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 ROGUE 40

MANUFACTURER'S SPECIFICATIONS

RECEIVER SECTION

* Frequency Range	26.965 to 27.405 MHz
* Sensitivity	0.25uV for 10db S/N at 1 kHz at 30% Modulation
* Selectivity	BW 2.5 kHz min. at 6 db down
* Adj. Channel Rejection	Better than 60 db
* Audio Distortion at 1 kHz	Less than 10% at 3W
* Squelch Sensitivity	0.2uV
* Squelch Stop Sensitivity	45 to 30,000uV (adjustable)
* Noise Limiter	Series gate

TRANSMITTER SECTION

* Frequency Range	26.965 to 27.405 MHz
* Power Output at 13.8 VDC	3.5 to 4 watts
* Modulation (4mV at microphone)	100%
* Emission (Class D operation)	6A3
* Hum and Noise	Better than 40 db down
* Frequency Tolerance	Better than ±.005%
* Antenna Impedance	50 ohms
* Switching	Electronic
* Modulation Distortion	Less than 10% at 95% modulation at 1 kHz

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:
C51, C125	8276, 5000
L9, T12, T13, T14	9091, 8728-A, 8728
L2, T3 thru T7	5009, 8728-A, 8728
T1, T2, T10, T11, T15, T16, T17	9440

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of frequency counter to TP1 (Q3 Base).	Ch. 19	C51	Adjust for 10.240MHz.
Input of oscilloscope to TP2 (junction of C62, C63 and C64).	Ch. 19	T10	Adjust for maximum RF.
Input of frequency counter to TP2 (junction of C62, C63 and C64).	Ch. 19		Check for 36.380MHz.
Input of DC meter to TP3 (junction of R65, R66 and R67).	Ch. 1	T11	Adjust for 3.00 volts.
Input of frequency counter to TP4 (Q15, Emitter).	Ch. 1		Check for 37.660MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP5 (U1, Pin 3).	Ch. 1		Check for 1.280MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP6 (Q20, Emitter).	Ch. 19, XMT	C125	Adjust for 10.695MHz.
Input of frequency counter to antenna jack.	Ch. 19, XMT	C125	Check for 27.185MHz. If necessary, readjust C125 for 27.185MHz.

RECEIVER ALIGNMENT

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

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP1 (Q3, Base). 455kHz, 1000Hz @ 30% modulation.	Ch. 19 Squelch MINIMUM	T7,T6,T5,T4	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation.	Ch. 19 Squelch MINIMUM	T3,L2,T2,T1	Adjust for maximum output. If necessary, readjust T4, T5, T6, and T7.

RECEIVER ADJUSTMENTS

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

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 50,000uV.	Ch. 19 Squelch MINIMUM	VR1	AGC Adjust volume control (VR4) for 0db. Decrease generator output to 50uV. Adjust VR1 so that audio does not drop more than 10db.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 30,000uV.	Ch. 19 Squelch Maximum	VR3	SQUELCH RANGE Adjust so that squelch just breaks.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 100uV.	Ch. 19 Squelch MINIMUM	VR7	S METER Adjust for 9 on S scale of meter.

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	T17,T16,T15, T14,T13,L9	Adjust for maximum.
	Ch. 19	L9	Adjust for 4 watts maximum.
Input of spectrum analyzer or harmonic meter to antenna jack.	Ch. 19	T12	Adjust for MINIMUM at 54MHz.

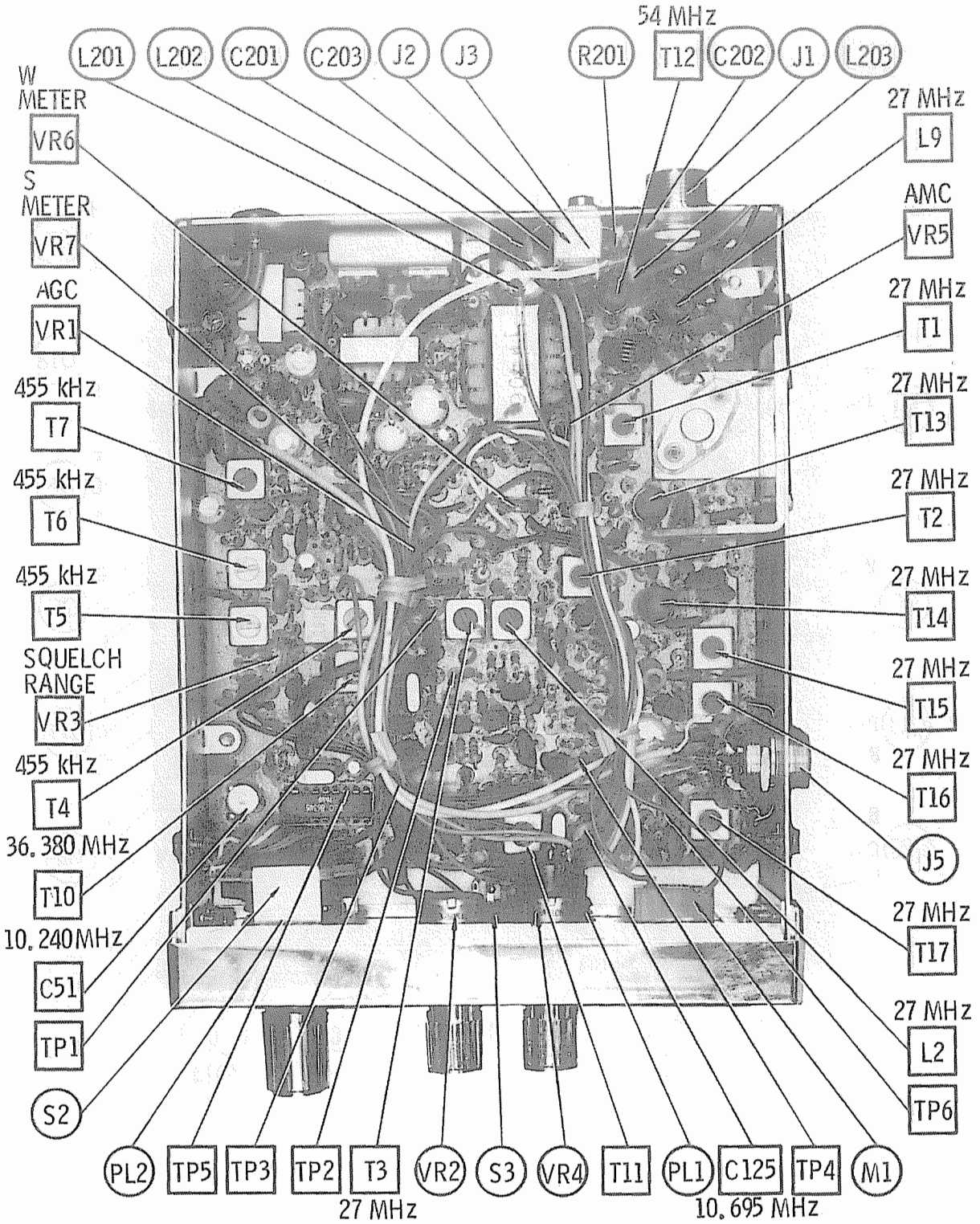
TRANSMITTER ADJUSTMENTS

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.

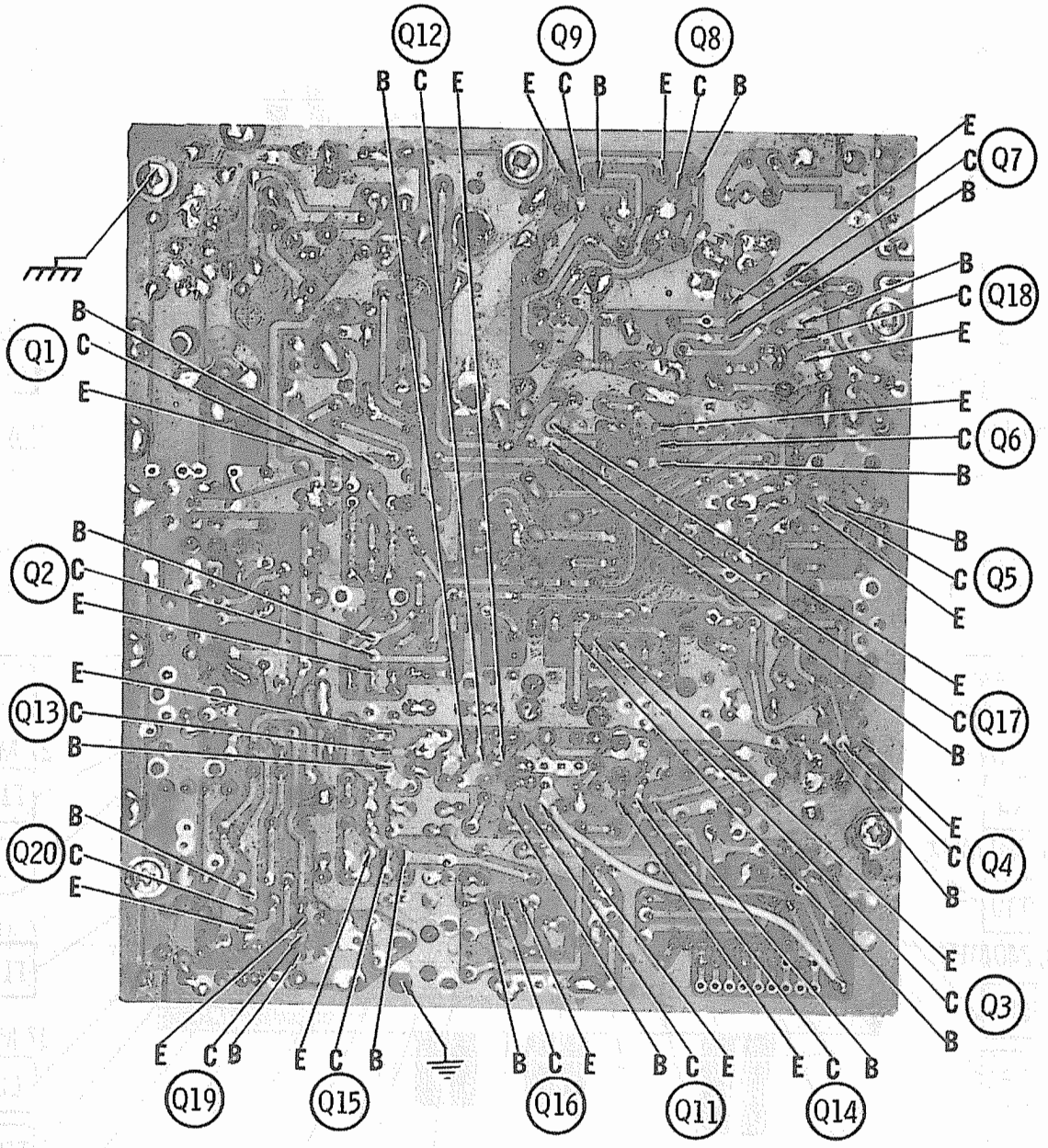
TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of oscilloscope or modulation meter to antenna jack. Inject a 1000Hz, 100mV signal at mic input.	Ch. 19	VR5	AMC Adjust for 100% modulation.
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.	Ch. 19	VR6	W METER Adjust so that W meter agrees with RF wattmeter.

TRUTH CHART

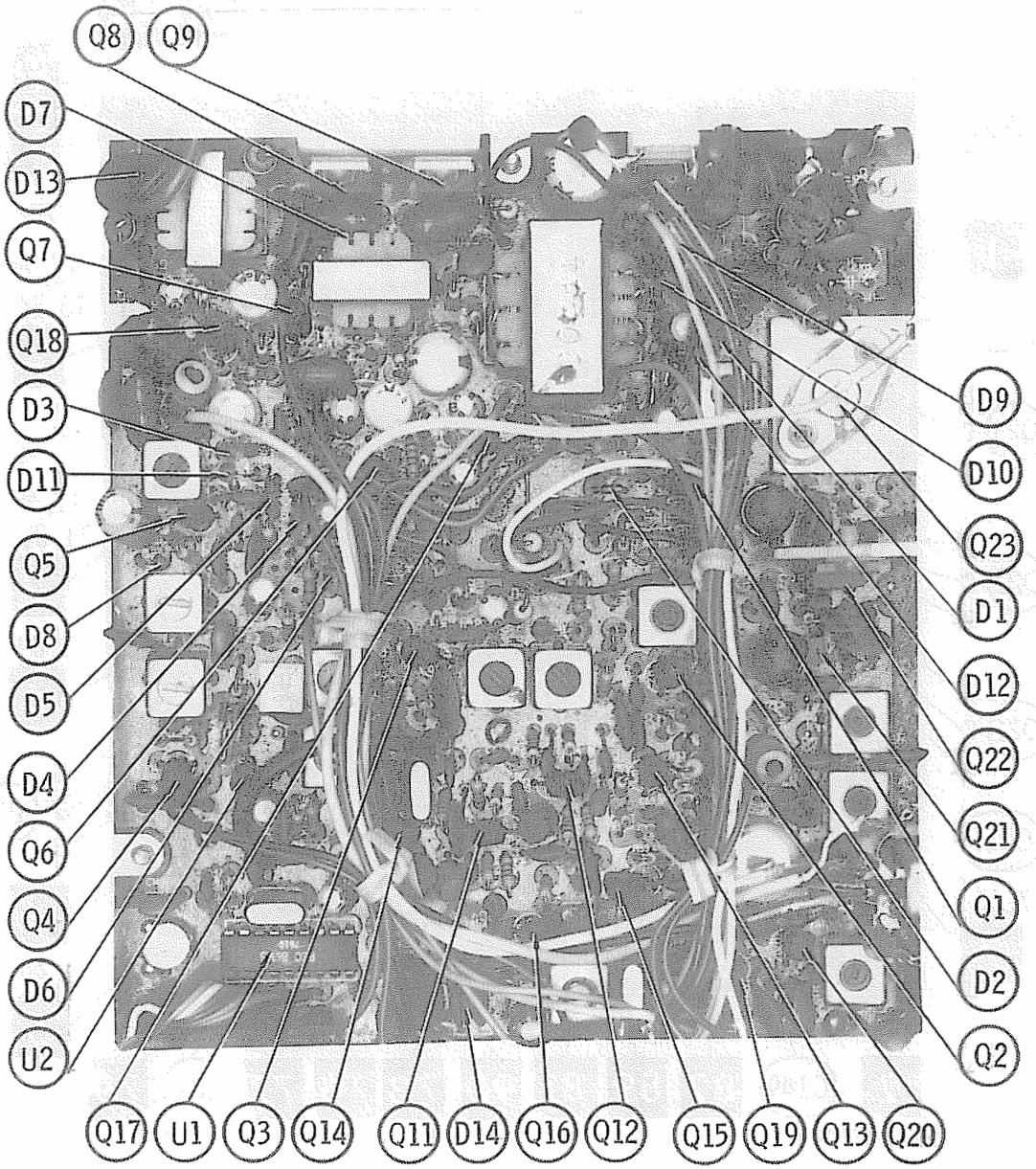
CHANNEL	1 = 4.83 Volts 0 = 0 Volts U1 PROGRAM DIVIDER PINS								REC & XMT VCO OUTPUT IN MHz AT TP4	DIVIDER INPUT REC & XMT VCO OUTPUT IN MHz AT TP5	
	10	11	12	13	14	15	16				
1	0	0	0	0	0	0	0		37.660	1.280	
2	0	0	0	0	0	0	1		37.670	1.290	
3	0	0	0	0	0	1	0		37.680	1.300	
4	0	0	0	0	1	0	0		37.700	1.320	
5	0	0	0	0	1	0	1		37.710	1.330	
6	0	0	0	0	1	1	0		37.720	1.340	
7	0	0	0	0	1	1	1		37.730	1.350	
8	0	0	0	1	0	0	1		37.750	1.370	
9	0	0	0	1	0	1	0		37.760	1.380	
10	0	0	0	1	0	1	1		37.770	1.390	
11	0	0	0	1	1	0	0		37.780	1.400	
12	0	0	0	1	1	1	0		37.800	1.420	
13	0	0	0	1	1	1	1		37.810	1.430	
14	0	0	1	0	0	0	0		37.820	1.440	
15	0	0	1	0	0	0	1		37.830	1.450	
16	0	0	1	0	0	1	1		37.850	1.470	
17	0	0	1	0	1	0	0		37.860	1.480	
18	0	0	1	0	1	0	1		37.870	1.490	
19	0	0	1	0	1	1	0		37.880	1.500	
20	0	0	1	1	0	0	0		37.900	1.520	
21	0	0	1	1	0	0	1		37.910	1.530	
22	0	0	1	1	0	1	0		37.920	1.540	
23	0	0	1	1	1	0	1		37.950	1.570	
24	0	0	1	1	0	1	1		37.930	1.550	
25	0	0	1	1	1	0	0		37.940	1.560	
26	0	0	1	1	1	1	0		37.960	1.580	
27	0	0	1	1	1	1	1		37.970	1.590	
28	0	1	0	0	0	0	0		37.980	1.600	
29	0	1	0	0	0	0	1		37.990	1.610	
30	0	1	0	0	0	1	0		38.000	1.620	
31	0	1	0	0	0	1	1		38.010	1.630	
32	0	1	0	0	1	0	0		38.020	1.640	
33	0	1	0	0	1	0	1		38.030	1.650	
34	0	1	0	0	1	1	0		38.040	1.660	
35	0	1	0	0	1	1	1		38.050	1.670	
36	0	1	0	1	0	0	0		38.060	1.680	
37	0	1	0	1	0	0	1		38.070	1.690	
38	0	1	0	1	0	1	0		38.080	1.700	
39	0	1	0	1	0	1	1		38.090	1.710	
40	0	1	0	1	1	0	0		38.100	1.720	



CHASSIS-BOTTOM

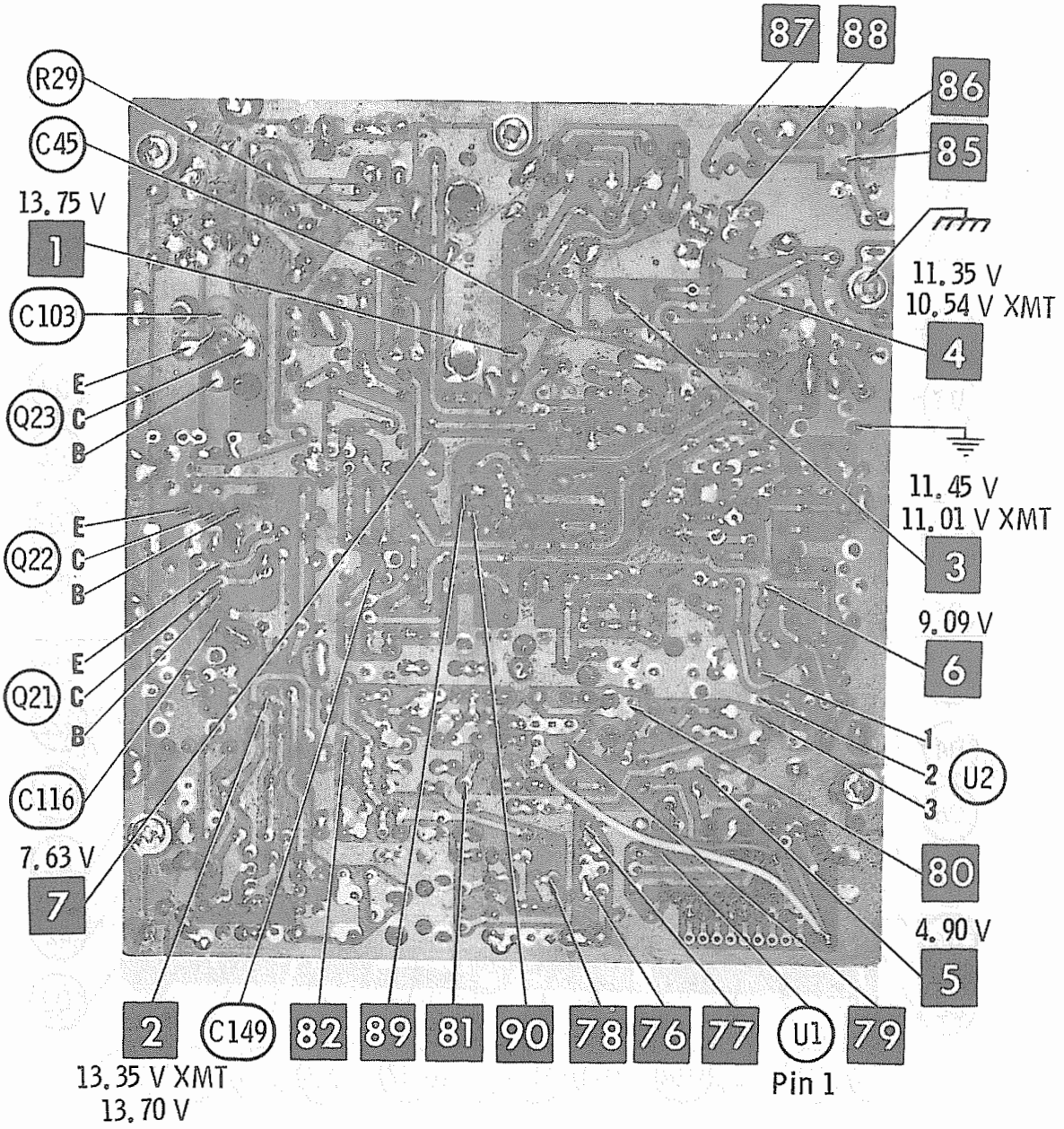


MAIN BOARD

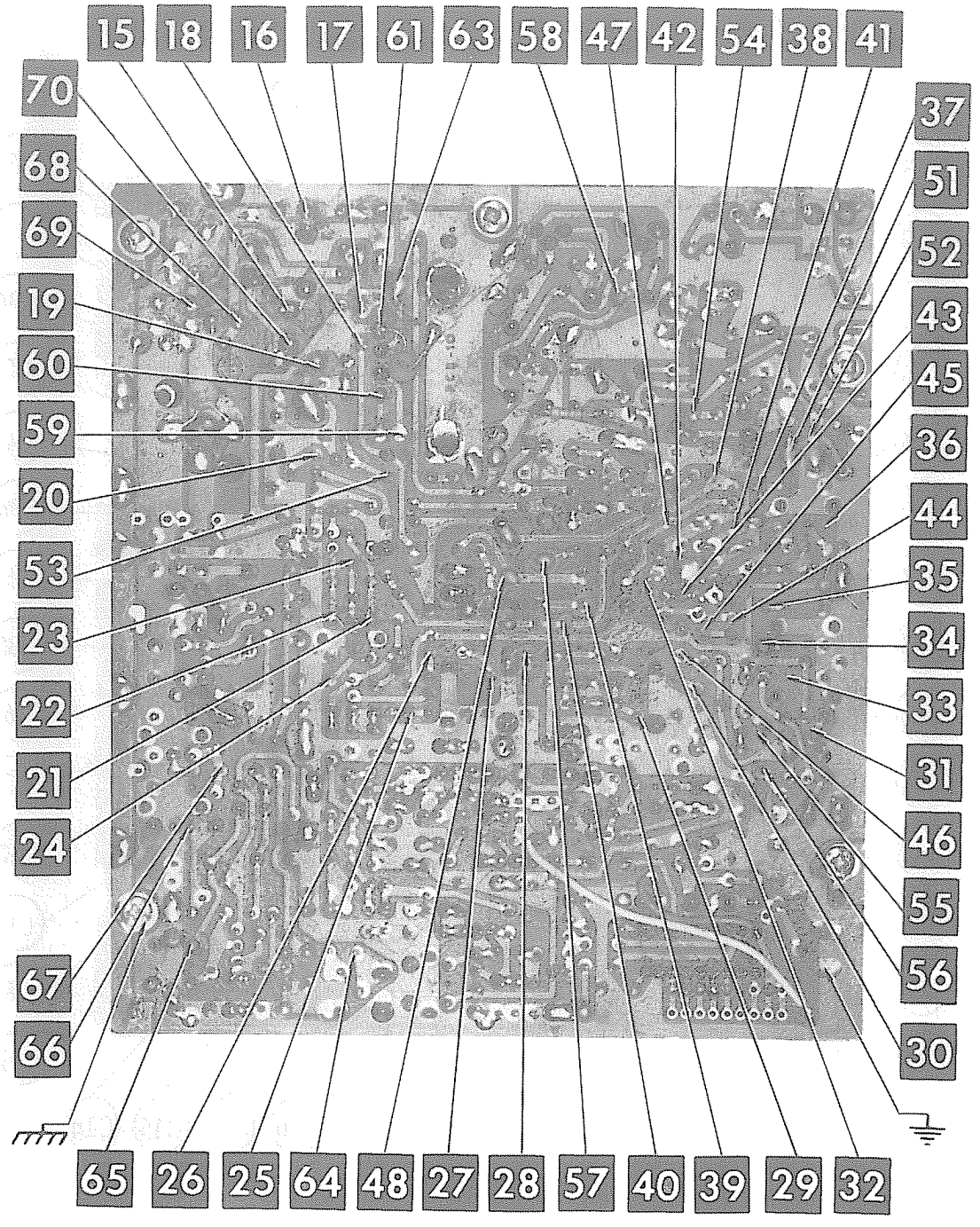

Q8
Q9
D7
D13
Q7
Q18
D3
D11
Q5
D8
D5
D4
Q6
Q4
D6
U2
Q17
U1
Q3
Q14
Q11
D14
Q16
Q12
Q15
Q19
Q13
Q20
D9
D10
Q23
D1
D12
Q22
Q21
Q1
D2
Q2

MAIN BOARD

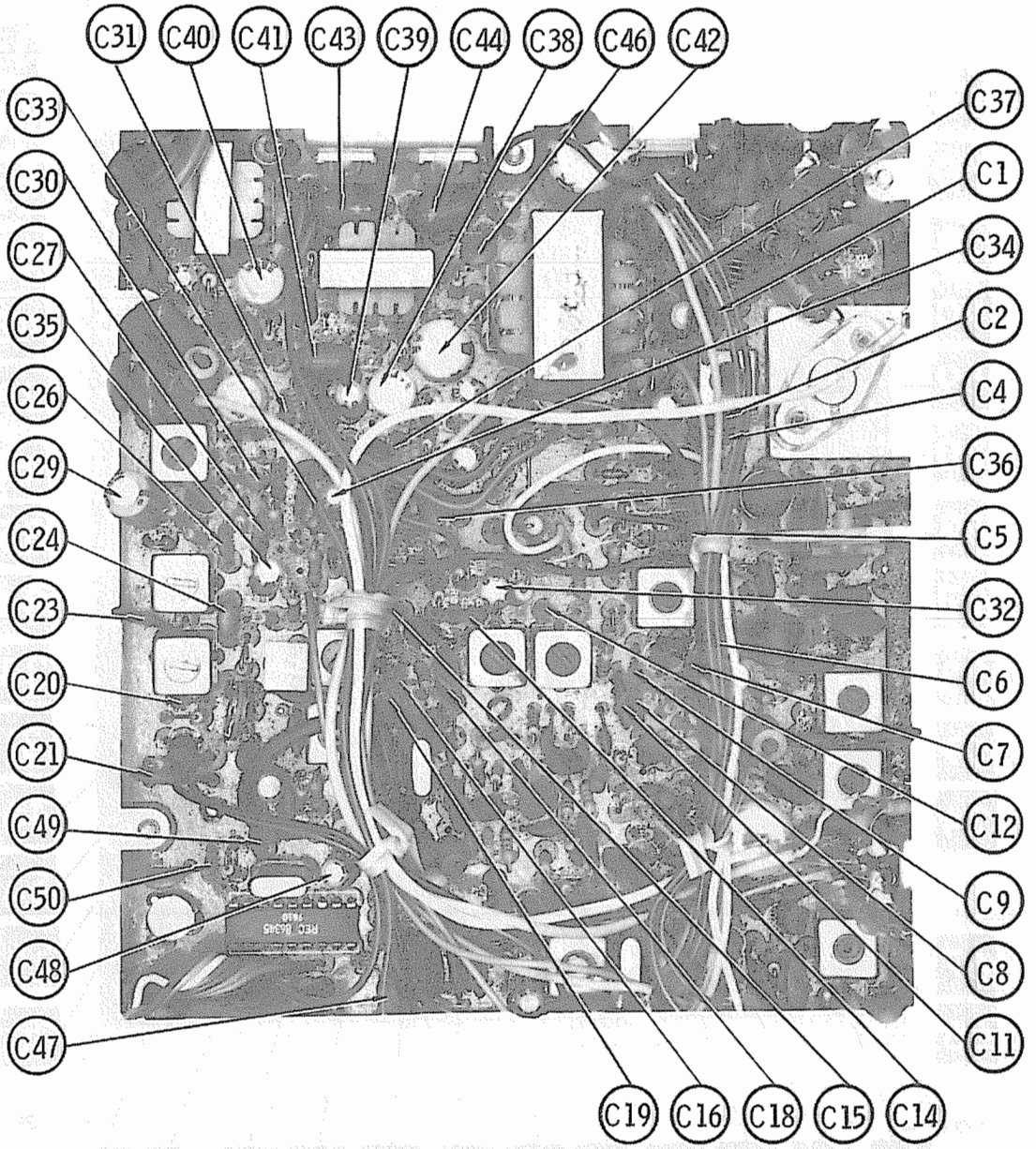
A Howard W. Sams CIRCUITRACE® Photo



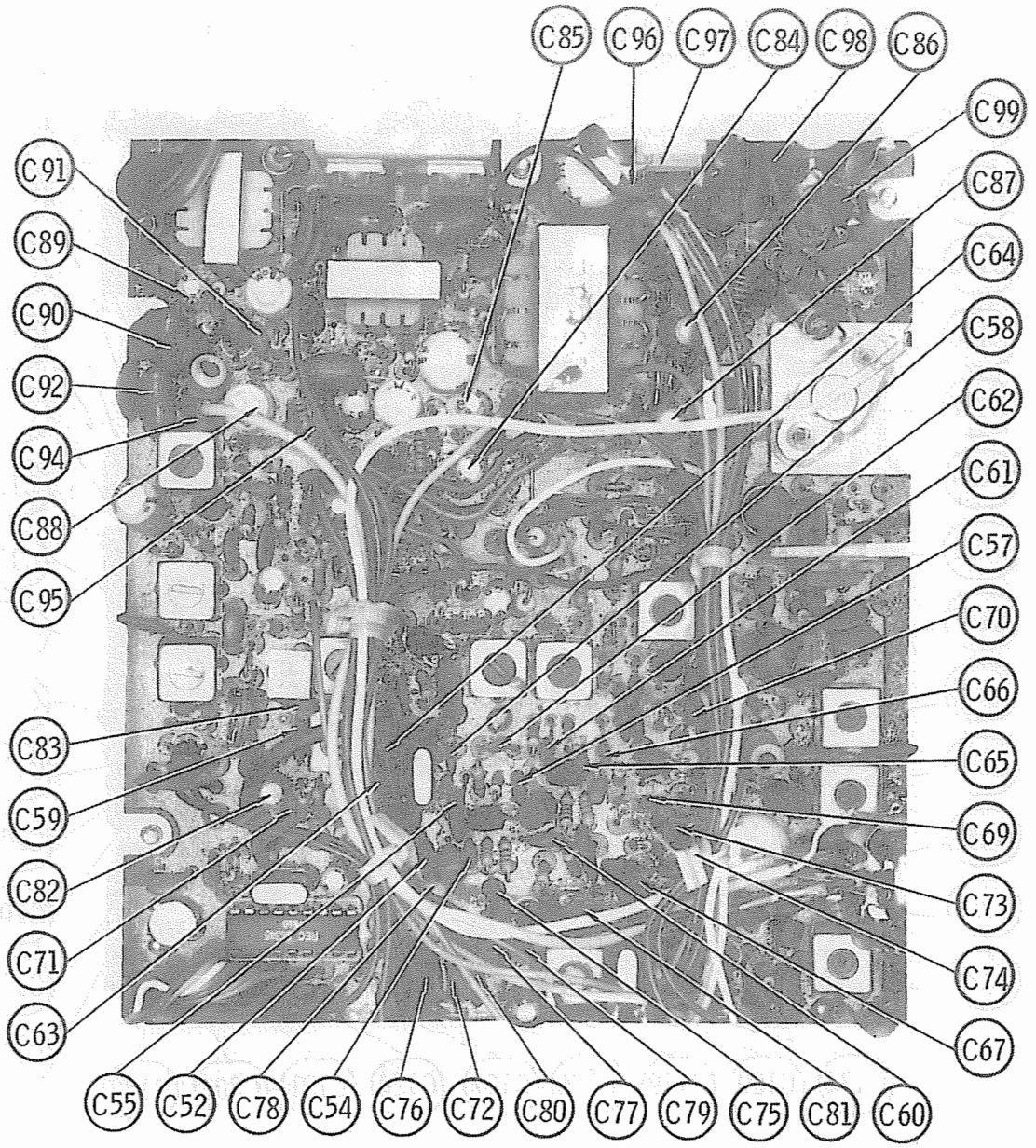
MAIN BOARD


15
18
16
17
61
63
58
47
42
54
38
41
70
68
69
19
60
59
20
53
23
22
21
24
67
66
65
26
25
64
48
27
28
57
40
39
29
32
30
56
55
46
31
33
34
35
44
36
45
43
52
51
37

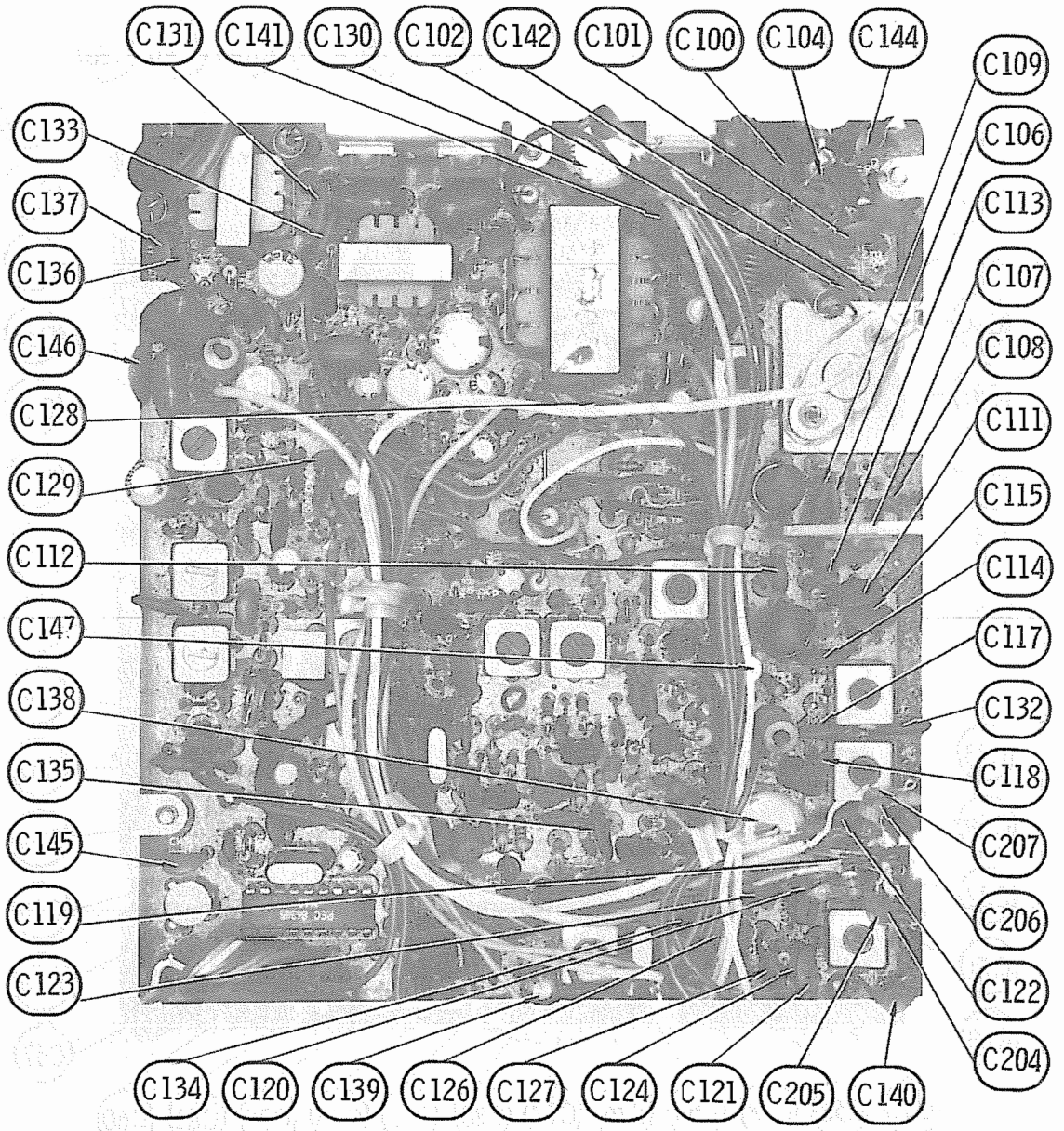
MAIN BOARD


C31
C40
C41
C43
C39
C44
C38
C46
C42
C33
C30
C27
C35
C26
C29
C24
C23
C20
C21
C49
C50
C48
C47
C37
C1
C34
C2
C4
C36
C5
C32
C6
C7
C12
C9
C8
C11
C19
C16
C18
C15
C14

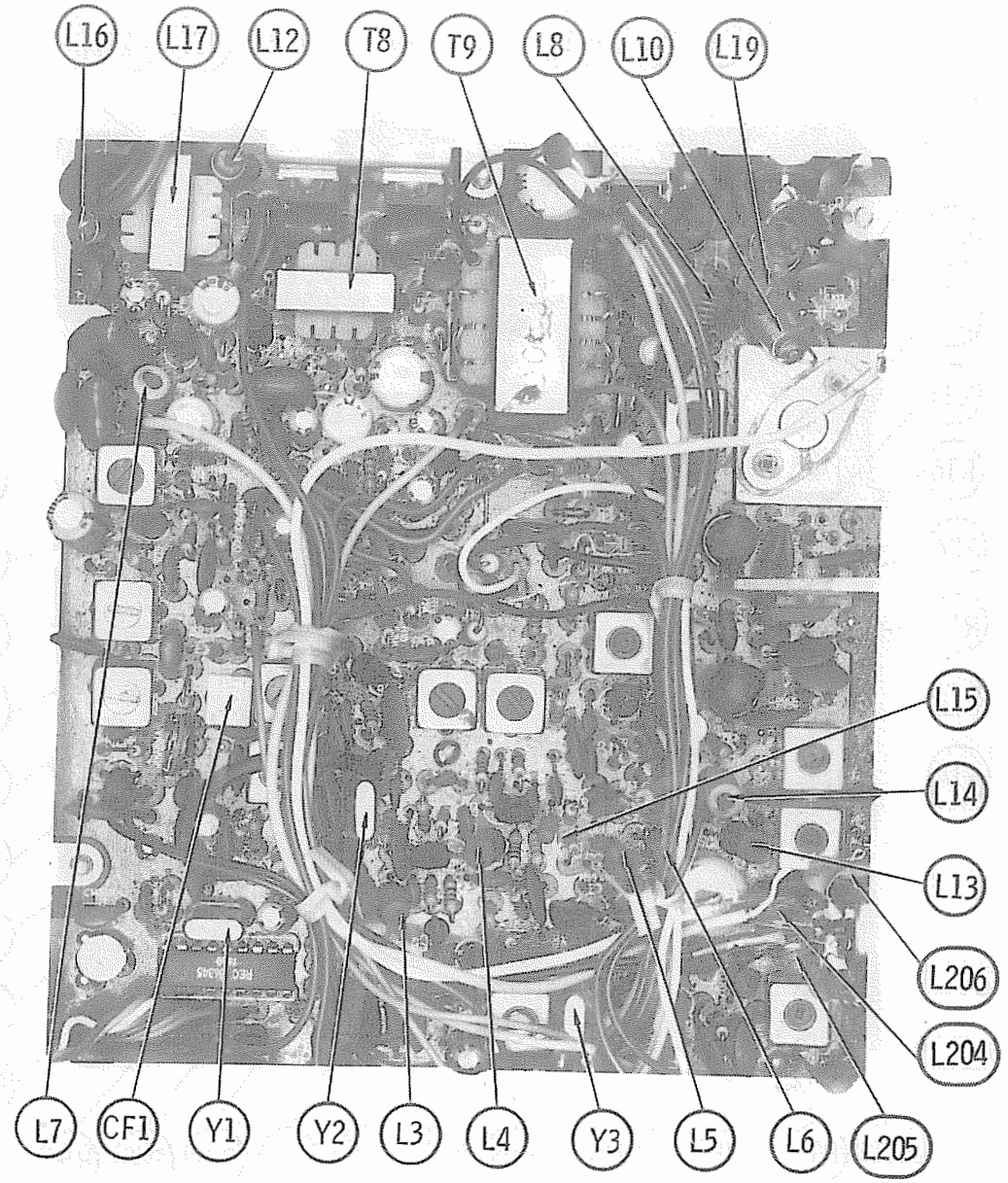
MAIN BOARD


C85
C96
C97
C84
C98
C86
C99
C91
C87
C89
C64
C90
C58
C92
C62
C94
C61
C88
C57
C95
C70
C66
C83
C65
C59
C69
C82
C73
C71
C74
C63
C67
C55
C52
C78
C54
C76
C72
C80
C77
C79
C75
C81
C60

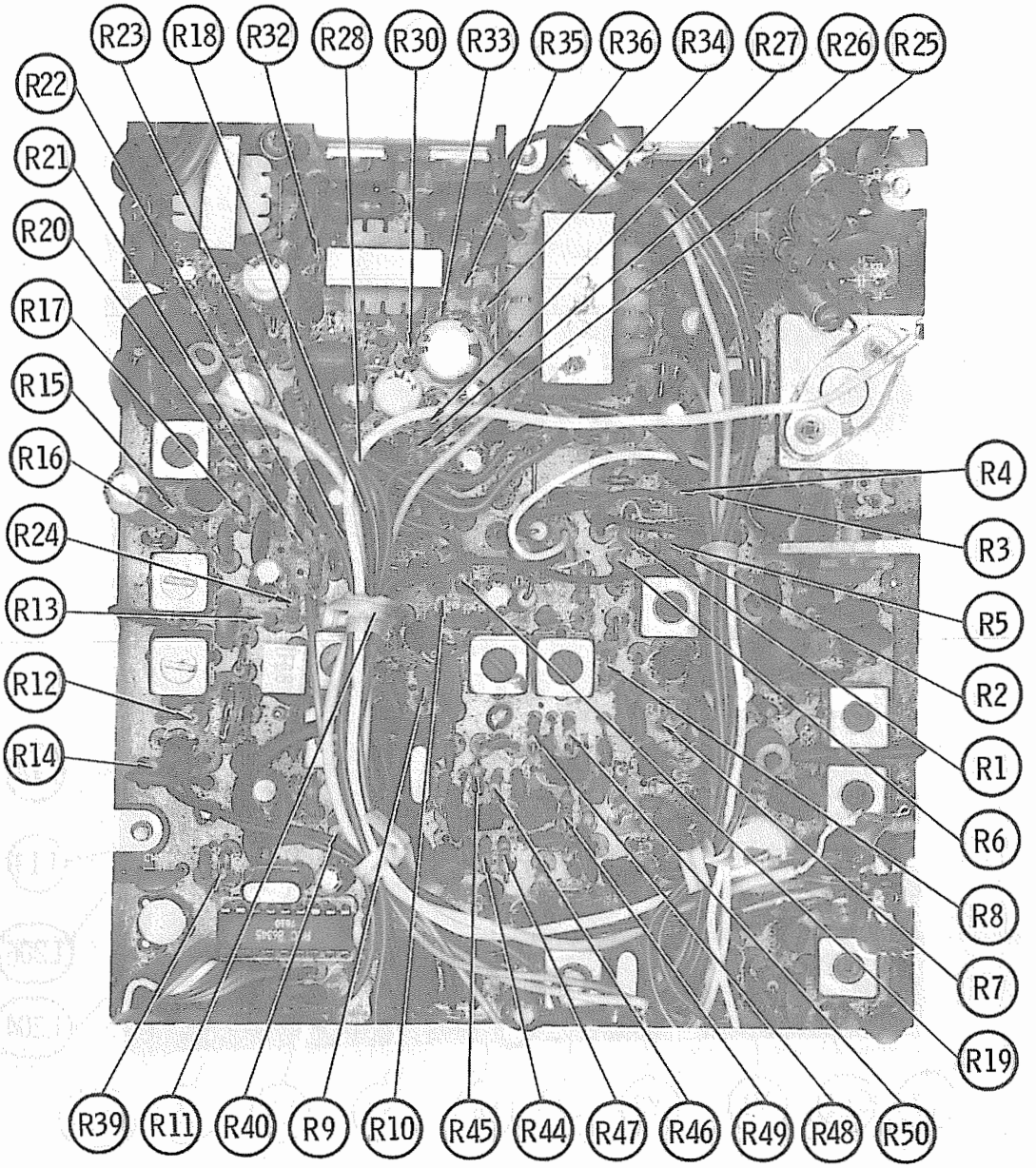
MAIN BOARD


C131
C141
C130
C102
C142
C101
C100
C104
C144
C109
C106
C113
C107
C108
C111
C115
C114
C117
C132
C118
C207
C206
C122
C204
C140
C205
C121
C124
C127
C126
C139
C120
C134
C123
C119
C145
C135
C138
C147
C128
C129
C112
C146
C136
C137
C133

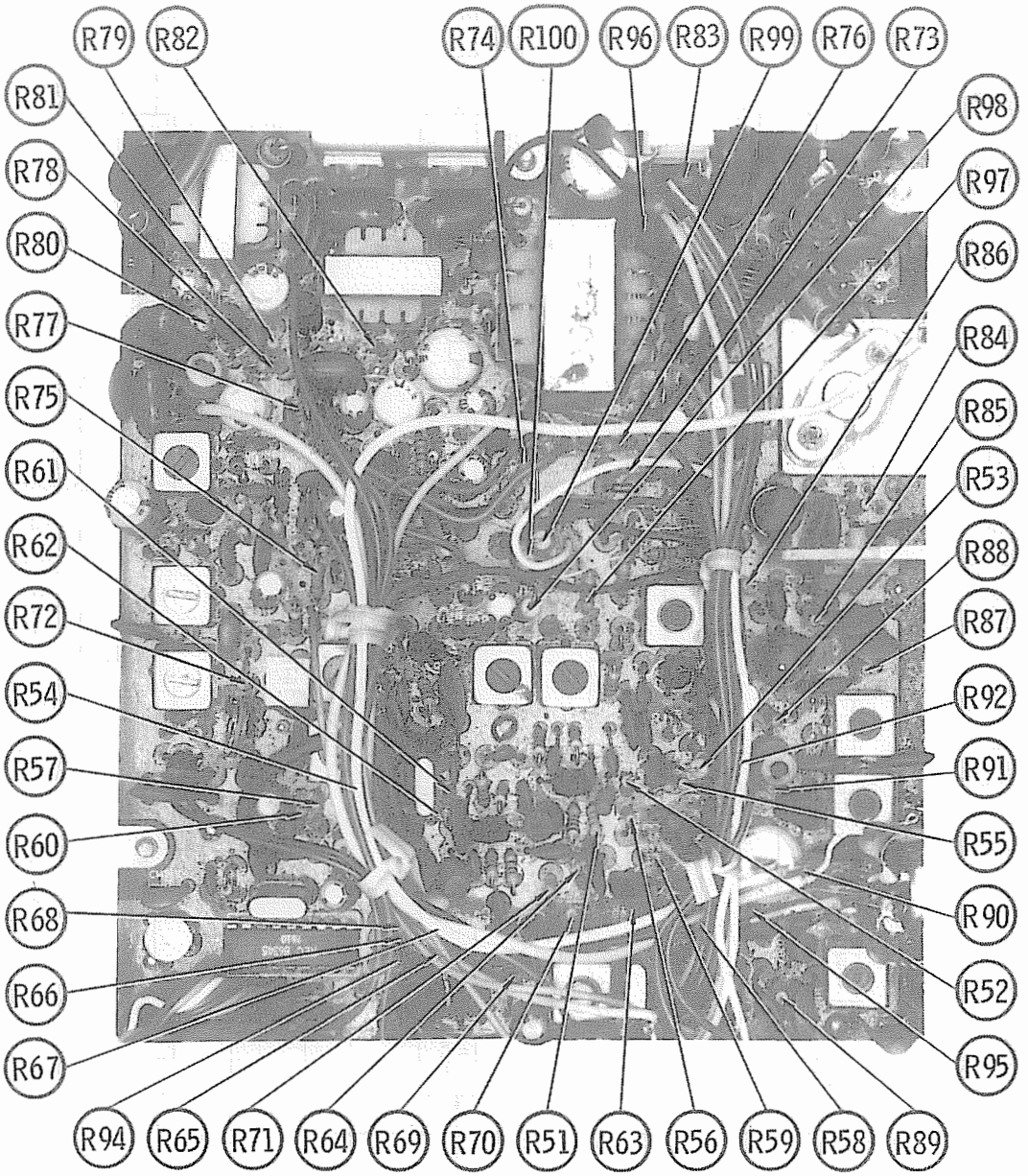
MAIN BOARD


L16
L17
L12
T8
T9
L8
L10
L19
L15
L14
L13
L206
L204
L7
CF1
Y1
Y2
L3
L4
Y3
L5
L6
L205

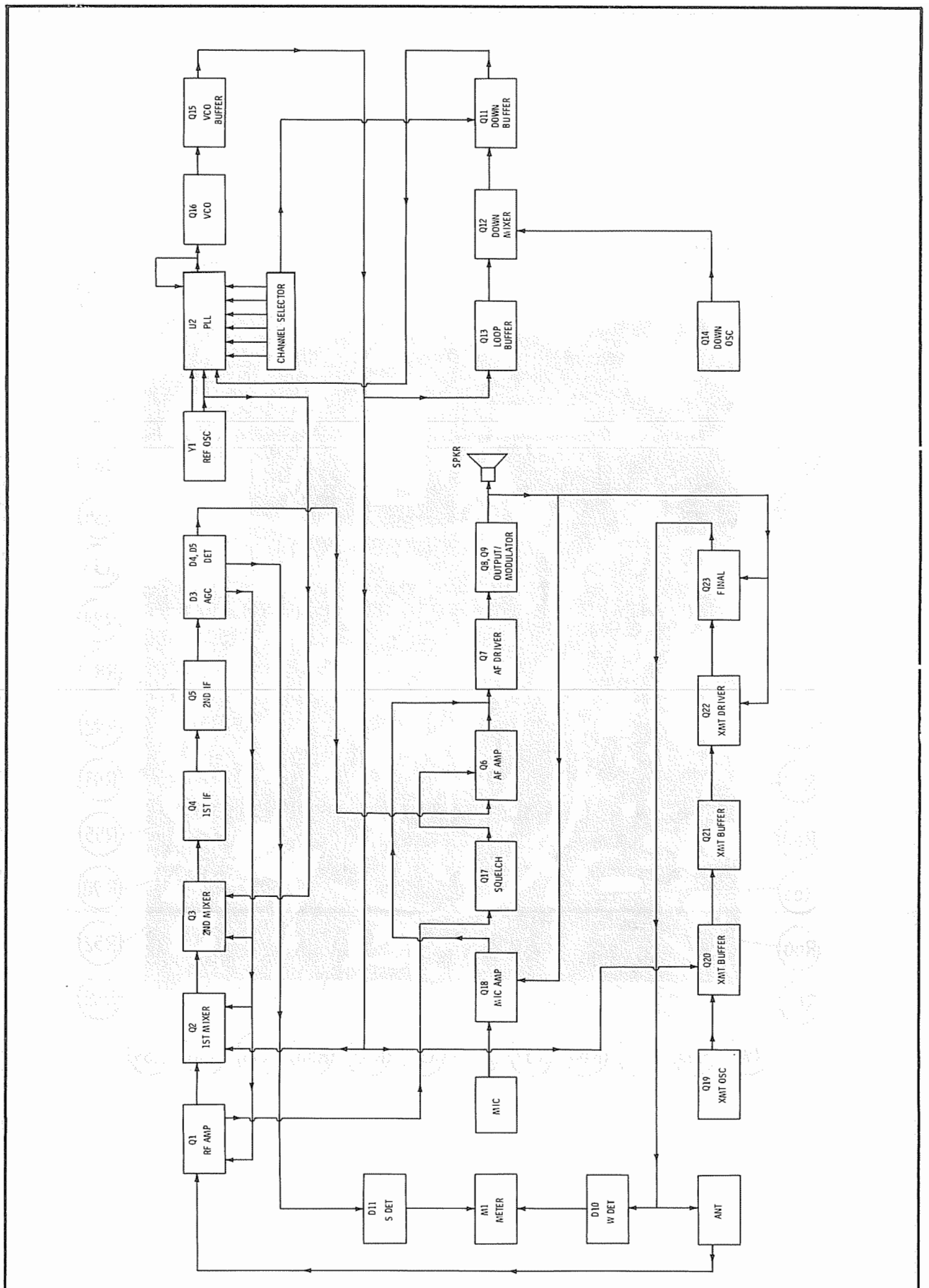
MAIN BOARD


R23
R18
R32
R28
R30
R33
R35
R36
R34
R27
R26
R25
R22
R21
R20
R17
R15
R16
R24
R13
R12
R14
R4
R3
R5
R2
R1
R6
R8
R7
R19
R39
R11
R40
R9
R10
R45
R44
R47
R46
R49
R48
R50

MAIN BOARD


R79
R82
R74
R100
R96
R83
R99
R76
R73
R81
R98
R78
R97
R80
R86
R77
R84
R75
R85
R61
R53
R62
R88
R72
R87
R54
R92
R57
R91
R60
R55
R68
R90
R66
R52
R67
R95
R94
R65
R71
R64
R69
R70
R51
R63
R56
R59
R58
R89

MAIN BOARD



BLOCK DIAGRAM

PARTS LIST AND DESCRIPTION

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

WIRING DATA

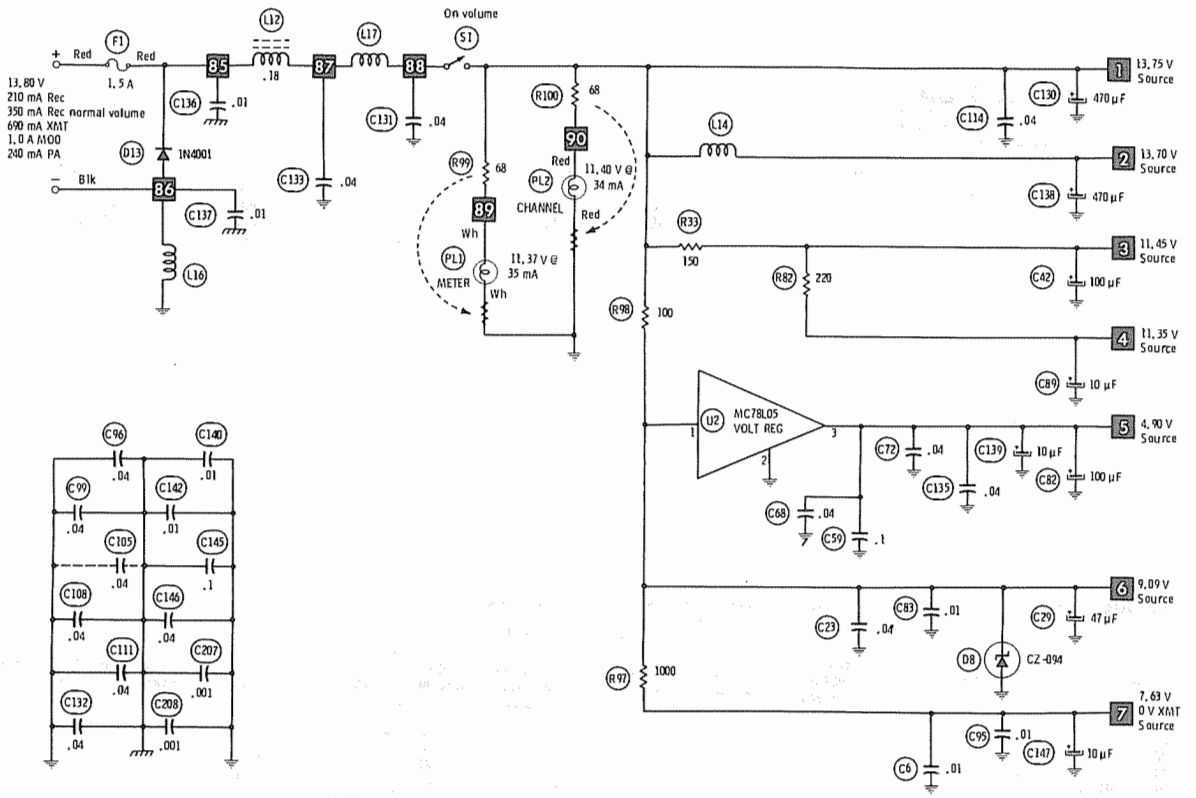
General-use Hook-up Wire (available in 5 colors)	BELDEN No. 8523	Coiled Microphone Cable	
Shielded Hook-up Wire (spiral wrapped)	BELDEN No. 8421	3-conductor (1 shielded) 23AWG	BELDEN No. 9471 (5')
(braided)	BELDEN No. 8401		BELDEN No. 8497 (6')
Speaker Cable (available in 4 colors)	BELDEN No. 8782		BELDEN 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)

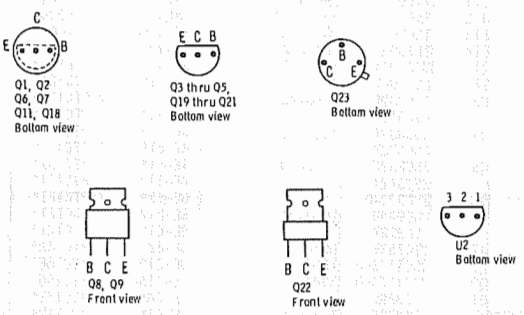
ITEM No.	TYPE No.	MFGR. PART No.	REPLACEMENT DATA									
			GENERAL ELECTRIC PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
D1	1N4448	1042-16	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
D2	1N4148	2019-45	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
D3	1N60	294-42-9	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D4	1N60	294-42-9	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D5	1N60	294-42-9	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D6	1N4148	2019-45	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
D7	1N4148	2019-45	GE-514	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG519	1N4148	WEP925	
D8	CZ-094	2087-46	GEZD-9.1	Z89.1B		RE 114		RT-240	ECG139A	1N4739A	WEP1109	103-272
	WZ-094		GEZD-9.1	ZM9.1B		RE 114	SK3060	RT-240	ECG5018	1N4739A	WEP1419	103-279-18
D9	1N40D1	2021-05	GE-504A	1N4001	HEPR0052	RE 49	SK3312	RT-212	ECG116	1N4004	WEP156	212-76
D10	1N60	294-42-9	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D11	1N60	294-42-9	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D12	1N60	294-42-9	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430
D13	1N4001	2021-05	GE-504A	1N4001	HEPR0052	RE 49	SK3312	RT-212	ECG116	1N4004	WEP156	212-76
D14	BB109G	2049-32	GE-90		HEPR2503			RT-262	ECG614		WEP200	ZEN-453
Q1	2SC394Y	1080-01	GE-61*	PTC121*	HEPS0014*	RE 9	SK3018*	RT-309	ECG229*	2SC394	WEP394	ZEN-114
Q2	2SC394Y	1080-01	GE-61*	PTC121*	HEPS0014*	RE 9	SK3018*	RT-309	ECG229*	2SC394	WEP394	ZEN-114
Q3	2SC839F	1080-20	GE-61*	PTC132*	HEPS0015*	RE 13*	SK3444*	RT-308	ECG123A*	2SC839	WEP736*	ZEN-120
	2SC372Y		GE-61*	PTC121*	HEPS0015*	RE 13*	SK3444	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q4	2SC839F	1080-20	GE-61*	PTC132*	HEPS0015*	RE 13*	SK3444*	RT-308	ECG123A*	2SC839	WEP736*	ZEN-120
	2SC372Y		GE-61*	PTC121*	HEPS0015*	RE 13*	SK3444	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q5	2SC839F	1080-20	GE-61*	PTC132*	HEPS0015*	RE 13*	SK3444*	RT-308	ECG123A*	2SC839	WEP736*	ZEN-120
	2SC372Y		GE-61*	PTC121*	HEPS0015*	RE 13*	SK3444	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q6	2SC372-0		GE-61*	PTC121*	HEPS0015*	RE 13*	SK3444	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC945R	1080-21	GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	2SC945	WEP1945	121-Z9000
	2SC372Y		GE-61*	PTC121*	HEPS0015*	RE 13*	SK3444	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
Q7	2SC733Y	1080-03	GE-62	PTC139*	HEPS0025*	RE 192	SK3122	RT-302	ECG199	2SC733	WEP66	ZEN-114
Q8	2SC1173-0	1080-130	GE-215	PTC186		RE 201	SK3197	RT-160	ECG236	2SC1173	WEP840	
Q9	2SC1173-0	1080-130	GE-215	PTC186		RE 201	SK3197	RT-160	ECG236	2SC1173	WEP840	
Q11	2SC829C		GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
	2SC839F	1080-20	GE-61*	PTC132*	HEPS0015*	RE 13*	SK3444*	RT-308	ECG123A*	2SC839	WEP736*	ZEN-120
Q12	2SC829C		GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
	2SC839F	1080-20	GE-61*	PTC132*	HEPS0015*	RE 13*	SK3444*	RT-308	ECG123A*	2SC839	WEP736*	ZEN-120
Q13	2SC829C		GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
	2SC829F	1080-20	GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
Q14	2SC839F	1080-20	GE-61*	PTC132*	HEPS0015*	RE 13*	SK3444*	RT-308	ECG123A*	2SC839	WEP736*	ZEN-120
Q15	2SC829C		GE-20*	PTC121*	HEPS0015*	RE 9*	SK3444	RT-308	ECG229*	2SC829	WEP829	ZEN-127
	2SC839F	1080-20	GE-61*	PTC132*	HEPS0015*	RE 13*	SK3444*	RT-308	ECG123A*	2SC839	WEP736*	ZEN-120
Q16	2SC839F	1080-20	GE-61*	PTC132*	HEPS0015*	RE 13*	SK3444*	RT-308	ECG123A*	2SC839	WEP736*	ZEN-120
Q17	2SC373	296-98-9	GE-212	PTC121*	HEPS0015*	RE 192	SK3122	RT-105	ECG199	2SC373	WEP373	ZEN-119
Q18	2SC372-0		GE-61*	PTC121*	HEPS0015*	RE 13*	SK3444	RT-308	ECG123A*	2SC372	WEP372	ZEN-114
	2SC945R	1080-21	GE-212	PTC121*	HEPS0015*	RE 192	SK3124	RT-107A	ECG199	2SC945	WEP1945	121-Z9000
Q19	2SC839F	1080-20	GE-61*	PTC132*	HEPS0015*	RE 13*	SK3444*	RT-308	ECG123A*	2SC839	WEP736*	ZEN-120
Q20	2SC839F	1080-20	GE-61*	PTC132*	HEPS0015*	RE 13*	SK3444*	RT-308	ECG123A*	2SC839	WEP736*	ZEN-120
Q21	1710		GE-210*	PTC123*	HEPS0014*	RE 13*	SK3122	RT-308*	ECG289	2SC735	WEP735A	ZEN-127
	2SC735-0	1080-07	GE-210*	PTC123*	HEPS0014*	RE 13*	SK3122	RT-308*	ECG289	2SC735	WEP735A	ZEN-127
	2SC735		GE-210*	PTC123*	HEPS0014*	RE 13*	SK3122	RT-308*	ECG289	2SC735	WEP735A	ZEN-127
Q22	2SC1226AP	1080-06	GE-215	PTC186		RE 203	SK3197	RT-166	ECG186A	2SC1226	WEP900	
	2SC1226A		GE-215	PTC186		RE 203	SK3197	RT-166	ECG186A	2SC1226	WEP900	
Q23	2SC756H		GE-46	PTC158		RE 206		RT-306F	ECG282		WEP909	
	2SC756-2-4	1080-05	GE-46	PTC158		RE 206		RT-306F	ECG282		WEP909	
U1	86345	2049-01										
U2	MC78L05C	2049-03				RE 387-IC	SK3462		ECG977			

* Lead Configuration may vary from original.

(12) 10 watt @ 3.0A

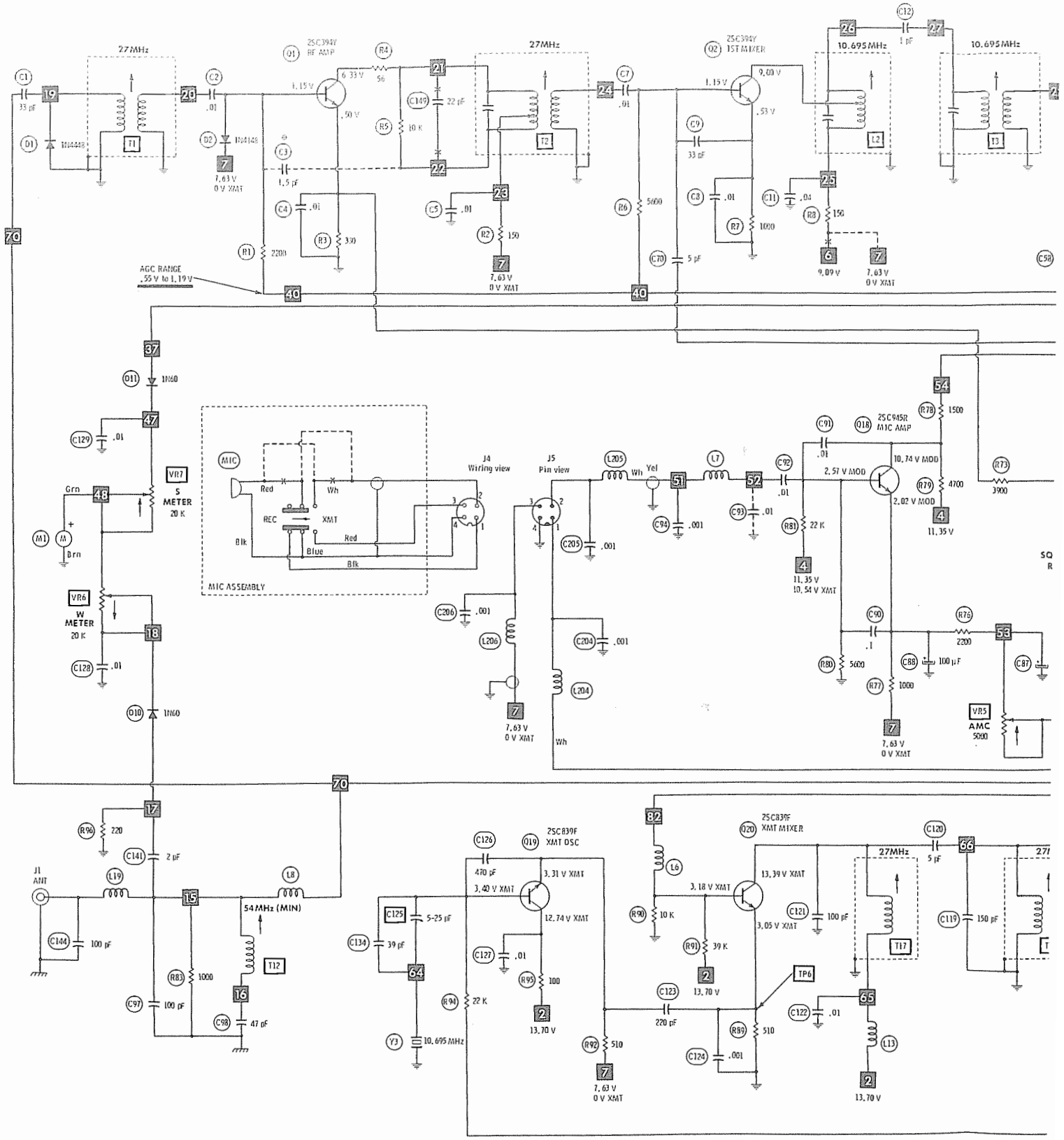


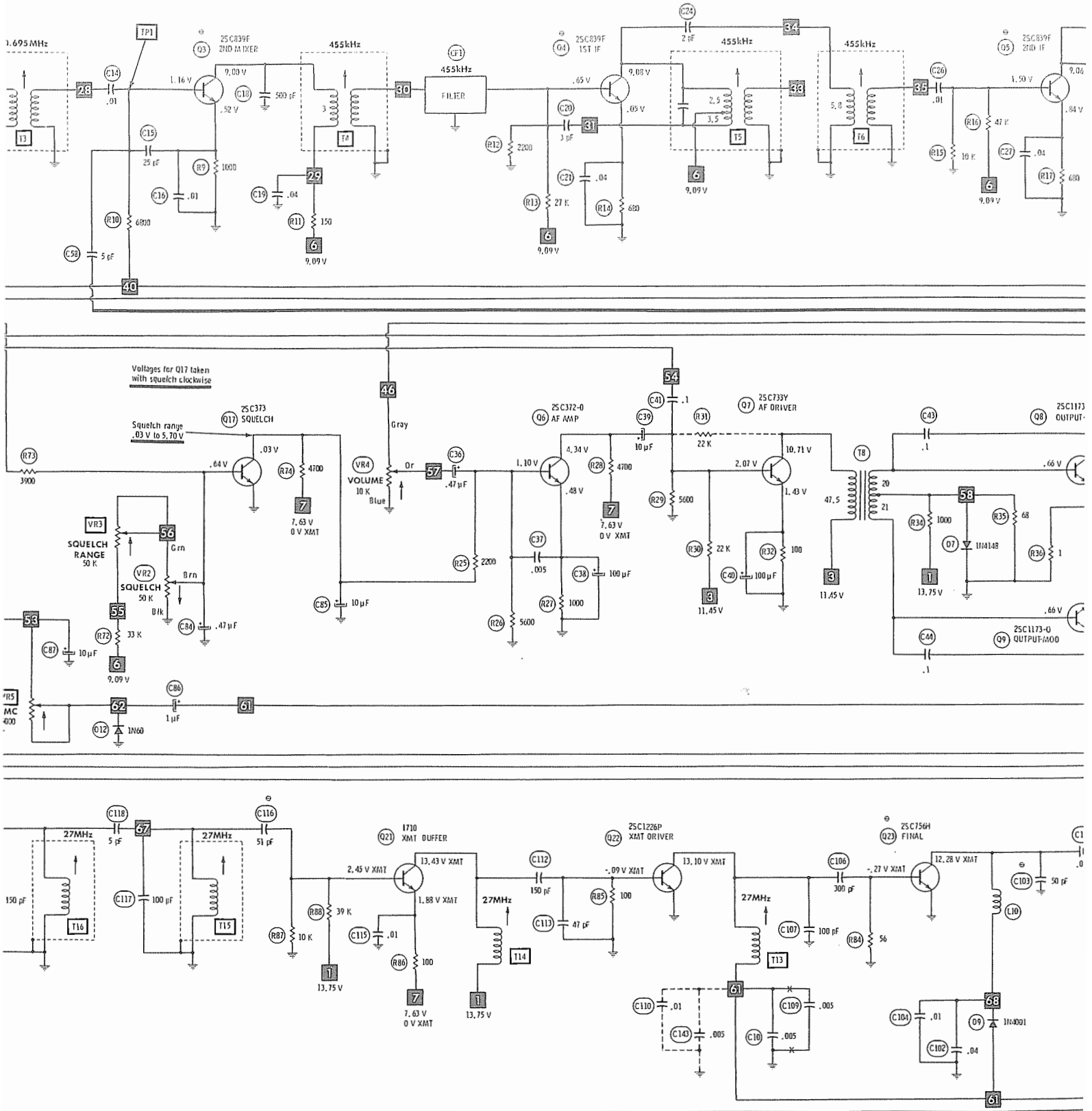
Terminal Guides

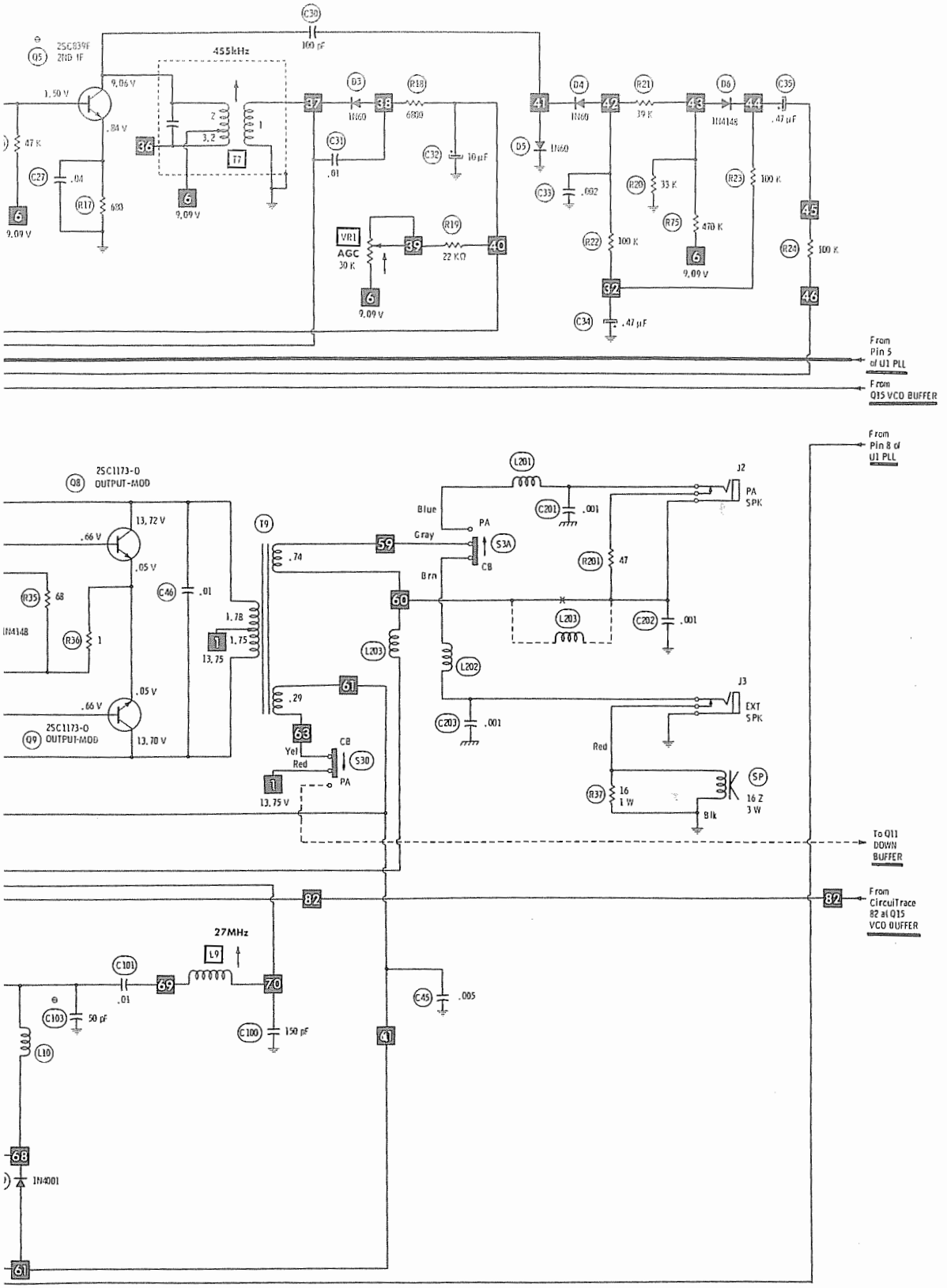


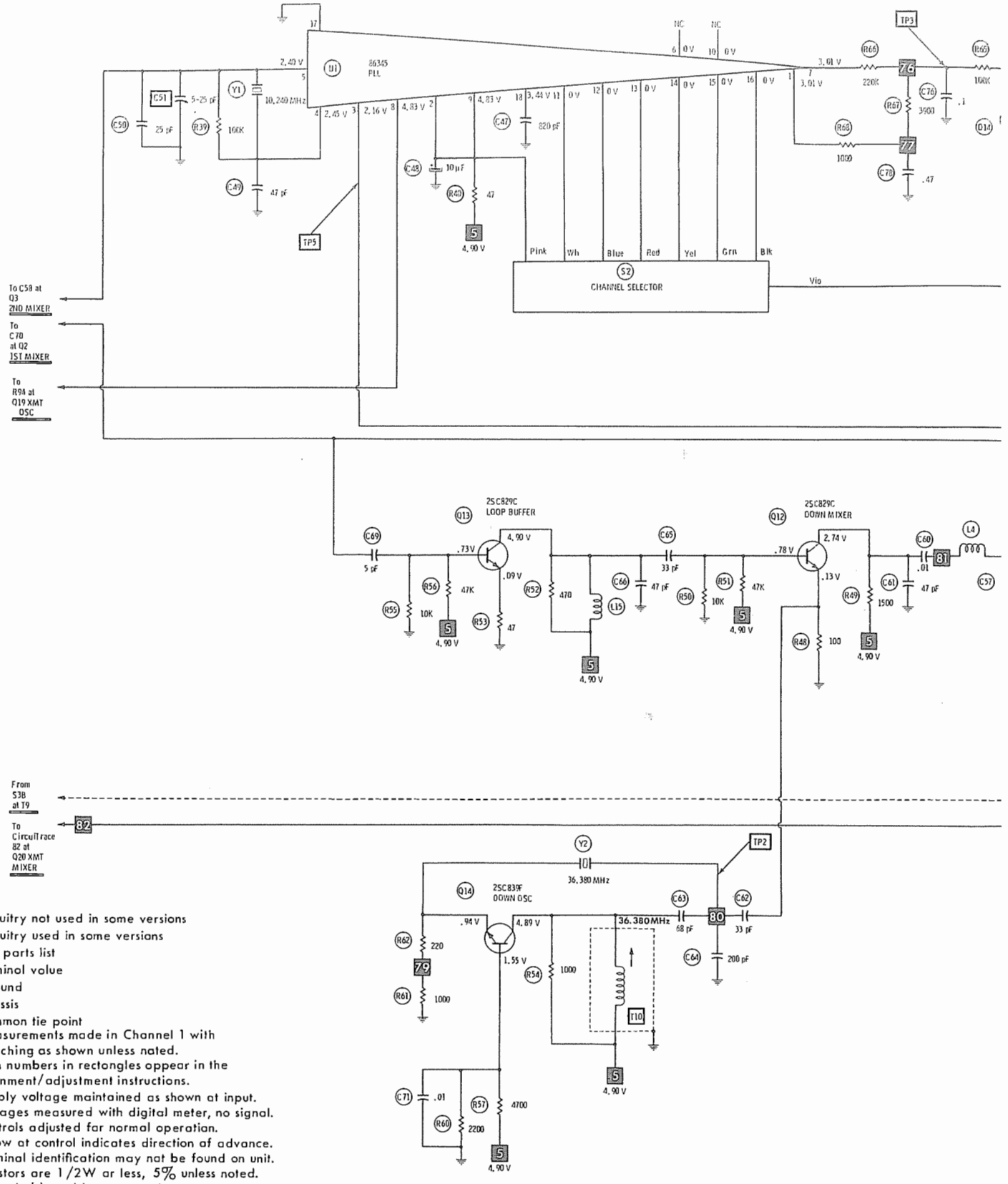
—✕— Circuitry not used in some versions
– – – Circuitry used in some versions
⊖ See parts list
※ Nominal value
⏚ Ground
Chassis
▽ Common tie point
Measurements made in Channel 1 with switching as shown unless noted.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltage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

A PHOTOFACT STANDARD NOTATION SCHEMATIC
WITH CIRCUITRACE®


27MHz
Q1 2SC394Y RF AMP
27MHz
Q2 2SC394Y 1ST MIXER
10.695MHz
10.695MHz
AGC RANGE .55 V to 1.19 V
MIC ASSEMBLY
REC
XMT
Red
Wh
Blk
Blue
J4 Wiring view
J5 Pin view
2SC945R MIC AMP
VR7 S METER 20 K
VR6 W METER 20 K
VR5 AMC 5000
J1 ANT
54MHz (MIN)
Q19 2SC839F XMT OSC
Q20 2SC839F XMT MIXER
Y3 10.695 MHz
TP6

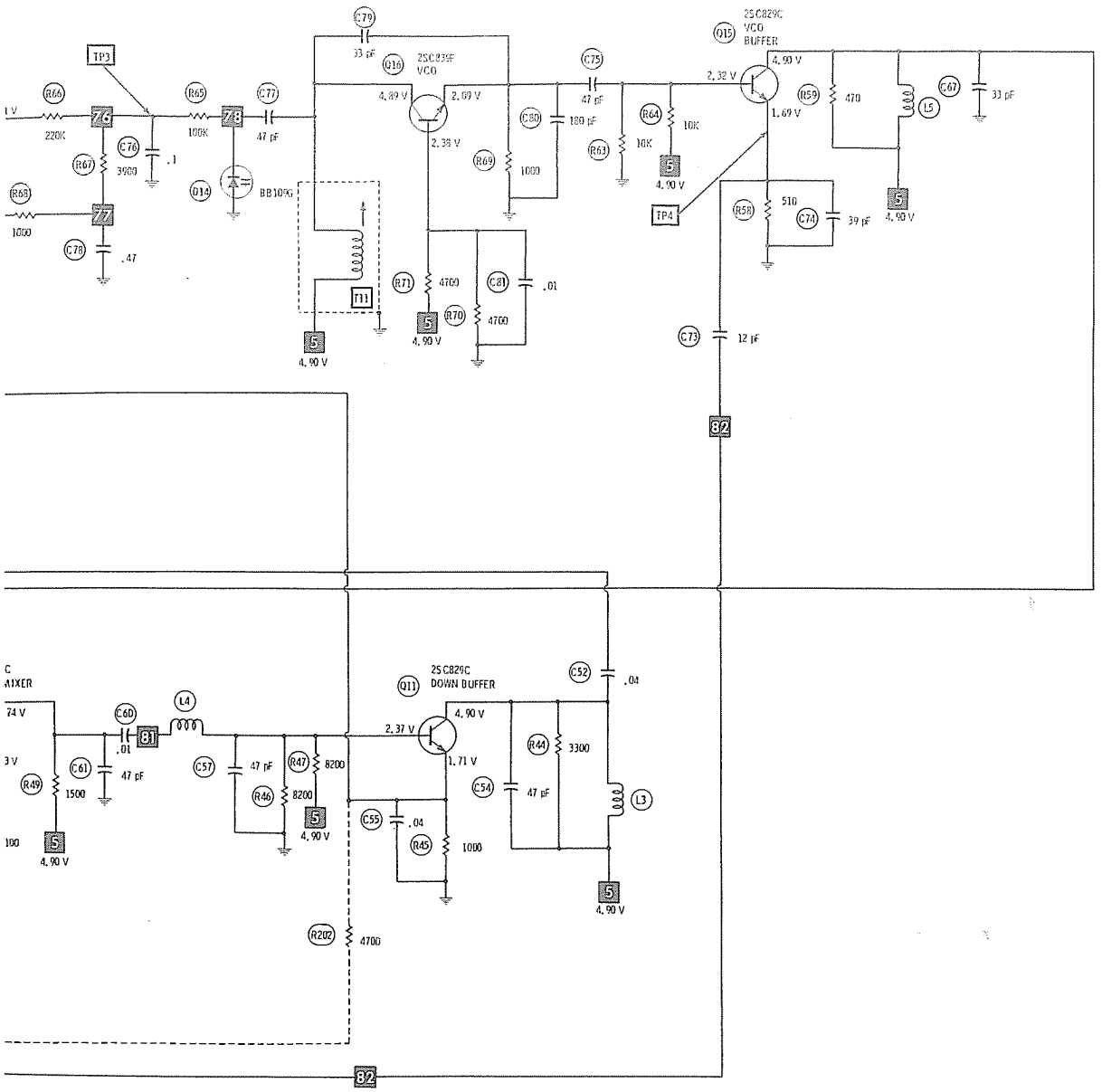

.695 MHz
TP1
Q3 2SC839F 2ND MIXER
455kHz
CF1 455kHz FILTER
Q4 2SC839F 1ST IF
Q5 2SC839F 2ND IF
Voltages for Q17 taken with squelch clockwise
Squelch range .03 V to 5.70 V
Q17 2SC373 SQUELCH
Q6 AF AMP
Q7 AF DRIVER
Q8 2SC1173 OUTPUT
Q9 2SC1173-O OUTPUT-MOD
VR3 SQUELCH RANGE 50 K
VR2 SQUELCH 50 K
VR4 VOLUME 10 K
Gray
Grn
Brn
Blk
Blue
Q21 1710 XMT BUFFER
Q22 2SC1226P XMT DRIVER
Q23 2SC756H FINAL
27MHz
T16
T15
T14
T13
D7 1N4148
D9 1N4001
D12 1N60


Q5 2SC839F 2ND IF
455kHz
C30 100 pF
1.50 V
9.06 V
.84 V
47 K
C27 .04
R17 680
6 9.09 V
T7
D3 IN60
R18 6800
C31 .01
C32 10 µF
VR1 AGC 30 K
R19 22 KΩ
D4 IN60
R21 39 K
D6 1N4148
C39 .47 µF
D5 IN60
C33 .002
R20 33 K
R23 100 K
R75 470 K
R22 100 K
R24 100 K
C34 .47 µF
From Pin 5 of U1 PLL
From Q15 VCO BUFFER
Q8 2SC1173-O OUTPUT-MOD
Q9 2SC1173-O OUTPUT-MOD
13.72 V
.66 V
.05 V
13.70 V
R35 68
R36 1
1N4148
C46 .01
T9
1.78
1.75
13.75
.74
.29
13.75 V
Blue
Gray
Brn
Yel
Red
CB
PA
S3A
S3O
L201
C201 .001
J2
PA SPK
R201 47
L203
C202 .001
L202
C203 .001
J3
EXT SPK
R37 16 1 W
SP 16 Z 3 W
Blk
To Q11 DOWN BUFFER
From CircuiTrace 82 at Q15 VCO BUFFER
27MHz
L9
C101 .01
C103 50 pF
L10
C100 150 pF
C45 .005
1N4001

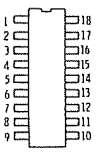


A PHOTOFACT STANDARD NOTATION SCHEMATIC

WITH CIRCUITRACE®



Terminal Guides



U1
Top view

Q11 thru Q16
Bottom view

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFGR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C29	47 10V	1080-59	PC50-16	VTT47D16	QV1-73	EV-1226
C32	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C34	.47 50V		PC1-50	VTTR47A63	QV1-3	EV-1610
C35	.47 50V		PC1-50	VTTR47A63	QV1-3	EV-1610
C36	.47 50V		PC1-50	VTTR47A63	QV1-3	EV-1610
C38	100 10V	1080-60	PC100-10	VTT100E10	QV1-93	EV-1130
C39	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C40	100 10V	1080-60	PC100-10	VTT100E10	QV1-93	EV-1130
C42	100 16V	1042-127	PC100-16	VTT100F16	QV1-95	EV-1230
C48	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C78	.47 16V	2087-60		TDC474M050EL	QOT1-19	S050-R479
C82	10 10V	1080-58	PC10-25	VTT10B25	QV1-41	EV-1222
C84	.47 50V		PC1-50	VTTR47A63	QV1-3	EV-1610
C85	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C86	1 10V	1014-107	PC1-50	VTT1A50	QV1-9	EV-1315
C87	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C88	100 10V	1080-60	PC100-10	VTT100E10	QV1-93	EV-1130
C89	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C130	470 16V	1042-124	PC500-16	VTT470K16	QV1-151	EV-1250
C138	470 16V	1042-124	PC500-16	VTT470K16	QV1-151	EV-1250
C139	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C147	10 10V	1080-58	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	GENERAL LINE
C1	33 NPO 50V 10%		DTZ-33	NP033	CN0433		10TCC-Q33
C2	.01 50V		UK50-103		MAG5011		
C3	3 50V ±.25		OTZ-3R3	NP03P3	CN0533		10TCC-V33
	1.5	(1)	DTZ-1R5	NP01P5	CN0515		10TCC-V15
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	33 NPO 50V 10%		OTZ-33	NP033	CN0433		10TCC-Q33
C11	.04 50V				GP140		5GA-S40
C12	1 50V ±.25				CN0510		10TCC-V10
C14	.01 50V		UK50-103		MAG5011		
C15	25 50V 10%		DTZ-25	NP025	CN0425		10TCC-Q25
C16	.01 50V		UK50-103		MAG5011		
C18	500 50V 10%		DD-471	GP470	GP347		10TS-T47
C19	.04 50V				GP140		5GA-S40
C20	3 50V ±.25	(1)	DTZ-3R3	NP03P3	CN0533		10TCC-V33
C21	.04 50V				GP140		5GA-S40
C23	.04 50V				GP140		5GA-S40
C24	2 N470 50V ±.25	1080-41			*		10TCT-V30
C26	.01 50V		UK50-103		MAG5011		
C27	.04 50V				GP140		5GA-S40
C30	100 N750 50V 10%		DTN-100	N100	CN7310		10TCU-T10
C31	.01 50V		UK50-103		MAG5011		
C33	.002				GP220		10TS-D20
C37	.005		DC-502	MGP005	TA250	QC2-123	TG-050
C41	.1 50V 10%			WMF05P1	EWF05010	QFT2-215	1FT-P10
C43	.1 50V 10%			WMF05P1	EWF05010	QFT2-215	1FT-P10
C44	.1 50V 10%			WMF05P1	EWF05010	QFT2-215	1FT-P10
C45	.005		OC-502	MGP005	TA250	QC2-123	TG-050
C46	.01 50V		UK50-103		MAG5011		
C47	820 50V 10%			CD19FD821J03	SX382		MWC-821
C49	47 NPO 10%		DTZ-47	NP047	CN0447		10TCC-Q47
C50	33 NPO 50V 10%		DTZ-33	NP033	CN0433		10TCC-Q33
	25 NPO 50V 10%		DTZ-25	NP025	CN0425		10TCC-Q25
C51	5-25	1042-53					
C52	.04 50V				GP140		5GA-S40
C54	47 50V 10%		DTZ-47	NP047	CN0447		10TCC-Q47
C55	.04 50V				GP140		5GA-S40
C57	47 50V 10%		DTZ-47	NP047	CN0447		10TCC-Q47
C58	5 50V ±.25		OTZ-4R7	NP04P7	CN0547		10TCC-V47
C59	.1 50V		CK-104		MAG5001		
C60	.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	GENERAL LINE
C61	47 50V 10%		DTZ-47	NP047	CN0447		10TCC-Q47
C62	33 50V 10%		OTZ-33	NP033	CN0433		10TCC-Q33
C63	68 NPO 50V 10%		OTZ-68	NP068	CN0468		10TCC-Q68
C64	200 NPO 50V 10%		OTZ-200				10TCC-T20
C65	33 50V 10%		OTZ-33	NP033	CN0433		10TCC-Q33
C66	51 50V 10%		OTZ-50	NP050	CN0450		10TCC-Q50
C67	33 50V 10%		OTZ-33	NP033	CN0433		10TCC-Q33
C69	5 50V +.25		OTZ-4R7	NP04P7	CN0547		10TCC-V47
C70	5 50V +.25		OTZ-4R7	NP04P7	CN0547		10TCC-V47
C71	.01 50V		UK50-103		MAG5011		
C72	.04 50V				GP140		5GA-S40
C73	12 50V 10%				CN0412		10TCC-Q12
C74	39 NPO 50V 10%				CN0439		10TCC-Q39
C75	47 50V 10%		OTZ-47	NP047	CN0447		10TCC-Q47
C76	.1 50V 10%			WMF05P1	EWF05010	QFT2-215	1FT-P10
C77	47 N750 50V 10%		OTN-47	N47	CN7447		10TCU-Q47
C79	33 NPO 50V 5%		OTZ-33	NP033	CN0433		10TCC-Q33
C80	180 N750 50V 10%		OTN-180				10TCU-T18
C81	.01 50V		UK50-103		MAG5011		
C83	.01 50V		UK50-103		MAG5011		
C90	.1 50V 10%			WMF05P1	EWF05010	QFT2-215	1FT-P10
C91	.01 50V		UK50-103		MAG5011		
C92	.1 50V 10%			WMF05P1	EWF05010	QFT2-215	1FT-P10
C94	.001 50V		00-102		GP210		10TS-010
C95	.01 50V		UK50-103		MAG5011		
C96	.04 50V				GP140		5GA-S40
C97	100 50V 5%		OTZ-100	NP0100	CN0310		10TCC-T10
C98	47 50V 10%		OTZ-47	NP047	CN0447		10TCC-Q47
	33 50V 10%		OTZ-33	NP033	CN0433		10TCC-Q33
C99	.04 50V				GP140		5GA-S40
C100	150 50V 10%		OTZ-150		CN0315		10TCC-T15
C101	.01 50V		UK50-103		MAG5011		
C102	.04 50V				GP140		5GA-S40
C103	50 50V 10%		OTZ-50	NP050	CN0450		10TCC-Q50
	100		OTZ-100	NP0100	CN0310		10TCC-T10
C104	.01 50V		UK50-103		MAG5011		
C106	300 50V 10%		00-301	GP300	GP330		10TS-T30
C107	100 50V 10%		OTZ-100	NP0100	CN0310		10TCC-T10
C108	.04 50V				GP140		5GA-S40
C109	.04 50V				GP140		5GA-S40
C111	.04 50V				GP140		5GA-S40
C112	150 50V 10%		OTZ-150		CN0315		10TCC-T15
C113	47 50V 10%		OTZ-47	NP047	CN0447		10TCC-Q47
C114	.04 50V				GP140		5GA-S40
C115	.01 50V		UK50-103		MAG5011		
C116	51 50V 10%		OTZ-50	NP050	CN0450		10TCC-Q50
	47 50V		OTZ-47	NP047	CN0447		10TCC-Q47
C117	100 50V 5%		OTZ-100	NP0100	CN0310		10TCC-T10
C118	5 50V +.25		OTZ-4R7	NP04P7	CN0547		10TCC-V47
C119	150 N750 10%		OTN-100	N100	CN7310		10TCU-T10
C120	5 50V +.25		OTZ-4R7	NP04P7	CN0547		10TCC-V47
C121	100 NPO 50V 5%		DTZ-100	NP0100	CN0310		10TCC-T10
C122	.01 50V		UK50-103		MAG5011		
C123	220 50V 10%		00-221		GP322		10TS-T22
C124	.001 50V		00-102		GP210		10TS-D10
C125	5-25	1042-53					
C126	510 50V 10%		00-501	GP500	GP350		10TS-T50
C127	.01 50V		UK50-103		MAG5011		
C128	.01 50V		UK50-103		MAG5011		
C129	.01 50V		UK50-103		MAG5011		
C131	.04 50V				GP140		5GA-S40
C132	.04 50V				GP140		5GA-S40
C133	.04 50V				GP140		5GA-S40
C134	24 NPO 50V 10%		OTZ-25	NP025	CN0425		10TCC-Q25
	39 NPO 50V 10%				CN0439		10TCC-Q39
C135	.04 50V				GP140		5GA-S40
C136	.01 50V		UK50-103		MAG5011		
C137	.01 50V		UK50-103		MAG5011		
C140	.01 50V		UK50-103		MAG5011		
C141	2 N470 50V +.25	1080-41			*		10TCT-V30
C142	.01 50V		UK50-103		MAG5011		
C144	100 50V 5%		DTZ-100	NP0100	CN0310		10TCC-T10
C145	.1 50V		CK-104		MAG5001		
C146	.04 50V				GP140		5GA-S40
C149	22		DTZ-22	NP022	CN0422		10TCC-Q22
C201	.0027				GP227		10TS-D27
	.001		00-102		GP210		10TS-D10
C202	.001		00-102		GP210		10TS-D10
C203	.001		00-102		GP210		10TS-D10
C204	.001		00-102		GP210		10TS-D10
C205	.001		00-102		GP210		10TS-D10
C206	.001		00-102		GP210		10TS-D10
C207	.001		00-102		GP210		10TS-D10

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
(1) In Model Fanfare 125F.

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	RESISTANCE	REPLACEMENT DATA				
			MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
VR1	AGC	30K					X260R503B (2)
VR2	Squelch	50K	1080-31				
VR3	Squelch Range	50K					X260R503B (2)
VR4	Volume/Switch	10K	1080-29				
VR5	AMC	5000					X260R502B (2)
VR6	W Meter	20K					X260R503B (2)
VR7	S Meter	20K					X260R503B (2)

(2) Cut off one of the end terminals and bend to fit PC board.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L2	IF (10.695MHz)	1080-13	TKAC-22536IE	CBS135-TC	
L3	RF Choke (470uH)	1079-08		9250-474	
L4	RF Choke (100uH)	1079-09		9250-104	
L5	RF Choke (1.2uH)	2049-08			
L6	RF Choke (2.2uH)	1080-27		70F226AI	
L7	RF Choke (1mH)	CH-4			
L8	RF Choke	1043-26	NS-1344		
L9	Antenna Tuning (27MHz)	1045-24	TC-71025	CB305	
L10	RF Choke	1080-22	TC-71029	4588	
L12	Pi Filter	1080-26	TC-71095	4590	
L13	RF Choke (2.2uH)	1080-27		70F226AI	
L14	RF Choke (1mH)	CH-4			
L15	RF Choke (1.2uH)	2049-08			
L16	RF Choke	1080-26	TC-71095	4590	
L17	Pi Filter	1080-28	115C		
L19	Pi Filter	2022-145			
L201	RF Choke (2.2uH)	1080-27		70F226AI	
L202	RF Choke (2.2uH)	1080-27		70F226AI	
L203	RF Choke (2.2uH)	1080-27		70F226AI	
L204	RF Choke (2.2uH)	1080-27		70F226AI	
L205	RF Choke (2.2uH)	1080-27		70F226AI	
L206	RF Choke (2.2uH)	1080-27		70F226AI	
T1	Rec Antenna (27MHz)	1080-11	TKXN-22160BU	CBS740-T	
T2	Rec Mixer (27MHz)	1080-12	TKXN-22534BU	CBS711-TC	
T3	IF (10.695MHz)	1080-14	TKAC-22165A	CBS508-1TC	
T4	IF (455kHz)	1080-15	YLN-20844BM	CBS507-4	
T5	IF (455kHz)	1080-16	YMC-20845AC		
T6	IF (455kHz)	1080-16	YMC-20845AC		
T7	IF (455kHz)	1080-17	YMC-20846AC	8535	
T10	Down Mixer	1043-22	KXN13638HM	CBS121	
T11	VCO	1043-22	KXN13638HM	CBS121	
T12	TVI Trap (54MHz)	1080-131	TC-71024	CB304	
T13	XMT Driver (27MHz)	1080-23	TC-71023	CB303	
T14	XMT Buffer (27MHz)	1080-24	TC-71026	CB306	
T15	Mixer (27MHz)	1043-23	KXN-13636BM	CBS701	
T16	Mixer (27MHz)	1043-22	KXN-13638HM	CBS121	
T17	Mixer (27MHz)	1043-22	KXN-1363BHM	CBS121	

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.	
L17	1A	.114	.6mH	1080-28			

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	SEC. 2	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T8	1	1		1080-137			

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE			REPLACEMENT DATA			NOTES
	PRI.	SEC.		MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T9	32	1 8	2 18	1080-138		MCB-9	

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP	3" PM, 16 Ohms	1080-150	30C25Z16	

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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	1.5A Quick Acting	1080-67	2087-40	AGC1 1/2	HDJ	31201.5	150145	FGI 1/2-2

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	2017-116	18-032	18-034	18-010	18-092	2	4	3	1	NC	4

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF1	Filter	2087-41	455kHz
J1	Jack	2079-48	Antenna
J2	Jack	1079-110	PA
J3	Jack	1079-110	External Speaker
J4	Socket	2017-25	Microphone
J5	Jack	2017-26	Microphone
M	Meter	2041-10	S/RF
PL1	Lamp	2087-25	Meter
PL2	Lamp	2087-26	Channel
S1	Switch		Power (Part of Volume Control)
S2	Switch	2087-23	Channel Selector
S3	Switch	2041-12	CB/PA
Y1	Crystal	2049-05	10.24MHz
Y2	Crystal	2049-06	36.380MHz
Y3	Crystal	2049-07	10.695MHz

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

ITEM	PART No.
Case Bottom	2087-16
Knob, Channel Selector	2087-07

ITEM	PART No.
Knob, Control	2087-08