

PHOTOFACT[®] with

CIRCUITRACE[®]

For Supplier Address See PHOTOFACT Index

NOTE

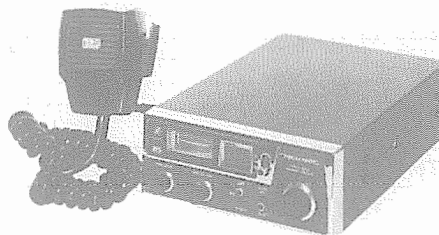
Repair or adjustment of transmitter circuits must be under supervision of a person with first-or second-class radiotelephone license.

(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.



TRC-422 (21-1531)

MANUFACTURER'S SPECIFICATIONS

RECEIVER

Frequency Coverage:	All 40 CB Channels (Class D) 26.965 to 27.405 MHz
Sensitivity:	0.5 μ V or better for 10 dB S + N/N
Adjacent Channel Rejection:	80 dB (at 10 kHz), greater than 100 dB for 20 kHz
Intermediate Frequency:	1st IF = 10.695 MHz 2nd IF = 455 kHz
Audio Output:	5.5 watts (max)
Frequency Response:	450 — 2500 Hz
Cross-Modulation:	60 dB (or better)
Squelch:	Adjustable from 0.5 μ V to 1 mV

TRANSMITTER

Frequency Coverage:	All 40 CB Channels (Class D) 26.965 to 27.405 MHz
RF Power Output:	4 watts (maximum)
Emission:	8A3
Modulation Capability:	90 — 100%
Spurious Radiation:	Better than —65 dB
Frequency Tolerance:	Better than 0.002%
Antenna Impedance:	50 ohms
Current Drain (13.8 volt supply):	1200 mA (without modulation) 1800 mA (full modulation)

PUBLIC ADDRESS

Output Power:	5.5 watts (maximum)
Output at 10% Distortion:	4.5 watts
Mic. Sensitivity for 4W Output Power (PA mode):	5 mV (at 1 kHz)
Frequency Response + / — 6 dB:	300 — 2700 Hz

POWER REQUIREMENTS: 12 — 16 volts DC positive or negative ground

DIMENSIONS: 2-7/32" × 5-21/32" × 9-29/32"
(5.6cm × 14.4cm × 25.2cm) (HWD)

WEIGHT: 2 lbs. 14 ozs. (1.3 Kg)

REALISTIC MODEL TRC-422

Courtesy of the Manufacturer

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

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ALIGNMENT INSTRUCTIONS

CAUTION: Use isolation transformer or observe polarity when connecting test equipment. Maintain line voltage at 120V AC. Allow a 15-minute warm-up period.
Adjustments made with 13.8 volt DC input.
Connect low sides of test equipment to ground unless specified otherwise.
Connect 50-ohm dummy load or antenna before keying transmitter.
Connect microphone.
Suggested Alignment Tools: GC ELECTRONICS:
T1 thru T4, T9, T10, T12 thru T17 9440
T5 thru T8 5000, 5009, 8276, 8728, 9089
L9, L12, T12 9300, 9302, 9304
T18 8728, 9304, 9089
CT 5000, 8276, 9089

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of oscilloscope to TP1 (T10 Secondary).	Ch. 19	T10	Adjust for maximum RF (300mV p-p typical). (See Figure 1.)
Input of frequency counter to TP1 (T10 Secondary).	Ch. 19	CT1	Adjust for 10.240MHz.
Input of frequency counter to TP2 (IC1 Pin 10).	Ch. 19		Check for 5.120MHz.
Input of oscilloscope to TP3 (IC4 Pin 4).	Ch. 19	T10	Adjust for maximum RF (300mV p-p typical). (See Figure 2.)
Input of DC meter to TP4 (Junction of R64 and R66).	Ch. 1	T12	Adjust for 2.80 volts. Check for approximately 4.00 volts on Channel 40.
Input of frequency counter to TP5 (IC1 Pin 22).	Ch. 1		Check for .910MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP5 (IC1 Pin 22).	Ch. 1, XMT		Check for 1.365MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of oscilloscope to TP6 (Junction of C83 and C84).	Ch. 19	T13,T14	Adjust for maximum RF (150mV p-p typical). (See Figure 3.)
Input of frequency counter to TP6 (Junction of C83 and C84).	Ch. 1		Check for 16.270MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP7 (IC5 Pin 3).	Ch. 1, XMT		Check for 16.725MHz. 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.
Preset controls as follows, unless otherwise noted: Squelch MINIMUM, ANL Out.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator to TP8 (Q4 Base). 455kHz, 1000Hz @ 30% modulation.	Ch. 19	T8,T7,T6	Adjust for maximum audio output.
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% modulation.	Ch. 19	T5,T4,T3, T2,T1	Adjust for maximum audio output. Readjust T6, T7 and T8 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, ANL Out.

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Output 1000uV.	Ch. 19 Squelch Maximum	VR2	SQUELCH RANGE Adjust so squelch just breaks.
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Output 100uV.	Ch. 19	VR5	RX SIGNAL METER Adjust for 9 on RX signal scale of meter.
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Output 1uV.	Ch. 19 Volume Maximum	VR1	IF AGC Adjust for 2.00 volts RMS (.5 watt) audio output.

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	T16,T15,T17, T18,L9	Adjust for maximum RF output.
Input of RF wattmeter to antenna input.	Ch. 19	L12	Adjust for 4.0 watts RF output maximum.
Input of spectrum analyzer or harmonic meter to antenna input.	Ch. 19	T19	Adjust for MINIMUM RF output at 54MHz (2nd harmonic). (-60db attenuation typical.)

TRANSMITTER ADJUSTMENTS

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 adjustment of transmitter.
See page 4 for channel frequencies.

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Input of RF wattmeter to antenna input.	Ch. 19	VR6	TX POWER METER At 4.0 watts RF output, adjust so needle rests at leading edge of red area on TX power scale of meter.

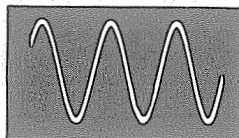


FIGURE 1

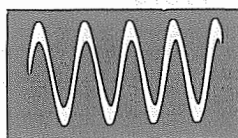


FIGURE 2

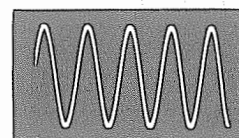
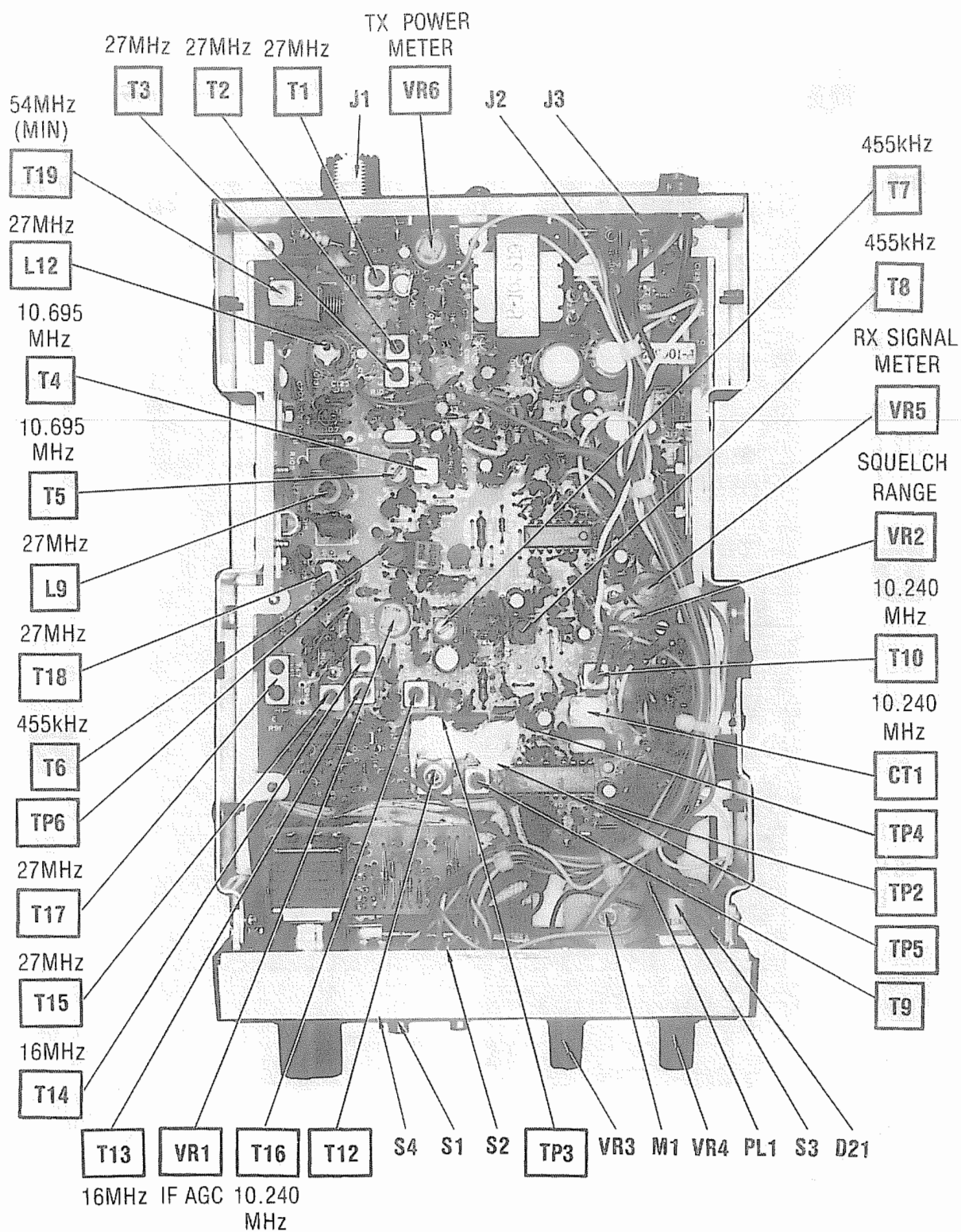


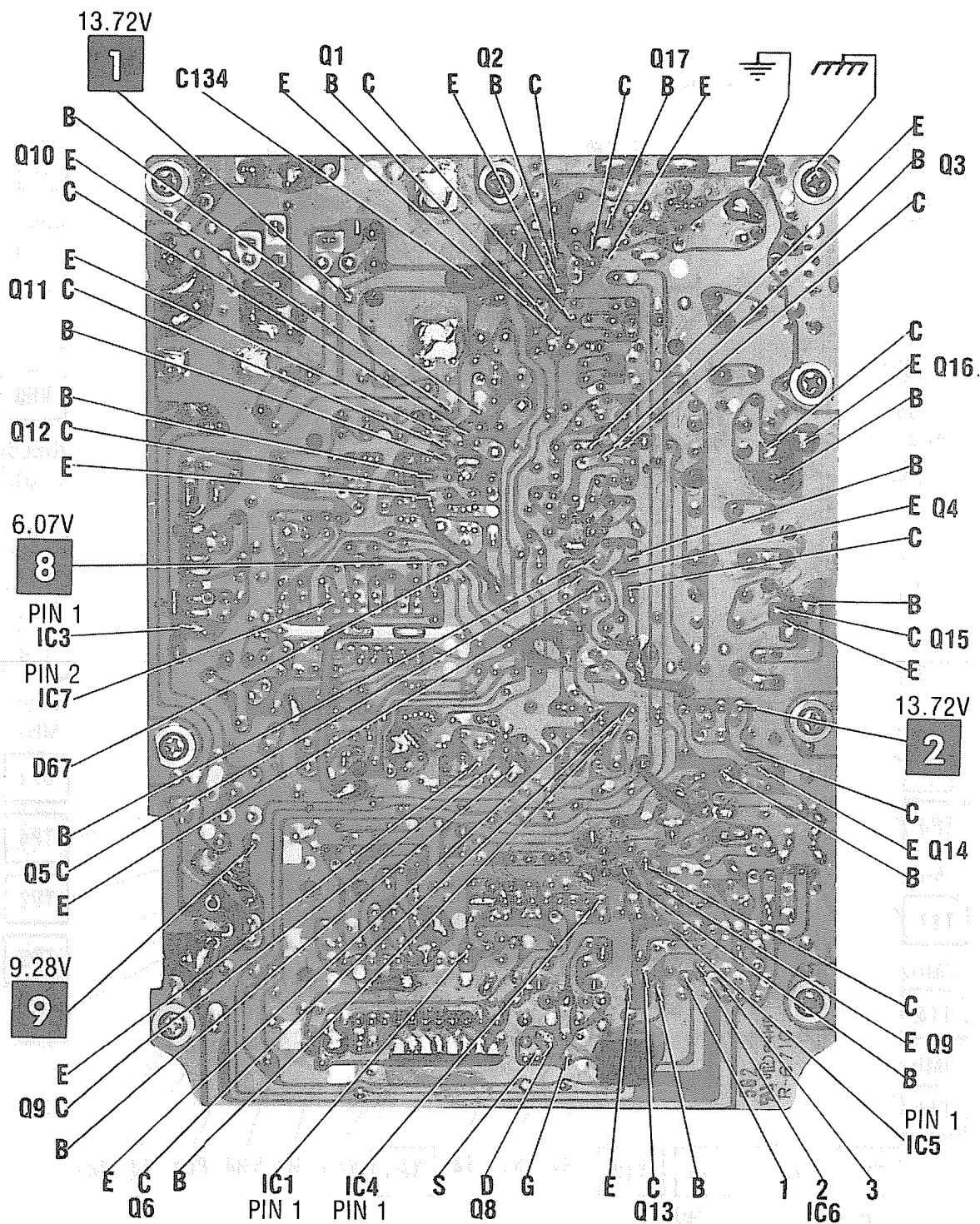
FIGURE 3

TRUTH CHART

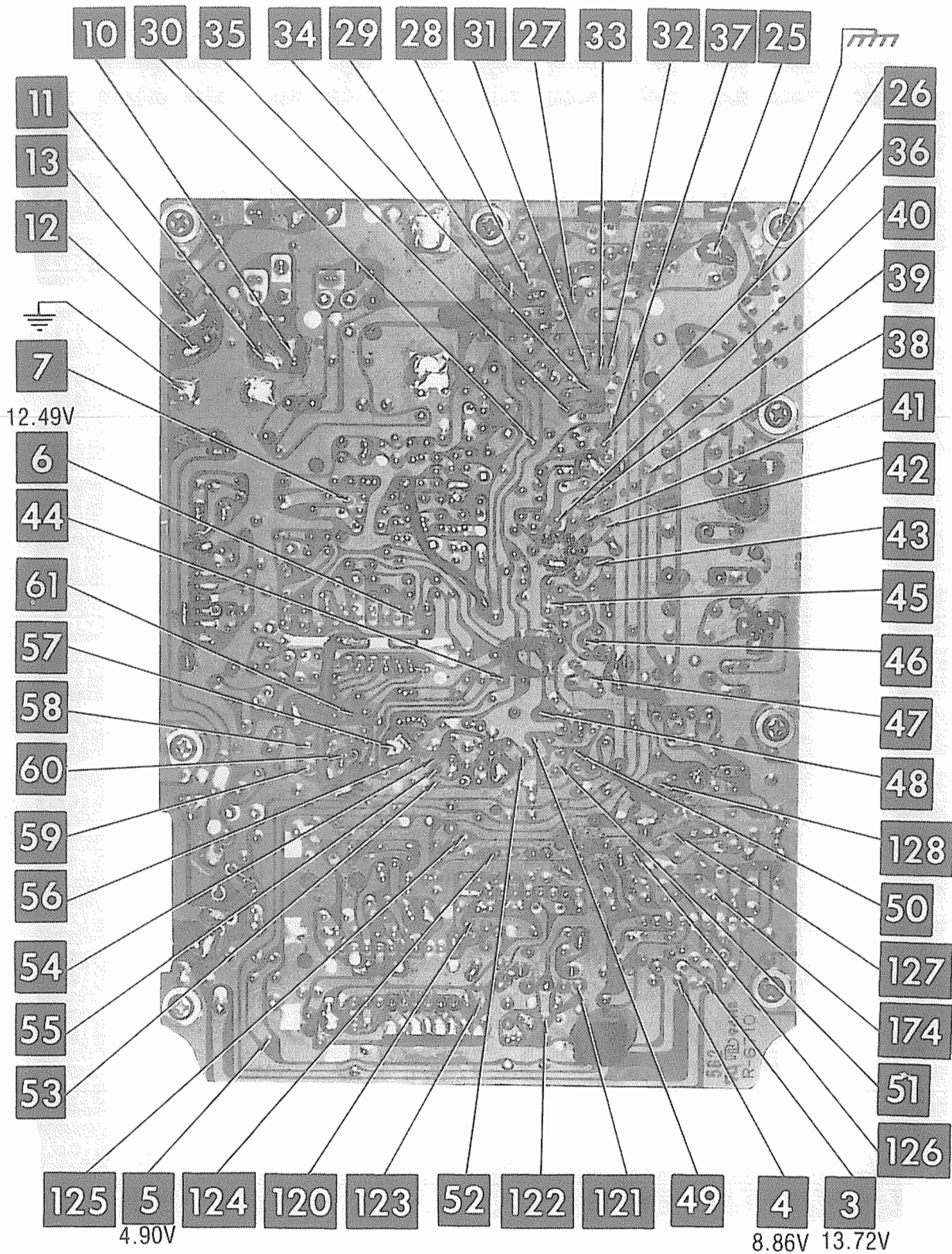
C H A N N E L	1 = 4.60 Volts 0 = 0 Volts						REC DIVIDER INPUT IN MHz AT TP5	XMT DIVIDER INPUT IN MHz AT TP5	REC VCO OUTPUT IN MHz AT TP6	XMT VCO OUTPUT IN MHz AT TP7
	CHANNEL INPUT CODES									
	IC1 PINS									
	6	5	4	3	2	1				
1	0	0	0	0	0	1	.910	1.365	16.270	16.725
2	0	0	0	0	1	0	.920	1.375	16.280	16.735
3	0	0	0	0	1	1	.930	1.385	16.290	16.745
4	0	0	0	1	0	0	.950	1.405	16.310	16.765
5	0	0	0	1	0	1	.960	1.415	16.320	16.775
6	0	0	0	1	1	0	.970	1.425	16.330	16.785
7	0	0	0	1	1	1	.980	1.435	16.340	16.795
8	0	0	1	0	0	0	1.000	1.455	16.360	16.815
9	0	0	1	0	0	1	1.010	1.465	16.370	16.825
10	0	1	0	0	0	0	1.020	1.475	16.380	16.835
11	0	1	0	0	0	1	1.030	1.485	16.390	16.845
12	0	1	0	0	1	0	1.050	1.505	16.410	16.865
13	0	1	0	0	1	1	1.060	1.515	16.420	16.875
14	0	1	0	1	0	0	1.070	1.525	16.430	16.885
15	0	1	0	1	0	1	1.080	1.535	16.440	16.895
16	0	1	0	1	1	0	1.100	1.555	16.460	16.915
17	0	1	0	1	1	1	1.110	1.565	16.470	16.925
18	0	1	1	0	0	0	1.120	1.575	16.480	16.935
19	0	1	1	0	0	1	1.130	1.585	16.490	16.945
20	1	0	0	0	0	0	1.150	1.605	16.510	16.965
21	1	0	0	0	0	1	1.160	1.615	16.520	16.975
22	1	0	0	0	1	0	1.170	1.625	16.530	16.985
23	1	0	0	0	1	1	1.200	1.655	16.560	17.015
24	1	0	0	1	0	0	1.180	1.635	16.540	16.995
25	1	0	0	1	0	1	1.190	1.645	16.550	17.005
26	1	0	0	1	1	0	1.210	1.665	16.570	17.025
27	1	0	0	1	1	1	1.220	1.675	16.580	17.035
28	1	0	1	0	0	0	1.230	1.685	16.590	17.045
29	1	0	1	0	0	1	1.240	1.695	16.600	17.055
30	1	1	0	0	0	0	1.250	1.705	16.610	17.065
31	1	1	0	0	0	1	1.260	1.715	16.620	17.075
32	1	1	0	0	1	0	1.270	1.725	16.630	17.085
33	1	1	0	0	1	1	1.280	1.735	16.640	17.095
34	1	1	0	1	0	0	1.290	1.745	16.650	17.105
35	1	1	0	1	0	1	1.300	1.755	16.660	17.115
36	1	1	0	1	1	0	1.310	1.765	16.670	17.125
37	1	1	0	1	1	1	1.320	1.775	16.680	17.135
38	1	1	1	0	0	0	1.330	1.785	16.690	17.145
39	1	1	1	0	0	1	1.340	1.795	16.700	17.155
40	0	0	0	0	0	0	1.350	1.805	16.710	17.165

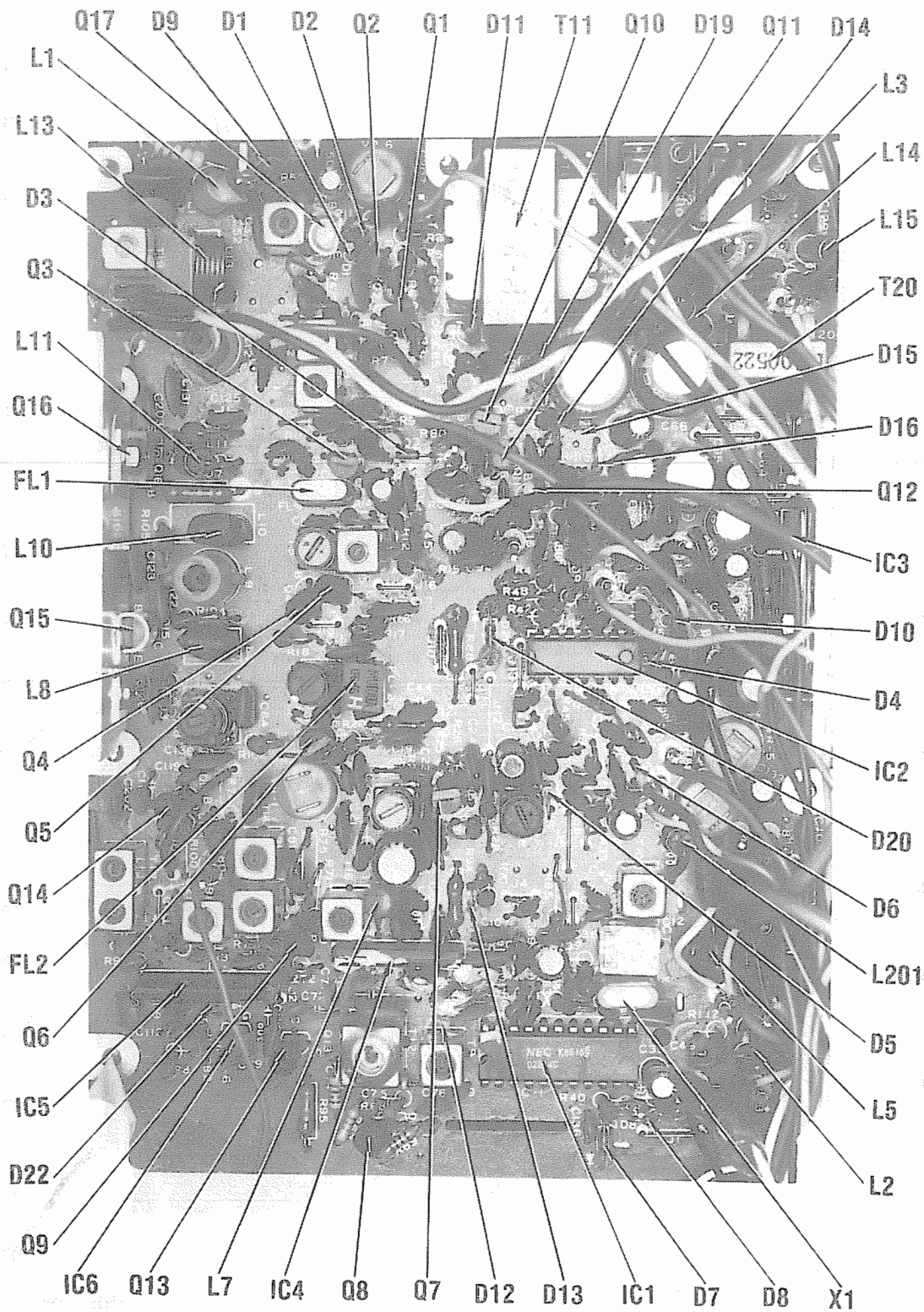


CHASSIS-BOTTOM

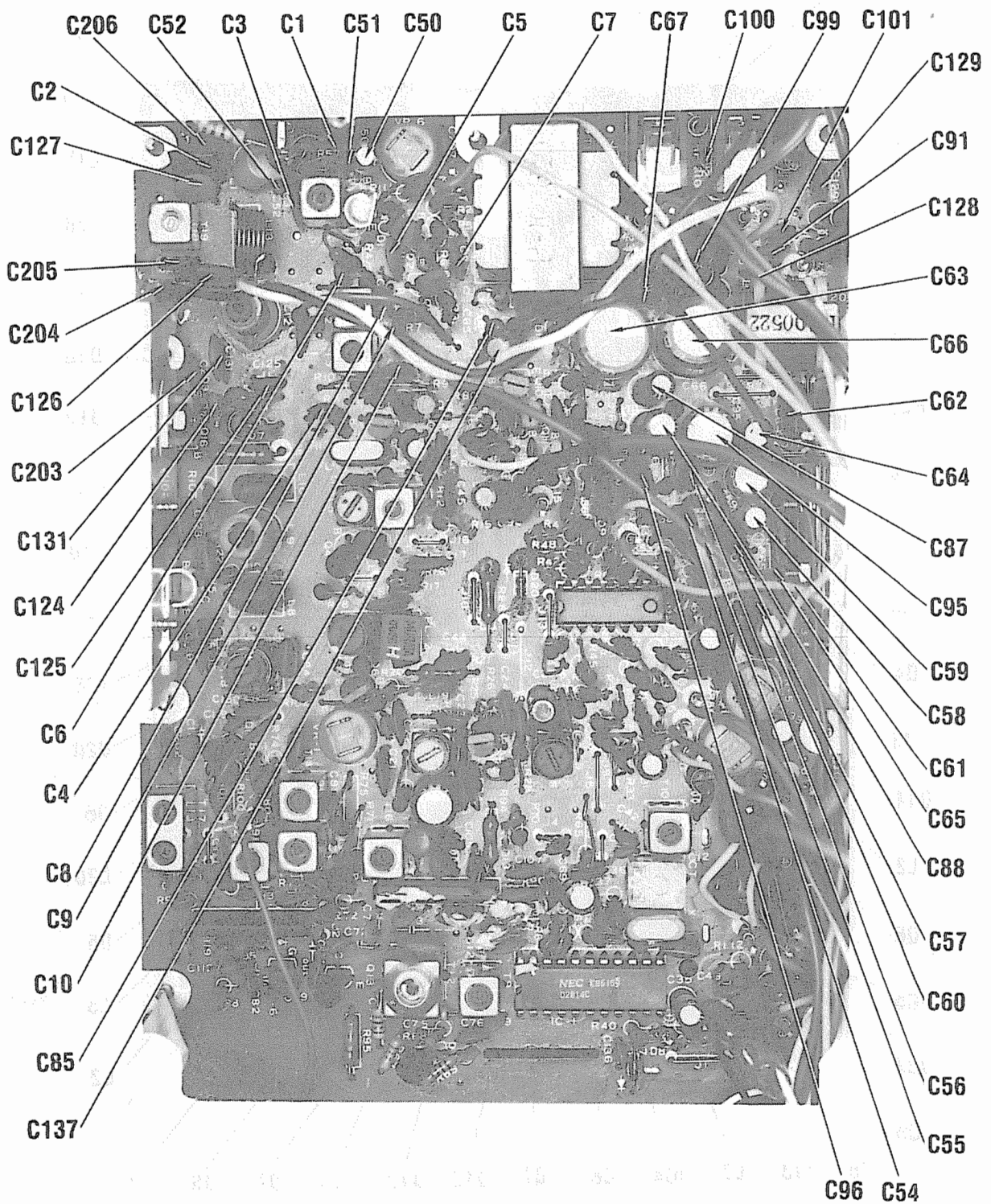


MAIN BOARD

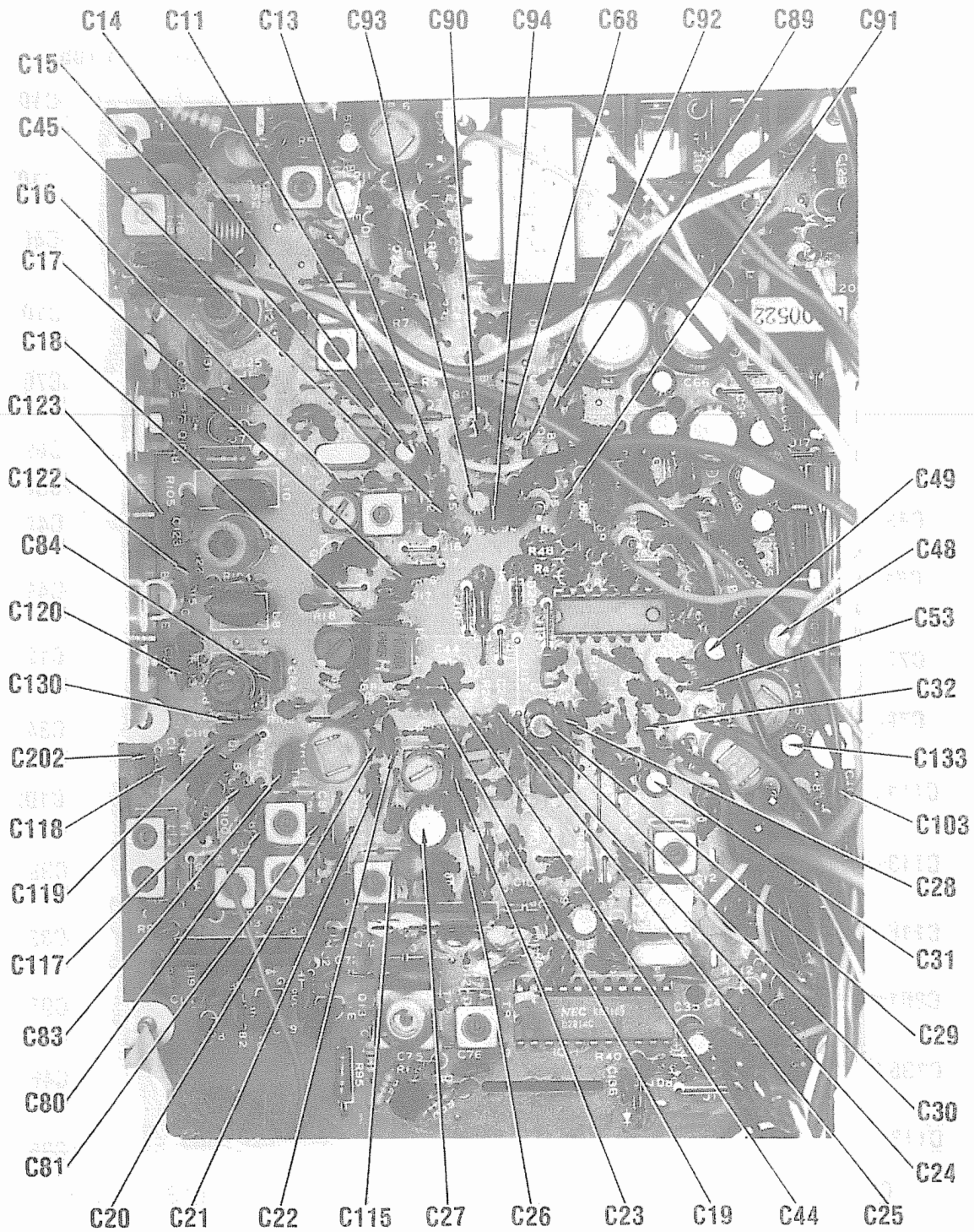




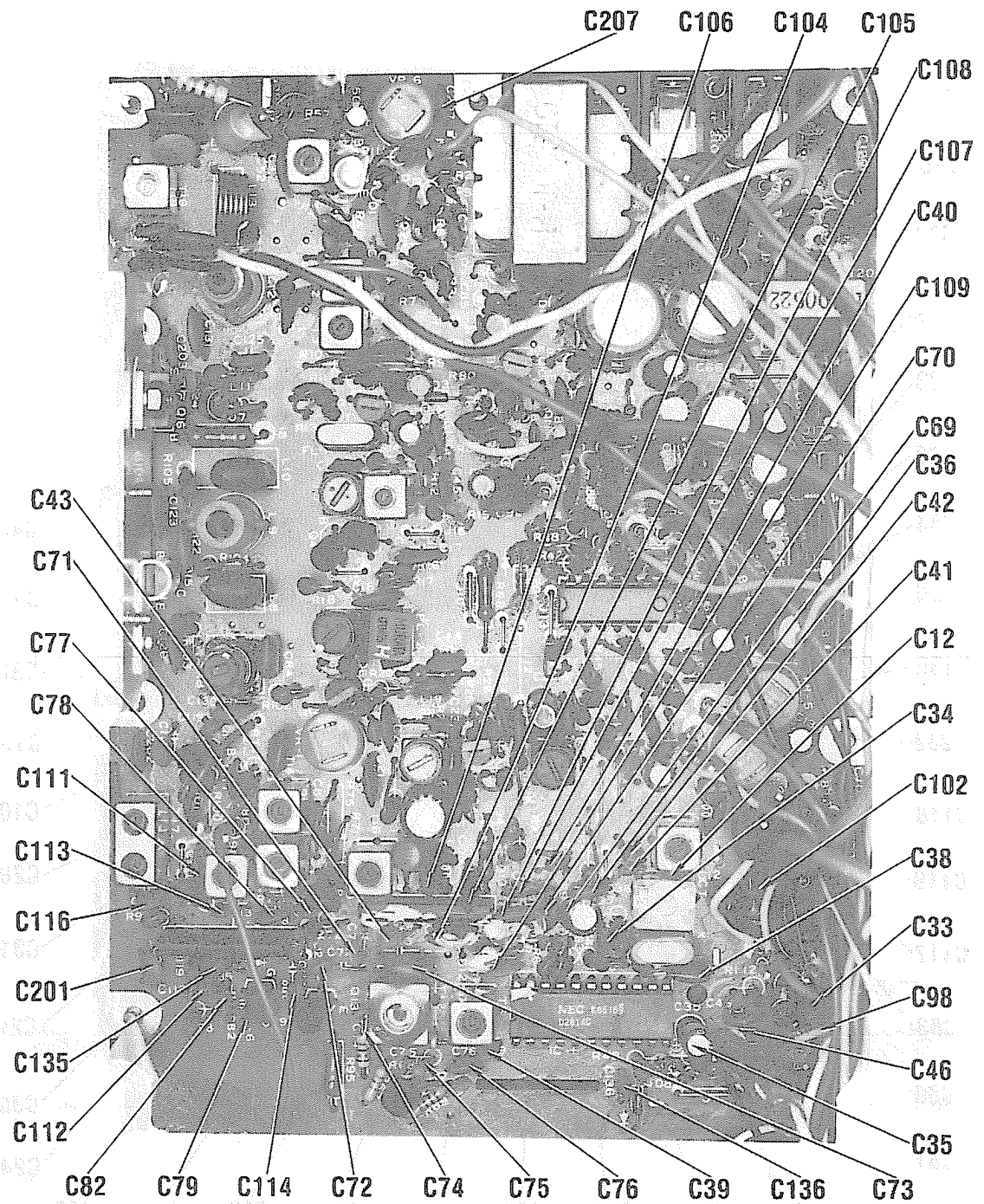
MAIN BOARD



MAIN BOARD



MAIN BOARD



MAIN BOARD

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.	RAYTHEON PART No.	RCA PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
Q16	25C2166		GE-215	PTC186	REN 235	SK3197/235	ECG235	TM235	WEP736/123A*	121-79039
Q17	25C1909		GE-215	PTC186	REN 235	SK3197/235	ECG235	TM235	WEP765/235	121-79039
	25C945		GE-212	PTC121*	REN 199	SK3124/289	ECG199	TM199/**	WEP1945	121-972
	25C945K		GE-212	PTC121*	REN 199	SK3124/289	ECG199	TM199/**	WEP1945	121-972

* Lead configuration may vary from original.
 /** Also available as exact type replacement.

ELECTROLYTIC CAPACITORS

REPLACEMENT DATA						
ITEM No.	RATING	MFRG. PART No.	CORNELL- DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C11	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C14	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C27	47 16V		PC50-16	VTT47U16	QV1-73	EV-1226
	100 16V		PC100-16	VTT100F16	QV1-95	EV-1231
C29	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C31	.47 50V		PC1-50	VTT47A63	QV1-3	EV-1610
C34	1 25V			TDC105M035EL		S035-19
C35	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C48	47 16V		PC50-16	VTT47D16	QV1-73	EV-1226
C49	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C50	.47 50V		PC1-50	VTT47A63	QV1-3	EV-1610
C58	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C59	100 10V		PC100-10	VTT100E10	QV1-93	EV-1131
C63	1000 16V		PC1000-16	VTT1000L16	QV1-183	EV-1261
C64	47 10V		PC50-16	VTT47U16	QV1-73	EV-1226
C66	470 16V		PC500-16	VTT470K16	QV1-151	EV-1251
C69	33 16V		PC30-25	VTT33U25	QV1-63	EV-1325
C85	1 50V			TDC105M050EL	QDT1-25	S050-19
C87	4.7 35V		PC5-50	VTT47B50	QV1-31	EV-1619.1
C88	22 16V		PC25-25	VTT22B16	QV1-55	EV-1224
C93	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C95	100 16V		PC100-16	VTT100F16	QV1-95	EV-1231
C133	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C137	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C1	220 50V 10%			CD15FD221J03	SX322	QW1-35	1MA-221
C2	220 50V 10%			CD15FD221J03	SX322	QW1-35	1MA-221
C3	33 NPO 50V 10%		DTZ-33	HP033	CN0433		10TCC-Q33
C4	22 NPO 50V 10%		DTZ-22	HP022	CN0422		10TCC-Q22
C5	47 50V 10%		DTZ-47	HP047	CN0447		10TCC-Q47
C6	1 50V +.25				CN0510		
C7	.01 25V		UK25-103		MAG2511		HY-520
C8	.01 25V		UK25-103		MAG2511		HY-520
C9	33 NPO 50V 10%		DTZ-33	NPO33	CN0433		10TCC-Q33
C10	.022 25V		UK25-223				HY-725
C12	12 NPO 50V 10%				CN0412		10TCC-Q12
C13	.022 25V		UK25-223				HY-725
C15	10 50V 10%		DTZ-10	HP010	CN0410		10TCC-Q10
C16	15 NPO 50V 10%		DTZ-15	HP015	CN0415		10TCC-Q15
C17	.047 25V		UK25-503		MAG2515		HY-735
C18	.047 25V		UK25-503		MAG2515		HY-735
	.01 25V		UK25-103		MAG2511		HY-520
C19	330 50V 5%		DD-331	GP330	GP333		10TS-T33
C20	4 50V +.25				CN0547		
C21	.047 25V		UK25-503		MAG2515		HY-735
C22	.047 25V		UK25-503		MAG2515		HY-735
C23	.022 50V 10%			DPMS2522	M192P2239RB	QFT2-127	1FT-S22
C24	.047 25V		UK25-503		MAG2515		HY-735
C25	.047 25V		UK25-503		MAG2515		HY-735
C26	.022 25V		UK25-223		MAG2515		HY-725
C28	.022 25V		UK25-223				HY-725
C30	.01 50V 10%			WMF1S1	M192P1039RB	QFT2-91	1FT-S10
C32	.0047 50V 10%			WMF1U47	M192P4729RB	QFT2-63	1FT-D47
C33	.022 50V				M192P2239RB		192P2239RB
C36	.022 50V				M192P2239RB		192P2239RB
C38	82 50V 10%			CD15ED020J03	SX482	QW1-25	1MA-820
C39	12 50V 10%				CN0412		10TCC-Q12
C40	1 NPO 50V +.25				CN0510		
C41	2 50V +.25				CN0522		
C42	220 50V 10%		DTZ-220				10TCC-T22
C43	12 50V 10%				CN0412		10TCC-Q12
C44	75 50V 10%		DTZ-75	HP075	CN0475		10TCC-Q75
C45	470 50V 10%		DD-471	GP470	GP347		10TS-T47
C46	.022 50V				M192P2239RB		192P2239RB
C51	.01 25V		UK25-103		MAG2511		HY-520
C52	2 50V +.25				CN0522		
C53	.01 50V 10%			WMF1S1	M192P1039RB	QFT2-91	1FT-S10
C54	.022 50V 10%			DPMS2522	M192P2239RB	QFT2-127	1FT-S22
C55	.01 50V 10%			WMF1S1	M192P1039RB	QFT2-91	1FT-S10
C56	.018 50V 10%				M192P1839RB		192P1839RB
C57	.0047 50V 10%			WMF1U47	M192P4729RB	QFT2-63	1FT-D47
C60	.0047 50V 10%			WMF1U47	M192P4729RB	QFT2-63	1FT-D47
C61	100 50V 10%						
C62	.068 50V 10%			WMF1S68	EWFI1A168	QF1-195	1PB-S68

REALISTIC MODEL TRC-422

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

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* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
(1) Used with IC1 Part Number UPD2814C.

[illegible]

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA			
			MFRG. PART No.	CENTRALAB PART No.	MALLORY PART No.	TRW PART No.
VR1	IF AGC	1000	P-6493			U260R102B
VR2	Squelch Range	10K	P-6494			U260R103B
VR3	Squelch	10K	P-3007			
VR4a	Volume CB	50K	P-1870			
VR4b	Volume PA-Power Switch	1000				
VR5	RX Signal Meter	22K	P-6495			U260R253B
VR6	TX Power Meter	33K	P-1873			U260R503B

PARTS LIST AND DESCRIPTION (CONTINUED)

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

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	Pi Filter	CA-3548	P-380043		
L2	RF Choke	CB-2318	P-380098		
L3	RF Choke	CB-2318	P-380098		
L5	RF Choke	CB-2318	P-380098		
L7	RF Choke	CB-2319	P-380026		
L8	RF Choke	CB-2394	P-380154		
L9	Xmt Driver (27MHz)	CA-3915	P-380157		
L10	RF Choke	CB-2395	P-380155		
L11	RF Choke	CB-2204	P-380048		
L12	Final (27MHz)	CA-3914	P-380033		
L13	Loading Final	CA-3547	P-380044		
L14	RF Choke	CB-2393	P-380156		
L15	RF Choke	CB-2393	P-380156		
L201	RF Choke	CB-2318	P-380098		
T1	Rec Antenna (27MHz)	CA-0295	P-110090		
T2	Rec RF (27MHz)	CA-3916	P-380140		
T3	Rec RF (27MHz)	CA-3917	P-380141		
T4	Mixer (10.695MHz)	CA-7869	P-140037		
T5	Mixer (10.695MHz)	CA-7870	P-140038		
T6	IF (455kHz)	CA-7871	P-130055		
T7	IF (455kHz)		P-130063		
T8	IF (455kHz)	CA-7514	P-130027		
T9	Offset Mixer (15.360MHz)	CA-3918	P-380144		
T10	PLL (10.240MHz)	CA-3919	P-380145		
T12	VCO	CA-3920	P-380161		
T13	Buffer (16MHz)	CA-3921	P-380147		
T14	Buffer (16MHz)	CA-3922	P-380148		
T15	Xmt Mixer (27MHz)	CA-3923	P-380149		
T16	PLL (10.240MHz)		P-380182		
T17	Xmt Mixer (27MHz)	CA-3925	P-380151		
T18	Xmt Predriver (27MHz)	CA-3545	P-380046/P-380158		
T19	TVI Trap (54MHz)	CA-3908	P-380132		

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.	
T20	1.5A	.1	200uH	TA-0671 P-100522(1)			(1) Number on unit.

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T11	12.5	¹ / ₈ ² / _{1.4}	TD-0172 P-100519(1)			(1) Number on unit.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP	3 1/2" PII, 8 Ohms	S-4747	3A05Z8	

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 250V Quick Acting	HF-1111	F-1133	AGC2	HRK	312002	150145	FG-2-2

REALISTIC MODEL TRC-422

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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		18-032	18-034	18-010	18-105	4	1	3	5	NC	1

MISCELLANEOUS

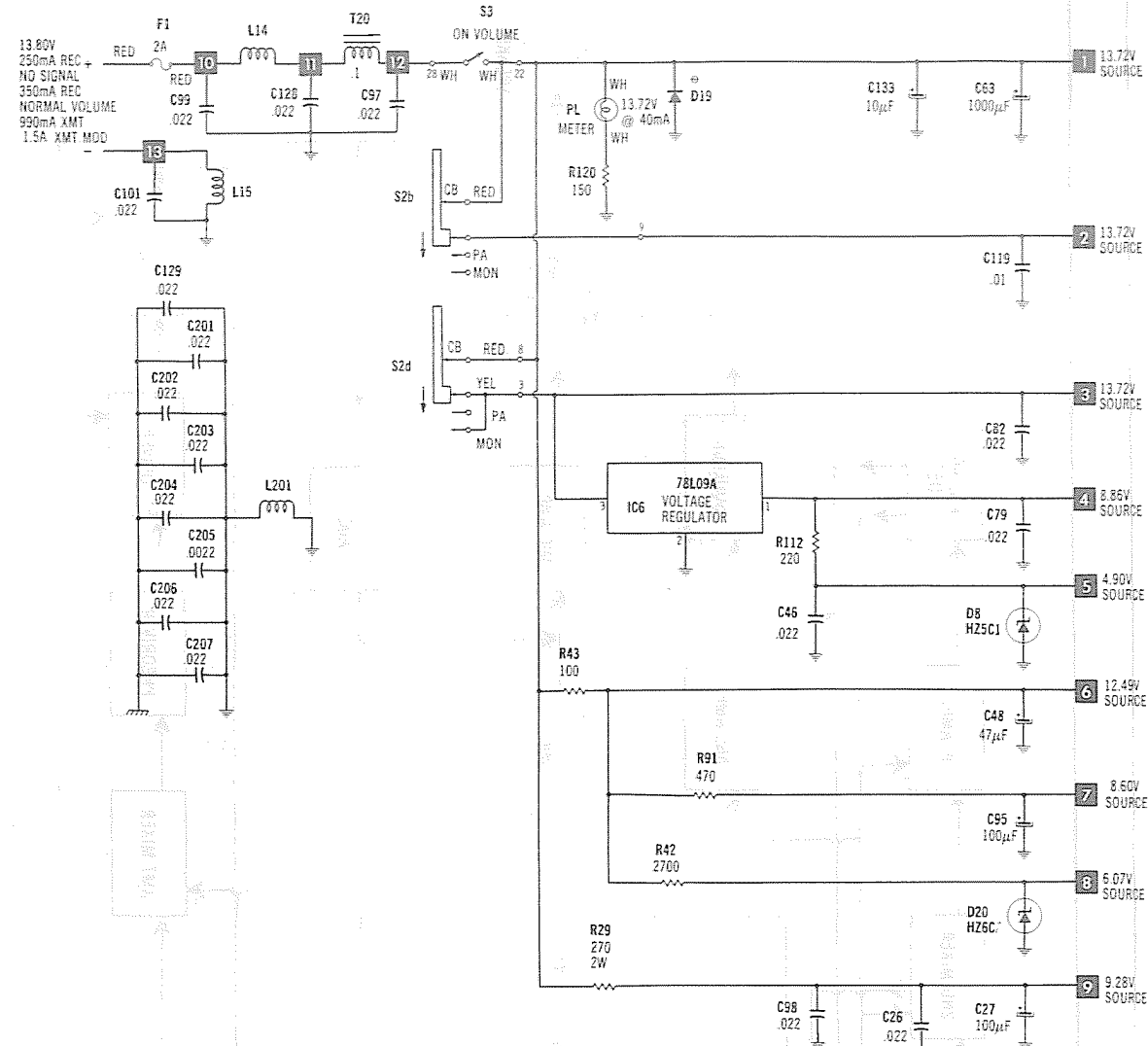
ITEM No.	PART NAME	PART No.	NOTES
D21	Diode	L-0902	Light Emitting, GL-31AR
FL1	Filter	C-0915	Crystal Filter (10F7AA) 10.695MHz
FL2	Filter	C-0754	Ceramic Filter (CFU455H2) 455kHz
J1	Jack	J-6574	Antenna
J2	Jack	J-0957	EXT SP
J3	Jack	J-0957	PA SP
J4	Jack	J-6572	5 Pin Din
LED301	LED		Channel Indicator, SG2-N52-02
M1	Meter	M-0381	RF Meter (With Lamp)
PL	Lamp	L-0904	Meter, 13.72V @ 40mA
S1	Switch	S-2453	ANL, SLE-1242-12K
S2	Switch	S-2453	CB-PA, SLE-1242-12K
S3	Switch	P-1870	Power (With VR-4/A-B)
S4	Switch	S-2453	Channel 9/Normal/Channel 19
S301	Switch	S-1311	Channel Selector
X1	Crystal	HX-2295	HC-18/V, 10.240MHz
	P.C. Board	P-200562	Main
	P.C. Board	X-7736	Flexible
	P.C. Board	P-200564	LED
	LED Cushion	HB-7595	

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

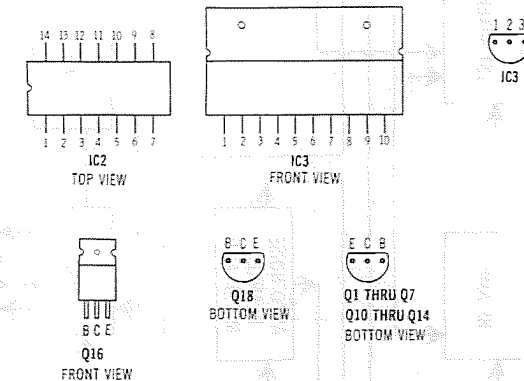
ITEM	PART No.	ITEM	PART No.
Thumbscrew for Mounting Bracket	K-2181	Bracket	HB-7587
Mounting Bracket	MB-0206	Lamp Cover	HB-7594
Case Bottom	Z-4060	Meter Cover	HB-7590
Case Top	Z-4059	Front Panel	Z-4061
Cushion	HP-6023	Front Plate	Z-4058
Strain Relief	HP-0598	Knob for Volume & Squelch	K-2961
Chassis	P-400206	Knob for Channel Selector	K-2960
Ground Plate	HB-7649	Trim Panel	Z-4058

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)
Microphone Cable (Coiled).....	Use BELDEN No. 9467 (5 conductor-1 shielded)(6 ft.)(AWG28)



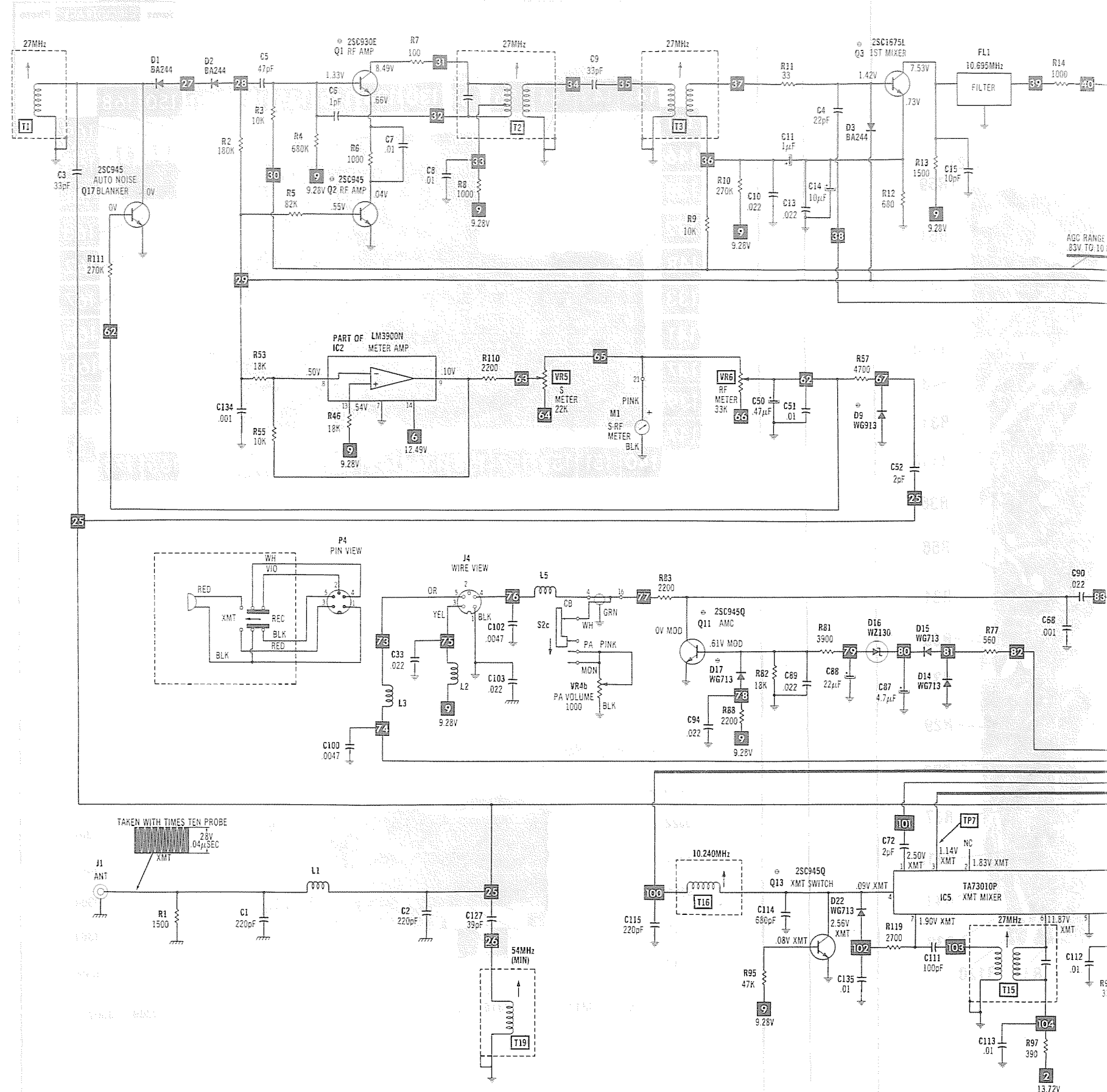
TERMINAL GUIDE



- 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).

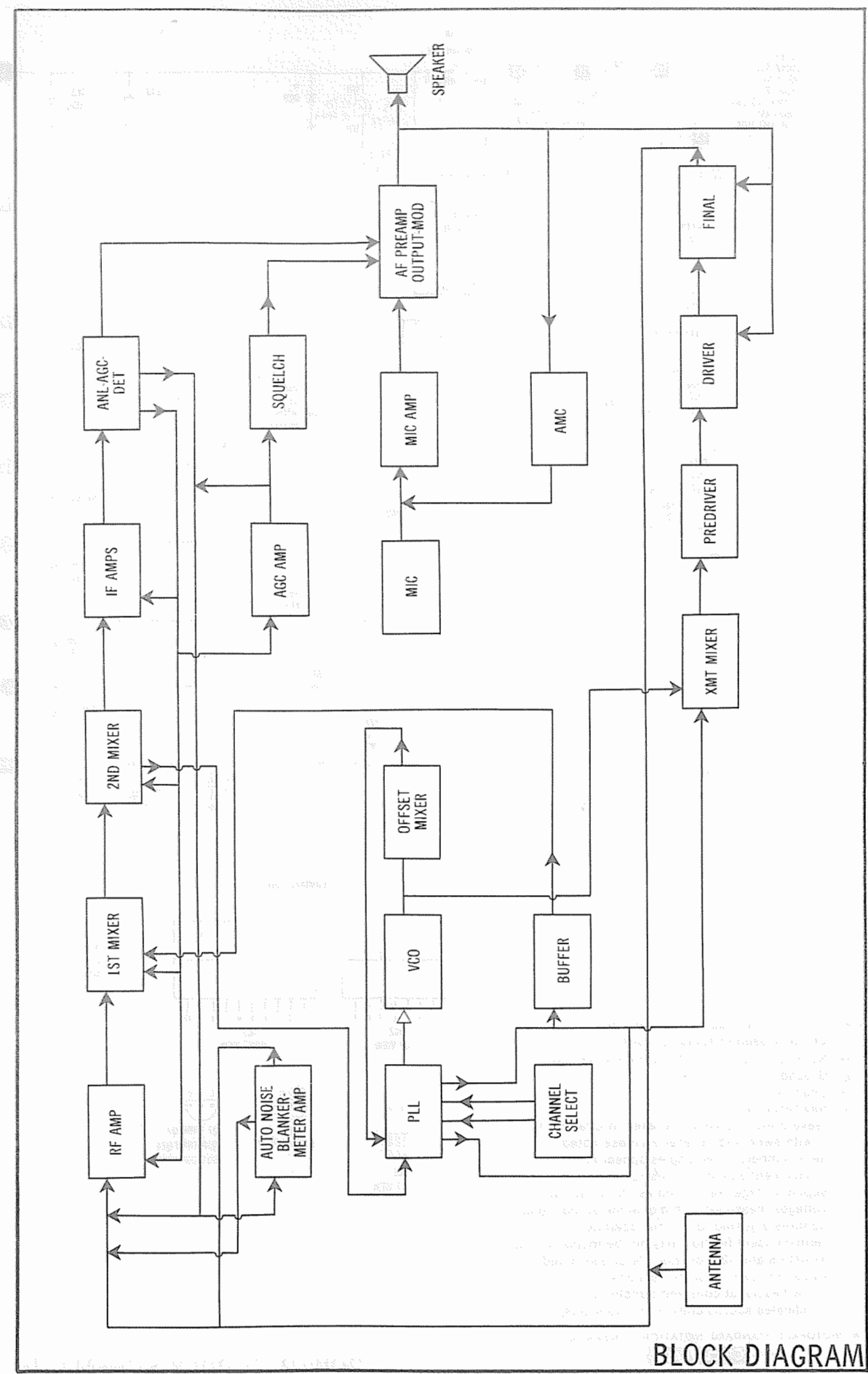
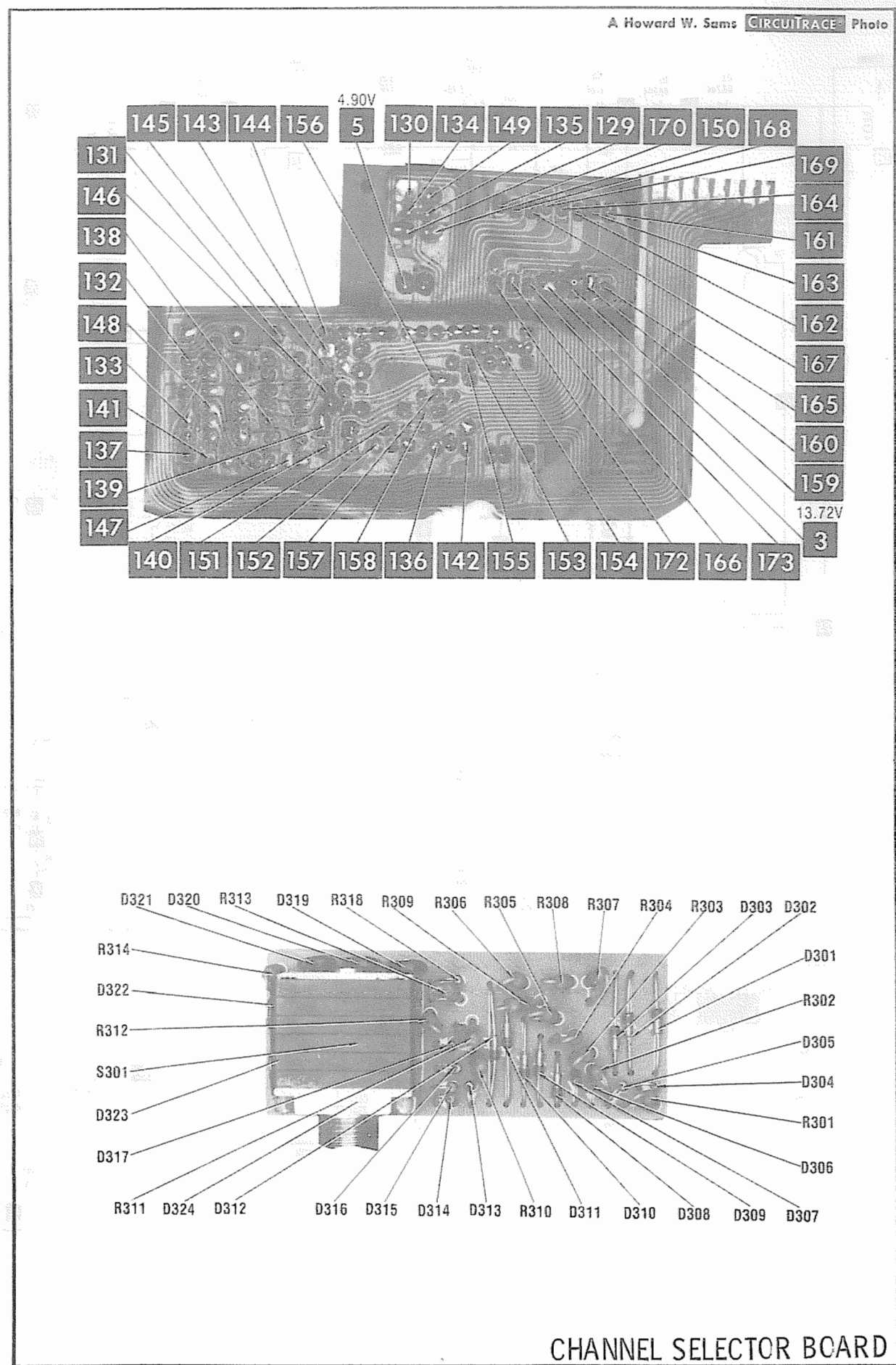
A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH **CIRCUITACE**
© Howard W. Sams & Co., Inc. 1979

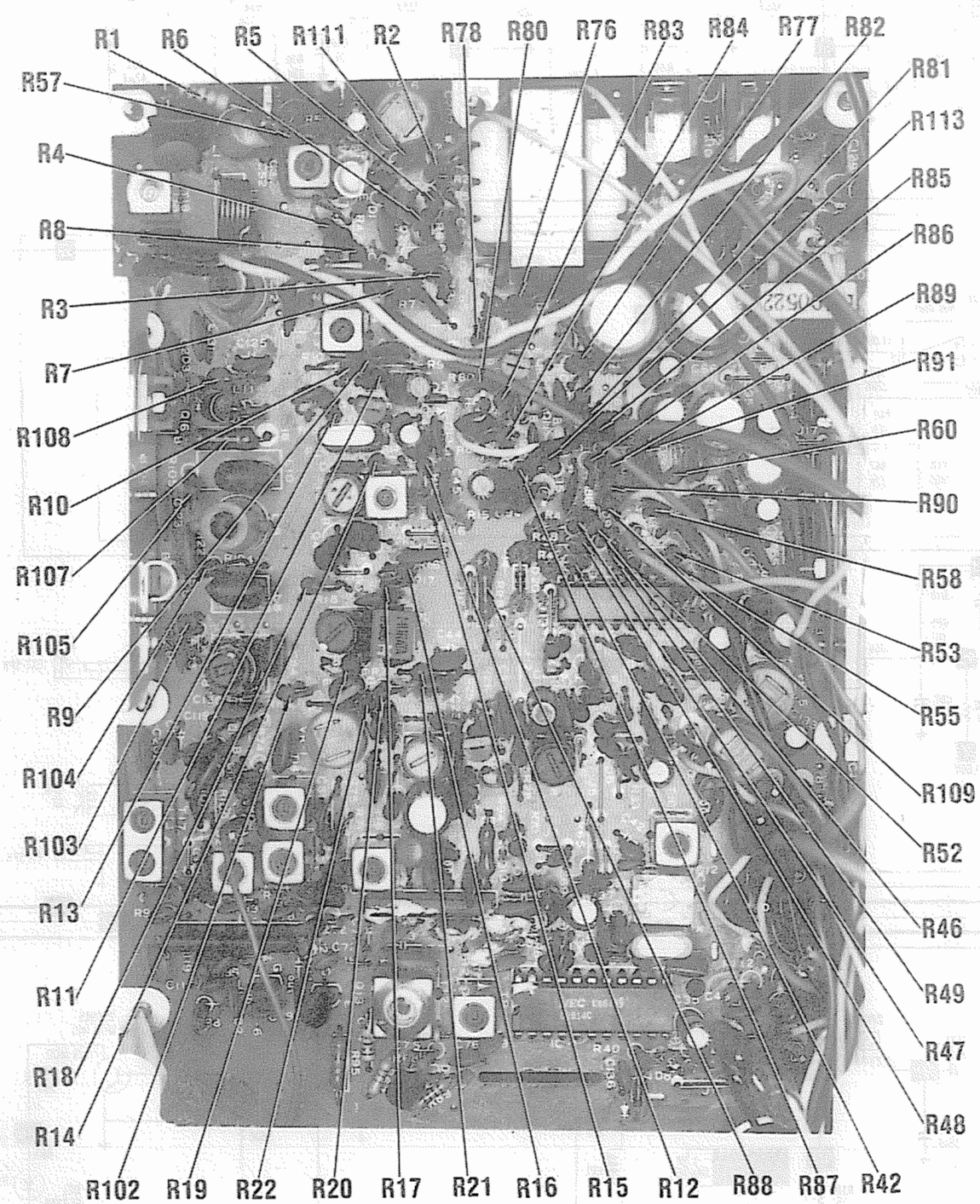
POWER SUPPLY SCHEMATIC



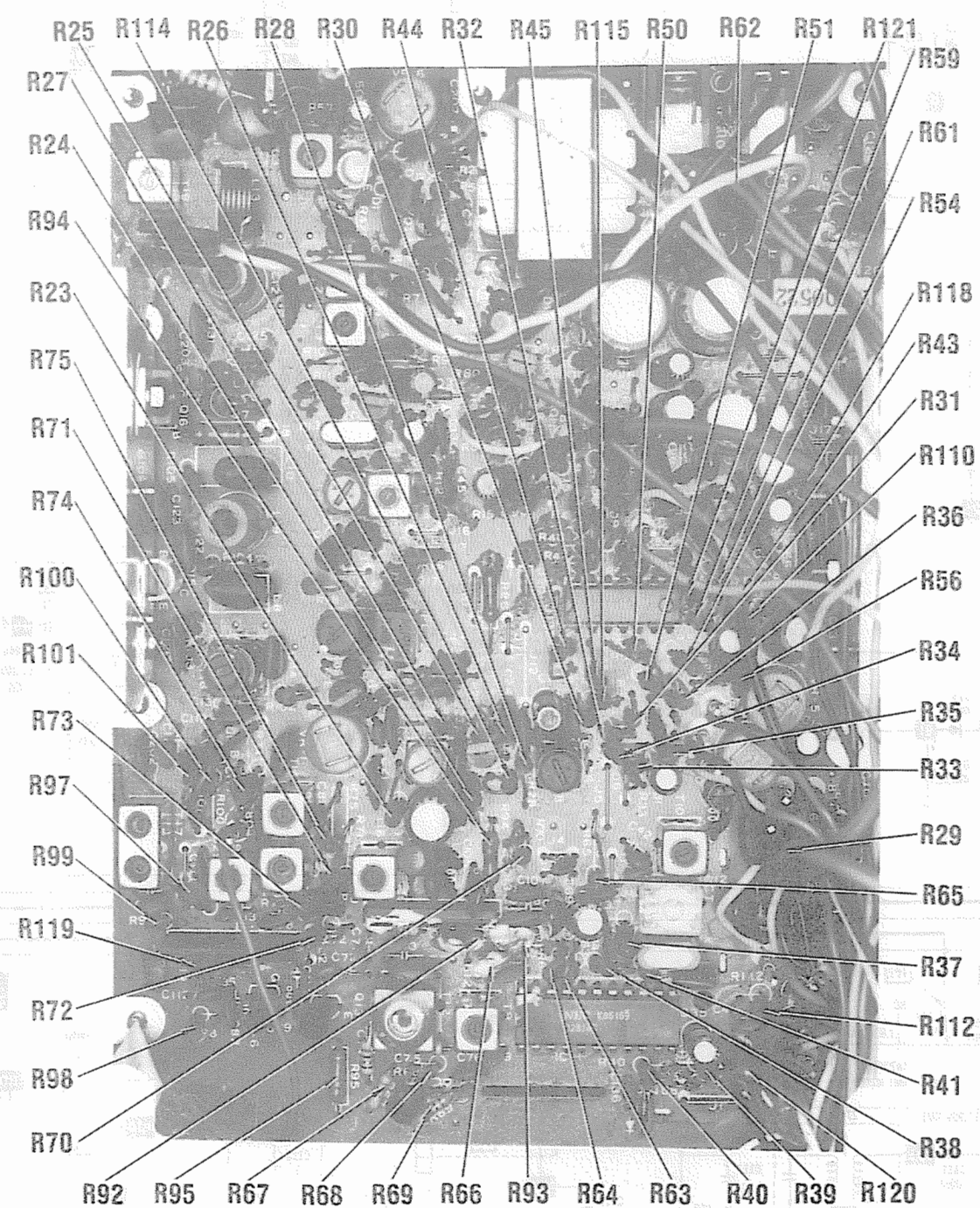
162 R51 R121
 R59
 R61
 R54
 R118
 R43
 R31
 R110
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 R29
 R65
 R37
 R112
 R41
 R38
 R40 R39 R120

MAIN BOARD

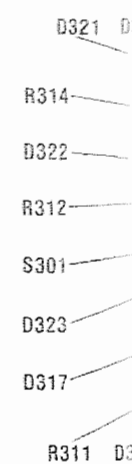
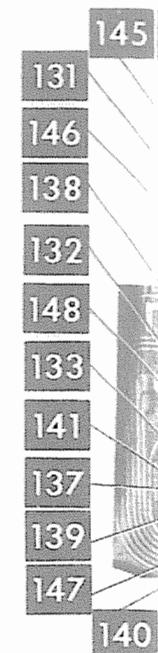




MAINBOARD



MAIN BOARD

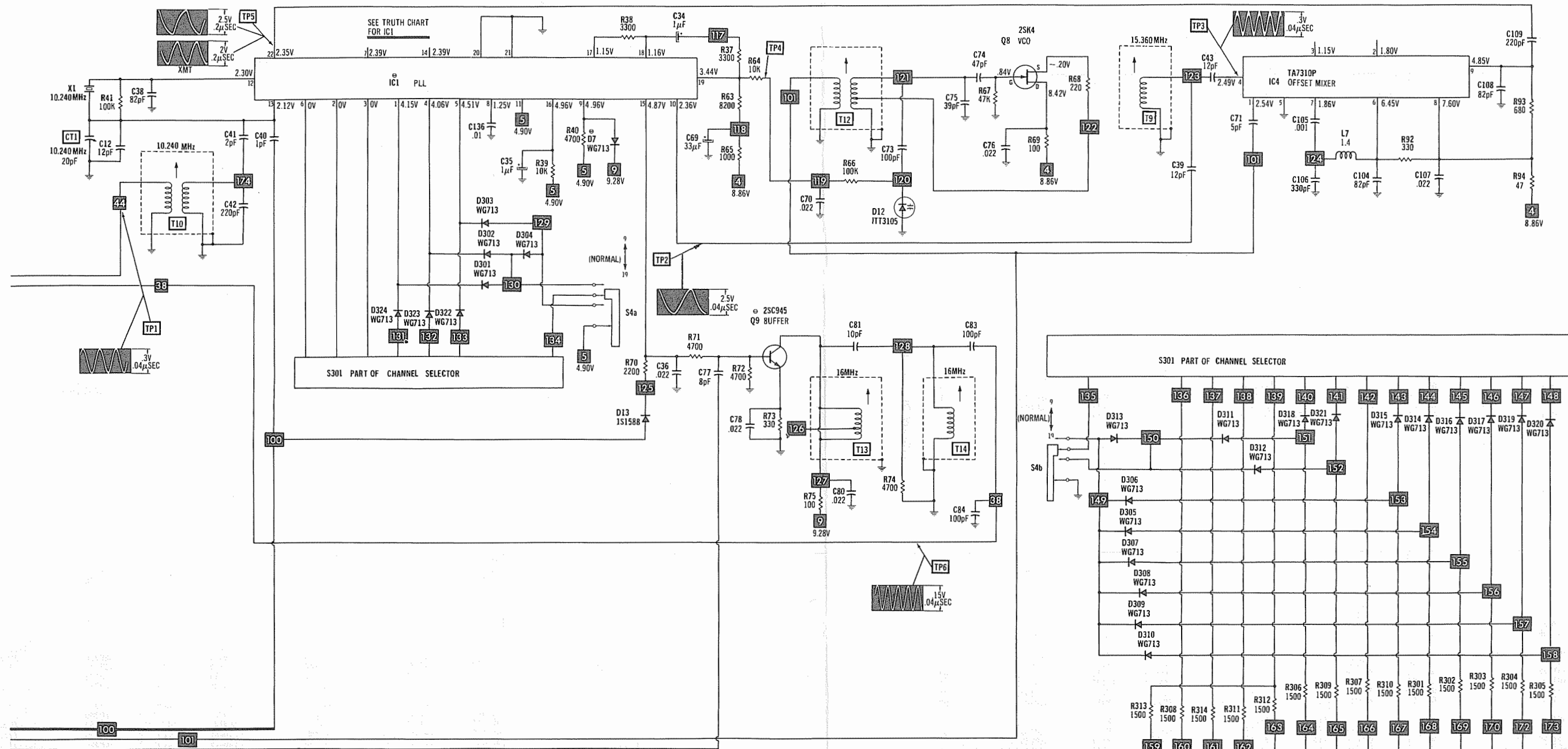


(When ordering parts, state Model, Part Number, and Description.)

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.
D1	BA244	DX-1096	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D2	BA244	DX-1096	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D3	BA244	DX-1096	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D4	WG713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S1588		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
	1S953		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D5	1N60		1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-29001
	1N60P	DX-0162	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134/109	103-29001
	1S188FM		1N34A5	PTC207	REN 109	SK3087	ECG109	TM109/**	WEP134/109	103-29001
D6	WG713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S1588		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
	1S953		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D7	WG713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S1588		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
	1S953		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D8	H25C1	DX-1097	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D9	WG713	DX-0543	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
	1S1588		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D10	WG713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S1588		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
	1S954		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D11	10E-1	DX-1039	GE-504A	PTC201	REN 116	SK3311	ECG116	TM116	WEP156	212-76-02
	SR-1K		GE-504A	PTC201	REN 116	SK3311	ECG116	TM116	WEP156	212-76-02
D12	1TT-3105	DX-1080	GE-90		REN 614		ECG614	TM614	WEP206/614	103-219
D13	WG713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S1588		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
	1S1593		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D14	WG713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S1588		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
	1S953		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
D15	WG713	DX-0543	GE-300	PTC214	REN 177					

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

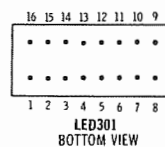
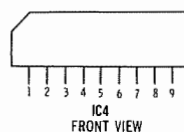
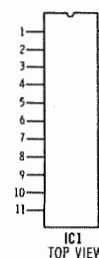
ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RAYTHEON PART No.	RCA PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
0316	WG713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S953		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S1588		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
0317	WG713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S953		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S1588		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
0318	WG713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
0319	1S953	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S1588		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
	WG713		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
0320	WG713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S953		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S1588		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
0321	WG713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S953		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S1588		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
0322	WG713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S953		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S1588		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
0323	WG713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S953		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S1588		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
0324	WG713	DX-0543	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S953		GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062/177	103-131
	1S1588		GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925/519	103-287
IC1	UPQ2814C H042853	MY-3540								
IC2	LM3900N LM3900	MY-3231					ECG992	TM992		
IC3	UPC1156*2	MX-3372				SK3484/1194	ECG1194	TM1194	WEP2126/1194	
IC4	TA7310P	MX-3256			REN 1192	SK3445/1192	ECG1192	TM1192	WEP2126/1192	
IC5	TA7310P-Y TA7310P	MX-3545			REN 1192	SK3445/1192	ECG1192	TM1192	WEP2126/1192	
IC6	78L09A NJM78L09A	MX-3544								
Q1	25C930E		GE-60*	PTC132*	REN 229	SK3356	ECG229 *	TM229*/**	WEP380	121-29021*
	25C930		GE-6							



* Circuitry not used in some versions.
 --- Circuitry used in some versions.
 ✖ Nominal value ▽ Common tie point
 ⊥ Ground
 CH Chassis
 e 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.
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A PHOTOFAC STANDARD NOTATION SCHEMATIC
 WITH **CIRCUITRACE**
 © Howard W. Sams & Co., Inc. 1979

TERMINAL GUIDES



PLL SCHEMATIC

EACH SEGMENT OF LED301 IS SUPPLIED WITH 2.09V @ 7.7mA