

PHOTOFACT[®] with

CIRCUITRACE[®]

For Supplier Address See PHOTOFACT Index

NOTE

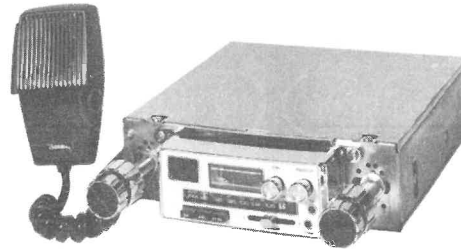
Repair or adjustment of transmitter circuits must be under supervision of a person with first-or second-class radiotelephone license.

(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 CBR-9600

MANUFACTURER'S SPECIFICATIONS

CB SECTION

TRANSMITTER

Power Output	: 4 watt maximum
Frequency Tolerance	: 0.005%
Modulation capability	: 80 ~ 100%
Spurious Suppression	: More than 60 dB
Antenna Impedance	: 50 ohm, unbalanced

RECEIVER

Sensitivity	: 0.5 μ V
Selectivity	: 5 KHz at -6 dB
Adjacent Channel Rejection	: More than 45 dB
Image rejection	: 60 dB

FM RADIO SECTION

Maximum sensitivity	: Less than 18 dB/ μ V at S/N 10 dB
Stereo Sensitivity	: Less than 26 dB/ μ V
Intermediate Frequency	: 10.7 MHz
Stereo Separation	: 25 dB

AM RADIO SECTION

Maximum sensitivity	: Less than 26 dB/ μ V
Selectivity	: 5 KHz at -6 dB
AF POWER OUTPUT	: 4 watt x 2 (R.M.S.)
POWER SUPPLY	: 13.8V DC, Negative ground
SPEAKER IMPEDANCE	: 4 ohm

Courtesy of the Manufacturer

BOMAN MODEL CBR-9600

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 9-volt DC input.
 Adjustments made with 13.8-volts DC.
 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:
 L105, L106, L107, L111, L113..... 5009, 8728-A, 8728
 L101, L102, L103, L104, L108, L109, L110, L116,
 L117, L118..... 9440

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of oscilloscope to TP12.	Ch. 19	L116	Adjust for maximum RF.
Input of frequency counter to TP12.	Ch. 19		Check for 10.240MHz.
Input of oscilloscope to TP3.	Ch. 19	L120	Adjust for maximum RF.
Input of DC meter to TP5.	Ch. 19	L117	Adjust for 3.0 volts.
Input of oscilloscope to TP4.	Ch. 19	L118	Adjust for maximum RF.
Input of frequency counter to TP4.	Ch. 1		Check for 37.660MHz. Repeat for all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP1.	Ch. 19, XMT		Adjust for 10.695MHz.

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 TP13 (TR103, base). 455kHz, 1000Hz @ 30% modulation.	Ch. 19	L107,L106, L105	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.185MHz,1000Hz @ 30% modulation.	Ch. 19	L104,L103, L102,L101	Adjust for maximum output. If necessary readjust L105, L106 and L107.

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 50,000uV.	Ch. 19	RV101	AGC Adjust volume VR2B for 0db. Decrease generator to 50uV. Adjust RV101 so that audio does not drop more than 10db.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 1000uV.	Ch. 19	RV103	SQUELCH RANGE Set Squelch Control VR1 fully clockwise. Adjust RV103 so that squelch just breaks.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 100uV.	Ch. 19	RV102	S METER Adjust RV102 for 9 on S scale of meter.

BOMAN MODEL CBR-9600

TRANSMITTER ALIGNMENT

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

NOTE: Be sure to check transmit frequency and power on all active channels after alignment of transmitter.
See page 4 for channel frequencies.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
	Ch. 19	L109, L110, L111, L113	Adjust for maximum.
	Ch. 19	L113	Adjust for 4 watts maximum.

TRANSMITTER ADJUSTMENTS

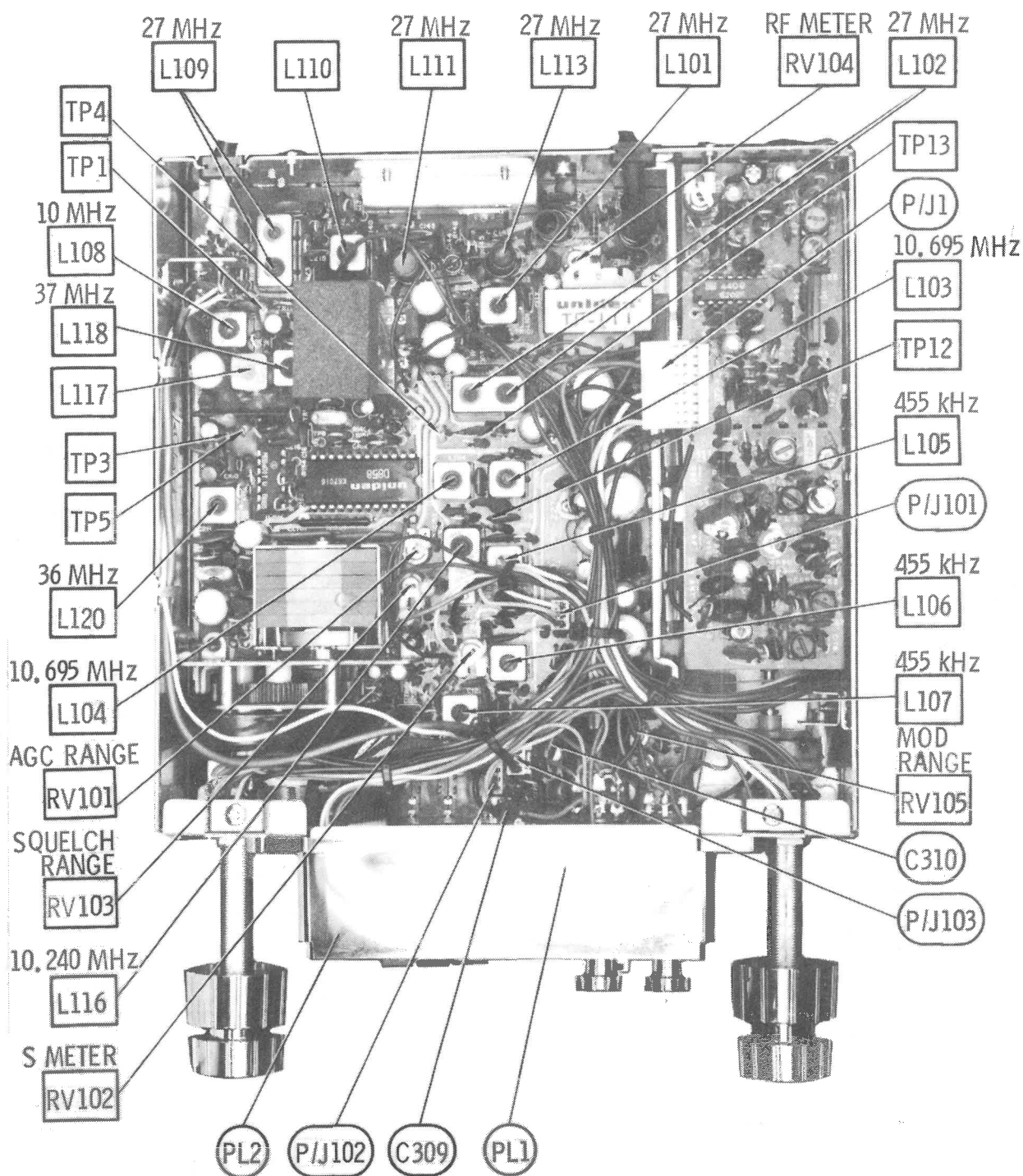
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.

NOTE: Be sure to check transmit frequency and power on all active channels after adjustment of transmitter.
See page 4 for channel frequencies.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Modulation meter to antenna jack. Inject a 1000Hz, .1 volt signal at MIC input.	Ch. 19	RV105	MOD Adjust for 90% modulation.
	Ch. 19	RV104	RF PANEL METER Adjust so that RF panel meter agrees with RF wattmeter.

TRUTH CHART

C H A N N E L	1 = 4.92 Volts 0 = 0 Volts							REC VCO OUTPUT IN MHz AT TP4		
	IC101 PROGRAM DIVIDER									
	PINS									
	13	14	15	16	17	18	19			
1	1	0	0	1	0	0	0	37.660		
2	0	0	0	0	1	0	0	37.670		
3	1	0	0	0	1	0	0	37.680		
4	1	1	0	0	1	0	0	37.700		
5	0	0	1	0	1	0	0	37.710		
6	1	0	1	0	1	0	0	37.720		
7	0	1	1	0	1	0	0	37.730		
8	0	0	0	1	1	0	0	37.750		
9	1	0	0	1	1	0	0	37.760		
10	0	0	0	0	0	1	0	37.770		
11	1	0	0	0	0	1	0	37.780		
12	1	1	0	0	0	1	0	37.800		
13	0	0	1	0	0	1	0	37.810		
14	1	0	1	0	0	1	0	37.820		
15	0	1	1	0	0	1	0	37.830		
16	0	0	0	1	0	1	0	37.850		
17	1	0	0	1	0	1	0	37.860		
18	0	0	0	0	1	1	0	37.870		
19	1	0	0	0	1	1	0	37.880		
20	1	1	0	0	1	1	0	37.900		
21	0	0	1	0	1	1	0	37.910		
22	1	0	1	0	1	1	0	37.920		
23	0	0	0	1	1	1	0	37.950		
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26	1	0	0	1	1	1	0	37.960		
27	0	0	0	0	0	0	1	37.970		
28	1	0	0	0	0	0	1	37.980		
29	0	1	0	0	0	0	1	37.990		
30	1	1	0	0	0	0	1	38.000		
31	0	0	1	0	0	0	1	38.010		
32	1	0	1	0	0	0	1	38.020		
33	0	1	1	0	0	0	1	38.030		
34	1	1	1	0	0	0	1	38.040		
35	0	0	0	1	0	0	1	38.050		
36	1	0	0	1	0	0	1	38.060		
37	0	0	0	0	1	0	1	38.070		
38	1	0	0	0	1	0	1	38.080		
39	0	1	0	0	1	0	1	38.090		
40	1	1	0	0	1	0	1	38.100		



CHASSIS-TOP

ALIGNMENT INSTRUCTIONS

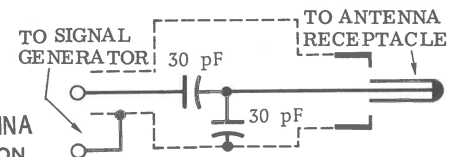
Check for specified source voltage.
 Connect low sides of generator and indicator to ground unless specified otherwise.
 Use only enough generator output to provide a usable indication.
 Suggested Alignment Tools: GC ELECTRONICS:
 L1, L2, L3, L5, L6, L7, L8, L402.... 5009, 8728-A, 8728
 CV52, CV53, CV401, CV402..... 8276, 5000
 CV51..... 9091, 8275

AM ALIGNMENT—SELECTOR IN AM POSITION

Connect output meter across speaker voice coil.

GENERATOR COUPLING	GENERATOR FREQUENCY	RADIO DIAL SETTING	ADJUST	REMARKS
High side thru .1uF to TP10.	262MHz 400-Hz mod.	High freq end stop	L8,L7,L6, L5	Adjust for maximum.
Thru dummy antenna to antenna input.	600kHz 400-Hz Mod.	600kHz	L3	"
Thru dummy antenna to antenna input.	1600kHz 400-Hz Mod.	1600kHz	CV53	"
Thru dummy antenna to antenna input.	1400kHz 400-Hz Mod.	1400kHz	CV52 CV51	Adjust for maximum. Repeat alignment until no further improvement is noted.

With radio installed in car and antenna extended 36", tune in a weak station near 1400kHz and adjust CV51 for maximum output. Antenna adjustment is located lower right of front panel.



DUMMY ANTENNA

FM IF ALIGNMENT USING AM SIGNAL GENERATOR—SELECTOR IN FM POSITION

High side of generator thru .001uF to TP.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
10.7MHz Unmodulated	Point of non-interference	DC probe of VTVM to TP11 (D1, cathode)	(1) L1,L402	Adjust for maximum.
"	"	DC probe of VTVM to TP6	L2	Adjust for zero reading. A positive or negative reading will be obtained on either side of correct setting.

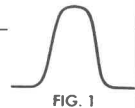


FIG. 1

(1) Before adjusting, vary generator frequency slightly. Maximum output indicates exact IF.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR—SELECTOR IN FM POSITION

High side of generator thru .001uF to TP.
 Use 60-hertz, frequency-modulated signal, 450kHz sweep.
 Use 60-hertz sawtooth voltage in scope for horizontal deflection.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
10.7MHz 450kHz Sweep	Point of non-interference	Vert input of scope to TP11 (D1, cathode)	L1,L402	Disconnect stabilizing capacitor C5. Adjust for maximum gain and symmetry of response similar to Fig. 1. Reconnect C5.
"	"	Vert input of scope to TP6	L2	Adjust L2 for maximum amplitude and straightness of line, similar to Fig. 2.

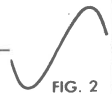


FIG. 2

FM RF ALIGNMENT—SELECTOR IN FM POSITION

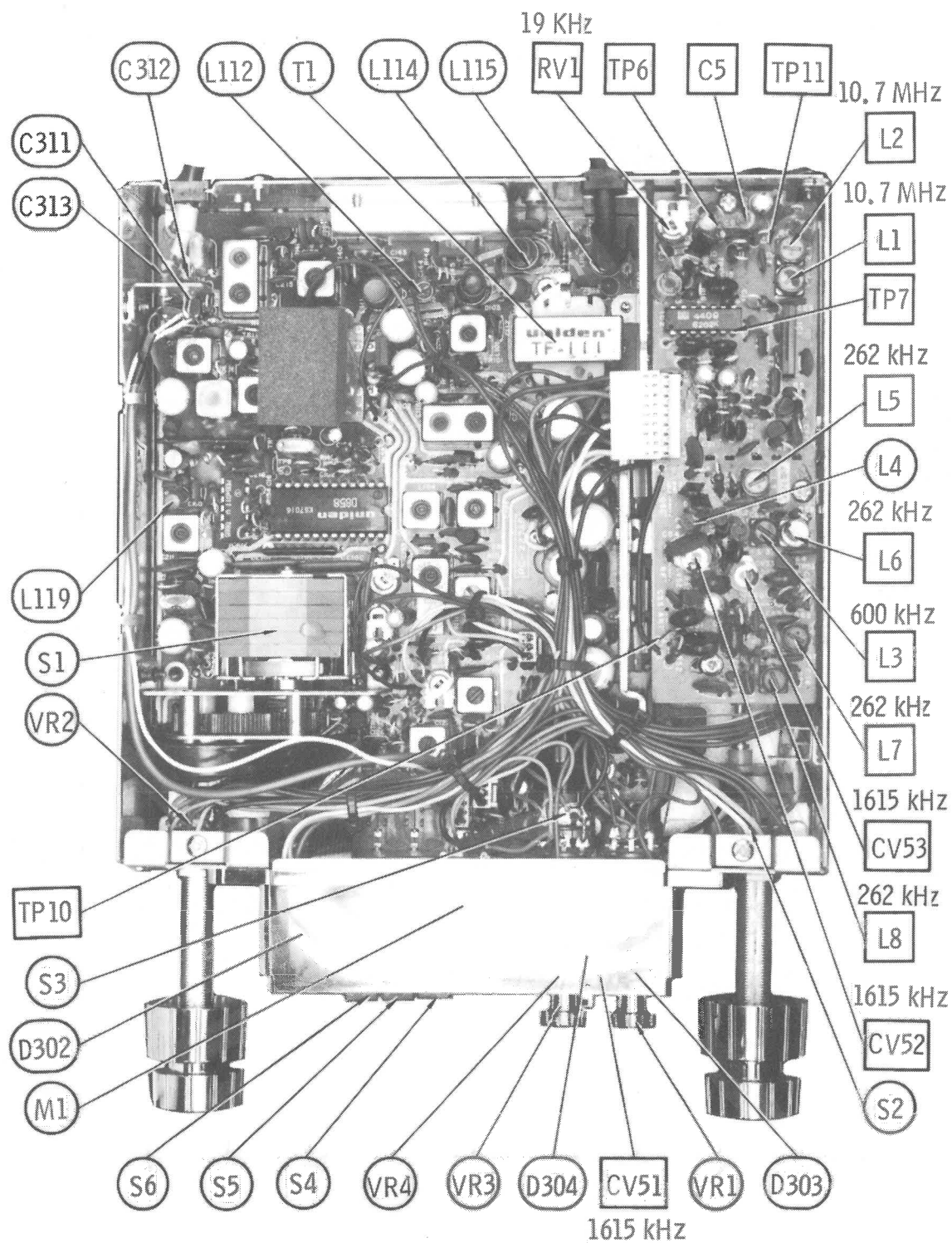
Connect generator across antenna terminals with 120-ohm carbon resistor in series with each lead. Adjustment of coils by bending should not be attempted unless the coil is deformed or replaced.

GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
108MHz Unmodulated	108MHz	DC probe of VTVM to TP11 (D1, cathode)	CV401, CV402	Adjust for maximum.

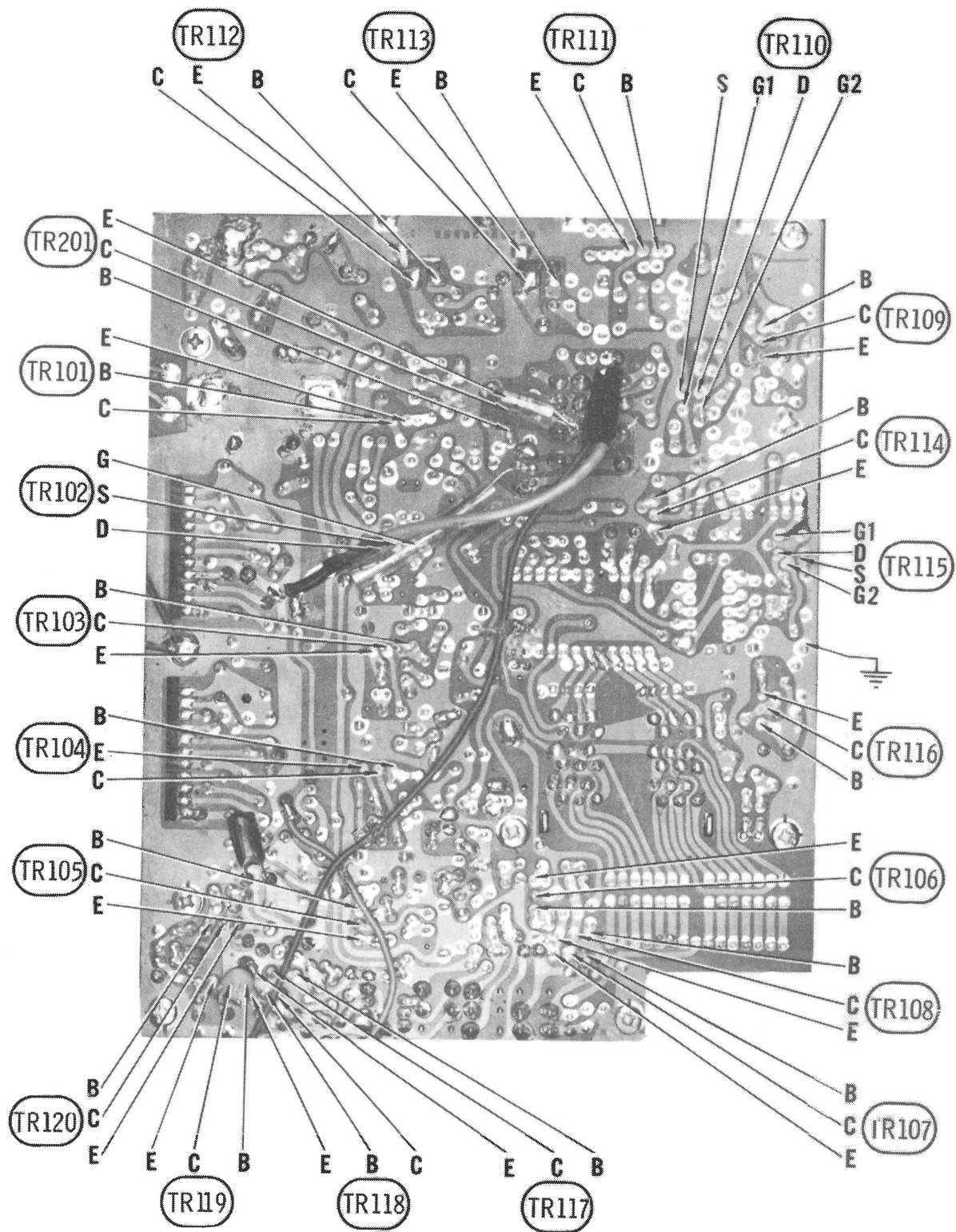
FM STEREO ALIGNMENT

Connect a jumper from TP6 to ground.

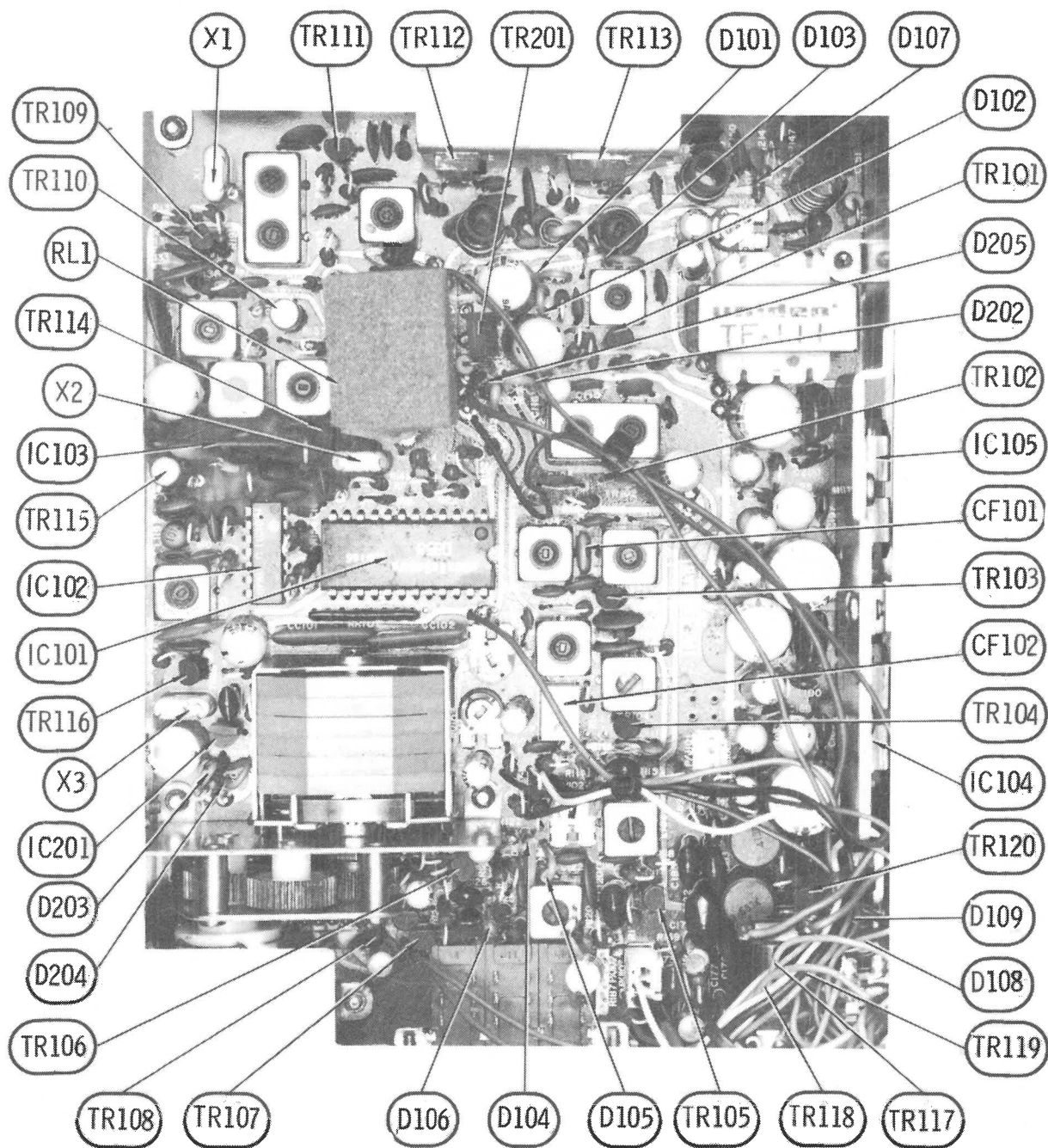
GENERATOR FREQUENCY	INDICATOR	ADJUST	REMARKS
	Input of frequency counter to TP7.	RV1	Adjust for 19kHz $\pm$ 20Hz.



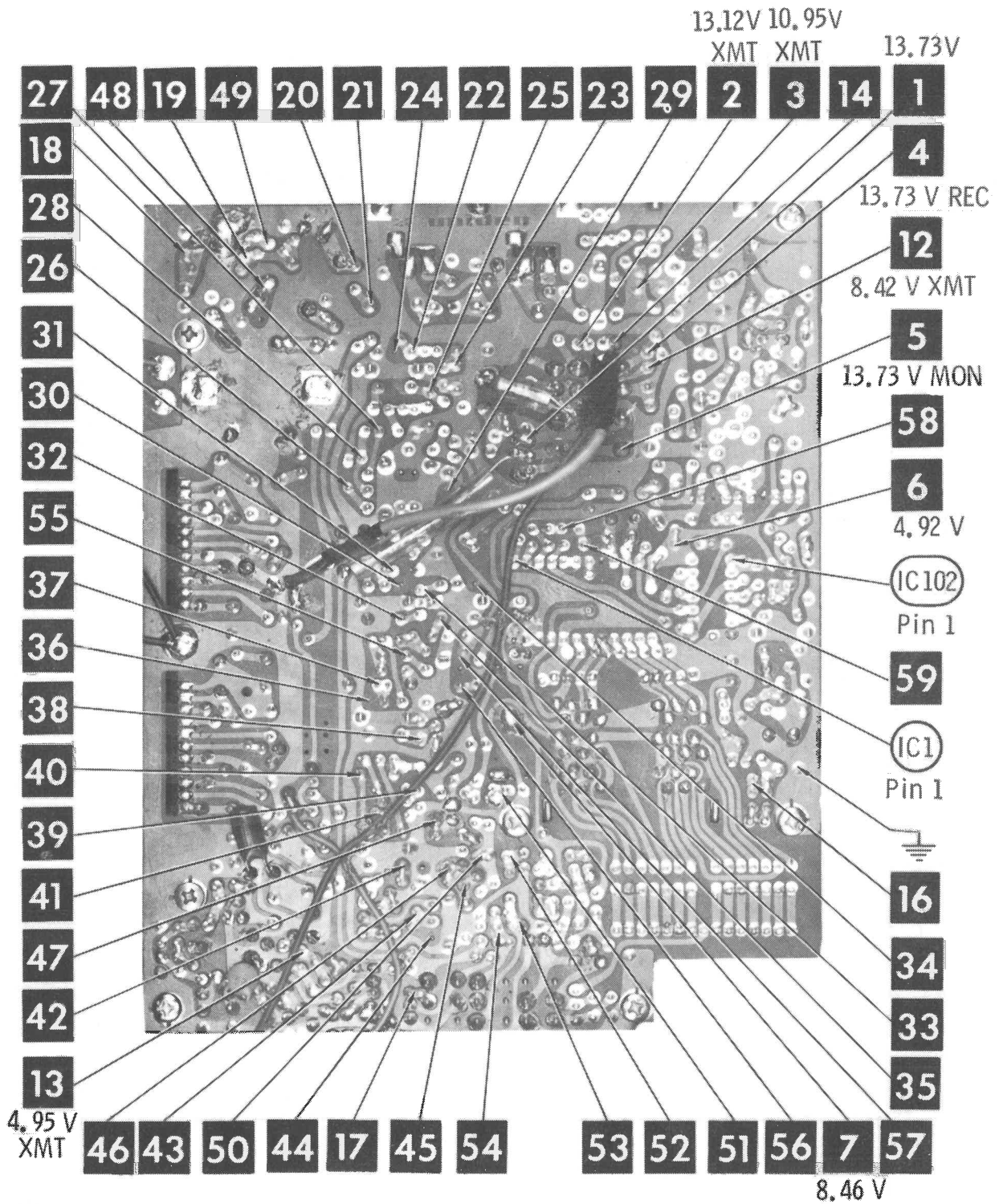
CHASSIS-TOP



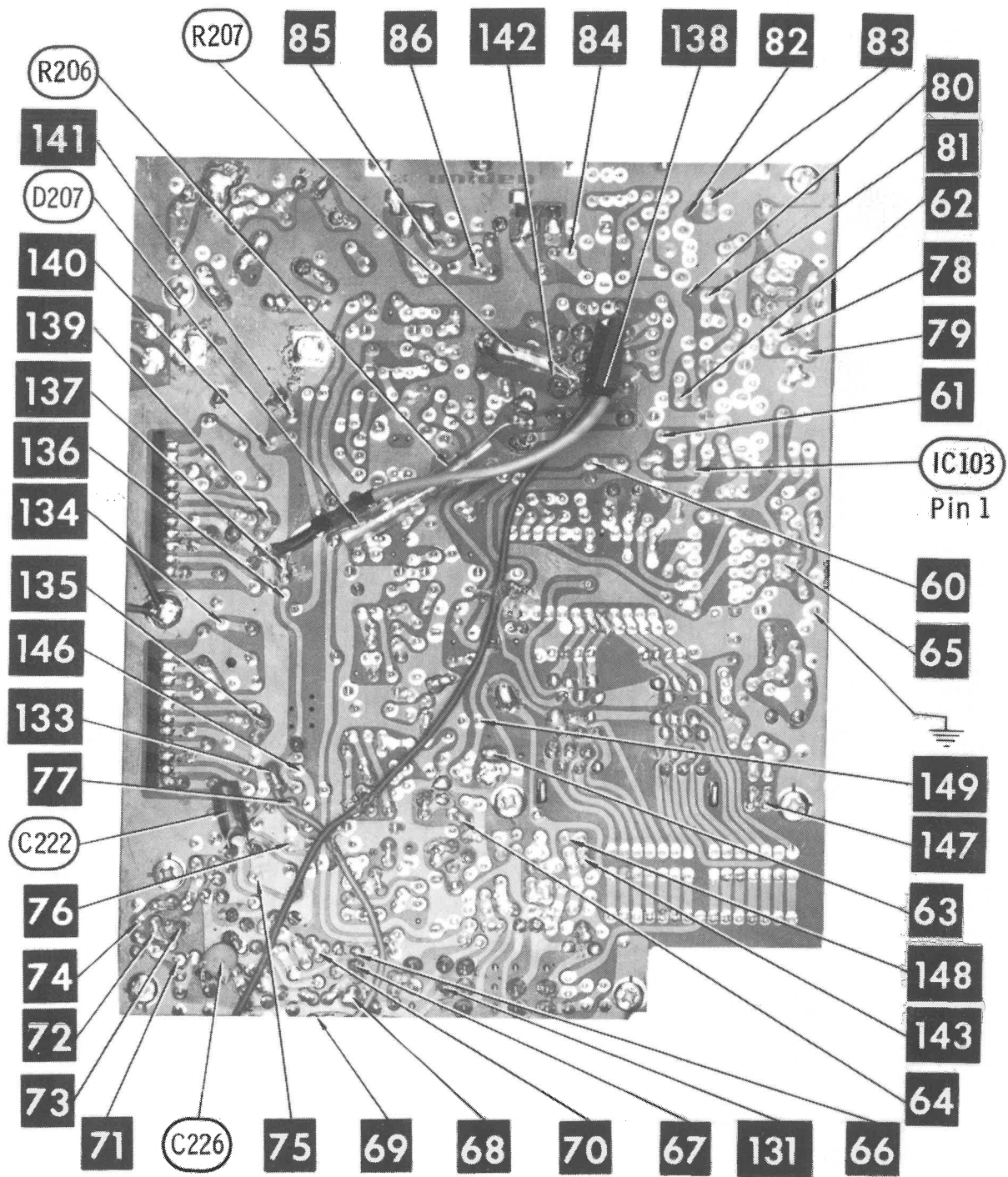
CB BOARD



CB BOARD

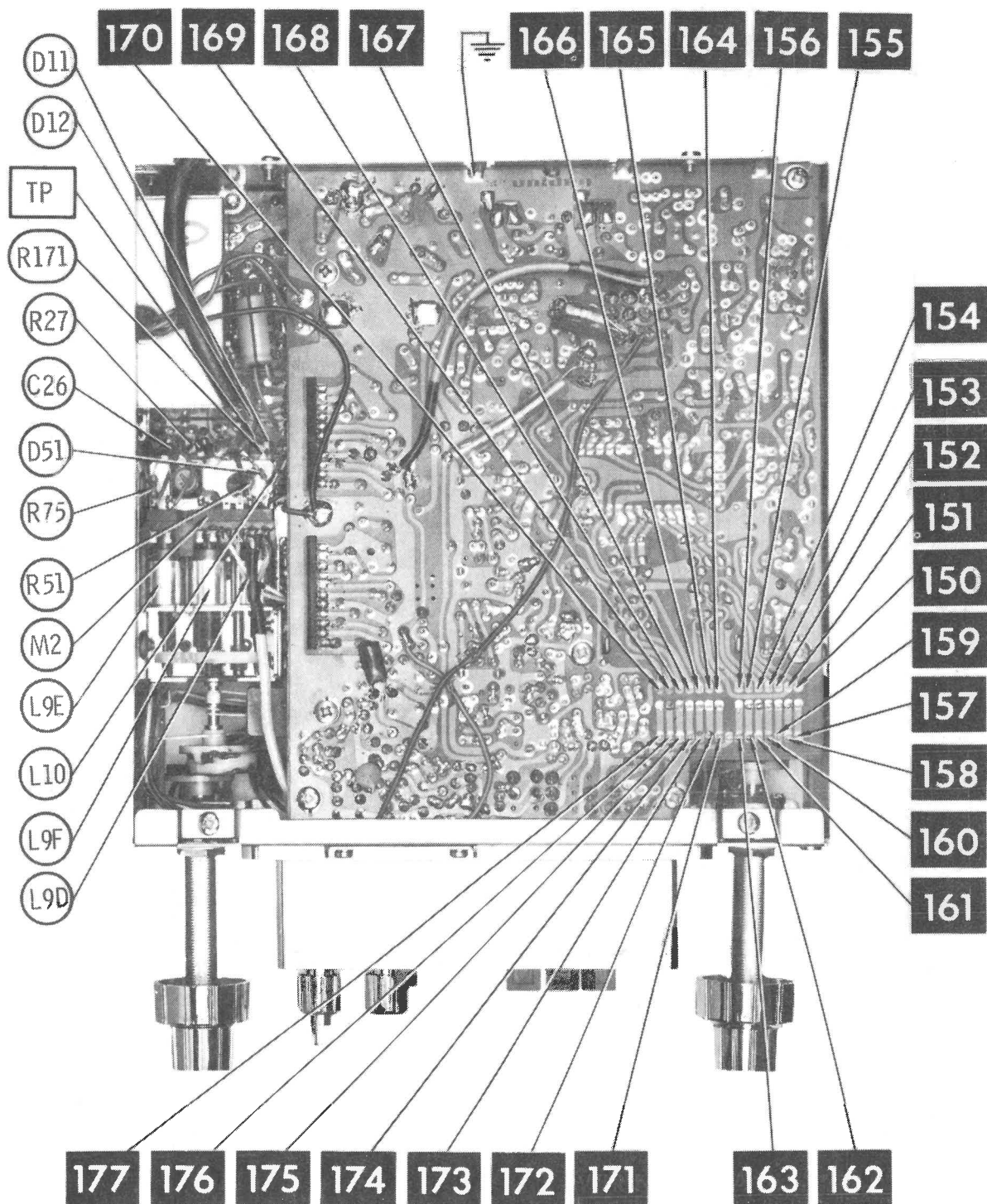


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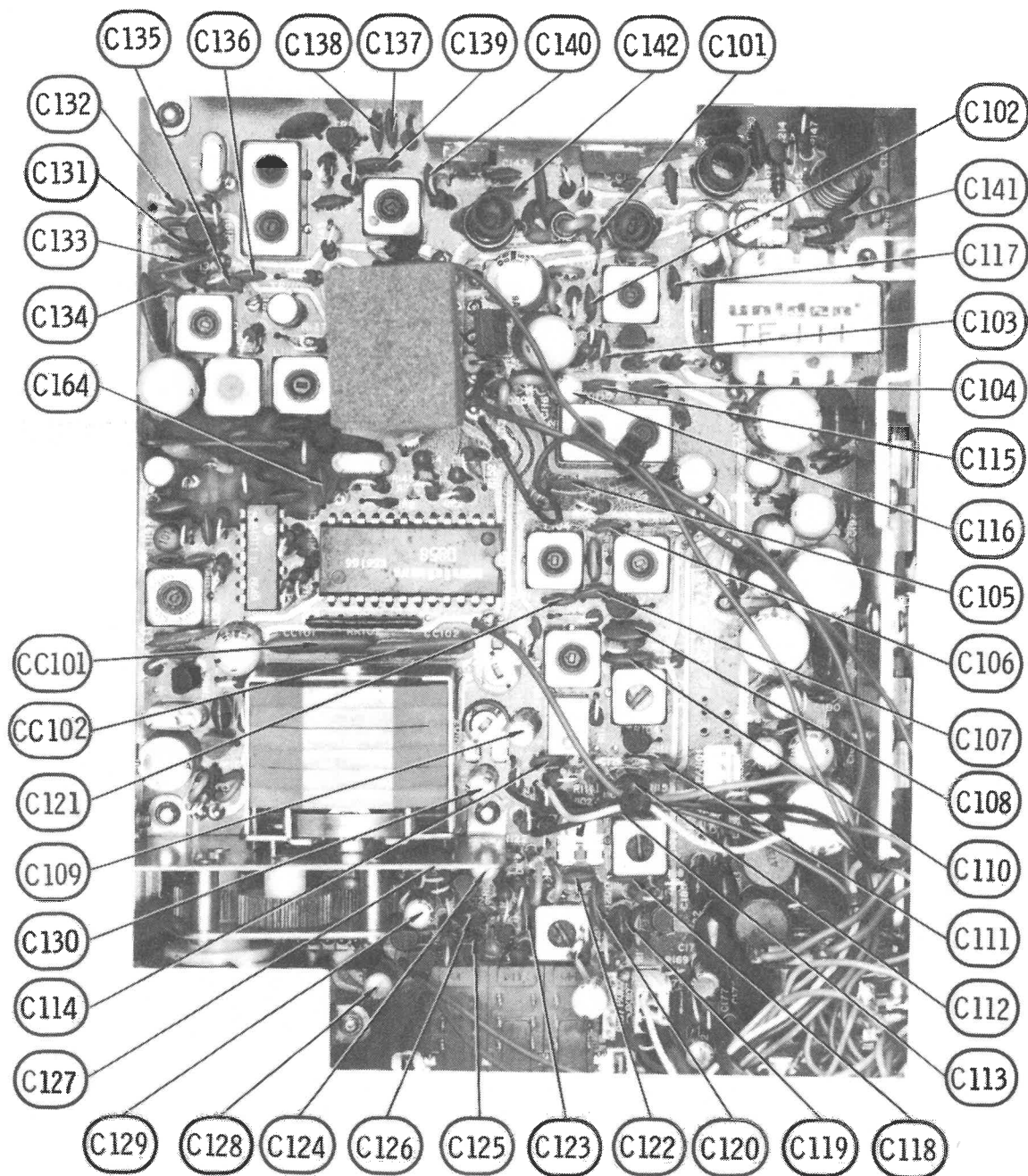


BOMAN MODEL CBR-9600

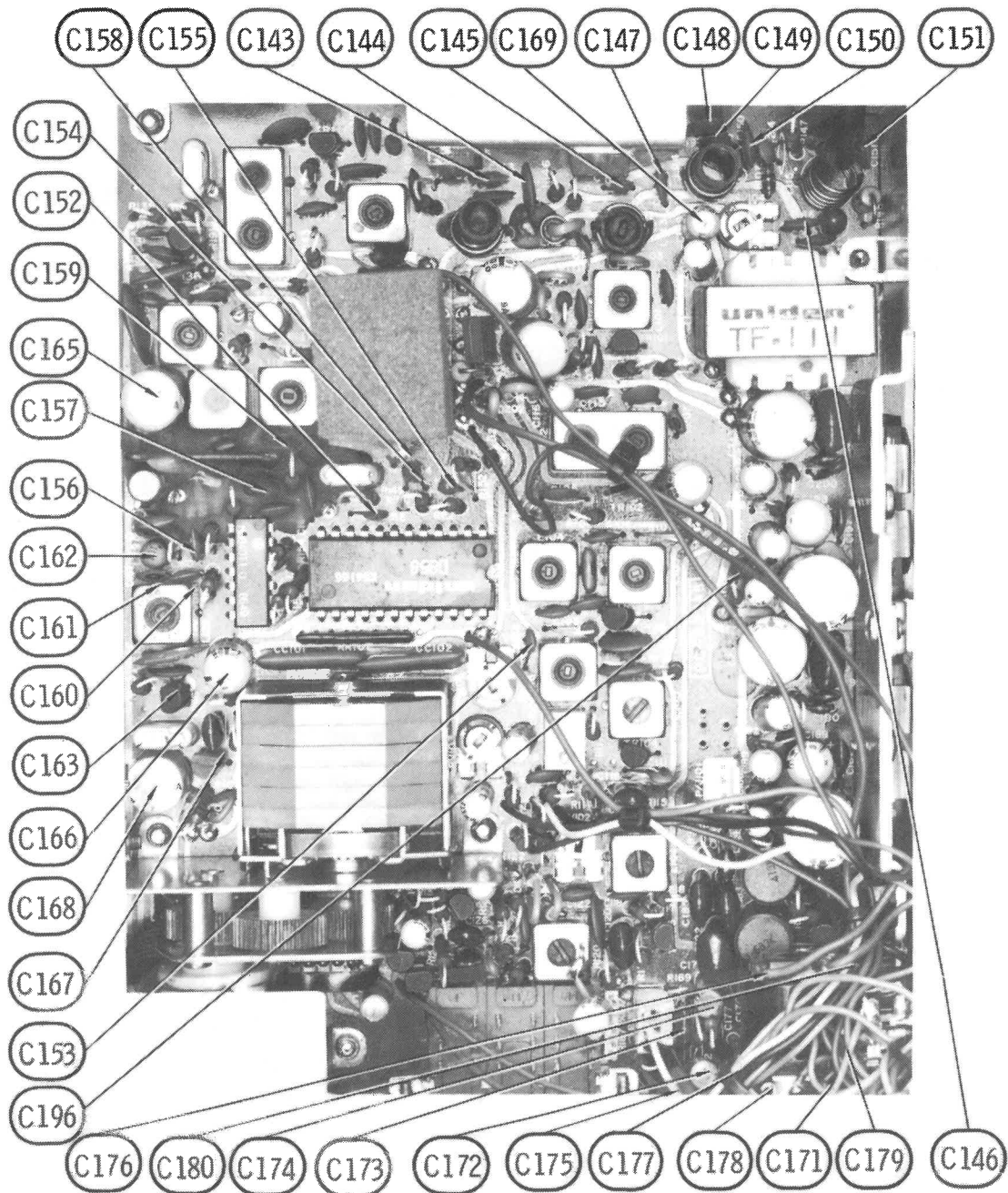
CB BOARD



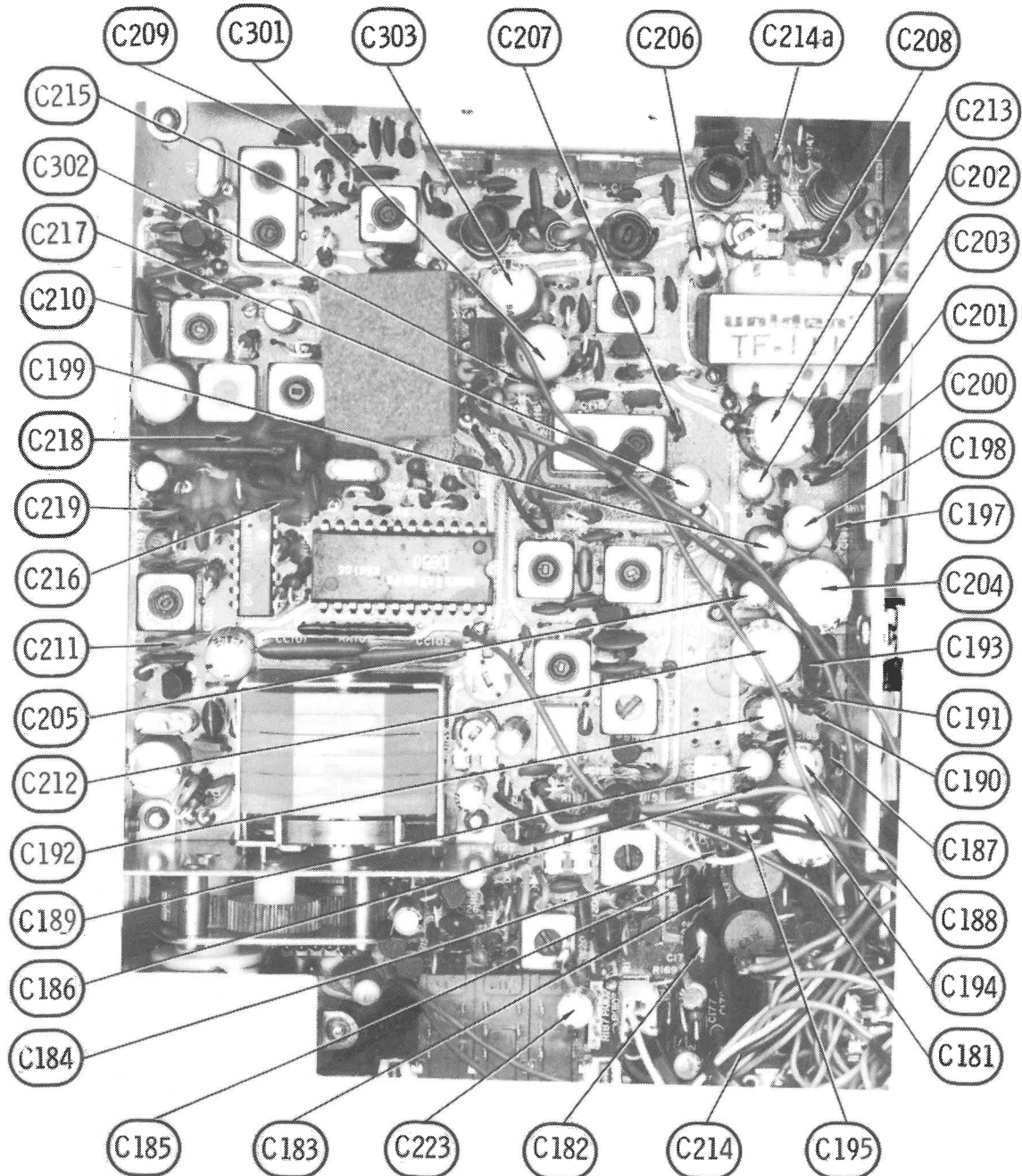
CHASSIS-BOTTOM



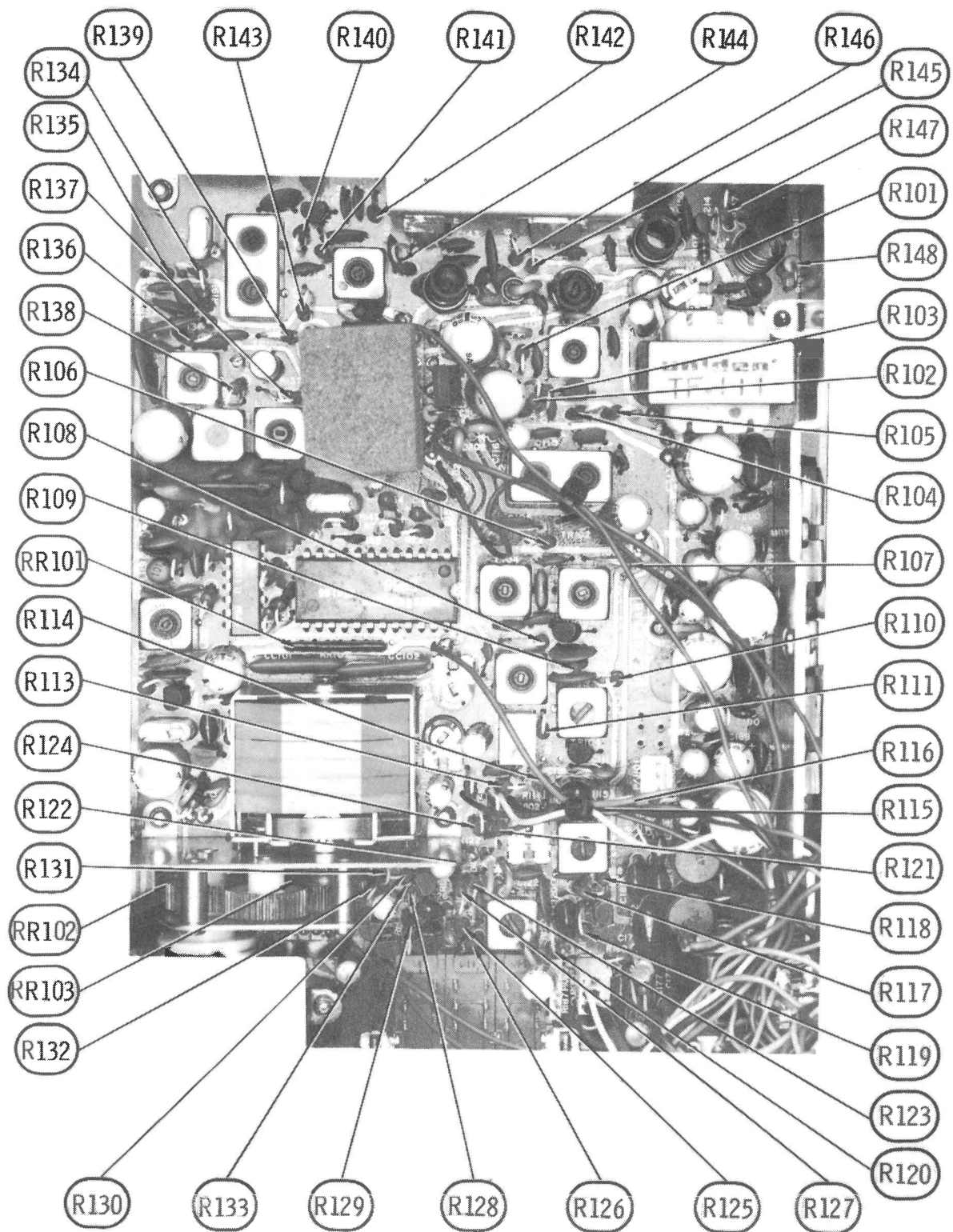
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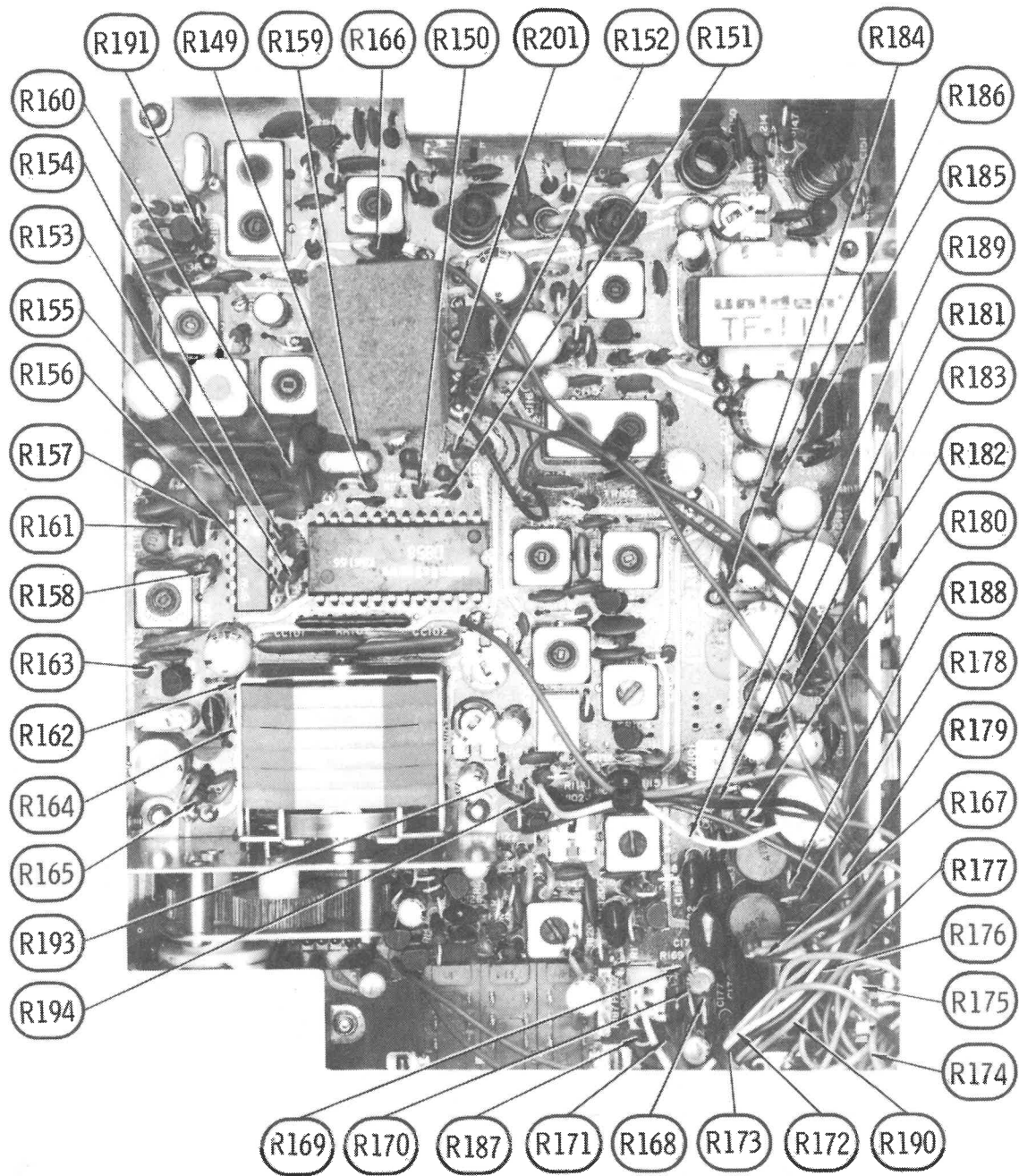
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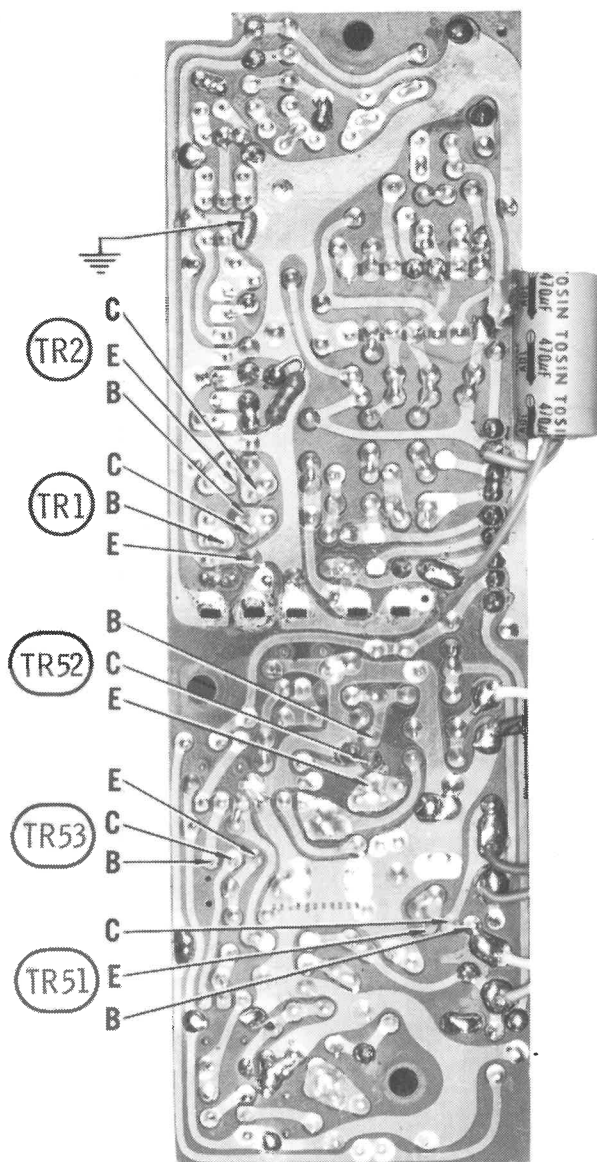
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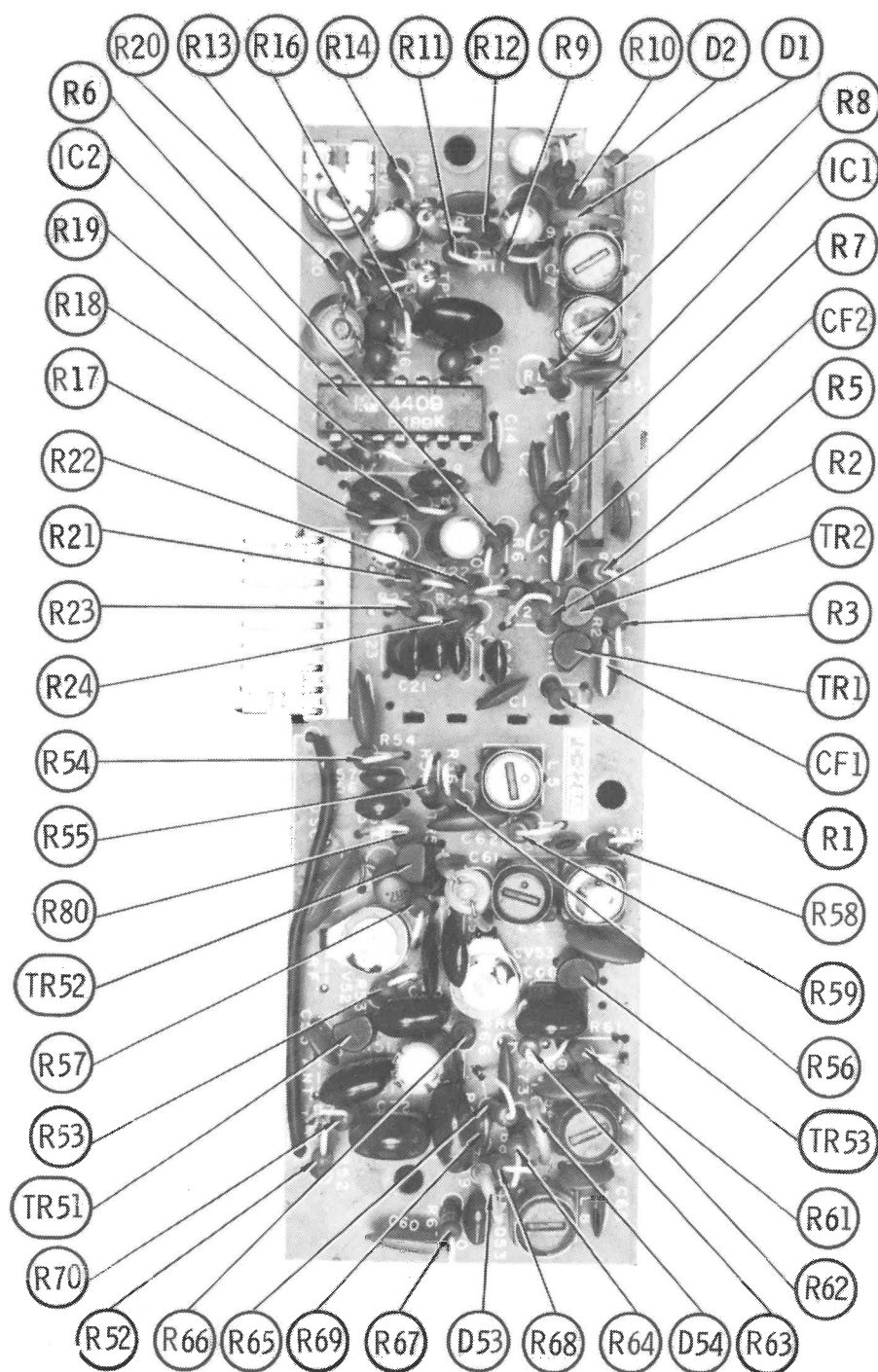
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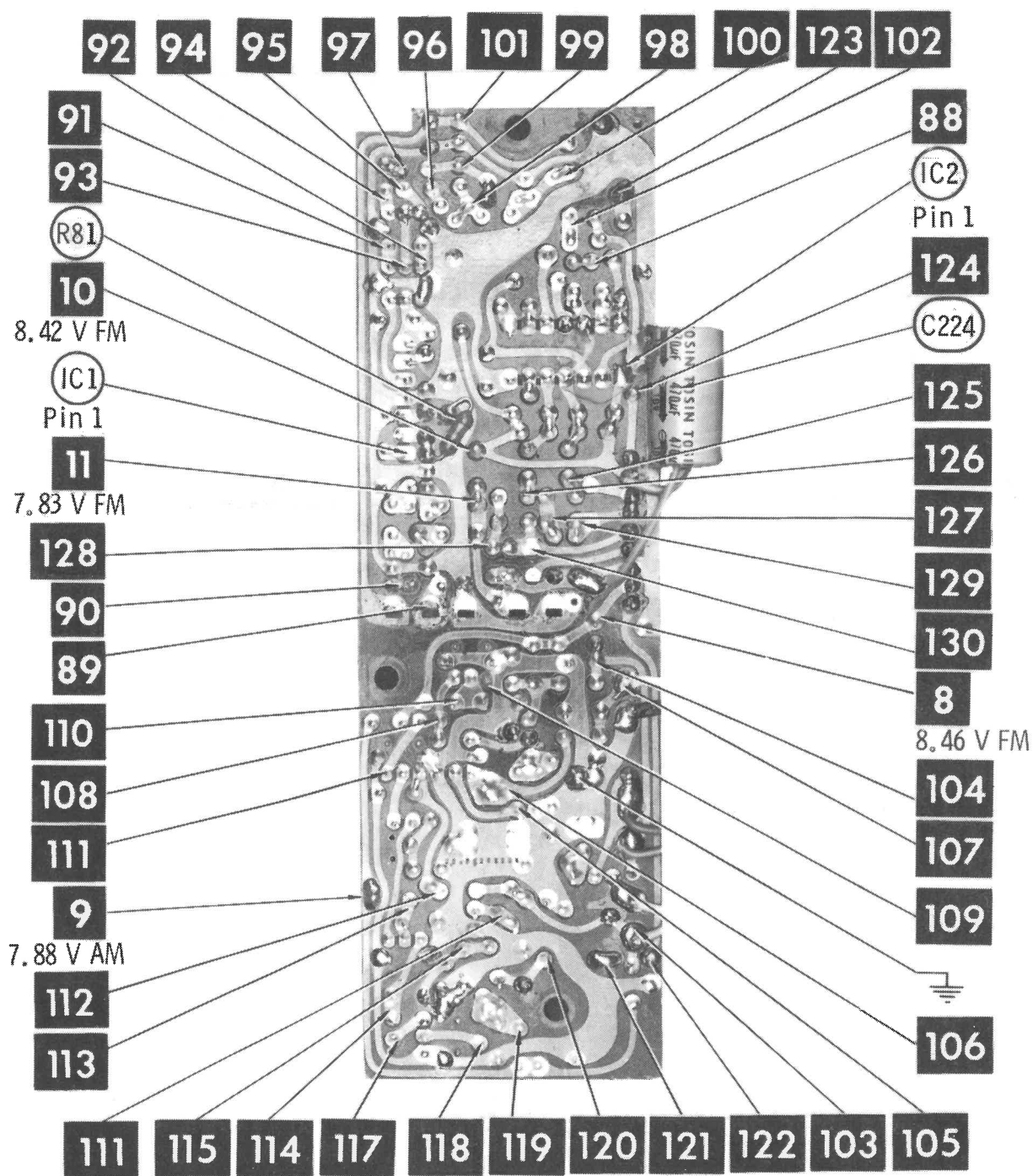
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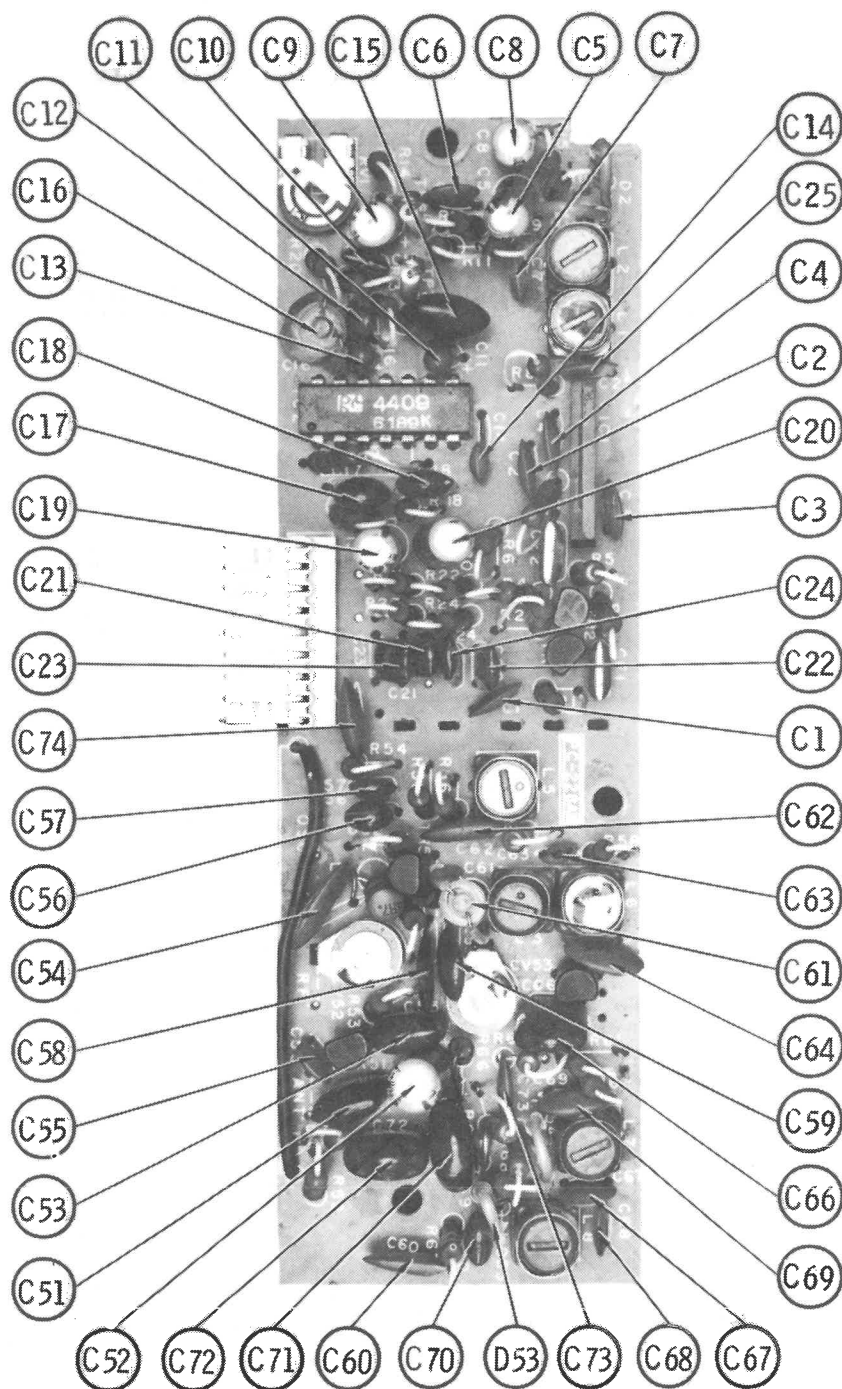
AM-FM BOARD



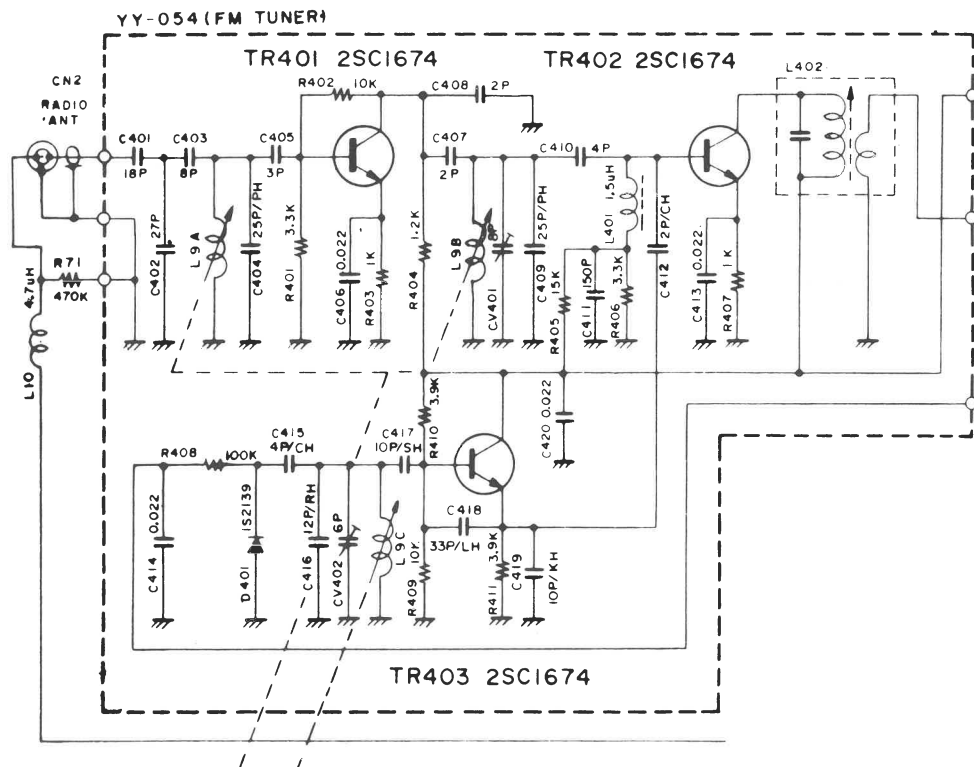
AM-FM BOARD



AM-FM BOARD



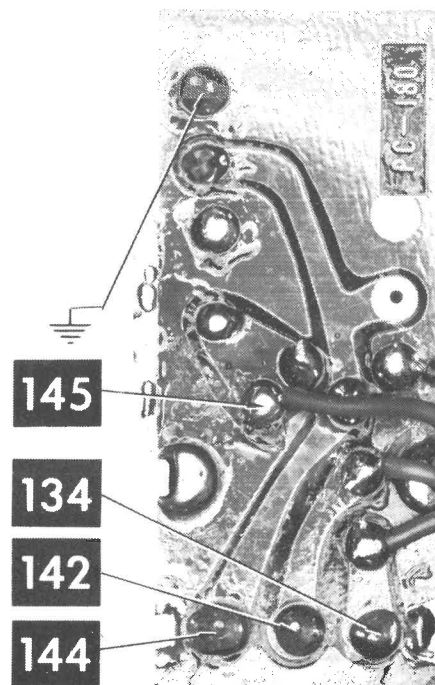
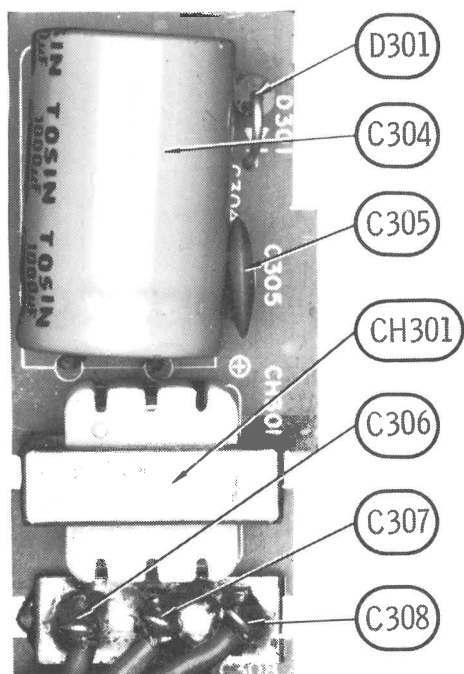
AM-FM BOARD



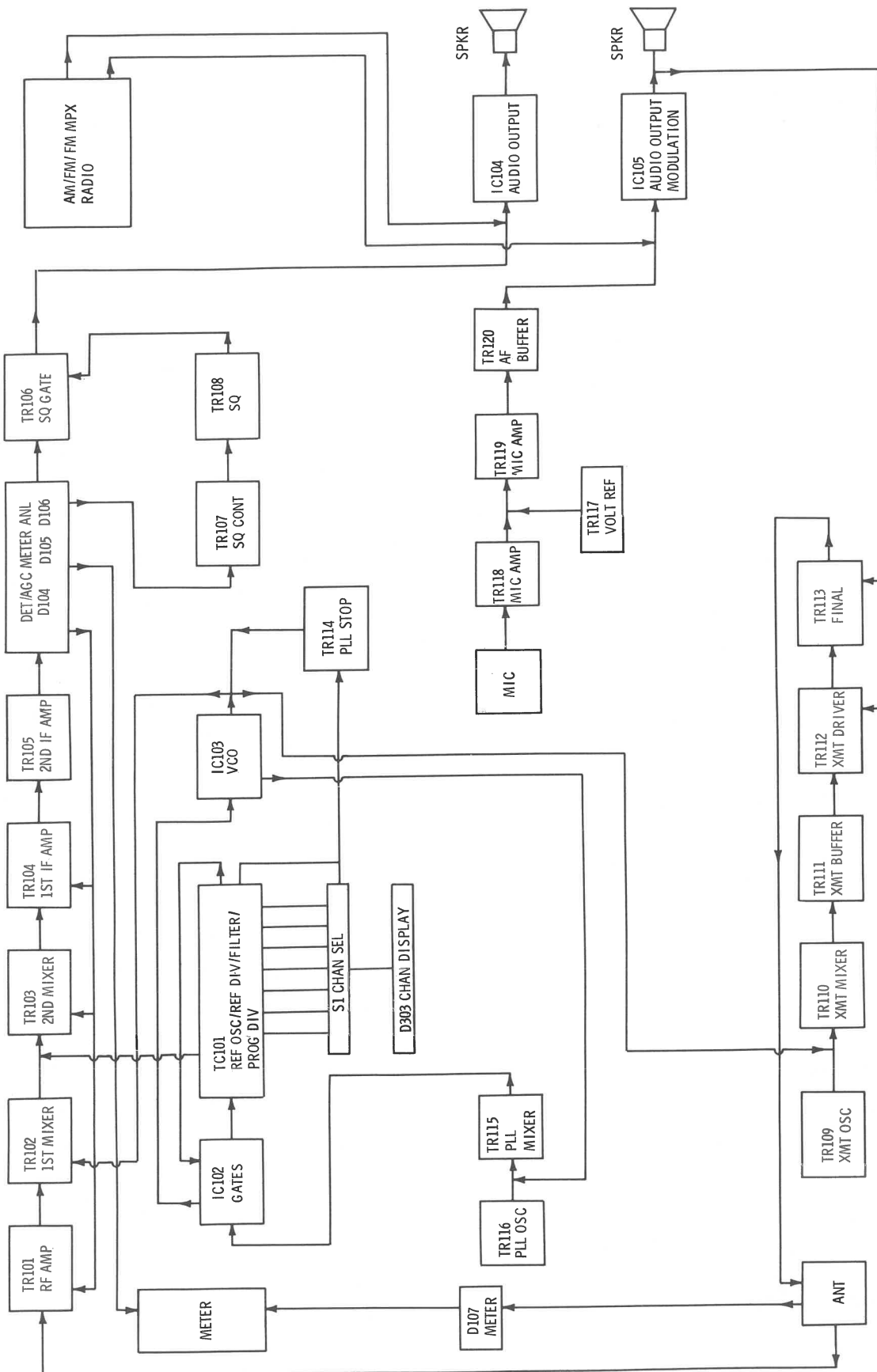
FM TUNER SCHEMATIC

Courtesy of the Manufacturer

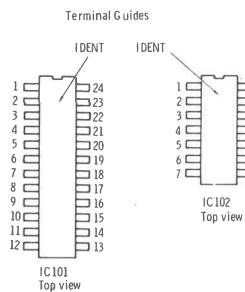
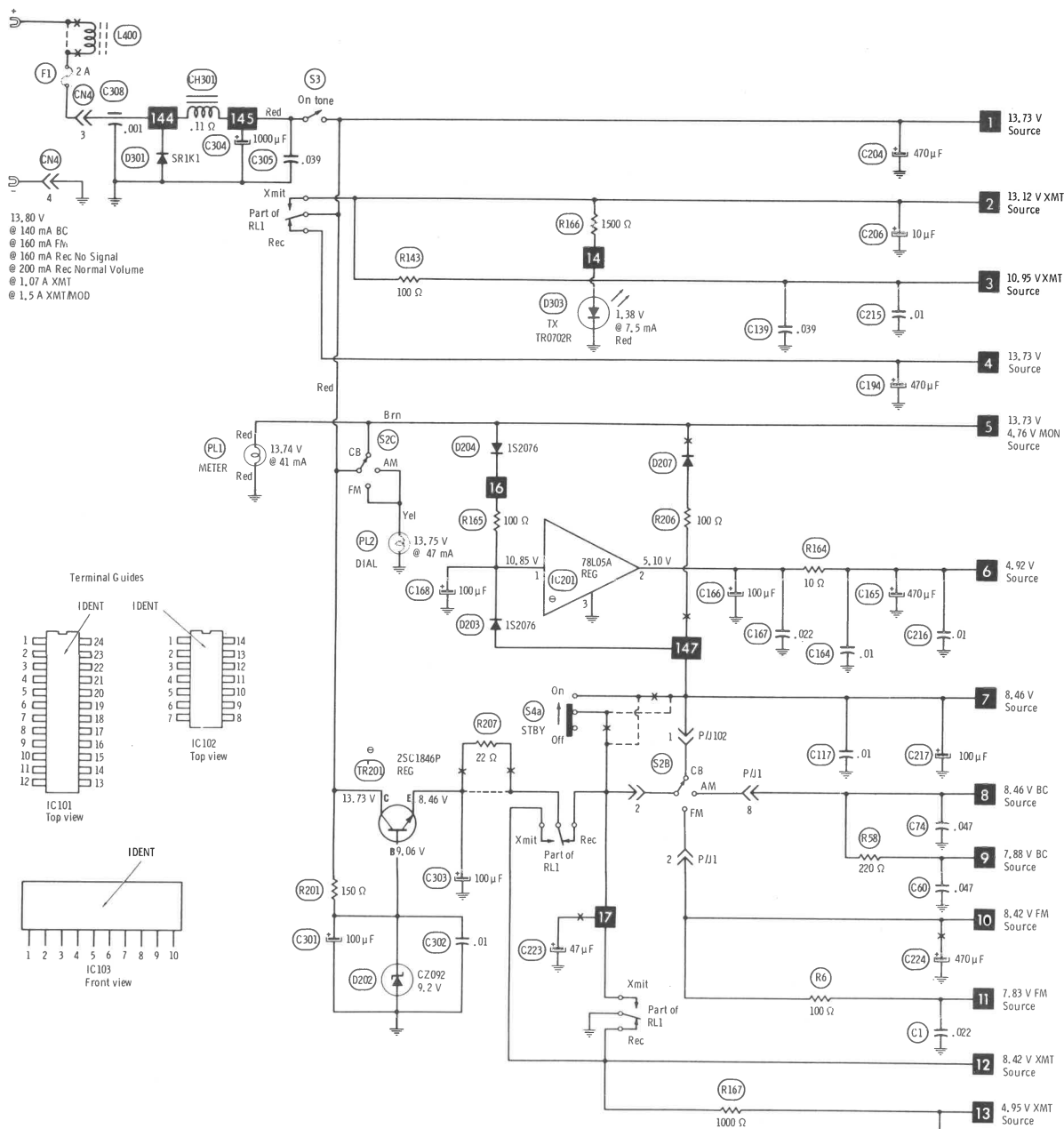
A Howard W. Sams **CIRCUITRACE®** Photo



POWER SUPPLY BOARD



BLOCK DIAGRAM

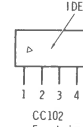
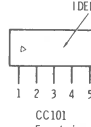
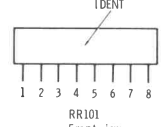
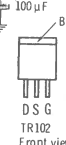
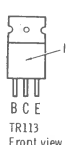
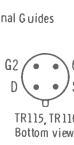
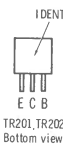


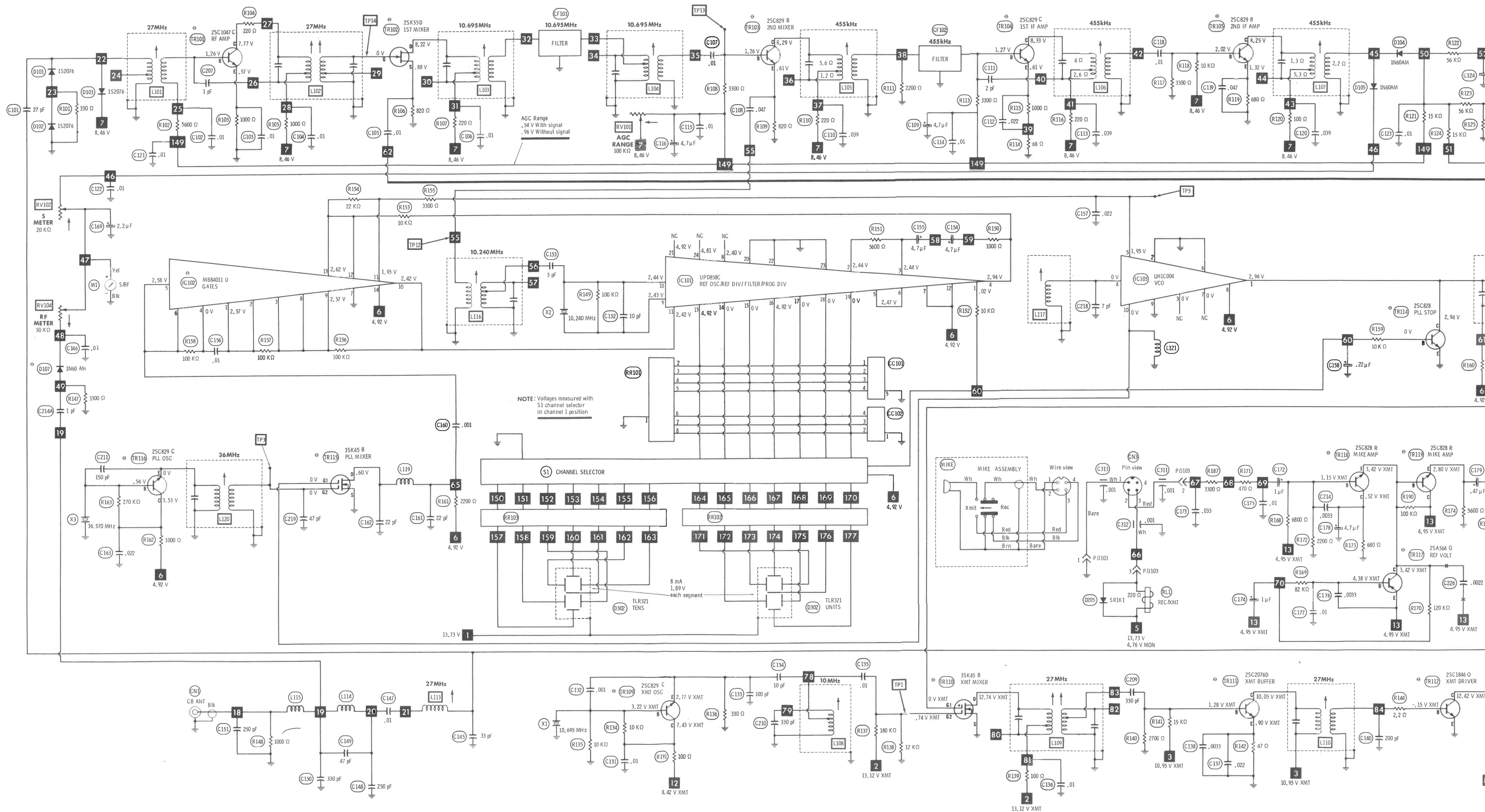
- Circuitry not used in some versions
 - - - Circuitry used in some versions
 - ⊙ See parts list
 - * Nominal value
 - ⊥ Ground
 - Chassis
 - ▽ Common tie point
- Measurements made in Channel 1 with switching as shown unless noted.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltage maintained as shown at input.
Voltages measured with digital meter, no signal.
Controls adjusted for normal operation.
Arrow at control indicates direction of advance.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 5% unless noted.
Value in () used in some versions.

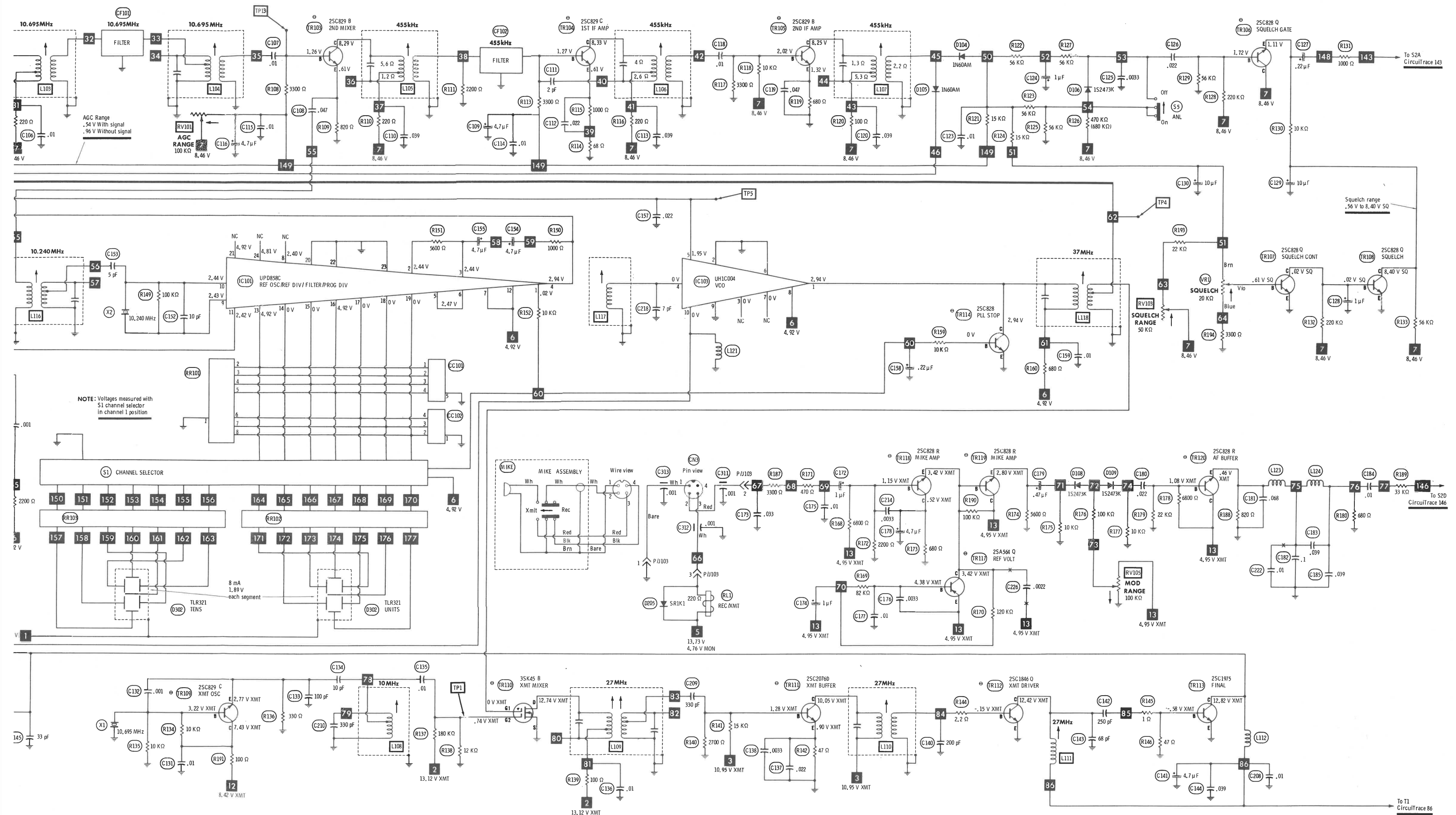
A PHOTOFACT STANDARD NOTATION SCHEMATIC

WITH **CIRCUITRACE®**

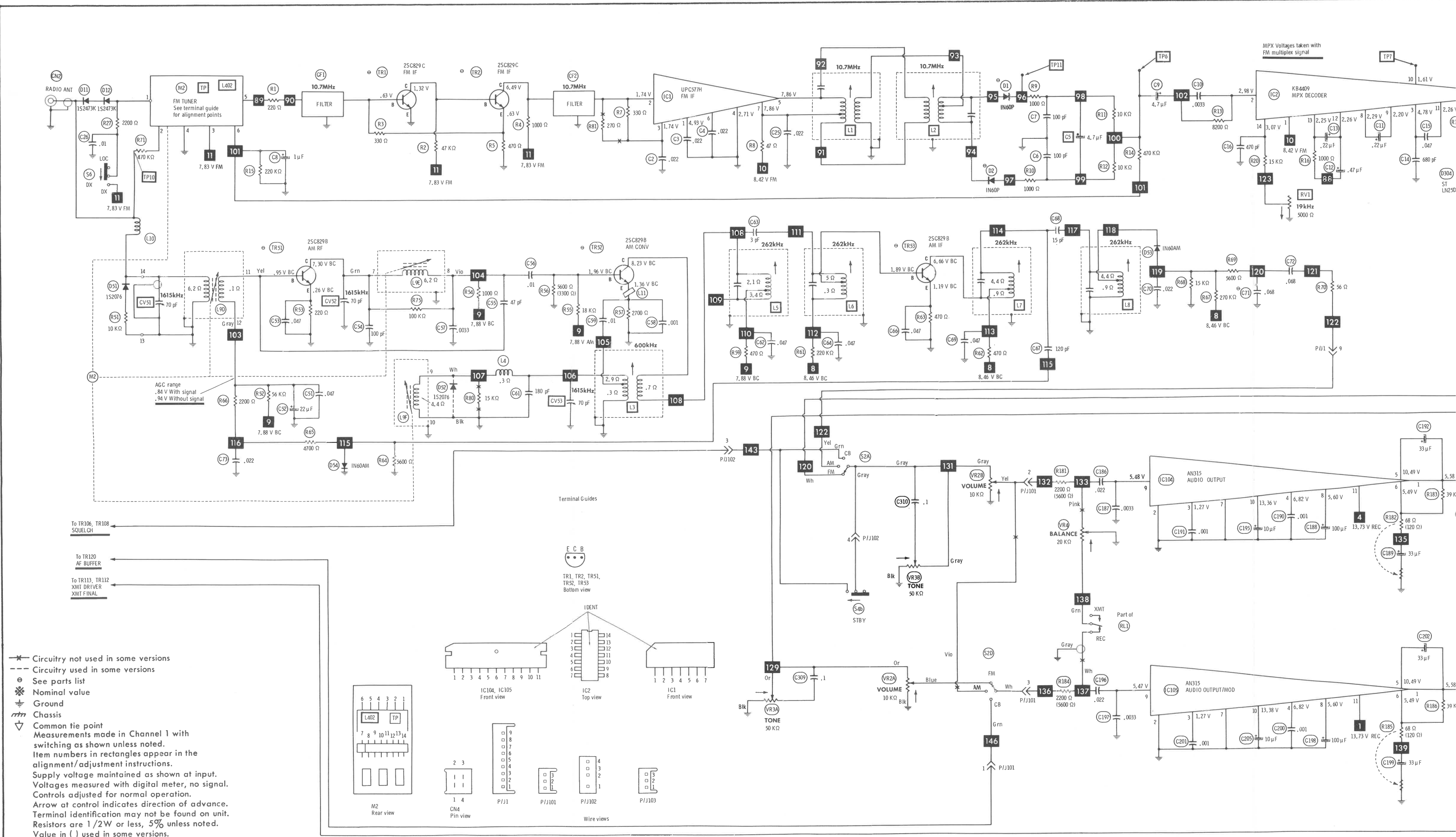
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BOMAN MODEL CBR-9600



PARTS LIST AND DESCRIPTION

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

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	1N60P	DDAY00102	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D2	1N60P	DDAY00102	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D11	1S2473K	DDAY048007	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
D12	1S2473K	DDAY048007	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
D51	1S2076	DDAY069001	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
D52	1S2076	DDAY069001	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
D53	1N60AM	DDAY001001	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D54	1N60AM	DDAY001001	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D101	1S2076	DDAY069001	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
D102	1S2076	DDAY069001	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
D103	1S2076	DDAY069001	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
D104	1N60AM	DDAY001001	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D105	1N60AM	DDAY001001	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D106	1S2473K	DDAY048007	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
D107	1N60AM	DDAY001001	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D108	1S2473K	DDAY048007	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
D109	1S2473K	DDAY048007	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
D202	CZ092	DDAY010002	GEZD-9.1	ZB9.1A	HEPZ0412	RE 114	SK3060	RT-240	ECG139	1N4739A	WEP1109	103-272
D203	1S2076	DDAY069001	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
D204	1S2076	DDAY069001	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177		WEP1062	
D205	SR1K1	DDAY002001	GE-504A	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116	1N4004	WEP156	212-76
D207	SR1K1	DDAY002001	GE-300	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177	1N4004	WEP1062	212-76
D301	SR1K1	DDAY002001	GE-504A	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116	1N4004	WEP156	212-76
IC1	UPC577H	DDAY0064001	GEIC-140			RE 341-M			ECG1082	UPC577H	WEP939	
IC2	KB4409	DDEY092001										
IC101	UPD858	DDEY055001							ECG1198			
IC102	UPD858C	DDEY089001							ECG1198			
IC103	MB84011U	DDEY089001							ECG4011B			
IC104	MB84011	DDEY089001							ECG4011B			
IC105	UHIC-004	DDEY087001							ECG1203			
IC106	AN315	DDEY09001							ECG1240			
IC201	7BL05A	DDEY088001				RE 387-IC			ECG977			
TR1	2SC829C	DDBY284002	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR2	2SC829C	DDBY284002	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR51	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR52	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR53	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR101	2SC1047C	DDBY283002	GE-60*	PTC132*	HEPS0016*	RE 28*	SK3018*	RT-107	ECG161*	2SC784	WEP63*	ZEN-109
TR102	2SC1047C	DDBY283002	GE-60*	PTC132*	HEPS0016*	RE 28*	SK3018*	RT-107	ECG161*	2SC784	WEP63*	ZEN-109
TR103	2SK55D	DDCY006001	GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP920	ZEN-123
TR104	2SK55D	DDCY006001	GE-FET-2	PTC161	HEPF0021	RE 45	SK3116	RT-175	ECG312		WEP920	ZEN-123
TR105	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR106	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR107	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR108	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR109	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR110	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR111	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR112	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR113	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR114	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR115	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR116	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR117	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR118	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR119	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR120	2SC829B	DDBY284001	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
TR201	2SC1846P	DDBY286001	GE-336	PTC180	HEP2004	RE 199	SK3050	RT-181	ECG222	2SC496	WEP913	800-767
	2SC1846	DDBY286001	GE-336	PTC180	HEP2004	RE 199	SK3050	RT-181	ECG222	2SC496	WEP913	800-767

BOMAN MODEL CBR-9600

* Lead configuration may vary from original.

(14) 1.2 watt @ 1.0 amp.

(15) 15 watt @ 2.0 amp.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFRG. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C5	4.7 25V	CELZ 84790	PC5-50	VTT4R7B50	QV1-27	EV-1319
C8	1 50V	CELZ811090	PC1-50	VTT1A50	QV1-11	EV-1615
C9	4.7 25V	CELZ514790	PC5-50	VTT4R7B50	QV1-27	EV-1319
C11	.22 35V	CSEZ662286		TDC224M050EL	QDT1-10	SD50-R229
C12	.47 35V	CSEZ664786		TDC474M050EL	QDT1-19	SD50-R479
C13	.22 35V	CSEZ662286		TDC224M050EL	QDT1-10	SD50-R229
C19	4.7 25V	CELZ514790	PC5-50	VTT4R7B50	QV1-27	EV-1319
C20	4.7 25V	CELZ514790	PC5-50	VTT4R7B50	QV1-27	EV-1319
C52	22 6.3V	CELZ902200	PC25-25	VTT22B16	QV1-55	EV-1224
C109	4.7 25V	CELZ514790	PC5-50	VTT4R7B50	QV1-27	EV-1319
C116	4.7 25V	CELZ514790	PC5-50	VTT4R7B50	QV1-27	EV-1319
C124	1 50V	CELZ811090	PC1-50	VTT1A50	QV1-11	EV-1615
C127	.22 16V	CAAZ312286		TDC224M050EL	QDT1-10	SD50-R229
C128	1 50V	CELZ811090	PC1-50	VTT1A50	QV1-11	EV-1615
C129	10 16V	CELZ311000	PC10-25	VTT10B25	QV1-41	EV-1222
C130	10 16V	CELZ311000	PC10-25	VTT10B25	QV1-41	EV-1222
C141	4.7 35V	CSEZ664796		TDC475M010EL	QDT1-48	SD10-4R79
C154	4.7 10V	CSEZ114796		TDC475M010EL	QDT1-48	SD10-4R79
C155	4.7 10V	CSEZ114796		TDC475M010EL	QDT1-48	SD10-4R79
C158	.22 16V	CAAZ312286		TDC224M050EL	QDT1-10	SD50-R229
C165	470 6.3V	CELZ904710	PC500-16	VTT470K16	QV1-149	EV-1150
C166	100 10V	CELZ111010	PC100-10	VTT100E10	QV1-93	EV-1130
C168	100 16V	CELZ311010	PC100-16	VTT100F16	QV1-95	EV-1230
C169	2.2 25V	CELZ512290	PC2-100	VTT2R2A50	QV1-19	EV-1517
C171	100 10V	CELZ111010	PC100-10	VTT100E10	QV1-93	EV-1130
C172	1 50V	CELZ811090	PC1-50	VTT1A50	QV1-11	EV-1615
C174	1 50V	CELZ811090	PC1-50	VTT1A50	QV1-11	EV-1615
C178	4.7 16V	CSEZ314796		TDC475M010EL	QDT1-48	SD10-4R79
C179	.47 50V	CELZ814780	PC1-50	VTT4R7A63	QV1-3	EV-1610
C188	100 6.3V	CELZ901010	PC100-10	VTT100E10	QV1-93	EV-1030
C189	33 10V	CELZ113300	PC30-25	VTT33B10	QV1-61	EV-1125
C192	33 16V	CELZ313300	PC30-25	VTT33D25	QV1-63	EV-1325
C194	470 16V	CELZ314710	PC500-16	VTT470K16	QV1-151	EV-1250
C195	10 16V	CELZ311000	PC10-25	VTT10B25	QV1-41	EV-1222
C198	100 6.3V	CELZ901010	PC100-10	VTT100E10	QV1-93	EV-1030
C199	33 10V	CELZ113300	PC30-25	VTT33B10	QV1-61	EV-1125
C202	33 16V	CELZ313300	PC30-25	VTT33D25	QV1-63	EV-1325
C204	470 16V	CELZ314710	PC500-16	VTT470K16	QV1-151	EV-1250
C205	10 16V	CELZ311000	PC10-25	VTT10B25	QV1-41	EV-1222
C206	10 16V	CELZ311000	PC10-25	VTT10B25	QV1-41	EV-1222
C212	330 16V	CELZ313310	WBR300-35	VTT330H16	QV1-133	EV-1245
C213	330 16V	CELZ313310	WBR300-35	VTT330H16	QV1-133	EV-1245
C217	100 10V	CELZ111010	PC100-10	VTT100E10	QV1-93	EV-1130
C223	47 10V	CELZ114700	PC50-16	VTT47D16	QV1-73	EV-1226
C224	470 10V		PC500-16	VTT470K16	QV1-149	EV-1150
C301	100 10V	CELZ111010	PC100-10	VTT100E10	QV1-93	EV-1130
C303	100 10V	CELZ111010	PC100-10	VTT100E10	QV1-93	EV-1130
C304	1000 16V	CELZ311020	PC100-16	VTT100F16	QV1-95	EV-1230

CAPACITORS

ITEM No.	RATING	MFRG. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C1	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C2	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C3	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C4	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C6	100		DD-101	GP100	GP310		10TS-T10
C7	100		DD-101	GP100	GP310		10TS-T10
C10	.0033			WMF1D33	EWFA233	QF1-43	1PB-D33
C14	680		DD-681	GP680	GP368		10TS-T68
C15	.047			DPMS2S47	EWFA147	QF1-171	1PB-S47
C16	470			CD15FD471J03	SX347	QW1-42	MWA-471
C17	.022			DPMS2S22	EWFA122	QF1-127	1PB-S22
C18	.022			DPMS2S22	EWFA122	QF1-127	1PB-S22
C21	.0033			WMF1D33	EWFA233	QF1-43	1PB-D33
C22	.0033			WMF1D33	EWFA233	QF1-43	1PB-D33
C23	.0068			WMF1D68	EWFA268	QF1-73	1PB-D68
C24	.0068			WMF1D68	EWFA268	QF1-73	1PB-D68
C25	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C26	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C51	.047			DPMS2S47	EWFA147	QF1-171	1PB-S47
C53	.047			DPMS2S47	EWFA147	QF1-171	1PB-S47
C54	100 NPO		DTZ-100	NP0100	CN0310		10TCC-T10
C55	47		DTZ-47	NP047	CN0447		10TCC-Q47
C56	.01			WMF1S1	EWFA110	QF1-91	1PB-S10
C57	.0033			WMF1D33	EWFA233	QF1-43	1PB-D33
C58	.001			DPMS6D1	EWFA210	QF1-1	1PB-D10
C59	.01			WMF1S1	EWFA110	QF1-91	1PB-S10
C60	.047		DC-503	MGP05	TA150	QC2-207	TG-S50
C61	180			CD15FD181J03	SX318	QW1-33	MWA-181
C62	.047		DC-503	MGP05	TA150	QC2-207	TG-S50
C63	3 NPO		DTZ-3R3	NP03P3	CN0533		10TCC-V33
C64	.047		DC-503	MGP05	TA150	QC2-207	TG-S50
C66	.047			DPMS2S47	EWFA147	QF1-171	1PB-S47
C67	120		DTZ-120		CN0312		10TCC-T12
C68	15 NPO		DTZ-15	NP015	CN0415		10TCC-Q15
C69	.047		DC-503	MGP05	TA150	QC2-207	TG-S50

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
C70	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C71	.068			WMF1S68	EWFA1A168	QF1-195	1PB-S68
	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C72	.068			WMF1S68	EWFA1A168	QF1-195	1PB-S68
C73	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C74	.047		DC-503	MGP05	TA150	QC2-207	TG-S50
C101	27				CN0427		10TCC-Q27
C102	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C103	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C104	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C105	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C106	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C107	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C108	.047		DC-503	MGP05	TA150	QC2-207	TG-S50
C110	.039				GP140		5GA-S40
C111	2		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C112	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C113	.039				GP140		5GA-S40
C114	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C115	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C117	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C118	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C119	.047			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C120	.039				GP140		5GA-S40
C121	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C122	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C123	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C125	.0033			WMF1D33	EWFA1A233	QF1-43	1PB-D33
C126	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C131	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C132	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C133	100 NPO		DTZ-100	NP0100	CN0310		10TCC-T10
C134	10		DTZ-10	NP010	CN0410		10TCC-Q10
C135	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C136	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C137	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C138	.0033		DD-332	GP3300	GP233	QC2-107	5GA-D33
C139	.039				GP140		5GA-S40
C140	200		DD-201	GP200	GP320		10TS-T20
C142	250		DD-271	GP270	GP327		10TS-T27
C143	68		DD-680	GP68	GP468		10TS-Q68
C144	.039				GP140		5GA-S40
C145	33		DTZ-33	NP033	CN0433		10TCC-Q33
C146	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C147	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C148	250		DD-271	GP270	GP327		10TS-T27
C149	47		DTZ-47	NP047	CN0447		10TCC-Q47
C150	330		DD-331	GP330	GP333		10TS-T33
C151	250		DD-271	GP270	GP327		10TS-T27
C152	10 NPO		DTZ-10	NP010	CN0410		10TCC-Q10
C153	5		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C156	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C157	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C159	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C160	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C161	22 NPO		DTZ-22	NP022	CN0422		10TCC-Q22
C162	22 NPO		DTZ-22	NP022	CN0422		10TCC-Q22
C163	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C164	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C167	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C173	.033			DPMS6S33	EWFA1A133		6PS-S33
C175	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C176	.0033		DD-332	GP3300	GP233	QC2-107	5GA-D33
C177	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C180	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C181	.068			WMF1S68	EWFA1A168	QF1-195	1PB-S68
C182	.1			DPMS2P1	EWFA1A010	QF1-215	1PB-P10
C183	.039			DPMS6S39	PVC6139		6PS-S39
C184	.01			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C185	.039			DPMS6S39	PVC6139		6PS-S39
C186	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C187	.0033			WMF1D33	EWFA1A233	QF1-43	1PB-D33
C190	.001			DPMS6D1	EWFA1A210	QF1-1	1PB-D10
C191	.001			DPMS6D1	EWFA1A210	QF1-1	1PB-D10
C193	.1			DPMS2P1	EWFA1A010	QF1-215	1PB-P10
C196	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C197	.0033			WMF1D33	EWFA1A233	QF1-43	1PB-D33
C200	.001			DPMS6D1	EWFA1A210	QF1-1	1PB-D10
C201	.001			DPMS6D1	EWFA1A210	QF1-1	1PB-D10
C203	.1			DPMS2P1	EWFA1A010	QF1-215	1PB-P10
C207	1 NPO				CN0510		10TCC-V10
C208	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C209	330		DD-331	GP330	GP333		10TS-T33
C210	330		DD-331	GP330	GP333		10TS-T33
C211	150 NPO		DTZ-150		CN0315		10TCC-T15
C214	.0033		DD-332	GP3300	GP233	QC2-107	5GA-D33
C214A	1				CN0510		10TCC-V10
C215	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C216	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C217	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C218	7 N220				*		
C219	47 N220				*		
C222	.01			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C226	.0022		DD-222		GP222	QC2-97	5GA-D22
C302	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C305	.039				GP140		5GA-S40
C306	.001						

BOMAN MODEL CBR-9600

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
C307	.001						
C308	.001						
C309	.1						
C310	.1						
C311	.001						
C312	.001						
C313	.001						
CC101							
CC102		HHAY003001 (1)					
CV51	70	CCVY021008					
CV52	70	CCVY021008					
CV53	70	CCVY021008					

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

(1) Capacitor network consisting of four 0.01uF capacitors

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.
RR101	Resistor Network		HHAY01201 (1)	RR103	Resistor Network		HHAY01101 (2)
RR102	Resistor Network		HHAY01101 (2)				

(1) Consists of seven 100K Resistors.

(2) Consists of seven 1.5K Resistors.

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

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
RV1	19kHz	5000	RRVY189010				U260R502B
RV101	AGC Range	100K	RRVY133010				U260R104B
RV102	S Meter	20K	RRVY189006				U260R253B
RV103	Squelch Range	50K	RRVY189007				U260R503B
RV104	R ^c Meter	50K	RRVY189007				U260R503B
RV105	MOD Range	100K	RRVY189008				U260R503B
VR1	Squelch	20K	RRVY231001				U260R104B
VR2A	Volume-Right	10K	RRVY228001				
VR2B	Volume-Left	10K					
VR3A	Tone-Right	50K	RRVY230001				
VR3B	Tone-Left	50K					
VR4	Balance	20K	RRVY233001				

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	Ratio Det (10.7MHz)	LLBY084001			(1) Part of M2
L2	Ratio Det (10.7MHz)	LLBY085001			
L3	AM Osc. (600kHz)	LLBY088001			
L4	RF Choke (4.7uH)	LLZY002009			
L5	AM IF (262kHz)	LLBY089001			
L6	AM IF (262kHz)	LLBY087001			
L7	AM IF (262kHz)	LLBY086001			
L8	AM IF (262kHz)	LLBY086001			
L9D	AM ANT	(1)			
L9F	AM RF	(1)			
L9F	AM Osc. Tuning	(1)			
L10	RF Choke	LLDY081001			
L101	REC Antenna (27MHz)	LLAY029001			
L102	REC RF (27MHz)	LLAY194001			
L103	IF (10.695MHz)	LLAY180001			
L104	IF (10.695MHz)	LLAY181001			
L105	IF (455kHz)	LLAY163001			
L106	IF (455kHz)	LLAY183001			
L107	IF (455kHz)	LLAY184001			
L108	Xmit Osc. (10MHz)	LLAY193001			
L109	Xmit Mixer (27MHz)	LLAY185001			
L110	Xmit Buffer (27MHz)	LLAY189001			
L111	Xmit Driver (27MHz)	LLCY017001			
L112	RF Choke	LLDY012001			
L113	Final Amp (27MHz)	LLCY020001			
L114	Pi Filter	LLCY110001			
L115	ANT Match	LLCY064001			
L116	REF. Osc. (10.240MHz)	LLAY182001			
L117	VCO	LLAY187001			
L118	VCO (37MHz)	LLAY188001			
L119	RF Choke (100uH)	LLZY012001			
L120	PLL Osc. (36MHz)	LLAY186001			

PARTS LIST AND DESCRIPTION (CONTINUED)

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

COILS (RF-IF) (cont)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L121	RF Choke (1uH)	LLZY002001			
L123	RF Choke (1.8mH)	LLZY015023			
L124	RF Choke (47mH)	LLZY015021			
L400	Noise Suppressor				

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.	
CH301	1.5A	.114	1mH	TTFY017001 TF-017 (1)	TR507		(1) Number on unit.

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	32	8	TTFY111001 TF-111 (1)			(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
F1	2 Amp			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		18-032	18-034	18-010	18-092	2	1	3	NC	NC	1

BOMAN MODEL CBR-9600

PARTS LIST AND DESCRIPTION (CONTINUED)

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

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF1	Filter	FFLY051001	10.7MHz
CF2	Filter	FFLY051001	10.7MHz
CF101	Filter	FFLY047001	10.7MHz
CF102	Filter	FFLY049001	455kHz
D302	LED	DDAY082001	Channel Display (SL1221)
D303	LED	DDAY073001	XMT Indicator (1.38V @ 7.5mA) (TR0702R)
D304	LED	DDAY081001	Stereo Indicator (1.54V @ 4.5mA) (LN250)
M1	Meter	ZMTY086001	S/R
M2	Tuner	ZYYY054001	FM
RL-1	Relay	ZRLY025001	XMT/Rec (220 Ohm)
S1	Switch	SSRY172001	Channel Selector
S2	Switch	SSRY180001	CB/AM/FM
S3	Switch		Power (Part of Tone Control)
S4	Switch	SSWY092001	ST-BY
S5	Switch	SSWY092001	ANL
S6	Switch	SSWY092001	D'im
X1	Crystal	QQXY078001	10.695MHz
X2	Crystal	QQXY077001	10.240MHz
X3	Crystal	QQXY079001	36.570MHz
	Printed Circuit Board		CB (PC-227AB)
	Printed Circuit Board		AM-FM-MPX (PC-228AA)
	Printed Circuit Board		LED Display A (PC-214AA) Right Hand Side
	Printed Circuit Board		LED Display B (PC-215AA) Left Hand Side
	Printed Circuit Board		Power Supply (PC-180AA)

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. 8497 (6')
Bonding Strap	BELDEN No. 8672	BELDEN No. 9472 (7-1/2')
AC Power Cord	BELDEN No. 17106	28AWG BELDEN No. 9466 (6')
	(6') BELDEN No. 17109	31AWG BELDEN No. 9468 (10')
	(9')	4-conductor (unshielded) 23AWG BELDEN No. 8415 (6')
		5-conductor (1 shielded) 28AWG BELDEN No. 9467 (6')
		BELDEN No. 9465 (7-1/2')

DIAL CORD STRINGING BOTTOM VIEW

