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 GALAXY

MANUFACTURER'S SPECIFICATIONS

RECEIVER SECTION	
Sensitivity at 10 db S + N/N -	
AM	0.4 uV
SSB	0.2 uV
Image Rejection -	80 db
I.F. Frequency -	
1st I.F.	AM & SSB, 7.8 MHz
2nd I.F.	AM & SSB, 455 kHz
Squelch Sensitivity -	
Threshold	0.2 uV
Maximum (Stop)	500 uV
Adjacent Channel Selectivity -	Better than 80 db
Cross Modulation -	60 db
Audio Output -	6 Watts
Audio Bandwidth (1 kHz/0 db) -	
3 db down	450 to 2000 Hz
"S" Meter Sensitivity for	
a reading of S9 -	100 uV
Clarifier -	
Frequency Range	±2.5 kHz
Current Drain -	
No Signal	700 mA
Maximum Audio Output	2 Amperes
TRANSMITTER	
RF Power Output -	
AM	3.5 to 4.0 W
SSB (PEP)	10 to 12 W
Modulation Capability -	90%
Frequency Range -	26.965 through 27.405 MHz
Spurious Signal Suppression -	-60 db or better
Microphone Output for 100% Modulation -	4 mV
Current Drain at 13.8 VDC -	
No Modulation	2 Amperes
Maximum Modulation	2.3 Amperes

Courtesy of the Manufacturer

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

 9CF1016

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

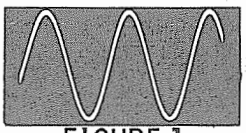


FIGURE 1

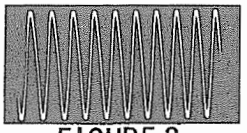


FIGURE 2


FIGURE 3

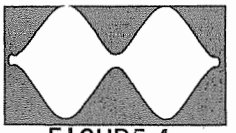


FIGURE 4

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 Mic 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 Mic Gain MINIMUM	L39	Adjust for MINIMUM at 54MHz (2nd harmonic).

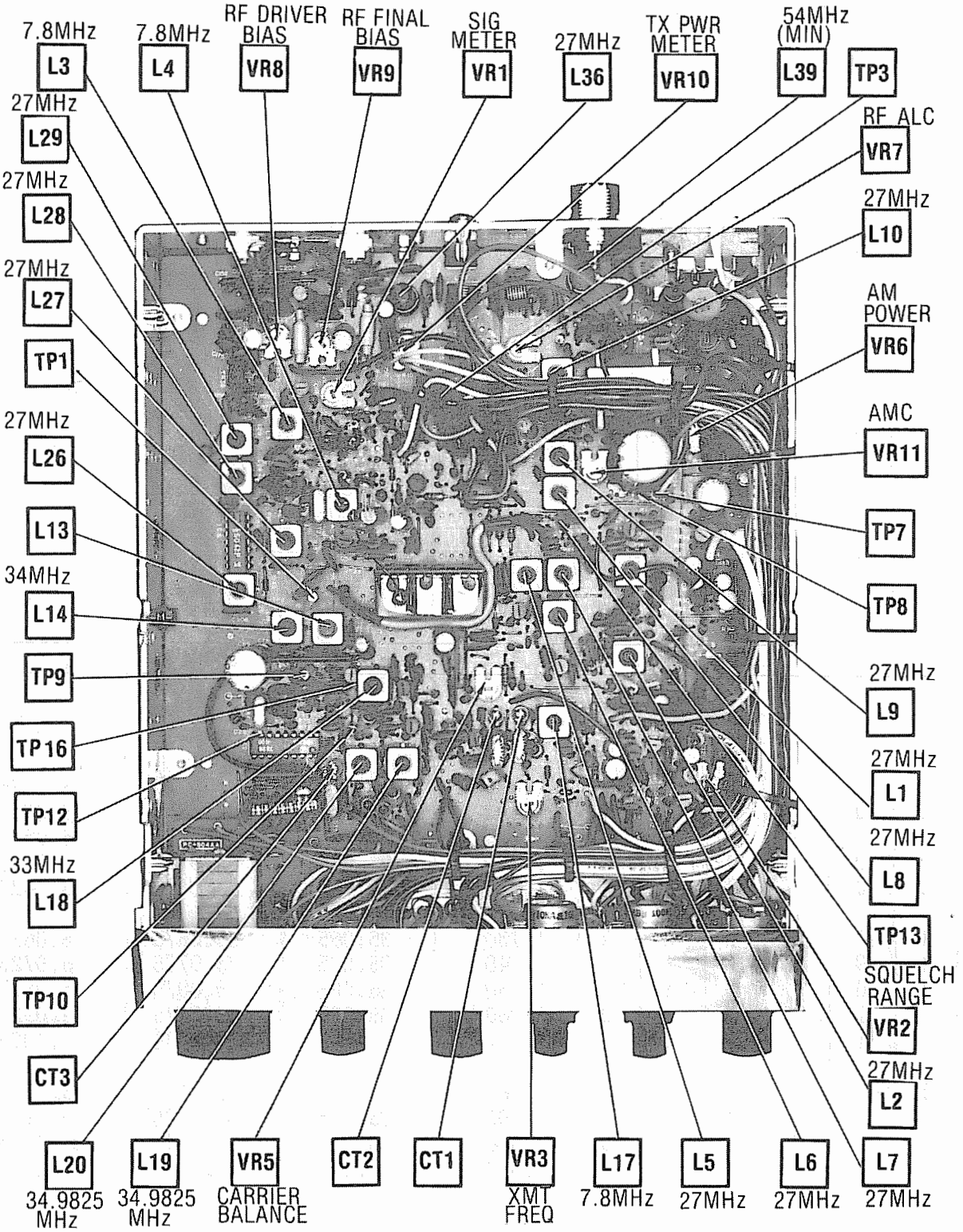
TRANSMITTER ADJUSTMENTS

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 Mic Gain Maximum	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 Mic 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 Mic 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 Mic Gain MINIMUM	VR7	RF ALC Adjust for 11.0 watts PEP RF output maximum.
Input of RF wattmeter to antenna input. No modulation.	Ch. 19, AM Mic 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 Mic Gain MINIMUM	VR10	TX PWR METER Adjust so PWR Meter agrees with RF wattmeter.
Input of oscilloscope or modulation meter to antenna input. Inject a 1000Hz, 100mV audio signal at Mic input.	Ch. 19, AM Mic Gain Maximum	VR11	AM AMC Adjust for 100% modulation maximum. (See Figure 4.)

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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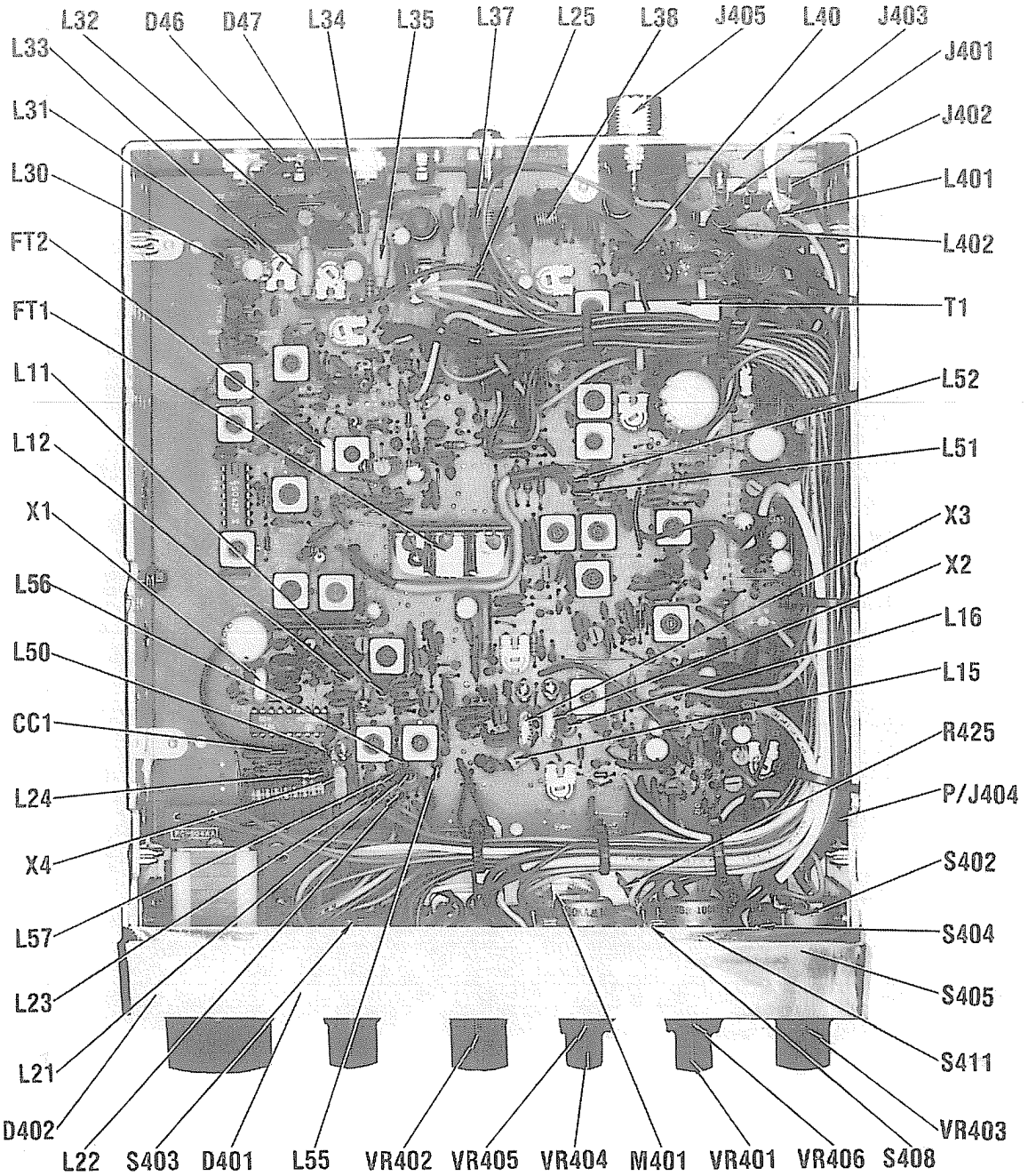

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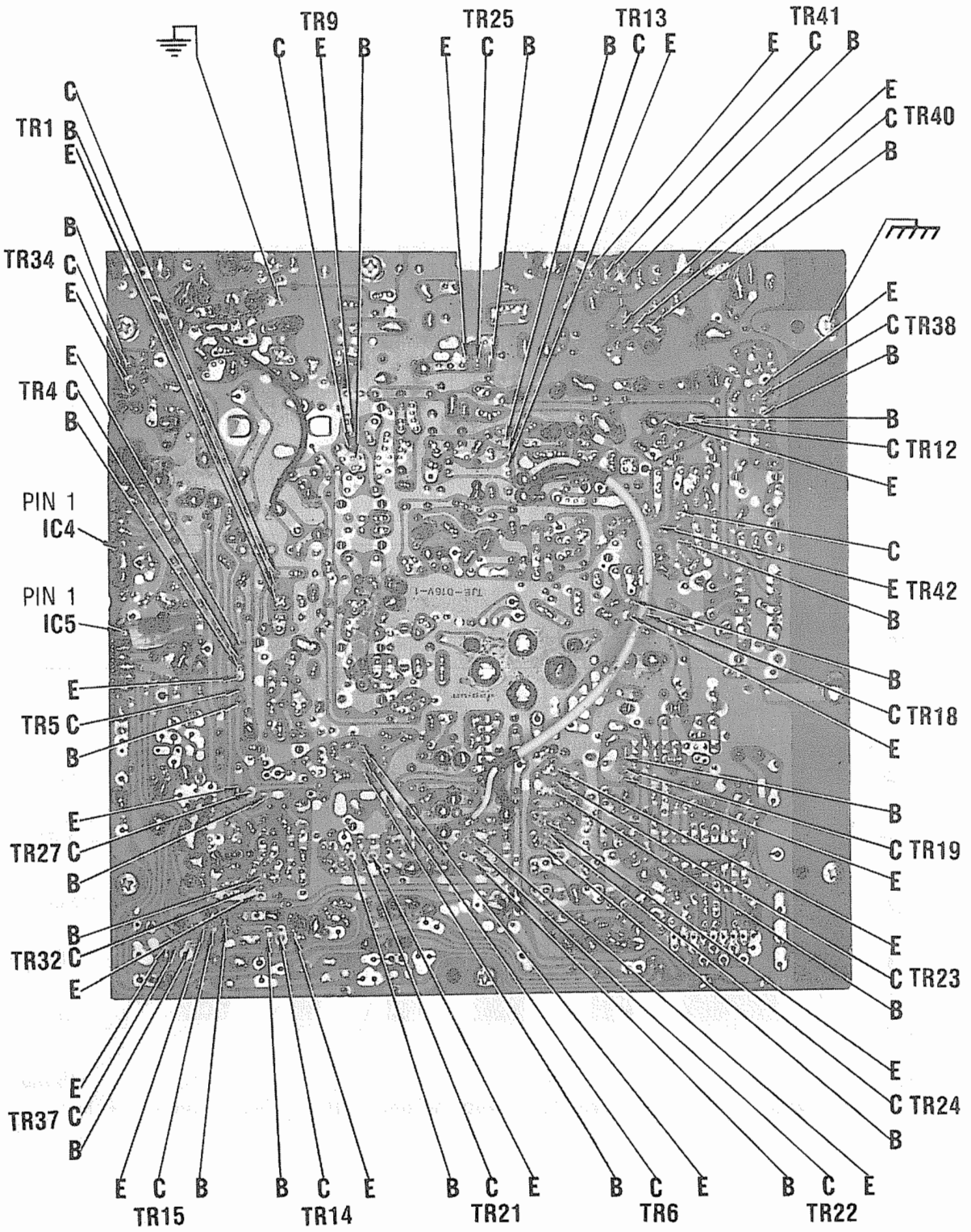
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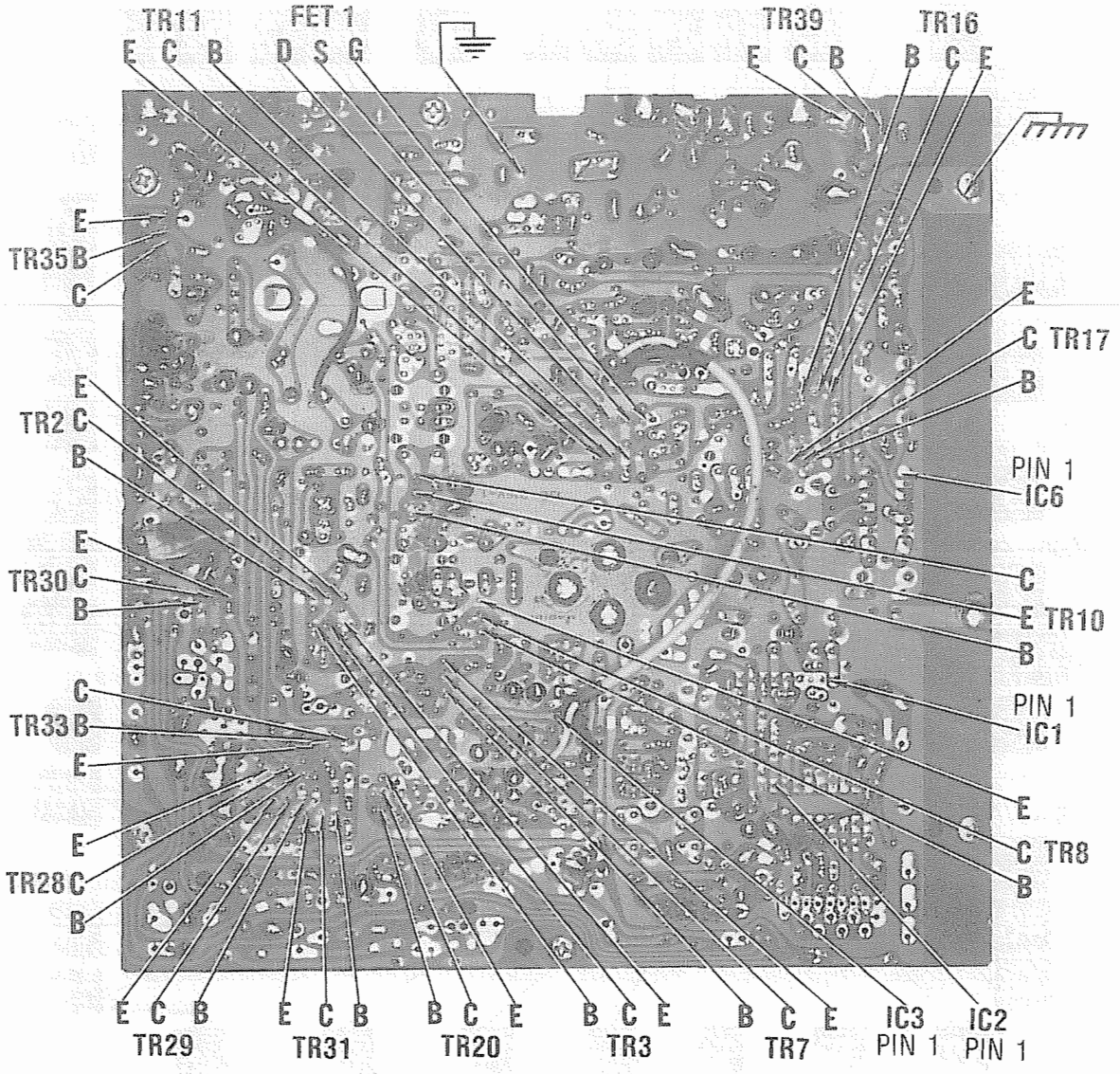
MAIN BOARD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C
E
C TR17
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TR2 C
B
PIN 1
IC6
E
TR30 C
B
C
E TR10
B
C
TR33 B
E
PIN 1
IC1
E
E
TR28 C
B
E
C TR8
B
E C B
TR29
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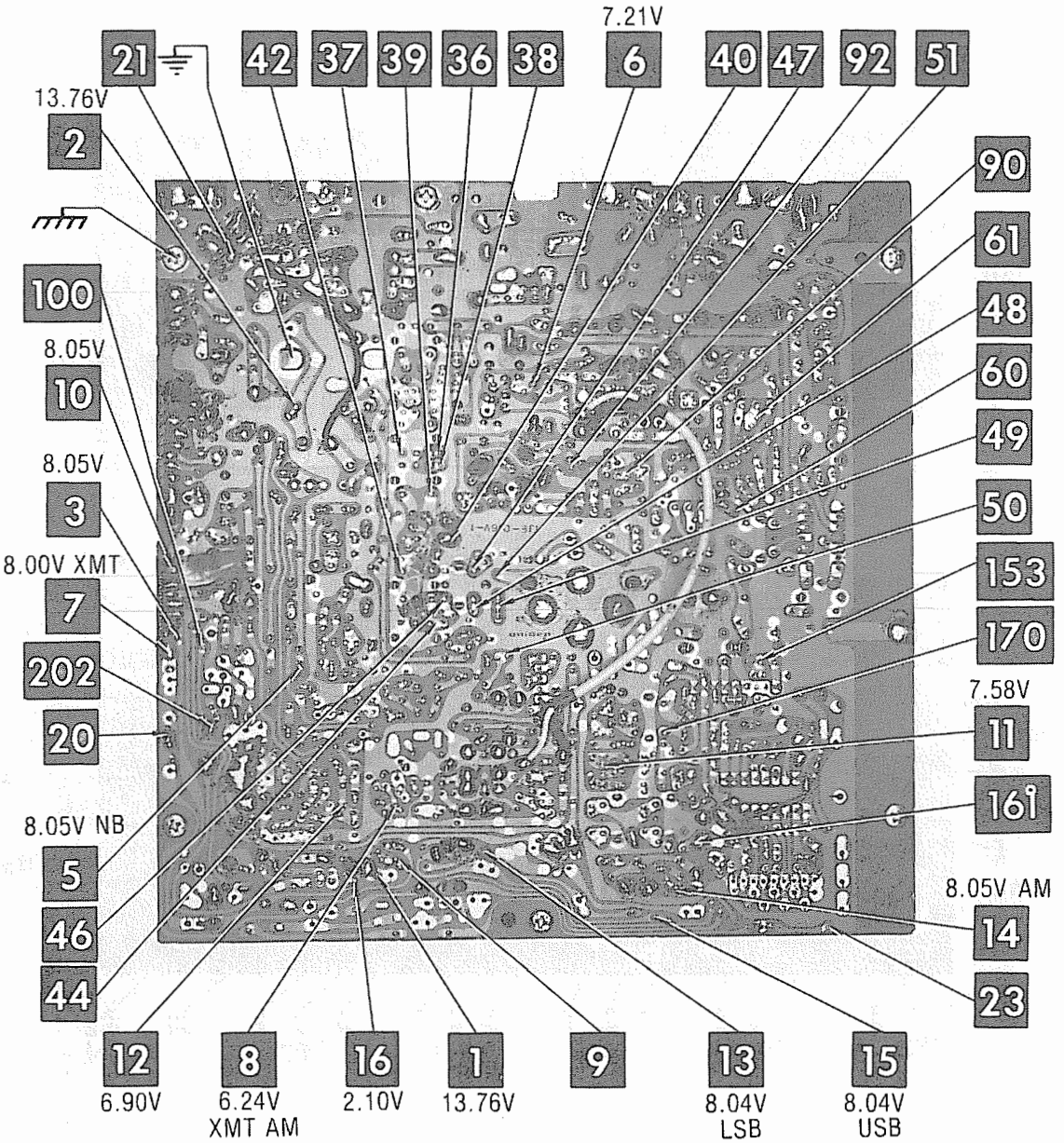
B C E
TR20
B C E
TR3
B C E
TR7
IC3
PIN 1
IC2
PIN 1

MAIN BOARD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3
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7
202
20
8.05V NB
5
46
44
90
61
48
60
49
50
153
170
7.58V
11
16
8.05V AM
14
23
12
6.90V
8
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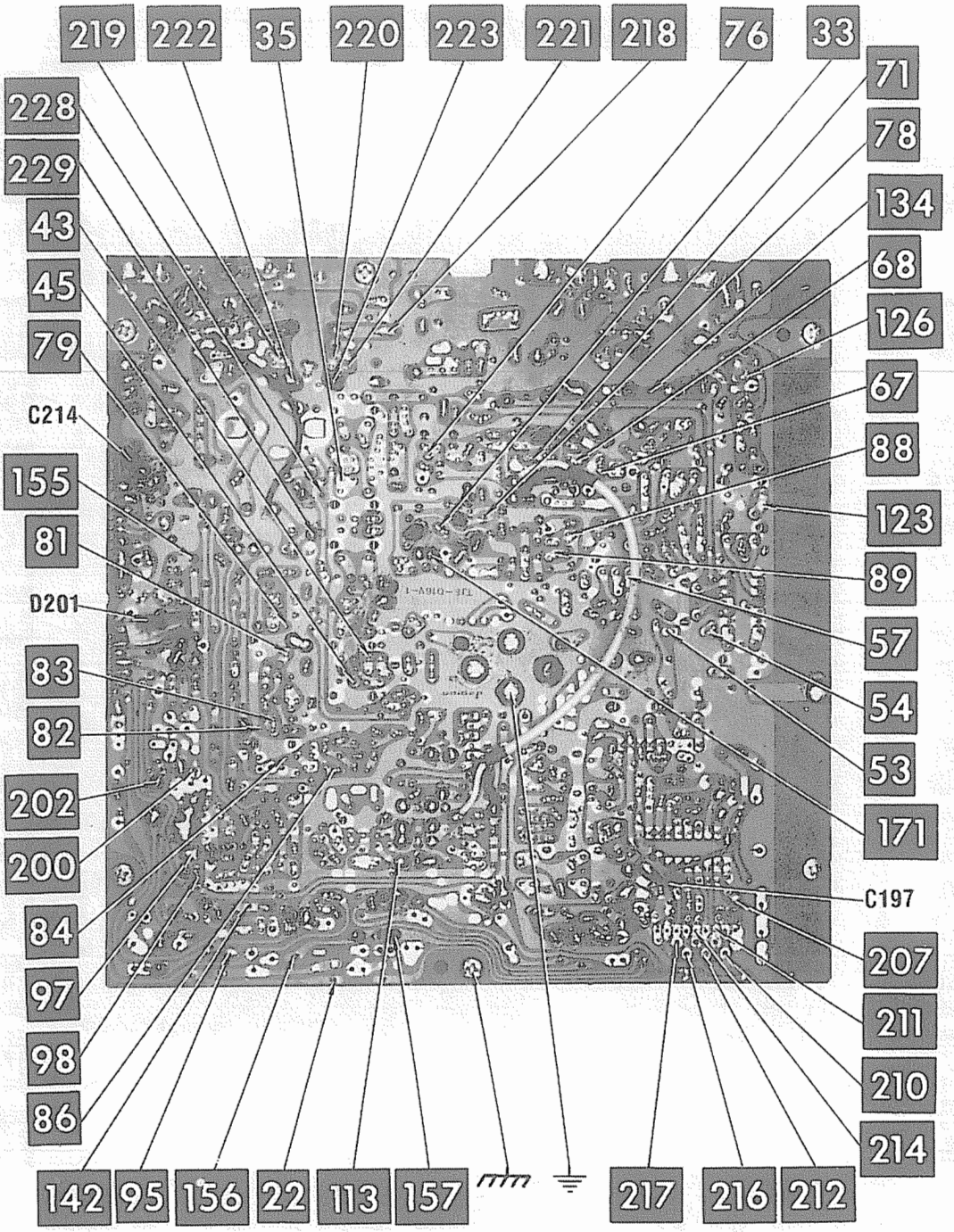
MAIN BOARD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MAIN BOARD

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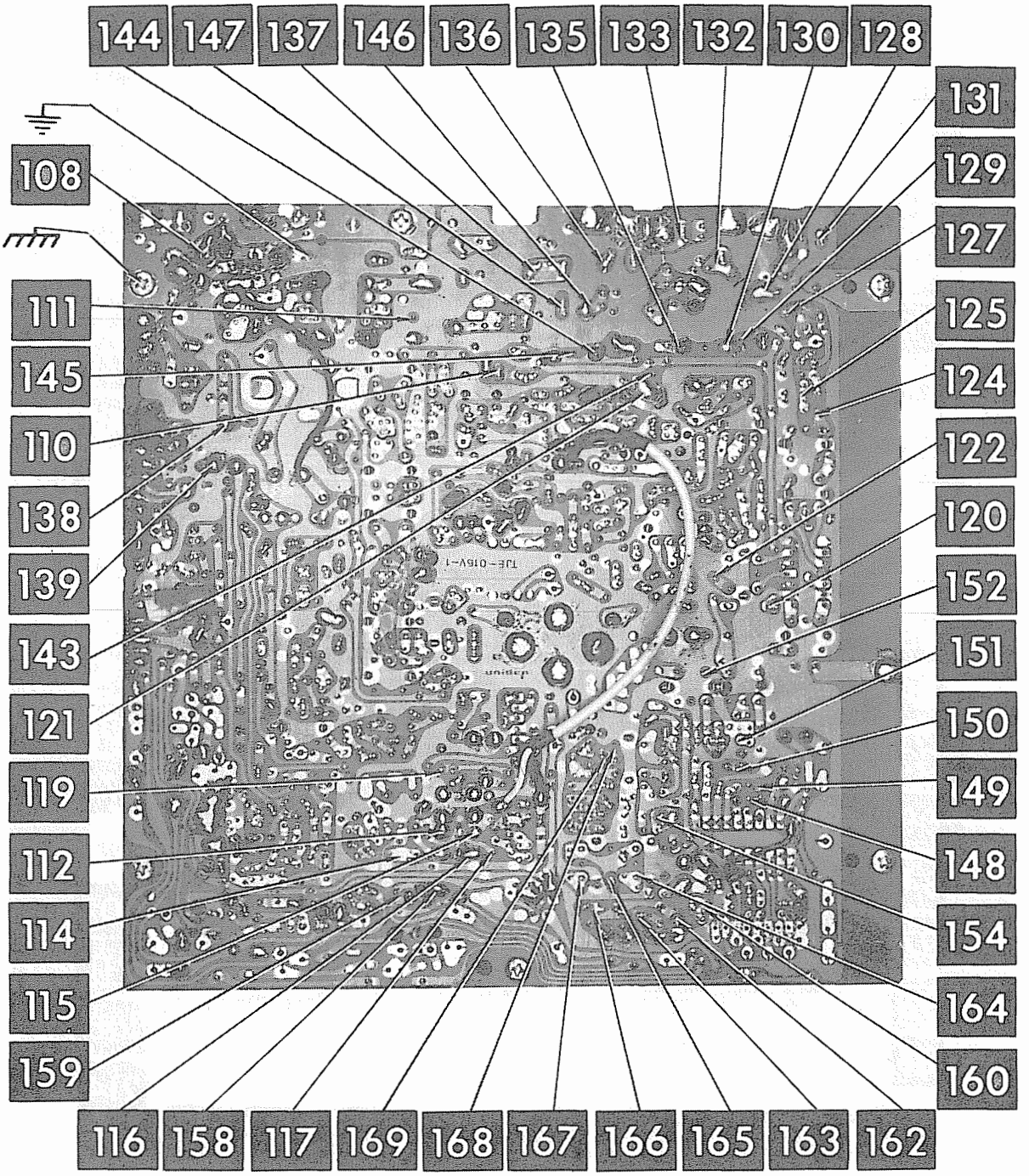

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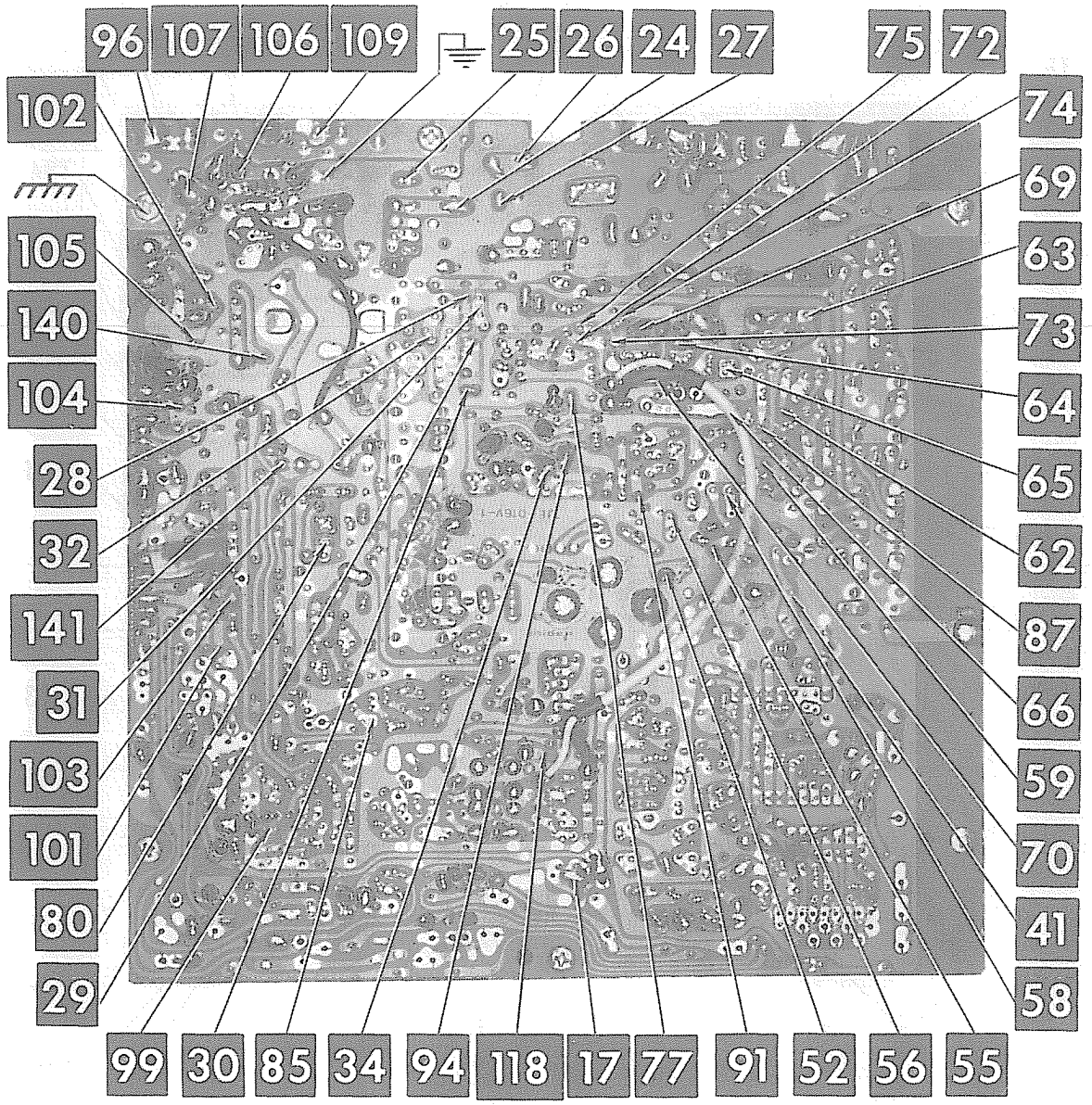
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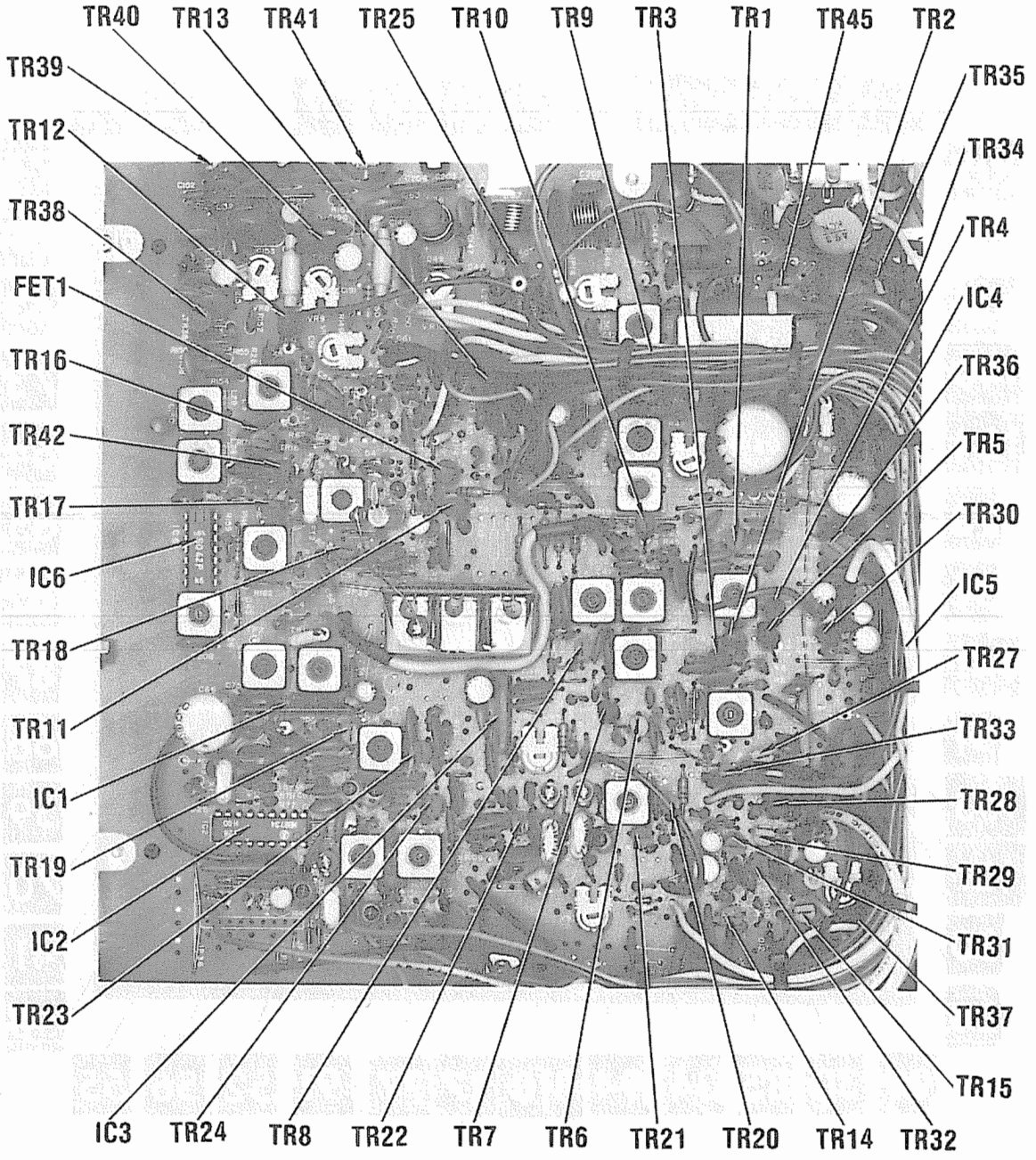
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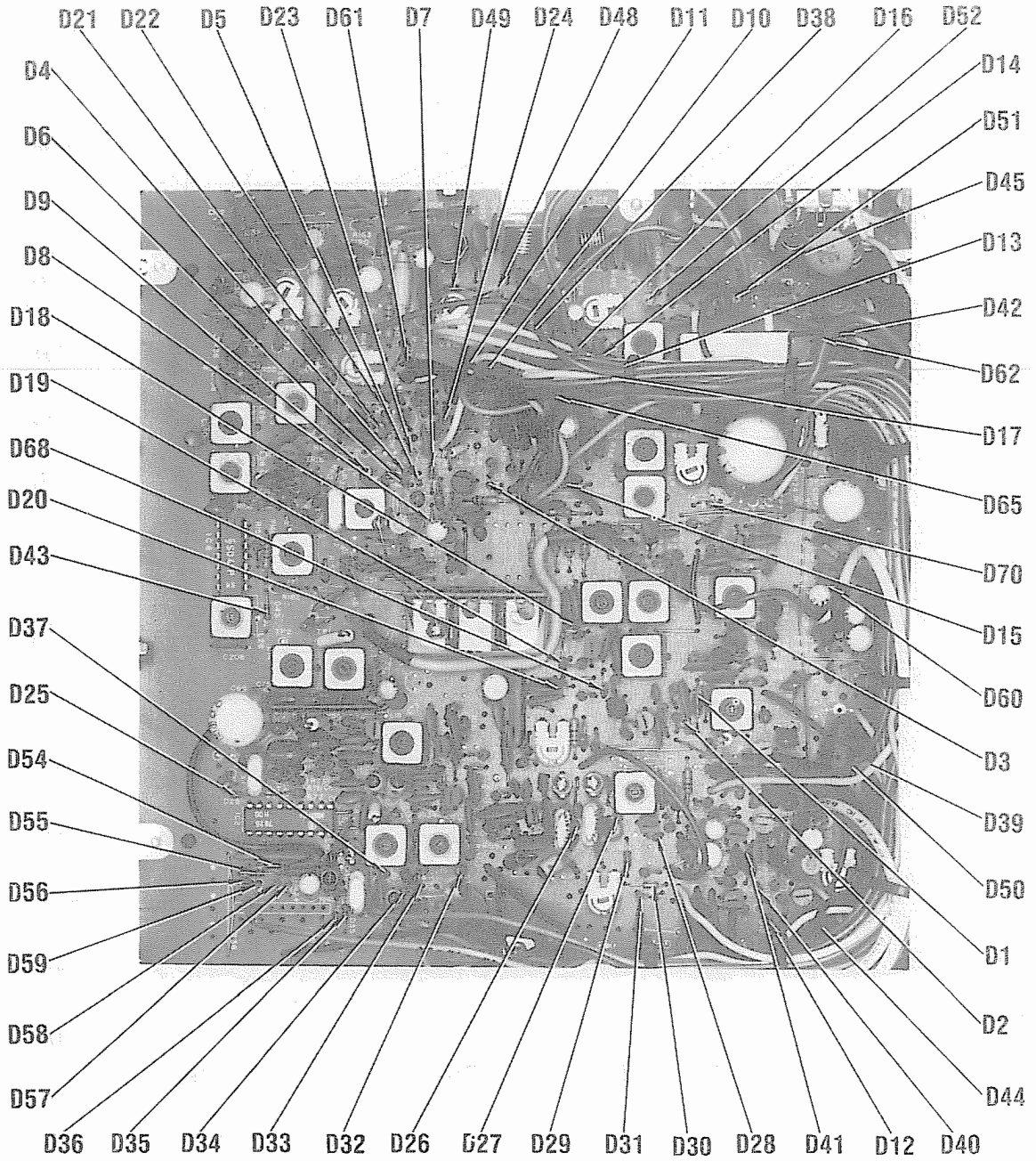
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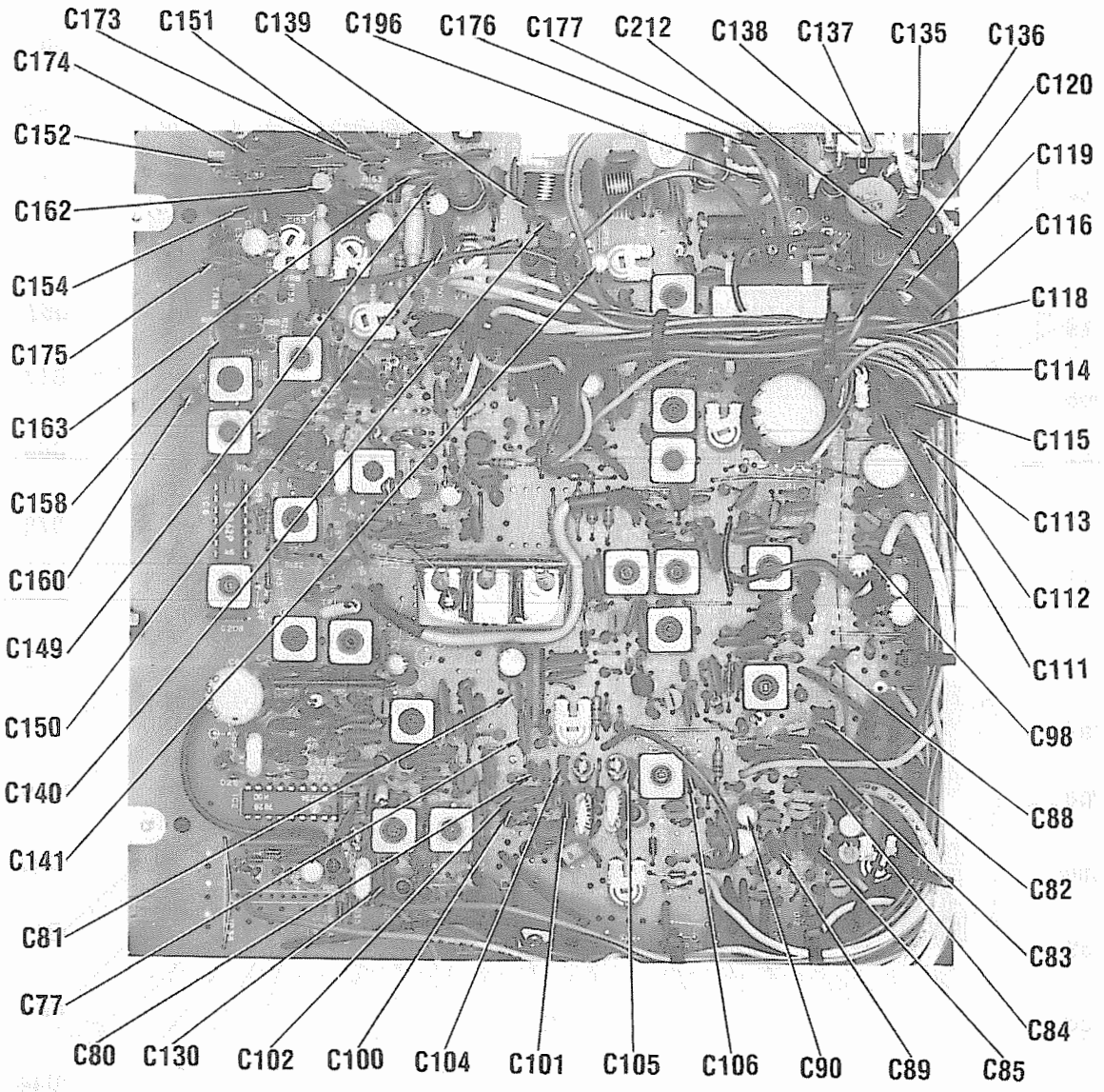
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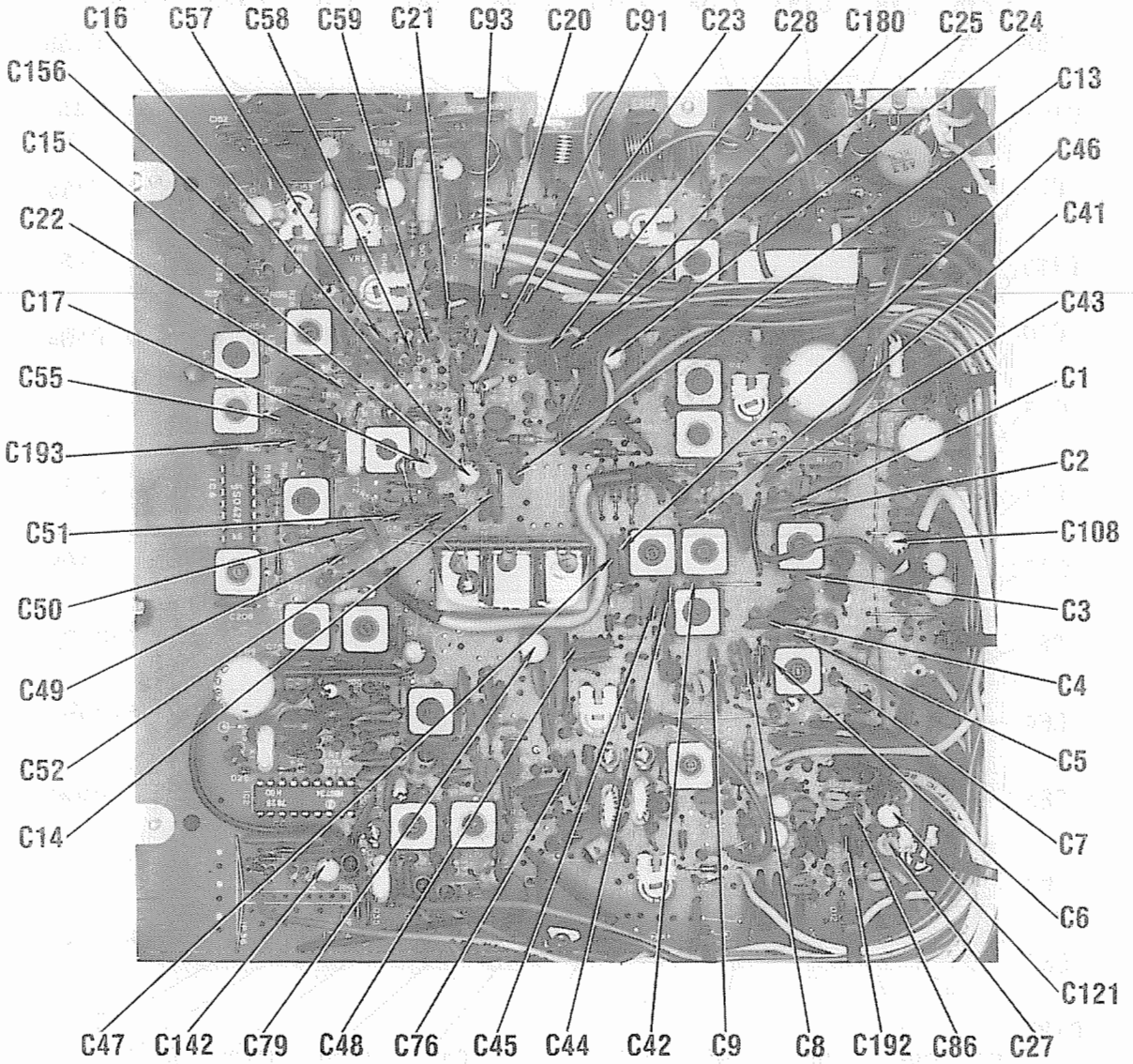
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C2
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C108
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C3
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C5
C14
C7
C6
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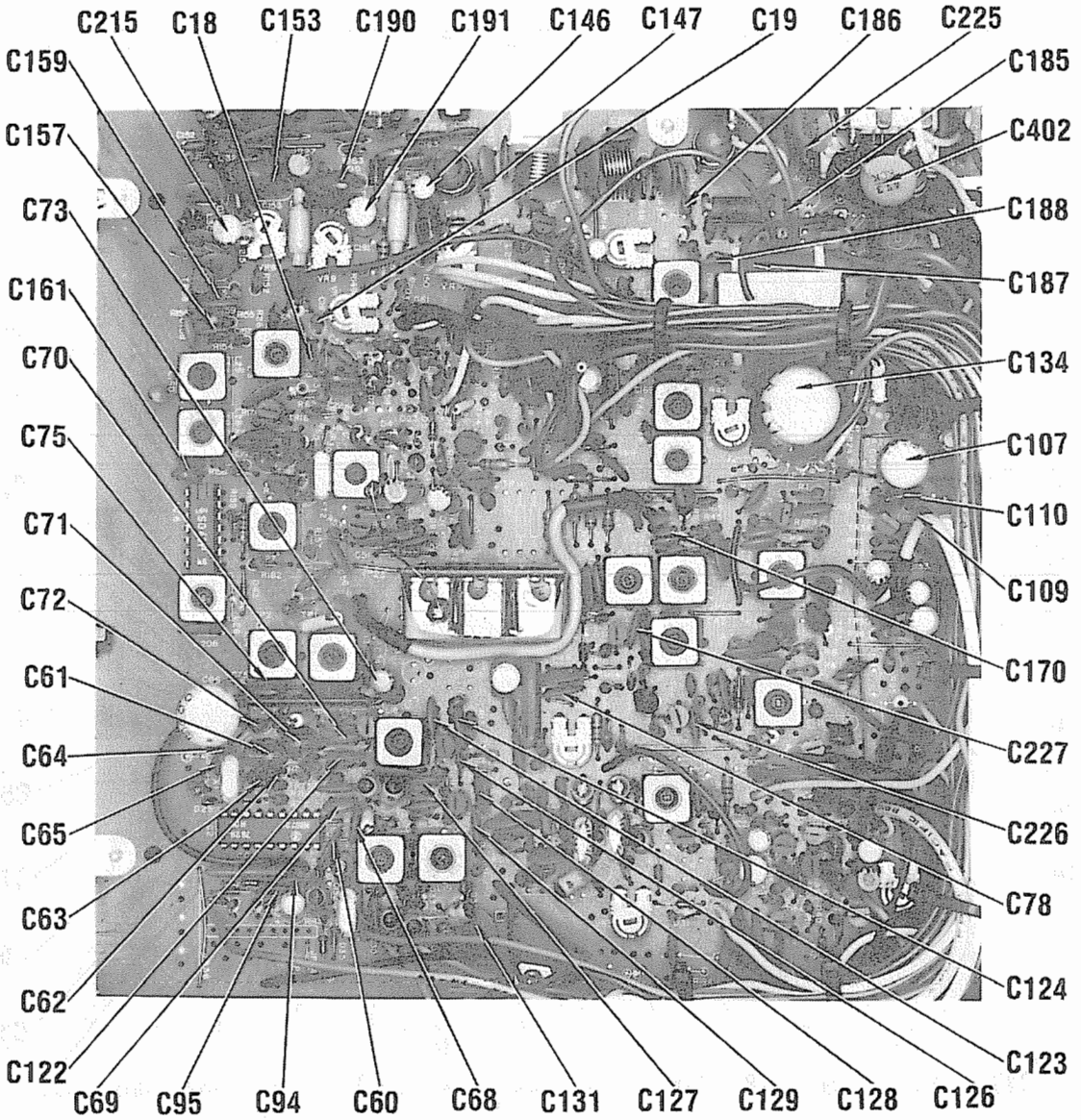
C8
C192
C86
C27

MAIN BOARD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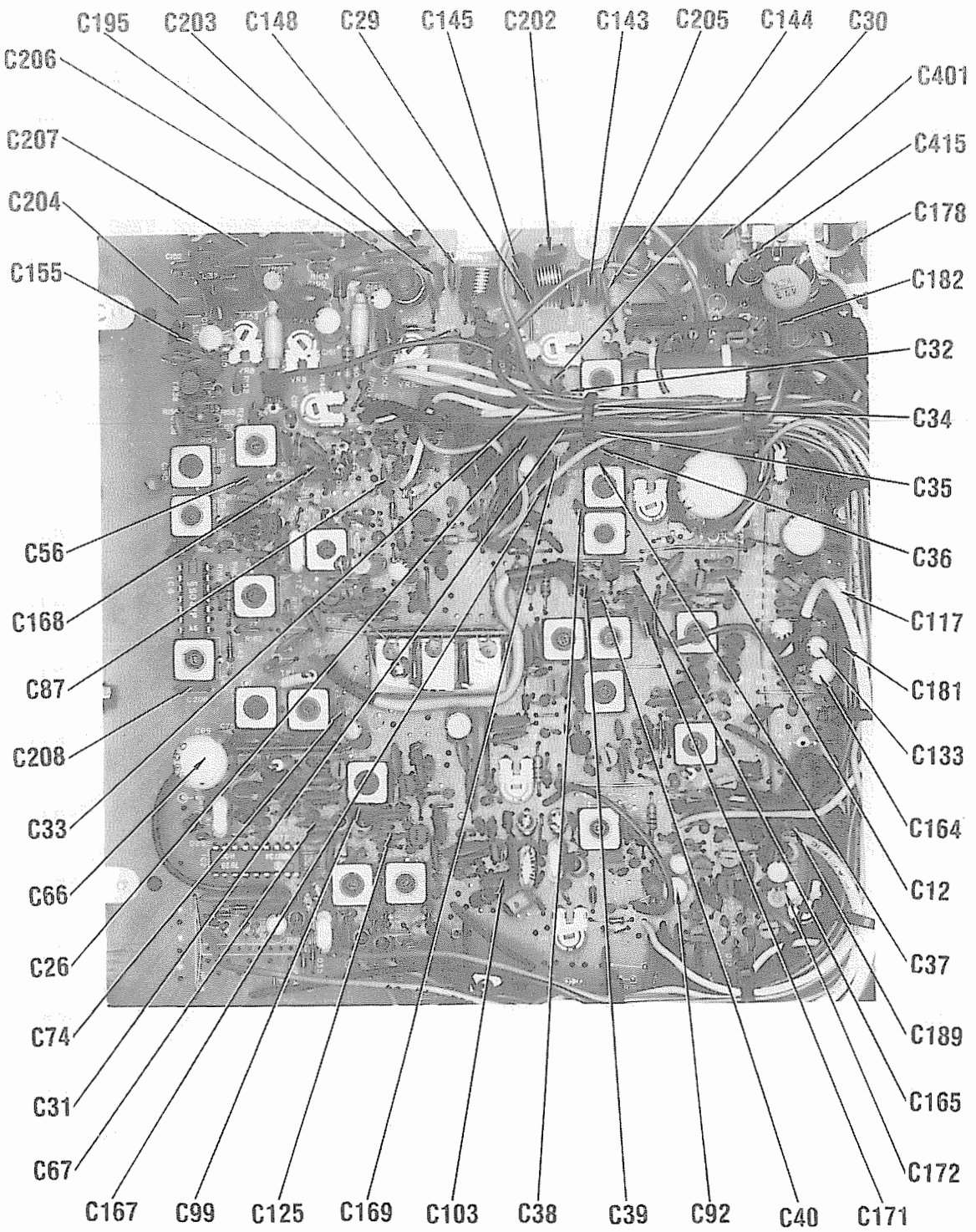
MAIN BOARD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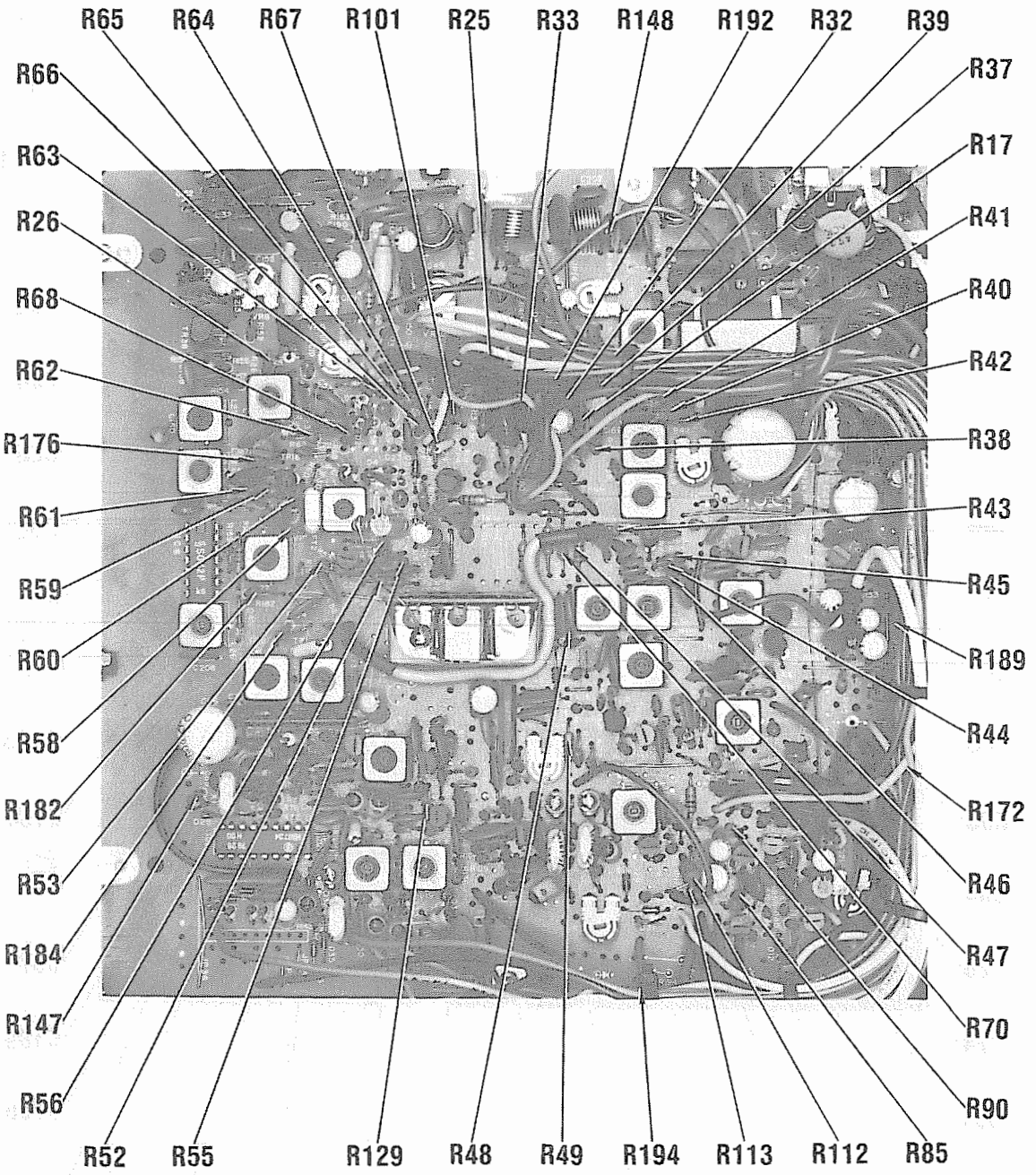
C40
C171

MAIN BOARD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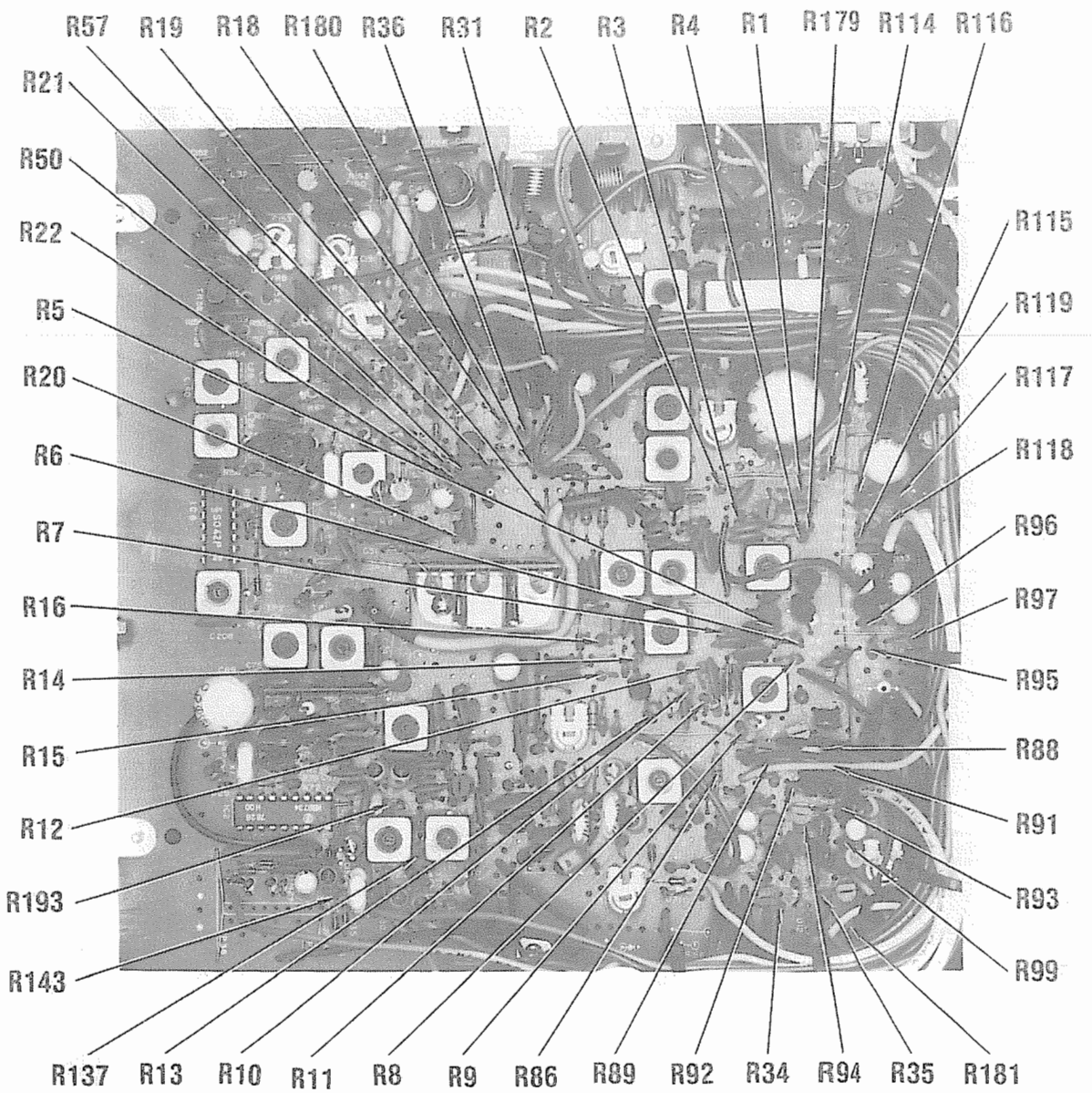
MAIN BOARD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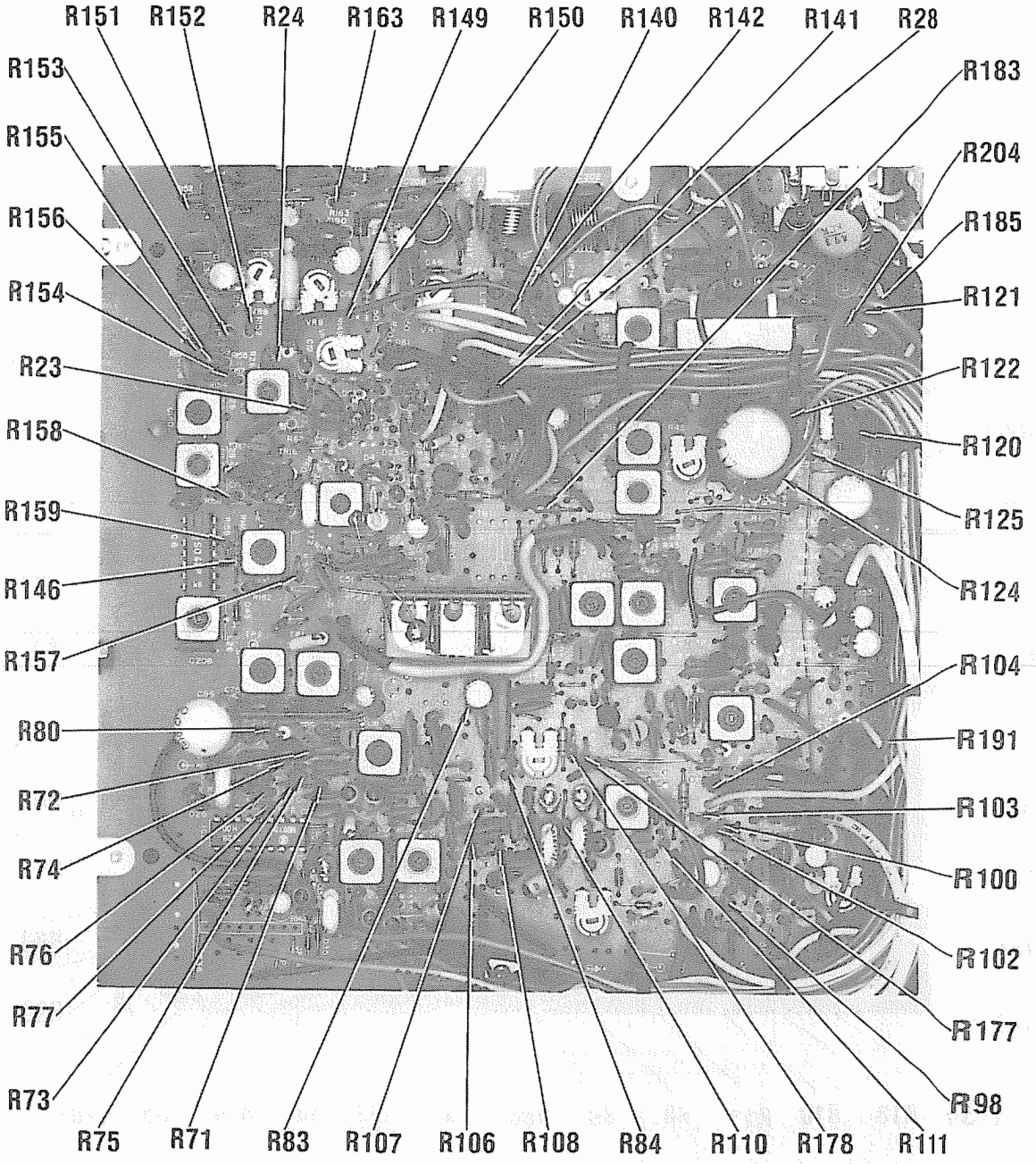
MAIN BOARD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R110
R178
R111

MAIN BOARD

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	TF-151(1) TF-147(2)			(1) Number on unit.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP401	3 1/2" PM, 8 Ohms	2102-166	3A05Z8	

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 32V	2102-176	1079-177	AGC4	HRK	312004	150145	

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	2102-168	18-032	18-034	18-010		1	2	5	3	NC	4

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
D401	LED	2095-07	Channel Indicator (1.94V @ 6.6mA)
D402	LED	2102-18	TX-RX Indicator (2.07V @ 22mA)
D410	LED	2102-19	AM (1.94V @ 6.6mA)
D411	LED	2102-19	USB (1.94V @ 6.6mA)
D412	LED	2102-19	LSB (1.94V @ 6.6mA)
FT1	Filter	2102-55	(7.8MHz)
FT2	Filter	2102-54	(7.8MHz)
J401	Jack	2102-171	PA Speaker
J402	Jack	2102-171	Ext. Speaker
J403	Jack	2057-26	DC Power
J404	Jack	2102-172	Microphone
J405	Jack	2102-169	Antenna
L31	Ferrite Bead	2102-39	
L32	Ferrite Bead	2102-42	
L34	Ferrite Bead	2102-39	
L51	Ferrite Bead	2057-77	
L52	Ferrite Bead	2057-77	
L55	Ferrite Bead	2057-77	
L56	Ferrite Bead	2057-77	
L57	Ferrite Bead	2057-77	
L404	Ferrite Bead	2057-77	
L405	Ferrite Bead	2057-77	
M401	Meter	2102-167	S/RF/SWR
PL1	Lamp		Meter (10.39V @ 32mA)
S401	Switch	2102-155	Channel Selector
S402	Switch	2102-158	Power On/Off (Part of Volume Control)
S403	Switch	2102-154	Mode
S404	Switch	2102-157	PA/CB
S405	Switch	2102-157	ANL/NB
S408	Switch	2102-156	SWR/S/RF/CAL
S411	Switch	2102-157	Channel 9 On/Off
X1	Crystal	2102-162	10.240MHz
X2	Crystal	2102-163	7.8025MHz
X3	Crystal	2102-164	7.7975MHz
X4	Crystal	2102-165	11.1125MHz

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

ITEM	PART No.
Bracket, Mounting	2102-190
Display, Optical Filter	2102-204
Knob, Channel	2102-195

ITEM	PART No.
Panel, Front	2102-194
Plate, Front Panel	2102-203

WIRING DATA

Cable (Speaker)(Unshielded).....	Use BELDEN No. 8782 (AWG24)(4 colors)
Shielding Strap.....	Use BELDEN No. 8660 (3/16" width)
Hook-up Wire (General Use).....	Use BELDEN No. 8524 (AWG22)(13 colors)
Hook-up Wire (Shielded).....	Use BELDEN No. 8401 (Braided Shield)(1 conductor)(AWG25)
	Use BELDEN No. 8421 (Spiral Shield)(1 conductor)(AWG25)
	Use BELDEN No. 8737 (Spiral Shield)(2 conductor)(AWG22)
Microphone Cable (Coiled).....	Use BELDEN No. 9467 (5 conductor-1 shielded)(6 ft.)(AWG28)

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
C138	.0047 50V		DD-472	GP4700	GP247		5GA-D47
	.047 50V			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C139	1 NPO 50V ±.25pF				CN0510		
C140	10 NPO 50V ±.5pF		DTZ-10	NP010	CN0410		10TCC-Q10
C141	.0047 50V		DD-472	GP4700	GP247		5GA-D47
	.047 50V			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C143	68 NPO 50V 10%		DTZ-68	NP068	CN0468		10TCC-Q68
C144	39 NPO 50V 10%				CN0439		10TCC-Q39
C145	180 N220 50V 10%				*		10TCR-T18
C147	1 NPO 50V ±.25pF				CN0510		
C148	390 N750 50V 10%		DTN-390				10TCU-T39
C149	330 N750 50V 10%		DTN-330	N330	CN7333		10TCU-T33
C150	.1 50V 10%			WMF05P1	EWF05D10		431P1049R5
C151	470 N750 50V 10%		DTN-470				10TCU-T47
C152	.0047 50V		DD-472	GP4700	GP247		5GA-D47
	.047 50V			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C153	.1 50V 10%			WMF05P1	M192P1049R8	QFT2-215	1FT-P10
C154	.0047 50V		DD-472	GP4700	GP247		5GA-D47
	.047 50V			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C155	.0047 50V		DD-472	GP4700	GP247		5GA-D47
	.047 50V			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C156	.01 50V		UK50-103		MAG5011		
C157	.0047 50V		DD-472	GP4700	GP247		5GA-D47
	.047 50V			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C158	47 NPO 50V 5%		DTZ-47	NP047	CN0447		10TCC-Q47
C159	330 N750 10%		DTN-330	N330	CN7333		10TCU-T33
C160	2 NPO 50V ±.25				CN0522		
C161	.01 50V 10%			WMF1S1	M192P1039R8	QFT2-91	1FT-S22
C163	120 N220 50V 10%				*		10TCR-T12
C165	.001 50V		DD-102		GP210		10TS-D10
C167	.022 50V			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C168	.047 50V 10%			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C170	100 50V 10%		DD-101	GP100	GP310		10TS-T10
C171	56 NPO 50V 10%				CN0456		10TCC-Q56
C172	.001 50V		DD-102		GP210		10TS-D10
C173	.0047 50V		DD-472	GP4700	GP247		5GA-D47
	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C174	220 N750 50V 10%		DTN-220	N220	CN7322		10TCU-T22
C175	33 NPO 50V 10%		DTZ-33	NP033	CN0433		10TCC-Q33
C176	.001 50V		DD-102		GP210		10TS-D10
C177	.022 50V			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C178	.001 50V		DD-102		GP210		10TS-D10
C181	.01 50V		UK50-103		MAG5011		
C182	.1 25V		UK25-104		MAG2501		HY-750
C185	.5pF 50V ±.25	2102-145					
C186	.5pF 50V ±.25	2102-145					
C187	.0047 50V		DD-472	GP4700	GP247		5GA-D47
	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C188	.0047 50V		DD-472	GP4700	GP247		5GA-D47
	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C189	.01 50V		UK50-103		MAG5011		
C190	.047 50V 10%			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C192	.001 50V		DD-102		GP210		10TS-D10
C195	47 NPO 50V 5%		DTZ-47	NP047	CN0447		10TCC-Q47
C196	.01 50V		UK50-103		MAG5011		
C197	.0047 50V 10%			WMF1D47	M192P4729R8	QFT2-63	1FT-D47
C202	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C203	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C204	.01 50V		UK50-103		MAG5011		
C205	.01 50V		UK50-103		MAG5011		
C206	.022 50V			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C207	.1 25V		UK25-104		MAG2501		HY-750
C208	.022 50V			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C212	.01 50V		UK50-103		MAG5011		
C214	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C225	470 50V 10%		DD-471	GP470	GP347		10TS-T47
C226	330 50V		DD-331	GP330	GP333		10TS-T33
C227	330 50V		DD-331	GP330	GP333		10TS-T33
C401	.022 50V			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C402	.047 50V			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C403	.001 50V		DD-102		GP210		10TS-D10
C404	.001 50V		DD-102		GP210		10TS-D10
C405	.001 50V		DD-102		GP210		10TS-D10
C406	.001 50V		DD-102		GP210		10TS-D10
C407	.001 50V		DD-102		GP210		10TS-D10
C415	.001 50V		DD-102		GP210		10TS-D10
CT1	20 Trimmer	2102-53					
CT2	20 Trimmer	2102-53					
CT3	20 Trimmer	2102-63					

*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	RESISTANCE	REPLACEMENT DATA			
			MFGR. PART No.	CENTRALAB PART No.	MALLORY PART No.	TRW PART No.
VR1	Sig Meter	10K	2102-51			U260R103B
VR2	Squelch Range	1000	2102-48			U260R102B
VR3	XMT Freq.	3000	2102-49			U260R502B
VR5	Carrier Balance	10K	2102-51			U260R103B
VR6	AM Power	5000	2102-50			U260R502B
VR7	RF ALC	10K	2102-51			U260R103B
VR8	RF Driver Bias	500	2102-47			U260R501B
VR9	RF Final Bias	5000	2102-50			U260R502B
VR10	TX PWR Meter	100K	2102-52			U260R104B
VR11	AMC	500	2102-47			U260R501B
VR401	Squelch	100K	2102-160(18)			
VR406	SWR	500				
VR402	Clarifier	20K	2102-159			
VR403	Volume/Power Switch	10K	2102-158			
VR404	RF Gain	10K	2102-161(19)			
VR405	Mic Gain	10K				

(18) Includes VR401 and VR406.
(19) Includes VR404 and VR405.

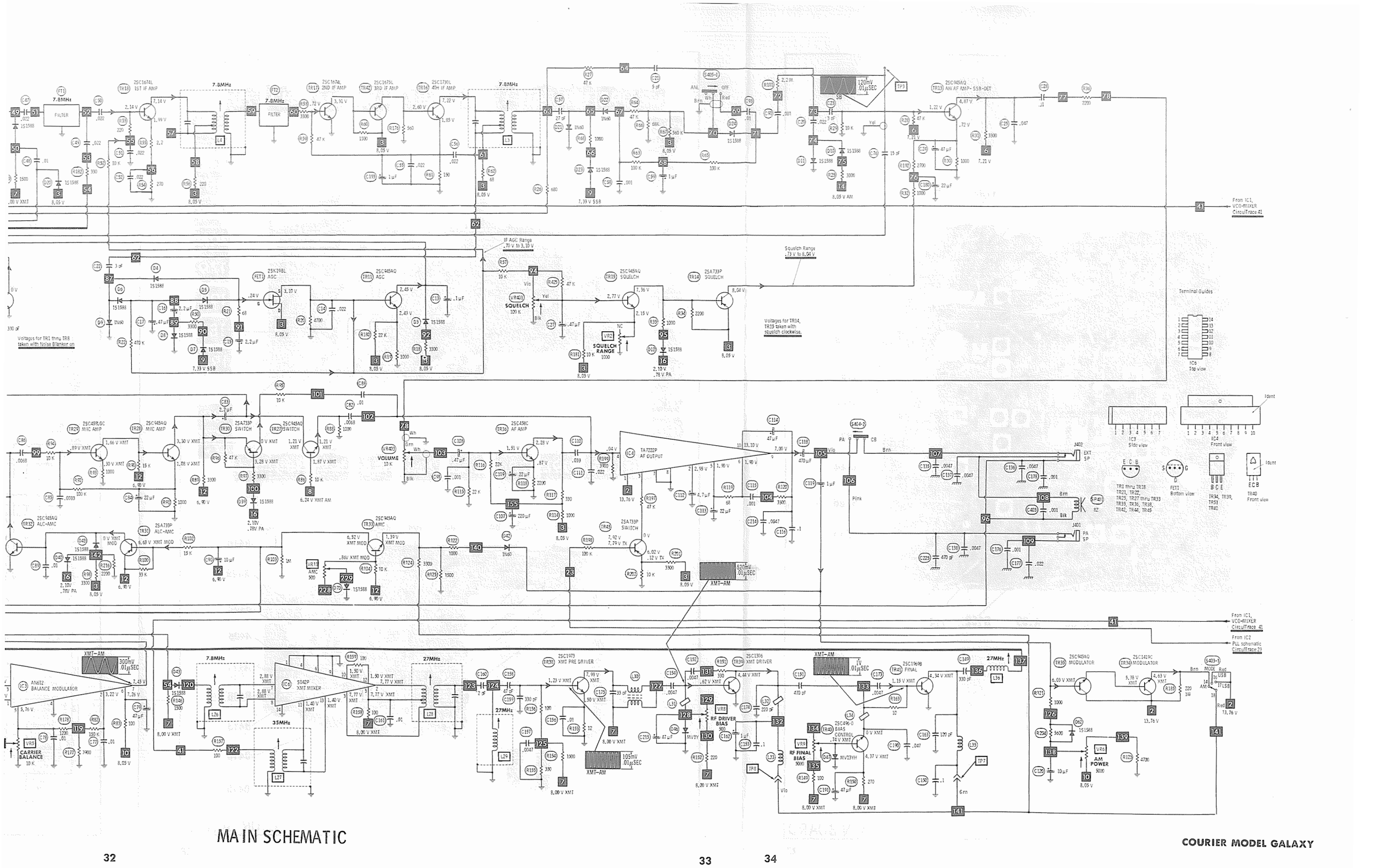
COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	Noise Blanker	1042-29	LA-038	CBS512-7TC	
L2	Noise Blanker	2102-22	LA-179		
L3	IF (7.8MHz)	2102-29	LA-255		
L4	IF (7.8MHz)	2102-37	LA-263		
L5	IF (7.8MHz)	2102-36	LA-262		
L6	IF (7.8MHz)	2102-31	LA-257		
L7	IF (7.8MHz)	2102-32	LA-258		
L8	RF Amp (27MHz)	2102-33	LA-259		
L9	RF Amp (27MHz)	2102-34	LA-260		
L10	RF Amp (27MHz)	2102-35	LA-261		
L11	RF Choke (470uH)	2102-45	LZ-012		
L12	Pi Filter (100uH)	2102-44	LZ-012		
L13	VCO	2102-23	LA-216		
L14	VCO Output (34MHz)	2095-12	LA-195		
L15	RF Choke (470uH)	2102-45	LZ-012		
L16	RF Choke (470uH)	2102-45	LZ-012		
L17	Carrier Shift (7.8MHz)	2102-24	LA-217		
L18	Tripler (33MHz)	2102-30	LA-256		
L19	Oscillator (34.9825MHz)	2102-24	LA-217		
L20	Oscillator (34.9850MHz)	2102-25	LA-218		
L21	RF Choke (470uH)	2102-45	LZ-012		
L22	RF Choke (470uH)	2102-45	LZ-012		
L23	RF Choke (470uH)	2102-45	LZ-012		
L24	RF Choke (470uH)	2102-45	LZ-012		
L25	RF Choke (100uH)	2102-44	LZ-012		
L26	XMT Mixer Input (7.8MHz)	2102-26	LA-219		
L27	XMT Mixer (35MHz)	2095-10	LA-160		
L28	XMT Predriver (27MHz)	2102-27	LA-220		
L29	XMT Predriver (27MHz)	2102-28	LA-254		
L30	RF Choke	2102-41	LD-096		
L33	RF Choke	2102-42	LD-098		
L35	RF Choke	2102-42	LD-098		
L36	Loading Final(27MHz)	1045-24	LC-019	CB305	
L37	Pi Filter	2056-22	LE-051		
L38	Antenna Matching	2056-22	LE-051		
L39	TVI Trap (54MHz)	1045-24	LC-019	CB305	
L40	Antenna	2102-38	LD-071		
L401	RF Choke	2056-20	LD-013		
L402	RF Choke	2056-20	LD-013		
L403	RF Choke	2102-40	LD-089		

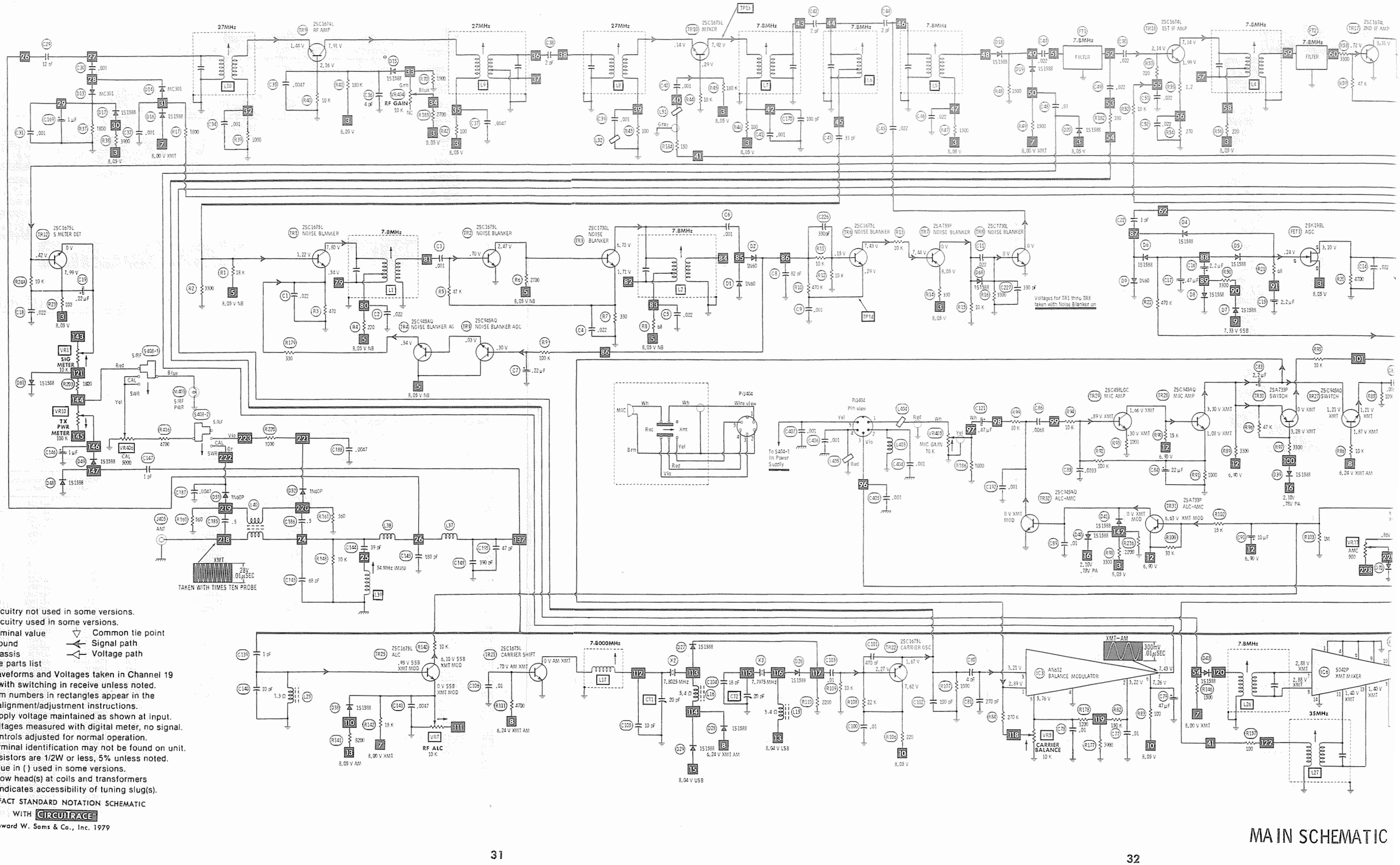
RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA	
		MFGR. PART No.	WORKMAN PART No.
R55	2.2 5% 1/4W Carbon Film		22-1032

ITEM No.	RATING	REPLACEMENT DATA	
		MFGR. PART No.	WORKMAN PART No.



MAIN SCHEMATIC

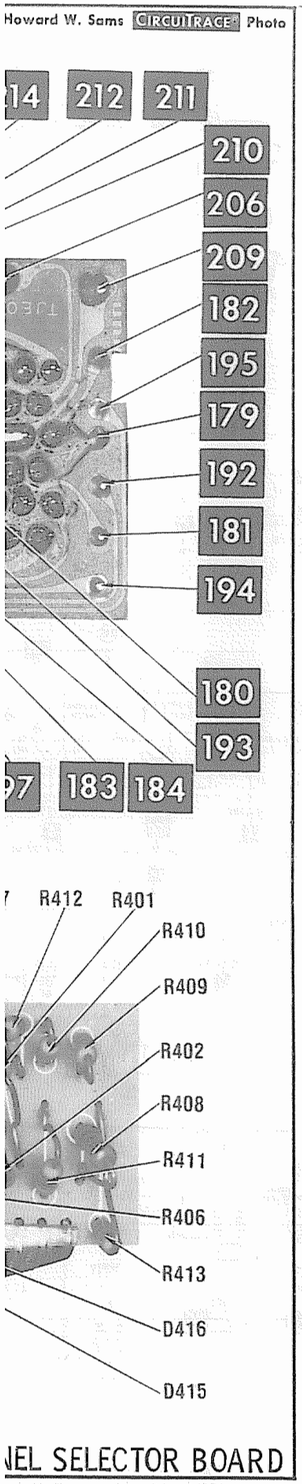


- Circuitry not used in some versions.
- Circuitry used in some versions.
- ※ Nominal value
- ⏚ Ground
- Chassis
- ⊖ See parts list
- ▽ Common tie point
- Signal path
- Voltage path

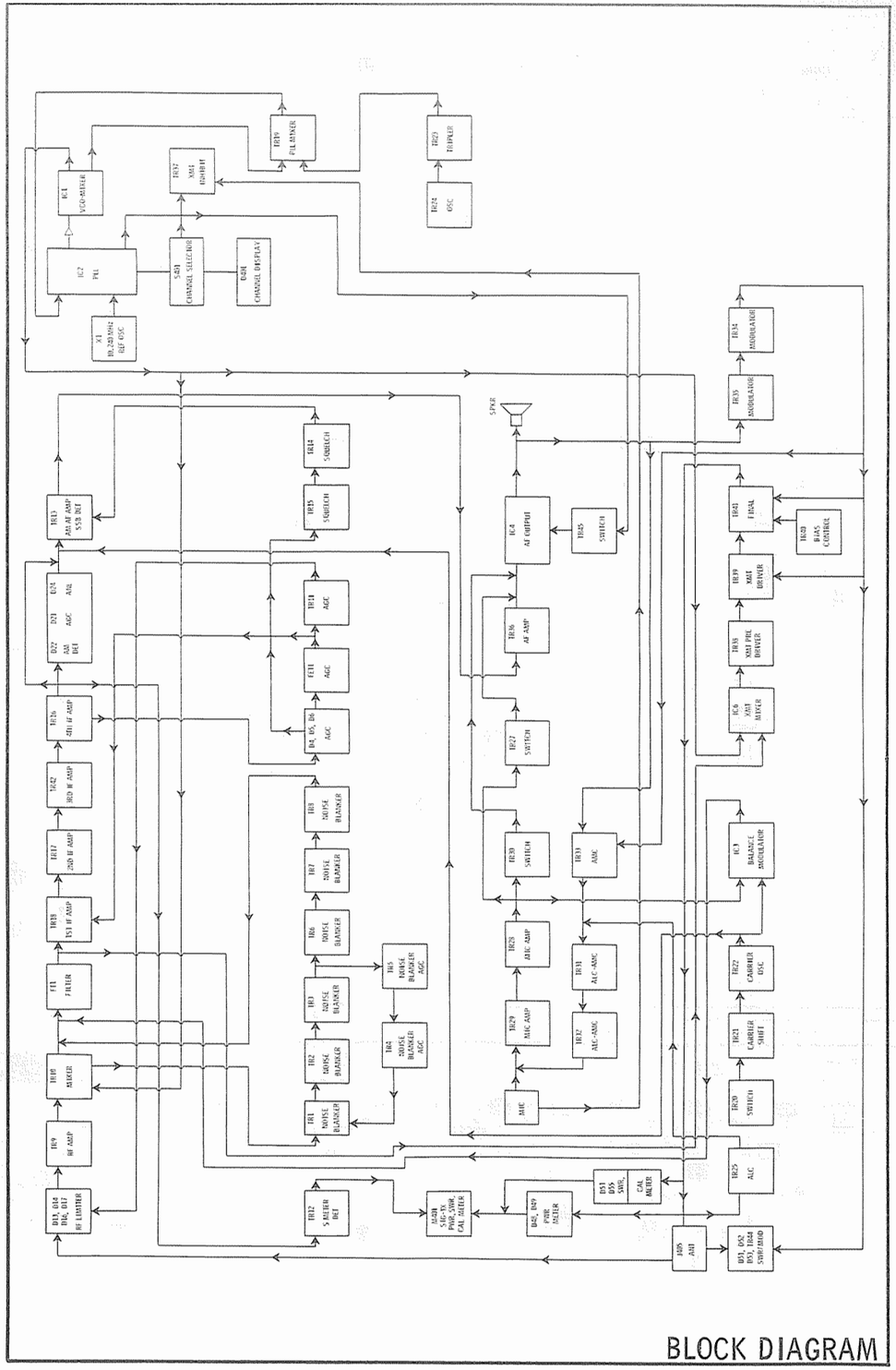
Waveforms and Voltages taken in Channel 19 with switching in receive unless noted.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltage maintained as shown at input.
Voltages measured with digital meter, no signal.
Controls adjusted for normal operation.
Terminal 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®

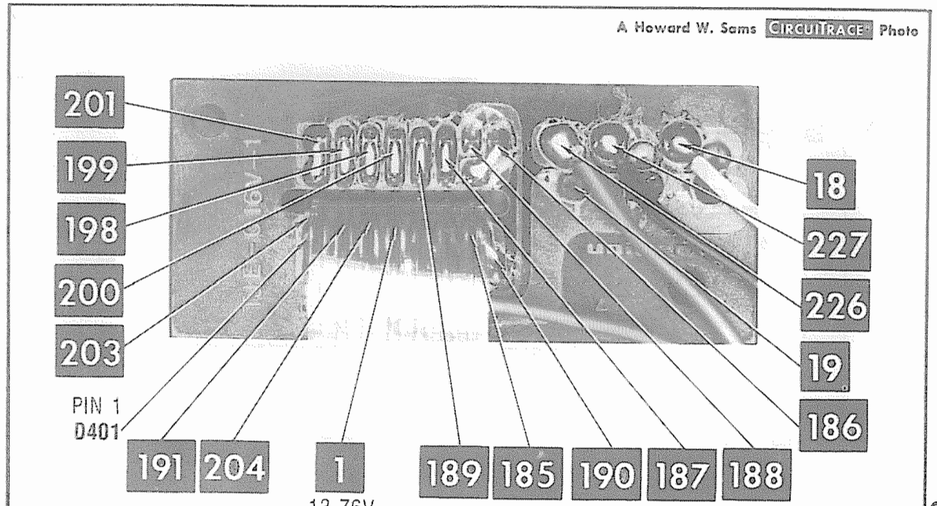
MAIN SCHEMATIC



CHANNEL SELECTOR BOARD



BLOCK DIAGRAM



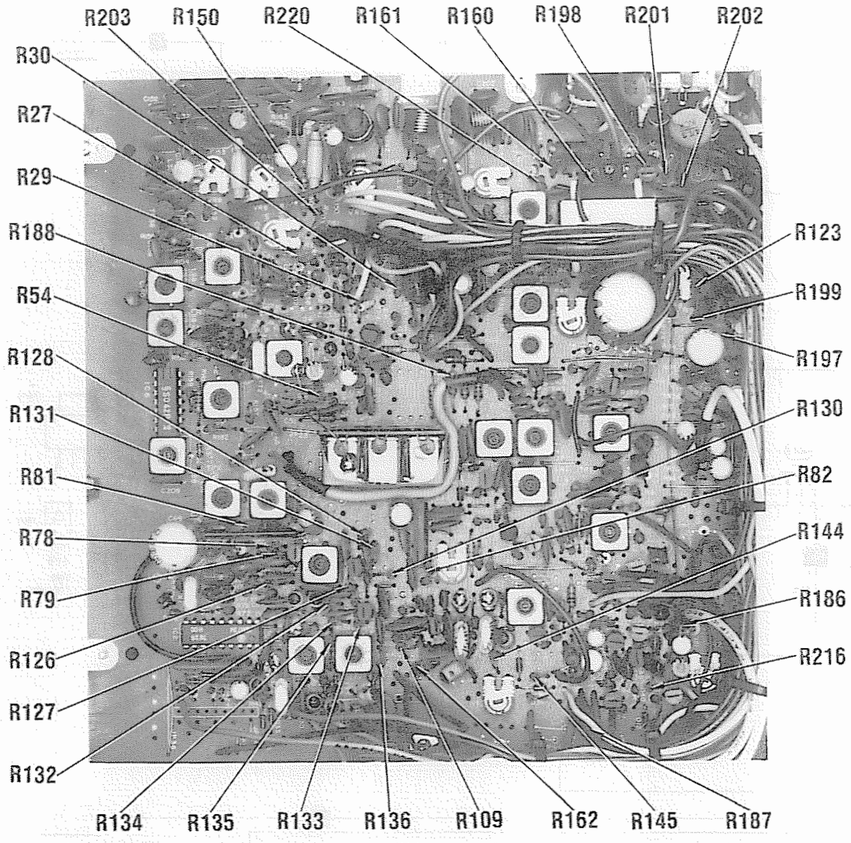
CHANNEL READOUT BOARD

PARTS LIST AND DESCRIPTION

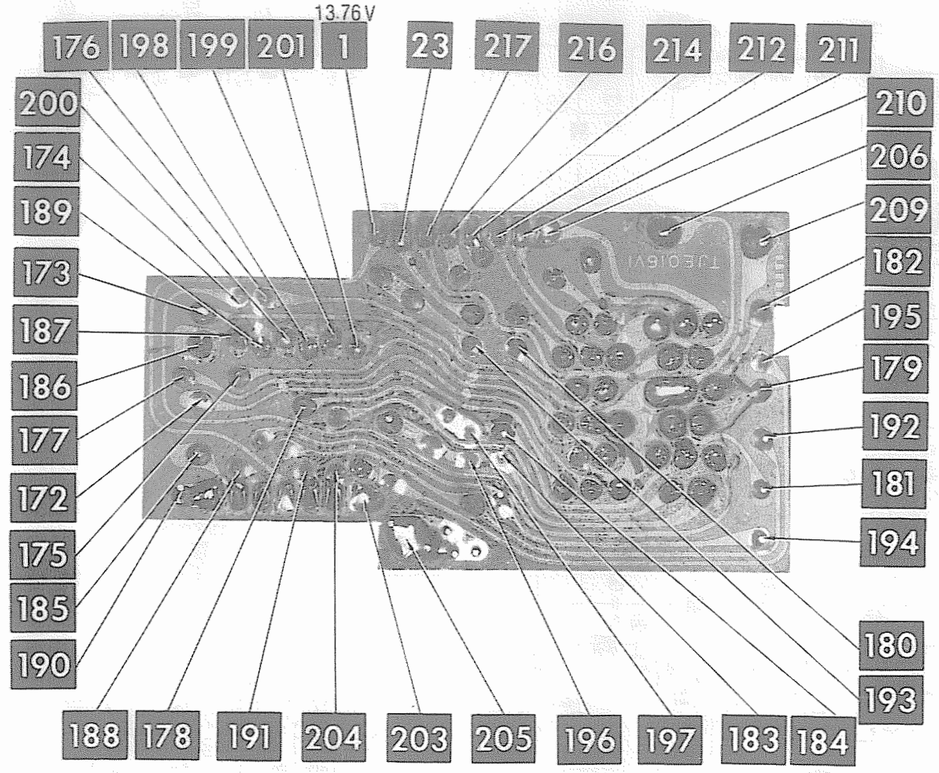
(When ordering parts, state Model, Part Number, and Description.)

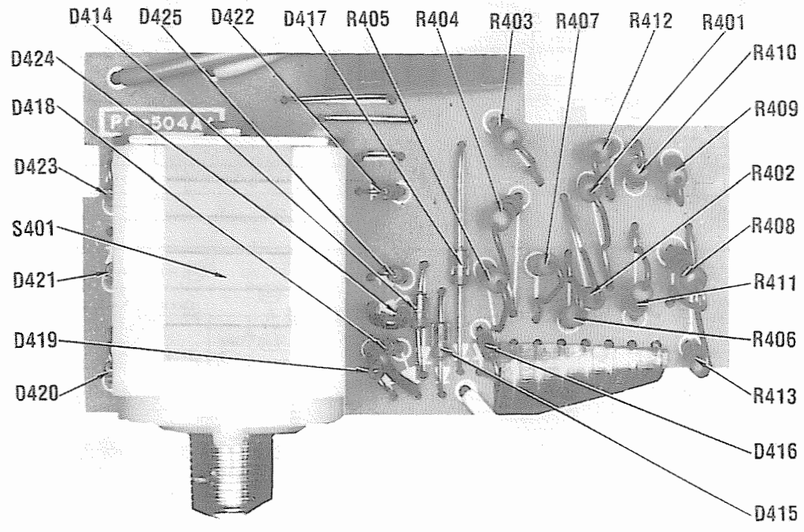
SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFGR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RAYTHEON PART No.	RCA PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
D1	1N60	194-42-9	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D2	1N60	194-42-9	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D3	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D4	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D5	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D6	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D7	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D8	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D9	1N60	194-42-9	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D10	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D11	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D12	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D13	MC301	2102-17	GE-300	PTC214	REN 177	SK3100/519	ECG177	TM177	WEP1062	103-131
D14	MC301	2102-17	GE-300	PTC214	REN 177	SK3100/519	ECG177	TM177	WEP1062	103-131
D15	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D16	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D17	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D18	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D19	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D20	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D21	1N60	194-42-9	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D22	1N60	194-42-9	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D23	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D24	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D25	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D26	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D27	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D28	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D29	1S1588	2010-02	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D30	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D31	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D32	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D33	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D34	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D35	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D36	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D37	1S2687D	2056-106			REN 612		ECG612			103-176
D38	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D39	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D40	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D41	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D42	1N60	194-42-29	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001

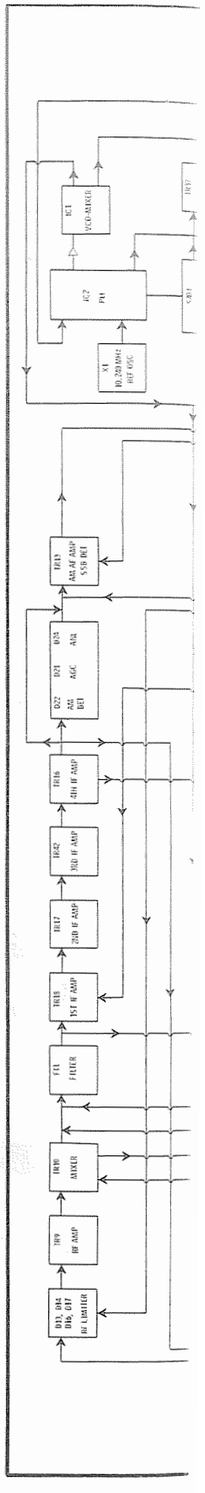


MAIN BOARD





CHANNEL SELECTOR BOARD



ORKMAN ART No.	ZENITH PART No.
925	103-287
925	103-287
156	212-76-02
925	103-287
925	103-287
925	103-287
134	103-Z9001
134	103-Z9001
925	103-287
925	103-287
925	103-287
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925	103-287
156	212-76-02
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925	103-287
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925	103-287
925	103-287
925	103-287
920	121-756
773	121-Z9021
773	121-Z9021
535	121-972*
1945	121-972
1945	121-972
773	121-Z9021
911	121-952
535	121-972*
784	121-Z9021
773	121-Z9021
1945	121-972
773	121-Z9021
1945	121-972
911	121-952
1945	121-972
535	121-972*
784	121-Z9021
784	121-Z9021
773	121-Z9021
1945	121-972
773	121-Z9021
773	121-Z9021
773	121-Z9021
773	121-Z9021
773	121-Z9021
1945	121-972
1945	121-972
458	121-Z9000A*
458	121-Z9000A*
458	121-Z9000A*
911	121-952
911	121-952
1945	121-972
1945	121-972
745	121-987-02
1945	121-972
458	121-Z9000A*
1945	121-972
912	921-1008
785	121-Z9039
913	121-Z9002
940	121-Z9040
773	121-Z9021
911	121-952

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFGR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No. Q-LINE	SPRAGUE PART No. GENERAL LINE
C7	.22 25V	2102-114		TDC224M050EL	QDT1-10	SD50-R229
C13	.1 25V	2102-113		TDC104M050EL	QDT1-2	SD50-R109
C15	2.2 25V	1079-36	PC2-100	VTT2R2A50	QV1-21	EV-1617.1
C16	2.2 25V	2102-115		TDC225M035FL		SD35-2R29
C17	.47 16V		PC1-50	VTTR47A63	QV1-3	EV-1610
	4.7 50V	1076-41	PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C19	.22 25V	2102-114		TDC224M050EL	QDT1-10	SD50-R229
C24	47 10V	170-31-1	PC50-16	VTT47D16	QV1-73	EV-1226
C26	47 10V	170-31-1	PC50-16	VTT47D16	QV1-73	EV-1226
C27	.47 50V		PC1-50	VTTR47A63	QV1-3	EV-1610
	4.7 50V	1076-41	PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C59	1 25V	2056-101		TDC105M035EL		SD35-19
C62	2.2 25V	2102-115		TDC225M035FL		SD35-2R29
C63	2.2 25V	2102-115		TDC225M035FL		SD35-2R29
C66	1000 10V	2102-117	PC1000-16	VTT1000L10	QV1-179	EV-1161
C72	4.7 10V	2056-102		TDC475M010EL	QDT1-48	SD10-4R79
C73	4.7 24V	1042-130	PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C79	47 10V	170-31-1	PC50-16	VTT47D16	QV1-73	EV-1226
C83	2.2 25V	1079-36	PC2-100	VTT2R2A50	QV1-21	EV-1617.1
C84	22 6.3V	2102-116		TDC226M015FL	QDT1-82	SD15-229
C90	10 16V	1042-129	PC10-25	VTT10B25	QV1-41	EV-1222
C92	47 10V	170-31-1	PC50-16	VTT47D16	QV1-73	EV-1226
C107	220 10V	1079-38	PC250-10	VTT220F10	QV1-115	EV-1140
C108	.47 50V		PC1-50	VTTR47A63	QV1-3	EV-1610
	4.7 50V	1076-41	PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C109	22 6.3V	2102-116		TDC226M015FL	QDT1-82	SD15-229
C112	4.7 24V	1042-130	PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C113	22 6.3V	2102-116		TDC226M015FL	QDT1-82	SD15-229
C114	47 10V	170-31-1	PC50-16	VTT47D16	QV1-73	EV-1226
C117	10 24V	170-79-1	PC10-25	VTT10B25		EV-1422
C118	470 10V	170-56-9	PC500-16	VTT470K16	QV1-151	EV-1251
C119	1 50V	1011-40	PC1-50	VTT1A50	QV1-11	EV-1615
C120	10 16V	1042-129	PC10-25	VTT10B25	QV1-41	EV-1222
C121	.47 16V		PC1-50	VTTR47A63	QV1-3	EV-1610
	4.7 50V	1076-41	PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C133	10 16V	1042-129	PC10-25	VTT10B25	QV1-41	EV-1222
C134	1000 25V	1042-123	WBR1000-25*	VTT1000M25	QV1-185	EV-1360
C142	.47 50V		PC1-50	VTTR47A63	QV1-3	EV-1610
	4.7 50V	1076-41	PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C146	1 50V	1011-40	PC1-50	VTT1A50	QV1-11	EV-1615
C162	1 50V	1011-40	PC1-50	VTT1A50	QV1-11	EV-1615
C164	10 25V	170-79-1	PC10-25	VTT10B25		EV-1422
C169	1 50V	1011-40	PC1-50	VTT1A50	QV1-11	EV-1615
C180	22 16V	1079-40	PC25-25	VTT22B16	QV1-55	EV-1224
C191	47 10V	170-31-1	PC50-16	VTT47D16	QV1-73	EV-1226
C193	1 25V	2056-101		TDC105M035EL		SD35-19
C215	47 10V	170-31-1	PC50-16	VTT47D16	QV1-73	EV-1226

CAPACITORS

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No. Q-LINE	SPRAGUE PART No. GENERAL LINE
C1	.022 50V				M192P2239R8		192P2239R8
C2	.022 50V				M192P2239R8		192P2239R8
C3	.001 50V		DD-102		GP210		10TS-D10
C4	.022 50V				M192P2239R8		192P2239R8
C5	.022 50V				M192P2239R8		192P2239R8
C6	.001 50V		DD-102		GP210		10TS-D10
C8	82 NPO 50V 10%		DTZ-82	NP082	CN0482		10TCC-Q82
C9	.001 50V		DD-102		GP210		10TS-D10
C12	.022 50V				M192P2239R8		192P2239R8
C14	.022 50V				M192P2239R8		192P2239R8
C18	.022 50V				M192P2239R8		192P2239R8
C20	.022 50V				M192P2239R8		192P2239R8
C21	5 NPO 50V ±.25				GP550		
C22	3 NPO 50V ±.25				CN0533		
C23	1 NPO 50V ±.25				CN0510		
	3 NPO 50V ±.25				CN0533		
C25	.047 50V 10%			DPMS2S47	ENF1A147	QF1-171	1PB-S47
C28	.1 50V 10%			WMF05P1	ENF05010		431P1049R5
C29	12 NPO 50V 10%				CN0412		10TCC-Q12

COURIER MODEL GALAXY

CAPACITORS (cont)

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No. Q-LINE	SPRAGUE PART No. GENERAL LINE
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				M192P4729R8		192P4729R8
	.047 50V			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C34	.001 50V		DD-102		GP210		10TS-D10
C35	.0047 50V		DD-472	GP4700	GP247		5GA-D47
	.047 50V			DPMS2S47	ENF1A147	QF1-171	1PB-S47
C36	4 NPO 50V ±.25				CN0547		
C37	.0047 50V		DD-472	GP4700	GP247		5GA-D47
	.047 50V			DPMS2S47	ENF1A147	QF1-171	1PB-S47
C38	2 NPO 50V ±.25				CN0522		
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 ±.25				CN0522		
C43	33 NPO 50V 10%		DTZ-33	NP033	CN0433		10TCC-Q33
C44	2 NPO 50V ±.25				CN0522		
C45	.022 50V			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C46	.022 50V			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C47	.022 50V			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C48	.01 50V		UK50-103		MAG5011		
C49	.022 50V			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C50	.022 50V			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C51	.022 50V			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C52	.022 50V			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C54	.022 50V 10%			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C55	.022 50V 10%			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C56	.022 50V			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C57	27 NPO 50V 10%				CN0427		10TCC-Q27
C58	.001 50V 10%			DPMS6D1	M192P1092R8	QFT2-1	1FT-D10
C60	.01 50V		UK50-103		MAG5011		
C61	.1 50V 10%			WMF05P1	ENF05010		431P1049R5
C64	18 NPO 50V 10%				CN0418		10TCC-Q18
C65	10 NPO 50V .5		DTZ-10	NP010	CN0410		10TCC-Q10
C67	.01 50V		UK50-103		MAG5011		
C68	.022 50V			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C69	47 NPO 50V 5%		DTZ-47	NP047	CN0447		10TCC-Q47
C70	47 NPO 50V 5%		DTZ-47	NP047	CN0447		10TCC-Q47
C71	.047 50V 10%			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C74	.01 50V		UK50-103		MAG5011		
C75	.01 50V		UK50-103		MAG5011		
C76	15 50V 10%		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%				CN7327		10TCU-T27
C82	.0068 50V 10%			WMF1D68	M192P6829R8	QFT2-73	1FT-D68
C85	.0033 50V 10%			WMF1D33	M192P3329R8	QFT2-73	1FT-D33
C86	.0068 50V 10%			WMF1D68	M192P6829R8	QFT2-73	1FT-D68
C87	.022 50V			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C88	.01 50V 10%			WMF1S1	M192P1039R8	QFT2-127	1FT-S22
C89	.01 50V 10%			WMF1S1	M192P1039R8	QFT2-91	1FT-S10
C91	.001 50V 10%			DPMS6D1	M192P1092	QFT2-1	1FT-D10
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 10%		DD-471	GP470	GP347		10TS-T47
C102	100 NPO 50V 10%		DTZ-100	NP0100	CN0310		10TCC-T10
C103	.01 50V		UK50-103		MAG5011		
C104	18 NPO 50V 10%				CN0418		10TCC-Q18
C105	10 NPO 50V ±.5pF	2102-127	DTZ-10	NP010	CN0410		10TCC-Q10
C106	.01 50V		UK50-103		MAG5011		
C110	.033 50V 10%			DPMS6S33	M192P3339R8	QFT2-149	1FT-S33
C111	.022 50V 10%			DPMS2S22	M192P2239R8	QFT2-127	1FT-S22
C115	.001 50V 10%		DD-102		GP210		10TS-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 ±.5pF	2102-127	DTZ-10	NP010	CN0410		10TCC-Q10
C127	220 50V		DTZ-220				10TCC-T22
C128	470 N750 50V 10%		DTN-470				10TCU-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
	.047 50V			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C136	.0047 50V		DD-472	GP4700	GP247		5GA-D47
	.047 50V			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47
C137	.0047 50V		DD-472	GP4700	GP247		5GA-D47
	.047 50V			DPMS2S47	M192P4739R8	QFT2-171	1FT-S47

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFGR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RAYTHEON PART No.	RCA PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
D43	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D44	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D45	SR1K-2	1042-17	GE-504A	PTC201	REN 116	SK3311	ECG116	TM116	WEP156	212-76-02
D46	MV-1Y	2102-20		PTC301	REN 601	SK3463/601	ECG601			
D47	MV-13YH	2102-21		PTC302			ECG605			
D48	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D49	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D50	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D51	1N60P	1042-13	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D52	1N60P	1042-13	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D54	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D55	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D56	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D57	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D58	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D59	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D60	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
	SR1K-2	1042-17	GE-504A	PTC201	REN 116	SK3311	ECG116	TM116	WEP156	212-76-02
D61	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D62	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D65	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D68	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D70	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D201	SR1K-2	1042-17	GE-504A	PTC201	REN 116	SK3311	ECG116	TM116	WEP156	212-76-02
D414	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D415	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D416	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D417	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D418	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D419	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D420	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D421	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D422	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D423	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D424	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
D425	1S1588	2010-01	GE-514	PTC214	REN 177	SK3100/519	ECG519	TM519	WEP925	103-287
FET1	2SK19BL	2102-11	GE-FET-2	PTC161	REN 132*	SK3834/132	ECG312*	TM312*	WEP920	121-756
IC1	UHIC-007	2102-05					ECG1262			
IC2	MB8734	2102-06								
IC3	AN612	2102-07					ECG1249			
						SK3726				
IC4	TA7222P	2102-08								
IC5	MB3756	2102-09								
IC6	S042P	2102-10								
TR1	2SC1675L	2046-03	GE-213	PTC132*	REN 229*	SK3122	ECG229*	TM229*	WEP773	121-Z9021
TR2	2SC1675L	2046-03	GE-213	PTC132*	REN 229*	SK3122	ECG229*	TM229*	WEP773	121-Z9021
TR3	2SC1730L	2056-08	GE-17*	PTC136*	REN 107	SK3293/107	ECG316*	TM316*	WEP535	121-972*
TR4	2SC945AQ	2056-07	GE-212	PTC121*	REN 199	SK3124/289	ECG199	TM199/**	WEP1945	121-972
TR5	2SC945AQ	2056-07	GE-212	PTC121*	REN 199	SK3124/289	ECG199	TM199/**	WEP1945	121-972
TR6	2SC1675L	2046-03	GE-213	PTC132*	REN 229*	SK3122	ECG229*	TM229*	WEP773	121-Z9021
TR7	2SA733P	2056-10	GE-48	PTC127	REN 294	SK3114/290	ECG294	TM294/**	WEP911	121-952
TR8	2SC1730L	2056-08	GE-17*	PTC136*	REN 107	SK3293/107	ECG316*	TM316*	WEP535	121-972*
TR9	2SC1674L	2032-34	GE-61*	PTC132*	REN 229*	SK3132	ECG229*	TM229*	WEP784	121-Z9021
TR10	2SC1675L	2046-03	GE-213	PTC132*	REN 229*	SK3122	ECG229*	TM229*	WEP773	121-Z9021
TR11	2SC945AQ	2056-07	GE-212	PTC121*	REN 199	SK3124/289	ECG199	TM199/**	WEP1945	121-972
TR12	2SC1675L	2046-03	GE-213	PTC132*	REN 229*	SK3122	ECG229*	TM229*	WEP773	121-Z9021
TR13	2SC945AQ	2056-07	GE-212	PTC121*	REN 199	SK3124/289	ECG199	TM199/**	WEP1945	121-972
TR14	2SA733P	2056-10	GE-48	PTC127	REN 294	SK3114/290	ECG294	TM294/**	WEP911	121-952
TR15	2SC945AQ	2056-07	GE-212	PTC121*	REN 199	SK3124/289	ECG199	TM199/**	WEP1945	121-972
TR16	2SC1730L	2056-08	GE-17*	PTC136*	REN 107	SK3293/107	ECG316*	TM316*	WEP535	121-972*
TR17	2SC1674L	2032-34	GE-61*	PTC132*	REN 229*	SK3132	ECG229*	TM229*	WEP784	121-Z9021
TR18	2SC1674L	2032-34	GE-61*	PTC132*	REN 229*	SK3132	ECG229*	TM229*	WEP784	121-Z9021
TR19	2SC1675L	2046-03	GE-213	PTC132*	REN 229*	SK3122	ECG229*	TM229*	WEP773	121-Z9021
TR20	2SC1145AQ	2056-07	GE-212	PTC121*	REN 199	SK3124/289	ECG199	TM199/**	WEP1945	121-972
TR21	2SC1675L	2046-03	GE-213	PTC132*	REN 229*	SK3122	ECG229*	TM229*	WEP773	121-Z9021
TR22	2SC1675L	2046-03	GE-213	PTC132*	REN 229*	SK3122	ECG229*	TM229*	WEP773	121-Z9021
TR23	2SC1675L	2046-03	GE-213	PTC132*	REN 229*	SK3122	ECG229*	TM229*	WEP773	121-Z9021
TR24	2SC1675L	2046-03	GE-213	PTC132*	REN 229*	SK3122	ECG229*	TM229*	WEP773	121-Z9021
TR25	2SC1675L	2046-03	GE-213	PTC132*	REN 229*	SK3122	ECG229*	TM229*	WEP773	121-Z9021
TR27	2SC945AQ	2056-07	GE-212	PTC121*	REN 199	SK3124/289	ECG199	TM199/**	WEP1945	121-972
TR28	2SC945AQ	2056-07	GE-212	PTC121*	REN 199	SK3124/289	ECG199	TM199/**	WEP1945	121-972
TR29	2SC458C	2102-13	GE-210	PTC121*	REN 289	SK3124/289	ECG289	TM289/**	WEP458	121-Z9000A*
	2SC458PGC	2102-14	GE-210	PTC121*	REN 289	SK3124/289	ECG289	TM289/**	WEP458	121-Z9000A*
	2SC458LGC		GE-210	PTC121*	REN 289	SK3124/289	ECG289	TM289/**	WEP458	121-Z9000A*
TR30	2SA733P	2056-10	GE-48	PTC127	REN 294	SK3114/290	ECG294	TM294/**	WEP911	121-952
TR31	2SA733P	2056-10	GE-48	PTC127	REN 294	SK3114/290	ECG294	TM294/**	WEP911	121-952
TR32	2SC945AQ	2056-07	GE-212	PTC121*	REN 199	SK3124/289	ECG199	TM199/**	WEP1945	121-972
TR33	2SC945AQ	2056-07	GE-212	PTC121*	REN 199	SK3124/289	ECG199	TM199/**	WEP1945	121-972
TR34	2SC1419C	2102-15	GE-66	PTC167	REN 152	SK3197/235	ECG152	TM152	WEP745	121-987-02
TR35	2SC945AQ	2056-07	GE-212	PTC121*	REN 199	SK3124/289	ECG199	TM199/**	WEP1945	121-972
TR36	2SC458C	2102-13	GE-210	PTC121*	REN 289	SK3124/289	ECG289	TM289/**	WEP458	121-Z9000A*
TR37	2SC945AQ	2056-07	GE-212	PTC121*	REN 199	SK3124/289	ECG199	TM199/**	WEP1945	121-972
TR38	2SC1973	2056-09	GE-285*	PTC143*	REN 293	SK3529*	ECG293	TM293	WEP912	921-1008
TR39	2SC1306	1042-08	GE-215	PTC186	REN 235	SK3239/236	ECG235	TM235/**	WEP785	121-Z9039
TR40	2SC496-O	2102-12	GE-57	PTC163	REN 295	SK3253/295	ECG295	TM295/**	WEP913	121-Z9002
TR41	2SC1969B	2102-16	GE-216	PTC186	REN 236	SK3239/236	ECG236	TM236	WEPR40	121-Z9040
TR42	2SC1675L	2046-03	GE-213	PTC132*	REN 229*	SK3122	ECG229*	TM229*	WEP773	121-Z9021
TR45	2SA733P	2056-10	GE-48	PTC127	REN 294	SK3114/290	ECG294	TM294/**	WEP911	121-952

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

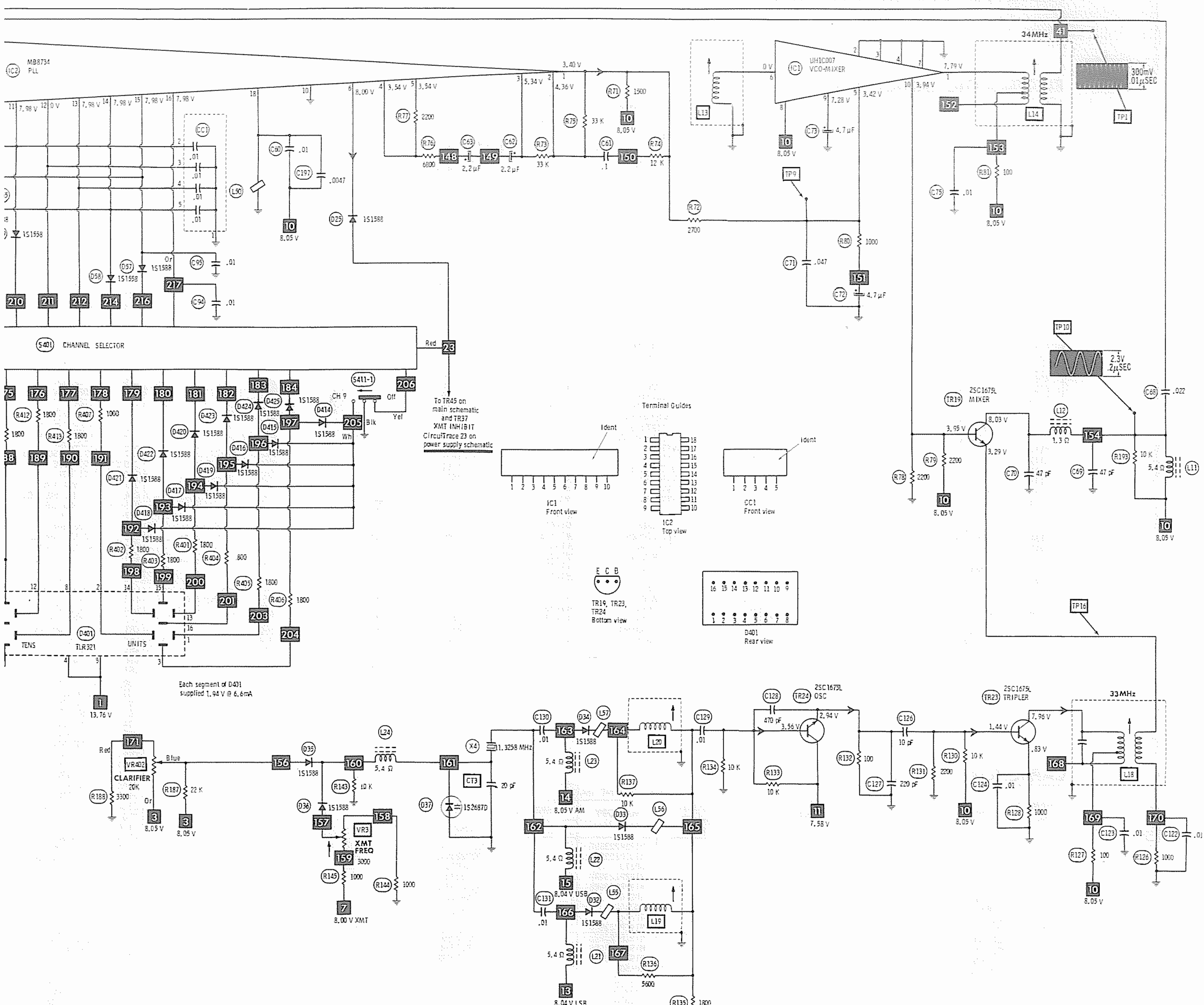
PARTS LIST AND DESCRIPTION (CONTINUED)
(When ordering parts, state Model, Part Number, and Description.)

ELECTROLYTIC CAPACITORS

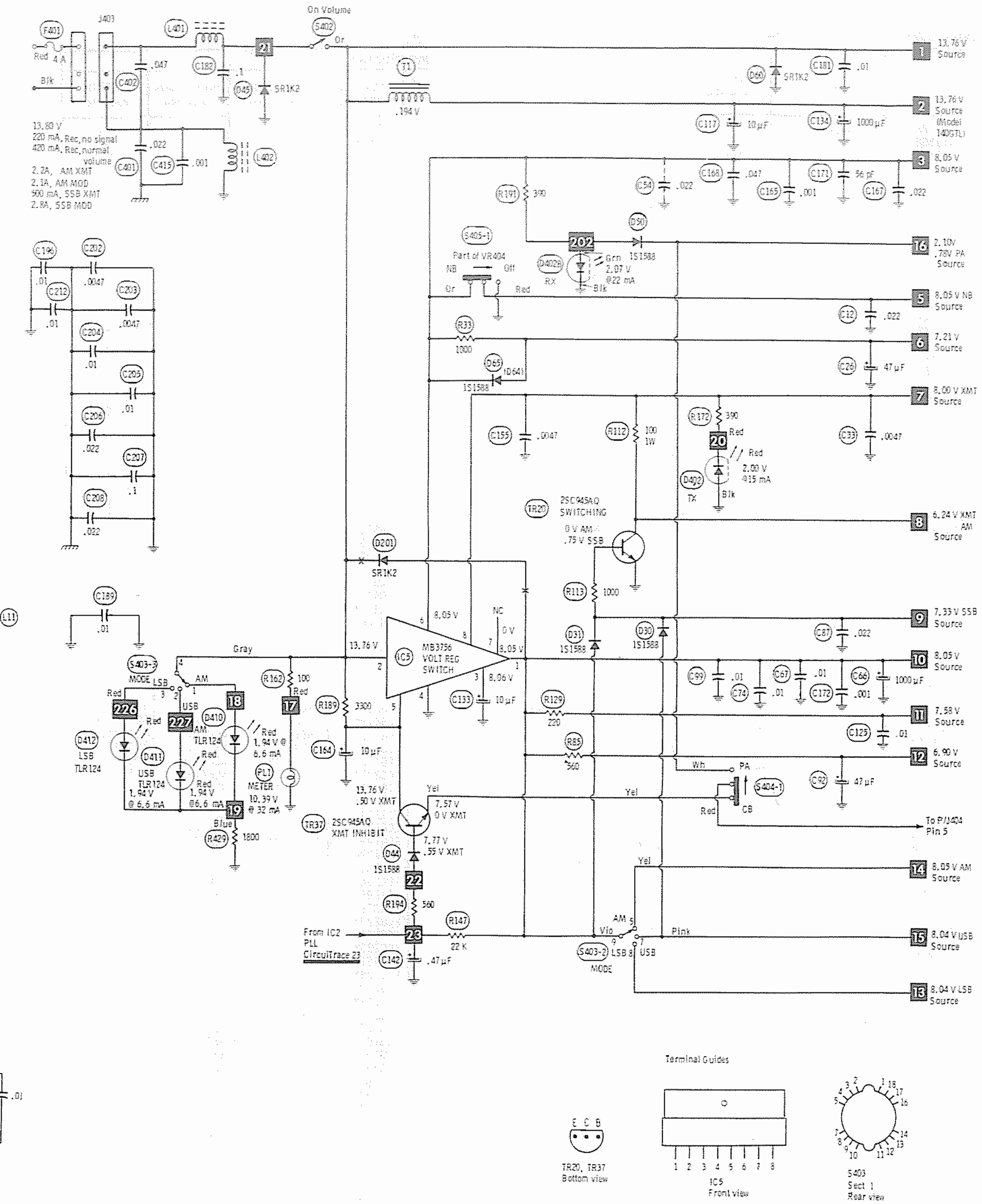
ITEM No.	RATING	REPLACEMENT DATA				
		MFGR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C7	.22 25V	2102-114		TDC224M050EL	QDT1-10	SD50-R229
C13	.1 25V	2102-113		TDC104M050EL	QDT1-2	SD50-R109
C15	2.2 25V	1079-36	PC2-100	VTT2R2A50	QV1-21	EV-1617.1
C16	2.2 25V	2102-115		TDC225M035FL		SD35-2R29
C17	.47 16V		PC1-50	VTTR47A63	QV1-3	EV-1610
	4.7 50V	1076-41	PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C19	.22 25V	2102-114		TDC224M050EL	QDT1-10	SD50-R229
C24	47 10V	170-31-1	PC50-16	VTT47D16	QV1-73	EV-1226
C26	47 10V	170-31-1	PC50-16	VTT47D16	QV1-73	EV-1226
C27	.47 50V		PC1-50	VTTR47A63	QV1-3	EV-1610
	4.7 50V	1076-41	PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C59	1 25V	2056-101		TDC105M035EL		SD35-1R
C62	2.2 25V	2102-115		TDC225M035FL		SD35-2R29
C63	2.2 25V	2102-115		TDC225M035FL		SD35-2R29
C66	1000 10V	2102-117	PC1000-16	VTT1000L10	QV1-179	EV-1161
C72	4.7 10V	2056-102		TDC475M010EL	QDT1-48	SD10-4R79
C73	4.7 24V	1042-130	PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C78	47 10V	170-31-1	PC50-16	VTT47D16	QV1-73	EV-1226
C83	2.2 25V	1079-36	PC2-100	VTT2R2A50	QV1-21	EV-1617.1
C84	22 6.3V	2102-116		TDC226M015FL	QDT1-82	SD15-229
C90	10 16V	1042-129	PC10-25	VTT10B25	QV1-41	EV-1222
C92	47 10V	170-31-1	PC50-16	VTT47D16	QV1-73	EV-1226
C107	220 10V	1079-38	PC250-10	VTT220F10	QV1-115	EV-1140
C108	.47 50V		PC1-50	VTTR47A63	QV1-3	EV-1610
	4.7 50V	1076-41	PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C109	22 6.3V	2102-116		TDC226M015FL	QDT1-82	SD15-229
C112	4.7 24V	1042-130	PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C113	22 6.3V	2102-116		TDC226M015FL	QDT1-82	SD15-229
C114	47 10V	170-31-1	PC50-16	VTT47D16	QV1-73	EV-1226
C117	10 24V	170-79-1	PC10-25	VTT10B25		EV-1422
C118	470 10V	170-56-9	PC500-16	VTT470K16	QV1-151	EV-1251
C119	1 50V	1011-40	PC1-50	VTT1A50	QV1-11	EV-1615
C120	10 16V	1042-129	PC10-25	VTT10B25	QV1-41	EV-1222
C121	.47 16V		PC1-50	VTTR47A63	QV1-3	EV-1610
	4.7 50V	1076-41	PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C133	10 16V	1042-129	PC10-25	VTT10B25	QV1-41	EV-1222
C134	1000 25V	1042-123	WBR1000-25*	VTT1000M25	QV1-185	EV-1360
C142	.47 50V		PC1-50	VTTR47A63	QV1-3	EV-1610
	4.7 50V	1076-41	PC5-50	VTT4R7B50	QV1-31	EV-1619.1
C146	1 50V	1011-40	PC1-50	VTT1A50	QV1-11	EV-1615
C162	1 50V	1011-40	PC1-50	VTT1A50	QV1-11	EV-1615
C164	10 25V	170-79-1	PC10-25	VTT10B25		EV-1422
C169	1 50V	1011-40	PC1-50	VTT1A50	QV1-11	EV-1615
C180	22 16V	1079-40	PC25-25	VTT22B16	QV1-55	EV-1224
C191	47 10V	170-31-1	PC50-16	VTT47D16	QV1-73	EV-1226
C193	1 25V	2056-101		TDC105M035EL		SD35-1R
C215	47 10V	170-31-1	PC50-16	VTT47D16	QV1-73	EV-1226

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				M192P2239R8		192P2239R8
C2	.022 50V				M192P2239R8		192P2239R8
C3	.001 50V		DD-102		GP210		10TS-D10
C4	.022 50V				M192P2239R8		192P2239R8
C5	.022 50V				M192P2239R8		192P2239R8
C6	.001 50V		DD-102		GP210		10TS-D10
C8	82 NPO 50V 10%		DTZ-82	NP082	CN0482		10TCC-Q82
C9	.001 50V		DD-102		GP210		10TS-D10
C12	.022 50V				M192P2239R8		192P2239R8
C14	.022 50V				M192P2239R8		192P2239R8
C18	.022 50V				M192P2239R8		192P2239R8
C20	.022 50V				M192P2239R8		192P2239R8
C21	5 NPO 50V ±.25				GP550		
C22	3 NPO 50V ±.25				CN0533		
C23	1 NPO 50V ±.25				CN0510		
	3 NPO 50V ±.25				CN0533		
C25	.047 50V 10%			OPMS2S47	EWF1A147	QF1-171	1PB-S47
C28	.1 50V 10%			WMF05P1	EWF05010		431P1049R5
C29	12 NPO 50V 10%				CN0412		10TCC-Q12

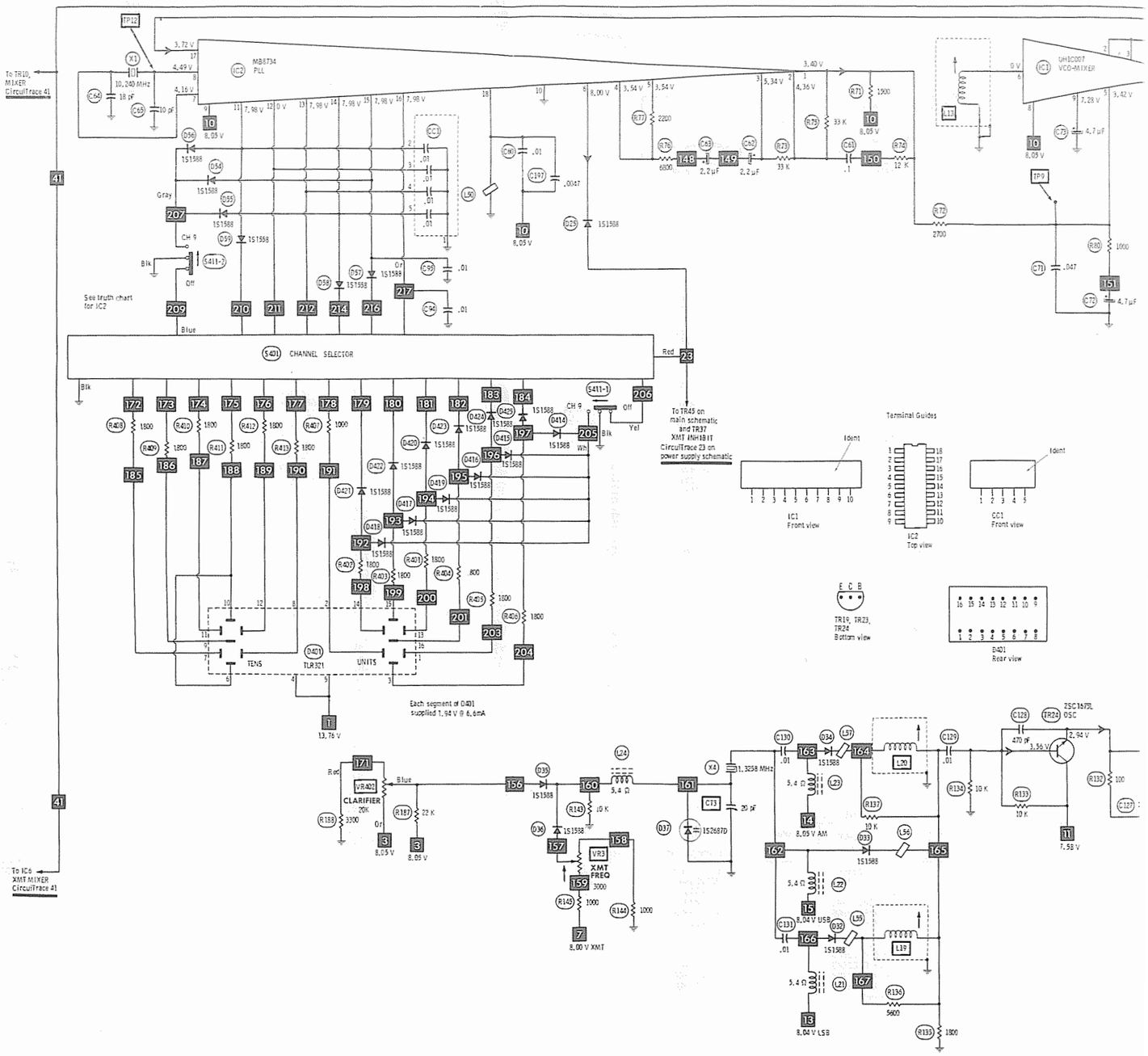


PLL SCHEMATIC



POWER SUPPLY SCHEMATIC

COURIER MODEL GALAXY



PLL SCHEMATIC

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