

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-420

MANUFACTURER'S SPECIFICATIONS

Description	Nominal	Limit
Intermediate frequency		
1st IF	10.695 MHz	
2nd IF	455 kHz	
Sensitivity for 500 mW output	0.25 μ V	0.5 μ V
Sensitivity at 10 dB S + N/N	0.8 μ V	1.6 μ V
Adjacent Channel Rejection	60 dB	56 dB
Image Rejection at 5.7 MHz	45 dB	35 dB
Bandwidth (-6 dB)	7.6 kHz	5 - 9 kHz
Signal-to-Noise ratio		
at 1 mV input	40 dB	34 dB
Distortion at 5 mV input	2.5%	< 6%
AGC Figure of merit at 50 mV input	90 dB	> 70 dB
Power output at 500 μ V Input		
Undistorted (10% THD)	3.5 W	> 3 W
Maximum	5 W	> 4 W
Electrical fidelity compared to 1000 Hz		
450 Hz	-6 dB	-6 $\pm$ 3 dB
2500 Hz	-6 dB	-6 $\pm$ 3 dB
Cross Modulation	50 dB	> 45 dB
Squelch	Adjustable from 0.8 μ V to 1 mV	
Current consumption (no signal)	250 mA	< 350 mA

Courtesy of the Manufacturer

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

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REALISTIC MODELS TRC-420, TRC-420-18

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:
 L104, L109, L110, T101, T102, T107, T108, T110 thru T113.... 9440
 L102, L106..... 8728,9304,9089
 L109..... 9300,9302,9304
 T103,T104,T105,T106..... 5000,5009,8276,8728,9089
 CT-1..... 5000,8276,9089

NOTE: When servicing Australian model TRC-420-18, alignment should be completed on channel 9 (27.115MHz) except as noted in remarks.

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of oscilloscope to TP1 (T107 Secondary).	Ch. 19	T107	Adjust for maximum RF (.4 volts p-p typical). (See Figure 1.)
Input of frequency counter to TP1 (T107 Secondary).	Ch. 19	CT1	Adjust for 10.240MHz $\pm$ 50Hz.
Input of frequency counter to TP2 (IC1 Pin 10).	Ch. 19		Check for 5.120MHz.
Input of DC meter to TP3 (Junction of R176 and R177).	Ch. 40 XMT	T109	Adjust for 6.50 volts. Check for approx. 4.70 volts on channel 1. (For Model TRC-420-18, 5.00 volts on channel 1.)
Input of oscilloscope to TP4 (IC1 Pin 22).	Ch. 19	T108	Adjust for maximum RF (.45 volts p-p typical). (See Figure 2.)
Input of frequency counter to TP4 (IC1 Pin 22).	Ch. 1		Check for .910MHz. Check all channels. (See Truth Chart for correct frequencies.) (For Model TRC-420-18, see Australian Truth Chart.)
Input of frequency counter to TP4 (IC1 Pin 22).	Ch. 1 XMT		Check for 1.365MHz. Check all channels. (See Truth Chart for correct frequencies.) (For Model TRC-420-18, see Australian Truth Chart.)
Input of oscilloscope to TP5 (T110 Secondary).	Ch. 19	T110	Adjust for maximum RF (.5 volts p-p typical). (See Figure 3.)
Input of frequency counter to TP5 (T110 Secondary).	Ch. 1		Check for 16.270MHz. Check all channels. (See Truth Chart for correct frequencies.) (For Model TRC-420-18, see Australian Truth Chart.)
Input of frequency counter to TP6 (IC3 Pin 2).	Ch. 1 XMT		Check for 16.725MHz. Check all channels. (See Truth Chart for correct frequencies.) (For Model TRC-420-18, see Australian Truth Chart.)
Input of oscilloscope to TP7 (IC3 Pin 9).	Ch. 19 XMT	T111,T112	Adjust for maximum RF (.5 volts p-p typical). (See Figure 4.)
Input of frequency counter to TP7 (IC3 Pin 9).	Ch. 1 XMT		Check for 26.965MHz. Check all channels. (See Truth Chart for correct frequencies.) (For Model TRC-420-18, see Australian Truth Chart.)

RECEIVER ALIGNMENT

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.
Set generator output low enough to prevent AGC limiting.
Preset controls as follows, unless otherwise notes: Squelch MINIMUM.

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Output of signal generator to TP8 (Q103 Base). 455kHz, 1000Hz @ 30% modulation.	Ch. 19	T106,T105, T104	Adjust for maximum audio output.
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% modulation.	Ch. 19	T103,T102, T101,L110	Adjust for maximum audio output. Readjust T104, T105 and T106 for maximum.

RECEIVER ADJUSTMENTS

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

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Output 700uV.	Ch. 19 Squelch Maximum	VR3	SQUELCH RANGE Adjust so squelch just breaks.
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Output 100uV.	Ch. 19	VR4	RX SIGNAL METER Adjust for 9 on RX Signal scale of meter.

TRANSMITTER ALIGNMENT

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

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Input of RF wattmeter to antenna input.	Ch. 19 XMT	T113,L102,	Adjust for maximum RF output.
Input of RF wattmeter to antenna input.	Ch. 19 XMT	L104,L106	Adjust for 4.0 watts RF output maximum.
Input of spectrum analyzer or harmonic meter to antenna input.	Ch. 19 XMT	L109	Adjust for MINIMUM at 54MHz (2nd harmonic).

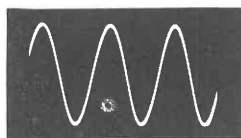


FIGURE 1

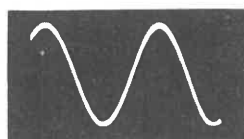


FIGURE 2

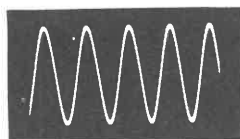


FIGURE 3

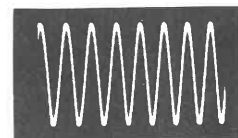


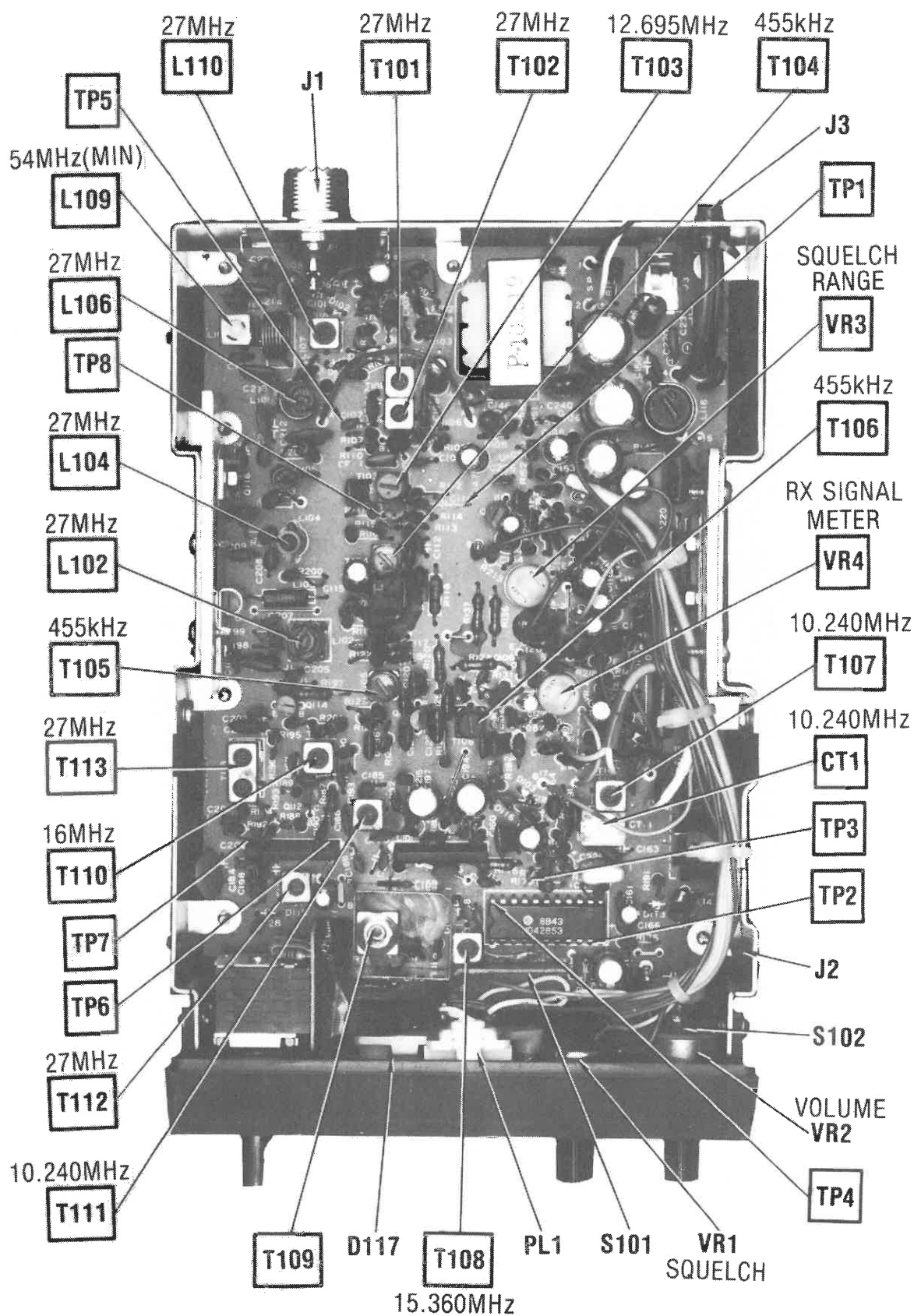
FIGURE 4

TRUTH CHART (USA and CANADIAN Models) TRC-420

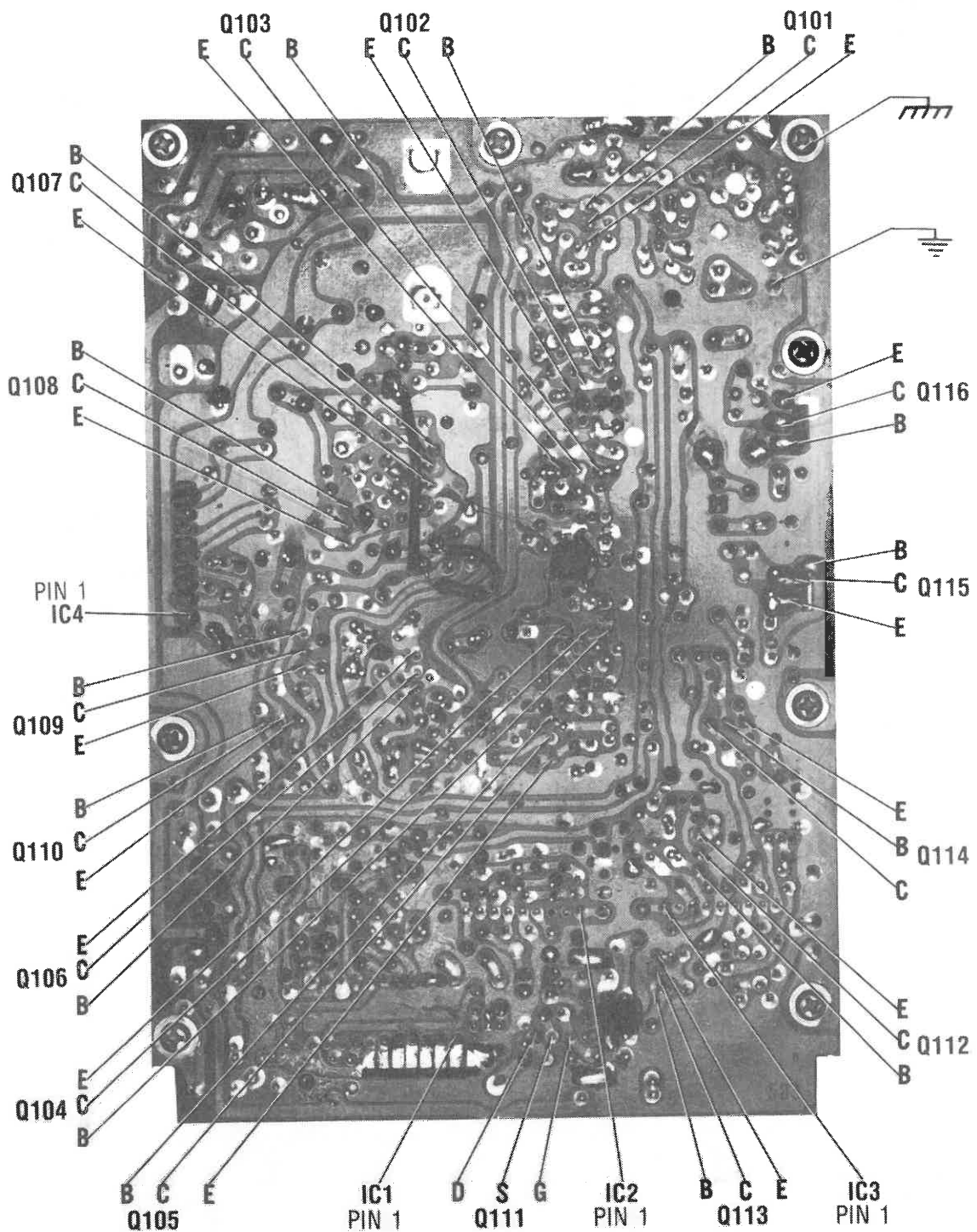
CHANNEL	1 = 4.65 Volts 0 = 0 Volts CHANNEL INPUT CODES								RECEIVE DIVIDER INPUT IN MHz AT TP4	TRANSMIT DIVIDER INPUT IN MHz AT TP4	RECEIVE VCO OUTPUT IN MHz AT TP5	TRANSMIT VCO OUTPUT IN MHz AT TP6	TRANSMIT SYNTH OUTPUT IN MHz AT TP7
	PINS												
	6	5	4	3	2	1							
1	0	0	0	0	0	1			.910	1.365	16.270	16.725	26.965
2	0	0	0	0	1	0			.920	1.375	16.280	16.735	26.975
3	0	0	0	0	1	1			.930	1.385	16.290	16.745	26.985
4	0	0	0	1	0	0			.950	1.405	16.310	16.765	27.005
5	0	0	0	1	0	1			.960	1.415	16.320	16.775	27.015
6	0	0	0	1	1	0			.970	1.425	16.330	16.785	27.025
7	0	0	0	1	1	1			.980	1.435	16.340	16.795	27.035
8	0	0	1	0	0	0			1.000	1.455	16.360	16.815	27.055
9	0	0	1	0	0	1			1.010	1.465	16.370	16.825	27.065
10	0	1	0	0	0	0			1.020	1.475	16.380	16.835	27.075
11	0	1	0	0	0	1			1.030	1.485	16.390	16.845	27.085
12	0	1	0	0	1	0			1.050	1.505	16.410	16.865	27.105
13	0	1	0	0	1	1			1.060	1.515	16.420	16.875	27.115
14	0	1	0	1	0	0			1.070	1.525	16.430	16.885	27.125
15	0	1	0	1	0	1			1.080	1.535	16.440	16.895	27.135
16	0	1	0	1	1	0			1.100	1.555	16.460	16.915	27.155
17	0	1	0	1	1	1			1.110	1.565	16.470	16.925	27.165
18	0	1	1	0	0	0			1.120	1.575	16.480	16.935	27.175
19	0	1	1	0	0	1			1.130	1.585	16.490	16.945	27.185
20	1	0	0	0	0	0			1.150	1.605	16.510	16.965	27.205
21	1	0	0	0	0	1			1.160	1.615	16.520	16.975	27.215
22	1	0	0	0	1	0			1.170	1.625	16.530	16.985	27.225
23	1	0	0	0	1	1			1.200	1.655	16.560	17.015	27.255
24	1	0	0	1	0	0			1.180	1.635	16.540	16.995	27.235
25	1	0	0	1	0	1			1.190	1.645	16.550	17.005	27.245
26	1	0	0	1	1	0			1.210	1.665	16.570	17.025	27.265
27	1	0	0	1	1	1			1.220	1.675	16.580	17.035	27.275
28	1	0	1	0	0	0			1.230	1.685	16.590	17.045	27.285
29	1	0	1	0	0	1			1.240	1.695	16.600	17.055	27.295
30	1	1	0	0	0	0			1.250	1.705	16.610	17.065	27.305
31	1	1	0	0	0	1			1.260	1.715	16.620	17.075	27.315
32	1	1	0	0	1	0			1.270	1.725	16.630	17.085	27.325
33	1	1	0	0	1	1			1.280	1.735	16.640	17.095	27.335
34	1	1	0	1	0	0			1.290	1.745	16.650	17.105	27.345
35	1	1	0	1	0	1			1.300	1.755	16.660	17.115	27.355
36	1	1	0	1	1	0			1.310	1.765	16.670	17.125	27.365
37	1	1	0	1	1	1			1.320	1.775	16.680	17.135	27.375
38	1	1	1	0	0	0			1.330	1.785	16.690	17.145	27.385
39	1	1	1	0	0	1			1.340	1.795	16.700	17.155	27.395
40	0	0	0	0	0	0			1.350	1.805	16.710	17.165	27.405

TRUTH CHART (AUSTRALIAN Model) TRC-420-18

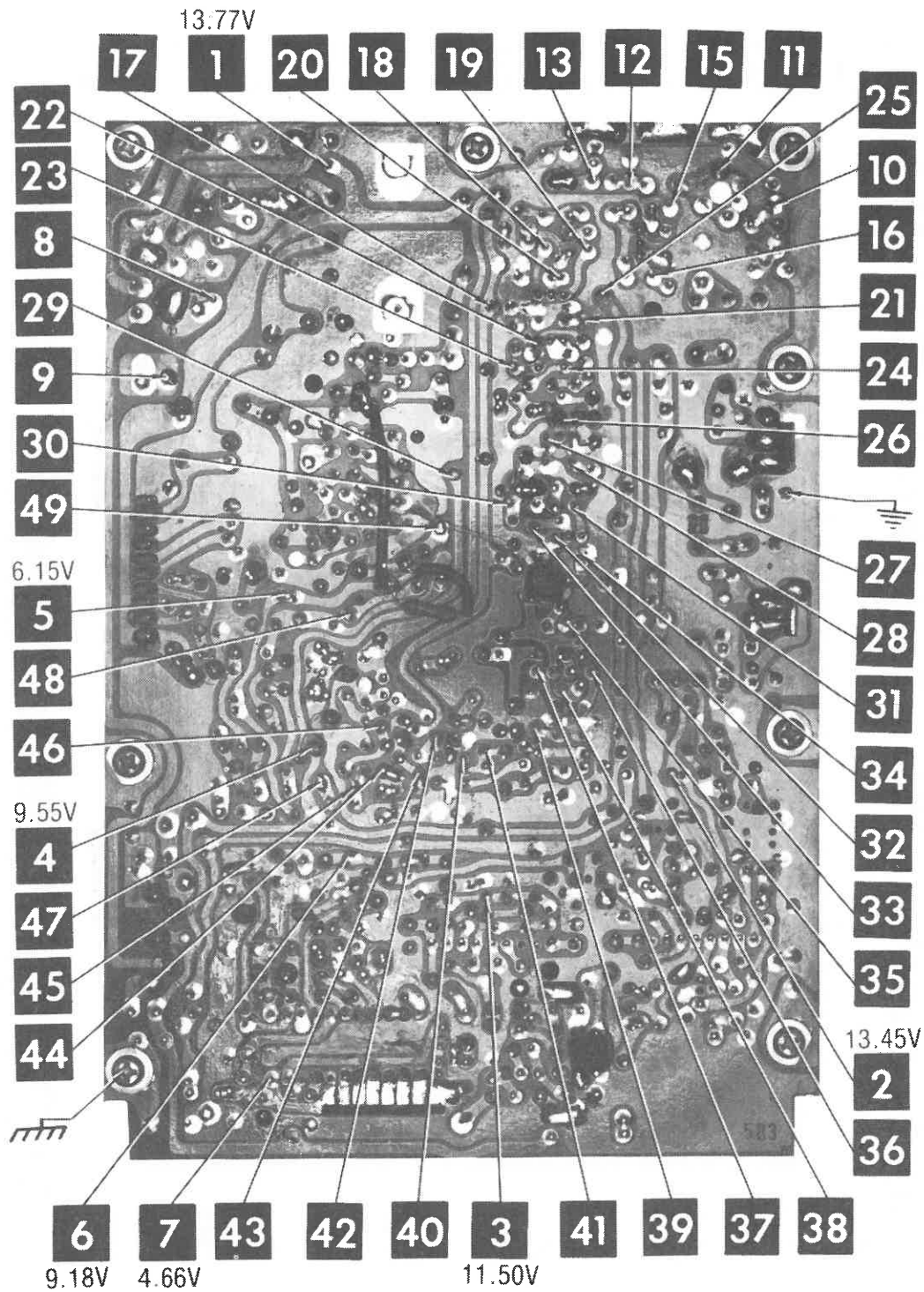
C H A N N E L	1 = 4.65Volts 0 = 0Volts CHANNEL INPUT CODES							RECEIVE DIVIDER INPUT IN MHz AT TP4	TRANSMIT DIVIDER INPUT IN MHz AT TP4	RECEIVE VCO OUTPUT IN MHz AT TP5	TRANSMIT VCO OUTPUT IN MHz AT TP6	TRANSMIT SYNTH OUTPUT IN MHz AT TP7
	PINS											
	6	5	4	3	2	1						
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2	0	0	0	0	1	0		.970	1.425	16.330	16.785	27.025
3	0	0	0	0	1	1		.980	1.435	16.340	16.795	27.035
4	0	0	0	1	0	0		1.000	1.455	16.360	16.815	27.055
5	0	0	0	1	0	1		1.010	1.465	16.370	16.825	27.065
6	0	0	0	1	1	0		1.030	1.485	16.390	16.845	27.085
7	0	0	0	1	1	1		1.040	1.495	16.400	16.855	27.095
8	0	0	1	0	0	0		1.050	1.505	16.410	16.865	27.105
9	0	0	1	0	0	1		1.060	1.515	16.420	16.875	27.115
10	0	1	0	0	0	0		1.070	1.525	16.430	16.885	27.125
11	0	1	0	0	0	1		1.080	1.535	16.440	16.895	27.135
12	0	1	0	0	1	0		1.100	1.555	16.460	16.915	27.155
13	0	1	0	0	1	1		1.110	1.565	16.470	16.925	27.165
14	0	1	0	1	0	0		1.120	1.575	16.480	16.935	27.175
15	0	1	0	1	0	1		1.130	1.585	16.490	16.945	27.185
16	0	1	0	1	1	0		1.140	1.595	16.500	16.955	27.195
17	0	1	0	1	1	1		1.150	1.605	16.510	16.965	27.205
18	0	1	1	0	0	0		1.170	1.625	16.530	16.985	27.225



CHASSIS-BOTTOM

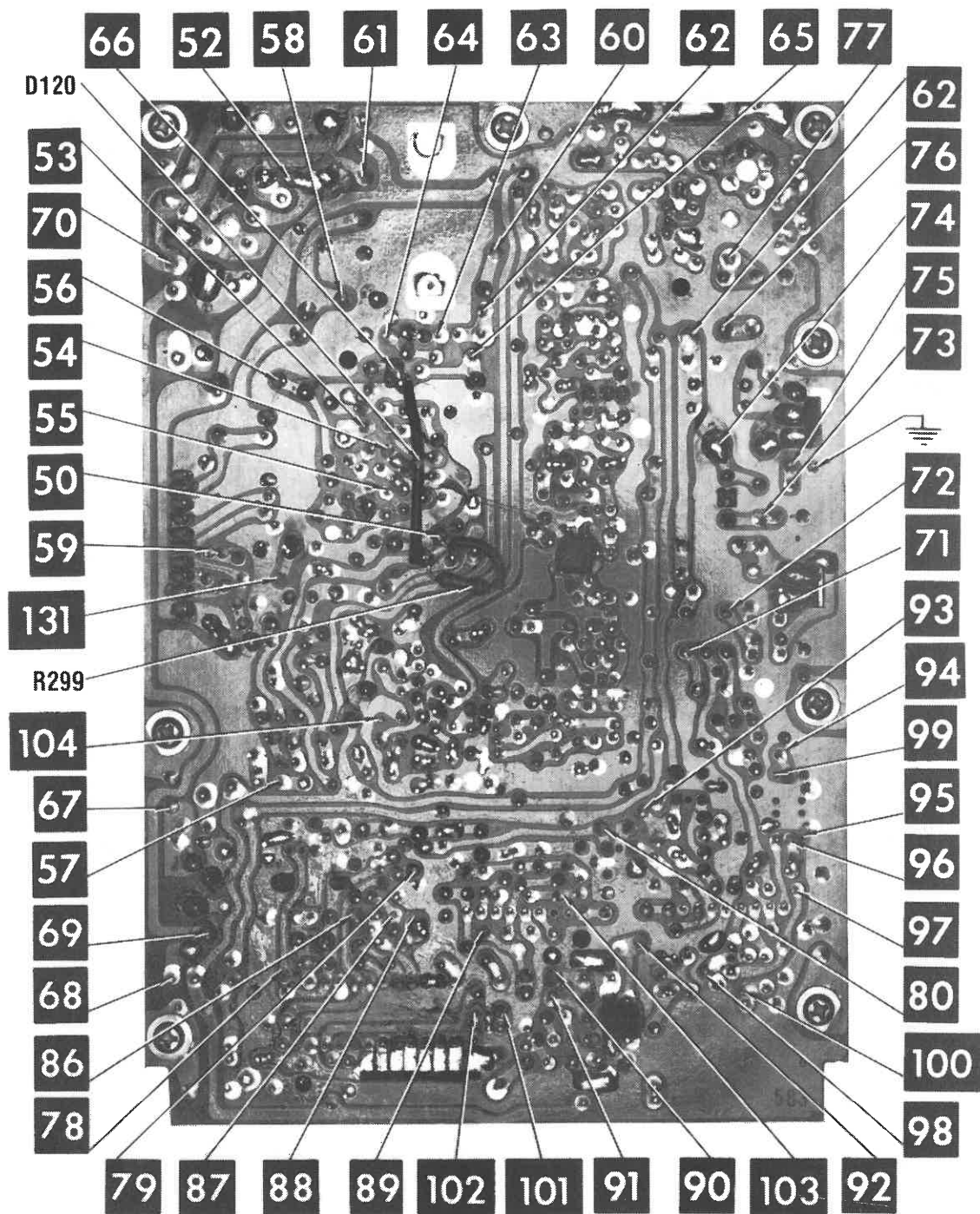


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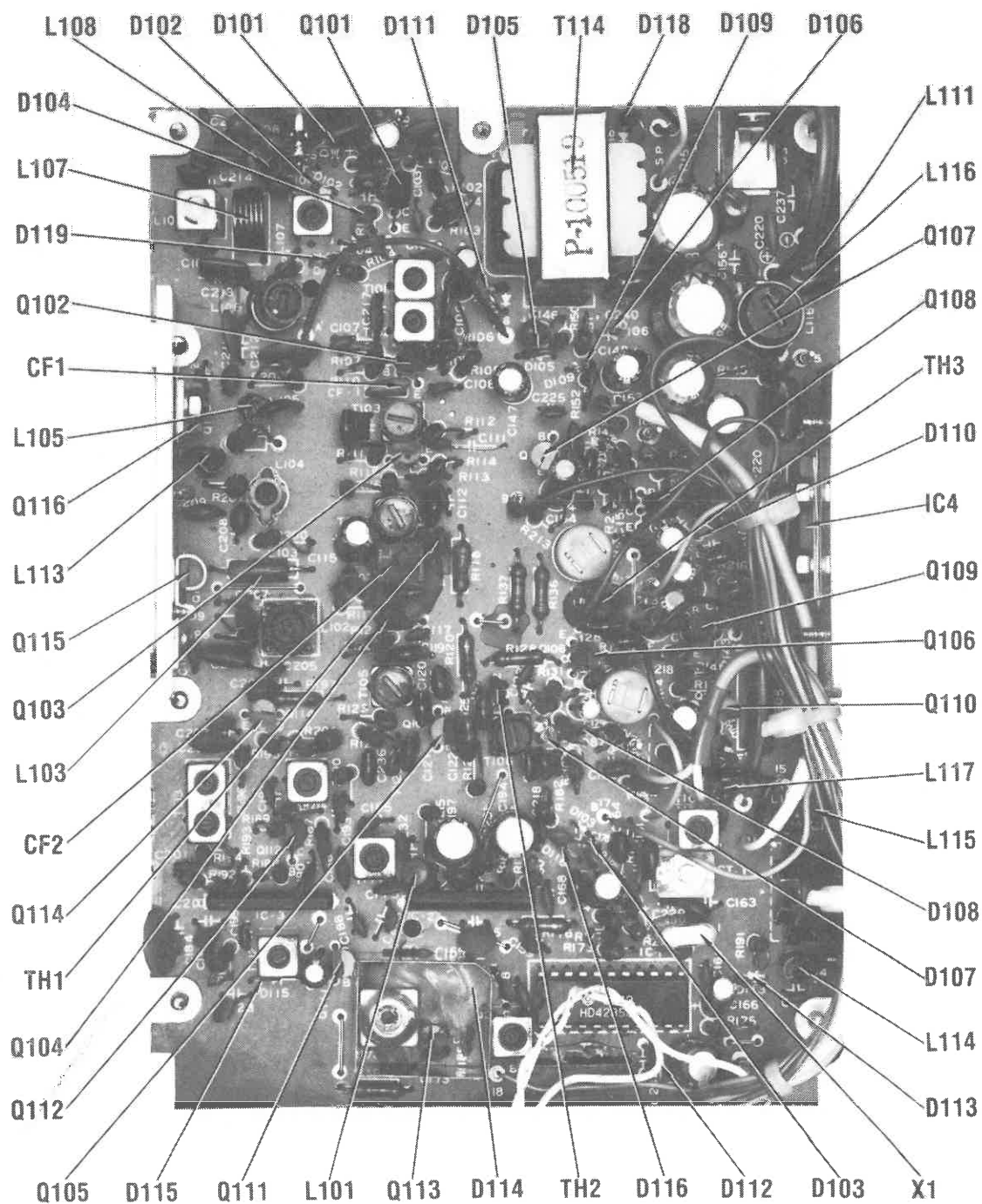


REALISTIC MODELS TRC-420, TRC-420-18

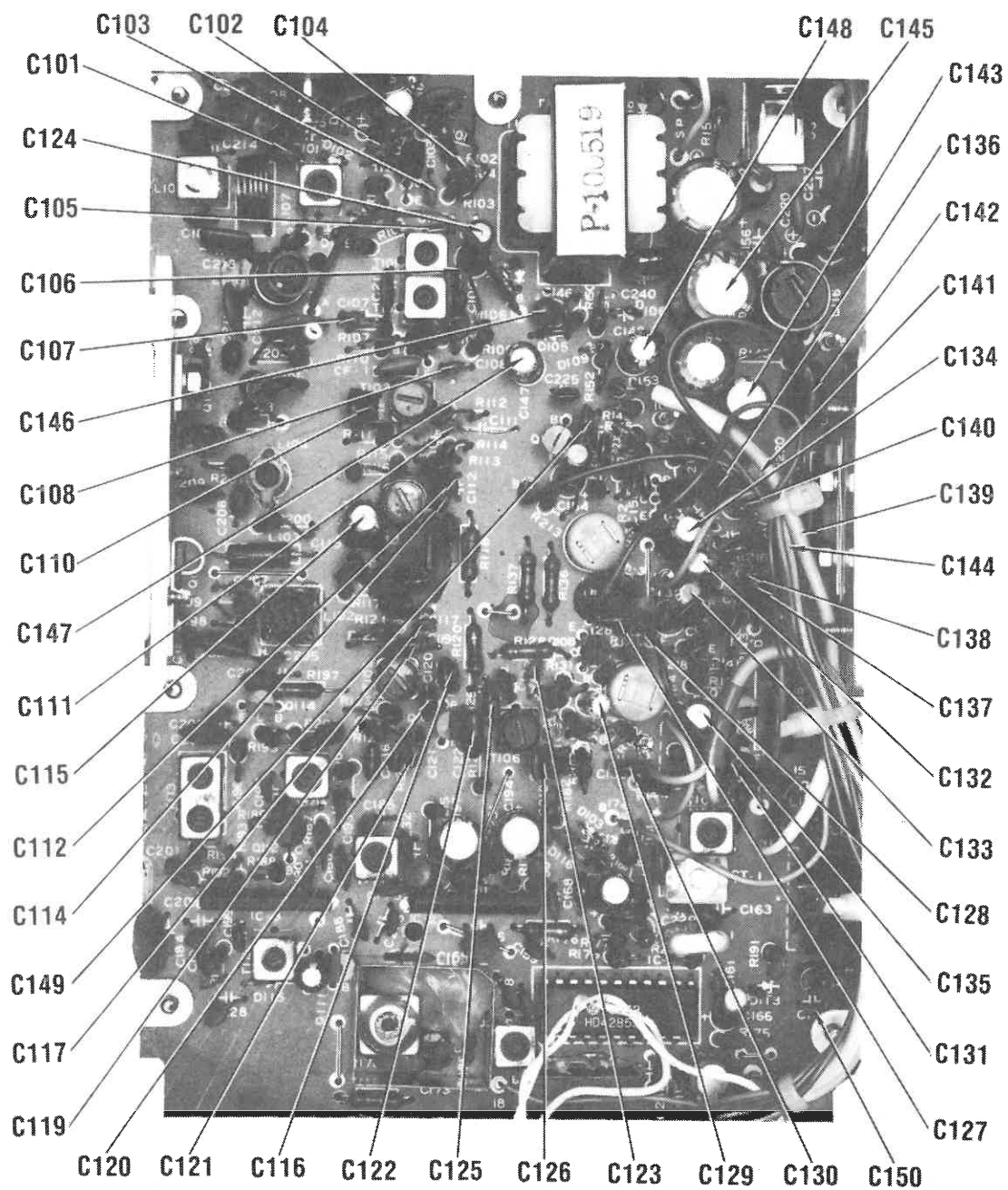
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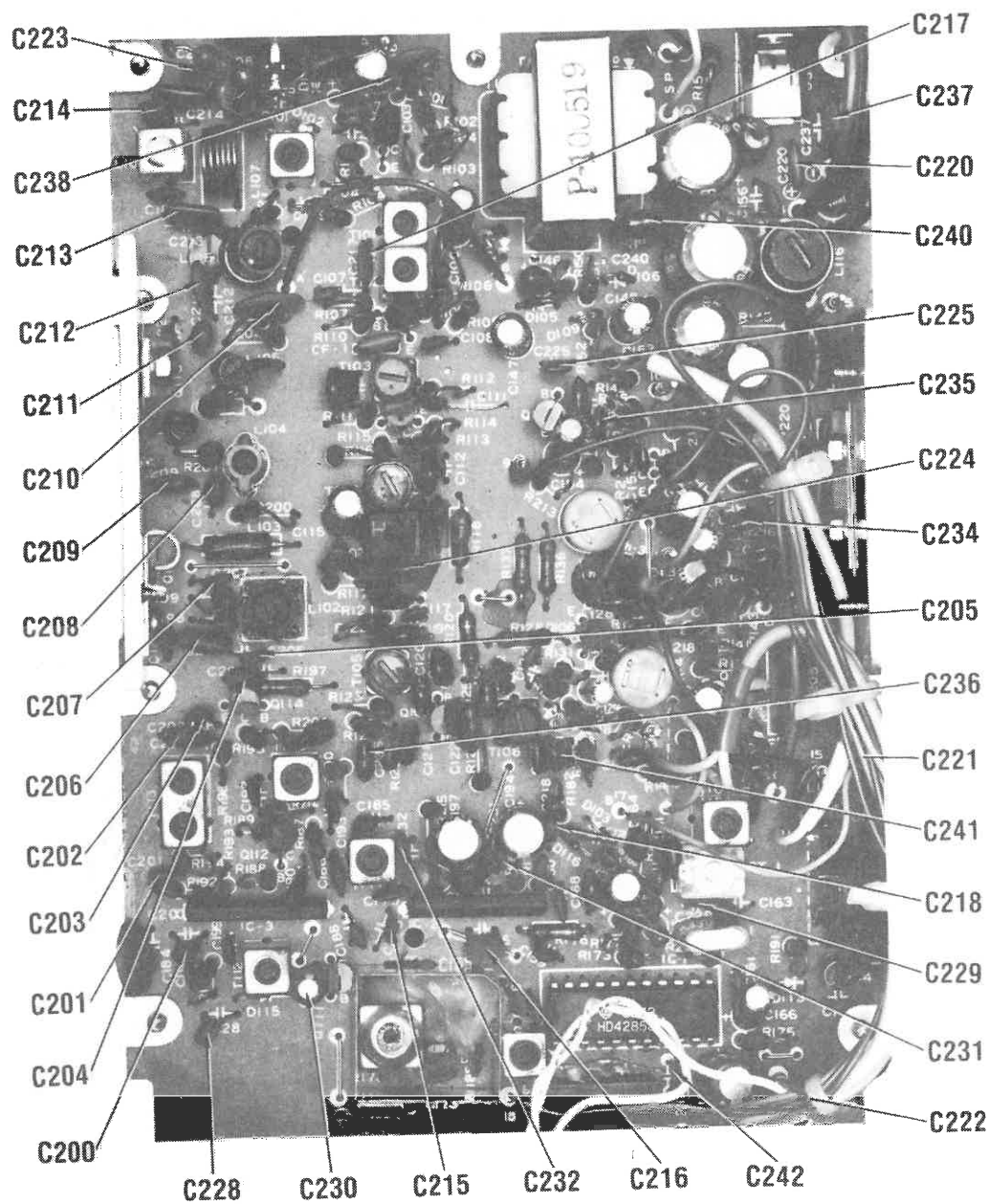
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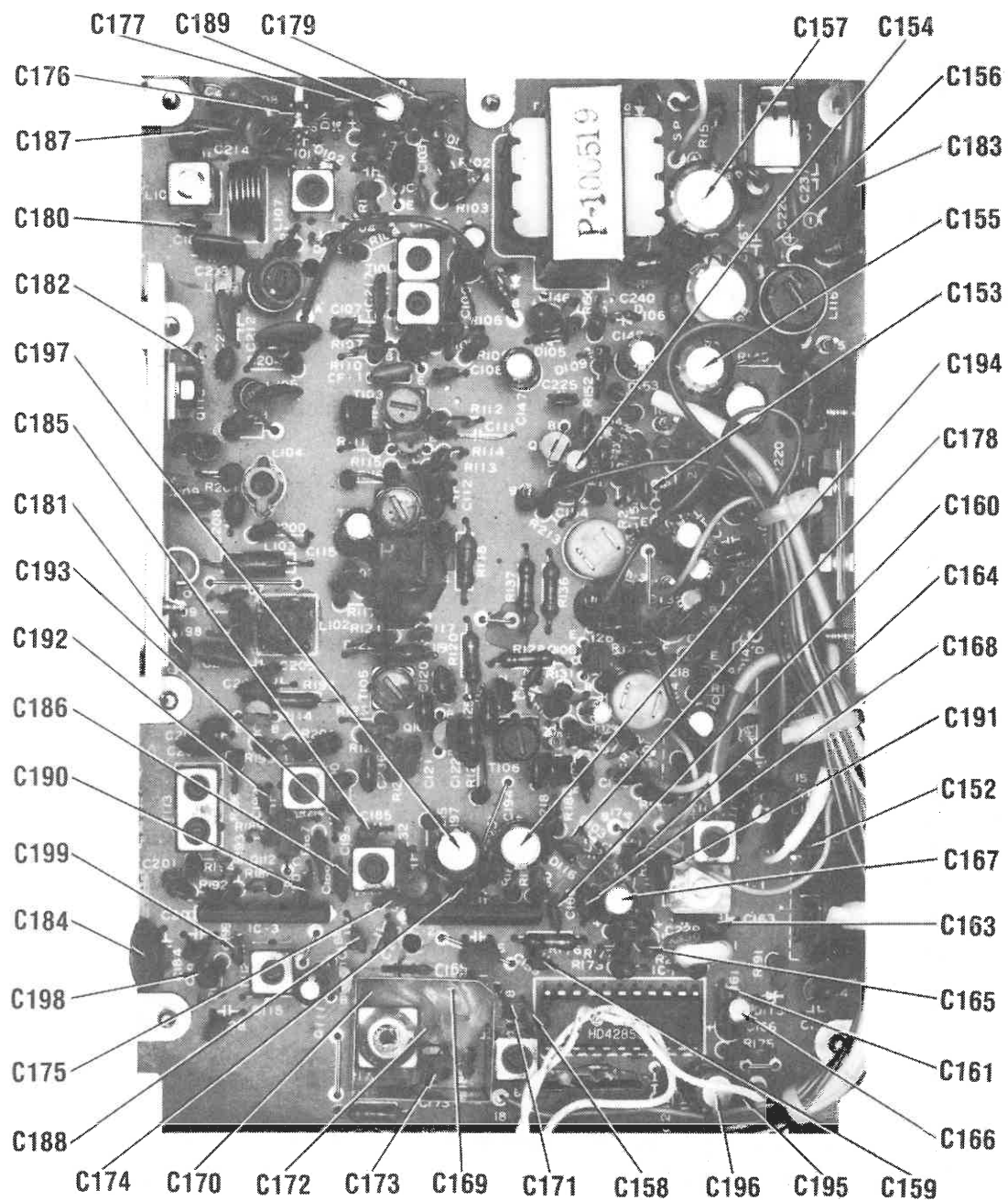
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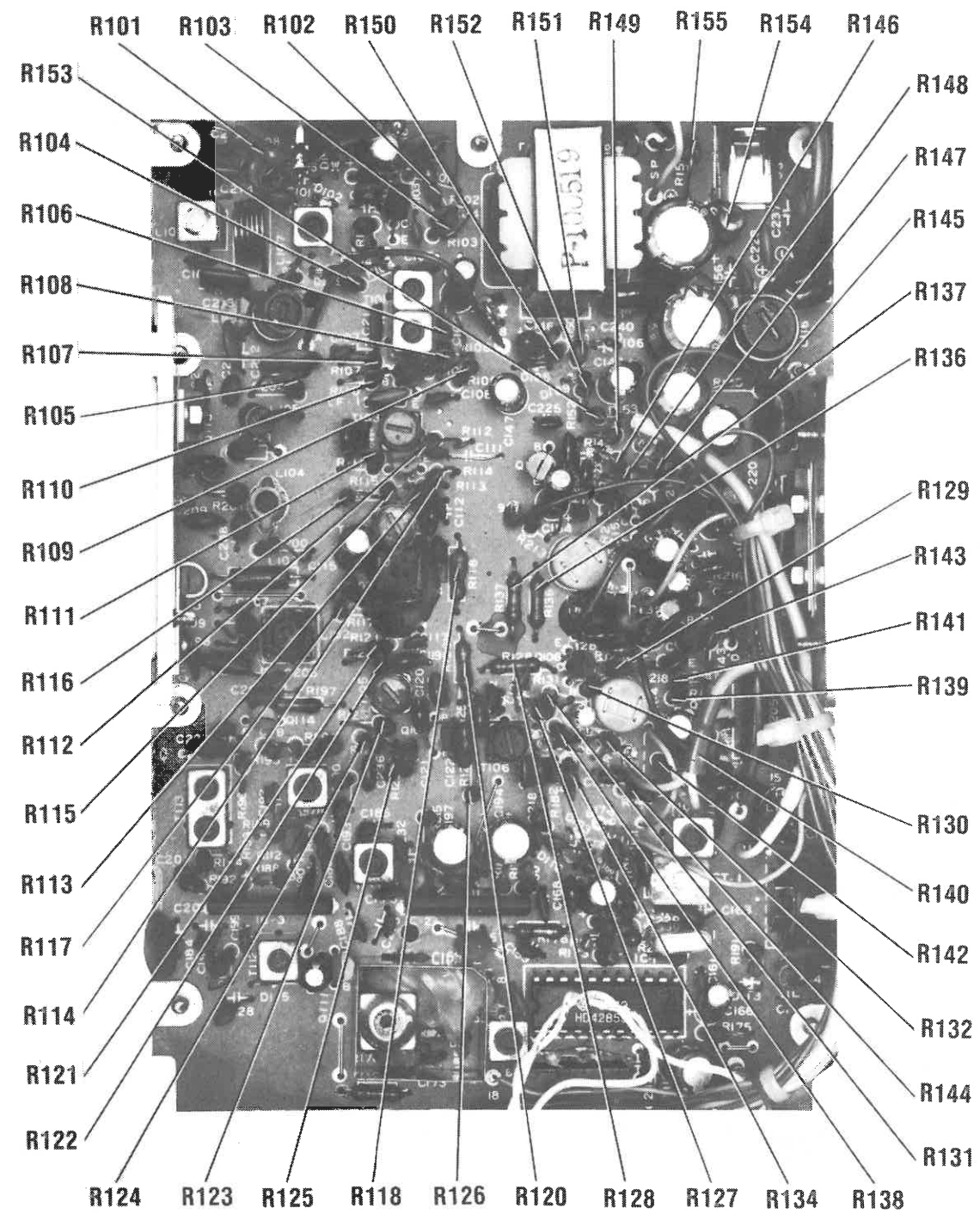
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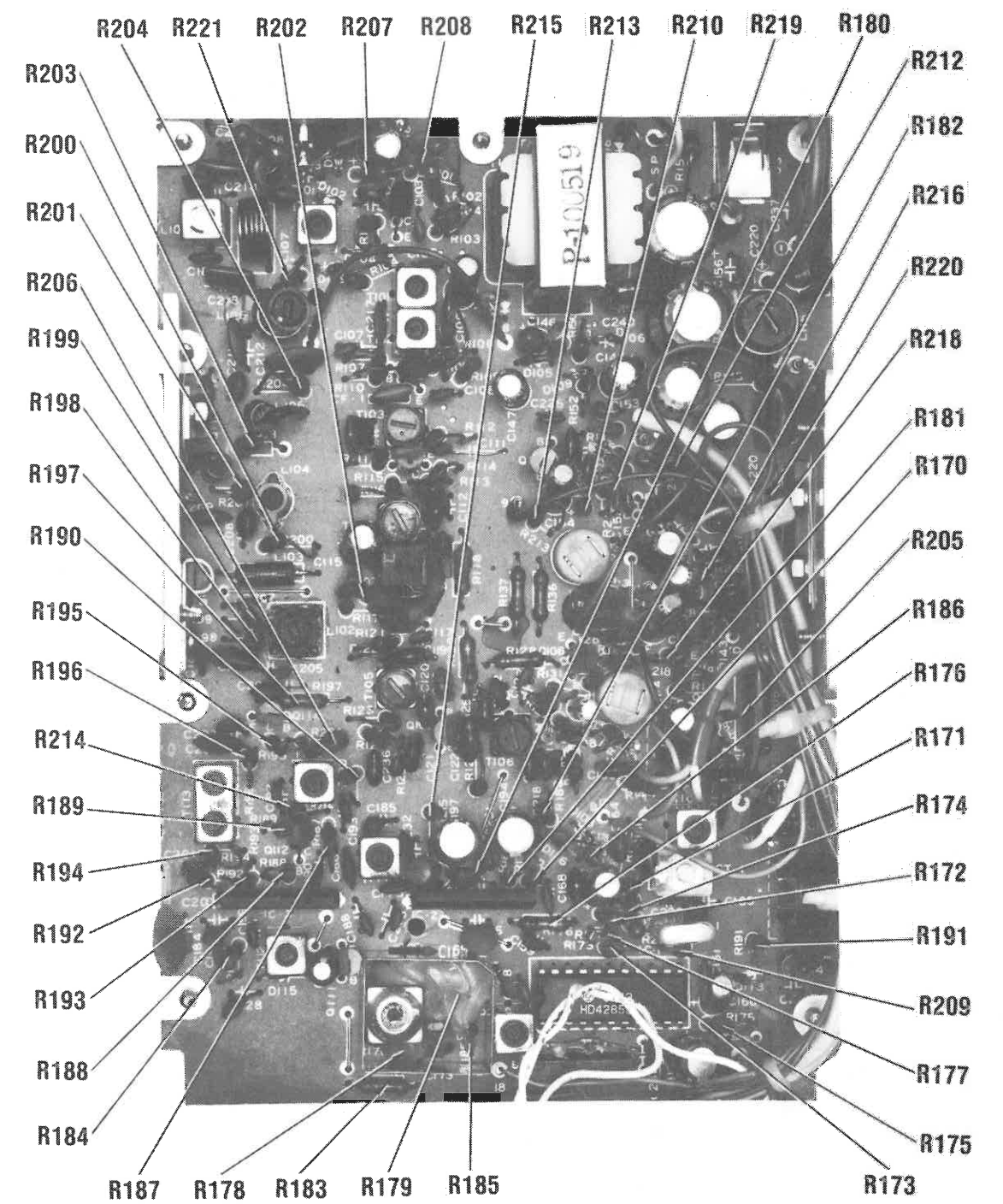
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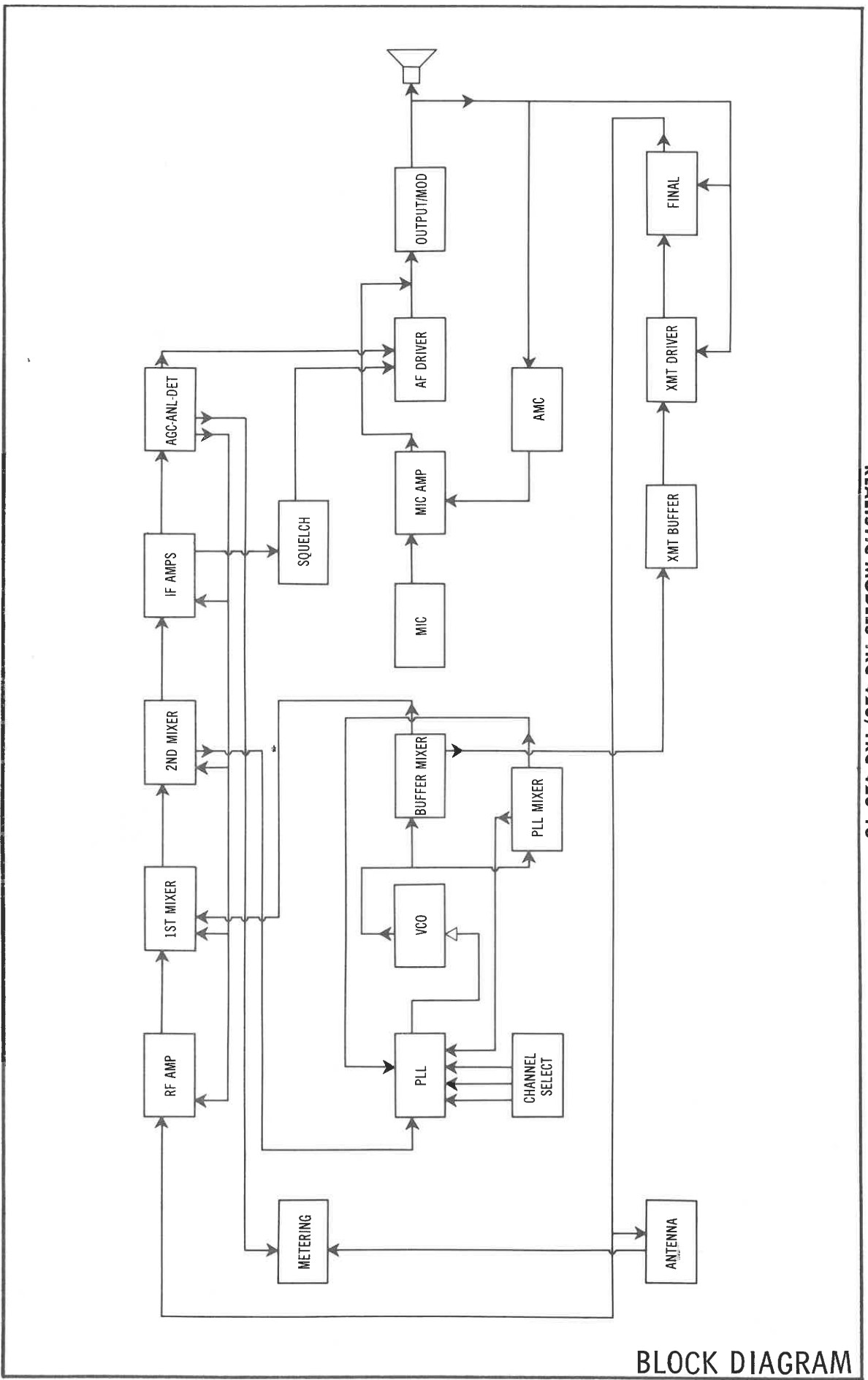
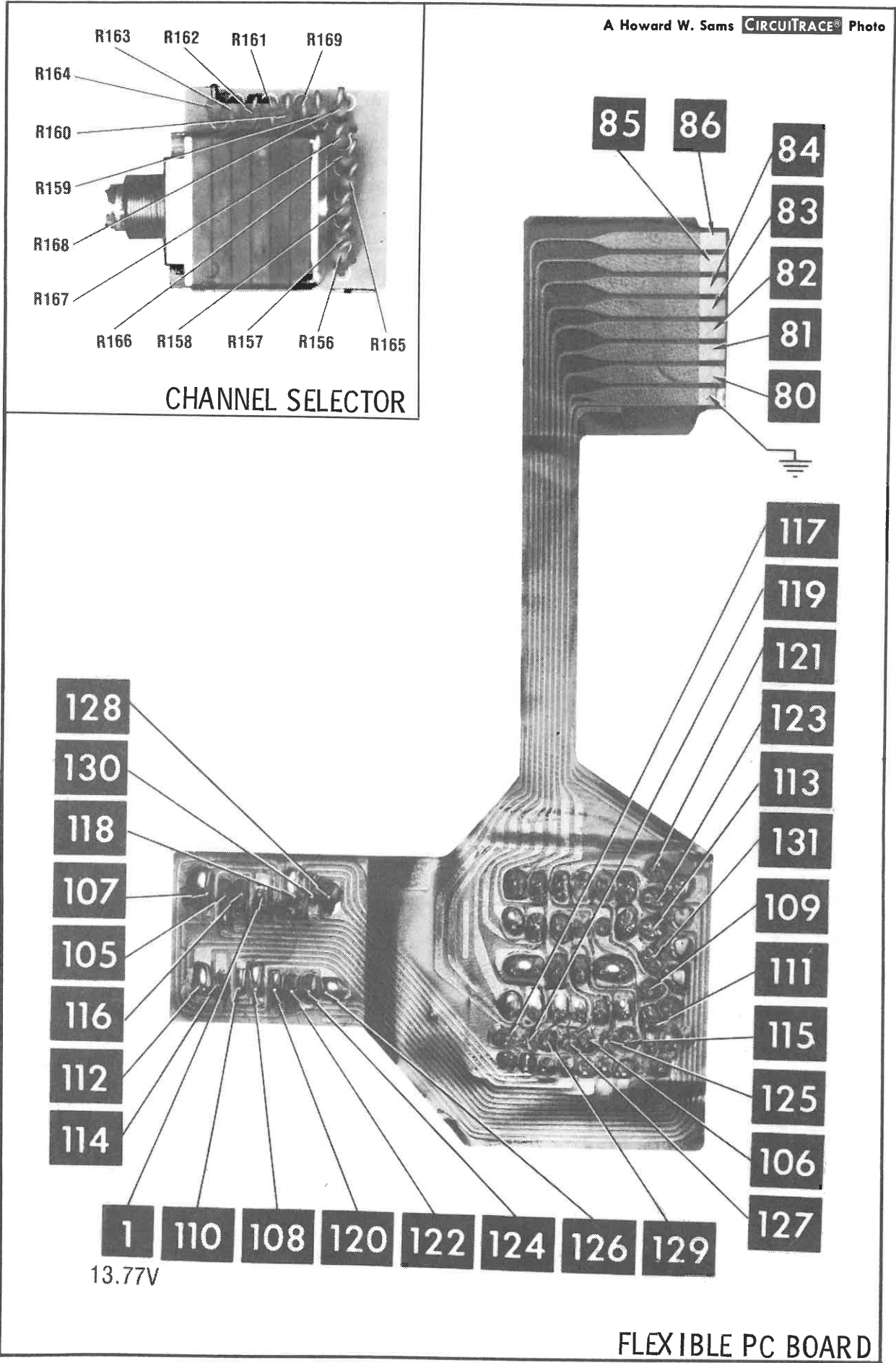
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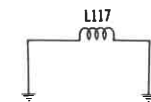
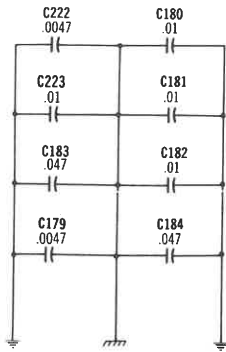
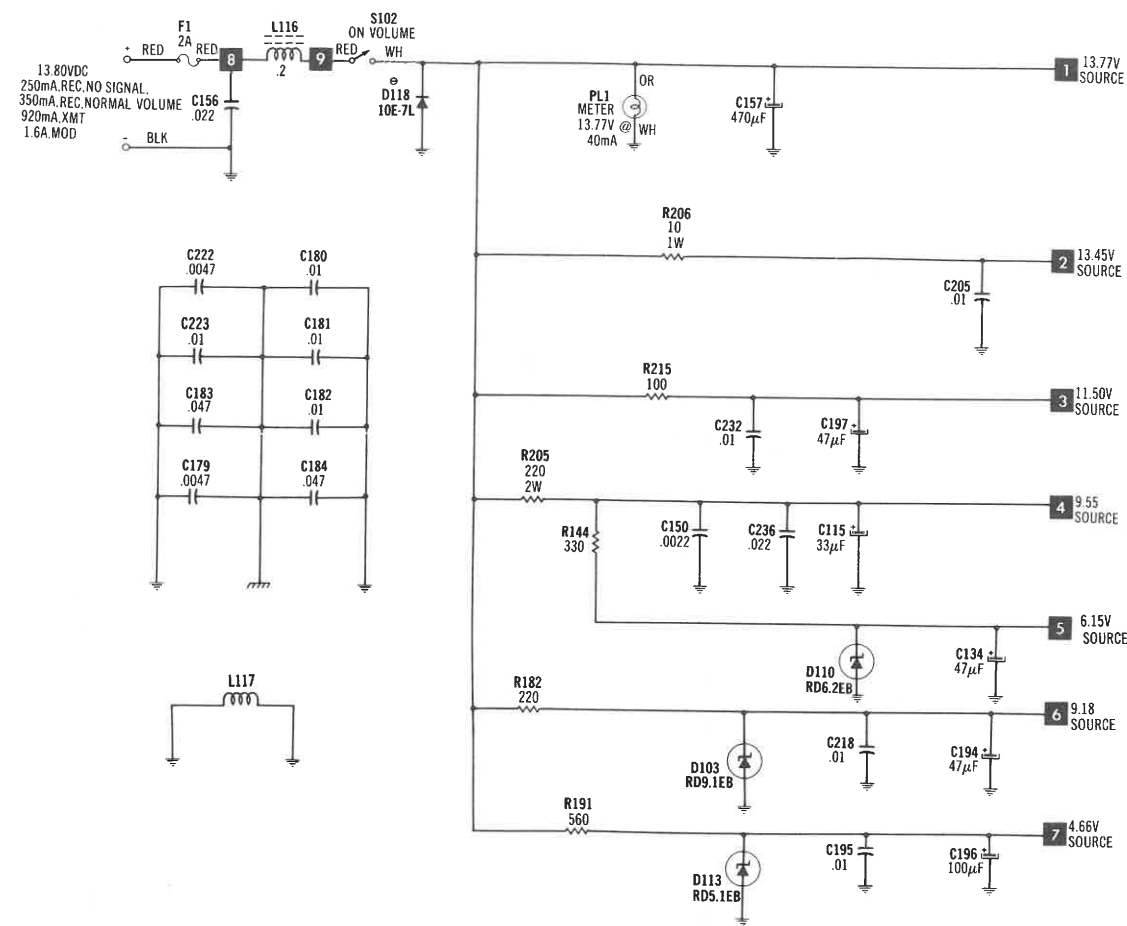


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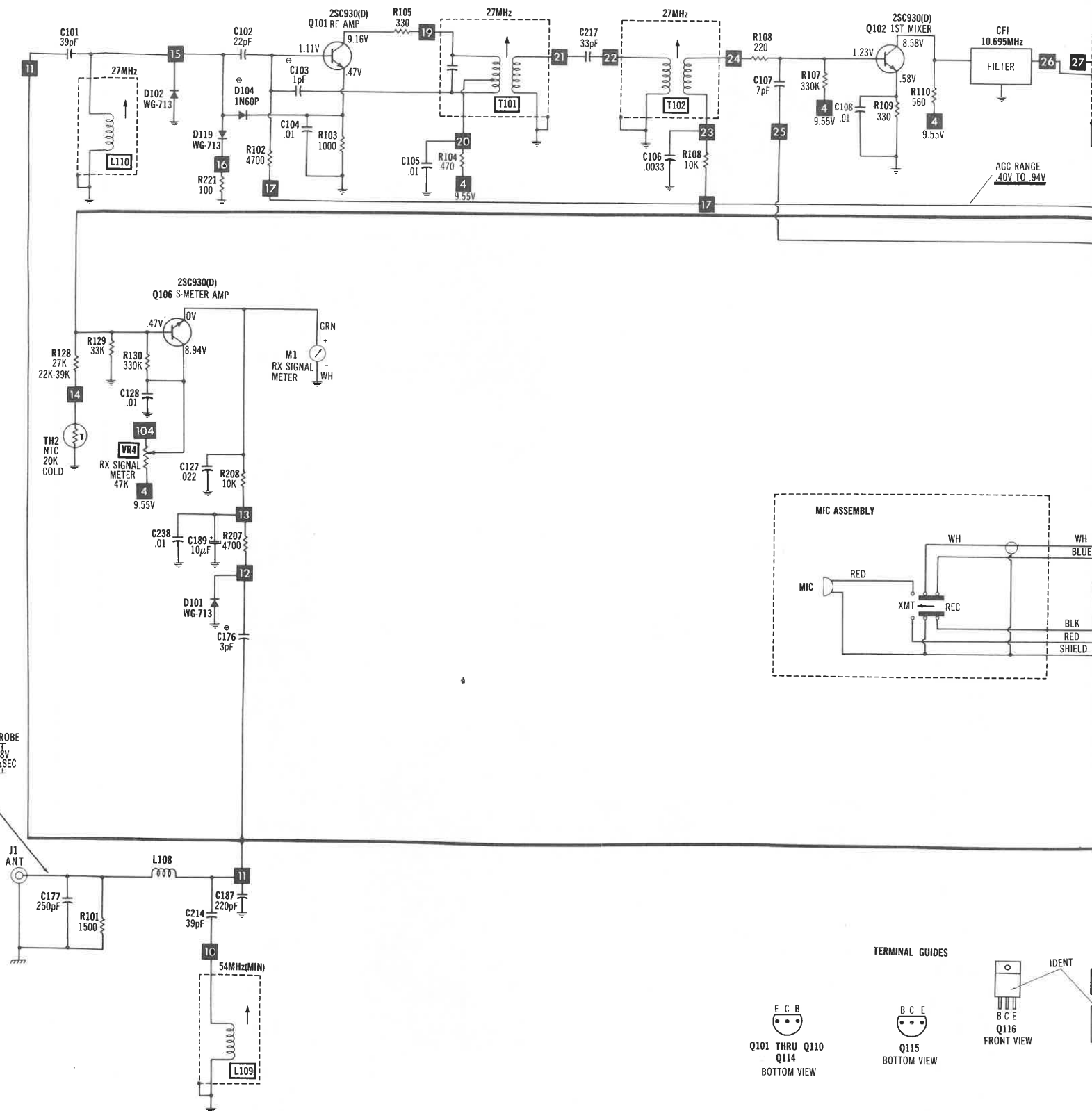
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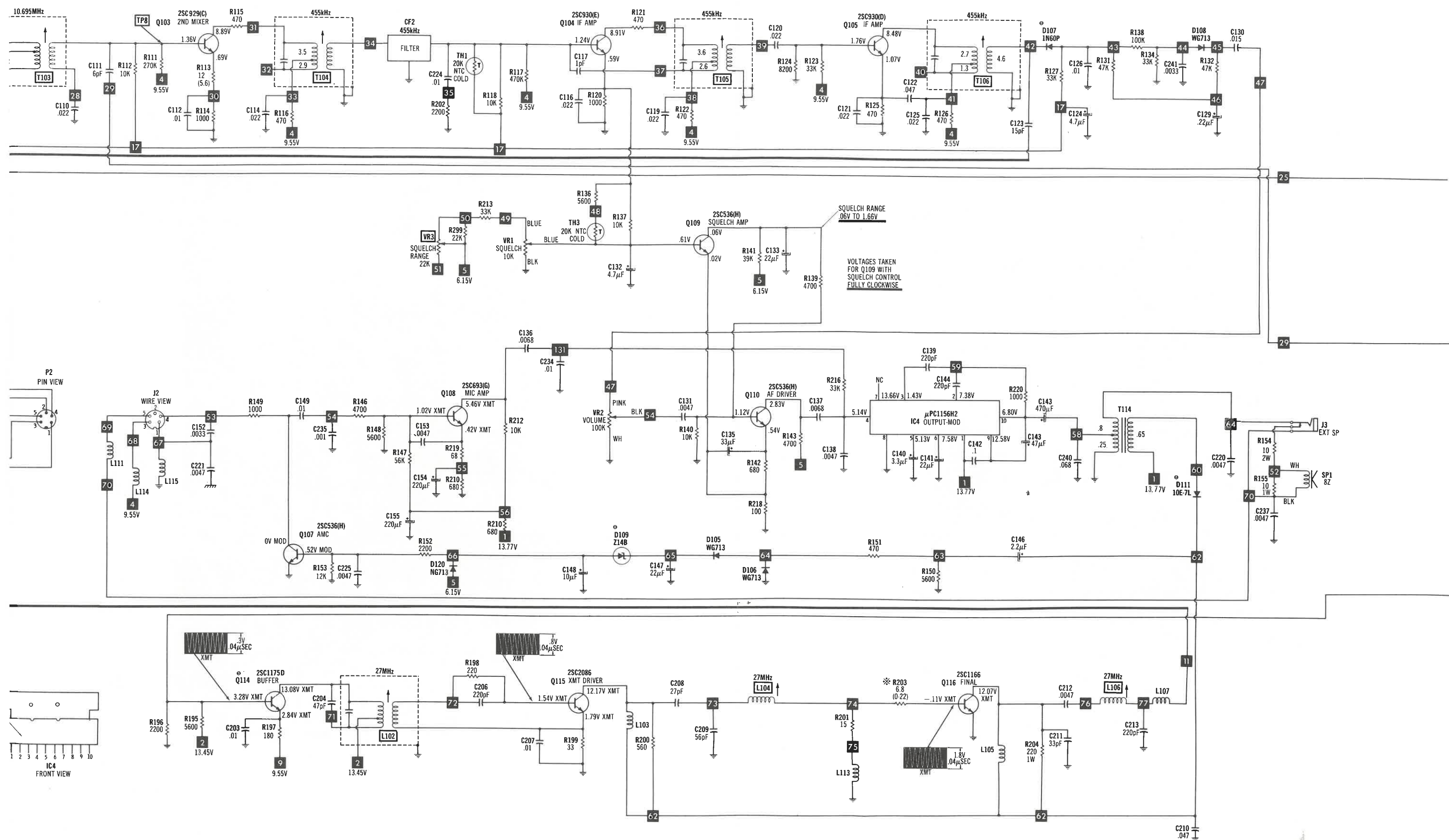




- Circuitry not used in some versions.
- - - Circuitry used in some versions.
- ⊗ Nominal value ∇ Common tie point
- ⊥ Ground
- ⏏ Chassis
- Ⓢ See parts list
- Waveforms and Voltages taken in Channel 19 with switching in receive unless noted. Item numbers in rectangles appear in the alignment/adjustment instructions. Supply voltage maintained as shown at input. Voltages measured with digital meter, no signal. Controls adjusted for normal operation. Terminal identification may not be found on unit. Resistors are 1/2W or less, 5% unless noted. Value in () used in some versions. Arrow head(s) at coils and transformers indicates accessibility of tuning slug(s).

A PHOTOFACIT STANDARD NOTATION SCHEMATIC
WITH **CIRCUITRACE**
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PARTS LIST AND DESCRIPTION

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

WIRING DATA

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

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFG. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RAYTHEON PART No.	RCA PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
D101	WG-713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D102	WG-713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D103	RD9.1EB	DX-0402		ZM9.1B		SK3784/5018A	ECG5018A	TM5018	WEP1419/5018	103-279-18
D104	1N60P	DX-0162	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-29001
	1S188FM	DX-0162	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-29001
D105	WG-713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D106	WG-713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D107	1N60P	DX-0162	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-29001
	1S188FM	DX-0162	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-29001
D108	WG-713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D109	Z148			ZM14A		SK3789/5023A	ECG5023A	TM5023	WEP1425/5023	
	MZ314B	DX-0713		ZM14A		SK3789/5023A	ECG5023A	TM5023	WEP1425/5023	
	WZ140	DX-0713		ZM14B		SK3789/5023A	ECG5023A	TM5023	WEP1425/5023	
D110	RD6.2EB	DX-0408		ZM6.2B		SK3779/5013A	ECG5013A	TM5013	WEP1414/5013	
D111	10E-7L		GE-504A	PTC201	REN 116	SK3311	ECG116	TM116	WEP156	212-76-02
	10E-1	DX-1039	GE-504A	PTC201	REN 116	SK3311	ECG116	TM116	WEP156	212-76-02
D112	WG-713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D113	RD5.1EB	DX-0398		ZM5.1B		SK3776/5010A	ECG5010A	TM5010	WEP1411/5010	103-279-10
D114	1TT310S	DX-1080	GE-90		REN 614		ECG614	TM614	WEP200/614	103-219
D115	WG-713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D116	WG-713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D118	10E-7L		GE-504A	PTC201	REN 116	SK3311	ECG116	TM116	WEP156	212-76-02
	10E-1	DX-1039	GE-504A	PTC201	REN 116	SK3311	ECG116	TM116	WEP156	212-76-02
D119	WG-713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D120	WG-713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
IC1	HD42853	MX-3540								
	UPD2814C									
	HD2856									
IC2	TA7310P	MX-3256			REN 1192	SK3445/1192	ECG1192	TM1192	WEP2120/1192	
IC3	TA7310P-Y	MX-3545			REN 1192	SK3445/1192	ECG1192	TM1192	WEP2120/1192	
	TA7310P	MX-3256			REN 1192	SK3445/1192	ECG1192	TM1192	WEP2120/1192	
IC4	UPC1156H2	MX-3587				SK3484/1194	ECG1194	TM1194	WEP2126/1194	
Q101	2SC930D		GE-60*	PTC132*	REN 229	SK3356	ECG229*	TM229*/**	WEP380	121-79021*
	2SC930		GE-60*	PTC132*	REN 229	SK3356	ECG229*	TM229*/**	WEP380	121-79021*
Q102	2SC930D		GE-60*	PTC132*	REN 229	SK3356	ECG229*	TM229*/**	WEP380	121-79021*
	2SC930		GE-60*	PTC132*	REN 229	SK3356	ECG229*	TM229*/**	WEP380	121-79021*
Q103	2SC929C		GE-86	PTC132*	REN 229*	SK3132	ECG229*	TM229*	WEP956/229*	121-79021*
	2SC929		GE-86	PTC132*	REN 229*	SK3132	ECG229*	TM229*	WEP956/229*	121-79021*
Q104	2SC930E		GE-60*	PTC132*	REN 229	SK3356	ECG229*	TM229*/**	WEP380	121-79021*
	2SC930		GE-60*	PTC132*	REN 229	SK3356	ECG229*	TM229*/**	WEP380	121-79021*
Q105	2SC930D		GE-60*	PTC132*	REN 229	SK3356	ECG229*	TM229*/**	WEP380	121-79021*
	2SC930		GE-60*	PTC132*	REN 229	SK3356	ECG229*	TM229*/**	WEP380	121-79021*
Q106	2SC930D		GE-60*	PTC132*	REN 229	SK3356	ECG229*	TM229*/**	WEP380	121-79021*
	2SC930		GE-60*	PTC132*	REN 229	SK3356	ECG229*	TM229*/**	WEP380	121-79021*
Q107	2SC536H		GE-212	PTC121*	REN 199	SK3122	ECG199	TM199	WEP536	121-972
	2SC536		GE-212	PTC121*	REN 199	SK3122	ECG199	TM199	WEP536	121-972
Q108	2SC693G		GE-62	PTC136*	REN 199	SK3124/289	ECG199	TM199	WEP66/199	121-972
	2SC693		GE-62	PTC136*	REN 199	SK3124/289	ECG199	TM199	WEP66/199	121-972
Q109	2SC536E		GE-212	PTC121*	REN 199	SK3122	ECG199	TM199	WEP536	121-972
	2SC536		GE-212	PTC121*	REN 199	SK3122	ECG199	TM199	WEP536	121-972
Q110	2SC536H		GE-212	PTC121*	REN 199	SK3122	ECG199	TM199	WEP536	121-972
	2SC536		GE-212	PTC121*	REN 199	SK3122	ECG199	TM199	WEP536	121-972
Q111	2SC930E		GE-60*	PTC132*	REN 229	SK3356	ECG229*	TM229*/**	WEP380	121-79021*
	2SC930		GE-60*	PTC132*	REN 229	SK3356	ECG229*	TM229*/**	WEP380	121-79021*
Q112	2SC930E		GE-60*	PTC132*	REN 229	SK3356	ECG229*	TM229*/**	WEP380	121-79021*
	2SC930		GE-60*	PTC132*	REN 229	SK3356	ECG229*	TM229*/**	WEP380	121-79021*
Q113	2SK41E1		GE-FET-2	PTC161	REN 132*	SK3834/132	ECG312*	TM312*	WEP920/312*	121-756
	2SK41		GE-FET-2	PTC161	REN 132*	SK3834/132	ECG312*	TM312*	WEP920/312*	121-756
Q114	2SC1175D		GE-210	PTC123*	REN 123A*	SK3122	ECG123A*	TM123A*	WEP774	121-29000A*
	2SC1175E		GE-210	PTC123*	REN 123A*	SK3122	ECG123A*	TM123A*	WEP774	121-29000A*
	2SC1175		GE-210	PTC123*	REN 123A*	SK3122	ECG123A*	TM123A*	WEP774	121-29000A*
Q115	2SC2086		GE-47*	PTC143*	REN 293*	SK3842	ECG293*	TM293*	WEP914/297	
Q116	2SC2166		GE-215	PTC186	REN 235	SK3197/235	ECG235	TM235	WEP785/235	121-29039

* Lead configuration may vary from original.

/** Also available as exact type replacement.

(12) For Australian Models.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFG. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C115	33 16V		PC30-25	VTT33025	QV1-63	EV-1325
C124	4.7 25V		PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C129	.22 25V			TDC224M050EL	QDT1-10	SD50-R229
C132	4.7 25V		PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C133	2.2 16V		PC2-100	VTT2R2A50	QV1-21	EV-1617.1
C134	47 10V		PC50-16	VTT47D16	QV1-73	EV-1226
C135	33 10V		PC30-25	VTT33B10		EV-1225
C140	3.3 25V			TDC335M035FL		SD35-3R39
C141	22 16V		PC25-25	VTT22B16	QV1-55	EV-1224
C143	47 16V		PC50-16	VTT47D16	QV1-73	EV-1226
C145	470 16V		PC500-16	VTT470K16	QV1-151	EV-1251
C146	2.2 50V			TDC225M050FL	QDT1-37	SD50-2R29
C147	22 16V		PC25-25	VTT22B16	QV1-55	EV-1224
C148	10 25V		PC10-25	VTT10B25		EV-1422
C154	220 10V		PC250-10	VTT220F10	QV1-115	EV-1140
C155	220 16V		PC250-25	VTT220H16	QV1-117	EV-1240
C157	470 16V		PC500-16	VTT470K16	QV1-151	EV-1251
C165	1 35V			TDC105M035EL		SD35-19
C166	1 50V			VTT1A50	QV1-11	EV-1615
C167	33 16V		PC1-50	VTT33025	QV1-63	EV-1325
C189	10 25V		PC10-25	VTT10B25		EV-1422
C194	47 16V		PC50-16	VTT47D16	QV1-73	EV-1226
C196	100 10V		PC100-10	VTT100E10	QV1-93	EV-1131
C197	47 16V		PC50-16	VTT47D16	QV1-73	EV-1226
C230	10 10V		PC10-25	VTT10B25	QV1-41	EV-1222

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.		
					Q-LINE	GENERAL LINE	
C101	39 50V 5%	CF1015	CD15ED390J03	SX439	QW1-17	MWA-390	
C102	22 50V 5%		CD15ED220J03	SX422	QW1-11	MWA-220	
C103	1 50V +.25			CN0510			
C104	.01 25V	CF1114		MAG2511		HY-520	
C105	.01 25V			MAG2511		HY-520	
C106	.0033 50V 10%		WMF1D33	M192P3329R8	QFT2-43	1FT-D33	
C107	7 50V +.25	CF1108		CN0410			
C108	.01 25V			MAG2511		HY-520	
C110	.022 50V 10%		DPMS2S22	M192P2239R8	QFT2-127	1FT-S22	
C111	6 50V +.25	CF1015		CN0568			
C112	.01 25V			MAG2511		HY-520	
C114	.022 50V 10%		DPMS2S22	M192P2239R8	QFT2-127	1FT-S22	
C116	.022 50V 10%	CF1015	DPMS2S22	M192P2239R8	QFT2-127	1FT-S22	
C117	1 50V +.25			CN0510			
C119	.022 50V 10%		DPMS2S22	M192P2239R8	QFT2-127	1FT-S22	
C120	.022 50V 10%		DPMS2S22	M192P2239R8	QFT2-127	1FT-S22	
C121	.022 50V 10%		DPMS2S22	M192P2239R8	QFT2-127	1FT-S22	
C122	.047 50V 10%		DPMS2S47	EW1A147	QF1-171	1PB-S47	
C123	15 50V 5%		NP015	CN0415		10TCC-Q15	
C125	.022 50V 10%		DPMS2S22	M192P2239R8	QFT2-127	1FT-S22	
C126	.01 50V 10%		WMF1S1	M192P1039R8	QFT2-91	1FT-S10	
C127	.022 50V 10%		DPMS2S22	M192P2239R8	QFT2-127	1FT-S22	
C128	.01 50V 10%		WMF1S1	M192P1039R8	QFT2-91	1FT-S10	
C130	.015 50V 10%		WMF1S15	M192P1539R8	QFT2-105	1FT-S15	
C131	.0047 50V 10%		WMF1D47	M192P4729R8	QFT2-63	1FT-D47	
C136	.0068 50V 10%		WMF1D68	M192P6829R8	QFT2-73	1FT-D68	
C137	.0068 50V 10%		WMF1D68	M192P6829R8	QFT2-73	1FT-D68	
C138	.0047 50V 10%		WMF1D47	M192P4729R8	QFT2-63	1FT-D47	
C139	220 50V 5%					10TCC-T22	
C142	.1 50V 10%		WMF05P1	M192P1049R8	QFT2-215	1FT-P10	
C144	220 50V 5%					10TCC-T22	
C149	.01 50V 10%		WMF1S1	M192P1039R8	QFT2-91	1FT-S10	
C150	.0022 25V			GP222		10TS-D22	
C152	.0033 50V 10%		WMF1D33	M192P3329R8	QFT2-43	1FT-D33	
C153	.0047 50V 10%		WMF1D47	M192P4729R8	QFT2-63	1FT-D47	
C156	.022 25V	CF1025				HY-725	
C158	10 50V 5%		NP010	CN0410		10TCC-Q10	
C159	220 50V 5%					10TCC-T22	
C160	82 50V 5%		NP082	CN0482		10TCC-Q82	
C161	2 50V +.25			CN0522			
C163	39 50V 5%	CF1108	CD15ED390J03	SX439	QW1-17	MWA-390	
C164	10 50V 5%		CD15CD100J03	CN0310	QW1-6	MWA-100	
C168	.022 50V 10%		DPMS2S22	M192P2239R8	QFT2-127	1FT-S22	
C169	100 50V 5%	CF1108	NP0100	CN0439		10TCC-T10	
C170	39 50V 5%			CN0568		10TCC-Q39	
C171	6 50V +.25			CN0447			
C172	.47 50V 5%		MAG2511		10TCC-Q47		
C173	.01 25V				HY-520		
C174	33 50V 5%		CD15ED330J03	SX433	QW1-15	MWA-330	
C175	82 50V 5%		NP082	CN0482		10TCC-Q82	
C176	3 50V +.25	CF1045		CN0533			
	5 50V +.25	CF1045		CN0568			
C177	250 50V 10%	CF1025	CD15FD271J03	SX327	QW1-37	MWB-271	
C178	2 50V +.25				CN0522		
	1 50V +.25				CN0510		
C179	.0047 50V 10%		GP4700	GP247		5GA-D47	
C180	.01 25V			MAG2511		HY-520	
C181	.01 25V			MAG2511		HY-520	
C182	.01 25V			MAG2511		HY-520	
C183	.047 50V		DPMS2S47	EW1A147	QF1-171	1PB-S47	

PARTS LIST AND DESCRIPTION (CONTINUED)

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

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.		
					Q-LINE	GENERAL LINE	
C184	.047 50V	CF1045	DPMS2S47	EWFA1A147	QF1-171	1PB-S47	
C185	220 50V 5%		GP820 CD15FD221J03	GP382	QW1-35	10TCC-T22	
C186	820 50V 5%			SX322		10TS-T82	
C187	220 50V 10%			CN0533		MWA-221	
C188	3 ±.25 5 ±.25			CN0568			
C190	.001 50V 10%		DPMS6D1	M192P10292	QFT2-1	1FT-D10	
C191	.022 50V 10%		DPMS2S22	M192P2239R8	QFT2-127	1FT-S22	
C192	.01 25V		WMF1D47	MAG2511	QFT2-63	HY-520	
C193	.01 25V			MAG2511		HY-520	
C195	.01 25V			MAG2511		HY-520	
C198	.01 25V			MAG2511		HY-520	
C199	.0047 50V 10%			M192P4729R8		1FT-D47	
C200	.01 25V			MAG2511		HY-520	
C201	.01 25V			MAG2511		HY-520	
C202	100 50V 10%		CF1089	CD15FD101J03	SX310	QW1-27	MWA-101
C203	47 50V 10%			CD15ED470J03	SX447	QW1-19	MWA-470
	.01 25V			CD15ED470J03	MAG2511	QW1-19	HY-520
C204	47 50V	CD15FD221J03		SX447	QW1-35	MWA-470	
C205	.01 25V			MAG2511		HY-520	
C206	220 50V 10%			SX322		MWA-221	
C207	.01 25V	MAG2511		HY-520			
C208	27 50V 5%	CD15ED270J03		SX427	QW1-13	MWA-270	
C209	56 50V 5%	CD15ED560J03		SX456	QW1-21	MWA-560	
C210	.047 50V	DPMS2S47		EWFA1A147	QF1-171	1PB-S47	
C211	33 50V 5%	CD15ED330J03		SX433	QW1-15	MWA-330	
C212	.0047 50V	GP4700	GP247	QW1-35	56A-D47		
C213	220 50V 10%	CD15FD221J03	SX322		MWA-221		
C214	39 50V 5%	CD15ED390J03	SX439	QW1-17	MWA-390		
C215	4 50V ±.25	C-0751	NP0100 NP033	CN0547	QFT2-63	10TCC-T10	
C216	100 50V 10%			CN0310		10TCC-033	
C217	33 50V 5%			CN0433		HY-520	
C218	.01 25V		MAG2511	56A-D47			
C220	.0047 50V 10%		GP247	1FT-D47			
C221	.0047 50V 10%		WMF1D47	56A-D47			
C222	.0047 50V 10%		GP4700	HY-520			
C223	.01 25V		WMF1S1	MAG2511	QFT2-91	1FT-S10	
C224	.01 50V			M192P1039R8	QFT2-63	1FT-D47	
C225	.0047 50V 10%			M192P4729R8	HY-520		
C228	.01 25V		NP010	MAG2511	10TCC-Q10		
C229	10 50V 5%			CN0410	HY-520		
C231	.01 25V			MAG2511	HY-520		
C232	.01 25V		WMF1S1	MAG2511	HY-520		
C234	.01 50V 10%			M192P1039R8	QFT2-91	1FT-S10	
C235	.001 50V 10%			DPMS6D1	QFT2-1	1FT-D10	
C236	.022 50V 10%			DPMS2S22	QFT2-127	1FT-S22	
C237	.0047 50V 10%			GP4700	56A-D47		
C238	.01 25V			MAG2511	HY-520		
C240	.068 50V 10%			WMF1S68	QF1-195	1PE-S68	
C241	.0033 50V 10%			WMF1D33	QFT2-43	1FT-D33	
C242	.01 25V	C-0751				HY-520	
CT-1	Trimmer						

REALISTIC MODELS TRC-420, TRC-420-18

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA		
			MFR. PART No.	MALLORY PART No.	TRW PART No.
VR1	Squelch	10K	P1729		
VR2	Volume/Power Switch	100K	P1881		
VR3	Squelch Range	47K	P6492		X260R503B
VR4	Squelch Range	22K	(6)		
	RX Signal	47K	P6492		X260R503B

(6) Alternate part, may be used in some versions.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		MFR. PART No.	WORKMAN PART No.			MFR. PART No.	WORKMAN PART No.
TH-1	20K Cold NTC	T1205		TH-3	20K Cold NTC	T1205	
TH-2	20K Cold NTC	T1205					

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.	
L101	RF Choke	CA-3932	78135		
L102	Pre Drive (27MHz)	CA-3937			
L103	RF Choke	CB-2283			
L104	XMT Driver (27MHz)	CA-3910			
L105	RF Choke	C-2284			
L106	Final Loading (27MHz)	C-0755			
L107	RF Choke	CA-3547			
L108	RF Choke	CA-3548			
L109	TVI Trap	CA-3908			
L110	Rec RF Input	CA-3543			
L111	RF Choke	CB-2318	78125		
L113	RF Choke	CB-2318			
L114	RF Choke	CB-2318			
L115	RF Choke	CB-2318			
L116	Line Choke	CA-3920			
L117	Choke Coil	CB-2318			
T101	RF Amp (27MHz)	CA-3916			
T102	RF Amp (27MHz)	CA-3917			
T103	1st Mixer (10.695MHz)	CA-7880			
T104	IF (455kHz)	CA-7881			
T105	IF (455kHz)	CA-7513	380159		
T106	IF (455kHz)	CA-7514			
T107	Ref Osc (10.240MHz)	CA-3984			
T108	PLL Output (15MHz)	CA-4939			
T109	VCO	CA-3911			
T110	Mixer (16MHz)	CA-4939			
T111	Ref Osc (10.240MHz)	CA-3935			
T112	Mixer (27MHz)	CA-3923			
T113	Mixer (27MHz)	CA-3925			

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T114	12.5	1 2 8 1.5	TD0172 P-100519(1)			(1) Number on unit.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP	3" PM 8 Ohms	S4645	30A05Z8R	

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA						
		PART No.		BUSS PART No.		LITTELFUSE PART No.		WORKMAN PART No.
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE
F1	2A Quick Acting	HF-111		AGC2	HRK	312-002	150145	FG2-2

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF1	Filter	C-0913	10.7MHz
CF2	Filter	C-0754	455kHz
D117	LED	L-0903	Channel Indicator
J1	Jack	J6574	Antenna
J2	Jack	J6575	Mic
J3	Jack	J0957	External Speaker
M1	Meter	M-0320	S/R
PL1	Lamp	L0904	Meter (13.77V @ 40mA)
S101	Switch	S1307	Channel Selector
X-1	Switch	P-18034E(1)	Channel Selector
	Crystal	MX2295	10.240MHz
	P.C. Board	P-200583	Main

(1) For Australian models.

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

ITEM	PART No.	ITEM	PART No.
Case, Top	Z-4037	Knob, Channel Select	K-2974
Case, Bottom	Z-4038	Knob, Volume/Squelch	K-2973
Front Panel	Z-4099		