For Supplier Address See PHOTOFACT Index

NOTE

Repair or adjustment of transmitter circuits must be under supervision of a person with first-or second-class radiotelephone license.
(Refer to FCC Rules and Regulations Part 95, Subpart C & D.)

The frequency of the transmitter should be checked periodically with a secondary frequency standard to insure proper and legal operation.

Best results will be obtained when adjusting the final RF output circuit if the antenna normally used is connected and the chassis is as nearly in the cabinet as possible.

Connect either 50-ohm dummy load or the normally used antenna system.

MODEL SB-505D

MANUFACTURER'S SPECIFICATIONS

TRANSMITTER

Power Output	4 watts (AM), 12 watts PEP (SSB)
Frequency Response	300 to 3000 Hz.
Output Impedance	50 ohms, unbalanced.
Output Indicator	Meter indicates relative RF output power.

RECEIVER

Sensitivity	Less than 0.5 μV for 10 dB (S+N)/N.
Selectivity	AM 65 dB (10 KHz), SSB 65 dB (10 KHz).
Image Rejection	75 dB.
IF Frequencies	7.8 MHz.
Adjacent Channel Rejection	65 dB.
RF Gain Control	Adjustable for optimum signal.
Automatic Gain Control (AGC)	Less than 10 dB change in audio output for inputs from 10 to 50,000 microvolts.
Squelch	Adjustable, threshold less than 1 μV.
Clarifier Range	±1250 Hz.
Audio Output Power	3.5 watts into 8 ohms.
Frequency Response	300 to 2100 Hz.
Distortion	Less than 10% @3.5 watts output.
Built-in Speaker	8 ohms, round.
External Speaker (Not Supplied)	8 ohms; disables internal speaker when connected.

PA SYSTEM

Power Output	3.5 watts into external speaker.
External Speaker for PA (Not Supplied)	8 ohms; when PA-CB switch is in PA, the PA speaker also monitors the receiver, separate jack provided.

Courtesy of the Manufacturer

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

 Printed in U. S. of America 9CF1005

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:
L1 thru L10, L13, L14, L17 thru L20, L26 thru L29 ..	9440
L36, L39	8728,9304,9089
CT1, CT2, CT3	5000,8276,9089

FIGURE 1

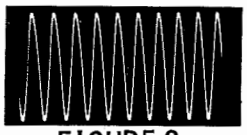


FIGURE 2

FIGURE 3

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of frequency counter to TP12 (IC2 Pin 8).	Ch. 19 AM		Check for 10.240MHz.
Input of oscilloscope to TP10.	Ch. 19, AM Clarifier Midrange	L18	Adjust for maximum RF. (2.3V p-p typical) (See Figure 1.)
Input of DC meter to TP9.	Ch. 40 AM	L13	Adjust for 3.50 volts. Check for approximately 2.50 volts on Channel 1.
Input of oscilloscope to TP1.	Ch. 19 USB	L14	Adjust for maximum RF. (300mV p-p typical) (See Figure 2.)
Input of frequency counter to TP1.	Ch. 19 USB Clarifier Midrange	CT3	Adjust for 34.9875MHz ±20Hz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP1.	Ch. 19 LSB Clarifier Midrange	L19	Adjust for 34.9825MHz ±20Hz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP1.	Ch. 19 AM Clarifier Midrange	L20	Adjust for 34.9850MHz ±20Hz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP10.	Ch. 1 USB		Check for 1.430MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP3.	Ch. 19 USB	CT1	Adjust for 7.8025MHz +5Hz or -0Hz.
Input of frequency counter to TP3.	Ch. 19 LSB	CT2	Adjust for 7.7975MHz +0Hz or -5Hz.
Input of frequency counter to TP3. Disconnect TP7 and TP8.	Ch. 19, XMT AM	L17	Adjust for 7.8000MHz ±5Hz. Reconnect TP7 and TP8.
Input of frequency counter to antenna input.	Ch. 1, XMT AM	VR3	Adjust for 26.965MHz. Check all channels. (See Page 4 for channel frequencies.)

RECEIVER ALIGNMENT

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.
Set generator output low enough to prevent AGC limiting.
Mode AM, RF Gain Maximum, Squelch MINIMUM, Clarifier Midrange, NB Off.

AM

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP13 (TR10 Collector). 7.8MHz, 1000Hz @ 30% modulation.	Ch. 19	L3,L4	Adjust for maximum output.
Output of signal generator thru .01uF to antenna input. 27.185MHz, 1000Hz @ 30% modulation.	Ch. 19	L5,L6,L7, L8,L9,L10	Adjust for maximum output. Readjust L3 and L4 for maximum.
Output of signal generator thru .01uF to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Input of oscilloscope to TP14 (D2 Cathode).	Ch. 19	L1,L2	Set generator output for 10db signal to noise plus noise ratio of receiver. Inject a 100pps, 1uSec. pulse width signal at antenna input. Switch Noise Blanker on and adjust for maximum amplitude pulses (10V peak typical). (See Figure 3.)

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.
Mode USB, RF Gain Maximum, Squelch MINIMUM, Clarifier Midrange, NB Off.

SSB

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP13 (TR10 Collector). 7.8025MHz, no modulation.	Ch. 19	L3,L4	Adjust for maximum output.
Output of signal generator thru .01uF to antenna input. 27.186MHz, no modulation.	Ch. 19	L5,L6,L7, L8,L9,L10	Adjust for maximum output. Readjust L3 and L4 for maximum.

RECEIVER ADJUSTMENTS

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.
Mode AM, RF Gain Maximum, Squelch MINIMUM, Clarifier Midrange, NB Off.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Output 1000uV.	Ch. 19 Squelch Maximum	VR2	SQUELCH RANGE Adjust so squelch just breaks.
Output of signal generator thru .01uF to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Output 100uV.	Ch. 19	VR1	SIG METER Adjust for 9 on SIG scale of meter.

TRANSMITTER ALIGNMENT

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

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of RF wattmeter to antenna input. Inject a two tone 50mV signal at mic input.	Ch. 19 USB Mike Gain Maximum	L26,L27,L28, L29,L36	Set VR7 to MINIMUM. Adjust for maximum RF output.
Input of spectrum analyzer or harmonic meter to antenna input.	Ch. 19 AM Mike Gain MINIMUM	L39	Adjust for MINIMUM at 54MHz (2nd harmonic).

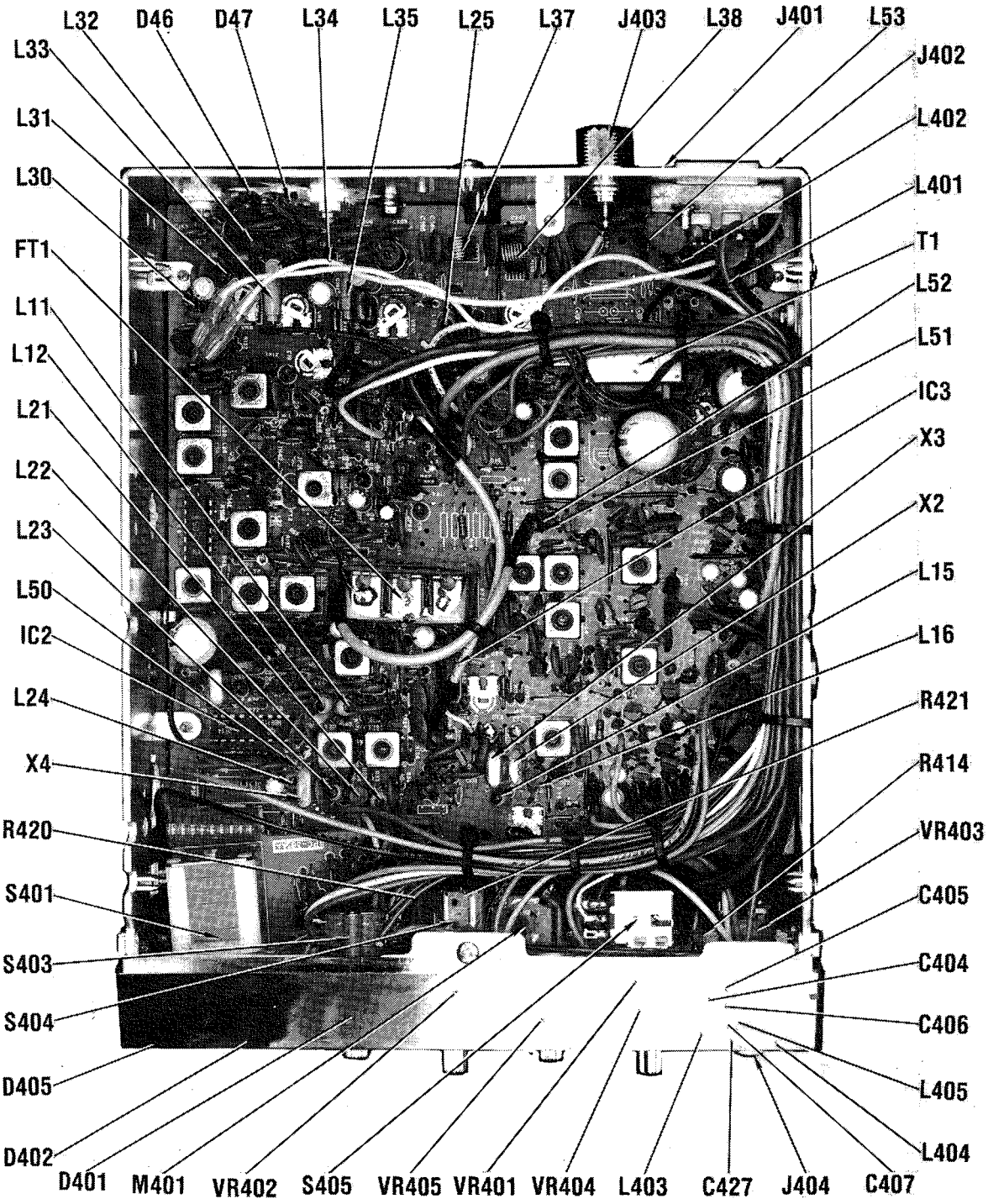
TRANSMITTER ADJUSTMENTS

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

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Insert a 0-150mA DC current meter at TP8. No modulation.	Ch. 19 USB Mike Gain MINIMUM	VR8	RF DRIVER BIAS Adjust for 35mA idle current. Reconnect TP8.
Insert a 0-150mA DC current meter at TP7. No modulation.	Ch. 19 USB Mike Gain MINIMUM	VR9	RF FINAL BIAS Adjust for 45mA idle current. Reconnect TP7.
Input of RF wattmeter to antenna input. No modulation.	Ch. 19 USB Mike Gain MINIMUM	VR5	CARRIER BALANCE Adjust for MINIMUM RF output. Check LSB and readjust if necessary for MINIMUM RF output.
Input of RF wattmeter to antenna input. Inject a two tone, 50mV signal at mic input.	Ch. 19 USB Mike Gain Maximum	VR7	RF ALC Adjust for 11.0 watts PEP RF output maximum.
Input of RF wattmeter to antenna input. No modulation.	Ch. 19, AM Mike Gain MINIMUM	VR6	AM POWER Adjust for 4.0 watts RF output maximum.
Input of RF wattmeter to antenna input. No modulation.	Ch. 19, AM Mike Gain MINIMUM	VR10	TX PWR METER Adjust so PWR Meter agrees with RF wattmeter.

TRUTH CHART

CHANNEL	1 = 7.98 Volts 0 = 0 Volts CHANNEL INPUT CODES IC2 PINS						DIVIDER INPUT IN MHz AT TP10	AM REC VCO OUTPUT IN MHz AT TP1	USB REC VCO OUTPUT IN MHz AT TP1	LSB REC VCO OUTPUT IN MHz AT TP1
	11	12	13	14	15	16				
1	0	0	1	1	1	1	1.430	34.765	34.7675	34.7625
2	0	1	0	0	0	0	1.440	34.775	34.7775	34.7725
3	0	1	0	0	0	1	1.450	34.785	34.7875	34.7825
4	0	1	0	0	1	1	1.470	34.805	34.8075	34.8025
5	0	1	0	1	0	0	1.480	34.815	34.8175	34.8125
6	0	1	0	1	0	1	1.490	34.825	34.8275	34.8225
7	0	1	0	1	1	0	1.500	34.835	34.8375	34.8325
8	0	1	1	0	0	0	1.520	34.855	34.8575	34.8525
9	0	1	1	0	0	1	1.530	34.865	34.8675	34.8625
10	0	1	1	0	1	0	1.540	34.875	34.8775	34.8725
11	0	1	1	0	1	1	1.550	34.885	34.8875	34.8825
12	0	1	1	1	0	1	1.570	34.905	34.9075	34.9025
13	0	1	1	1	1	0	1.580	34.915	34.9175	34.9125
14	0	1	1	1	1	1	1.590	34.925	34.9275	34.9225
15	1	0	0	0	0	0	1.600	34.935	34.9375	34.9325
16	1	0	0	0	1	0	1.620	34.955	34.9575	34.9525
17	1	0	0	0	1	1	1.630	34.965	34.9675	34.9625
18	1	0	0	1	0	0	1.640	34.975	34.9775	34.9725
19	1	0	0	1	0	1	1.650	34.985	34.9875	34.9825
20	1	0	0	1	1	1	1.670	34.005	34.0075	35.0025
21	1	0	1	0	0	0	1.680	35.015	35.0175	35.0125
22	1	0	1	0	0	1	1.690	35.025	34.0275	35.0225
23	1	0	1	1	0	0	1.720	35.055	35.0575	35.0525
24	1	0	1	0	1	0	1.700	35.035	35.0375	35.0325
25	1	0	1	0	1	1	1.710	35.045	35.0475	35.0425
26	1	0	1	1	0	1	1.730	35.065	35.0675	35.0625
27	1	0	1	1	1	0	1.740	35.075	35.0775	35.0725
28	1	0	1	1	1	1	1.750	35.085	35.0875	35.0825
29	1	1	0	0	0	0	1.760	35.095	35.0975	35.0925
30	1	1	0	0	0	1	1.770	35.105	35.1075	35.1025
31	1	1	0	0	1	0	1.780	35.115	35.1175	35.1125
32	1	1	0	0	1	1	1.790	35.125	35.1275	35.1225
33	1	1	0	1	0	0	1.800	35.135	35.1375	35.1325
34	1	1	0	1	0	1	1.810	35.145	35.1475	35.1425
35	1	1	0	1	1	0	1.820	35.155	35.1575	35.1525
36	1	1	0	1	1	1	1.830	35.165	35.1675	35.1625
37	1	1	1	0	0	0	1.840	35.175	35.1775	35.1725
38	1	1	1	0	0	1	1.850	35.185	35.1875	35.1825
39	1	1	1	0	1	0	1.860	35.195	35.1975	35.1925
40	1	1	1	0	1	1	1.870	35.205	35.2075	35.2025



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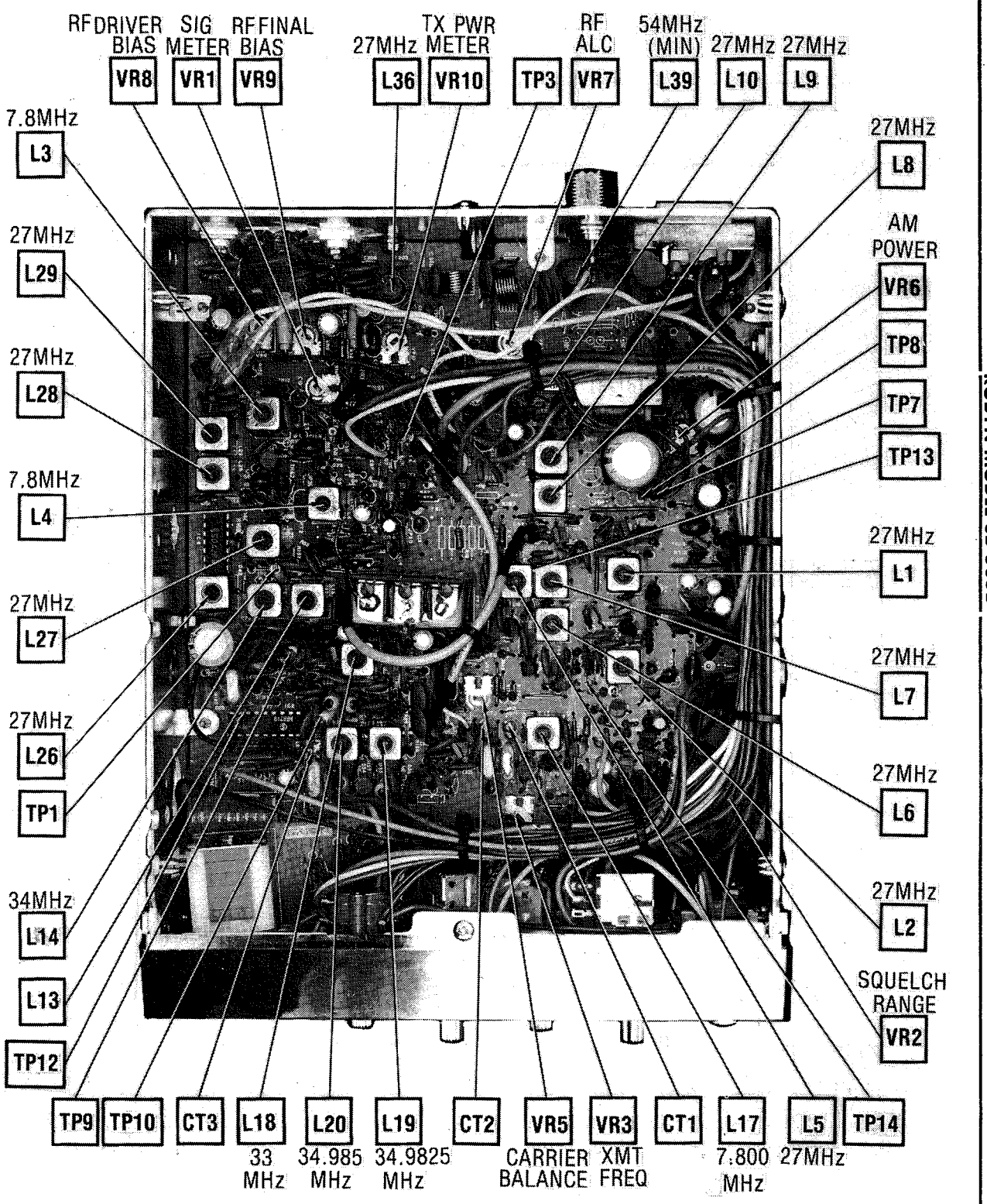

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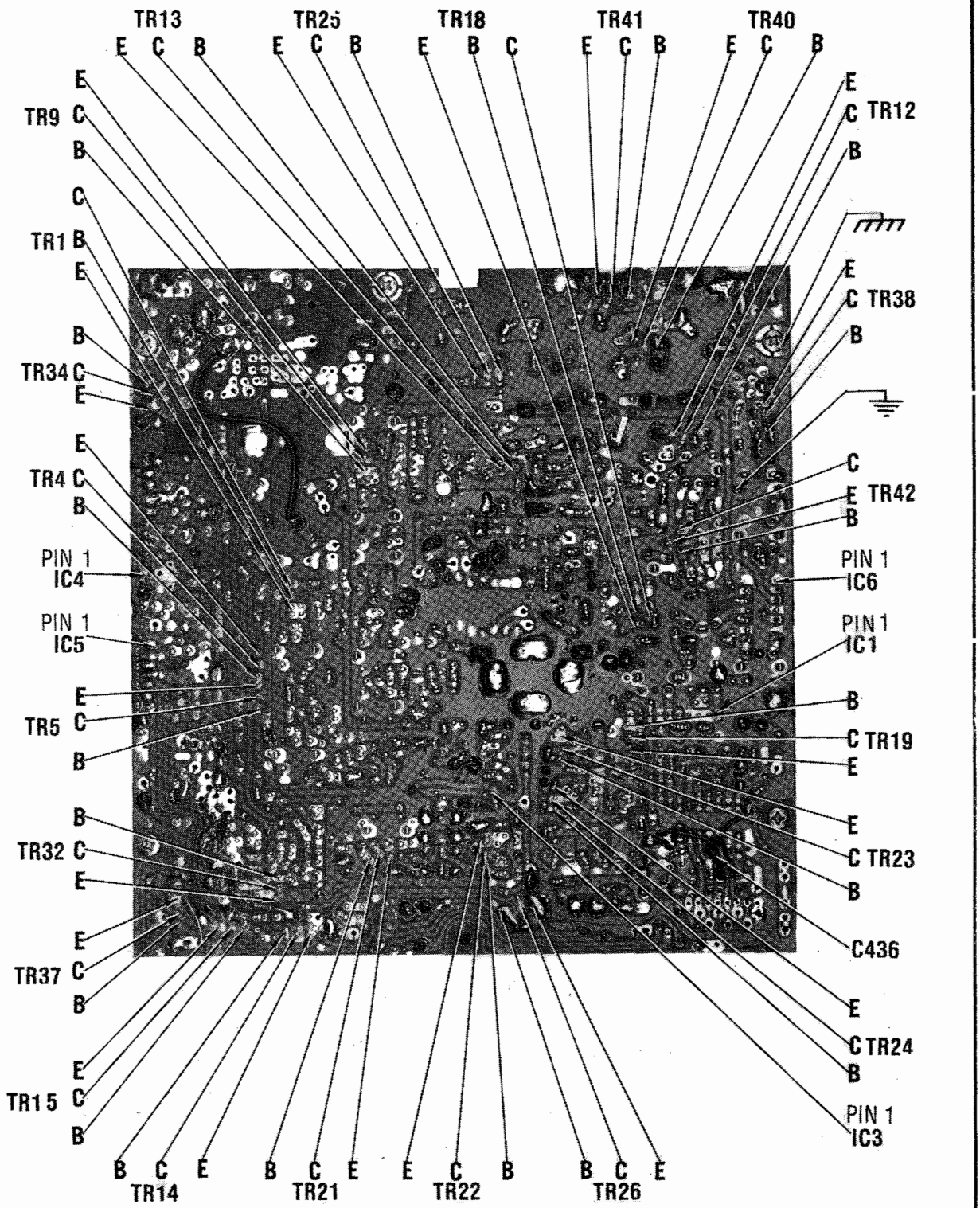
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TR4
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PIN 1
IC4
PIN 1
IC5
TR5
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TR32
B C E
TR37
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TR15
E C B
TR12
E C B
TR38
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C E B
PIN 1
IC6
PIN 1
IC1
TR19
B C E
TR23
E C B
C436
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IC3
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TR14
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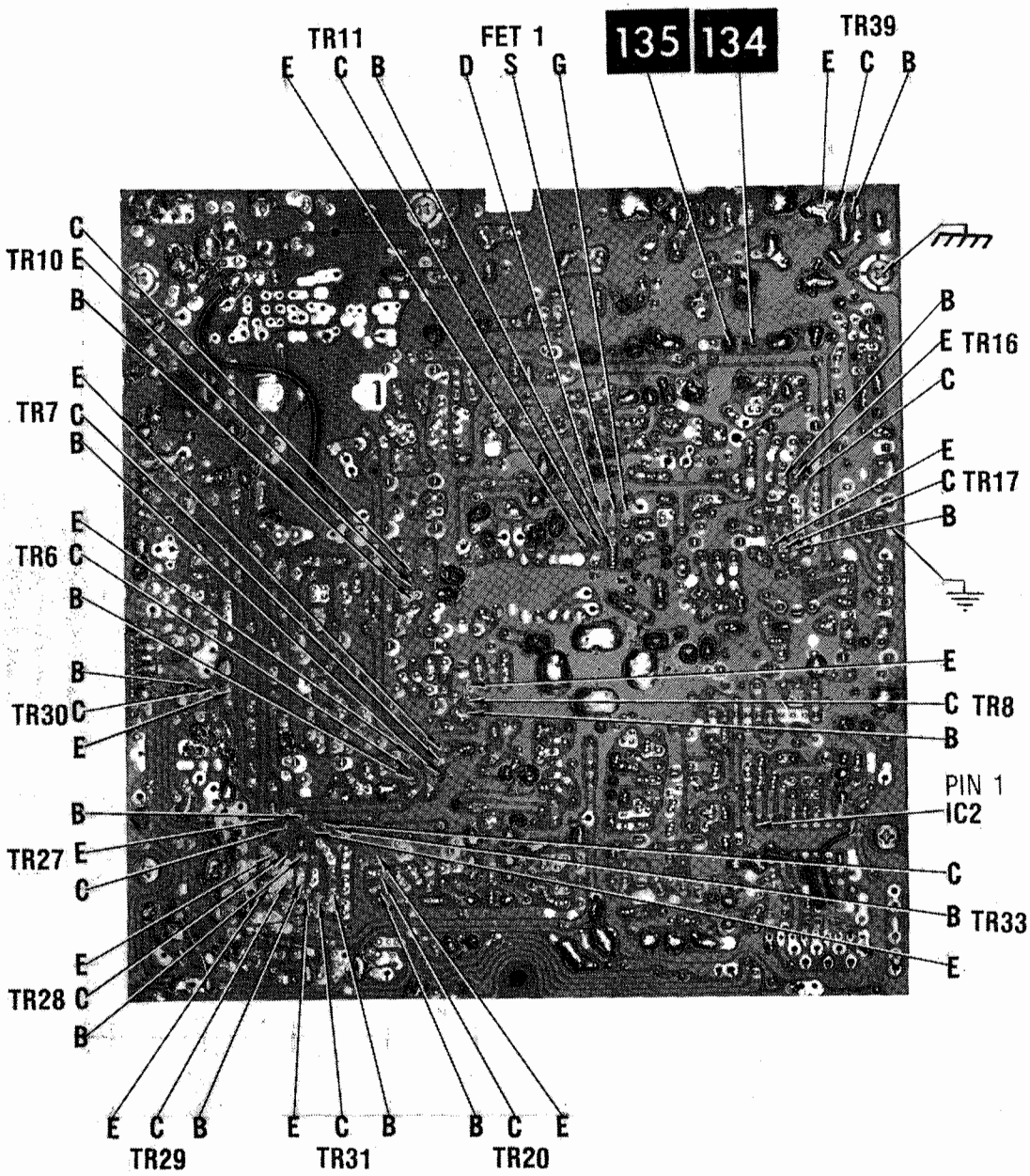
TR21
E C B
TR22
B C E
TR26

MAIN BOARD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B
B
TR30 C
E
B
E TR16
C
E
C TR17
B
E
C TR8
B
PIN 1
IC2
B
TR27 E
C
E
TR28 C
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C
B TR33
E
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TR31
B C E
TR20

MAIN BOARD

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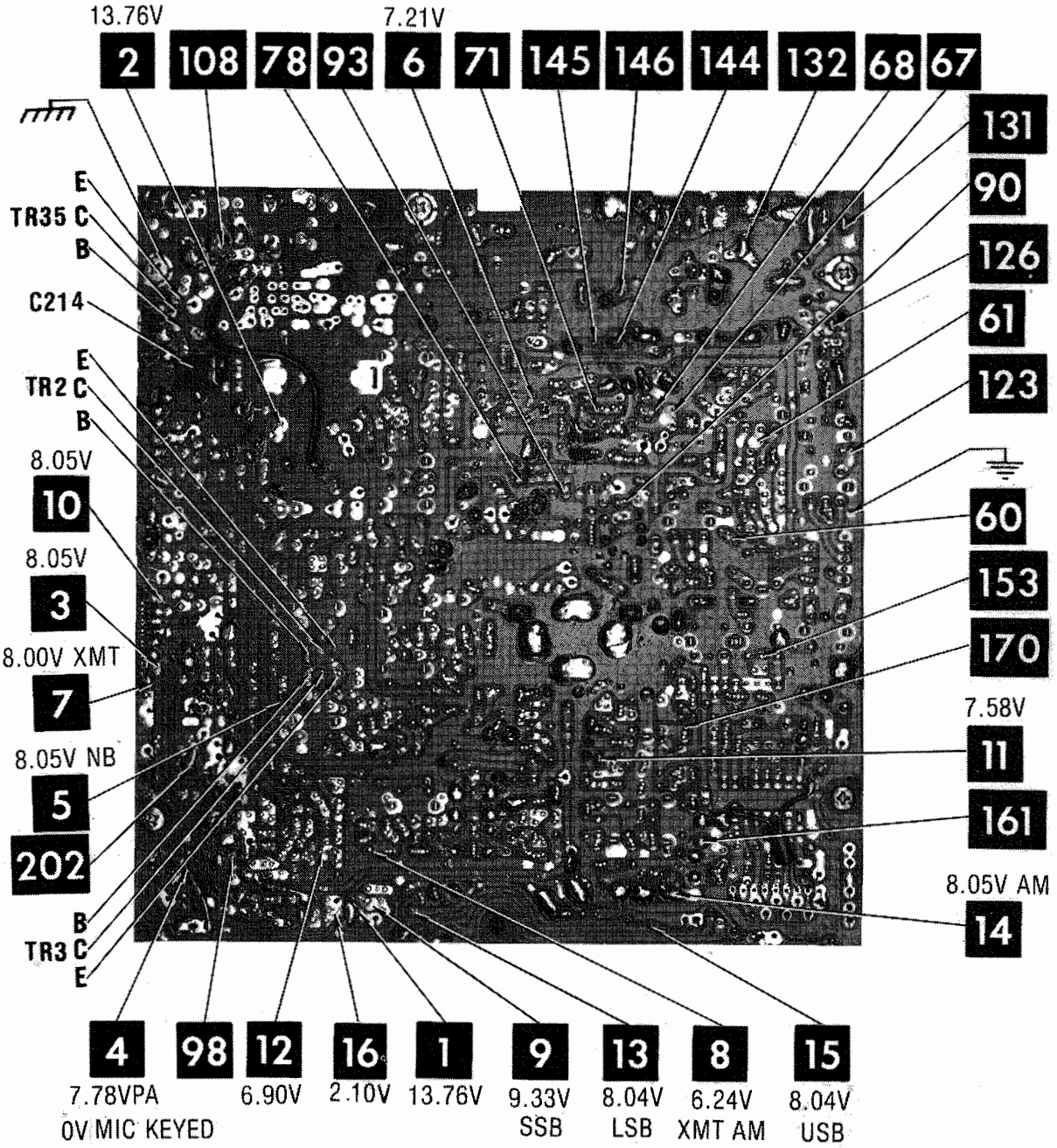

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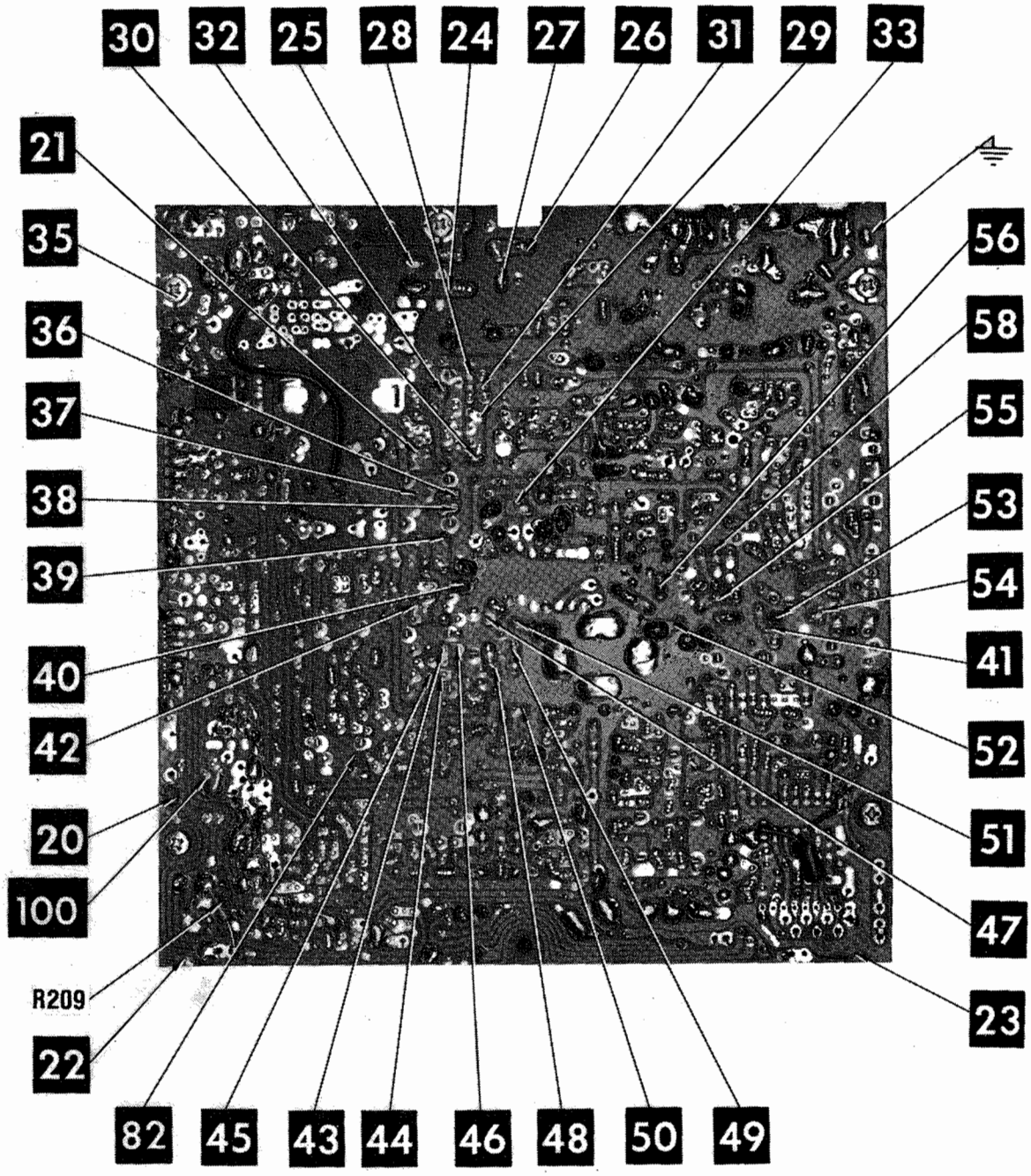
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MAIN BOARD

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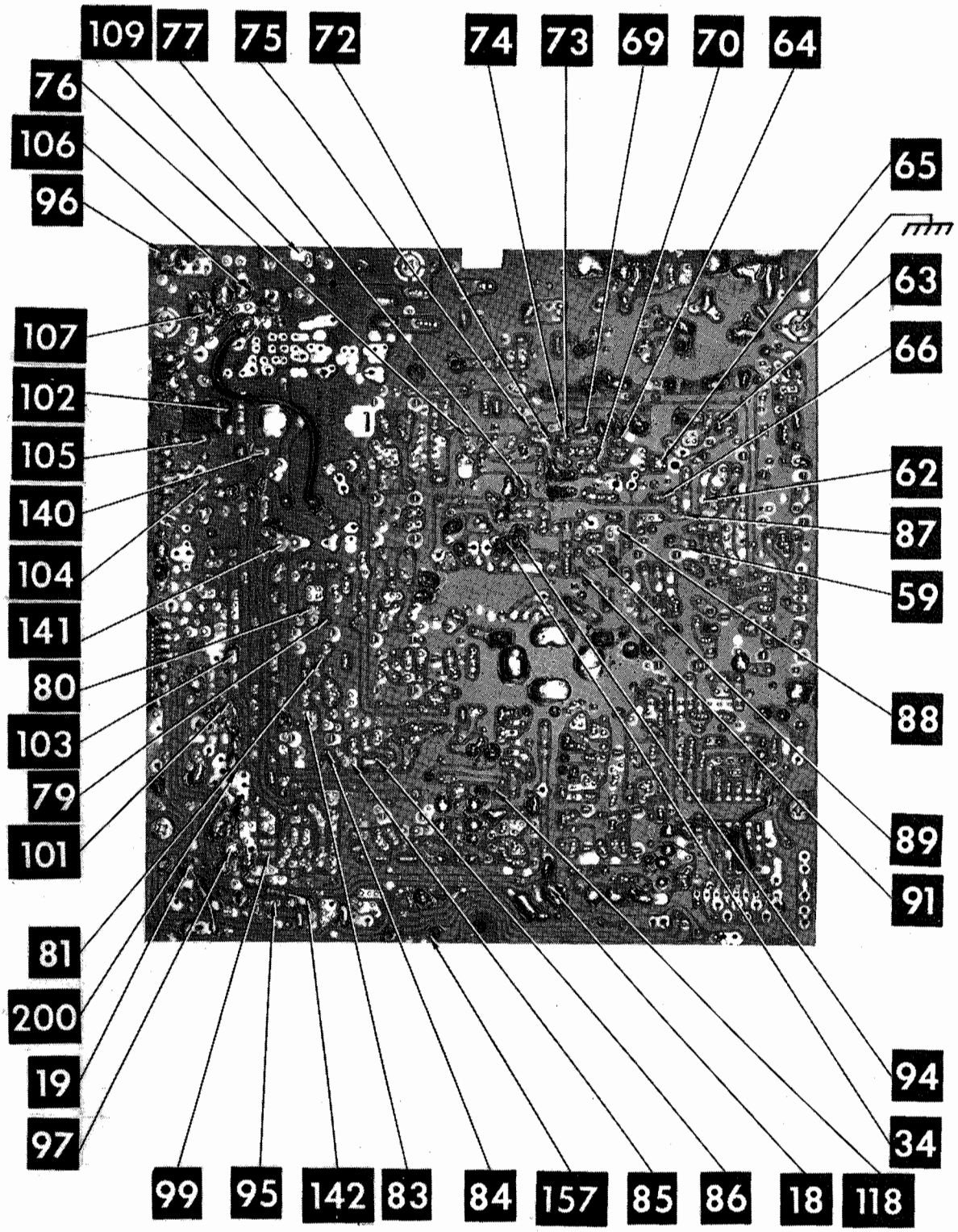

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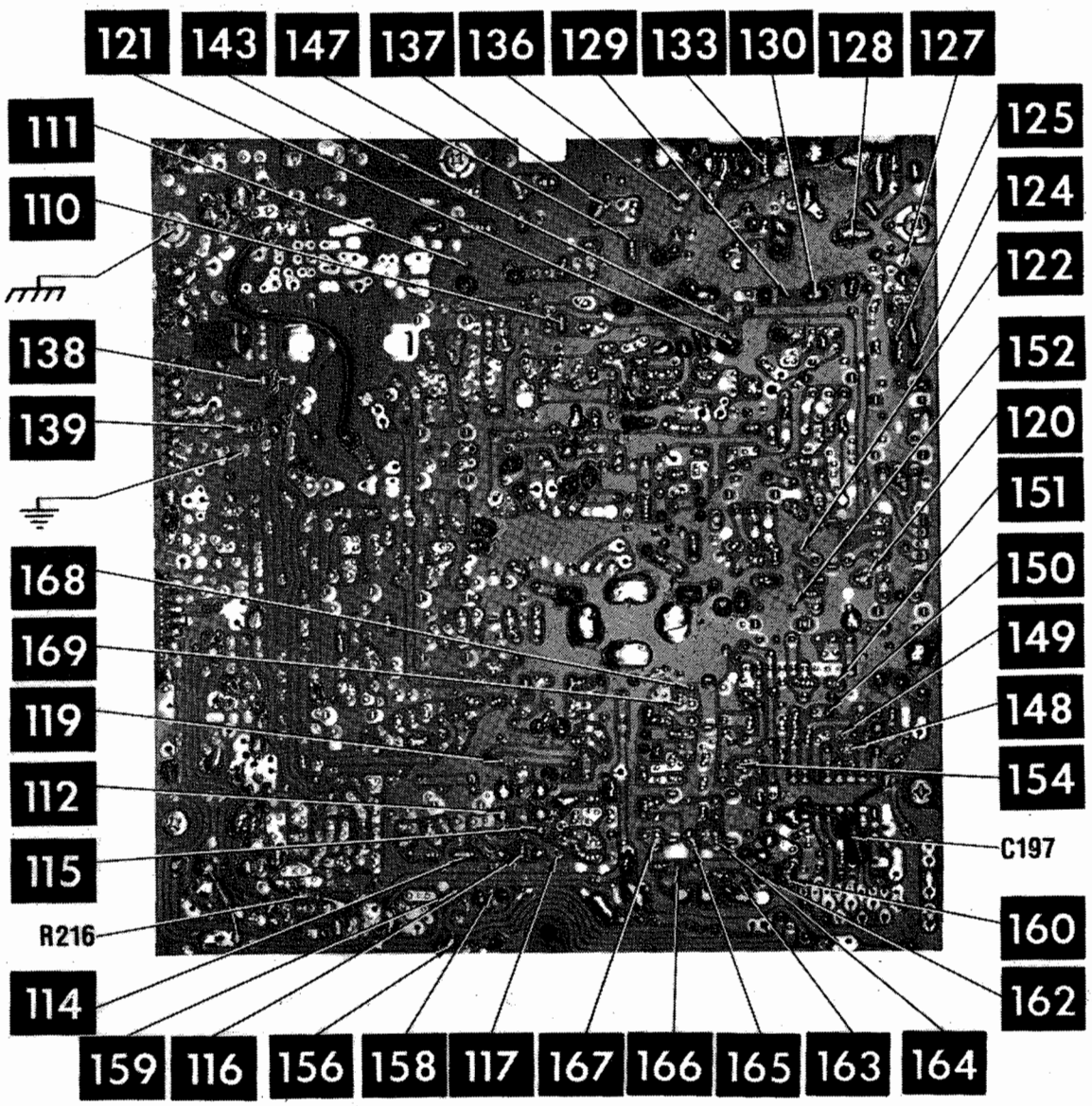

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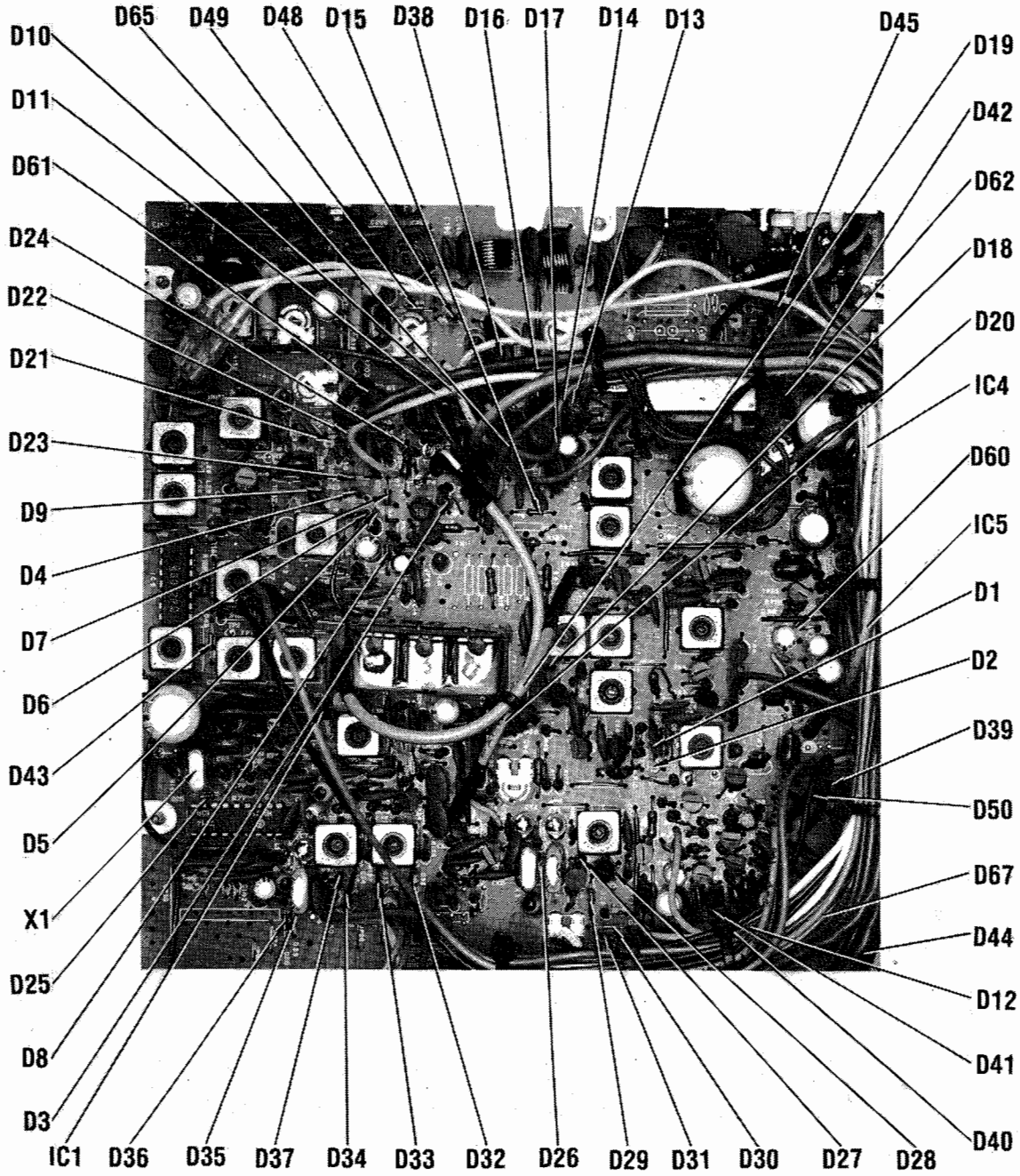
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D4
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D43
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X1
D25
D8
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IC1
D36
D35
D37
D34
D33
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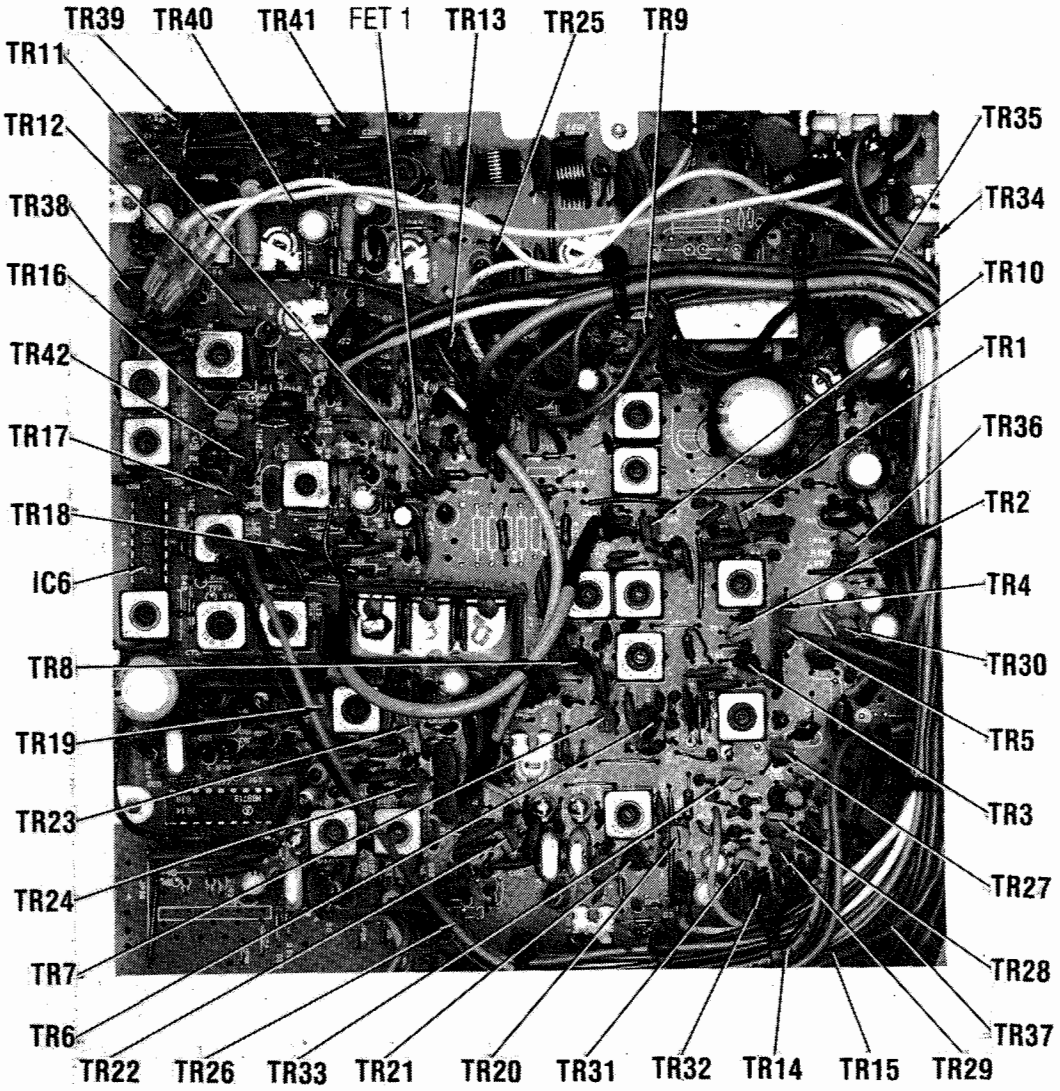
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TR4
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TR3
TR24
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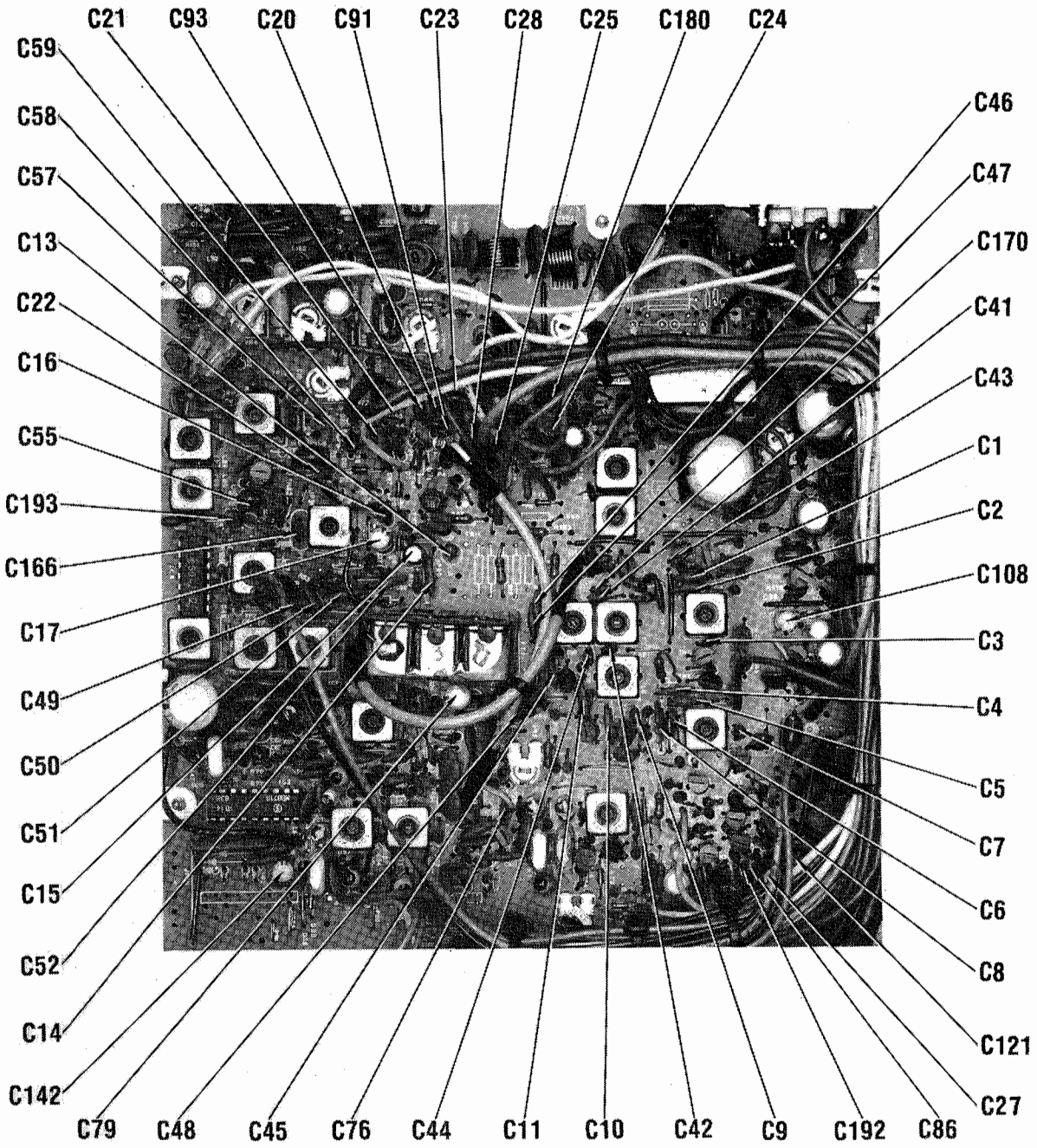
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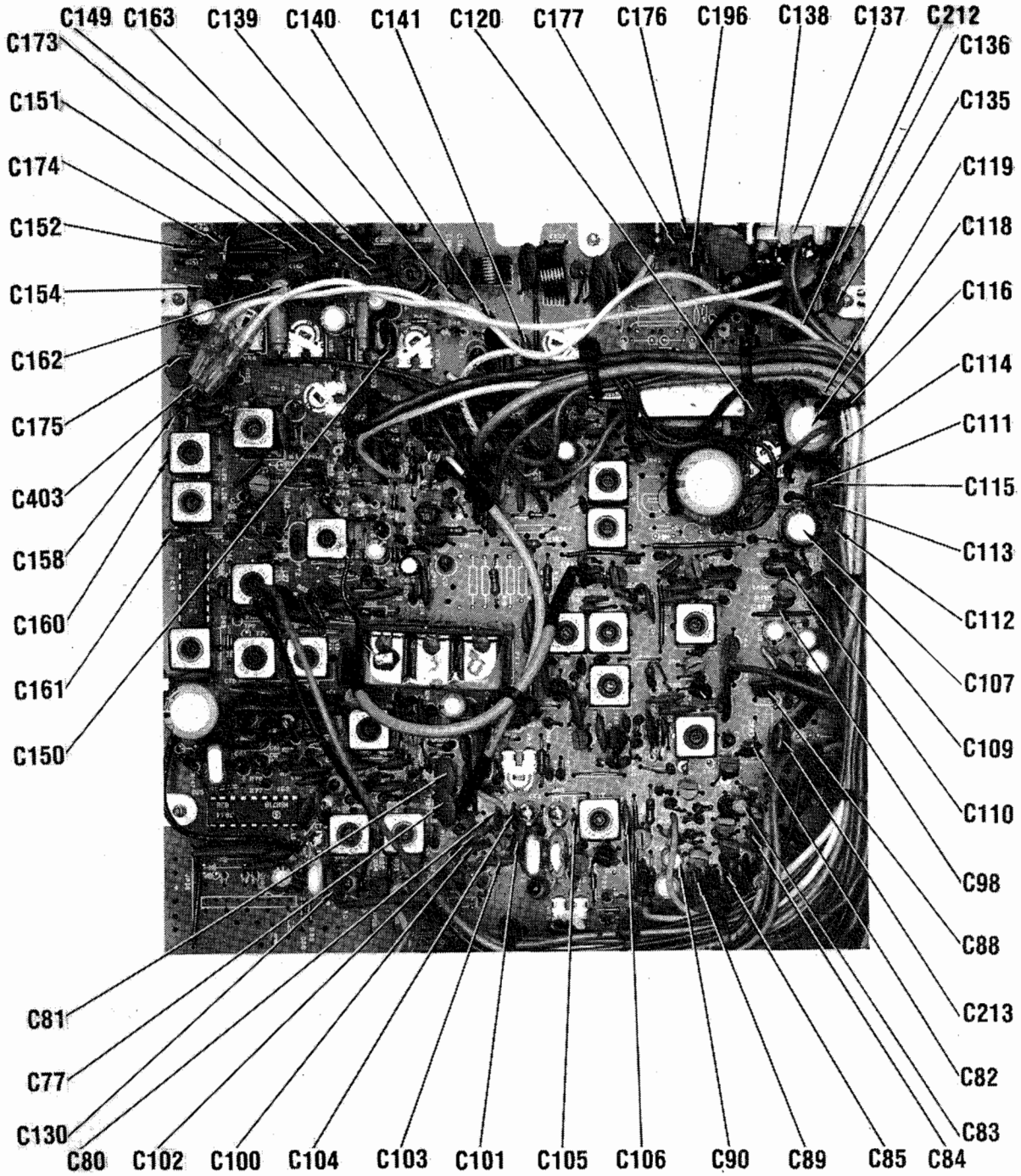
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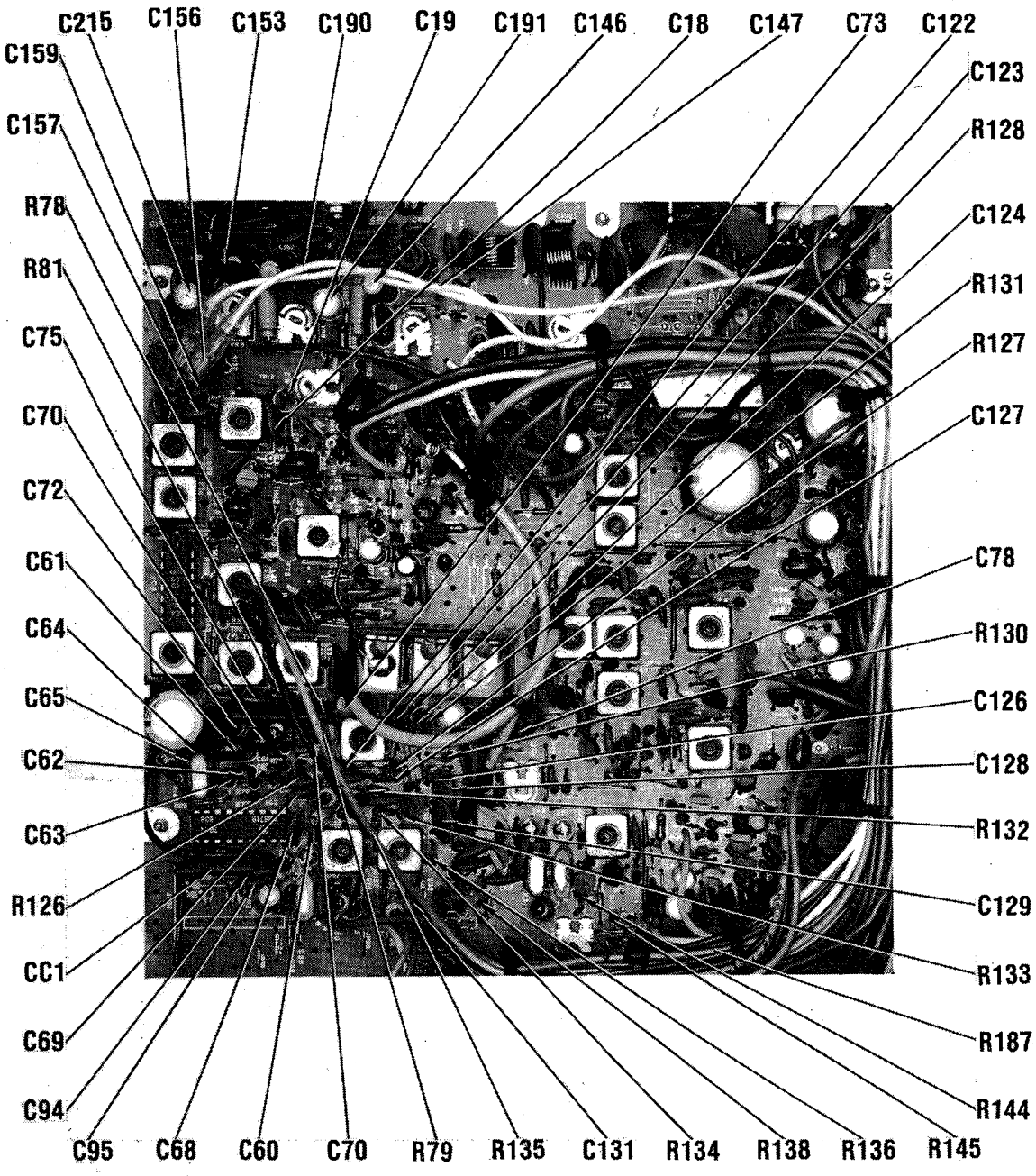
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C65
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C128
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C69
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R136
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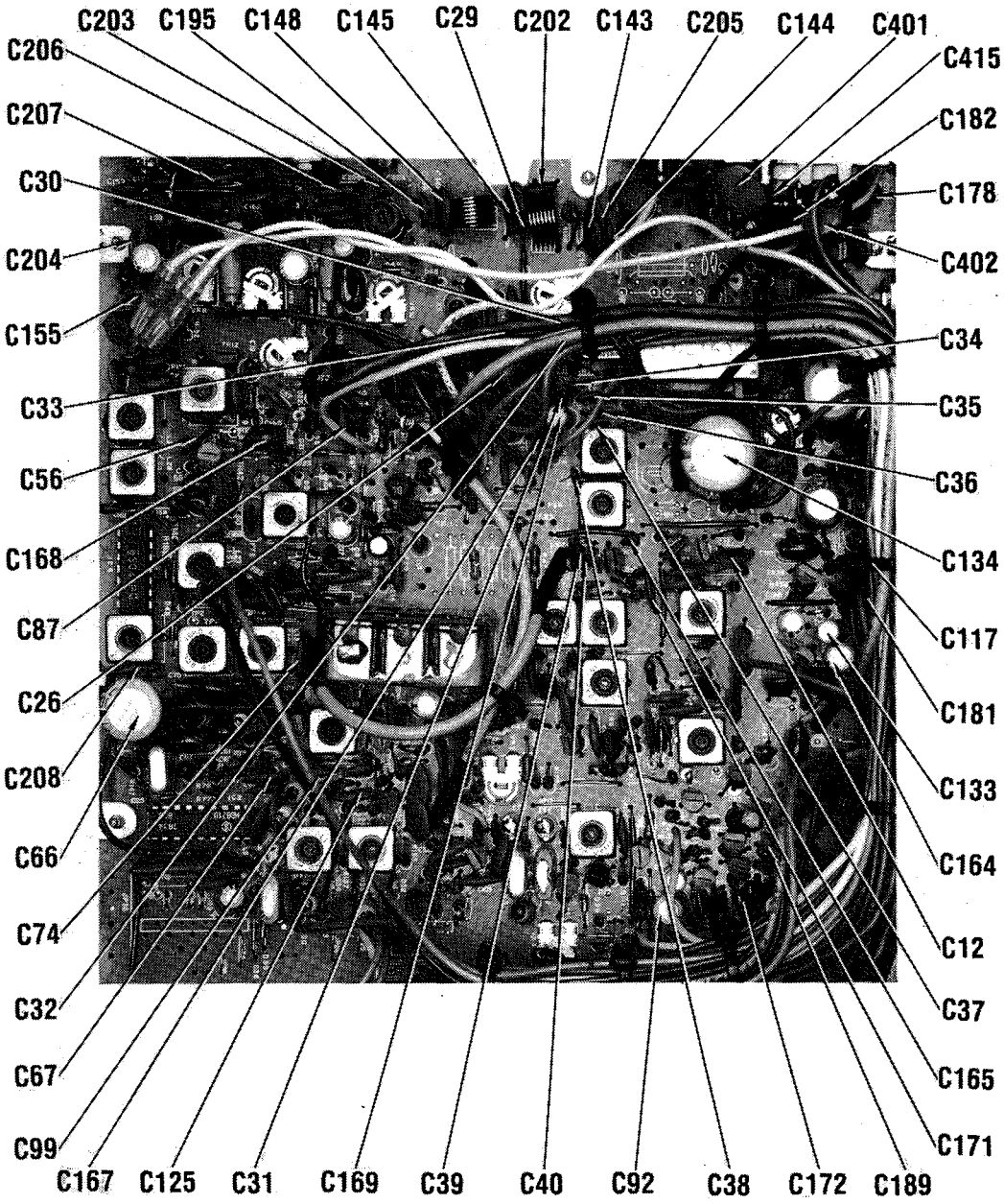
MAIN BOARD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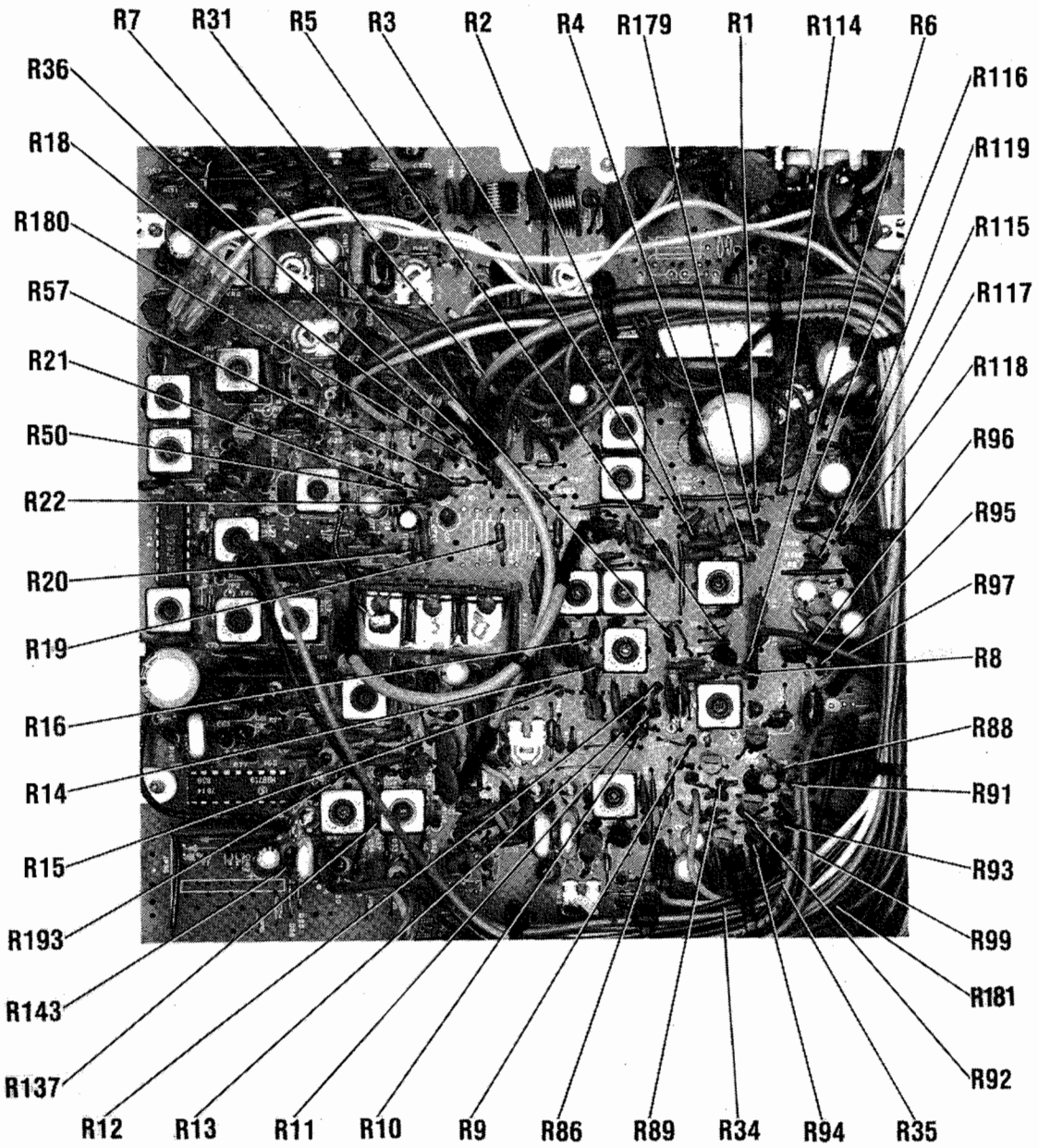
MAIN BOARD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R22
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R97
R19
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R16
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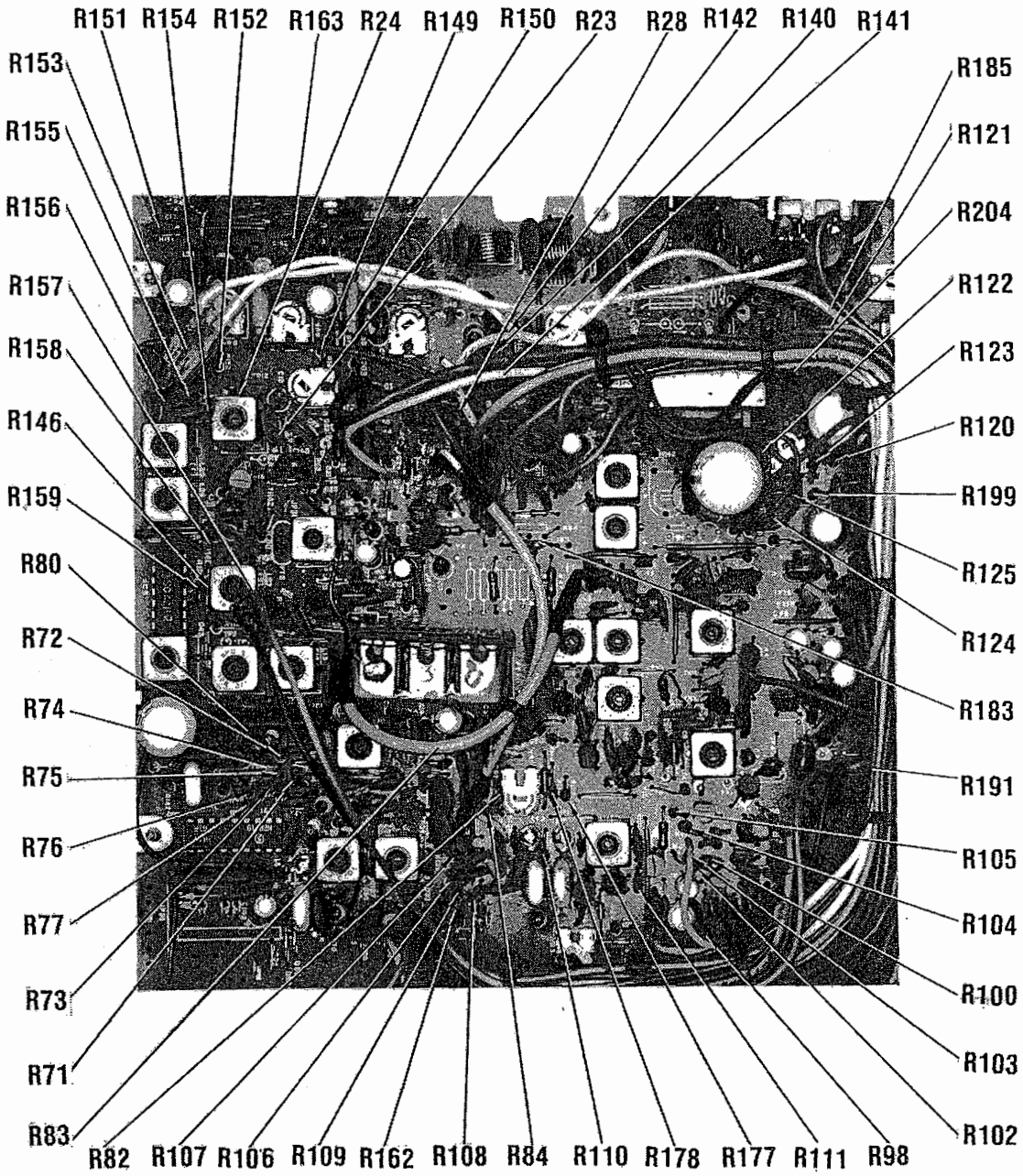
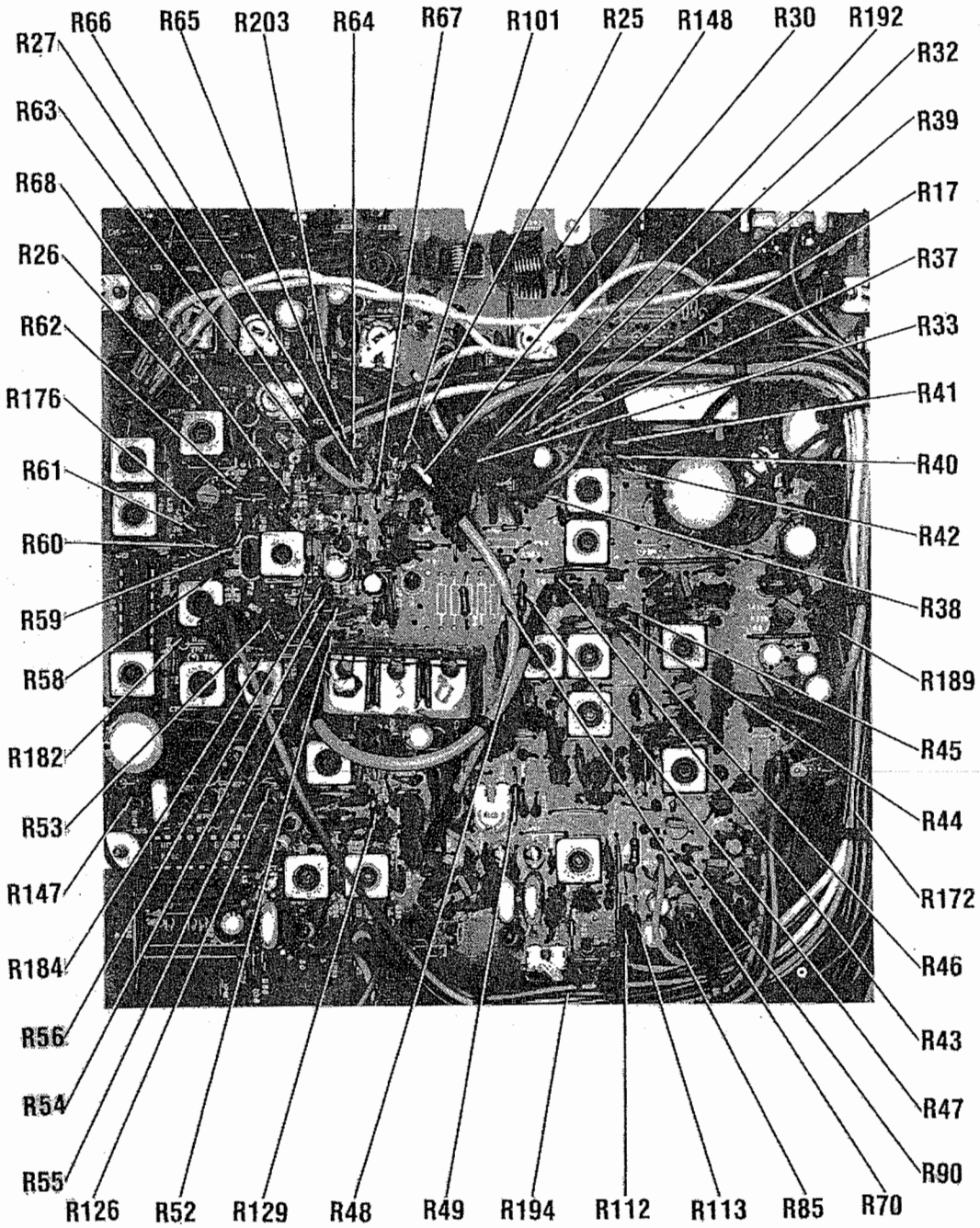
R14
R91
R15
R93
R193
R99
R143
R181
R137
R92
R12
R13
R11
R10
R9
R86
R89
R34
R94
R35

MAIN BOARD

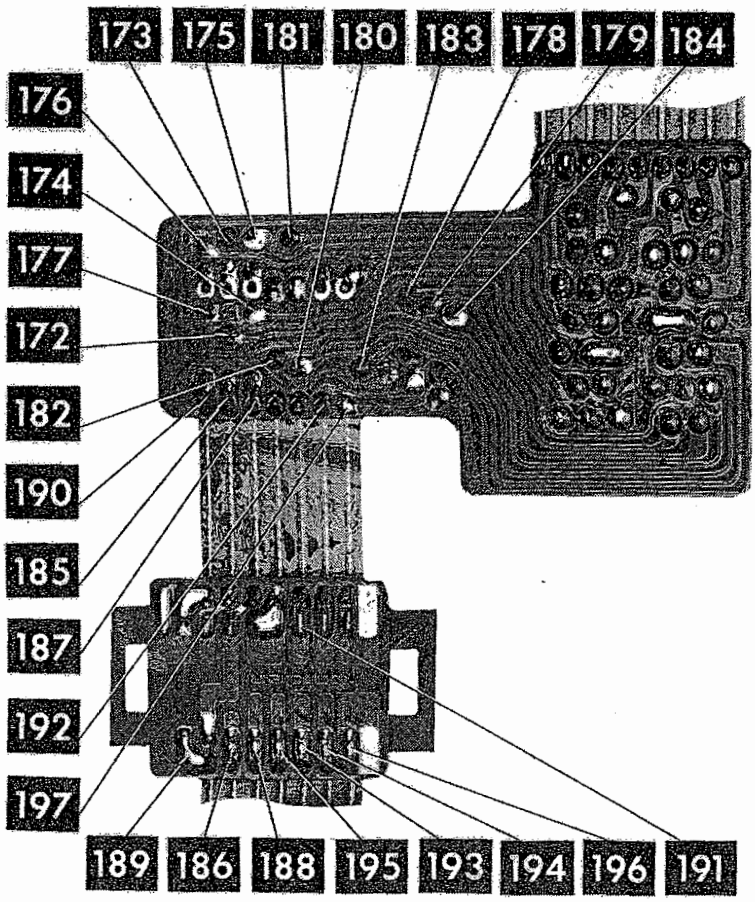

R151 R154 R152 R163 R24 R149 R150 R23 R28 R142 R140 R141
R153
R155
R156
R157
R158
R146
R159
R80
R72
R74
R75
R76
R77
R73
R71
R83
R185
R121
R204
R122
R123
R120
R199
R125
R124
R183
R191
R105
R104
R100
R103
R102
R82 R107 R106 R109 R162 R108 R84 R110 R178 R177 R111 R98

MAIN BOARD

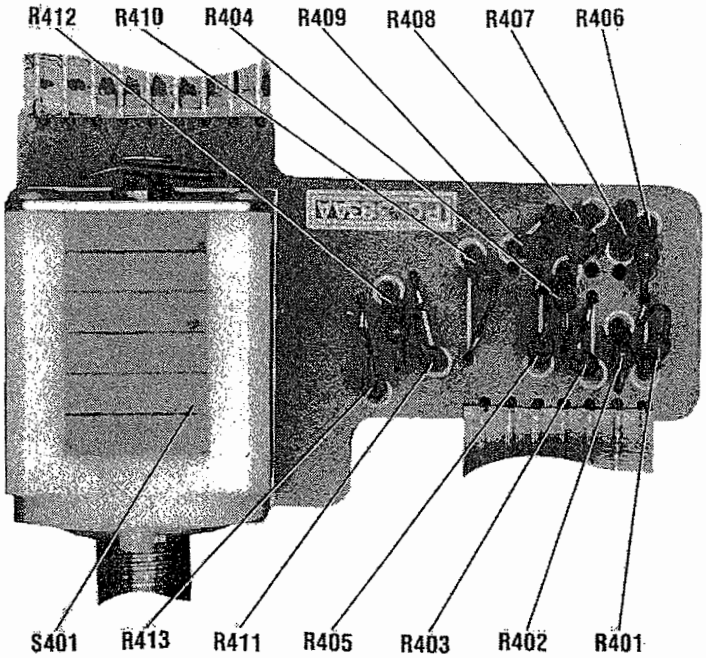

R66
R65
R203
R64
R67
R101
R25
R148
R30
R192
R27
R32
R63
R39
R68
R17
R26
R37
R62
R33
R176
R41
R61
R40
R60
R42
R59
R38
R58
R189
R182
R45
R53
R44
R147
R172
R184
R46
R56
R43
R54
R47
R55
R90
R126
R52
R129
R48
R49
R194
R112
R113
R85
R70

MAIN BOARD

A Howard W. Sams CIRCUITRACE® Photo



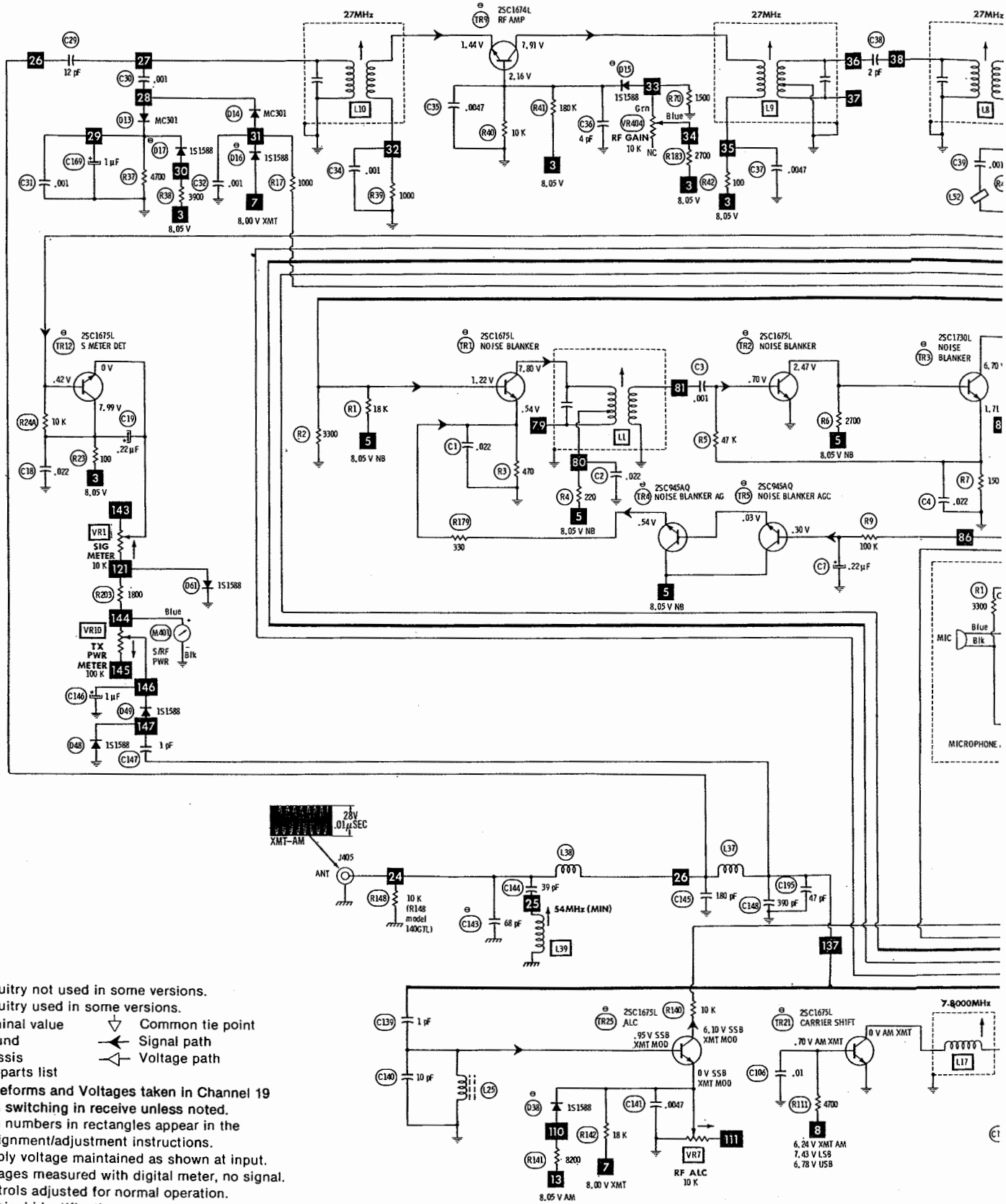
CH. SELECTOR & LED BOARD



CH. SELECTOR BOARD

BLOCK DIAGRAM

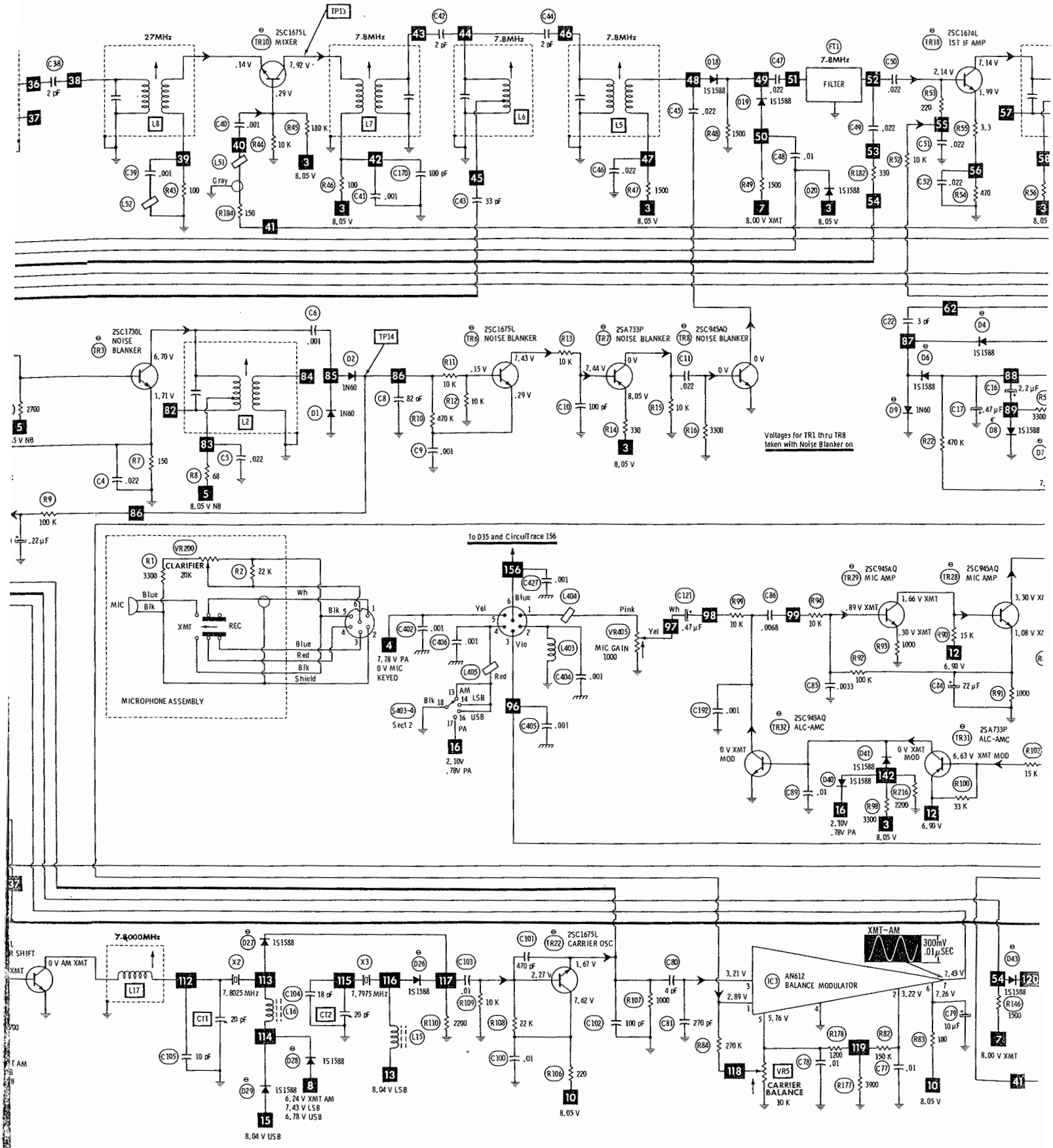
ROBYN MODEL SB-505D



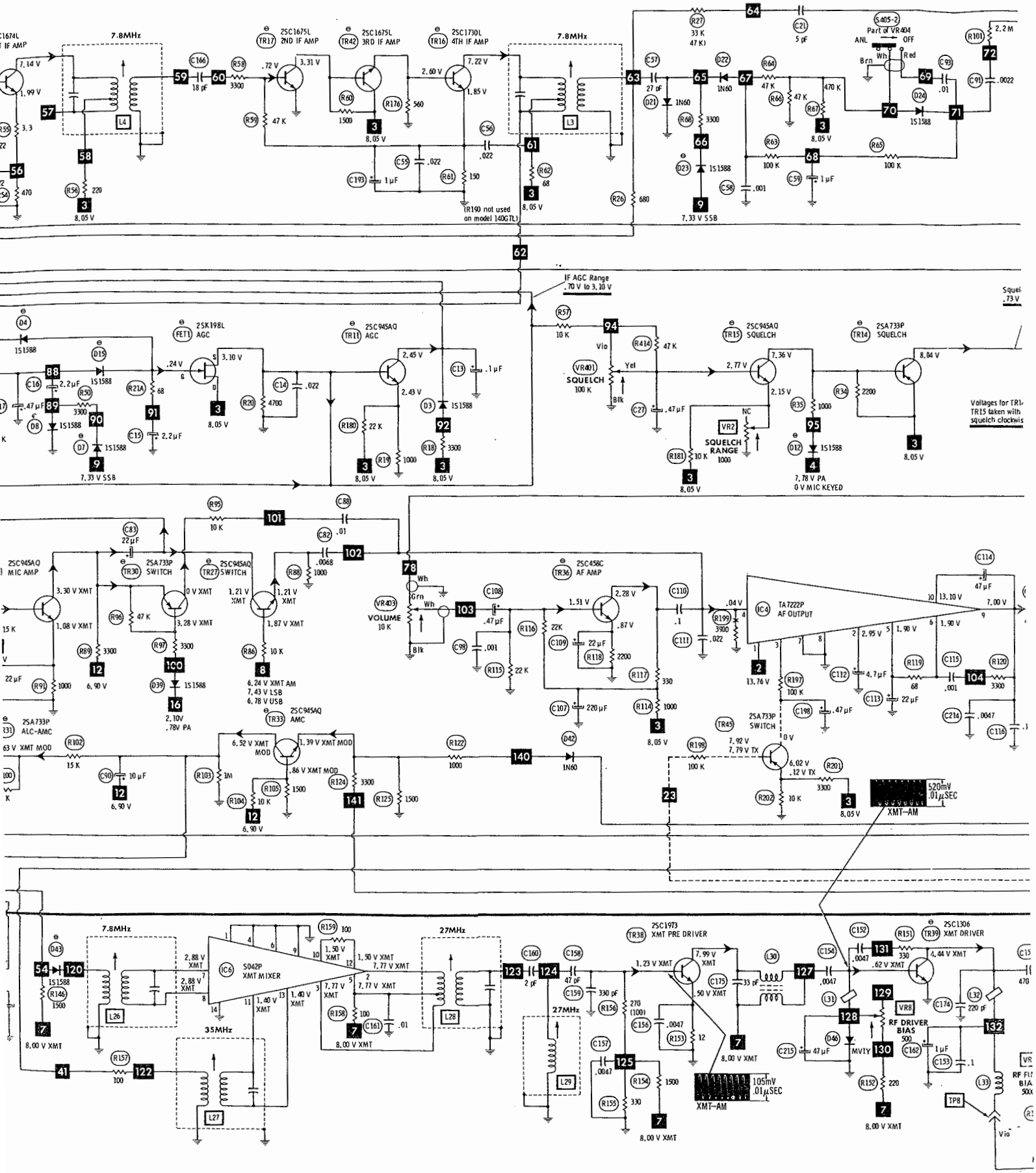
—✕— Circuitry not used in some versions.
– – – Circuitry used in some versions.
※ Nominal value
⏚ Ground
Chassis
⊖ See parts list
▽ Common tie point
Signal path
Voltage path

Waveforms and Voltages taken in Channel 19 with switching in receive unless noted.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltage maintained as shown at input.
Voltages measured with digital meter, no signal.
Controls adjusted for normal operation.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 5% unless noted.
Value in ( ) used in some versions.
Arrow head(s) at coils and transformers indicates accessibility of tuning slug(s).

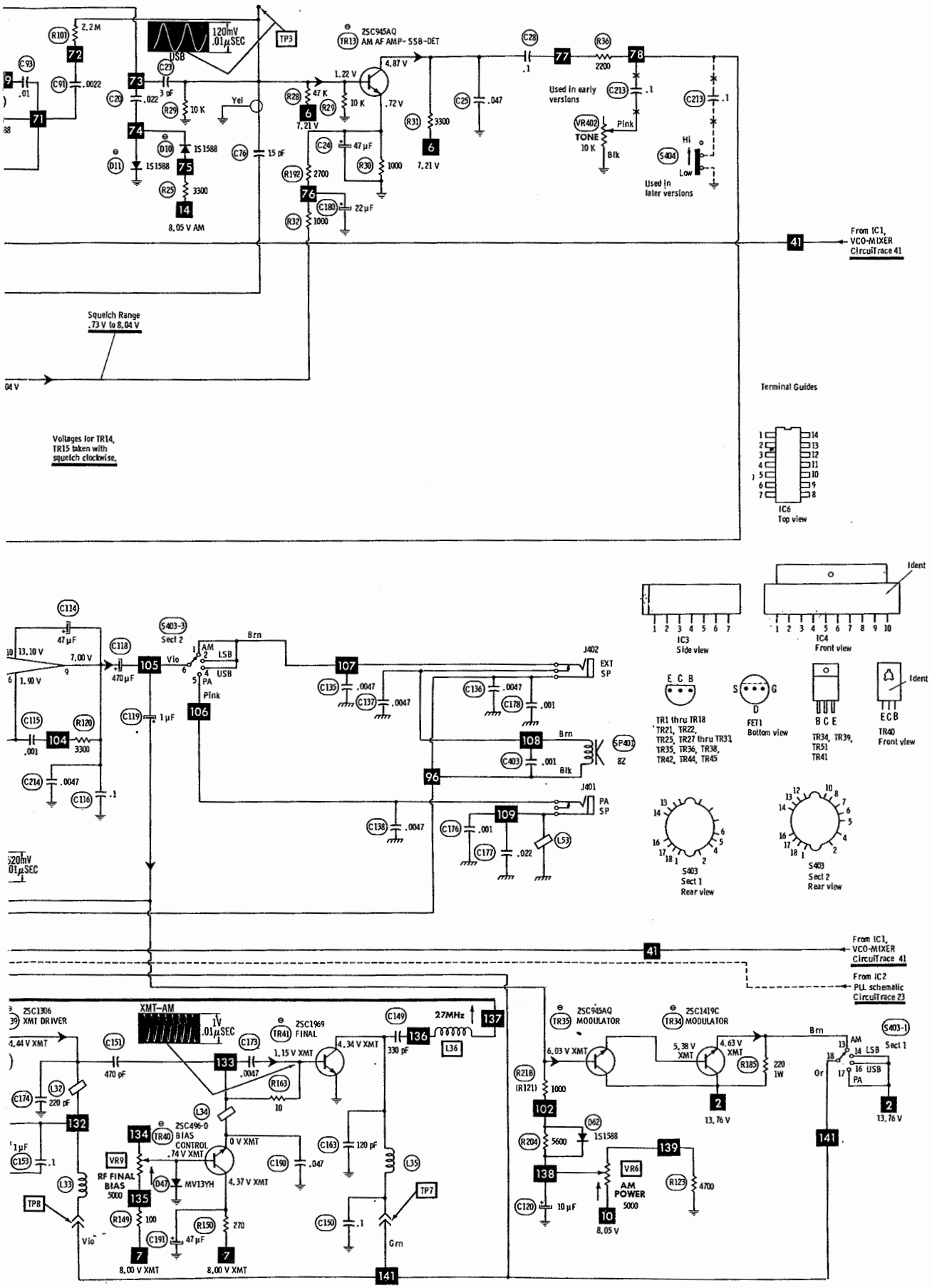
A PHOTOFACT STANDARD NOTATION SCHEMATIC
WITH CIRCUITRACE®

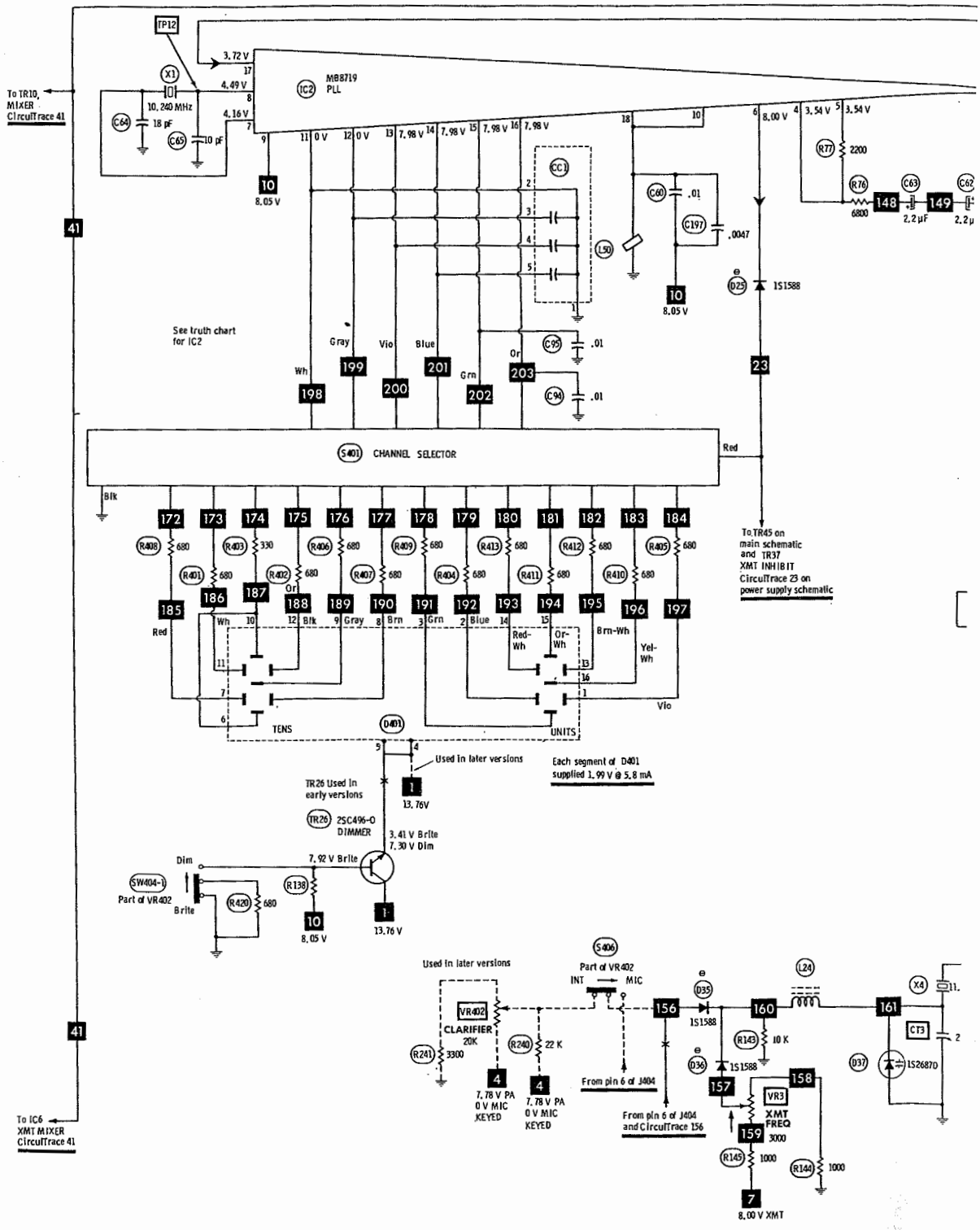

27MHz
7.8MHz
7.8MHz
7.8MHz
TP13
TP14
2SC1675L MIXER (TR10)
2SC1730L NOISE BLANKER (TR3)
2SC1675L NOISE BLANKER (TR6)
2SA733P NOISE BLANKER (TR7)
2SC945AQ NOISE BLANKER (TR8)
2SC1674L 1ST IF AMP (TR18)
FILTER (FT1)
Voltages for TR1 thru TR8 taken with Noise Blanker on
CLARIFIER 20K
MICROPHONE ASSEMBLY
MIC
XMT
REC
To D35 and CircuitTrace 156
MIC GAIN 1000
2SC945AQ MIC AMP (TR29)
2SC945AQ MIC AMP (TR28)
2SC945AQ ALC-AMC (TR32)
2SA733P ALC-AMC (TR31)
0 V XMT MOD
6.63 V XMT MOD
7.8000MHz
0 V AM XMT
2SC1675L CARRIER OSC (TR22)
AN612 BALANCE MODULATOR (IC3)
CARRIER BALANCE 10 K (VR5)
XMT-AM
300mV .01μSEC
8.00 V XMT
6.24 V XMT AM
7.43 V LSB
6.78 V USB
8.04 V USB
8.04 V LSB
2.10V .78V PA
7.78 V PA 0 V MIC KEYED
8.05 V NB
8.00 V XMT
8.05 V
6.90 V
7.26 V

MA IN SCHEM


7.8MHz
2SC1675L 2ND IF AMP
2SC1675L 3RD IF AMP
2SC1730L 4TH IF AMP
7.8MHz
IF AGC Range .70 V to 3.10 V
2SK198L AGC
2SC945AQ AGC
2SC945AQ SQUELCH
2SA733P SQUELCH
SQUELCH 100 K
SQUELCH RANGE 1000
Voltages for TR1 TR15 taken with squelch clockwis
2SC945AQ MIC AMP
2SA733P SWITCH
2SC945AQ SWITCH
VOLUME 10 K
2SC458C AF AMP
TA7222P AF OUTPUT
2SA733P ALC-AMC
2SC945AQ AMC
2SA733P SWITCH
6.52 V XMT MOD
1.39 V XMT MOD
.86 V XMT MOD
520mV .01μSEC
XMT-AM
7.8MHz
S042P XMT MIXER
27MHz
35MHz
2SC1973 XMT PRE DRIVER
2SC1306 XMT DRIVER
RF DRIVER BIAS
105mV .01μSEC
XMT-AM

SCHEMATIC


2SC945AQ
AM AF AMP- SSB-DET
TR13
120mV
.01μSEC
USB
TP3
R101 2.2M
C93 .01
C91 .0022
C23 3 pF
C20 .022
R29 10 K
Yel
D10 1S1588
D11 1S1588
C76 15 pF
R25 3300
8.05 V AM
R28 47 K
R29 10 K
1.22 V
4.87 V
.72 V
7.21 V
C24 47 μF
R192 2700
R30 1000
C180 22 μF
R32 1000
R31 3300
C25 .047
C28 .1
R36 2200
Used in early versions
C213 .1
VR402 TONE 10 K
Pink
Blk
S404
Hi
Low
Used in later versions
From IC1, VCO-MIXER CircuiTrace 41
Squelch Range .73 V to 8.04 V
Voltages for TR14, TR15 taken with squelch clockwise.
Terminal Guides
IC6 Top view
IC3 Side view
IC4 Front view
Ident
TR1 thru TR18 TR21, TR22, TR25, TR27 thru TR33, TR35, TR36, TR38, TR42, TR44, TR45
FET1 Bottom view
TR34, TR39, TR51 TR41
TR40 Front view
C114 47 μF
C118 470 μF
C119 1 μF
C115 .001
R120 3300
C214 .0047
C116 .1
S403-3 Sect 2
AM
LSB
USB
PA
Brn
Vio
Pink
J402 EXT SP
C135 .0047
C137 .0047
C136 .0047
C178 .001
C403 .001 Blk
SP401 8Ω
J401 PA SP
C138 .0047
C176 .001
C177 .022
L53
S403 Sect 1 Rear view
S403 Sect 2 Rear view
From IC1, VCO-MIXER CircuiTrace 41
From IC2 PLL schematic CircuiTrace 23
2SC1306 XMT DRIVER
4.44 V XMT
XMT-AM
1V
.01μSEC
C151 470 pF
C173 .0047
R163 10
TR41 2SC1969 FINAL
1.15 V XMT
4.34 V XMT
C149 27MHz
L36 330 pF
L32 220 nH
L34
TR40 2SC496-0 BIAS CONTROL .74 V XMT
0 V XMT
4.37 V XMT
VR9 RF FINAL BIAS 5000
D47 MV13YH
R149 100
R150 270
C191 47 μF
8.00 V XMT
C163 120 pF
C190 .047
C150 .1
L35
TP7
TP8
Grn
TR35 2SC945AQ MODULATOR
TR34 2SC1419C MODULATOR
6.03 V XMT
5.38 V XMT
4.63 V XMT
R185 220 1W
13.76 V
R218 (R121) 1000
D62 1S1588
R204 5600
C120 10 μF
VR6 AM POWER 5000
R123 4700
8.05 V
S403-1 Sect 1
Brn
Or
AM
LSB
USB
PA
13.76 V



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⊖ See parts list
▽ Common tie point
◀— Signal path
◁— Voltage path

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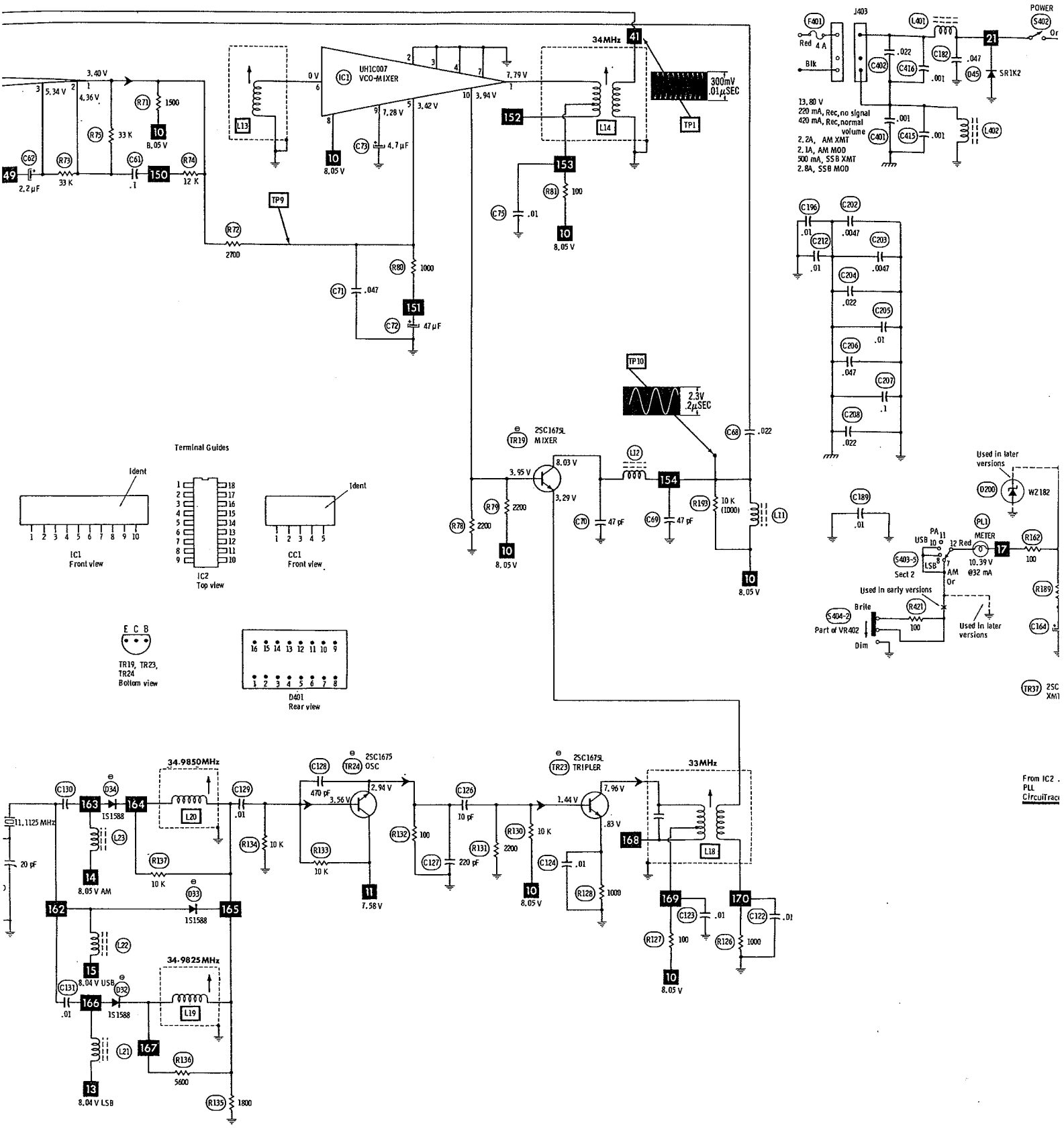
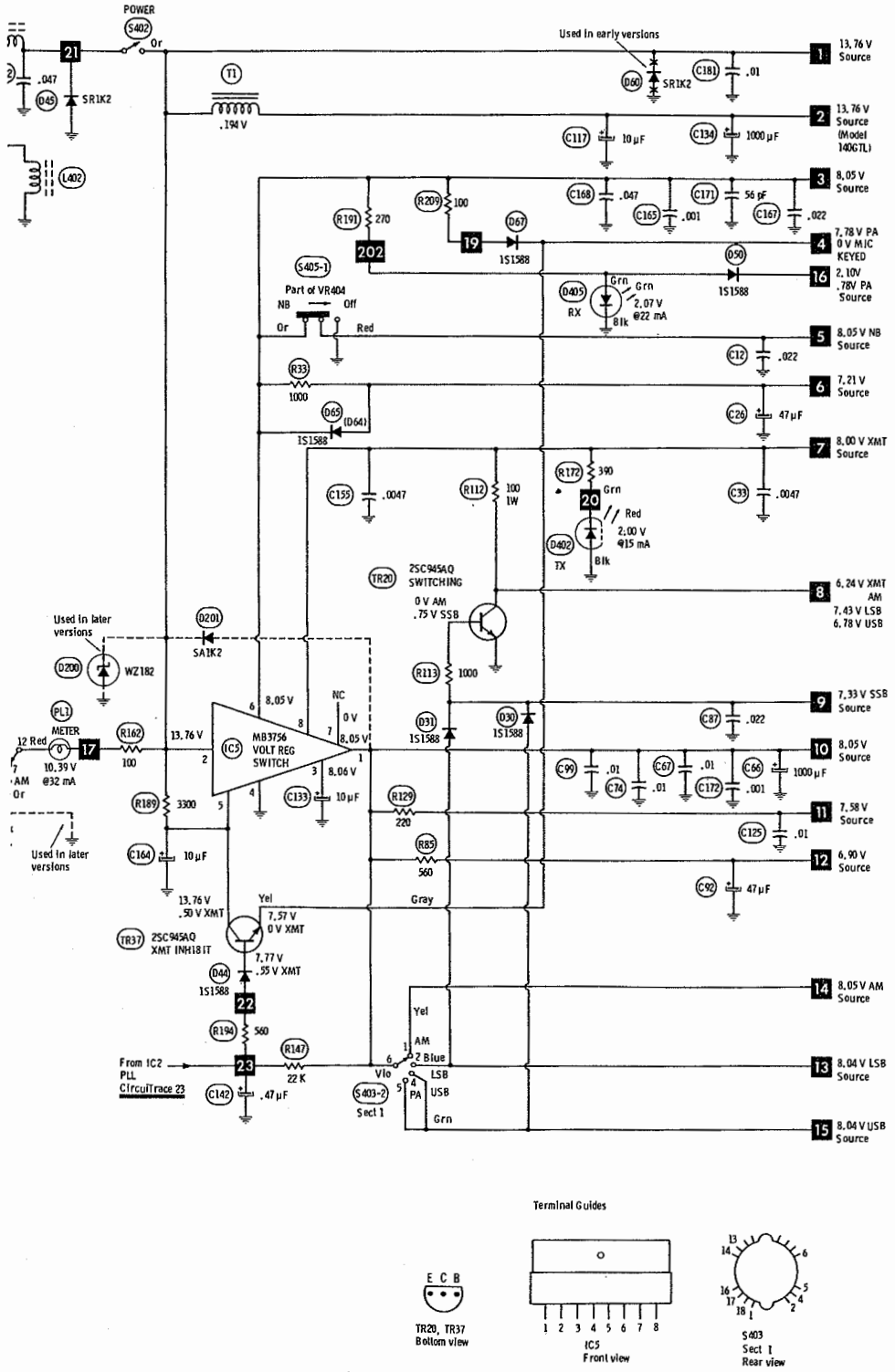


PLL & CH. SELECTOR SCHEMATIC



POWER SUPPLY SCHEMATIC

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	1N60	DG1N60	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
D2	1N60	DG1N60	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
D3	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D4	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D5	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D6	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D7	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D8	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D9	1N60	DG1N60	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
D10	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D11	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D12	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D13	MC301	DAC301			HEPR2500				ECG610			
D14	MC301	DAC301			HEPR2500				ECG610			
D15	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D16	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D17	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D18	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D19	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D20	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D21	1N60	DG1N60	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
D22	1N60	DG1N60	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
D23	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D24	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D25	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D26	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D27	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D28	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D29	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D30	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D31	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D32	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D33	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D34	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D35	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D36	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D37	1S2687D	DC687D			HEPR2502	REN 612			ECG612			103-176
D38	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D39	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D40	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D41	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D42	1N60	DG1N60	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-Z9001
D43	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D44	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D45	SR1K-2	DR2100	GE-504A	PTC201	HEPR0052	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
D46	MV-1Y	DVMV1Y		PTC301		REN 601	SK3463		ECG601			
D47	MV-13YH	DV13YH		PTC302					ECG605			
D48	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D49	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D50	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D60	SR1K-2	DR2100	GE-504A	PTC201	HEPR0052	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
D61	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D62	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D65	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D67	1S1588	DS1588	GE-514	PTC214	HEPR9137	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
FET1	2SK19BL	QF198L	GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312	TM312	WEP920	121-756
	2SK19	QKSK19	GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312	TM312	WEP920	121-756
IC1	UHIC-007	NRC007										
IC2	MB8719	NC8719										
IC3	AN612	NBN612							ECG1249			
IC4	TA7222P	NA222P										
IC5	MB3756	ND3756										
IC6	S042P	NI042P										
TR1	2SC1675L	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
	2SC1675	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
TR2	2SC1675L	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
	2SC1675	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
TR3	2SC1730L	QS1730	GE-17*	PTC136*	HEPS0025*	REN 107	SK3018*	RT-107A	ECG316*	TM316*	WEP535	121-972*
	2SC1730	QS1730	GE-17*	PTC136*	HEPS0025*	REN 107	SK3018*	RT-107A	ECG316*	TM316*	WEP535	121-972*
TR4	2SC945AQ	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945A	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
TR5	2SC945AQ	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945A	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
TR6	2SC1675L	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
	2SC1675	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
TR7	2SA733P	QTA733	GE-48	PTC127	HEPS0019*	REN 294	SK3138	RT-303	ECG294	TM294/**	WEP911	121-952
	2SA733	QTA733	GE-48	PTC127	HEPS0019*	REN 294	SK3138	RT-303	ECG294	TM294/**	WEP911	121-952
TR8	2SC945AQ	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945A	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
TR9	2SC1674L	QS1674	GE-61	PTC132*	HEPS0010*	REN 229*	SK3246	RT-308	ECG229*	TM229*	WEP784	121-Z9021
	2SC1674	QS1674	GE-61	PTC132*	HEPS0010*	REN 229*	SK3246	RT-308	ECG229*	TM229*	WEP784	121-Z9021
TR10	2SC1675L	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
	2SC1675	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
TR11	2SC945AQ	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945A	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

ITEM No.	TYPE No.	MFGR. PART No.	REPLACEMENT DATA									
			GENERAL ELECTRIC PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
TR12	2SC1675L	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
	2SC1675	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
TR13	2SC945AQ	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945A	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
TR14	2SA733P	QTA733	GE-48	PTC127	HEPS0019*	REN 294	SK3138	RT-303	ECG294	TM294/**	WEP911	121-952
	2SA733	QTA733	GE-48	PTC127	HEPS0019*	REN 294	SK3138	RT-303	ECG294	TM294/**	WEP911	121-952
TR15	2SC945AQ	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945A	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
TR16	2SC1730L	QS1730	GE-17*	PTC136*	HEPS0025*	REN 107	SK3018*	RT-107A	ECG316*	TM316*	WEP535	121-972*
	2SC1730	QS1730	GE-17*	PTC136*	HEPS0025*	REN 107	SK3018*	RT-107A	ECG316*	TM316*	WEP535	121-972*
TR17	2SC1674L	QS1674	GE-61	PTC132*	HEPS0010*	REN 229*	SK3246	RT-308	ECG229*	TM229*	WEP784	121-Z9021
	2SC1674	QS1674	GE-61	PTC132*	HEPS0010*	REN 229*	SK3246	RT-308	ECG229*	TM229*	WEP784	121-Z9021
TR18	2SC1674L	QS1674	GE-61	PTC132*	HEPS0010*	REN 229*	SK3246	RT-308	ECG229*	TM229*	WEP784	121-Z9021
	2SC1674	QS1674	GE-61	PTC132*	HEPS0010*	REN 229*	SK3246	RT-308	ECG229*	TM229*	WEP784	121-Z9021
TR19	2SC1675L	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
	2SC1675	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
TR20	2SC145AQ	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945A	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
TR21	2SC1675L	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
	2SC1675	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
TR22	2SC1675L	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
	2SC1675	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
TR23	2SC1675L	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
	2SC1675	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
TR24	2SC1675L	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
	2SC1675	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
TR25	2SC1675L	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
	2SC1675	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
TR26	2SC496-0	QSC496	GE-57	PTC163	HEPS5000	REN 295	SK3253	RT-162	ECG295	TM295/**	WEP913	121-Z9002
	2SC496	QSC496	GE-57	PTC163	HEPS5000	REN 295	SK3253	RT-162	ECG295	TM295/**	WEP913	121-Z9002
TR27	2SC945AQ	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945A	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
TR28	2SC945AQ	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945A	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
TR29	2SC945AQ	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945A	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
TR30	2SA733P	QTA733	GE-48	PTC127	HEPS0019*	REN 294	SK3138	RT-303	ECG294	TM294/**	WEP911	121-952
	2SA733	QTA733	GE-48	PTC127	HEPS0019*	REN 294	SK3138	RT-303	ECG294	TM294/**	WEP911	121-952
TR31	2SA733P	QTA733	GE-48	PTC127	HEPS0019*	REN 294	SK3138	RT-303	ECG294	TM294/**	WEP911	121-952
	2SA733	QTA733	GE-48	PTC127	HEPS0019*	REN 294	SK3138	RT-303	ECG294	TM294/**	WEP911	121-952
TR33	2SC945AQ	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945A	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
TR34	2SC1419C	QS1419	GE-66	PTC167	HEPS5027	REN 152	SK3054	RT-197	ECG152	TM152	WEP745	121-987-02
	2SC1419	QS1419	GE-66	PTC167	HEPS5027	REN 152	SK3054	RT-197	ECG152	TM152	WEP745	121-987-02
TR35	2SC945AQ	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945A	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
TR36	2SC458C	QSC458	GE-210	PTC121*	HEPS0009*	REN 289	SK3122	RT-187	ECG289	TM289/**	WEP458	121-Z9000A*
	2SC458	QSC458	GE-210	PTC121*	HEPS0009*	REN 289	SK3122	RT-187	ECG289	TM289/**	WEP458	121-Z9000A*
TR37	2SC945AQ	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945A	QSC945	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
TR38	2SC1973	QS1973	GE-335				SK3250		ECG315	TM315	WEP914	921-1008
TR39	2SC1306	QS1306	GE-215	PTC186		REN 235	SK3197	RT-146	ECG235	TM235/**	WEP785	121-Z9039
TR40	2SC496-0	QSC496	GE-57	PTC163	HEPS5000	REN 295	SK3253	RT-162	ECG295	TM295/**	WEP913	121-Z9002
	2SC496	QSC496	GE-57	PTC163	HEPS5000	REN 295	SK3253	RT-162	ECG295	TM295/**	WEP913	121-Z9002
TR41	2SC19698	QS1969	GE-216	PTC186		REN 236	SK3197	RT-158	ECG236	TM236	WEP840	121-Z9040
	2SC1969	QS1969	GE-216	PTC186		REN 236	SK3197	RT-158	ECG236	TM236	WEP840	121-Z9040
TR42	2SC1675L	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
	2SC1675	QS1675	GE-213	PTC132*	HEPS0025*	REN 229*	SK3122	RT-308	ECG229*	TM229*	WEP773	121-Z9021
TR45	2SA733P	QTA733 (1)	GE-48	PTC127	HEPS0019*	REN 294	SK3138	RT-303	ECG294	TM294/**	WEP911	121-952
	2SA733	QTA733	GE-48	PTC127	HEPS0019*	REN 294	SK3138	RT-303	ECG294	TM294/**	WEP911	121-952

* Lead configuration may vary from original.
/** Also available as exact type replacement.
(1) Used in some versions.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFGR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C7	.22 25V			TDC224M050EL	QDT1-10	SD50-R229
C13	.1 25V			TDC104M050EL	QDT1-2	SD50-R109
C15	2.2 25V		PC2-100	VTT2R2A50	QV1-19	EV-1517
C16	2.2 25V			TDC225M035FL	QDT1-31	SD35-2R29
C17	.47 50V		PC1-50	VTTR47A63	QV1-3	EV-1610
C19	.22 25V			TDC224M050EL	QDT1-10	SD50-R229
C24	47 10V		PC50-16	VTT47D16	QV1-73	EV-1226
C26	47 10V		PC50-16	VTT47D16	QV1-73	EV-1226
C27	.47 5DV		PC1-50	VTTR47A63	QV1-3	EV-1610
C59	1 25V			TDC105M035EL		SD35-19
C62	2.2 25V			TDC225M035FL		SD35-2R29
C63	2.2 25V			TDC225M035FL		SD35-2R29
C66	1000 10V		PC1000-16	VTT1000L10	QV1-179	EV-1160
C72	4.7 10V			TDC475M010EL	QDT1-48	SD10-4R79
C73	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319
C79	47 10V		PC50-16	VTT47D16	QV1-73	EV-1226
C83	2.2 25V		PC2-100	VTT2R2A50	QV1-19	EV-1517
C84	22 6.3V			TDC226M015FL	QDT1-82	SD15-229
C90	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C92	47 10V		PC50-16	VTT47D16	QV1-73	EV-1226
C107	220 10V		PC250-10	VTT220F10	QV1-115	EV-1140
C108	.47 50V		PC1-50	VTTR47A63	QV1-3	EV-1610
C109	22 6.3V			TDC226M015FL	QDT1-82	SD15-229
C112	4.7 25V		PC5-50	VTT4R7B50	QV1-27	EV-1319
C113	22 6.4V			TDC226M015FL	QDT1-82	SD15-229
C114	47 10V		PC50-16	VTT47D16	QV1-73	EV-1226

ROBYN MODEL SB-505D

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
C117	10 25V		PC10-25	VTT10B25	QV1-43	EV-1322
C118	470 10V		PC500-16	VTT470K16	QV1-149	EV-1150
C119	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C120	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C121	.47 50V		PC1-50	VTTR47A63	QV1-3	EV-1610
C133	10 16V		PC10-25	VTT10B25	QV1-41	EV-1222
C134	1000 25V		WBR1000-25*	VTT1000M25	QV1-185	EV-1360
C142	.47 50V		PC1-50	VTTR47A63	QV1-3	EV-1610
C146	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C162	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C164	10 25V		PC10-25	VTT10B25	QV1-43	EV-1322
C169	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C180	22 10V		PC25-25	VTT22B16	QV1-55	EV-1224
C191	47 10V		PC50-16	VTT47D16	QV1-73	EV-1226
C193	1 25V			TDC105M035EL		SD35-19
C198	.47	(1)				
C215	47 10V		PC50-16	VTT47D16	QV1-73	EV-1226

* Axial replacement for radial device.
(1) Used in some versions.

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	.022 50V		DC-253	MGP025	TA125		TG-S25
C2	.022 50V		DC-253	MGP025	TA125		TG-S25
C3	.001 50V		DD-102		GP210		10TS-D10
C4	.022 50V		DC-253	MGP025	TA125		TG-S25
C5	.022 50V		DC-253	MGP025	TA125		TG-S25
	.001 50V		DD-102		GP210		10TS-D10
C6	.022 50V		DC-253	MGP025	TA125		TG-S25
C8	82 NPO 50V 5%		DTZ-82	NP082	CN0482		10TCC-Q82
C9	.001 50V		DD-102		GP210		10TS-D10
C10	100 N220 50V			*	*	*	10TCR-T10
C11	.022 50V		DC-253	MGP025	TA125		TG-S25
C12	.022 50V		DC-253	MGP025	TA125		TG-S25
C14	.022 50V		DC-253	MGP025	TA125		TG-S25
C18	.022 50V		DC-253	MGP025	TA125		TG-S25
C20	.022 50V		DC-253	MGP025	TA125		TG-S25
C21	5 NPO 50V			*	*	*	10TCC-V50
C22	3 NPO 50V		DTZ-3R3	NP03P3	CN0533		10TCC-V33
C23	3 NPO 50V		DTZ-3R3	NP03P3	CN0533		10TCC-V33
C25	.047 50V 10%			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C28	.1 50V 10%			WMF05P1	M192P1049R8	QFT2-215	1FT-P10
C29	12 NPO 50V				CN0412		10TCC-Q12
C30	.001 50V		DD-102		GP210		10TS-D10
C31	.001 50V		DD-102		GP210		10TS-D10
C32	.001 50V		DD-102		GP210		10TS-D10
C33	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C34	.001 50V		DD-102		GP210		10TS-D10
C35	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C36	4 NPO 50V		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C37	.0047 50V		DD-472	GP47DD	GP247		5GA-D47
C38	2 NPO 50V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C39	.001 50V		DD-102		GP210		10TS-D10
C40	.001 50V		DD-102		GP210		10TS-D10
C41	.001 50V		DD-102		GP210		10TS-D10
C42	2 NPO 50V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C43	33 NPO 50V 5%		DTZ-33	NP033	CN0433		10TCC-Q33
C44	2 NPO 50V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C45	.022 50V		DC-253	MGP025	TA125		TG-S25
C46	.022 50V		DC-253	MGP025	TA125		TG-S25
C47	.022 50V		DC-253	MGP025	TA125		TG-S25
C48	.01 50V		UK50-103		MAG5011		
C49	.022 50V		DC-253	MGPD25	TA125		TG-S25
C50	.022 50V		DC-253	MGP025	TA125		TG-S25
C51	.022 50V		DC-253	MGP025	TA125		TG-S25
C52	.022 50V		DC-253	MGP025	TA125		TG-S25
C55	.022 50V 10%			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C56	.022 50V		DC-253	MGP025	TA125		TG-S25
C57	27 NPO 50V 5%				CN0427		10TCC-Q27
C58	.001 50V 10%			DPMS6D1	M192P10292	QFT2-1	1FT-D10
C60	.01 50V		UK50-103		MAG5011		
C61	.1 50V 10%			WMF05P1	M192P1049R8	QFT2-215	1FT-P10
C64	18 NPO 50V				CN0418		10TCC-Q18
C65	10 NPO 50V		DTZ-10	NP010	CN0410		10TCC-Q10
C67	.01 50V		UK50-103		MAG5011		
C68	.022 50V		DC-253	MGP025	TA125		TG-S25
C69	47 NPO 50V 10%		DTZ-47	NP047	CN0447		10TCC-Q47
C70	47 NPO 50V 10%		DTZ-47	NP047	CN0447		10TCC-Q47
C71	.047 50V 10%			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C74	.01 50V		UK50-103		MAG5011		
C75	.01 50V		UK50-103		MAG5011		
C76	15 NPO 50V 5%		DTZ-15	NP015	CN0415		10TCC-Q15
C77	.01 50V		UK50-103		MAG5011		
C78	.01 50V		UK50-103		MAG5011		
C80	4 NPO 50V		DTZ-4R7	NP04P7	CN0547		10TCC-V47
C81	270 N750 50V 10%						
C82	.0068 50V 10%			WMF1D68	M192P6829R8	QFT2-73	1FT-D68
C85	.0033 50V 10%			WMF1D33	M192P3329R8	QFT2-43	1FT-D33
C86	.0068 50V 10%			WMF1D68	M192P6829R8	QFT2-73	1FT-D68
C87	.022 50V		DC-253	MGP025	TA125		TG-S25
	.01 50V 10%			WMF1S1	M192P1D39R8	QFT2-91	1FT-S10
C88	.047 50V			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47

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
C89	.01 50V 10%			WMF1S1	M192P1039R8	QFT2-91	1FT-S10
	.001 50V 10%			DPMS6D1	M192P10292	QFT2-1	1FT-D10
C91	.0022 50V			DPMS6D22	M192P2229R8	QFT2-27	1FT-D22
C93	.01 50V 10%			WMF1S1	M192P1039R8	QFT2-91	1FT-S10
C94	.01 50V		UK50-103		MAG5011		
C95	.01 50V		UK50-103		MAG5011		
C98	.001 50V		DD-102		GP210		10TS-D10
C99	.01 50V		UK50-103		MAG5011		
C100	.01 50V		UK50-103		MAG5011		
C101	470 50V		DD-471	GP470	GP347		10TS-T47
C102	100 NPO 50V 5%		DTZ-100	NP0100	CN0310		10TCC-T10
C103	.01 50V		UK50-103		MAG5011		
C104	18 NPO 50V 5%				CN0418		10TCC-Q18
C105	10 NPO 50V		DTZ-10	NP010	CN0410		10TCC-Q10
C106	.01 50V		UK50-103		MAG5011		
C110	.1 50V 10%			WMF05P1	M192P1049R8	QFT2-215	1FT-P10
C111	.022 50V 10%			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C115	.001 50V 10%			DPMS6D1	M192P10292	QFT2-1	1FT-D10
C116	.1 50V 10%			WMF05P1	M192P1049R8	QFT2-215	1FT-P10
C122	.01 50V		UK50-103		MAG5011		
C123	.01 50V		UK50-103		MAG5011		
C124	.01 50V		UK50-103		MAG5011		
C125	.01 50V		UK50-103		MAG5011		
C126	10 NPO 50V		DTZ-10	NP010	CN0410		10TCC-Q10
C127	220 50V		DTZ-220				10TCC-T22
C128	470 50V		DD-471	GP470	GP347		10TS-T47
C129	.01 50V		UK50-103		MAG5011		
C130	.01 50V		UK50-103		MAG5011		
C131	.01 50V		UK50-103		MAG5011		
C135	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C136	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C137	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C138	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C139	1 NPO 50V				CN0510		10TCC-V10
C140	10 NPO 50V		DTZ-10	NP010	CN0410		10TCC-Q10
C141	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C143	68 NPO 50V 5%		DTZ-68	NP068	CN0468		10TCC-Q68
C144	39 NPO 50V 5%				CN0439		10TCC-Q39
C145	180 N220 50V 10%			*	*	*	10TCR-T18
C147	1 NPO 50V				CN0510		10TCC-V10
C148	390 N750 50V 10%		DTN-390				10TCU-T39
C149	330 N750 50V 5%		DTN-330	N330	CN7333		10TCU-T33
C150	.1 50V 10%			WMF05P1	M192P1049R8	QFT2-215	1FT-P10
C151	470 N750 50V 5%		DTN-470				10TCU-T47
C152	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C153	.1 50V 10%			WMF05P1	M192P1049R8	QFT2-215	1FT-P10
C154	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C155	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C156	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C157	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C158	47 NPO 50V 10%		DTZ-47	NP047	CN0447		10TCC-Q47
C159	330 N750 50V 5%		DTN-330	N330	CN7333		10TCU-T33
C160	2 NPO 50V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C161	.01 50V 10%			WMF1S1	M192P1039R8	QFT2-91	1FT-S10
C163	120 N220 50V 10%			*	*	*	10TCR-T12
C165	.001 50V		DD-102		GP210		10TS-D10
C166	.022 50V		DC-253	MGP025	TA125		TG-S25
C167	.022 50V		DC-253	MGP025	TA125		TG-S25
C168	.047 50V			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C170	100 50V		DTZ-100	NP0100	CN0310		10TCC-T10
C171	56 NPO 50V 5%				CN0456		10TCC-Q56
C172	.001 50V		DD-102		GP210		10TS-D10
C173	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C174	220 N750 50V 10%		DTN-220	N220	CN7322		10TCU-T22
C175	33 50V		DTZ-33	NP033	CN0433		10TCC-Q33
C176	.001 50V		DD-102		GP210		10TS-D10
C177	.022 50V		DC-253	MGP025	TA125		TG-S25
C178	.001 50V		DD-102		GP210		10TS-D10
C181	.01 50V		UK50-103		MAG5011		
C182	.047 50V		UK50-503		MAG5015		
C189	.01 50V		UK50-103		MAG5011		
C190	.047 50V 10%			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C192	.001 50V		DD-102		GP210		10TS-D10
C195	47 NPO 50V 10%		DTZ-47	NP047	CN0447		10TCC-Q47
C196	.01 50V		UK50-103		MAG5011		
C197	.0047 50V			WMF1D47	M192P4729R8	QFT2-63	1FT-D47
C202	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C203	.0047 50V		DD-472	GP4700	GP247		5GA-D47
	.022 50V		DC-253	MGP025	TA125		TG-S25
C204	.01 50V		UK50-103		MAG5011		
C205	.01 50V		UK50-103		MAG5011		
	.047 50V		UK50-503		MAG5015		
C206	.022 50V		DC-253	MGP025	TA125		TG-S25
C207	.1 50V		CK-104		MAG5001		
C208	.022 50V		DC-253	MGP025	TA125		TG-S25
C212	.01 50V		UK50-103		MAG5011		
C213	.1 50V 10%			WMF05P1	M192P1049R8	QFT2-215	1FT-P10
C214	.047 50V 10%			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C401	.001 50V						
C402	.022 50V		DC-253	MGP025	TA125		TG-S25
C404	.001 50V		CY15C102M	FA102K03	SM210	QFT2-1	1FT-D10
C405	.001 50V		CY15C102M	FA102K03	SM210	QFT2-1	1FT-D10
C406	.001 50V		CY15C102M	FA102K03	SM210	QFT2-1	1FT-D10
C407	.001 50V		CY15C102M	FA102K03	SM210	QFT2-1	1FT-D10
C415	.001 50V		CY15C102M	FA102K03	SM210	QFT2-1	1FT-D10
C416	.001 50V		CY15C102M	FA102K03	SM210	QFT2-1	1FT-D10
C427	.001 50V		CY15C102M	FA102K03	SM210	QFT2-1	1FT-D10

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
CT1	20	510055					
CT2	20	510055					
CT3	20	510055					
CC1		NN0111 (1)					

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
(1) Consists of three capacitors.

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA			
			MFGR. PART No.	CENTRALAB PART No.	MALLORY PART No.	TRW PART No.
VR1	Sig Meter	10K	RS1033			U260R103B
VR2	Squelch Range	1000	RS1023			U260R102B
VR3	XMT Frequency	3000	RS3023			U260R502B
VR5	Carrier Balance	10K	RS1033			U260R103B
VR6	AM Power	5000	RS5023			U260R502B
VR7	RF ALC	10K	RS1033			U260R103B
VR8	RF Driver Bias	500	RS5013			U260R501B
VR9	RF Final Bias	5000	RS5023			U260R502B
VR10	TX Power Meter	100K	RS1043			U260R104B
VR200	F. Tune/Clarifier	20K	505020	B16-125		
VR401	Squelch	100K	520015			
VR402	Tone/Dim Switch	10K	505023 (18)			
VR402	Clarifier	20K	505020			
VR403	Volume/Power Switch	10K	520016			
VR404	RF Gain/NB Switch	10K	505022			
VR405	Mic Gain	1000	505021			

(18) Early Versions.
(19) Late Versions.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	Noise Blanker	LL0051	LA-038	CBS512-7TC	
L2	Noise Blanker	LL0057	LA-179		
L3	AM IF (7.8MHz)	LL0168	LA-255		
L4	IF Amp (7.8MHz)	LL0176	LA-263		
L5	Mixer (7.8MHz)	LL0175	LA-262		
L6	Mixer (7.8MHz)	LL0170	LA-257		
L7	Mixer (7.8MHz)	LL0171	LA-258		
L8	Rec Mixer (27MHz)	LL0172	LA-259		
L9	RF Amp (27MHz)	LL0173	LA-260		
L10	Rec RF (27MHz)	LL0174	LA-261		
L11	RF Choke (470uH)	LL0072	LZ-012		
L12	Pi Filter (100uH)	LL0071	LZ-012		
L13	PLL	LL0162	LA-216		
L14	VCO (34MHz)	LL0060	LA-195		
L15	RF Choke (470uH)	LL0072	LZ-012		
L16	RF Choke (470uH)	LL0072	LZ-012		
L17	Carrier Shift (7.8MHz)	LL0163	LA-217		
L18	RF Choke	LL0169	LA-256		
L19	Oscillator (34.9825MHz)	LL0163	LA-217		
L20	Oscillator (34.9850MHz)	LL0164	LA-218		
L21	RF Choke (470uH)	LL0072	LZ-012		
L22	RF Choke (470uH)	LL0072	LZ-012		
L23	RF Choke (470uH)	LL0072	LZ-012		
L24	RF Choke (470uH)	LL0072	LZ-012		
L25	RF Choke (100uH)	LL0071	LZ-012		
L26	IF (7.8MHz)	LL0165	LA-219		
L27	XMT Mixer (35MHz)	LL0161	LA-160		
L28	Predriver (27MHz)	LL0166	LA-220		
L29	Predriver (27MHz)	LL0167	LA-254		
L30	XMT Drive (27MHz)	LL0178	LD-096		
L33	RF Choke	LL0179	LD-098		
L35	RF Choke	LL0179	LD-098		
L36	Loading Final (27MHz)	LL0062	LC-019	CB305	
L37	Pi Filter (27MHz)	LL0069	LE-051		
L38	Antenna Matching (27MHz)	LL0069	LE-051		
L39	Trap (54MHz)	LL0062	LC-019	CB305	
L401	RF Choke	LL0063	LD-013		
L402	RF Choke	LL0063	LD-013		
L403	RF Choke	LL0098	LD-089		

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.	
T1	2.8A	.194	2.25mH	505045 TF-151(1) TF-147(2)			(1) Number on unit. (2) Used in some versions.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP401	3 1/2" PM, 8 Ohms	505040		

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
F401	4A Quick Acting	505027 FS012(1)		MTH-4	HOJ	312004	150145	

(1) Number on unit.

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	505036				18-094	1	2	5	3	NC	4

MIC includes Remote Fine Tune/Clarifier Control.

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
D401	LED	DNR321	Channel Readout (1.99V @ 5.8mA each segment)
D402	LED	OLR124	Red (2V @ 15mA)
D405	LED	OPG24A	
FT1	Filter	505025	7.8MHz
FT2	Filter	505025	7.8MHz
J401	Jack	505039	PA Speaker
J402	Jack	505039	Extension Speaker
J403	Jack	500020	DC Power
J404	Jack	410010	Microphone
J405	Jack	510045	Antenna
L31	Ferrite Bead	LL0177	
L32	Ferrite Bead	LL0180	
L34	Ferrite Bead	LL0177	
L50	Ferrite Bead	LL0068	
L51	Ferrite Bead	LL0068	
L52	Ferrite Bead	LL0068	
L53	Ferrite Bead	LL0068	
L404	Ferrite Bead	LL0068	
L405	Ferrite Bead	LL0068	
M401	Meter	505035	S/RF/PWR
PL1	Lamp	510010	Meter (10.39V @ 32mA)
S401	Switch	505041	Channel Selector
S403	Switch	505042	AM/LSB/USB/PA
X1	Crystal	XQ2400	10.24MHz
X2	Crystal	XA8025	7.8025MHz
X3	Crystal	XA7975	7.7975MHz
X4	Crystal	XE1125	11.1125MHz
	Printed Circuit Board	505002	Main
	Printed Circuit Board	505004	Channel Selector Switch
	Printed Circuit Board	505001	LED Channel Display
	Printed Circuit Board	505003	Mic Jack

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

ITEM	PART No.
Chassis, Front	505018
Cover, Bottom	505016
Cover, Top	505017
Knob, Channel Selector	510029

ITEM	PART No.
Knob ,VR	510030
Mounting Bracket	505011
Panel Front ,Chrome	505026
Panel Front ,Face	505024