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 1-624

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

 Printed in U. S. of America 7CY463

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.
Connect low sides of test equipment to ground unless specified otherwise.
Connect 50-ohm dummy load or antenna before keying transmitter.

Suggested Alignment Tools:	GC ELECTRONICS
L203, L204, T103, T201, T202	8728
T1, T2, T3, T101, T102	9440
CT201	5000

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Inputs of frequency counter and RF VTVM to PL1 pin 8.	Ch. 13	T1	Adjust for 37.750MHz at maximum.
Input of frequency counter to PL1 pin 8.	Ch. 17		Check for 37.800MHz.
	Ch. 21		Check for 37.850MHz.
	Ch. 1		Check for 37.600MHz.
	Ch. 5		Check for 37.650MHz.
	Ch. 9		Check for 37.700MHz.
Input of frequency counter to PL1 pin 3.	Ch. 13		Check for 10.180MHz.
	Ch. 14		Check for 10.170MHz.
	Ch. 15		Check for 10.160MHz.
	Ch. 16		Check for 10.140MHz.
Input of frequency counter to Q2 collector.	Ch. 13, Xmit		Check for 10.635MHz.
	Ch. 14, Xmit		Check for 10.625MHz.
	Ch. 15, Xmit		Check for 10.615MHz.
	Ch. 16, Xmit		Check for 10.595MHz.
Input of frequency counter to PL1 pin 6.	Ch. 13, Xmit	T3,T2	Adjust for 27.115MHz at maximum.

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 Q103 base. 455kHz, 1000Hz @ 30% modulation.	Ch. 13 Delta Tune-center. RF Gain-fully clockwise.	T103	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.115MHz, 1000Hz @ 30% modulation.	Ch. 13	T102,T101	Adjust for maximum output. Repeat above steps, if necessary.

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. 27.115MHz, 1000Hz @ 30% modulation. Output 500uV.	Ch. 13 Delta Tune-center. RF Gain-fully clockwise.	VR103	SQUELCH RANGE Turn squelch control VR102 fully clockwise. Adjust VR103 so that squelch just breaks.
Output of signal generator thru .01uF to antenna jack. 27.115MHz, 1000Hz @ 30% modulation. Output 100uV.	Ch. 13	VR104B	S METER Adjust for 9 on S scale of meter.

TRANSMITTER ALIGNMENT

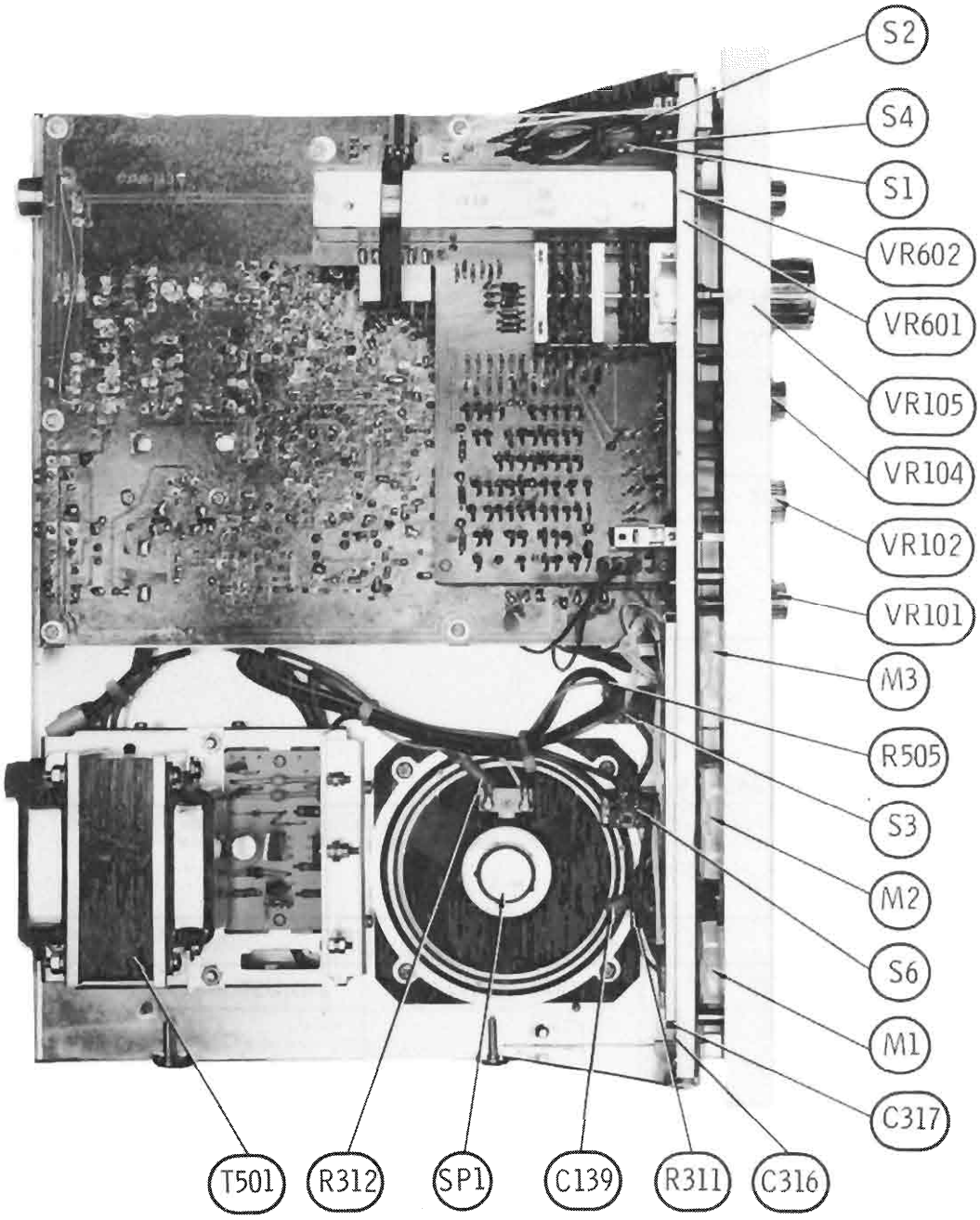
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.
NOTE: Be sure to check transmit frequency and power on all active channels after alignment of transmitter.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
	Ch. 13	T201,CT201, T202,L203, L204	Adjust for maximum.
	Ch. 13	L204	Adjust for 4 watts maximum.

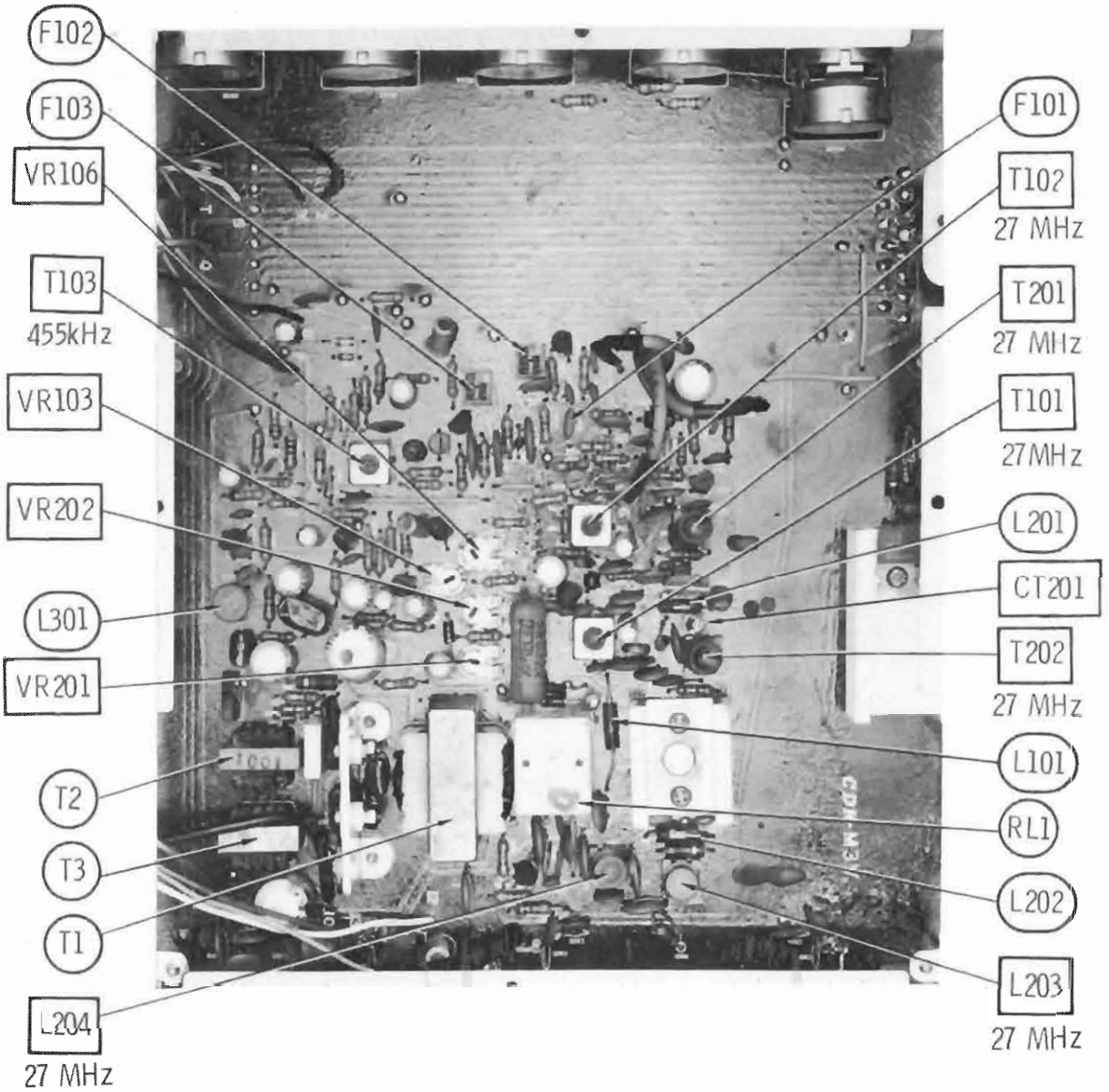
TRANSMITTER ADJUSTMENTS

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

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
DC meter to Q501 emitter.	Ch. 13	VR501	B+ Adjust VR501 for 13.8 volts. Voltage should not vary when keying transmitter.
Modulation meter to antenna jack. Inject a 1000Hz signal at MIC input.	Ch. 13	VR201	AMC Disconnect C255 to disable AMC. Adjust signal for overmodulation. Restore AMC operation. Adjust VR201 for 100% modulation maximum.
	Ch. 13	VR202	RF PANEL METER Adjust VR202 for 3/4 scale on RF meter.

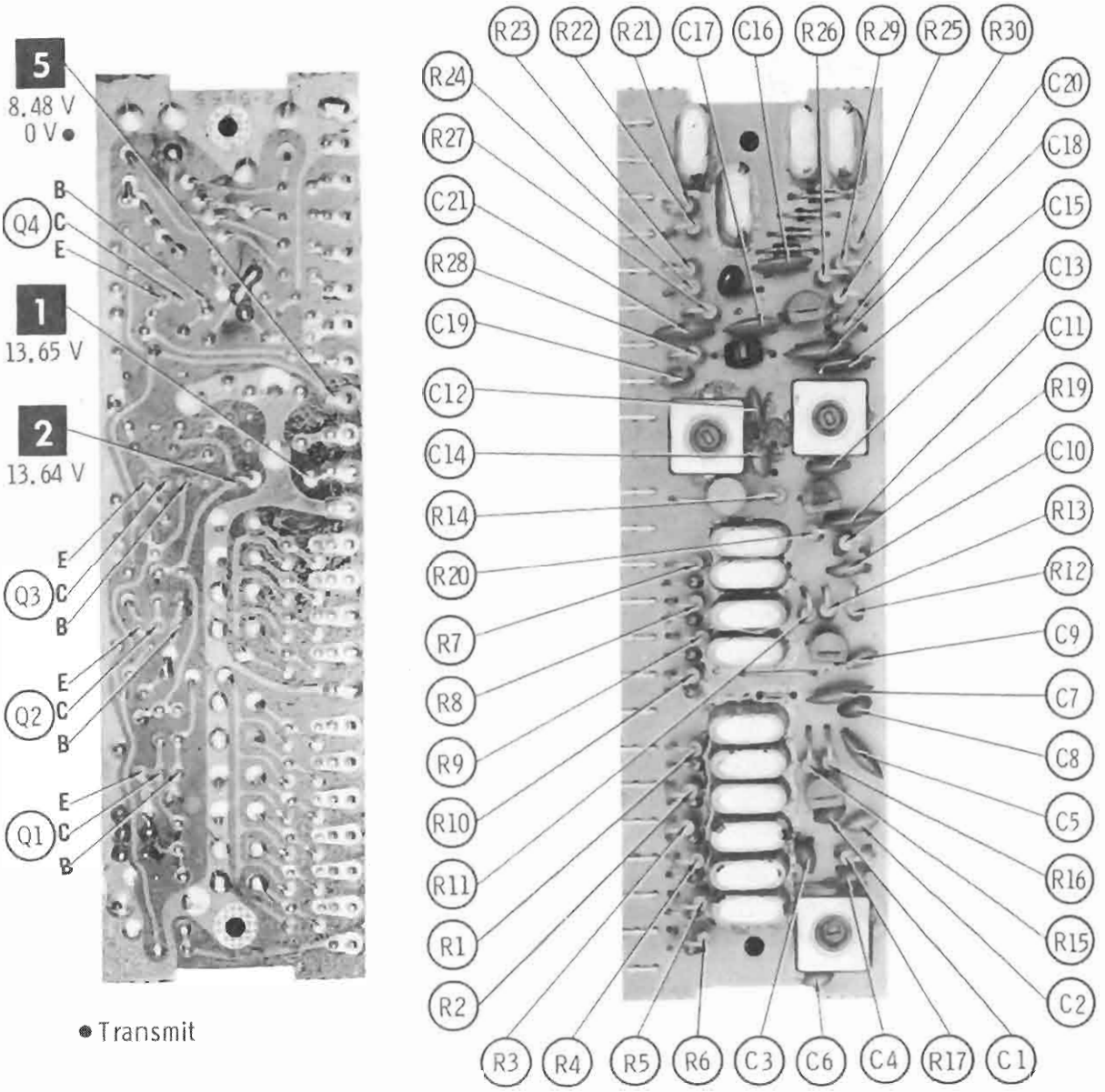

S2
S4
S1
VR602
VR601
VR105
VR104
VR102
VR101
M3
R505
S3
M2
S6
M1
C317
T501
R312
SP1
C139
R311
C316

CHASSIS-TOP

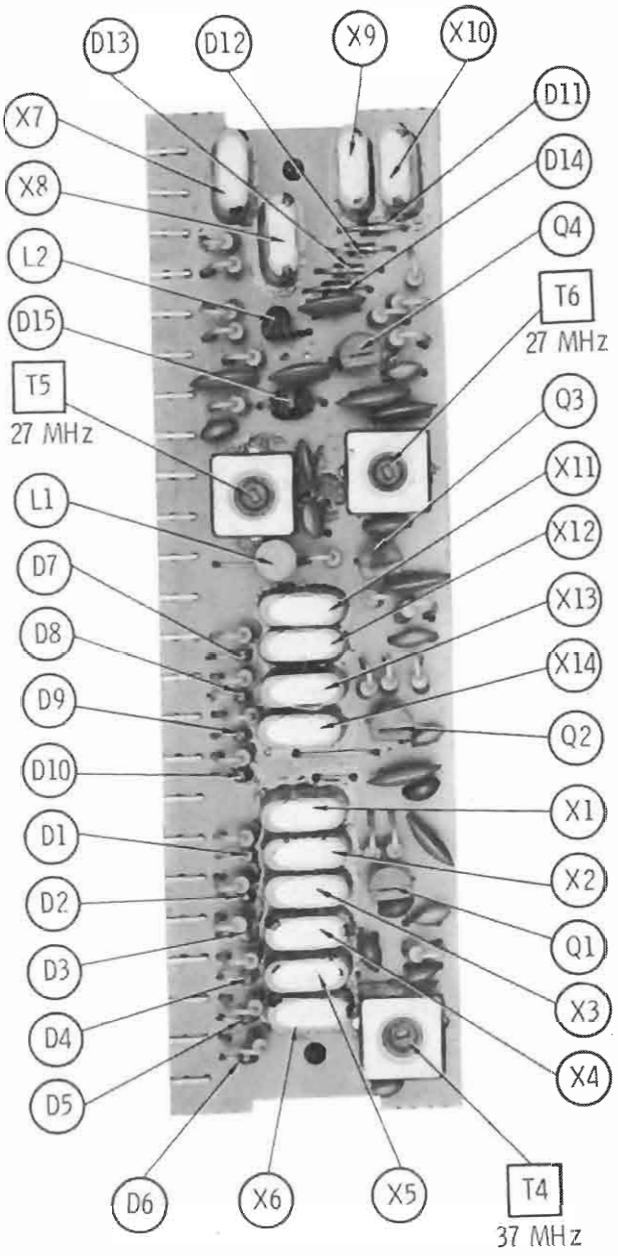

F102
F103
VR106
T103
455kHz
VR103
VR202
L301
VR201
T2
T3
T1
L204
27 MHz
F101
T102
27 MHz
T201
27 MHz
T101
27MHz
L201
CT201
T202
27 MHz
L101
RL1
L202
L203
27 MHz

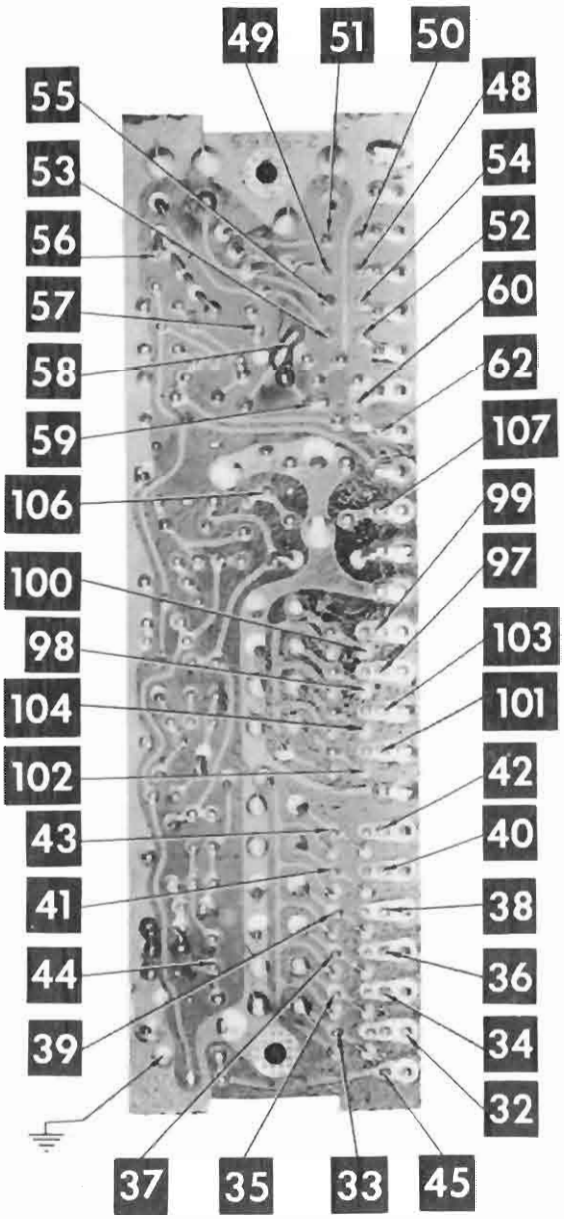
MAIN BOARD

A Howard W. Sams CIRCUITRACE® Photo



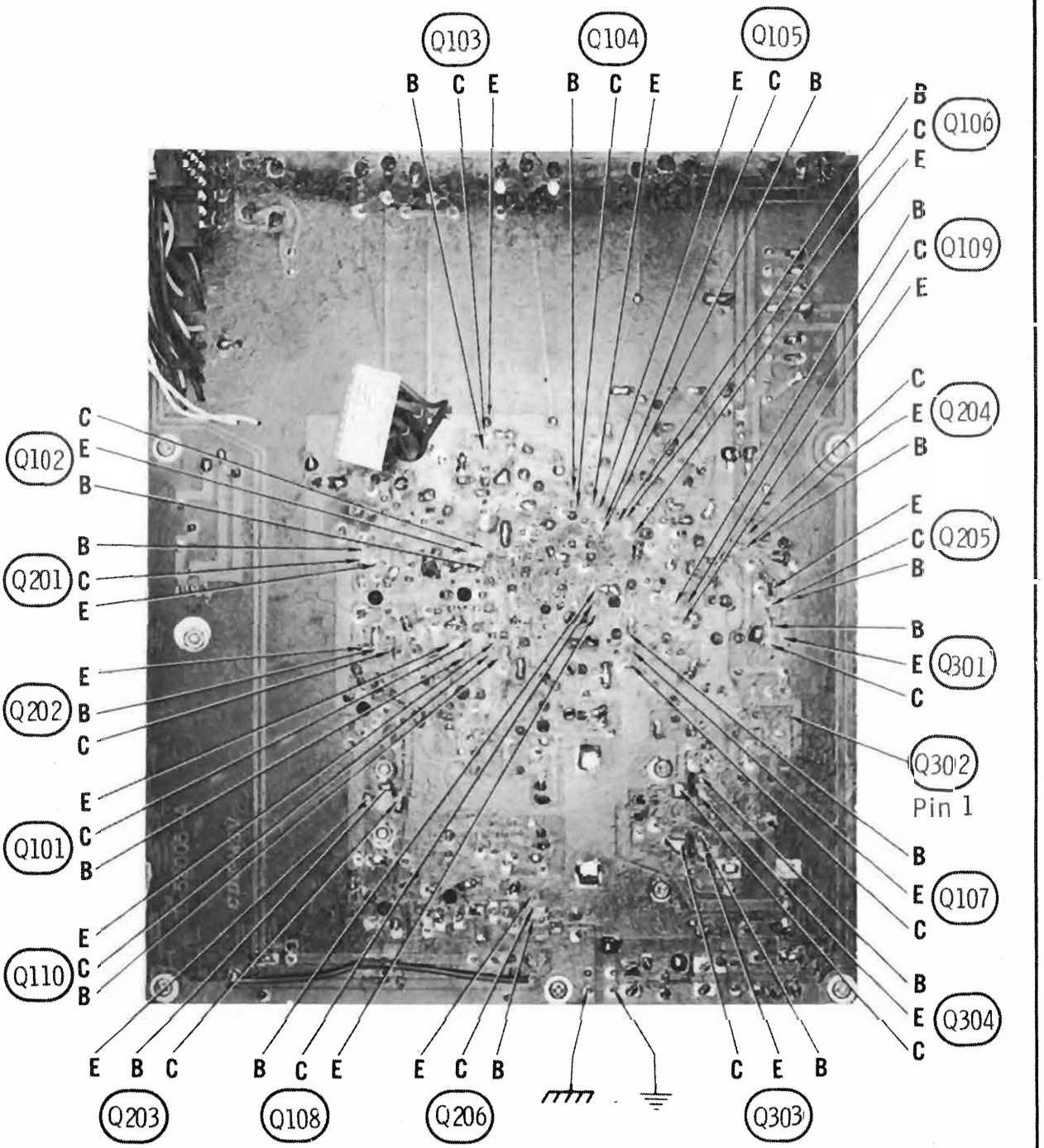
SYNTH OSC BOARD



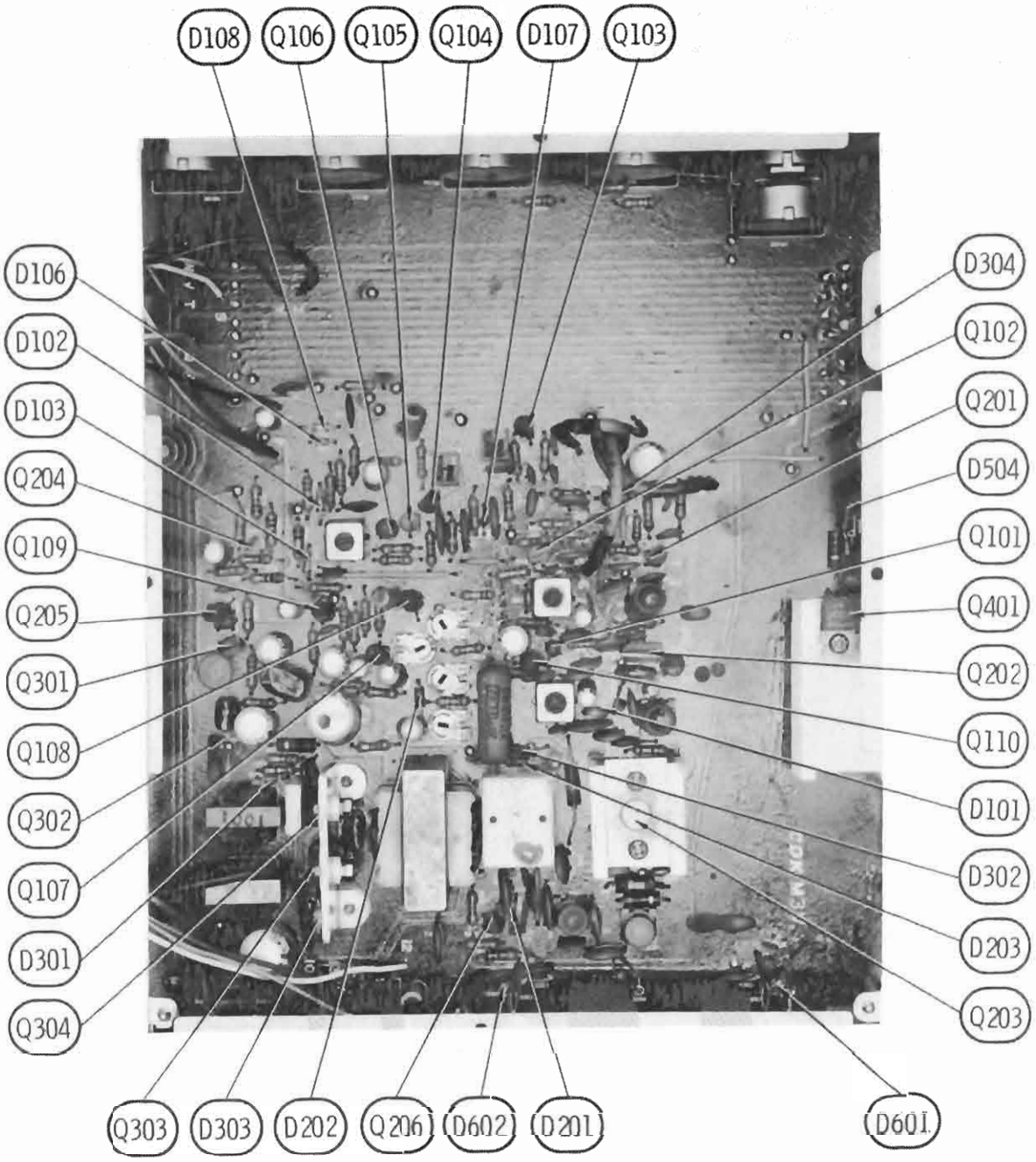


ROYCE MODEL 1-624

SYNTH OSC BOARD


Q103
B C E
Q104
B C E
Q105
E C B
Q106
B C E
Q109
B C E
Q204
C E B
Q205
E C B
Q301
B E C
Q302
Pin 1
Q107
B E C
Q304
B E C
Q303
C E B
Q206
E C B
Q108
B C E
Q203
E B C
Q110
E C B
Q101
E C B
Q202
E B C
Q201
B C E
Q102
C E B

MAIN BOARD


D108
Q106
Q105
Q104
D107
Q103
D106
D102
D103
Q204
Q109
Q205
Q301
Q108
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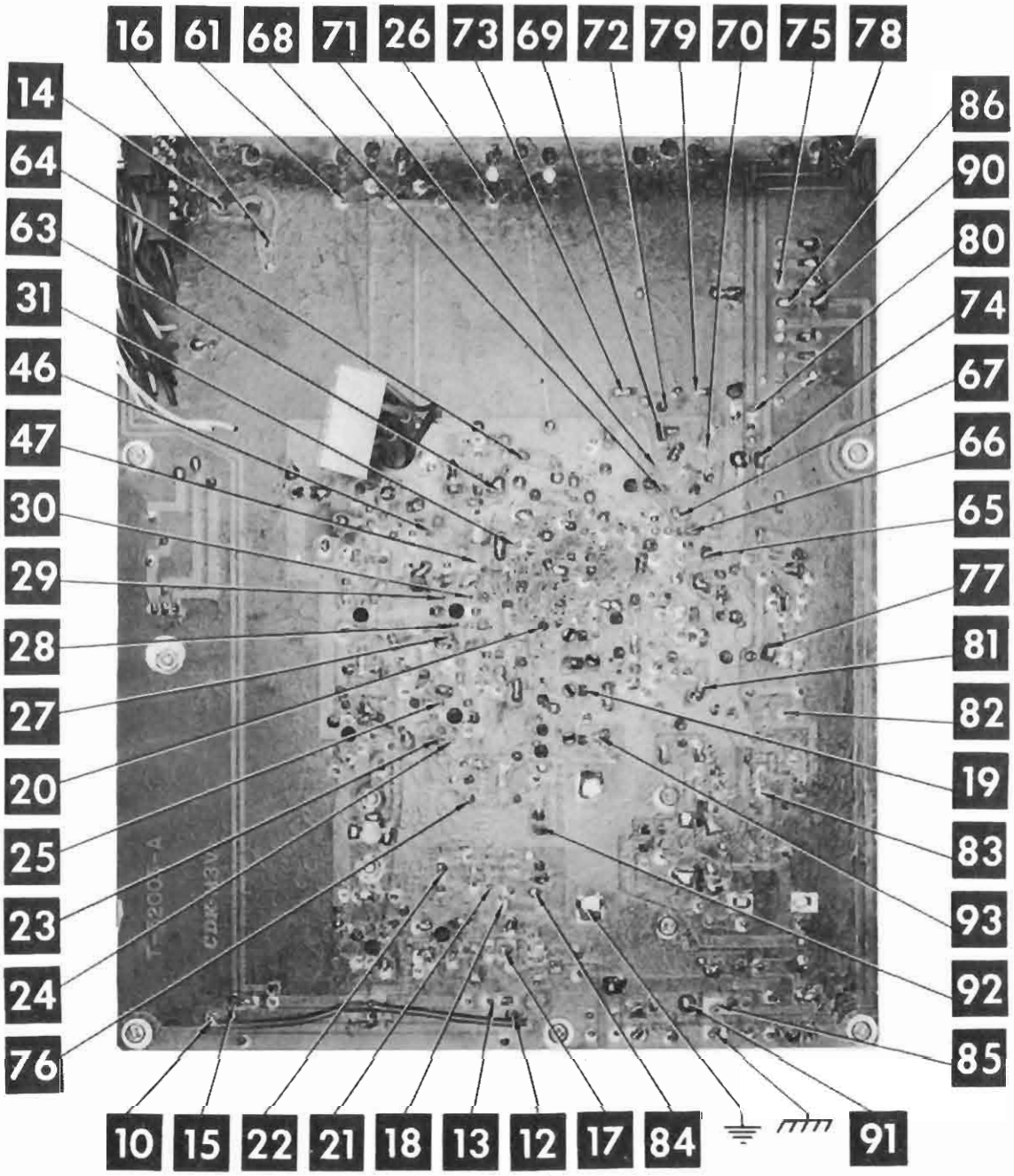
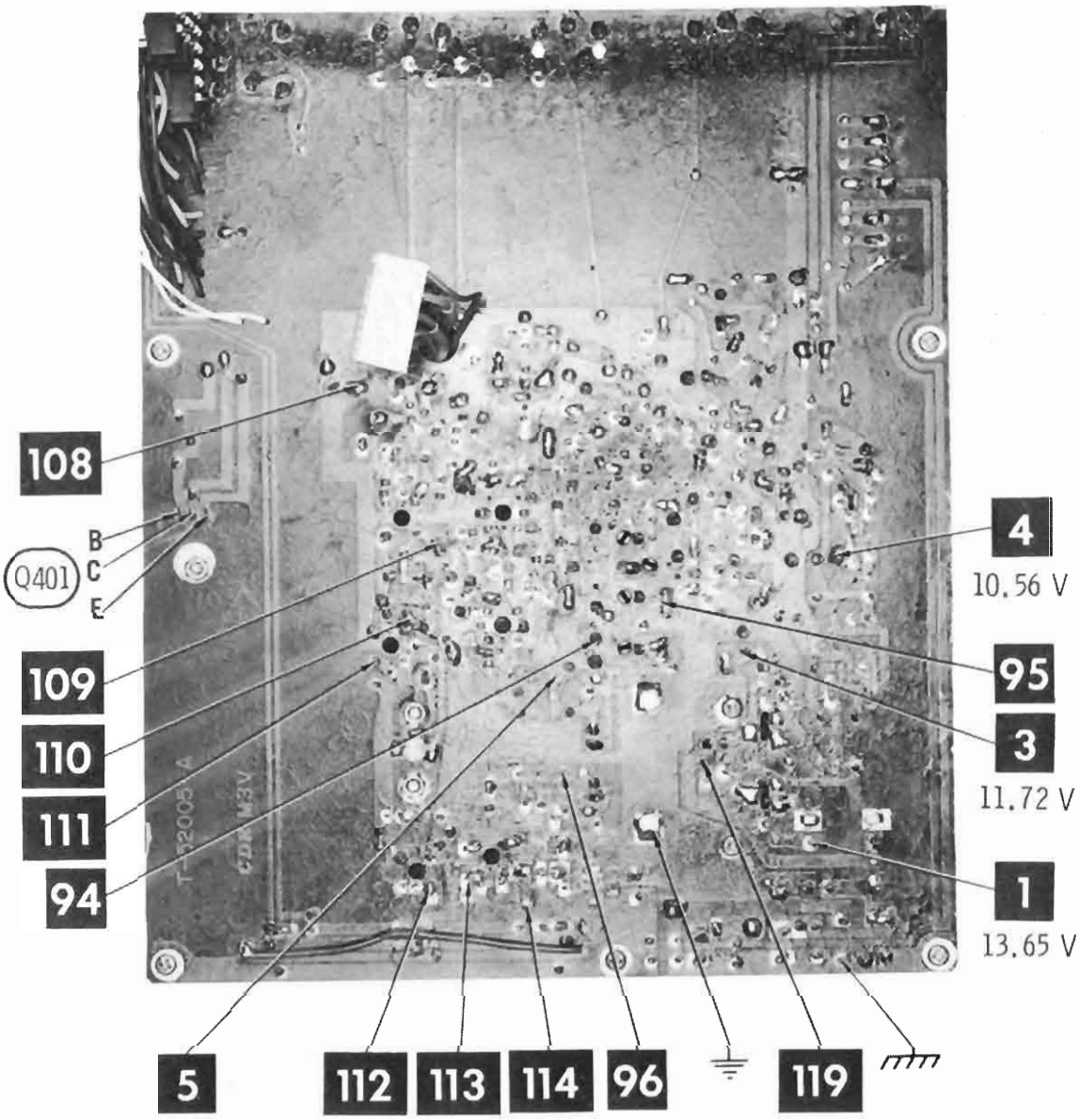
Q107
D301
Q304
D304
Q102
Q201
D504
Q101
Q401
Q202
Q110
D101
D302
D203
Q203
Q303
D303
D202
Q206
D602
D201
D601

MAIN BOARD

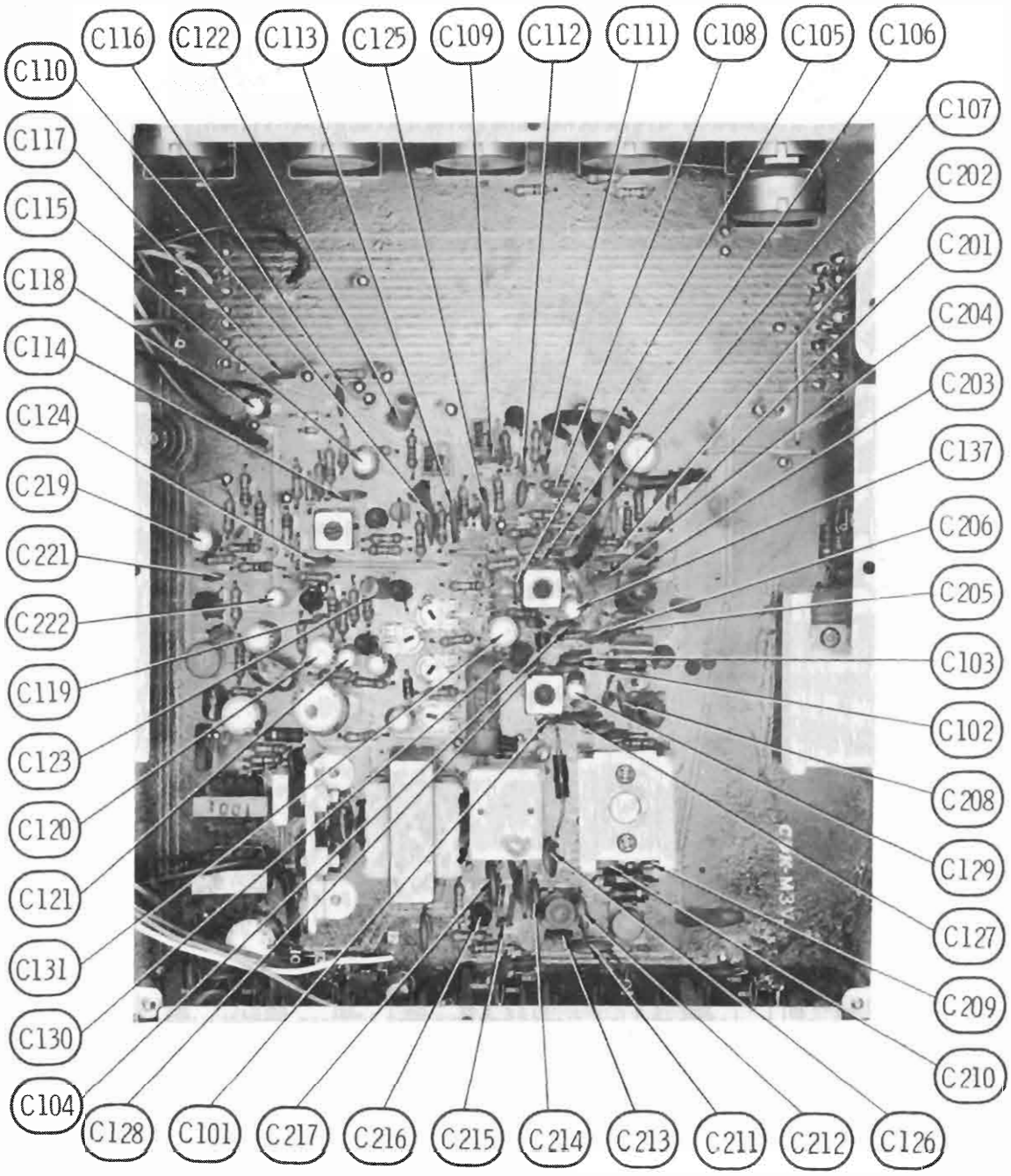
A Howard W. Sams CIRCUITRACE® Photo



MAIN BOARD


108
B
C
E
Q401
109
110
111
94
4
10.56 V
95
3
11.72 V
1
13.65 V
5
8.48 V
0 V •
112
113
114
96
119
• Transmit

MAIN BOARD


C116
C122
C113
C125
C109
C112
C111
C108
C105
C106
C110
C107
C117
C202
C115
C201
C118
C204
C114
C203
C124
C137
C219
C206
C221
C205
C222
C103
C119
C102
C123
C208
C120
C129
C121
C127
C131
C209
C130
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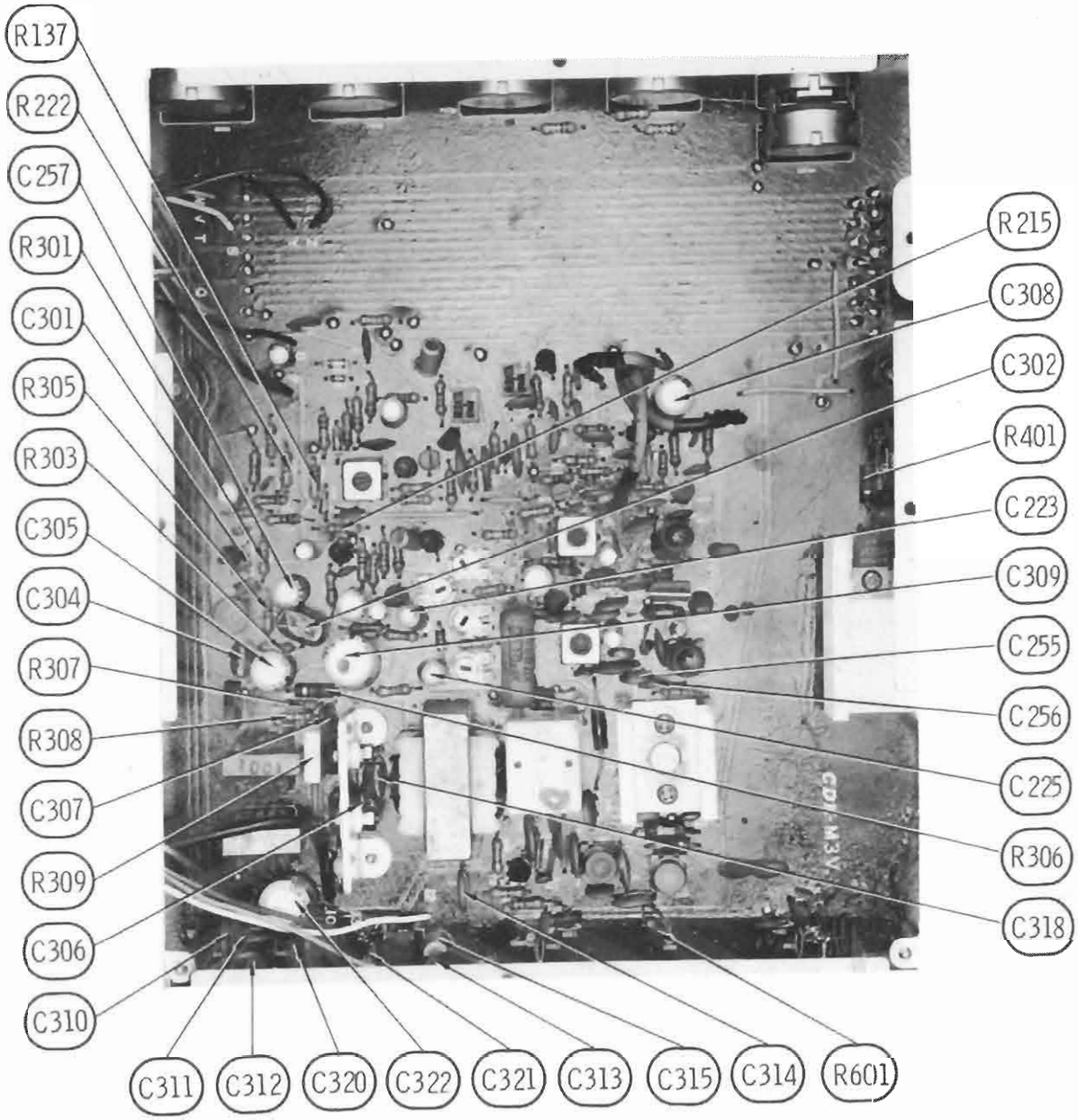
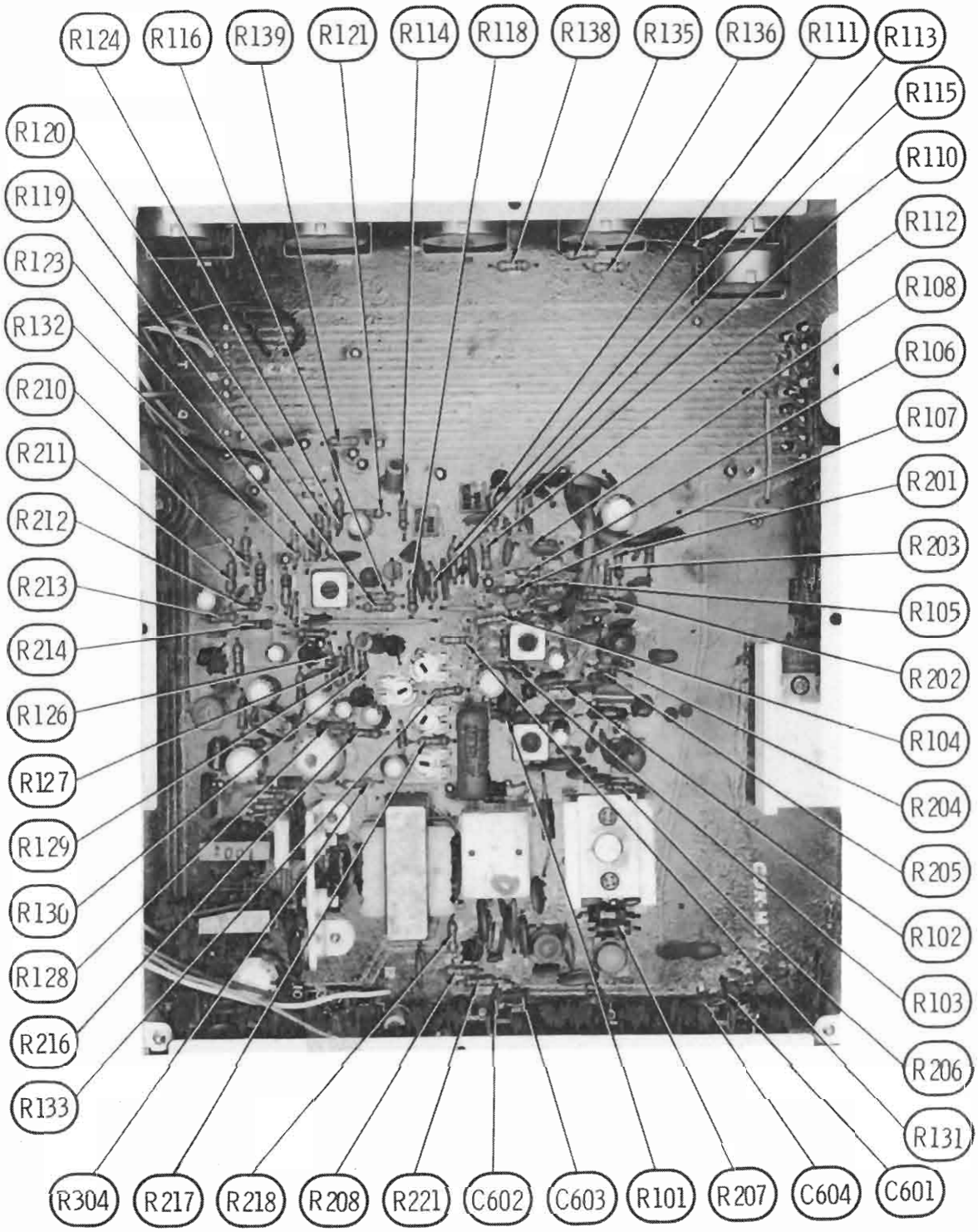
C104
C128
C101
C217
C216
C215
C214
C213
C211
C212
C126

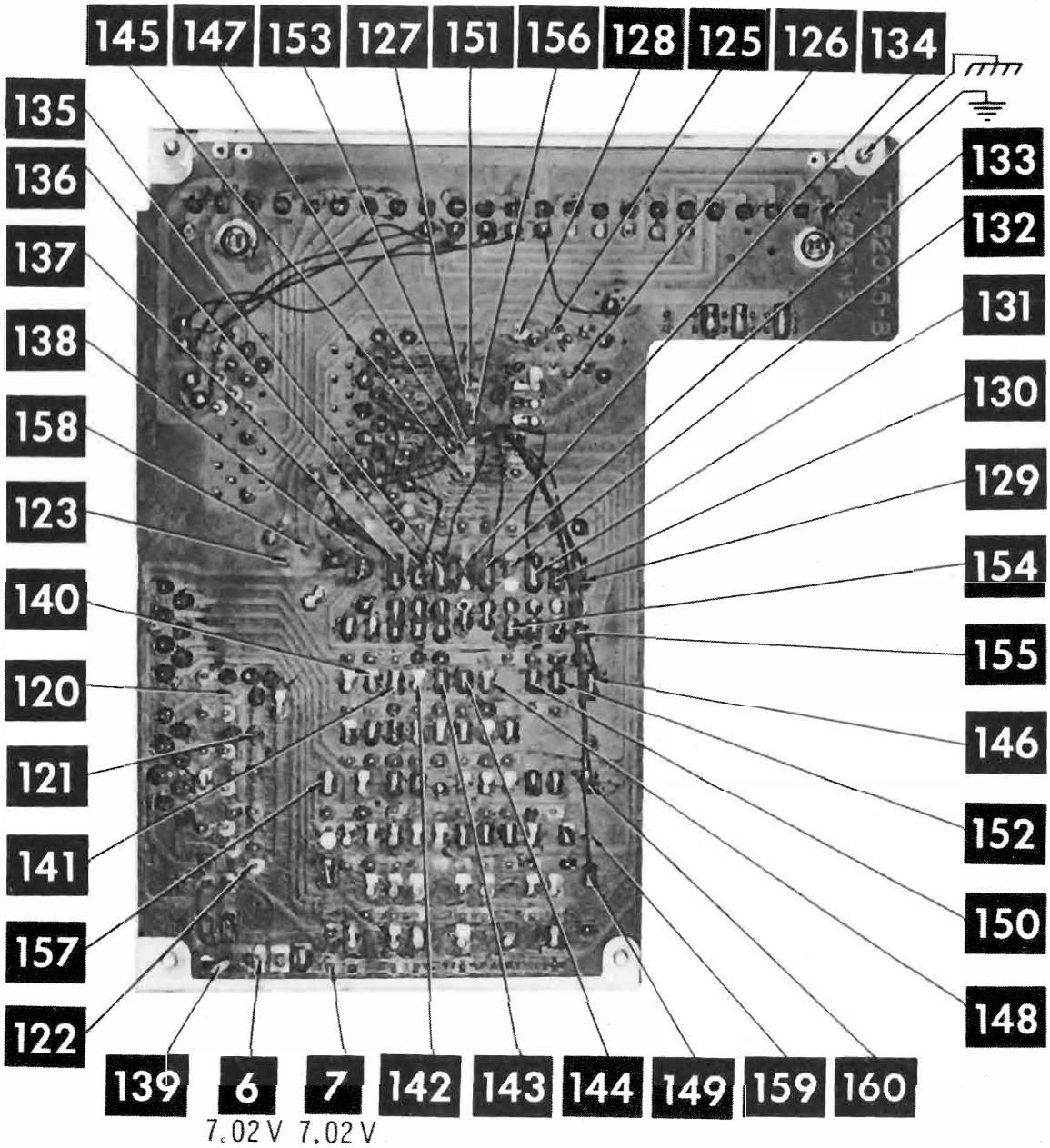
MAIN BOARD


R137
R222
C257
R301
C301
R305
R303
C305
C304
R307
R308
C307
R309
C306
C310
C311
C312
C320
C322
C321
C313
C315
C314
R601
R215
C308
C302
R401
C223
C309
C255
C256
C225
R306
C318

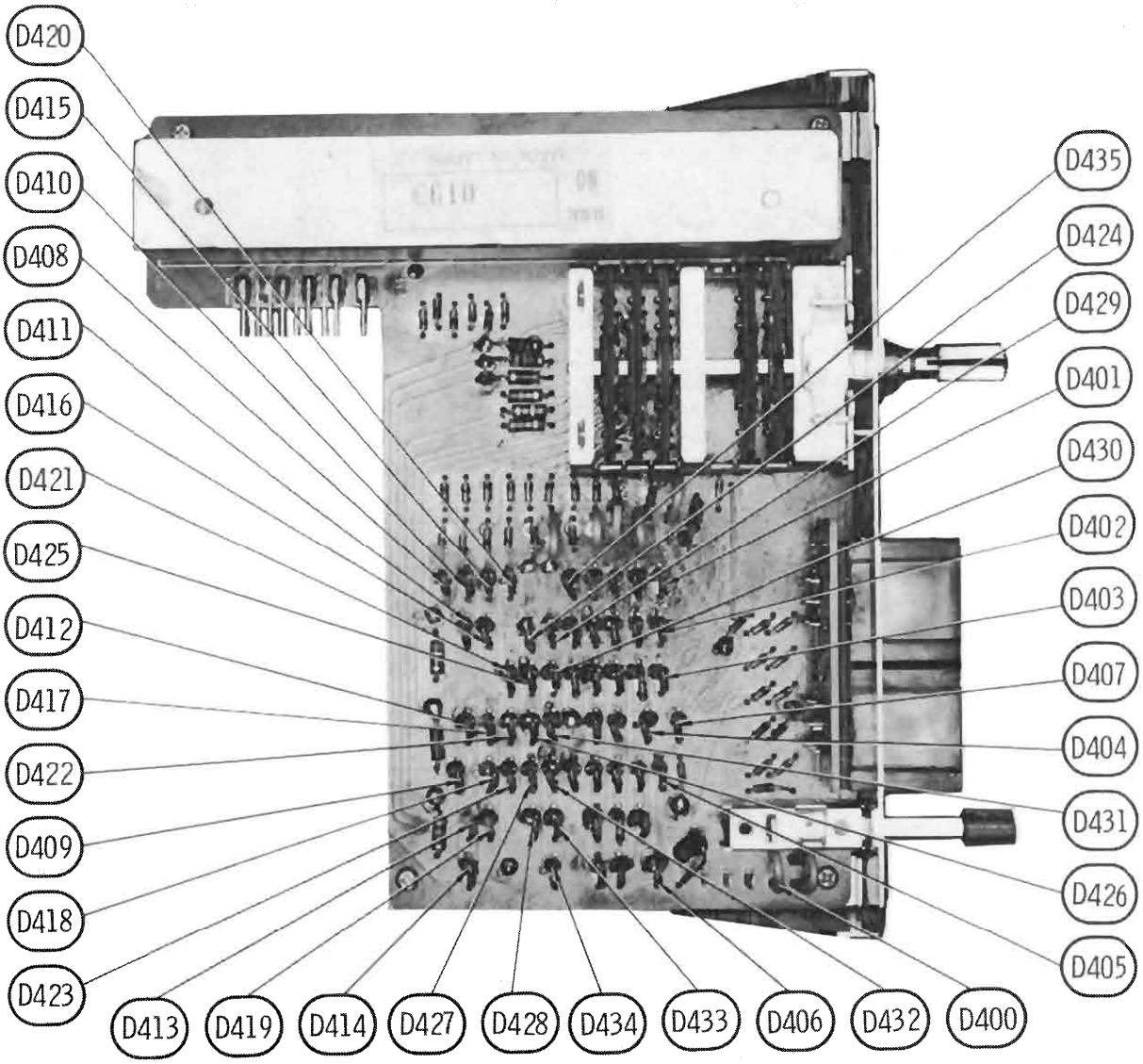
MAIN BOARD


R124
R116
R139
R121
R114
R118
R138
R135
R136
R111
R113
R115
R120
R110
R119
R112
R123
R108
R132
R106
R210
R107
R211
R201
R212
R203
R213
R105
R214
R202
R126
R104
R127
R204
R129
R205
R130
R102
R128
R103
R216
R206
R133
R131
R304
R217
R218
R208
R221
C602
C603
R101
R207
C604
C601

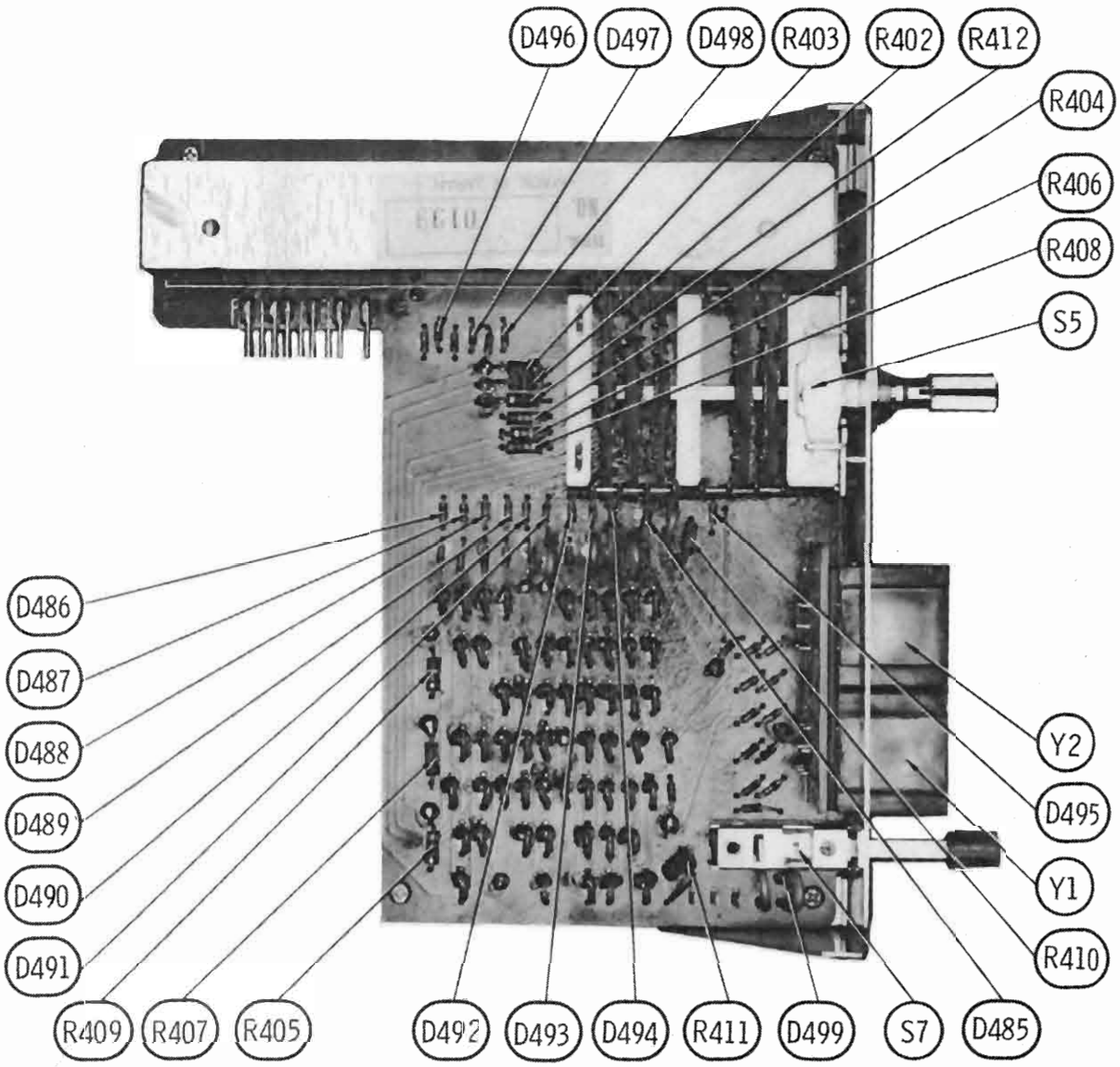
MAIN BOARD



MATRIX READOUT BOARD



MATRIX READOUT BOARD



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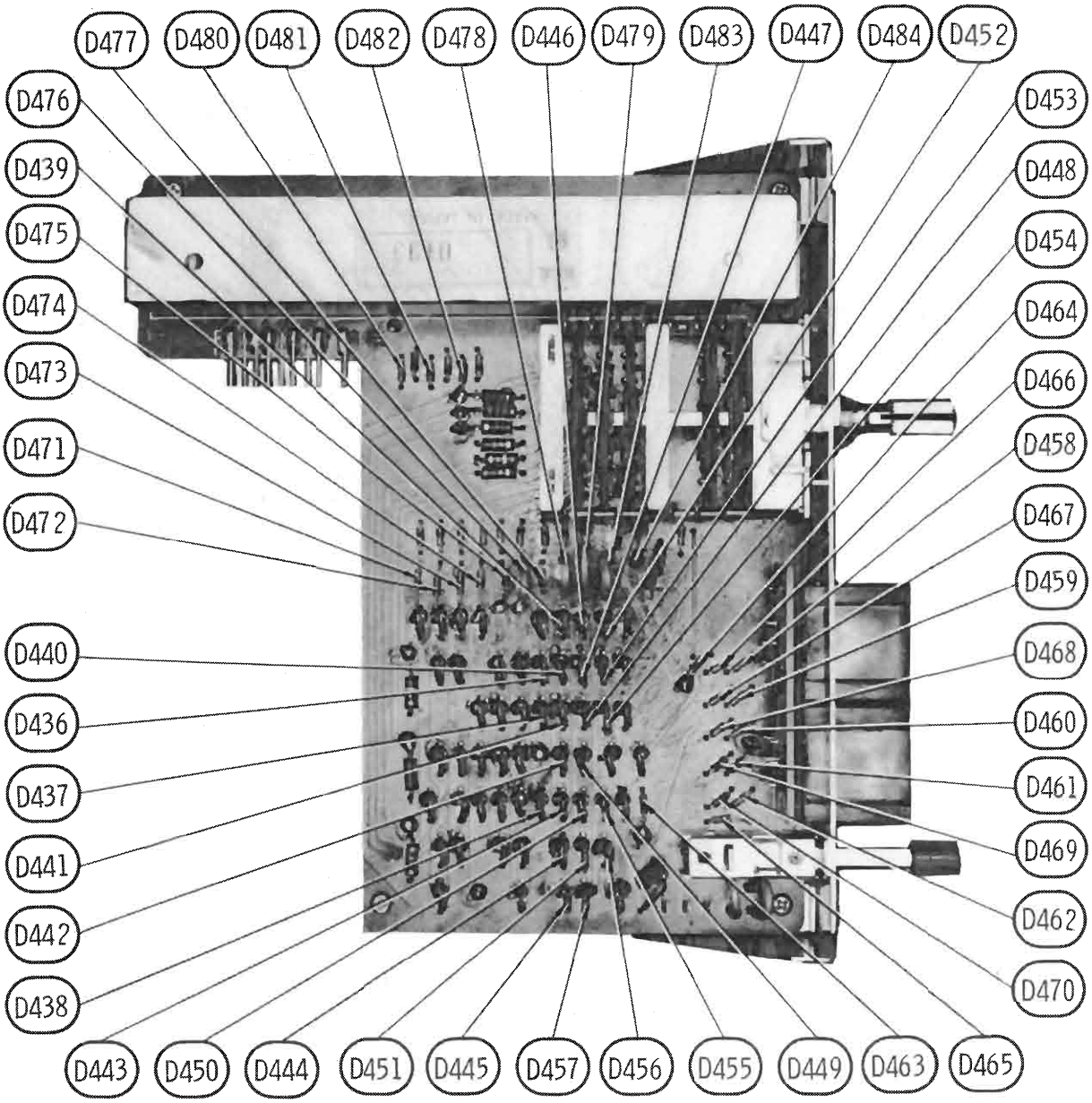

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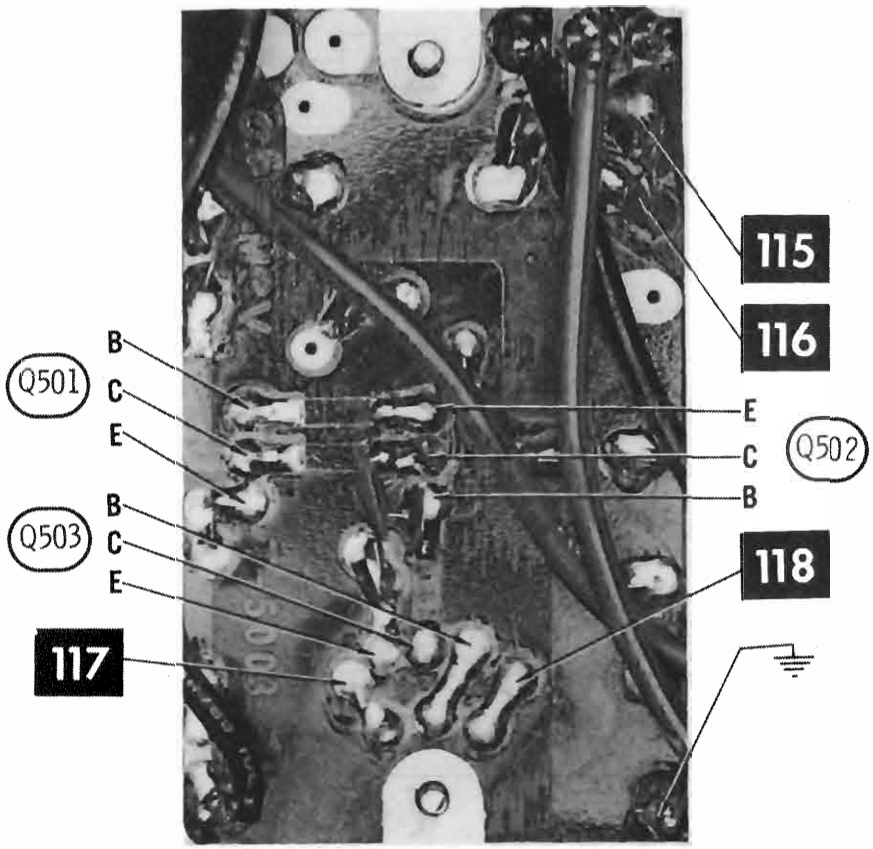
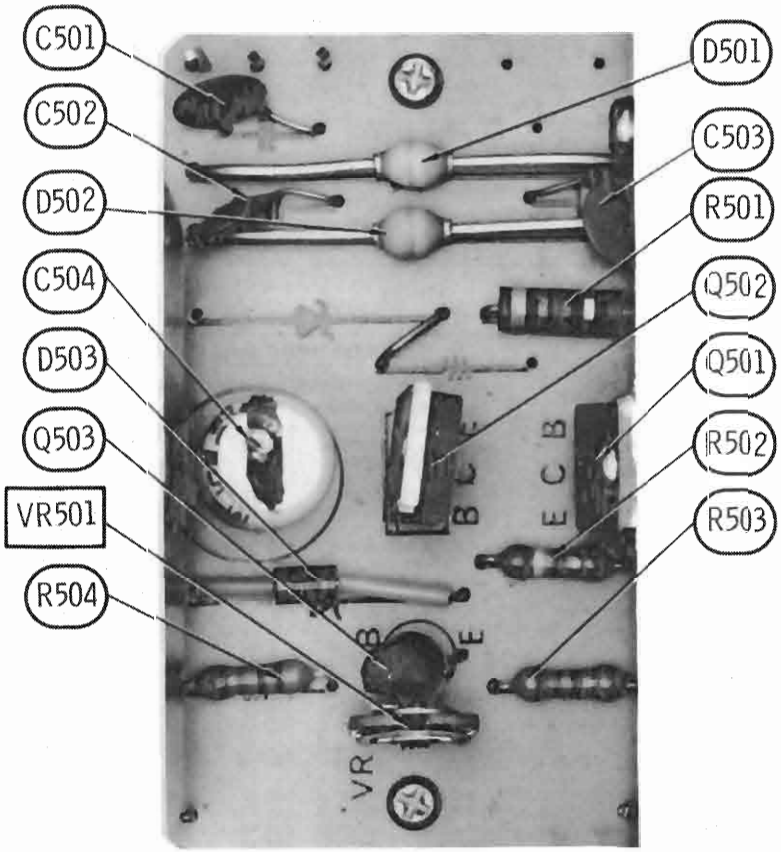
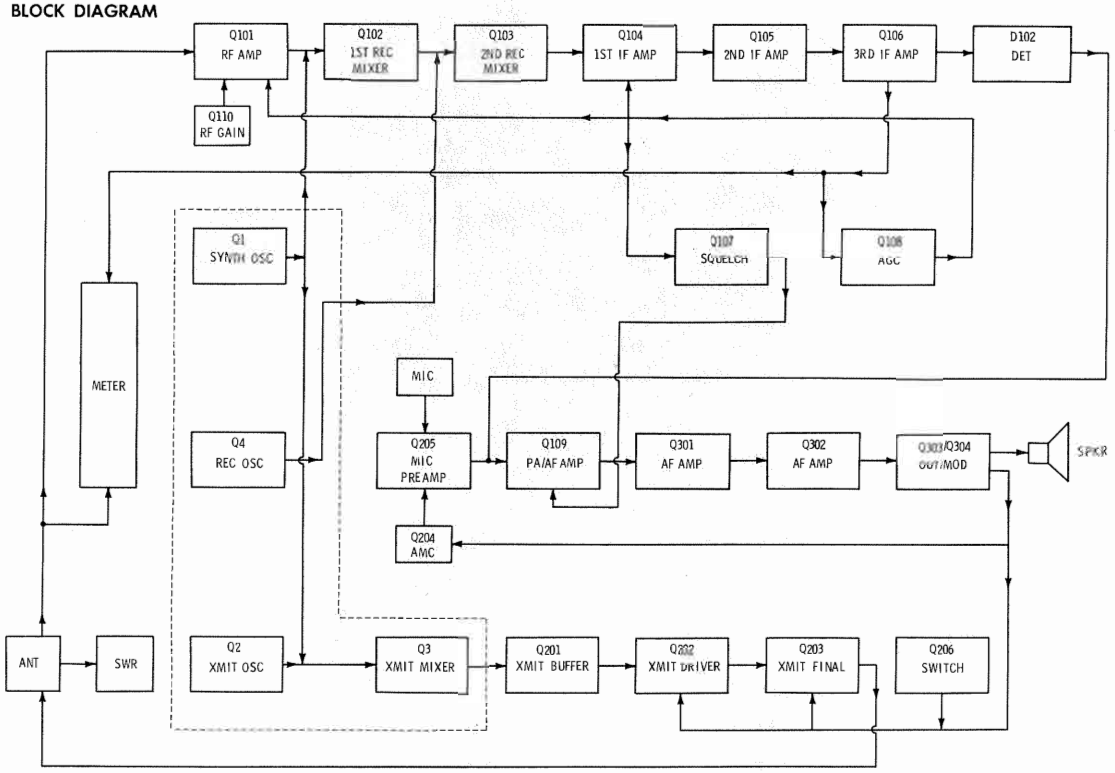




POWER SUPPLY BOARD

BLOCK DIAGRAM



PARTS LIST AND DESCRIPTION

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

WIRING DATA

General-use Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in 13 Colors 8524 (Stranded) Available in 13 Colors
Power Cord, 2-Wire	Use BELDEN No.	17106 (Plastic) -6 feet
Shielded Antenna Lead	Use BELDEN No.	8214 Lowest-loss (RG-8/U Type) 8237 Low-loss (RG-8/U) 8240 (Solid) Miniature (RG-58/U) 8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable	Use BELDEN No.	8497 3-Conductor (1 shielded for Press-to-Talk) Neoprene

SEMICONDUCTORS (Select replacement transistor for best results)

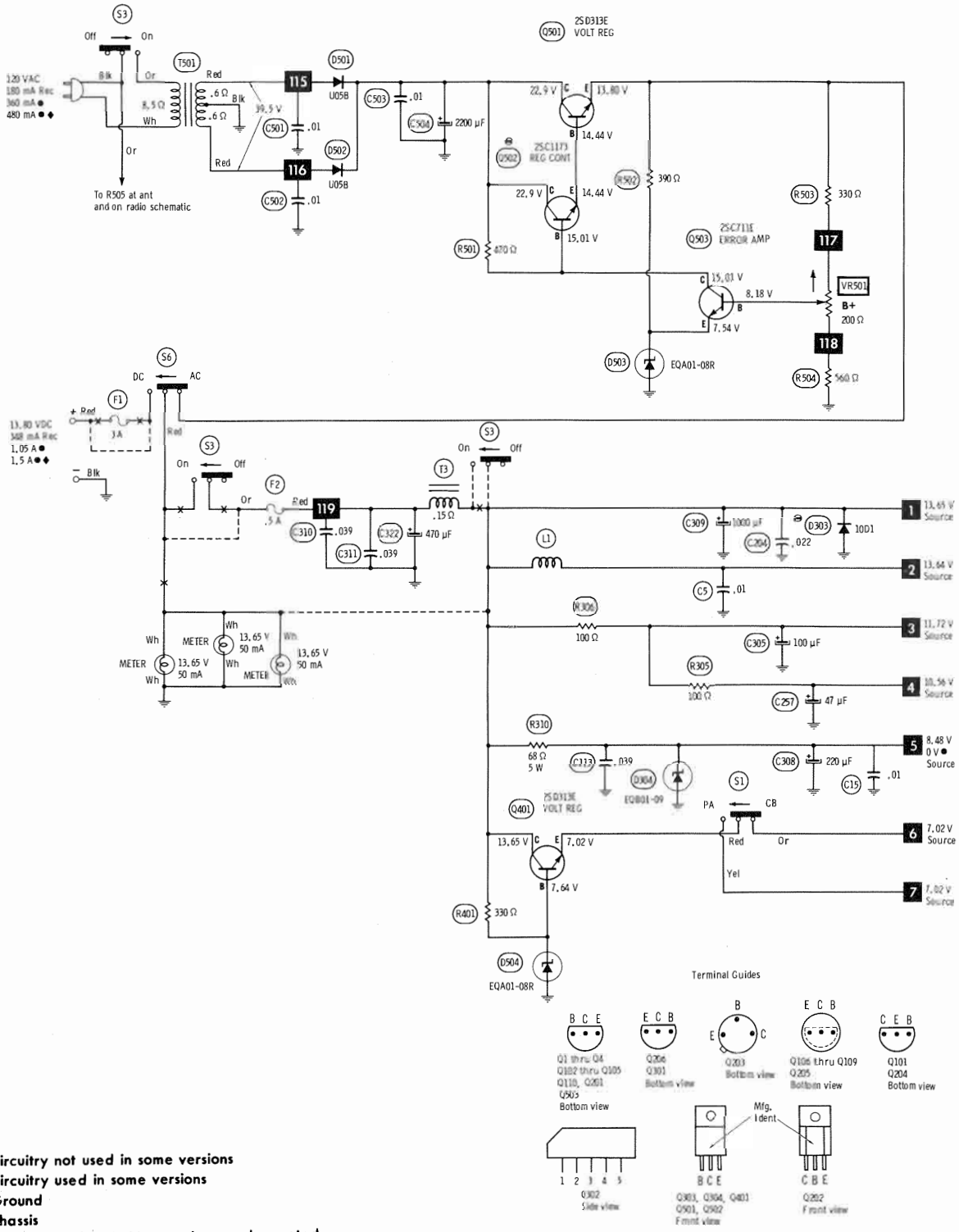
ITEM No.	TYPE No.	MFGR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D1	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D2	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D3	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D4	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D5	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D6	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D7	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D8	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D9	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D10	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D11	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D12	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D13	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D14	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D15	ITT301		GE-90	D201		HEPR2503	RE 195	SK3126	RT-262	
D101	10D-1		GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
	10D-10		GE-509	5A10D	PTC203	HEPR0056	RE 51	SK3080	RT-210	ECG125
D102	1S188		1N34AS	1N34A	PTC207	HEPR9134	RE 47	SK3087	RT-200	ECG109
D103	1S188		1N34AS	1N34A	PTC207	HEPR9134	RE 47	SK3087	RT-200	ECG109
D106	1S2075K		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D107	HV-46				PTC301					
D108	1S188		1N34AS	1N34A	PTC207	HEPR9134	RE 47	SK3087	RT-200	ECG109
D201	1S188		1N34AS	1N34A	PTC207	HEPR9134	RE 47	SK3087	RT-200	ECG109
D202	10D-1		GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D203	10D-1		GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D301	SV-9		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177

PARTS LIST AND DESCRIPTION (CONTINUED)

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

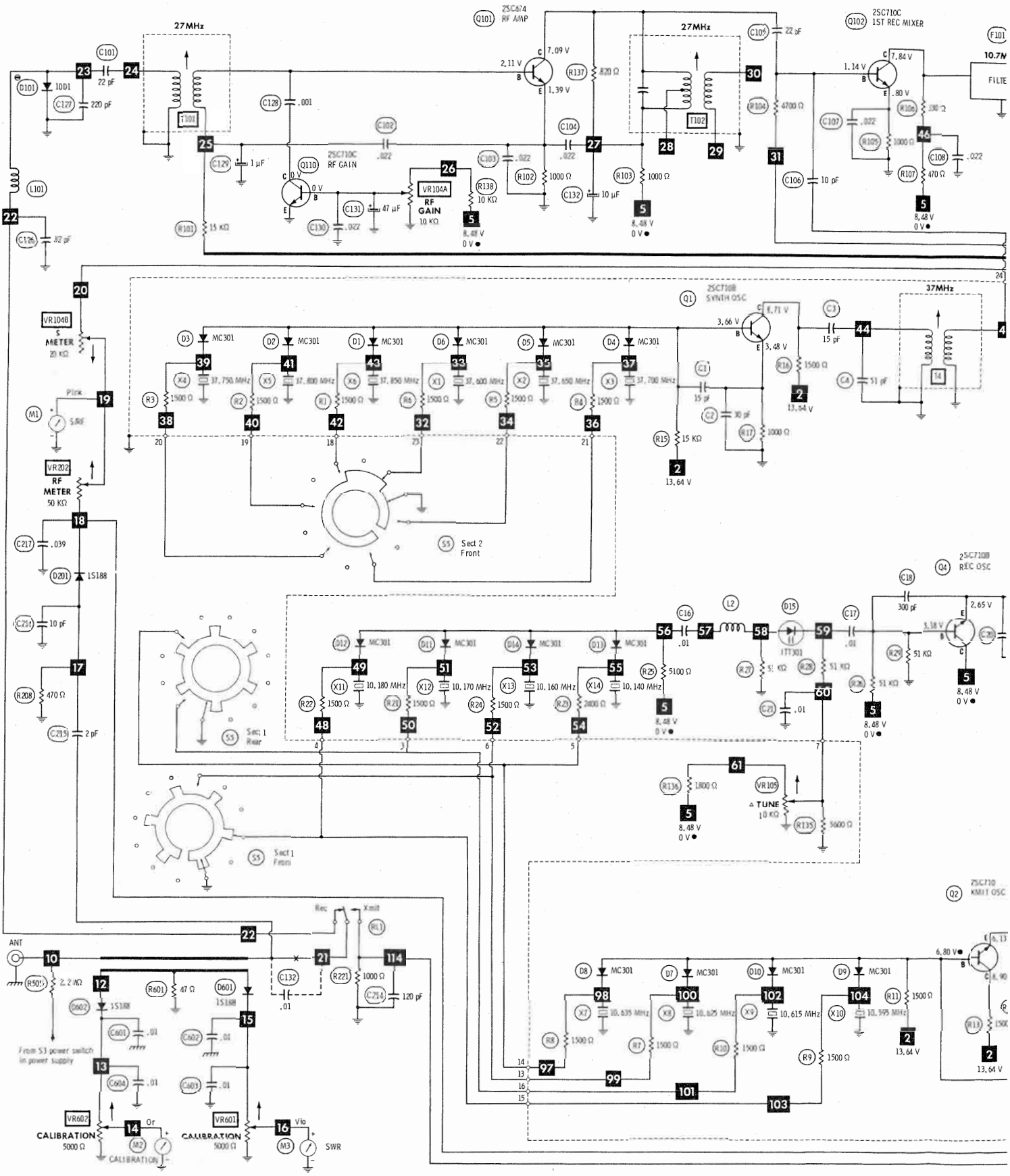
SEMICONDUCTORS (Select replacement transistor for best results)

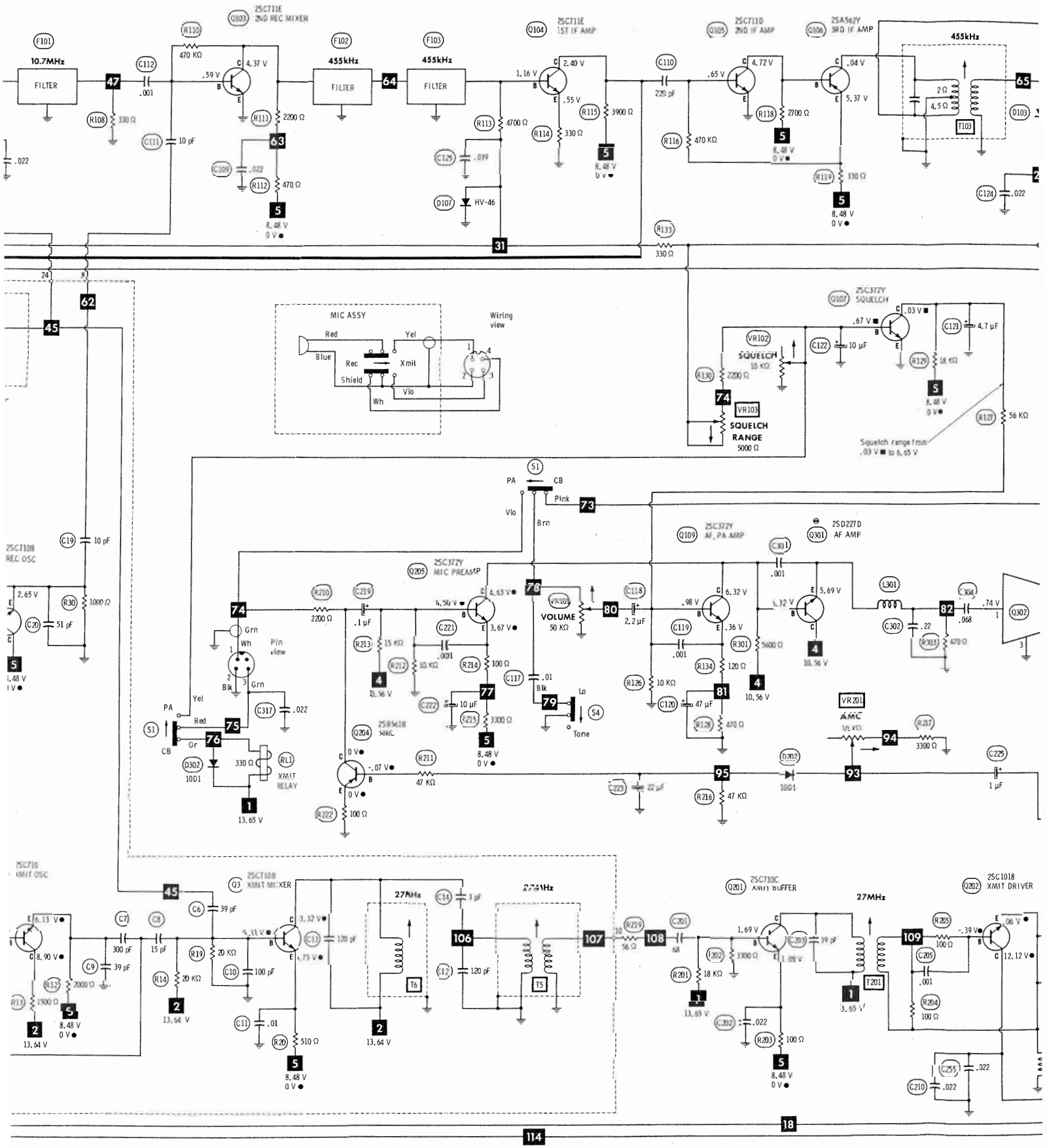
ITEM No.	TYPE No.	MFGR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D302	10D-1		GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D303	10D-1		GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
	U05-6		GE-512	R350	PTC204	HEPR0092	RE 92	SK3051	RT-201	ECG156
D304	EQ8-01-09		GEZD-9.1	Z1209	ZB9.1A	HEPZ0412	RE 114	SK3060	RT-240	ECG139
D400			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D401			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D402			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D403			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D404			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D405			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D406			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D407			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D408			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D409			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D410			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D411			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D412			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D413			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D414			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D415			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D416			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D417			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D418			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D419			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D420			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D421			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D422			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D423			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D424			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D425			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D426			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D427			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D428			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D429			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D430			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D431			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D432			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D433			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D434			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D435			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D436			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D437			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D438			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D439			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D440			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D441			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D442			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D443			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D444			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D445			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D446			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D447			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D448			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D449			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D450			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D451			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D452			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D453			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D454			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D455			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D456			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D457			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D458			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D459			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D460			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D461			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D462			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D463			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D464			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D465			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D466			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D467			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D468			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D469			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D470			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D471			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D472			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D473			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D474			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D475			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D476	10D-1		GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D477			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D478	10D-1		GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D479	10D-1		GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D480			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D481			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D482			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D483	10D-1		GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D484	10D-1		GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D485			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D486			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D487			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D488			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177

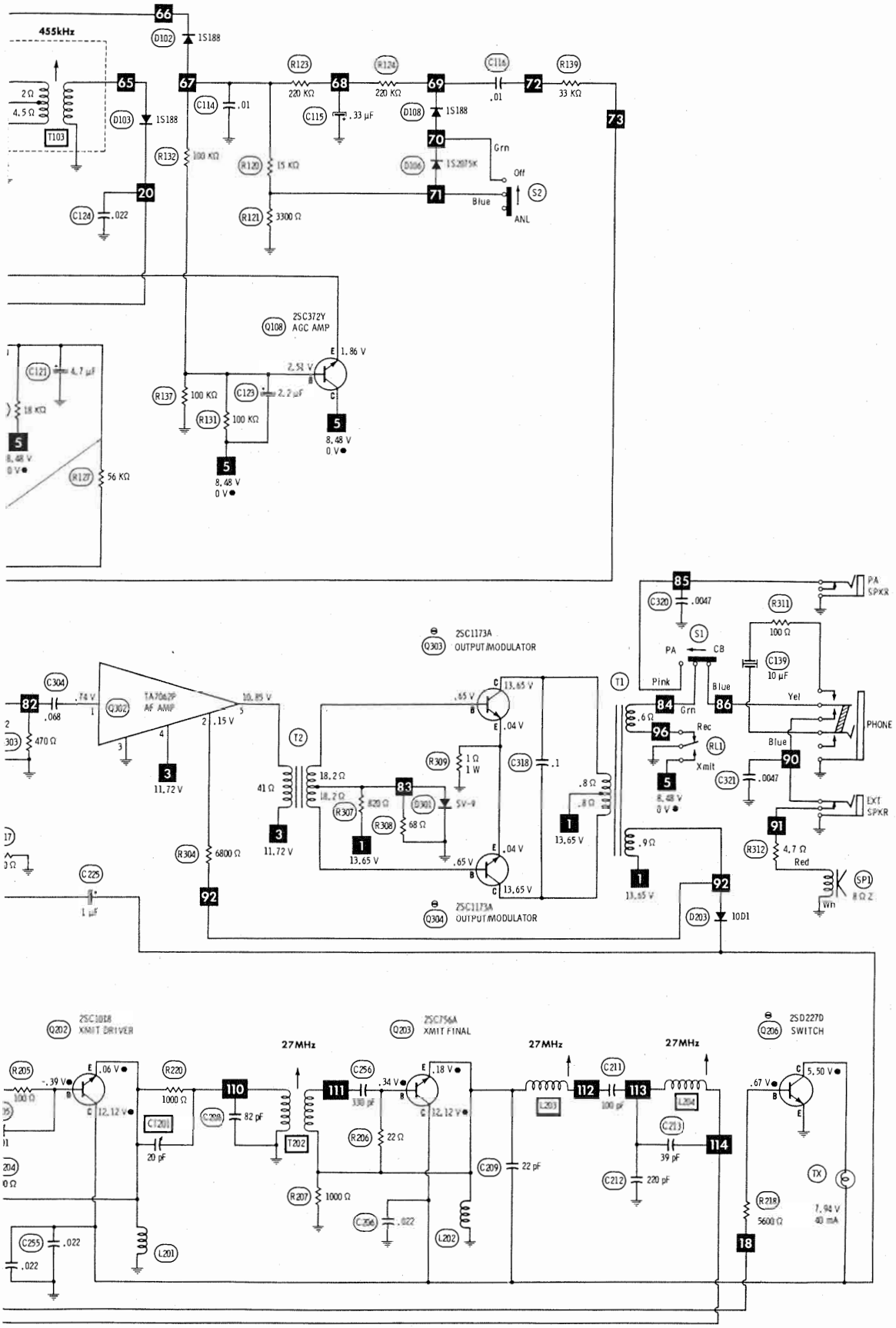


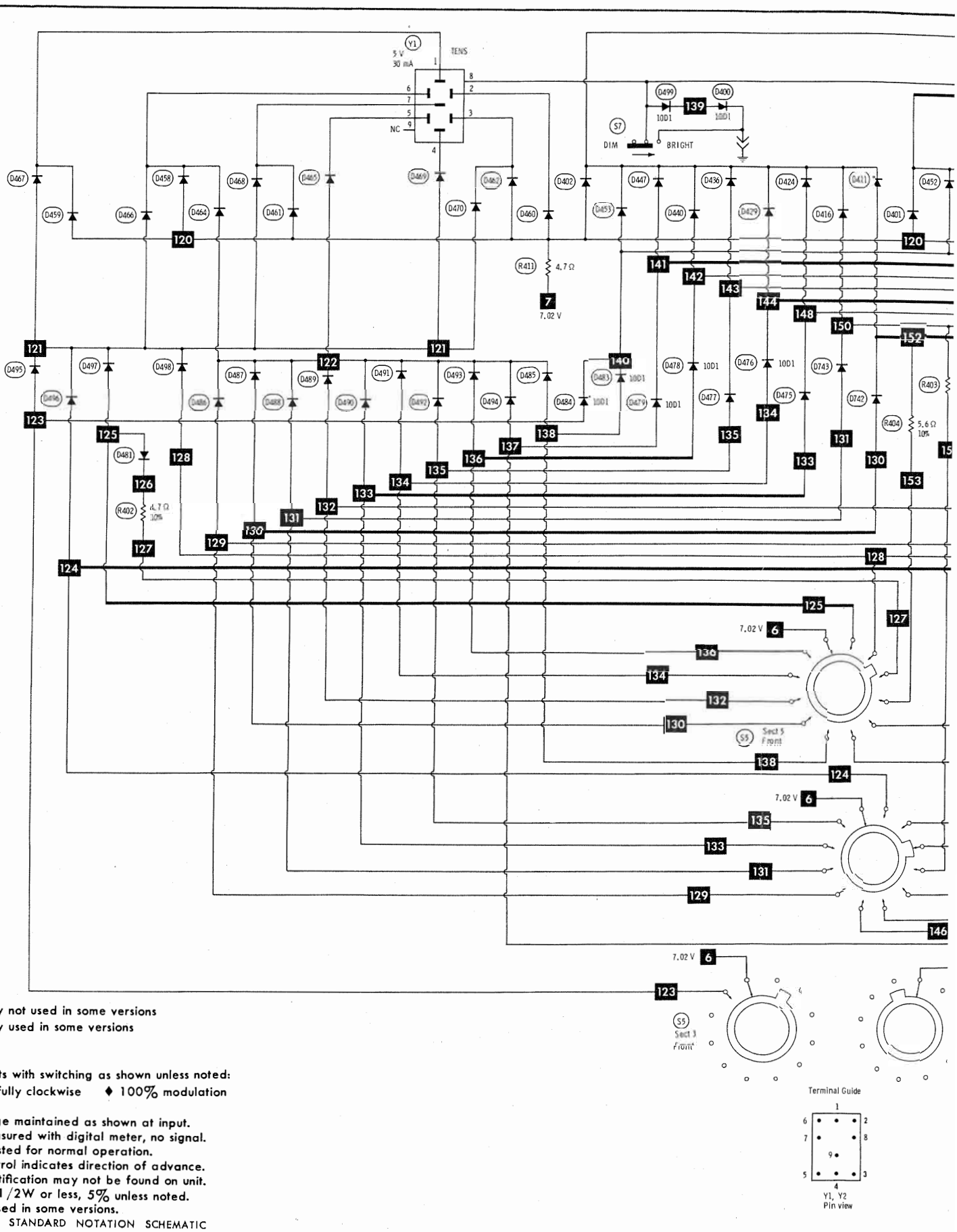
—✱— Circuitry not used in some versions
– – – Circuitry used in some versions
⏚ Ground
Chassis
Measurements with switching as shown unless noted:
■ Squelch fully clockwise ♦ 100% modulation
● Transmit
Supply voltage maintained as shown at input.
Voltages measured with digital meter, no signal.
Controls 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®

Chan	Crystal Complement	Chan	Crystal Complement	Chan	Crystal Complement	Chan	Crystal Complement
1	X1, X7, X11	7	X2, X9, X13	13	X1, X7, X11	19	X5, X9, X13
2	X1, X8, X12	8	X2, X10, X14	14	X1, X8, X12	20	X5, X10, X14
3	X1, X9, X13	9	X3, X7, X11	15	X1, X9, X13	21	X6, X7, X11
4	X1, X10, X14	10	X3, X8, X12	16	X4, X10, X14	22	X6, X8, X12
5	X2, X7, X11	11	X3, X9, X13	17	X5, X7, X11		
6	X2, X8, X12	12	X3, X10, X14	18	X5, X8, X12	23	X6, X10, X14


27MHz
Q101 2SC634 RF AMP
Q102 2SC710C 1ST REC MIXER
T101
T102
Q110 2SC710C RF GAIN
VR104A RF GAIN 10 KΩ
Q1 2SC710B SYNTH OSC
37MHz
D1 MC301
D2 MC301
D3 MC301
D4 MC301
D5 MC301
D6 MC301
X1 37.600 MHz
X2 37.650 MHz
X3 37.700 MHz
X4 37.750 MHz
X5 37.800 MHz
X6 37.850 MHz
VR104B S METER 20 KΩ
M1 S/RF
VR202 RF METER 50 KΩ
S5 Sect 2 Front
S5 Sect 1 Rear
S5 Sect 1 Front
Q4 2SC710B REC OSC
D11 MC301
D12 MC301
D14 MC301
D15 1T301
X11 10.180 MHz
X12 10.170 MHz
X13 10.160 MHz
X14 10.140 MHz
VR105 Δ TUNE 10 KΩ
Q2 2SC710 XMIT OSC
D7 MC301
D8 MC301
D9 MC301
D10 MC301
X7 10.635 MHz
X8 10.625 MHz
X9 10.615 MHz
X10 10.595 MHz
RL1 Rec Xmit
ANT
VR602 CALIBRATION 5000 Ω
VR601 CALIBRATION 5000 Ω
M2 CALIBRATION
M3 SWR
From S3 power switch in power supply


F101
10.7MHz
FILTER
Q103 2SC711E 2ND REC MIXER
F102 455kHz FILTER
F103 455kHz FILTER
Q104 2SC711E 1ST IF AMP
Q105 2SC711D 2ND IF AMP
Q106 2SA562Y 3RD IF AMP
455kHz
T103
MIC ASSY
Red
Yel
Blue
Rec
Xmit
Shield
Vio
Wh
Wiring view
Q107 2SC372Y SQUELCH
VR102 SQUELCH 10 KΩ
VR103 SQUELCH RANGE 5000 Ω
Squelch range from .03 V■ to 6.65 V
S1 PA CB
Pink
Brn
Vio
Q109 2SC372Y AF PA AMP
Q301 2SD227D AF AMP
Q205 2SC372Y MIC PREAMP
VR202 VOLUME 50 KΩ
Grn
Wh
Blk
Pin view
Yel
Red
Or
CB
PA
RL1 XMIT RELAY
D302 10D1
Q204 2SB561B MIC
VR201 AMC 10 KΩ
2SC710B XMIT OSC
Q3 2SC710B XMIT MIXER
27MHz
T6
T5
Q201 2SC710C XMIT BUFFER
Q202 2SC1018 XMIT DRIVER
T201
45
62
74
75
76
77
78
79
80
81
82
93
94
95
106
107
108
109
114
18
31
47
64
65
63
5
1
2
4

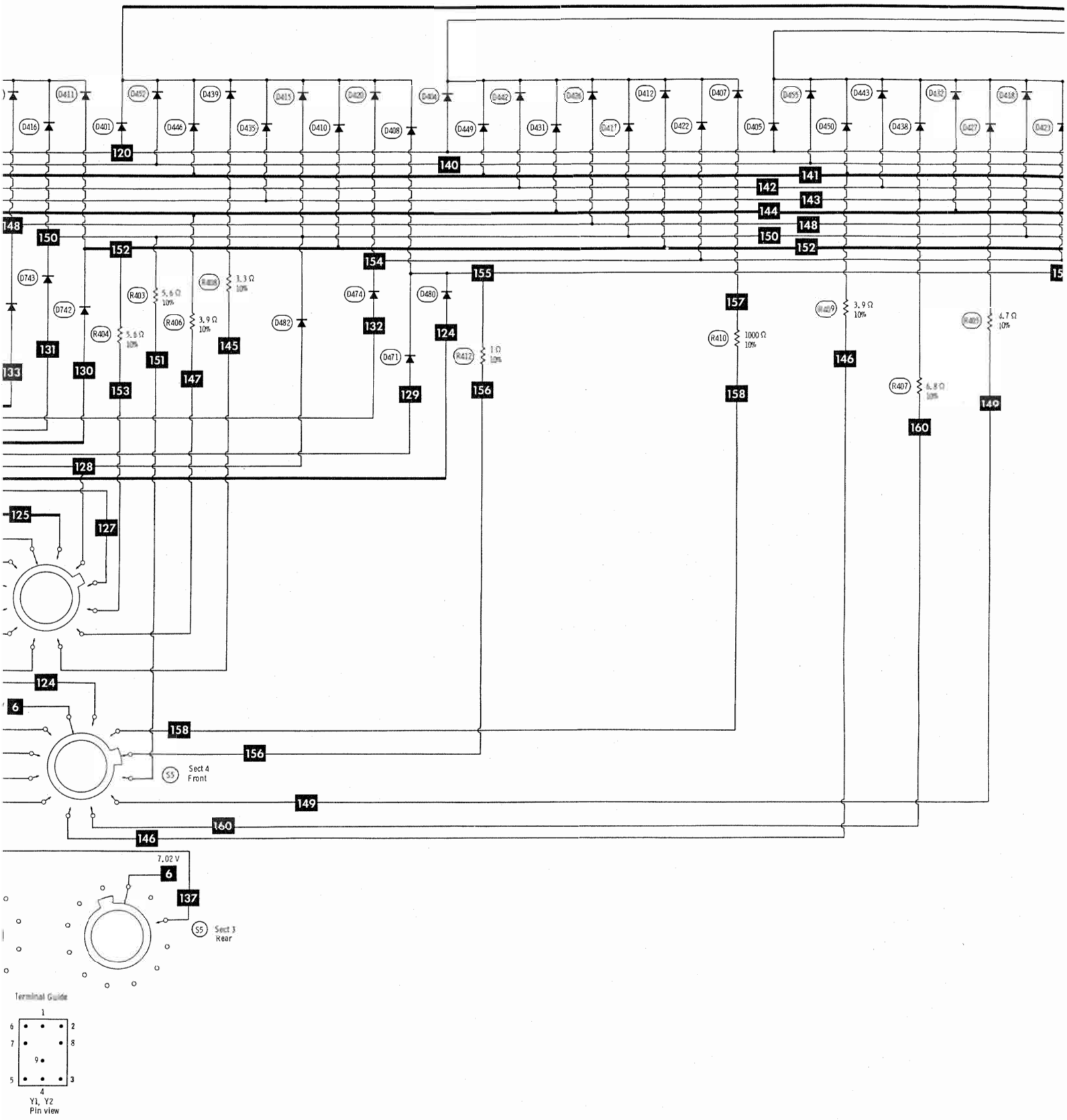

455kHz
D102 1S188
D103 1S188
D108 1S188
D106 1S2075K
T103
R123 220 KΩ
R124 220 KΩ
C116 .01
R139 33 KΩ
C114 .01
C115 .33 µF
R132 100 KΩ
R120 15 KΩ
R121 3300 Ω
C124 .022
Grn
Off
Blue
ANL
S2
Q108 2SC372Y AGC AMP
1.86 V
2.52 V
R137 100 KΩ
C123 2.2 µF
R131 100 KΩ
8.48 V
0 V
C121 4.7 µF
18 KΩ
R127 56 KΩ
Q303 2SC1173A OUTPUT/MODULATOR
Q304 2SC1173A OUTPUT/MODULATOR
Q302 TA7062P AF AMP
C304 .068
470 Ω
.74 V
10.85 V
.15 V
11.72 V
T2
41 Ω
18.2 Ω
820 Ω
D301 SV-9
R307
R308 68 Ω
R309 1 Ω 1 W
C318 .1
.8 Ω
13.65 V
.65 V
.04 V
R304 6800 Ω
C225 1 µF
T1
.6 Ω
.9 Ω
Pink
Blue
Grn
Rec
Xmit
RL1
C320 .0047
C321 .0047
R311 100 Ω
C139 10 µF
Yel
PA
CB
PA SPKR
PHONE
EXT SPKR
R312 4.7 Ω Red
SP1 8 Ω 2
Wh
D203 10D1
Q202 2SC1018 XMIT DRIVER
Q203 2SC756A XMIT FINAL
Q206 2SD227D SWITCH
27MHz
R205 100 Ω
.39 V
.06 V
12.12 V
R220 1000 Ω
C1201 20 pF
C208 82 pF
T202
C256 330 pF
.34 V
.18 V
R206 22 Ω
R207 1000 Ω
C206 .022
C209 22 pF
L203
C211 100 pF
L204
C213 39 pF
C212 220 pF
.67 V
5.50 V
R218 5600 Ω
7.94 V
40 mA
TX
C255 .022
.022
L201
L202
65
66
67
68
69
70
71
72
73
20
5
82
83
84
85
86
96
90
91
92
1
3
110
111
112
113
114
18

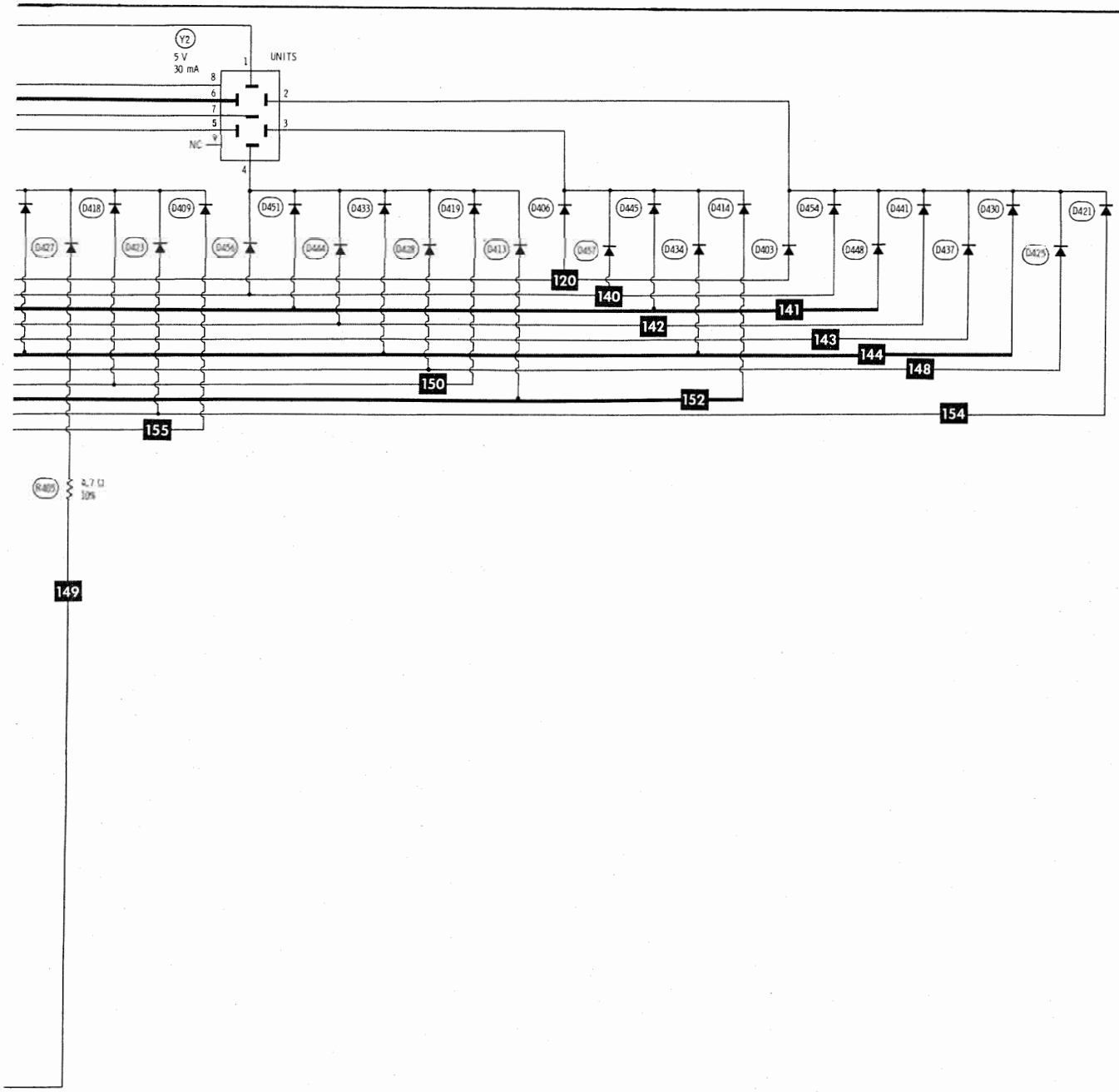


—✕— Circuitry not used in some versions
– – – Circuitry used in some versions
⏚ Ground
Chassis
Measurements with switching as shown unless noted:
■ Squelch fully clockwise ♦ 100% modulation
● Transmit
Supply voltage maintained as shown at input.
Voltages measured with digital meter, no signal.
Controls 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®

Terminal Guide

Y1, Y2
Pin view


D411
D416
D401
D452
D446
D439
D435
D415
D410
D420
D408
D404
D449
D442
D431
D426
D417
D412
D422
D407
D405
D455
D450
D443
D438
D432
D427
D418
D423
120
140
141
142
143
144
148
150
152
154
155
157
D743
D742
D403
R403 5.6 Ω 10%
R404 5.6 Ω 10%
R406 3.9 Ω 10%
R408 3.3 Ω 10%
D482
D474
D480
D471
R412 1 Ω 10%
R410 1000 Ω 10%
R409 3.9 Ω 10%
R401 4.7 Ω 10%
R407 6.8 Ω 10%
131
130
133
153
151
147
145
132
124
129
156
158
146
149
160
128
125
127
124
6
158
156
S5 Sect 4 Front
149
160
146
7.02 V
6
137
S5 Sect 3 Rear
Terminal Guide
1
2
3
4
5
6
7
8
9
Y1, Y2
Pin view


Y2
5 V
30 mA
UNITS
1
2
3
4
5
6
7
8
9
N/C
D418
D409
D451
D433
D419
D406
D445
D414
D454
D441
D430
D421
D427
D423
D456
D444
D428
D413
D457
D434
D403
D448
D437
D425
120
140
141
142
143
144
148
150
152
154
155
R405
2,7 Ω
10%
149

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.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D489			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D490			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D491			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D492			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D493			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D494			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D495			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D496			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D497			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D498			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D499	10D-1		GE-504A	5A40	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D501	U05-B		GE-512	R350	PTC204	HEPR0092	RE 92	SK3051	RT-201	ECG156
D502	U05-B		GE-512	R350	PTC204	HEPR0092	RE 92	SK3051	RT-201	ECG156
D503	EQA-01-08R		GEZD-8.2	Z1208	ZB8.2A	HEPZ0411	RE 112	SK3136	RT-257	ECG5072
D504	EQA-01-08R		GEZD-8.2	Z1208	ZB8.2A	HEPZ0411	RE 112	SK3136	RT-257	ECG5072
D601	1S188		1N34AS	1N34A	PTC207	HEPR9134	RE 47	SK3087	RT-200	ECG109
D602	1S188		1N34AS	1N34A	PTC207	HEPR9134	RE 47	SK3087	RT-200	ECG109
Q1	2SC710B		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q2	2SC710B		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q3	2SC710B		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q4	2SC710B		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q101	2SC674D		GE-211 *	TR-21 *	PTC132 *	HEPS0016 *	RE 28 *	SK3117 *	RT-113 *	ECG161 *
Q102	2SC710C		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q103	2SC711E		GE-62 *	(IR)2SC644	PTC121	HEPS0024 *	RE 192 *	SK3124 *	RT-302 *	ECG199 *
Q104	2SC711E		GE-62 *	(IR)2SC644	PTC121	HEPS0024 *	RE 192 *	SK3124 *	RT-302 *	ECG199 *
Q105	2SC711D		GE-62 *	(IR)2SC644	PTC121	HEPS0024 *	RE 192 *	SK3124 *	RT-302 *	ECG199 *
Q106	2SA562Y		GE-82 *	TR-20 *	PTC103 *	HEPS0019 *	RE 26 *	SK3114	RT-303	ECG290
Q107	2SC372Y		GE-61 *	(IR)2SC372	PTC121 *	HEPS0015 *	RE 13 *	SK3122	RT-308	ECG123A *
Q108	2SC372Y		GE-61 *	(IR)2SC372	PTC121 *	HEPS0015 *	RE 13 *	SK3122	RT-308	ECG123A *
Q109	2SC372Y		GE-61 *	(IR)2SC372	PTC121 *	HEPS0015 *	RE 13 *	SK3122	RT-308	ECG123A *
Q110	2SC710C		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q201	2SC710C		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q202	2SC1018 (11)		GE-236		PTC192		RE 212		RT-143	ECG299
Q203	2SC756A (12)		GE-46		PTC158		RE 206		RT-306F	ECG282
Q204	2SB561B		GE-21 *		PTC103 *	HEPS0019 *	RE 26 *	SK3114 *	RT-126A *	ECG159 *
Q205	2SC372Y		GE-61 *	(IR)2SC372	PTC121 *	HEPS0015 *	RE 13 *	SK3122	RT-308	ECG123A *
Q206	2SD227D		GE-82 *	TR-24 *	PTC123 *	HEPS0015 *	RE 13 *	SK3124 *	RT-172 *	ECG123A *
	2SC735Y(1)		GE-210 *	TR-21 *	PTC123 *	HEPS0014 *	RE 13 *	SK3122	RT-308 *	ECG289
Q301	2SD227D		GE-82 *	TR-24 *	PTC123 *	HEPS0015 *	RE 13 *	SK3124 *	RT-172 *	ECG123A *
	2SC735Y(1)		GE-210 *	TR-21 *	PTC123 *	HEPS0014 *	RE 13 *	SK3122	RT-308 *	ECG289
Q302	TA7062P		GEIC-93							ECG1102
Q303	2SC1173A (13)		GE-215		PTC186		RE 201	SK3197	RT-160	ECG236
	2SD330 (1)(14)		GE-66	TR-76	PTC167	HEPS5027	RE 21	SK3054	RT-154	ECG152
Q304	2SC1173A (13)		GE-215		PTC186		RE 201	SK3197	RT-160	ECG236
	2SD330 (1)(14)		GE-66	TR-76	PTC167	HEPS5027	RE 21	SK3054	RT-154	ECG152
Q401	2SD313E (15)		GE-66	TR-76	PTC154		RE 205	SK3054	RT-154	ECG196
Q501	2SD313E (15)		GE-66	TR-76	PTC154		RE 205	SK3054	RT-154	ECG196
Q502	2SC1173L (13)		GE-215		PTC186		RE 201	SK3197	RT-160	ECG236
	2SD330 (1)(14)		GE-66	TR-76	PTC167	HEPS5027	RE 21	SK3054	RT-154	ECG152
Q503	2SC711E		GE-62 *	(IR)2SC644	PTC121	HEPS0024 *	RE 192 *	SK3124 *	RT-302 *	ECG199 *

* Lead Configuration may vary from original.
(1) Used in some versions.
(11) Rating, 4.0 watt @ 1.0 amp.
(12) Rating, 10 watts @ 4.0 amp.
(13) Rating, 10 Watts @ 3.0 amp.
(14) Rating, 20 watts @ 2.0 amp.
(15) Rating, 30 watts @ 3.0 amp.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFGR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C115	.33 50V			TDC334M050EL	QDT1-14	SD50-R339
C118	2.2 50V		PC2-100	VTT2R2A50	QV1-19	EV-1517
C120	47 16V		PC50-16	VTT47D16	QV1-73	EV-1226
C121	4.7 25V		PC5-50	VTT4R7A50	QV1-27	EV-1319
C122	10 16V		PC10-25	VTT10A25	QV1-41	EV-1222
C123	2.2 50V		PC2-100	VTT2R2A50	QV1-19	EV-1517
C129	1 50V		PC1-50	VTT1B63	QV1-11	EV-1615
C131	47 16V		PC50-16	VTT47D16	QV1-73	EV-1226
C137	10 16V		PC10-25	VTT10A25	QV1-41	EV-1222
C139	10 16V		PC10-25	VTT10A25	QV1-41	EV-1222
C219	.1 50V			TDC104M050EL	QDT1-2	SD50-R109

PARTS LIST AND DESCRIPTION (CONTINUED)

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

ELECTROLYTIC CAPACITORS (cont)

ITEM No.	RATING	REPLACEMENT DATA				
		MFGR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C222	10 16V		PC10-25	VTT10A25	QV1-41	EV-1222
C223	22 10V		PC25-25	VTT22A16	QV1-55	EV-1224
C225	1 50V		PC1-50	VTT1B63	QV1-11	EV-1615
C257	47 16V		PC50-16	VTT47D16	QV1-73	EV-1226
C305	100 16V		PC100-16	VTT100F16	QV1-95	EV-1230
C308	220 16V		PC250-25	VTT220G16	QV1-117	EV-1240
C309	1000 16V		PC1000-16	VTT1000L16	QV1-183	EV-1260
C315	10 16V		PC10-25	VTT10A25	QV1-41	EV-1222
C322	470 16V		PC500-16	VTT470J16	QV1-151	EV-1250
C504	2200 25V		WBR2000-25	TC2520A	QE1-645	TVA-1213.5

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	15		DTZ-15	NP015	CN0415		10TCC-Q15
C2	30		DTZ-33	NP033	CN0433		10TCC-Q33
C3	15		DTZ-15	NP015	CN0415		10TCC-Q15
C4	51						
C5	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C6	39				CN0439		10TCC-Q39
C7	300 10%		DD-301	GP300	GP330		10TS-T30
C8	15		DTZ-15	NP015	CN0415		10TCC-Q15
C9	39				CN0439		10TCC-Q39
C10	100 10%		DD-101	GP100	GP310		10TS-T10
C11	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C12	120 10%						10TCC-T12
C13	120 10%						10TCC-T12
C14	3		DTZ-3R3	NP03P3	CN0533		10TCC-V33
C15	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C16	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C17	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C18	300 10%		DD-301	GP300	GP330		10TS-T30
C19	10		DTZ-10	NP010	CN0410		10TCC-Q10
C20	51						
C21	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C101	22 10% N220				*		10TCR-Q22
C102	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C103	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C104	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C105	22 10% N220				*		10TCR-Q22
C106	10		DTZ-10	NP010	CN0410		10TCC-Q10
C107	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C108	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C109	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C110	220 10% N220				*		10TCR-T22
C111	10		DTZ-10	NP010	CN0410		10TCC-Q10
C112	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C113	.039						
C114	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C116	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C117	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C119	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C124	.002		DD-202	GP2000	GP220	QC2-93	5GA-D20
C125	.039						
C126	82 10% N220				*		10TCR-Q82
C127	220		DD-221		GP322		10TS-T22
C128	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C130	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C132	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C201	68 10% N220				*		10TCR-Q68
C202	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C203	39 10% N220				*		10TCR-Q39
C204	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C205	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C206	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C208	82 10%		DD-820		GP482		10TS-Q82
C209	22 10% N220				*		10TCR-Q22
C210	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C211	100 10% NP0		DTZ-100	NP0100	CN0310		10TCC-T10
C212	220 10% N220				*		10TCR-T22
C213	39 10% N220				*		10TCR-Q39
C214	120 10% NP0						10TCC-T12
C215	2		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C216	10		DTZ-10	NP010	CN0410		10TCC-Q10
C217	.039						
C221	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C255	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C256	30 10% N750		DTN-330	N330	CN7333		10TCU-T33
C301	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C302	.22 10%			WMF05P22	EWF05022	QF1-253	431P2249R5
C304	.068			WMF1S68	EWF1A168	QF1-195	1PB-S68
C306	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C307	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C310	.039						

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 1-624

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

 Printed in U. S. of America 7CY463

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.
Connect low sides of test equipment to ground unless specified otherwise.
Connect 50-ohm dummy load or antenna before keying transmitter.

Suggested Alignment Tools:	GC ELECTRONICS
L203, L204, T103, T201, T202	8728
T1, T2, T3, T101, T102	9440
CT201	5000

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Inputs of frequency counter and RF VTVM to PL1 pin 8.	Ch. 13	T1	Adjust for 37.750MHz at maximum.
Input of frequency counter to PL1 pin 8.	Ch. 17		Check for 37.800MHz.
	Ch. 21		Check for 37.850MHz.
	Ch. 1		Check for 37.600MHz.
	Ch. 5		Check for 37.650MHz.
	Ch. 9		Check for 37.700MHz.
Input of frequency counter to PL1 pin 3.	Ch. 13		Check for 10.180MHz.
	Ch. 14		Check for 10.170MHz.
	Ch. 15		Check for 10.160MHz.
	Ch. 16		Check for 10.140MHz.
Input of frequency counter to Q2 collector.	Ch. 13, Xmit		Check for 10.635MHz.
	Ch. 14, Xmit		Check for 10.625MHz.
	Ch. 15, Xmit		Check for 10.615MHz.
	Ch. 16, Xmit		Check for 10.595MHz.
Input of frequency counter to PL1 pin 6.	Ch. 13, Xmit	T3,T2	Adjust for 27.115MHz at maximum.

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 Q103 base. 455kHz, 1000Hz @ 30% modulation.	Ch. 13 Delta Tune-center. RF Gain-fully clockwise.	T103	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.115MHz, 1000Hz @ 30% modulation.	Ch. 13	T102,T101	Adjust for maximum output. Repeat above steps, if necessary.

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. 27.115MHz, 1000Hz @ 30% modulation. Output 500uV.	Ch. 13 Delta Tune-center. RF Gain-fully clockwise.	VR103	SQUELCH RANGE Turn squelch control VR102 fully clockwise. Adjust VR103 so that squelch just breaks.
Output of signal generator thru .01uF to antenna jack. 27.115MHz, 1000Hz @ 30% modulation. Output 100uV.	Ch. 13	VR104B	S METER Adjust for 9 on S scale of meter.

TRANSMITTER ALIGNMENT

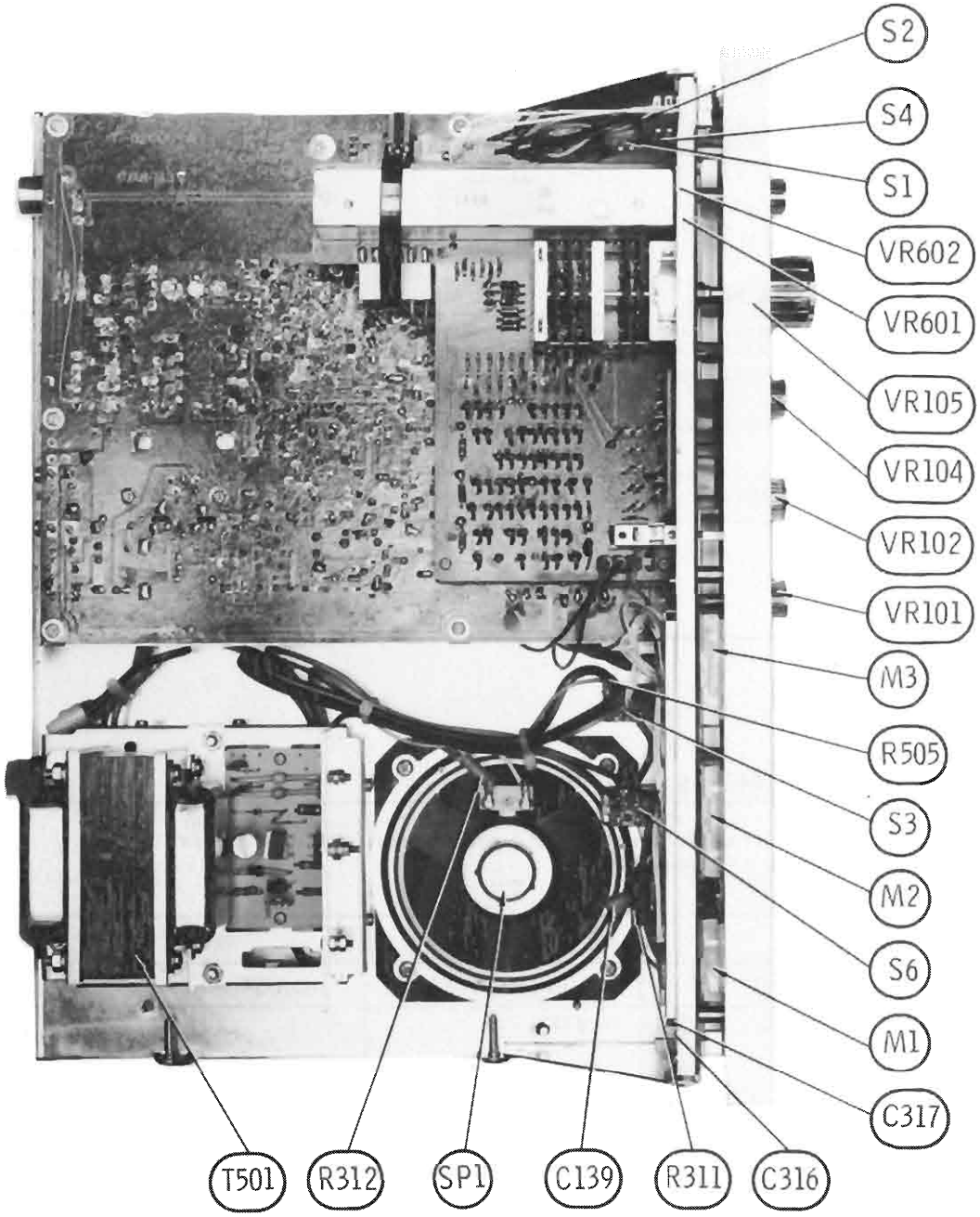
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.
NOTE: Be sure to check transmit frequency and power on all active channels after alignment of transmitter.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
	Ch. 13	T201,CT201, T202,L203, L204	Adjust for maximum.
	Ch. 13	L204	Adjust for 4 watts maximum.

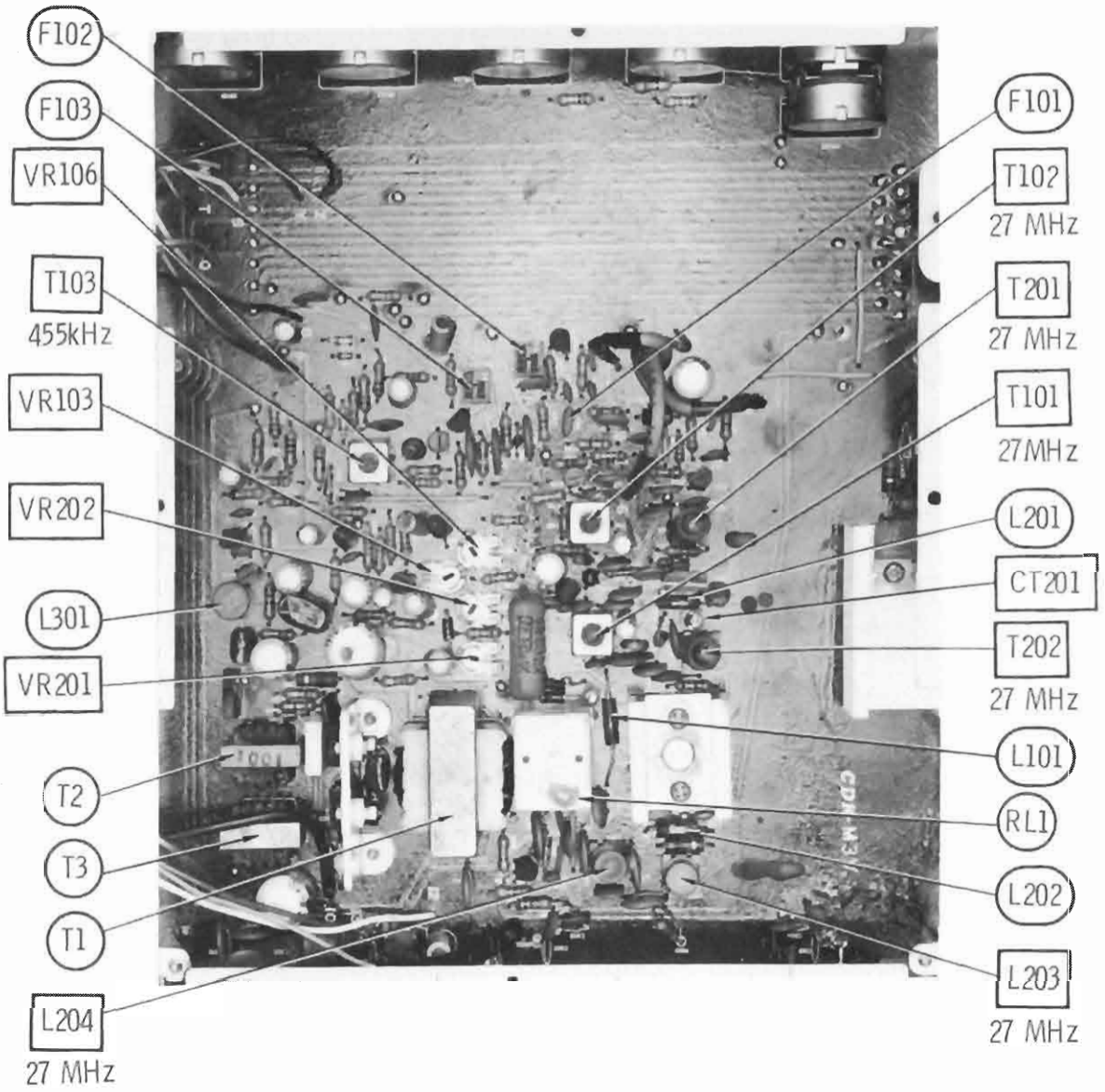
TRANSMITTER ADJUSTMENTS

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

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
DC meter to Q501 emitter.	Ch. 13	VR501	B+ Adjust VR501 for 13.8 volts. Voltage should not vary when keying transmitter.
Modulation meter to antenna jack. Inject a 1000Hz signal at MIC input.	Ch. 13	VR201	AMC Disconnect C255 to disable AMC. Adjust signal for over-modulation. Restore AMC operation. Adjust VR201 for 100% modulation maximum.
	Ch. 13	VR202	RF PANEL METER Adjust VR202 for 3/4 scale on RF meter.

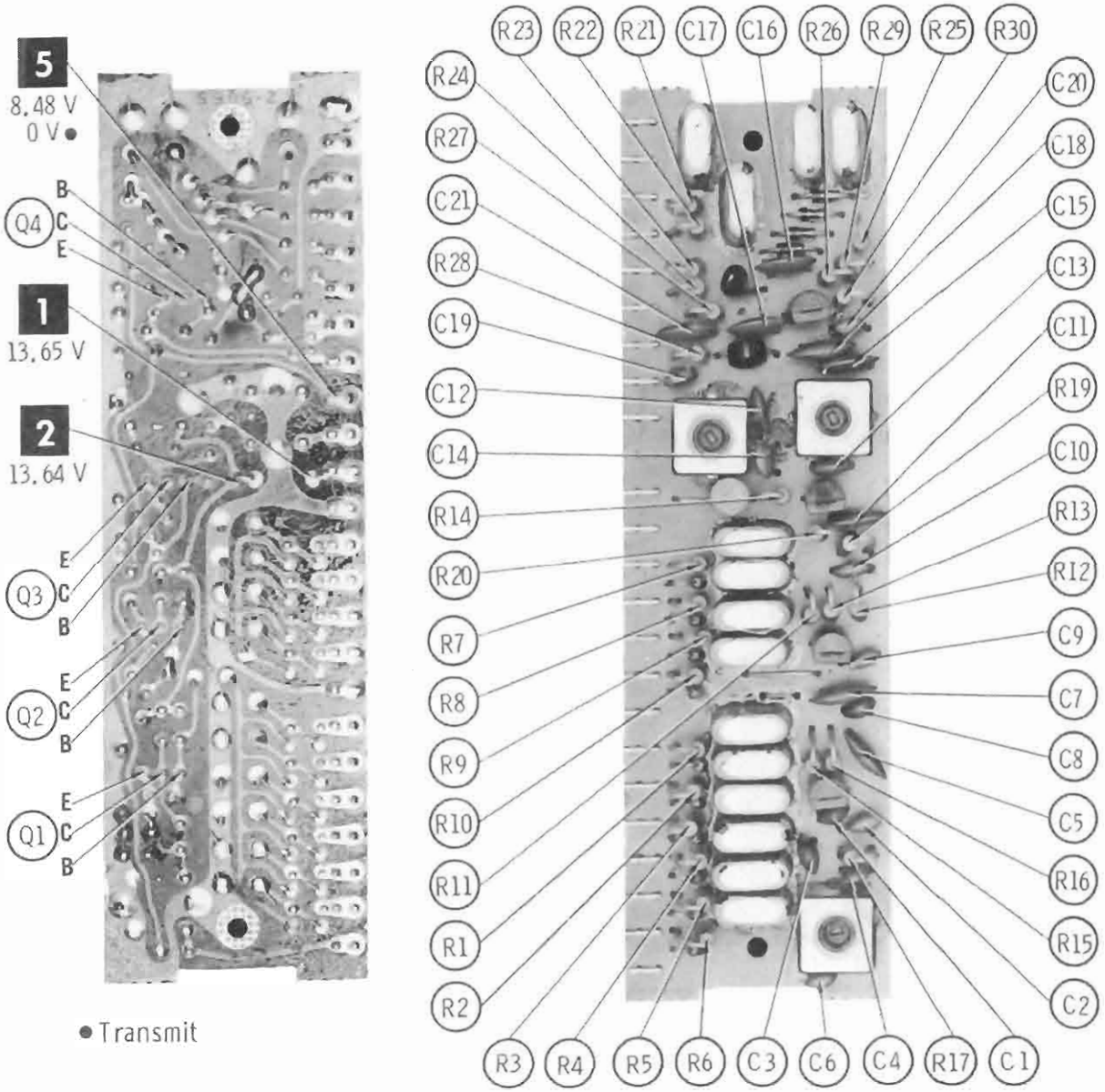

S2
S4
S1
VR602
VR601
VR105
VR104
VR102
VR101
M3
R505
S3
M2
S6
M1
C317
T501
R312
SP1
C139
R311
C316

CHASSIS-TOP


F102
F103
VR106
T103
455kHz
VR103
VR202
L301
VR201
T2
T3
T1
L204
27 MHz
F101
T102
27 MHz
T201
27 MHz
T101
27MHz
L201
CT201
T202
27 MHz
L101
RL1
L202
L203
27 MHz

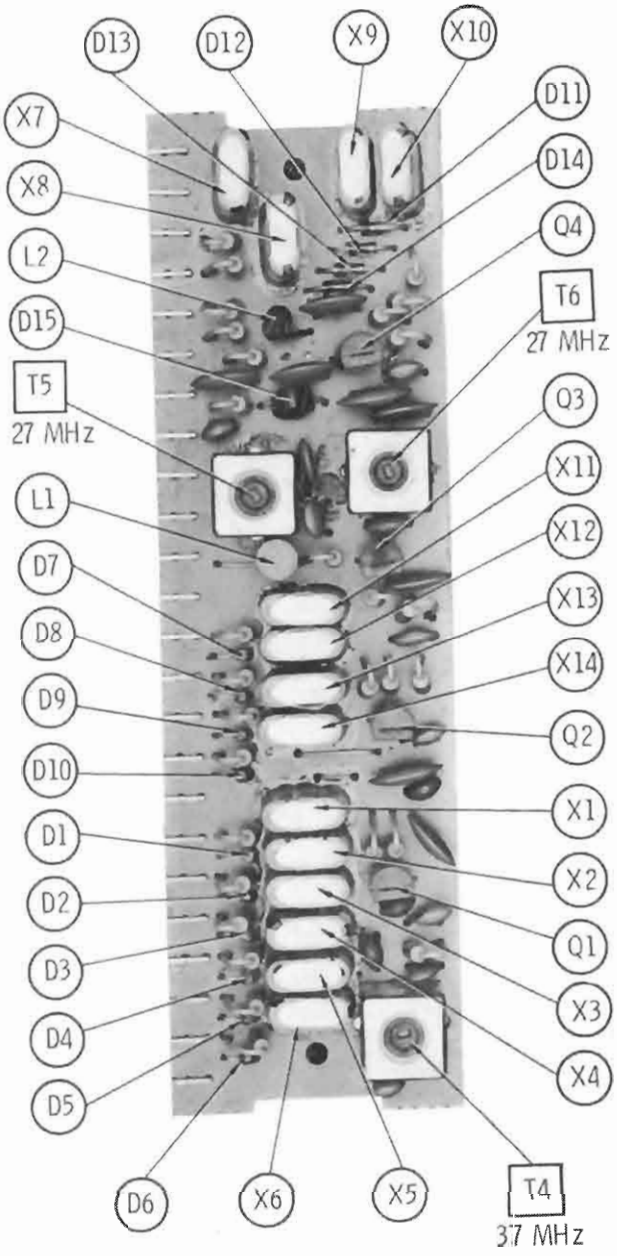
MAIN BOARD

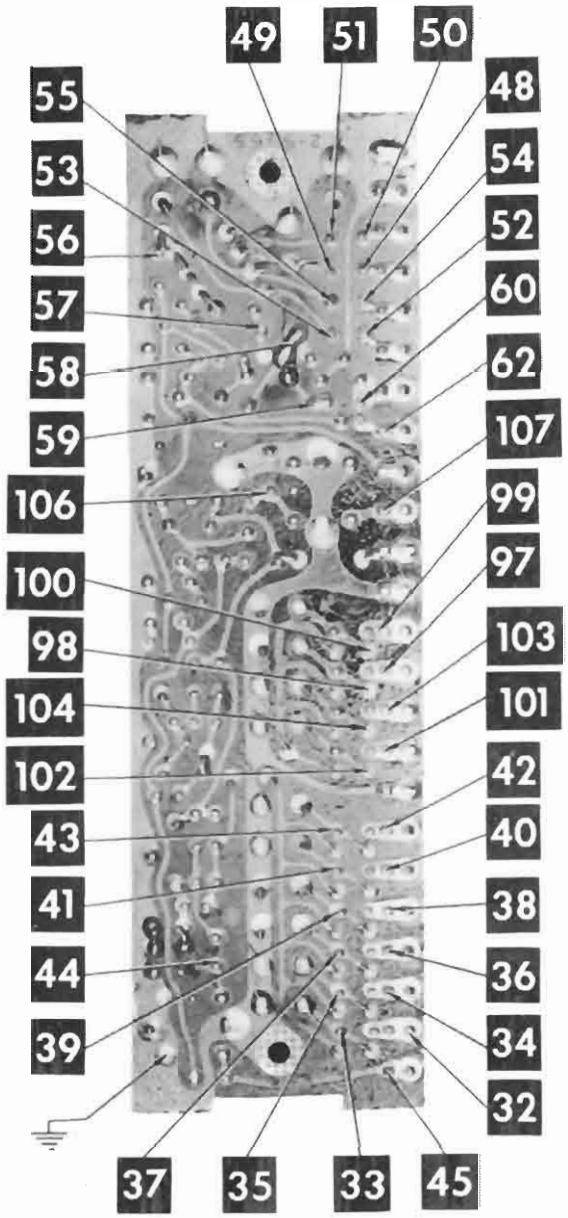
A Howard W. Sams CIRCUITRACE® Photo



● Transmit

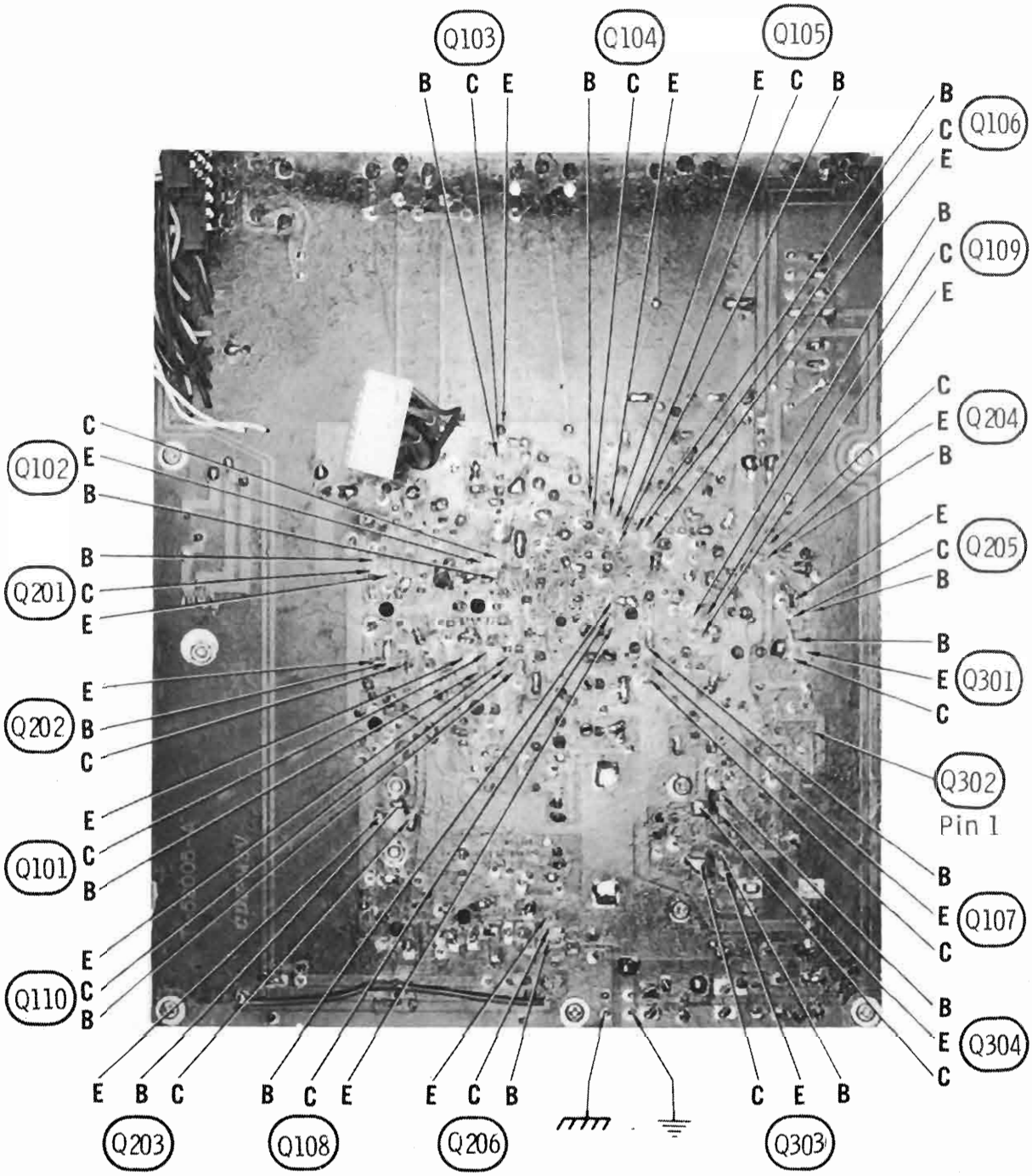
SYNTH OSC BOARD



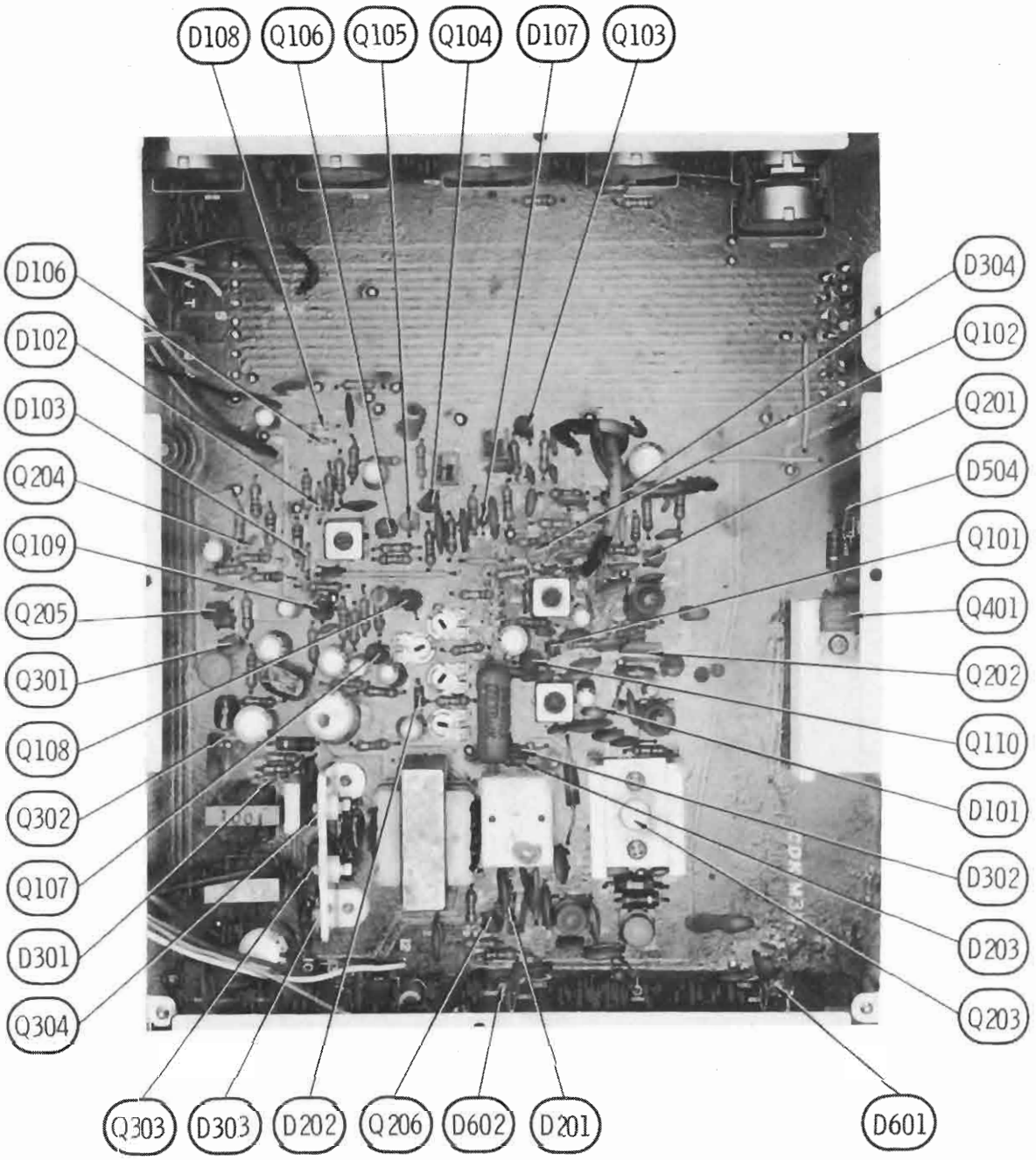


ROYCE MODEL 1-624

SYNTH OSC BOARD


Q103
B C E
Q104
B C E
Q105
E C B
Q106
B C E
Q109
B C E
Q204
C E B
Q205
E C B
Q301
B E C
Q302
Pin 1
Q107
B E C
Q304
B E C
Q303
C E B
Q206
E C B
Q108
B C E
Q203
E B C
Q110
E C B
Q101
E C B
Q202
E B C
Q201
B C E
Q102
C E B

MAIN BOARD


D108
Q106
Q105
Q104
D107
Q103
D106
D102
D103
Q204
Q109
Q205
Q301
Q108
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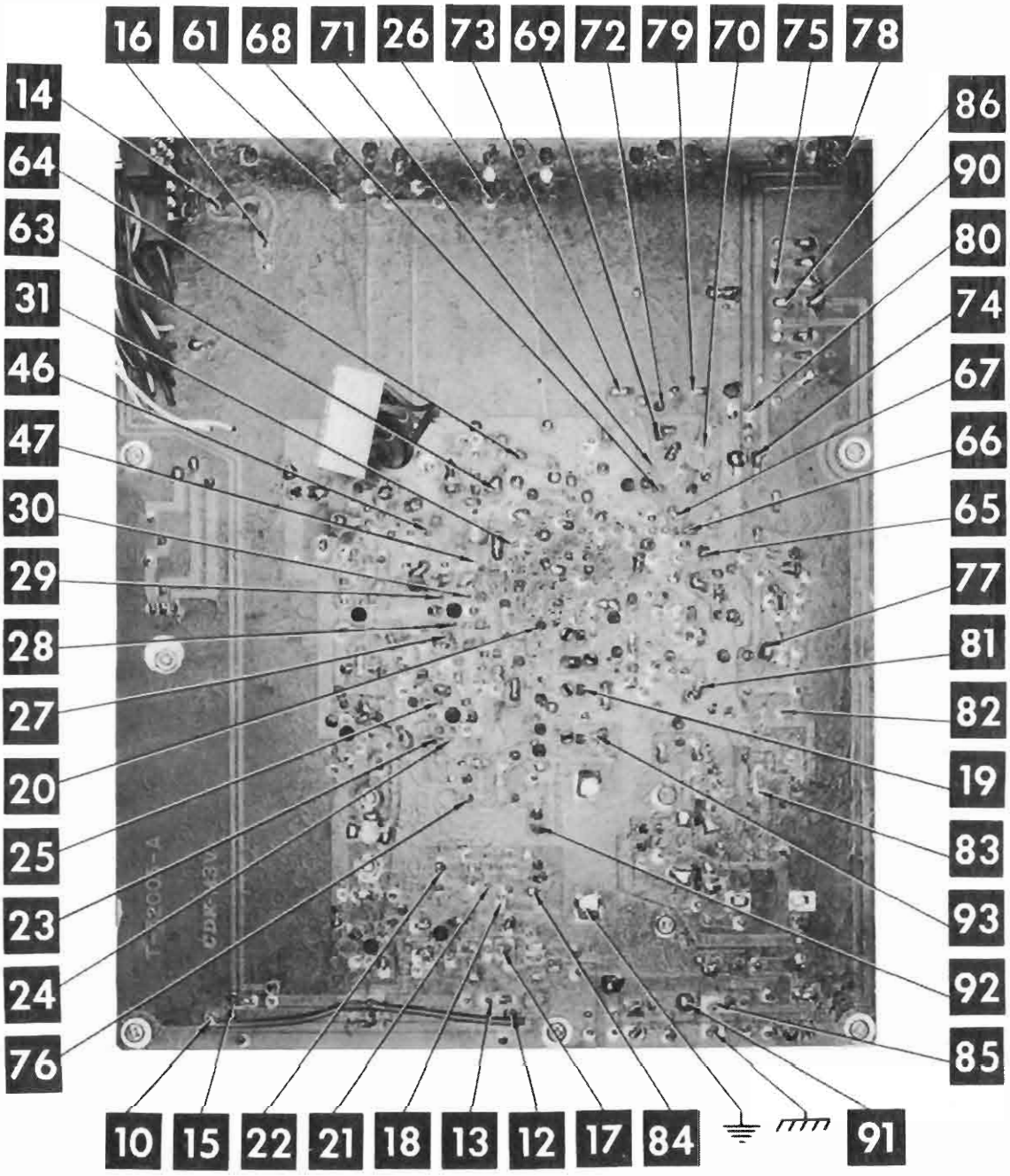
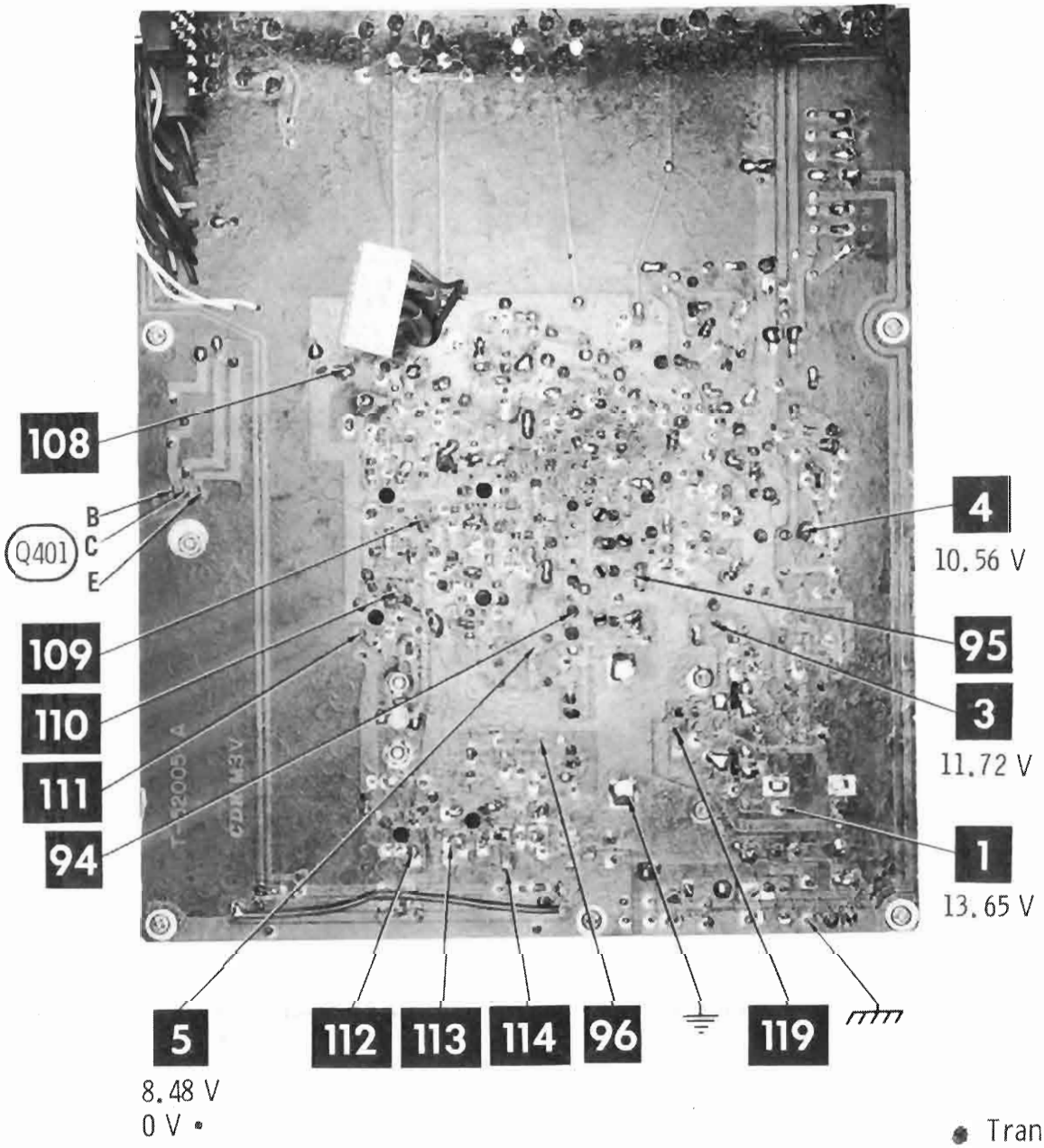
Q107
D301
Q304
D304
Q102
Q201
D504
Q101
Q401
Q202
Q110
D101
D302
D203
Q203
Q303
D303
D202
Q206
D602
D201
D601

MAIN BOARD

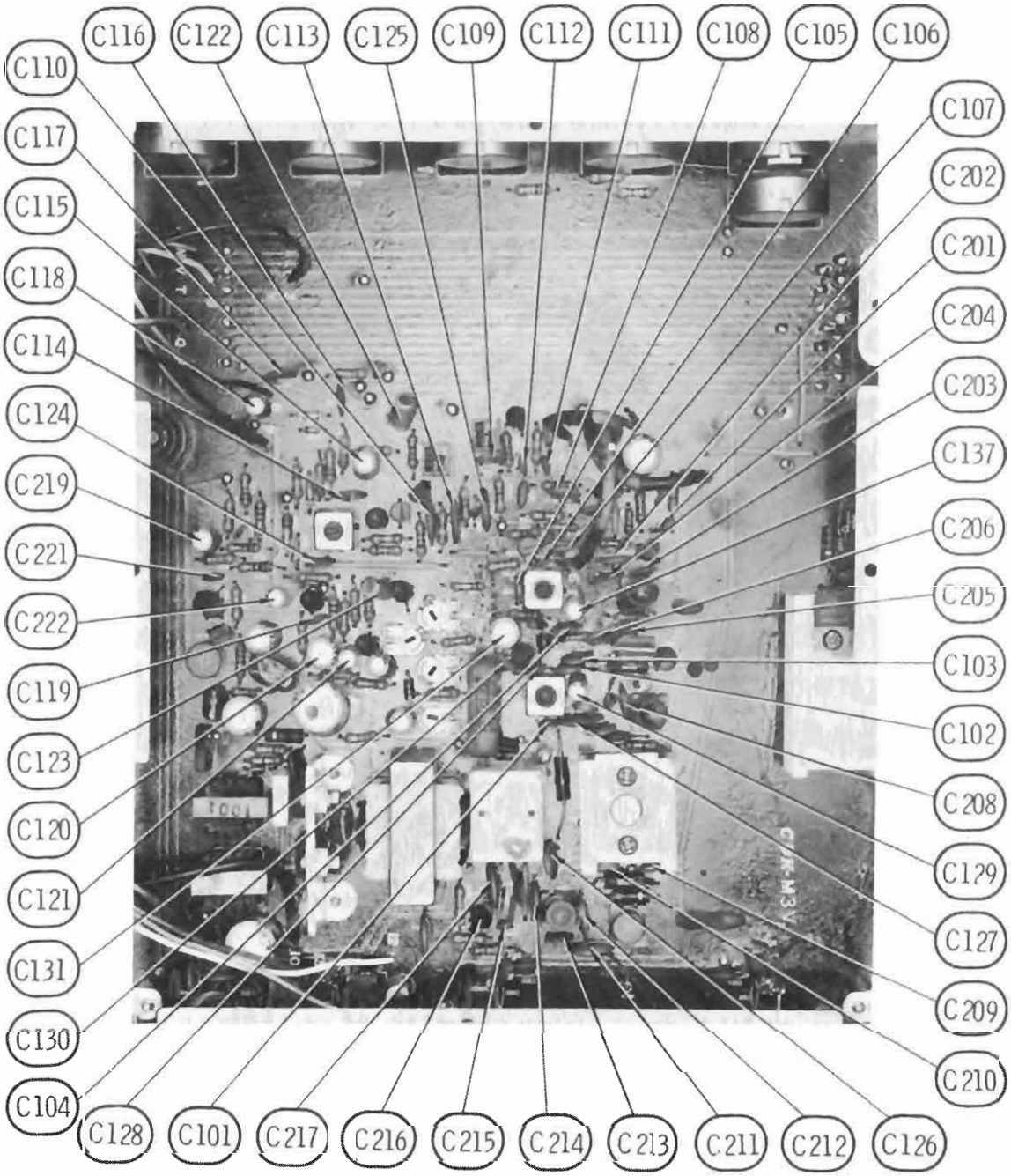
A Howard W. Sams CIRCUITRACE® Photo



MAIN BOARD


108
Q401
B
C
E
109
110
111
94
4
10.56 V
95
3
11.72 V
1
13.65 V
5
8.48 V
0 V •
112
113
114
96
119
• Transmit

MAIN BOARD


C116
C122
C113
C125
C109
C112
C111
C108
C105
C106
C110
C107
C117
C202
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C201
C118
C204
C114
C203
C124
C137
C219
C206
C221
C205
C222
C103
C119
C102
C123
C208
C120
C129
C121
C127
C131
C209
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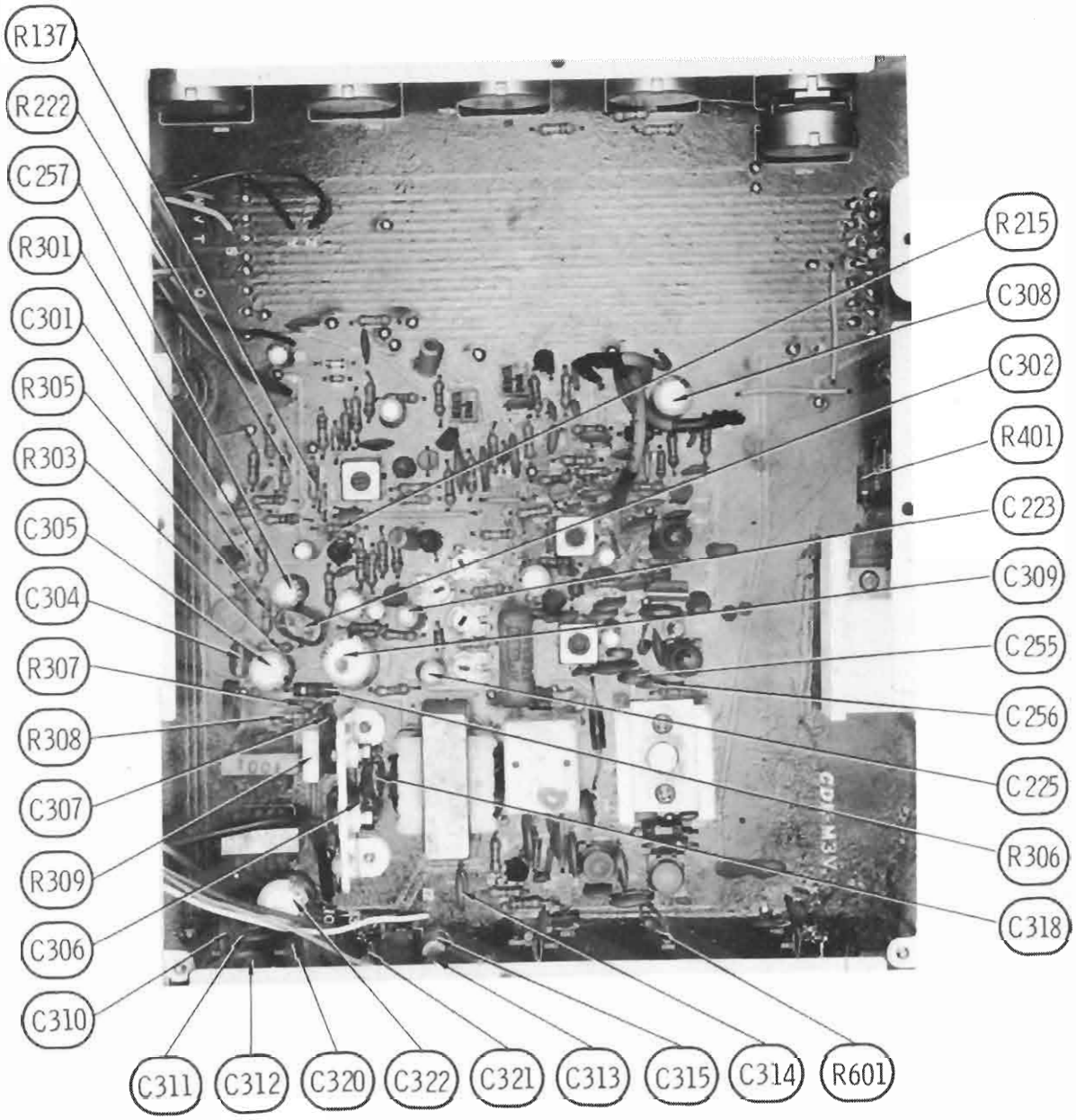
C215
C214
C213
C211
C212
C126

MAIN BOARD


R137
R222
C257
R301
C301
R305
R303
C305
C304
R307
R308
C307
R309
C306
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C312
C320
C322
C321
C313
C315
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R215
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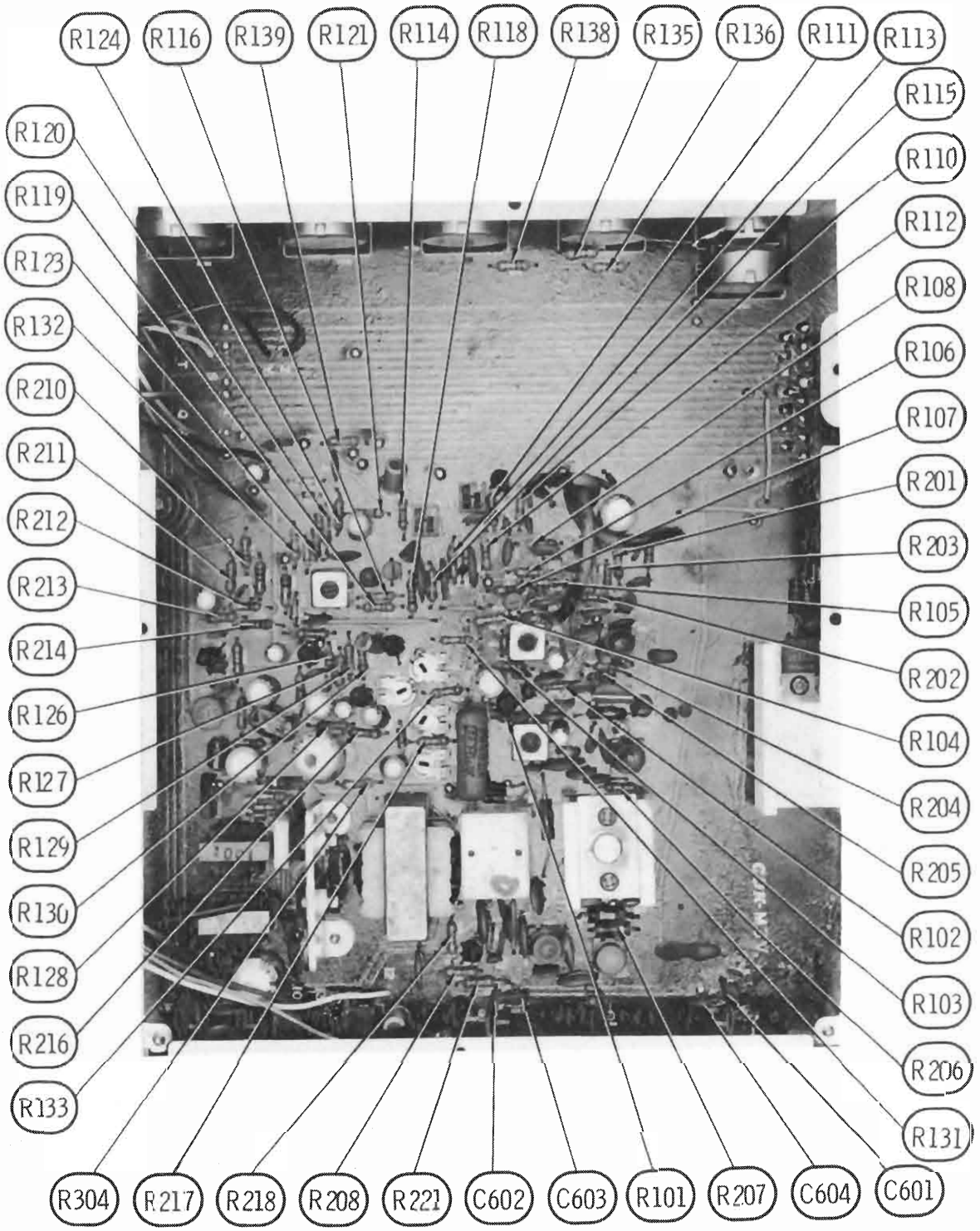
R401
C223
C309
C255
C256
C225
R306
C318

MAIN BOARD


R124
R116
R139
R121
R114
R118
R138
R135
R136
R111
R113
R115
R110
R112
R108
R106
R107
R201
R203
R105
R202
R104
R204
R205
R102
R103
R206
R131
R601
R604
R207
R101
R603
R602
R221
R208
R218
R217
R304
R133
R216
R128
R130
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R127
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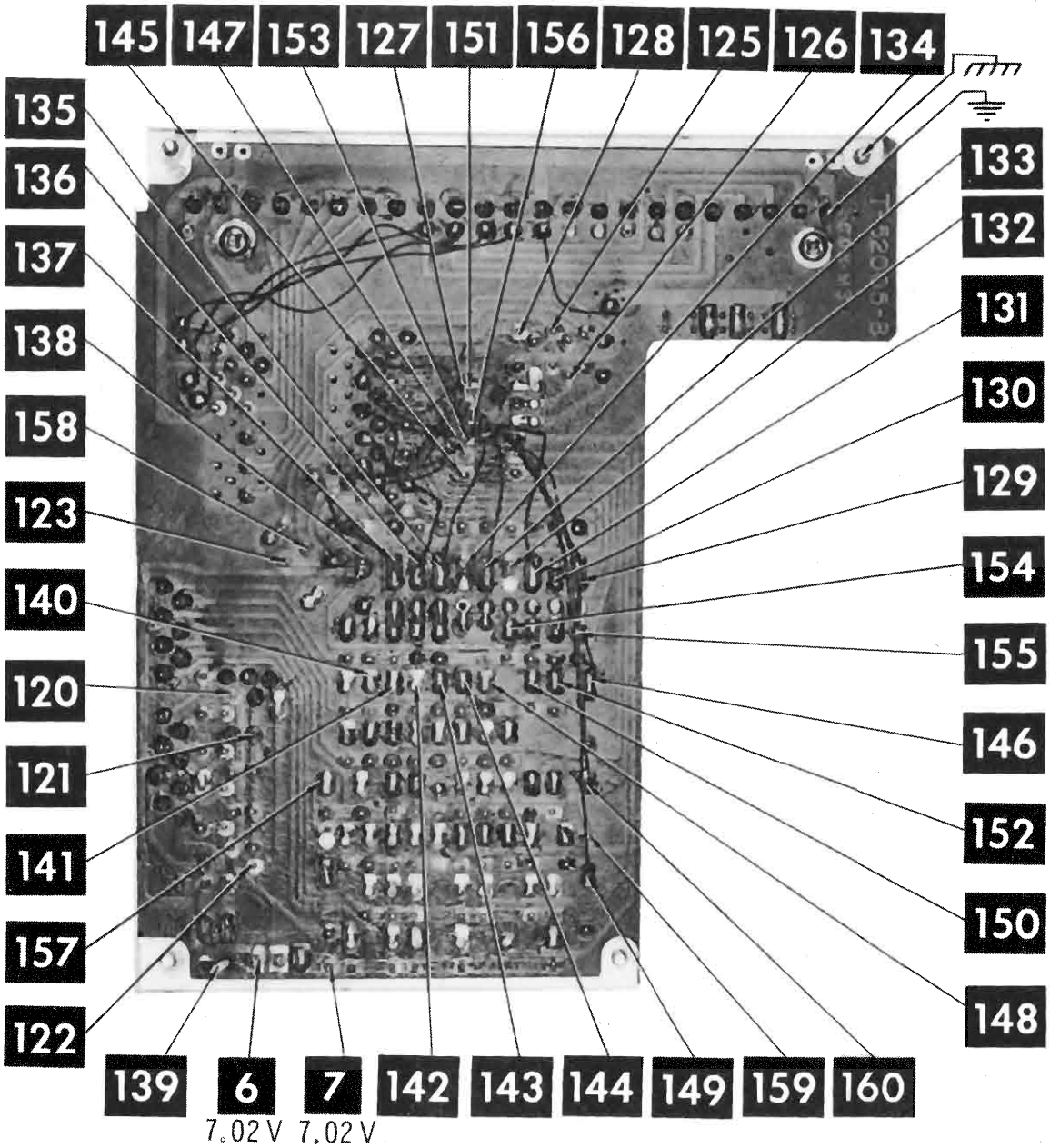
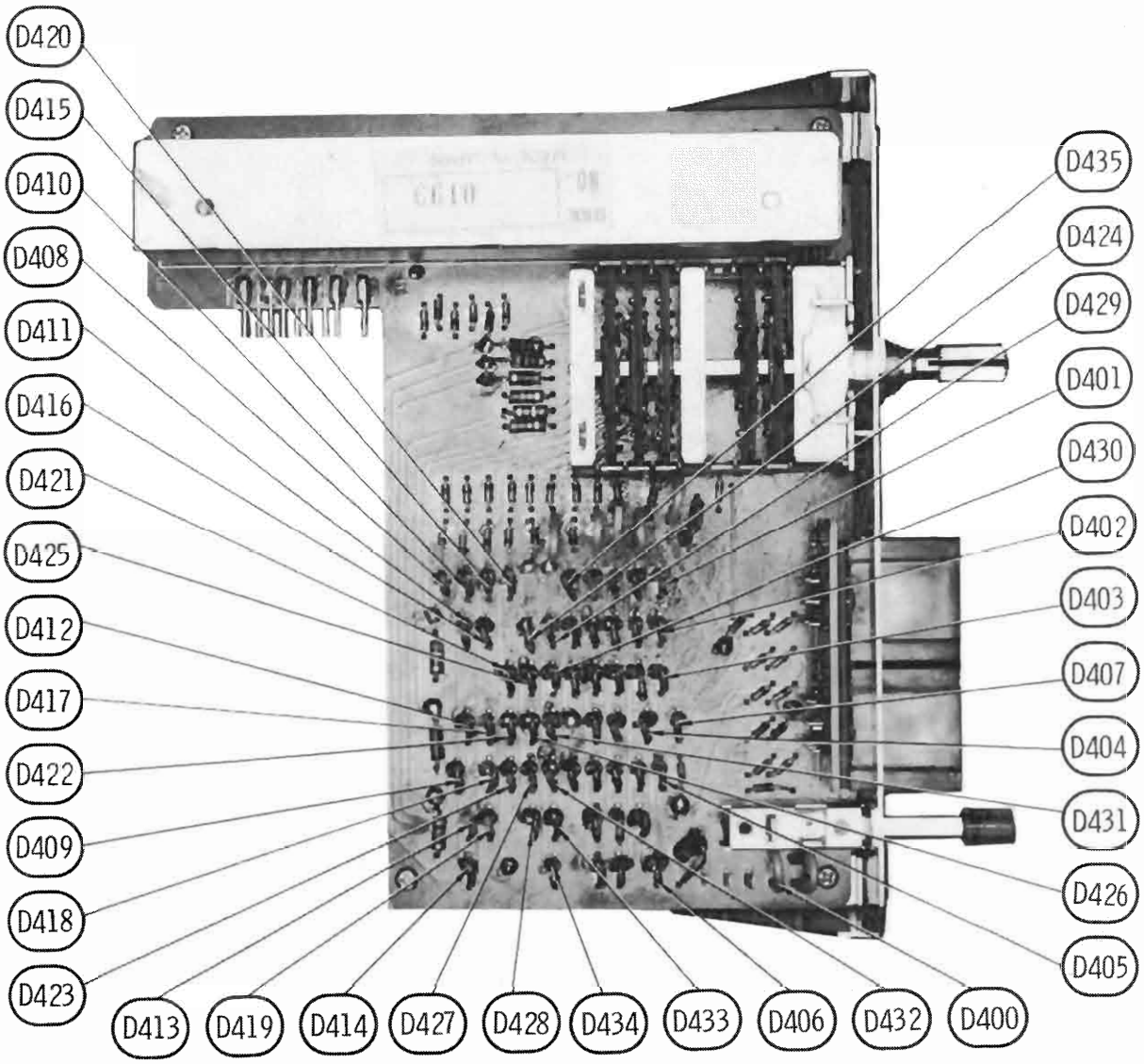
R214
R213
R212
R211
R210
R132
R123
R119
R120

MAIN BOARD



MATRIX READOUT BOARD



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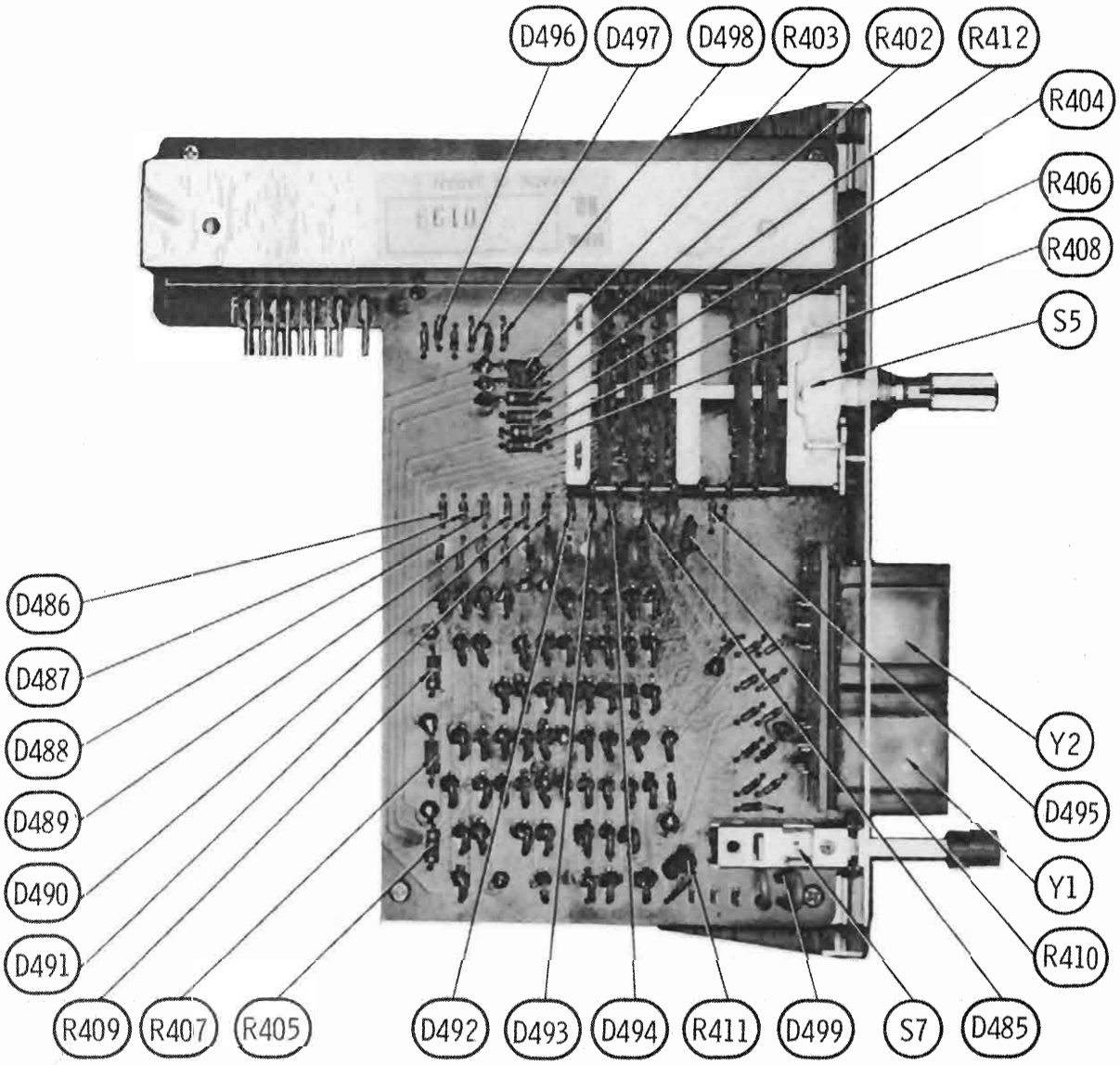

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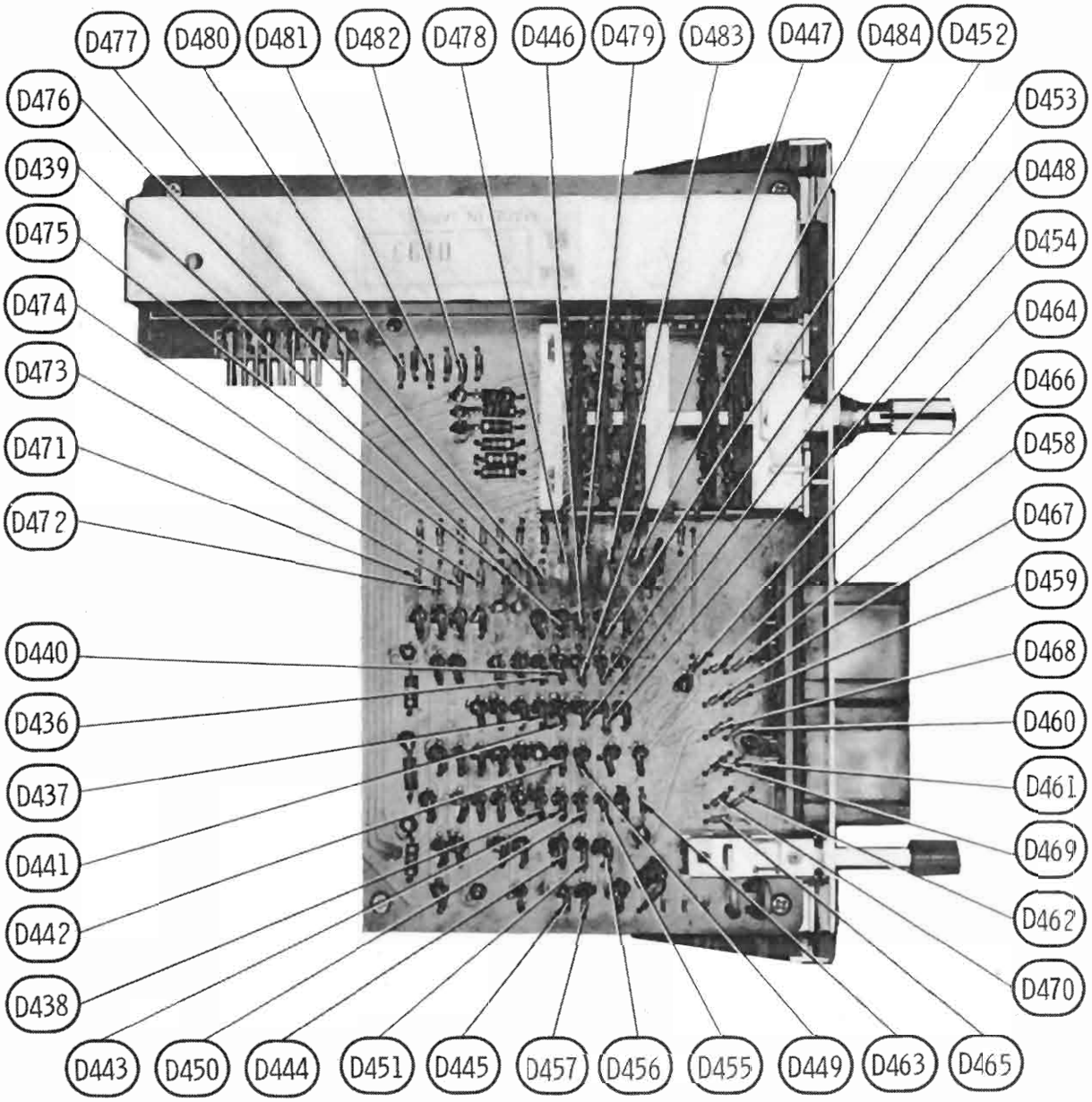
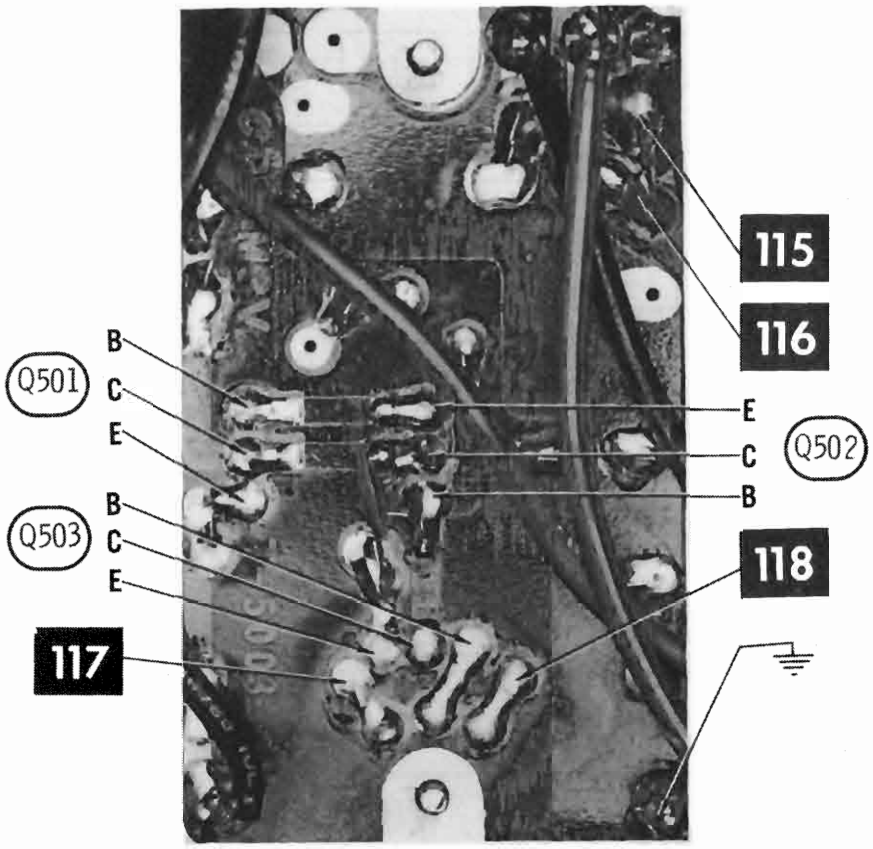
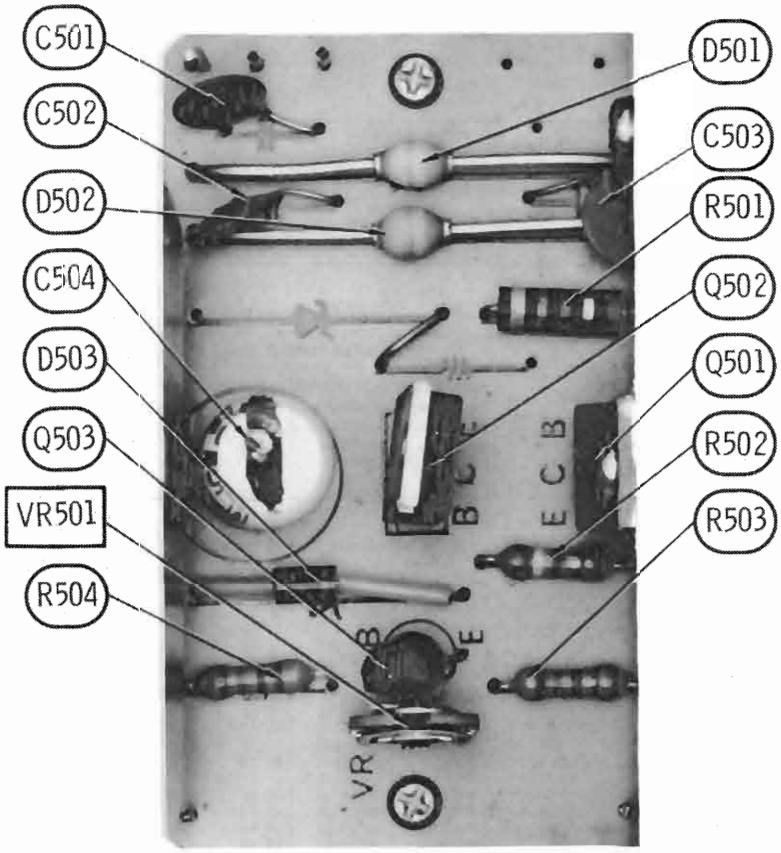


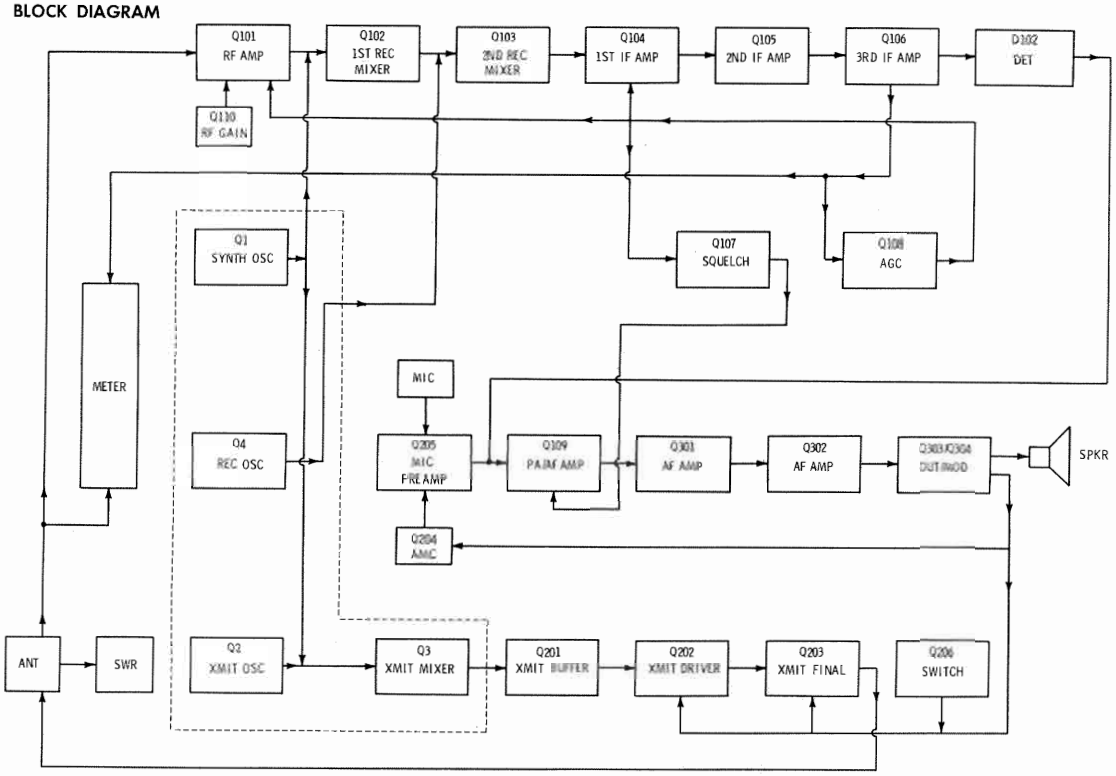
MATRIX READOUT BOARD





POWER SUPPLY BOARD

BLOCK DIAGRAM



PARTS LIST AND DESCRIPTION

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

WIRING DATA

General-use Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 13 Colors 8524 (Stranded) Available in 13 Colors
Power Cord, 2-Wire	Use BELDEN No. 17106 (Plastic) -6 feet
Shielded Antenna Lead	Use BELDEN No. 8214 Lowest-loss (RG-8/U Type) 8237 Low-loss (RG-8/U) 8240 (Solid) Miniature (RG-58/U) 8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable	Use BELDEN No. 8497 3-Conductor (1 shielded for Press-to-Talk) Neoprene

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFGR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D1	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D2	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D3	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D4	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D5	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D6	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D7	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D8	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D9	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D10	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D11	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D12	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D13	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D14	MC301		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D15	ITT301		GE-90	D201		HEPR2503	RE 195	SK3126	RT-262	
D101	100-1		GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
	100-10		GE-509	5A10D	PTC203	HEPR0056	RE 51	SK3080	RT-210	ECG125
D102	1S188		1N34AS	1N34A	PTC207	HEPR9134	RE 47	SK3087	RT-200	ECG109
D103	1S188		1N34AS	1N34A	PTC207	HEPR9134	RE 47	SK3087	RT-200	ECG109
D106	1S2075K		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D107	HV-46				PTC301					
D108	1S188		1N34AS	1N34A	PTC207	HEPR9134	RE 47	SK3087	RT-200	ECG109
D201	1S188		1N34AS	1N34A	PTC207	HEPR9134	RE 47	SK3087	RT-200	ECG109
D202	100-1		GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D203	100-1		GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D301	SV-9		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177

PARTS LIST AND DESCRIPTION (CONTINUED)

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

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFGR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D302	100-1		GE-504A	SA4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D303	100-1		GE-504A	SA4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
	U05-B		GE-512	R350	PTC204	HEPR0092	RE 92	SK3051	RT-201	ECG156
D304	EQB-01-09		GEZD-9.1	Z1209	ZB9.1A	HEPZ0412	RE 114	SK3060	RT-240	ECG139
D400			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D401			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D402			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D403			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D404			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D405			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D406			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D407			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D408			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D409			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D410			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D411			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D412			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D413			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D414			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D415			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D416			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D417			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D418			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D419			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D420			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D421			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D422			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D423			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D424			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D425			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D426			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D427			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
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D429			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D430			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D431			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
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D434			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D435			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D436			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D437			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D438			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D439			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D440			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D441			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D442			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D443			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D444			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D445			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D446			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D447			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D448			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D449			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D450			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D451			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D452			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D453			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D454			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D455			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D456			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D457			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D458			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
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D462			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
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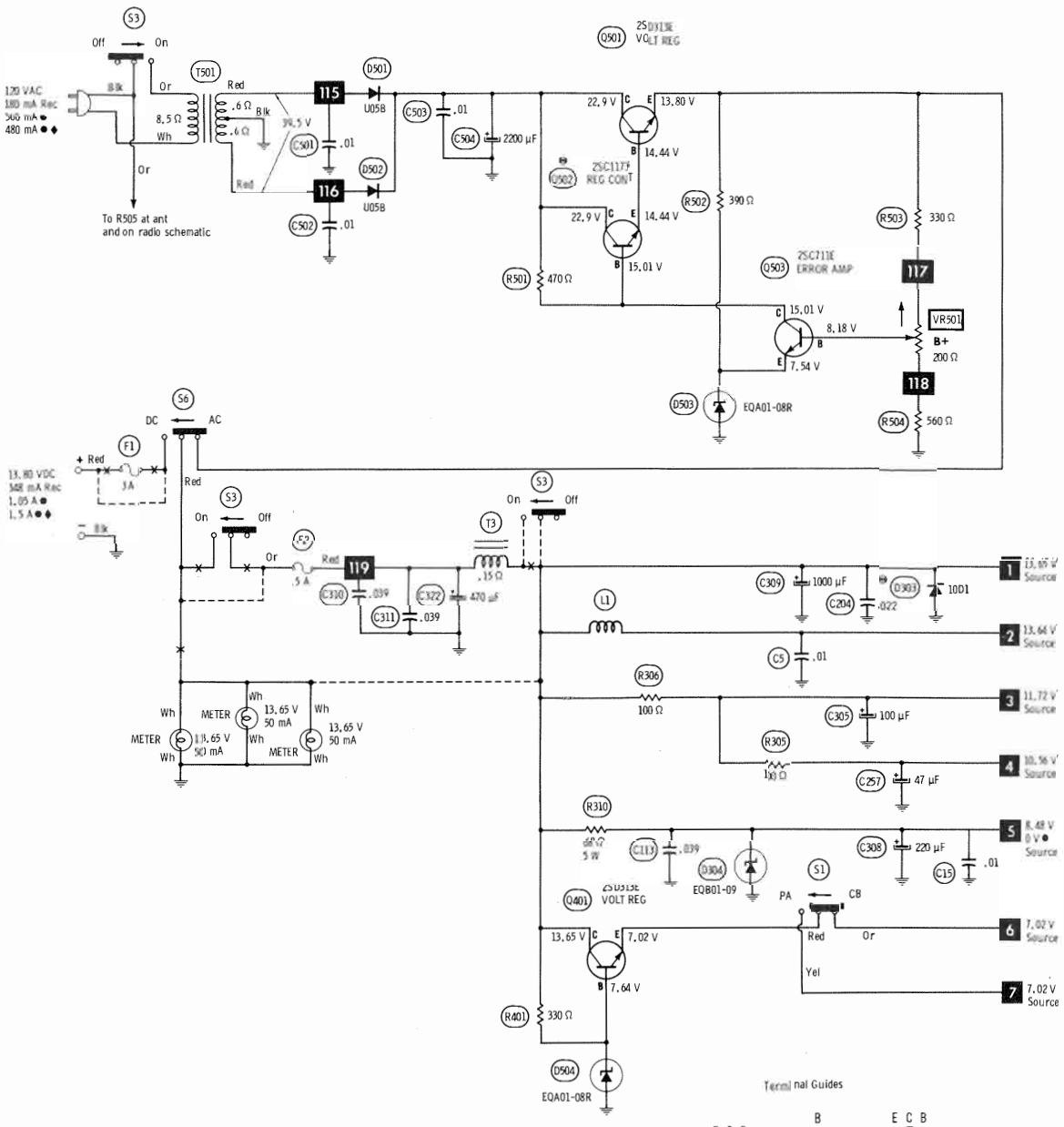
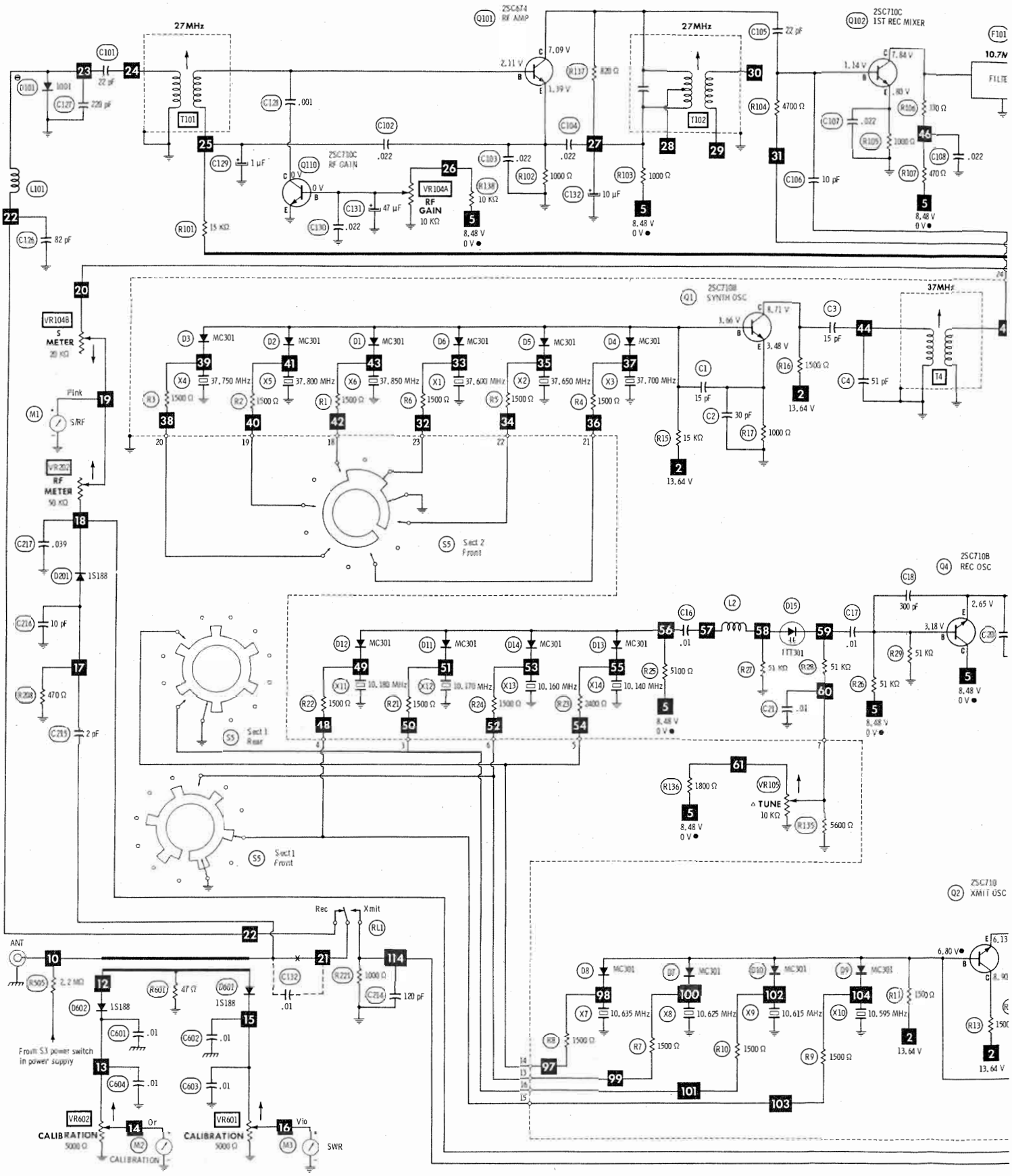
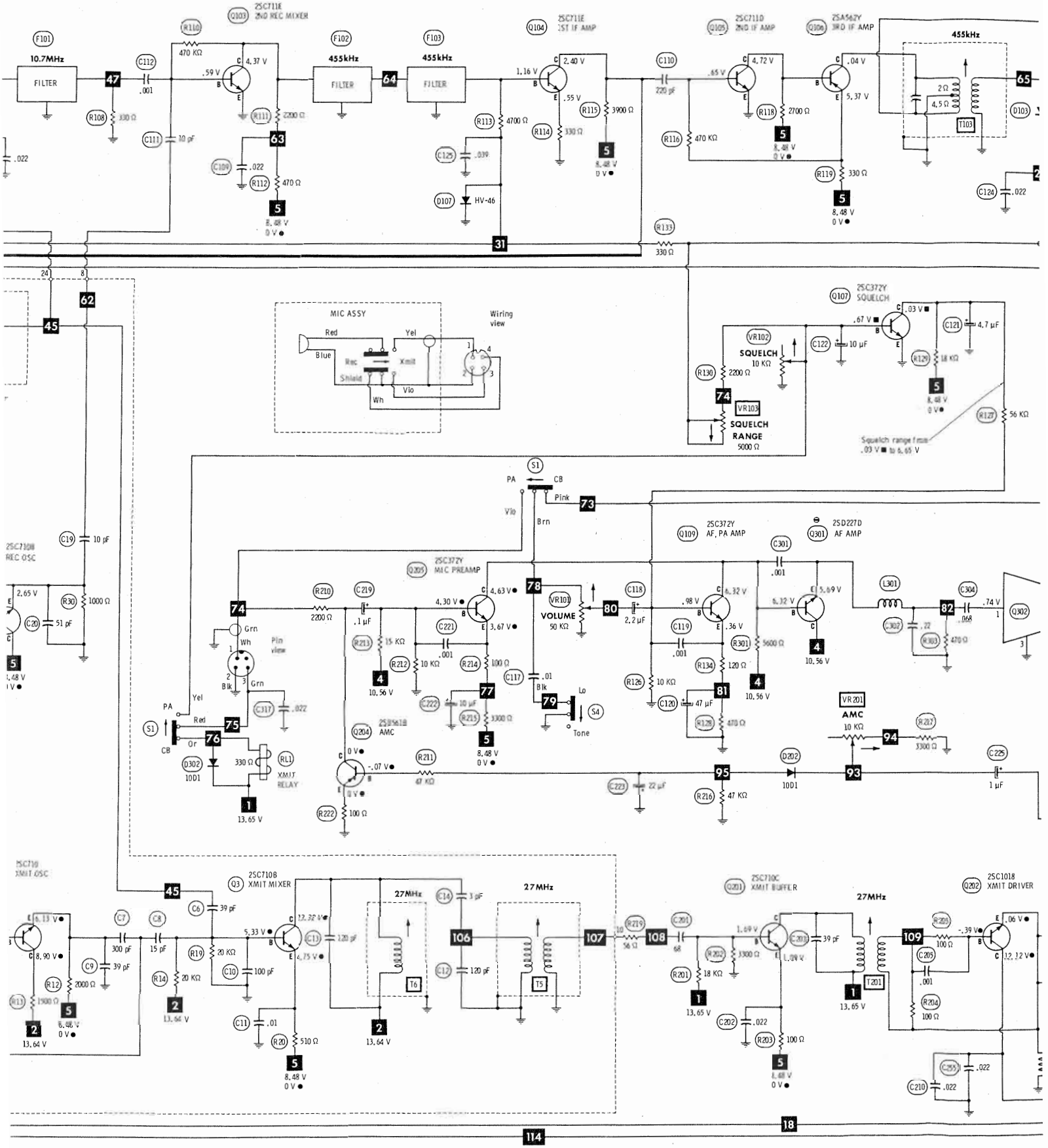
D466			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D467			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D468			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D469			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D470			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D471			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D472			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D473			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D474			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D475			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D476	100-1		GE-504A	SA4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D477			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D478	100-1		GE-504A	SA4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D479	100-1		GE-504A	SA4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D480			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D481			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D482			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D483	100-1		GE-504A	SA4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D484	100-1		GE-504A	SA4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D485			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D486			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D487			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D488			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177

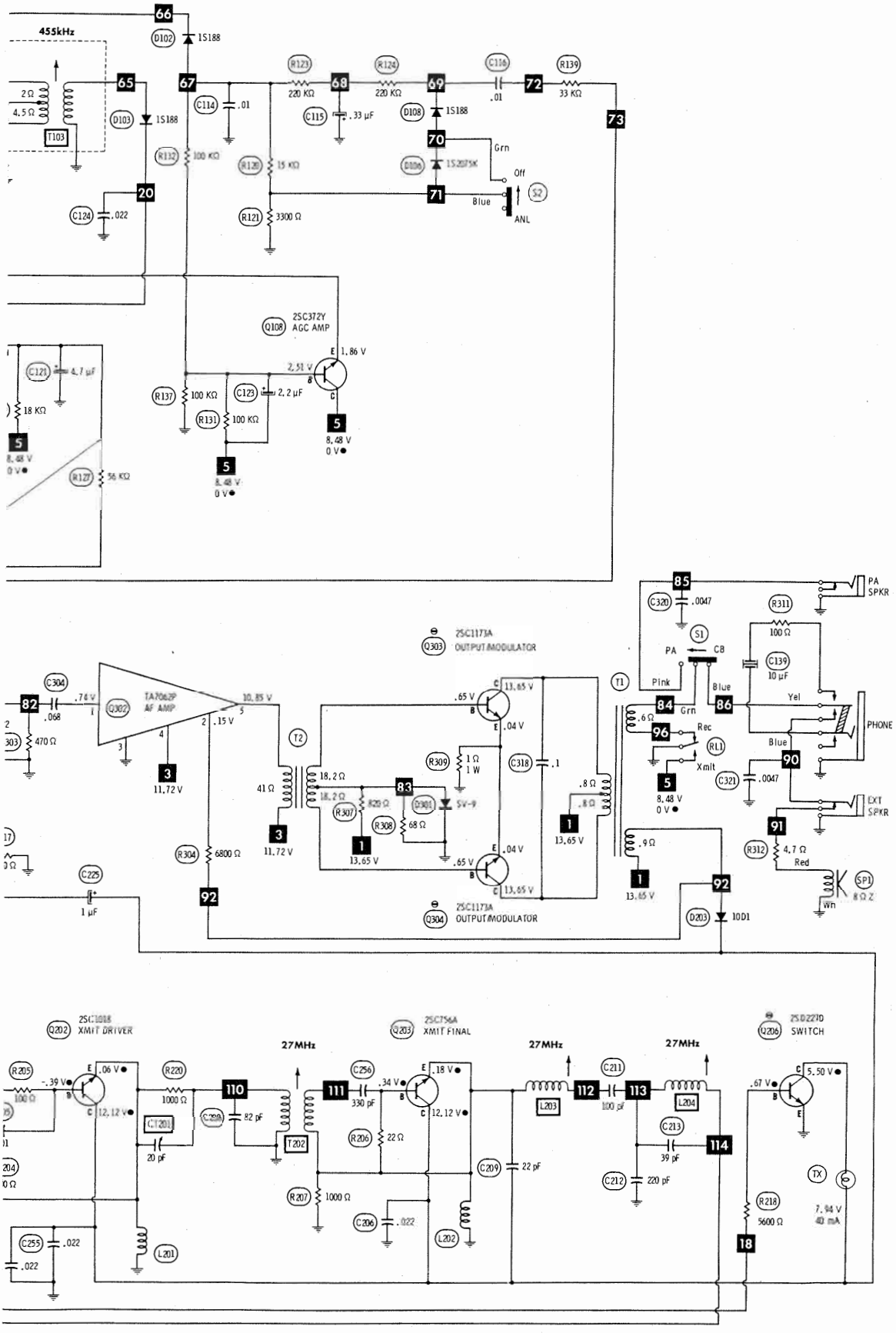


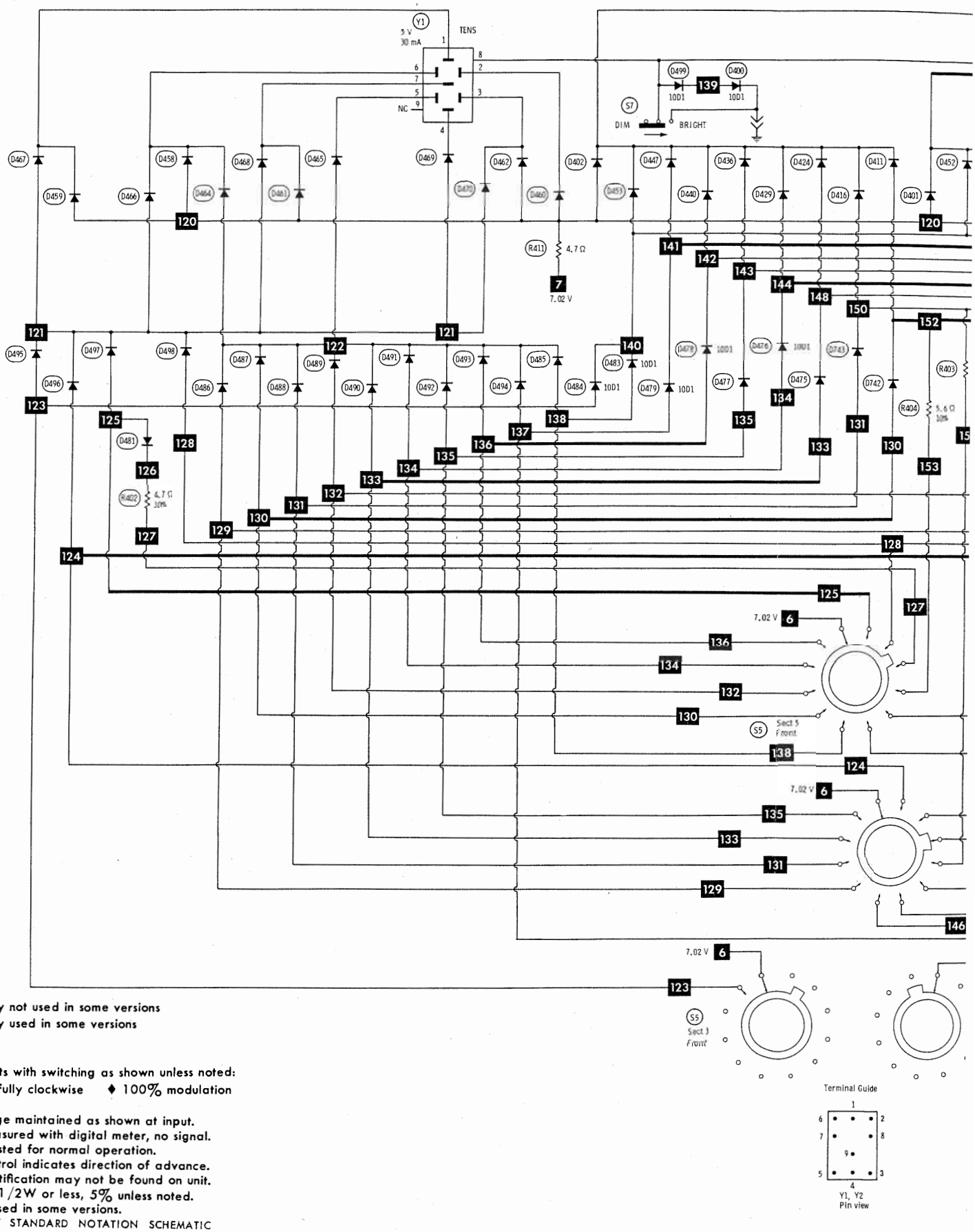
—✕— Circuitry not used in some versions
– – – Circuitry used in some versions
⏚ Ground
Chassis
Measurements with switching as shown unless noted:
■ Squelch fully clockwise ♦ 100% modulation
● Transmit
Supply voltage maintained as shown at input.
Voltages measured with digital meter, no signal.
Controls 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®

Chan	Crystal Complement	Chan	Crystal Complement	Chan	Crystal Complement	Chan	Crystal Complement
1	X1, X7, X11	7	X2, X9, X13	13	X4, X7, X11	19	X5, X9, X13
2	X1, X8, X12	8	X2, X10, X14	14	X4, X8, X12	20	X5, X10, X14
3	X1, X9, X13	9	X3, X7, X11	15	X4, X9, X13	21	X6, X7, X11
4	X1, X10, X14	10	X3, X8, X12	16	X4, X10, X14	22	X6, X8, X12
5	X2, X7, X11	11	X3, X9, X13	17	X5, X7, X11		
6	X2, X8, X12	12	X3, X10, X14	18	X5, X8, X12	23	X6, X10, X14


27MHz
Q101 2SC674 RF AMP
Q102 2SC710C 1ST REC MIXER
Q110 2SC710C RF GAIN
VR104A RF GAIN 10 KΩ
VR104B S METER 20 KΩ
VR202 RF METER 50 KΩ
Q1 2SC710B SYNTH OSC
Q4 2SC710B REC OSC
Q2 2SC710 XMIT OSC
D1 MC301
D2 MC301
D3 MC301
D4 MC301
D5 MC301
D6 MC301
D11 MC301
D12 MC301
D13 MC301
D14 MC301
D15 1T301
D201 1S188
D602 1S188
D603 1S188
D8 MC301
D9 MC301
D10 MC301
D7 MC301
X1 37.600 MHz
X2 37.650 MHz
X3 37.700 MHz
X4 37.750 MHz
X5 37.800 MHz
X6 37.850 MHz
X7 10.635 MHz
X8 10.625 MHz
X9 10.615 MHz
X10 10.595 MHz
X11 10.180 MHz
X12 10.170 MHz
X13 10.160 MHz
X14 10.140 MHz
T101
T102
T4
L101
L2
RL1
S5 Sect 1 Rear
S5 Sect 1 Front
S5 Sect 2 Front
M1 S/RF
M2 CALIBRATION
M3 SWR
Rec
Xmit
ANT
From S3 power switch in power supply
CALIBRATION 5000 Ω
TUNE 10 KΩ
F101
10.7M
FILTE


F101
10.7MHz
FILTER
47
C112
.001
R110
470 KΩ
Q103
2SC711E
2ND REC MIXER
4.37 V
.59 V
R108
330 Ω
C111
10 pF
R111
2200 Ω
63
C109
.022
R112
470 Ω
5
8.48 V
0 V
F102
455kHz
FILTER
64
F103
455kHz
FILTER
Q104
2SC711E
1ST IF AMP
2.40 V
1.16 V
.55 V
R113
4700 Ω
R114
330 Ω
R115
3900 Ω
C125
.039
D107
HV-46
31
C110
220 pF
Q105
2SC711D
2ND IF AMP
4.72 V
.65 V
R116
470 KΩ
R118
2700 Ω
Q106
2SA562Y
3RD IF AMP
.04 V
5.37 V
R119
330 Ω
455kHz
2 Ω
4.5 Ω
T103
65
D103
C124
.022
R133
330 Ω
24
8
62
45
MIC ASSY
Red
Yel
Blue
Rec
Xmit
Shield
Vio
Wh
Wiring view
Q107
2SC372Y
SQUELCH
.67 V
.03 V
C121
4.7 µF
VR102
SQUELCH
10 KΩ
C122
10 µF
R129
18 KΩ
R130
2200 Ω
74
VR103
SQUELCH
RANGE
5000 Ω
R127
56 KΩ
Squelch range from
.03 V to 6.65 V
S1
PA
CB
Pink
Vio
Brn
73
Q109
2SC372Y
AF, PA AMP
Q301
2SD227D
AF AMP
C301
.001
L301
C304
.74 V
Q302
C302
.22
R303
470 Ω
82
4
10.56 V
Q205
2SC372Y
MIC PREAMP
78
VR101
VOLUME
50 KΩ
80
C118
2.2 µF
C119
.001
R301
5600 Ω
R134
120 Ω
R126
10 KΩ
C120
47 µF
R128
470 Ω
81
C219
.1 µF
R210
2200 Ω
R213
15 KΩ
R212
10 KΩ
C221
.001
R214
100 Ω
C117
.01
Blk
Lo
Tone
S4
79
77
C222
10 µF
R215
3300 Ω
Q204
2SC618
AMC
R211
47 KΩ
R222
100 Ω
C223
22 µF
R216
47 KΩ
VR201
AMC
10 KΩ
R217
3300 Ω
94
95
D202
10D1
93
C225
1 µF
C19
10 pF
2SC710B
REC OSC
C20
51 pF
R30
1000 Ω
2.65 V
Grn
Wh
Blk
Grn
Pin view
C317
.022
PA
Yel
Red
Or
CB
S1
75
76
D302
10D1
330 Ω
RL1
XMIT
RELAY
1
13.65 V
2SC710
XMIT OSC
45
Q3
2SC710B
XMIT MIXER
C6
39 pF
C7
300 pF
C8
15 pF
C9
39 pF
R12
2000 Ω
R13
1900 Ω
R14
20 KΩ
R19
20 KΩ
C10
100 pF
C11
.01
R20
510 Ω
27MHz
C13
120 pF
C14
3 pF
C12
120 pF
T6
T5
106
107
2
13.64 V
5
8.48 V
0 V
Q201
2SC710C
XMIT BUFFER
Q202
2SC1018
XMIT DRIVER
R219
56 Ω
108
C201
68
R202
3300 Ω
R201
18 KΩ
C202
.022
R203
100 Ω
C203
39 pF
T201
109
R205
100 Ω
C205
.001
R204
100 Ω
C255
.022
C210
.022
18
114


455kHz
D102 1S188
D103 1S188
D108 1S188
D106 1S2075K
Grn
Off
Blue
S2
ANL
T103
R123 220 KΩ
R124 220 KΩ
R139 33 KΩ
C116 .01
C114 .01
C115 .33 µF
R132 100 KΩ
R120 15 KΩ
R121 3300 Ω
C124 .022
Q108 2SC372Y AGC AMP
1.86 V
2.51 V
R137 100 KΩ
C123 2.2 µF
R131 100 KΩ
8.48 V 0 V
C121 4.7 µF
18 KΩ
R127 56 KΩ
Q303 2SC1173A OUTPUT/MODULATOR
Q304 2SC1173A OUTPUT/MODULATOR
C304 .068
.74 V
Q302 TA7062P AF AMP
10.85 V
.15 V
11.72 V
470 Ω
T2
41 Ω
18.2 Ω
820 Ω
68 Ω
D301 SV-9
R309 1 Ω 1 W
C318 .1
.8 Ω
13.65 V
.65 V
.04 V
R304 6800 Ω
C225 1 µF
T1
C320 .0047
PA SPKR
R311 100 Ω
S1
PA CB
C139 10 µF
Pink
Blue
Yel
Grn
Rec
Xmit
RL1
C321 .0047
PHONE
EXT SPKR
.6 Ω
.9 Ω
R312 4.7 Ω Red
SP1 8 Ω 2
Wh
D203 10D1
Q202 2SC1018 XMIT DRIVER
Q203 2SC756A XMIT FINAL
Q206 2SD227D SWITCH
27MHz
R205 100 Ω
.39 V
.06 V
12.12 V
R220 1000 Ω
C1201 20 pF
C208 82 pF
T202
C256 330 pF
.34 V
.18 V
R206 22 Ω
R207 1000 Ω
C206 .022
L202
C209 22 pF
L203
C211 100 pF
L204
C213 39 pF
C212 220 pF
.67 V
5.50 V
R218 5600 Ω
7.94 V 40 mA
TX
C255 .022
L201
110
111
112
113
114
18
92
91
90
96
86
85
84
83
82
73
72
69
68
67
66
65
20

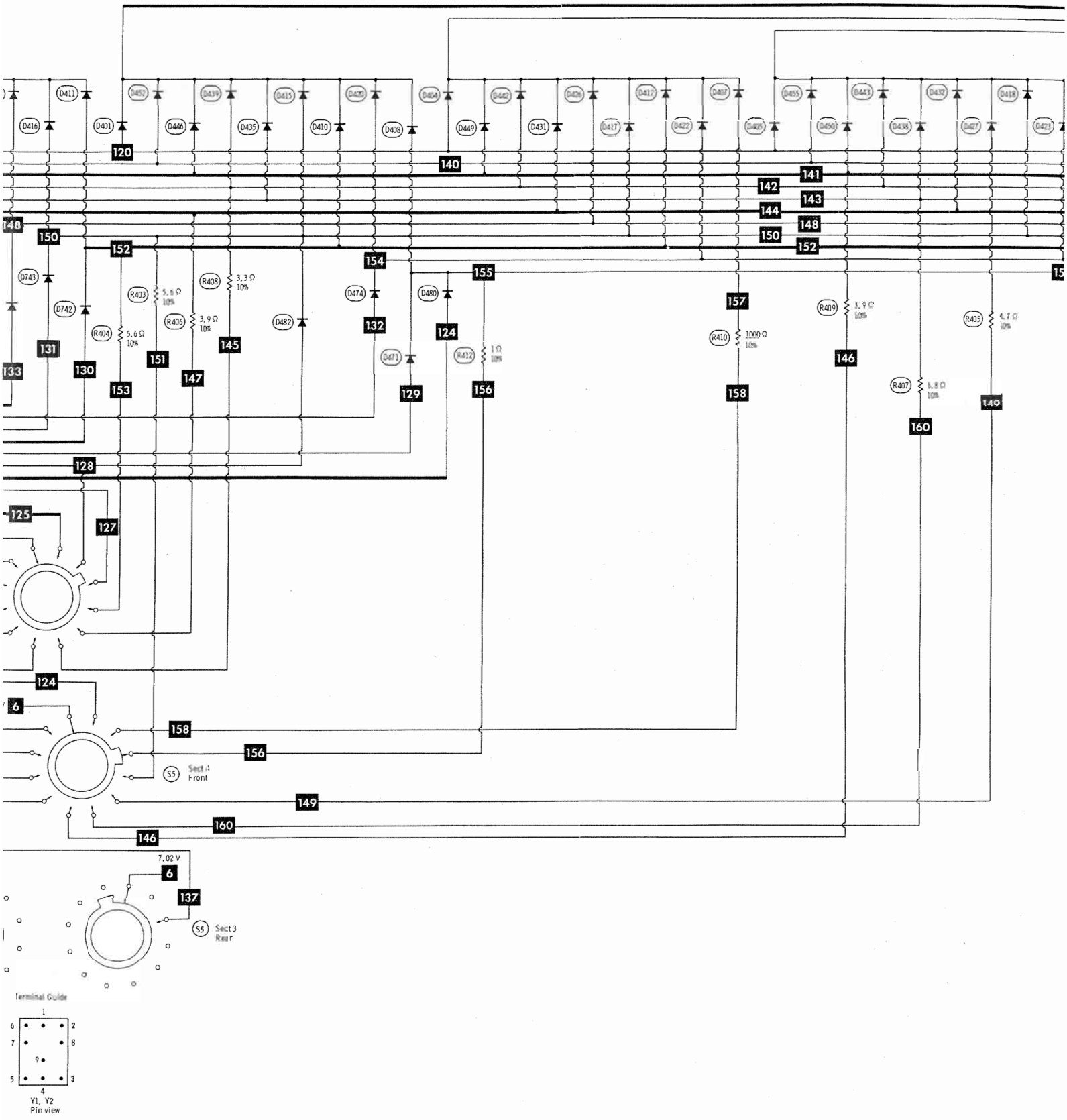


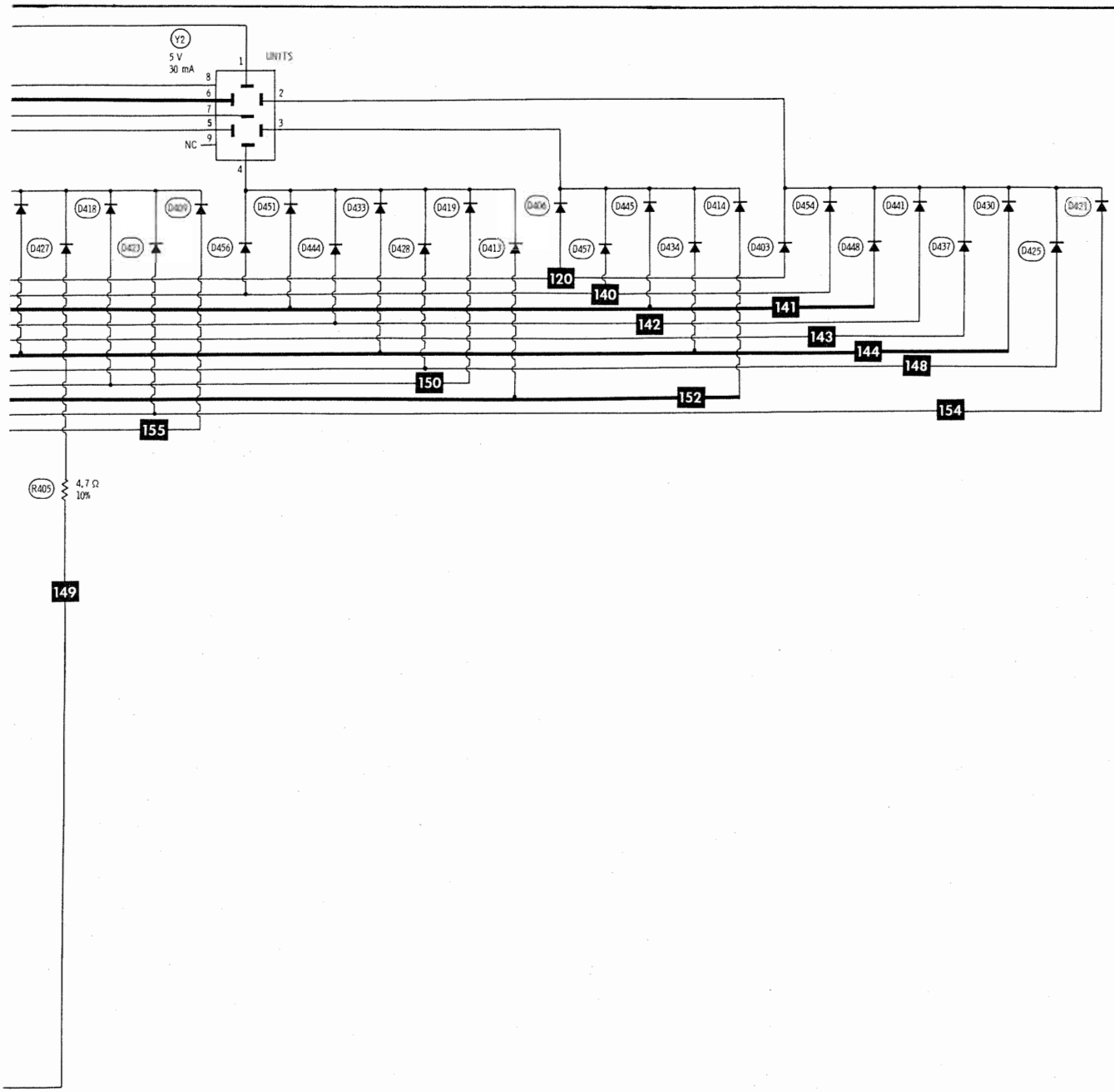
Terminal Guide

Y1, Y2
Pin view

—✕— Circuitry not used in some versions
– – – Circuitry used in some versions
⏚ Ground
Chassis
Measurements with switching as shown unless noted:
■ Squelch fully clockwise ♦ 100% modulation
● Transmit
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®


D411
D416
D401
D452
D446
D439
D435
D415
D410
D425
D408
D404
D449
D442
D431
D426
D417
D422
D437
D405
D455
D450
D443
D438
D432
D427
D418
D423
120
140
141
142
143
144
148
150
152
154
155
157
D743
D742
D403
R403
5,6 Ω 10%
R404
5,6 Ω 10%
R408
3,3 Ω 10%
R406
3,9 Ω 10%
D482
D474
D480
D471
R412
1 Ω 10%
R410
1000 Ω 10%
R409
3,9 Ω 10%
R405
4,7 Ω 10%
R407
6,8 Ω 10%
131
130
133
153
151
147
145
132
124
129
156
158
146
149
160
128
125
127
124
6
158
156
S5
Sect 1
Front
149
160
146
7,02 V
6
137
S5
Sect 3
Rear
Terminal Guide
1
6
2
7
8
9
5
3
4
Y1, Y2
Pin view


Y2
5 V
30 mA
UNITS
1
2
3
4
5
6
7
8
9
NC
D418
D409
D451
D433
D419
D406
D445
D414
D454
D441
D430
D421
D427
D423
D456
D444
D428
D413
D457
D434
D403
D448
D437
D425
120
140
141
142
143
144
148
150
152
154
155
R405
4,7 Ω
10%
149

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.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D489			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D490			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D491			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D492			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D493			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D494			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D495			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D496			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D497			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D498			GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D499	10D-1		GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D501	U05-B		GE-512	R350	PTC204	HEPR0092	RE 92	SK3051	RT-201	ECG156
D502	U05-B		GE-512	R350	PTC204	HEPR0092	RE 92	SK3051	RT-201	ECG156
D503	EQA-01-08R		GEZD-8.2	Z1208	ZB8.2A	HEPZ0411	RE 112	SK3136	RT-257	ECG5072
D504	EQA-01-08R		GEZD-8.2	Z1208	ZB8.2A	HEPZ0411	RE 112	SK3136	RT-257	ECG5072
D601	1S188		1N34AS	1N34A	PTC207	HEPR9134	RE 47	SK3087	RT-200	ECG109
D602	1S188		1N34AS	1N34A	PTC207	HEPR9134	RE 47	SK3087	RT-200	ECG109
Q1	2SC710B		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q2	2SC710B		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q3	2SC710B		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q4	2SC710B		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q101	2SC674D		GE-211 *	TR-21 *	PTC132 *	HEPS0016 *	RE 28 *	SK3117 *	RT-113 *	ECG161 *
Q102	2SC710C		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q103	2SC711E		GE-62 *	(IR)2SC644	PTC121	HEPS0024 *	RE 192 *	SK3124 *	RT-302 *	ECG199 *
Q104	2SC711E		GE-62 *	(IR)2SC644	PTC121	HEPS0024 *	RE 192 *	SK3124 *	RT-302 *	ECG199 *
Q105	2SC711D		GE-62 *	(IR)2SC644	PTC121	HEPS0024 *	RE 192 *	SK3124 *	RT-302 *	ECG199 *
Q106	2SA562Y		GE-82 *	TR-20 *	PTC103 *	HEPS0019 *	RE 26 *	SK3114	RT-303	ECG290
Q107	2SC372Y		GE-61 *	(IR)2SC372	PTC121 *	HEPS0015 *	RE 13 *	SK3122	RT-308	ECG123A *
Q108	2SC372Y		GE-61 *	(IR)2SC372	PTC121 *	HEPS0015 *	RE 13 *	SK3122	RT-308	ECG123A *
Q109	2SC372Y		GE-61 *	(IR)2SC372	PTC121 *	HEPS0015 *	RE 13 *	SK3122	RT-308	ECG123A *
Q110	2SC710C		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q201	2SC710C		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q202	2SC1018 (11)		GE-236		PTC192		RE 212		RT-143	ECG299
Q203	2SC756A (12)		GE-46		PTC158		RE 206		RT-306F	ECG282
Q204	2SB561B		GE-21 *		PTC103 *	HEPS0019 *	RE 26 *	SK3114 *	RT-126A *	ECG159 *
Q205	2SC372Y		GE-61 *	(IR)2SC372	PTC121 *	HEPS0015 *	RE 13 *	SK3122	RT-308	ECG123A *
Q206	2SD227D		GE-82 *	TR-24 *	PTC123 *	HEPS0015 *	RE 13 *	SK3124 *	RT-172 *	ECG123A *
	2SC735Y(1)		GE-210 *	TR-21 *	PTC123 *	HEPS0014 *	RE 13 *	SK3122	RT-308 *	ECG289
Q301	2SD227D		GE-82 *	TR-24 *	PTC123 *	HEPS0015 *	RE 13 *	SK3124 *	RT-172 *	ECG123A *
	2SC735Y(1)		GE-210 *	TR-21 *	PTC123 *	HEPS0014 *	RE 13 *	SK3122	RT-308 *	ECG289
Q302	TA7062P		GEIC-93							ECG1102
Q303	2SC1173A (13)		GE-215		PTC186		RE 201	SK3197	RT-160	ECG236
	2SD330 (1)(14)		GE-66	TR-76	PTC167	HEPS5027	RE 21	SK3054	RT-154	ECG152
Q304	2SC1173A (13)		GE-215		PTC186		RE 201	SK3197	RT-160	ECG236
	2SD330 (1)(14)		GE-66	TR-76	PTC167	HEPS5027	RE 21	SK3054	RT-154	ECG152
Q401	2SD313E (15)		GE-66	TR-76	PTC154		RE 205	SK3054	RT-154	ECG196
Q501	2SD313E (15)		GE-66	TR-76	PTC154		RE 205	SK3054	RT-154	ECG196
Q502	2SC1173L (13)		GE-215		PTC186		RE 201	SK3197	RT-160	ECG236
	2SD330 (1)(14)		GE-66	TR-76	PTC167	HEPS5027	RE 21	SK3054	RT-154	ECG152
Q503	2SC711E		GE-62 *	(IR)2SC644	PTC121	HEPS0024 *	RE 192 *	SK3124 *	RT-302 *	ECG199 *

* Lead Configuration may vary from original.
(1) Used in some versions.
(11) Rating, 4.0 watt @ 1.0 amp.
(12) Rating, 10 watts @ 4.0 amp.
(13) Rating, 10 Watts @ 3.0 amp.
(14) Rating, 20 watts @ 2.0 amp.
(15) Rating, 30 watts @ 3.0 amp.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFGR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C115	.33 50V			TDC334M050EL	QDT1-14	SD50-R339
C118	2.2 50V		PC2-100	VTT2R2A50	QV1-19	EV-1517
C120	47 16V		PC50-16	VTT47D16	QV1-73	EV-1226
C121	4.7 25V		PC5-50	VTT4R7A50	QV1-27	EV-1319
C122	10 16V		PC10-25	VTT10A25	QV1-41	EV-1222
C123	2.2 50V		PC2-100	VTT2R2A50	QV1-19	EV-1517
C129	1 50V		PC1-50	VTT1R63	QV1-11	EV-1615
C131	47 16V		PC50-16	VTT47D16	QV1-73	EV-1226
C137	10 16V		PC10-25	VTT10A25	QV1-41	EV-1222
C139	10 16V		PC10-25	VTT10A25	QV1-41	EV-1222
C219	.1 50V			TDC104M050EL	QDT1-2	SD50-R109

ELECTROLYTIC CAPACITORS (cont)

ITEM No.	RATING	REPLACEMENT DATA				
		MFGR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C222	10 16V		PC10-25	VTT10A25	QV1-41	EV-1222
C223	22 10V		PC25-25	VTT22A16	QV1-55	EV-1224
C225	1 50V		PC1-50	VTT1863	QV1-11	EV-1615
C257	47 16V		PC50-16	VTT47016	QV1-73	EV-1226
C305	100 16V		PC100-16	VTT100F16	QV1-95	EV-1230
C308	220 16V		PC250-25	VTT220G16	QV1-117	EV-1240
C309	1000 16V		PC1000-16	VTT1000L16	QV1-183	EV-1260
C315	10 16V		PC10-25	VTT10A25	QV1-41	EV-1222
C322	470 16V		PC500-16	VTT470J16	QV1-151	EV-1250
C504	2200 25V		WBR2000-25	TC2520A	QE1-645	TVA-1213.5

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	15		DTZ-15	NP015	CN0415		10TCC-Q15
C2	30		DTZ-33	NP033	CN0433		10TCC-Q33
C3	15		DTZ-15	NP015	CN0415		10TCC-Q15
C4	51						
C5	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C6	39				CN0439		10TCC-Q39
C7	300 10%		DD-301	GP300	GP330		10TS-T30
C8	15		DTZ-15	NP015	CN0415		10TCC-Q15
C9	39				CN0439		10TCC-Q39
C10	100 10%		DD-101	GP100	GP310		10TS-T10
C11	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C12	120 10%						10TCC-T12
C13	120 10%						10TCC-T12
C14	3		DTZ-3R3	NP03P3	CN0533		10TCC-V33
C15	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C16	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C17	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C18	300 10%		DD-301	GP300	GP330		10TS-T30
C19	10		DTZ-10	NP010	CN0410		10TCC-Q10
C20	51						
C21	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C101	22 10% N220				*		10TCR-Q22
C102	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C103	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C104	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C105	22 10% N220				*		10TCR-Q22
C106	10		DTZ-10	NP010	CN0410		10TCC-Q10
C107	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C108	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C109	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C110	220 10% N220				*		10TCR-T22
C111	10		DTZ-10	NP010	CN0410		10TCC-Q10
C112	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C113	.039						
C114	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C116	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C117	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C119	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C124	.002		DD-202	GP2000	GP220	QC2-93	5GA-D20
C125	.039						
C126	82 10% N220				*		10TCR-Q82
C127	220		DD-221		GP322		10TS-T22
C128	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C130	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C132	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C201	68 10% N220				*		10TCR-Q68
C202	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C203	39 10% N220				*		10TCR-Q39
C204	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C205	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C206	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C208	82 10%		DD-820		GP482		10TS-Q82
C209	22 10% N220				*		10TCR-Q22
C210	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C211	100 10% NPO		DTZ-100	NP0100	CN0310		10TCC-T10
C212	220 10% N220				*		10TCR-T22
C213	39 10% N220				*		10TCR-Q39
C214	120 10% NPO						10TCC-T12
C215	2		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C216	10		DTZ-10	NP010	CN0410		10TCC-Q10
C217	.039						
C221	.001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C255	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C256	30 10% N750		DTN-330	N330	CN7333		10TCU-T33
C301	001		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C302	.22 10%			WMF05P22	EWF05022	QF1-253	431P2249R5
C304	.068			WMF1S68	EWF1A168	QF1-195	1PB-S68
C306	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C307	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C310	.039						

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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
C311	.039						
C312	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C313	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C314	.039						
C316	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C317	.022		UK50-223	MGP02	MAG5012	QC2-157	TG-S20
C318	.1			WMF05P1	EWF05010	QF1-215	431P1049R5
C320	.0047		DC-502	MGP005	TA250	QC2-123	TG-D50
C321	.0047		DC-502	MGP005	TA250	QC2-123	TG-D50
C501	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C502	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C503	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C601	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C602	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C603	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10
C604	.01		UK50-103	MGP01	MAG5011	QC2-141	TG-S10

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

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

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
VR101	Volume	50K		F2-50F,SSK106	A47-50K-Z,KSS-3 or [NP-50K-Z, UP-C-400]	UA54A,SL3500 or [RU54A,SL36,SL1500]	BU1,CF12,SS1,DC1
VR102	Squelch	10K		F2-10K,SSK106	A47-10K-Z,KSS-3 or [NP-10K-Z, UP-C-400]	UA14A,SL3500 or [RU14A,SL36,SL1500]	BU1,CF61,SS1,DC1
VR103	Squelch Range	5000					
VR104A	RF Gain	10K		F1-10K,SSK106	A47-10K-S,KSS-3 or [NP-10K-S, UP-C-400]	UA14L,SL3500 or [RU14L,SL36,SL1500]	BU1,CF9,SS1,DC1
VR105	Delta Tune	10K		F1-10K,SSK106	A47-10K-S,KSS-3 or [NP-10K-S, UP-C-400]	UA14L,SL3500 or [RU14L,SL36,SL1500]	BU1,CF9,SS1,DC1
VR104B	S Meter	20K					
VR201	AMC	10K					
VR202	RF Meter	50K					
VR501	B+	200		T-200		MTC22L1	X201R251B
VR601	Calibration	5000		F1-5000, R1-5000,CPL-2, SSK106	NP-5000-S NR-5000-S, UP-C-400,DC-2	PS3L,3014,RU53L, CS3500	BU1,CF8,CR4,SS1, SS7A,DC1
VR602	Calibration	5000					

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	RF Choke	2-0074			
L2	RF Choke	2-0170			
L101	RF Choke	2-0162			
L201	RF Choke	2-0166			
L202	RF Choke	2-0169			
L203	Pi Filter (27MHz)	2-0163			
L204	Final Amp (27MHz)	2-0164			
L301	RF Choke	2-0165			
T4	Synth Osc (37MHz)		81950L		
T5	Xmit Mixer (27MHz)		81950L		
T6	Harmonic Suppressor (27MHz)		820-50L		
T101	Rec Ant (27MHz)	2-0049	ETC-15089-5834		
T102	Rec RF (27MHz)	2-0045	ETC-15061-5712		
T103	IF (455kHz)	2-0050	ETC-15090-5822		
T201	Xmit Buffer (27MHz)	2-0062			
T202	Xmit Driver (27MHz)	2-0161			

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.	
T3	1.5A	.116	1.38mH	2-0036 1002 (1)	TR509		(1) Number on unit.

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE			REPLACEMENT DATA			NOTES
	PRI.	SEC.		MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
		1	2				
T1	42	8	29	2-0156 20015 (1)	TR788		(1) Number on unit.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	SEC. 2	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	1	1		2-0033 1001 (1)	TR612		(1) Number on unit.

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T501	120V AC @ 480mA AC	36V AC @ 2.7A AC	2-0059 20014-8 (1)			(1) Number on unit.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	3 5/8" PM, 8 Ohms		3A05Z8R	

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	3A Fast Acting			AGC3	HDJ	312003	150145	FG3-2
F2	.5A Fast Acting			AGC1/2	HKP	312.500	342012AL	FG1/2-2

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

CRYSTALS

ITEM No.	CRYSTAL FREQUENCY IN MHz	MFGR. PART No.	CTS KNIGHTS PART No.	CHANNEL
X1	37.600		DA14W37600	1,2,3,4
X2	37.650		DA14W37650	5,6,7,8
X3	37.700		DA14W37700	9,10,11,12
X4	37.750		DA14W37750	13,14,15,16
X5	37.800		DA14W37800	17,18,19,20
X6	37.850		DA14W37850	21,22,23
X7	10.635		DB40W10635	1,5,9,13,17,21

ITEM No.	CRYSTAL FREQUENCY IN MHz	MFGR. PART No.	CTS KNIGHTS PART No.	CHANNEL
X8	10.625		DB40W10625	2,6,10,14,18,22
X9	10.615		DB40W10615	3,7,11,15,19
X10	10.595		DB40W10595	4,8,12,16,20,23
X11	10.180		DC45W10180	1,5,9,13,17,21
X12	10.170		DC45W10170	2,6,10,14,18,22
X13	10.160		DC45W10160	3,7,11,15,19
X14	10.140		DC45W10140	4,8,12,16,20,23

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
F101	Filter		10.7MHz (SFE 10.7MA)
F102	Filter		455kHz (CFU-455H)
F103	Filter		455kHz (CFU-455H)
M1	Meter		S/RF
M2	Meter		Calibration
M3	Meter		SWR
RL1	Relay		Xmit/Rec (330 ohms) (NS2-P-DC12V)
S1	Switch		CB/PA
S2	Switch		ANL
S3	Switch		Power (On/Off)
S4	Switch		Tone (Lo-Hi)
S5	Switch		Channel Selector
S6	Switch		AC/DC
S7	Switch		Dim/Bright
	Printed Circuit Board		Main (T-52005-A)
	Printed Circuit Board		Crystal (2-5065)
	Printed Circuit Board		Diode Matrix (T-52005-B)
	Printed Circuit Board		Display (T-52004-C)