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 3-5819B

MANUFACTURER'S SPECIFICATIONS

GENERAL

CHANNELS: 40 channels - PLL digital logic channel synthesizer circuitry
POWER REQUIREMENT: Consumption - 20 watts. Current drain - 1.5 amps (100% mod.) at 13.8 Volt DC
POWER SUPPLY: 12 Volts DC normal (Positive or Negative ground)
SEMICONDUCTORS: Integrated circuits, transistors, diodes, crystal and ceramic filters.
OPERATING TEMPERATURE RANGE: −30 °C to +50 °C.
MICROPHONE: Dynamic with push-to-talk switch, 500 ohms.
BUILT-IN SPEAKER: 8 ohms impedance, 92mm (3⅝ inches) in size.
CONTROLS/FEATURES: Volume with ON-OFF switch, Squelch, R.F. Gain control, Mic Power control, Channel selector switch, PA/CB switch, Delta tune switch, Noise blanker, ANL switch, LED type channel readout, MOD (modulation) light, Antenna warning light, S-RF meter (receive-transmit), plus SWR calibration switch, Tone switch.
CONNECTORS: External speaker jack 3.5mm (8 ohms impedance), SO239 type antenna receptacle to match PL-259 coax plug (50 ohms impedance), PA Speaker Jack 3.5mm (8 ohms impedance), 12-Volt DC power Jack that allows easy disconnect, MIC Jack.
DIMENSIONS: 7⅛" W. 2⅝" H. 8½" D.

RECEIVER

SENSITIVITY: Better than 0.5uv for 500 MW audio output
FREQUENCY COVERAGE: 26.965 to 27.405 MHz.
ADJACENT CHANNEL SELECTIVITY: Better than 55db.
AUDIO OUTPUT POWER: Better than 3.0 watts at 10% THD.
AGC: Minimum 70 db
IF FREQUENCIES: 455 KHz, 10.695 MHz.
SQUELCH RANGE (SENSITIVITY): 0.5 to 500 uv.
IMAGE REJECTION RATIO: Better than 60db.
DELTA TUNE RANGE: Approximately ± 1 KHz.

TRANSMITTER

FREQUENCY RESPONSE: 400 Hz to 2.5 KHz
FREQUENCY COVERAGE: 26.965 to 27.405 MHz
TRANSMIT POWER OUTPUT: 4 watts maximum as limited by FCC regulations at 13.8 volts DC.
MODULATION: Capable of 100%; factory pre-set limit 85-100%.
FREQUENCY TOLERANCE: Better than .003% MAX.
TRANSMITTED HARMONIC AND SPURIOUS SUPPRESSION: Minimum 62 db below carrier.

Courtesy of the Manufacturer

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

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 T5,T11	9440
T2,T6 thru T9	5000,5009,8276,8728,9089
L5,L9,L10	9300,9302,9304
CT1,CT2	5000,8276,9089

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of frequency counter to TP1 (Q8 base).	Ch. 19 Delta Tune 0	CT1	Adjust for 10.240MHz ±50Hz.
Input of frequency counter to TP1 (Q8 base).	Ch. 19 Delta Tune +		Check for 10.24040MHz to 10.240750MHz.
Input of frequency counter to TP1 (Q8 base).	Ch. 19 Delta Tune -		Check for 10.239750MHz to 10.239590MHz.
Input of DC meter to TP8.	Ch. 1	T1	Adjust for 2.00 volts ±.1 volt. Check for 3.30 volts to 4.60 volts on channel 40.
Input of DC meter to TP8.	Ch. 1 XMT	CT2	Adjust for 2.00 volts ±.1 volt. Check for 3.30 volts to 4.60 volts on channel 40.
Input of frequency counter to TP2 (IC1 Pin 8).	Ch. 1 Delta Tune 0		Check for 6.030MHz. Check all channels. (See Truth Chart for correct frequencies).
Input of frequency counter to TP2 (IC1 Pin 8).	Ch. 1, XMT		Check for 3.2425MHz. Check all channels. (See Truth Chart for correct frequencies).
Input of frequency counter to TP3 (IC1 on PLL Board Pin 3).	Ch. 1 Delta Tune 0		Check for 16.270MHz. Check all channels. (See Truth Chart for correct frequencies).
Input of frequency counter to TP3 (IC1 on PLL Board Pin 3).	Ch. 1, XMT		Check for 13.4825MHz. Check all channels. (See Truth Chart for correct frequencies).
Input of oscilloscope to TP4 (T2 secondary).	Ch. 19, XMT	T2	Adjust for maximum RF (340mV p-p typical). (See Figure 2).
Input of frequency counter to TP4 (T2 secondary).	Ch. 1, XMT		Check for 26.965MHz. Check all channels. (See Truth Chart for correct frequencies.) If necessary readjust CT1 for correct frequency.

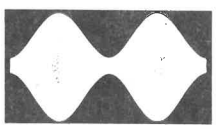


FIG. 1

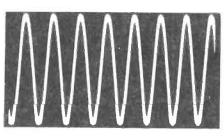


FIG. 2

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:
RF Gain Maximum, Delta Tune 0, Squelch MINIMUM, NB + ANL Off, Tone Hi.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP1 (Q8 base). 455kHz,1000Hz @ 30% modulation.	Ch. 19	T9,T8,T7	Adjust for maximum output.
Output of signal generator thru .01uF to antenna input. 27.185MHz,1000Hz @ 30% modulation.	Ch. 19	T6,T5,T11, T4,T3	Adjust for maximum output. Readjust T7, T8 and T9 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 other wise noted:
RF Gain Maximum, Delta Tune 0, Squelch MINIMUM, NB + ANL Off, Tone Hi.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna input. 27.185MHz,1000Hz @ 30% modulation. Output 500uV.	Ch. 19 Squelch Maximum	RV1	SQUELCH RANGE Adjust so that squelch just breaks.
Output of signal generator thru .01uF to antenna input. 27.185MHz,1000Hz @ 30% modulation. Output 100uV.	Ch. 19	RV3	S METER Adjust for 9 on S scale of meter.

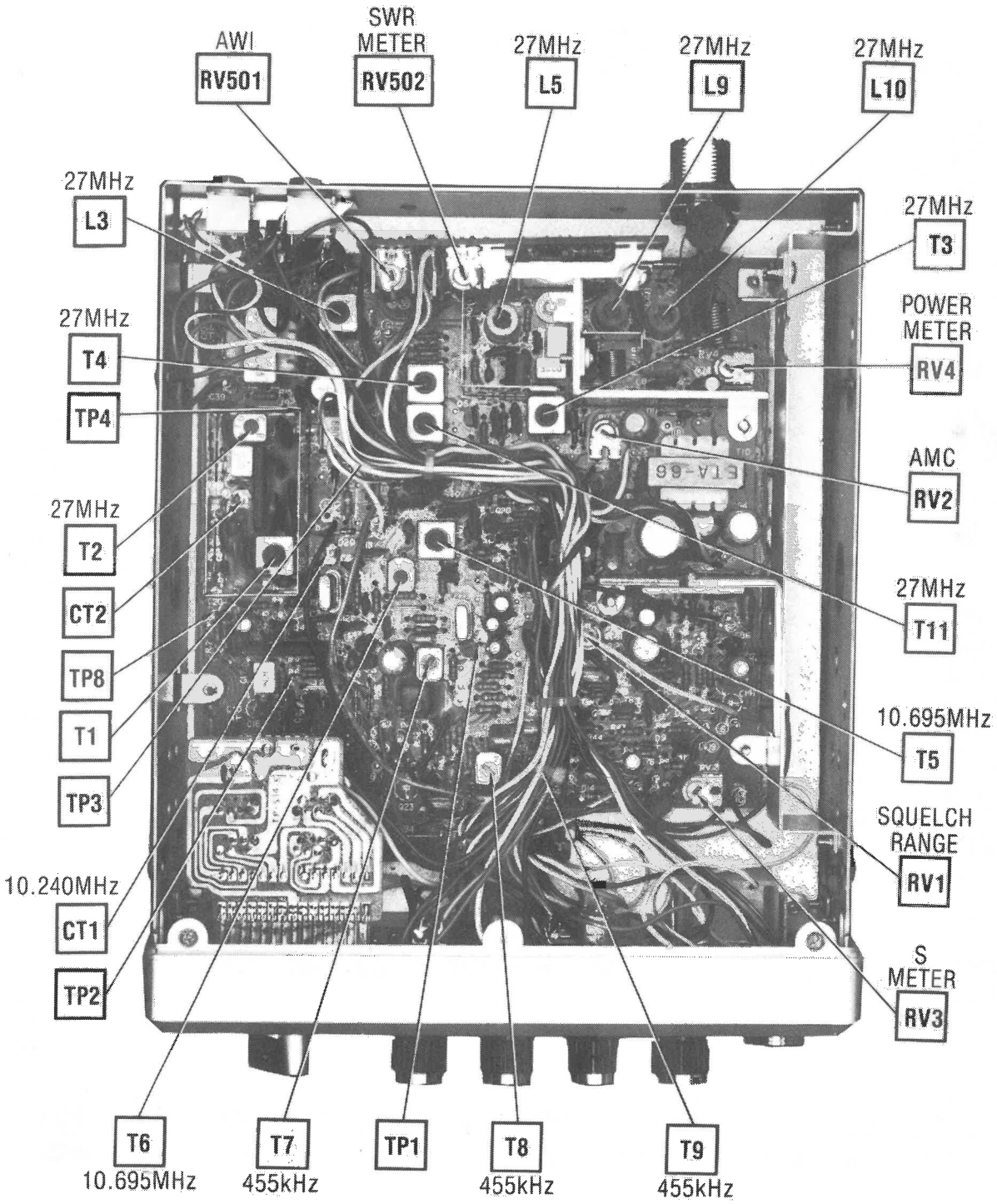
TRANSMITTER ALIGNMENT

Connect a 50-ohm, 25-watt dummy load to antenna connector.
NOTE: Be sure to check transmit frequency and power on all active channels after alignment of transmitter.
See page 6 for channel frequencies.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of RF wattmeter to antenna input.	Ch. 19	L3	Adjust for maximum RF output.
Input of RF wattmeter to antenna input.	Ch. 19	L5,L9,L10	Adjust for 4.0 watts RF output maximum.
Input of oscilloscope or modulation meter to antenna input. Inject a 1000Hz, 20mV audio signal at mic input.	Ch. 19 Mic Power Maximum	RV2	AMC Adjust for 90% modulation maximum. (See Figure 1).
Input of RF wattmeter to antenna input.	Ch. 19 Mic Power MINIMUM	RV4	POWER METER At 4.0 watts RF output adjust so that pointer is at the leading edge of the wide red area on POWER scale of meter.
Connect a 150 ohm non-inductive load to antenna input.	Ch. 19	RV501	AWI Adjust so that indicator just begins to illuminate.
Connect a 150 ohm non-inductive load to antenna input.	Ch. 19 Meter CAL	RV502	SWR METER Set SWR CAL Control so that meter pointer rests at CAL mark on SWR scale of meter. Switch METER to SWR and adjust RV502 for 3 on SWR scale of meter.

TRUTH CHART

CHANNEL	1 = 6.20 Volts 0 = 0 Volts CHANNEL INPUT CODES IC1 PINS								Rec DIVIDER INPUT IN MHz AT TP2	XMT DIVIDER INPUT IN MHz AT TP2	Rec VCO OUTPUT IN MHz AT TP3	XMT VCO OUTPUT IN MHz AT TP3	XMT SYNTH IN MHz AT TP4
	9	10	11	12	13	14	15						
1	1	0	0	1	0	1	0		6.030	3.2425	16.270	13.4825	26.965
2	1	0	0	1	0	0	1		6.040	3.2475	16.280	13.4875	26.975
3	1	0	0	1	0	0	0		6.050	3.2525	16.290	13.4925	26.985
4	1	0	0	0	1	1	0		6.070	3.2625	16.310	13.5025	27.005
5	1	0	0	0	1	0	1		6.080	3.2675	16.320	13.5075	27.015
6	1	0	0	0	1	0	0		6.090	3.2725	16.330	13.5125	27.025
7	1	0	0	0	0	1	1		6.100	3.2775	16.340	13.5175	27.035
8	1	0	0	0	0	0	1		6.120	3.2875	16.360	13.5275	27.055
9	1	0	0	0	0	0	0		6.130	3.2925	16.370	13.5325	27.065
10	0	1	1	1	1	1	1		6.140	3.2975	16.380	13.5375	27.075
11	0	1	1	1	1	1	0		6.150	3.3025	16.390	13.5425	27.085
12	0	1	1	1	1	0	0		6.170	3.3125	16.410	13.5525	27.105
13	0	1	1	1	0	1	1		6.180	3.3175	16.420	13.5575	27.115
14	0	1	1	1	0	1	0		6.190	3.3225	16.430	13.5625	27.125
15	0	1	1	1	0	0	1		6.200	3.3275	16.440	13.5675	27.135
16	0	1	1	0	1	1	1		6.220	3.3375	16.460	13.5775	27.155
17	0	1	1	0	1	1	0		6.230	3.3425	16.470	13.5825	27.165
18	0	1	1	0	1	0	1		6.240	3.3475	16.480	13.5875	27.175
19	0	1	1	0	1	0	0		6.250	3.3525	16.490	13.5925	27.185
20	0	1	1	0	0	1	0		6.270	3.3625	16.510	13.6025	27.205
21	0	1	1	0	0	0	1		6.280	3.3675	16.520	13.6075	27.215
22	0	1	1	0	0	0	0		6.290	3.3725	16.530	13.6125	27.225
23	0	1	0	1	1	0	1		6.320	3.3875	16.560	13.6275	27.255
24	0	1	0	1	1	1	1		6.300	3.3775	16.540	13.6175	27.235
25	0	1	0	1	1	1	0		6.310	3.3825	16.550	13.6225	27.245
26	0	1	0	1	1	0	0		6.330	3.3925	16.570	13.6325	27.265
27	0	1	0	1	0	1	1		6.340	3.3975	16.580	13.6375	27.275
28	0	1	0	1	0	1	0		6.350	3.4025	16.590	13.6425	27.285
29	0	1	0	1	0	0	1		6.360	3.4075	16.600	13.6475	27.295
30	0	1	0	1	0	0	0		6.370	3.4125	16.610	13.6525	27.305
31	0	1	0	0	1	1	1		6.380	3.4175	16.620	13.6575	27.315
32	0	1	0	0	1	1	0		6.390	3.4225	16.630	13.6625	27.325
33	0	1	0	0	1	0	1		6.400	3.4275	16.640	13.6675	27.335
34	0	1	0	0	1	0	0		6.410	3.4325	16.650	13.6725	27.345
35	0	1	0	0	0	1	1		6.420	3.4375	16.660	13.6775	27.355
36	0	1	0	0	0	1	0		6.430	3.4425	16.670	13.6825	27.365
37	0	1	0	0	0	0	1		6.440	3.4475	16.680	13.6875	27.375
38	0	1	0	0	0	0	0		6.450	3.4525	16.690	13.6925	27.385
39	0	0	1	1	1	1	1		6.460	3.4575	16.700	13.6975	27.395
40	0	0	1	1	1	1	0		6.470	3.4625	16.710	13.7025	27.405


AWI
RV501
SWR METER
RV502
27MHz
L5
27MHz
L9
27MHz
L10
27MHz
L3
27MHz
T3
POWER METER
RV4
27MHz
T4
TP4
AMC
RV2
27MHz
T2
CT2
TP8
T1
TP3
27MHz
T11
10.695MHz
T5
SQUELCH RANGE
RV1
10.240MHz
CT1
TP2
S METER
RV3
T6
10.695MHz
T7
455kHz
TP1
T8
455kHz
T9
455kHz

OVERALL-TOP

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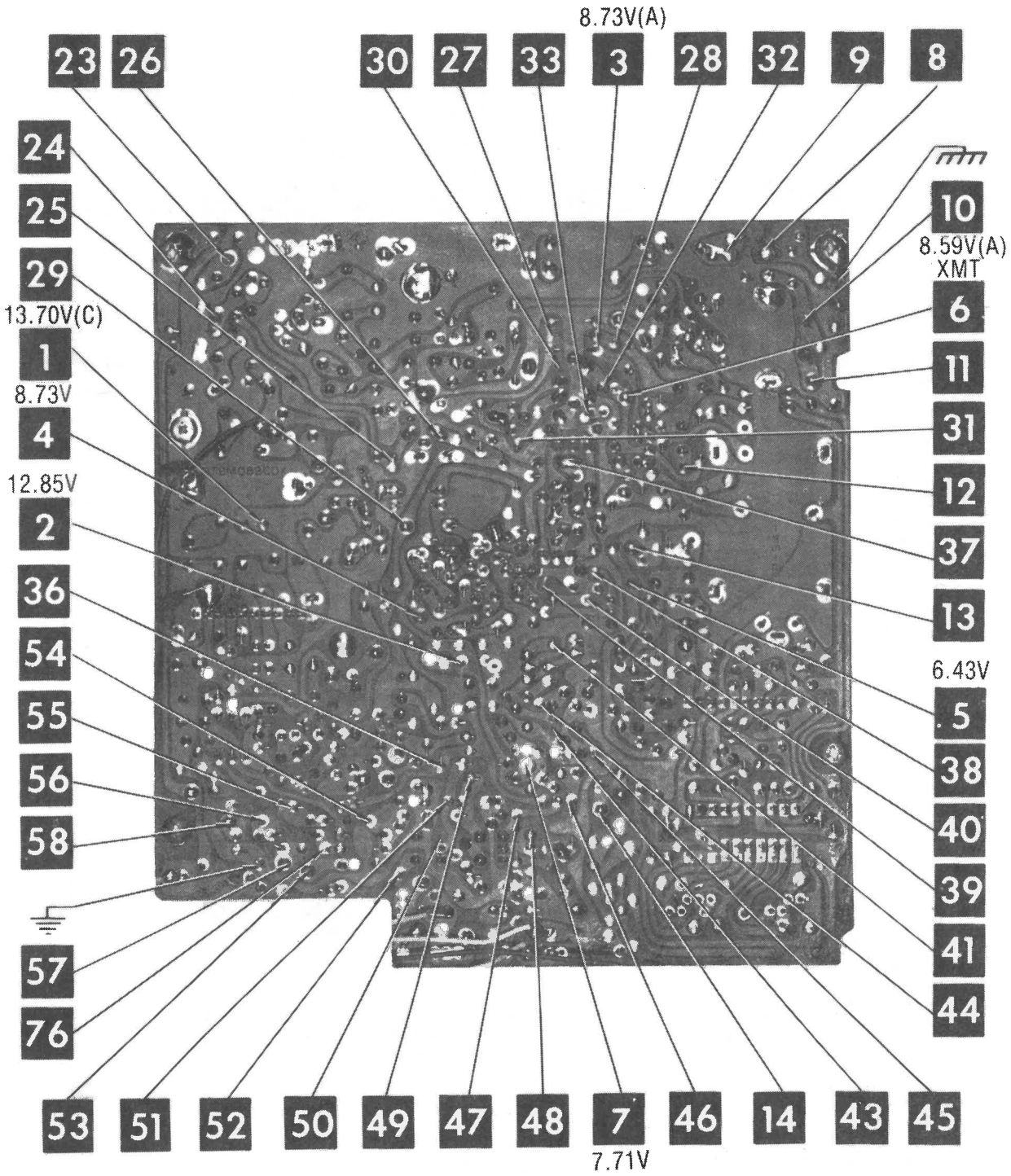
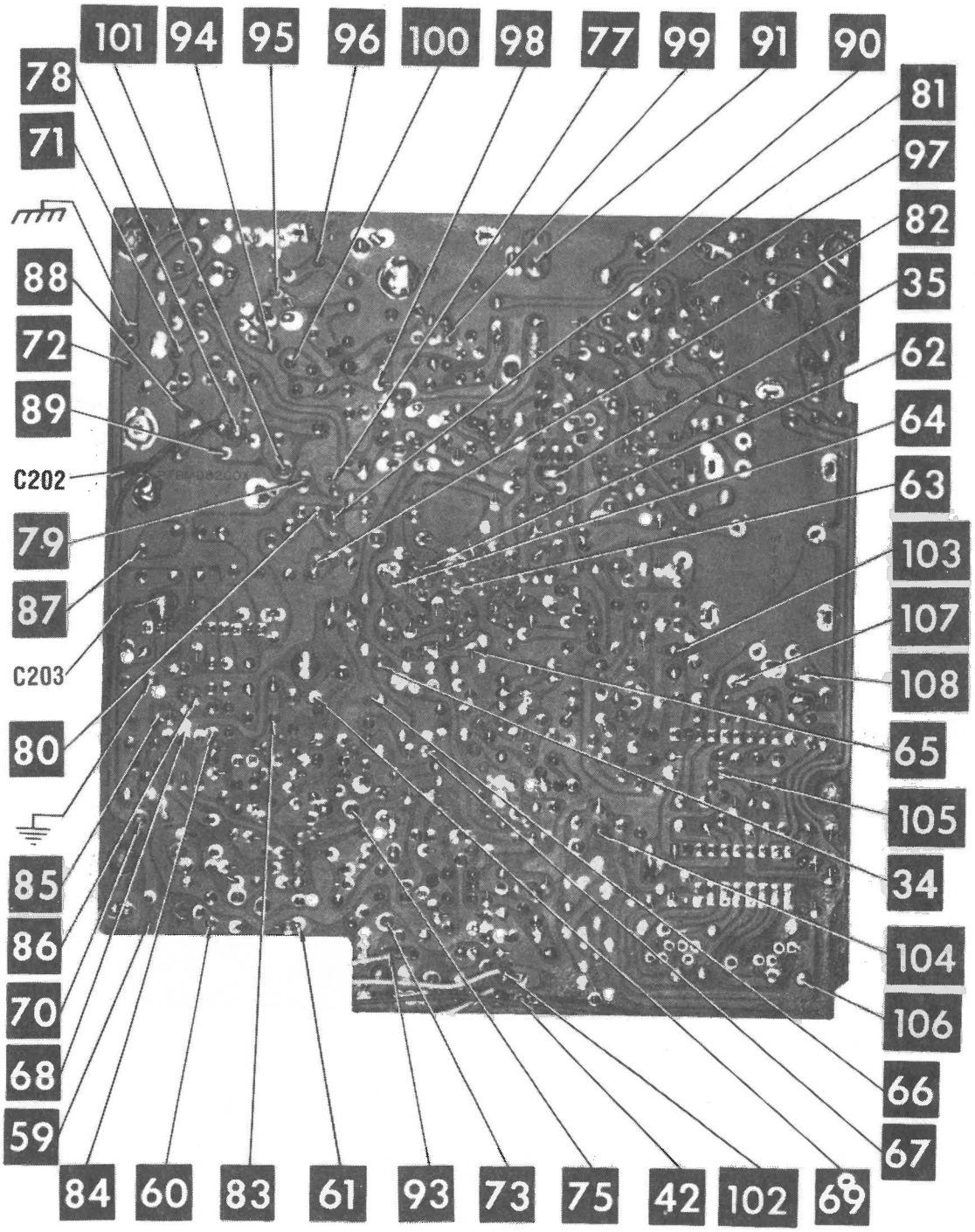


MAIN BOARD


101
94
95
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100
98
77
99
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90
78
71
88
72
89
C202
79
87
C203
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85
86
70
68
59
84
60
83
61
93
73
75
42
102
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103
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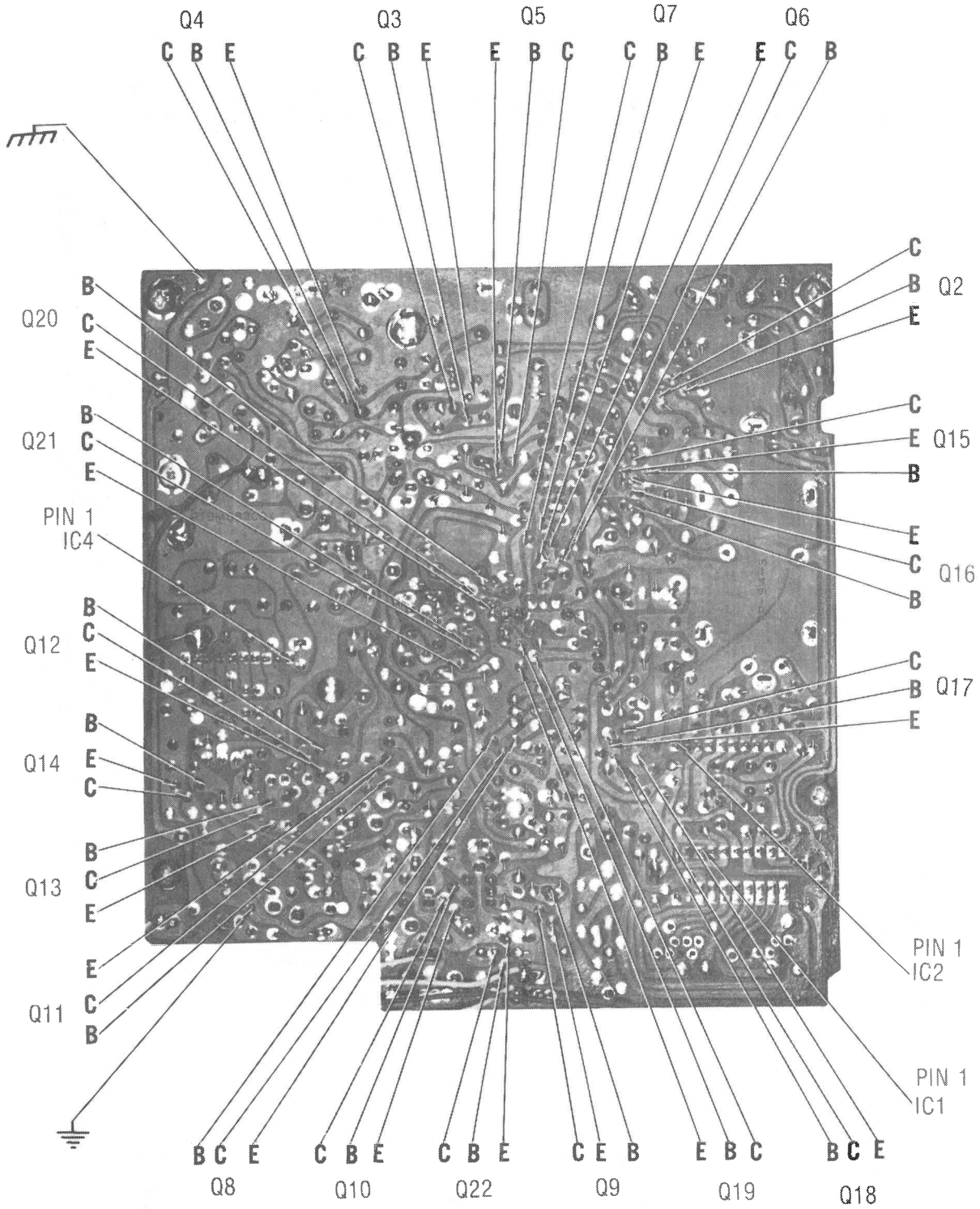
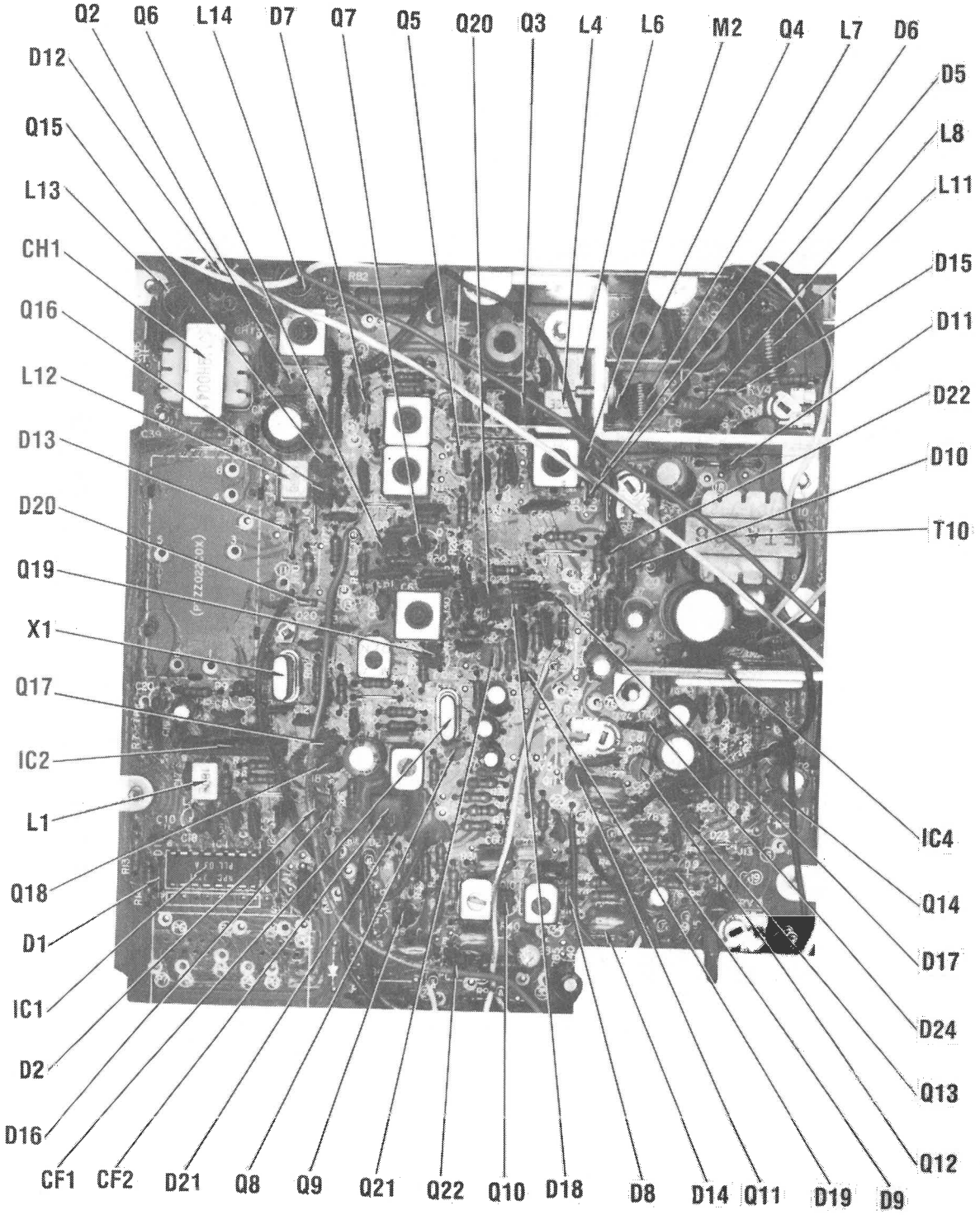
104
106
66
67

MAIN BOARD


Q4
C B E
Q3
C B E
Q5
E B C
Q7
C B E
Q6
E C B
Q20
B
C
E
Q21
B
C
E
PIN 1
IC4
Q12
B
C
E
Q14
B
E
C
Q13
B
C
E
Q11
E
C
B
C
B Q2
E
C
E Q15
B
E
C Q16
B
C
B Q17
E
PIN 1
IC2
PIN 1
IC1
B C E
Q8
C B E
Q10
C B E
Q22
C E B
Q9
E B C
Q19
B C E
Q18

MAIN BOARD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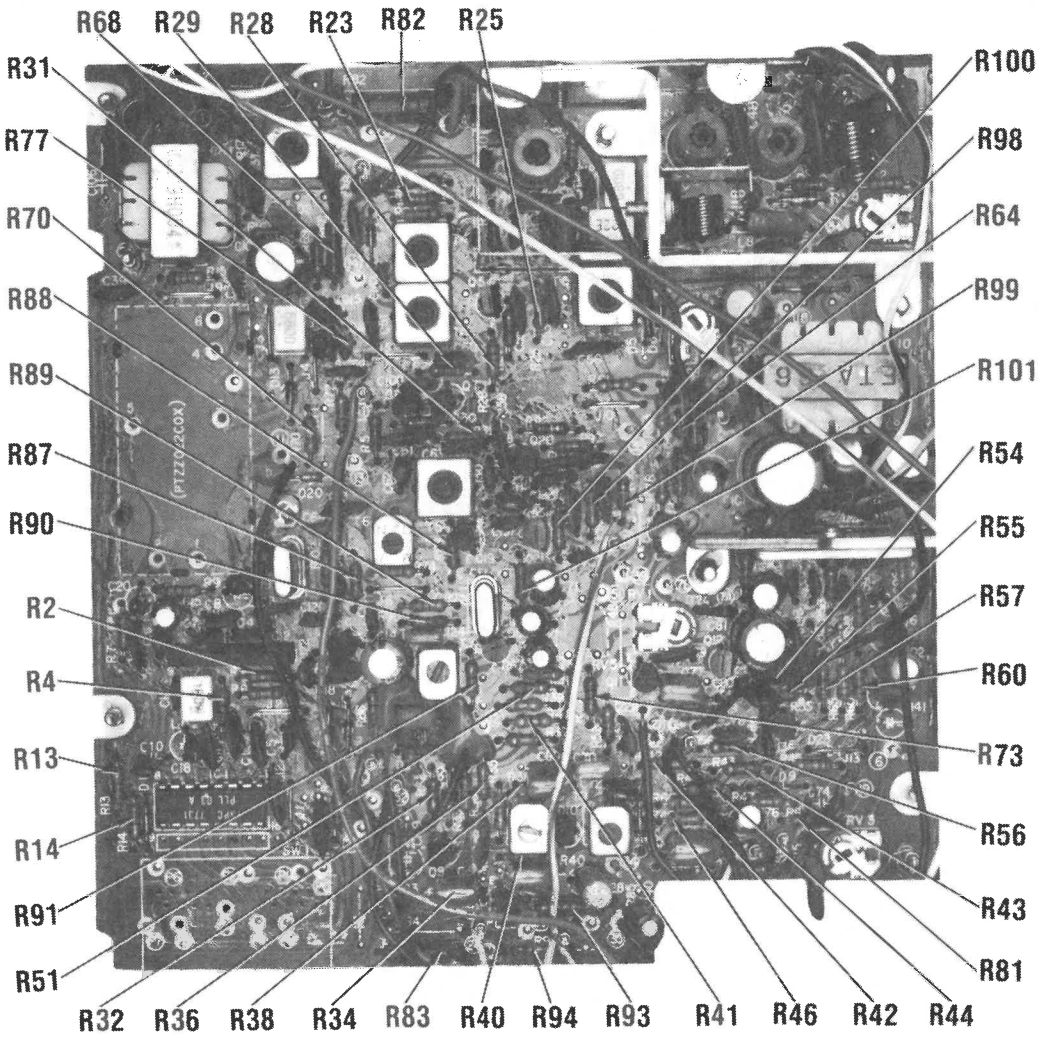
Q6
L14
D7
Q7
Q5
Q20
Q3
L4
L6
M2
Q4
L7
D6
D12
D5
Q15
L8
L13
L11
CH1
D15
Q16
D11
L12
D22
D13
D10
D20
T10
Q19
X1
Q17
IC2
L1
IC4
Q18
Q14
D1
D17
IC1
D24
D2
Q13
D16
Q12
CF1
CF2
D21
Q8
Q9
Q21
Q22
Q10
D18
D8
D14
Q11
D19
D9

MAIN BOARD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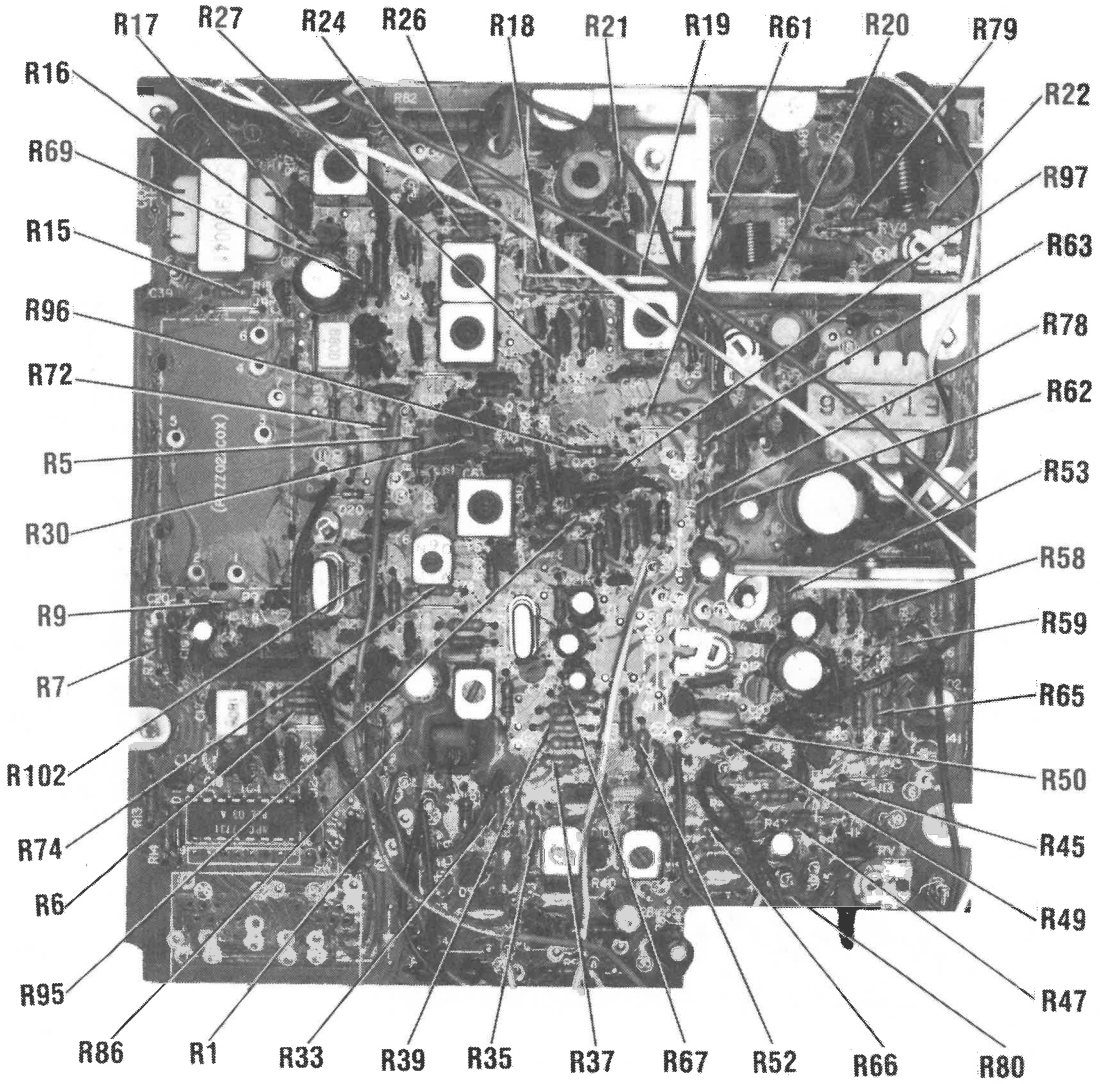
R29
R28
R23
R82
R25
R31
R77
R70
R88
R89
R87
R90
R2
R4
R13
R14
R91
R51
R32
R36
R38
R34
R83
R40
R94
R93
R41
R46
R42
R44
R100
R98
R64
R99
R101
R54
R55
R57
R60
R73
R56
R43
R81

MAIN BOARD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R24
R26
R18
R21
R19
R61
R20
R79
R16
R22
R69
R97
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R63
R96
R78
R72
R62
R5
R53
R30
R58
R9
R59
R7
R65
R102
R50
R74
R45
R6
R49
R95
R47
R86
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R33
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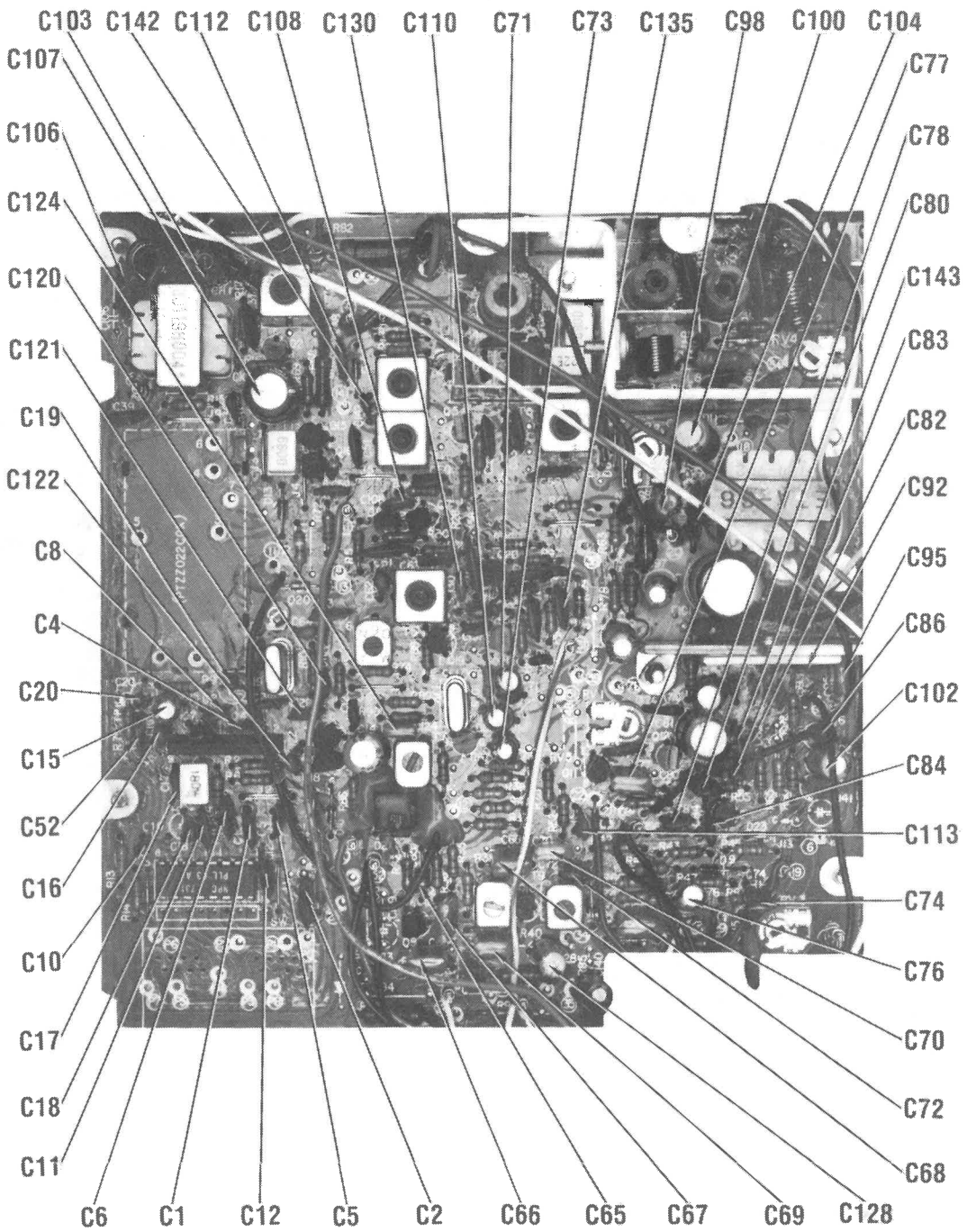
R35
R37
R67
R52
R66
R80

MAIN BOARD


C103
C142
C112
C108
C130
C110
C71
C73
C135
C98
C100
C104
C107
C77
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C124
C80
C120
C143
C121
C83
C19
C82
C122
C92
C8
C95
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C86
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C76
C17
C70
C18
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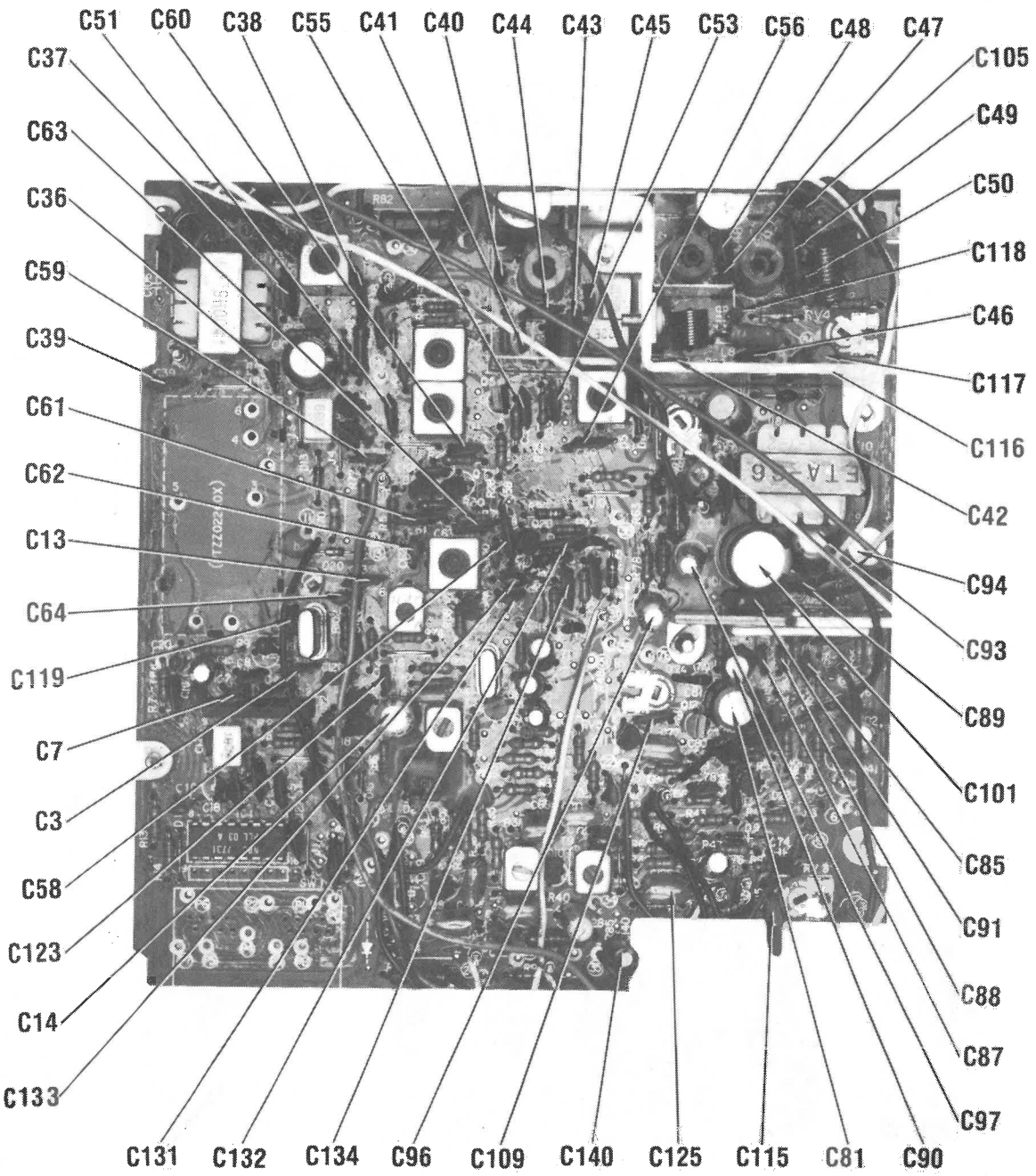
C5
C2
C66
C65
C67
C69
C128

MAIN BOARD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C55
C41
C40
C44
C43
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C53
C56
C48
C47
C37
C105
C63
C49
C36
C50
C59
C118
C39
C46
C61
C117
C62
C116
C13
C42
C64
C94
C119
C93
C7
C89
C3
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C58
C85
C123
C91
C14
C88
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C131
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C134
C96
C109
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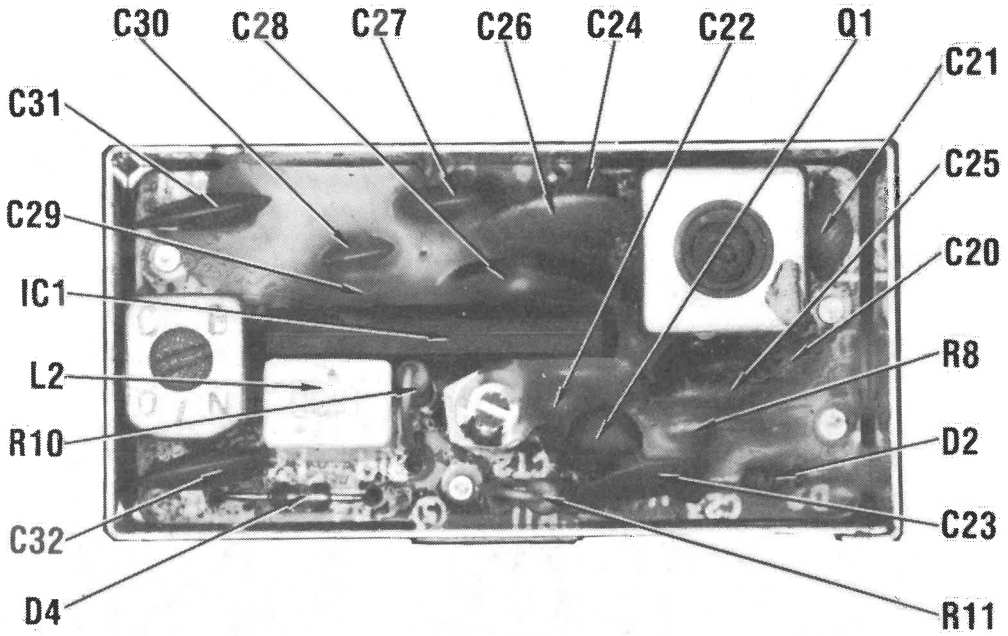
C125
C115
C81
C90

MAIN BOARD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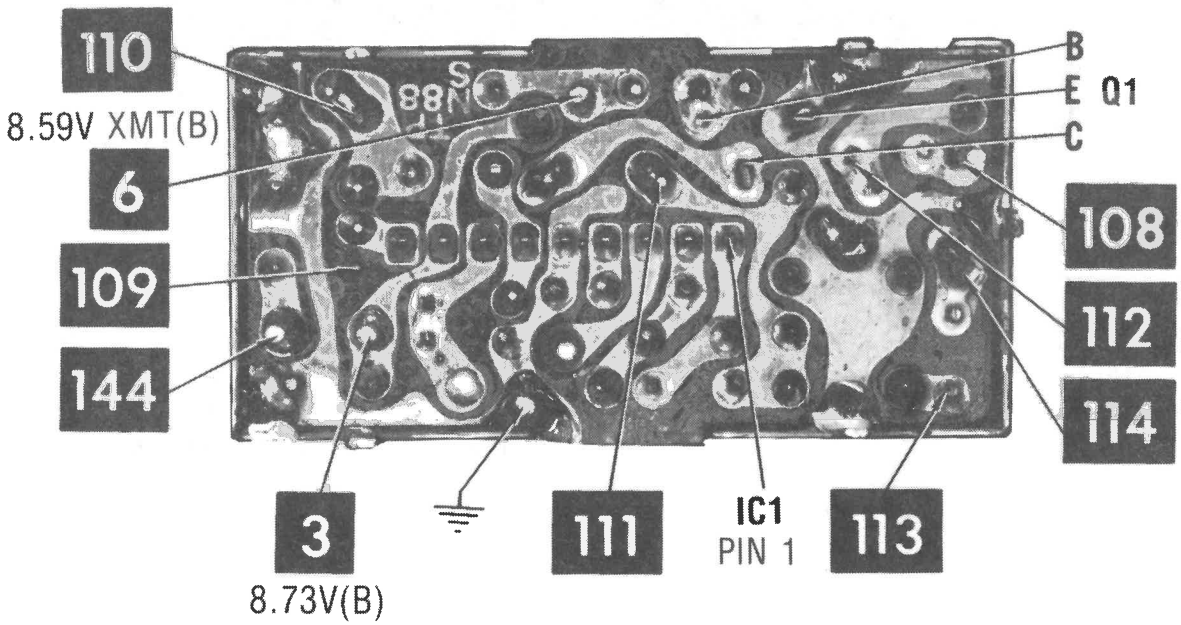
C28
C27
C26
C24
C22
Q1
C21
C31
C25
C29
C20
IC1
R8
L2
R10
D2
C32
C23
D4
R11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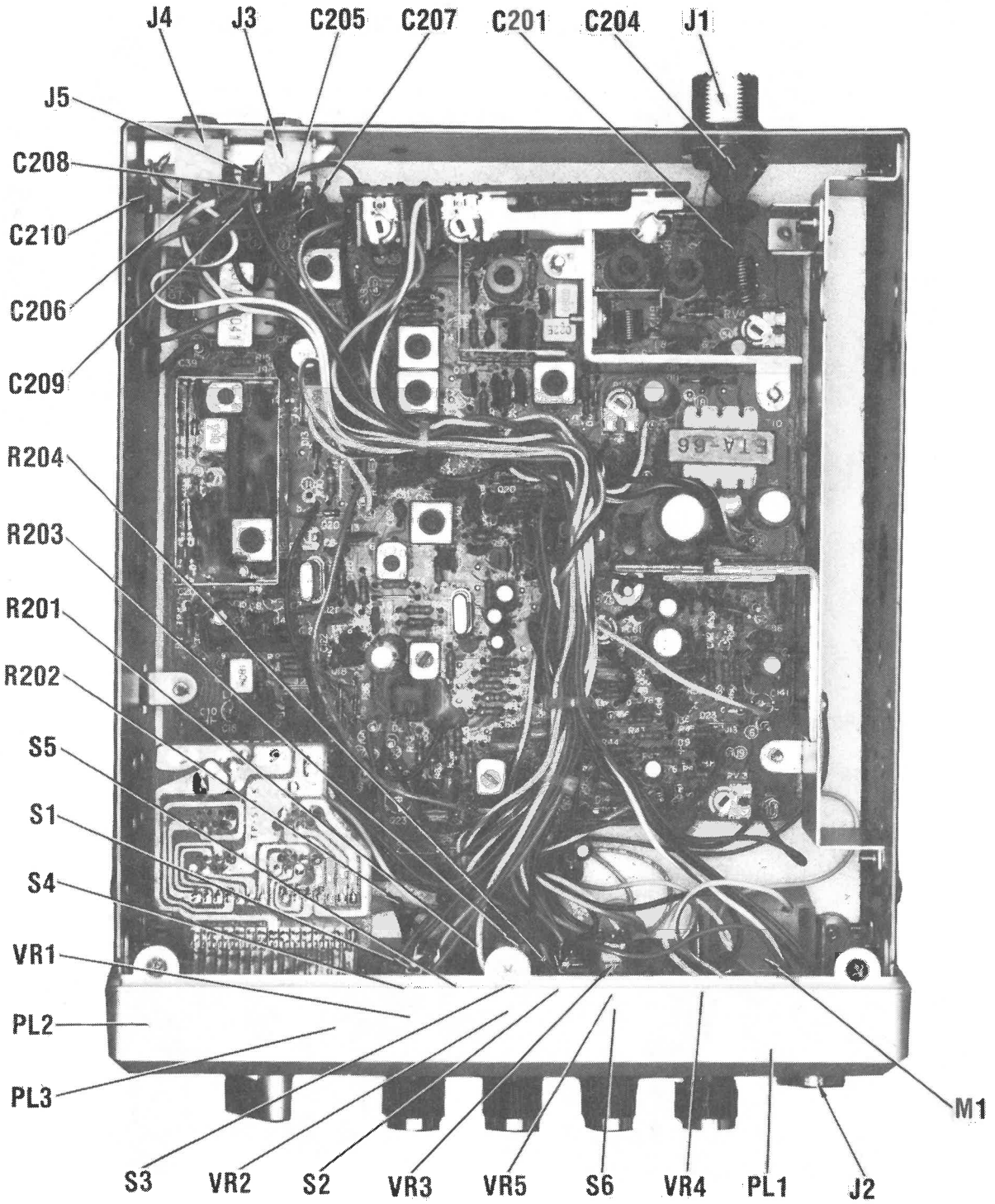
8.59V XMT(B)
6
109
144
3
8.73V(B)
111
IC1
PIN 1
113
B
E Q1
C
108
112
114

PLL BOARD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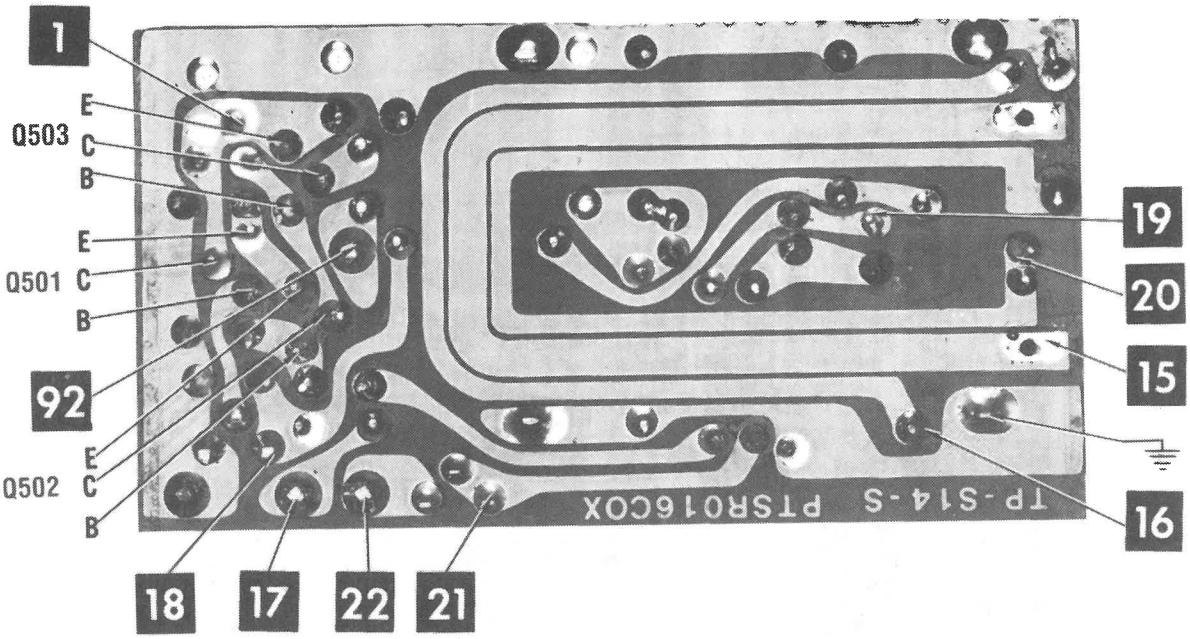
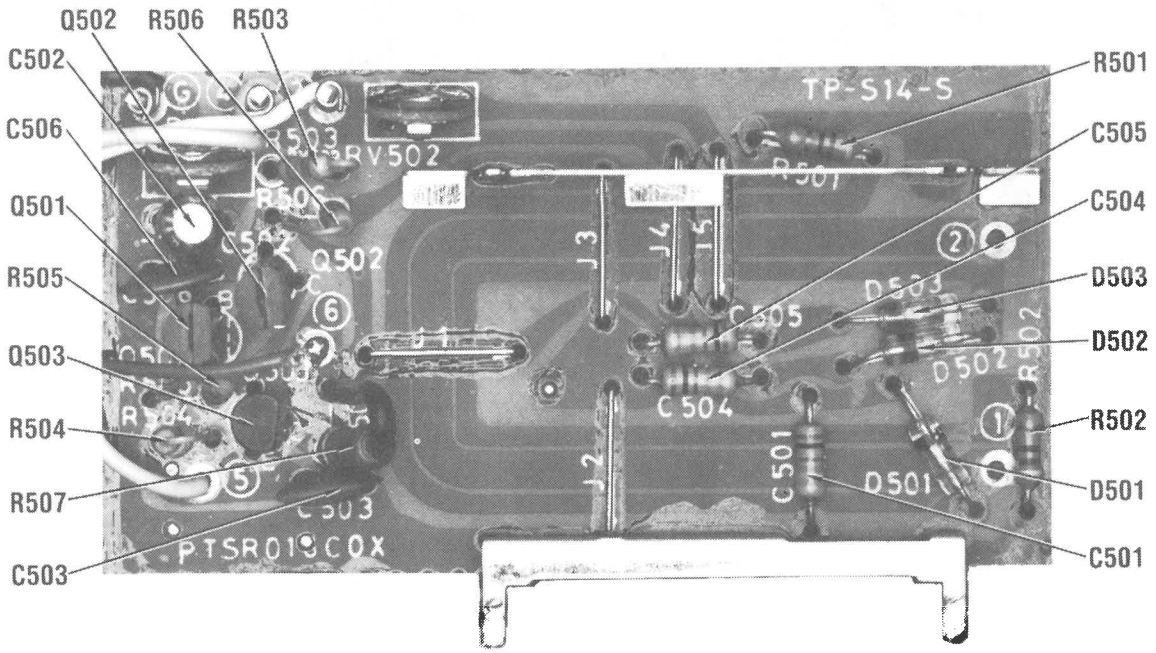
J3
C205
C207
C201
C204
J1
J5
C208
C210
C206
C209
R204
R203
R201
R202
S5
S1
S4
VR1
PL2
PL3
M1
S3
VR2
S2
VR3
VR5
S6
VR4
PL1
J2

OVERALL-TOP

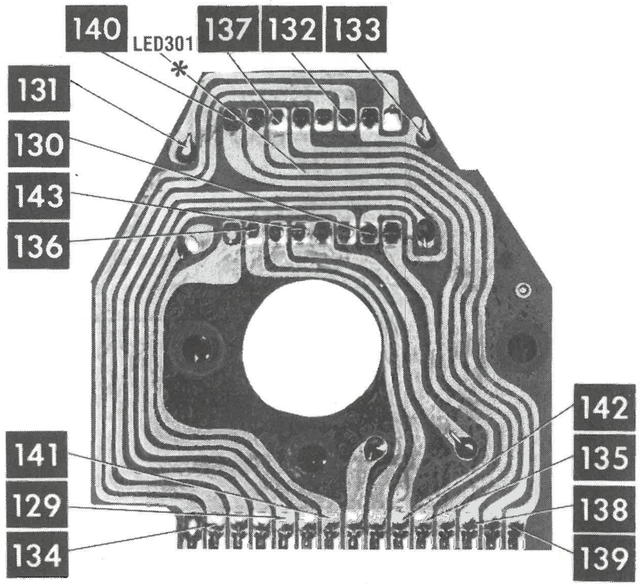
13.70V(B)





AWI BOARD

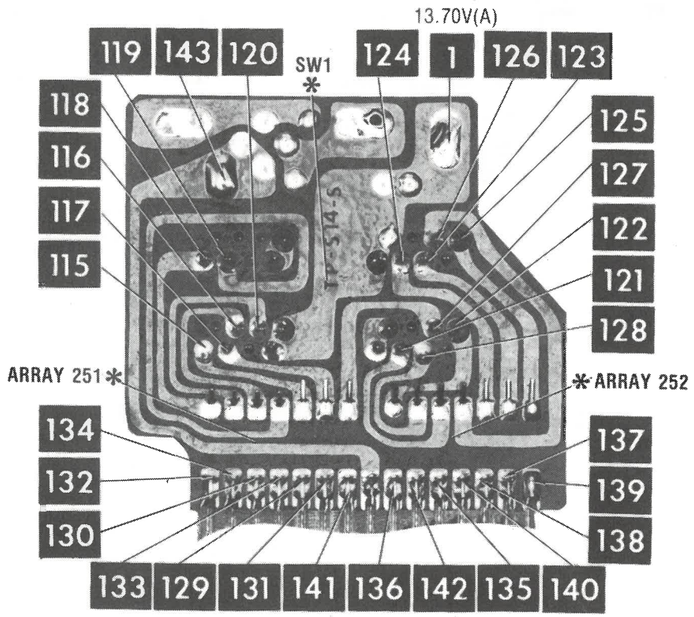
A Howard W. Sams CIRCUITRACE® Photo



*COMPONENT ON TOP OF BOARD

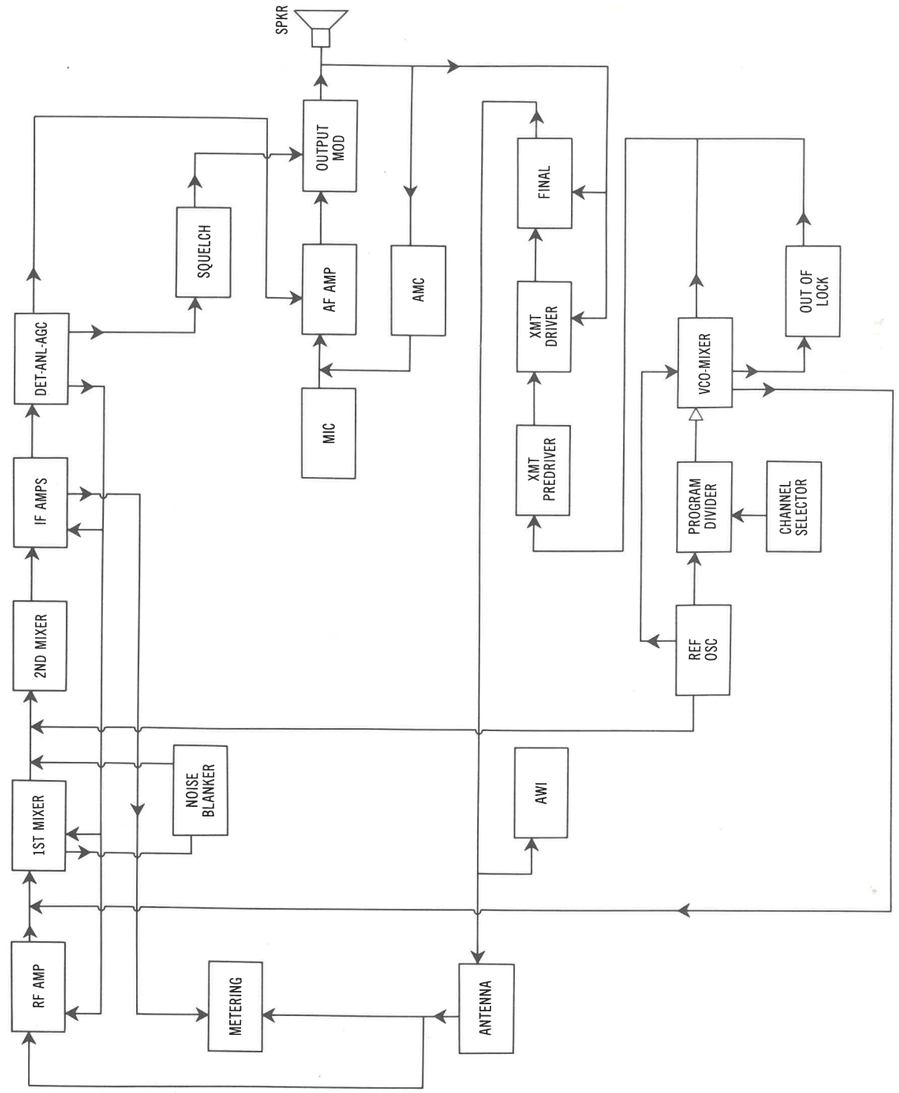
LED BOARD

A Howard W. Sams CIRCUITRACE® Photo



*COMPONENT ON TOP OF BOARD

SWITCH BOARD



BLOCK DIAGRAM

PARTS LIS

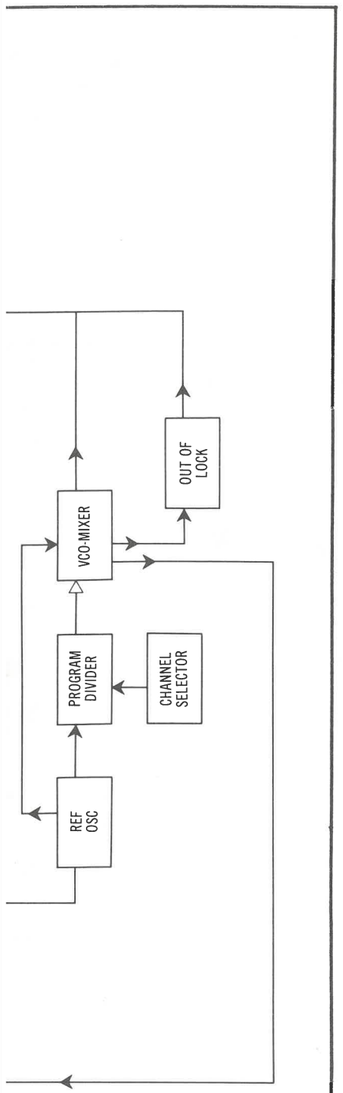
(When ordering

WIRING

General-use H	
Shielded Hook-	
Speaker Cable	
Bonding Strap	
AC Power Cord	

SEMICONI

ITEM No.	TYPE No.
	PLL
D2	ITT410
	BB122
	MV201
D4	1S1555
	1S2076
IC1	C3001A
	C3001
	TA7310
	MC3001
Q1	2SC710D
	2SC710E
	2SC710
	MAIN BOA
D1	1S1555
	1S2076
D2	MZ306
D5	1S1555
	1S2076
D6	1S1555
	1S2076
D7	1S1555
	1S2076
D8	1N60
	1K261
D9	1S1555
	1S2076
D10	1N60
	1K261
	1X60
D11	10V200P
	10V200
	V06C
D12	1S1885
	SRIK-4
	1S18
D13	RD9.1E
	RD9.1Z
D14	1N60
	1K261
D15	1N60
	1K261
D16	1S1555
	1S2076
D17	1N60
	1K261
D18	1N60
	1K261
D19	1S1555
	1S2076
D20	1S1555
	1S2076
D21	1S1555
	1S2076
D22	1S1555
	1S2076
D24	1N60
	1K261
D501	1N60
	1K261
D502	1N60
	1K261
D503	1N60
	1K261
IC1	PLL03A
	PLL03
IC2	C3001A
	C3001
	MC3001
	TA7310P



BLOCK DIAGRAM

PARTS LIST AND DESCRIPTION

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

WIRING DATA

General-use Hook-up Wire (available in 5 colors)	BELDEN No. 8523	Coiled Microphone Cable	
Shielded Hook-up Wire (spiral wrapped)	BELDEN No. 8421	3-conductor (1 shielded) 23AWG	BELDEN No. 9471 (5')
(braided)	BELDEN No. 8401		BELDEN No. 8497 (6')
Speaker Cable (available in 4 colors)	BELDEN No. 8782		BELDEN No. 9472 (7-1/2')
Bonding Strap	BELDEN No. 8672	28AWG	BELDEN No. 9466 (6')
AC Power Cord (6')	BELDEN No. 17106	31AWG	BELDEN No. 9468 (10')
(9')	BELDEN No. 17109	4-conductor (unshielded) 23AWG	BELDEN No. 8415 (6')
		5-conductor (1 shielded) 28AWG	BELDEN No. 9467 (6')
			BELDEN No. 9465 (7-1/2')

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFGR. PART No.	REPLACEMENT DATA: GENERAL ELECTRIC PART No.	MALLORY PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
	PLL										
D2	ITT410	EA16X106			REN 612			ECG612			103-176
	BB122				REN 612			ECG612			103-176
	MV201				REN 612			ECG612			103-176
D4	1S1555	RT5217	GE-300	PTC214	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
	1S2076		GE-514	PTC214	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
IC1	C3001A				REN 1192	SK3445		ECG1192		WEP2120	
	C3001				REN 1192	SK3445		ECG1192		WEP2120	
	TA7310				REN 1192	SK3445		ECG1192		WEP2120	
	MC3001	EA33X8509			REN 1192	SK3445		ECG1192		WEP2120	
Q1	2SC710D	EA15X364	GE-211*	PTC132	REN 123A*	SK3122	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A
	2SC710E	EA15X364	GE-211*	PTC132	REN 123A*	SK3122	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A
	2SC710		GE-211*	PTC132	REN 123A*	SK3122	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A
	MAIN BOARD										
D1	1S1555	RT5217	GE-300	PTC214	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
	1S2076		GE-514	PTC214	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D2	MZ306	EA16X163	GEZD-6.0		REN 5070			ECG5070A	TM5070	WEP1153	103-Z9008
D5	1S1555	RT5217	GE-300	PTC214	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
	1S2076		GE-514	PTC214	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D6	1S1555	RT5217	GE-300	PTC214	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
	1S2076		GE-514	PTC214	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D7	1S1555	RT5217	GE-300	PTC214	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
	1S2076		GE-514	PTC214	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D8	1N60	EA16X48	1N60	PTC206	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
	1K261		1N34AS	PTC207	REN 109	SK3087	RT-200	ECG109	TM109/**	WEP134	103-Z9001
D9	1S1555	RT5217	GE-300	PTC214	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
	1S2076		GE-514	PTC214	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D10	1N60		1N60	PTC206	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
	1K261		1N34AS	PTC207	REN 109	SK3087	RT-200	ECG109	TM109/**	WEP134	103-Z9001
D11	1X60	EA16X414	1N60	PTC206	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
	10V200P	EA16X405	GE-504A	PTC201	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
	10V200		GE-504A	PTC201	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
	V06C		GE-504A	PTC201	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
D12	1S1885		GE-504A	PTC201	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
	SRIK-4		GE-504A	PTC201	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
	1S18	RV1189	GE-504A	PTC201	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
D13	RD9.1E		GEZD-9.1	ZB9.1B	REN 139	SK3060	RT-240	ECG139A	TM139/**	WEP1109	103-272
	RD9.1Z	EA16X415	GEZD-9.1	ZB9.1B	REN 139	SK3060	RT-240	ECG139A	TM139/**	WEP1109	103-272
D14	1N60	EA16X48	1N60	PTC206	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
	1K261		1N34AS	PTC207	REN 109	SK3087	RT-200	ECG109	TM109/**	WEP134	103-Z9001
D15	1N60	EA16X48	1N60	PTC206	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
	1K261		1N34AS	PTC207	REN 109	SK3087	RT-200	ECG109	TM109/**	WEP134	103-Z9001
D16	1S1555	RT5217	GE-300	PTC214	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
	1S2076		GE-514	PTC214	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D17	1N60	EA16X48	1N60	PTC206	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
	1K261		1N34AS	PTC207	REN 109	SK3087	RT-200	ECG109	TM109/**	WEP134	103-Z9001
D18	1N60	EA16X48	1N60	PTC206	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
	1K261		1N34AS	PTC207	REN 109	SK3087	RT-200	ECG109	TM109/**	WEP134	103-Z9001
D19	1S1555	RT5217	GE-300	PTC214	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
	1S2076		GE-514	PTC214	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D20	1S1555	RT5217	GE-300	PTC214	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
	1S2076		GE-514	PTC214	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D21	1S1555	RT5217	GE-300	PTC214	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
	1S2076		GE-514	PTC214	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D22	1S1555	RT5217	GE-300	PTC214	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
	1S2076		GE-514	PTC214	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D24	1N60	EA16X48	1N60	PTC206	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
	1K261		1N34AS	PTC207	REN 109	SK3087	RT-200	ECG109	TM109/**	WEP134	103-Z9001
D501	1N60	EA16X48	1N60	PTC206	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
	1K261		1N34AS	PTC207	REN 109	SK3087	RT-200	ECG109	TM109/**	WEP134	103-Z9001
D502	1N60	EA16X48	1N60	PTC206	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
	1K261		1N34AS	PTC207	REN 109	SK3087	RT-200	ECG109	TM109/**	WEP134	103-Z9001
D503	1N60	EA16X48	1N60	PTC206	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
	1K261		1N34AS	PTC207	REN 109	SK3087	RT-200	ECG109	TM109/**	WEP134	103-Z9001
IC1	PLL03A	EA33X8501									
	PLL03										
IC2	C3001A				REN 1192	SK3445		ECG1192		WEP2120	
	C3001				REN 1192	SK3445		ECG1192		WEP2120	
	MC3001	EA33X8509			REN 1192	SK3445		ECG1192		WEP2120	
	TA7310P				REN 1192	SK3445		ECG1192		WEP2120	

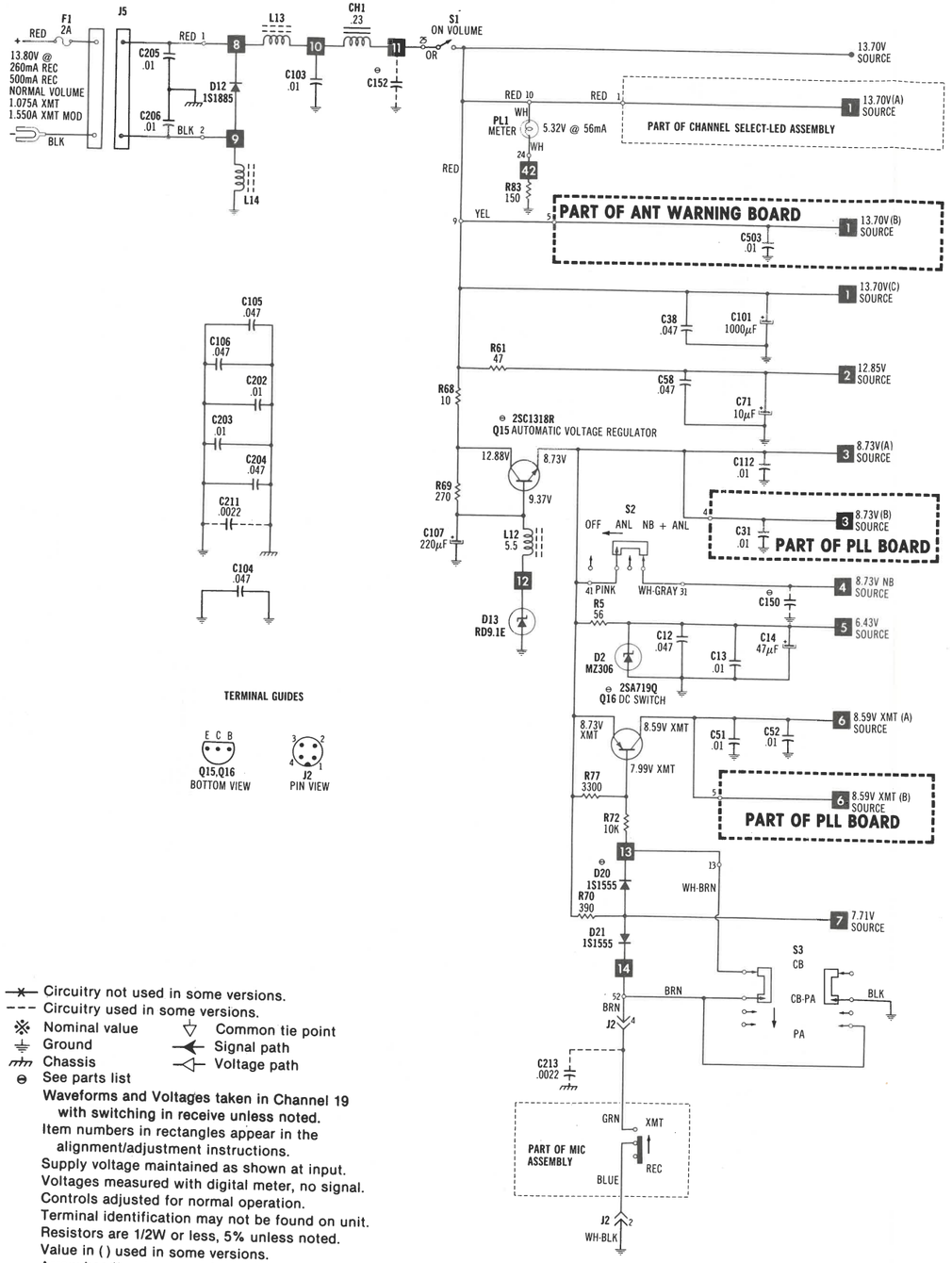
PARTS LIST AND DESCRIPTION (CONTINUED)

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

SEMICONDUCTORS (Select replacement transistor for best results) (cont)

ITEM No.	TYPE No.	MFGR. PART No.	REPLACEMENT DATA: GENERAL ELECTRIC PART No.	MALLORY PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
IC4	TA7205AP		GEIC-179	PTC780	REN 1155	SK3231		TVCM-81	ECG1155	TM1155	WEP949	
	TA7205P	EA33X8389	GEIC-179	PTC780	REN 1155	SK3231		TVCM-81	ECG1155	TM1155	WEP949	
	TA7205		GEIC-179	PTC780	REN 1155	SK3231		TVCM-81	ECG1155	TM1155	WEP949	
Q2	2SC710D	EA15X364	GE-211*	PTC132	REN 123A*	SK3122	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A	
	2SC710		GE-211*	PTC132	REN 123A*	SK3122	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A	
Q3	2SC1760	EA15X380	GE-276	PTC180	REN 306	SK3197	RT-310	ECG306	TM306	WEP771		
	2SC1846		GE-336	PTC904	REN 295	SK3253		ECG295	TM295	WEP913	121-880	
	2SC2036		GE-336		REN 306	SK3518		ECG306	TM306	WEP771		
Q4	2SC1306	EA15X381	GE-215	PTC186	REN 235	SK3197	RT-146	ECG235	TM235/**	WEP785	121-Z9039	
	2SC2075		GE-215	PTC186	REN 235	SK3197	RT-146	ECG235	TM235	WEP785	121-Z9039	
	2SC1678		GE-322	PTC186	REN 235	SK3197	RT-146	ECG235	TM235	WEP840	121-Z9039	
	2SC1974		GE-337	PTC186	REN 235	SK3197	RT-146	ECG235	TM235	WEP785	121-Z9040	
Q5	2SC460B	RT6204	GE-61*	PTC136*	REN 107	SK3122	RT-134	ECG107	TM107/**	WEP460	121-Z9000*	
	2SC460A	RT6204	GE-61*	PTC136*	REN 107	SK3122	RT-134	ECG107	TM107/**	WEP460	121-Z9000*	
	2SC460		GE-61*	PTC136*	REN 107	SK3122	RT-134	ECG107	TM107/**	WEP460	121-Z9000*	
	2SC1047		GE-60*	PTC132*	REN 229*	SK3132	RT-107	ECG229*	TM229*	WEP63*	121-Z9021	
Q6	2SC710D	EA15X364	GE-211*	PTC132	REN 123A*	SK3122	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A	
	2SC710		GE-211*	PTC132	REN 123A*	SK3122	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A	
Q7	2SC710D	EA15X364	GE-211*	PTC132	REN 123A*	SK3122	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A	
	2SC710		GE-211*	PTC132	REN 123A*	SK3122	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A	
Q8	2SC710D	EA15X364	GE-211*	PTC132	REN 123A*	SK3122	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A	
	2SC710		GE-211*	PTC132	REN 123A*	SK3122	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A	
	2SC829		GE-20*	PTC139*	REN 229*	SK3122	RT-308	ECG229*	TM229*/**	WEP829	121-Z9000A*	
Q9	2SC710D	EA15X364	GE-211*	PTC132	REN 123A*	SK3122	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A	
	2SC710		GE-211*	PTC132	REN 123A*	SK3122	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A	
	2SC829		GE-20*	PTC139*	REN 229*	SK3122	RT-308	ECG229*	TM229*/**	WEP829	121-Z9000A*	
Q10	2SC829B		GE-20*	PTC139*	REN 229*	SK3122	RT-308	ECG229*	TM229*/**	WEP829	121-Z9000A*	
	2SC829C	EA15X190	GE-20*	PTC139*	REN 229*	SK3122	RT-308	ECG229*	TM229*/**	WEP829	121-Z9000A*	
	2SC829		GE-20*	PTC139*	REN 229*	SK3122	RT-308	ECG229*	TM229*/**	WEP829	121-Z9000A*	
	2SC710		GE-211*	PTC132	REN 123A*	SK3122	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A	
Q11	2SC828P	EA15X325	GE-61*	PTC139*	REN 199	SK3122	RT-302	ECG199	TM199/**	WEP828	121-972	
	2SC828		GE-61*	PTC139*	REN 199	SK3122	RT-302	ECG199	TM199/**	WEP828	121-972	
	2SC945		GE-212	PTC121*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972	
Q12	2SA733AQ		GE-48	PTC127	REN 294	SK3114	RT-303	ECG294	TM294/**	WEP911	121-952	
	2SA733Q	EA15X385	GE-48	PTC127	REN 294	SK3114	RT-303	ECG294	TM294/**	WEP911	121-952	
	2SA733		GE-48	PTC127	REN 294	SK3114	RT-303	ECG294	TM294/**	WEP911	121-952	
	2SA564		GE-65	PTC103*	REN 234	SK3114	RT-303	ECG234	TM234	WEP564	121-879	
Q13	2SC1327T		GE-85*	PTC139*	REN 199	SK3245	RT-107A	ECG199	TM199	WEP634	121-972	
	2SC1327	EA15X386	GE-85*	PTC139*	REN 199	SK3245	RT-107A	ECG199	TM199	WEP634	121-972	
	2SC900		GE-62	PTC139*	REN 199	SK3124	RT-302	ECG199	TM199/**	WEP66	121-972	
	2SC945		GE-212	PTC121*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972	
Q14	2SC945AQ		GE-212	PTC121*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972	
	2SC945A	RT7557	GE-212	PTC121*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972	
	2SC945		GE-212	PTC121*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972	
	2SC828		GE-61*	PTC139*	REN 199	SK3122	RT-302	ECG199	TM199/**	WEP828	121-972	
	2SC372		GE-61*	PTC121*	REN 123A*	SK3245	RT-308	ECG123A*	TM123A*/**	WEP372	121-Z9000A*	
Q15	2SC1318R	EA15X378	GE-210	PTC123	REN 297	SK3122	RT-302	ECG297	TM297	WEP914	121-Z9014	
	2SC1318Q	EA15X378	GE-210	PTC123	REN 297	SK3122	RT-302	ECG297	TM297	WEP914	121-Z9014	
	2SC1318		GE-210	PTC123	REN 297	SK3122	RT-302	ECG297	TM297	WEP914	121-Z9014	
Q16	2SA719Q	EA15X395	GE-269	PTC103*	REN 290	SK3114	RT-305	ECG290	TM290/**	WEP911	121-1019	
	2SA719P	EA15X395	GE-269	PTC103*	REN 290	SK3114	RT-305	ECG290	TM290/**	WEP911	121-1019	
	2SA719R	EA15X395	GE-269	PTC103*	REN 290	SK3114	RT-305	ECG290	TM290/**	WEP911	121-1019	
	2SA719		GE-269	PTC103*	REN 290	SK3114	RT-305	ECG290	TM290/**	WEP911	121-1019	
	2SA720		GE-272	PTC103*	REN 298	SK3450	RT-305	ECG298	TM298	WEP915*	121-879*	
Q17	2SC829C	EA15X190	GE-20*	PTC139*	REN 229*	SK3122	RT-308	ECG229*	TM229*/**	WEP829	121-Z9000A*	
	2SC829		GE-20*	PTC139*	REN 229*	SK3122	RT-308	ECG229*	TM229*/**	WEP829	121-Z9000A*	
	2SC839		GE-61*	PTC132*	REN 123A*	SK3444	RT-308	ECG123A*	TM123A*/**	WEP1945	121-Z9000A*	
	2SC710		GE-211*	PTC132	REN 123A*	SK3122	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A	
Q18	2SC829C	EA15X190	GE-20*	PTC139*	REN 229*	SK3122	RT-308	ECG229*	TM229*/**	WEP829	121-Z9000A*	
	2SC829		GE-20*	PTC139*	REN 229*	SK3122	RT-308	ECG229*	TM229*/**	WEP829	121-Z9000A*	
	2SC839		GE-61*	PTC132*	REN 123A*	SK3444	RT-308	ECG123A*	TM123A*/**	WEP1945	121-Z9000A*	
	2SC710		GE-211*	PTC132	REN 123A*	SK3122	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A	
Q19	2SC1327T		GE-85*	PTC139*	REN 199	SK3245	RT-107A	ECG199	TM199	WEP634	121-972	
	2SC1327	EA15X386	GE-85*	PTC139*	REN 199	SK3245	RT-107A	ECG199	TM199	WEP634	121-972	
	2SC900		GE-62	PTC139*	REN 199	SK3124	RT-302	ECG199	TM199/**	WEP66	121-972	
Q20	2SC829C	EA15X190	GE-20*	PTC139*	REN 229*	SK3122	RT-308	ECG229*	TM229*/**	WEP829	121-Z9000A*	
	2SC829		GE-20*	PTC139*	REN 229*	SK3122	RT-308	ECG229*	TM229*/**	WEP829	121-Z9000A*	
Q21	2SA733AP		GE-48	PTC127	REN 294	SK3114	RT-303	ECG294	TM294/**	WEP911	121-952	
	2SA733P	EA15X385	GE-48	PTC127	REN 294	SK3114	RT-303	ECG294	TM294/**	WEP911	121-952	
	2SA733Q	EA15X385	GE-48	PTC127	REN 294	SK3114	RT-303	ECG294	TM294/**	WEP911	121-952	
	2SA733		GE-48	PTC127	REN 294	SK3114	RT-303	ECG294	TM294/**	WEP911	121-952	
Q22	2SC945AQ		GE-212	PTC121*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972	
	2SC945A	RT7557	GE-212	PTC121*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972	
	2SC945		GE-212	PTC121*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972	
Q501	2SC945AP		GE-212	PTC121*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972	
	2SC945A	RT7557	GE-212	PTC121*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972	
	2SC945		GE-212	PTC121*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972	
	2SC828		GE-61*	PTC139*	REN 199	SK3122	RT-302	ECG199	TM199/**	WEP828	121-972	
Q502	2SC945AP		GE-212	PTC121*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972	
	2SC945A	RT7557	GE-212	PTC121*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972	
	2SC945		GE-212	PTC121*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972	
	2SC828		GE-61*	PTC139*	REN 199	SK3122	RT-302	ECG199	TM199/**	WEP828	121-972	
Q503	2SA719R	RV2355	GE-269	PTC103*	REN 290	SK3114	RT-305	ECG290	TM290/**	WEP911	121-1019	
	2SA719		GE-269	PTC103*	REN 290	SK3114	RT-305	ECG290	TM290/**	WEP911	121-1019	
	2SA733		GE-48	PTC127	REN 294	SK3114	RT-303	ECG294	TM294/**	WEP911	121-952	

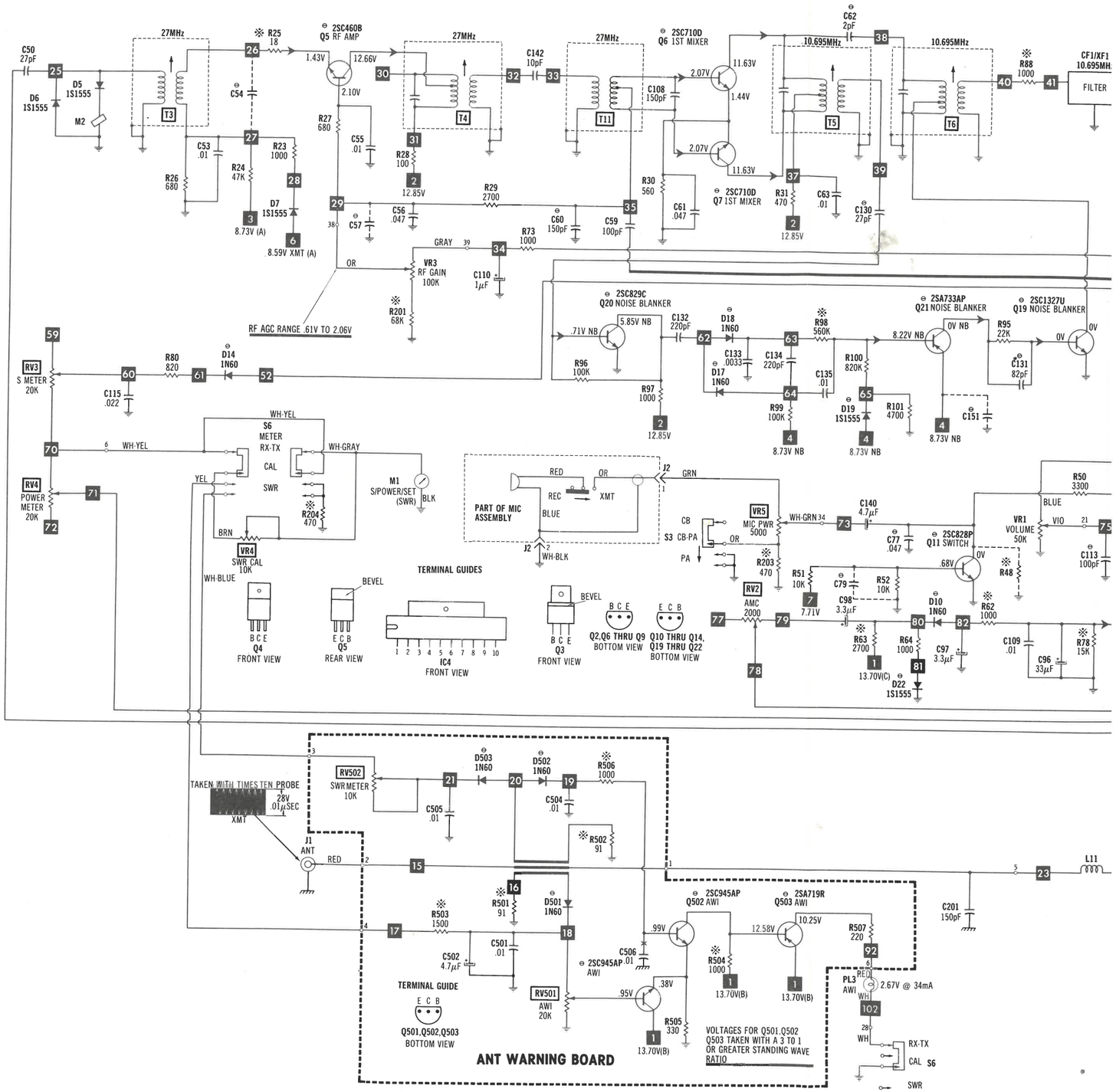
* Lead configuration may vary from original.
/** Also available as exact type replacement.



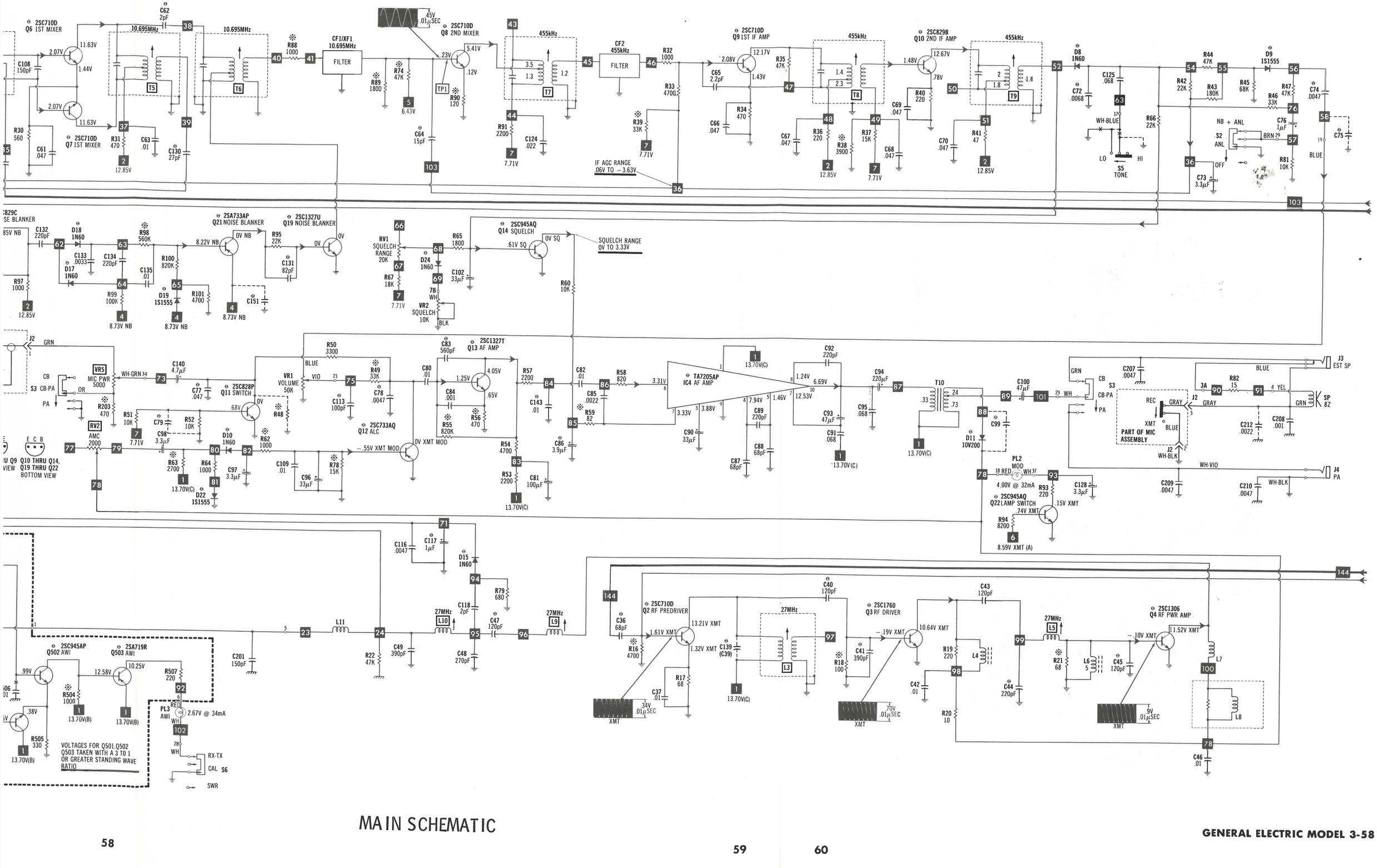
- Circuitry not used in some versions.
- Circuitry used in some versions.
- ※ Nominal value
- ⏚ Ground
- Chassis
- ⊖ See parts list
- Common tie point
- Signal path
- Voltage path

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).

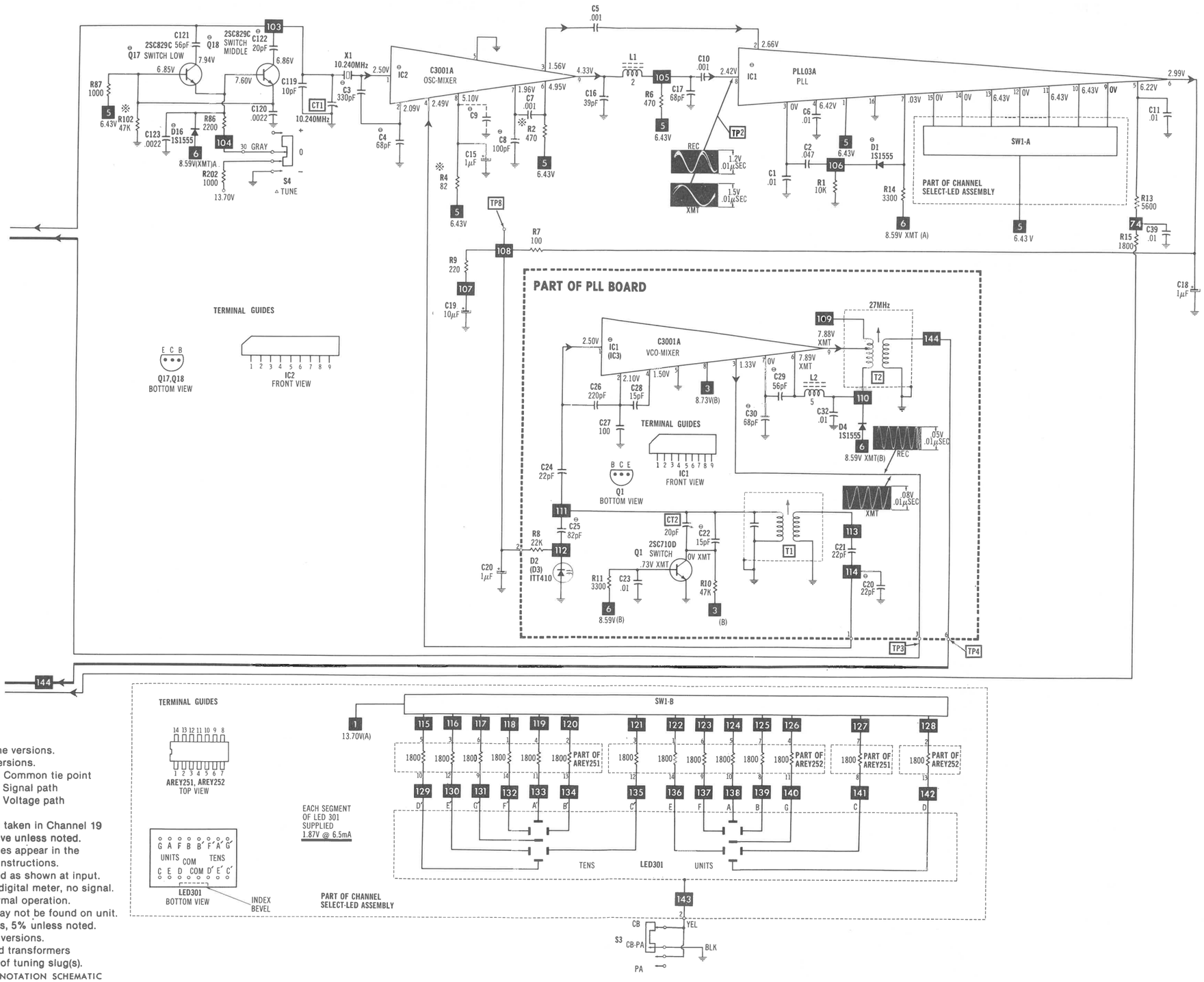
A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE®



POWER SUPPLY SCHEMATIC



MAIN SCHEMATIC



- Circuitry not used in some versions.
- Circuitry used in some versions.
- ※ Nominal value
- ▽ Common tie point
- ⏚ Ground
- Signal path
- Chassis
- Voltage path
- ⊖ 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 CIRCUITRACE®

PLL SCHEMATIC

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFGR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No. Q-LINE	SPRAGUE PART No. GENERAL LINE
C14	47 25V	RT4632	PC50-25	VTT47E25	QV1-77	EV-1426.1
C15	1 50V	EA31X204	PC1-50	VTT1A50	QV1-11	EV-1615
C18	1 35V	EA31X134		TDC105M035EL		SD35-19
C19	10 16V	EA31X246		TDC106M025FL	QDT1-64	SD25-109
C20	1 35V	EA31X134		TDC105M035EL		SD35-19
C71	10 16V	EA31X246	PC10-25	VTT10B25	QV1-41	EV-1222
C73	3.3 25V	EA31X260	PC5-50	VTT3R3A50	QV1-25	EV-1618.1
C76	1 50V	EA31X204	PC1-50	VTT1A50	QV1-11	EV-1615
C81	100 16V	EA31X269	PC100-16	VTT100F16	QV1-95	EV-1231
C86	3.9 25V	EA31X242		T1M335M050P0Y	QDT1-46	SD50-3R99
C90	33 16V	RT5269	PC30-25	VTT33D25	QV1-63	EV-1325
C93	47 16V	EA31X214	PC50-16	VTT47D16	QV1-73	EV-1226
C94	220 16V	RT5047	PC250-25	VTT220H16	QV1-117	EV-1240
C96	33 10V	RT2317	PC30-25	VTT33D25	QV1-63	EV-1325
C97	3.3 25V	EA31X260	PC5-50	VTT3R3A50	QV1-25	EV-1618.1
C98	3.3 25V	EA31X260	PC5-50	VTT3R3A50	QV1-25	EV-1618.1
C100	47 25V	RT4632	PC50-25	VTT47E25	QV1-77	EV-1426.1
C101	1000 16V	EA31X200	PC1000-16	VTT1000L16	QV1-183	EV-1261
C102	33 6.3V	RT5269	PC30-25	VTT33B10		EV-1225
C107	220 10V	EA2777	PC250-10	VTT220F10	QV1-115	EV-1140
C110	1 50V	EA31X204	PC1-50	VTT1A50	QV1-11	EV-1615
C117	1 50V	EA31X204	PC1-50	VTT1A50	QV1-11	EV-1615
C128	3.3 50V	EA31X239	PC5-50	VTT3R3A50	QV1-25	EV-1618.1
C140	4.7 25V	EA31X211	PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C502	4.7 25V	EA31X211	PC5-50	VTT4R7B50	QV1-31	EV-1619.1

CAPACITORS

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No. Q-LINE	SPRAGUE PART No. GENERAL LINE
PLL BOARD							
C20	22 N150 50V 10%	EA18X151			*		10TCP-Q22
C21	22 50V		DTZ-22	NP022	CN0422		10TCC-Q22
C22	15 N150 50V 10%	EA18X215			*		10TCP-Q15
C23	.01 50V		UK50-103		MAG5011		
C24	22 N150 50V 10%	EA18X151			*		10TCP-Q22
C25	82 N150 50V 10%	EA18X234			*		10TCP-Q82
C26	220 50V 10%		DTZ-220				10TCC-T22
C27	100 50V 10%		DTZ-100	NP0100	CN0310		10TCC-T10
C28	15 N150 50V 10%	EA18X215			*		10TCP-Q15
C29	56 50V				CN0456		10TCC-Q56
C30	68 50V		DTZ-68	NP068	CN0468		10TCC-Q68
C31	.01 50V		UK50-103		MAG5011		
C32	.01 50V		UK50-103		MAG5011		
CT2	20 Trimmer	EA30X52					
MAIN BOARD							
C1	.01 50V		UK50-103		MAG5011		
C2	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C3	330 50V 10%		DD-331		GP330		10TS-T33
C4	68 N150 50V 5%	EA18X173		DPMS6D1	*		10TCP-Q68
C5	.001 50V 10%				M192P10292	QFT2-1	1FT-D10
C6	.01 50V		UK50-103		MAG5011		
C7	.001 50V 10%			DPMS6D1	M192P10292	QFT2-1	1FT-D10
C8	100 50V 10%		DTZ-100	NP0100	CN0310		10TCC-T10
C9	(1)						
C10	.001 50V 10%			DPMS6D1	M192P10292	QFT2-1	1FT-D10
C11	.01 50V		UK50-103		MAG5011		
C12	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C13	.01 50V		UK50-103		MAG5011		
C16	39 50V				CN0439		10TCC-Q39
C17	68 50V		DTZ-68	NP068	CN0468		10TCC-Q68
C36	68 50V		DTZ-68	NP068	CN0468		10TCC-Q68
C37	.01 50V		UK50-103		MAG5011		
C38	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C39	.01 50V		UK50-103		MAG5011		
C40	120 50V 10%		DTZ-120		CN0312		10TCC-T12
C41	390 50V 10%		DD-391	GP390	GP339		10TS-T39
C42	.01 50V		UK50-103		MAG5011		
C43	120 50V 10%		DTZ-120		CN0312		10TCC-T12
C44	220 50V 10%		DTZ-220				10TCC-T22
C45	120 50V 10%		DTZ-120		CN0312		10TCC-T12
C46	.01 50V		UK50-103		MAG5011		
C47	120 50V 10%		DTZ-120		CN0312		10TCC-T12
C48	270 50V 10%		DTZ-270				10TCC-T27
C49	390 50V 10%		DD-391	GP390	GP339		10TS-T39
C50	27 50V				CN0427		10TCC-Q27
C51	.01 50V		UK50-103		MAG5011		
C52	.01 50V		UK50-103		MAG5011		
C53	.01 50V		UK50-103		MAG5011		
C54	(1)						
C55	.01 50V		UK50-103		MAG5011		
C56	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C57	(1)						
C58	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C59	100 50V 10%		DTZ-100	NP0100	CN0310		10TCC-T10
C60	150 50V		DTZ-150		CN0315		10TCC-T15
C61	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C62	2 50V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C63	.01 50V		UK50-103		MAG5011		

CAPACITORS (cont)

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No. Q-LINE	SPRAGUE PART No. GENERAL LINE
C64	15 50V		DTZ-15	NP015	CN0415		10TCC-Q15
C65	2.2 500V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C66	.047 50V 10%			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C67	.047 50V 10%			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C68	.047 50V 10%			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C69	.047 50V 10%			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C70	.047 50V 10%			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C72	.0068 50V 10%			WMF1D68	M192P6829R8	QFT2-73	1FT-D68
C74	.0047 50V 10%			WMF1D47	M192P4729R8	QFT2-63	1FT-D47
C75	(1)						
C77	.047 50V 10%			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C78	.0047 50V		DD-472		GP4700		5GA-D47
C79	(1)						
C80	.01 50V 10%			WMF1S1	M192P1039R8	QFT2-91	1FT-S10
C82	.01 50V 10%			WMF1S1	M192P1039R8	QFT2-91	1FT-S10
C83	560 50V		DD-561		GP356		10TS-T56
C84	.001 50V 10%			DPMS6D1	M192P10292	QFT2-1	1FT-D10
C85	.0022 50V				GP222		10TS-D22
C87	68 50V		DTZ-68	NP068	CN0468		10TCC-Q68
C88	68 50V		DTZ-68	NP068	CN0468		10TCC-Q68
C89	220 50V 10%		DTZ-220				10TCC-T22
C91	.068 50V 10%			WMF1S68	EWF1A168	QF1-195	1PB-S68
C92	220 50V 10%		DTZ-220				10TCC-T22
C95	.068 50V 10%			WMF1S68	EWF1A168	QF1-195	1PB-S68
C99	(1)						
C103	.01 50V		UK50-103		MAG5011		
C104	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C105	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C106	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C108	150 50V 10%		DTZ-150		CN0315		10TCC-T15
C109	.01 50V		UK50-103		MAG5011		
C112	.01 50V		UK50-103		MAG5011		
C113	100 50V 10%		DTZ-100	NP0100	CN0310		10TCC-T10
C115	.022 50V 10%			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C116	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C118	2 50V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C119	10 N150 50V 10%	EA18X152			*		10TCP-Q10
C120	.0022 50V				GP222		10TS-D22
C121	56 N150 50V 10%	EA18X207			*		10TCP-Q56
C122	20 N150 50V 10%	EA18X214			*		10TCP-Q20
C123	.0022 50V				GP222		10TS-D22
C124	.022 50V 10%			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C125	.068 50V 10%			WMF1S68	EWF1A168	QF1-195	1PB-S68
C130	27 50V				CN0427		10TCC-Q27
C131	82 50V 10%		DTZ-82	NP082	CN0482		10TCC-Q82
C132	220 50V 10%		DTZ-220				10TCC-T22
C133	.0033 50V 10%			WMF1D33	M192P3329R8	QFT2-43	1FT-D33
C134	220 50V 10%		DTZ-220				10TCC-T22
C135	.01 50V		UK50-103		MAG5011		
C139	39				CN0439		10TCC-Q39
C142	10 50V		DTZ-10	NP010	CN0410		10TCC-Q10
C143	.01 50V		UK50-103		MAG5011		
C150	(1)						
C151	(1)						
C152	(1)						
C201	150 500V		DTZ-150		CN0315		10TCC-T15
C202	.01 50V		UK50-103		MAG5011		
C203	.01 50V		UK50-103		MAG5011		
C204	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C205	.01 50V		UK50-103		MAG5011		
C206	.01 50V		UK50-103		MAG5011		
C207	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C208	.001 50V		DD-102		GP210		10TS-D10
C209	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C210	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C211	.0022 50V				GP222		10TS-D22
C212	.0022 50V				GP222		10TS-D22
C213	.0022 50V				GP222		10TS-D22
C501	.01 50V		UK50-103		MAG5011		
C503	.01 50V		UK50-103		MAG5011		
C504	.01 50V		UK50-103		MAG5011		
C505	.01 50V		UK50-103		MAG5011		
C506	.01 50V		UK50-103		MAG5011		
CT1	20 Trimmer	EA30X52					

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
(1) Value varies, replace with value found in set.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA			
			MFGR. PART No.	CENTRALAB PART No.	MALLORY PART No.	TRW PART No.
RV1	Squelch Range	20K	EA49X332			U260R253B
RV2	AMC	2000	EA49X331			U260R252B
RV3	S Meter	20K	EA49X332			U260R253B
RV4	Power Meter	20K	EA49X332			U260R253B
RV501	AWI	20K	EA49X490			X260R253B
RV502	SWR Meter	10K	EA49X356			X260R103B
VR1	Volume/Power Switch	50K	EA49X392			
VR2	Squelch	10K	EA49X504			
VR3	RF Gain	100K	EA49X503 (18)			
VR5	Mic PWR	5000				
VR4	SWR CAL	10K	EA49X504			

(18) Includes VR3 and VR5.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA	
		MFGR. PART No.	WORKMAN PART No.
AREY 251	Resistor Array		EA62X167 (1)

ITEM No.	RATING	REPLACEMENT DATA	
		MFGR. PART No.	WORKMAN PART No.
AREY 252	Resistor Array		EA62X167 (1)

(1) Consists of seven 1.8K ohm Resistors.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
PLL BOARD					
L2	RF Choke (.9uH)	EA36X335			
T1	VCO	EA36X337	I008003M86M5		
T2	XMT Predriver (27MHz)	EA36X489	CB01N		
MAIN BOARD					
L1	RF Choke (18uH)	EA36X334			
L3	Predriver(27MHz)	EA36X248	10CP005U80BC		
L4	RF Choke (2.2uH)	EA36X237			
L5	Driver (27MHz)	EA36X238			
L6	RF Amp (68uH)	EA36X239			
L7	Xmit Loading (0.55uH)	EA36X245			
L8	Xmit Loading (1.0uH)	EA36X240			
L9	Loading Final (27MHz)	EA36X241			
L10	PI Filter (27MHz)	EA36X242			
L11	Antenna Matching (0.4uH)	EA36X261			
L12	RF Choke (68uH)	EA36X239			
L13	RF Choke (1.15uH)	EA36X263			
L14	RF Choke (1.15uH)	EA36X263			
T3	Rec RF (27MHz)	EA36X249	ETR033369C7		
T4	RF Amp (27MHz)	EA36X265	ETR033489NC		
T5	Mixer (10.695MHz)	EA36X340	10MA018M89P		
T6	Mixer (10.695MHz)	EA61X204	MA06N98M		
T7	IF Mixer (455kHz)	EA61X188	ETI01226NA		
T8	IF Amp (455kHz)	EA61X189	ETI01236NC		
T9	IF Amp (455kHz)	EA61X190	ETI012960A		
T11	RF Amp (27MHz)	EA36X339	10CM003M89M		

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.	
CH1	1.55A	.23	2mH	LJ119H004W (1)			(1) Number on unit.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T10	32	1 2 8 8	ETA-66 (1)	TR723	MCB-16	(1) Number on unit.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP	3 1/2" PM 8 Ohms	EA95X127		

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA						
		PART No.		BUSS PART No.		LITTELFUSE PART No.		WORKMAN PART No.
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE
F1	2A Quick Acting	5-1725	5-1722	AGC2	HRK	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	5-1278	18-032	18-034	18-010	18-092	1	2	4	3	NC	2

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF1/XF1	Filter	EA36X333	10.695MHz
CF2	Filter	EA36X332	455kHz
LED301	LED	EA16X303	Channel Readout, TENS & UNITS (1.87V @ 6.5mA each segment)
J1	Jack	EA41X155	Antenna
J2	Jack	EA41X175	Microphone
J3	Jack	EA41X135	Extension Speaker
J4	Jack	EA41X135	PA Speaker
J5	Jack	EA41X183	DC Interlock
M1	Meter	EA62X152	Signal/Power/SWR
M2	Ferrite Bead	EA2X941	
PL1	Lamp	(Part of M1)	Meter (5.32V @ 56mA) (Part of M1)
PL2	Lamp	EA41X145	MOD (4.00V @ 32mA)
PL3	Lamp	EA41X179	AWI, Red (2.67V @ 34mA)
S1	Switch		Part of VR1
S2	Switch	EA39X227	ANL/NBL + ANL
S3	Switch	EA55X133	CB/CB-PA/PA
S4	Switch	EA39X227	Delta Tune (+/-)
S5	Switch	EA39X226	Tone (High/Low)
S6	Switch	EA55X133	Meter (RX-TX/CAL/SWR)
SW1	Switch	EA55X137	Channel Selector
X4	Crystal	EA75X6	10.240MHz

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

ITEM	PART No.
Cabinet, Bottom	EA98X700
Cabinet, Top	EA98X491
Escutcheon, Assembly	EA89X278
Knob, Channel Select	EA43X897
Knob, Volume	EA43X727

ITEM	PART No.
Knob, RF Gain	EA43X729
Knob, Mic Power	EA43X730
Lens, Channel Readout	EA89X281
Lens, AWI	EA9X421
Lens, Mod	EA9X422