

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.



COBRA MODEL 138XLR

MODEL 138XLR

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

© 1977 Howard W. Sams & Co., Inc.

Printed in U. S. of America

7CE536

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.

Suggested Alignment Tools: GC Electronics:

L27,L30,L32.....5009
 L1,L2,L3,L4,L5,L7,L8,L16,L17,L24,
 L37,L39.....9440
 CT1 thru CT7.....5000

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of RF VTVM to TP6.	Ch. 1, AM Clarifier - Midrange	L24	Adjust for maximum.
Input of DC meter to TP7.	Ch. 1,	L17	Adjust for 2.0 volts.
Input of RF VTVM to TP8.	Ch. 19	L16	Adjust for maximum.
Input of frequency counter to TP8.	Ch. 19	CT6	Adjust for 34.9850MHz +20Hz.
Input of frequency counter to TP8.	Ch. 19, USB	CT4	Adjust for 34.9875MHz +20Hz.
Input of frequency counter to TP8.	Ch. 19, LSB	CT5	Adjust for 34.9825MHz +20Hz.
Input of frequency counter to TP8.	Ch. 19, LSB, Xmit	VR9	Adjust for 34.9825MHz +20Hz.
Input of frequency counter to TP9.	Ch. 19, USB, Xmit	CT2	Adjust for 7.8025MHz + 5Hz -0Hz.
Input of frequency counter to TP9.	Ch. 19, LSB, Xmit	CT3	Adjust for 7.7975MHz + 0Hz -5Hz.

RECEIVER ALIGNMENT

Connect an AC VTVM or AF wattmeter across speaker voice coil.
 Adjust volume control to obtain a suitable indication.

SSB

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna jack. 27.186MHz, no modulation. Output .25uV.	Ch. 19, USB RF Gain - Max Clarifier - Midrange Volume - Max	L8,L7,L5, L4,L3	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.186MHz, no modulation. Output .25uV.	Ch. 19	CT1	Adjust for .5 watts audio.

RECEIVER ALIGNMENT

Connect an AC VTVM or AF wattmeter across speaker voice coil.
 Adjust volume control to obtain a suitable indication.

AM

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna jack. 23.5MHz, no modulation. Output 200uV. Input of RF VTVM to TP5.	Ch. 19, AM RF Gain - Max NB-On	L1,L2	Adjust for maximum.

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. 27.186MHz, no modulation. Output 250uV.	Ch. 19, USB RF Gain - Max Volume - Max	VR2	SSB AGC Adjust for .5 volts audio.
Output of signal generator thru .01uF to antenna jack. 27.186MHz, no modulation. Output 100uV.	Ch. 19	VR1	S METER Adjust for 9 on S scale of meter.
Output of signal generator thru .01uF to antenna jack. 27.186MHz, no modulation. Output 500uV.	Ch. 19	VR3	SQUELCH RANGE Set Squelch Control VR404 fully clockwise. Adjust VR3 so that squelch just breaks.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output .5uV.	Ch. 19, AM	VR5	AM AGC Adjust for .5 watts audio.

TRANSMITTER ALIGNMENT

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

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

See page 4 for channel frequencies.

SSB

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of 2 tone generator to Mike input. 500Hz and 2400Hz at .5 volts.	Ch. 19, USB Dynamike - Max	L39, L37, L32, L30	Adjust for maximum.
Output of 2 tone generator to Mike input. 500Hz and 2400Hz at .5 volts.	Ch. 19, LSB	CT7	Adjust for 11.5 watts.

TRANSMITTER ADJUSTMENTS

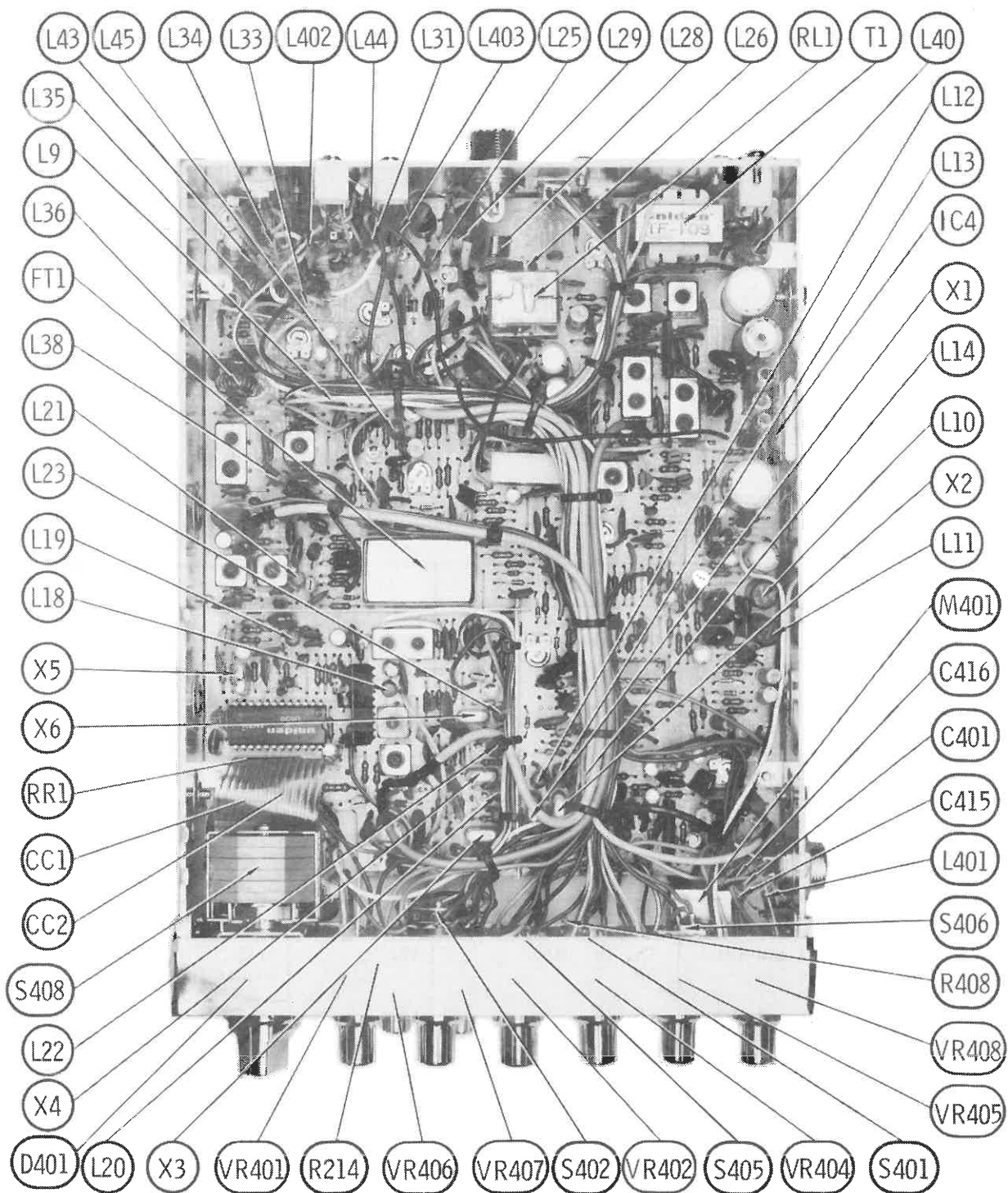
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.

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

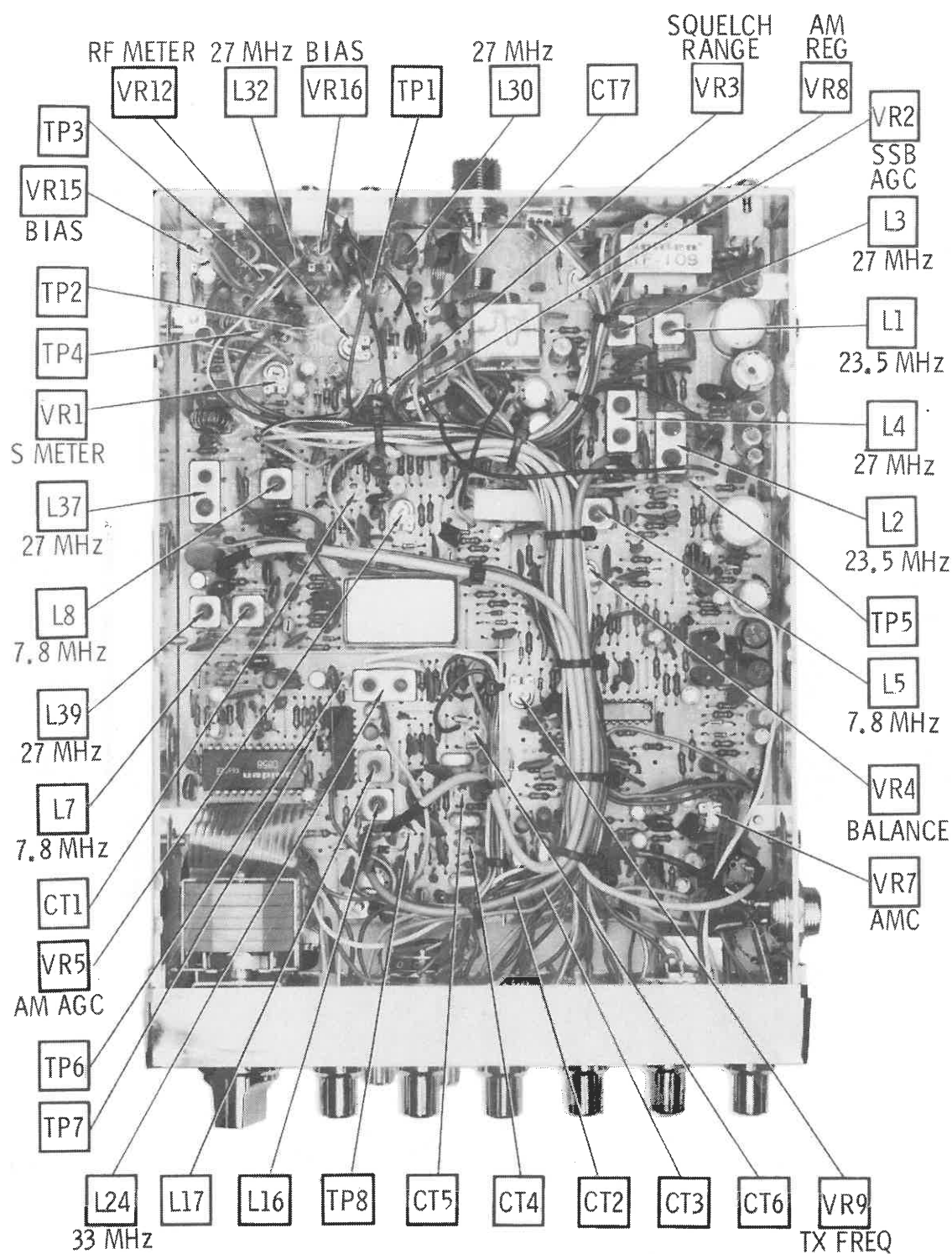
See page 4 for channel frequencies.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
DC current meter to TP3 and TP4. No modulation.	Ch. 19, USB	VR15	BIAS Adjust for 40mA <u>+10mA</u> .
DC current meter to TP1 and TP2. No modulation.	Ch. 19, USB	VR16	BIAS Adjust for 70mA <u>+10mA</u> .
No modulation.	Ch. 19, USB	VR4	BALANCE Adjust for MINIMUM RF.
No modulation.	Ch. 19, AM	VR8	AM REG Adjust for 3.8 watts.
No modulation.	Ch. 19, AM	VR12	RF PANEL METER Adjust for 3.8 watts on RF scale of meter.
Inject a 1000Hz signal at Mike input. Modulation meter to antenna jack.	Ch. 19, AM AMC - Max	VR7	AM AMC Adjust signal for 50% modulation. Increase signal 630 times. Adjust VR7 for 95% modulation.

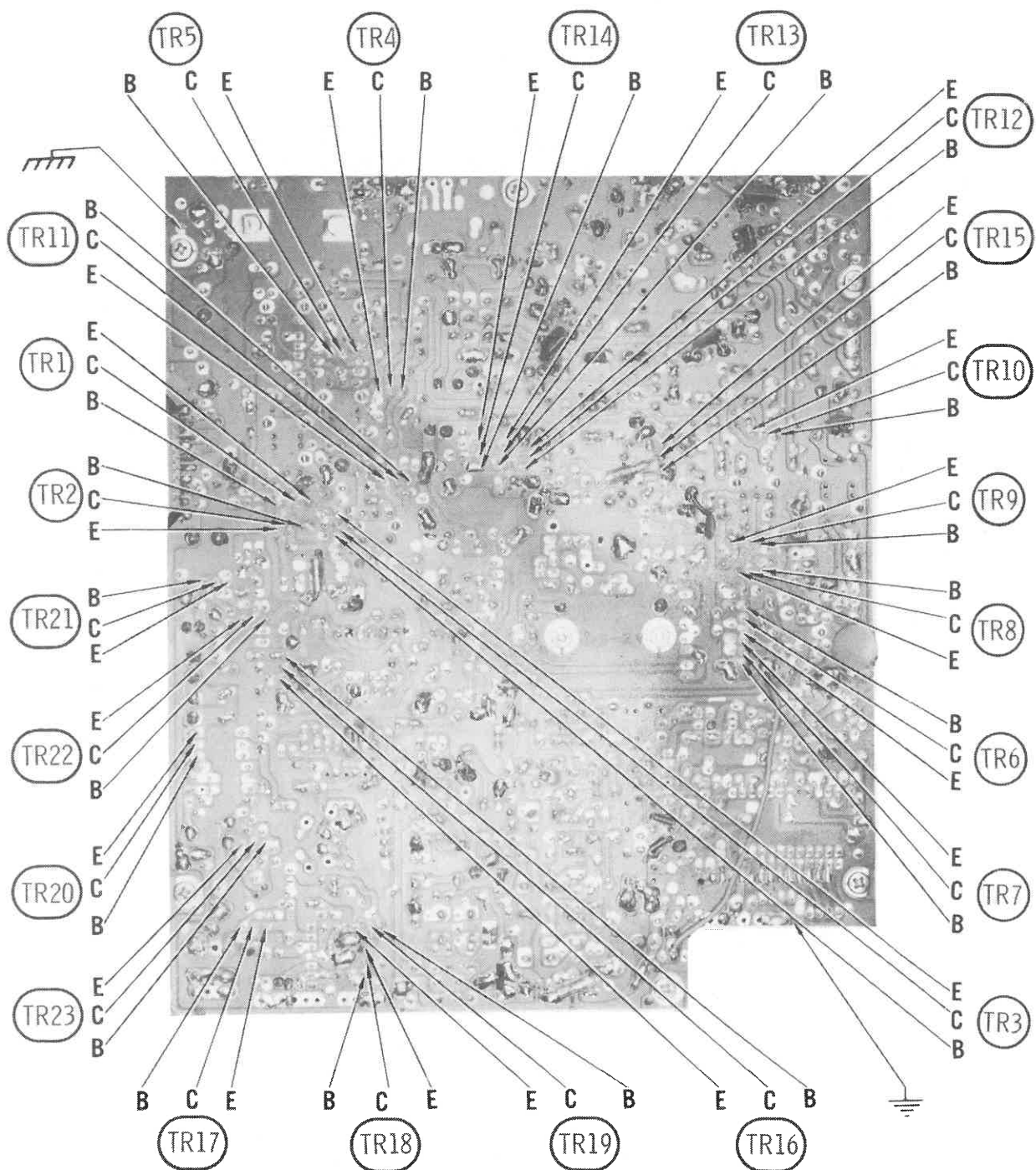
COBRA MODEL 138XLR



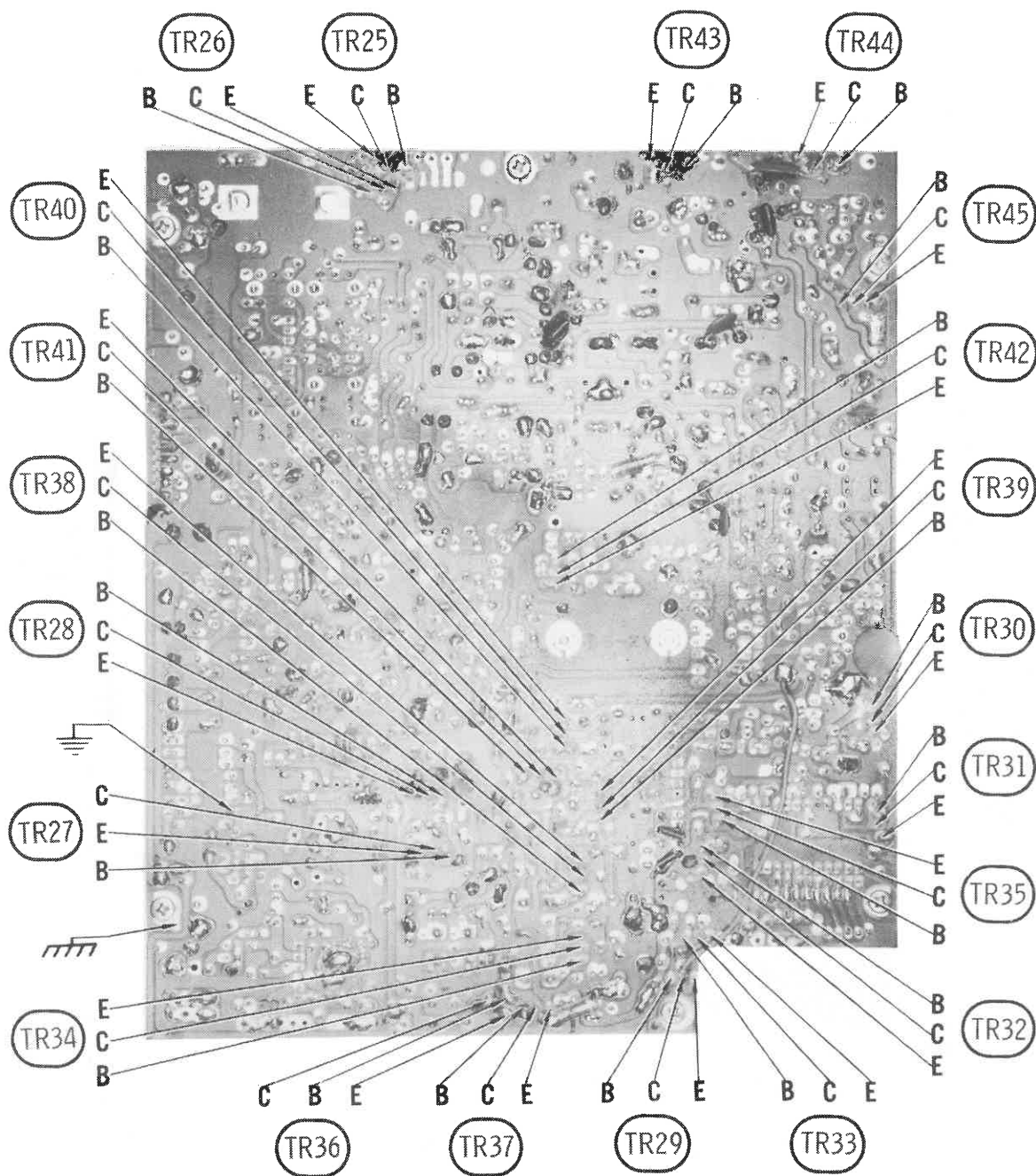
CHASSIS - BOTTOM



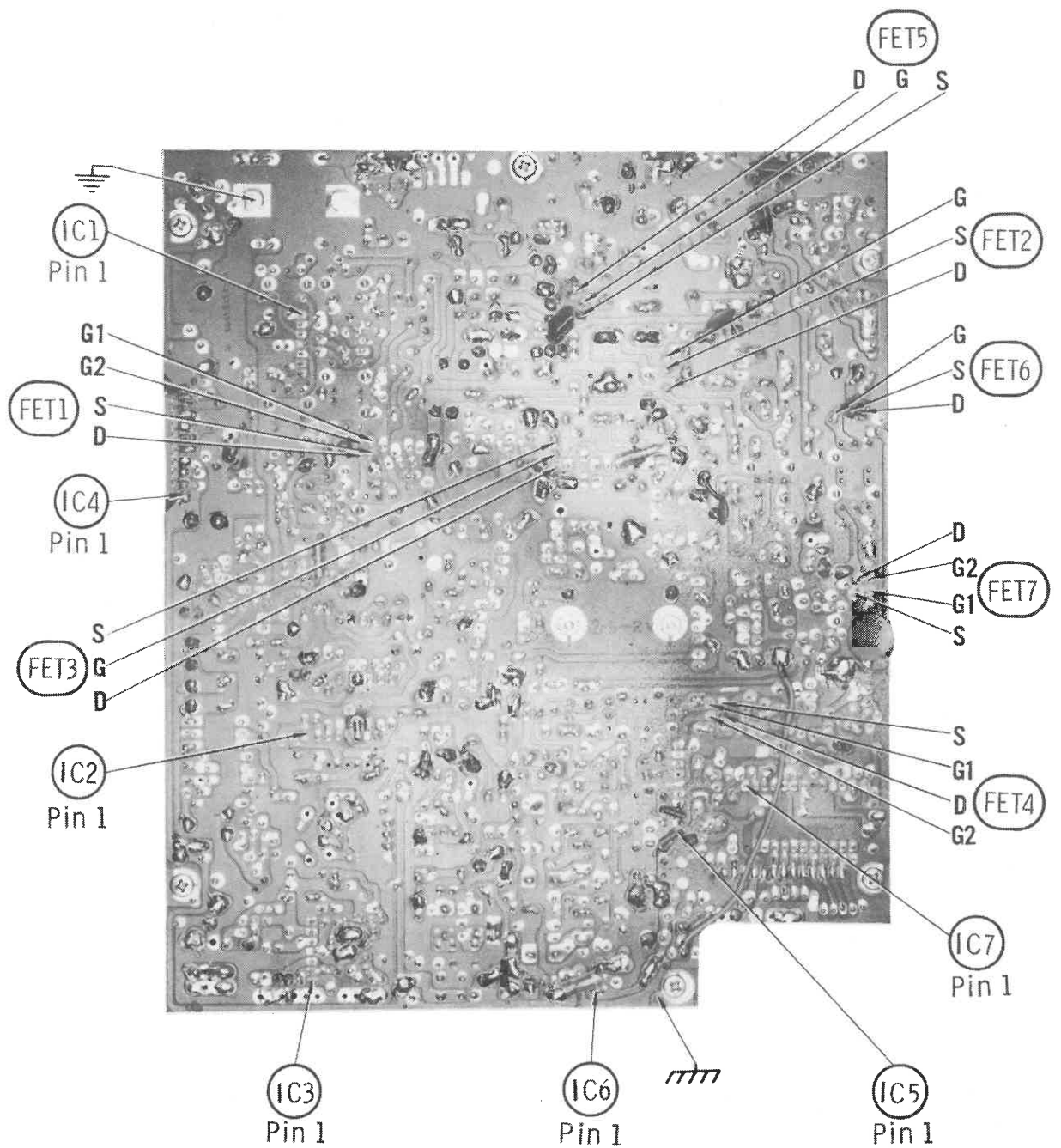
CHASSIS - BOTTOM



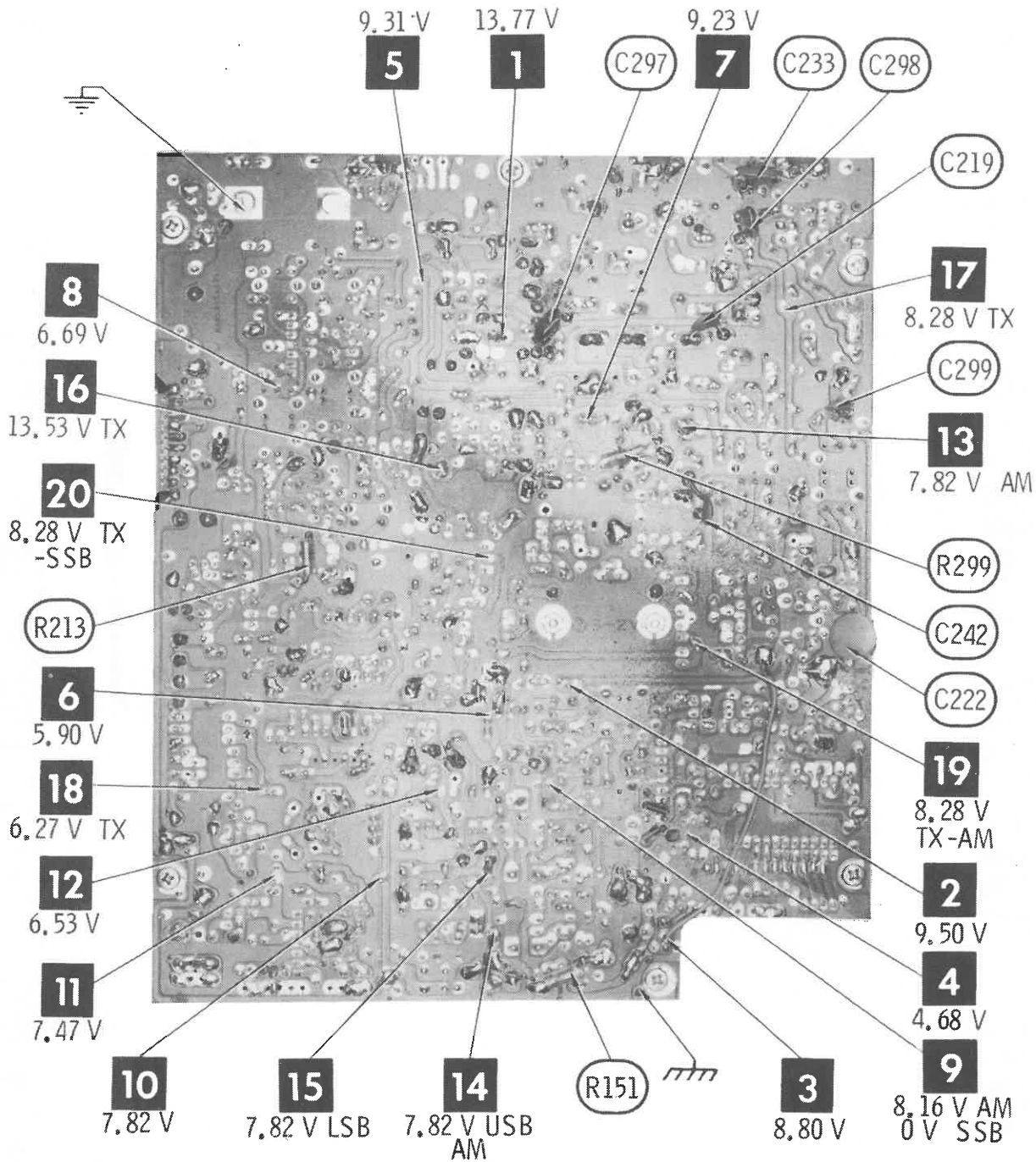
MAIN BOARD



MAIN BOARD

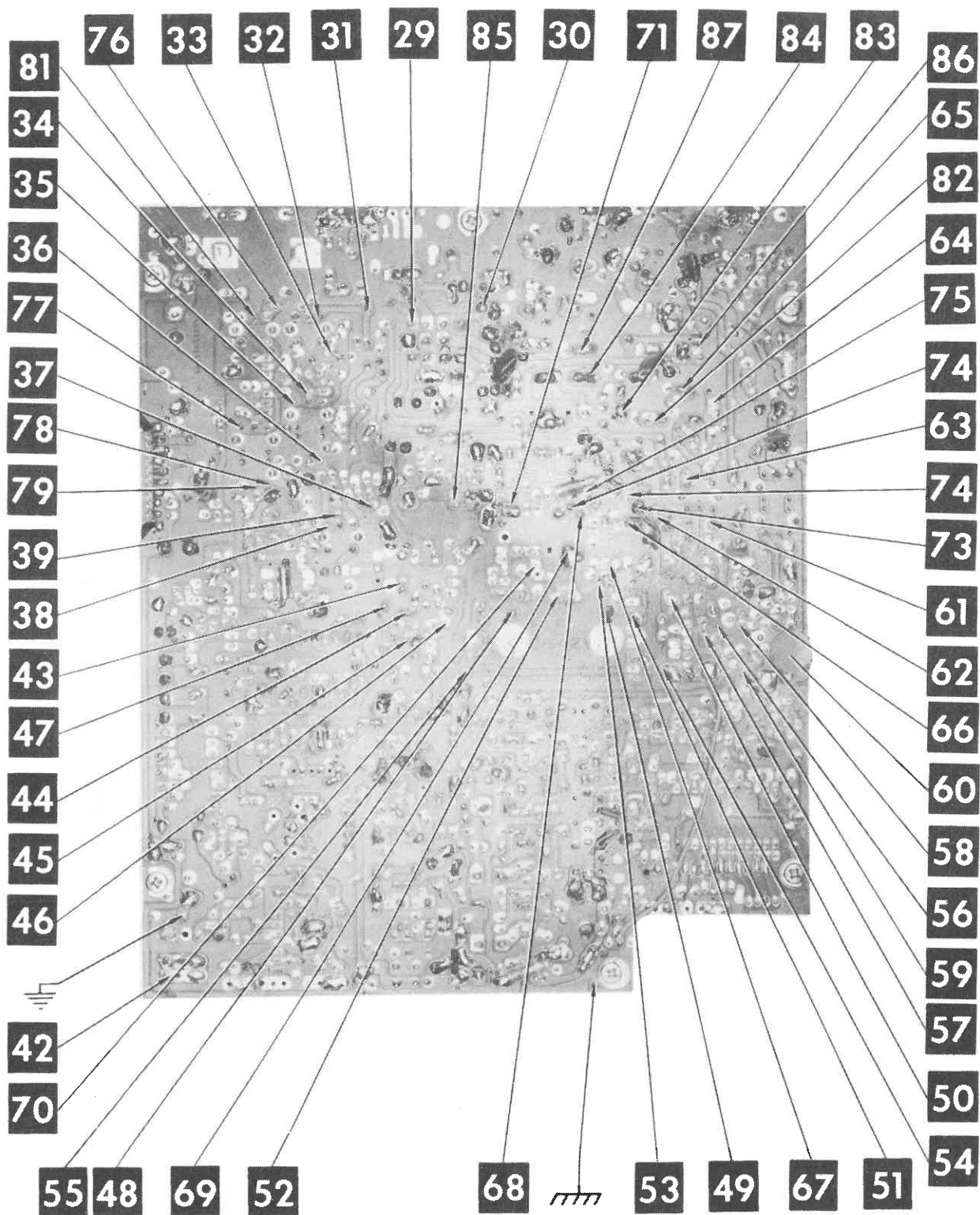


MAIN BOARD



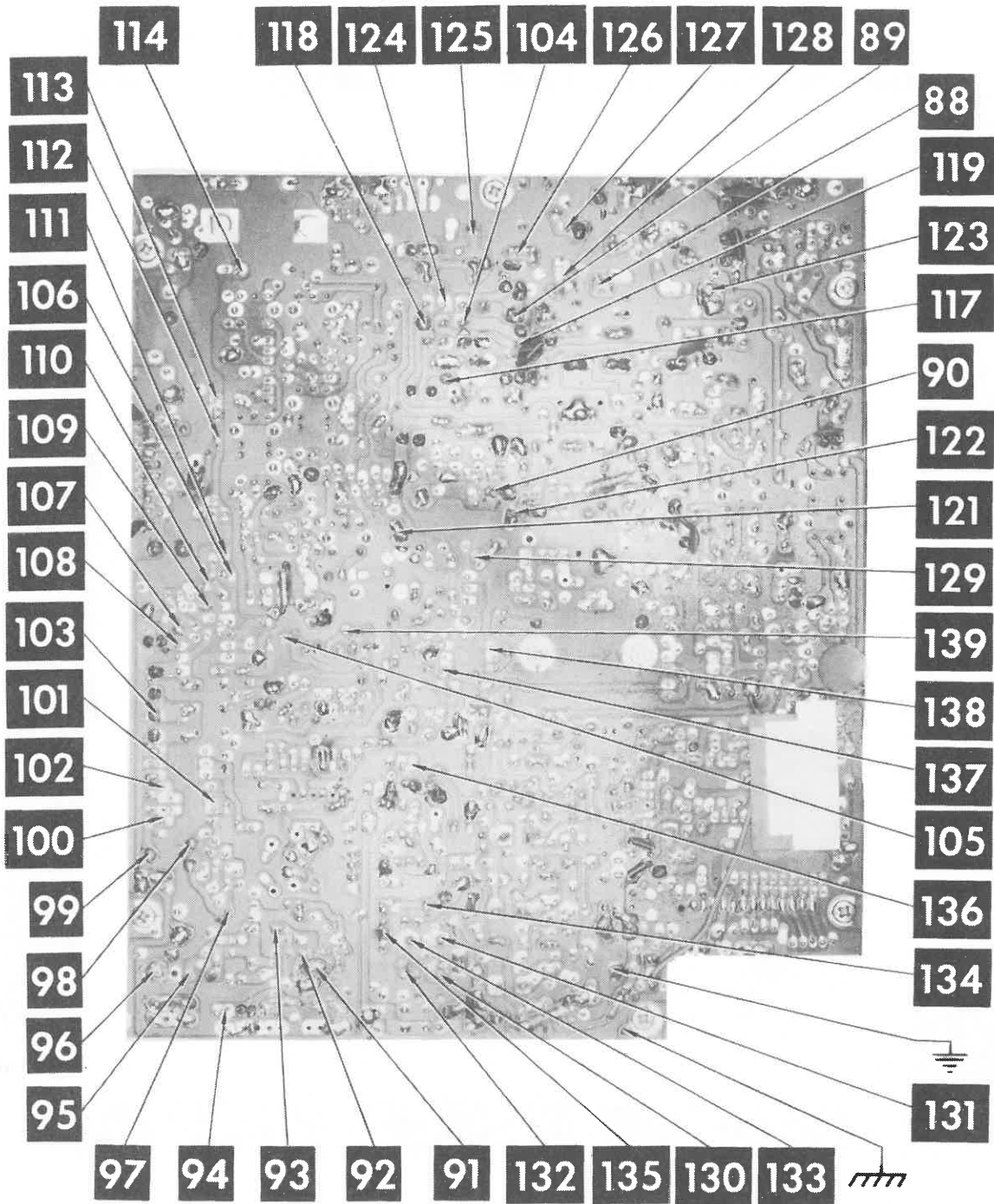
COBRA MODEL 138XLR

MAIN BOARD

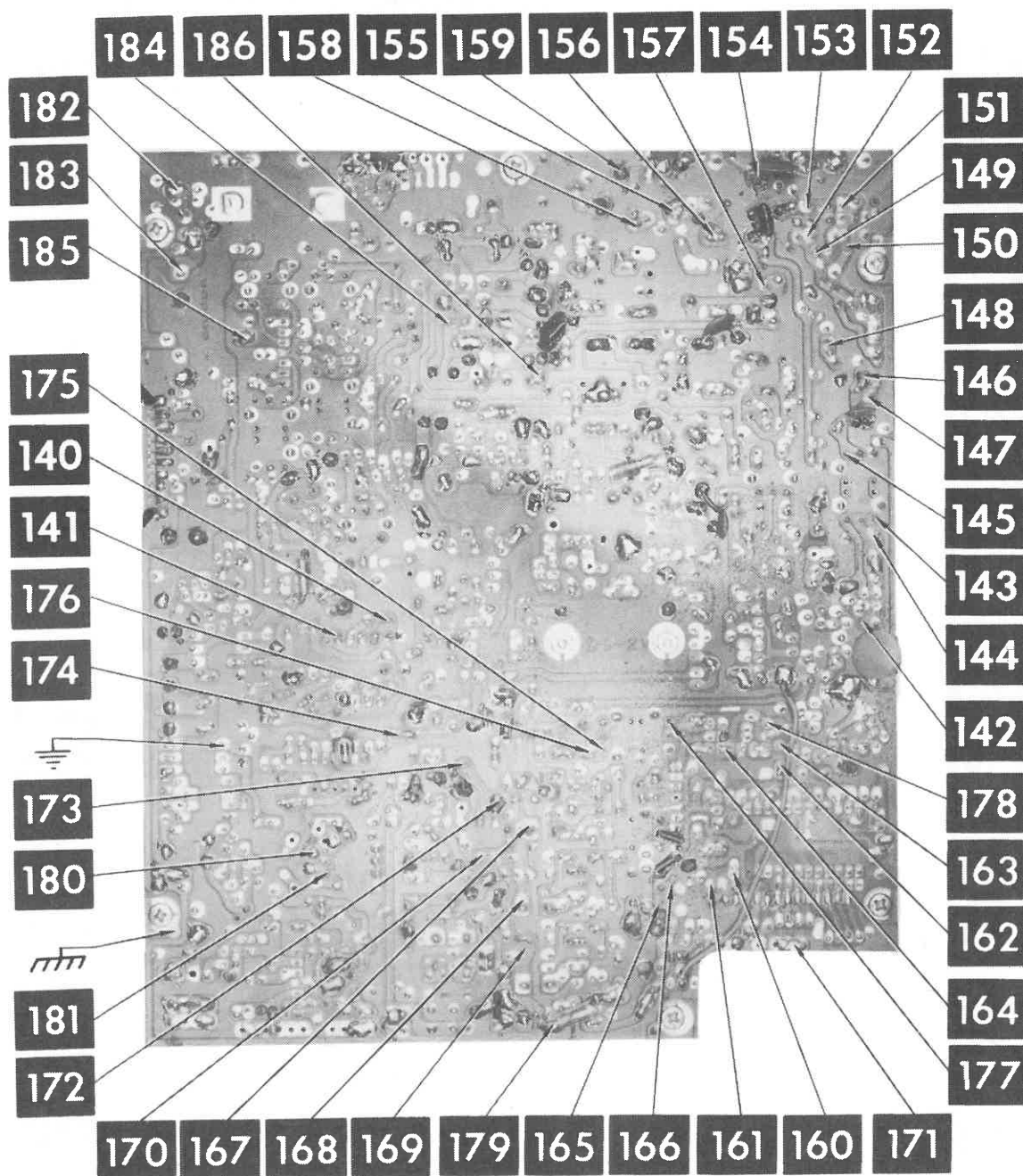


MAIN BOARD

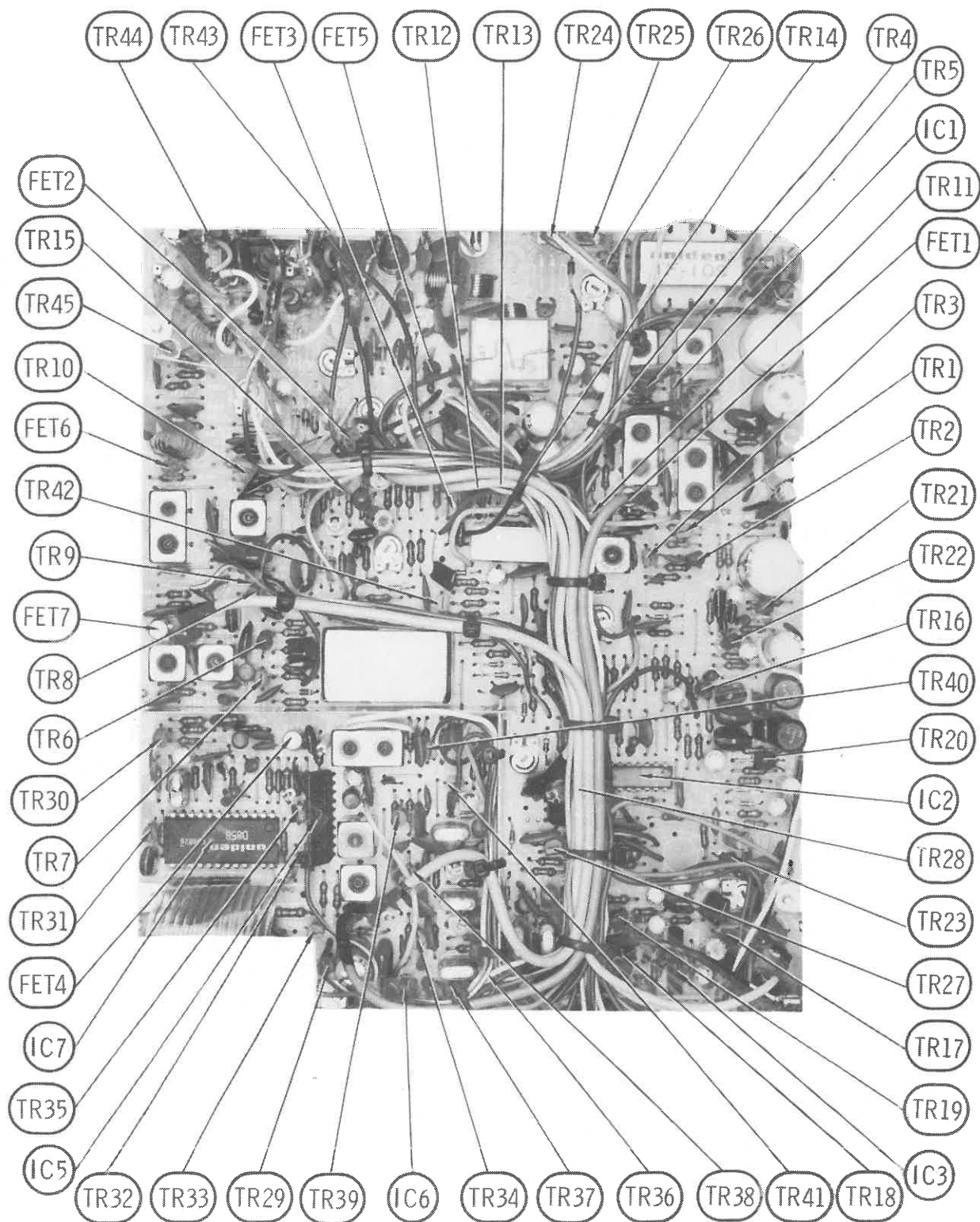
COBRA MODEL 138XLR



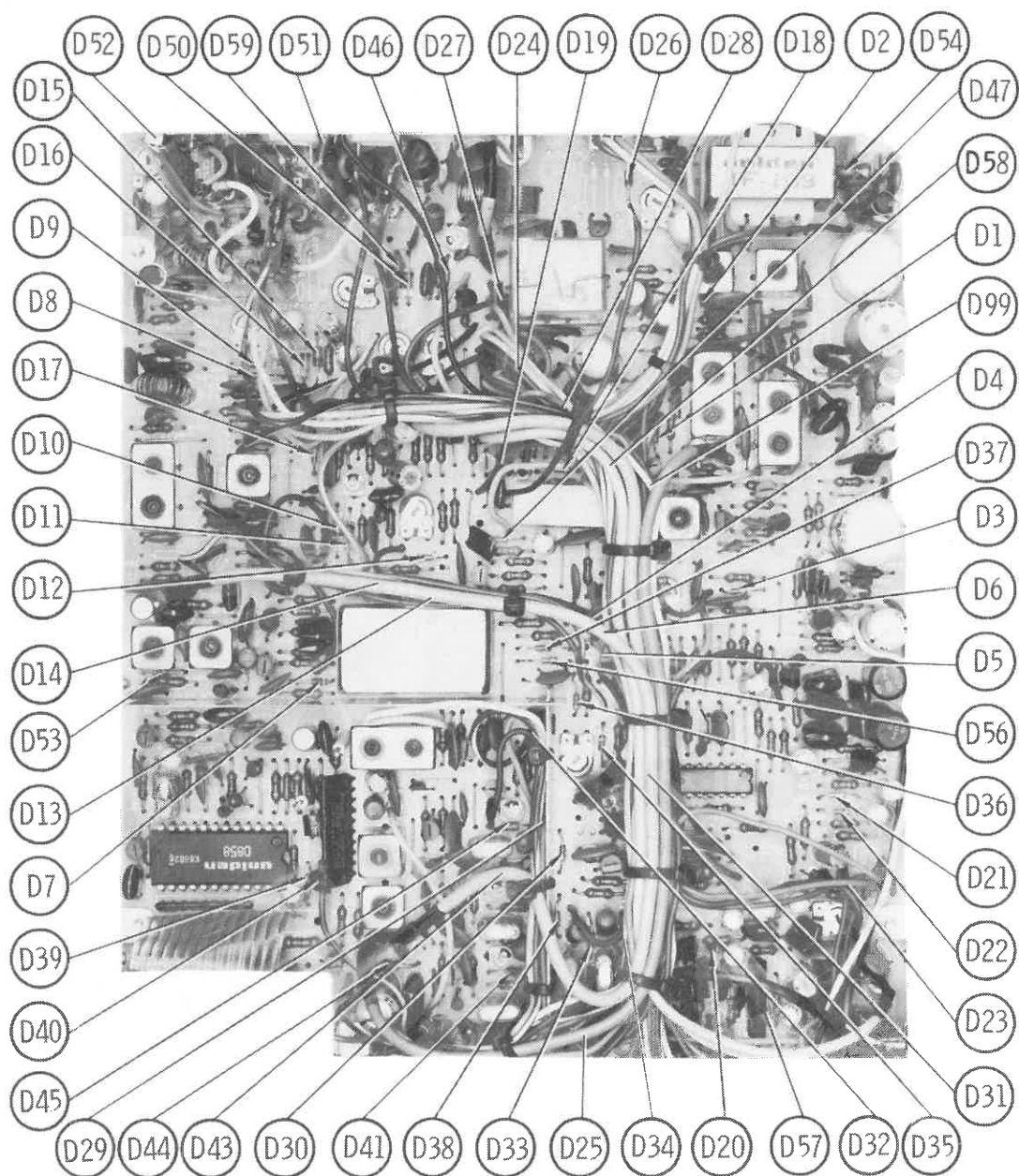
MAIN BOARD



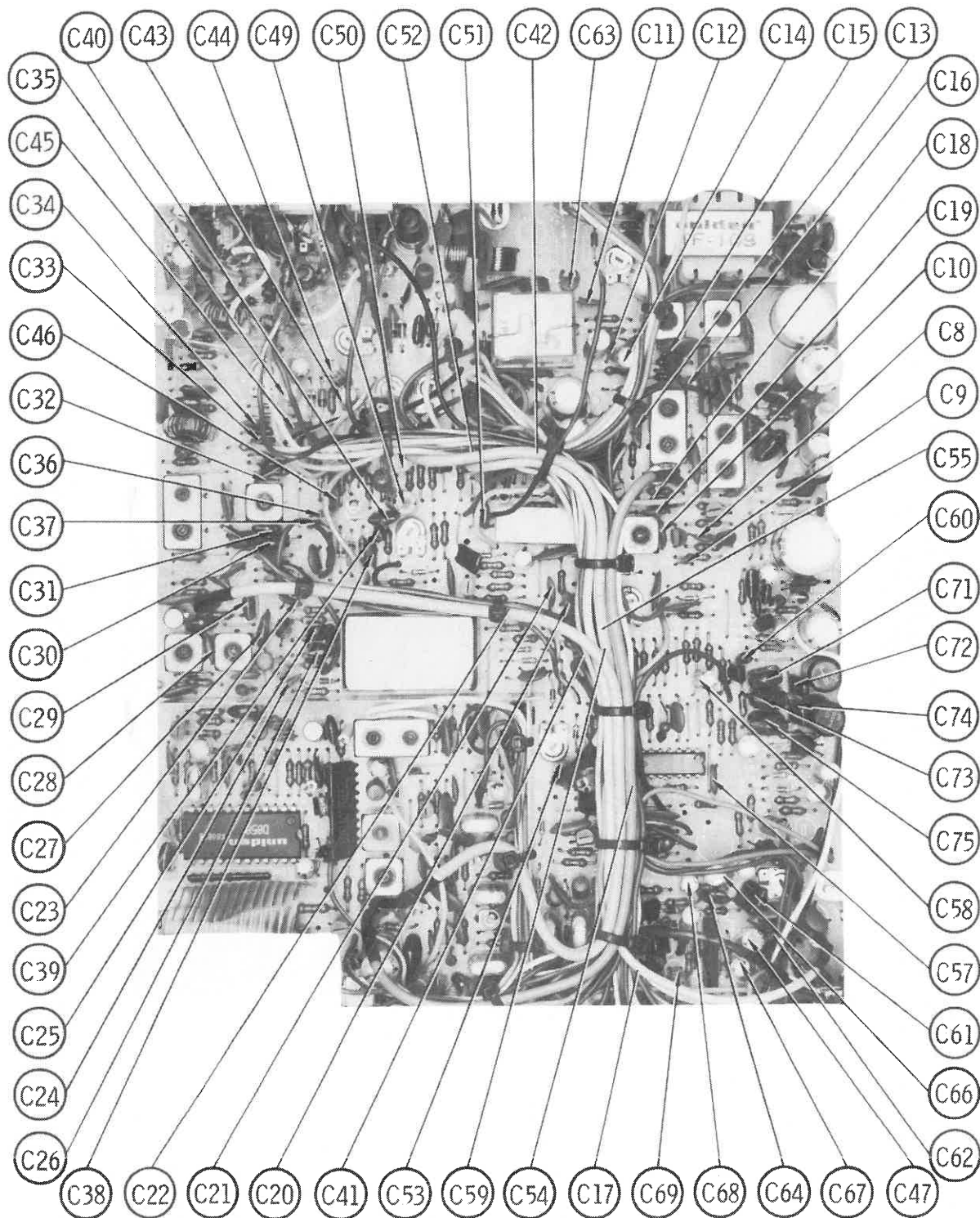
MAIN BOARD



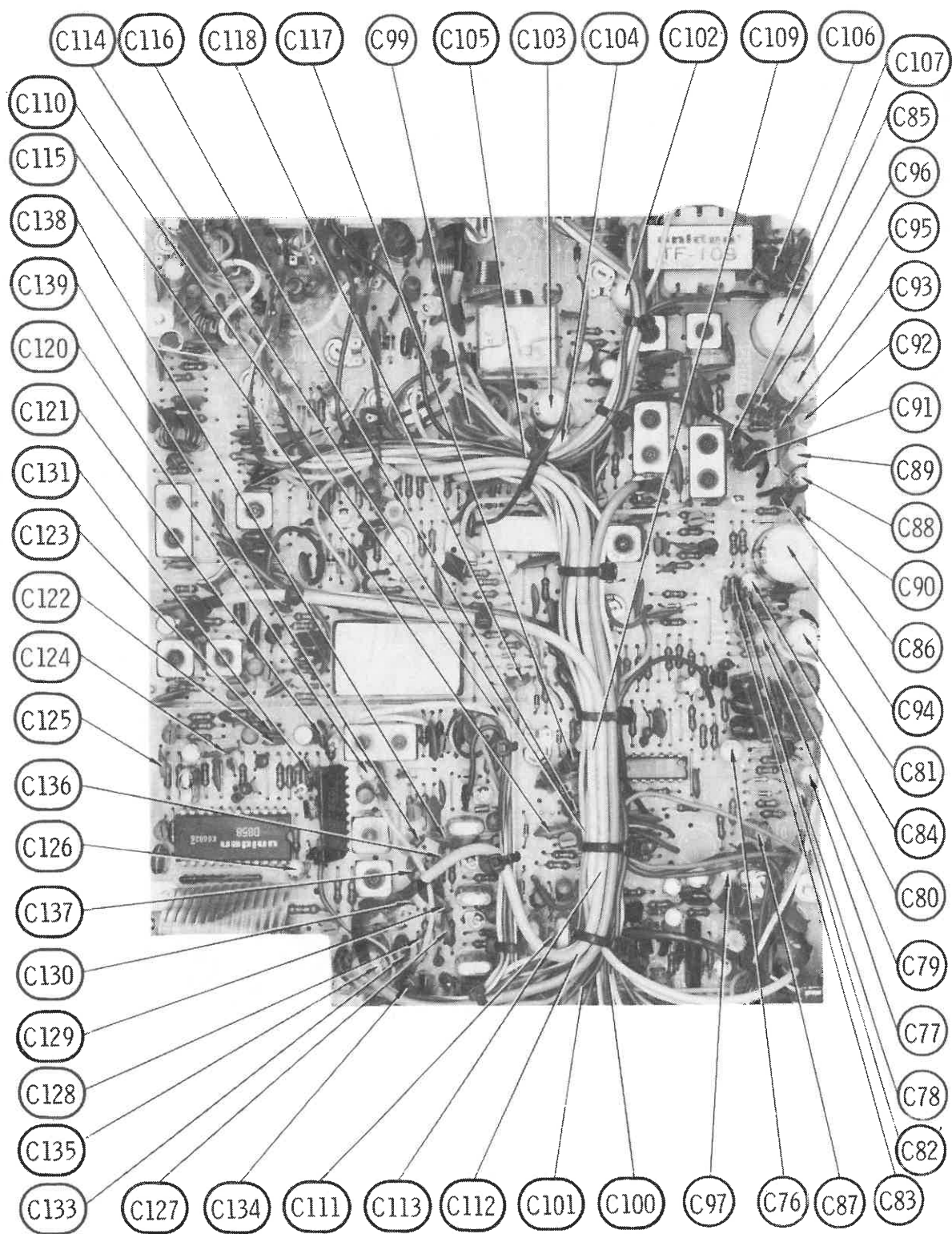
MAIN BOARD



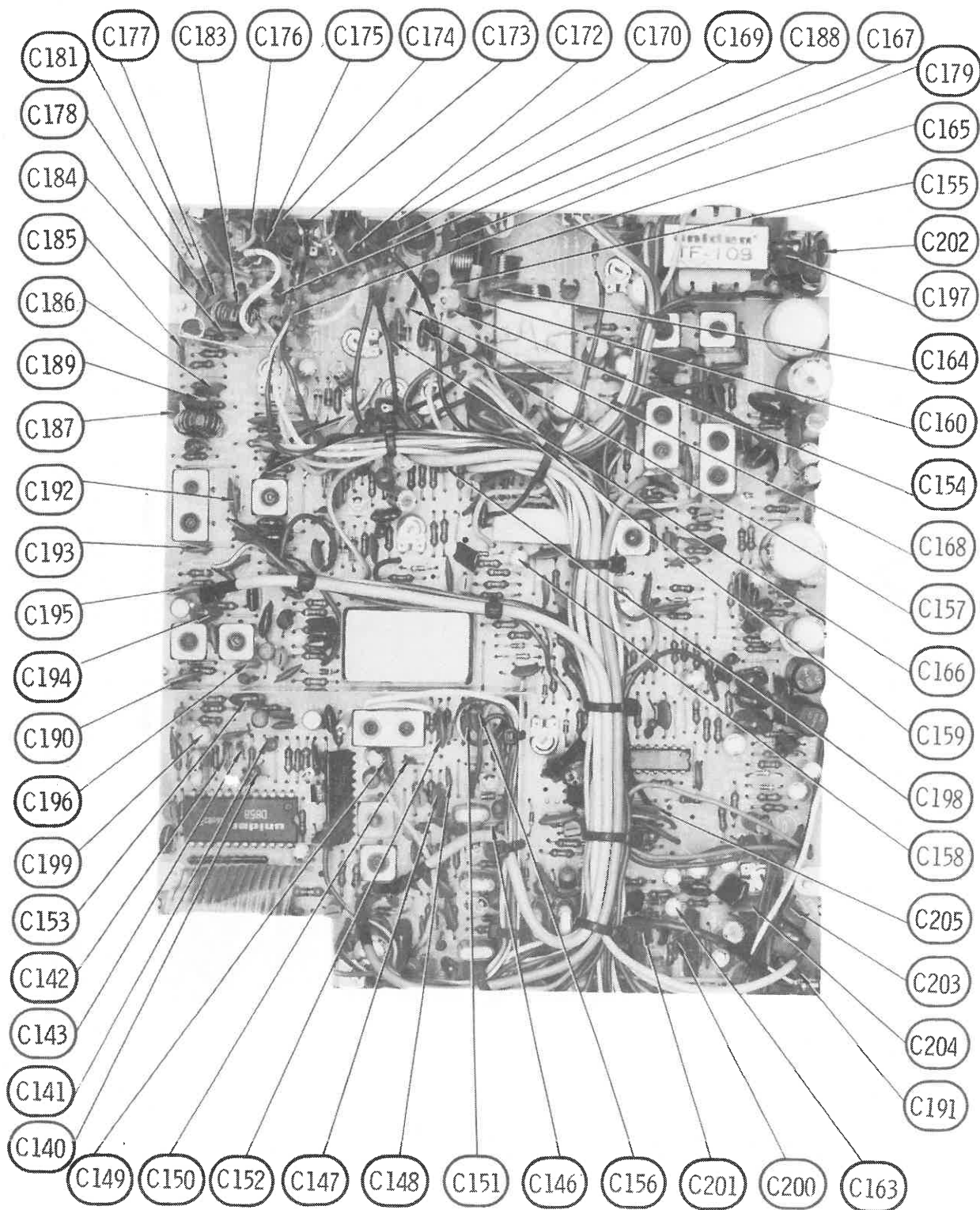
MAIN BOARD



MAIN BOARD

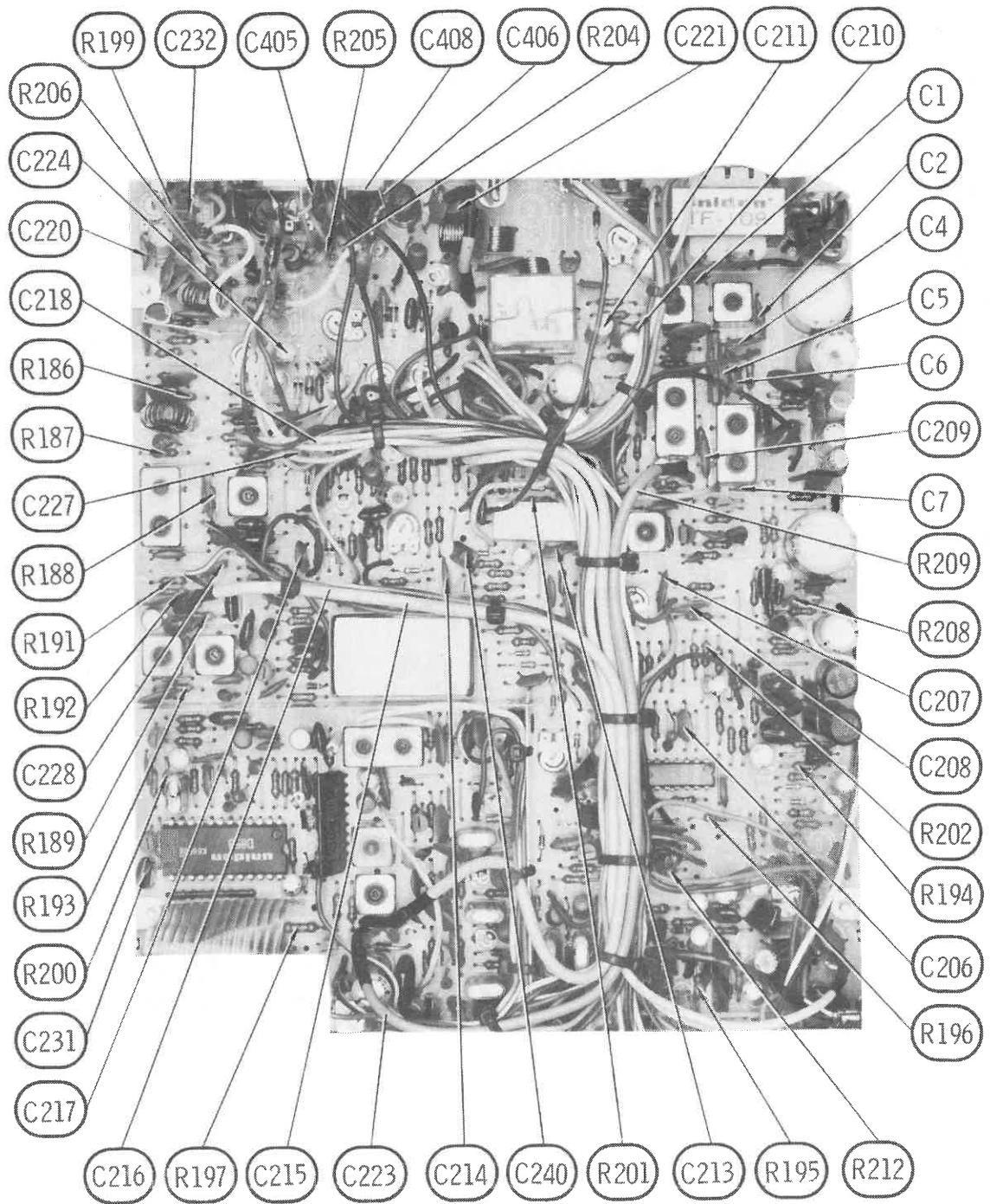


MAIN BOARD

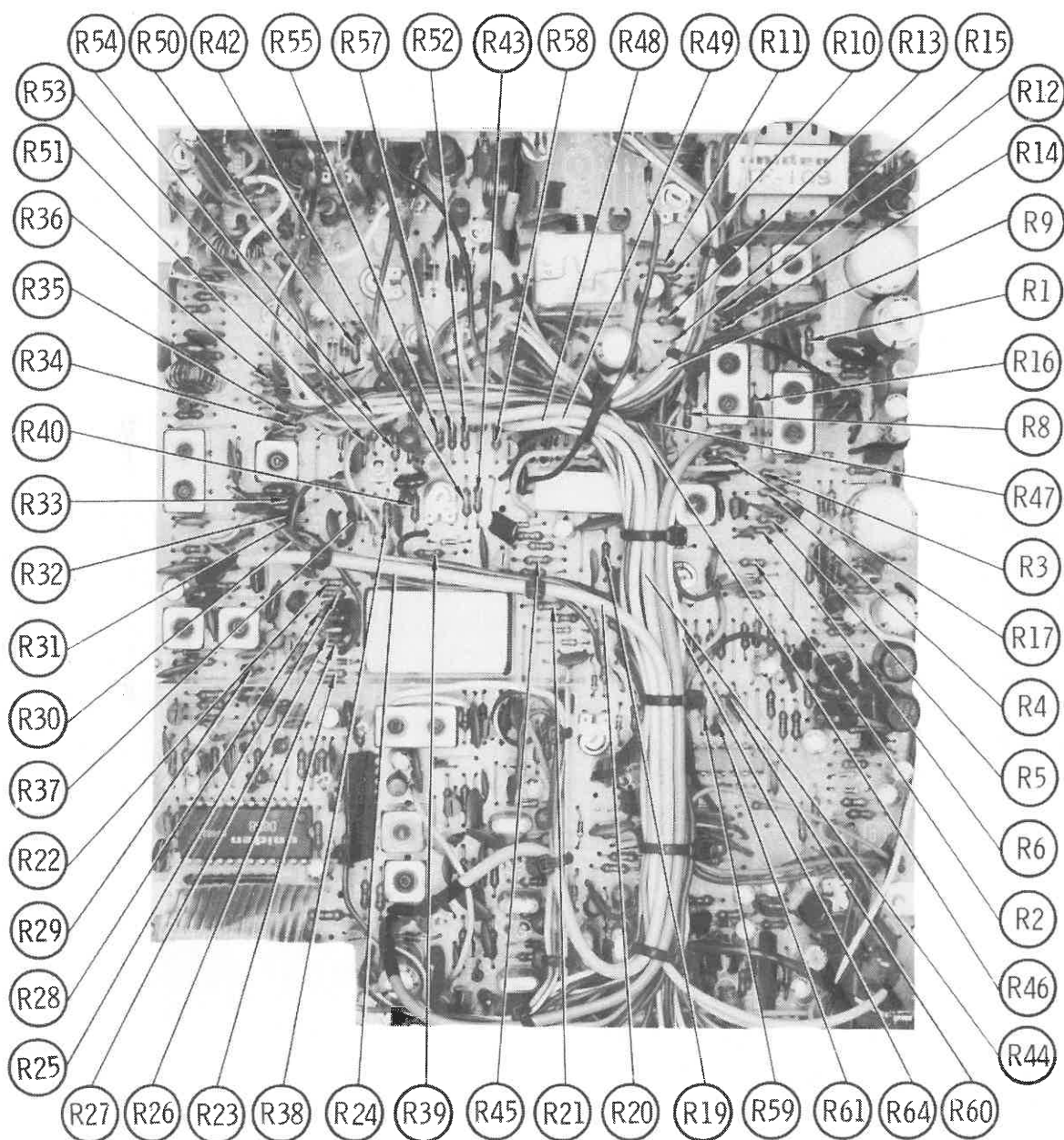


COBRA MODEL 138XLR

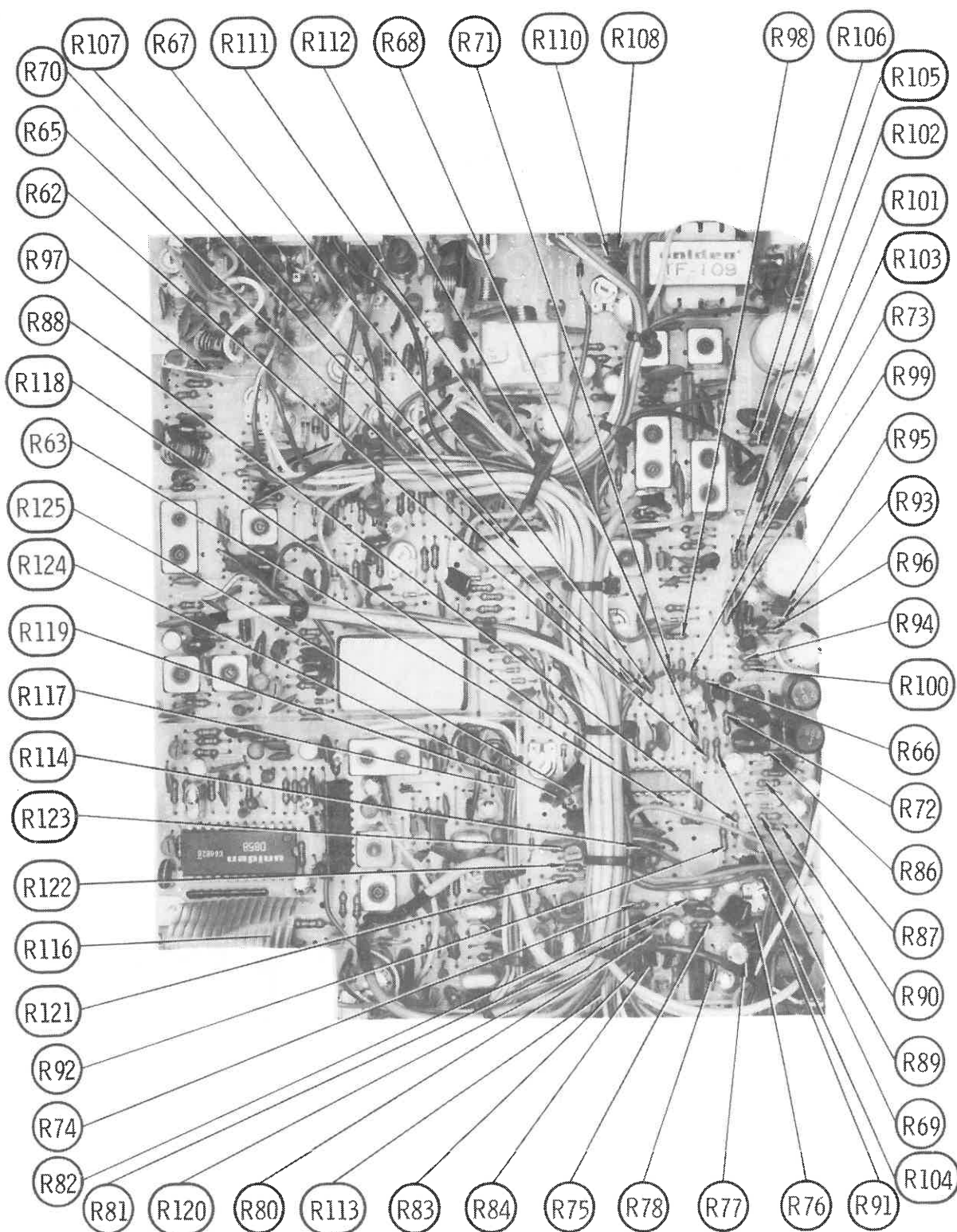
MAIN BOARD



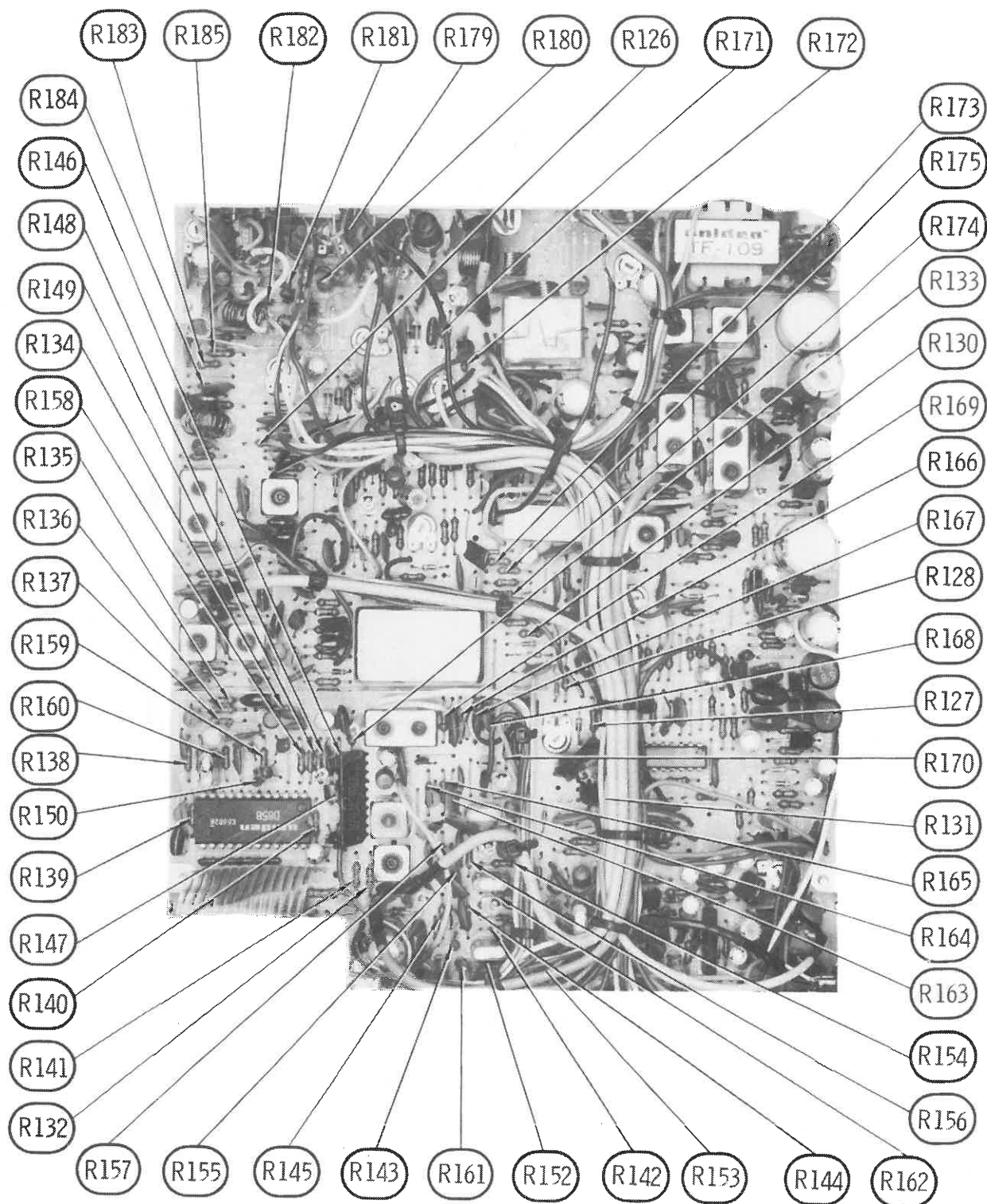
MAIN BOARD



MAIN BOARD



MAIN BOARD

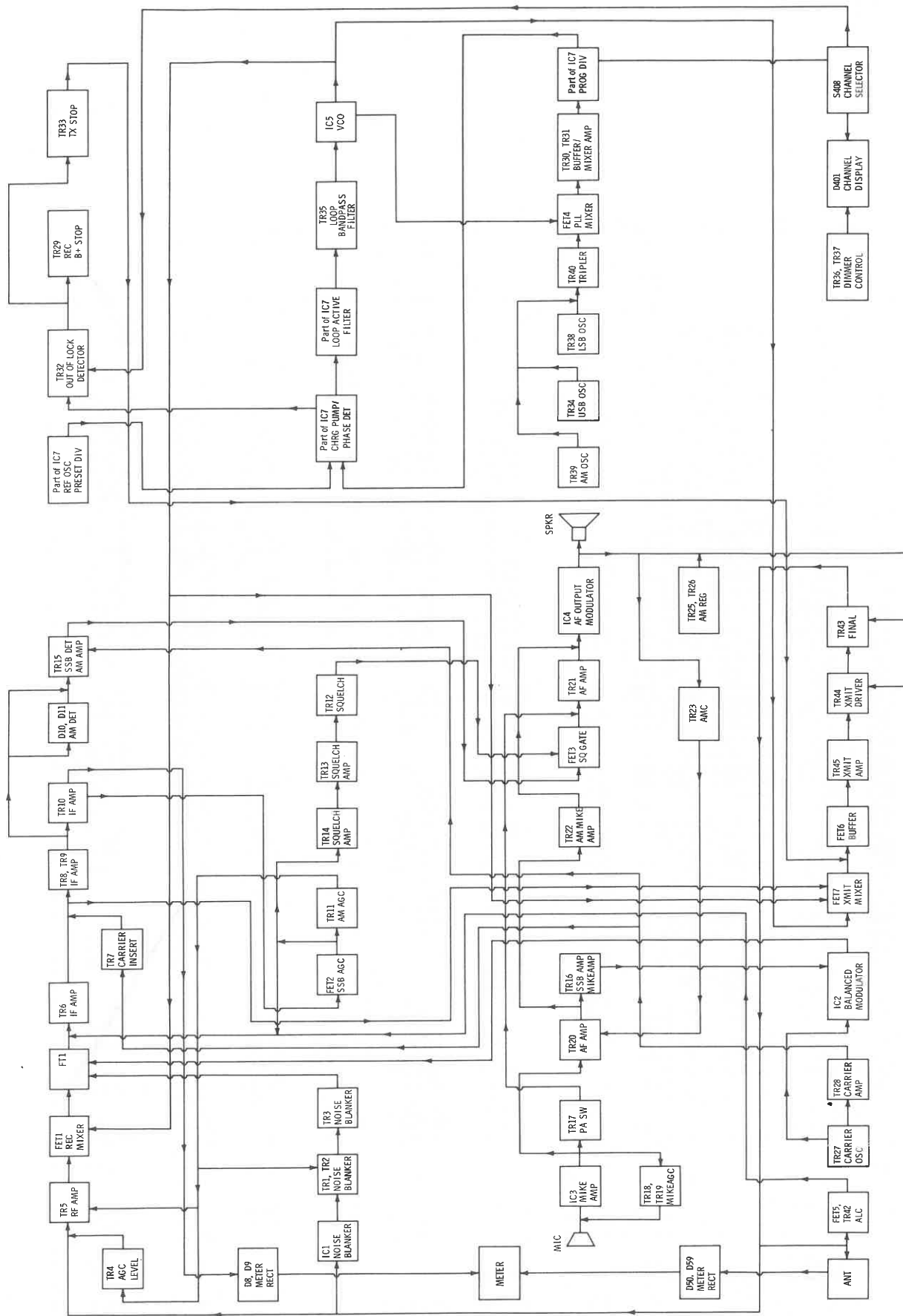


MAIN BOARD

TRUTH CHART

H = 4.68 Volts L 0 Volts

C H A N N E L	IC7 Program Divider										USB REC/TX	AM REC/TX	LSB REC/TX
	PINS										VCO OUTPUT IN MHz AT TP8	VCO OUTPUT IN MHz AT TP8	VCO OUTPUT IN MHz AT TP8
	13	14	15	16	17	18	19	20	21				
1	H	L	L	L	H	L	L	H	L		34.7675	34.765	34.7625
2	L	H	L	L	H	L	L	H	L		34.7775	34.775	34.7725
3	H	H	L	L	H	L	L	H	L		34.7875	34.785	34.7825
4	H	L	H	L	H	L	L	H	L		34.8075	34.705	34.8025
5	L	H	H	L	H	L	L	H	L		34.8175	34.815	34.8125
6	H	H	H	L	H	L	L	H	L		34.8275	34.825	34.8225
7	L	L	L	H	H	L	L	H	L		34.8375	34.835	34.8325
8	L	L	L	L	L	L	L	L	H		34.8575	34.855	34.8525
9	H	L	L	L	L	L	L	L	H		34.8675	34.865	34.8625
10	L	H	L	L	L	L	L	L	H		34.8775	34.875	34.8725
11	H	H	L	L	L	L	L	L	H		34.8875	34.885	34.8825
12	H	L	H	L	L	L	L	L	H		34.9075	34.905	34.9125
13	L	H	H	L	L	L	L	L	H		34.9175	34.915	34.9125
14	H	H	H	L	L	L	L	L	H		34.9275	34.925	34.9225
15	L	L	L	H	L	L	L	L	H		34.9375	34.935	34.9325
16	L	L	L	L	H	L	L	L	H		34.9575	34.955	34.9525
17	H	L	L	L	H	L	L	L	H		34.9675	34.965	34.9625
18	L	H	L	L	H	L	L	L	H		34.9775	34.975	34.9725
19	H	H	L	L	H	L	L	L	H		34.9875	34.985	34.9825
20	H	L	H	L	H	L	L	L	H		35.0075	34.005	35.0025
21	L	H	H	L	H	L	L	L	H		35.0175	34.015	35.0125
22	H	H	H	L	H	L	L	L	H		35.0275	34.025	35.0225
23	L	L	L	L	L	H	L	L	H		35.0575	34.055	35.0525
24	L	L	L	H	H	L	L	L	H		35.0375	34.035	35.0325
25	H	L	L	H	H	L	L	L	H		35.0475	34.045	35.0425
26	H	L	L	L	L	H	L	L	H		35.0675	34.065	35.0625
27	L	H	L	L	L	H	L	L	H		35.0775	34.075	35.0725
28	H	H	L	L	L	H	L	L	H		35.0875	34.085	35.0825
29	L	L	H	L	L	H	L	L	H		35.0975	34.095	35.0925
30	H	L	H	L	L	H	L	L	H		35.1075	34.105	35.1025
31	L	H	H	L	L	H	L	L	H		35.1175	34.115	35.1125
32	H	H	H	L	L	H	L	L	H		35.1275	34.125	35.1225
33	L	L	L	H	L	H	L	L	H		35.1375	34.135	35.1325
34	H	L	L	H	L	H	L	L	H		35.1475	34.145	35.1425
35	L	L	L	L	H	H	L	L	H		35.1575	34.155	35.1525
36	H	L	L	L	H	H	L	L	H		35.1675	34.165	35.1625
37	L	H	L	L	H	H	L	L	H		35.1775	34.175	35.1725
38	H	H	L	L	H	H	L	L	H		35.1875	34.185	35.1825
39	L	L	H	L	H	H	L	L	H		35.1975	34.195	35.1925
40	H	L	H	L	H	H	L	L	H		35.2075	34.205	35.2025



PARTS LIST AND DESCRIPTION

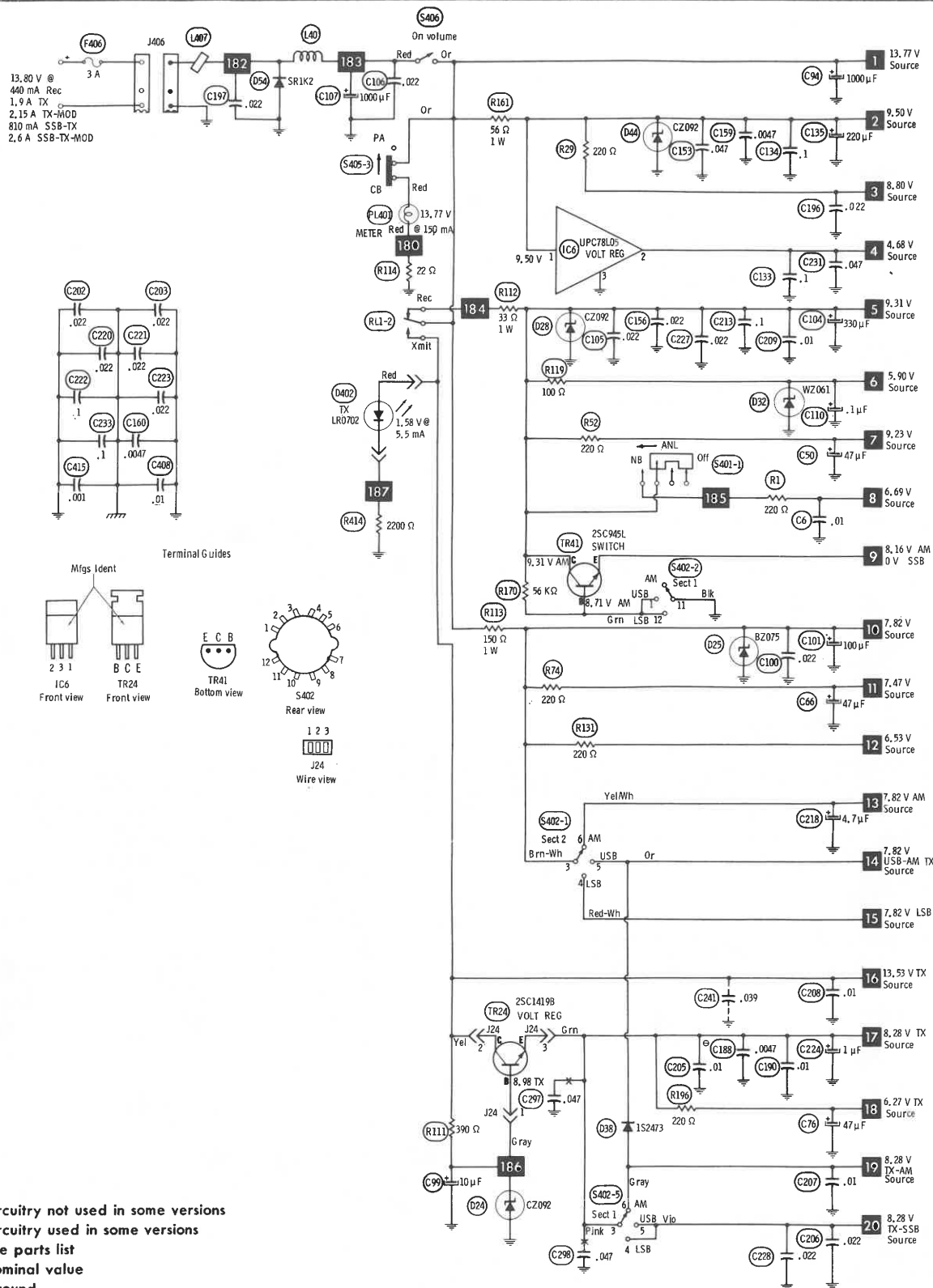
(When ordering parts, state Model, Part Number, and Description.)

WIRING DATA

General-use Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 13 Colors 8524 (Stranded) Available in 13 Colors
Shielded Antenna Lead	Use BELDEN No. 8214 Lowest-loss (RG-8/U Type) 8237 Low-loss (RG-8/U) 8240 (Solid) Miniature (RG-58/U) 8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable	Use BELDEN No. 8497 3-Conductor (1 shielded for Press-to-Talk) Neoprene 8491 4-Conductor (2 shielded, 2 unshielded) Neoprene
Bonding Strap	Use BELDEN No. 8661 (3/8 inch)

SEMICONDUCTORS (Select replacement transistor for best results)

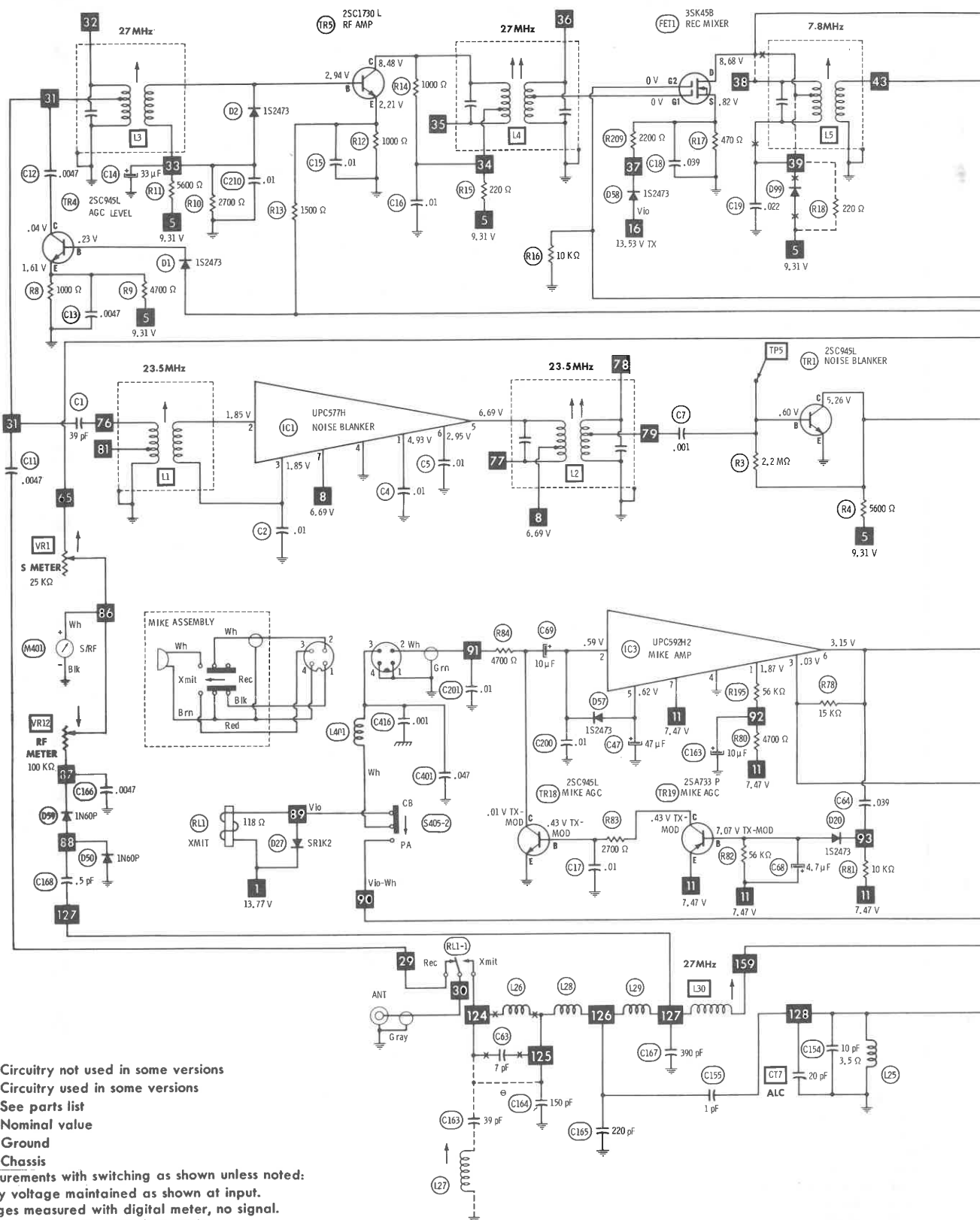
ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D1	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D2	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D3	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D4	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D5	1S2473	151-064-9-002	GE-200	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D6	1S2473	151-064-9-002	GE-200	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D7	1S2473	151-064-9-002	GE-200	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D8	1S2473	151-064-9-001	GE-200	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D9	1S2473	151-064-9-001	GE-200	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D10	1N60P	150-006-9-001	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D11	1N60P	150-006-9-001	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D12	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D13	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D14	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D15	1N60P	150-006-9-001	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D16	1N60P	150-006-9-001	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D17	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D18	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D19	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D20	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D21	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D22	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D23	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D24	CZ092	152-051-9-001	GEZD-9.1	Z1209	ZB9.1A	HEPZ0412	RE 114	SK3060	RT-240	ECG139
D25	BZ075	152-079-9-004	GEZD-7.5		ZB7.5B		RE 111		RT-239	ECG138
D26	WZ050	152-079-9-001	GEZD-5.1						RT-235	
D27	SR1K2	151-045-9-001	GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D28	CZ092	152-051-9-001	GEZD-9.1	Z1209	ZB9.1A	HEPZ0412	RE 114	SK3060	RT-240	ECG139
D29	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D30	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D31	WZ061	152-079-9-003	GEZD-6.2		ZB6.2B		RE 109		RT-237	ECG137
D32	WZ061	152-079-9-002	GEZD-6.2		ZB6.2B		RE 109		RT-237	ECG137
D33	1S2473	151-062-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D34	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D35	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D36	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D37	1S2473	151-064-9-001	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D38	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D39	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D40	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D41	1S2687D	153-008-9-001	GE-90	D201		HEPR2503	RE 195	SK3126	RT-262	
D43	1S2687D	153-008-9-001	GE-90	D201		HEPR2503	RE 195	SK3126	RT-262	
D44	CZ092	152-051-9-001	GEZD-9.1	Z1209	ZB9.1A	HEPZ0412	RE 114	SK3060	RT-240	ECG139
D45	1S2687D	153-008-9-001	GE-90	D201		HEPR2503	RE 195	SK3126	RT-262	
D46	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D47	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D50	1N60P	150-006-9-001	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D51	KB162W	153-008-9-002			PTC301					
D52	KB162W	153-008-9-002			PTC301					
D53	1S2673	151-064-9-002	GE-300	D200	PTC204	HEPR0602	RE 52	SK3100	RT-218	ECG519
D54	SR1K2	151-045-9-001	GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D56	1S2473	151-064-9-001	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D57	1S2473	151-035-9-003	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D58	1S2473	151-064-9-002	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
D59	1N60P	150-006-9-001	1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D99			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519
FET1	3SK45B	182-138-9-001	GE-FET-4	WEP905	PTC181	HEPF2004	RE 199	SK3050	RT-181	ECG222
FET2	3SK45 (1) JF1033G JF1033	182-044-9-002 (1)	GE-FET-2 FE-100	WEP905 FE-100	PTC181 PTC161	HEPF2004 HEPF0021	RE 199 RE 45	SK3050 SK3116	RT-181 RT-175	ECG222 ECG312
FET3	2SK68M 2SK68A-M	182-044-9-001 (1)	GE-FET-1 FE-100	FE-100	PTC151 PTC151	HEPF0010 HEPF0010	RE 46 RE 46	SK3112 SK3112	RT-176 RT-176	ECG133 ECG133
FET4	2SK68 (1) 3SK45 3SK45B-09	182-042-9-001 (1)	GE-FET-1 FE-100	FE-100 WEP905	PTC151 PTC181	HEPF0010 HEPF2004	RE 46 RE 199	SK3112 SK3050	RT-176 RT-181	ECG133 ECG222
FET5	2SK68M 2SK68A-M	182-044-9-001 (1)	GE-FET-1 FE-100	FE-100	PTC151 PTC151	HEPF0010 HEPF0010	RE 46 RE 46	SK3112 SK3112	RT-176 RT-176	ECG133 ECG133
	2SK68 (1)		GE-FET-1	FE-100	PTC151	HEPF0010	RE 46	SK3112	RT-176	ECG133

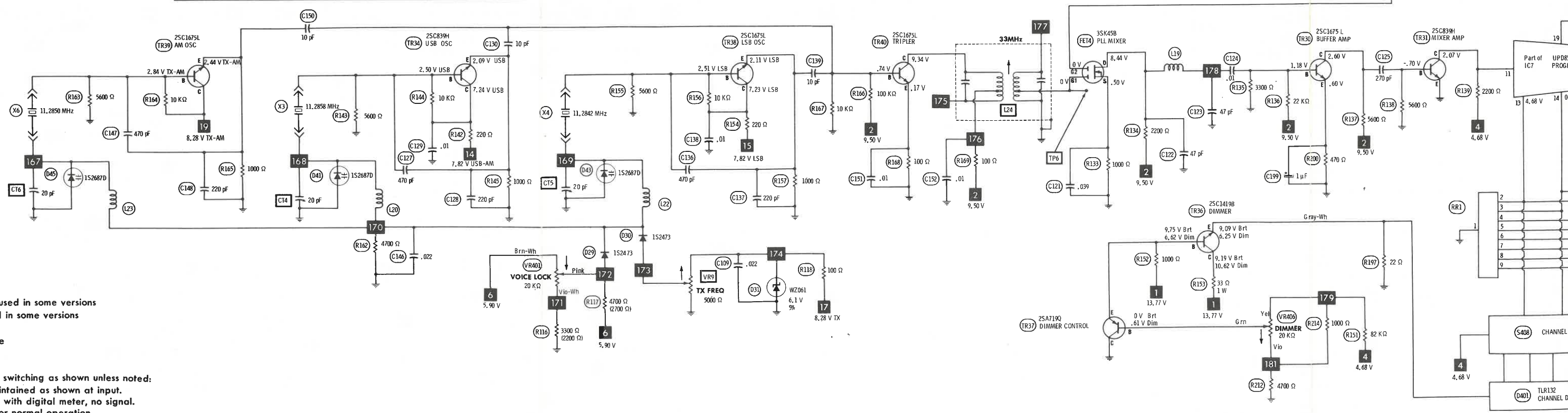
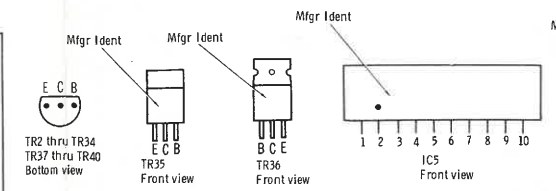
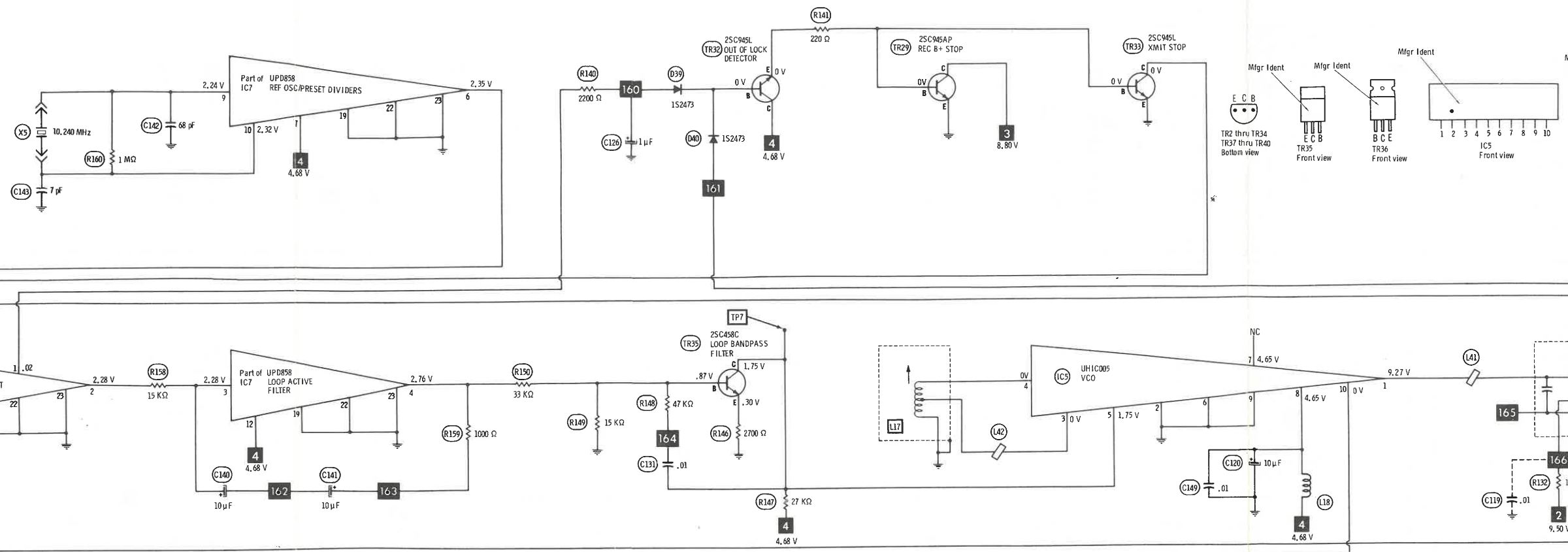


- Circuitry not used in some versions
- - - Circuitry used in some versions
- ⊙ See parts list
- ⊗ Nominal value
- ⊕ Ground
- Chassis

Measurements with switching as shown unless noted:
 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 PHOTOFACIT STANDARD NOTATION SCHEMATIC
 WITH CIRCUITRACE™



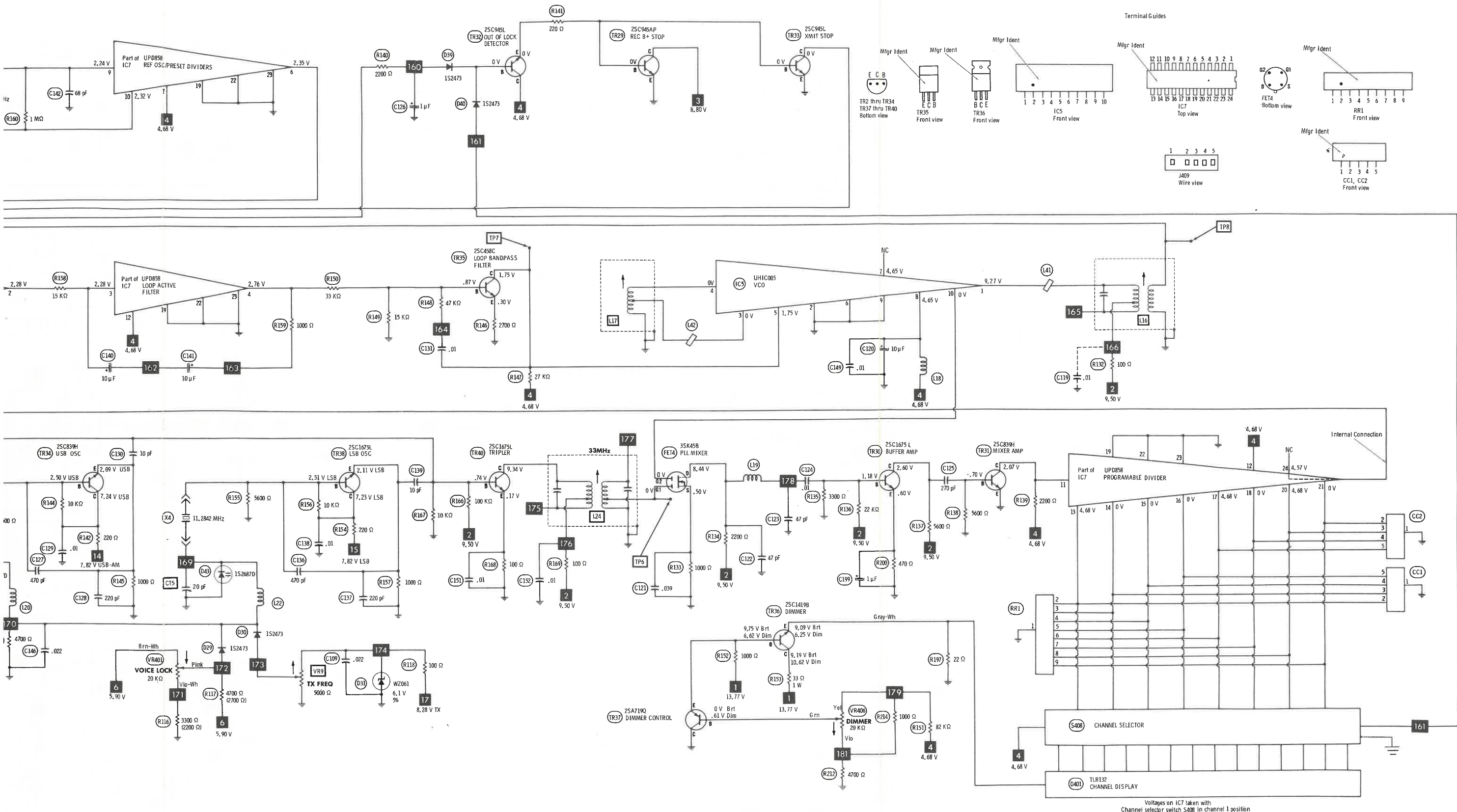


— Circuitry not used in some versions
 --- Circuitry used in some versions
 e See parts list
 * Nominal value
 ⏏ Ground
 m Chassis

Measurements with switching as shown unless noted:
 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 PHOTOFACIT STANDARD NOTATION SCHEMATIC
 WITH CIRCUITRACE[®]

© Howard W. Sams & Co., Inc. 1977



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.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
FET6	JF1033G JF1033	182-044-9-002 (1)	GE-FET-2 GE-FET-2	FE-100 FE-100	PTC161 PTC161	HEPF0021 HEPF0021	RE 45 RE 45	SK3116 SK3116	RT-175 RT-175	ECG312 ECG312
FET7	3SK45B 3SK45 (1)	182-138-9-001	GE-FET-4 GE-FET-4	WEP905 WEP905	PTC181 PTC181	HEPF2004 HEPF2004	RE 199 RE 199	SK3050 SK3050	RT-181 RT-181	ECG222 ECG222
IC1	UPC577H	307-112-9-007	GEIC-140	WEP939			RE 341-M			ECG1082
IC2	MC1496A	307-112-9-005								
IC3	UPC592H2	307-112-9-006								
IC4	UPC1156H	307-112-9-001								
IC5	UHC005	307-112-9-002								
IC6	UPC78L05 78L05 (1)	307-112-9-003								ECG977 ECG977
IC7	UPD858 UPD858C	307-112-9-004 (1)								
TR1	2SC945L 2SC945AP	176-060-9-003 (1)	GE-212 GE-212	(IR)2SC945 (IR)2SC945	PTC121 * PTC121 *	HEPS0015 * HEPS0015 *	RE 192 RE 192	SK3124 SK3124	RT-107A RT-107A	ECG199 ECG199
TR2	2SC945 (1) 2SA733P	177-020-9-001 (1)	GE-212 GE-65	(IR)2SC945 TR-31	PTC121 * PTC103 *	HEPS0015 * HEPS5022 *	RE 192 RE 26 *	SK3124 SK3025 *	RT-107A RT-303	ECG199 ECG159
TR3	2SA733(1) 2SC945L 2SC945AP	176-060-9-003 (1)	GE-65 GE-212 GE-212	TR-31 (IR)2SC945 (IR)2SC945	PTC103 * PTC121 * PTC121 *	HEPS5022 * HEPS0015 * HEPS0015 *	RE 26 * RE 192 RE 192	SK3025 * SK3124 SK3124	RT-303 RT-107A RT-107A	ECG159 ECG199 ECG199
TR4	2SC945(1) 2SC945L 2SC945AP	176-060-9-003 (1)	GE-212 GE-212 GE-212	(IR)2SC945 (IR)2SC945 (IR)2SC945	PTC121 * PTC121 * PTC121 *	HEPS0015 * HEPS0015 * HEPS0015 *	RE 192 RE 192 RE 192	SK3124 SK3124 SK3124	RT-107A RT-107A RT-107A	ECG199 ECG199 ECG199
TR5	2SC945(1) 2SC1730L 2SC1730(1)	176-073-9-001	GE-212 GE-17 GE-17	(IR)2SC945 TR-24 TR-24	PTC121 * PTC136 PTC136	HEPS0015 * HEPS0025 HEPS0025	RE 192 RE 9 RE 9	SK3124 SK3018 SK3018	RT-107A RT-107 RT-107	ECG199 ECG107 ECG107
TR6	2SC839H 2SC1675L	176-065-9-001 (1)	GE-61 * GE-213	(IR)2SC644 TR-33	PTC132 * PTC139 *	HEPS0015 * HEPS0025 *	RE 13 * RE 13 *	SK3018 * SK3124	RT-308 RT-308	ECG123A * ECG229 *
TR7	2SC1675(1) 2SC1675L	176-065-9-001 (1)	GE-213 GE-213	TR-33 TR-33	PTC139 * PTC139 *	HEPS0025 * HEPS0025 *	RE 13 * RE 13 *	SK3124 SK3124	RT-308 RT-308	ECG229 * ECG229 *
TR8	2SC1675(1) 2SC839H 2SC1675L	176-065-9-001 (1)	GE-213 GE-61 * GE-213	TR-33 (IR)2SC644 TR-33	PTC139 * PTC132 * PTC139 *	HEPS0025 * HEPS0015 * HEPS0025 *	RE 13 * RE 13 * RE 13 *	SK3124 SK3018 * SK3124	RT-308 RT-308 RT-308	ECG229 * ECG123A * ECG229 *
TR9	2SC1675(1) 2SC839H 2SC1675L	176-065-9-001 (1)	GE-213 GE-61 * GE-213	TR-33 (IR)2SC644 TR-33	PTC139 * PTC132 * PTC139 *	HEPS0025 * HEPS0015 * HEPS0025 *	RE 13 * RE 13 * RE 13 *	SK3124 SK3018 * SK3124	RT-308 RT-308 RT-308	ECG229 * ECG123A * ECG229 *
TR10	2SC1675(1) 2SC839H 2SC1675L	176-065-9-001 (1)	GE-213 GE-61 * GE-213	TR-33 (IR)2SC644 TR-33	PTC139 * PTC132 * PTC139 *	HEPS0025 * HEPS0015 * HEPS0025 *	RE 13 * RE 13 * RE 13 *	SK3124 SK3018 * SK3124	RT-308 RT-308 RT-308	ECG229 * ECG123A * ECG229 *
TR11	2SC1675(1) 2SC945L 2SC945AP	176-060-9-003 (1)	GE-213 GE-212 GE-212	TR-33 (IR)2SC945 (IR)2SC945	PTC139 * PTC121 * PTC121 *	HEPS0025 * HEPS0015 * HEPS0015 *	RE 13 * RE 192 RE 192	SK3124 SK3124 SK3124	RT-308 RT-107A RT-107A	ECG229 * ECG199 ECG199
TR12	2SC945(1) 2SC945L 2SC945AP	176-060-9-003 (1)	GE-212 GE-212 GE-212	(IR)2SC945 (IR)2SC945 (IR)2SC945	PTC121 * PTC121 * PTC121 *	HEPS0015 * HEPS0015 * HEPS0015 *	RE 192 RE 192 RE 192	SK3124 SK3124 SK3124	RT-107A RT-107A RT-107A	ECG199 ECG199 ECG199
TR13	2SC945(1) 2SC945L 2SC945AP	176-060-9-003 (1)	GE-212 GE-212 GE-212	(IR)2SC945 (IR)2SC945 (IR)2SC945	PTC121 * PTC121 * PTC121 *	HEPS0015 * HEPS0015 * HEPS0015 *	RE 192 RE 192 RE 192	SK3124 SK3124 SK3124	RT-107A RT-107A RT-107A	ECG199 ECG199 ECG199
TR14	2SC945(1) 2SC945L 2SC945AP	176-060-9-003 (1)	GE-212 GE-212 GE-212	(IR)2SC945 (IR)2SC945 (IR)2SC945	PTC121 * PTC121 * PTC121 *	HEPS0015 * HEPS0015 * HEPS0015 *	RE 192 RE 192 RE 192	SK3124 SK3124 SK3124	RT-107A RT-107A RT-107A	ECG199 ECG199 ECG199
TR15	2SC945(1) 2SC945L 2SC945AP	176-060-9-003 (1)	GE-212 GE-212 GE-212	(IR)2SC945 (IR)2SC945 (IR)2SC945	PTC121 * PTC121 * PTC121 *	HEPS0015 * HEPS0015 * HEPS0015 *	RE 192 RE 192 RE 192	SK3124 SK3124 SK3124	RT-107A RT-107A RT-107A	ECG199 ECG199 ECG199
TR16	2SC945(1) 2SC945L 2SC945AP	176-060-9-003 (1)	GE-212 GE-212 GE-212	(IR)2SC945 (IR)2SC945 (IR)2SC945	PTC121 * PTC121 * PTC121 *	HEPS0015 * HEPS0015 * HEPS0015 *	RE 192 RE 192 RE 192	SK3124 SK3124 SK3124	RT-107A RT-107A RT-107A	ECG199 ECG199 ECG199
TR17	2SC945(1) 2SA733P 2SA733(1)	177-020-9-001	GE-212 GE-65 GE-65	(IR)2SC945 TR-31 TR-31	PTC121 * PTC103 * PTC103 *	HEPS0015 * HEPS5022 * HEPS5022 *	RE 192 RE 26 * RE 26 *	SK3124 SK3025 * SK3025 *	RT-107A RT-303 RT-303	ECG199 ECG159 * ECG159 *
TR18	2SC945L 2SC945AP	176-060-9-003 (1)	GE-212 GE-212	(IR)2SC945 (IR)2SC945	PTC121 * PTC121 *	HEPS0015 * HEPS0015 *	RE 192 RE 192	SK3124 SK3124	RT-107A RT-107A	ECG199 ECG199
TR19	2SC945(1) 2SA733P 2SA733(1)	177-020-9-001	GE-212 GE-65 GE-65	(IR)2SC945 TR-31 TR-31	PTC121 * PTC103 * PTC103 *	HEPS0015 * HEPS5022 * HEPS5022 *	RE 192 RE 26 * RE 26 *	SK3124 SK3025 * SK3025 *	RT-107A RT-303 RT-303	ECG199 ECG159 * ECG159 *
TR20	2SC945L 2SC945AP	176-060-9-003 (1)	GE-212 GE-212	(IR)2SC945 (IR)2SC945	PTC121 * PTC121 *	HEPS0015 * HEPS0015 *	RE 192 RE 192	SK3124 SK3124	RT-107A RT-107A	ECG199 ECG199
TR21	2SC945(1) 2SC945L		GE-212 GE-212	(IR)2SC945 (IR)2SC945	PTC121 * PTC121 *	HEPS0015 * HEPS0015 *	RE 192 RE 192	SK3124 SK3124	RT-107A RT-107A	ECG199 ECG199

COBRA MODEL 138XLR

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.	MFG. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
TR22	2SC945AP	176-060-9-003 (1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945(1)		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945L		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR23	2SC945AP	176-060-9-003 (1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945(1)		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945L		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR24	2SC945(1)	176-060-9-003 (1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC1419B		GE-66	TR-76	PTC167	HEPS5027	RE 21	SK3054	RT-197	ECG152
	2SC1419C		GE-66	TR-76	PTC167	HEPS5027	RE 21	SK3054	RT-197	ECG152
TR25	2SC1419(1)	176-055-9-004 (1)	GE-66	TR-76	PTC167	HEPS5027	RE 21	SK3054	RT-197	ECG152
	2SC1419B		GE-66	TR-76	PTC167	HEPS5027	RE 21	SK3054	RT-197	ECG152
	2SC1419C		GE-66	TR-76	PTC167	HEPS5027	RE 21	SK3054	RT-197	ECG152
TR26	2SC1419(1)	176-060-9-003 (1)	GE-66	TR-76	PTC167	HEPS5027	RE 21	SK3054	RT-197	ECG152
	2SC945L		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945AP		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR27	2SC945(1)	176-065-9-001 (1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC839H		GE-61 *	TR-33	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
	2SC1675L		GE-213	TR-33	PTC139 *	HEPS0025 *	RE 13 *	SK3124	RT-308	ECG229 *
TR28	2SC1675(1)	176-065-9-001 (1)	GE-213	TR-33	PTC139 *	HEPS0025 *	RE 13 *	SK3124	RT-308	ECG229 *
	2SC839H		GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
	2SC1675L		GE-213	TR-33	PTC139 *	HEPS0025 *	RE 13 *	SK3124	RT-308	ECG229 *
TR29	2SC1675(1)	176-060-9-003 (1)	GE-213	TR-33	PTC139 *	HEPS0025 *	RE 13 *	SK3124	RT-308	ECG229 *
	2SC945AP		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945(1)		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR30	2SC1675L	176-065-9-001 (1)	GE-213	TR-33	PTC139 *	HEPS0025 *	RE 13 *	SK3124	RT-308	ECG229 *
	2SC1675(1)		GE-213	TR-33	PTC139 *	HEPS0025 *	RE 13 *	SK3124	RT-308	ECG229 *
	2SC839H		GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
TR31	2SC1675L	176-065-9-001 (1)	GE-213	TR-33	PTC139 *	HEPS0025 *	RE 13 *	SK3124	RT-308	ECG229 *
	2SC1675(1)		GE-213	TR-33	PTC139 *	HEPS0025 *	RE 13 *	SK3124	RT-308	ECG229 *
	2SC945L		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR32	2SC945AP	176-060-9-003 (1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945(1)		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945L		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR33	2SC945AP	176-060-9-003 (1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945(1)		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945L		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR34	2SC945(1)	176-065-9-001 (1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC839H		GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308	ECG123A *
	2SC1675L		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR35	2SC1675(1)	176-049-9-002 (1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC458C		GE-210 *	(IR)2SC458B	PTC121 *	HEPS0009 *	RE 13 *	SK3124	RT-187	ECG123A *
	2SC458(1)		GE-210 *	(IR)2SC458B	PTC121 *	HEPS0009 *	RE 13 *	SK3124	RT-187	ECG123A *
TR36	2SC1419B	176-055-9-004 (1)	GE-66	TR-76	PTC167	HEPS5027	RE 21	SK3054	RT-197	ECG152
	2SC1419C		GE-66	TR-76	PTC167	HEPS5027	RE 21	SK3054	RT-197	ECG152
	2SC1419(1)		GE-66	TR-76	PTC167	HEPS5027	RE 21	SK3054	RT-197	ECG152
TR37	2SA719Q	177-024-9-001 (1)	GE-21 *	TR-28 *	PTC103 *	HEPS0012 *	RE 26 *	SK3114	RT-305	ECG290
	2SA719P		GE-21 *	TR-28 *	PTC103 *	HEPS0012 *	RE 26 *	SK3114	RT-305	ECG290
	2SA719(1)		GE-21 *	TR-28 *	PTC103 *	HEPS0012 *	RE 26 *	SK3114	RT-305	ECG290
TR38	2SC1675L	176-065-9-001 (1)	GE-213	TR-33	PTC139 *	HEPS0025 *	RE 13	SK3124	RT-308	ECG229 *
	2SC1675(1)		GE-213	TR-33	PTC139 *	HEPS0025 *	RE 13	SK3124	RT-308	ECG229 *
	2SC1675L		GE-213	TR-33	PTC139 *	HEPS0025 *	RE 13	SK3124	RT-308	ECG229 *
TR39	2SC1675(1)	176-065-9-001 (1)	GE-213	TR-33	PTC139 *	HEPS0025 *	RE 13	SK3124	RT-308	ECG229 *
	2SC1675L		GE-213	TR-33	PTC139 *	HEPS0025 *	RE 13	SK3124	RT-308	ECG229 *
	2SC1675(1)		GE-213	TR-33	PTC139 *	HEPS0025 *	RE 13	SK3124	RT-308	ECG229 *
TR40	2SC1675L	176-065-9-001 (1)	GE-213	TR-33	PTC139 *	HEPS0025 *	RE 13	SK3124	RT-308	ECG229 *
	2SC1675(1)		GE-213	TR-33	PTC139 *	HEPS0025 *	RE 13	SK3124	RT-308	ECG229 *
	2SC945L		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR41	2SC945AP	176-060-9-003 (1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945(1)		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945L		GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR42	2SC1307-1	176-073-9-002 (11)	GE-216	WEP1307	PTC186		RE 201	SK3197	RT-158	ECG236
	2SC1307(1)		GE-216	WEP1307	PTC186		RE 201	SK3197	RT-158	ECG236
	2SC1306		GE-215	WEP1306	PTC186		RE 203	SK3197	RT-146	ECG235
TR43	2SC1307(1)	172-024-9-002 (12)	GE-215	WEP1306	PTC186		RE 203	SK3197	RT-146	ECG235
	2SC1306		GE-215	WEP1306	PTC186		RE 203	SK3197	RT-146	ECG235
	2SC1973	176-073-9-003 (12)	GE-335	WEP922						ECG315

* Lead configuration may vary from original.

(1) Used in some versions.

(11) Rating 25 WATTS @ 8 AMPS

(12) Rating 12 WATTS @ 3 AMPS

PARTS LIST AND DESCRIPTION (CONTINUED)

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

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFGR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C14	33 10V	022-122-9-005	PC30-25	VTT33B10	QV1-61	EV-1125
C35	1 50V	022-152-9-004	PC1-50	VTT1A50	QV1-11	EV-1615
C39	.1 16V	033-025-9-001		TDC104M050EL	QDT1-2	SD50-R109
C42	10 16V	022-120-9-001	PC10-25	VTT10B25	QV1-41	EV-1222
C43	10 16V	022-120-9-001	PC10-25	VTT10B25	QV1-41	EV-1222
C44	4.7 25V	022-122-9-000	PC5-50	VTT4R7B50	QV1-27	EV-1319
C47	47 10V	022-120-9-002	PC50-16	VTT47D16	QV1-73	EV-1226
C49	47 10V	022-120-9-002	PC50-16	VTT47D16	QV1-73	EV-1226
C50	47 10V	022-120-9-022	PC50-16	VTT47D16	QV1-73	EV-1226
C52	.1 16V	033-025-9-001		TDC104M050EL	QDT1-2	SD50-R109
C55	2.2 25V	022-122-9-002	PC2-100	VTT2R2A50	QV1-19	EV-1517
C58	1 50V	022-152-9-004	PC1-50	VTT1A50	QV1-11	EV-1615
C59	47 10V	022-120-9-002	PC50-16	VTT47D16	QV1-73	EV-1226
C60	.1 16V	033-025-9-001		TDC104M050EL	QDT1-2	SD50-R109
C66	47 10V	022-120-9-002	PC50-16	VTT47D16	QV1-73	EV-1226
C67	4.7 25V	022-122-9-000	PC5-50	VTT4R7B50	QV1-27	EV-1319
C68	4.7 25V	022-122-9-000	PC5-50	VTT4R7B50	QV1-27	EV-1319
C69	10 16V	022-120-9-001	PC10-25	VTT10B25	QV1-41	EV-1222
C76	47 10V	022-120-9-002	PC50-16	VTT47D16	QV1-73	EV-1226
C77	.47 50V	022-152-9-003	PC1-50	VTT47A63	QV1-3	EV-1610
C78	.47 50V	022-152-9-003	PC1-50	VTT47A63	QV1-3	EV-1610
C79	.47 50V	022-152-9-003	PC1-50	VTT47A63	QV1-3	EV-1610
C81	220 16V	022-122-9-008	PC250-25	VTT220H16	QV1-117	EV-1240
C84	1 50V	022-152-9-004	PC1-50	VTT1A50	QV1-11	EV-1615
C87	10 16V	022-120-9-001	PC10-25	VTT10B25	QV1-41	EV-1222
C88	4.7 25V	022-122-9-000	PC5-50	VTT4R7B50	QV1-27	EV-1319
C89	33 16V	022-132-9-005	PC30-25	VTT33D25	QV1-63	EV-1325
C92	33 16V	022-132-9-005	PC30-25	VTT33D25	QV1-63	EV-1325
C94	1000 16V	022-152-9-002	PC1000-16	VTT1000L16	QV1-183	EV-1260
C95	470 16V	022-099-9-006	PC500-16	VTT470K16	QV1-151	EV-1250
C97	4.7 25V	022-122-9-000	PC5-50	VTT4R7B50	QV1-27	EV-1319
C99	10 16V	022-120-9-001	PC10-25	VTT10B25	QV1-41	EV-1222
C101	100 10V	022-122-9-007	PC100-10	VTT100E10	QV1-93	EV-1130
C102	220 10V	022-122-9-009	PC250-10	VTT220F10	QV1-115	EV-1140
C103	470 10V	002-152-9-001	PC500-16	VTT470K16	QV1-149	EV-1150
C104	330 10V	022-122-9-011	WBR300-35	VTT330G10	QV1-131	EV-1145
C107	1000 16V	022-152-9-002	PC1000-16	VTT1000L16	QV1-183	EV-1260
C110	.1 16V	033-025-9-001		TDC104M050EL	QDT1-2	SD50-R109
C120	10 16V	022-120-9-001	PC10-25	VTT10B25	QV1-41	EV-1222
C126	1 50V	022-152-9-004	PC1-50	VTT1A50	QV1-11	EV-1615
C135	220 10V	022-122-9-009	PC250-10	VTT220F10	QV1-115	EV-1140
C140	10 6.3V	027-021-9-002		TDC106M025FL	QDT1-64	SD25-109
C141	10 6.3V	027-021-9-002		TDC106M025FL	QDT1-64	SD25-109
C158	1 50V	022-152-9-004	PC1-50	VTT1A50	QV1-11	EV-1615
C163	10 16V	022-120-9-001	PC10-25	VTT10B25	QV1-41	EV-1222
C179	2.2 25V	027-021-9-001		TDC225M050FL	QDT1-37	SD50-2R29
C181	47 10V	022-120-9-002	PC50-16	VTT47D16	QV1-73	EV-1226
C199	1 50V	022-152-9-004	PC1-50	VTT1A50	QV1-11	EV-1615
C211	2.2 25V	022-122-9-002	PC2-100	VTT2R2A50	QV1-19	EV-1517
C218	4.7 25V	022-122-9-000	PC5-50	VTT4R7B50	QV1-27	EV-1319
C224	1 50V	022-152-9-004	PC1-50	VTT1A50	QV1-11	EV-1615

COBRA MODEL 138XLR

CAPACITORS

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C1	39 NPO				CN0439		10TCC-Q39
C2	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C4	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C5	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C6	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C7	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C8	.001		DD-101	GP100	GP310		10TS-T10
C9	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C10	.0047		DD-472	GP4700	GP247		5GA-D47
C11	.0047		DD-472	GP4700	GP247		5GA-D47
C12	.0047		DD-472	GP4700	GP247		5GA-D47
C13	.0047		DD-472	GP4700	GP247		5GA-D47
C15	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C16	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C17	.01			WMF1S1	EWF1A110	QF1-91	1PB-S10
C18	.039			DPMS6S39	PVC6139		6PS-S39
C19	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C20	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C21	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C22	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C23	.022			DPMS2S22	EWF1A122	QF1-127	1PB-S22

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
C24	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C25	.039			DPMS6S39	PVC6139		6PS-S39
C26	.039			DPMS6S39	PVC6139		6PS-S39
C27	.039			DPMS6S39	PVC6139		6PS-S39
C28	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C29	.039			DPMS6S39	PVC6139		6PS-S39
C30	.039			DPMS6S39	PVC6139		6PS-S39
C31	.039			DPMS6S39	PVC6139		6PS-S39
C32	5 NPO		DTZ-4R7	NPO4P7	CN0547		10TCC-V47
C33	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C34	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C36	5 NPO		DTZ-4R7	NPO4P7	CN0547		10TCC-V47
C37	10 NPO		DTZ-10	NPO10	CN0410		10TCC-Q10
C38	330 N750		DTN-330	N330	CN7333		10TCU-T33
C40	.039			DPMS6S39	PVC6139		6PS-S39
C41	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C45	47 NPO		DTZ-47	NPO47	CN0447		10TCC-Q47
C46	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C51	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C53	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C54	33 NPO		DTZ-33	NPO33	CN0433		10TCC-Q33
C57	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C61	.047			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C62	.047			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C63	7		DTZ-6R8	NPO6P8	CN0568		10TCC-V68
C64	.039			DPMS6S39	PVC6139		6PS-S39
C71	.068			WMF1S68	EWFA1A168	QF1-195	1PB-S68
C72	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C73	.1			DPMS2P1	EWFA1A010	QF1-215	1PB-P10
C74	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C75	.1			DPMS2P1	EWFA1A010	QF1-215	1PB-P10
C80	.01			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C82	.047			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C83	.01			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C85	.039			DPMS6S39	PVC6139		6PS-S39
C86	.022			DPMS2S22	EWFA1A122	QF1-127	1PB-S22
C90	22 NPO		DTZ-22	NPO22	CN0422		10TCC-Q22
C91	.1			DPMS2P1	EWFA1A010	QF1-215	1PB-P10
C93	.047	(1)	DTZ-68	DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C96	.1			NPO68	CN0468		10TCC-Q68
	.047			DPMS2P1	EWFA1A010	QF1-215	1PB-P10
C100	.022		DC-203	DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C105	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C106	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C109	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C111	18 NPO				CN0418		10TCC-Q18
C112	18 NPO				CN0418		10TCC-Q18
C113	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C114	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C115	100 NPO		DTZ-100	NPO100	CN0310		10TCC-T10
C116	10 NPO		DTZ-10	NPO10	CN0410		10TCC-Q10
C117	1 NPO				CN0510		10TCC-V10
C118	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C119	.01	(1)	DC-103	MGP01	TA110	QC2-141	TG-S10
C121	.039			DPMS6S39	PVC6139		6PS-S39
C122	47 NPO		DTZ-47	NPO47	CN0447		10TCC-Q47
C123	47 NPO		DTZ-47	NPO47	CN0447		10TCC-Q47
C124	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C125	270		DD-271	GP270	GP327		10TS-T27
C127	470		DD-471	GP470	GP347		10TS-T47
C128	220		DD-221		GP322		10TS-T22
C129	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C130	10 NPO		DTZ-10	NPO10	CN0410		10TCC-Q10
C131	.01			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C133	.1			DPMS2P1	EWFA1A010	QF1-215	1PB-P10
C134	.1			DPMS2P1	EWFA1A010	QF1-215	1PB-P10
C136	470		DD-471	GP470	GP347		10TS-T47
C137	220		DD-221		GP322		10TS-T22
C138	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C139	10 NPO		DTZ-10	NPO10	CN0410		10TCC-Q10
C142	68 NPO		DTZ-68	NPO68	CN0468		10TCC-Q68
C143	7 NPO		DTZ-6R8	NPO6P8	CN0568		10TCC-V68
C146	.022		DC-203	MGP02	TA120	QC2-157	TG-S20
C147	470		DD-471	GP470	GP347		10TS-T47
C148	220		DD-221		GP322		10TS-T22
C149	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C150	10 NPO		DTZ-10	NPO10	CN0410		10TCC-Q10
C151	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C152	.01		DC-103	MGP01	TA110	QC2-141	TG-S10
C153	.047			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C154	10 NPO		DTZ-10	NPO10	CN0410		10TCC-Q10
C155	1 NPO				CN0510		10TCC-V10
C156	.022		DC-103	MGP01	TA110	QC2-141	TG-S10

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
C157	.039	(1)	DD-472	DPMS6S39	PVC6139		6PS-S39
C159	.0047		DD-472	GP4700	GP247		5GA-D47
C160	.0047			GP4700	GP247		5GA-D47
C163	39 NPO				CN0439		10TCC-Q39
C164	150 NPO	(1)	DTZ-150		CN0315		10TCC-T15
	68		DTZ-68	NP068	CN0468		10TCC-Q68
C165	220 NPO		DTZ-220				10TCC-T22
C166	.0047		DD-472	GP4700	GP247		5GA-D47
C167	390 N750	020-175-9-007					
C168	.5 NPO						
C169	.047						
	.1						
C170	470	(1)	DD-471	DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C172	.0047		DD-472	DPMS2P1	EWFA1A010	QF1-215	1PB-P10
C173	180 NPO		DTZ-180	GP470	GP347		10TS-T47
C174	56 NPO			GP4700	GP247		5GA-D47
C175	.1	(1)					10TCC-T18
	.047			DPMS2P1	CN0456	QF1-215	10TCC-Q56
C176	56 NPO			DPMS2S47	EWFA1A010	QF1-171	1PB-P10
C177	.0047				EWFA1A147		1PB-S47
C178	.0047	(1)	DD-472		CN0456		10TCC-Q56
C183	.0047		DD-472	GP4700	GP247		5GA-D47
C184	120 NPO		DTZ-120	GP4700	GP247		5GA-D47
C185	.0047		DD-472	GP4700	CN0312		10TCC-T12
C186	.0047	(1)	DD-472	GP4700	GP247		5GA-D47
C187	.0047		DD-472	GP4700	GP247		5GA-D47
C188	.0047		DD-472	GP4700	GP247		5GA-D47
C189	.0047			WMF1D47	EWFA1A247	QF1-57	1PB-D47
C190	.01	(1)	DC-103	MGPO1	TA110	QF1-57	1PB-D47
C191	.1		DC-103	DPMS2P1	EWFA1A010	QC2-141	TG-S10
C192	.01		DC-103	MGPO1	TA110	QF1-215	1PB-P10
C193	.022		DC-203	MGPO2	TA120	QC2-141	TG-S10
C194	.039	(1)	DC-203	DPMS6S39	TA120	QC2-157	TG-S20
C195	.01		DC-103	MGPO1	PVC6139		6PS-S39
C196	.022		DC-203	MGPO2	TA110	QC2-141	TG-S10
C197	.022		DC-203	MGPO2	TA120	QC2-157	TG-S20
C198	.039	(1)		DPMS6S39	TA120	QC2-157	TG-S20
C200	.01			WMF1S1	PVC6139		6PS-S39
C201	.01			WMF1S1	EWFA1A110	QF1-91	1PB-S10
C202	.022		DC-203	MGPO2	EWFA1A110	QF1-91	1PB-S10
C203	.022	(1)	DC-203	MGPO2	TA120	QC2-157	TG-S20
C204	.01		DC-103	MGPO1	TA120	QC2-157	TG-S20
C205	.01		DC-103	MGPO1	TA110	QC2-141	TG-S10
C206	.022		DC-203	MGPO2	TA110	QC2-141	TG-S10
C207	.01	(1)	DC-103	MGPO1	TA120	QC2-157	TG-S20
C208	.01		DC-103	MGPO1	TA110	QC2-141	TG-S10
C209	.01		DC-103	MGPO1	TA110	QC2-141	TG-S10
C210	.01		DC-103	MGPO1	TA110	QC2-141	TG-S10
C213	.1	(1)	DC-104	WMF1S1	EWFA1A110	QF1-91	1PB-S10
C214	.01		DC-103	MGPO1	TA010	QC2-233	TG-P10
C215	.022		DC-203	MGPO2	TA110	QC2-141	TG-S10
C216	.022		DC-203	MGPO2	TA120	QC2-157	TG-S20
C217	.022	(1)	DC-203	MGPO2	TA120	QC2-157	TG-S20
C219	.022		DC-203	MGPO2	TA120	QC2-157	TG-S20
C220	.022		DC-203	MGPO2	TA120	QC2-157	TG-S20
C221	.022		DC-203	MGPO2	TA120	QC2-157	TG-S20
C222	.1	(1)	DC-104	MGPO1	TA120	QC2-157	TG-S20
C223	.022		DC-203	MGPO2	TA010	QC2-233	TG-P10
C227	.022		DC-203	MGPO2	TA120	QC2-157	TG-S20
C228	.022		DC-203	MGPO2	TA120	QC2-157	TG-S20
C231	.047	(1)	DC-203	MGPO2	TA120	QC2-157	TG-S20
C232	180 N220			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C233	.1				*		10TCR-T18
C240	.01		DC-104	MGPO1	TA010	QC2-233	TG-P10
C241	.039	(1)		WMF1S1	EWFA1A110	QF1-91	1PB-S10
C242	47 NPO		DTZ-47	DPMS6S39	PVC6139		6PS-S39
C297	.047			NP047	CN0447		10TCC-Q47
C298	.01			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C299	33 NPO	(1)	DTZ-33	WMF1S1	EWFA1A110	QF1-91	1PB-S10
C401	.047			NP033	CN0433		10TCC-Q33
C405	.01			DPMS2S47	EWFA1A147	QF1-171	1PB-S47
C406	.01		DC-103	MGPO1	TA110	QC2-141	TG-S10
C408	.01	(1)	DC-103	MGPO1	TA110	QC2-141	TG-S10
C415	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C416	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
CC1	.01	(1)					
CC2	.01						
CT1	20						
CT2	20						

COBRA MODEL 138XLR

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
CT3	20	028-013-9-000					
CT4	20	028-013-9-000					
CT5	20	028-013-9-000					
CT6	20	028-013-9-000					
CT7	20	028-013-9-000					

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

(1) Used in some versions.

(2) Consists of four (4) .01 capacitors.

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.
VR1	S Meter	25K	008-307-9-003				
VR2	SSB AGC	100K	008-307-9-005				
VR3	Squelch Range	100K	008-307-9-005				
VR4	Balance	50K	008-307-9-004				
VR5	AM AGC	100K	008-307-9-005				
VR7	AM AMC	5000	008-307-9-001				
VR8	AM Reg	10K	008-307-9-002				
VR9	TX Frequency	5000	008-307-9-001				
VR12	RF Meter	100K	008-307-9-005				
VR15	Bias	200					
	Bias	300	008-307-9-006				
			(6)				
VR16	Bias	200					
	Bias	300	008-307-9-006				
			(6)				
VR401	Voice Lock	20K	008-283-9-002				
			RV-049 (5)				
VR402	RF Gain	100K	008-307-9-008				
			RV-048 (5)				
VR404	Squelch	100K	008-307-9-008				
			RV-048 (5)				
VR405	Volume/Switch	10K	008-307-9-007				
VR406	Dimmer	20K	008-307-9-009				
VR407	Tone	20K	008-307-9-009				
VR408	Dynamike	20K	008-283-9-002				
			RV-049 (5)				

(5) Number on unit.

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

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.
R107	10 5W	5W-SQ10	013-014-9-001	RR1	4700	(1)	527-075-9-001

(1) Consists of 8 4700 ohm resistors.

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	Blanker Input (23.5MHz)	060-023-9-001	LA-029		(1) Used in some versions.
L2	Noise Blanker (23.3MHz)	060-023-9-003	LA-155		
L3	Rec Antenna (27MHz)	060-023-9-002	LA-152		
L4	Rec RF (27MHz)	060-023-9-004	LA-156		
L5	IF (7.8MHz)	046-018-9-002	LA-179		
L7	IF (7.8MHz)	060-018-9-001	LA-038		
L8	IF (7.8MHz)	060-018-9-003	LA-096		
L9	RF Choke (470uH)	041-086-9-002			
L10	RF Choke (56uH)	041-086-9-003			
L11	RF Choke (68uH)	041-086-9-004			
L12	RF Choke (470uH)	041-086-9-002			
L13	RF Choke (470uH)	041-086-9-002			
L14	RF Choke (470uH)	041-086-9-002			
L16	VCO	046-018-9-001	LA-160		
L17	VCO Adj.	046-018-9-004	LA-191		
L18	RF Choke (470uH)	041-086-9-002			
L19	RF Choke (100uH)	041-086-9-001			
L20	RF Choke (470uH)	041-086-9-002			
L21	RF Choke (470uH)	041-086-9-002			
L22	RF Choke (470uH)	041-086-9-002			
L23	RF Choke (470uH)	041-086-9-002			
L24	Tripler IF (33MHz)	046-018-9-003	LA-090		
L25	RF Choke (470uH)	041-086-9-002			
L26	RF Choke	(1)			
L27	TVI Trap	046-018-9-006 (1)	LC-018		
L28	Pi Filter	046-018-9-012	LE-051		
L29	Pi Filter	046-018-9-012	LE-051		
L30	Final (27MHz)	046-018-9-007	LC-019		
L31	RF Choke	046-018-9-009	LD-018		
L32	Xmit Driver (27MHz)	046-018-9-006	LC-018		
L33	RF Choke	046-018-9-009	LD-018		
L34	RF Choke	046-018-9-009	LD-018		
L35	Xmit Amp	046-018-9-010	LD-057		
L36	Xmit Buffer	046-018-9-010	LD-057		
L37	Xmit Mixer (27MHz)	060-023-9-005	LA-157		
L38	RF Choke (470uH)	041-086-9-002			
L39	Xmit Mixer (27MHz)	060-018-9-001	LA-038		
L40	RF Choke	046-018-9-008	LD-013		
L43	RF Choke (1uH)	041-086-9-005	LZ-002		
L44	RF Choke (1uH)	041-086-9-005	LZ-002		
L45	RF Choke (470uH)	041-086-9-002			
L401	RF Choke (10uH)	046-018-9-005	LD-046		
L402	RF Choke (10uH)	046-018-9-005	LD-046		
L403	RF Choke (10uH)	046-018-9-005	LD-046		

COBRA MODEL 138XLR

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	3.92	8	061-032-9-001			

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP401	3 1/2" PM 8 Ohms	580-024-9-001	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
F406	3 Amp	191-251-3-003	426-020-9-001	AGC3	HDJ	312003		

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
MIKE	562-017-9-001	18-032	18-034	18-010	18-092	2	1	3	NC	NC	4

CRYSTALS

ITEM No.	CRYSTAL FREQUENCY IN MHz	MFGR. PART No.	CTS KNIGHTS PART No.	CHANNEL	ITEM No.	CRYSTAL FREQUENCY IN MHz	MFGR. PART No.	CTS KNIGHTS PART No.	CHANNEL
X1	7.8025	133-015-9-001	CC90M7.8025	Carrier Osc.	X4	11.2842	133-013-9-003	CB200M11.2842	LSB Osc.
X2	7.7975	133-013-9-002	CC90M7.7975	Carrier Osc.	X5	10.240	133-013-9-001	None	Ref. Osc.
X3	11.2858	133-013-9-005	CB200M11.2858	USB Osc.	X6	11.2850	133-013-9-004	CB200M11.2850	AM Osc.

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
D401	LED	158-014-9-001	Channel Indicator Xmit Indicator 7.8MHz
D402	LED	151-064-9-003	
FT1	Ceramic Filter	143-004-9-000	
L41	Ferrite Bead	763-080-9-003	
L42	Ferrite Bead	763-080-9-003	RF/S Xmit/Rec ANL/NB AM/USB/LSB PA/CB Power (On Volume) Channel Selector Main (PC-196AA) Channel Selector Switch (PC-204AA)
L407	Ferrite Bead	046-018-9-011	
M401	Meter	320-084-9-001	
RL1	Relay	441-016-9-001	
S401	Switch	084-057-9-001	
S402	Switch	083-222-9-001	
S405	Switch	084-056-9-001	
S406	Switch		
S408	Switch		
	Printed Circuit Board	302-230-9-001	
	Flexible Board	427-081-9-001	

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

ITEM	PART No.	ITEM	PART No.
Cabinet, Top	272-124-9-001	Knob, Control	751-095-9-002
Cabinet, Bottom	272-125-9-001	Knob, Tone or Dimmer	271-059-9-001
Mike Hanger	741-074-9-001	Escutcheon	255-154-9-001
Knob, Channel	751-151-9-001	Mounting Bracket	251-228-9-001