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 GEN-696A

MANUFACTURER'S SPECIFICATIONS

GENERAL

Semiconductors:	17 transistors, 13 diodes and 3 ICs
Frequency Range:	26.965 MHz – 27.405 MHz (channels 1 through 40)
Antenna Impedance:	50 ohms
Modulation:	AM (Amplitude Modulation)
Controls:	Volume control with Power ON-OFF switch
	Variable Squelch control
	Channel Selector
Connectors and Jacks:	Microphone connector
	SO-239 Antenna connector (50 ohms)
	External Speaker jack (8 ohms)
Speaker:	3-1/16 inch, 8 ohms
Microphone:	Dynamic microphone (500 ohms)
Power Supply:	13.8 volts DC (Positive or Negative Ground)
Dimensions:	6-3/8"(W) x 2-3/16"(H) x 7-3/4"(D)
	16.1 cm(W) x 5.6 cm(H) x 19.7 cm(D)
Weight:	2 lbs. 14 oz. (1.3 kg.)

RECEIVER NOMINAL SPECIFICATIONS

Circuit:	PLL synthesized dual conversion superheterodyne
IF Frequency:	1st IF ..... 10.695 MHz, 2nd IF ..... 455 kHz
Sensitivity at S/N 10 dB:	0.5 micro-volt
Selectivity:	(±10 kHz) 60 dB
AGC:	80 dB
S/N at 1mV input:	50 dB
Audio Power Output:	3.5 watts
Audio Frequency Response:	300 – 2.5 kHz
Spurious Response:	–50 dB
Squelch Range:	1 μV to 350 μV
Current Drain (no signal):	200 mA

TRANSMITTER NOMINAL SPECIFICATIONS

RF Output Power:	4W maximum
Modulation Capability:	100% maximum
Spurious Response:	–70 dB

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

TC101 . . . . . .8276, 5000
T1, L105. . . . . .5009, 8728A, 8728
L7, L9, L11 . . . . . .9091, 8728A, 8728
L6. . . . . .9304, 9300, 9302
L1 thru L5, T101 thru T104. 9440

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of frequency counter to TP1 (PLL pin 1).	Ch. 19	TC101	Adjust for 10.240MHz.
Input of DC meter to TP2 (IC101 pin 7)	Ch. 1	L105	Adjust for 2.00 volts.
	Ch. 1, XMT		Check for 3.36 volts.
Input of oscilloscope to TP3 (T101 secondary).	Ch. 19	T101	Adjust for maximum.
Input of oscilloscope to TP4 (L3 secondary).	Ch. 19	L3	Adjust for maximum.
Input of frequency counter to TP5 (PLL pin 12)	Ch. 1		Check for 16.270MHz. Check all channels. (See Truth Chart for correct frequencies).
Input of frequency counter to TP6 (IC101 pin 17)	Ch. 1		Check for .910 MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of oscilloscope to TP7 (PLL pin 16)	Ch. 19, XMT	T102,T103, T104	Adjust for maximum RF.
Input of frequency counter to TP7 (PLL pin 16)	Ch. 1, XMT		Check for 26.965MHz. Check all channels. (See Truth Chart for correct frequencies.)

RECEIVER ALIGNMENT

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.
Set generator output low enough to prevent AGC limiting.
Squelch MINIMUM, ANL Off

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TPA. 455kHz, 1000Hz @ 30% modulation.	Ch. 19	T1	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation.	Ch. 19	L2, L1	Adjust for maximum output. If necessary readjust T1.

RECEIVER ADJUSTMENTS

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

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 1000uV.	Ch. 19 Squelch Max	VR4	SQUELCH RANGE Adjust VR4 so squelch just breaks.

TRANSMITTER ALIGNMENT

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

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
	Ch. 19	L4,L5,L6, L7,L9	Adjust for maximum.
	Ch. 19	L9,L7	Adjust for 4 watts maximum.
Input of harmonic meter or spectrum analyzer to antenna jack.	Ch. 19	L11	Adjust for MINIMUM at 54MHz.

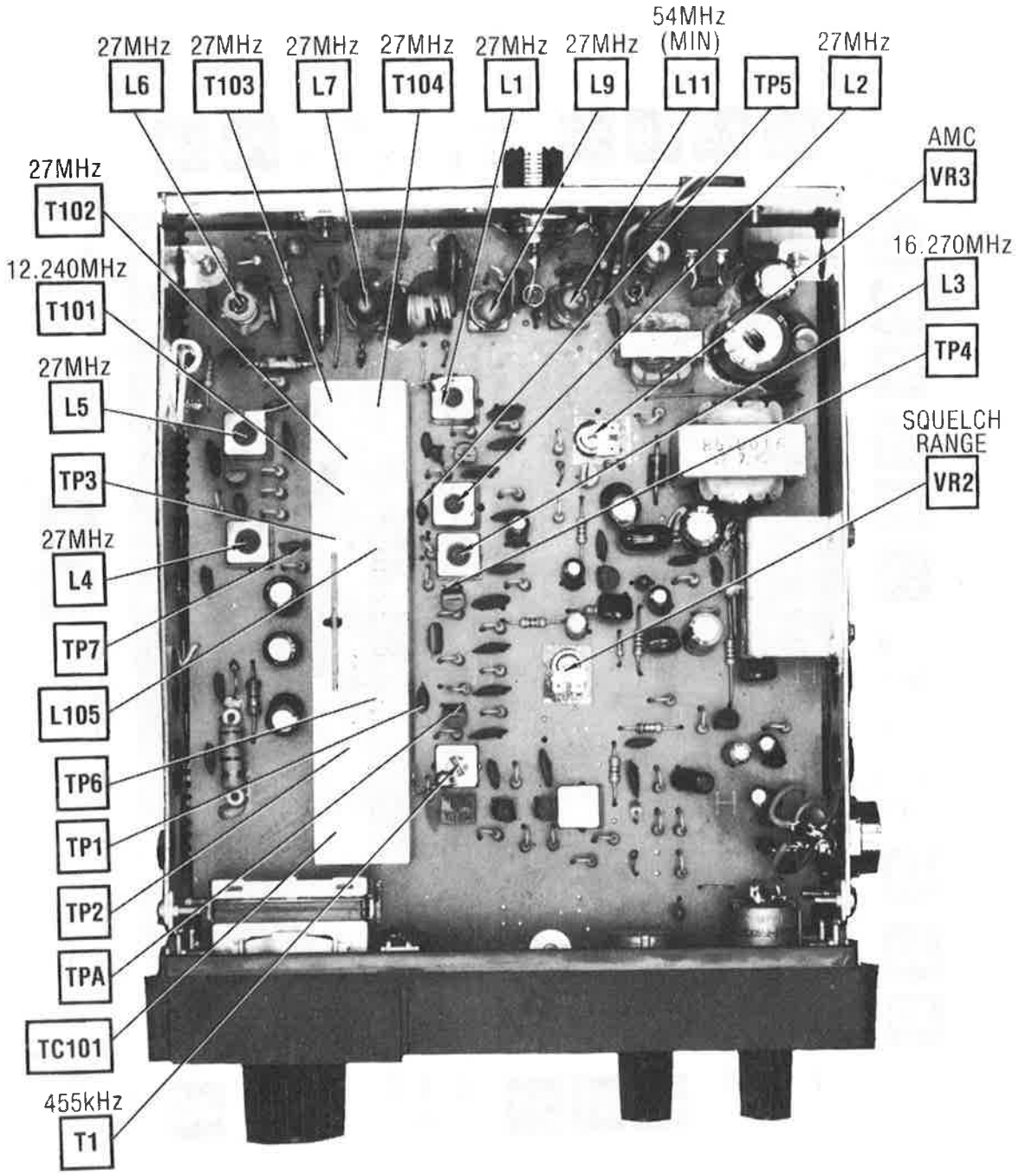
TRANSMITTER ADJUSTMENTS

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

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of oscilloscope or modulation meter to antenna jack. Inject a 1000Hz, 100mV signal at MIC input.	Ch. 19	VR5	ALC Adjust VR5 for 100% modulation maximum.

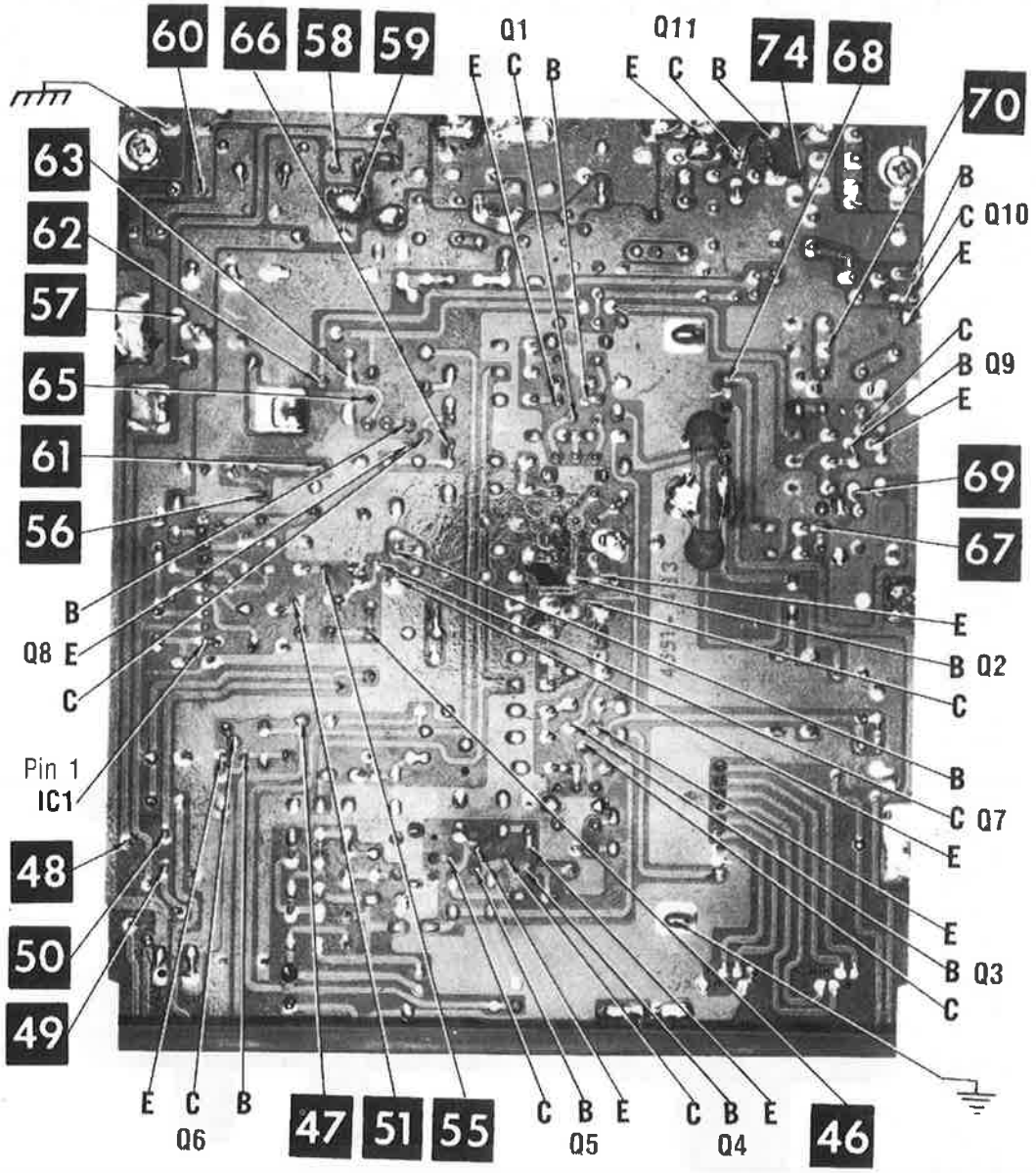
TRUTH CHART

CHANNEL	1 = 7.20 Volts 0 = 0 Volts IC101 CHANNEL INPUT CODE PINS								REC SYNTHESIZER OUTPUT IN MHz AT TP5 (PLL,pin12)	DIVIDER INPUT IN MHz AT TP6 (IC2,Pin17)	XMT SYNTHESIZER OUTPUT IN MHz AT TP7 (PLL,pin16)
			10	11	12	13	14	15			
1			0	0	0	0	0	0	16.270	.910	26.965
2			0	0	0	0	0	1	16.280	.920	26.975
3			0	0	0	0	1	0	16.290	.930	26.985
4			0	0	0	1	0	0	16.310	.950	27.005
5			0	0	0	1	0	1	16.320	.960	27.015
6			0	0	0	1	1	0	16.330	.970	27.025
7			0	0	0	1	1	1	16.340	.980	27.035
8			0	0	1	0	0	1	16.360	1.000	27.055
9			0	0	1	0	1	0	16.370	1.010	27.065
10			0	0	1	0	1	1	16.380	1.020	27.075
11			0	0	1	1	0	0	16.390	1.030	27.085
12			0	0	1	1	1	0	16.410	1.050	27.105
13			0	0	1	1	1	1	16.420	1.060	27.115
14			0	1	0	0	0	0	16.430	1.070	27.125
15			0	1	0	0	0	1	16.440	1.080	27.135
16			0	1	0	0	1	1	16.460	1.100	27.155
17			0	1	0	1	0	0	16.470	1.110	27.165
18			0	1	0	1	0	1	16.480	1.120	27.175
19			0	1	0	1	1	0	16.490	1.130	27.185
20			0	1	1	0	0	0	16.510	1.150	27.205
21			0	1	1	0	0	1	16.520	1.160	27.215
22			0	1	1	0	1	0	16.530	1.170	27.225
23			0	1	1	1	0	1	16.560	1.200	27.255
24			0	1	1	0	1	1	16.540	1.180	27.235
25			0	1	1	1	0	0	16.550	1.190	27.245
26			0	1	1	1	1	0	16.570	1.210	27.265
27			0	1	1	1	1	1	16.580	1.220	27.275
28			1	0	0	0	0	0	16.590	1.230	27.285
29			1	0	0	0	0	1	16.600	1.240	27.295
30			1	0	0	0	1	0	16.610	1.250	27.305
31			1	0	0	0	1	1	16.620	1.260	27.315
32			1	0	0	1	0	0	16.630	1.270	27.325
33			1	0	0	1	0	1	16.640	1.280	27.335
34			1	0	0	1	1	0	16.650	1.290	27.345
35			1	0	0	1	1	1	16.660	1.300	27.355
36			1	0	1	0	0	0	16.670	1.310	27.365
37			1	0	1	0	0	1	16.680	1.320	27.375
38			1	0	1	0	1	0	16.690	1.330	27.385
39			1	0	1	0	1	1	16.700	1.340	27.395
40			1	0	1	1	0	0	16.710	1.350	27.405

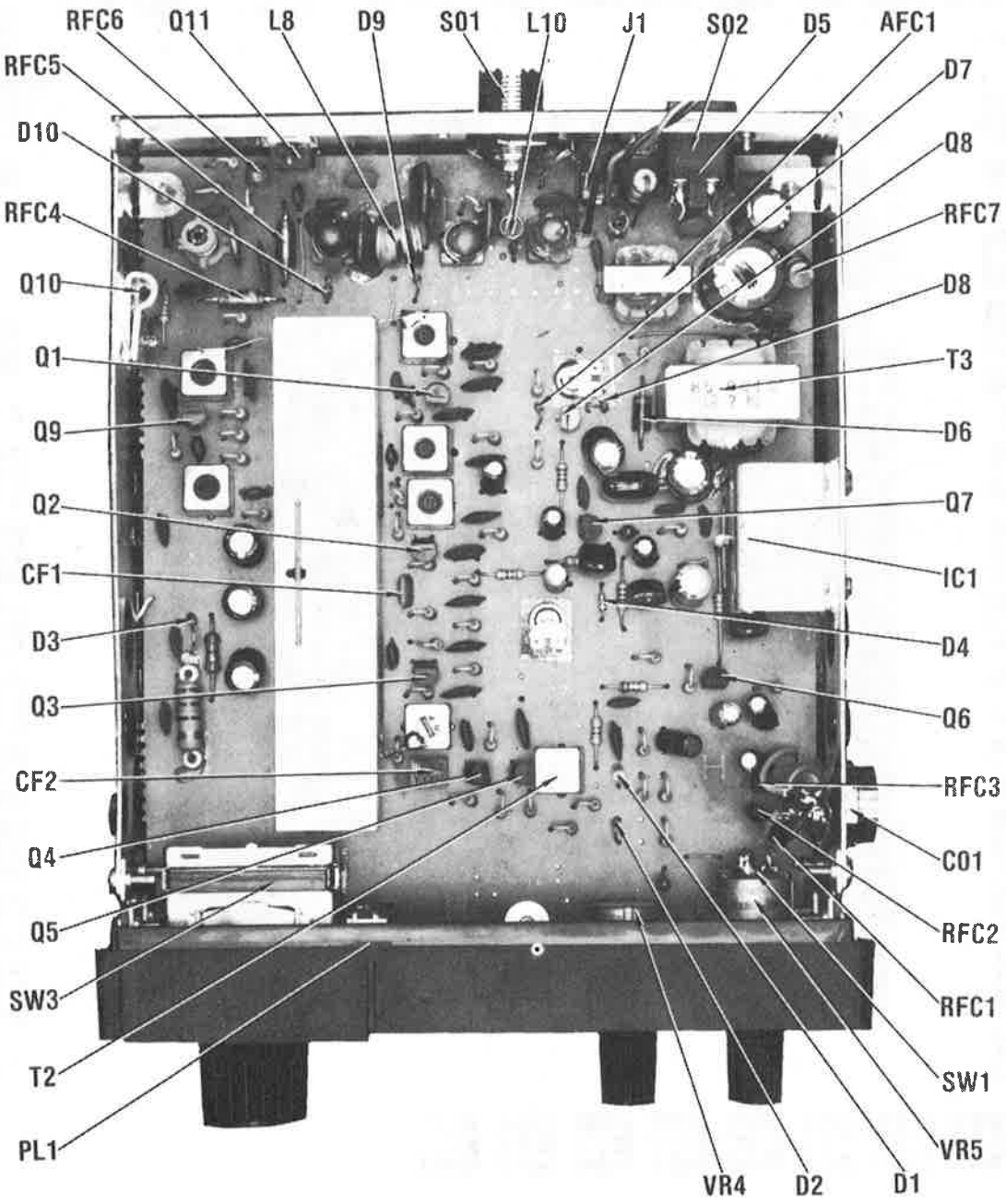


CHASSIS - BOTTOM

A Howard W. Sams CIRCUITRACE® Photo

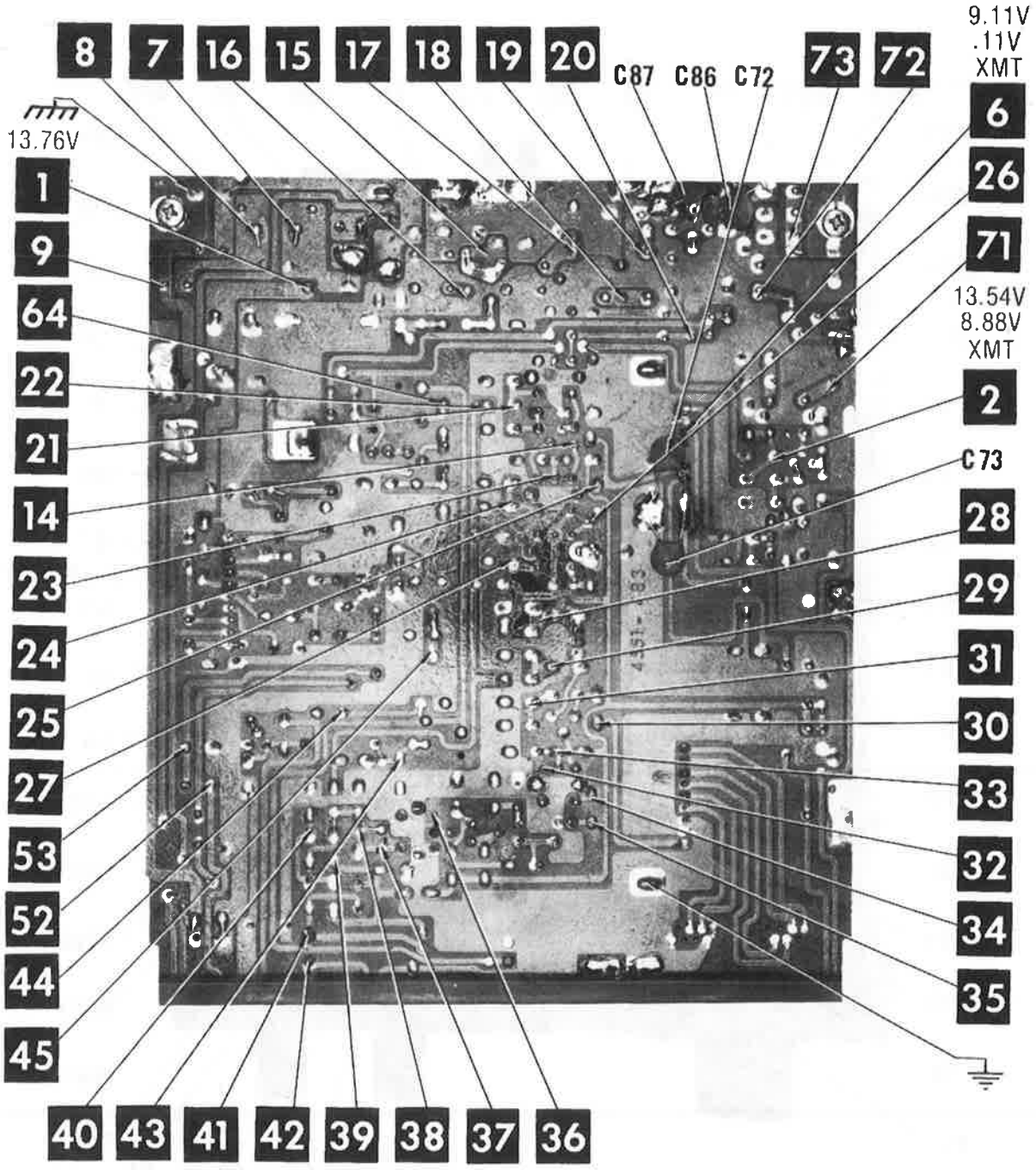


MAIN BOARD

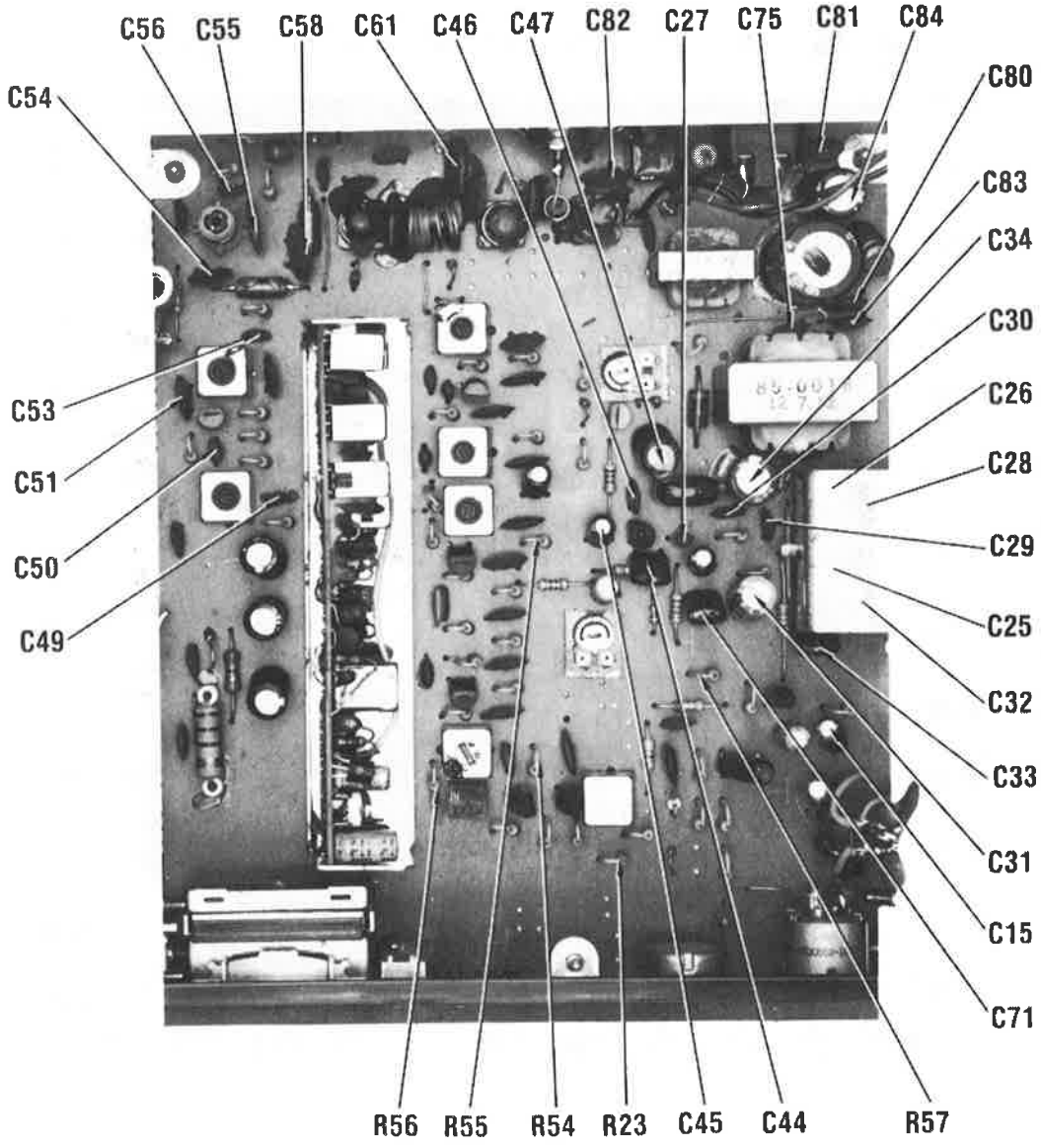

RFC6
Q11
L8
D9
S01
L10
J1
S02
D5
AFC1
RFC5
D7
D10
Q8
RFC4
RFC7
Q10
D8
Q1
T3
Q9
D6
Q2
Q7
CF1
IC1
D3
D4
Q3
Q6
CF2
RFC3
Q4
C01
Q5
RFC2
SW3
RFC1
T2
SW1
PL1
VR5
VR4
D2
D1

MAIN BOARD

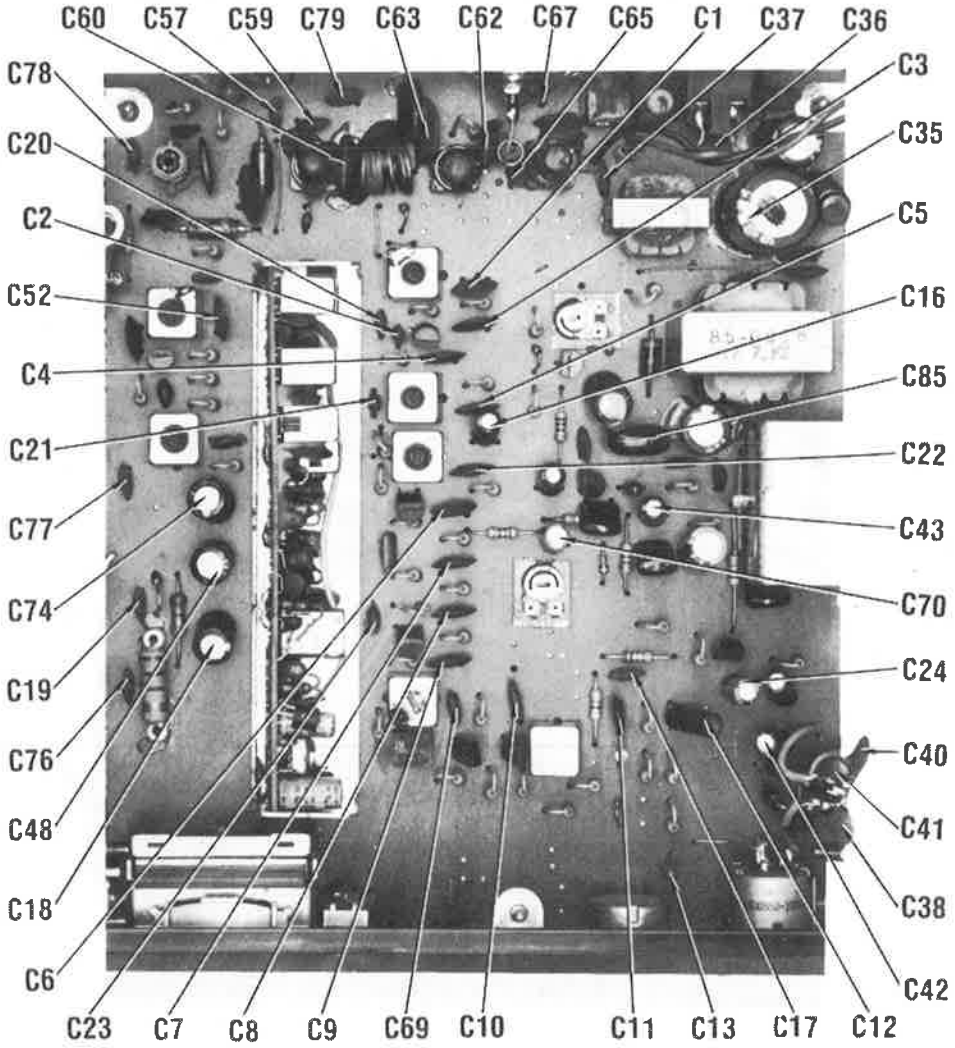
A Howard W. Sams CIRCUITRACE® Photo



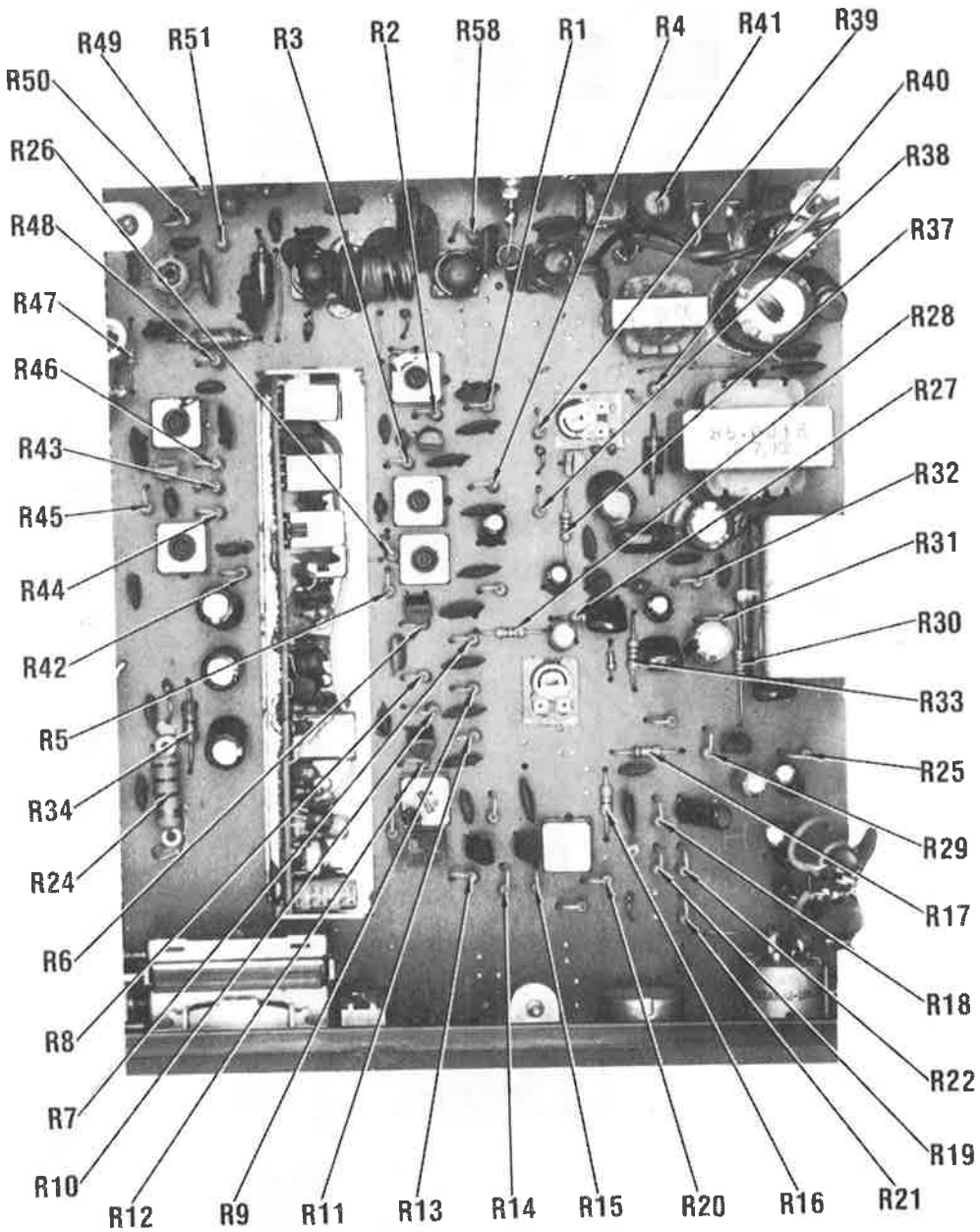
MAIN BOARD


C56
C55
C58
C61
C46
C47
C82
C27
C75
C81
C84
C54
C80
C83
C34
C30
C53
C26
C51
C28
C50
C29
C49
C25
C32
C33
C31
C15
C71
R56
R55
R54
R23
C45
C44
R57

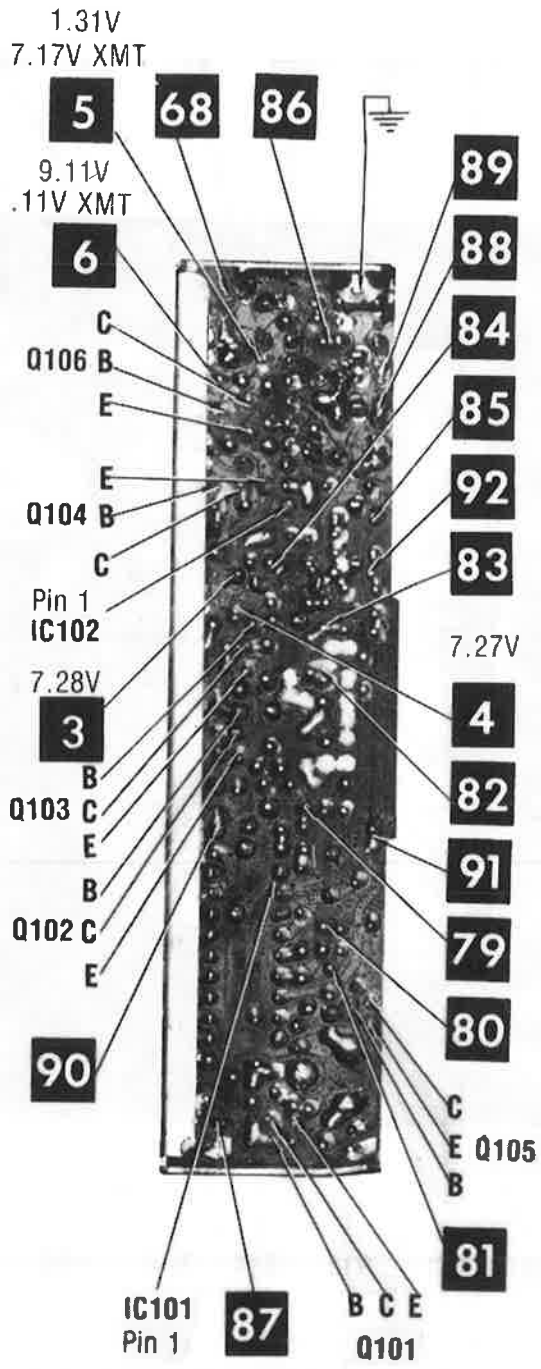
MAIN BOARD


C60
C57
C59
C79
C63
C62
C67
C65
C1
C37
C36
C78
C3
C20
C35
C2
C5
C52
C16
C4
C85
C21
C22
C77
C43
C74
C70
C19
C24
C76
C40
C48
C41
C18
C38
C6
C42
C23
C7
C8
C9
C69
C10
C11
C13
C17
C12

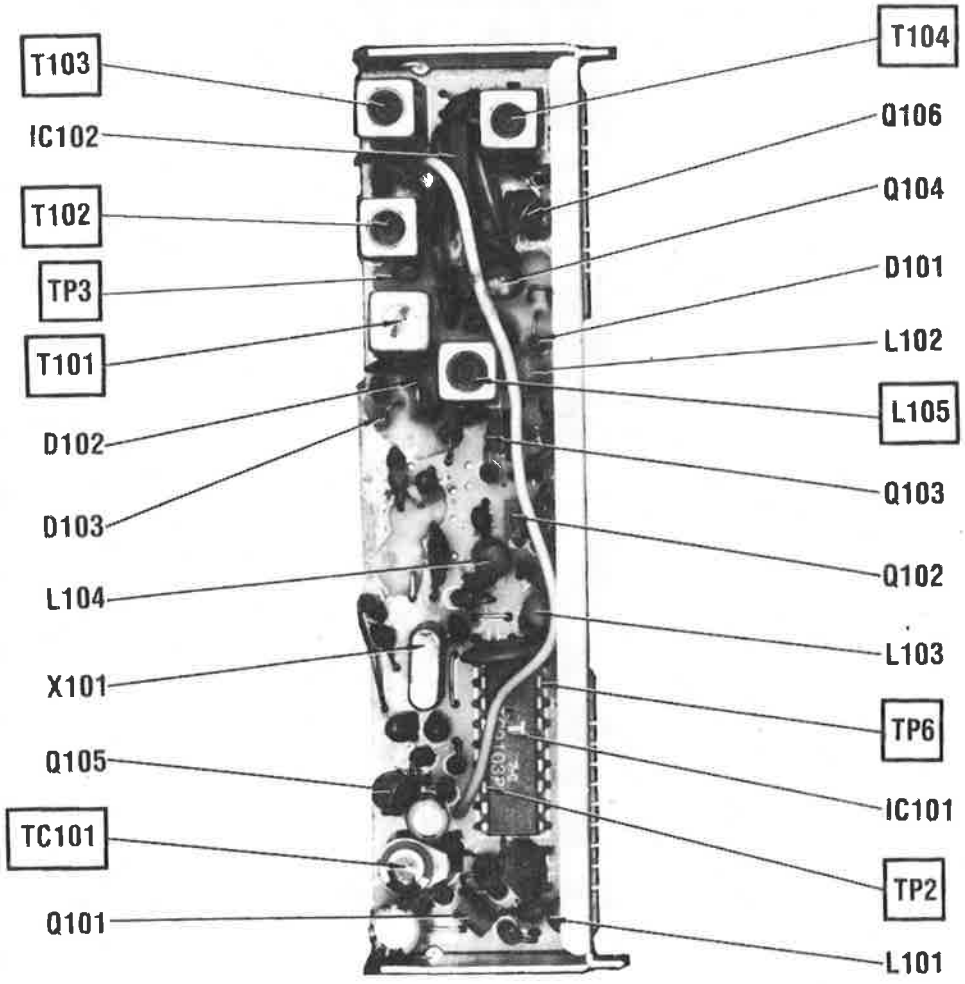
MAIN BOARD


R49
R51
R3
R2
R58
R1
R4
R41
R39
R50
R40
R26
R38
R48
R37
R47
R28
R46
R27
R43
R32
R45
R31
R44
R30
R42
R33
R5
R25
R34
R29
R24
R17
R6
R18
R8
R22
R7
R19
R10
R12
R9
R11
R13
R14
R15
R20
R16
R21

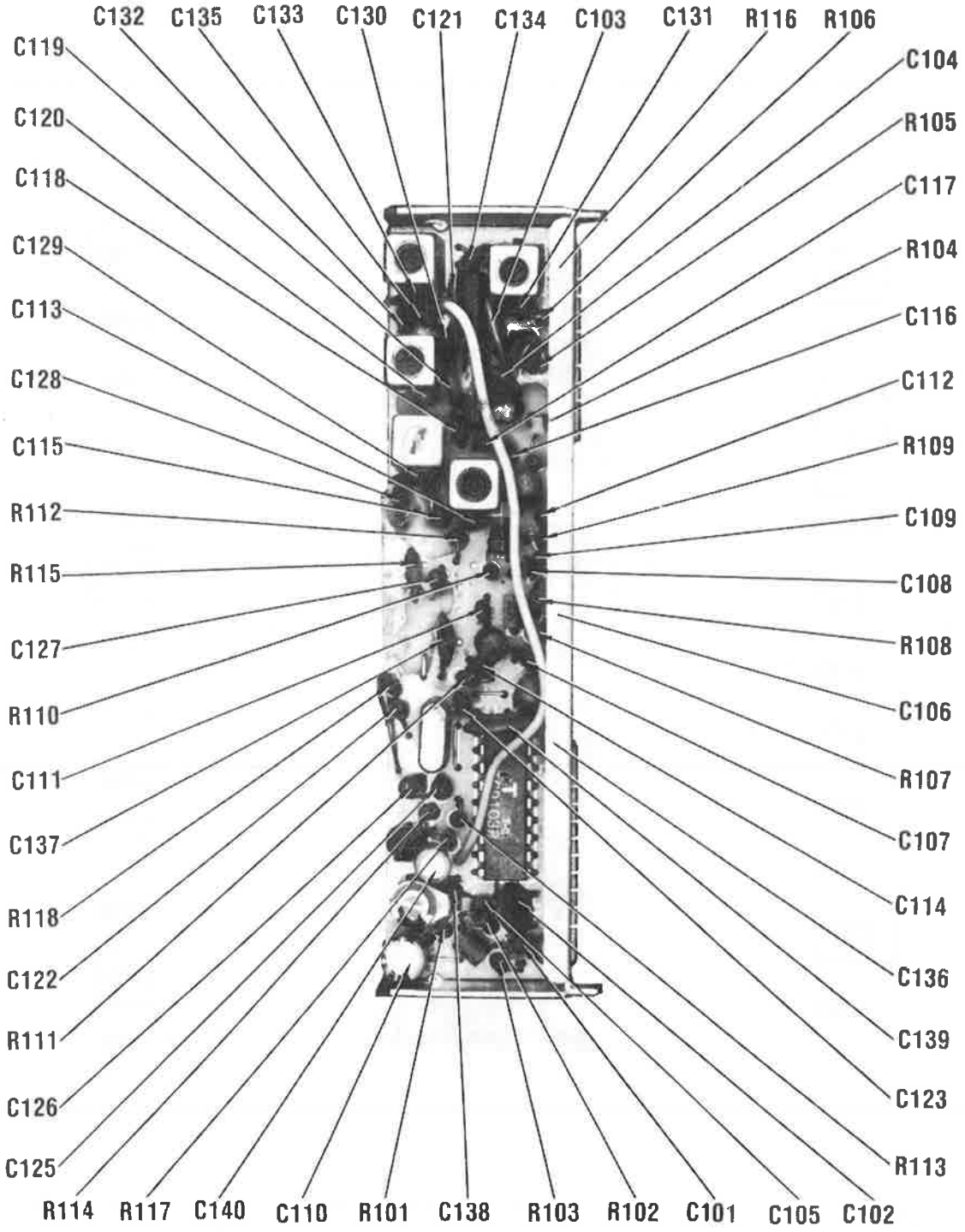
MAIN BOARD


1.31V
7.17V XMT
5
68
86
9.11V
.11V XMT
6
89
88
84
85
92
83
C
Q106 B
E
E
Q104 B
C
Pin 1
IC102
7.28V
3
7.27V
4
B
Q103 C
E
82
B
Q102 C
E
91
79
80
90
C
E Q105
B
81
IC101
Pin 1
87
B C E
Q101

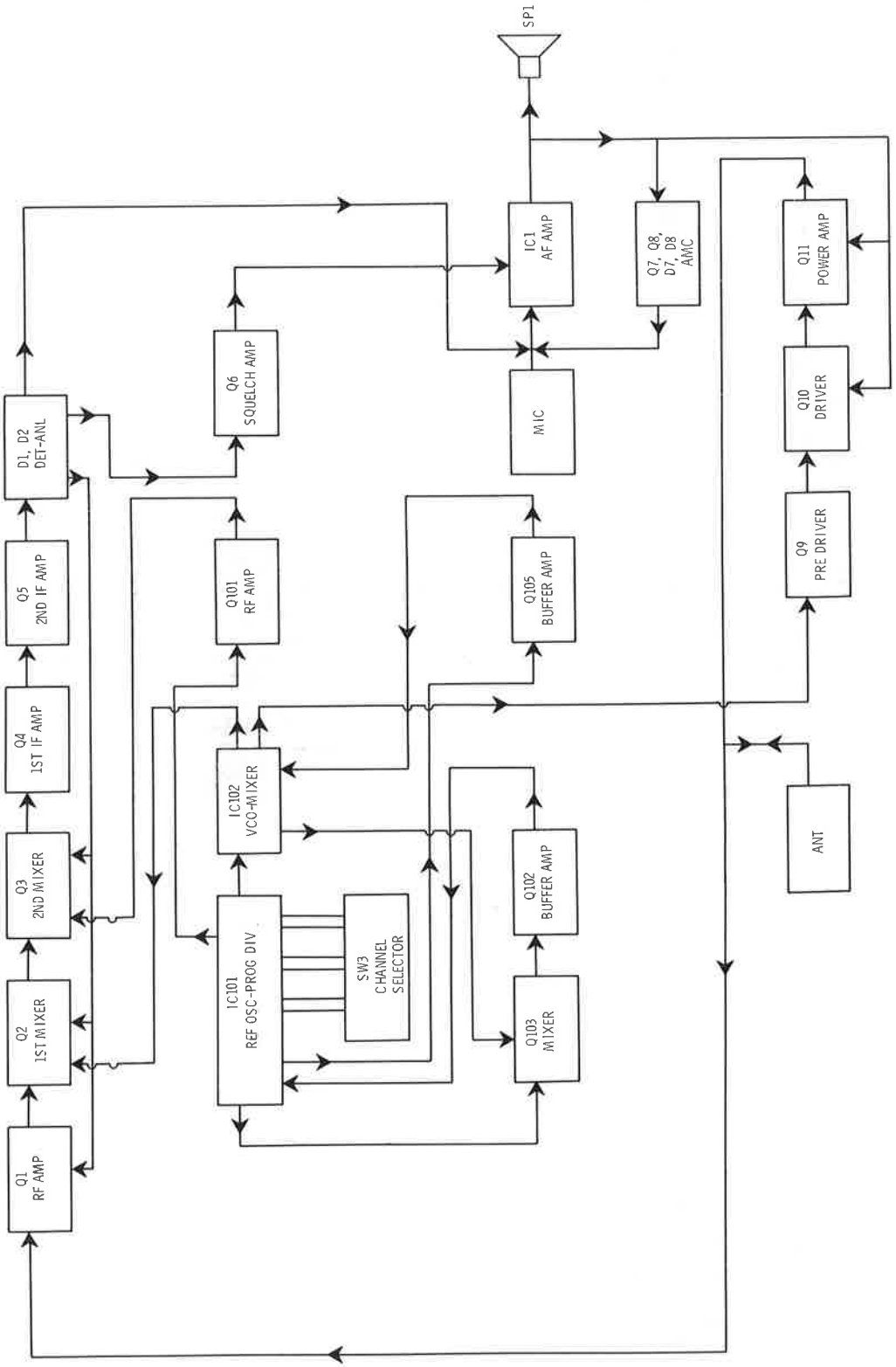
PLL BOARD


T103
IC102
T102
TP3
T101
D102
D103
L104
X101
Q105
TC101
Q101
T104
Q106
Q104
D101
L102
L105
Q103
Q102
L103
TP6
IC101
TP2
L101

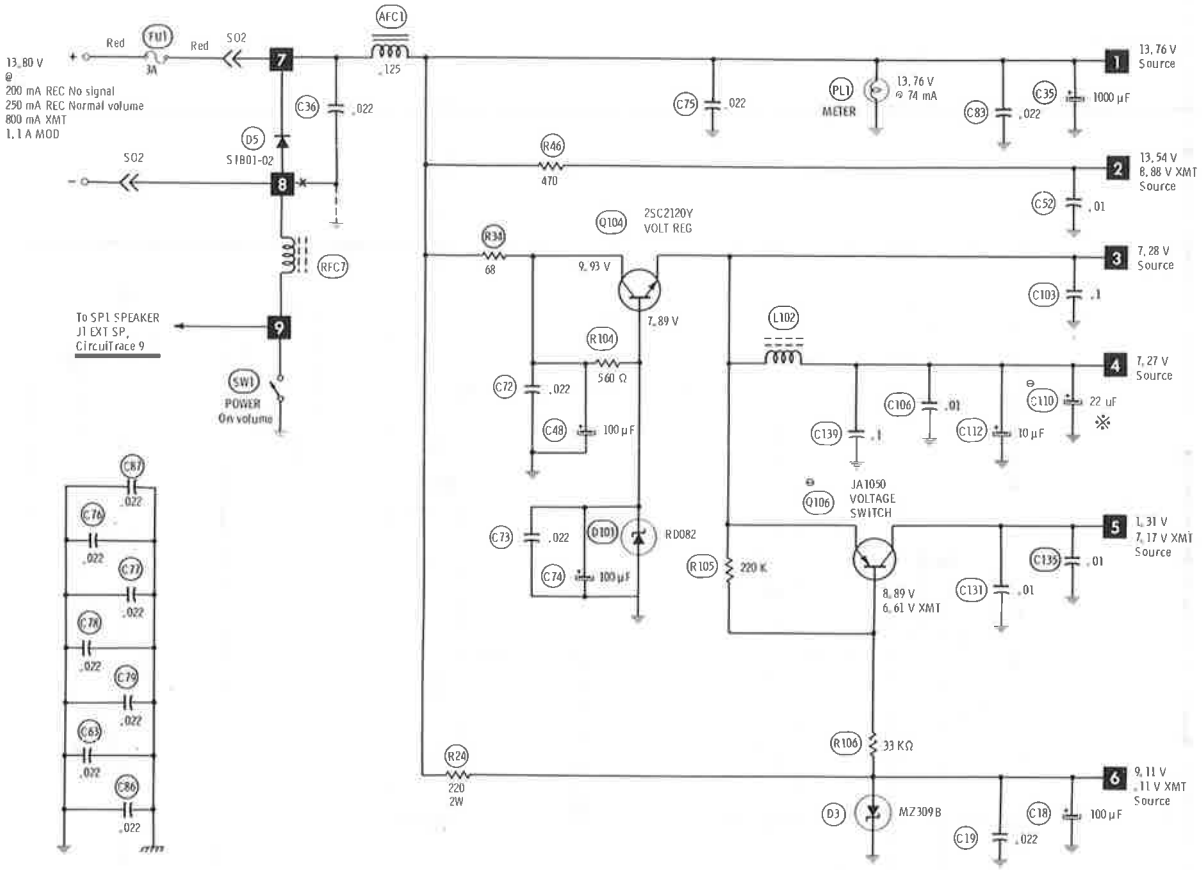
PLL BOARD

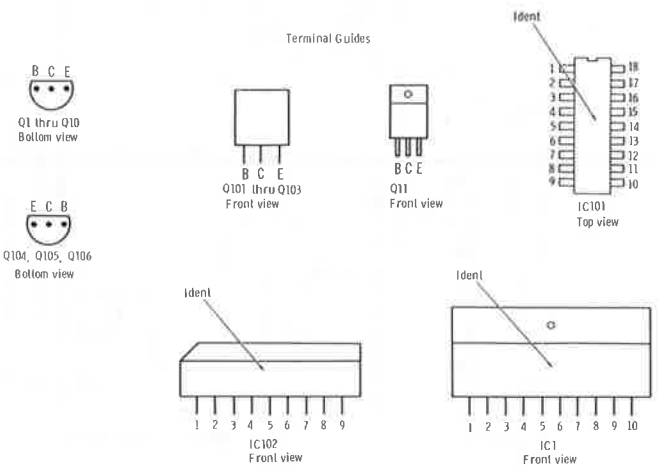

C132
C135
C133
C130
C121
C134
C103
C131
R116
R106
C119
C104
C120
R105
C118
C117
C129
R104
C113
C116
C128
C112
C115
R109
R112
C109
R115
C108
C127
R108
R110
C106
C111
R107
C137
C107
R118
C114
C122
C136
R111
C139
C126
C123
C125
R113
R114
R117
C140
C110
R101
C138
R103
R102
C101
C105
C102

PLL BOARD



BLOCK DIAGRAM



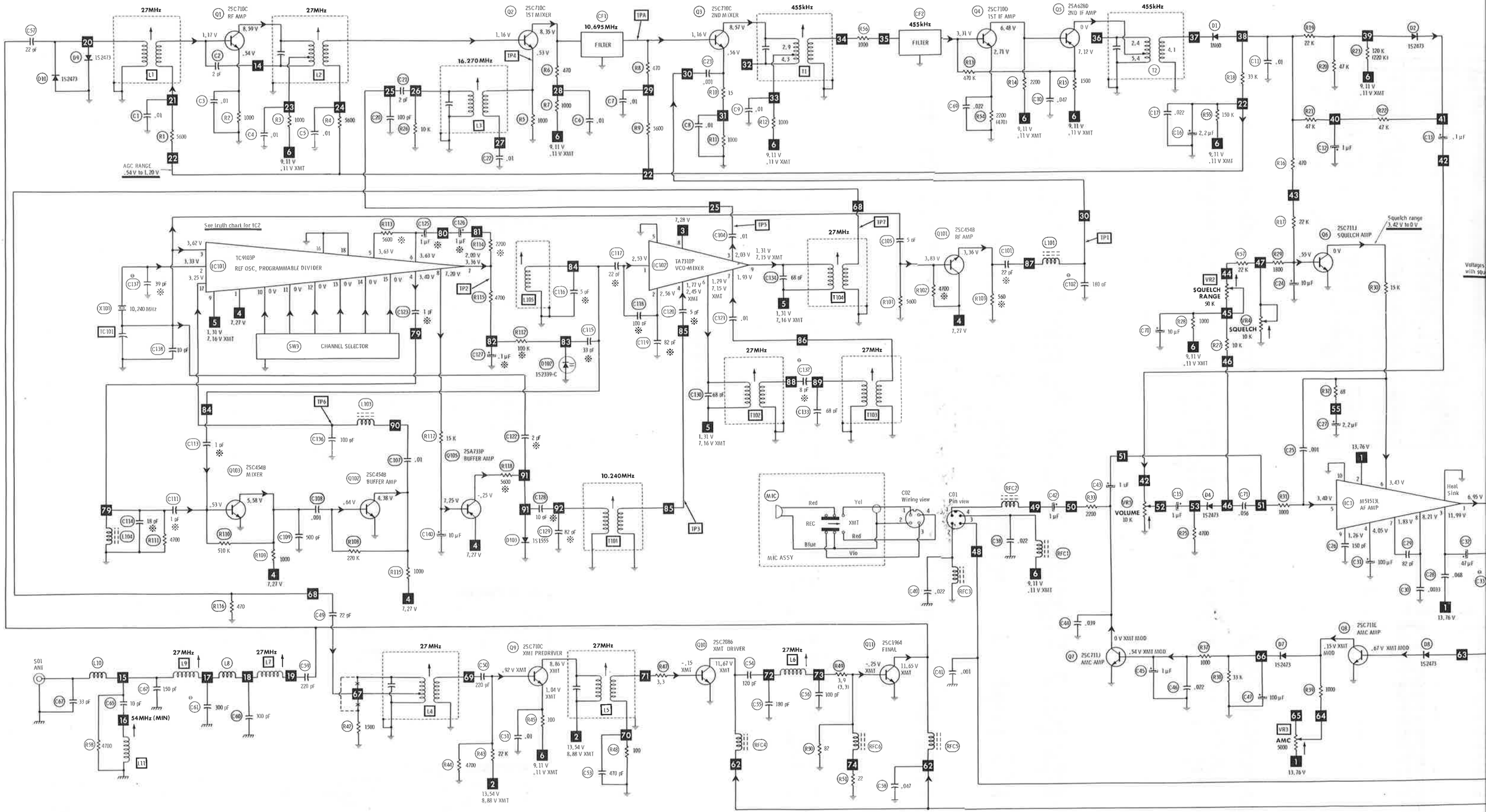


—✖— Circuitry not used in some versions
– – – Circuitry used in some versions
⊖ See parts list
※ Nominal value
⏚ Ground
Chassis
▽ Common tie point
◄ Signal path
◄▷ Voltage path

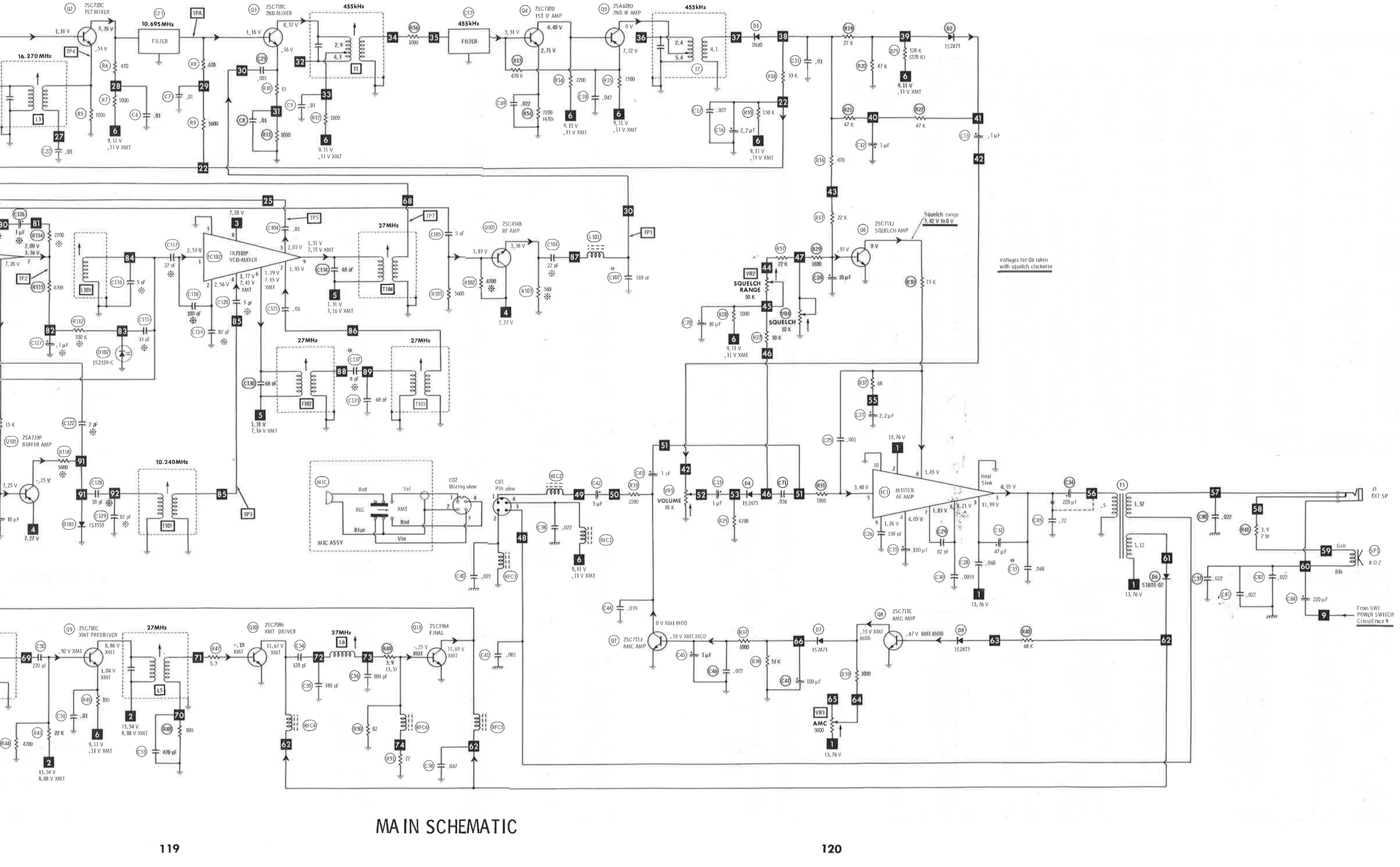
Measurements made in Channel 1 with switching as shown unless noted.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltage maintained as shown at input.
Voltages measured with digital meter, no signal.
Controls adjusted for normal operation.
Arrow at control indicates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

A PHOTOFACT STANDARD NOTATION SCHEMATIC
WITH CIRCUITRACE®

POWER SUPPLY SCHEMATIC



MAIN SCHEMATIC



MAIN SCHEMATIC

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFGR. PART No.	REPLACEMENT DATA: GENERAL ELECTRIC PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
D1	1N60		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
D2	1S2473	5631-1S2473	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D3	MZ309B	5635MZ309B	GEZD-9.1	ZB9.1B		REN 139	SK3060	RT-240	ECG139A	TM139/**	WEP1109	103-272
D4	1S2473	5631-1S2473	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D5	SIB01-02	5632-SIB01-02	GE-504A	PTC201	HEPR0052	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
D6	SIB01-02	5632-SIB01-02	GE-504A	PTC201	HEPR0052	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
D7	1S2473	5631-1S2473	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D8	1S2473	5631-1S2473	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D9	1S2473	5631-1S2473	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D10	1S2473	5631-1S2473	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D101	RD082		GEZD-8.2	ZB8.2A		REN 5072	SK3136	RT-257	ECG5072	TM5072/**	WEP1108	
D102	1S2339-C				HEPR2500				ECG610			
D103	1S1555		GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
IC1	M51513L	5652-M51513L										
IC101	TC9103P					REN 1192	SK3445		ECG1192			
IC102	TA7310P											
Q1	2SC710	5613-710-C	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A
	2SC710C		GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A
Q2	2SC710	5613-710-C	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A
	2SC710C		GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A
Q3	2SC710	5613-710C	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A
	2SC710C		GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A
Q4	2SC710	5613-710D	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A
	2SC710D		GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9003
Q5	2SA628	5611-628D	GE-82*	PTC103*	HEPS0013*	REN 159*	SK3466*	RT-303	ECG159*	TM159*/**	WEP62	121-Z9003
	2SA628D		GE-82*	PTC103*	HEPS0013*	REN 159*	SK3466*	RT-303	ECG159*	TM159*/**	WEP62	121-Z9003
Q6	2SC711	5613-711G	GE-62*	PTC121	HEPS0024*	REN 199*	SK3124*	RT-302*	ECG199*	TM199*/**	WEP372*	121-972
	2SC711G		GE-62*	PTC121	HEPS0024*	REN 199*	SK3124*	RT-302*	ECG199*	TM199*/**	WEP372*	121-972
Q7	2SC711	5613-711G	GE-62*	PTC121	HEPS0024*	REN 199*	SK3124*	RT-302*	ECG199*	TM199*/**	WEP372*	121-972
	2SC711G		GE-62*	PTC121	HEPS0024*	REN 199*	SK3124*	RT-302*	ECG199*	TM199*/**	WEP372*	121-972
Q8	2SC711	5613-711E	GE-62*	PTC121	HEPS0024*	REN 199*	SK3124*	RT-302*	ECG199*	TM199*/**	WEP372*	121-972
	2SC711E		GE-62*	PTC121	HEPS0024*	REN 199*	SK3124*	RT-302*	ECG199*	TM199*/**	WEP372*	121-972
Q9	2SC710	5613-710C	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A
	2SC710C		GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A*/**	WEP710	121-Z9000A
Q10	2SC2086	5613-2086	GE-47*	PTC143*	HEPS3001*	REN 293*	SK3124		ECG293*	TM293*	WEP912*	
Q11	2SC1964	5613-1964	GE-215	PTC186		REN 235	SK3197	RT-146	ECG235	TM235	WEP840	121-Z9039
Q101	2SC454C		GE-210	PTC115*	HEPS0015*	REN 289	SK3124	RT-187	ECG289	TM289/**	WEP454	121-773
	2SC454		GE-210	PTC115*	HEPS0015*	REN 289	SK3124	RT-187	ECG289	TM289/**	WEP454	121-773
Q102	2SC454C		GE-210	PTC115*	HEPS0015*	REN 289	SK3124	RT-187	ECG289	TM289/**	WEP454	121-773
	2SC454		GE-210	PTC115*	HEPS0015*	REN 289	SK3124	RT-187	ECG289	TM289/**	WEP454	121-773
Q103	2SC454C		GE-210	PTC115*	HEPS0015*	REN 289	SK3124	RT-187	ECG289	TM289/**	WEP454	121-773
	2SC454		GE-210	PTC115*	HEPS0015*	REN 289	SK3124	RT-187	ECG289	TM289/**	WEP454	121-773
Q104	2SC2120		GE-18*	PTC144*	HEPS5026	REN 128*	SK3024	RT-114	ECG128*	TM128*	WEP59*	121-792
Q105	2SA733		GE-48	PTC127	HEPS0019*	REN 294	SK3138	RT-303	ECG294	TM294/**	WEP564	121-952
Q106	JA1050		GE-82*	PTC103	HEPS0019	REN 159*	SK3114	RT-126A*	ECG159*	TM159*	WEP62*	121-Z90003

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

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
C12	1 50V	CE1U50V50-10	PC1-50	VTT1A50	QV1-11	EV-1615
C13	.1 35V	CT.1U35V20		TDC104M050EL	QDT1-2	SD50-R109
C15	1 50V	CE1U50V50-10	PC1-50	VTT1A50	QV1-11	EV-1615
C16	2.2 25V	CE2.2U25V50-10	PC2-100	VTT2R2A50	QV1-19	EV-1517
C18	100 10V	PC100-10	PC100-10	VTT100E10	QV1-93	EV-1130
C24	10 16V	CE10U16V50-10	PC10-25	VTT10B25	QV1-41	EV-1222
C27	2.2 25V	CT2.2U25V20		TDC225M035FL		SD35-2R29
C31	100 10V	CE100U10V50-10	PC100-10	VTT100E10	QV1-93	EV-1130
C32	47 16V	CE47U16V50-10	PC50-16	VTT47D16	QV1-73	EV-1226
C34	220 16V	CE220U16V50-10	PC250-25	VTT220H16	QV1-117	EV-1240
C35	1000 16V	CE1000U16V50-10	PC1000-16	VTT1000L16	QV1-183	EV-1260
C42	1 50V	CE1U50V50-10	PC1-50	VTT1A50	QV1-11	EV-1615
C43	1 50V	CE1U50V50-10	PC1-50	VTT1A50	QV1-11	EV-1615
C45	1 50V	CE1U50V50-10	PC1-50	VTT1A50	QV1-11	EV-1615
C47	100 10V	CE100U10V50-10	PC100-10	VTT100E10	QV1-93	EV-1130
C48	100 10V	CE100U10V50-10	PC100-10	VTT100E10	QV1-93	EV-1130
C70	10 16V	CE10U16V50-10	PC10-25	VTT10B25	QV1-41	EV-1222
C74	100 10V	CE100U10V50-10	PC100-10	VTT100E10	QV1-93	EV-1130
C84	220 16V	CE220U16V50-10	PC250-25	VTT220H16	QV1-117	EV-1240
C110	22 10V		PC25-25	VTT22B16	QV1-55	EV-1224
C112	10 25V	CT10U25V20	PC10-25	VTT10B25	QV1-43	EV-1322
C125	1 35V			TDC105M035EL		SD35-19
C126	1 35V			TDC105M035EL		SD35-19
C127	.1 35V			TDC104M050EL	QDT1-2	SD50-R109
C140	10 16V	CE10U16V50-10	PC10-25	VTT10B25	QV1-41	EV-1222

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
C1	.01 50V		UK50-103		MAG5011		
C2	2 +.5 50V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C3	.01 50V		UK50-103		MAG5011		
C4	.01 50V		UK50-103		MAG5011		
C5	.01 50V		UK50-103		MAG5011		
C6	.01 50V		UK50-103		MAG5011		
C7	.01 50V		UK50-103		MAG5011		
C8	.01 50V		UK50-103		MAG5011		
C9	.01 50V		UK50-103		MAG5011		
C10	.047 25V		UK25-503		MAG2515		HY-735
C11	.01 50V		UK50-103		MAG5011		
C17	.022 50V		DC-253	MGP025	TA125		TG-S25
C19	.022 50V		DC-253	MGP025	TA125		TG-S25
C20	100 10% 50V		DTZ-100	NP0100	CN0310		10TCC-T10
C21	2 +.5 50V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C22	.01 50V		UK50-103		MAG5011		
C23	.001 50V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C25	.001 50V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C26	150 10% 50V		DTZ-150		CN0315		10TCC-T15
C28	.068 10% 50V						
C29	82 10% 50V		DTZ-82	NP082	CN0482		10TCC-Q82
C30	.033 50V		UK50-333		MAG50133		
C33	.068 10% 50V						
C36	.022 50V		DC-253	MGP025	TA125		TG-S25
C37	.022 50V		DC-253	MGP025	TA125		TG-S25
C38	.022 50V		DC-253	MGP025	TA125		TG-S25
C40	.022 50V		DC-253	MGP025	TA125		TG-S25
C41	.001 50V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C44	.039 10% 50V						
C46	.022 50V		DC-253	MGP025	TA125		TG-S25
C49	22 10% 50V		DTZ-22	NP022	CN0422		10TCC-Q22
C50	220 50V		DTZ-220				10TCC-T22
C51	.01 50V		UK50-103		MAG5011		
C52	.01 50V		UK50-103		MAG5011		
C53	470 50V		DD-471	GP470	GP347		10TS-T47
C54	120 NPO 5% 50V		DTZ-120		CN0312		10TCC-T12
C55	180 N220 5% 50V						
C56	100 10% 50V		DTZ-100	NP0100	CN0310		10TCC-T10
C57	22 10% 50V		DTZ-22	NP022	CN0422		10TCC-Q22
C58	.047 50V		UK50-503		MAG5015		
C59	220 10% 50V		DTZ-220				10TCC-T22
C60	300 5% 50V			CD15FD301J03	SX330	QW1-38	MWA-301
C61	300 5% 50V			CD15FD301J03	SX330	QW1-38	MWA-301
C62	150 5% 50V			CD15FD151J03	SX315	QW1-31	MWA-151
C63	.022 50V		DC-253	MGP025	TA125		TG-S25
C65	10 +.5 50V		DTZ-10	NP010	CN0410		10TCC-Q10
C67	33 10% 50V		DTZ-33	NP033	CN0433		10TCC-Q33
C69	.022 25V		DC-253	MGP025	TA125		TG-S25
C71	.056 10% 50V						
C72	.022 50V		DC-253	MGP025	TA125		TG-S25
C73	.022 50V		DC-253	MGP025	TA125		TG-S25
C75	.022 50V		DC-253	MGP025	TA125		TG-S25
C76	.022 50V		DC-253	MGP025	TA125		TG-S25
C77	.022 50V		DC-253	MGP025	TA125		TG-S25
C78	.022 50V		DC-253	MGP025	TA125		TG-S25
C79	.022 50V		DC-253	MGP025	TA125		TG-S25
C80	.022 50V		DC-253	MGP025	TA125		TG-S25
C81	.022 50V		DC-253	MGP026	TA125		TG-S25
C82	.022 50V		DC-253	MGP025	TA125		TG-S25
C83	.022 50V		DC-253	MGP025	TA125		TG-S25
C85	.22 10% 50V			CD15ED220J03	SX422	QW1-11	MWA-220
C86	.022 50V		DC-253	MGP025	TA125		TG-S25
C87	.022 50V		DC-253	MGP025	TA125		TG-S25
C101	22		DTZ-22	NP022	CN0422		10TCC-Q22
C102	180		DD-181		GP318		10TS-T18
C103	.1 50V		CK-104		MAG5001		
C104	.01 50V		UK50-103		MAG5011		
C105	5 50V		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C106	.01 50V		UK50-103		MAG5011		
C107	.01 50V		UK50-103		MAG5011		
C108	.001 50V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C109	500 50V		DD-501	GP500	GP350		10TS-T50
C111	1				CN0510		10TCC-V10
C113	1				CN0510		10TCC-V10
C114	18				CN0418		10TCC-Q18
C115	33		DTZ-33	NP033	CN0433		10TCC-Q33
C116	5		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C117	22		DTZ-22	NP022	CN0422		10TCC-Q22
C118	100		DTZ-100	NP0100	CN0310		10TCC-T10
C119	82		DTZ-82	NP082	CN0482		10TCC-Q82
C120	5		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C121	.01 50V		UK50-103		MAG5011		
C122	2		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C123	1				CN0510		10TCC-V10
C128	10		DTZ-10	NP010	CN0410		10TCC-Q10
C129	82		DTZ-82	NP082	CN0482		10TCC-Q82
C130	68 NPO 50V		DTZ-68	NP068	CN0468		10TCC-Q68
C131	.01 50V		UK50-103		MAG5011		
C132	8 NPO		DTZ-10	NP010	CN0410		10TCC-Q10
C133	68 NPO 50V		DTZ-68	NP068	CN0468		10TCC-Q68
C134	68		DTZ-68	NP068	CN0468		10TCC-Q68
C135	.01 50V		UK50-103		MAG5011		
C136	100 50V		DTZ-100	NP0100	CN0310		10TCC-T10
C137	39				CN0439		10TCC-Q39
C138	10		DTZ-10	NP010	CN0410		10TCC-Q10
C139	.1 50V		CK-104		MAG5001		

CONTROLS (All wat

ITEM No.	FUNCTION
VR2	Squelch Range
VR3	AMC
VR4	Squelch
VR5	Volume/Power Switch

(5) Number on unit.

COILS (RF-IF)

ITEM No.	FUNCTION
L1	Rec Antenna (27MHz)
L2	Rec RF (27MHz)
L3	Rec Mixer (27MHz)
L4	Mixer (27MHz)
L5	XMT Predriver (27MHz)
L6	Pi Filter (27MHz)
L7	Final Amp (27MHz)
L8	Pi Filter
L9	Pi Filter (27MHz)
L10	XMT Antenna
L11	TVI Trap (54MHz)
L101	RF Choke
L102	RF Choke
L103	RF Choke
L104	RF Choke
L105	VCO
RFC1	RF Choke
RFC2	RF Choke
RFC3	RF Choke
RFC4	RF Choke
RFC5	RF Choke
RFC6	RF Choke
RFC7	RF Choke
T1	IF (455kHz)
T2	IF (455kHz)
T101	Buffer Amp (10.240MHz
T102	Mixer (27MHz)
T103	Mixer (27MHz)
T104	Mixer (27MHz)

FILTER CHOKE

ITEM No.	RATINGS: CURRENT (Measured)	DC RES.	IND (0
AFC1	1.1A	.125	1.

TRANSFORMER (Au

ITEM No.	IMPEDANCE: PRI.	SEC.	
T3	1.12	1 20.48	2 8

VANIA T No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
09	TM109/**	WEP134	103-Z9001
19	TM519	WEP925	103-287
39A	TM139/**	WEP1109	103-272
19	TM519	WEP925	103-287
16	TM116	WEP156	212-76-02
16	TM116	WEP156	212-76-02
19	TM519	WEP925	103-287
19	TM519	WEP925	103-287
19	TM519	WEP925	103-287
072	TM5072/**	WEP1108	
10			
77	TM177	WEP1062	103-131
192			
23A*	TM123A*/**	WEP710	121-Z9000A
23A*	TM123A*/**	WEP710	121-Z9000A
23A*	TM123A*/**	WEP710	121-Z9000A
23A*	TM123A*/**	WEP710	121-Z9000A
23A*	TM123A*/**	WEP710	121-Z9000A
23A*	TM123A*/**	WEP710	121-Z9000A
23A*	TM123A*/**	WEP710	121-Z9000A
59*	TM159*/**	WEP62	121-Z9003
59*	TM159*/**	WEP62	121-Z9003
99*	TM199*/**	WEP372*	121-972
99*	TM199*/**	WEP372*	121-972
99*	TM199*/**	WEP372*	121-972
99*	TM199*/**	WEP372*	121-972
99*	TM199*/**	WEP372*	121-972
99*	TM199*/**	WEP372*	121-972
123A*	TM123A*/**	WEP710	121-Z9000A
123A*	TM123A*/**	WEP710	121-Z9000A
293*	TM293*	WEP912*	
235	TM235	WEP840	121-Z9039
289	TM289/**	WEP454	121-773
289	TM289/**	WEP454	121-773
289	TM289/**	WEP454	121-773
289	TM289/**	WEP454	121-773
289	TM289/**	WEP454	121-773
289	TM289/**	WEP454	121-773
128*	TM128*	WEP59*	121-792
294	TM294/**	WEP564	121-952
159*	TM159*	WEP62*	121-Z90003

SPRAGUE PART No.	
Q-LINE	GENERAL LINE
-11	EV-1615
1-2	SD50-R109
-11	EV-1615
-19	EV-1517
-93	EV-1130
-41	EV-1222
	SD35-2R29
-93	EV-1130
-73	EV-1226
-117	EV-1240
-183	EV-1260
-11	EV-1615
-11	EV-1615
-11	EV-1615
-93	EV-1130
-93	EV-1130
-41	EV-1222
-93	EV-1130
-117	EV-1240
-55	EV-1224
-43	EV-1322
	SD35-19
	SD35-19
T1-2	SD50-R109
-41	EV-1222

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	.01 50V		UK50-103		MAG5011		
C2	2 +.5 50V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C3	.0T 50V		UK50-103		MAG5011		
C4	.01 50V		UK50-103		MAG5011		
C5	.01 50V		UK50-103		MAG5011		
C6	.01 50V		UK50-103		MAG5011		
C7	.01 50V		UK50-103		MAG5011		
C8	.01 50V		UK50-103		MAG5011		
C9	.01 50V		UK50-103		MAG5011		
C10	.047 25V		UK25-503		MAG2515		HY-735
C11	.01 50V		UK50-103		MAG5011		
C17	.022 50V		DC-253	MGP025	TA125		TG-S25
C19	.022 50V		DC-253	MGP025	TA125		TG-S25
C20	100 10% 50V		DTZ-100	NP0100	CN0310		10TCC-T10
C21	2 +.5 50V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C22	.0T 50V		UK50-103		MAG5011		
C23	.001 50V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C25	.001 50V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C26	150 10% 50V		DTZ-150		CN0315		10TCC-T15
C28	.068 10% 50V						
C29	82 10% 50V		DTZ-82	NP082	CN0482		10TCC-Q82
C30	.033 50V		UK50-333		MAG50133		
C33	.068 10% 50V						
C36	.022 50V		DC-253	MGP025	TA125		TG-S25
C37	.022 50V		DC-253	MGP025	TA125		TG-S25
C38	.022 50V		DC-253	MGP025	TA125		TG-S25
C40	.022 50V		DC-253	MGP025	TA125		TG-S25
C41	.001 50V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C44	.039 10% 50V						
C46	.022 50V		DC-253	MGP025	TA125		TG-S25
C49	22 10% 50V		DTZ-22	NP022	CN0422		10TCC-Q22
C50	220 50V		DTZ-220				10TCC-T22
C51	.01 50V		UK50-103		MAG5011		
C52	.01 50V		UK50-103		MAG5011		
C53	470 50V		DD-471	GP470	GP347		10TS-T47
C54	120 NPO 5% 50V		DTZ-120		CN0312		10TCC-T12
C55	180 N220 5% 50V						
C56	100 10% 50V		DTZ-100	NP0100	CN0310		10TCC-T10
C57	22 10% 50V		DTZ-22	NP022	CN0422		10TCC-Q22
C58	.047 50V		UK50-503		MAG5015		
C59	220 10% 50V		DTZ-220				10TCC-T22
C60	300 5% 50V			CD15FD301J03	SX330	QW1-38	MWA-301
C61	300 5% 50V			CD15FD301J03	SX330	QW1-38	MWA-301
C62	150 5% 50V			CD15FD151J03	SX315	QW1-31	MWA-151
C63	.022 50V		DC-253	MGP025	TA125		TG-S25
C65	10 +.5 50V		DTZ-10	NP010	CN0410		10TCC-Q10
C67	33 10% 50V		DTZ-33	NP033	CN0433		10TCC-Q33
C69	.022 25V		DC-253	MGP025	TA125		TG-S25
C71	.056 10% 50V						
C72	.022 50V		DC-253	MGP025	TA125		TG-S25
C73	.022 50V		DC-253	MGP025	TA125		TG-S25
C75	.022 50V		DC-253	MGP025	TA125		TG-S25
C76	.022 50V		DC-253	MGP025	TA125		TG-S25
C77	.022 50V		DC-253	MGP025	TA125		TG-S25
C78	.022 50V		DC-253	MGP025	TA125		TG-S25
C79	.022 50V		DC-253	MGP025	TA125		TG-S25
C80	.022 50V		DC-253	MGP025	TA125		TG-S25
C81	.022 50V		DC-253	MGP025	TA125		TG-S25
C82	.022 50V		DC-253	MGP025	TA125		TG-S25
C83	.022 50V		DC-253	MGP025	TA125		TG-S25
C85	.22 10% 50V			CD15ED220J03	SX422	QW1-11	MWA-220
C86	.022 50V		DC-253	MGP025	TA125		TG-S25
C87	.022 50V		DC-253	MGP025	TA125		TG-S25
C101	22		DTZ-22	NP022	CN0422		10TCC-Q22
C102	180		DD-181		GP318		10TS-T18
C103	.1 50V		CK-104		MAG5001		
C104	.01 50V		UK50-103		MAG5011		
C105	5 50V		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C106	.01 50V		UK50-103		MAG5011		
C107	.01 50V		UK50-103		MAG5011		
C108	.001 50V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C109	500 50V		DD-501	GP500	GP350		10TS-T50
C111	1				CN0510		10TCC-V10
C113	1				CN0510		10TCC-V10
C114	18				CN0418		10TCC-Q18
C115	33		DTZ-33	NP033	CN0433		10TCC-Q33
C116	5		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C117	22		DTZ-22	NP022	CN0422		10TCC-Q22
C118	100		DTZ-100	NP0100	CN0310		10TCC-T10
C119	82		DTZ-82	NP082	CN0482		10TCC-Q82
C120	5		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C121	.01 50V		UK50-103		MAG5011		
C122	2		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C123	1				CN0510		10TCC-V10
C128	10		DTZ-10	NP010	CN0410		10TCC-Q10
C129	82		DTZ-82	NP082	CN0482		10TCC-Q82
C130	68 NPO 50V		DTZ-68	NP068	CN0468		10TCC-Q68
C131	.01 50V		UK50-103		MAG5011		
C132	8 NPO		DTZ-10	NP010	CN0410		10TCC-Q10
C133	68 NPO 50V		DTZ-68	NP068	CN0468		10TCC-Q68
C134	68		DTZ-68	NP068	CN0468		10TCC-Q68
C135	.01 50V		UK50-103		MAG5011		
C136	100 50V		DTZ-100	NP0100	CN0310		10TCC-T10
C137	39				CN0439		10TCC-Q39
C138	10		DTZ-10	NP010	CN0410		10TCC-Q10
C139	.1 50V		CK-104		MAG5001		

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.
VR2	Squelch Range	50K	J25778			U260R503B
VR3	AMC	5000	J25791			U260R502B
VR4	Squelch	10K	J25796 1033721(5)			
VR5	Volume/Power Switch	10K	J25795 1030552(5)			

(5) Number on unit.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	Rec Antenna (27MHz)	J611326	5933-0022		
L2	Rec RF (27MHz)	J611327	5933-0032		
L3	Rec Mixer (27MHz)	J611328	5933-0042		
L4	Mixer (27MHz)	J611329	5933-0052		
L5	XMT Predriver (27MHz)	J611329	5933-0052		
L6	Pi Filter (27MHz)	J611332	5943-00318		
L7	Final Amp (27MHz)	J611286	5943-0225		
L8	Pi Filter	J611333	5991-0244		
L9	Pi Filter (27NHz)	J611285	5943-0215		
L10	XMT Antenna	J611334	5991-02010		
L11	TVI Trap (54MHz)	J611307	5943-0235		
L101	RF Choke	J611396			
L102	RF Choke	J611397			
L103	RF Choke	J611398			
L104	RF Choke	J611399			
L105	VCO	J611400			
RFC1	RF Choke	J611336	5995-100225		
RFC2	RF Choke	J611336	5995-100225		
RFC3	RF Choke	J611336	5995-100225		
RFC4	RF Choke	J611330	5993-0065		
RFC5	RF Choke	J611331	59y3-0055		
RFC6	RF Choke	J611335	5995-0046		
RFC7	RF Choke	J611260	5995-00511		
T1	IF (455kHz)	J62882	5553-70211		
T2	IF (455kHz)	J62881	5553-70113		
T101	Buffer Amp (10.240MHz)	J62920			
T102	Mixer (27MHz)	J62920			
T103	Mixer (27MHz)	J62920			
T104	Mixer (27MHz)	J62920			

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.	
AFC1	1.1A	.125	1.12mH	J62855 83-0018(1)			(1) Number on unit.

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE			REPLACEMENT DATA			NOTES
	PRI.	SEC.		MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T3	1.12	1 20.48	2 8	J11488 85-0016(1)			(1) Number on unit.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	3" PM 8 Ohms	J10176	30A05Z8	

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
FU1	3A Quick Acting	J18544		AGC3	HRK	312003	150145	FG3-2

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	J63349	18-032	18-034	18-010	18-092	1	2	4	3	NC	2

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF1	Filter	J307	10.695MHz
CF2	Filter	J308	455kHz
CO1	Socket	J26870	Mic
CO2	Plug	J26856	Mic
J1	Jack	J63357	External Speaker
PL1	Lamp	J18556	Channel Indicator
SO1	Socket	J26856	Antenna
SO2	Socket	J26827	Power
SW1	Switch		Power On/Off (Part of volume control)
SW3	Switch	J12632	Channel Indicator

WIRING DATA

General-use Hook-up Wire (available in 5 colors) BELDEN No. 8523
Shielded Hook-up Wire (spiral wrapped) . . . . . BELDEN No. 8421
(braided) . . . . . BELDEN No. 8401
Speaker Cable (available in 4 colors) . . . . . BELDEN No. 8782
Bonding Strap . . . . . BELDEN No. 8672
AC Power Cord . . . . . (6') BELDEN No. 17106
(9') BELDEN No. 17109

Coiled Microphone Cable
3-conductor (1 shielded) 23AWG BELDEN No. 9471 (5')
BELDEN No. 8497 (6')
BELDEN No. 9472 (7-1/2')
28AWG BELDEN No. 9466 (6')
31AWG BELDEN No. 9468 (10')
4-conductor (unshielded) 23AWG BELDEN No. 8415 (6')
5-conductor (1 shielded) 28AWG BELDEN No. 9467 (6')
BELDEN No. 9465 (7-1/2')