



PHOTOFACT[®] with CIRCUITRACE[®]

For Supplier Address See PHOTOFACT Index

NOTE

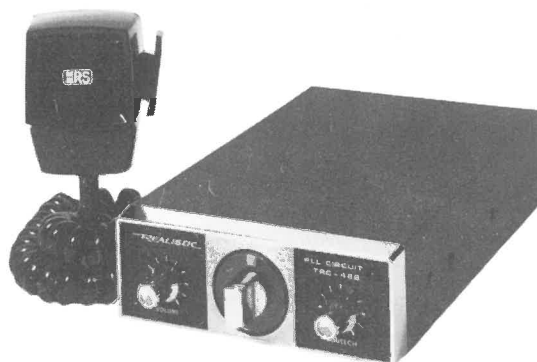
Repair or adjustment of transmitter circuits must be under supervision of a person with first-or second-class radiotelephone license.

(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-468 (21-1520)

MANUFACTURER'S SPECIFICATIONS

TRANSMITTER SPECIFICATIONS

Description	Nominal	Limit
RF power output	4 watts	3.0~4.0 watts
Emission	6A3	
Modulation capabilities	+90%, -100%	
AMC range (1 kHz)	55 dB	≥36 dB
Mic sensitivity (50% Modulation @ 1000 Hz)	1.0 mV	0.5 to 2 mV
Frequency accuracy	0.002%	≤0.005%
Spurious radiation & Harmonic signal radiation (ratio from fundamental)	-66 dB	≤-60 dB
Current consumption		
unmodulated	800 mA	800 mA ±25%
max. modulated	1300 mA	1300 mA ±25%
Envelope distortion at 1000 Hz, 50% modulation	4.0%	≤10%
Hum and Noise level (below maximum modulation capability)	50 dB	≥35 dB
Stability against variation of antenna impedance	Satisfactory when dummy antenna is varied from 20 ohms to 200 ohms.	

RECEIVER SPECIFICATIONS

Intermediate frequency		
1st IF	10.695 MHz	
2nd IF	455 kHz	
Sensitivity for 500 mW output	0.2 μV	≤0.5 μV
Sensitivity at 10 dB S+N/N	0.5 μV	≤1.0 μV
Adjacent Channel Rejection	60 dB	≥45 dB
Image Response (26 MHz)	-45 dB	≤-30 dB
Signal to Noise ratio		
at 1 mV input	45 dB	≥35 dB
Distortion		
at 5 mV input	3.0%	≤8.0%
AGC Figure of merit	70 dB	≥60 dB
Power output at 5000 μV input		
Undistorted (10% THD)	3.5 W	≥3.0 W
Maximum	5.0 W	≥4.0 W
Electrical fidelity compared to 1000 Hz		
400 Hz	-6 dB	-6 ±5 dB
2500 Hz	-6 dB	-6 ±5 dB
Cross Modulation	48 dB	≥46 dB
Squelch	Adjustable from 0.5 μV to 1 mV	
Current Consumption		
No signal	140 mA	140 mA ±25%
Max. output	850 mA	850 mA ±25%

Courtesy of the Manufacturer

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

© 1978 Howard W. Sams & Co., Inc. Printed in U. S. of America 8CE724

REALISTIC MODEL TRC-468

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:

T1, T2, T11 thru T15, T201..... 9440

T203, T204, T205..... 9440

T3, T4, T5, T202 thru T208..... 5009, 8728, 8728A

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of frequency counter to TP1 (IC201 pin 10).	Ch. 19		Check for 10.240MHz
Input of oscilloscope and frequency counter to TP2 (T208 secondary).	Ch. 19	T208	Adjust for maximum RF at 10.240MHz.
Input of frequency counter to TP3 (IC201 pin 9).	Ch. 19	R222	Adjust for 5.120MHz.
Input of oscilloscope and frequency counter to TP4 (T206 secondary).	Ch. 19	T206	Adjust for maximum RF at 15.630MHz.
Input of DC meter to TP5 (Junction of R203 and R206).	Ch. 1	T201	Adjust for 1.80 volts.
Input of oscilloscope to TP6 (T202 secondary).	Ch. 19	T202	Adjust for maximum RF.
Input of frequency counter to TP7 (P211).	Ch. 1		Check for 16.270MHz. Check all channels. See Truth Chart for correct frequencies.
Input of oscilloscope and frequency counter to TP8 (T207 secondary).	Ch. 19, Xmt	T207	Adjust for maximum RF at 10.695MHz. See Truth Chart for correct frequencies.
Input of oscilloscope to TP9 (T205 secondary).	Ch. 19, Xmt	T203, T204 T205	Adjust for maximum RF.
Input of frequency counter to TP9 (T205 secondary).	Ch. 1, Xmt		Check for 26.965MHz. Check all channels. See Truth Chart for correct frequencies.

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 TP10 (Q3 base) 455kHz, 1000Hz @ 30% modulation.	Ch. 19 Squelch MIN	T5, T4, T3	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation.	Ch. 19 Squelch MIN	T2, T1	Adjust for maximum output. If necessary readjust T3, T4 and T5.

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
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 2.0uV.	Ch. 19, Squelch MIN Volume Maximum	RT1	IF GAIN Adjust for .5 watts audio maximum.

TRANSMITTER ALIGNMENT

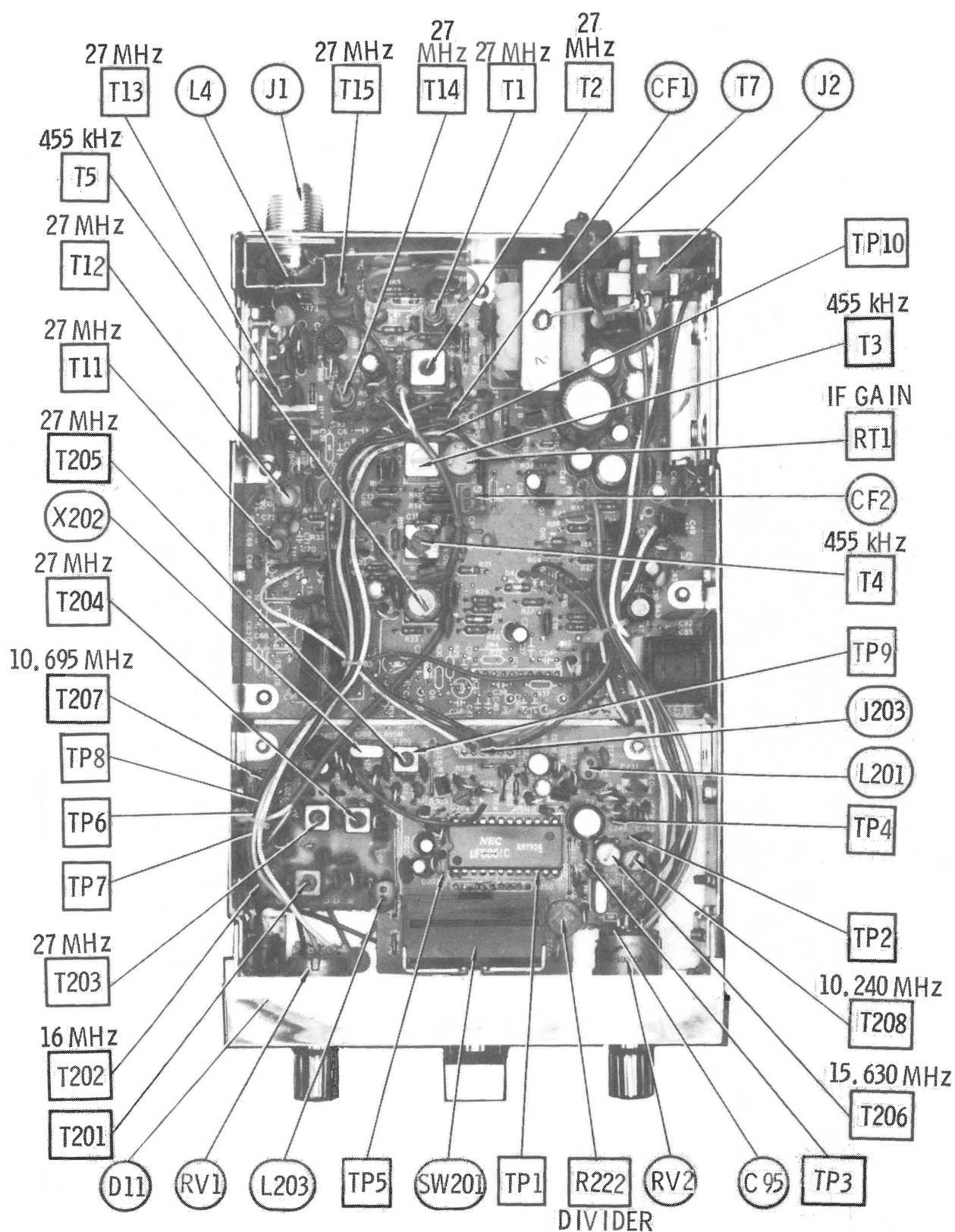
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.
NOTE: Be sure to check frequency and output power on all active channels after alignment of transmitter.
See page 4 for channel frequencies.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
	Ch. 19	T11, T12, T13 T14, T15	Adjust for maximum RF output.
	Ch. 19	T14	Adjust for 4.0 watts output maximum

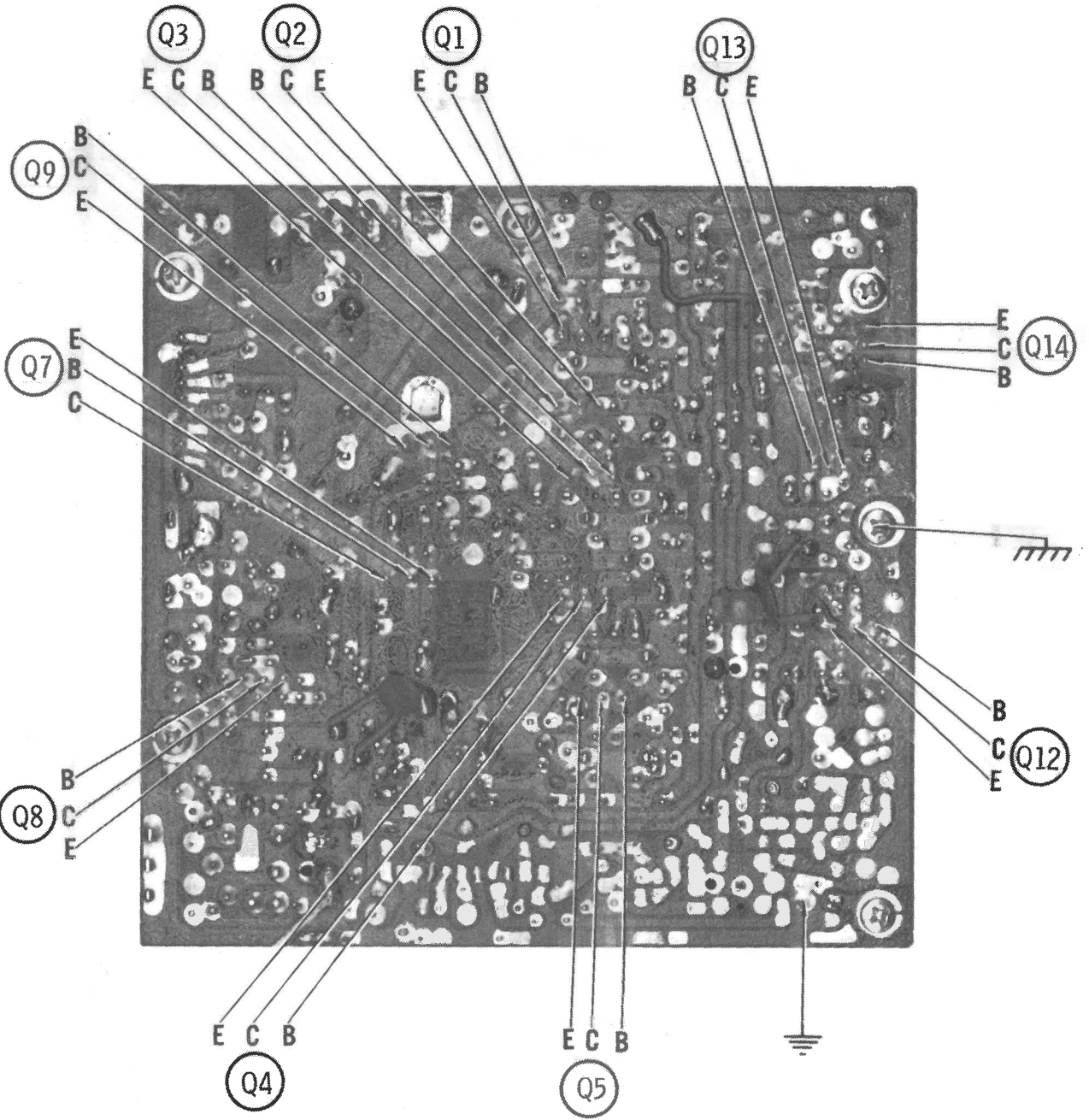
TRUTH CHART

1 = <u>5.06</u> Volts 0 = <u>0</u> Volts									
C H A N N E L	IC201 PROGRAM DIVIDER						REC VCO OUTPUT IN MHz AT TP7	XMT VCO OUTPUT IN MHz AT TP9	
	PINS								
	6	5	4	3	2	1			
1	0	0	0	0	0	1	16.270	26.965	
2	0	0	0	0	1	0	16.280	26.975	
3	0	0	0	0	1	1	16.290	26.985	
4	0	0	0	1	0	0	16.310	27.005	
5	0	0	0	1	0	1	16.320	27.015	
6	0	0	0	1	1	0	16.330	27.025	
7	0	0	0	1	1	1	16.340	27.035	
8	0	0	1	0	0	0	16.360	27.055	
9	0	0	1	0	0	1	16.370	27.065	
10	0	1	0	0	0	0	16.380	27.075	
11	0	1	0	0	0	1	16.390	27.085	
12	0	1	0	0	1	0	16.410	27.105	
13	0	1	0	0	1	1	16.420	27.115	
14	0	1	0	1	0	0	16.430	27.125	
15	0	1	0	1	0	1	16.440	27.135	
16	0	1	0	1	1	0	16.460	27.155	
17	0	1	0	1	1	1	16.470	27.165	
18	0	1	1	0	0	0	16.480	27.175	
19	0	1	1	0	0	1	16.490	27.185	
20	1	0	0	0	0	0	16.510	27.205	

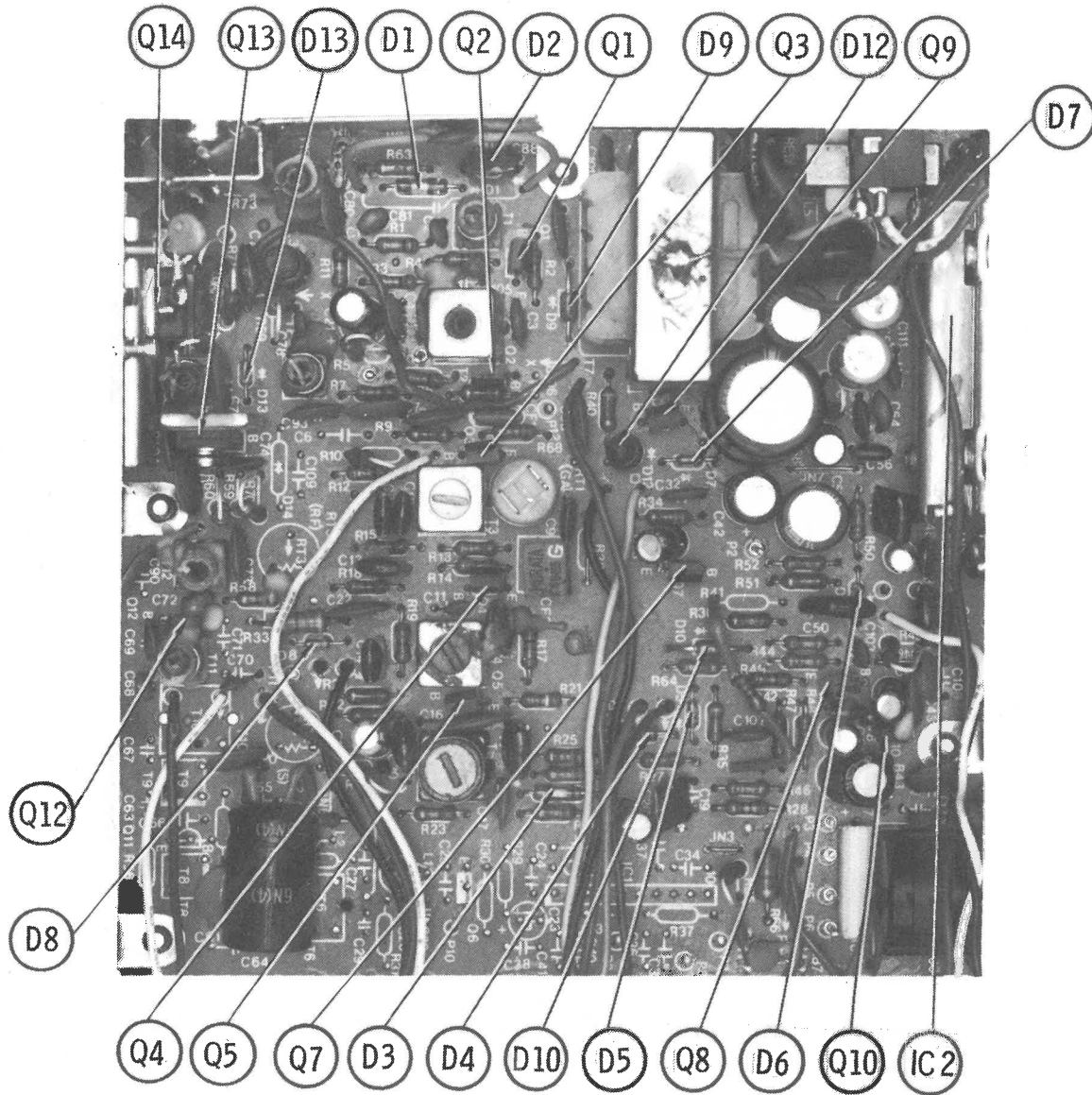
1 = <u>5.06</u> Volts 0 = <u>0</u> Volts									
C H A N N E L	IC201 PROGRAM DIVIDER						REC VCO OUTPUT IN MHz AT TP7	XMT VCO OUTPUT IN MHz AT TP9	
	PINS								
	6	5	4	3	2	1			
21	1	0	0	0	0	1	16.250	27.215	
22	1	0	0	0	1	0	16.530	27.225	
23	1	0	0	0	1	1	16.560	27.255	
24	1	0	0	1	0	0	16.540	27.235	
25	1	0	0	1	0	1	16.550	27.245	
26	1	0	0	1	1	0	16.570	27.265	
27	1	0	0	1	1	1	16.580	27.275	
28	1	0	1	0	0	0	16.590	27.285	
29	1	0	1	0	0	1	16.600	27.295	
30	1	1	0	0	0	0	16.610	27.305	
31	1	1	0	0	0	1	16.620	27.315	
32	1	1	0	0	1	0	16.630	27.325	
33	1	1	0	0	1	1	16.640	27.335	
34	1	1	0	1	0	0	16.650	27.345	
35	1	1	0	1	0	1	16.660	27.355	
36	1	1	0	1	1	0	16.670	27.365	
37	1	1	0	1	1	1	16.680	27.375	
38	1	1	1	0	0	0	16.690	27.385	
39	1	1	1	0	0	1	16.700	27.395	
40	0	0	0	0	0	0	16.710	27.405	



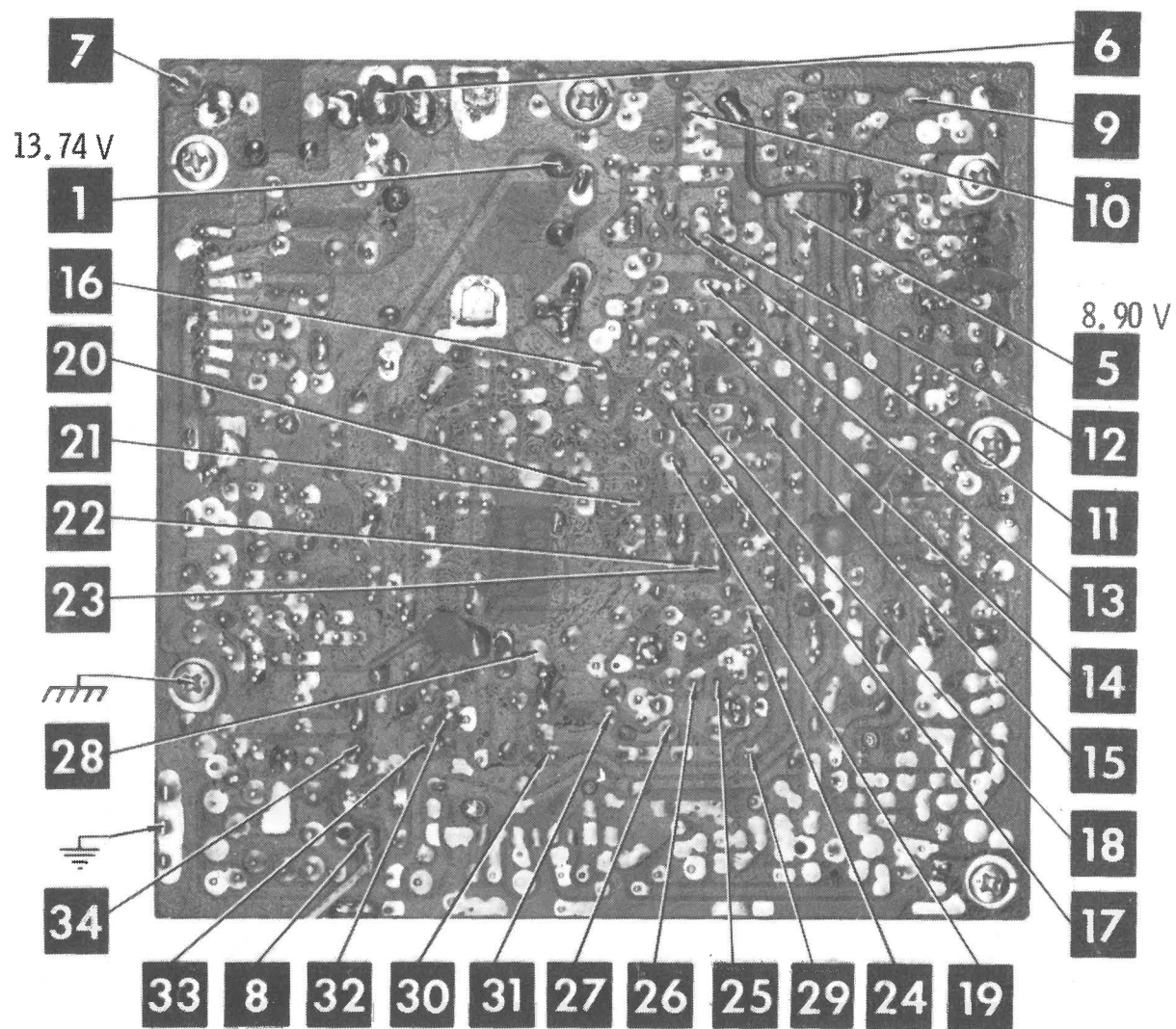
CHASSIS - BOTTOM



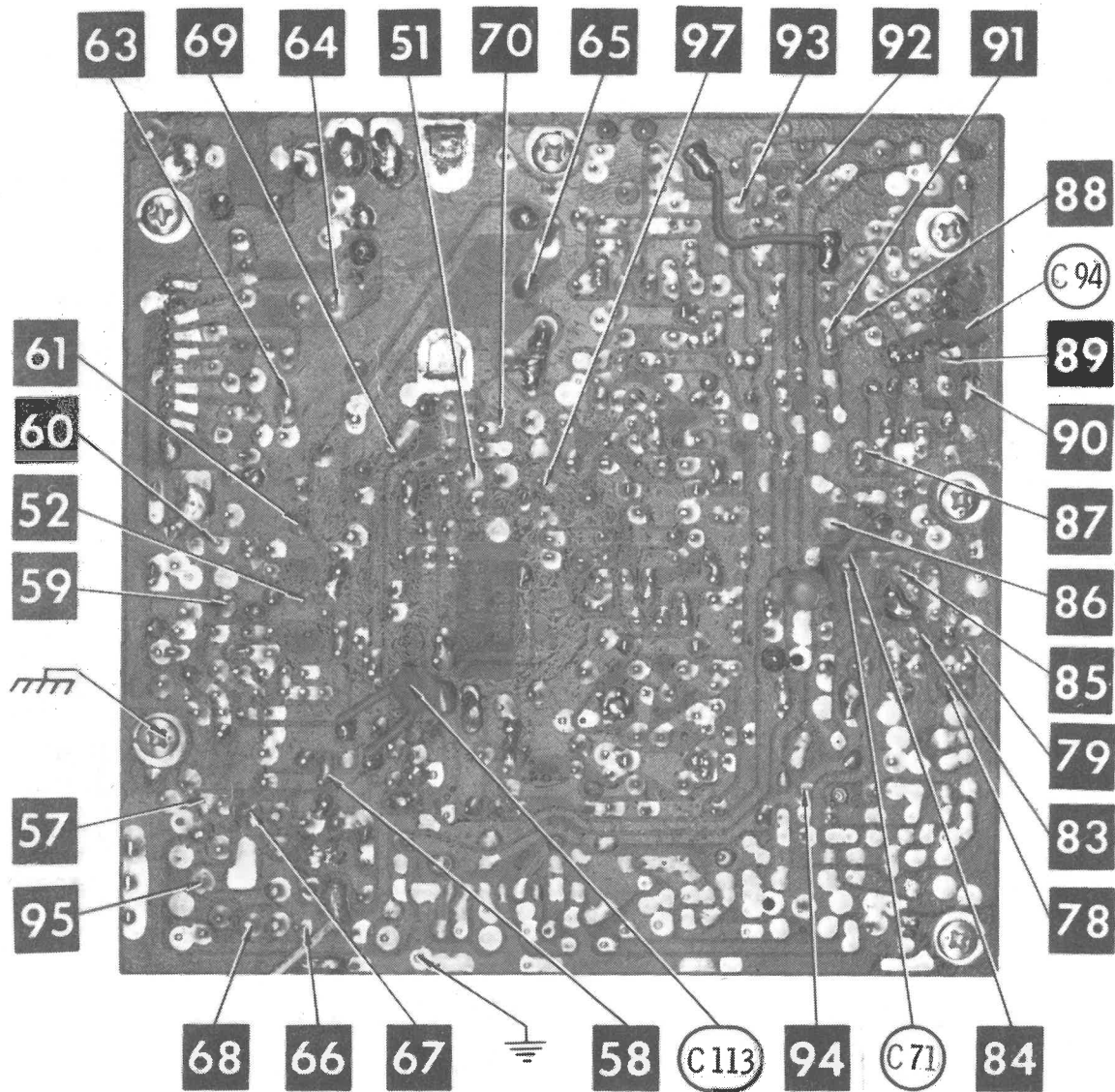
MAIN BOARD



MAIN BOARD

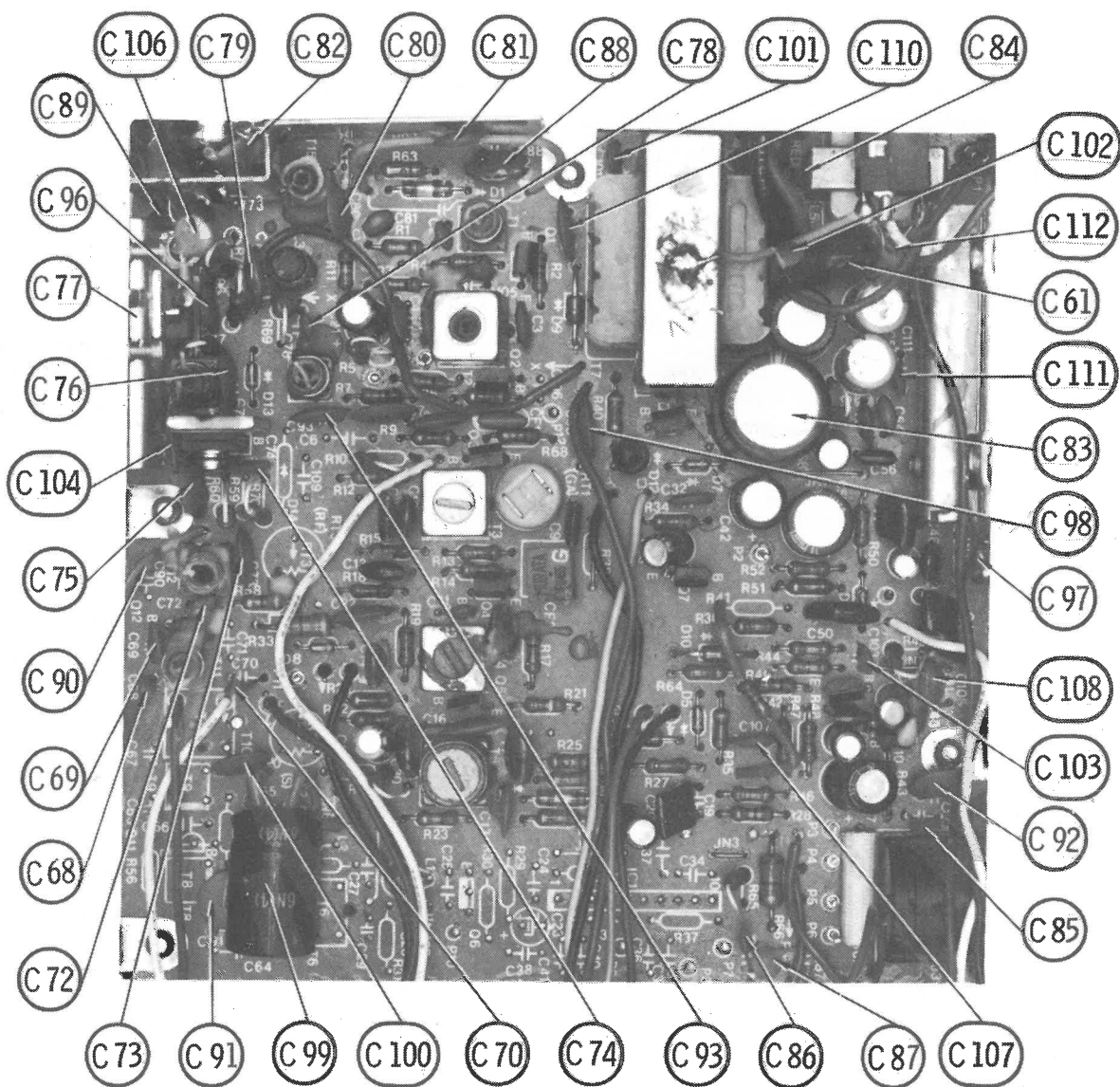


MAIN BOARD

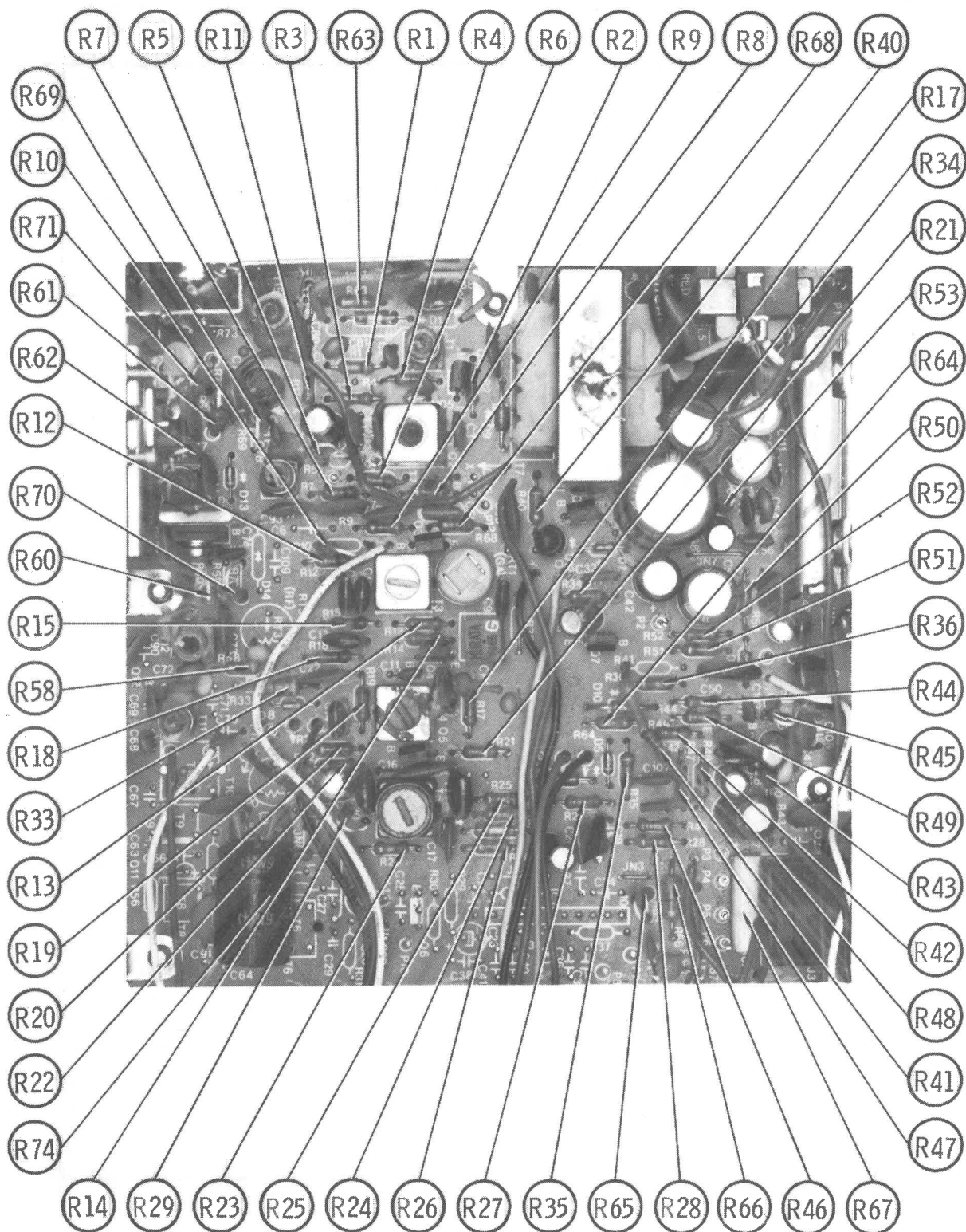


REALISTIC MODEL TRC-468

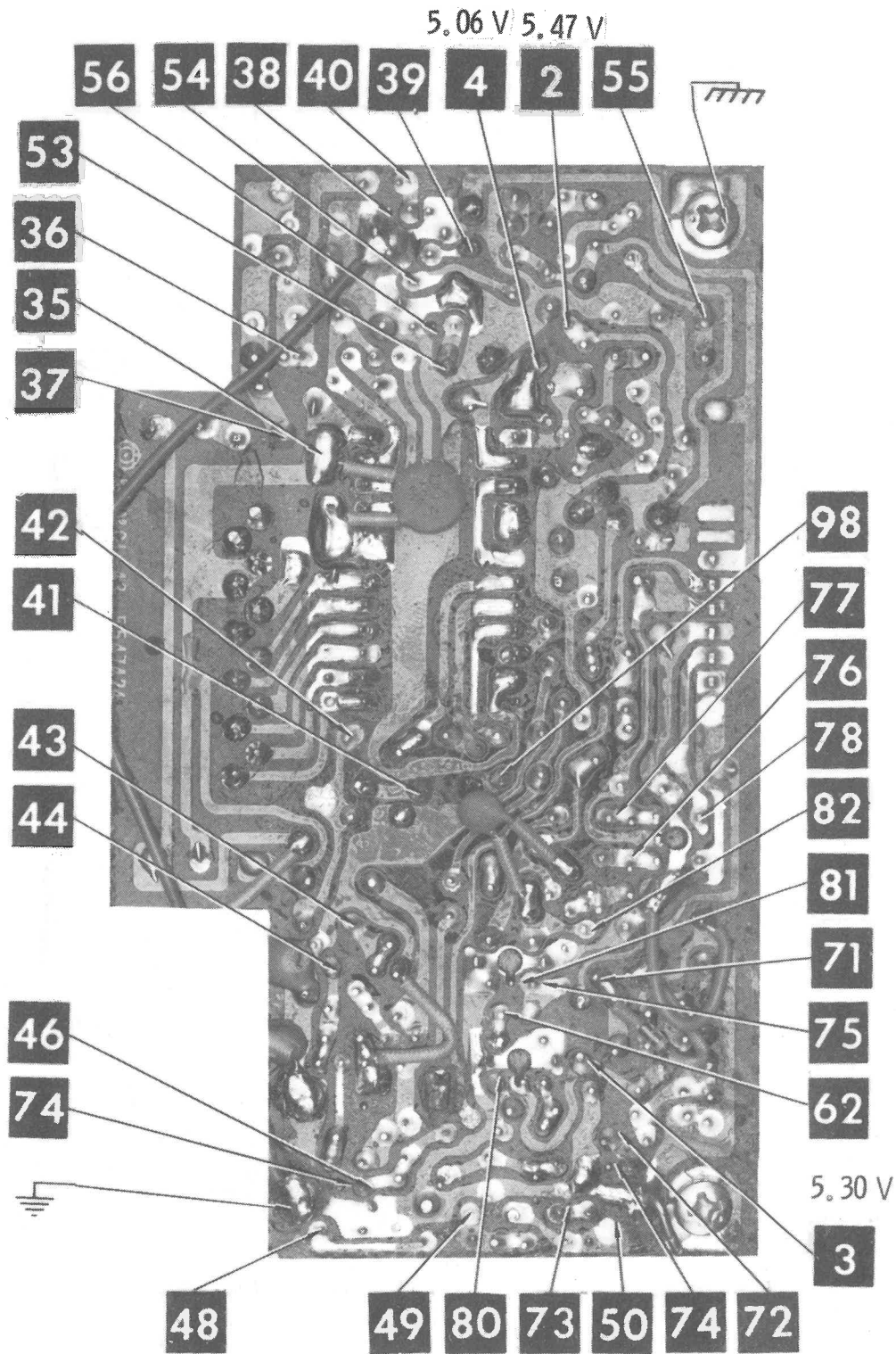
MAIN BOARD



MAIN BOARD

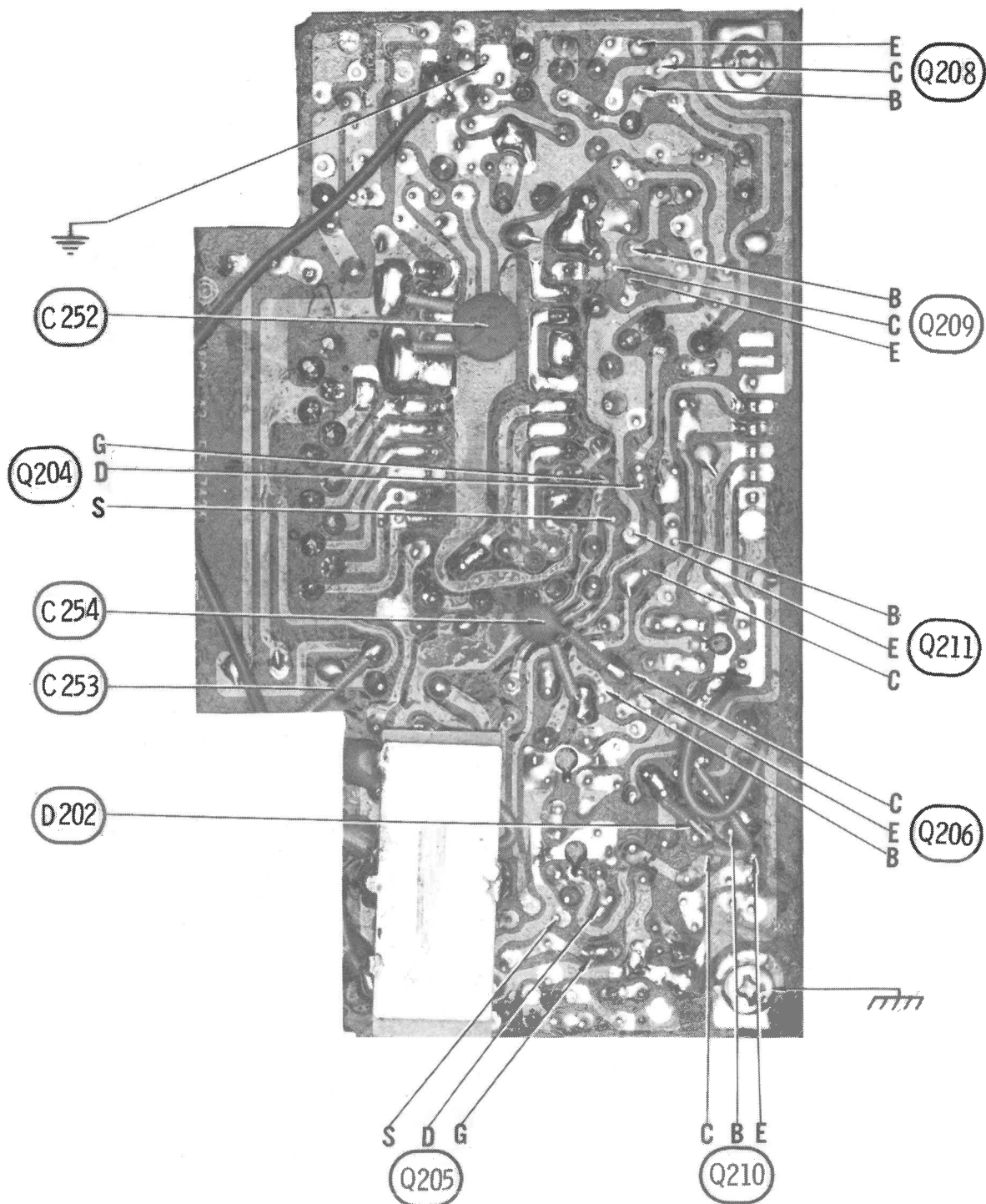


MAIN BOARD

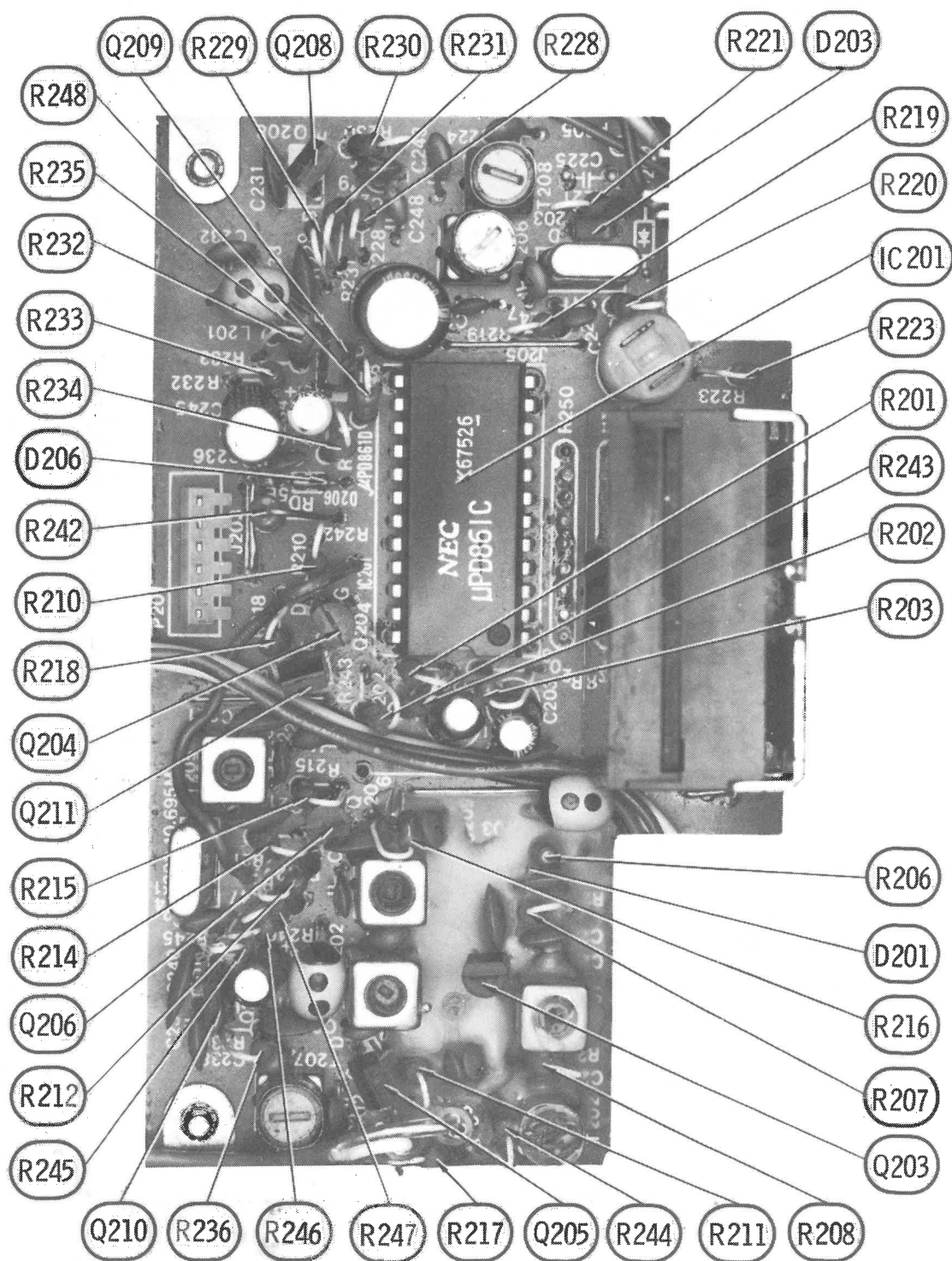


REALISTIC MODEL TRC-468

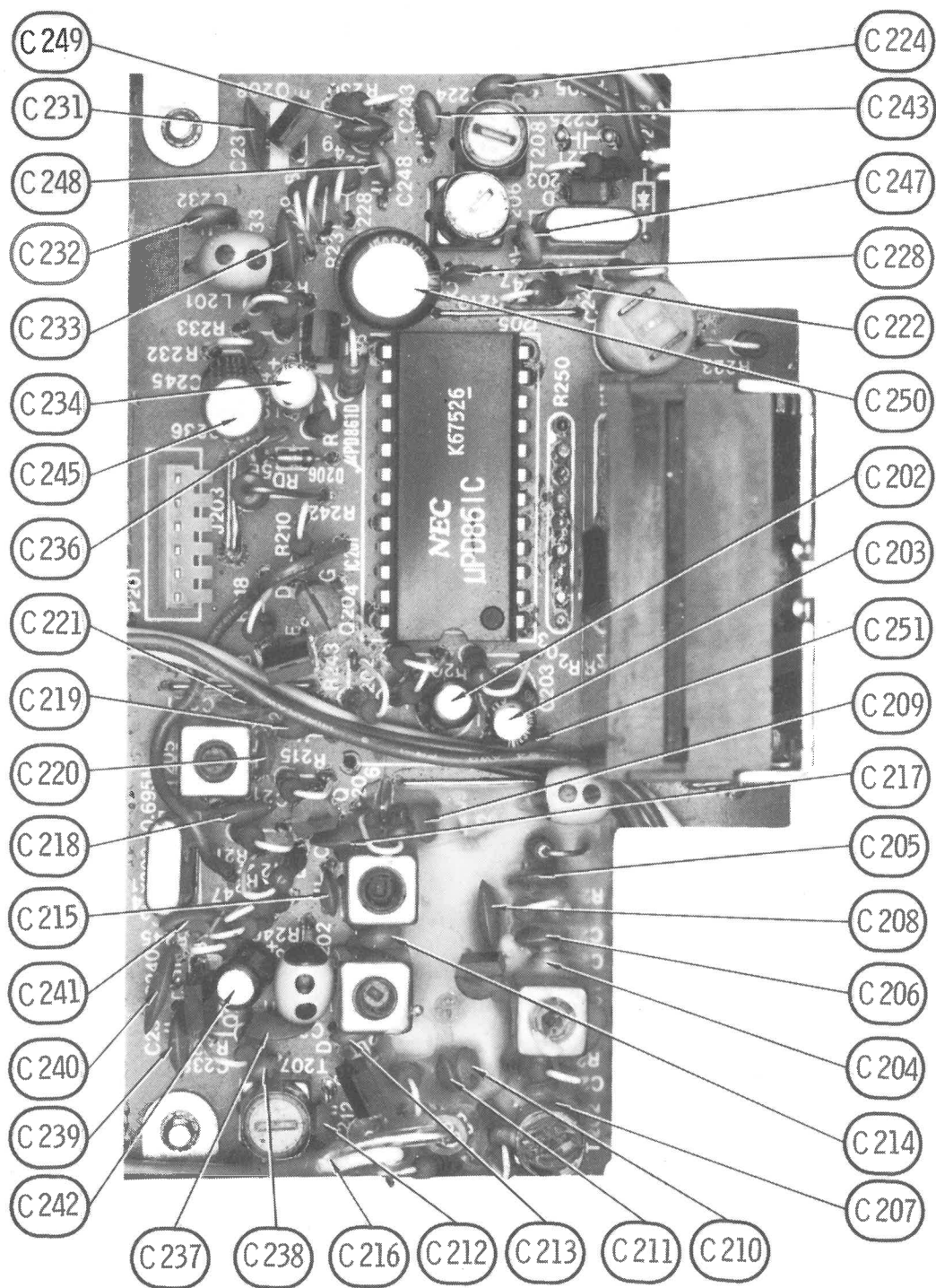
PLL BOARD



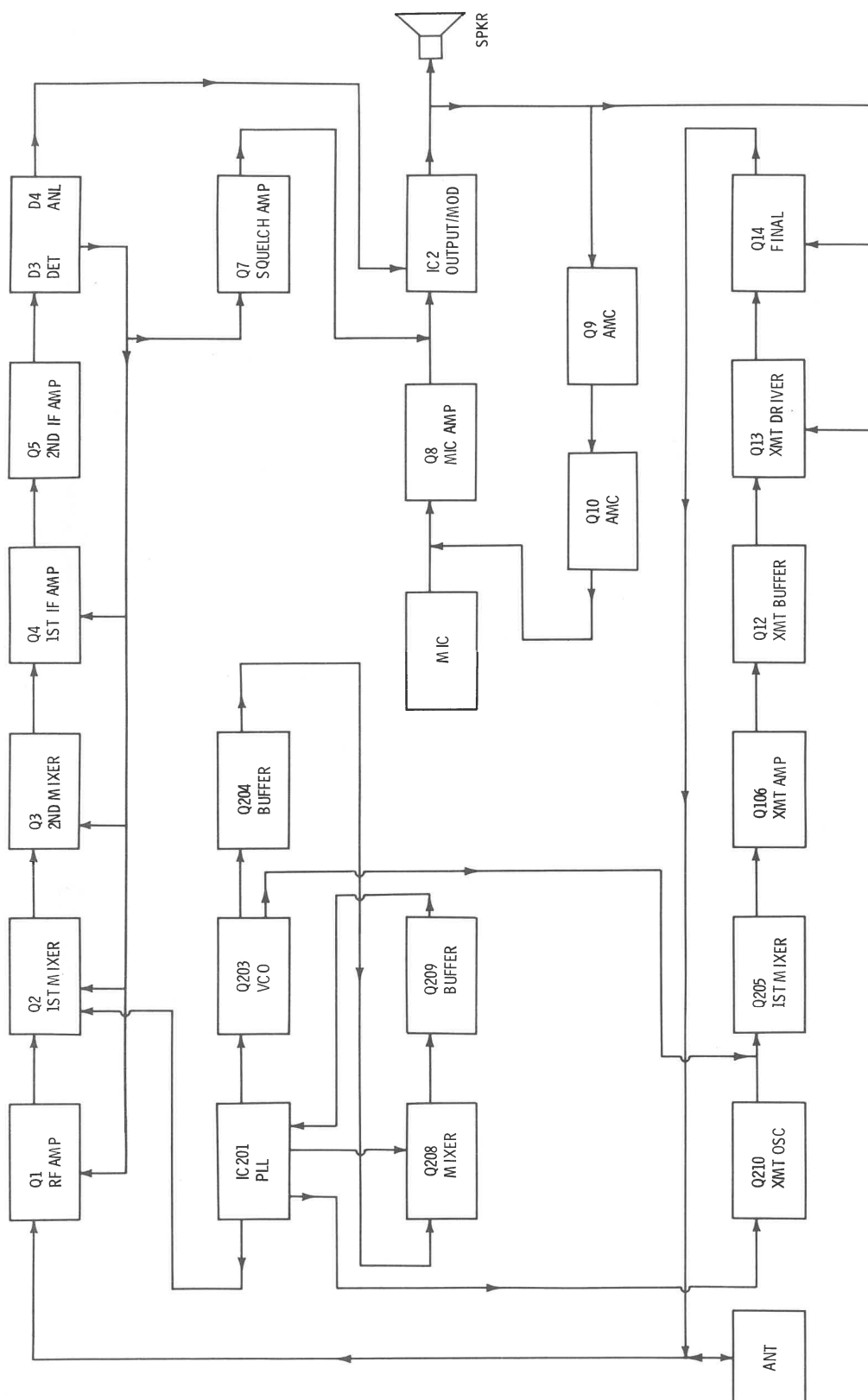
PLL BOARD



PLL BOARD

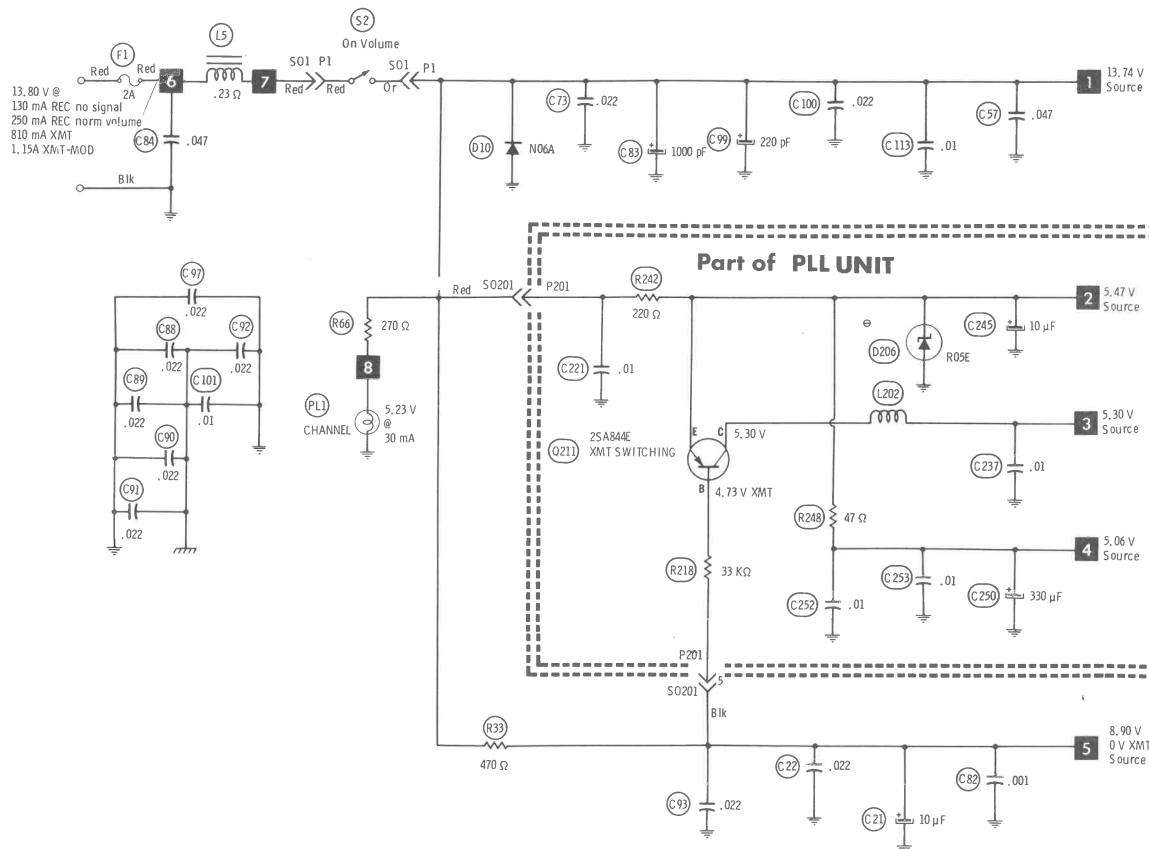


PLL BOARD

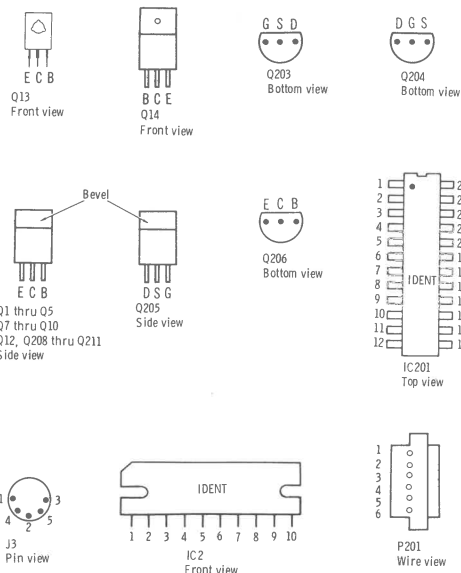


BLOCK DIAGRAM

REALISTIC MODEL TRC-468



Terminal Guides



* Circuitry not used in some versions

--- Circuitry used in some versions

⊕ See parts list

✱ Nominal value

⊥ Ground

Chassis

▽ Common tie point

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

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

Supply voltage maintained as shown at input.

Voltages measured with digital meter, no signal.

Controls adjusted for normal operation.

Arrow at control indicates direction of advance.

Terminal identification may not be found on unit.

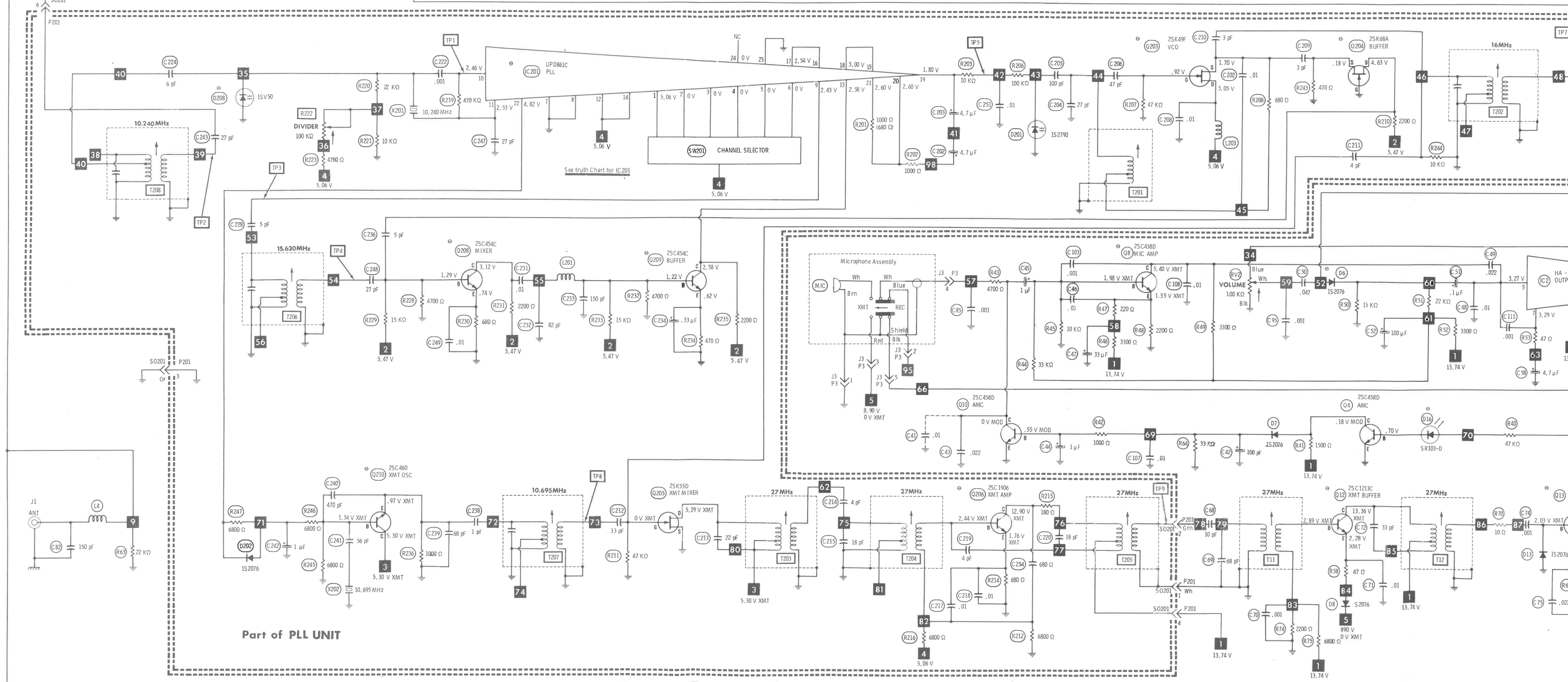
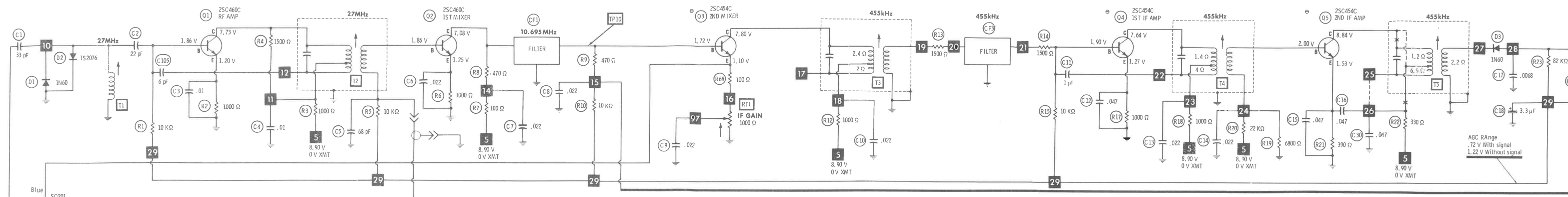
Resistors are 1/2W or less, 5% unless noted.

Value in () used in some versions.

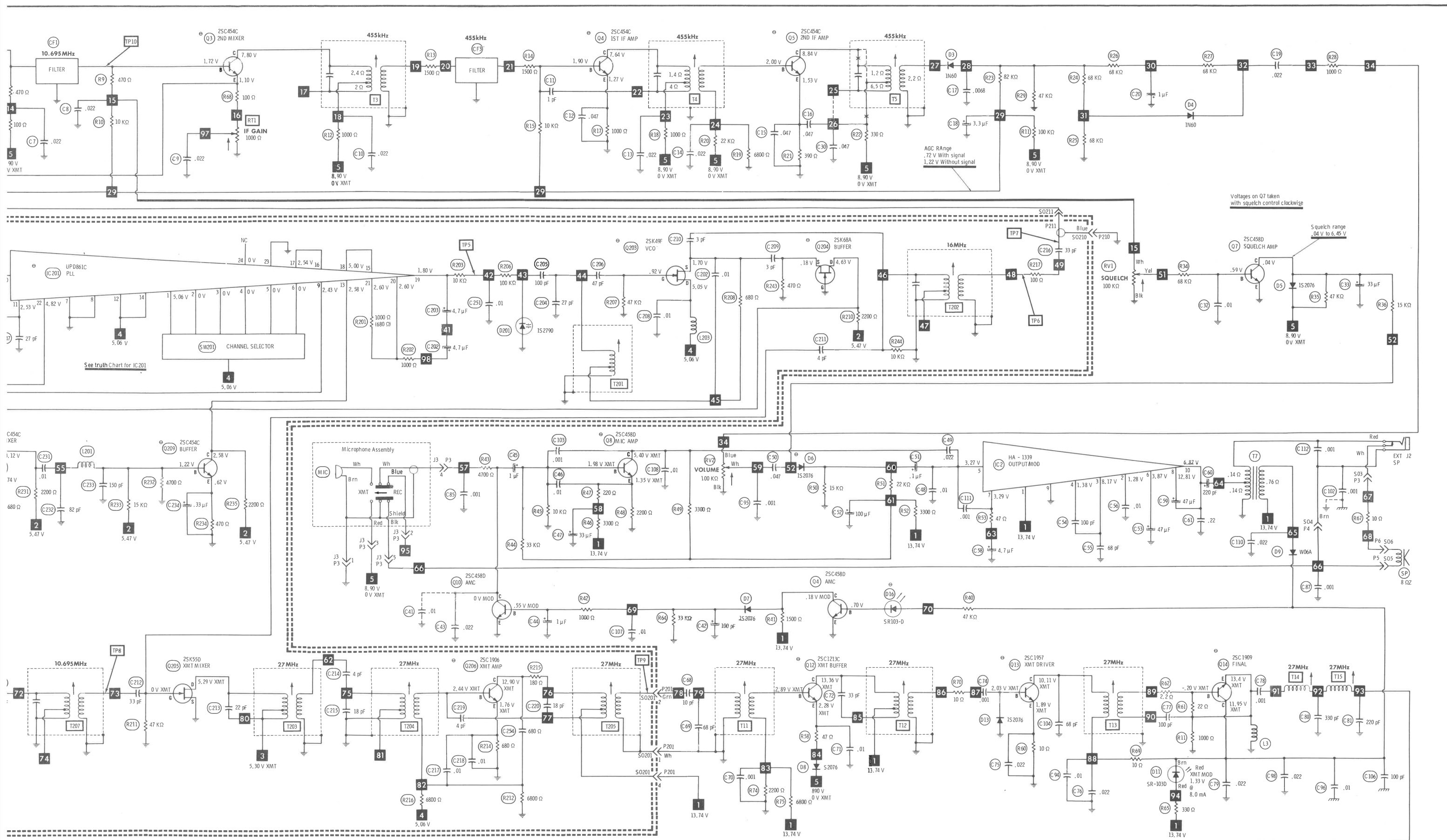
A PHOTOFAC STANDARD NOTATION SCHEMATIC

WITH **CIRCUITRACE®**

© Howard W. Sams & Co., Inc. 1978



Part of PLL UNIT



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
(braided)	BELDEN No. 8401	BELDEN No. 9471 (5')
Speaker Cable (available in 4 colors)	BELDEN No. 8782	BELDEN No. 9472 (7-1/2')
Bonding Strap	BELDEN No. 8672	BELDEN No. 9466 (6')
AC Power Cord	(6') BELDEN No. 17106	28AWG BELDEN No. 9468 (10')
	(9') BELDEN No. 17109	31AWG BELDEN No. 8415 (6')
		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.	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.
D1	1N60	5330731	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D2	1S2076	5330133	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
D3	1N60	5330731	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D4	1N60	5330731	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D5	1S2076	5330133	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
D6	1S2076	5330133	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
D7	1S2076	5330133	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
D8	1S2076	5330133	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
D9	W06A	5330341	GE-504A	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116	1N4004	WEP156	212-61
D10	W06A	5330341	GE-504A	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116	1N4004	WEP156	212-61
D13	1S2076	5330133	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
D201	1S2790	5330661				RE 195	SK3126		ECG613			103-281
D202	1S2076	5330131	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
D203	1SV50	5330852	GE-90		HEPR2503			RT-262	ECG614		WEP200	ZEN-453
	1SV68		GE-90		HEPR2503			RT-262	ECG614		WEP200	ZEN-453
D206	RD5E		GEZD-5.6	ZM5.6A	HEPZ0212A	RE 107	SK3057	RT-236	ECG5011	1N4733A	WEP1412	
	RD5E-C		GEZD-5.6	ZM5.6A	HEPZ0212A	RE 107	SK3057	RT-236	ECG5011	1N4733A	WEP1412	
	HZ-5		GEZD-5.6	ZM5.6A	HEPZ0212A	RE 107	SK3057	RT-236	ECG5011	1N4733A	WEP1412	
	HZ-7		GEZD-5.6	ZM6.8A	HEPZ0215A	RE 110	SK3334	RT-238	ECG5014	1N4736A	WEP1415	
	RD5, 1E-C	5330842	GEZD-5.6	ZM5.6A	HEPZ0212A	RE 107	SK3057	RT-236	ECG5011	1N4733A	WEP1412	
IC2	HA1339		GEIC-64									ECG1169
IC201	HA1339A	5350491	GEIC-64									ECG1169
	UPD861C	5359261										
	HD42851											
Q1	2SC460C	0573487	GE-61*	PTC136*	2SC460	RE 9	SK3018*	RT-134	ECG107	2SC460	WEP460	121-722
	2SC460		GE-61*	PTC136*	2SC460	RE 9	SK3018*	RT-134	ECG107	2SC460	WEP460	121-722
Q2	2SC460C	0573487	GE-61*	PTC136*	2SC460	RE 9	SK3018*	RT-134	ECG107	2SC460	WEP460	121-722
	2SC460		GE-61*	PTC136*	2SC460	RE 9	SK3018*	RT-134	ECG107	2SC460	WEP460	121-722
Q3	2SC454C	0573492	GE-210*	PTC115*	2SC454	RE 10*	SK3018*	RT-187	ECG108*	2SC454	WEP454	ZEN-114
	2SC454		GE-210*	PTC115*	2SC454	RE 10*	SK3018*	RT-187	ECG108*	2SC454	WEP454	ZEN-114
	2SC839		GE-61*	PTC132*	2SC839	RE 13*	SK3018*	RT-308	ECG123A*	2SC839	WEP736*	ZEN-120
Q4	2SC454C	0573492	GE-210*	PTC115*	2SC454	RE 10*	SK3018*	RT-187	ECG108*	2SC454	WEP454	ZEN-114
	2SC454		GE-210*	PTC115*	2SC454	RE 10*	SK3018*	RT-187	ECG108*	2SC454	WEP454	ZEN-114
	2SC839		GE-61*	PTC132*	2SC839	RE 13*	SK3018*	RT-308	ECG123A*	2SC839	WEP736*	ZEN-120
Q5	2SC454C	0573492	GE-210*	PTC115*	2SC454	RE 10*	SK3018*	RT-187	ECG108*	2SC454	WEP454	ZEN-114
	2SC454		GE-210*	PTC115*	2SC454	RE 10*	SK3018*	RT-187	ECG108*	2SC454	WEP454	ZEN-114
	2SC839		GE-61*	PTC132*	2SC839	RE 13*	SK3018*	RT-308	ECG123A*	2SC839	WEP736*	ZEN-120
Q7	2SC458D	5320064	GE-210*	PTC121*	2SC458	RE 13*	SK3124	RT-187	ECG123A*	2SC458	WEP458	ZEN-114
	2SC458		GE-210*	PTC121*	2SC458	RE 13*	SK3124	RT-187	ECG123A*	2SC458	WEP458	ZEN-114
	2SC1740		GE-62	HEPS0015*		RE 13*	SK3122	RT-109*	ECG123A*		WEP736*	121-972
Q8	2SC458D	5320064	GE-210*	PTC121*	2SC458	RE 13*	SK3124	RT-187	ECG123A*	2SC458	WEP458	ZEN-114
	2SC458		GE-210*	PTC121*	2SC458	RE 13*	SK3124	RT-187	ECG123A*	2SC458	WEP458	ZEN-114
	2SC1740		GE-62	HEPS0015*		RE 13*	SK3122	RT-109*	ECG123A*		WEP736*	121-972
Q9	2SC458D	5320064	GE-210*	PTC121*	2SC458	RE 13*	SK3124	RT-187	ECG123A*	2SC458	WEP458	ZEN-114
	2SC458		GE-210*	PTC121*	2SC458	RE 13*	SK3124	RT-187	ECG123A*	2SC458	WEP458	ZEN-114
	2SC1740		GE-62	HEPS0015*		RE 13*	SK3122	RT-109*	ECG123A*		WEP736*	121-972
Q10	2SC458D	5320064	GE-210*	PTC121*	2SC458	RE 13*	SK3124	RT-187	ECG123A*	2SC458	WEP458	ZEN-114
	2SC458		GE-210*	PTC121*	2SC458	RE 13*	SK3124	RT-187	ECG123A*	2SC458	WEP458	ZEN-114
	2SC1740		GE-62	HEPS0015*		RE 13*	SK3122	RT-109*	ECG123A*		WEP736*	121-972
Q12	2SC1213C	5320613	GE-268	PTC123*	2SC1213	RE 17*	SK3024*	RT-134	ECG289	WEP910	WEP910	121-1014
	2SC1213		GE-268	PTC123*	2SC1213	RE 17*	SK3024*	RT-134	ECG289	WEP910	WEP910	121-1014
	2SC454		GE-210*	PTC115*	2SC454	RE 10*	SK3018*	RT-187	ECG108*	2SC454	WEP454	ZEN-114
	2SC839		GE-61*	PTC132*	2SC839	RE 13*	SK3018*	RT-308	ECG123A*	2SC839	WEP736*	ZEN-120
Q13	2SC1957	5321311	GE-270	PTC180	HEPS3044	RE 209			ECG295		WEP913	
	(14)								ECG235		WEP785	
Q14	2SC2091	5321321	GE-215	PTC186		RE 203	SK3197	RT-146				
	2SC1909					RE 203	SK3197	RT-146				
	(15)											
Q203	2SC2092	5321422	GE-337	PTC186		RE 203	SK3197	RT-146	ECG235	2SC1306	WEP785	
	2SK49F		GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP801	ZEN-123
	2SK49		GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP801	ZEN-123
	2SK54		GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP801	ZEN-123
Q204	2SK68A		GE-FET-1	PTC151	HEPF0010	RE 46	SK3112	RT-176	ECG133		WEP801	ZEN-123
	2SK68		GE-FET-1	PTC151	HEPF0010	RE 46	SK3112	RT-176	ECG133		WEP801	ZEN-123
	2SK68L	5321501	GE-FET-1	PTC151	HEPF0010	RE 46	SK3112	RT-176	ECG133		WEP801	ZEN-123
	2SK106		GE-FET-1	PTC151	HEPF0010	RE 46	SK3112	RT-176	ECG133		WEP801	ZEN-123
Q205	2SK55D	5320943	GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP801	ZEN-123
	2SK55		GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP801	ZEN-123
Q206	2SC1906	5321431	GE-86	PTC132*	HEPS0016*	RE 10*	SK3039*	RT-113*	ECG108*	2SC454*	WEP56*	
	2SC717		GE-17*	PTC132*	2SC717	RE 28*	SK3018*	RT-134	ECG161*	2SC717	WEP1717	
Q208	2SC454C	0573492	GE-210*	PTC115*	2SC454	RE 10*	SK3018*	RT-187	ECG108*	2SC454	WEP454	ZEN-114
	2SC454		GE-210*	PTC115*	2SC454	RE 10*	SK3018*	RT-187	ECG108*	2SC454	WEP454	ZEN-114
	2SC839		GE-61*	PTC132*	2SC839	RE 13*	SK3018*	RT-308	ECG123A*	2SC839	WEP736*	ZEN-120
Q209	2SC454C	0573492	GE-210*	PTC115*	2SC454	RE 10*	SK3018*	RT-187	ECG108*	2SC454	WEP454	ZEN-114
	2SC454		GE-210*	PTC115*	2SC454	RE 10*	SK3018*	RT-187	ECG108*	2SC454	WEP454	ZEN-114
	2SC839		GE-61*	PTC132*	2SC839	RE 13*	SK3018*	RT-308	ECG123A*	2SC839	WEP736*	ZEN-120
Q210	2SC460C	0573487	GE-61*	PTC136*	2SC460	RE 9	SK3018*	RT-134	ECG107	2SC460	WEP460	121-722
	2SC460		GE-61*	PTC136*	2SC460	RE 9	SK3018*	RT-134	ECG107	2SC460	WEP460	121-722
	2SC1739		GE-210*	PTC136*	HEPS0015*	RE 13*	SK3124*	RT-107A*	ECG123A*		WEP736*	
Q211	2SA844E	5321253	GE-244*	PTC103*	HEPS0019*	RE 18*	SK3114	RT-126A*	ECG129*		WEP60*	
	2SA844		GE-244*	PTC103*	HEPS0019*	RE 18*	SK3114	RT-126A*	ECG129*		WEP60*	

* Lead configuration may vary from original.
(14) 750mW @ 1.0 Amp.
(15) 10 Watt @ 3.0 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
C18	3.3 25V	0252613	PC5-50	VTT3R3A50	QV1-23	EV-1318
C20	1 50V	0252611	PC1-50	VTT1A50	QV1-11	EV-1615
C21	10 25V	0252621	PC10-25	VTT10B25	QV1-43	EV-1322
C33	3.3 50V	0252613	PC5-50	VTT3R3A50	QV1-25	EV-1618
C42	100 16V	0252231	PC100-16	VTT100F16	QV1-95	EV-1230
C44	1 50V	0252611	PC1-50	VTT1A50	QV1-11	EV-1615
C45	1 50V	0252611	PC1-50	VTT1A50	QV1-11	EV-1615
C47	33 25V	0252623	PC30-25	VTT33D25	QV1-63	EV-1325
C51	.1 25V	0256527		TDC104M050EL	QDT1-2	SD50-R109
C52	100 16V	0252531	PC100-16	VTT100F16	QV1-95	EV-1230
C53	47 16V	0252525	PC50-16	VTT47D16	QV1-73	EV-1226
C58	4.7 25V	0252615	PC5-50	VTT4R7B50	QV1-27	EV-1319
C59	47 16V	0252525	PC50-16	VTT47D16	QV1-73	EV-1226
C60	220 10V	0252332	PC250-10	VTT220F10	QV1-115	EV-1140
C83	1000 16V	0256010	PC1000-16	VTT1000L16	QV1-183	EV-1260
C99	220 25V	0252632	PC250-25	VTT220K25	QV1-119	EV-1340
C202	4.7 25V	0252615(1)	PC5-50	VTT4R7B50	QV1-27	EV-1319
C203	4.7 25V	0252615(1)	PC5-50	VTT4R7B50	QV1-27	EV-1319
C234	.33 25V	0256530		TDC334M050EL	QDT1-14	SD50-R339
C242	1 50V	0252611	PC1-50	VTT1A50	QV1-11	EV-1615
C245	10 25V	0252621	PC10-25	VTT10B25	QV1-43	EV-1322
C250	330 6.3V	0252233				

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

IIA No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
	1N60	WEP134	ZEN-430
		WEP1062	
	1N60	WEP134	ZEN-430
	1N60	WEP134	ZEN-430
		WEP1062	
		WEP1062	
		WEP1062	
	1N4004	WEP156	212-61
	1N4004	WEP156	212-61
		WEP1062	
		WEP1062	103-281
		WEP200	ZEN-453
		WEP200	ZEN-453
	1N4733A	WEP1412	
	1N4733A	WEP1412	
	1N4733A	WEP1412	
	1N4736A	WEP1415	
	1N4733A	WEP1412	
			ECG1169
			ECG1169
	2SC460	WEP460	121-722
	2SC460	WEP460	121-722
	2SC460	WEP460	121-722
	2SC460	WEP460	121-722
	2SC454	WEP454	ZEN-114
*	2SC454	WEP454	ZEN-114
	2SC839	WEP736*	ZEN-120
	2SC454	WEP454	ZEN-114
*	2SC454	WEP454	ZEN-114
	2SC839	WEP736*	ZEN-120
	2SC454	WEP454	ZEN-114
*	2SC454	WEP454	ZEN-114
*	2SC839	WEP736*	ZEN-120
*	2SC458	WEP458	ZEN-114
*	2SC458	WEP458	ZEN-114
*		WEP736*	121-972
*	2SC458	WEP458	ZEN-114
*	2SC458	WEP458	ZEN-114
*		WEP736*	121-972
*	2SC458	WEP458	ZEN-114
*	2SC458	WEP458	ZEN-114
*		WEP736*	121-972
*	2SC458	WEP458	ZEN-114
*	2SC458	WEP458	ZEN-114
*		WEP736*	121-972
*		WEP910	121-1014
		WEP910	121-1014
*	2SC454	WEP454	ZEN-114
	2SC839	WEP736*	ZEN-120
		WEP913	
		WEP785	
	2SC1306	WEP785	
		WEP801	ZEN-123
		WEP801	ZEN-123
		WEP801	ZEN-123
		WEP801	ZEN-123
		WEP801	ZEN-123
		WEP801	ZEN-123
		WEP801	ZEN-123
		WEP801	ZEN-123
		WEP801	ZEN-123
	2SC454*	WEP801	ZEN-123
	2SC717	WEP56*	ZEN-104
	2SC454	WEP1717	
	2SC454	WEP454	ZEN-114
*	2SC454	WEP454	ZEN-114
	2SC839	WEP736*	ZEN-120
	2SC454	WEP454	ZEN-114
*	2SC454	WEP454	ZEN-114
	2SC839	WEP736*	ZEN-120
	2SC460	WEP460	121-722
*	2SC460	WEP460	121-722
		WEP736*	
		WEP60*	
		WEP60*	

ITEM No.	RATING	REPLACEMENT DATA				
		MFG. PART No.	CORNELL- DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C18	3.3 25V	0252613	PC5-50	VTT3R3A50	QV1-23	EW-1318
C20	1 50V	0252611	PC1-50	VTT1A50	QV1-11	EW-1615
C21	10 25V	0252621	PC10-25	VTT10B25	QV1-43	EW-1322
C33	3.3 50V	0252613	PC5-50	VTT3R3A50	QV1-25	EW-1618
C42	100 16V	0252231	PC100-16	VTT1100F16	QV1-95	EW-1230
C44	1 50V	0252611	PC1-50	VTT1A50	QV1-11	EW-1615
C45	1 50V	0252611	PC1-50	VTT1A50	QV1-11	EW-1615
C47	33 25V	0252623	PC30-25	VTT33B25	QV1-63	EW-1325
C51	.1 25V	0256527		TDC104M050EL	QDT1-2	SD50-R109
C52	100 16V	0252631	PC100-16	VTT1100F16	QV1-95	EW-1230
C53	47 16V	0252625	PC50-16	VTT47D16	QV1-73	EW-1226
C58	4.7 25V	0252615	PC5-50	VTT4R7B50	QV1-27	EW-1319
C59	47 16V	0252625	PC50-16	VTT47D16	QV1-73	EW-1226
C60	220 10V	0252332	PC250-10	VTT220F10	QV1-115	EW-1140
C83	1000 16V	0256010	PC1000-16	VTT1000L16	QV1-183	EW-1260
C99	220 25V	0252632	PC250-25	VTT220K25	QV1-119	EW-1340
C202	4.7 25V	0252615(1)	PC5-50	VTT4R7B50	QV1-27	EW-1319
C203	4.7 25V	0252615(1)	PC5-50	VTT4R7B50	QV1-27	EW-1319
C234	.33 25V	0256530		TDC334M050EL	QDT1-14	SD50-R339
C242	1 50V	0252611	PC1-50	VTT1A50	QV1-11	EW-1615
C245	10 25V	0252621	PC10-25	VTT10B25	QV1-43	EW-1322
C250	330 6.3V	0252233				

REALISTIC MODEL TRC-468

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE	PART No.
						Q-LINE	GENERAL LINE
C1	33 10%	(1)	DTZ-33	NP033	CN0433		10TCC-Q33
C2	22 10%		DTZ-22	NP022	CN0422		10TCC-Q22
C3	.01		UK50-103		MAG5011		
C4	.01		UK50-103		MAG5011		
C5	68 10%		DTZ-68	NP068	CN0468		10TCC-Q68
C6	.022		DC-253	MGP025	TA125		TG-S25
C7	.022		DC-253	MGP025	TA125		TG-S25
C8	.022 50V				M192P2239R8	QFT2-127	1FT-S22
C9	.022 50V				M192P2239R8	QFT2-127	1FT-S22
C10	.022 50V				M192P2239R8	QFT2-127	1FT-S22
C11	1 +.25						
C12	.047 50V			DPMS2S47	EWFA1A147	QFT2-171	1FT-S47
C13	.022 50V				M192P2239R8	QFT2-127	1FT-S22
C14	.022 50V				M192P2239R8	QFT2-127	1FT-S22
C15	.047 50V			DPMS2S47	EWFA1A147	QFT2-171	1FT-S47
C16	.047		UK50-503		MAG5015		
C17	.0068 10%			WMF1D68	EWFA1A268	QF1-73	1PB-D68
C19	.022 50V				M192P2239R8	QFT2-127	1FT-S22
C22	.022		DC-253	MGP025	TA125		TG-S25
C30	.047 50V			DPMS2S47	EWFA1A147	QFT2-171	1FT-S47
C32	.01		UK50-103		MAG5011		
C41	.01		UK50-103		MAG5011		
C43	.022		DC-253	MGP025	TA125		TG-S25
C46	.01 50V			WMF1S1	EWFA1A110	QFT2-91	1FT-S10
C48	.01 50V			WMF1S1	EWFA1A110	QFT2-91	1FT-S10
C49	.022 50V				M192P2239R8	QFT2-127	1FT-S22
C50	.047 50V			DPMS2S47	EWFA1A147	QFT2-171	1FT-S47
C54	100 10%		DD-101	GP100	GP310		10TS-T10
C55	68		DD-680	GP68	GP468		10TS-Q68
C56	.01 50V			WMF1S1	EWFA1A110	QFT2-91	1FT-S10
C57	.047 50V			DPMS2S47	EWFA1A147	QFT2-171	1FT-P22
C61	.22 100V			DPMS2P22	EWFA0A22	QFT2-253	1FT-P22
C68	10		DTZ-10	NP010	CN0410		10TCC-Q10
C69	68		DD-680	GP68	GP468		10TS-Q68
C70	.001		DD-102G	GP1000	GP210	QC2-81	56A-D10
C71	.01 10%			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C72	.33		DTZ-33	NP033	CN0433		10TCC-Q33
C73	.022		DC-253	MGP025	TA125		TG-S25
C74	.001		DD-102G	GP1000	GP210	QC2-81	56A-D10
C75	.022		DC-253	MGP025	TA125		TG-S25
C76	.022		DC-253	MGP025	TA125		TG-S25
C77	100 10%		DD-101	GP100	GP310		10TS-T10
C78	.001		DD-102G	GP1000	GP210	QC2-81	56A-D10
C79	.022		DC-253	MGP025	TA125		TG-S25
C80	330 10%		DD-331	GP330	GP333		10TS-T33
C81	220 10%		DD-221		GP322		10TS-T22
C82	150 10%		DD-151		GP315		10TS-T15
C84	.047		UK50-503		MAG5015		
C85	.001		DD-102G	GP1000	GP210	QC2-81	56A-D10
C86	.001		DD-102G	GP1000	GP210	QC2-81	56A-D10
C87	.001		DD-102G	GP1000	GP210	QC2-81	56A-D10

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

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
C88	.022		DC-253	MGP025	TA125		TG-S25
C89	.022		DC-253	MGP025	TA125		TG-S25
C90	.022		DC-253	MGP025	TA125		TG-S25
C91	.022		DC-253	MGP025	TA125		TG-S25
C92	.022		DC-253	MGP025	TA125		TG-S25
C93	.022		DC-253	MGP025	TA125		TG-S25
C94	.01		UK50-103		MAG5011		
C95	.001		DD-102G	GP1000	GP210	QC2-81	56A-D10
C96	.01		UK50-103		MAG5011		
C97	.022		DC-253	MGP025	TA125		TG-S25
C98	.022		DC-253	MGP025	TA125		TG-S25
C100	.022		DC-253	MGP025	TA125		TG-S25
C101	.01		UK50-103		MAG5011		
C102	.001		DD-102G	GP1000	GP210	QC2-81	56A-D10
C103	.001		DD-102G	GP1000	GP210	QC2-81	56A-D10
C104	68 10%		DD-680	GP68	GP468		10TS-Q68
C105	6 +.5	0248646					
C106	100 10%		DD-101	GP100	GP310		10TS-T10
C107	.01		UK50-103		MAG5011		
C108	.01		UK50-103		MAG5011		
C110	.022		DC-253	MGP025	TA125		TG-S25
C111	.001		DD-102G	GP1000	GP210	QC2-81	56A-D10
C112	.001		DD-102G	GP1000	GP210	QC2-81	56A-D10
C113	.01		UK50-103		MAG5011		
C204	27 N750 10%				CN7427		10TCU-Q27
C205	100 10%		DD-101	GP100	GP310		10TS-T10
C206	47 10%		DTZ-47	NP047	CN0447		10TCC-Q47
C207	.001		DD-102G	GP1000	GP210	QC2-81	56A-D10
C208	.01		UK50-103		MAG5011		
C209	3 +.5	0248643	DTZ-3R3	NP03P3	CN0533		10TCC-V33
C210	3 +.5	0248643(1)	DTZ-3R3	NP03P3	CN0533		10TCC-V33
C211	4 +.5	0248644(1)					
C212	33 10%		DTZ-33	NP033	CN0433		10TCC-Q33
C213	22 N470 10%	0248378					10TCT-Q22
C214	4 +.5	0248644(1)					
C215	18 N470 10%	0248376					10TCT-Q18
C216	33 10%		DTZ-33	NP033	CN0433		10TCC-Q33
C217	.01		UK50-103		MAG5011		
C218	.01		UK50-103		MAG5011		
C219	4 +.5	0248644					
C220	18 N470 10%	0248376					10TCT-Q18
C221	.01						
C222	.001		UK50-103	GP1000	MAG5011	QC2-81	56A-D10
C224	6 +.5	0248646	DD-102G		GP210		
C228	5 +.5		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C231	.01		UK50-103		MAG5011		
C232	82 10%		DD-820		GP482		10TS-Q82
C233	150 10%		DD-151		GP315		10TS-T15
C236	5 +.5		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C237	.01		UK50-103		MAG5011		
C238	1 +.25	0248631					
C239	68 10%		DD-680	GP68	GP468		10TS-Q68

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

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
R222	Divider	10K	0151889				
RT-1	IF Gain	1000	0151883				U260R103B
RV1	Squelch	100K	5000303				U260R102B
RV2	Volume/Switch	100K	5003141				

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.	
L3	RF Choke	5150782		7AF226AP	
L4	Antenna Match	5150071		4586	
L201	RF Choke	5152087			
L202	RF Choke	5152074			
L203	RF Choke	5152089			
T1	Rec Antenna (27MHz)	5126372			
T2	RF Amp (27MHz)	5120099		CBS723-TC	
T3	IF (455kHz)	0322116		8517	
T4	IF (455kHz)	0322146		CBS503-4TC	
T5	IF (455kHz)	5132021		8518	
T11	XMT Amp (27MHz)	5126376			
T12	XMT Buffer (27MHz)	5123375			
T13	XMT Driver (27MHz)	5126377			
T14	Final (27MHz)	5126378			
T15	Final (27MHz)	5126373			
T201	PLL Output	5123432			
T202	Buffer (16MHz)	5123441			
T203	XMT Mixer (27MHz)	5123431			
T204	SMT Mixer (27MHz)	5123432			
T205	XMT Amp (27MHz)	5123431			
T206	Mixer (15.630MHz)	5123443			
T207	XMT Osc (10.695MHz)	5123442			
T208	PLL Input (10.240MHz)	5123444			

REALISTIC MODEL TRC-468

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.	
L5	1.150A	.23	1.5mH	5220001	TR548		

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T7	8	12.5	5250192			

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP	3 1/8" PM 8 Ohms	5402521	30A05Z8R	

PARTS LIST AND DESCRIPTION (CONTINUED)

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

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA						
		PART No.		BUSS PART No.		LITTELFUSE PART No.		WORKMAN PART No.
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE
F1	2A Quick Acting			AGC2	HDJ	312002	150145	FG2-2

MICROPHONE

ITEM No.	REPLACEMENT DATA				CONNECTION DATA						
	MFGR. PART No.	GC PART No.	GC NOISE CANCEL	GC POWER	GC CONNECTOR	GC Red	GC Shield	GC Yellow	GC Blue	GC White	GC Black
MIC	5421091	18-032	18-034	18-010	18-105	4	1	3	5	NC	1

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF1	Filter	5160211	10.695MHz
CF2	Filter	5160011	455kHz
D11	LED	5380051	SR103D
D12	LED	5380051	SR103D
J1	Jack	5675152	Antenna
J2	Jack	5673101	External Speaker
J3	Jack	5651141	MIC 5 pin
PL1	Lamp	576082	Channel Selector (5.23V @ 30mA)
SW201	Switch	5612182	Channel Selector
X201	Crystal	5780281	10.240MHz
X202	Crystal	5780282	10.695MHz
	Power Cord	5741191	DC

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

ITEM	PART No.	ITEM	PART No.
Cover, Bottom	6145932	Knob (Channel Selector)	6286331
Cover, Top	6145922	Knob (Control)	6286321
Channel Indicator	6464311	Set Bracket	7401421