



PHOTOFACT[®] with

CIRCUITRACE[®]

For Supplier Address See PHOTOFACT Index

NOTE

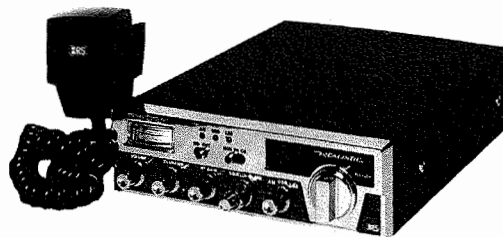
Repair or adjustment of transmitter circuits must be under supervision of a person with first-or second-class radiotelephone license.

(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 TRC-449 (21-1562)

MANUFACTURER'S SPECIFICATIONS

GENERAL:

Channels	: 40 Channels for AM, Upper Side Band and Lower Side Band, utilizing Digital Circuitry
Frequency Range	: 26.965 MHz to 27.405 MHz
Frequency Control	: Digital (Phase Lock Loop) Synthesizer
Frequency Accuracy	: ± 100 Hz
Operating Temperature Range	: -20°C to $+50^{\circ}\text{C}$
Power Requirements	: 13.8V DC (12-16 volts DC, negative or positive ground)
Antenna	: 52 ohm (Coaxial connector)
Microphone	: 600 ohm Dynamic Type
Speaker	: 8 ohm, 3 Watt
Size	: 2-3/8" x 7-7/8" x 10-1/2" (HWD) (6 x 20 x 26.6 cm [HWD])
Weight	: 6 lbs. (approx.) (2.65 kg)
Accessories	: DC Cord with in-line Fuse, Microphone and Microphone Hanger and Mounting Brackets

MEASUREMENT CONDITION:

Power Source	: 13.8V DC
Antenna Impedance	: 50 ohm
Test Temperature	: 25°C
AM Modulation Frequency	: 1 kHz
SSB Modulation Frequency, Transmit	: Two tone: 500 Hz and 2400 Hz Single tone: 1 kHz
Mean Signal Input Level	: $1000 \mu\text{V}$
Reference Audio Output Power	: 0.5 W
Reference AM Modulation Percentage	: 1 kHz 30%
Audio Frequency, SSB Receive	: 1 kHz
Audio Output Load	: 8 ohms resistive
Measuring Channel	: 19

Courtesy of the Manufacturer

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

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REALISTIC MODEL TRC-449

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 at TP10 (TR401 Emitter).
 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:

CT1 thru CT7.....8276,5000
 L27,L30,L32.....9091,8728A,8728
 L1 thru L5,L7,L8,L16,L17,L24,L37,L39.....9440

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Input of frequency counter thru 47pF to TP11 (IC7, pin 10).	Ch. 1, AM		Check for 10.240MHz.
Input of oscilloscope to TP6.	Ch. 1, AM	L24	Adjust for maximum RF.
Input of frequency counter to TP6.	Ch. 1, AM Clarifier Midrange	CT6	Adjust for 33.855MHz +20Hz.
	Ch. 1, USB Clarifier Midrange	CT4	Adjust for 33.8574MHz +20Hz.
	Ch. 1, LSB Clarifier Midrange	CT5	Adjust for 33.8526MHz +20Hz.
Input of DC meter to TP7.	Ch. 1, AM Clarifier Midrange	L17	Adjust for 2.00 volts.
Input of oscilloscope to TP8.	Ch. 19, AM Clarifier Midrange	L16	Adjust for maximum RF.
Input of frequency counter to TP8.	Ch. 1, AM Clarifier Midrange		Check for 34.765MHz. Check all channels. (See Truth Chart for correct frequencies).
	Ch. 1, USB Clarifier Midrange		Check for 34.7675MHz. Check all channels. (See Truth Chart for correct frequencies).
	Ch. 1, LSB Clarifier Midrange		Check for 34.7625MHz. Check all frequencies. (See Truth Chart for correct frequencies).
Input of frequency counter to TP12 (TR31 collector).	Ch. 1, AM Clarifier Midrange		Check for .910MHz. Check all channels. (See Truth Chart for correct frequencies).
Input of frequency counter to TP9	Ch. 1, USB	CT2	Adjust for 7.8025MHz +5Hz.
	Ch. 1, LSB	CT3	Adjust for 7.7975MHz +5Hz.
Input of frequency counter to antenna jack.	Ch. 1, AM, XMT	VR9	Adjust for 26.965MHz.

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.
RF Gain Maximum, Clarifier 0, Squelch MINIMUM, NB Switch Off, ANL Switch Off.

AM

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP13 (FET1, G1). 7.8MHz, 1000Hz @ 30% modulation.	Ch. 19, AM	L8, L7, L5	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation.	Ch. 19, AM	L4, L3	Adjust for maximum output. If necessary readjust L5, L6, L7, and L8.
Inject a 100pps, 1u sec signal at MIC input. Input of oscilloscope to TP5.	Ch. 19, AM	L1, L2	Adjust for maximum.

RECEIVER ALIGNMENT

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.
RF Gain Maximum, Clarifier 0, Squelch MINIMUM, ANL Switch Off, NB Switch Off, Volume Maximum.

SSB

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna jack. 27.186MHz, no modulation. Output .25uV.	Ch. 19, USB	CT1	Adjust for 2 volts audio.

RECEIVER ADJUSTMENTS

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.
RF Gain Maximum, Clarifier 0, Squelch MINIMUM, NB Switch Off, ANL Switch Off.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output .5uV.	Ch. 19, AM Volume Maximum	VR5	AM RX GAIN Adjust for 2 volts audio.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 50uV.	Ch. 19, AM RF Gain MINIMUM Squelch Maximum	VR2	RF GAIN Adjust for 2 volts audio.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 1000uV.	Ch. 19, AM Squelch Maximum	VR3	SQUELCH RANGE Adjust so that squelch just breaks.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 100uV.	Ch. 19, AM	VR1	SIGNAL METER Adjust for 9 on SIGNAL scale of meter.

REALISTIC MODEL TRC-449

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.

AM

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of Spectrum analyzer or harmonic meter to antenna jack.	Ch. 19, AM	L27	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.

See page 4 for channel frequencies.

SSB

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Inject a 1000Hz 5mV signal at MIC input.	Ch. 19	L39,L37, L32,L30, CT7	Adjust for maximum.
Inject a 1000Hz 200mV signal at MIC input.	Ch. 19	CT7	Adjust for 12 watts.

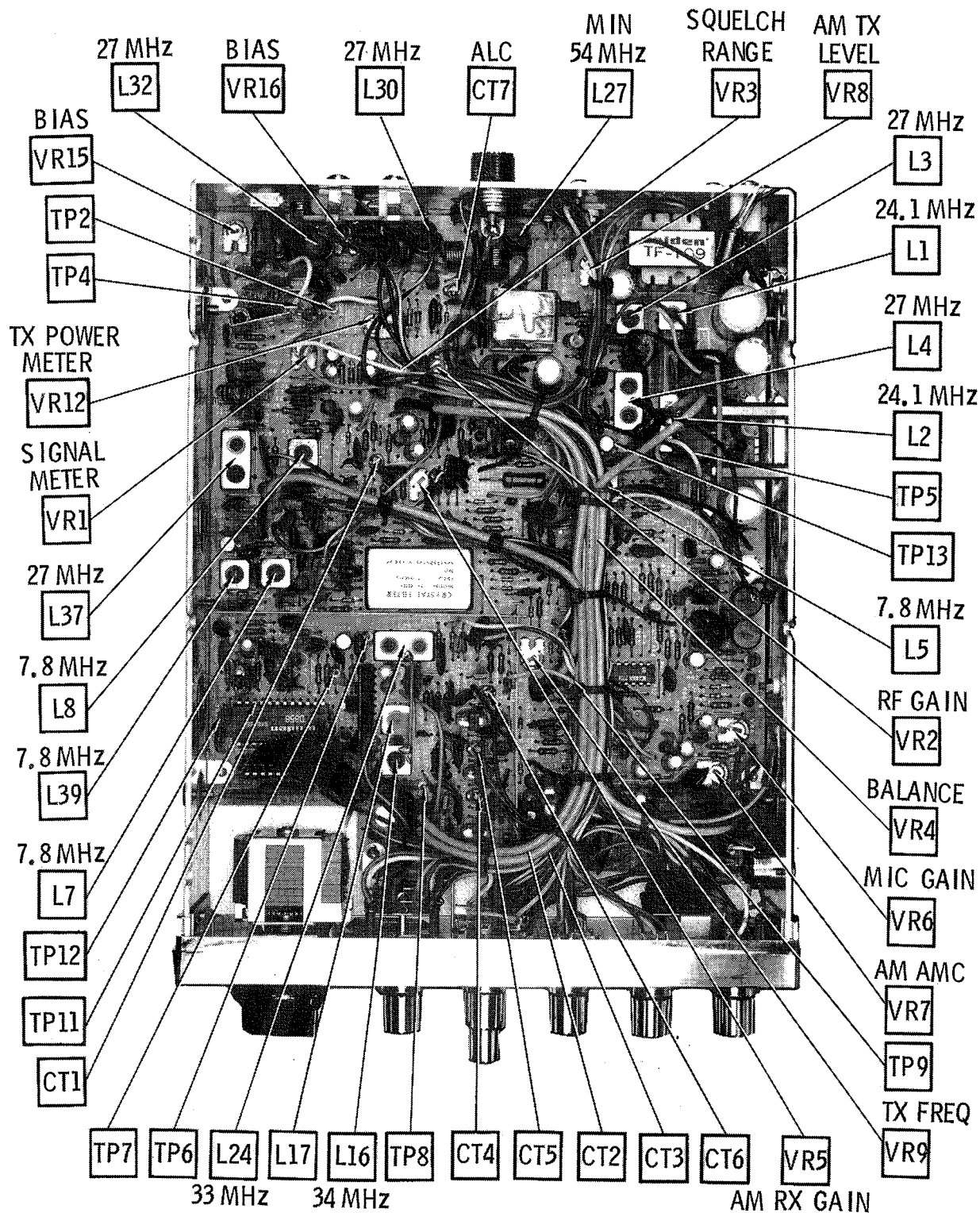
TRANSMITTER ADJUSTMENTS

Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.

NOTE: Be sure to check transmit frequency and power on all active channels after adjustment of transmitter.

See page 4 for channel frequencies.

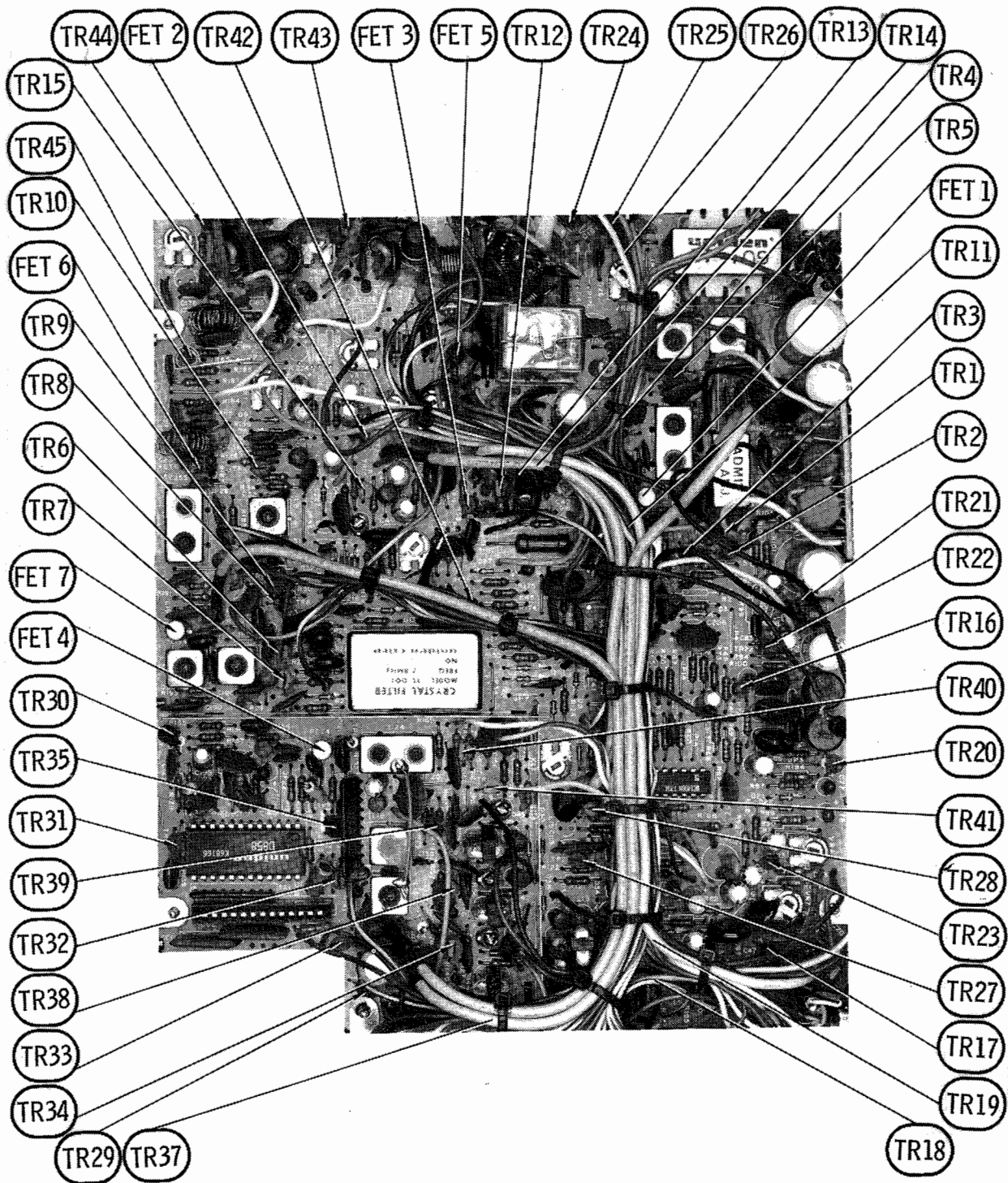
TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Connect current meter in series with circuit at TP4. No signal input.	Ch. 19, USB	VR15	BIAS Adjust for 40mA.
Connect current meter in series with circuit at TP2. No signal input.	Ch. 19, USB	VR16	BIAS Adjust for 15mA.
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector. No signal input.	Ch. 19, USB	VR4	BALANCE Adjust VR4 for MINIMUM RF.
	Ch. 19, AM	VR8	AM POWER Adjust for 4 watts maximum.
Inject a 1000Hz, 5mV signal at MIC input. Input of oscilloscope or modulation meter to antenna jack.	Ch. 19, AM	VR6,VR7	MIC GAIN & AM AMC Turn VR7 (from top) fully clockwise. Adjust VR6 for 50% modulation. Increase audio to 200mV. Adjust VR7 for 100% modulation maximum.
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.	Ch. 19, AM	VR12	TX POWER METER Adjust so that the Power meter reads just below the red on the power scale of meter.



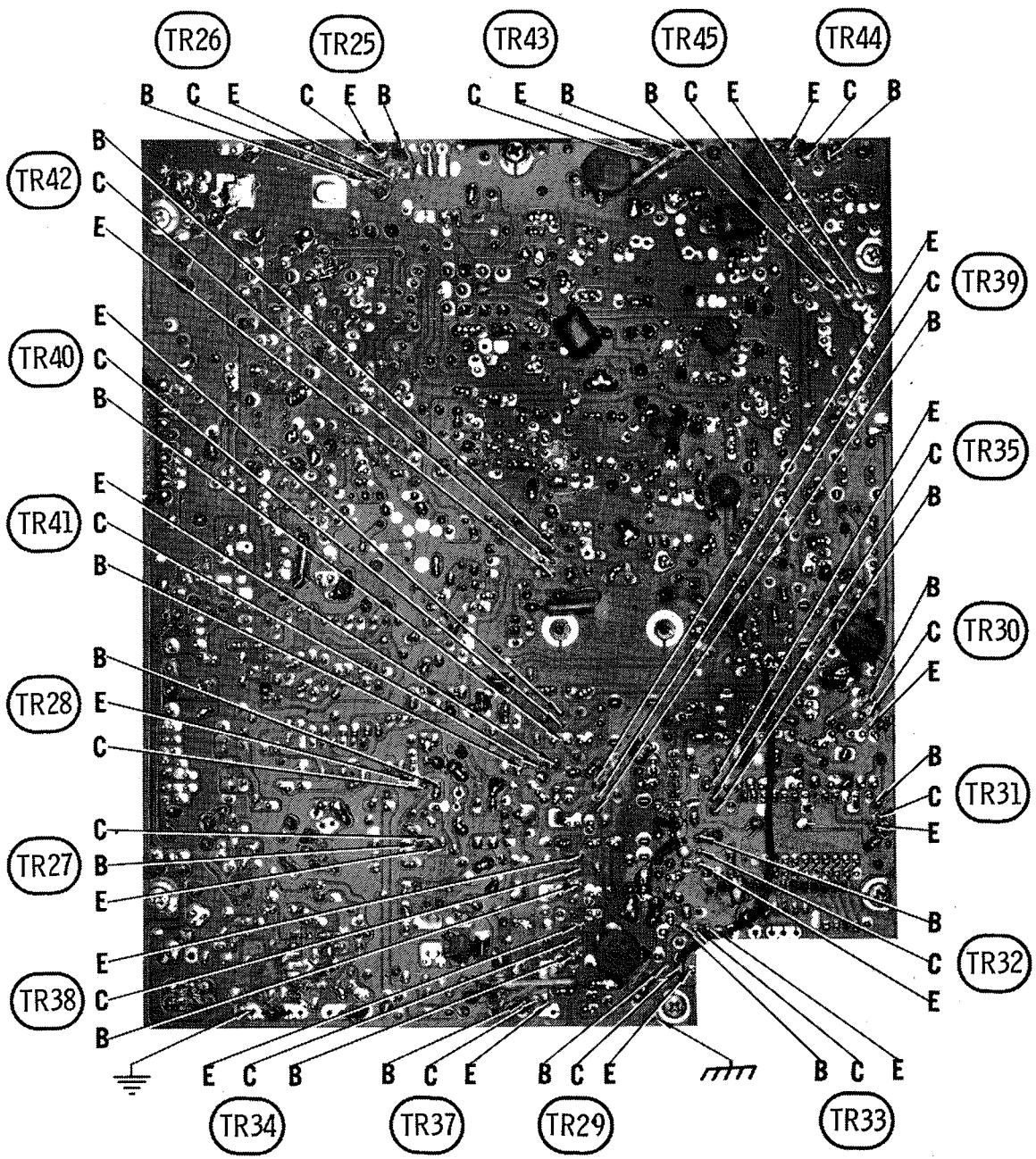
CHASSIS - BOTTOM

TRUTH CHART

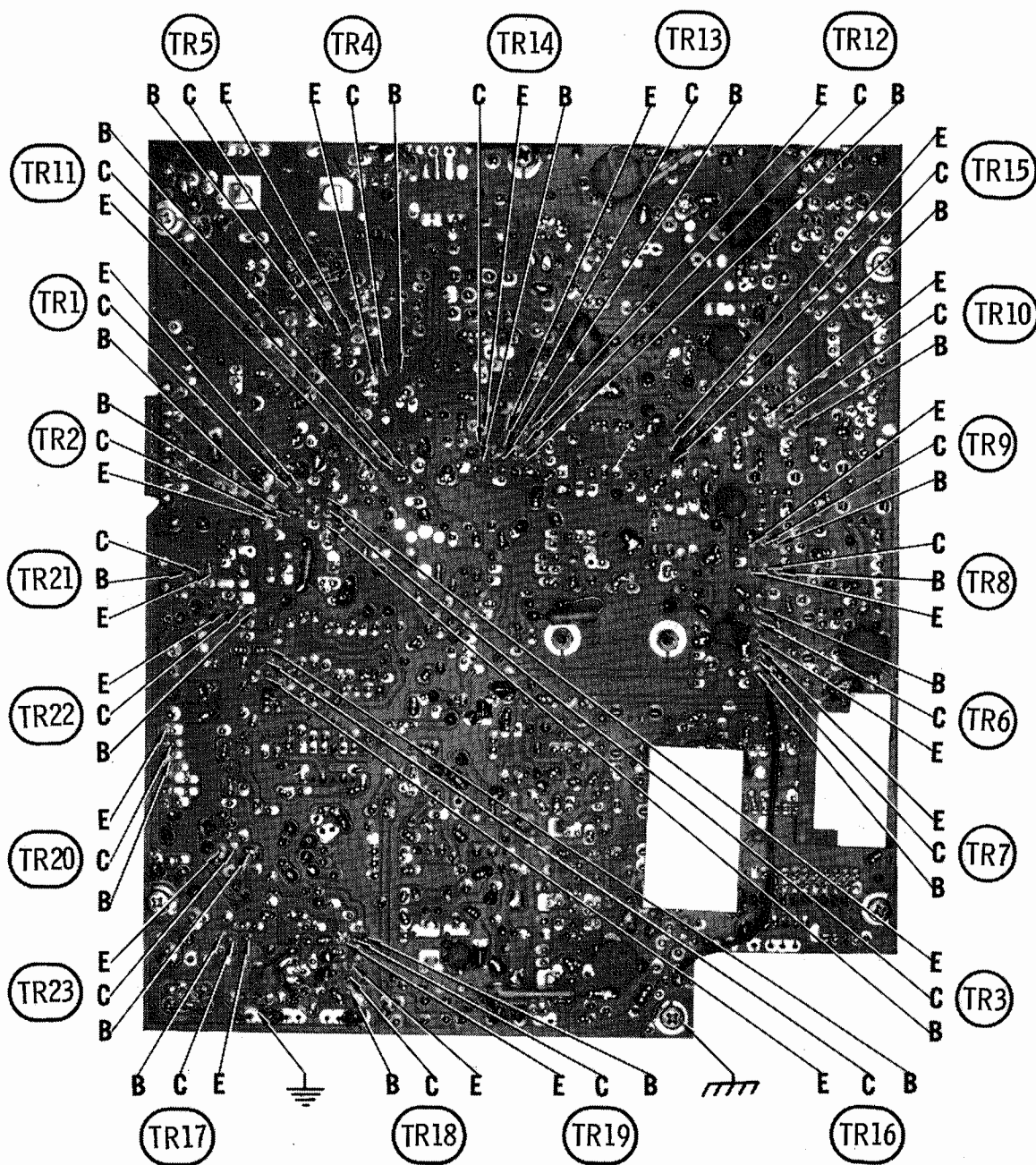
C H A N N E L	1 = 4.90 Volts 0 = 0 Volts IC7 PROGRAM DIVIDER								AM (Rec) SYNTHESIZER OUTPUT IN MHz AT TP8	USB (Rec & XMT) AM (XMT) SYNTHESIZER OUTPUT IN MHz AT TP8	LSB (Rec & XMT) SYNTHESIZER OUTPUT IN MHz AT TP8	AM,USB,LSB (Rec & XMT) DIVIDER INPUT IN MHz AT TP12
	PINS											
	21	20	18	17	16	15	14	13				
1	0	1	0	1	0	0	0	1	34.765	34.7675	34.7625	.910
2	0	1	0	1	0	0	1	0	34.775	34.7775	34.7725	.920
3	0	1	0	1	0	0	1	1	34.785	34.7875	34.7825	.930
4	0	1	0	1	0	1	0	1	34.805	34.8075	34.8025	.950
5	0	1	0	1	0	1	1	0	34.815	34.8175	34.8125	.960
6	0	1	0	1	0	1	1	1	34.825	34.8275	34.8225	.970
7	0	1	0	1	1	0	0	0	34.835	34.8375	34.8325	.980
8	1	0	0	0	0	0	0	0	34.855	34.8575	34.8525	1.000
9	1	0	0	0	0	0	0	1	34.865	34.8675	34.8625	1.010
10	1	0	0	0	0	0	1	0	34.875	34.8775	34.8725	1.020
11	1	0	0	0	0	0	1	1	34.885	34.8875	34.8825	1.030
12	1	0	0	0	0	1	0	1	34.905	34.9075	34.9025	1.050
13	1	0	0	0	0	1	1	0	34.915	34.9175	34.9125	1.060
14	1	0	0	0	0	1	1	1	34.925	34.9275	34.9225	1.070
15	1	0	0	0	1	0	0	0	34.935	34.9375	34.9325	1.080
16	1	0	0	1	0	0	0	0	34.955	34.9575	34.9525	1.100
17	1	0	0	1	0	0	0	1	34.965	34.9675	34.9625	1.110
18	1	0	0	1	0	0	1	0	34.975	34.9775	34.9725	1.120
19	1	0	0	1	0	0	1	1	34.985	34.9875	34.9825	1.130
20	1	0	0	1	0	1	0	1	35.005	35.0075	35.0025	1.150
21	1	0	0	1	0	1	1	0	35.015	35.0175	35.0125	1.160
22	1	0	0	1	0	1	1	1	35.025	35.0275	35.0225	1.170
23	1	0	1	0	0	0	0	0	35.055	35.0575	35.0525	1.200
24	1	0	0	1	1	0	0	0	35.035	35.0375	35.0325	1.180
25	1	0	0	1	1	0	0	1	35.045	35.0475	35.0425	1.190
26	1	0	1	0	0	0	0	1	35.065	35.0675	35.0625	1.210
27	1	0	1	0	0	0	1	0	35.075	35.0775	35.0725	1.220
28	1	0	1	0	0	0	1	1	35.085	35.0875	35.0825	1.230
29	1	0	1	0	0	1	0	0	35.095	35.0975	35.0925	1.240
30	1	0	1	0	0	1	0	1	35.105	35.1075	35.1025	1.250
31	1	0	1	0	0	1	1	0	35.115	35.1175	35.1125	1.260
32	1	0	1	0	0	1	1	1	35.125	35.1275	35.1225	1.270
33	1	0	1	0	1	0	0	0	35.135	35.1375	35.1325	1.280
34	1	0	1	0	1	0	0	1	35.145	35.1475	35.1425	1.290
35	1	0	1	1	0	0	0	0	35.155	35.1575	35.1525	1.300
36	1	0	1	1	0	0	0	1	35.165	35.1675	35.1625	1.310
37	1	0	1	1	0	0	1	0	35.175	35.1775	35.1725	1.320
38	1	0	1	1	0	0	1	1	35.185	35.1875	35.1825	1.330
39	1	0	1	1	0	1	0	0	35.195	35.1975	35.1925	1.340
40	1	0	1	1	0	1	0	1	35.205	35.2075	35.2025	1.350



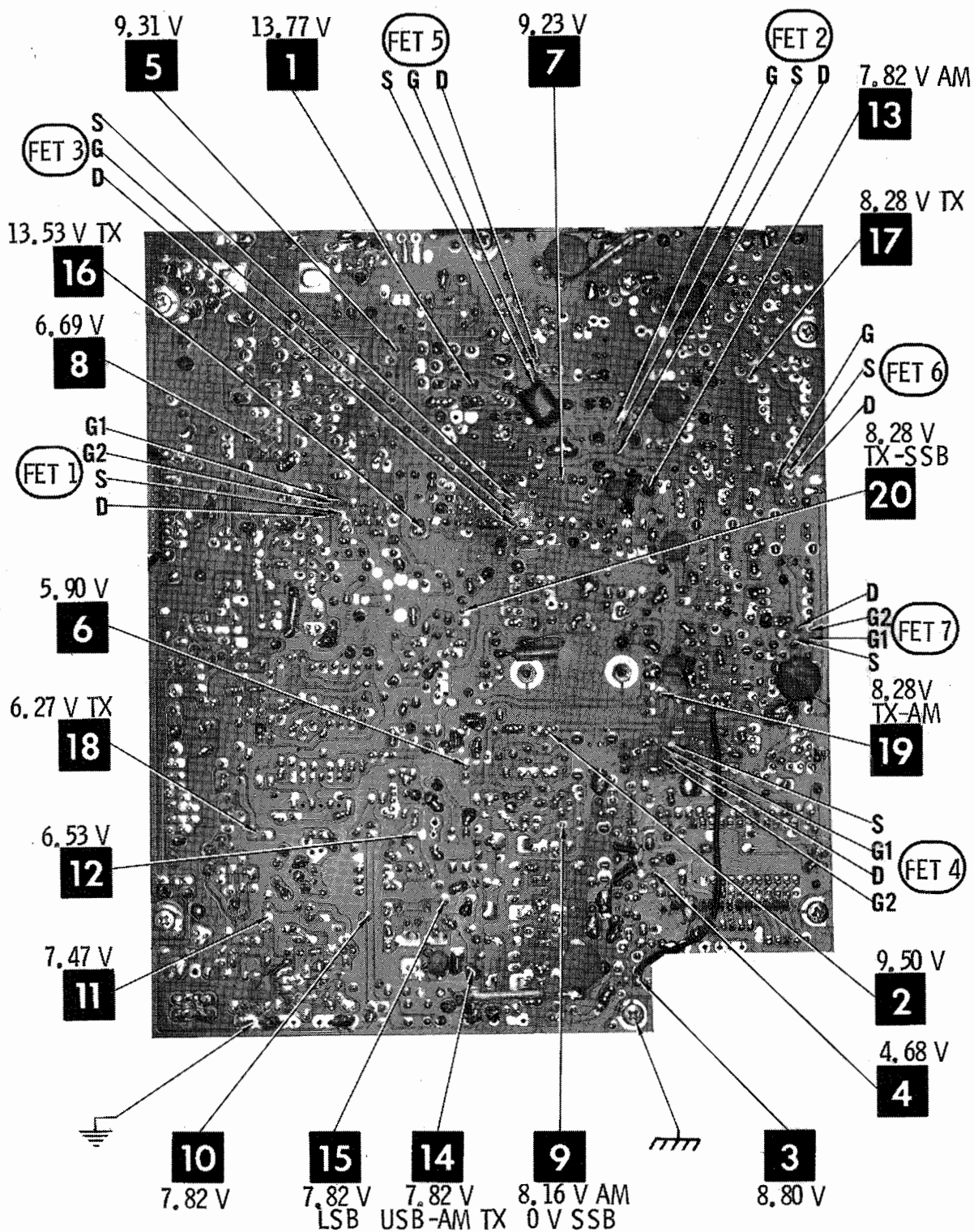
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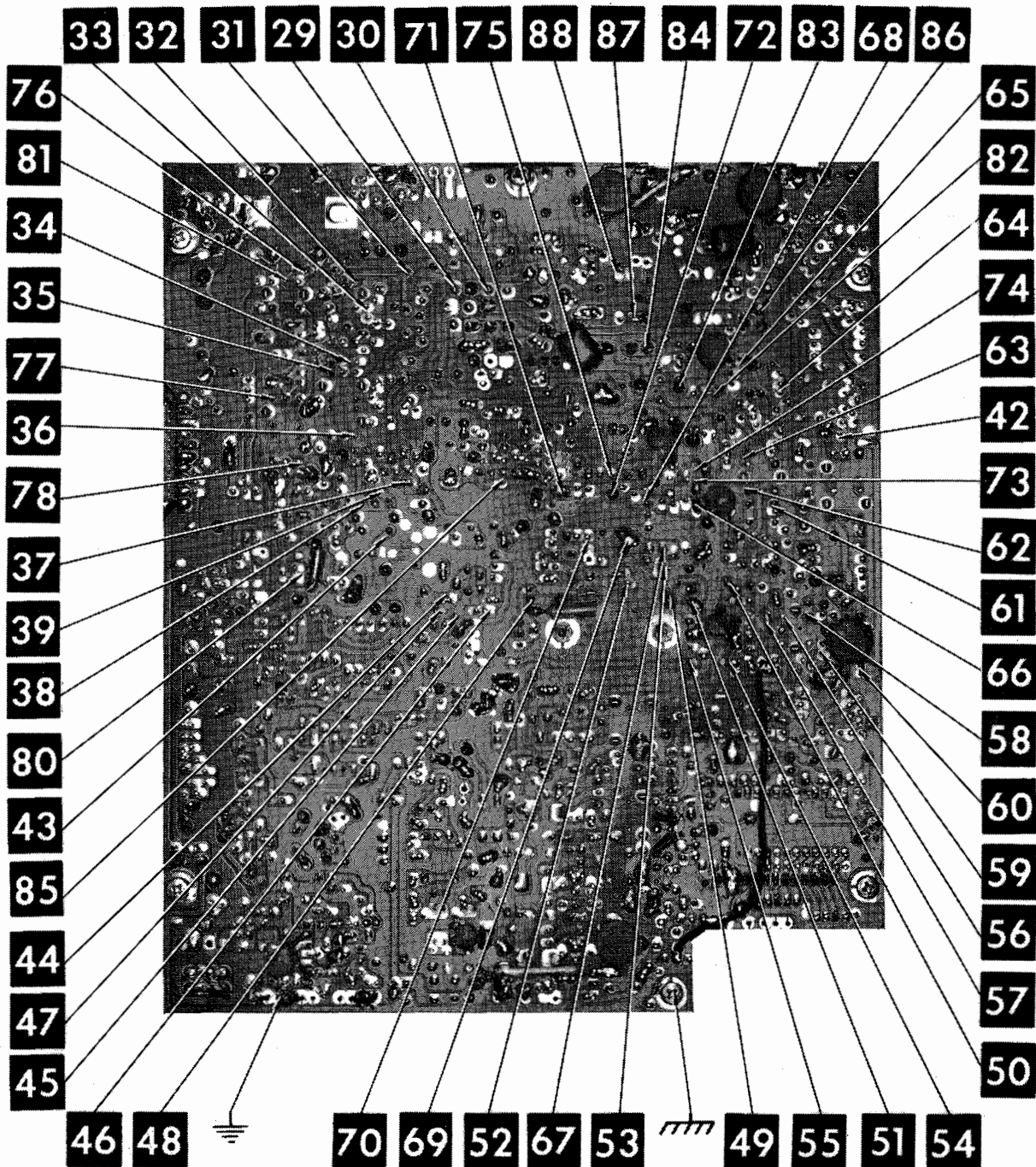
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MAIN BOARD

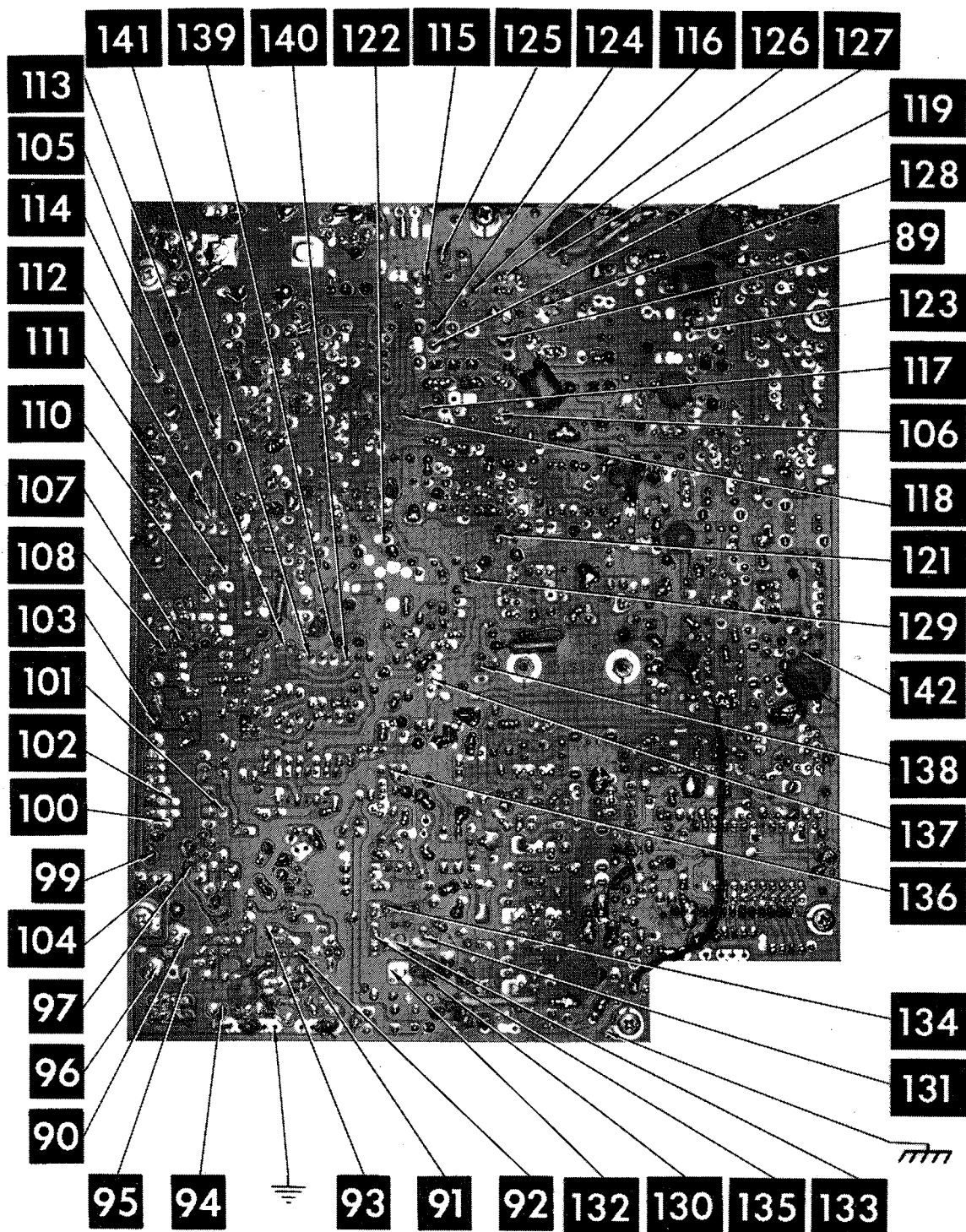


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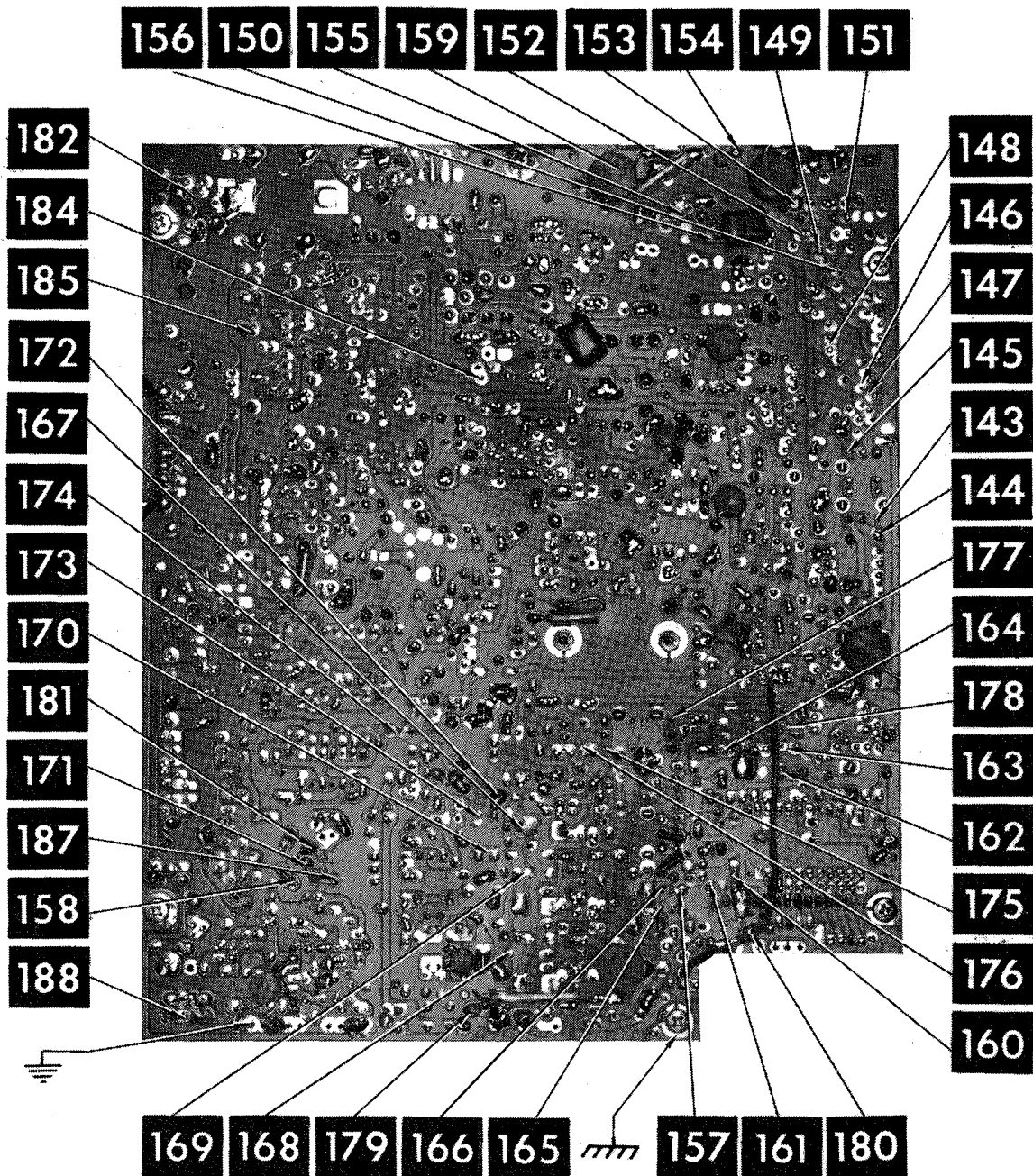
REALISTIC MODEL TRC-449

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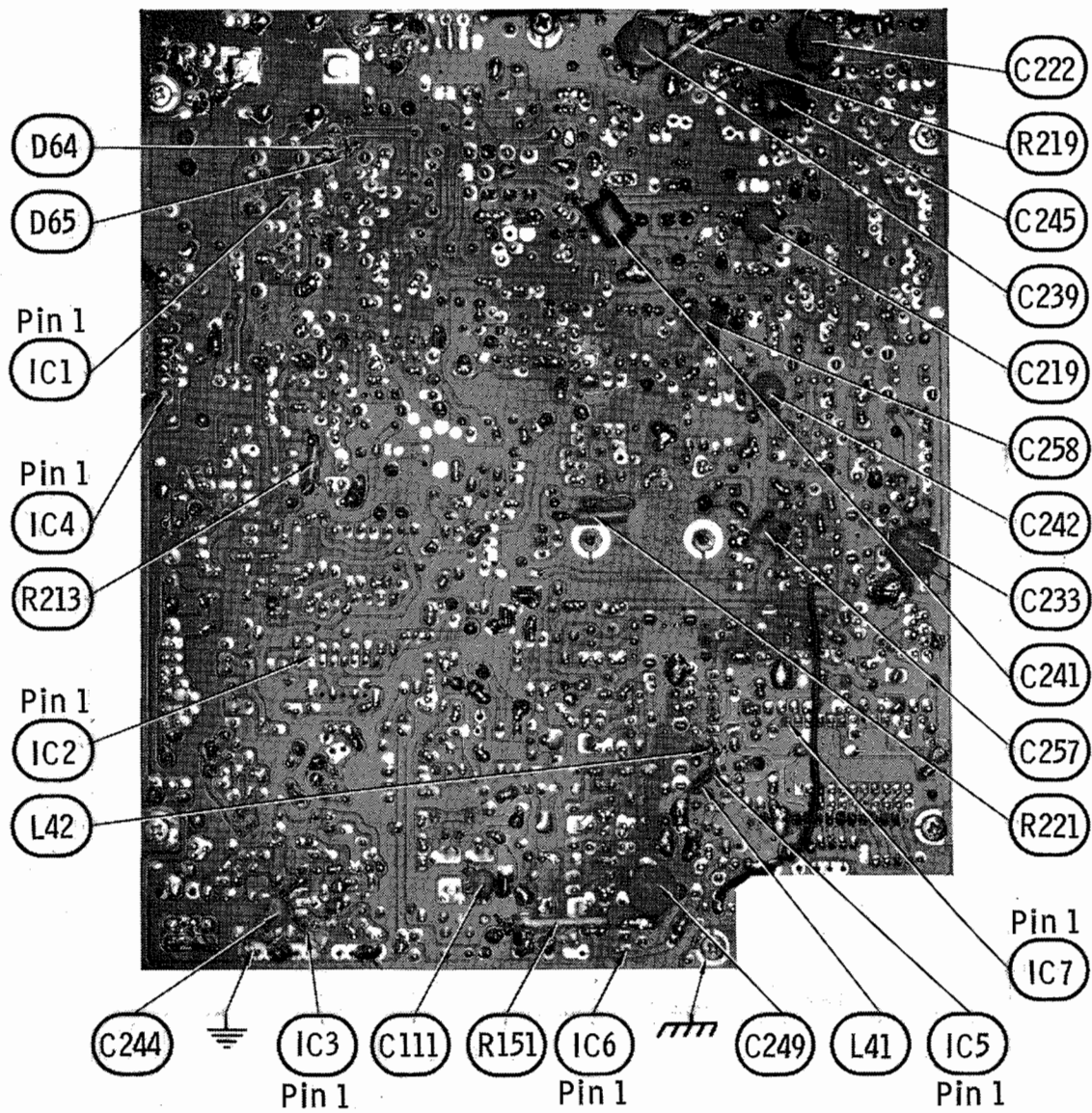


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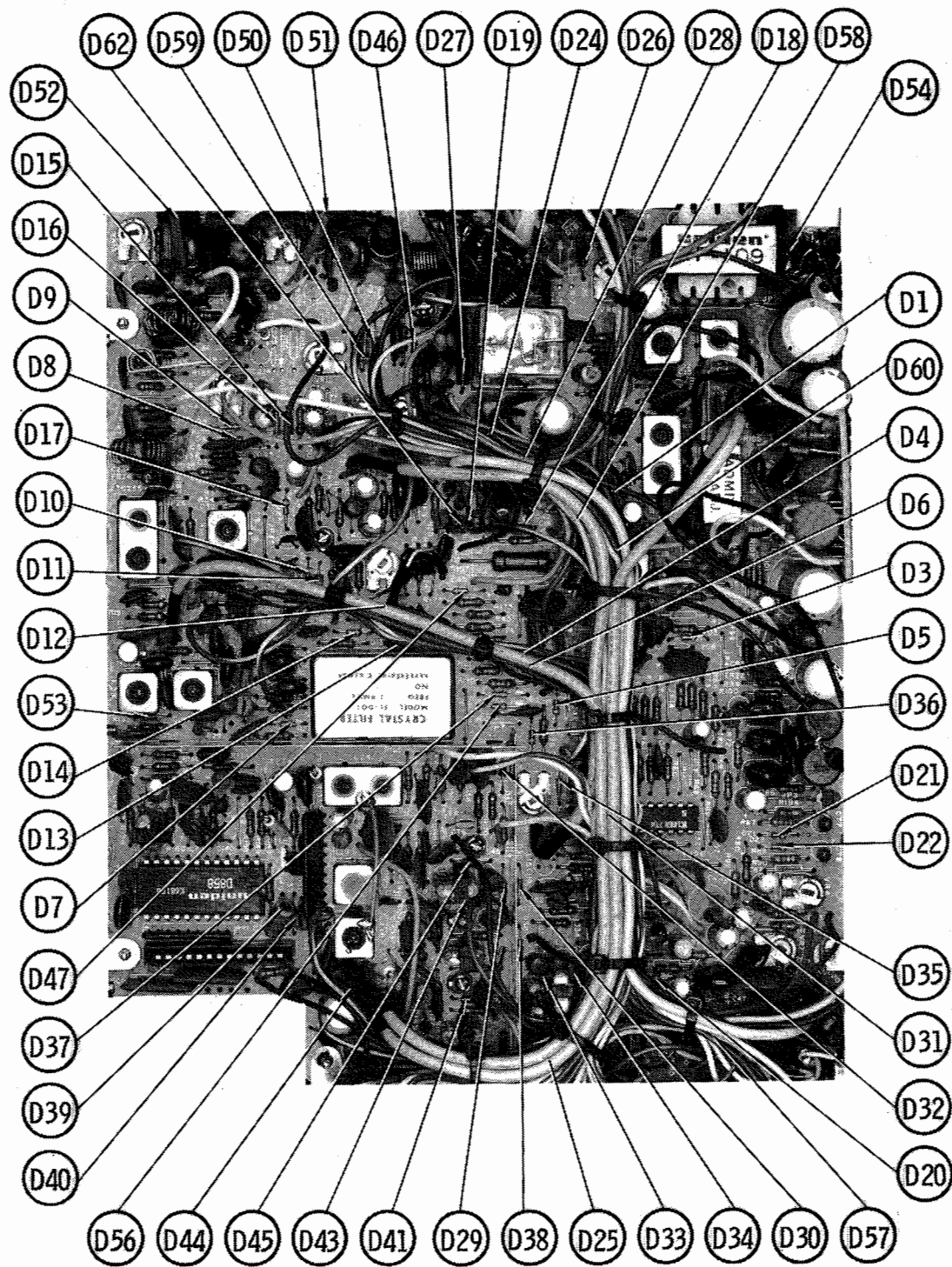
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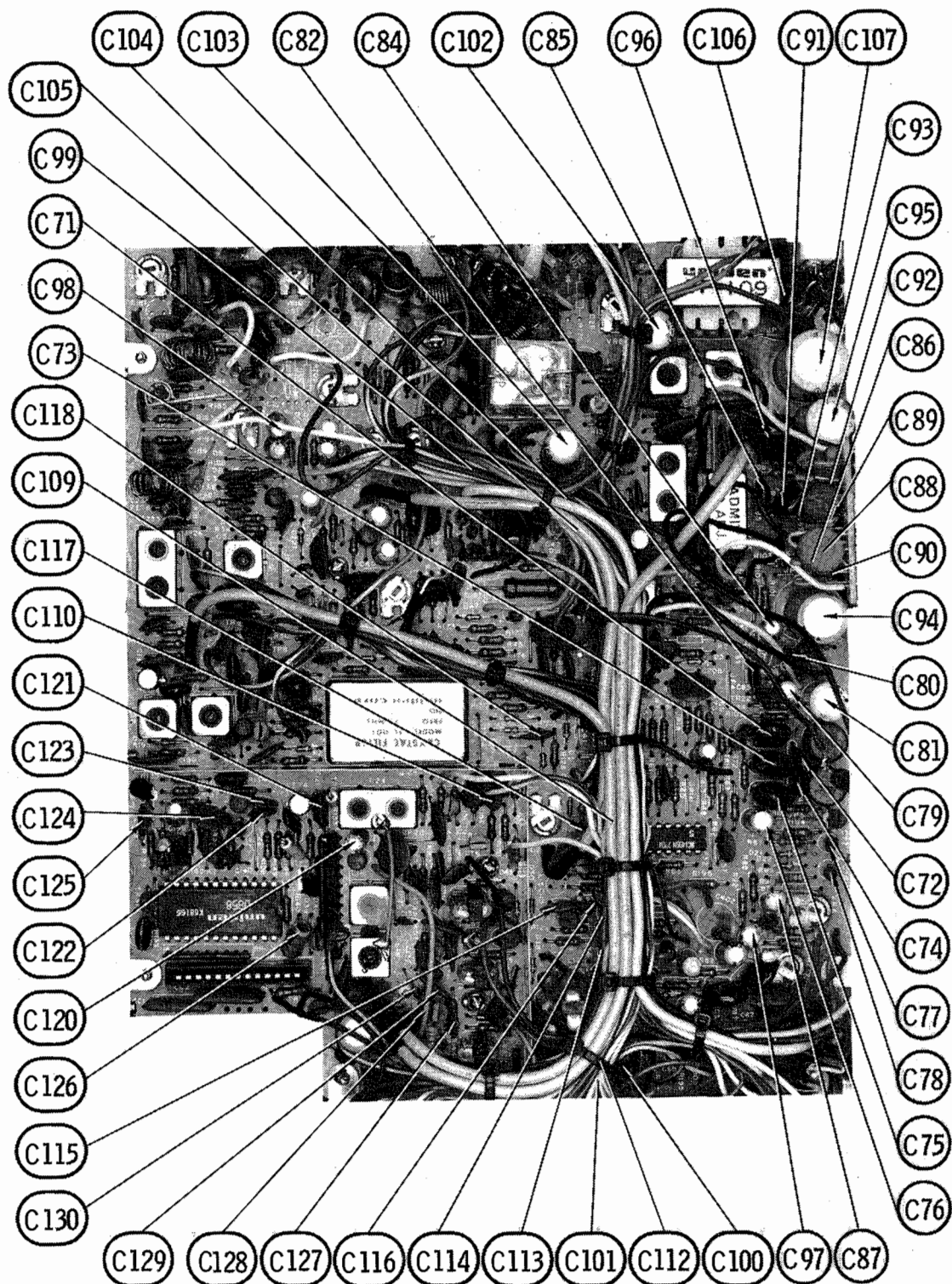
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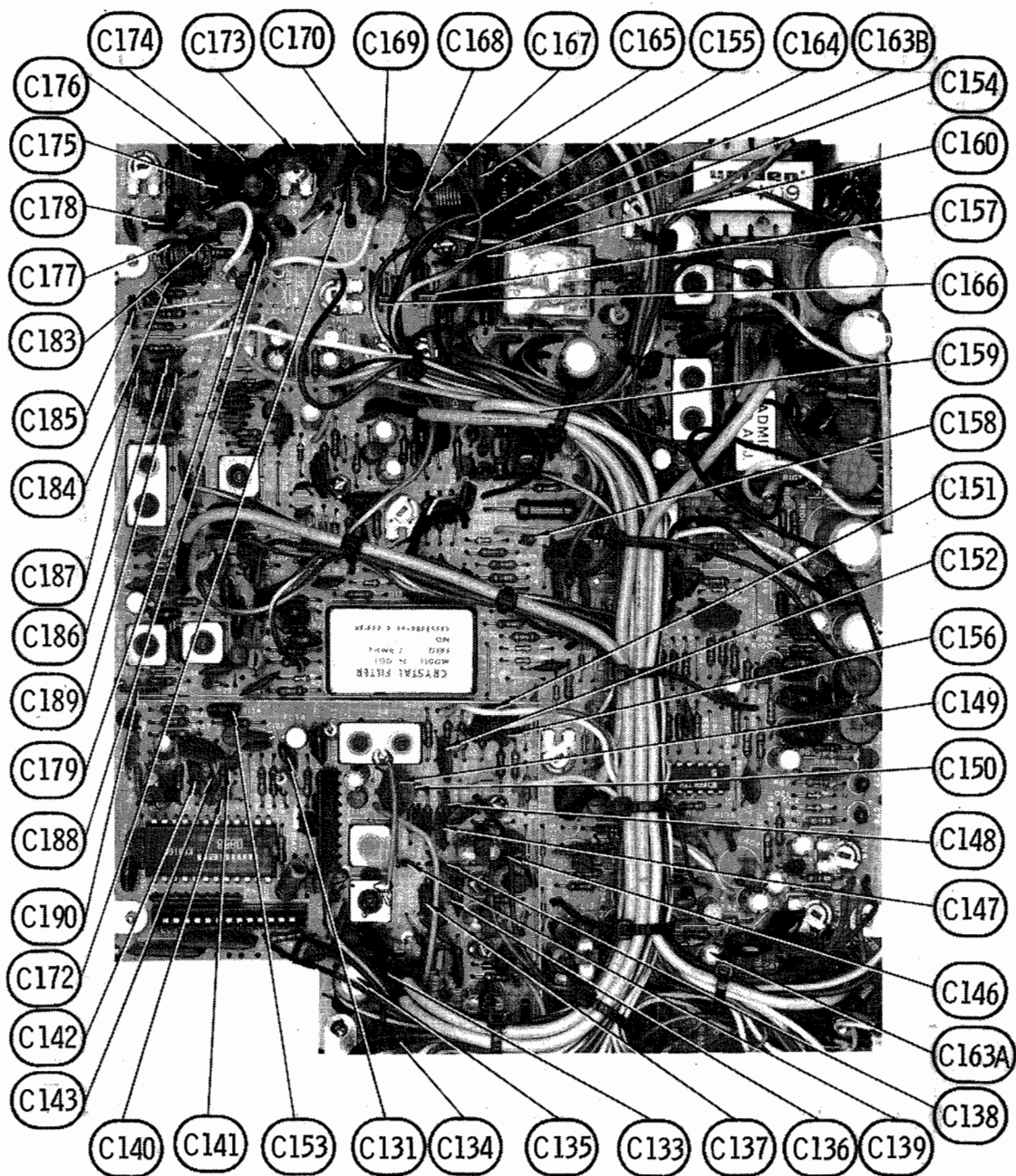
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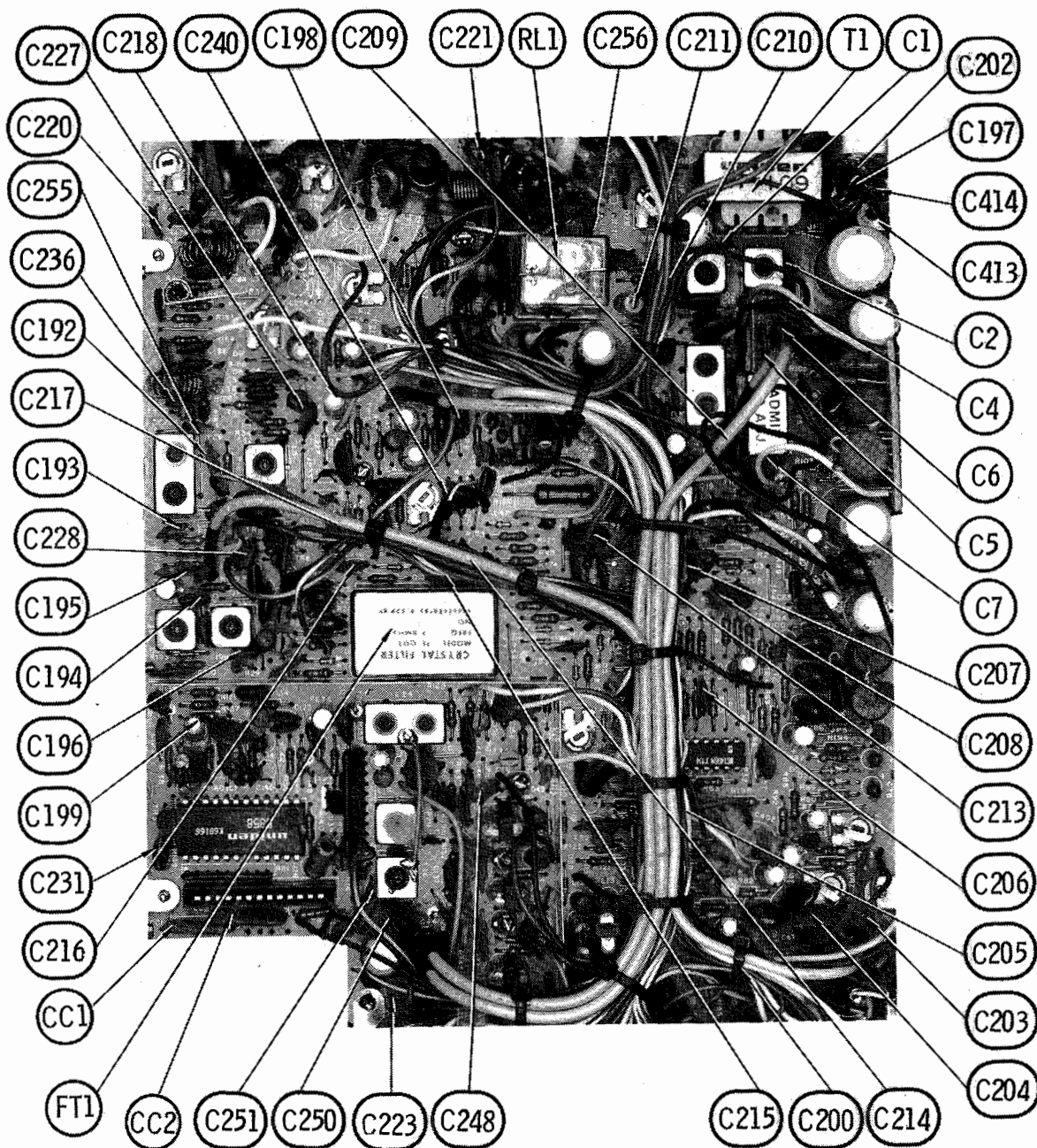
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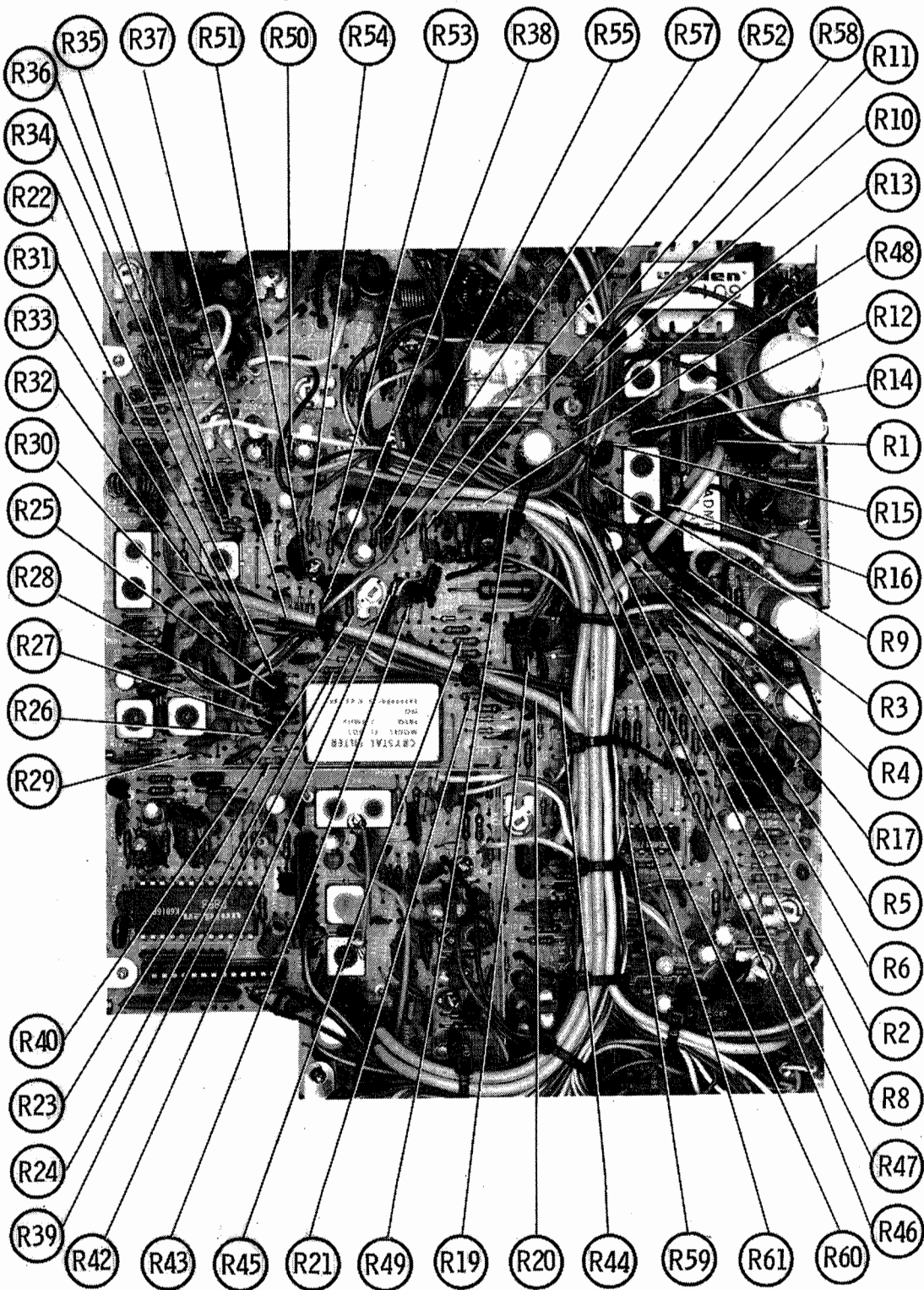
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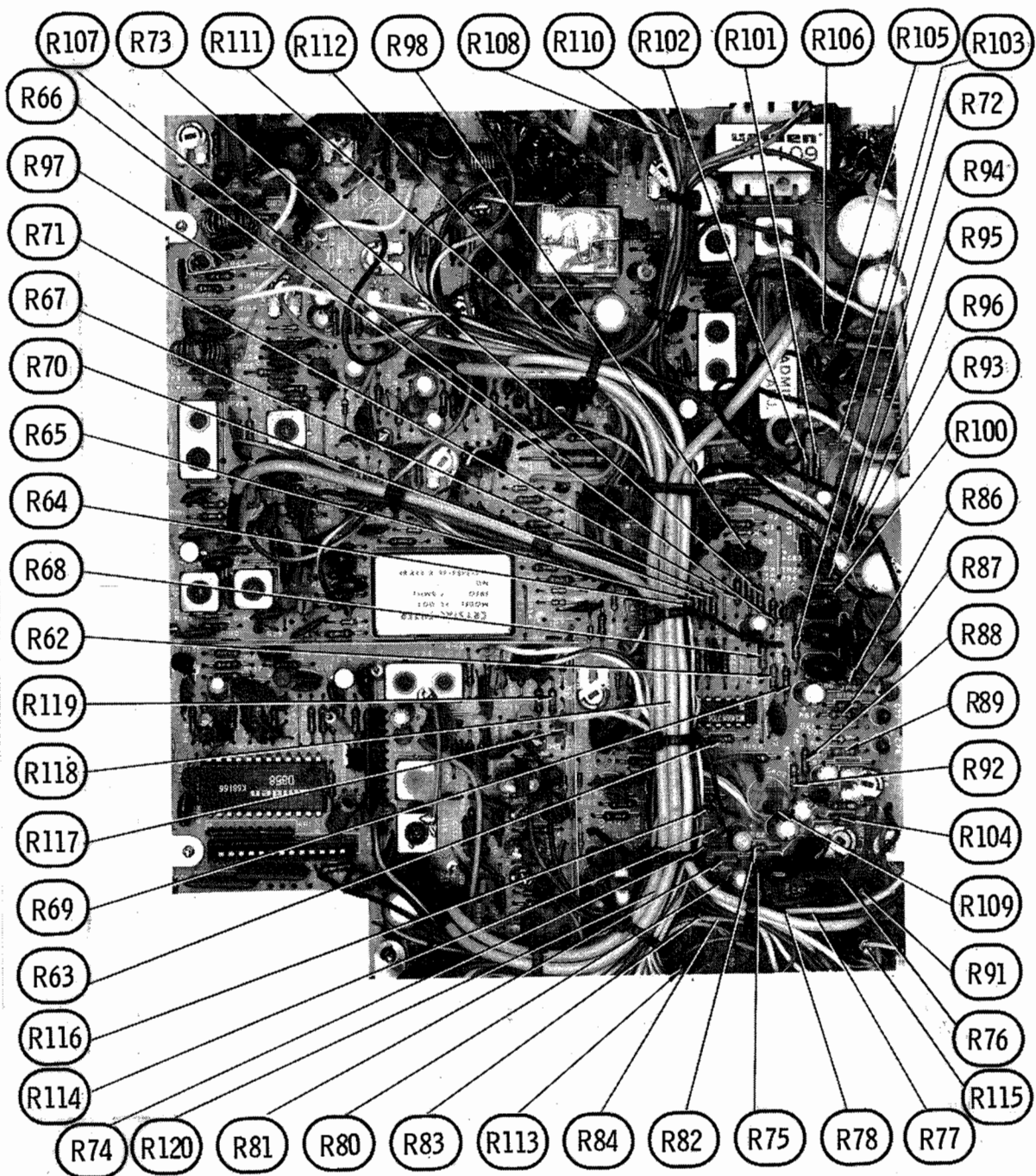
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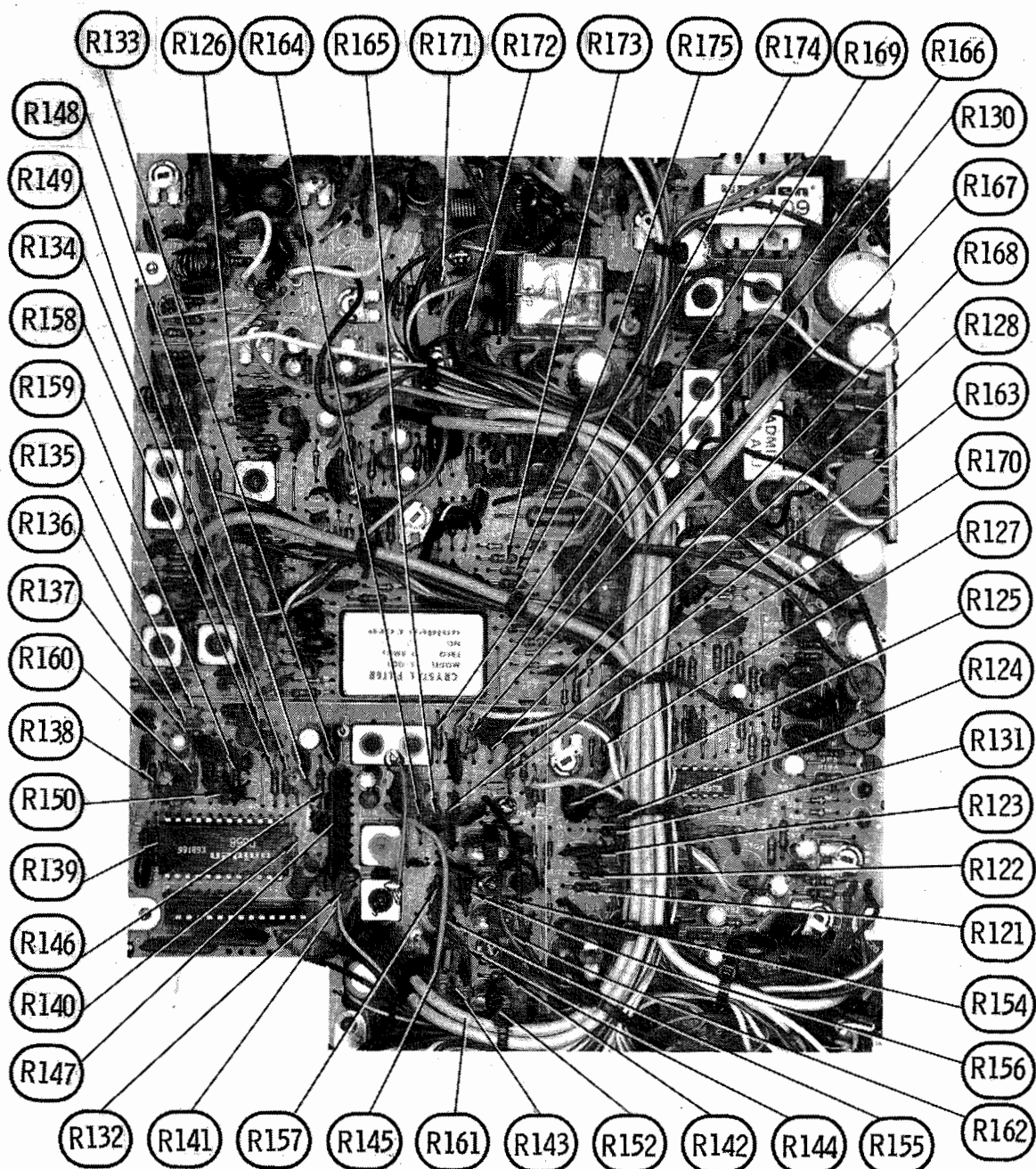


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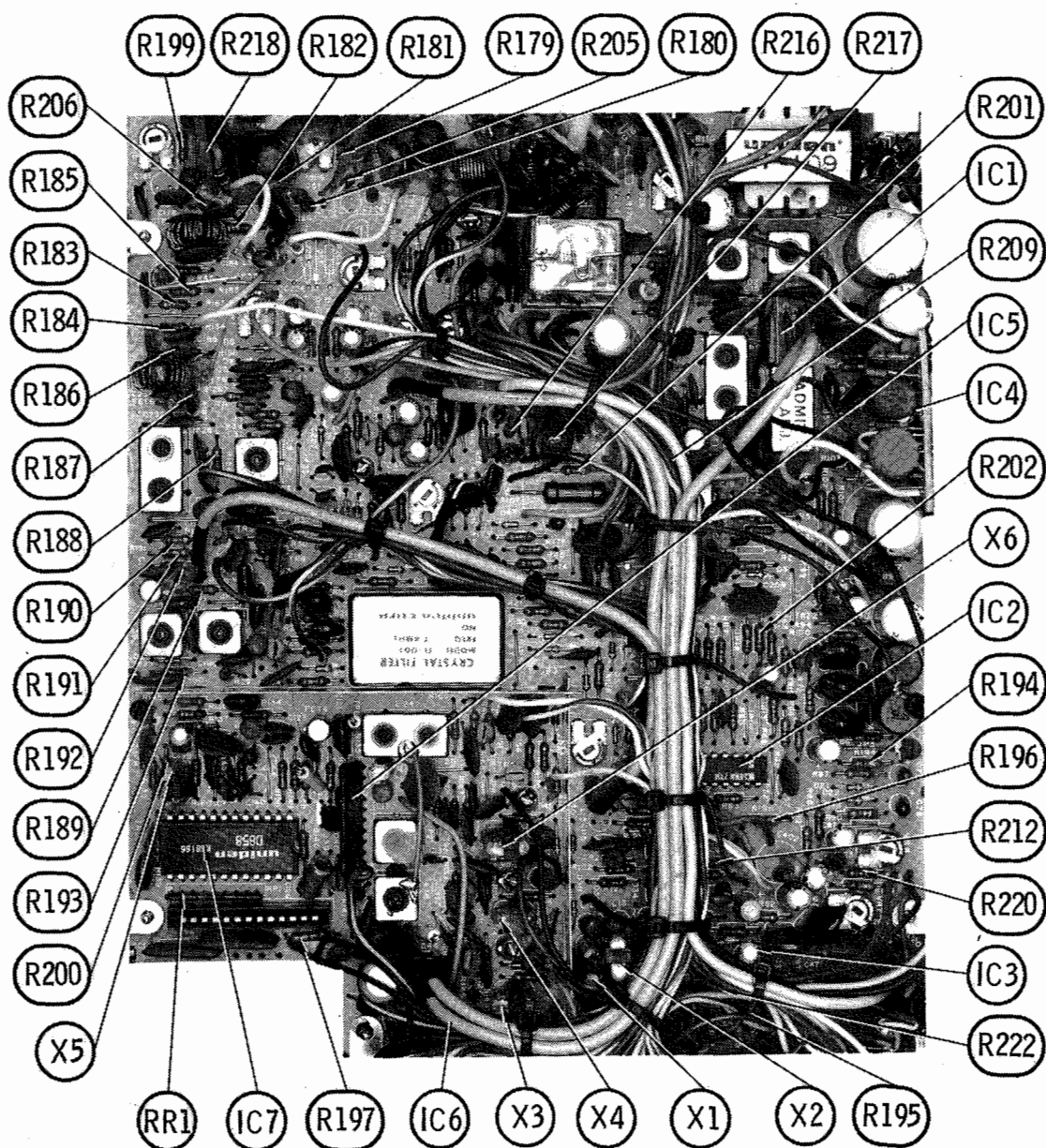


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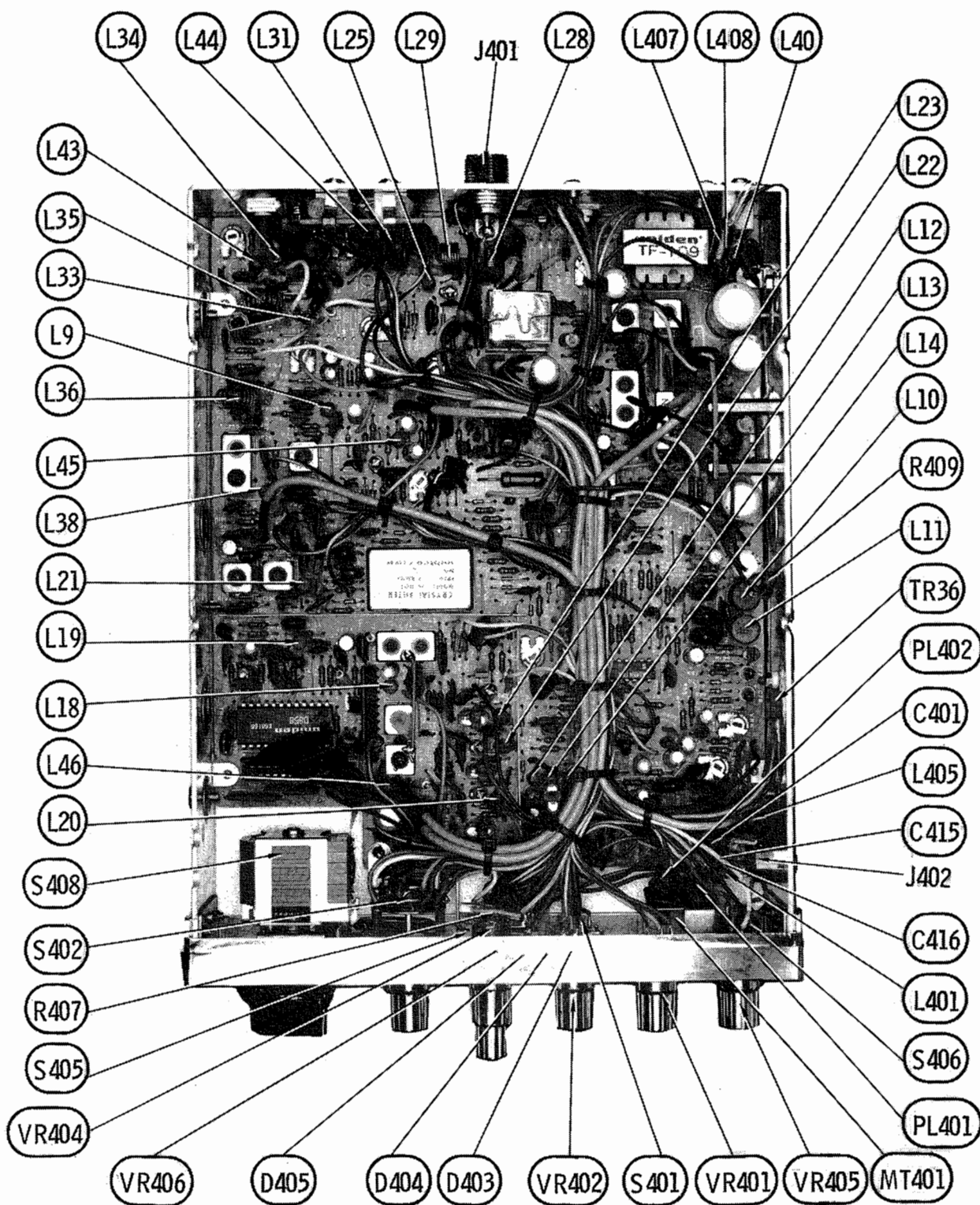
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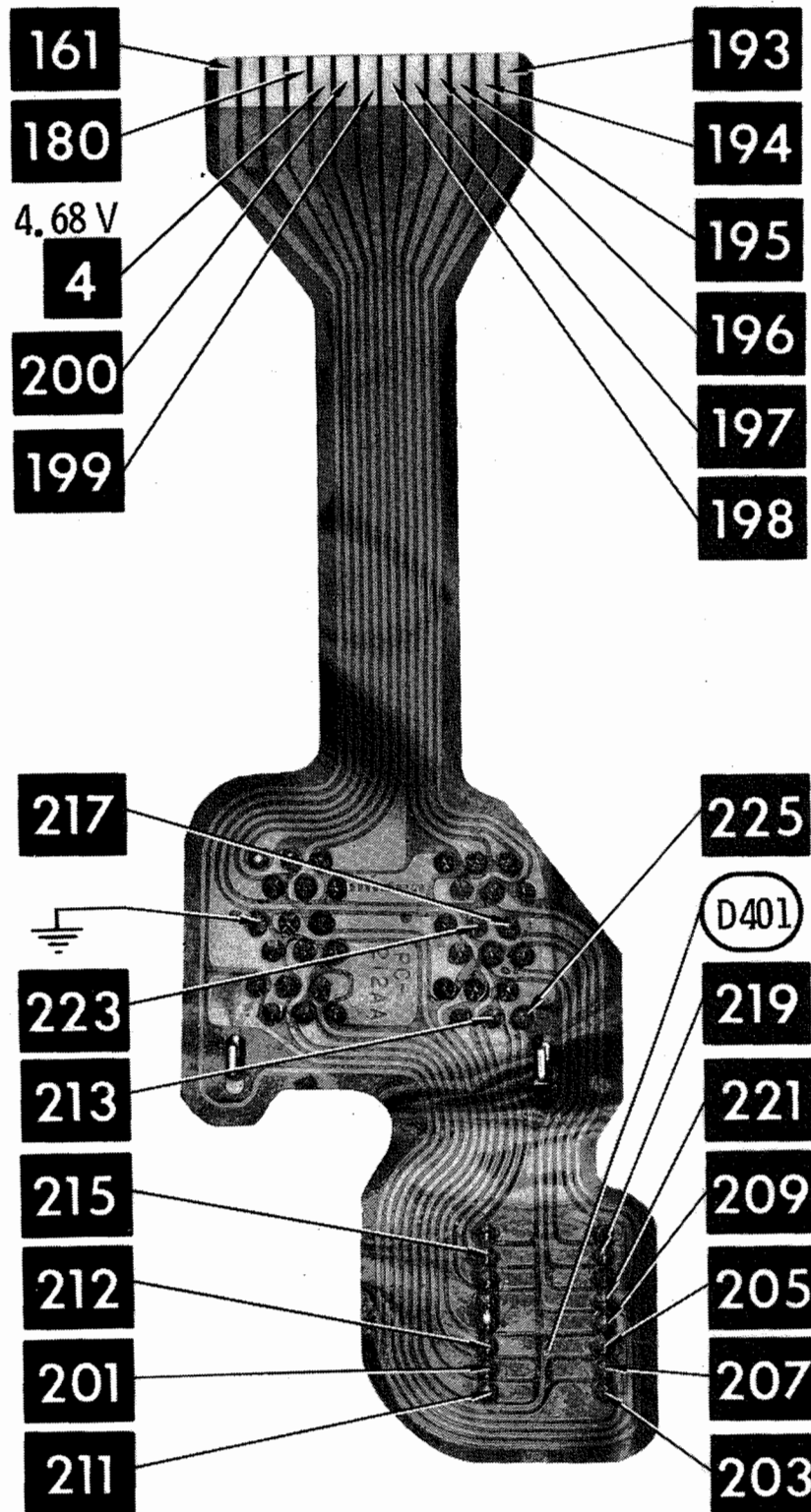
MAIN BOARD



MAIN BOARD

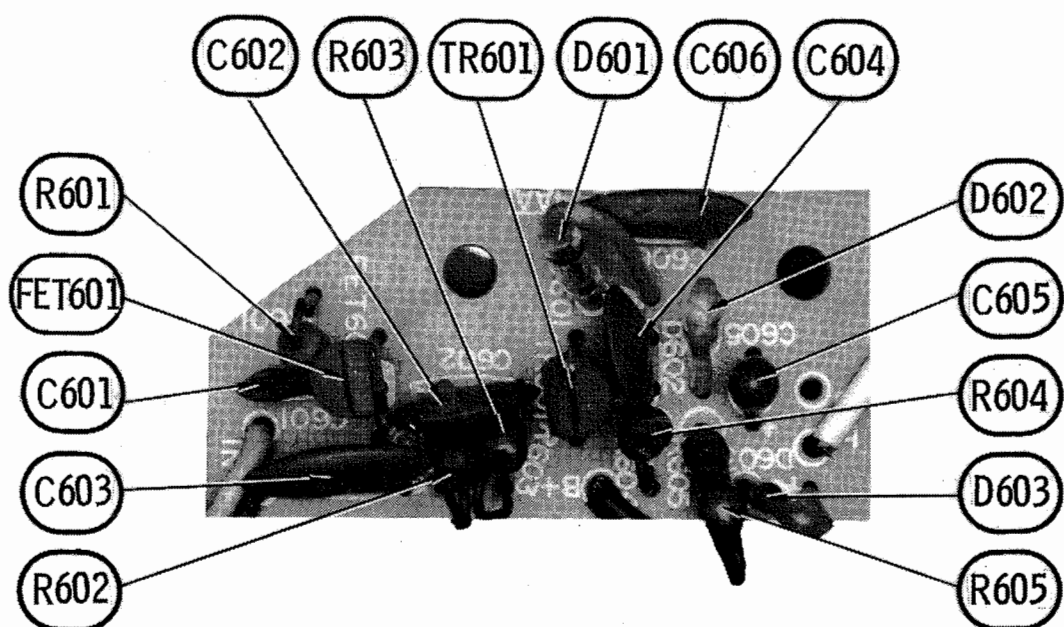
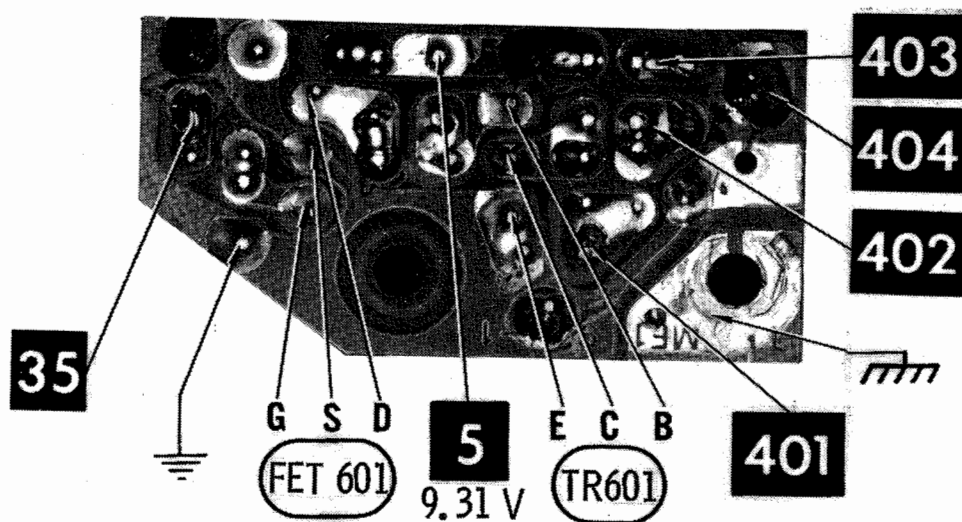


CHASSIS - BOTTOM

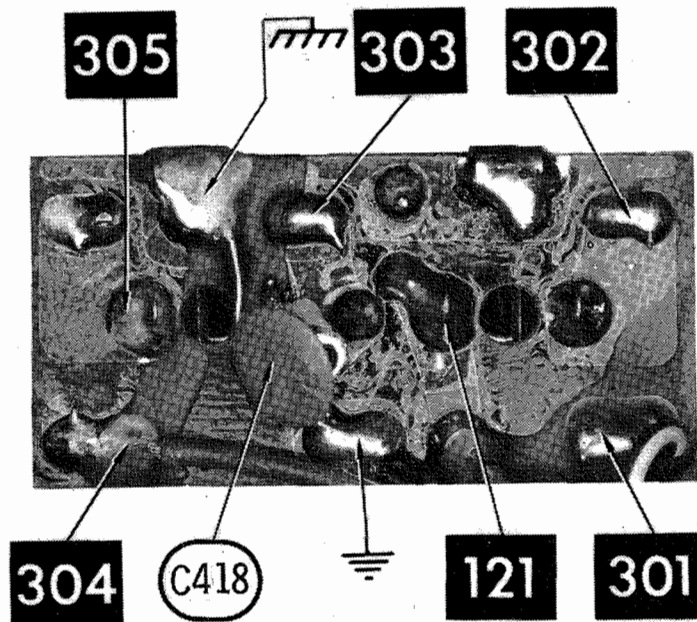


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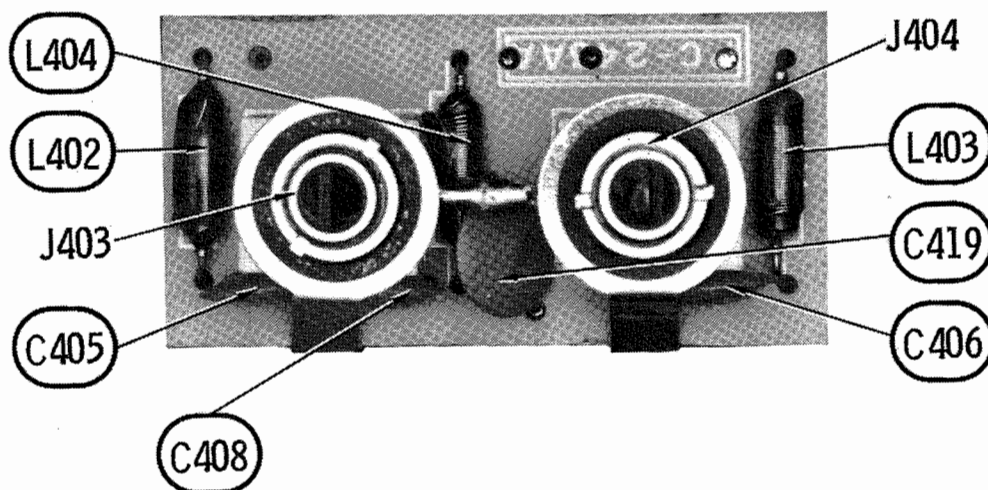
CH. READOUT BOARD



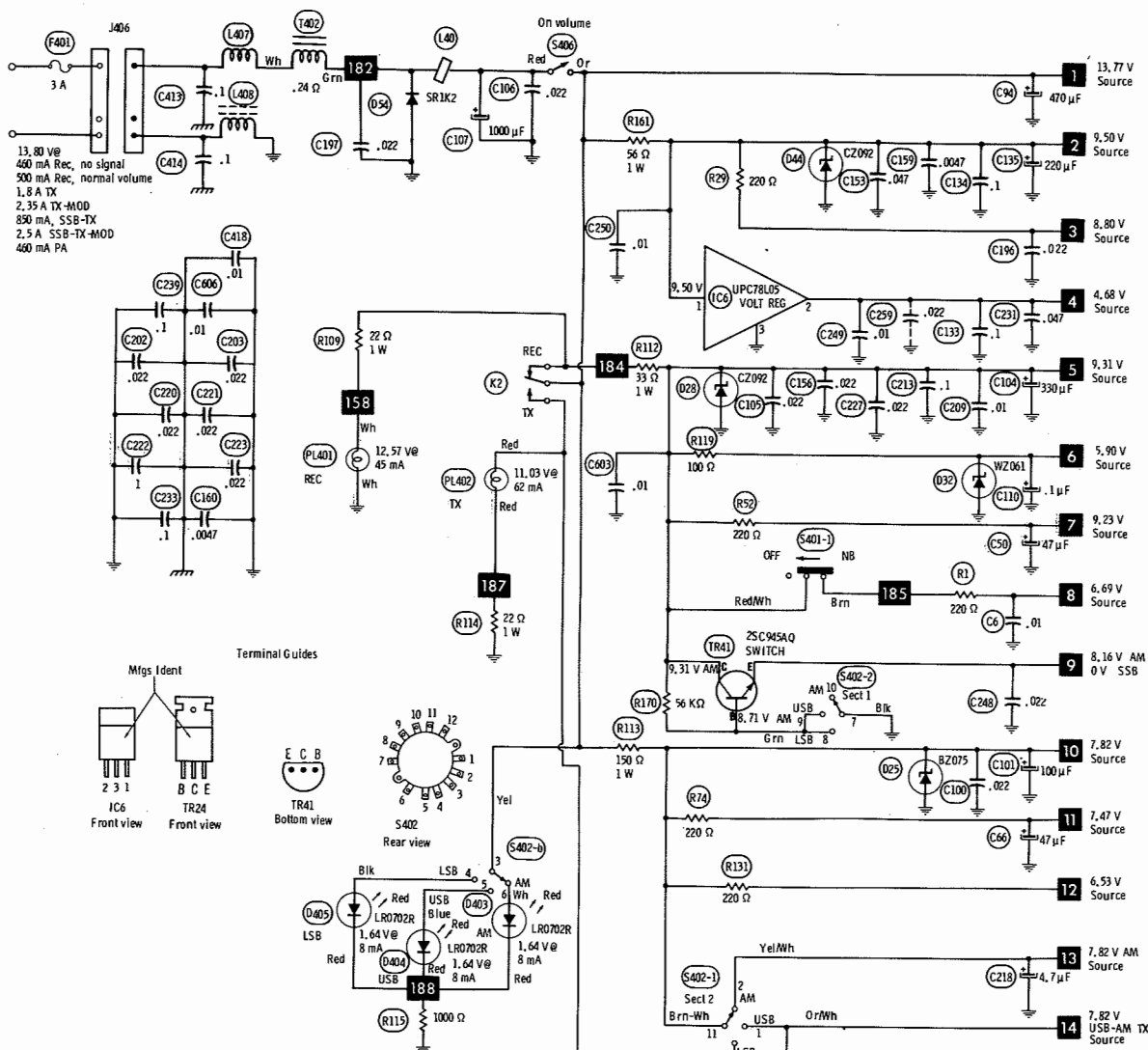
NOISE BLANKER BOARD



REALISTIC MODEL TRC-449



JACK 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.

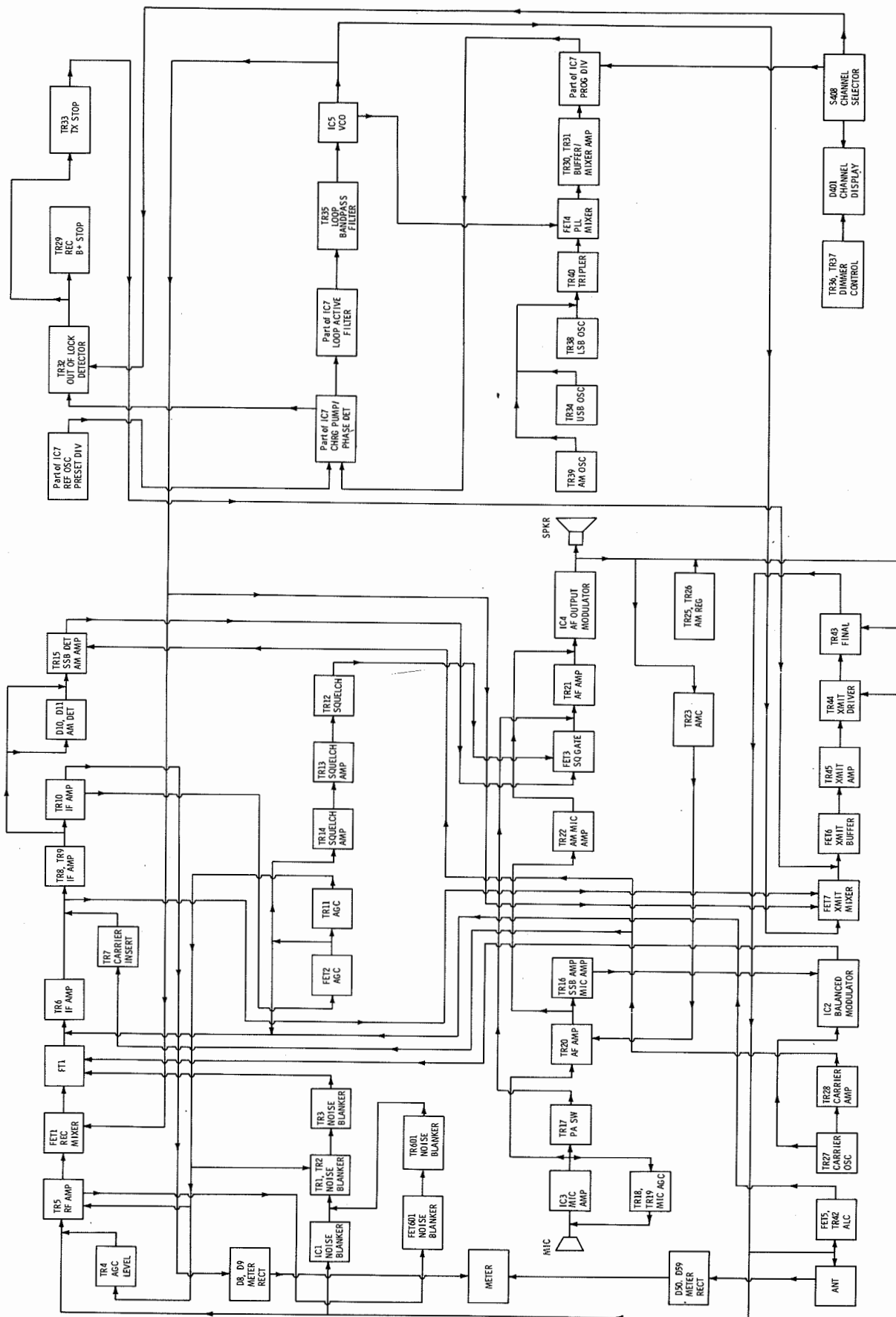
Value in () used in some versions.

A PHOTOFAC STANDARD NOTATION SCHEMATIC

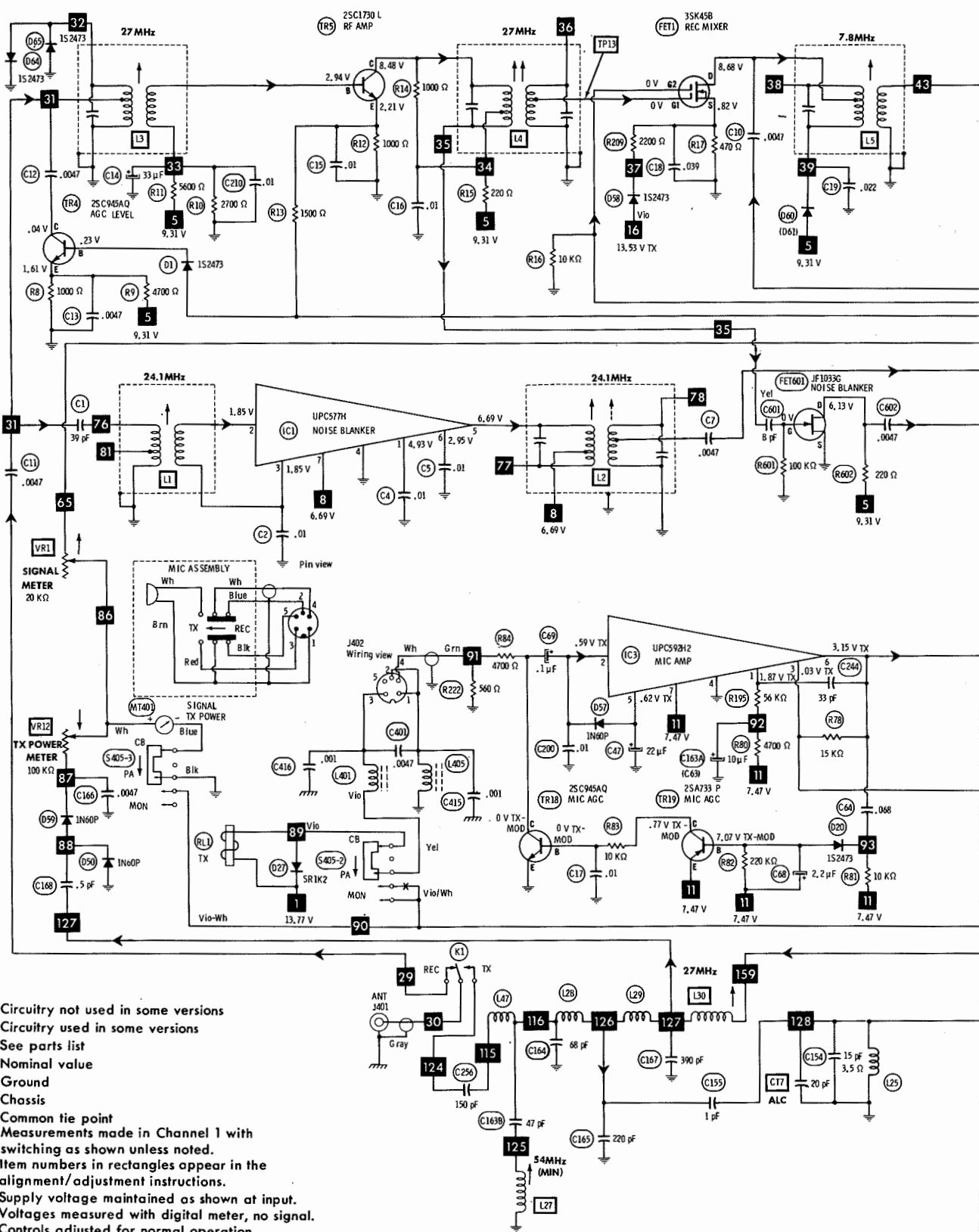
WITH **CIRCUITACE**

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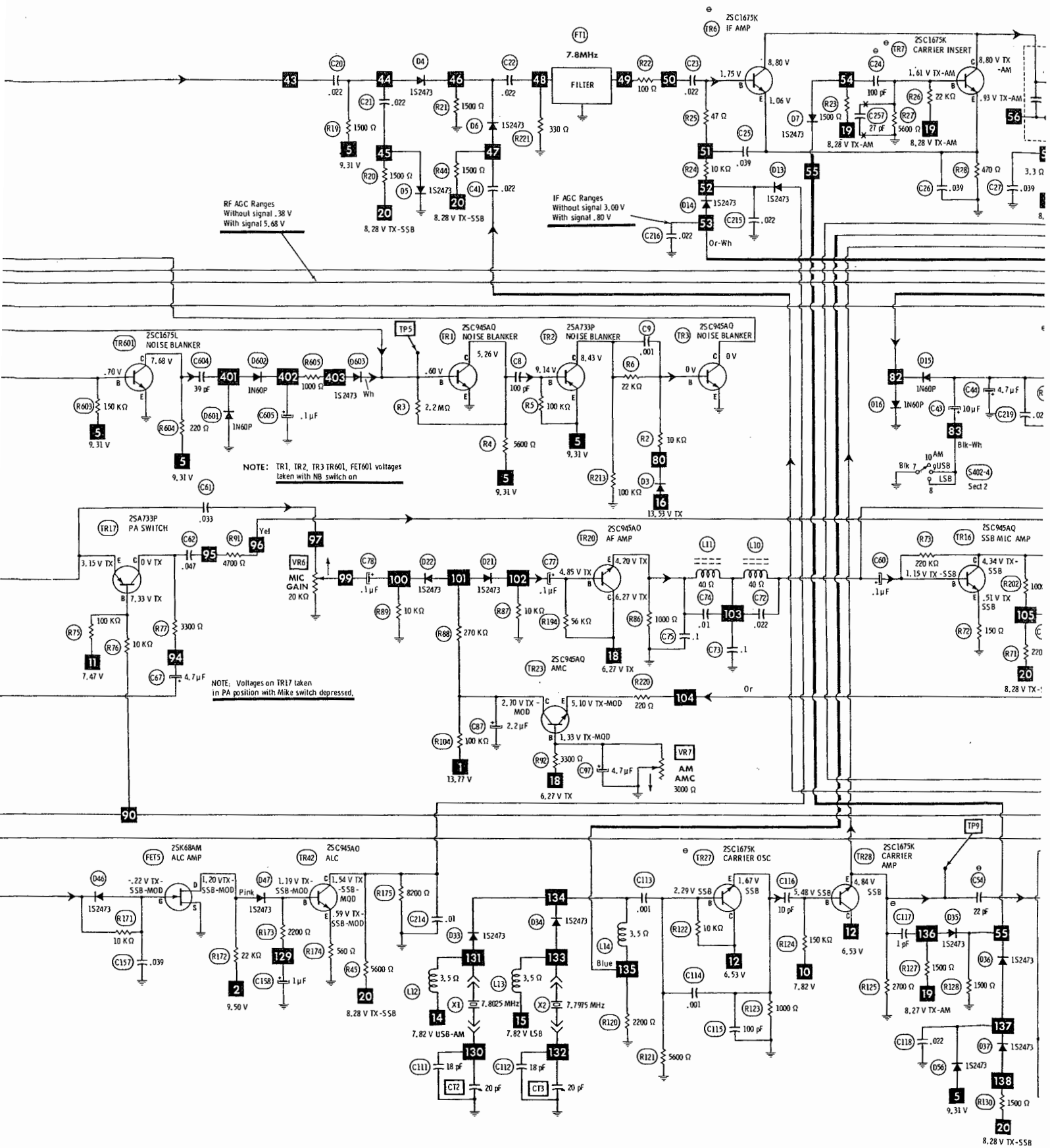
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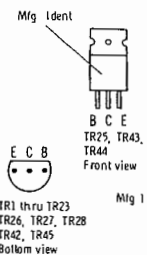


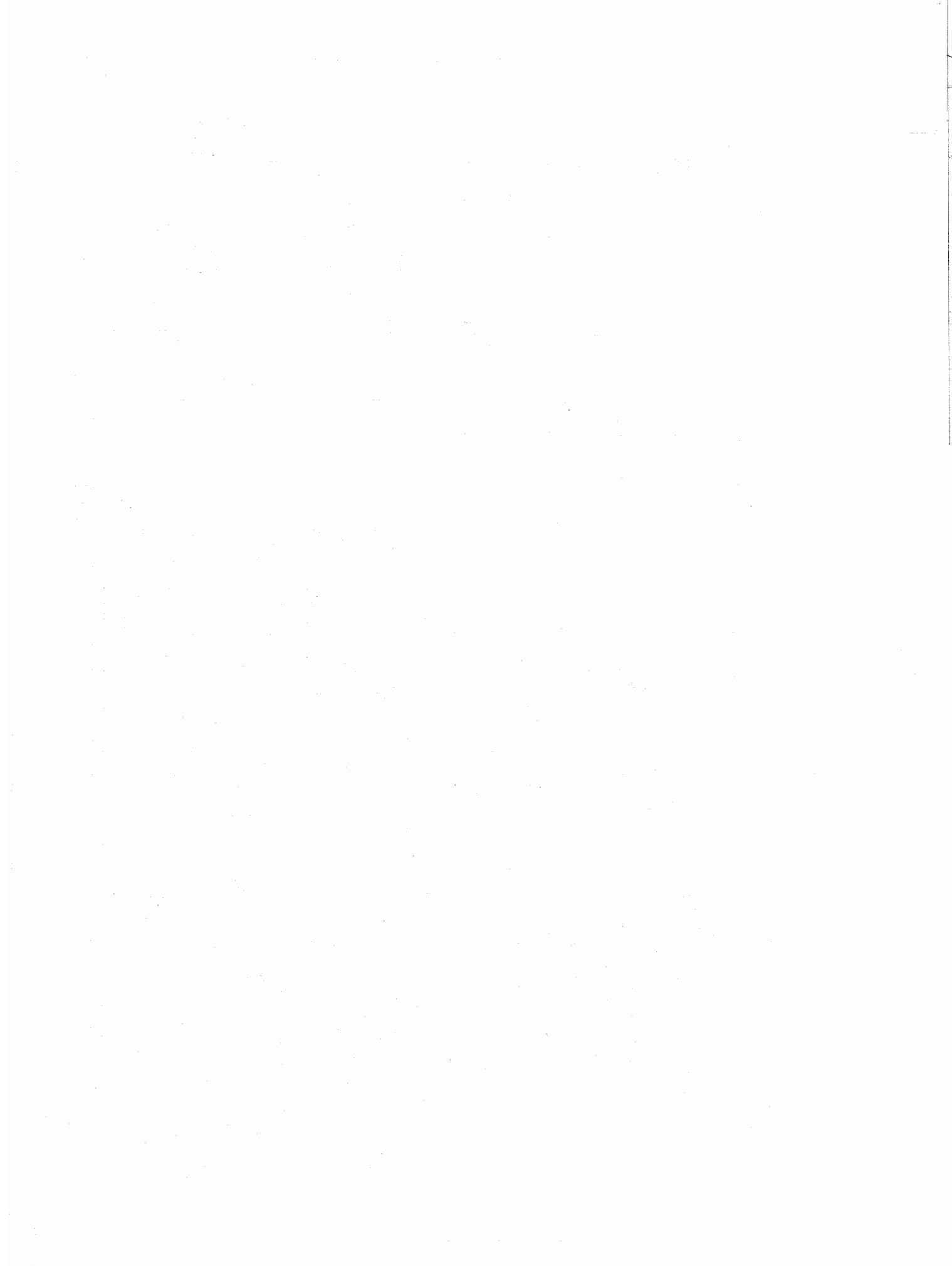
BLOCK DIAGRAM

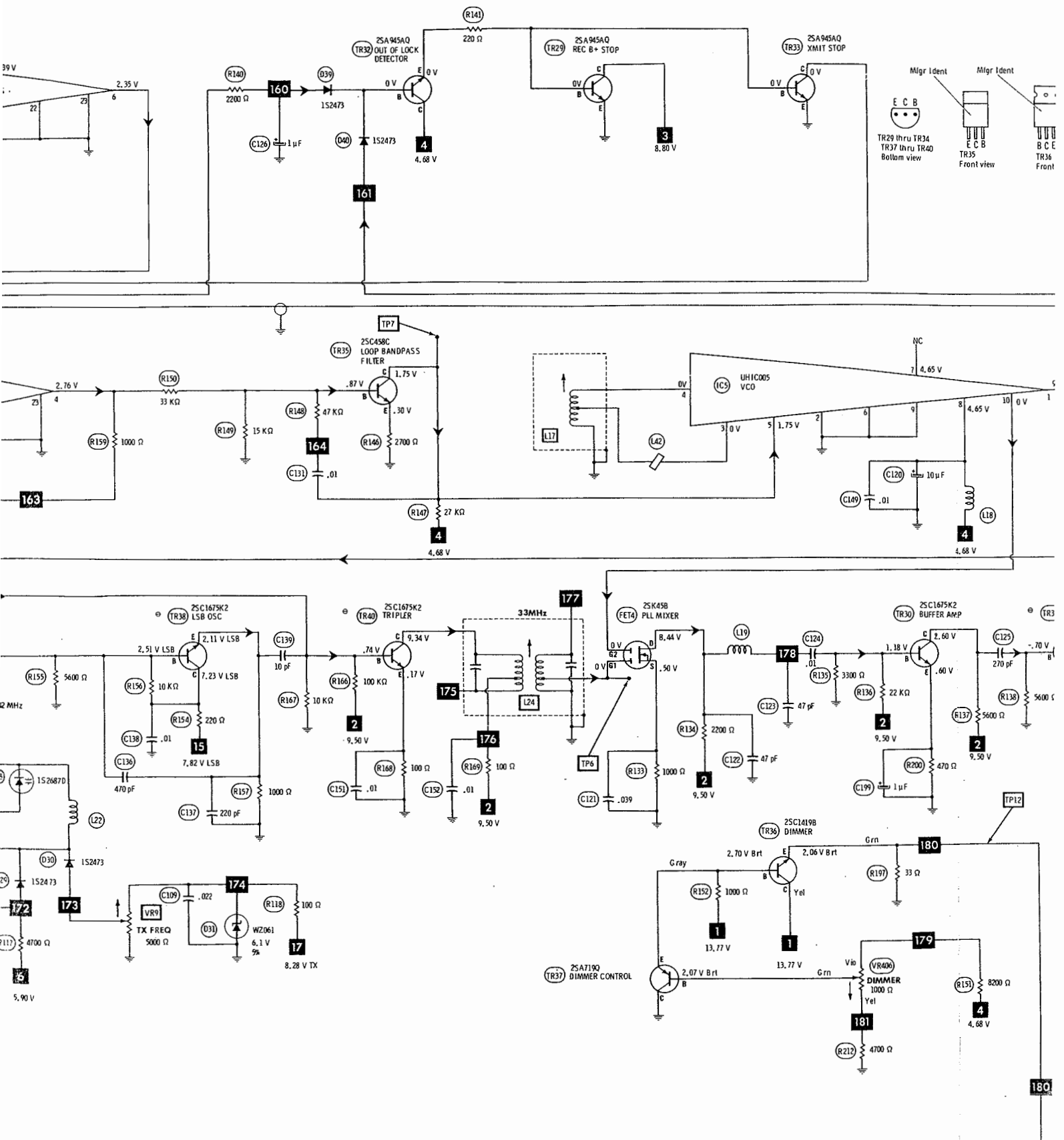


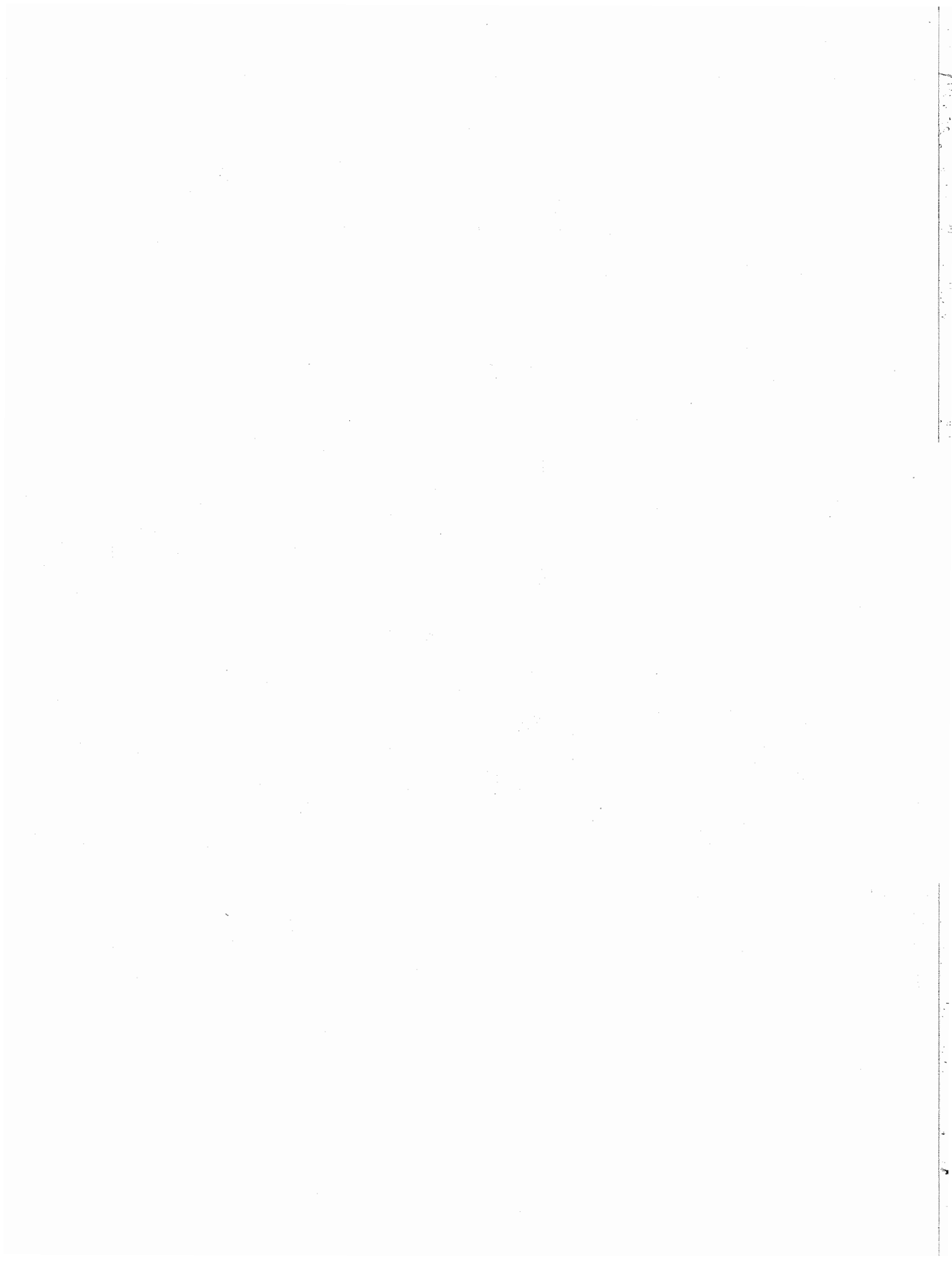
* Circuitry not used in some versions
 --- Circuitry used in some versions
 e See parts list
 * Nominal value
 G Ground
 Chassis
 Common tie point
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 Value in () used in some versions.



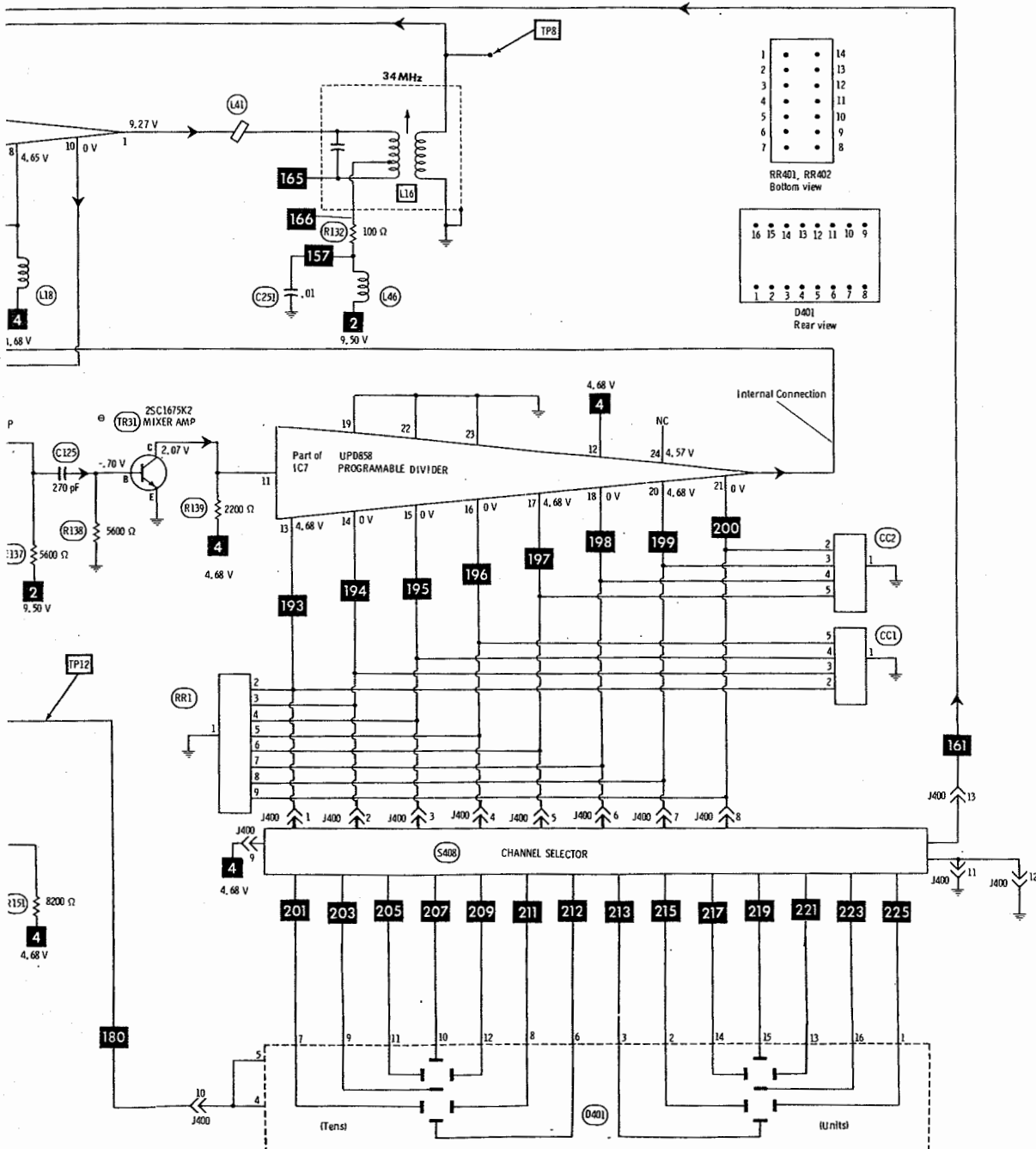
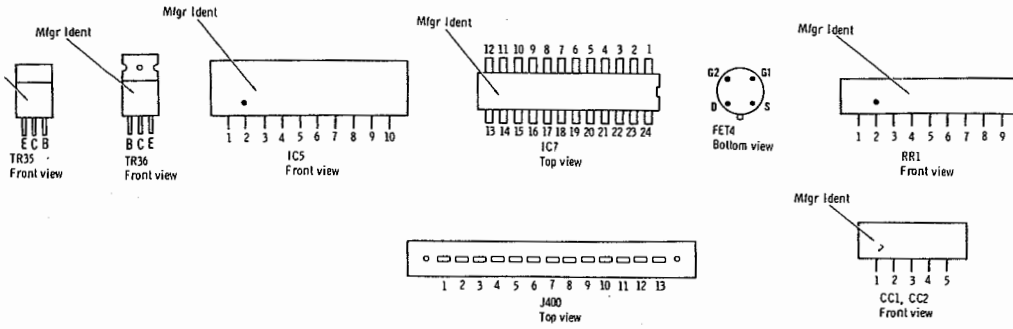








Terminal Guides



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	(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')

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA									
			GENERAL ELECTRIC PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
01	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
03	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
04	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
05	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
06	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
07	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
08	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
09	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
010	1N60P		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
011	1N60P		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
012	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
013	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
014	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
015	1N60P		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
016	1N60P		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
017	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
018	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
	1S2473K		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
019	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
	1S2473K		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
020	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
021	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
022	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
024	CZ092	DX-0087	GEZD-9.1	ZB9.1A	HEPZ0412	REN 139	SK3060	RT-240	ECG139	1N4739A	WEP1109	103-272
025	BZ075	DX-0748	GEZD-7.5	ZB7.5B		REN 138		RT-239	ECG138A	1N4737A	WEP1107	ZEN-505
026	Y2037	ODAY087002	GEZD-3.9			REN 5067	SK3331		ECG5067A		WEP1100	
027	SR1K-2	DX-0475	GE-504A	PTC201	HEPR0052	REN 116	SK3030	RT-213	ECG116	1N4004	WEP156	212-76
028	CZ092	DX-0087	GEZD-9.1	ZB9.1A	HEPZ0412	REN 139	SK3060	RT-240	ECG139	1N4739A	WEP1109	103-272
029	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
030	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
031	WZ-061	DX-0530	GEZD-6.2	ZM6.2B		REN 137		RT-237	ECG5013	1N4735A	WEP1414	
032	WZ-061	DX-0530	GEZD-6.2	ZM6.2B		REN 137		RT-237	ECG5013	1N4735A	WEP1414	
033	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
034	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
035	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
036	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
037	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
038	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
039	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
040	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
041	1S2687D	DX-0749			HEPR2502	REN 612			ECG612			ZEN-452
043	1S2687D	DX-0749			HEPR2502	REN 612			ECG612			ZEN-452
044	CZ-092	DX-0087	GEZD-9.1	ZB9.1A	HEPZ0412	REN 139	SK3060	RT-240	ECG139	1N4739A	WEP1109	103-272
045	1S2687D	DX-0749			HEPR2502	REN 612			ECG612			ZEN-452
046	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
047	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
050	1N60P		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
051	MV1Y	DX-0750				REN 601	SK3463		ECG601			
052	MV1Y	DX-0750				REN 601	SK3463		ECG601			
053	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
054	SR1K-2	DX-0475	GE-504A	PTC201	HEPR0052	REN 116	SK3030	RT-213	ECG116	1N4004	WEP156	212-76
056	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
057	1N60P		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
058	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
059	1N60P		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
060	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
062	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
	1S2473K		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
064	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
	1S2473K		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
065	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
	1S2473K		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
066	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
	1S2473K		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
067	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
	1S2473K		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
068	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
	1S2473K		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
0601	1N60P		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
0602	1N60P		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
0603	1S2473		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925	
	1S2473K		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177		WEP1062	
FET1	3SK45B	DDCY104001	GE-FET-4	PTC182	HEPF0021	REN 222	SK3065	RT-181	ECG222		WEP905	121-826
FET2	JF10336		GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312			ZEN-123
	JF1033	DDCY202003	GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312			ZEN-123
	2SK198L	DDCY202003	GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312			ZEN-123
FET3	2SK68AM	DDCY009002	GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312			ZEN-123
	2SK68M	DDCY009002	GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312			ZEN-123
FET4	3SK45B		GE-FET-4	PTC182	HEPF0021	REN 222	SK3065	RT-181	ECG222		WEP905	121-826
	3SK45B-09	DDCY104003	GE-FET-4	PTC182	HEPF0021	REN 222	SK3065	RT-181	ECG222		WEP905	121-826
FET5	2SK68AM	DDCY009002	GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312			ZEN-123
	2SK68M	DDCY009002	GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312			ZEN-123

REALISTIC MODEL TRC-449

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA									
			GENERAL ELECTRIC PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
FET6	JF1033	DDCY202003	GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312			ZEN-123
FET7	2SK19BL	DDCY202003	GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312			ZEN-123
FET601	3SK45B	DDCY104001	GE-FET-4	PTC182	HEPF2007	REN 222	SK3065	RT-181	ECG222		WEP905	121-826
	JF1033G		GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312			ZEN-123
	JF1033	DDCY202002	GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312			ZEN-123
IC1	UPC577H		GE-FET-2			REN 1082	SK3461		ECG1082	UPC577H	WEP939	
IC2	MC1496N	MX-3389			HEPC6050G							
IC3	UPC592H2	MX-3370										
IC4	UPC1156H	MX-3372					SK3469					
IC5	UHC-005	MX-3379										
IC6	UPC78L05	MX-3198										
IC7	D858					REN 977	SK3462		ECG1195			
	UPD858C	MX-3399							ECG1194			
TR1	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR2	25A733P	DDBY003001	GE-48	PTC103*	HEPS0019*	REN 294	SK3138	RT-303	ECG294	25A733	WEP916	121-933
TR3	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR4	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR5	25C1730L	DDBY269001	GE-17*	PTC136*	HEPS0025*	REN 107	SK3018*	RT-107A	ECG316*		WEP535	121-888
TR6	25C1675K		GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675L	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675K2	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
TR7	25C1675K		GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675L	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675K2	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
TR8	25C1675K		GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675L	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675K2	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
TR9	25C1675K		GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675L	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675K2	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
TR10	25C1675K		GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675L	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675K2	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
TR11	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR12	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR13	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR14	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR15	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR16	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR17	25A733P	DDBY003001	GE-48	PTC103*	HEPS0019*	REN 294	SK3138	RT-303	ECG294	25A733	WEP916	121-933
TR18	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR19	25A733P	DDBY003001	GE-48	PTC103*	HEPS0019*	REN 294	SK3138	RT-303	ECG294	25A733	WEP916	121-933
TR20	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR21	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR22	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR23	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR24	25C1419B	DDBY278001 (13)	GE-66	PTC167	HEPS5027	REN 152	SK3054	RT-197	ECG152		WEP745	
TR25	25C1419B	DDBY278001 (13)	GE-66	PTC167	HEPS5027	REN 152	SK3054	RT-197	ECG152		WEP745	
TR26	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR27	25C1675K		GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675L	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675K2	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
TR28	25C1675L	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675K2	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
TR29	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR30	25C1675K	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675L	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
TR31	25C1675K2	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675L	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
TR32	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR33	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR34	25C1675K2	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675L	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
TR35	25C458C	DDBY273001	GE-210*	PTC121*	HEPS0009*	REN 123A*	SK3124	RT-187	ECG289	25C458	WEP458	121-Z9000*
TR36	25C1419B	DDBY278001	GE-66	PTC167	HEPS5027	REN 152	SK3054	RT-197	ECG152		WEP745	
TR37	25A719Q	DDBY011003	GE-269	PTC103*	HEPS0019*	REN 290	SK3114	RT-305	ECG290		WEP911	121-879
TR38	25C1675K2	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675L	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675K2	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
TR39	25C1675L	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675K2	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
TR40	25C1675L	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675K2	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
TR41	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR42	25C945AQ	DDBY224003	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	25C945	WEP1945	121-Z9000
TR43	25C1307	DDBY231002 (14)	GE-216	PTC186		REN 236	SK3197	RT-158	ECG236		WEP840	
TR44	25C1306	DDBY230001 (15)	GE-215	PTC186		REN 235	SK3197	RT-146	ECG235	25C1306	WEP785	
TR45	25C1973	DDBY272001	GE-335				SK3250		ECG315		WEP922	
TR601	25C1675L	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127
	25C1675K2	DDBY259001	GE-213	PTC139*	HEPS0025*	REN 123A*	SK3124	RT-308	ECG229*		WEP956*	ZEN-127

* Lead configuration may vary from original.

(13) 20 WATT @ 2.0 AMP

(14) 12 WATT @ 3.0 AMP

(15) 25 WATT @ 8.0 AMP

PARTS LIST AND DESCRIPTION (CONTINUED)

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

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C14	33 10V	CELZ113300	PC30-25	VTT33B10	QV1-61	EV-1125
C35	1 50V	CELZ811090	PC1-50	VTT1A50	QV1-11	EV-1615
C39	.1 16V	CAAZ311086		TDC104M050EL	QDT1-2	SD50-R109
C42	10 16V	CELZ311000	PC10-25	VTT10B25	QV1-41	EV-1222
C43	10 16V	CELZ311000	PC10-25	VTT10B25	QV1-41	EV-1222
C44	4.7 25V	CELZ514790	PC5-50	VTT4R7B50	QV1-27	EV-1319
C47	22 16V	CELZ312200	PC25-25	VTT22B16	QV1-55	EV-1224
C49	47 10V	CELZ114700	PC50-16	VTT47D16	QV1-73	EV-1226
C50	47 10V	CELZ114700	PC50-16	VTT47D16	QV1-73	EV-1226
C52	.1 16V	CAAZ311086		TDC104M050EL	QDT1-2	SD50-R109
C55	2.2 25V	CELZ512290	PC2-100	VTT2R2A50	QV1-19	EV-1517
C58	1 50V	CELZ811090	PC1-50	VTT1A50	QV1-11	EV-1615
C59	47 10V	CELZ114700	PC50-16	VTT47D16	QV1-73	EV-1226
C60	.1 16V	CAAZ311086	WBR500-16	TC605B		TVA-1103
C66	47 10V	CELZ114700	PC50-16	VTT47D16	QV1-73	EV-1226
C67	4.7 25V	CELZ514790	PC5-50	VTT4R7B50	QV1-27	EV-1319
C68	2.2 25V	CELZ512290	PC2-100	VTT2R2A50	QV1-19	EV-1517
C69	.1 16V	CAAZ311086		TDC104M050EL	QDT1-2	SD50-R109
C76	47 10V	CELZ114700	PC50-16	VTT47D16	QV1-73	EV-1226
C77	.1 16V	CAAZ311086		TDC104M050EL	QDT1-2	SD50-R109
C78	.1 16V	CAAZ311086		TDC104M050EL	QDT1-2	SD50-R109
C79	.47 50V	CELZ814780	PC1-50	VTT47A63	QV1-3	EV-1610
C81	220 16V	CELZ312210	PC250-25	VTT220H16	QV1-117	EV-1240
C84	1 50V	CELZ811090	PC1-50	VTT1A50	QV1-11	EV-1615
C87	2.2 25V	CELZ512290	PC2-100	VTT2R2A50	QV1-19	EV-1517
C88	4.7 10V	CSEZ114796		TDC475M010EL	QDT1-48	SD10-4R79
C89	33 16V	CELZ313300	PC30-25	VTT33D25	QV1-63	EV-1325
C92	33 6V	CELZ313300	PC30-25	VTT33B10	QV1-61	EV-1125
C94	470 16V	CELZ314710	PC500-16	VTT470K16	QV1-151	EV-1250
C95	470 16V	CELZ314710	PC500-16	VTT470K16	QV1-151	EV-1250
C97	4.7 25V	CELZ514790	PC5-50	VTT4R7B50	QV1-27	EV-1319
C98	1 50V	CELZ811090	PC1-50	VTT1A50	QV1-11	EV-1615
C99	10 16V	CELZ311000	PC10-25	VTT10B25	QV1-41	EV-1222
C101	100 10V	CELZ111010	PC100-10	VTT100E10	QV1-93	EV-1130
C102	220 10V	CELZ112210	PC250-10	VTT220F10	QV1-115	EV-1140
C103	470 10V	CELZ114710	PC500-16	VTT470K16	QV1-149	EV-1150
C104	330 10V	CELZ113310	WBR300-35	VTT330G10	QV1-131	EV-1145
C107	1000 16V	CELZ311020	PC1000-16	VTT1000L16	QV1-183	EV-1260
C110	.1 16V	CAAZ311086		TDC104M050EL	QDT1-2	SD50-R109
C120	10 16V	CELZ311000	PC10-25	VTT10B25	QV1-41	EV-1222
C126	1 50V	CELZ811090	PC1-50	VTT1A50	QV1-11	EV-1615
C135	220 10V	CELZ112210	PC250-10	VTT220F10	QV1-115	EV-1140
C140	10 6.3V	CSEZ901006		TDC106M025FL	QDT1-64	SD25-109
C141	10 6.3V	CSEZ901006		TDC106M025FL	QDT1-64	SD25-109
C158	1 25V	CSEZ511096		TDC105M035EL		SD35-19
C163A	10 16V	CELZ311000	PC10-25	VTT10B25	QV1-41	EV-1222
C179	2.2 25V	CSEZ512296		TDC225M035FL		SD35-2R29
C199	1 50V	CELZ811090	PC1-50	VTT1A50	QV1-11	EV-1615
C211	2.2 25V	CELZ512290	PC2-100	VTT2R2A50	QV1-19	EV-1517
C218	4.7 25V	CELZ514790	PC5-50	VTT4R7B50	QV1-27	EV-1319
C605	.1 16V	CAAZ311086		TDC104M050EL	QDT1-2	SD50-R109

REALISTIC MODEL TRC-449

CAPACITORS

CAPACITORS			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
C1	39 NPO				CN0439		10TCC-Q39
C2	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C4	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C5	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C6	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C7	.0047		DD-472	GP4700	GP247		5GA-D47
C8	100		DD-101	GP100	GP310		10TS-T10
C9	.001		DD-102G	GP1000	GP210	QC2-81	5GA-010
C10	.0047		DD-472	GP4700	GP247		5GA-D47
C11	.0047		DD-472	GP4700	GP247		5GA-D47
C12	.0047		DD-472	GP4700	GP247		5GA-D47
C13	.0047		DD-472	GP4700	GP247		5GA-D47
C15	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C16	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C17	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C18	.039			DPMS6S39	PVC6139		6PS-S39
C19	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C20	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C21	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C22	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C23	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C24	100 NPO		DTZ-100	NP0100	CN0310		10TCC-T10
C25	.039			DPMS6S39	PVC6139		6PS-S39
C26	.039			DPMS6S39	PVC6139		6PS-S39
C27	.039			DPMS6S39	PVC6139		6PS-S39
C28	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C29	.039			DPMS6S39	PVC6139		6PS-S39
C30	.039			DPMS6S39	PVC6139		6PS-S39
C31	.039			DPMS6S39	PVC6139		6PS-S39
C32	5 NPO		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C33	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C34	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C36	5 NPO		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C37	10 NPO		DTZ-10	NP010	CN0410		10TCC-Q10

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
C38	330 N750		DTN-330	N330	CN7333		10TCU-T33
C40	.039			DPMS6S39	PVC6139		6PS-S39
C41	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C45	47 NPO		DTZ-47	NP047	CN0447		10TCC-Q47
C46	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C51	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C53	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C54	22 NPO		DTZ-22	NP022	CN0422		10TCC-Q22
C57	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C61	.033			DPMS6S33	EWFA1A133		6PS-S33
C62	.047			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C64	.068			WMF1S68	EWFA1A168	QF1-195	1PB-S68
C71	.068			WMF1S68	EWFA1A168	QF1-195	1PB-S68
C72	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C73	.1			DPMS2P1	EWFA1A010	QF1-215	1PB-P10
C74	.01			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C75	.1			DPMS2P1	EWFA1A010	QF1-215	1PB-P10
C80	.01			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C82	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C85	.039			DPMS6S39	PVC6139		6PS-S39
C86	.039			DPMS6S39	PVC6139		6PS-S39
C90	22 NPO		DTZ-22	NP022	CN0422		10TCC-Q22
C91	.1			DPMS2P1	EWFA1A010	QF1-215	1PB-P10
C93	68 NPO		DD-560		GP456		10TS-Q56
C96	.22			DPMS2P22	EWFA1A022	QF1-253	1PB-P22
C100	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C105	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C106	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C109	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C111	18 NPO				CN0418		10TCC-Q18
C112	18 NPO				CN0418		10TCC-Q18
C113	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C114	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C115	100 NPO		DTZ-100	NP0100	CN0310		10TCC-T10
C116	10 NPO		DTZ-10	NP010	CN0410		10TCC-Q10
C117	1 NPO				CN0510		10TCC-V10
C118	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C121	.039			DPMS6S39	PVC6139		6PS-S39
C122	47 NPO		DTZ-47	NP047	CN0447		10TCC-Q47
C123	47 NPO		DTZ-47	NP047	CN0447		10TCC-Q47
C124	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C125	270		DD-271	GP270	GP327		10TS-T27
C127	470		DD-471	GP470	GP347		10TS-T47
C128	220		DD-221		GP322		10TS-T22
C129	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C130	10 NPO		DTZ-10	NP010	CN0410		10TCC-Q10
C131	.01			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C133	.1			DPMS2P1	EWFA1A010	QF1-215	1PB-P10
C134	.1			DPMS2P1	EWFA1A010	QF1-215	1PB-P10
C136	470		DD-471	GP470	GP347		10TS-T47
C137	220		DD-221		GP322		10TS-T22
C138	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C139	10 NPO		DTZ-10	NP010	CN0410		10TCC-Q10
C142	68 NPO		DD-680	GP68	GP468		10TS-Q68
C143	7 NPO		DTZ-6R8	NP06P8	CN0568		10TCC-V68
C146	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C147	470		DD-471	GP470	GP347		10TS-T47
C148	220		DD-221		GP322		10TS-T22
C149	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C150	10 NPO		DTZ-10	NP010	CN0410		10TCC-Q10
C151	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C152	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C153	.047			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C154	15 NPO		DTZ-15	NP015	CN0415		10TCC-Q15
C155	1 NPO				CN0510		10TCC-V10
C156	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C157	.039			DPMS6S39	PVC6139		6PS-S39
C159	.0047		DD-472	GP4700	GP247		5GA-D47
C160	.0047		DD-472	GP4700	GP247		5GA-D47
C1638	47 NPO		DTZ-47	NP047	CN0447		10TCC-Q47
C164	68 NPO		DTZ-68	NP068	CN0468		10TCC-Q68
C165	220 NPO		DTZ-220				10TCC-T22
C166	.0047		DD-472	GP4700	GP247		5GA-D47
C167	390 N750		DTN-390				10TCU-T39
C168	.5 NPO						
C169	.047			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C170	470 N750		DTN-470	GP4700	GP247		10TCU-T47
C172	.0047		DD-472				5GA-D47
C173	180 NPO		DTZ-180				10TCC-T18
C174	56 NPO				CN0456		10TCC-Q56
C175	.1			DPMS2P1	EWFA1A010	QF1-215	1PB-P10
C176	56 NPO				CN0456		10TCC-Q56
C177	.0047		DD-472	GP4700	GP247		5GA-D47
C178	.0047		DD-472	GP4700	GP247		5GA-D47
C183	.0047		DD-472	GP4700	GP247		5GA-D47
C184	120 NPO		DTZ-120		CN0312		10TCC-T12
C185	.0047		DD-472	GP4700	GP247		5GA-D47
C186	.0047		DD-472	GP4700	GP247		5GA-D47
C187	.0047		DD-472	GP4700	GP247		5GA-D47
C188	.047			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C189	.0047		DD-472	GP4700	GP247		5GA-D47
C190	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C192	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C193	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C194	.039			DPMS6S39	PVC6139		6PS-S39
C195	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C196	.022		DC-203	MGP02	TA120	QC2-157	TG-S20

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
C197	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C198	.1			DPMS2P1	EWFA1A010	QF1-215	1PB-P10
C200	.01			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C202	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C203	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C204	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C205	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C206	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C207	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C208	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C209	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C210	.01			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C213	.1		DC-104	MGP1	TA010	QC2-233	TG-P10
C214	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C215	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C216	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C217	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C219	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C220	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C221	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C222	.1		DC-104	MGP1	TA010	QC2-233	TG-P10
C223	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C227	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C228	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C231	.047			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C233	.1		DC-104	MGP1	TA010	QC2-233	TG-P10
C236	33 NPO		DTZ-33	NP033	CN0433		10TCC-Q33
C239	.1		DTZ-33	MGP1	TA010	QC2-233	TG-P10
C240	.01			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C241	.047			OPMS2S47	EWFA1A147	QF1-171	1PB-S47
C242	47 NPO		DTZ-47	NP047	CN0447		10TCC-Q47
C244	33 NPO		DTZ-33	NP033	CN0433		10TCC-Q33
C245	.047			OPMS2S47	EWFA1A147	QF1-171	1PB-S47
C248	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C249	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C250	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C251	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C255	.0047		DD-472	GP4700	GP247		5GA-D47
C256	150 NPO		DTZ-150		CN0315		10TCC-T15
C257	27 NPO				CN0427		10TCC-Q27
C258	15 NPO		DTZ-15	NP015	CN0415		10TCC-Q15
C259	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C263	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C401	.0047			WMF1D47	EWFA1A247	QF1-57	1PB-D47
C405	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C406	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C408	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C413	.1		DC-104	MGP1	TA010	QC2-233	TG-P10
C414	.1		DC-104	MGP1	TA010	QC2-233	TG-P10
C415	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C416	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C418	.01		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C419	.01		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C601	8 NPO		DTZ-6R8	NP06P8	CN0568		10TCC-V68
C602	.0047		DD-472	GP4700	GP247		5GA-D47
C603	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C604	39 NPO				CN0439		10TCC-Q39
C606	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
CC1		C-0793 (1)					
CC2		C-0793 (1)					
CT1	20	CCVY028004					
CT2	20	CCVY028004					
CT3	20	CCVY028004					
CT4	20	CCVY028004					
CT5	20	CCVY028004					
CT6	20	CCVY028004					
CT7	20	CCVY028004					

(1) Consists of four .01 capacitors.

REALISTIC MODEL TRC-449

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFR. PART No.			WORKMAN PART No.	MFR. PART No.
RR1	Resistor Network		C-0792 (1)				

(1) Consists of eight 4700 ohm resistors.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA			
			MFGR. PART No.	CENTRALAB PART No.	MALLORY PART No.	TRW PART No.
VR1	Signal Meter	20K	RRVY189006			U260R253B
VR2	RF Gain	100K	RRVY189008			U260R104B
VR3	Squelch Range	100K	P-6418			U260R104B
VR4	Balance	50K	P-6417			U260R503B
VR5	AM RX Gain	100K	P-6418			U260R104B
VR6	MIC Gain	20K	P-6416			U260R253B
VR7	AM AMC	3000	RRVY189010			
VR8	AM TX Level	10K	P-6415			U260R103B
VR9	TX Frequency	5000	P-6414			U260R502B
VR12	TX Power Meter	100K	P-6418			U260R104B
VR15	Bias	300	P-6420			
VR16	Bias	300	P-6420			
VR401	Clarifier	20K	RRVY196001			
VR402	RF Gain	100K	RRVY282001			
VR404	Squelch	100K	RRVY274001 (18)			
VR406	Dimmer	1000				
VR405	Volume/Power Switch	10K	RRVY271001			

(18) Includes VR404 and VR406.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	Noise Blanker (23.5MHz)	CA-3272	LA-029	CBS740-T	
L2	Noise Blanker (23.5MHz)	CA-3747	LA-155		
L3	Rec Antenna (27MHz)	CA-3746	LA-152		
L4	Rec RF (27MHz)	CA-3748	LA-156		
L5	IF (7.8MHz)	CA-3751	LA-179		
L7	IF (7.8MHz)	CA-3414	LA-038	CBS512-7TC	
L8	IF (7.8MHz)	CA-3424	LA-096	CBS511-7TC	
L9	RF Choke (470uH)	C-0787	LZ-012		
L10	RF Choke (56mH)	C-0788	LZ-015		
L11	RF Choke (68mH)	C-0789	LZ-015		
L12	RF Choke (470uH)	C-0787	LZ-012		
L13	RF Choke (470uH)	C-0787	LZ-012		
L14	RF Choke (470uH)	C-0787	LZ-012		
L16	VCO (34.195MHz)	CA-3750	LA-195		
L17	VCO (34.195MHz)	CA-3753	LA-191		
L18	RF Choke (470uH)	C-0708	LZ-012		
L19	RF Choke (100uH)	C-0786	LZ-012		
L20	RF Choke (470uH)	C-0708	LZ-012		
L21	RF Choke (470uH)	C-0708	LZ-012		
L22	RF Choke (470uH)	C-0708	LZ-012		
L23	RF Choke (470uH)	C-0708	LZ-012		
L24	Trippler (33.855MHz)	CA-3752	LA-190		
L25	RF Choke (470uH)	C-0787	LZ-012		
L27	TVI Trap (54MHz)	CA-3409	LC-018	CB304	
L28	RF Choke (.4uH)	CA-3760	LE-051		
L29	RF Choke (.4uH)	CA-3760	LE-051		
L30	Final (27MHz)	CA-3639	LC-019	CB305	
L31	RF Choke (.89uH)	CA-3757	LD-018	CB304	
L32	XMT Driver (27MHz)	CA-3409	LC-018		
L33	RF Choke (.89uH)	CA-3757	LD-018		
L34	RF Choke (.48uH)	CA-3757	LD-018		
L35	XMT Amp (27MHz)	CA-3758	LD-057		
L36	XMT Buffer (27MHz)	CA-3758	LA-057		
L37	XMT Mixer (27MHz)	CA-3749	LA-137		
L38	RF Choke	C-0787	LZ-012		
L39	XMT Mixer (7.8MHz)	CA-3414	LA-038		
L43	RF Choke (1uH)	C-0785	LZ-002		
L44	RF Choke (1uH)	C-0785	LZ-002		
L45	RF Choke (100uH)	C-0787	LZ-012		
L46	RF Choke (10uH)	LLZY001001	LZ-001		
L47	RF Choke (.29uH)	LLDY069001	LE-069		
L401	RF Choke (9.5uH)	LLDY089001	LD-089		
L402	RF Choke (9.5uH)	LLDY089001	LD-089		
L403	RF Choke (9.5uH)	LLDY089001	LD-089		
L405	RF Choke (9.5uH)	LLDY089001	LD-091		
L407	RF Choke (7.3uH)	LLDY003001	LE-003		
L408	RF Choke (7.3uH)	LLDY013001	LD-013		

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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.	
L40	2.5A	.232	2.88mH	CA-3756			

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	8	18	TD-0154		MCB20	

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP401	3 1/2" PM 8 Ohms	S-4686 SP-049 (1)	3A05Z8	(1) Number on unit.

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
F461	3 Amp	ZFSY001006	W-1933	AGC3	HDJ	312003	150145	FG3-2

REALISTIC MODEL TRC-449

PARTS LIST AND DESCRIPTION (CONTINUED)

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

MICROPHONE

ITEM No.	REPLACEMENT DATA				CONNECTION DATA						
	MFG. 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	M-2222	18-032	18-034	18-010	18-105	4	1	3	NC	NC	1

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
D401	LED	L-0776	Channel Display (TLR-321)
D403	LED	L-0777	AM Indicator (LR0702R) (1.64V @ 8mA)
D404	LED	L-0777	USB Indicator (LR0702R) (1.64V @ 8mA)
D405	LED	L-0777	LSB Indicator (LR0702R) (1.64V @ 8mA)
FT-1	Crystal Filter	FFLY001001	7.8MHz (FL-001)
J401	Jack	J-0846	Antenna
J402	Jack	J0723	Microphone
J403	Jack	J-0643	PA
J404	Jack	J-0643	External Speaker
J406	Jack	J-0819	Power
MT401	Meter	M-0262	S/Rf (MT-141)
PL401	Lamp	L-0778	Rec (12.57V @ 45mA)
PL402	Lamp	L-0779	TX (11.03V @ 62mA)
RL-1	Relay	ZRLY027001	XMT/Rec (RL-027)
S401	Switch	S-2379	NB
S402	Switch	S-1277	AM/USB/LSB
S405	Switch	S-2378	CB/PA/MON
S406	Switch		Power (Part of Volume Control)
S408	Switch	S-1276	Channel Selector
X1	Crystal	MX-2171	7.8025MHz
X2	Crystal	MX-2172	7.7975MHz
X3	Crystal	MX-2317	11.2858MHz
X4	Crystal	MX-2315	11.2842MHz
X5	Crystal	MX-2292	10.240MHz
X6	Crystal	MX-2316	11.2850MHz
	Printed Circuit Board	PPCY196024	Main
	Printed Circuit Board	X-7421	Switch
	Printed Circuit Board	X-7422	NB
	Printed Circuit Board	PPCY243011	External Speaker/PA

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

ITEM	PART No.	ITEM	PART No.
Escutcheon	Z-3497	Knob, Control	K-2283
Cabinet, Top	Z-3493	Knob, Squelch	K-2556
Cabinet, Bottom	Z-3494	Knob, Dimmer	K-2557
Mounting Bracket	M3-0182	Microphone Hanger	M-3105
Knob, Channel Selector	K-2555		