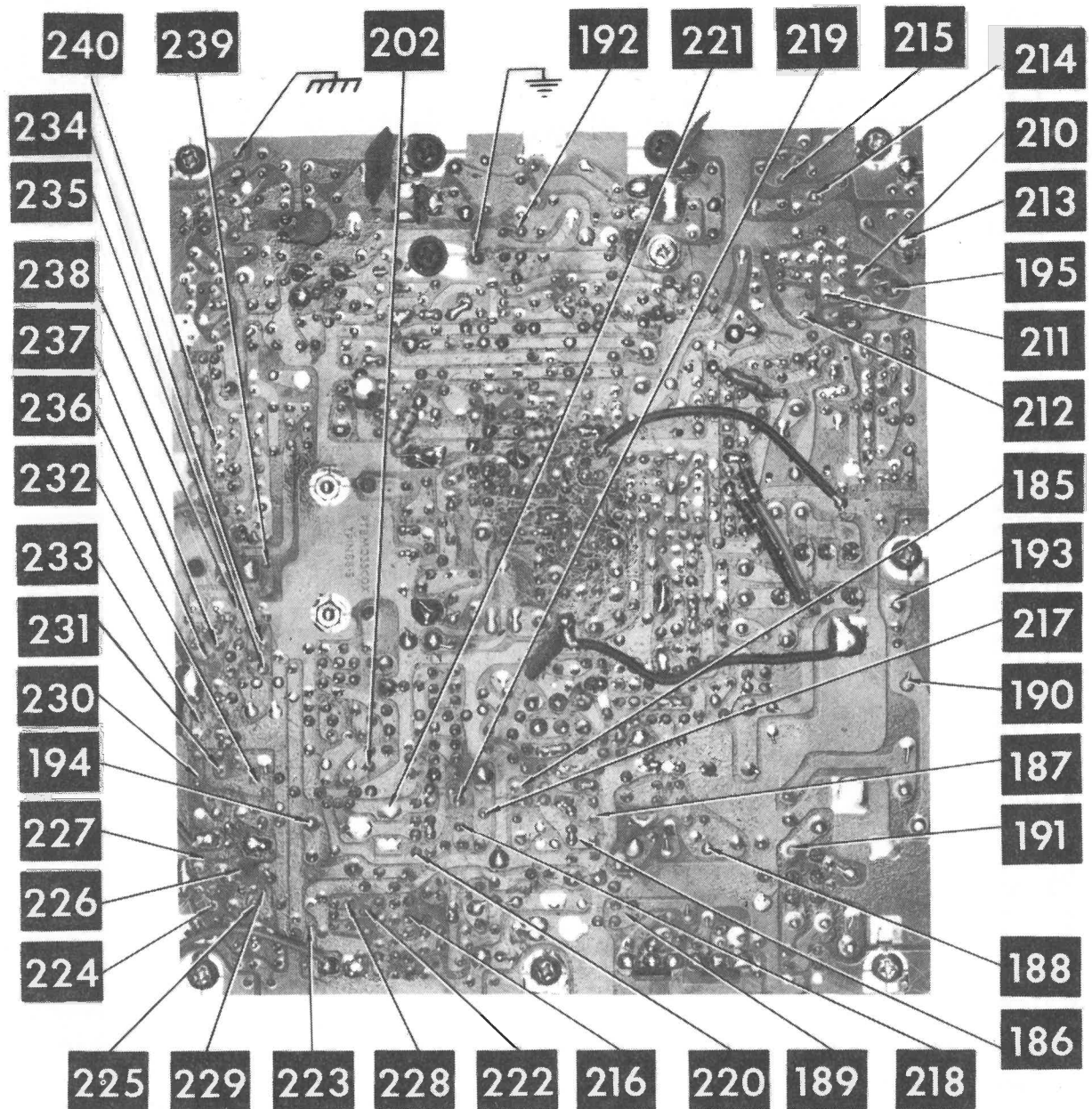


MAIN BOARD

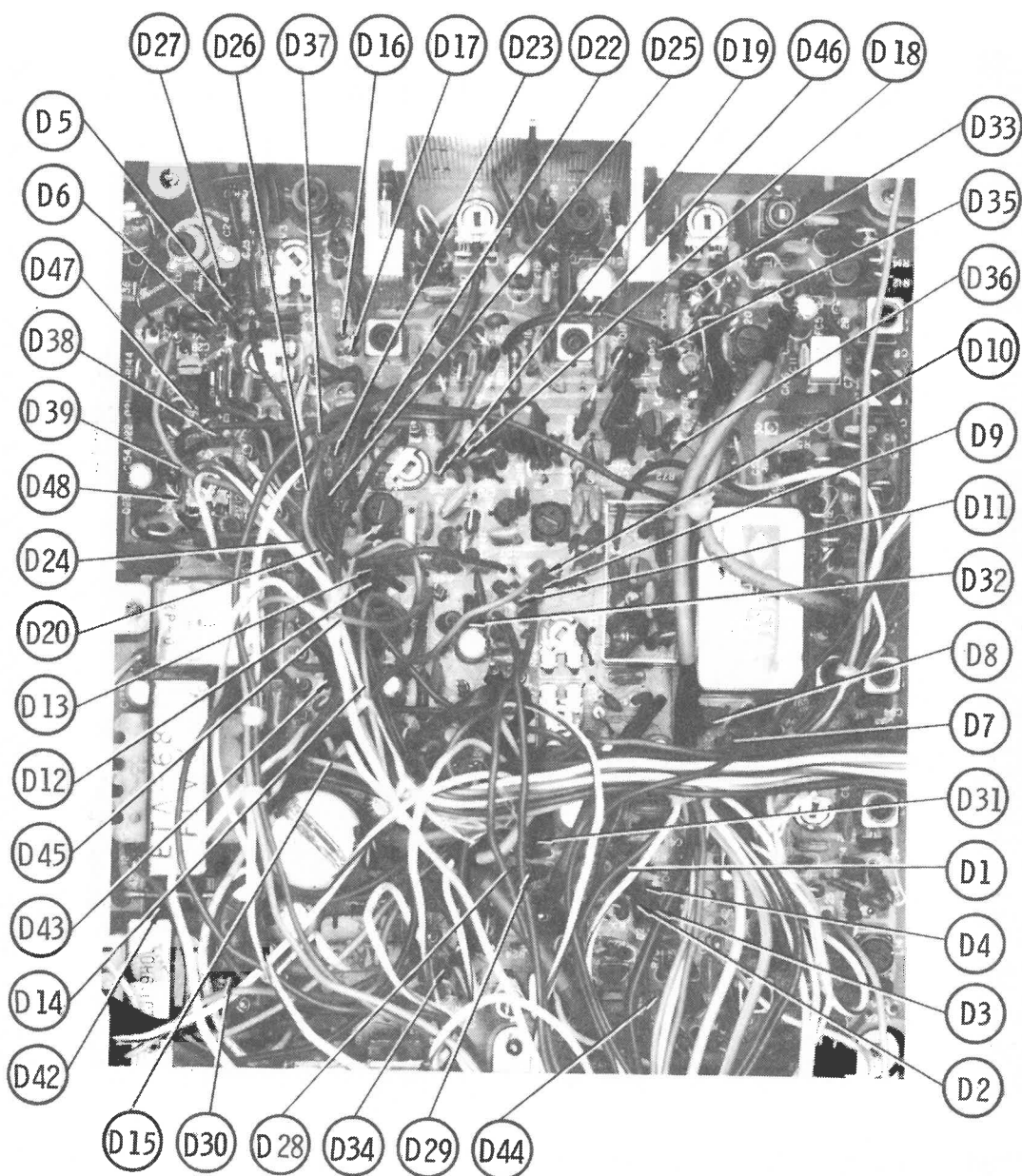
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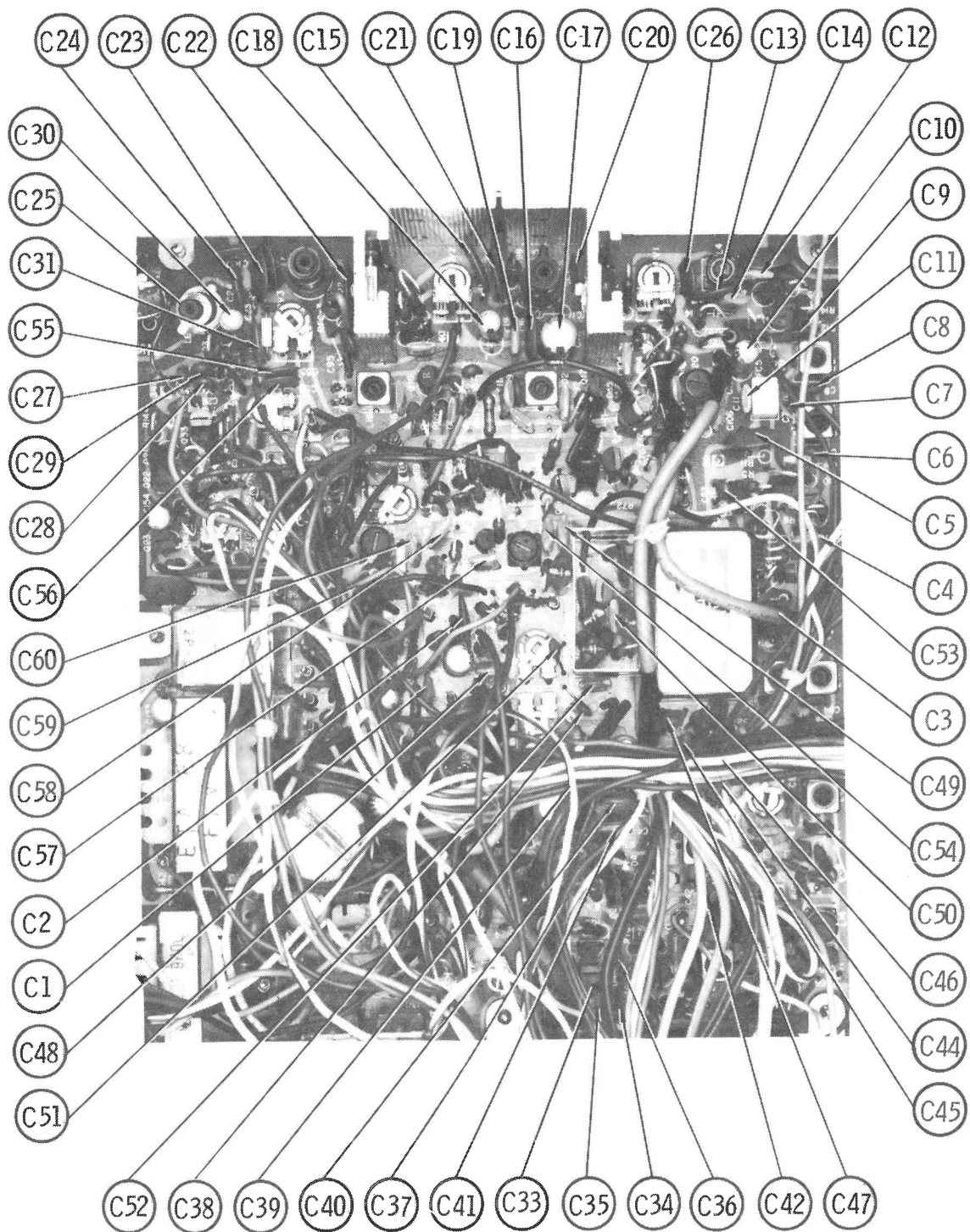
MAIN BOARD



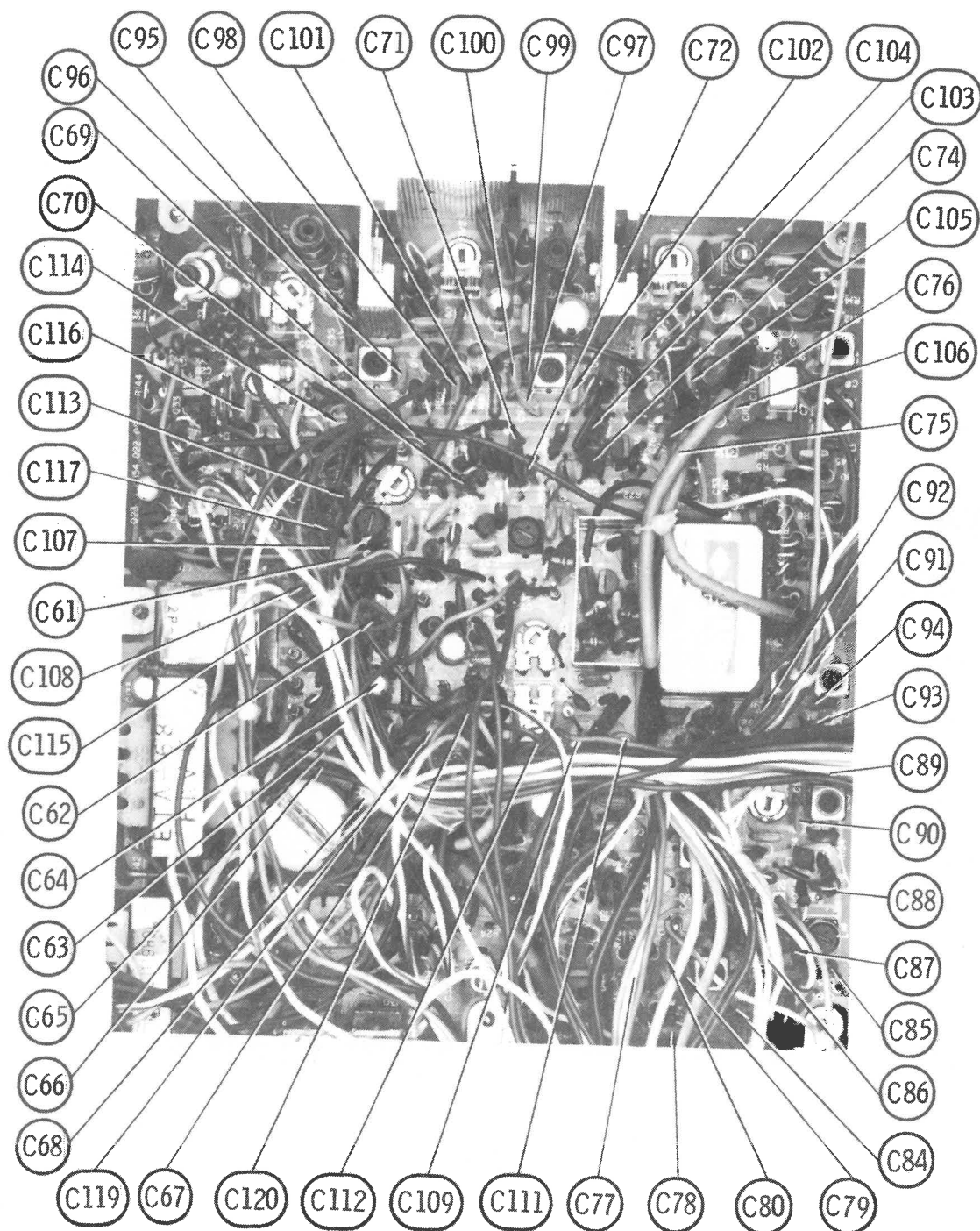
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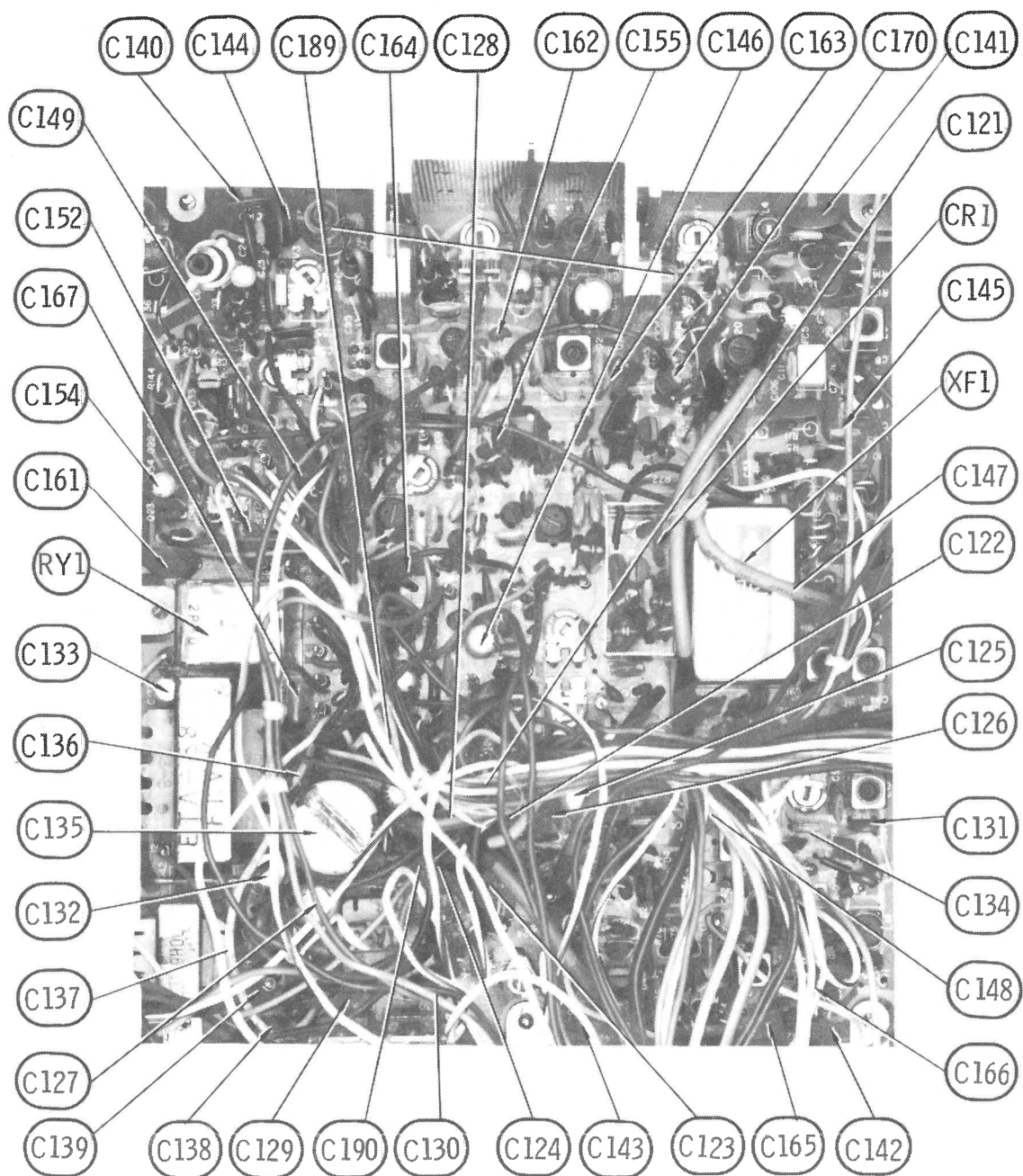
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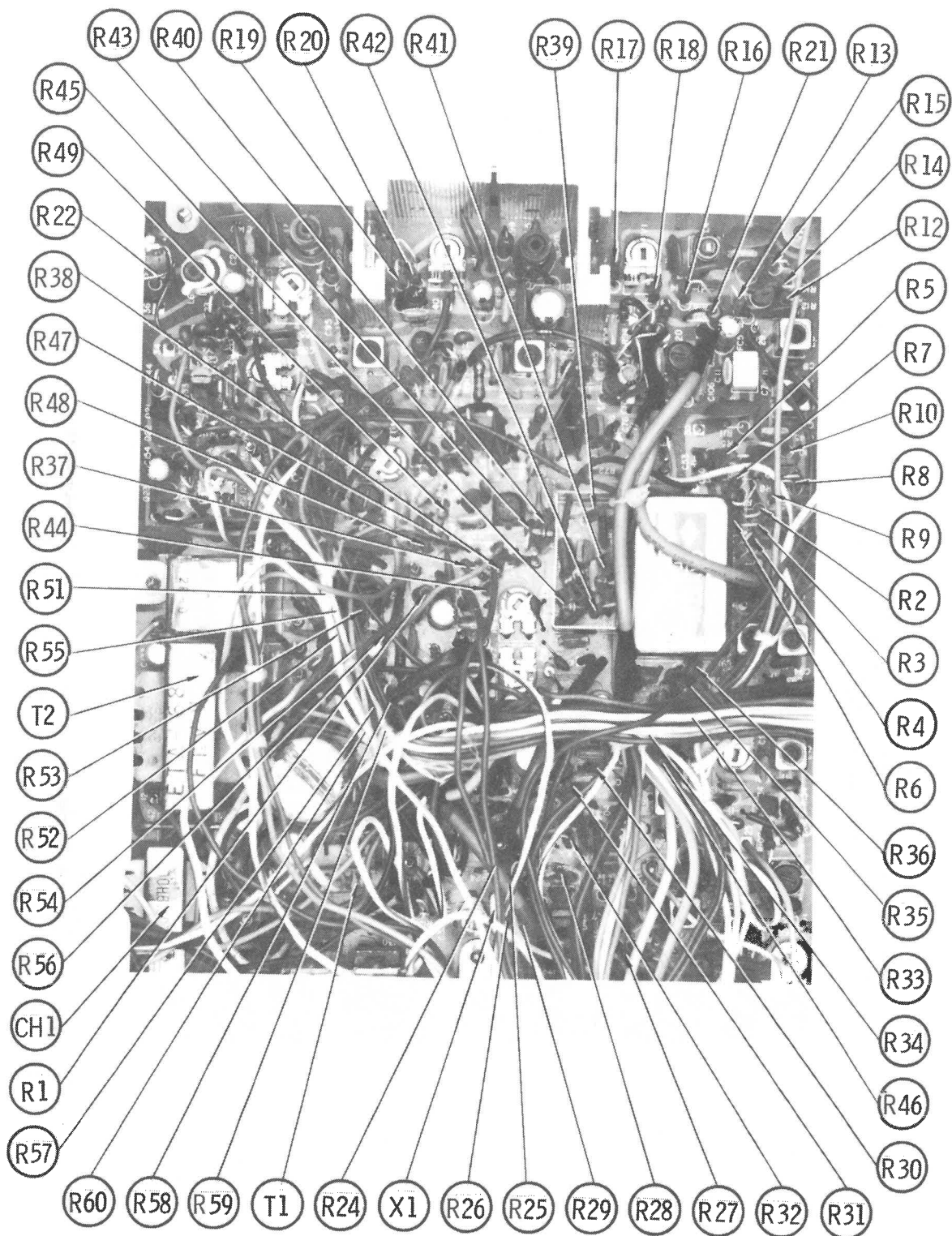
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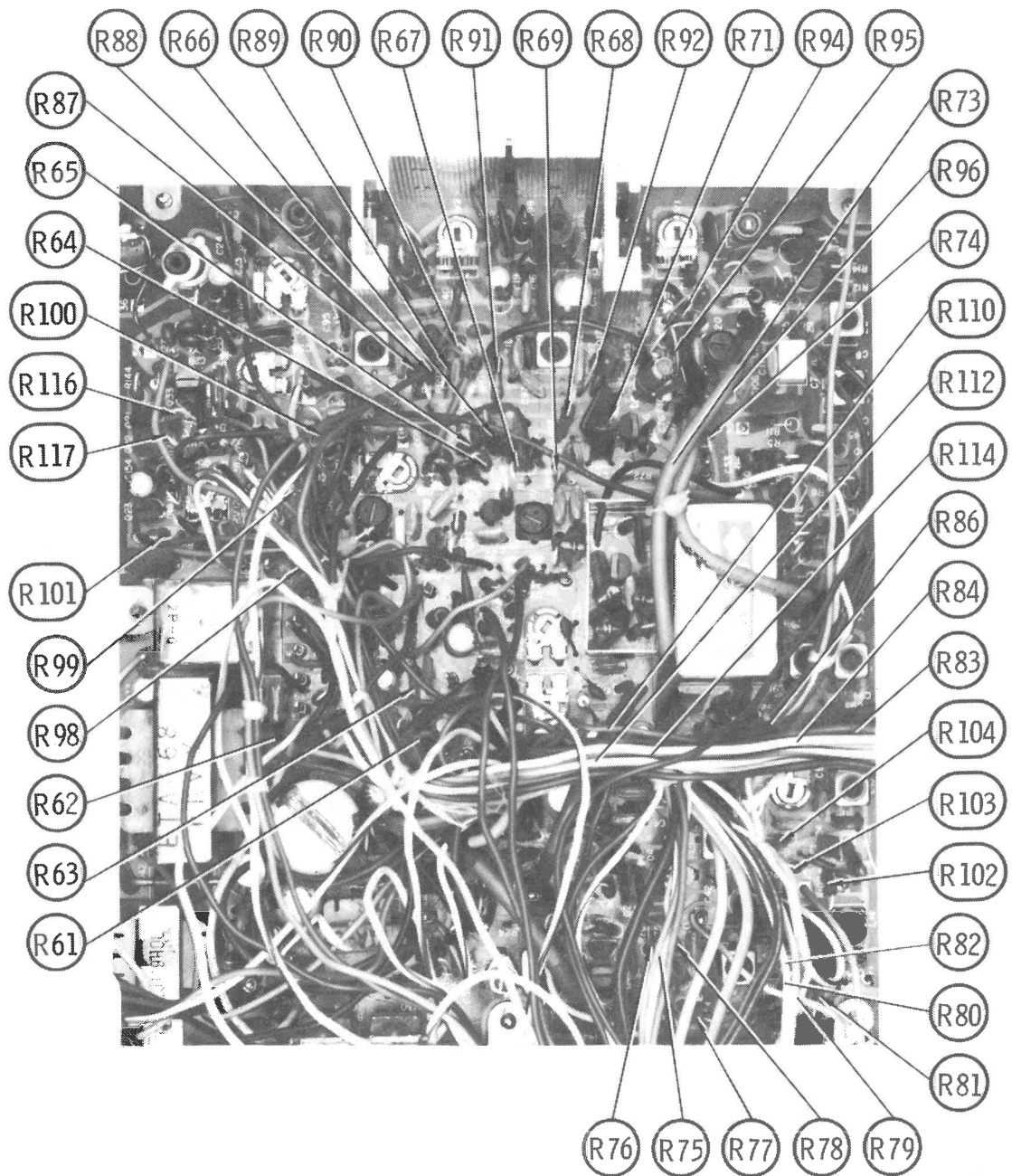
MAIN BOARD



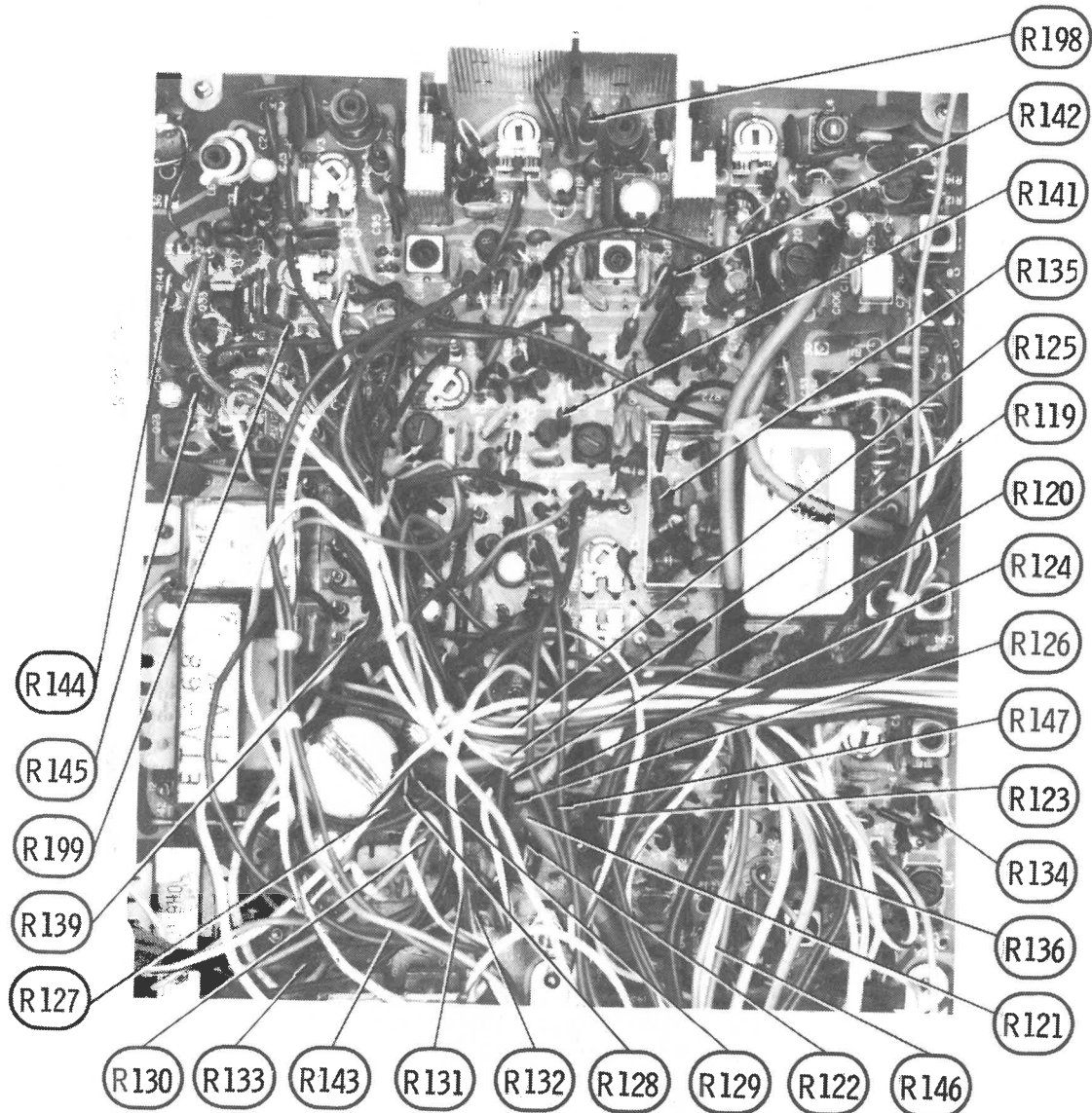
MAIN BOARD



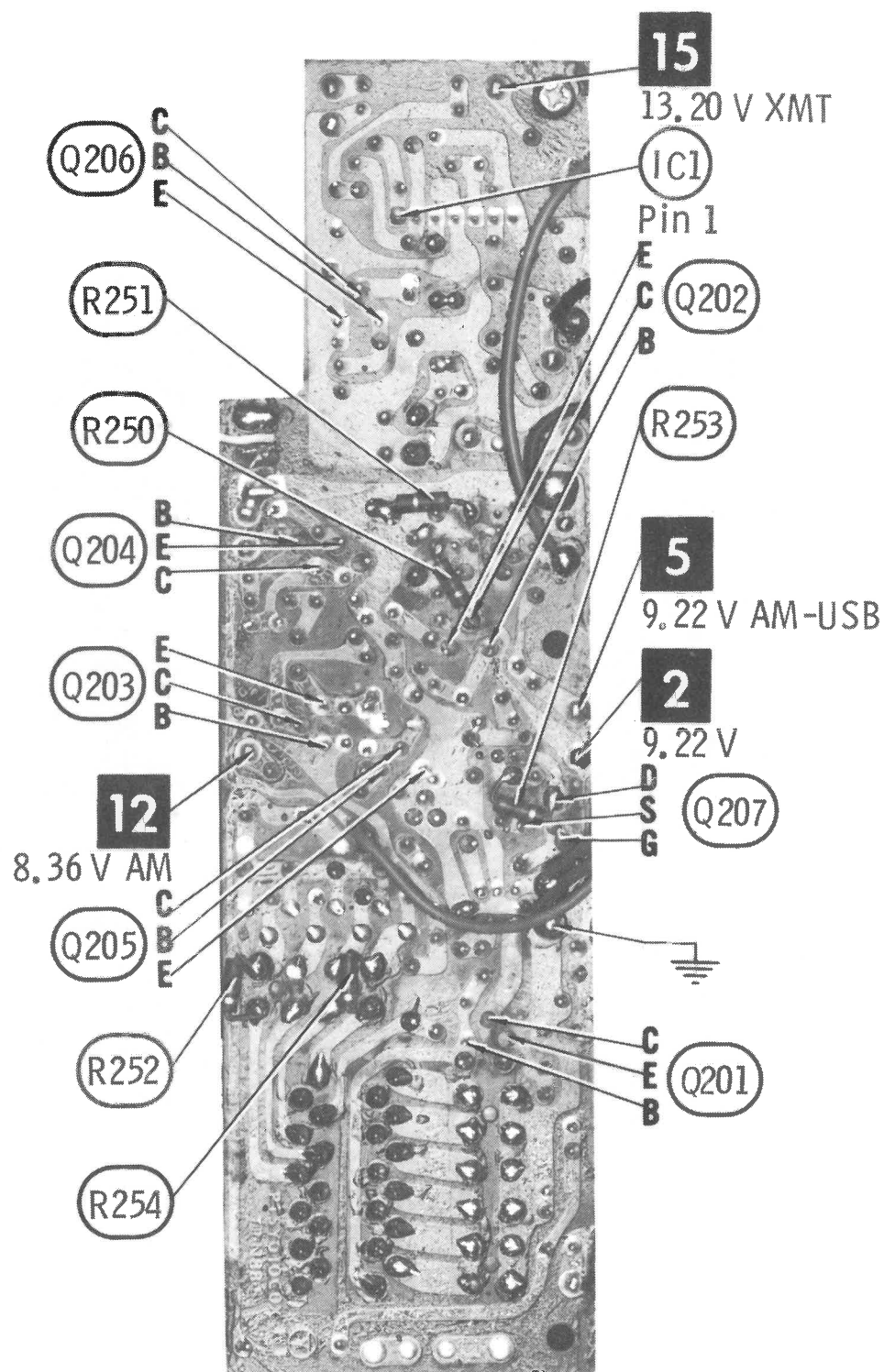
MAIN BOARD



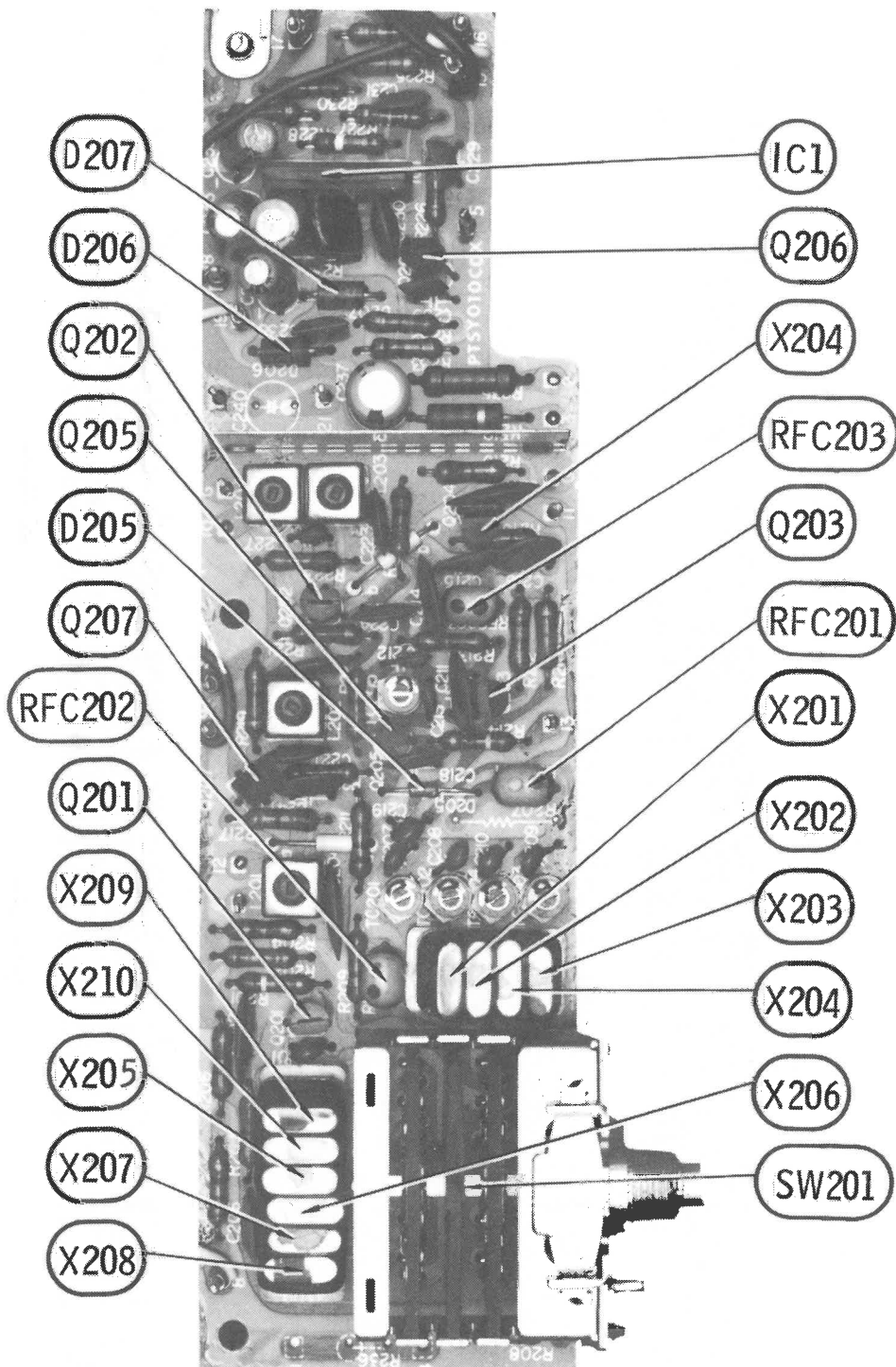
MAIN BOARD



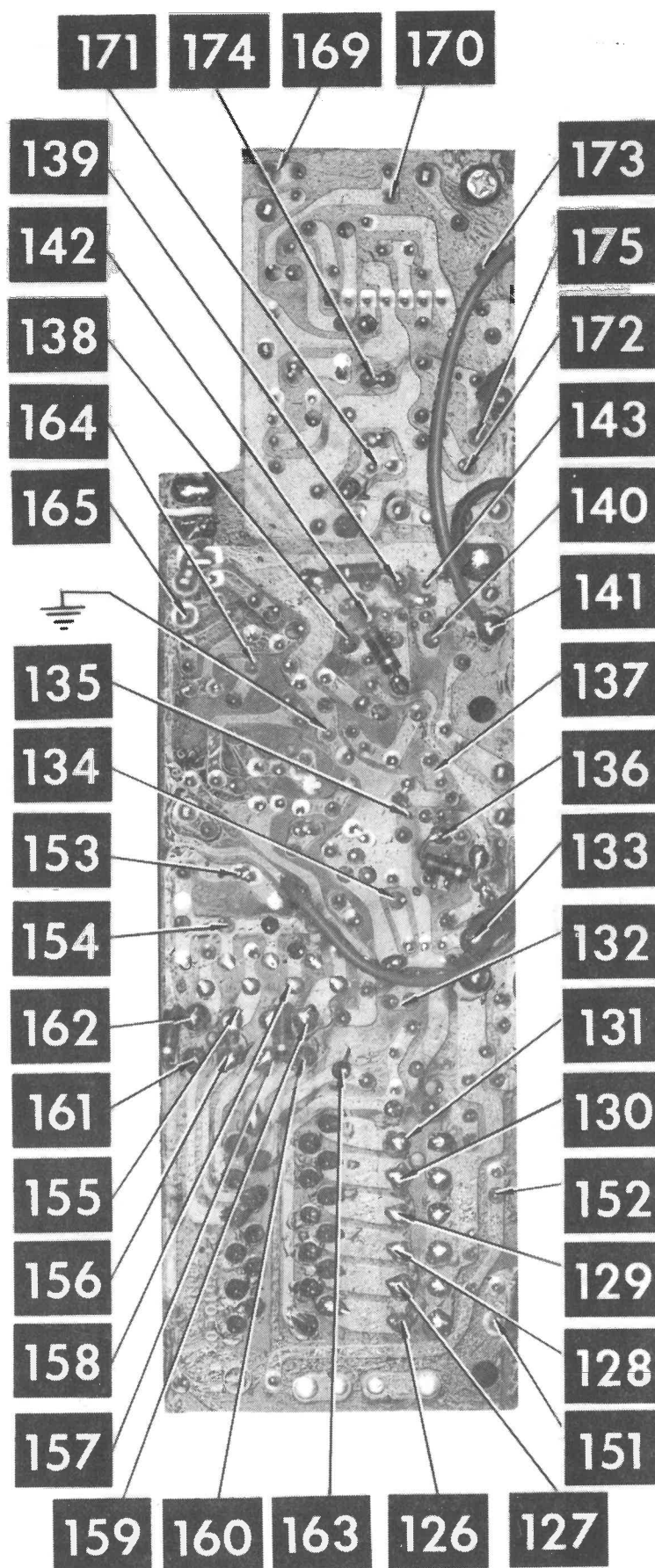
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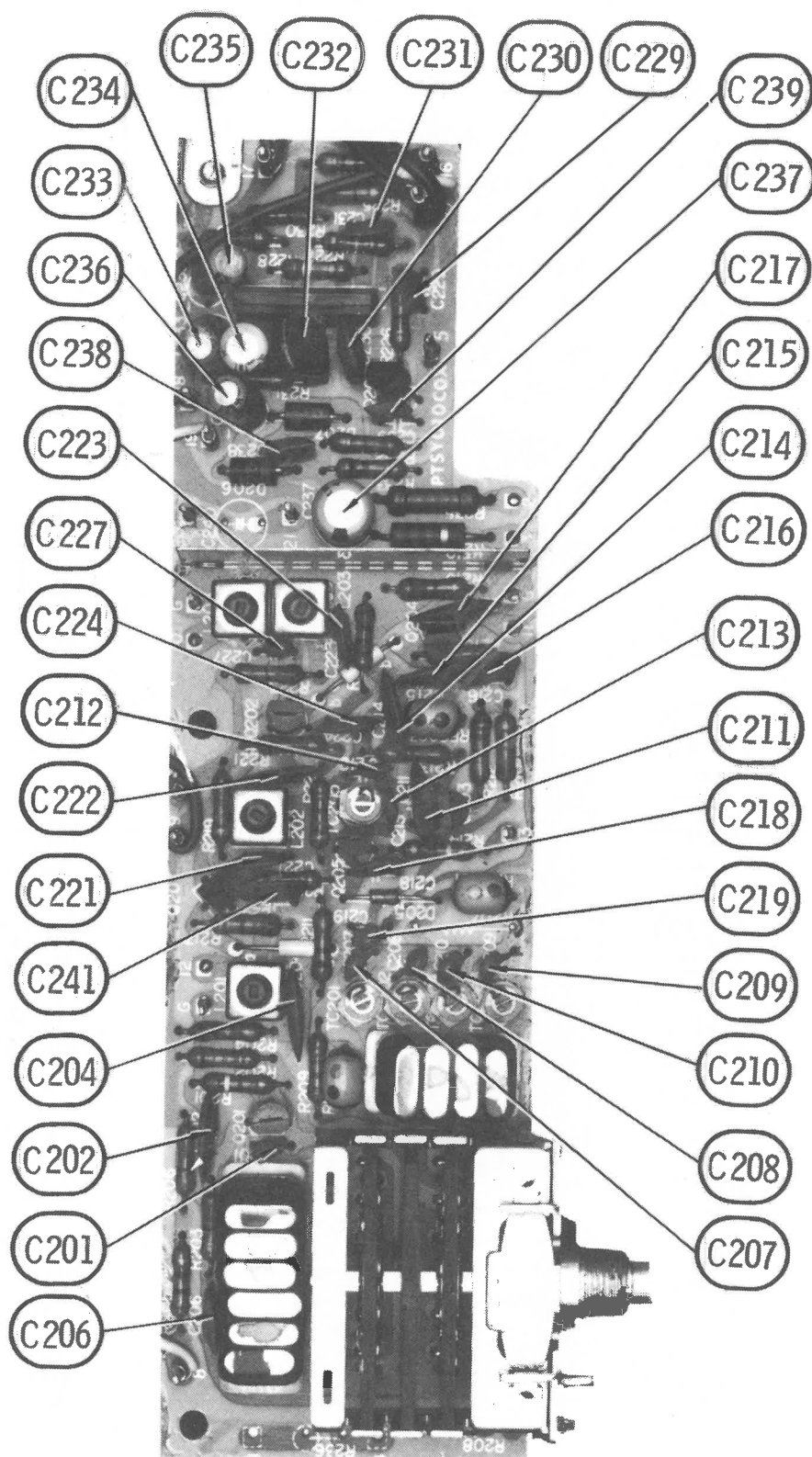
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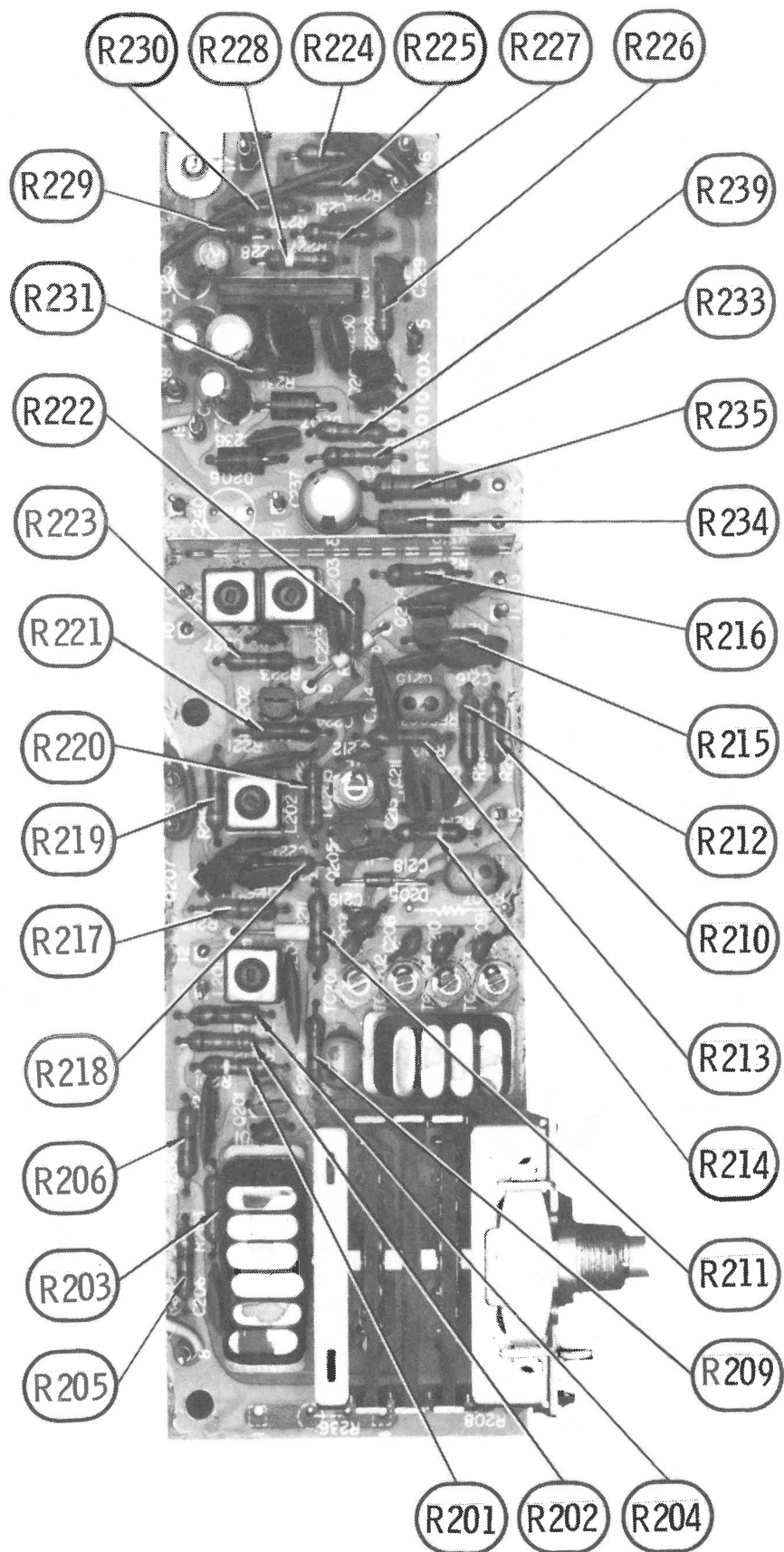
SYNTH BOARD



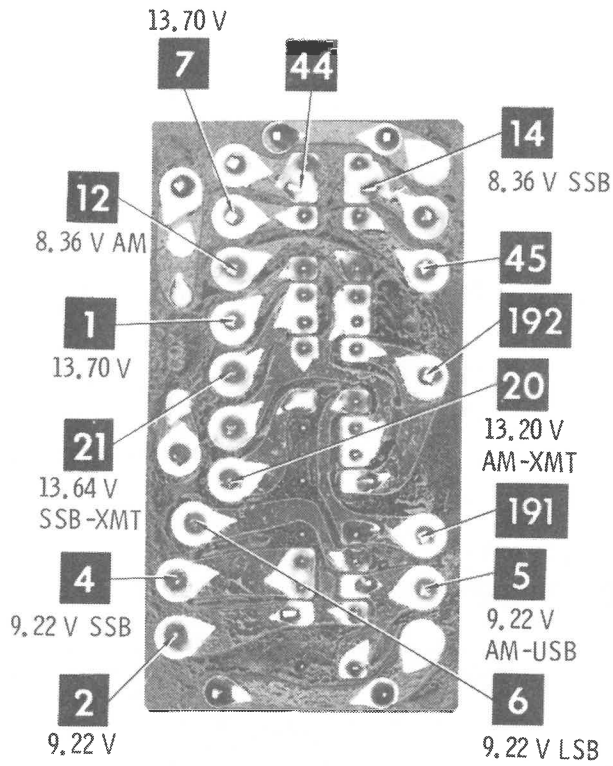
SYNTH BOARD



SYNTH BOARD

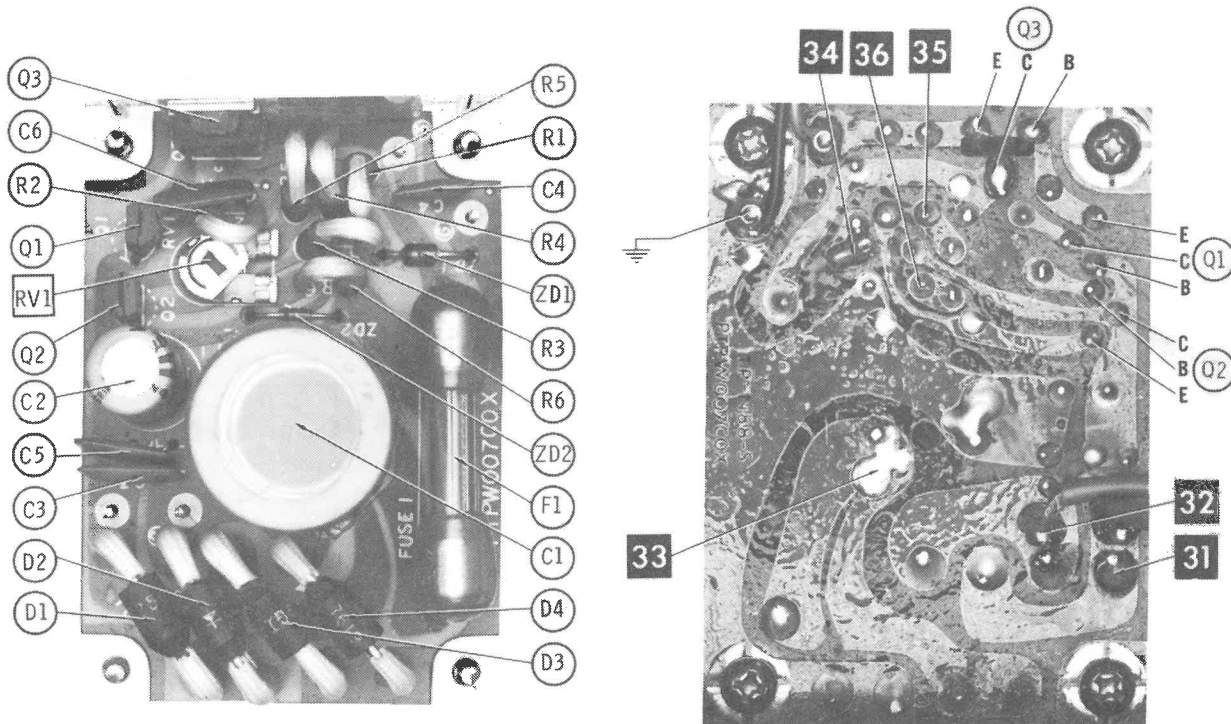


SYNTH BOARD

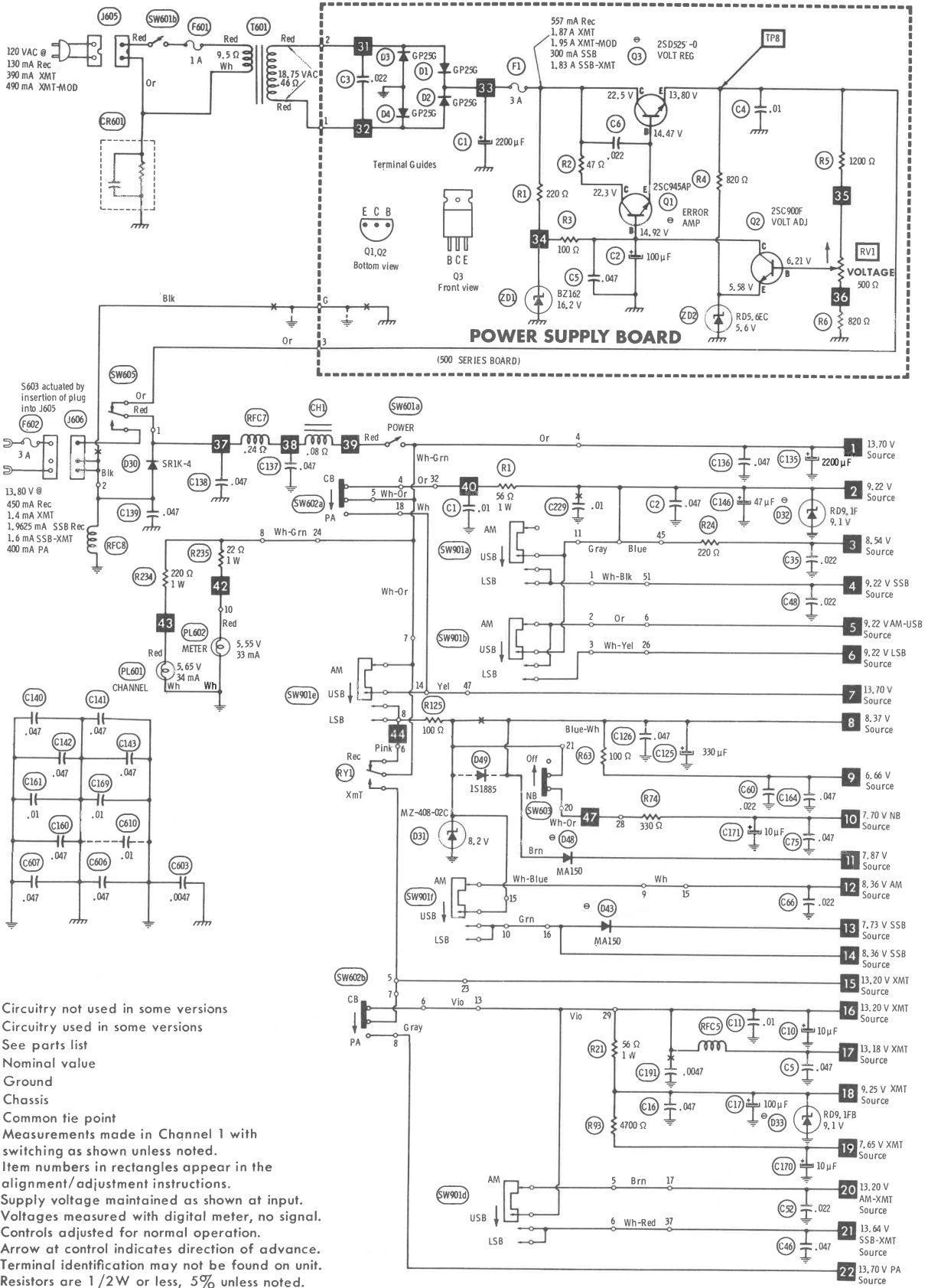


SWITCH BOARD

MIDLAND MODEL 13-976



POWER SUPPLY BOARD



✕ Circuitry not used in some versions

--- Circuitry used in some versions

⊙ See parts list

⊗ Nominal value

⊕ Ground

⏏ Chassis

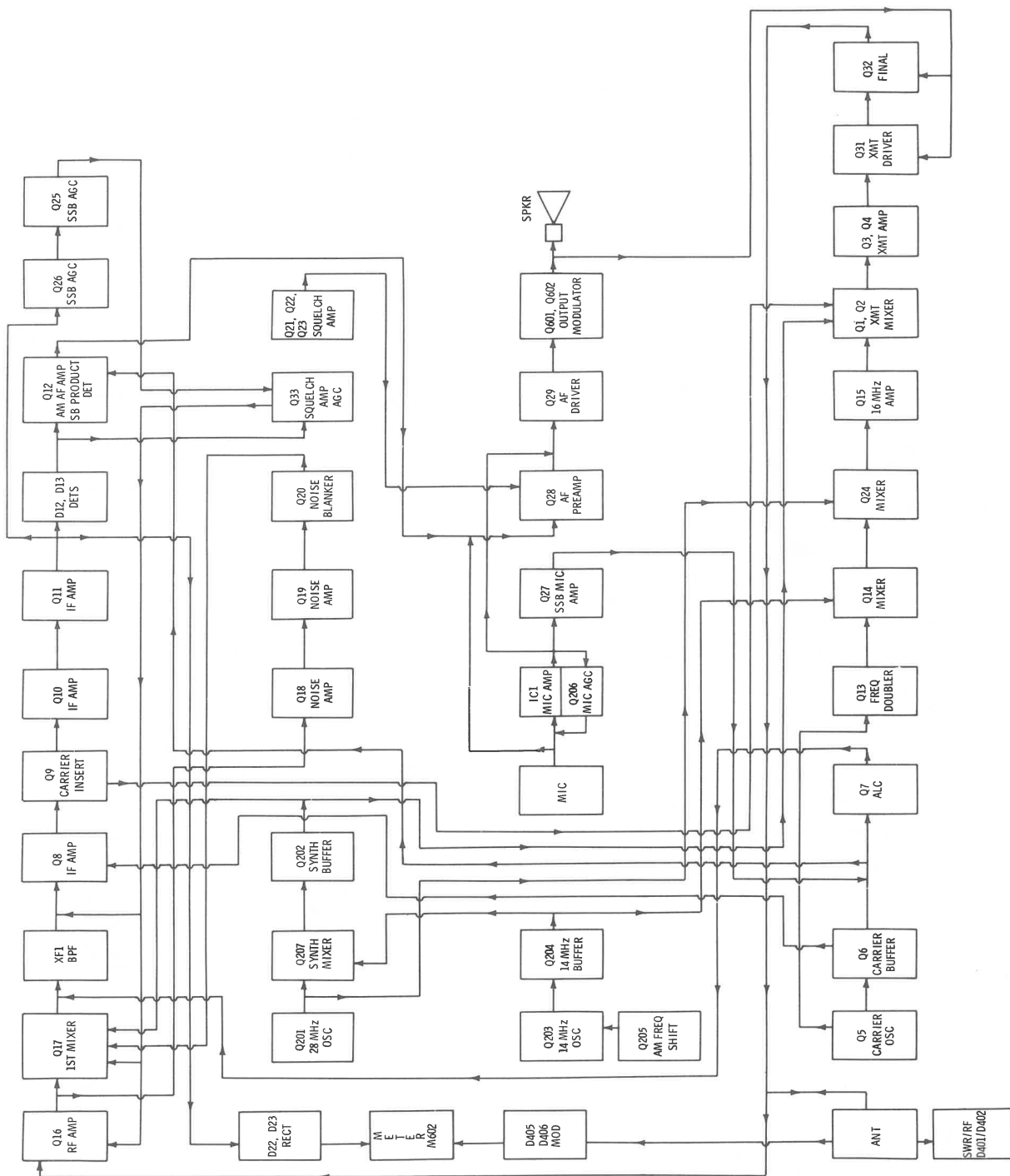
▽ Common tie point

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

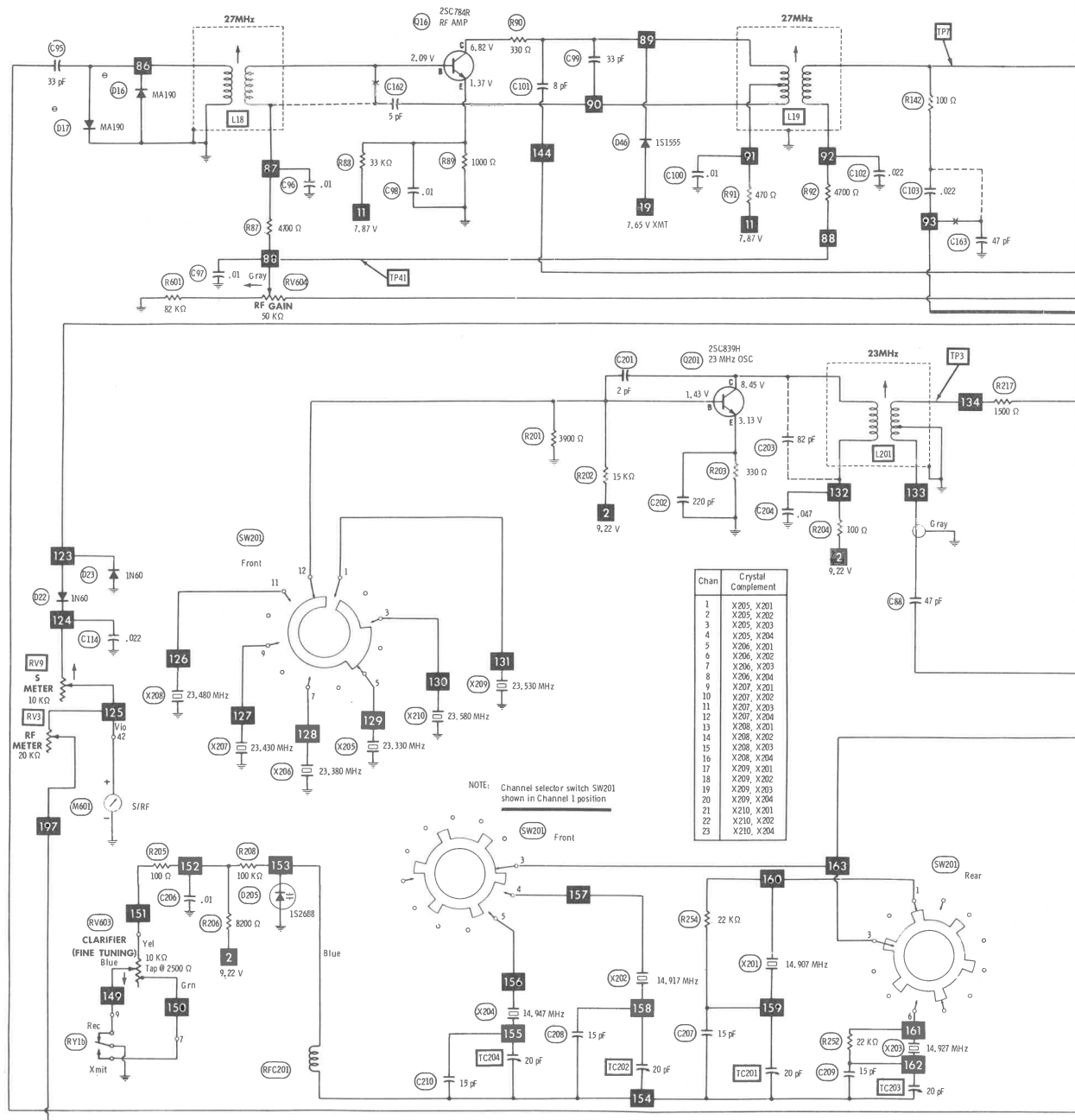
A PHOTOFACT STANDARD NOTATION SCHEMATIC

WITH **CIRCUITRACE®**

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BLOCK DIAGRAM

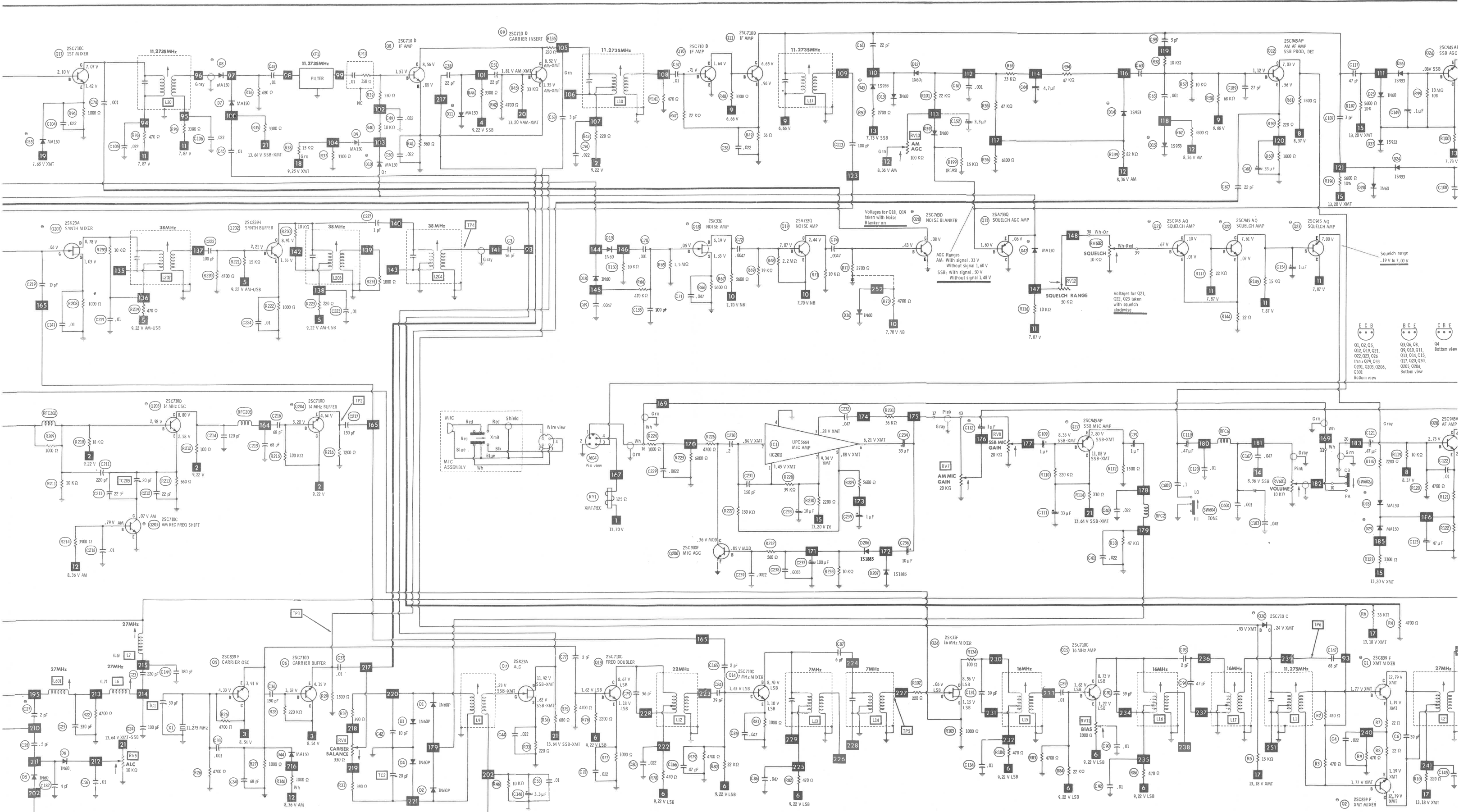


- ✱ Circuitry not used in some versions
 - Circuitry used in some versions
 - ⊕ See parts list
 - ✱ Nominal value
 - ⊕ Ground
 - ⊕ Chassis
 - ▽ Common tie point
- Measurements made in Channel 1 with switching as shown unless noted. Item numbers in rectangles appear in the alignment/adjustment instructions. 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

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PARTS LIST AND DESCRIPTION

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

WIRING DATA

General-use Hook-up Wire (available in 5 colors)	BELDEN No. 8523	Coiled Microphone Cable	
Shielded Hook-up Wire (spiral wrapped)	BELDEN No. 8421	3-conductor (1 shielded) 23AWG	BELDEN No. 9471 (5')
(braided)	BELDEN No. 8401		BELDEN No. 8497 (6')
Speaker Cable (available in 4 colors)	BELDEN No. 8782		BELDEN No. 9472 (7-1/2')
Bonding Strap	BELDEN No. 8672	28AWG	BELDEN No. 9466 (6')
AC Power Cord	BELDEN No. 17106	31AWG	BELDEN No. 9468 (10')
	(6')		BELDEN No. 8415 (6')
	(9')	4-conductor (unshielded) 23AWG	BELDEN No. 9467 (6')
		5-conductor (1 shielded) 28AWG	BELDEN No. 9465 (7-1/2')

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFRG. PART No.	REPLACEMENT DATA									
			GENERAL ELECTRIC PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
MAIN BOARD												
D1	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D2	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D3	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D4	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D5	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D6	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D7	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	
D8	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	
D9	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	
D10	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	
D11	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	
D12	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D13	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N4148	WEP134	ZEN-430
D14	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	
D15	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	
D16	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	
D17	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	
D18	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D19	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D20	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D22	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D23	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D24	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	
D25	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D26	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	
D27	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D28	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	
D29	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	
D30	SR1K-4		GE-504A	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116	1N4007	WEP156	212-61
D31	ME408-02C		GEZD-8-.2	ZB8-.2B		RE 112		RT-257	ECG5072A	1N4738A	WEP1108	
D32	RD9.1FB		GEZD-9-.1	ZB9.1B		RE 114		RT-240	ECG139A	1N4739A	WEP1109	103-372
	ME409-02B		GEZD-9-.1	ZB9.1B		RE 114		RT-240	ECG139A	1N4739A	WEP1109	103-372
D33	RD9.1FB		GEZD-9-.1	ZB9.1B		RE 114		RT-240	ECG139A	1N4739A	WEP1109	103-372
	ME409-02B		GEZD-9-.1	ZB9.1B		RE 114		RT-240	ECG139A	1N4739A	WEP1109	103-372
D34	VD11.24			PTC301		RE 250			ECG601			
D35	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	ZEN-430
D36	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D37	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	ZEN-430
D38	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D39	1N60		1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D42	SR3AM-2		GE-512	PTC204	HEPR0098	RE 92	SK3051	RT-201	ECG156		WEP4008	
D43	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	
D44	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	
D45	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	
D46	1S1555		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	
D47	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	ZEN-453
D48	1S953		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	ZEN-453
D205	1S2688		GE-90		HEPR2503			RT-262	ECG614		WEP200	ZEN-453
D206	1S1885		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	ZEN-453
D207	1S1885		GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4148	WEP1062	ZEN-453
IC1	UPC566H		GEIC-94				RE327-1C	SK3249	TVCM-82	UPC566H		
	MPC566H		GEIC-94				RE327-1C	SK3249	TVCM-82	UPC566H		
Q1	25C839H		GE-61*	PTC132*	HEPS0015*	RE 13*	SK3018*	RT-308	ECG123A*	25C839	WEP736*	ZEN-120
	25C839		GE-61*	PTC132*	HEPS0015*	RE 13*	SK3018*	RT-308	ECG123A*	25C839	WEP736*	ZEN-120
Q2	25C839H		GE-61*	PTC132*	HEPS0015*	RE 13*	SK3018*	RT-308	ECG123A*	25C839	WEP736*	ZEN-120
	25C839		GE-61*	PTC132*	HEPS0015*	RE 13*	SK3018*	RT-308	ECG123A*	25C839	WEP736*	ZEN-120
Q3	25C710		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
	25C710D		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
Q4	8C456		GE-20	PTC136	HEPS0015	RE 192	SK3122	RT-108A	ECG199		WEP66	
Q5	25C839H		GE-61*	PTC132*	HEPS0015*	RE 13*	SK3018*	RT-308	ECG123A*	25C839	WEP736*	ZEN-120
	25C839		GE-61*	PTC132*	HEPS0015*	RE 13*	SK3018*	RT-308	ECG123A*	25C839	WEP736*	ZEN-120
Q6	25C710D		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
	25C710		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
Q7	25K23		GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP920	ZEN-123
Q8	25C710D		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
	25C710		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
Q9	25C710D		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
	25C710		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
Q10	25C710D		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
	25C710		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
Q11	25C710D		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
	25C710		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
Q12	25C945		GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
Q13	25C710		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
	25C710D		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
Q14	25C710		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
	25C710D		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
Q15	25C710		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
	25C710D		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114

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.	MFRG. PART No.	REPLACEMENT DATA									
			GENERAL ELECTRIC PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
Q16	25C784R		GE-60*	PTC132*	HEPS0008*	RE 28*	SK3018*	RT-187	ECG229*	25C784	WEP784	ZEN-104
	25C784BN		GE-60*	PTC132*	HEPS0008*	RE 28*	SK3018*	RT-187	ECG229*	25C784	WEP784	ZEN-104
Q17	25C784		GE-60*	PTC132*	HEPS0008*	RE 28*	SK3018*	RT-187	ECG229*	25C784	WEP784	ZEN-104
	25C710		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
Q18	25C710D		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
	25K33E		GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312	25K33	WEP920	ZEN-123
Q19	25K33		GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312	25K33	WEP920	ZEN-123
	25A733Q		GE-48	PTC103*	HEPS0019*	RE 219	SK3138	RT-303	ECG294	25A733	WEP916	
Q20	25A733		GE-48	PTC103*	HEPS0019*	RE 219	SK3138	RT-303	ECG294	25A733	WEP916	
	25C763D		GE-61*	PTC115	HEPS0020*	RE 10*	SK3018*	RT-309	ECG108*	25C380*	WEP56	ZEN-127
Q21	25C763		GE-61*	PTC115	HEPS0020*	RE 10*	SK3018*	RT-309	ECG108*	25C380*	WEP56	ZEN-127
	25C945P		GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	25C945	WEP1945	121-29000
Q22	25C945		GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	25C945	WEP1945	121-29000
	25C945P		GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	25C945	WEP1945	121-29000
Q23	25C945		GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	25C945	WEP1945	121-29000
	25C945P		GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	25C945	WEP1945	121-29000
Q24	25C945		GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	25C945	WEP1945	121-29000
	25K23A		GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP920	ZEN-123
Q25	25K23		GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP920	ZEN-123
	25K33F		GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312	25K33	WEP920	ZEN-123
Q26	25K33		GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312	25K33	WEP920	ZEN-123
	25C945P		GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	25C945	WEP1945	121-29000
Q27	25C945		GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	25C945	WEP1945	121-29000
	25C945P		GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	25C945	WEP1945	121-29000
Q28	25C945		GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	25C945	WEP1945	121-29000
	25C945P		GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	25C945	WEP1945	121-29000
Q29	25C945		GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	25C945	WEP1945	121-29000
	25C945P		GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	25C945	WEP1945	121-29000
Q30	25C945		GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	25C945	WEP1945	121-29000
	25C710		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
Q31	25C710D		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
	25C1306(12)		GE-215	PTC186	HEP203	RE 203	SK3197	RT-146	ECG235	25C1306	WEP845	
Q32	25C1307(13)		GE-216	PTC186	HEP201	RE 201	SK3197	RT-158	ECG236		WEP780	
	25A733Q		GE-48	PTC103*	HEPS0019*	RE 219	SK3138	RT-303	ECG294	25A733	WEP916	
Q201	25A733		GE-48	PTC103*	HEPS0019*	RE 219	SK3138	RT-303	ECG294	25A733	WEP916	
	25C839H		GE-61*	PTC132*	HEPS0015*	RE 13*	SK3018*	RT-308	ECG123A*	25C839	WEP736*	ZEN-120
Q202	25C839		GE-61*	PTC132*	HEPS0015*	RE 13*	SK3018*	RT-308	ECG123A*	25C839	WEP736*	ZEN-120
	25C839H		GE-61*	PTC132*	HEPS0015*	RE 13*	SK3018*	RT-308	ECG123A*	25C839	WEP736*	ZEN-120
Q203	25C839		GE-61*	PTC132*	HEPS0015*	RE 13*	SK3018*	RT-308	ECG123A*	25C839	WEP736*	ZEN-120
	25C839H		GE-61*	PTC132*	HEPS0015*	RE 13*	SK3018*	RT-308	ECG123A*	25C839	WEP736*	ZEN-120
Q204	25C839		GE-61*	PTC132*	HEPS0015*	RE 13*	SK3018*	RT-308	ECG123A*	25C839	WEP736*	ZEN-120
	25C710		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
Q205	25C710D		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
	25C710		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
Q206	25C900F		GE-211*	PTC132	HEPS0016*	RE 13*	SK3018*	RT-308*	ECG123A*	25C710	WEP710	ZEN-114
	25C900		GE-62	PTC139*	HEPS0015*	RE 192	SK3124	RT-302	ECG199	25C900	WEP66	ZEN-119
Q207	25C900		GE-62	PTC139*	HEPS0015*	RE 192	SK3124	RT-302	ECG199	25C900	WEP66	ZEN-119
	25K23A		GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP920	ZEN-123
Q601	25K23		GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP920	ZEN-123
	25D325E(14)		GE-28	PTC110	HEPS5027	RE 42	SK3197	RT-197	ECG186	25D325	WEP751	
Q602	25D325		GE-28	PTC110	HEPS5027	RE 42	SK3197	RT-197	ECG186	25D325	WEP751	
	25D325E(14)		GE-28	PTC110	HEPS5027	RE 42	SK3197	RT-197	ECG186	25D325	WEP751	
	25D325		GE-28	PTC110	HEPS5027	RE 42	SK3197	RT-197	ECG186	25D325	WEP751	
POWER SUPPLY BOARD												
D1	GP256		GE-504A	PTC201	HEPRO052	RE 49	SK3030	RT-213	ECG116	1N4007	WEP158	212-61
D2	GP256		GE-504A	PTC201	HEPRO052	RE 49	SK3030	RT-213	ECG116	1N4007	WEP158	212-61
D3	GP256		GE-504A	PTC201	HEPRO052	RE 49	SK3030	RT-213	ECG116	1N4007	WEP158	212-61
D4	GP256		GE-504A	PTC201	HEPRO052	RE 49	SK3030	RT-213	ECG116	1N4007	WEP158	212-61
Q1	25C945P		GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	25C945	WEP1945	121-29000
Q2	25C945		GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	25C945	WEP1945	121-29000
	25C900F		GE-62	PTC139*	HEPS0015*	RE 192	SK3124	RT-302	ECG199	25C900	WEP66	ZEN-119
Q3	25C900		GE-62	PTC139*	HEPS0015*	RE 192	SK3124	RT-302	ECG199	25C900	WEP66	ZEN-119
	25D525Y		GE-66	PTC110	HEPS5027	RE 21	SK3054	RT-197	ECG152		WEP745	
ZD1	25D525		GE-66	PTC110	HEPS5027	RE 21	SK3054	RT-197	ECG152		WEP745	
	BZ162		GEZD-16	ZB16B	HEPS5027	RE 122		RT-246	ECG8075A	1N4745A	WEP1160	
ZD2	RD5, 6E		GEZD-5,6	ZB5, 6B		RE 107		RT-236	ECG136A	1N4734A	WEP1104	
Lead Configuration may vary from												

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

SEMICONDUCTORS (Select replacement transistor for best results) (cont)

[illegible]

* Lead Configuration may vary from original.

- (12) Rating 12W @ 3A.
- (13) Rating 25W @ 8A.
- (14) Rating 10W @ 1.5A.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFG. 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 25V		PC5-50	VTT3R3A50	QV1-23	EV-1318
C30	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C39	1 25V			TDC105M035EL		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			TDC105M035EL		SD35-19
C119	.47 50V		PC1-50	VTT4R7A63	QV1-3	EV-1610
C121	.47 50V		PC1-50	VTT4R7A63	QV1-3	EV-1610
C123	47 10V		PC50-16	VTT47D16	QV1-73	EV-1226
C125	330 10V		WBR300-35	VTT330G10	QV1-131	EV-1145
C127	100 16V		PC100-16	VTT100F16	QV1-95	EV-1230
C128	100 10V		PC100-16	VTT100F16	QV1-95	EV-1230
C132	100 16V		PC100-16	VTT100F16	QV1-95	EV-1230

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

ELECTROLYTIC CAPACITORS (cont)

(1) Used in some versions.

CAPACITORS

027	2 N150 50V 15 N150 50V	(1)
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PARTS LIST AND DESCRIPTION (CONTINUED)

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

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C65	.001 50V			DPMS6D1	EWFA1A210	QF1-1	1PB-D10
C66	.022 50V			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C67	22 N150 50V			*		10TCP-Q22	
C69	.0047 50V			WMF1D47	EWFA1A247	QF1-57	1PB-D47
C70	.001 50V			DPMS6D1	EWFA1A210	QF1-1	1PB-D10
C71	.047 50V				MAG5015		
C72	.0047 50V		UK50-503	WMF1D47	EWFA1A247	QF1-57	1PB-D47
C74	.0047 50V			WMF1D47	EWFA1A247	QF1-57	1PB-D47
C75	.047 50V			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C76	.001 50V			DPMS6D1	EWFA1A210	QF1-1	1PB-D10
C77	2 N150 50V			*		10TCP-V22	
C78	.022 50V			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C79	56 N150 50V			*		10TCP-Q56	
C80	.022 50V			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C84	39 N150 50V			*		10TCP-Q39	
C85	.047 50V			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C86	.047 50V			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C87	6 N150 50V			*		10TCP-V56	
C88	47 N150 50V			*		10TCP-Q47	
C89	.01 50V			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C90	.01 50V			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C91	39 N150 50V			*		10TCP-Q39	
C92	.01 50V			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C93	2 N150 50V			*		10TCP-V22	
C94	47 N150 50V			*		10TCP-Q47	
C95	33 N150 50V			*		10TCP-Q33	
C96	.01 50V			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C97	.01 50V			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C98	.01 50V			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C99	33 N150 50V			*		10TCP-Q33	
C100	.01 50V			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C101	8 N10 50V		DTZ-6R8	NP06P8	CN0568	QF1-127	10TCC-V68
C102	.022 50V			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C103	.022 50V			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C104	.022 50V			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C105	.022 50V			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C106	.022 50V			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C107	3 N150 50V			*		10TCP-V30	
C108	.01 50V			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C112	.047 50V	(1)	UK50-503	MAG5015			
C113	100 50V		DD-101	GP100	GP310	QF1-127	10TS-T10
C114	.022 50V			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C116	.01 50V			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C117	47 N150 50V			*		10TCP-Q47	
C120	.01 50V			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C122	.01 50V			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C124	.1 50V			WMF05P1	EWFA1A110	QF1-91	431P1049R5
C126	.047 50V		UK50-503	MAG5015			
C129	.022 50V			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C130	.022 50V			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C131	39 N150 50V			*		10TCP-Q39	
C134	.01 50V			DPMS4S1	EWFA1A110	QF1-127	4PB-S10
C136	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C137	.047 50V		UK50-503	MAG5015			
C138	.047 50V		UK50-503	MAG5015			
C139	.047 50V		UK50-503	MAG5015			
C140	.047 50V		UK50-503	MAG5015			
C141	.047 50V		UK50-503	MAG5015			
C142	.047 50V		UK50-503	MAG5015			
C143	.047 50V		UK50-503	MAG5015			
C144	180 N150 50V			*		10TCP-T18	
C145	.01 50V			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C147	68 N150 50V			*		10TCP-Q68	
C155	100 50V		DD-101	GP100	GP310	QF1-127	10TS-T10
C160	.047 50V		UK50-503	MAG5015			
C161	.01 50V		DC-103	TA110			
C162	5 N150 50V			*		QC2-141	TG-S10
C163	47 N150 50V			*		10TCP-V50	
C164	.047 50V			*		10TCP-Q47	
C165	2 N150 50V			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C166	47 N150 50V			*		10TCP-V22	
C167	.047 50V			*		10TCP-Q47	
C181	10 50V	(1)	DTZ-10	DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C182	4 N150 50V	(1)		NP010	CN0410	QF1-171	10TCC-Q10
C183	.047 50V	(1)	UK50-503	*	MAG5015	10TCP-V39	
C189	27 N150 50V			*		10TCP-Q27	
C190	33 N150 50V			*		10TCP-Q33	
C191	.0047 50V	(1)	DD-472	GP4700	GP247	QF1-171	5GA-D47
C201	2 N150 50V			*		10TCP-V22	
C202	220 N150 50V			*		10TCP-T22	
C203	82 50V	(1)	DD-820	GP482	GP482	QF1-171	10TS-Q82
C204	.047 50V		UK50-503	MAG5015			
C206	.01 50V		DC-103	TA110			
C207	15 N150 50V			MGP01		QC2-141	TG-S10
C208	15 N150 50V			*		10TCP-Q15	
C209	15 N150 50V			*		10TCP-Q15	
C210	15 N150 50V			*		10TCP-Q15	
C211	220 N150 50V			*		10TCP-T22	
C212	22 N150 50V			*		10TCP-Q22	
C213	22 N150 50V			*		10TCP-Q22	

MIDLAND MODEL 13-976

PARTS LIST AND DESCRIPTION (CONTINUED)

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

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C214	120 N150 50V			*		10TCP-T12	
C215	68 N150 50V			*		10TCP-Q68	
C216	68 N150 50V			*		10TCP-Q68	
C217	150 N150 50V			*		10TCP-T15	
C218	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C219	10 N150 50V			*		10TCP-Q10	
C221	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C222	100 N150 50V			*		10TCP-T10	
C223	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C224	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C227	1 N150 50V			*			
C229	.0022 50V		DD-222		GP222	QC2-97	5GA-D22
C230	.2 12V		UK12-204		MAG12022		HY-370
C231	150 50V		DD-151		GP315		10TS-T15
C232	.047 50V			DPMS2S47	EWFI1A147	QF1-171	1PB-S47
C238	.0033 50V		DD-332	GP3300	GP233	QC2-107	5GA-D33
C239	.0022 50V		DD-222		GP222	QC2-97	5GA-D22
C241	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C601	150 N150 50V			*		10TCP-T15	
C602	.047 50V			DPMS2S47	EWFI1A147	QF1-171	1PB-S47
C604	.001 50V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C605	.1 50V			WMF05P1	EWFO5010		431P1049R5
C606	.047 50V		UK50-503		MAG5015		
C607	.047 50V		UK50-503		MAG5015		
TC1	50 50V	13-123008					
TC2	20 50V	13-123009					
TC201	20 50V	13-123010					
TC202	20 50V	13-123010					
TC203	20 50V	13-123010					
TC204	20 50V	13-123010					
TC205	20 50V	13-123010					
POWER SUPPLY BOARD							
C3	.022 50V		DC-253	MGP025	TA125		TG-S25
C4	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C5	.047 50V		UK50-503		MAG5015		
C6	.022 50V		DC-253	MGP025	TA125		TG-S25

* 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)

			REPLACEMENT DATA				
ITEM No.	FUNCTION	RESIST-ANCE	MFRG. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
MAIN BOARD							
RV1	Bias	1000	13-164140				U260R102B
RV2	Bias	500	13-164141				U260R501B
RV3	RF Meter	20K	13-164142				U260R253B
RV4	Carrier Balance	330	13-161036				U260R501B
RV5	ALC	10K	13-164144				U260R103B
RV6	SSB AGC	5000	13-161037	T-5000 (2)	C-502 (2)	MTC53L1 (2)	X201R502B (2)
RV7	AM MIC Gain	20K	13-164142				U260R253B
RV8	SSB MIC Gain	20K	13-164142				U260R103B
RV9	S Meter	10K	13-164144				U260R104B
RV10	AM AGC	100K	13-161038				U260R102B
RV11	Bias	1000	13-164140				
RV12	Squelch Range	50K	13-164145				
RV601	Volume	10K	13-160141				
RV602	Squelch	10K	13-166080				
RV603	Clarifier	10K Tap @ 2500	13-164154				
RV604	RF Gain	50K	13-166084				
RV605	AM Power	10 5W	13-164156				
POWER SUPPLY BOARD							
RV1	Voltage	500					U260R501B

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

PARTS LIST AND DESCRIPTION (CONTINUED)

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

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	Xmt Mixer (11.275MHz)	13-090406			
L2	Xmt Mixer (27MHz)	13-176583			
L3	Xmt Mixer (27MHz)	13-176584			
L4	Xmt Amp (27MHz)	13-176585			
L5	Xmt Driver (27MHz)	13-176586			
L6	Pi Filter (27MHz)	13-176587			
L7	Final (27MHz)	13-176586			
L9	Carrier Buffer	13-090407			
L10	IF (11.2735MHz)	13-090406			
L11	IF (11.2735MHz)	13-090408			
L12	Frequency Doubler (22MHz)	13-176588			
L13	Oscillator (7MHz)	13-090409			
L14	Oscillator (7MHz)	13-090409			
L15	Mixer (16MHz)	13-176589			
L16	Amp (16MHz)	13-176589			
L17	Amp (16MHz)	13-176589			
L18	Rec Antenna (27MHz)	13-176590			
L19	Rec RF (27MHz)	13-176591			
L20	IF (11.2735MHz)	13-090410			
L201	Synth Oscillator (23MHz)	13-176592			
L202	Synth Mixer (38MHz)	13-176593			
L203	Synth Buffer (38MHz)	13-176593			
L204	Synth Buffer (38MHz)	13-176593			
L601	Antenna Match (27MHz)	13-176594			
RFC1	RF Choke (2uH)	13-178228			
RFC2	RF Choke (1mH)	13-178229			
RFC3	RF Choke (.8uH)	13-178209			
RFC5	RF Choke (2.2uH)	13-176564			
RFC6	RF Choke (68uH)	13-178210			
RFC7	RF Choke	13-178230			
RFC8	RF Choke	13-178230			
RFC9	RF Choke (.8uH)	13-178209			
RFC201	RF Choke (4.3uH)	13-178231			
RFC202	RF Choke (2.7uH)	13-178233			
RFC203	RF Choke (2uH)	13-178232			

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (O CURRENT 1000~)	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
CH1	2.25A	.24	3.72mH	13-178234 LJ119H004W(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	1		13-096209 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	13-096210 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 @ 600mA AC	19.0V AC @ 2.94A AC	13-098025 H68U003Y(1)			(1) Number on unit.

MIDLAND MODEL 13-976

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.	
SP601	3" PM, 8 Ohms	13-060118	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
MAIN BOARD								
F601	1 Amp	13-204016	13-158522 13-034099(1)	AGC1	HKP HDJ	312001	342012AL 150145	FG1-2 FG3-2
F602	3 Amp			AGC3		312003		
POWER SUPPLY BOARD								
F1	3 Amp Pigtail	13-204017		GJV3		318003		

(1) Includes fuse, fuse holder and cord assembly.

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	13-038100	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	13-130019	Antenna PA External Speaker Microphone Power (AC) Power (DC) S/Rf Channel Indicator (5.65V @ 34mA) Meter (5.55V @ 33mA) Xmt/Rec Channel Selector Power PA/CB NB Tone Mode 11.275MHz 14.907MHz 14.917MHz 14.927MHz 14.947MHz 23.330MHz 23.380MHz 23.430MHz 23.480MHz 23.530MHz 23.580MHz 11.2735MHz
CR601	Component Combination	13-130020	
J601	Jack	13-159212	
J602	Jack	13-153168	
J603	Jack	13-153168	
J604	Jack	13-159234	
J605	Jack	13-159236	
J606	Jack	13-159235	
M601	Meter	13-200080	
PL601	Lamp	13-201078	
PL602	Lamp	13-201078	
RY1	Relay	13-105028	
SW201	Switch	13-180119	
SW601	Switch	13-183237	
SW602	Switch	13-183238	
SW603	Switch	13-183239	
SW604	Switch	13-183239	
SW901	Switch		
X1	Crystal	13-128124	
X201	Crystal	13-128260	
X202	Crystal	13-128261	
X203	Crystal	13-128262	
X204	Crystal	13-128263	
X205	Crystal	13-128250	
X206	Crystal	13-128251	
X207	Crystal	13-128252	
X208	Crystal	13-128253	
X209	Crystal	13-128254	
X210	Crystal	13-128255	
XF1	Crystal Filter	13-179069	

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

ITEM	PART No.	ITEM	PART No.
Cabinet Top	13-010321	Knob, Channel	13-115141
Cabinet Bottom	13-013146	Knob, Power Switch	13-115145
Escutcheon	13-011030	Channel Indicator Disc	13-020713
Knob, Control	13-110201	Microphone Hanger	13-158523