

# PHOTOFACT<sup>®</sup> with

# CIRCUITRACE<sup>®</sup>

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 78-574

## MANUFACTURER'S SPECIFICATIONS

MIDLAND MODEL 78-574

### RECEIVER

Receiving System:	AM: Dual conversion superheterodyne
Sensitivity for 10 dB S/N:	SSB: Single conversion superheterodyne AM: 1.0 microvolts, SSB: 0.25 microvolts
Selectivity at 6 dB down:	AM: 6 kHz, SSB: 2 kHz
Clarifier:	±800 Hz
Audio Output Power:	3 watts for 8 ohms load at EXT SP jack
Squelch Range:	1 to 500 microvolts
Intermediate Frequencies:	AM: 10.695 MHz (1st), 455 kHz (2nd), SSB: 10.695 MHz

### SSB TRANSMITTER

SSB Generation:	Dual balanced modulator with crystal lattice filter
RF Output Power:	12 watts PEP, F.C.C. maximum
Unwanted Sideband Suppression:	60 dB
Carrier Suppression:	40 dB
Harmonic Suppression:	60 dB

### AM TRANSMITTER

Modulation:	High level, Class B
RF Output Power:	4 watts, F.C.C. maximum
Harmonic Suppression:	60 dB

Courtesy of the Manufacturer

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

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## 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. Adjust RV1 at TP14 for 13.8-volts DC. 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:
T4, T201, T202, T203, T204, T205, T206 .....	9440
T1, T2 .....	5000,5009,8276,8728,9089
T207, T208 .....	5000,5009,8276,8728,9089
L212, L214 .....	8282,9304,8728,9089
L209, T209 .....	8728,9304,9089
VCO .....	9440
CT1, CT2, CT201, CT202, CT203 .....	5000,8276,9089

## SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Input of frequency counter to TP3.	Ch. 19, AM/USB	CT201	Adjust for 10.240MHz $\pm$ 50Hz.
Input of oscilloscope to TP5.	Ch. 19, AM/USB Clarifier Midrange	T201	Adjust for maximum RF. (150mV p-p typical.) (See Figure 1.)
Input of frequency counter to TP5.	Ch. 19, AM/USB Clarifier Midrange	CT203	Adjust for 20.1050MHz $\pm$ 20Hz.
Input of frequency counter to TP5.	Ch. 19, LSB Clarifier Midrange	CT202	Adjust for 20.1035MHz $\pm$ 20Hz.
Input of DC meter to TP1.	Ch. 1, AM/USB	VCO	Adjust for 3.60 volts. Check for approximately 2.00 volts on Channel 40.
Input of frequency counter to TP6 (IC203 Pin 2).	Ch. 1		Check for 2.550MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of oscilloscope to TP7 (T203 Secondary).	Ch. 19	T202,T203	Adjust for maximum RF. (80mV p-p typical.) (See Figure 2.)
Input of frequency counter to TP7 (T203 Secondary).	Ch. 1, AM/USB Clarifier Midrange		Check for 37.660MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP7 (T203 Secondary).	Ch. 1, LSB Clarifier Midrange		Check for 37.657MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP8 (Q4 Emitter).	Ch. 19, USB/ AM XMIT	CT1	Adjust for 10.695MHz $\pm$ 50Hz.
Input of frequency counter to TP8 (Q4 Emitter).	Ch. 19, LSB	CT2	Adjust for 10.692MHz $\pm$ 50Hz.

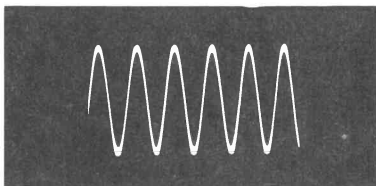


Figure 1

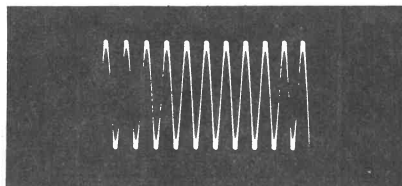


Figure 2

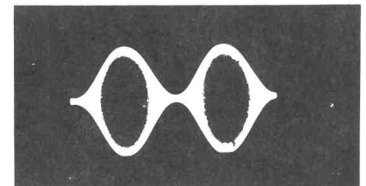


Figure 3

## 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.  
Clarifier Midrange, Squelch MINIMUM, NB Off, Tone Hi, LOC/DX DX.

### AM

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP9 (Base of Q5). 455kHz, 1000Hz @ 30% modulation.	Ch. 19	T2,T1	Adjust for maximum output.
Output of signal generator thru .01uF to antenna input. 27.185MHz, 1000Hz @ 30% modulation.	Ch. 19	T208,T207, T204,T205, T206	Adjust for maximum output. Readjust T1 and T2 for maximum.

## RECEIVER ALIGNMENT

Connect an AC VTVM or AF wattmeter across speaker voice coil.  
Adjust volume control to obtain a suitable indication.  
Set generator output low enough to prevent AGC limiting.  
Clarifier Midrange, Squelch MINIMUM, NB Off, Tone Hi, LOC/DX DX.

### SSB

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP10 (Base of Q7). 10.694MHz, no modulation.	Ch. 19, USB	T4,T3	Adjust for maximum output.
Output of signal generator thru .01uF to antenna input. 27.186MHz, no modulation.	Ch. 19, USB	T208,T207, T204,T205, T206	Adjust for maximum output. Readjust T3 and T4 for maximum.

## RECEIVER ADJUSTMENTS

Connect an AC VTVM or AF wattmeter across speaker voice coil.  
Adjust volume control to obtain a suitable indication.  
Clarifier Midrange, Squelch MINIMUM, NB Off, Tone Hi, LOC/DX DX.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of DC meter to TP11 (Junction of R226 and R248). No signal input.	Ch. 19	RV10	RF GAIN RANGE Adjust for 2.00 volts.
Output of signal generator thru .01uF to antenna input. No signal input. Input of DC meter to TP11 (Junction of D16 and D17).	Ch. 19, USB	RV6	SSB AGC Adjust for 2.10 volts.
Output of signal generator thru .01uF to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Output 500uV.	Ch. 19, AM	RV7	AM SQUELCH RANGE Adjust so squelch just breaks.
Output of signal generator thru .01uF to antenna input. 27.186MHz, no modulation. Output 500uV.	Ch. 19, USB	RV8	SSB 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, AM	RV5	AM S METER Adjust for 9 on RX signal scale of meter.

## RECEIVER ADJUSTMENTS (Continued)

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna input. 27.186MHz, no modulation. Output 100uV.	Ch. 19, USB	RV4	SSB S METER Adjust for 9 on RX signal 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.

## SSB

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of RF wattmeter to antenna input. Inject a 2400Hz, 10mV signal at Mic input.	Ch. 19, USB	T204,T205, T3,T209, L209,L212, L214	Adjust for maximum RF output.

## 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.

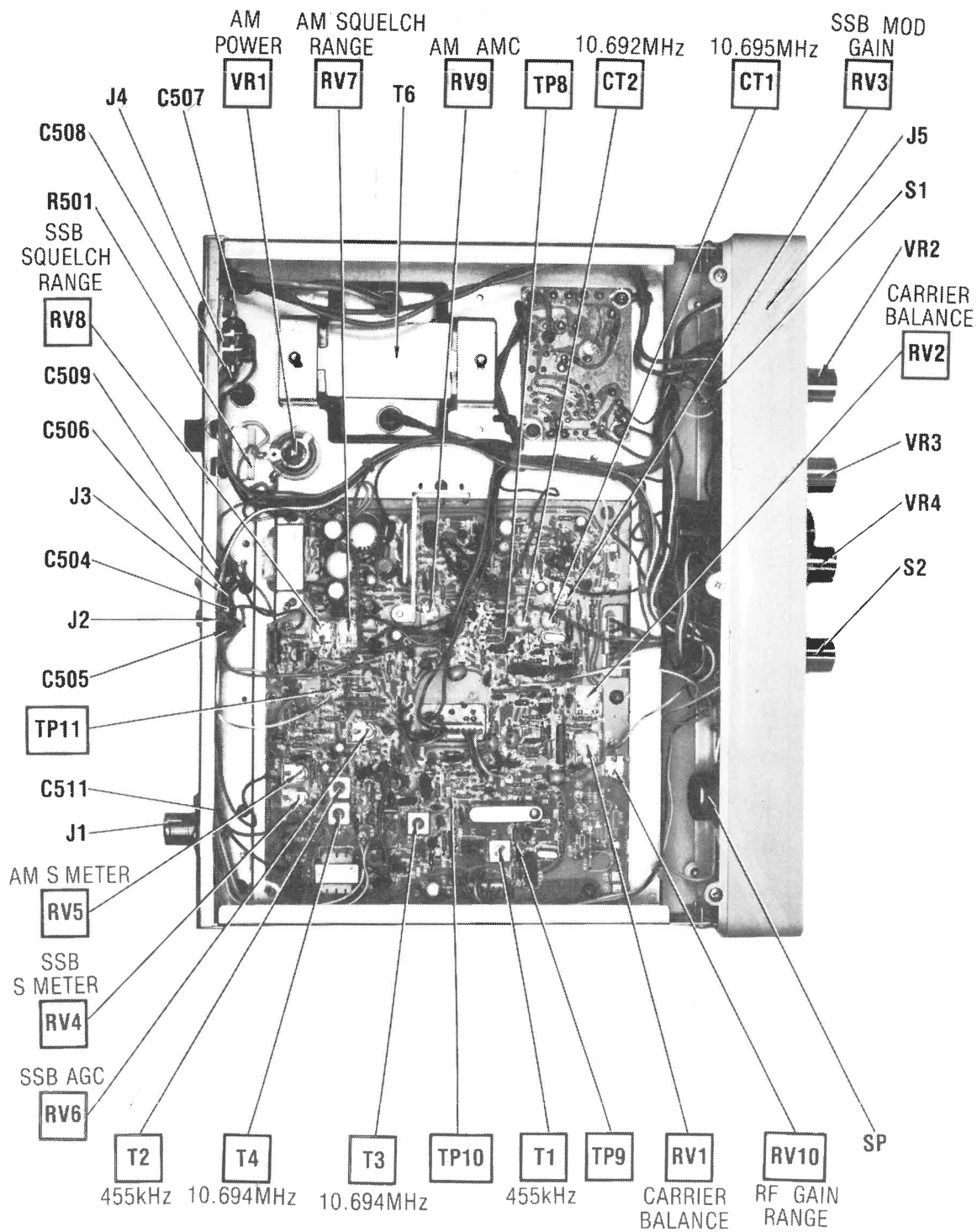
TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of RF wattmeter to antenna input. No signal input.	Ch. 19, USB	RV1,RV2	CARRIER BALANCE Adjust for MINIMUM RF output.
Input of RF wattmeter to antenna input. No signal input. Input of DC meter to TP13 (Q208 Base).	Ch. 19, USB	RV206	XMT FINAL BIAS Adjust for .70 volts bias.
Input of RF wattmeter to antenna input. Inject a 2400Hz, 2.5mV signal at Mic input.	Ch. 19, USB	RV3	SSB MOD GAIN Adjust for 12 watts RF output.
Input of RF wattmeter to antenna input. Inject a 2400Hz, 20mV signal at Mic input.	Ch. 19, USB	RV201	SSB RF ALC Adjust for 12 watts RF output maximum.
Input of oscilloscope or modulation meter to antenna input. Inject a 1000Hz, 100mV signal at Mic input.	Ch. 19, AM	RV9	AM AMC Adjust for 100% modulation maximum. (See Figure 3.)
Input of RF wattmeter to antenna input.	Ch. 19, AM	RV202	RF METER Adjust so RF meter agrees with RF wattmeter.
Input of RF wattmeter and 50-ohm, 25-watt dummy load to antenna input.	Ch. 19, AM Mic Power MINIMUM Speech Comp Normal	VR1	AM POWER Adjust for 4.0 watts RF output maximum.



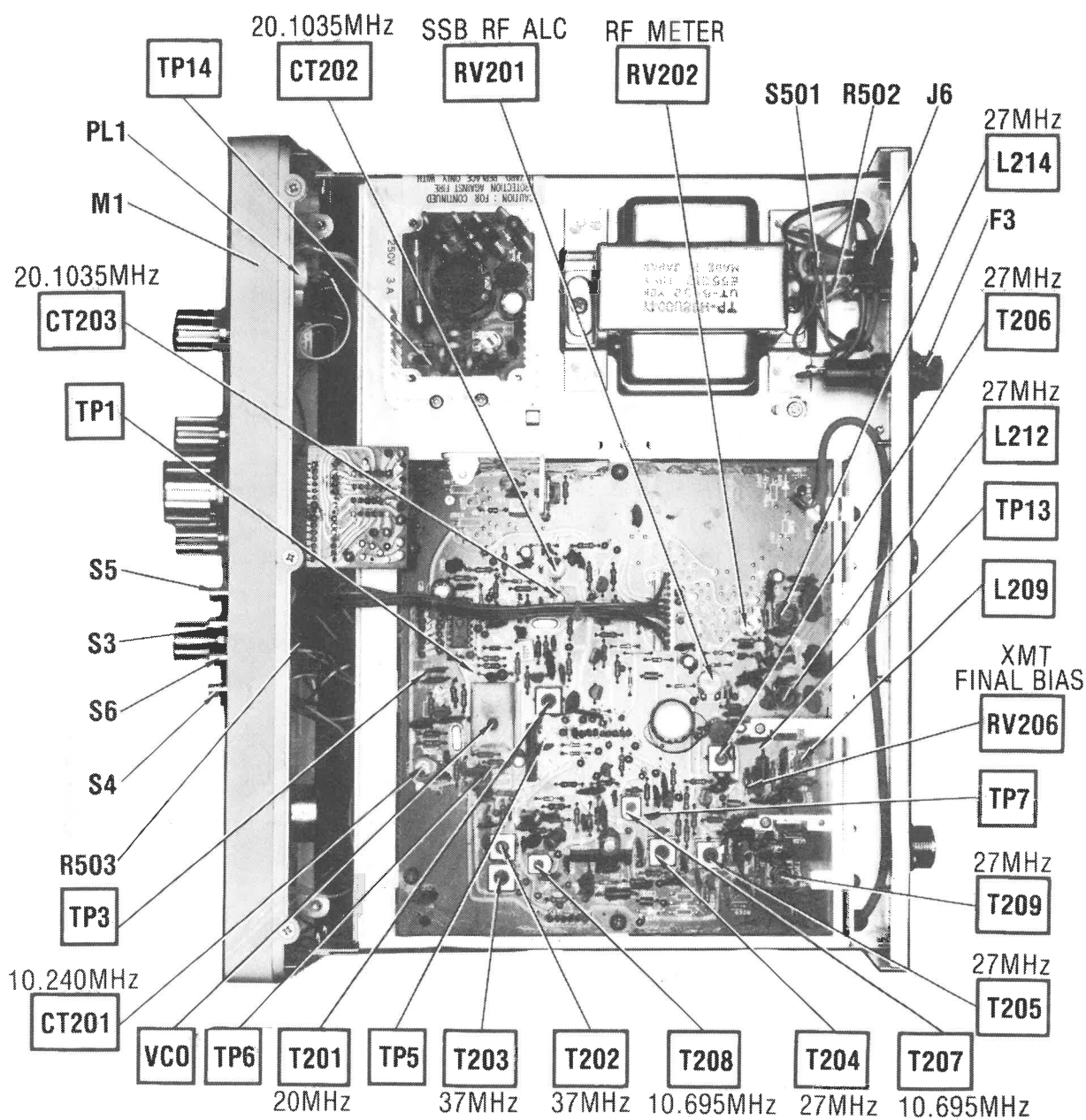
# TRUTH CHART

C H A N N E L	1 = 5.40 Volts      0 = 0 Volts								DIVIDER INPUT IN MHz AT TP6	AM/USB REC & XMIT SYNTHESIZER OUTPUT IN MHz AT TP7	LSB REC & XMIT SYNTHESIZER OUTPUT IN MHz AT TP7
	PROGRAM DIVIDER IC203										
	PINS										
	10	11	12	13	14	15					
1	1	1	1	1	1	1			2.550	37.660	37.657
2	1	1	1	1	1	0			2.540	37.670	37.667
3	1	1	1	1	0	1			2.530	37.680	37.677
4	1	1	1	0	1	1			2.510	37.700	37.697
5	1	1	1	0	1	0			2.500	37.710	37.707
6	1	1	1	0	0	1			2.490	37.720	37.717
7	1	1	1	0	0	0			2.480	37.730	37.727
8	1	1	0	1	1	0			2.460	37.750	37.747
9	1	1	0	1	0	1			2.450	37.760	37.757
10	1	1	0	1	0	0			2.440	37.770	37.767
11	1	1	0	0	1	1			2.430	37.780	37.777
12	1	1	0	0	0	1			2.410	37.800	37.797
13	1	1	0	0	0	0			2.400	37.810	37.807
14	1	0	1	1	1	1			2.390	37.820	37.817
15	1	0	1	1	1	0			2.380	37.830	37.827
16	1	0	1	1	0	0			2.360	37.850	37.847
17	1	0	1	0	1	1			2.350	37.860	37.857
18	1	0	1	0	1	0			2.340	37.870	37.867
19	1	0	1	0	0	1			2.330	37.880	37.877
20	1	0	0	1	1	1			2.310	37.900	37.897
21	1	0	0	1	1	0			2.300	37.910	37.907
22	1	0	0	1	0	1			2.290	37.920	37.917
23	1	0	0	0	1	0			2.260	37.950	37.947
24	1	0	0	1	0	0			2.280	37.930	37.927
25	1	0	0	0	1	1			2.270	37.940	37.937
26	1	0	0	0	0	1			2.250	37.960	37.957
27	1	0	0	0	0	0			2.240	37.970	37.967
28	0	1	1	1	1	1			2.230	37.980	37.977
29	0	1	1	1	1	0			2.220	37.990	37.987
30	0	1	1	1	0	1			2.210	38.000	37.997
31	0	1	1	1	0	0			2.200	38.010	38.007
32	0	1	1	0	1	1			2.190	38.020	38.017
33	0	1	1	0	1	0			2.180	38.030	38.027
34	0	1	1	0	0	1			2.170	38.040	38.037
35	0	1	1	0	0	0			2.160	38.050	38.047
36	0	1	0	1	1	1			2.150	38.060	38.057
37	0	1	0	1	1	0			2.140	38.070	38.067
38	0	1	0	1	0	1			2.130	38.080	38.077
39	0	1	0	1	0	0			2.120	38.090	38.087
40	0	1	0	0	1	1			2.110	38.100	38.097

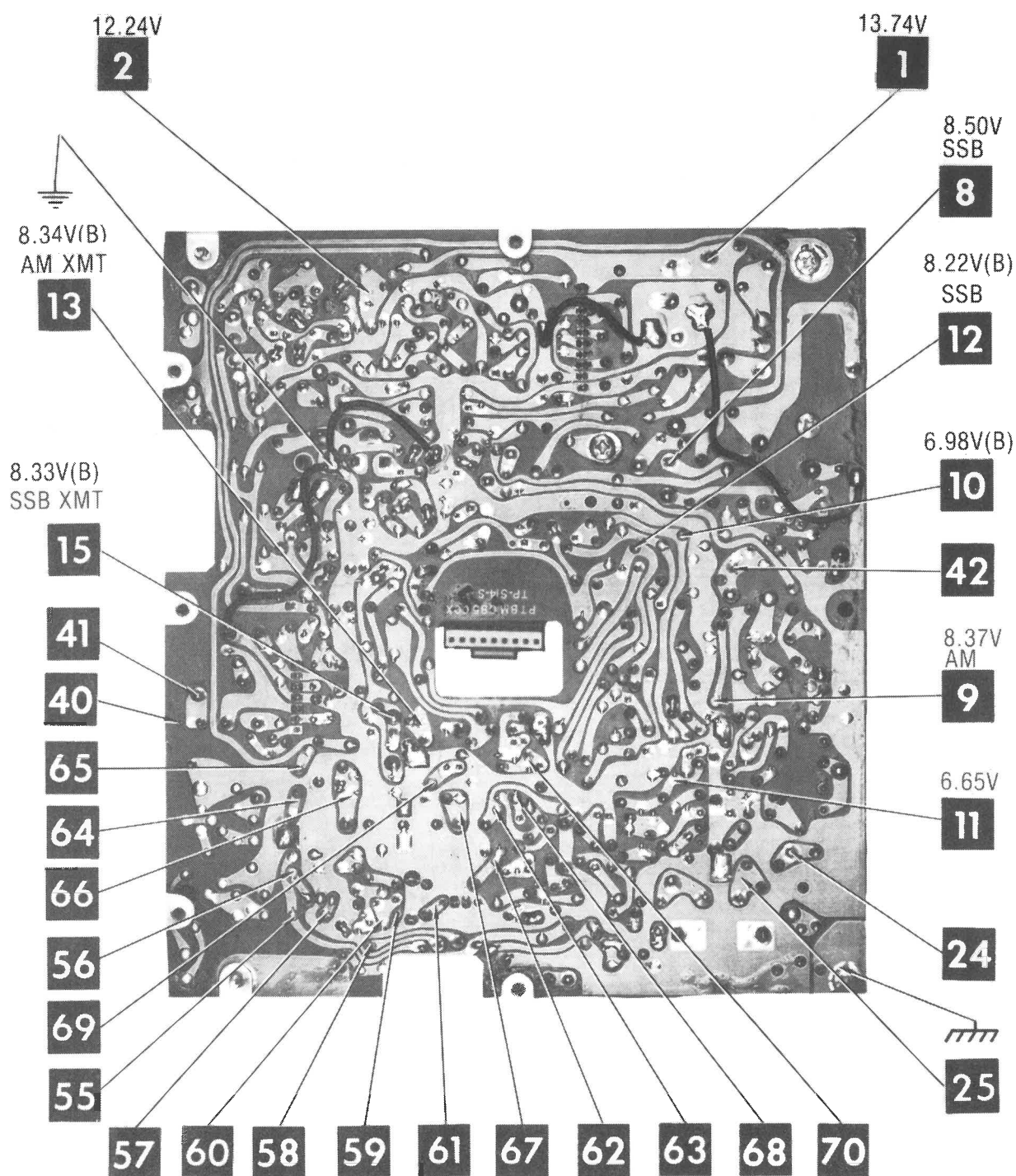
MIDLAND MODEL 78-574



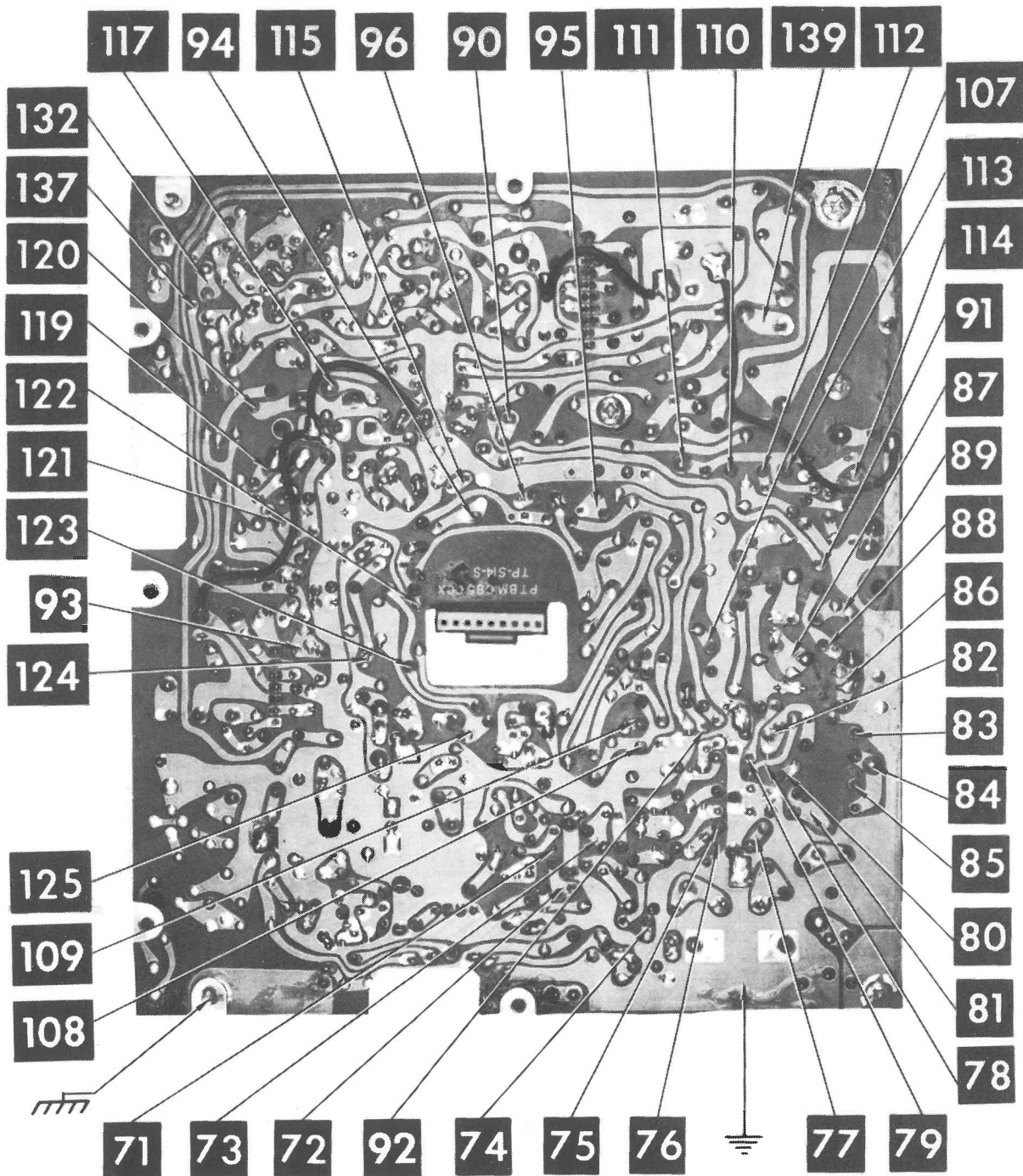
CHASSIS VIEW



CHASSIS VIEW



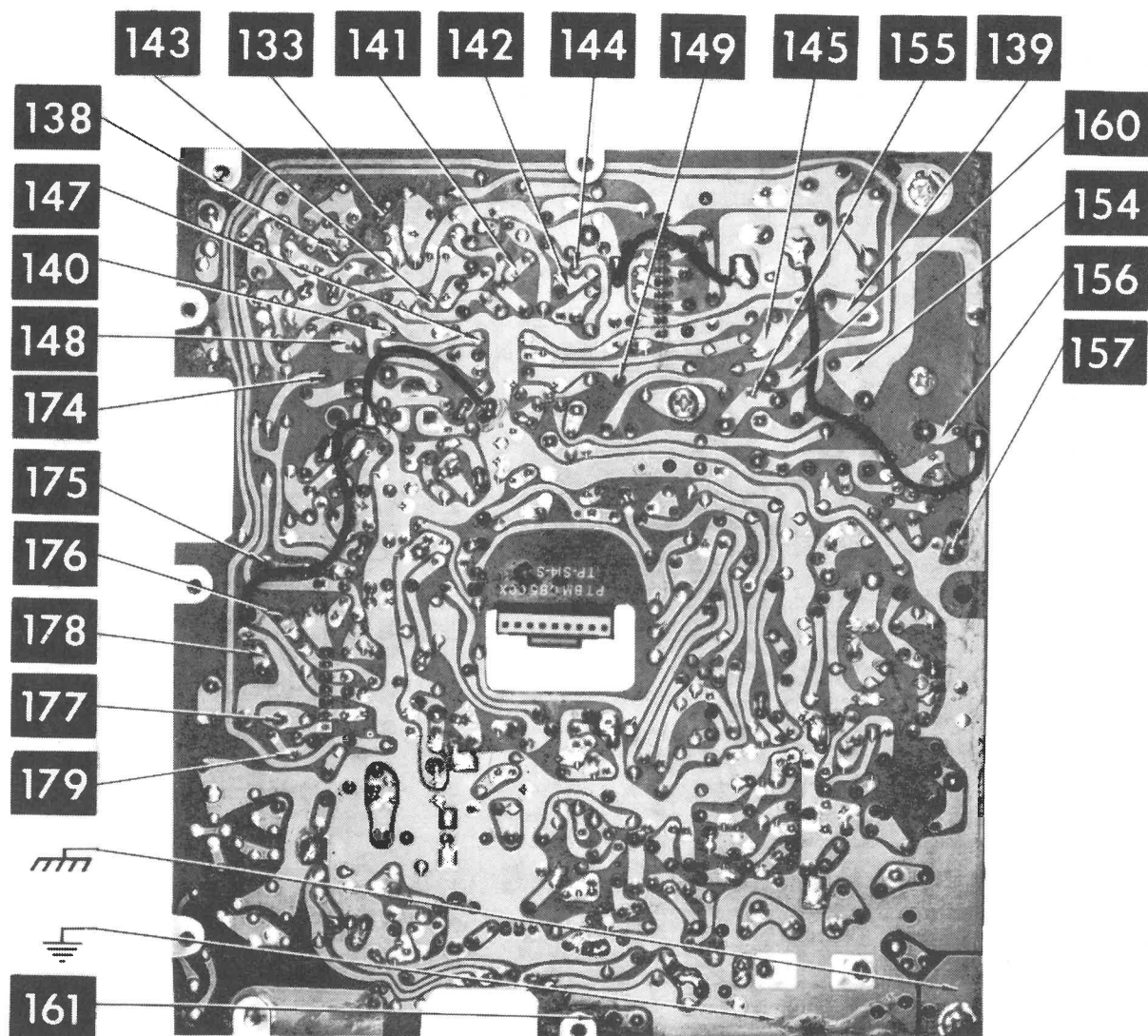
RECEIVER BOARD



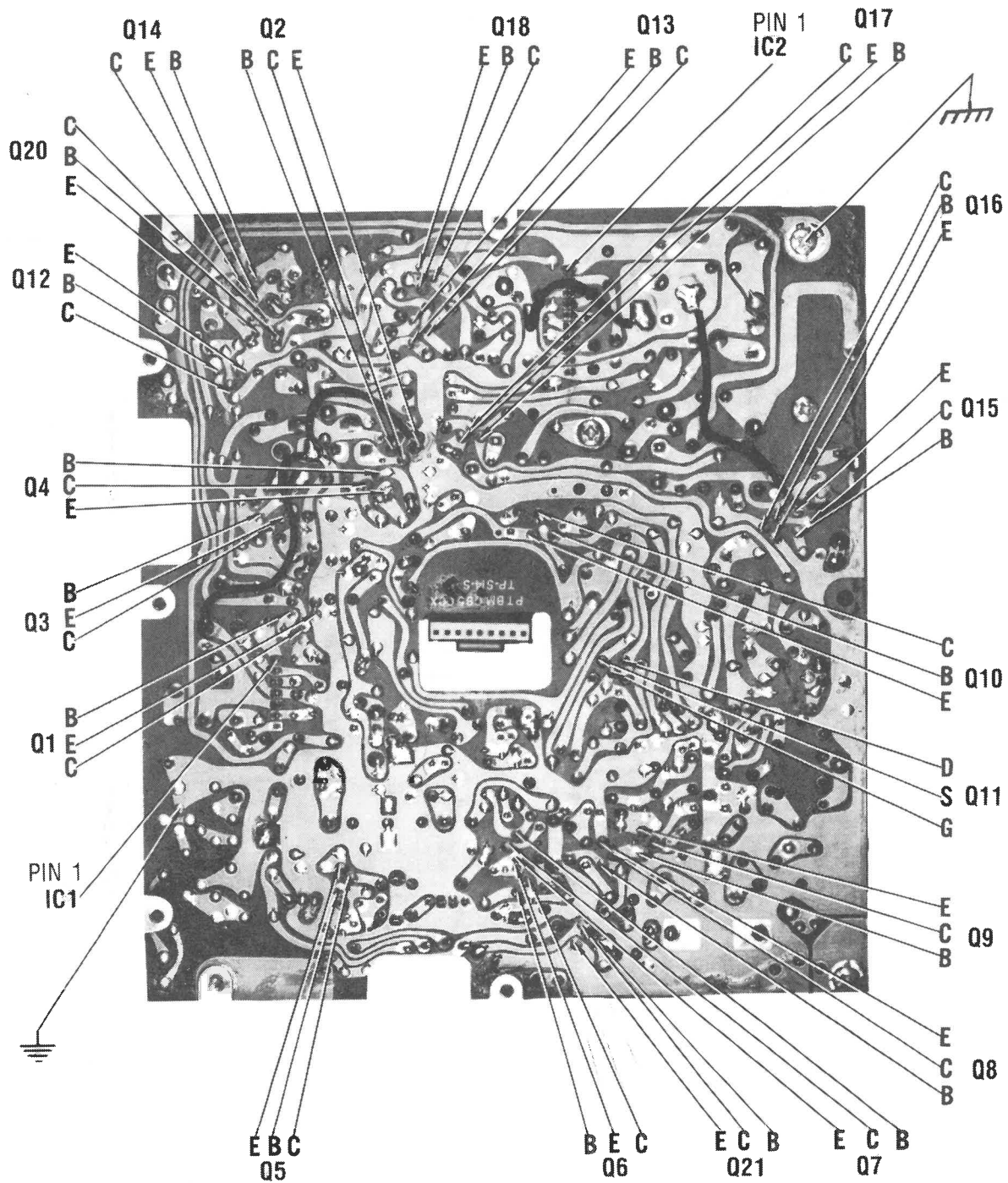
MIDLAND MODEL 78-574

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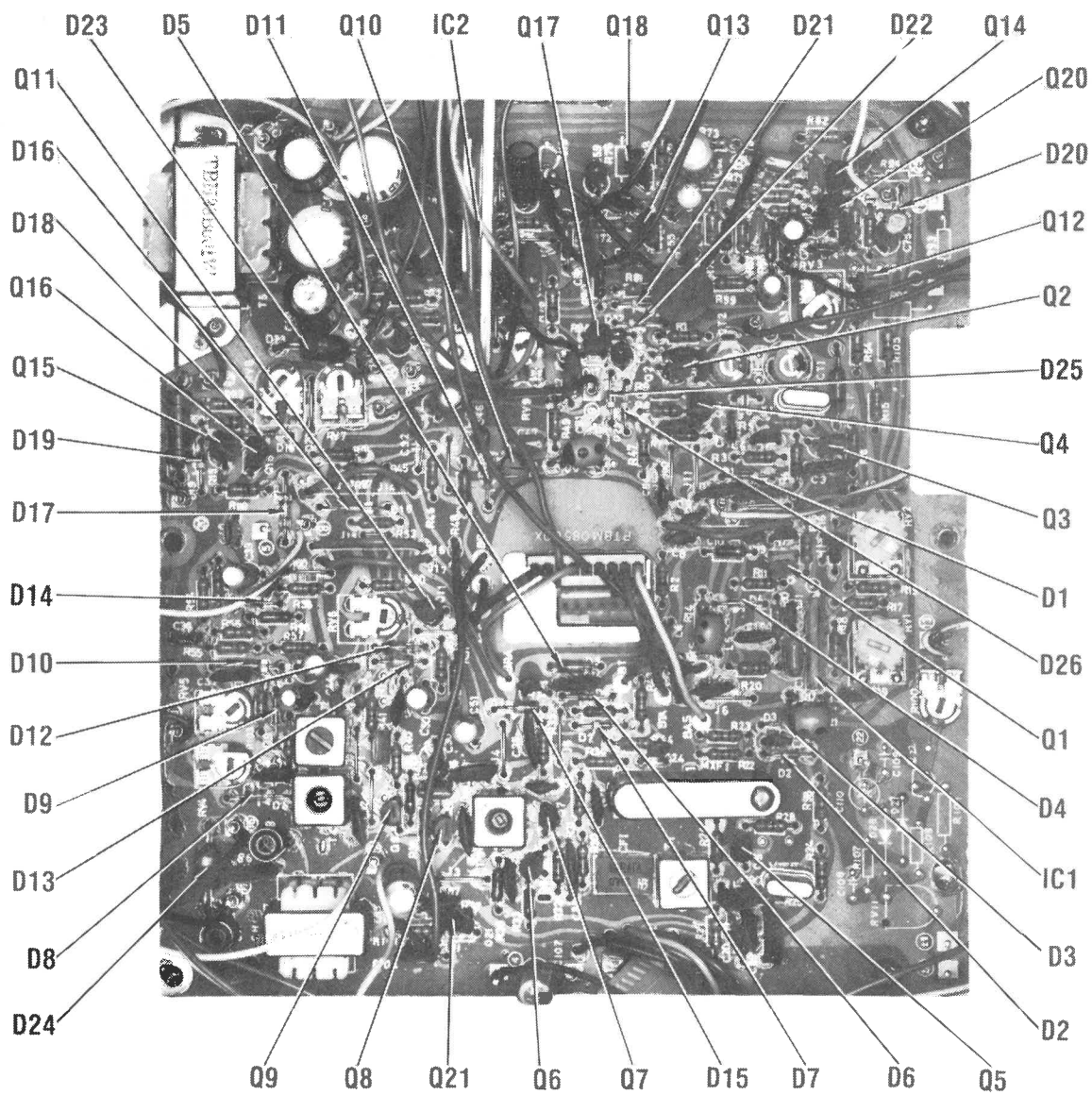




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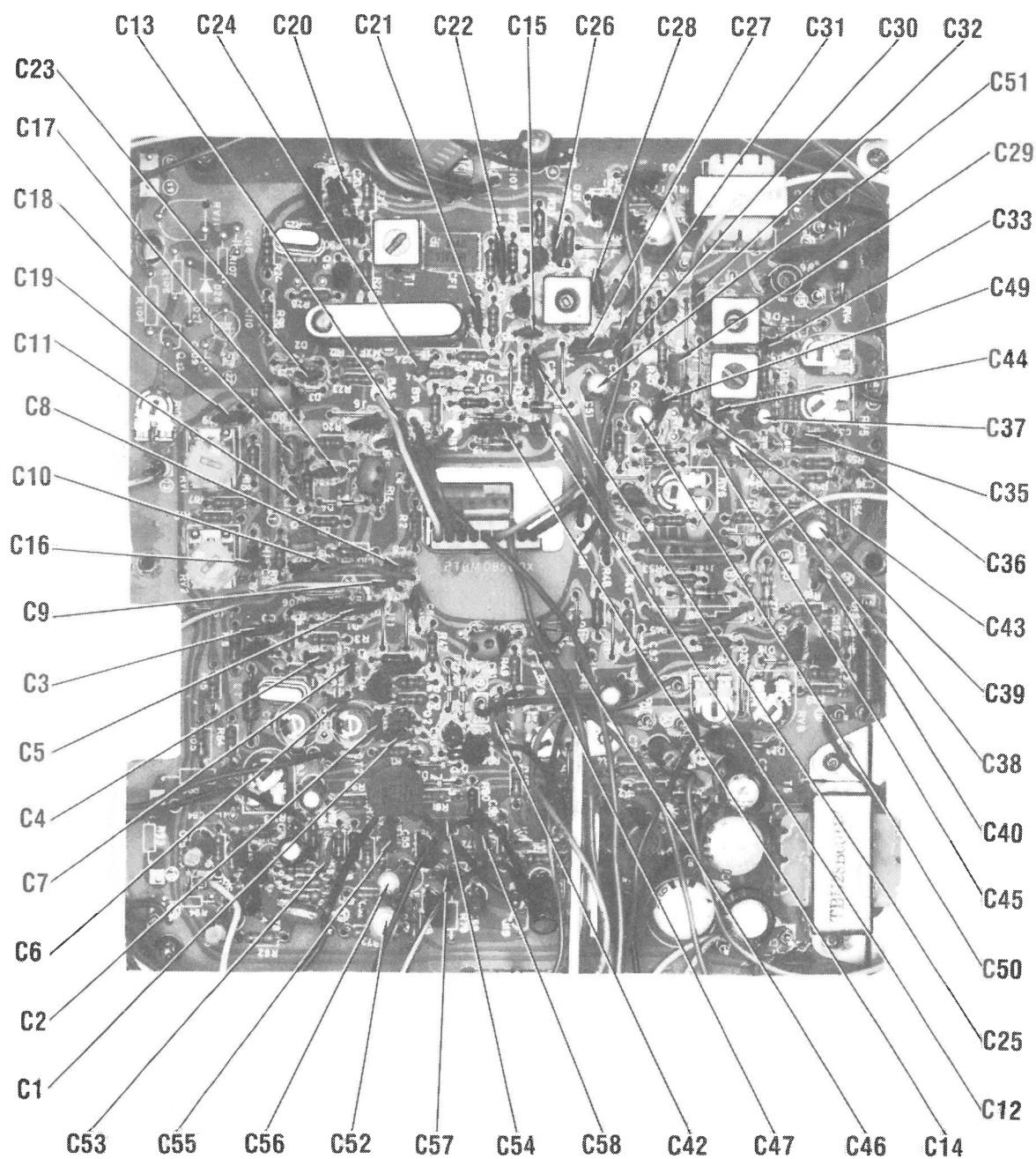


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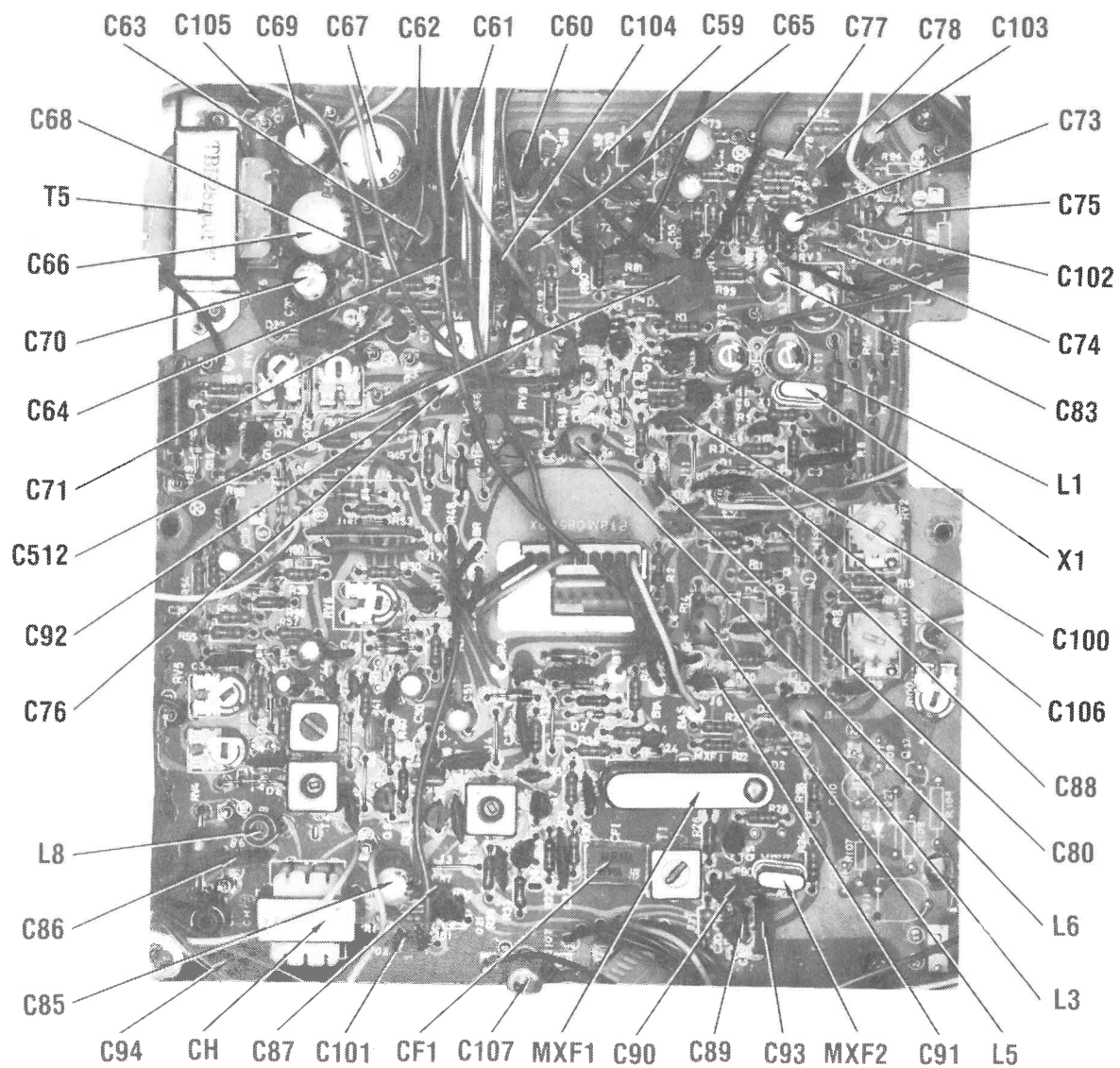


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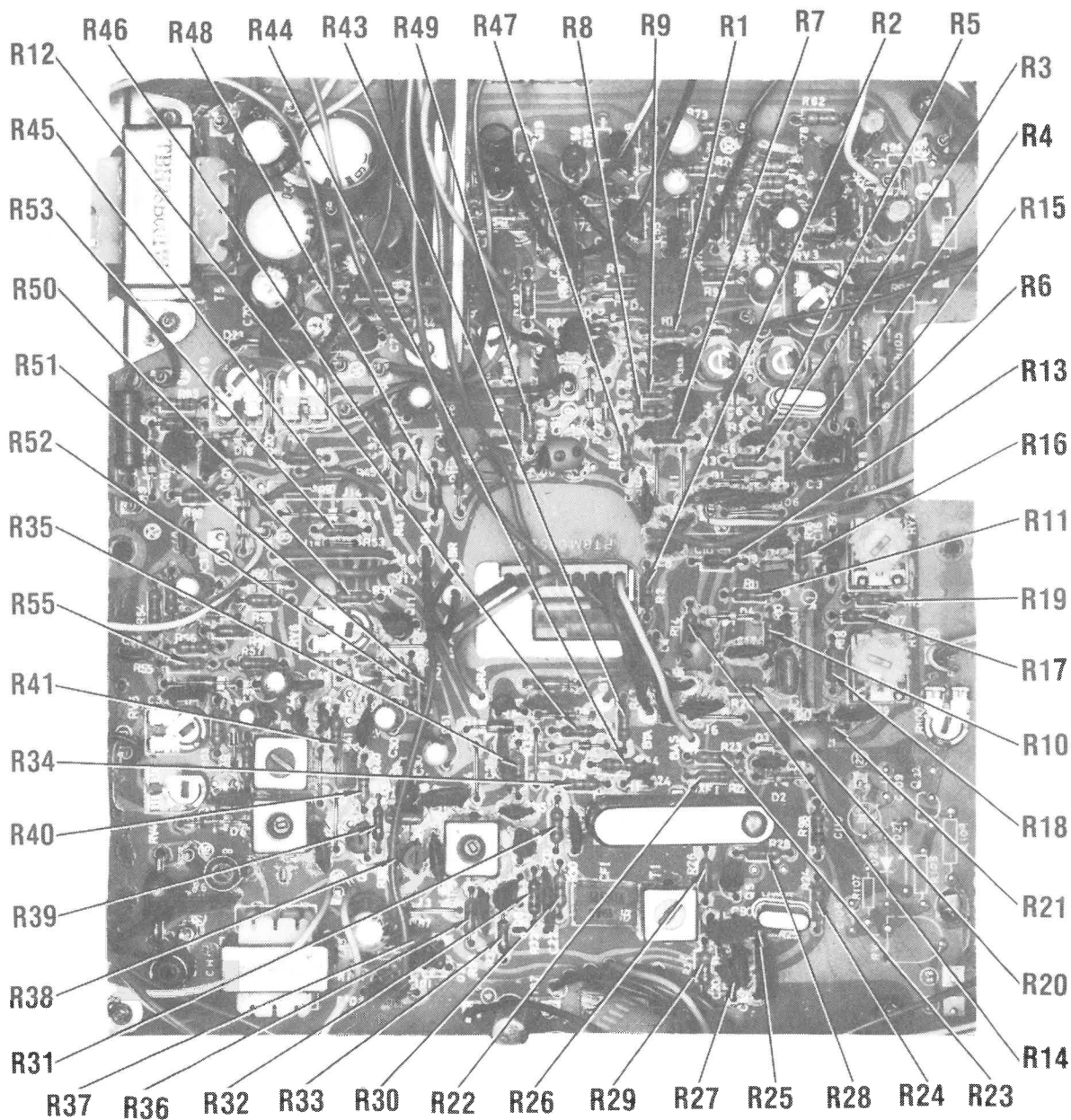




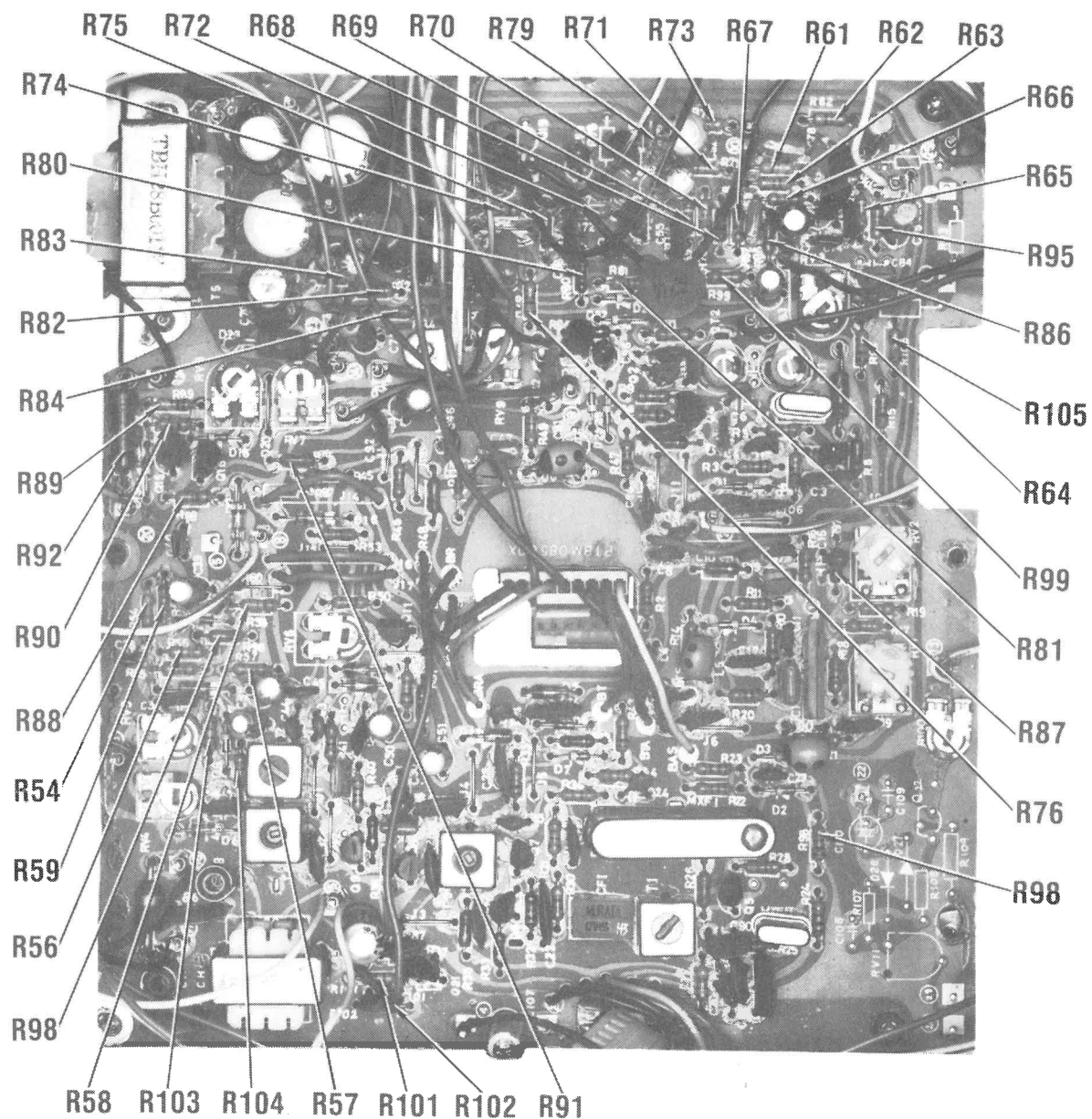
MIDLAND MODEL 78-574



RECEIVER BOARD

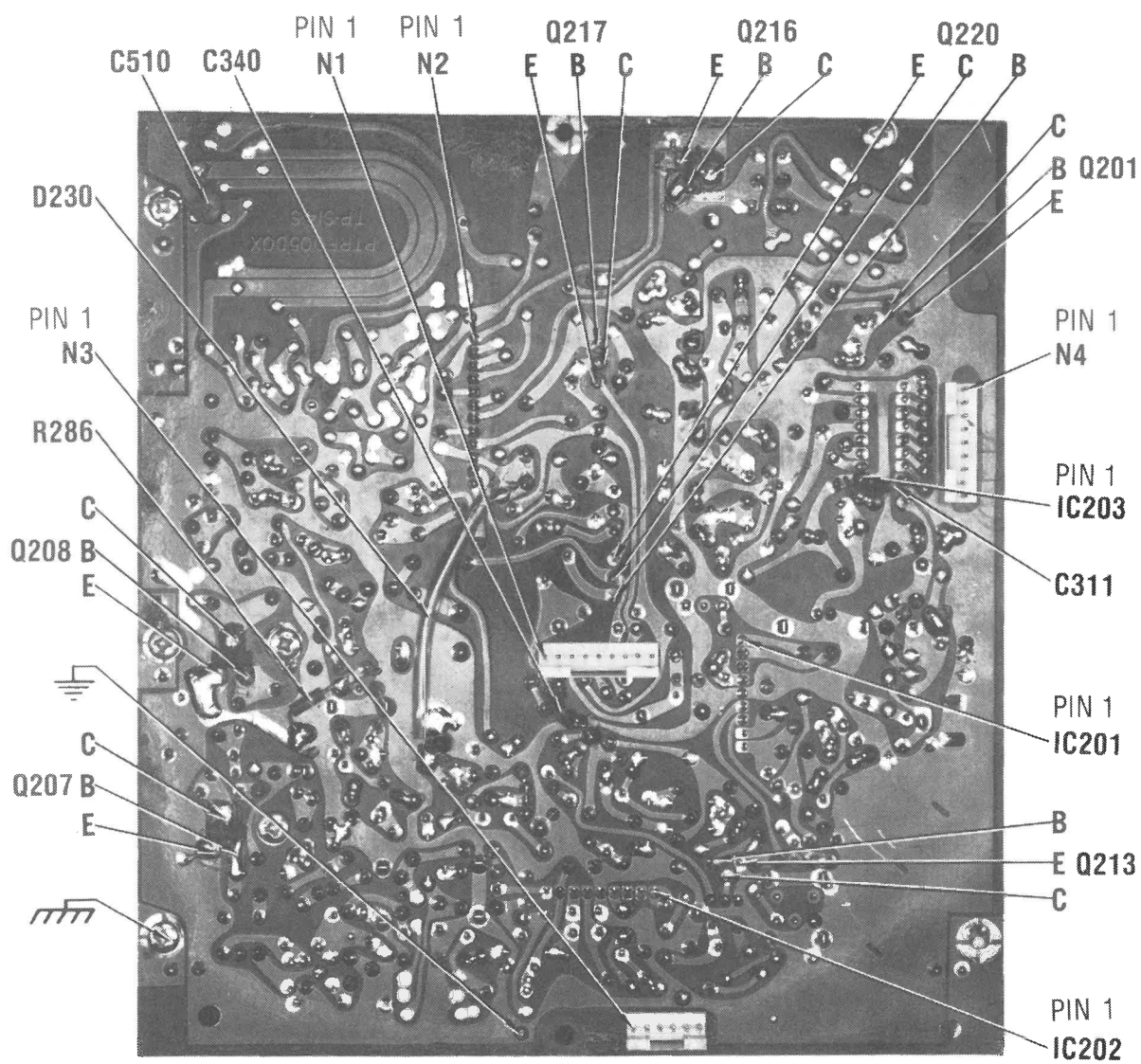


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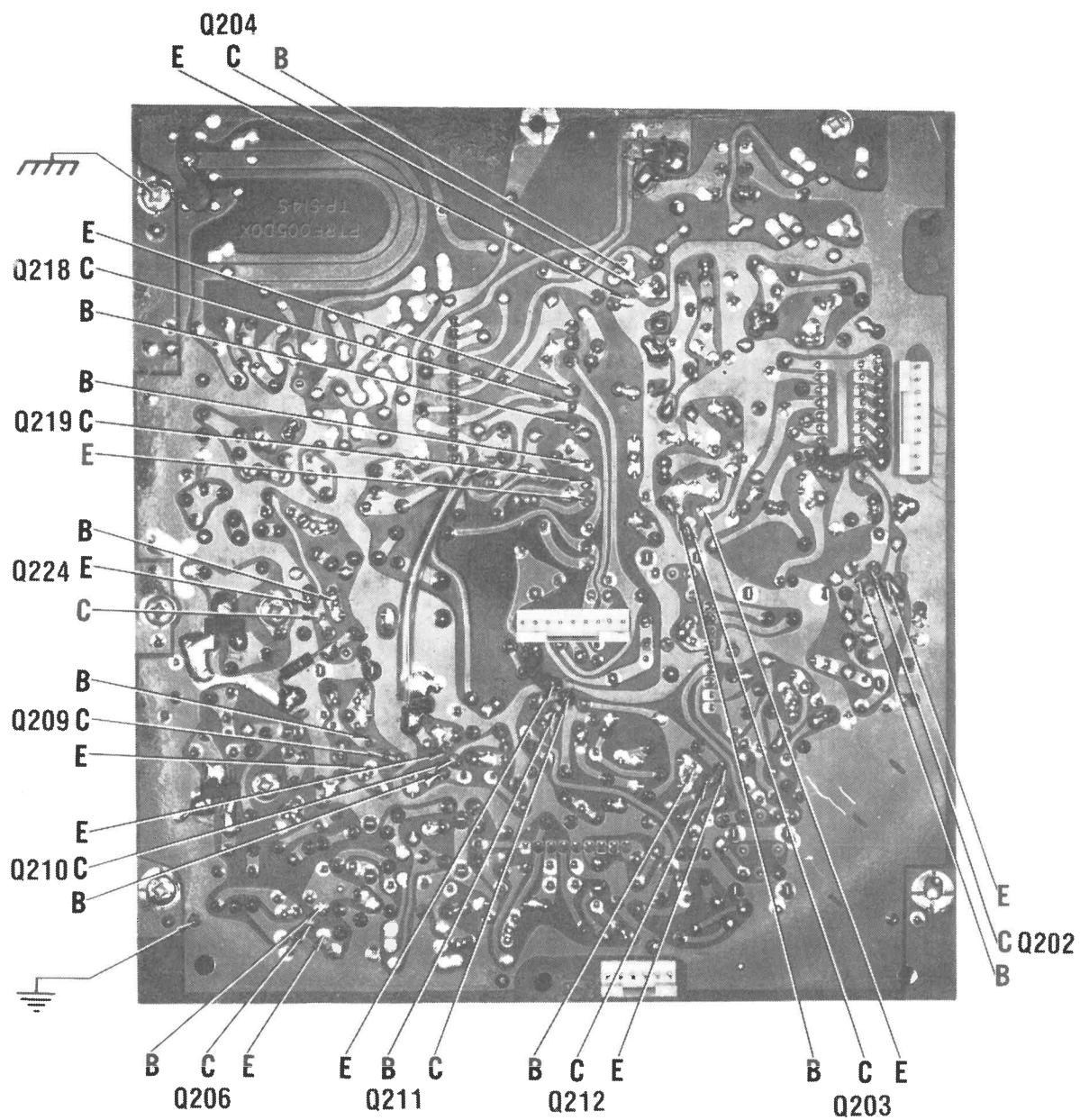


RECEIVER BOARD





TRANSMITTER BOARD



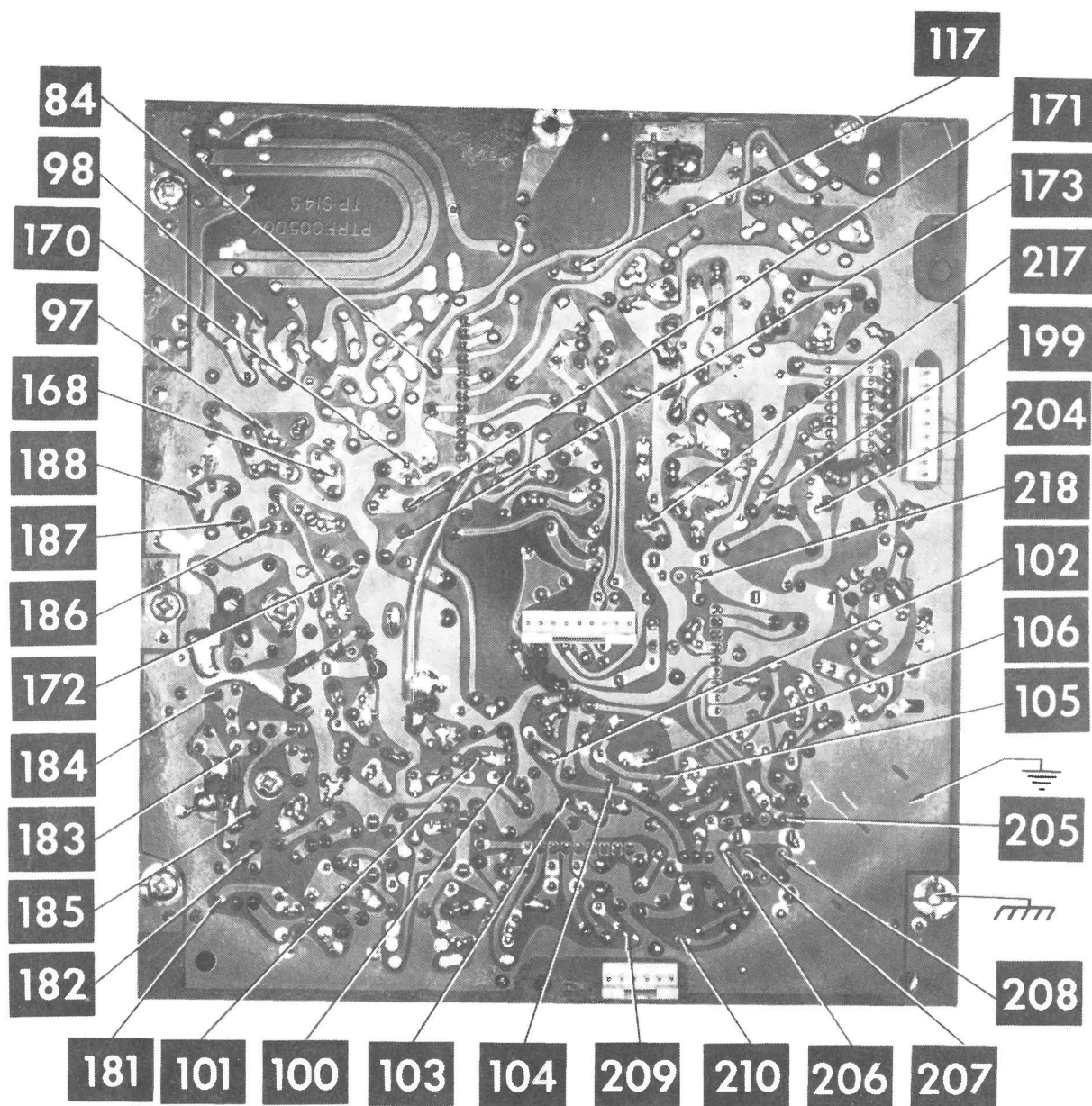
TRANSMITTER BOARD



MIDLAND MODEL 78-574

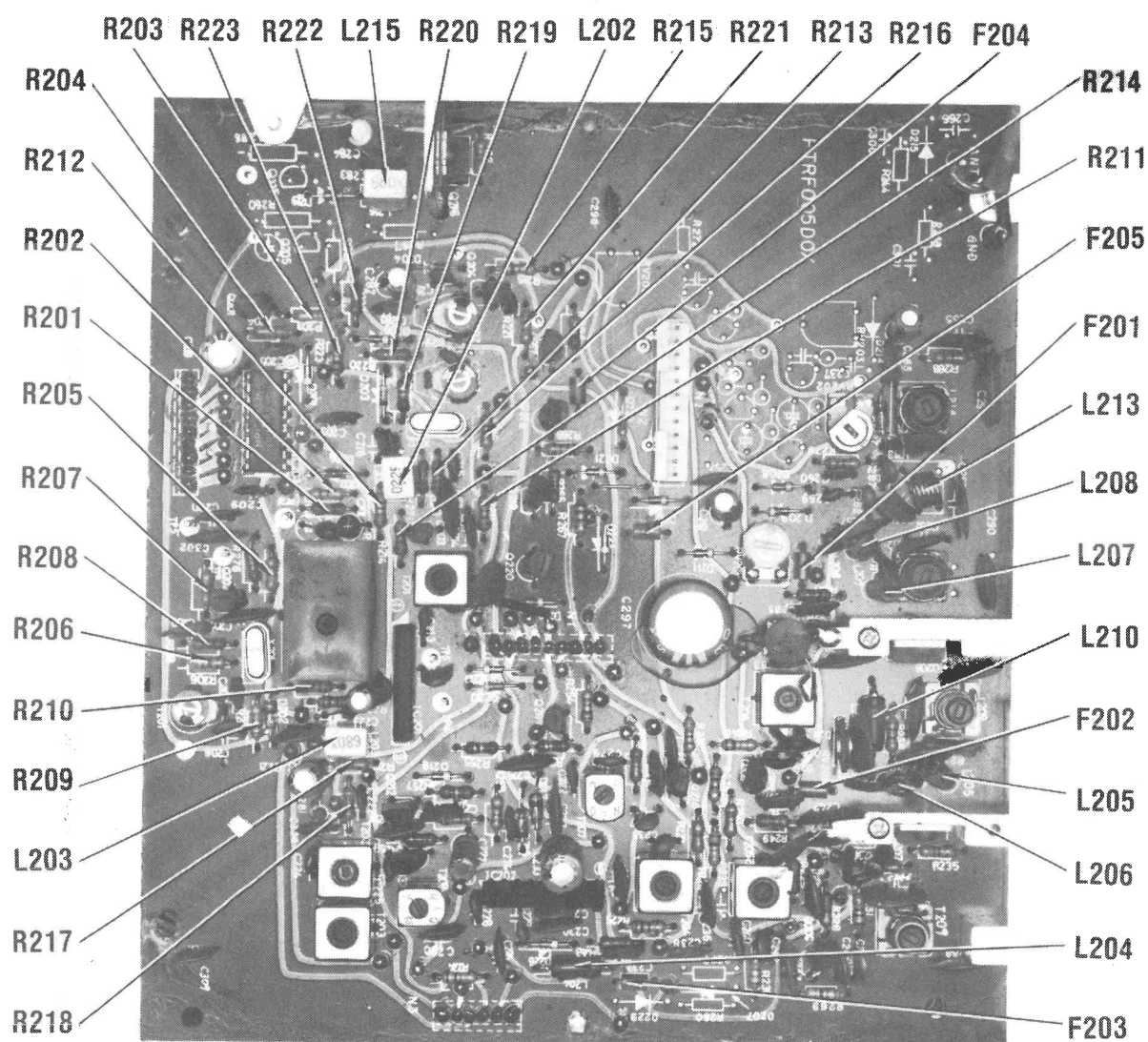
TRANSMITTER BOARD



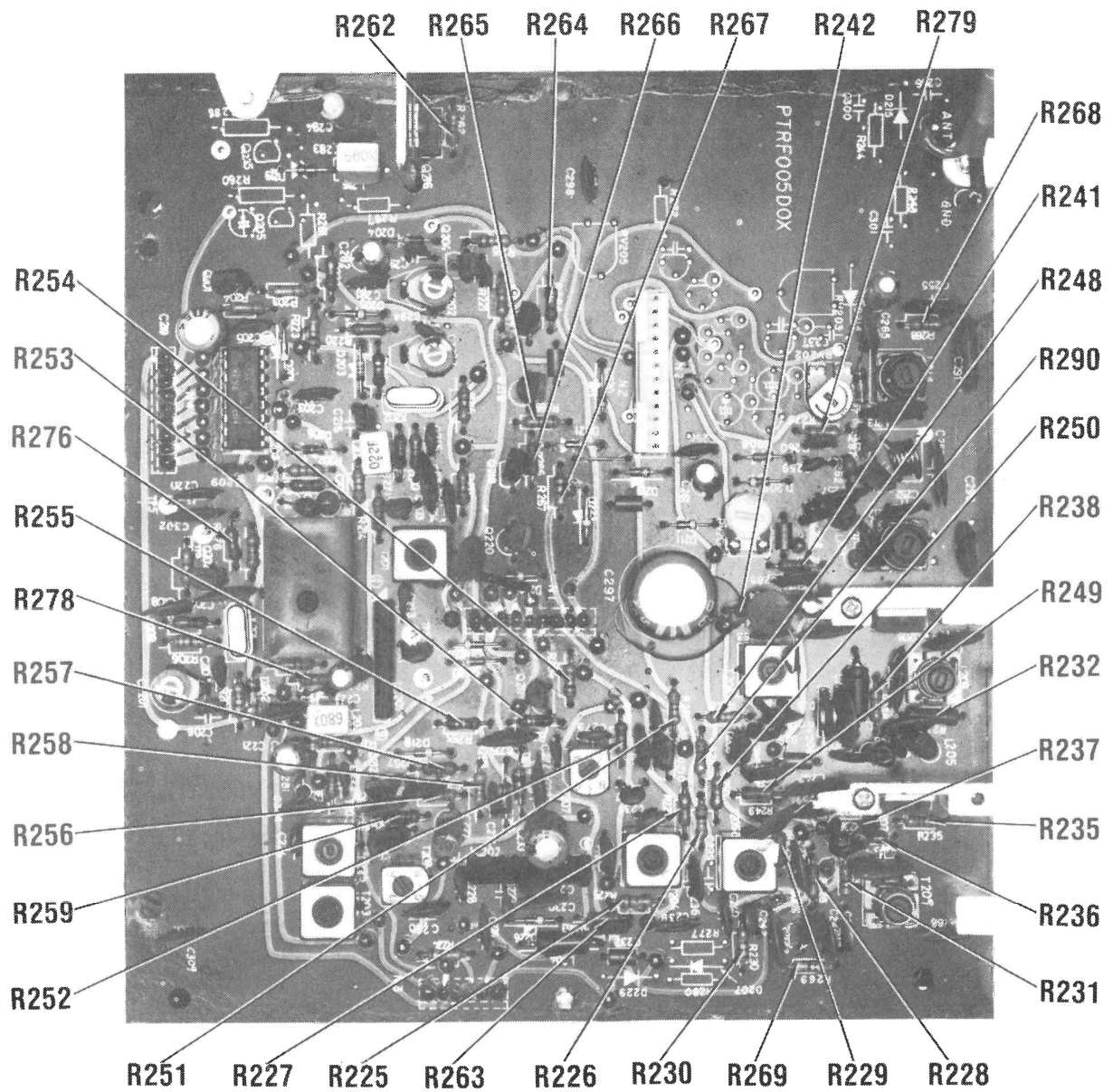


TRANSMITTER BOARD





TRANSMITTER BOARD

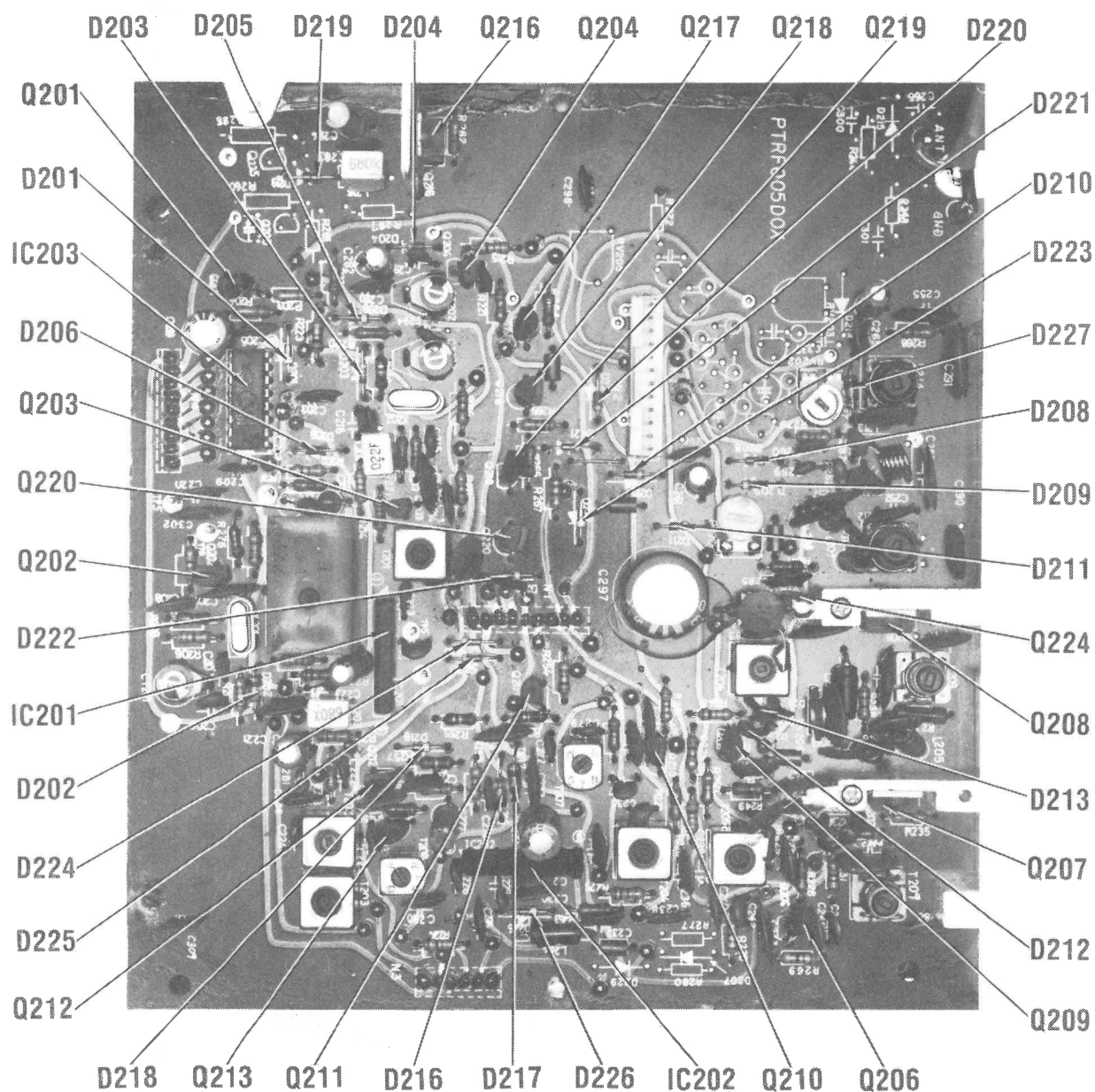


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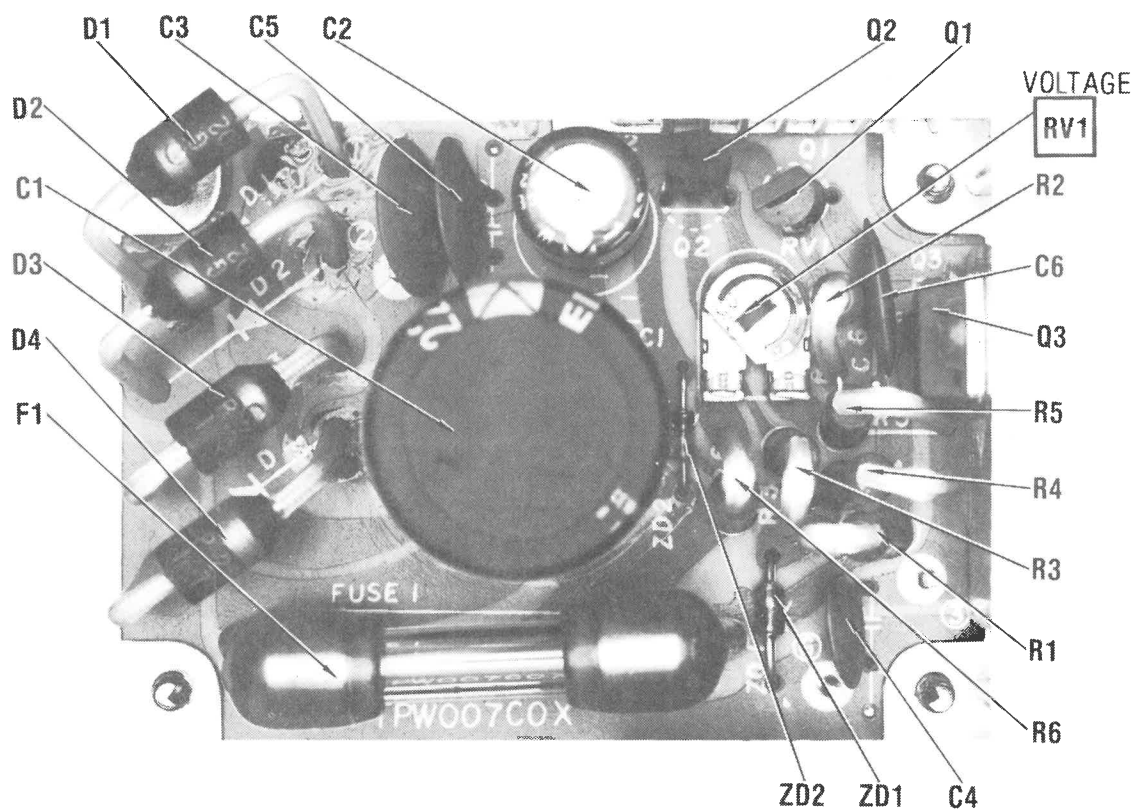
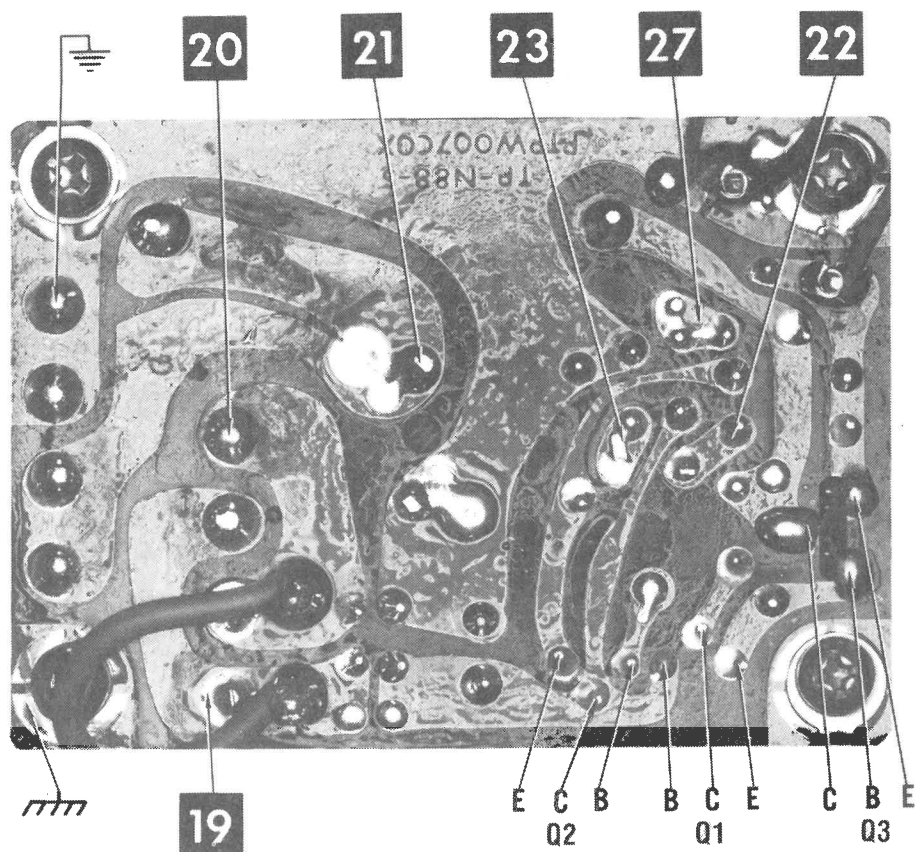




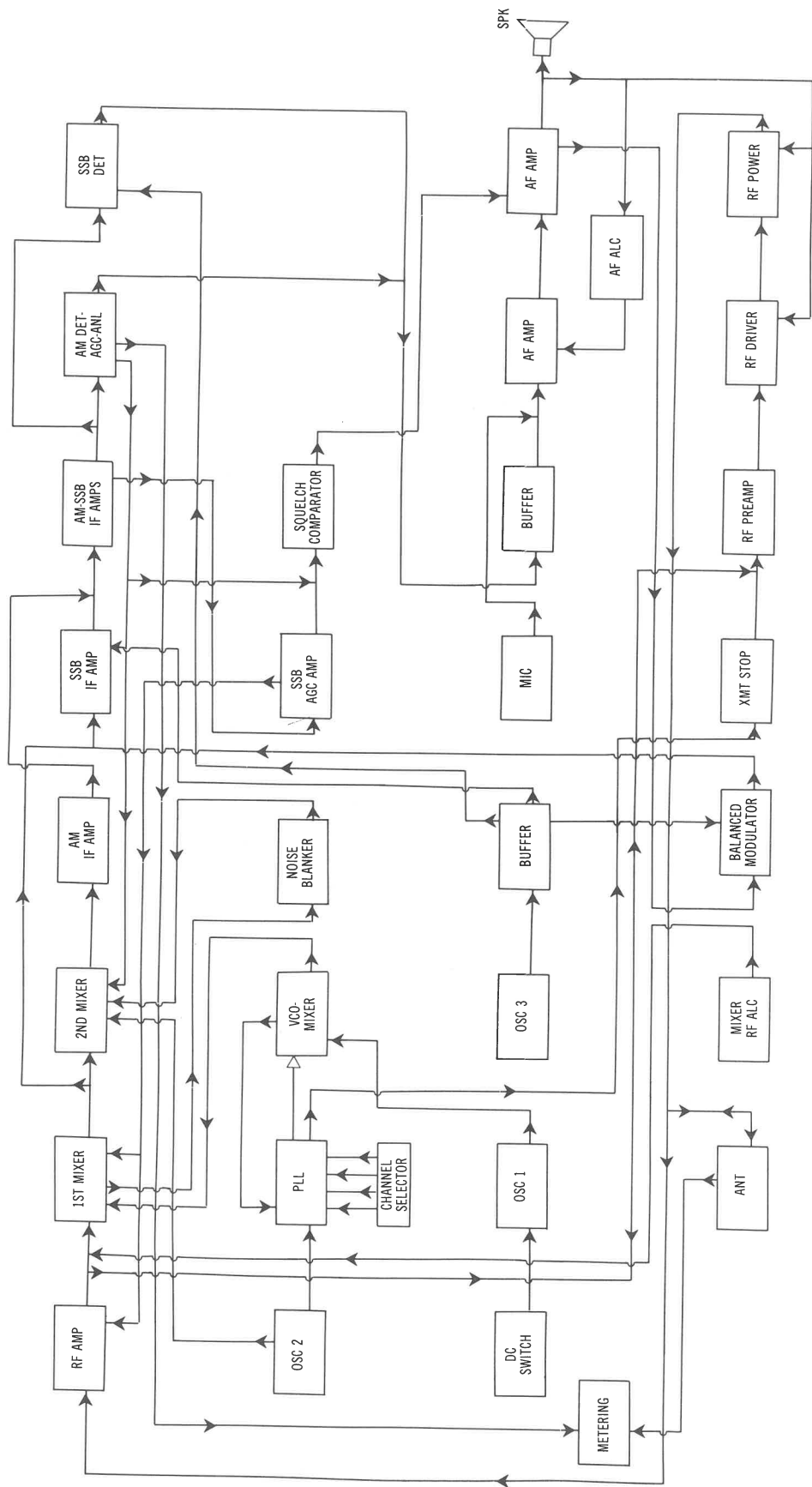




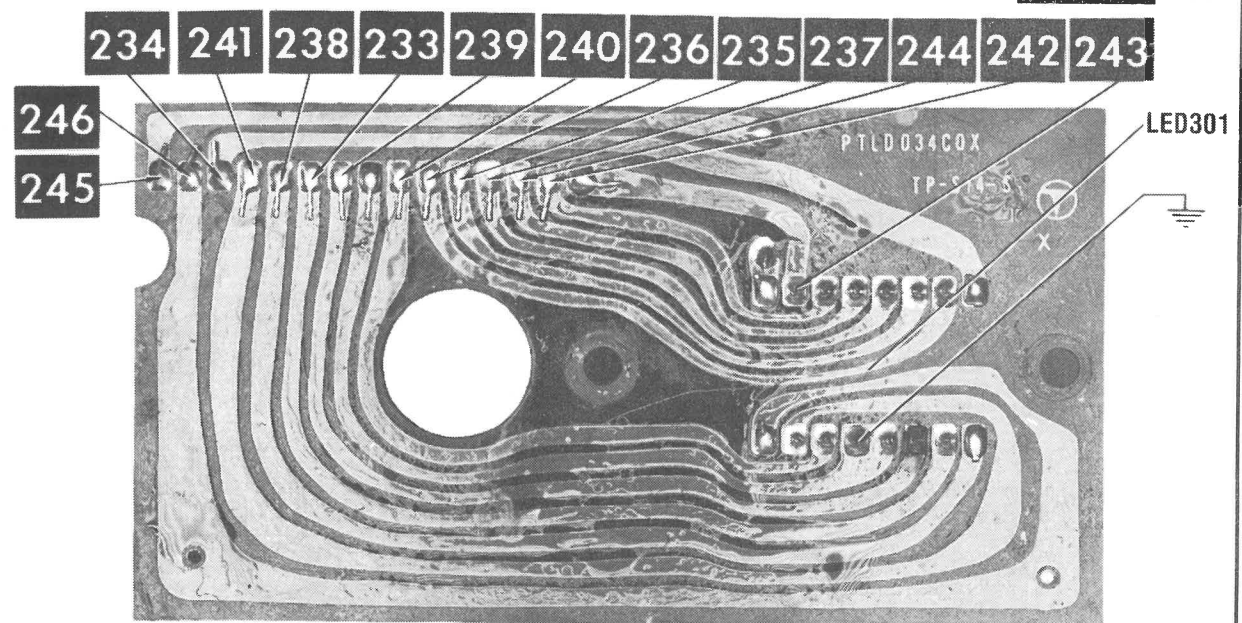
TRANSMITTER BOARD



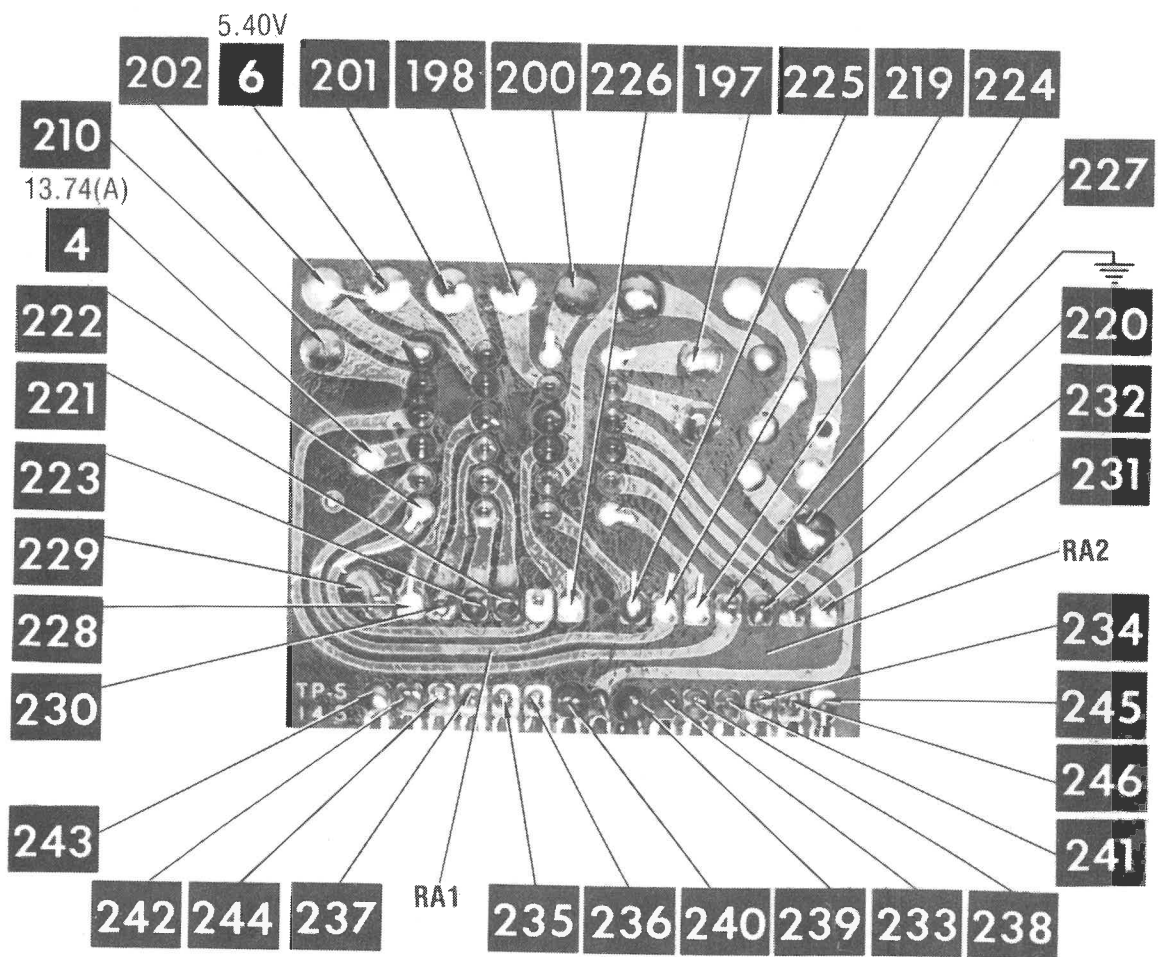
POWER SUPPLY BOARD



BLOCK DIAGRAM



READOUT BOARD



SWITCH BOARD

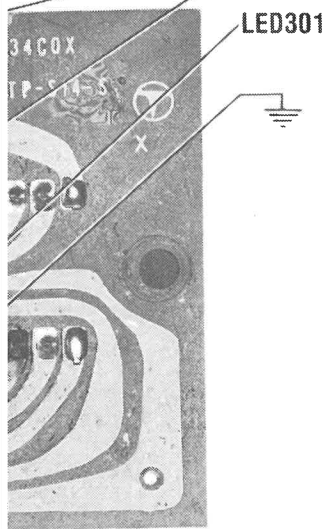
# PARTS LIST AND DI (When ordering parts, state Mod.

## SEMICONDUCTOR!

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D2	MA150	05-330150
D3	MA150	05-330150
D4	MA150	05-330150
D5	1N60	05-170060
D6	MC301	05-340301
D7	MA150	05-330150
D8	1N60	05-170060
D9	MA150	05-330150
D10	1N60	05-170060
D11	MA150	05-330150
D12	1N60	05-170060
D13	1N60	05-170060
D14	MA150	05-330150
D15	1N60	05-170060
D16	1N60	05-170060
D17	1N60	05-170060
D18	MA150	05-330150
D19	MA150	05-330150
D20	MA150	05-330150
D21	MA150	05-330150
D22	MA150	05-330150
D23	GP25	05-140025
D24	GP25B	05-140025
D25	MA150	05-330150
D26	MA150	05-330150
D201	MA150	05-330150
D202	1N60	05-170060
D203	ITT310	05-200310
D204	MA150	05-330150
D205	MA150	05-330150
D206	MZ205	05-480205
D208	MA150	05-330150
D209	MA150	05-330150
D210	MA150	05-330150
D211	MA150	05-330150
D212	MA150	05-330150
D213	MA150	05-330150
D216	1N60	05-170060
D217	1N60	05-170060
D218	MA150	05-330150
D219	MZ390	05-480309
D220	MA150	05-330150
D221	MA150	05-330150
D222	MA150	05-330150
D223	MA150	05-330150
D224	MA150	05-330150
D225	MA150	05-330150
D226	MA150	05-330150
D227	1N60	05-170060
D230	MA150	05-330150
IC1	AN612	02-010612
IC2	TA7205P	02-257205
IC201	C3001A	02-373001
	C3001	
	C3001T	
IC202	C3001-0	02-373001
	C3001	
IC203	C3001M	02-373001
	PLL02AG	
	PLL02	
	PLL02A	02-360002
Q1	2SC711F	01-030711
	2SC711	
Q2	2SC710D	01-030710
	2SC710	
Q3	2SC710D	01-030710
	2SC710	
Q4	2SC711E	01-030711
	2SC711	
Q5	2SC710C	01-030710
	2SC710	
Q6	2SC710C	01-030710
	2SC710	
Q7	2SC710C	01-030710
	2SC710	
Q8	2SC710C	01-030710
	2SC710	



44 242 243



READOUT BOARD

219 224

227

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232

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RA2

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245

246

241

233 238

SWITCH 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.	MFR. 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	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D2	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D3	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D4	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D5	1N60	05-170060	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D6	MC301	05-340301	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D7	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D8	1N60	05-170060	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D9	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D10	1N60	05-170060	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D11	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D12	1N60	05-170060	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D13	1N60	05-170060	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D14	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D15	1N60	05-170060	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D16	1N60	05-170060	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D17	1N60	05-170060	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D18	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D19	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D20	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D21	MA150	05-330150	GE-300	PTC214	FEN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D22	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D23	GP25		GE-512	PTC204	REN 156	SK3051/156	ECG156	TM156	WEP4008	212-Z9000
	GP25B	05-140025	GE-512	PTC204	REN 156	SK3051/156	ECG156	TM156	WEP4008	212-Z9000
D24	GP24		GE-512	PTC204	REN 156	SK3051/156	ECG156	TM156	WEP4008	212-Z9000
	GP25B	05-140025	GE-512	PTC204	REN 156	SK3051/156	ECG156	TM156	WEP4008	212-Z9000
D25	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D26	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D201	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D202	1N60	05-170060	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D203	ITT310	05-200310	GE-90		REN 614		ECG614	TM614	WEP200	103-219
D204	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D205	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D206	MZ205	05-480205		ZM5.1A		SK3776/5010	ECG5010	TM5010	WEP1411	103-279-10
D208	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D209	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D210	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D211	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D212	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D213	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D216	1N60	05-170060	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D217	1N60	05-170060	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D218	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D219	MZ390	05-480309		ZM9.1A		SK3784/5018	ECG5018	TM5018	WEP1419	103-279-18
D220	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D221	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D222	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D223	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D224	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D225	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D226	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
D227	1N60	05-170060	1N60	PTC206	REN 109	SK3088	ECG109	TM109/**	WEP134	103-Z9001
D230	MA150	05-330150	GE-300	PTC214	REN 177	SK3175/177	ECG177	TM177	WEP1062	103-131
IC1	AN612	02-010612					ECG1249	TM1249		
IC2	TA7205P	02-257205	GEIC-179	PTC780	REN 1155	SK3231/1155	ECG1155	TM1155	WEP949	
IC201	C3001A				REN 1192	SK3445/1192	ECG1192	TM1192	WEP2120	
	C3001				REN 1192	SK3445/1192	ECG1192	TM1192	WEP2120	
	C3001T	02-373001			REN 1192	SK3445/1192	ECG1192	TM1192	WEP2120	
IC202	C3001-0				REN 1192	SK3445/1192	ECG1192	TM1192	WEP2120	
	C3001				REN 1192	SK3445/1192	ECG1192	TM1192	WEP2120	
	C3001M	02-373001			REN 1192	SK3445/1192	ECG1192	TM1192	WEP2120	
IC203	PLL02AG		GEIC-317		REN 1167	SK3732/1167	ECG1233	TM1233	WEP2007	
	PLL02				REN 1167	SK3732/1167	ECG1167	TM1167	WEP2007	
	PLL02A	02-360002	GEIC-317		REN 1167	SK3732/1167	ECG1233	TM1233	WEP2007	
Q1	2SC711F	01-030711	GE-62*	PTC121	REN 99*	SK3245/199	ECG199*	TM199/**	WEP372*	121-972
	2SC711		GE-62*	PTC121	REN 99*	SK3245/199	ECG199*	TM199/**	WEP372*	121-972
Q2	2SC710D	01-030710	GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A/**	WEP710	121-Z9000A
	2SC710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A/**	WEP710	121-Z9000A
Q3	2SC710D	01-030710	GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A/**	WEP710	121-Z9000A
	2SC710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A/**	WEP710	121-Z9000A
Q4	2SC711E	01-030711	GE-62*	PTC121	REN 99*	SK3245/199	ECG199*	TM199/**	WEP372*	121-972
	2SC711		GE-62*	PTC121	REN 99*	SK3245/199	ECG199*	TM199/**	WEP372*	121-972
Q5	2SC710C	01-030710	GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A/**	WEP710	121-Z9000A
	2SC710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A/**	WEP710	121-Z9000A
Q6	2SC710C	01-030710	GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A/**	WEP710	121-Z9000A
	2SC710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A/**	WEP710	121-Z9000A
Q7	2SC710C	01-030710	GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A/**	WEP710	121-Z9000A
	2SC710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A/**	WEP710	121-Z9000A
Q8	2SC710C	01-030710	GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A/**	WEP710	121-Z9000A
	2SC710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A/**	WEP710	121-Z9000A

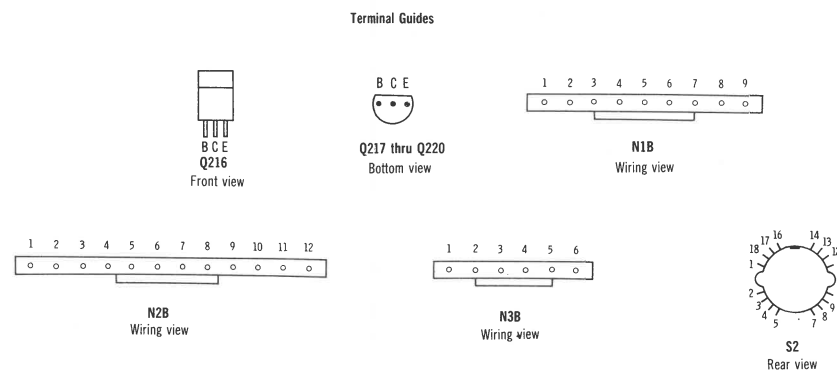
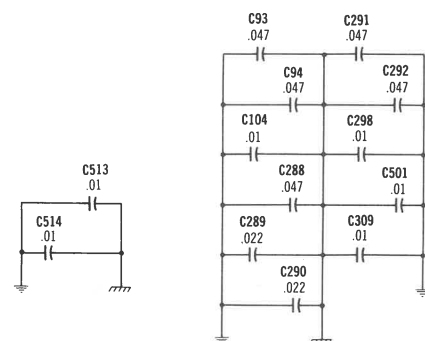
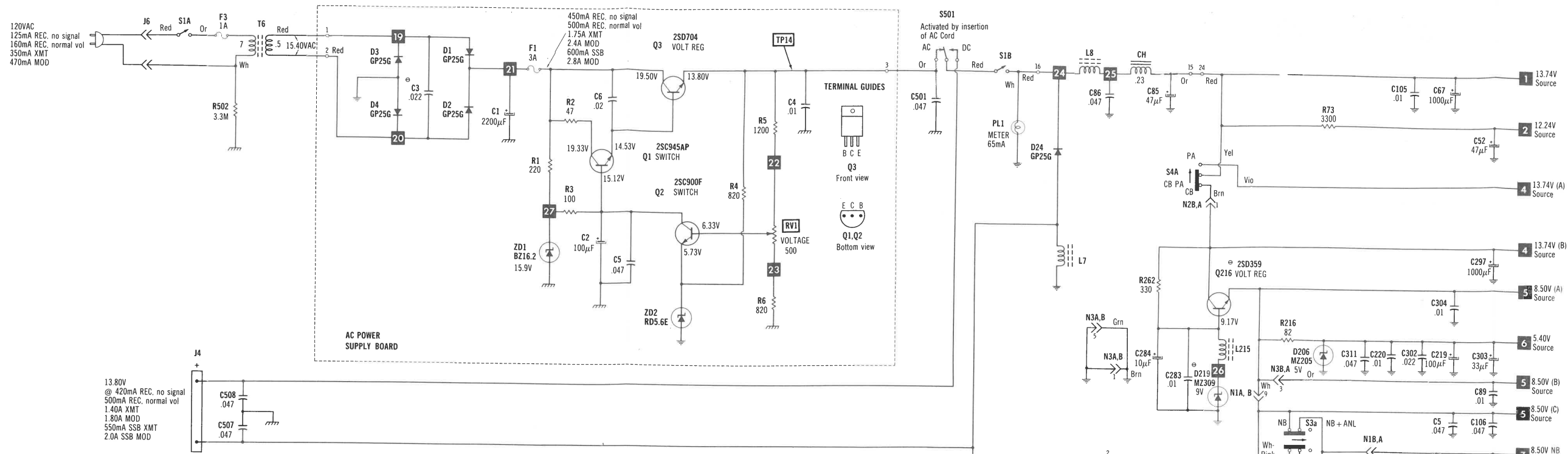
PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

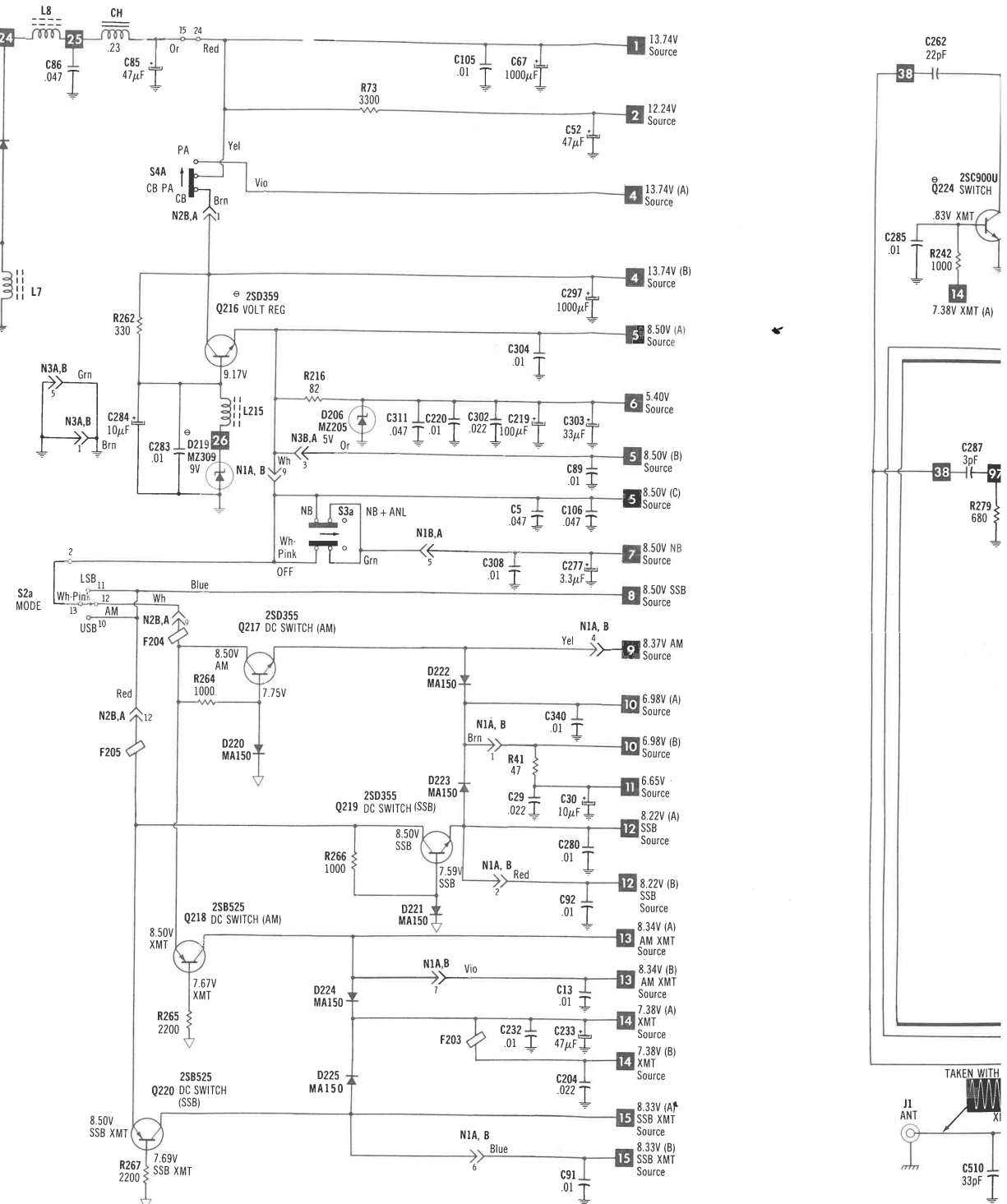
ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RAYTHEON PART No.	RCA PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
Q9	2SC710C 2SC710	01-030710	GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A*/**	WEP710	121-Z9000A
Q10	2SC711E 2SC711	01-030711	GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A*/**	WEP710	121-Z9000A
	GE-62*		PTC121	REN 199*	SK3245/199	ECG199*	TM199*/**	WEP372*	121-972	
Q11	2SK34E 2SK34	01-070034	GE-62*	PTC161*	REN 132*	SK3448	ECG132*	TM312*	WEP920*	121-756*
	GE-FET-2*		PTC161*	REN 132*	SK3448	ECG132*	TM312*	WEP920*	121-756*	
Q12	2SC711F 2SC711	01-030711	GE-62*	PTC121	REN 199*	SK3245/199	ECG199*	TM199*/**	WEP372*	121-972
	GE-62*		PTC121	REN 199*	SK3245/199	ECG199*	TM199*/**	WEP372*	121-972	
Q13	2SC1312G 2SC1312	01-031312	GE-62	PTC139*	REN 199	SK3245/199	ECG199	TM199	WEP66	121-972
	GE-62		PTC139*	REN 199	SK3250/315	ECG199	TM199/**	WEP66	121-972	
Q14	2SC900F 2SC900	01-030900	GE-62	PTC139*	REN 199	SK3250/315	ECG199	TM199/**	WEP66	121-972
	GE-82*		PTC103*	REN 159*	SK3114/290	ECG159*	TM159*/**	WEP62	121-Z9003	
Q15	2SA628F 2SA626	01-010626	GE-82*	PTC103*	REN 159*	SK3114/290	ECG159*	TM159*/**	WEP62	121-Z9003
	GE-62*		PTC121	REN 199*	SK3245/199	ECG199*	TM199*/**	WEP372*	121-972	
Q16	2SC711F 2SC711	01-030711	GE-62*	PTC121	REN 199*	SK3245/199	ECG199*	TM159*/**	WEP372*	121-972
	GE-62*		PTC121	REN 199*	SK3245/199	ECG199*	TM199*/**	WEP372*	121-972	
Q17	2SC711F 2SC711	01-030711	GE-62*	PTC121	REN 199*	SK3245/199	ECG199*	TM199*/**	WEP372*	121-972
	GE-62*		PTC121	REN 199*	SK3245/199	ECG199*	TM199*/**	WEP372*	121-972	
Q18	2SC711F 2SC711	01-030711	GE-62*	PTC121	REN 199*	SK3245/199	ECG199*	TM199*/**	WEP372*	121-972
	GE-62*		PTC121	REN 199*	SK3245/199	ECG199*	TM199*/**	WEP372*	121-972	
Q20	2SA719Q 2SA719	01-030711	GE-269	PTC103*	REN 290	SK3114/290	ECG290	TM290/**	WEP911	121-1019
	GE-269		PTC103*	REN 290	SK3114/290	ECG290	TM199*/**	WEP372*	121-972	
Q21	2SC711F 2SC711	01-030711	GE-62*	PTC121	REN 199*	SK3245/199	ECG199*	TM199*/**	WEP372*	121-972
	GE-62*		PTC121	REN 199*	SK3245/199	ECG199*	TM199*/**	WEP372*	121-972	
Q201	2SC711F 2SC711	01-030711	GE-62*	PTC121	REN 199*	SK3245/199	ECG199*	TM199*/**	WEP372*	121-972
	GE-62*		PTC121	REN 199*	SK3245/199	ECG199*	TM199*/**	WEP372*	121-972	
Q202	2SC711E 2SC711F	01-030711	GE-62*	PTC121	REN 199*	SK3245/199	ECG199*	TM199*/**	WEP372*	121-972
	GE-62*		PTC121	REN 199*	SK3245/199	ECG199*	TM199*/**	WEP372*	121-972	
Q203	2SC710D 2SC710D	01-030710	GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A*/**	WEP710	121-Z9000A
	GE-211*		PTC132*	REN 123A*	SK3356	ECG123A*	TM123A*/**	WEP710	121-Z9000A	
Q204	2SC710D 2SC710	01-030710	GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A*/**	WEP710	121-Z9000A
	GE-211*		PTC132*	REN 123A*	SK3356	ECG123A*	TM123A*/**	WEP710	121-Z9000A	
Q206	2SC710D 2SC710	01-030710	GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A*/**	WEP710	121-Z9000A
	GE-211*		PTC132*	REN 123A*	SK3356	ECG123A*	TM123A*/**	WEP710	121-Z9000A	
Q207	2SC2166 2SC1969	01-032166	GE-215	PTC186	REN 235	SK3197/235	ECG235	TM235	WEP736*	121-Z9039
	GE-216		PTC186	REN 236	SK3239/236	ECG236	TM236	WEP840	121-Z9040	
Q208	2SC763C 2SC763C	01-030763	GE-61*	PTC115	REN 229*	SK3122	ECG229*	TM229*	WEP556	121-Z9021
	GE-61*		PTC115	REN 229*	SK3122	ECG229*	TM229*	WEP556	121-Z9021	
Q210	2SC763 2SC710C	01-030710	GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A*/**	WEP710	121-Z9000A
	2SC710		GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A*/**	WEP710	121-Z9000A
Q211	2SC710C 2SC710	01-030710	GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A*/**	WEP710	121-Z9000A
	2SA628F		GE-211*	PTC132*	REN 123A*	SK3356	ECG123A*	TM123A*/**	WEP710	121-Z9000A
Q212	2SA628F 2SA628	01-010628	GE-82*	PTC103*	REN 159*	SK3114/290	ECG159*	TM159/**	WEP62	121-Z9003
	2SC711F		GE-62*	PTC121	REN 199*	SK3245/199	ECG199*	TM199/**	WEP372*	121-972
Q213	2SC711F 2SC711	01-030711	GE-62*	PTC121	REN 199*	SK3245/199	ECG199*	TM199/**	WEP372*	121-972
	2SD359		GE-247	PTC110	REN 186A	SK3041	ECG186A	TM186A	WEP900	121-Z9008
Q216	2SD365 2SD360	01-040359	GE-66	PTC167	REN 152	SK3054/196	ECG152	TM152	WEP945	121-987-02
	2SD355		GE-271	PTC143*	REN 297	SK3849/293	ECG297	TM297	WEP714	121-Z9014
Q217	2SD355 2SD355	01-040355	GE-67*	PTC177	REN 298	SK3138/193	ECG298	TM298	WEP915	121-Z9046
	2SD355		GE-271	PTC143*	REN 297	SK3849/293	ECG297	TM297	WEP914	121-Z9014
Q219	2SD355 2SD355	01-040355	GE-67*	PTC177	REN 298	SK3138/193	ECG298	TM298	WEP915	121-Z9046
	2SD355		GE-62	PTC139*	REN 199	SK3250/315	ECG199	TM199/**	WEP66	121-972
Q220	2SD355 2SD355	01-040525	GE-67*	PTC177	REN 298	SK3138/193	ECG298	TM298	WEP915	121-Z9046
	2SD355		GE-62	PTC139*	REN 199	SK3250/315	ECG199	TM199/**	WEP66	121-972
Q224	2SC900U 2SC900	01-030900	GE-62	PTC139*	REN 199	SK3250/315	ECG199	TM199/**	WEP66	121-972
	2SD704		GE-62	PTC139*	REN 199	SK3250/315	ECG199	TM199/**	WEP66	121-972
Q3	BD162 RD5.6E	05-060162 05-540056	GEZD-16	ZB16B	REN 5075	SK3751/5075A	ECG5075A	TM5075A/**	WEP1160	103-Z9013
	GEZD-5.6		ZB5.6B	REN 136	SK3057/136A	ECG136A	TM136A/**	WEP1104	103-Z9007	
D1	GP25G	01-030945	GE-512	PTC204	REN 156	SK3051/156	ECG156	TM156	WEP4008	212-Z9000
	GP25G		GE-512	PTC204	REN 156	SK3051/156	ECG156	TM156	WEP4008	212-Z9000
D3	GP25G	01-030945	GE-512	PTC204	REN 156	SK3051/156	ECG156	TM156	WEP4008	212-Z9000
	GP25G		GE-512	PTC204	REN 156	SK3051/156	ECG156	TM156	WEP4008	212-Z9000
Q1	2SC945AP 2SC945	01-030945	GE-212	PTC121*	REN 199	SK3124/289	ECG199	TM199/**	WEP1945	121-972
	2SC900F 2SC900		GE-212	PTC121*	REN 199	SK3124/289	ECG199	TM199/**	WEP1945	121-972
Q2	2SC900F 2SC900	01-030900	GE-62	PTC139*	REN 199	SK3250/315	ECG199	TM199/**	WEP66	121-972
	2SD704		GE-62	PTC139*	REN 199	SK3250/315	ECG199	TM199/**	WEP66	121-972
Z01	BD162 RD5.6E	05-060162 05-540056	GEZD-16	ZB16B	REN 5075	SK3751/5075A	ECG5075A	TM5075A/**	WEP1160	103-Z9013
	GEZD-5.6		ZB5.6B	REN 136	SK3057/136A	ECG136A	TM136A/**	WEP1104	103-Z9007	





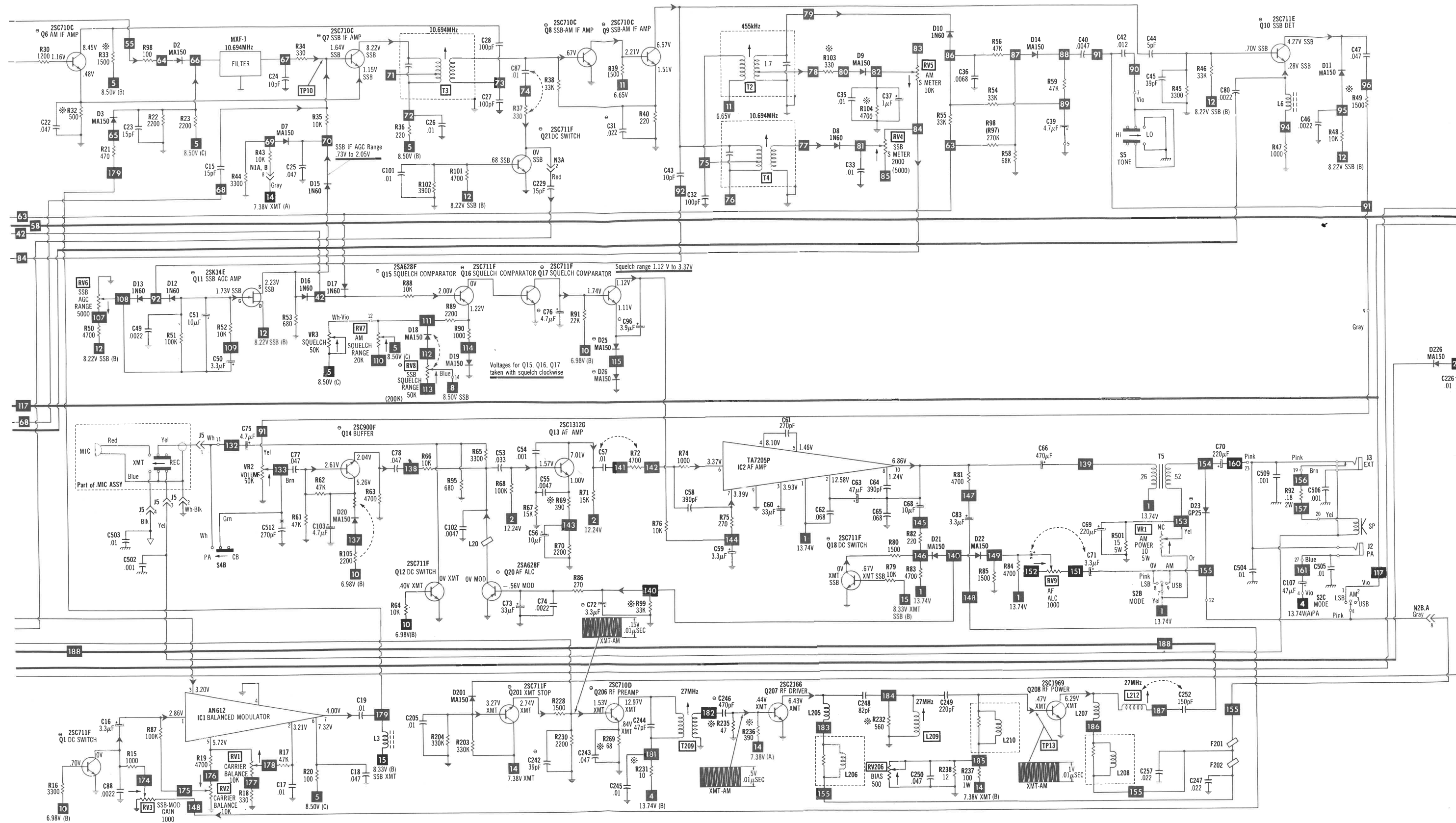
- ✕ Circuitry not used in some versions.
  - Circuitry used in some versions.
  - ✱ Nominal value
  - ⏏ Common tie point
  - ⏏ Ground
  - ⏏ Signal path
  - ⏏ Chassis
  - ⏏ Voltage path
  - Ⓜ See parts list
- Waveforms and Voltages taken in Channel 19 with switching in receive unless noted.  
Item numbers 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).

## POWER SUPPLY SCHEMATIC





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MAIN/PLL SCHEMATIC





PARTS LIST AND DESCRIPTION (CONTINUED)

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

ELECTROLYTIC CAPACITORS (cont)

ITEM No.	RATING	REPLACEMENT DATA				
		MFR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C60	33 16V	00-132510		VTT33D25	QV1-63	EV-1325
C63	47 16V	00-132630		PC50-16	QV1-73	EV-1226
C66	470 16V	00-132675		PC500-16	QV1-151	EV-1251
C67	1000 16V	00-132210		PC1000-16	QV1-183	EV-1261
C68	10 16V	00-132115		PC10-25	QV1-41	EV-1222
C69	220 16V	00-132380		PC250-25	QV1-117	EV-1240
C70	220 16V	00-132380		PC250-25	QV1-117	EV-1240
C71	3.3 25V	00-132465		PC5-50	QV1-25	EV-1618.1
C72	3.3 25V	00-132465		PC5-50	QV1-25	EV-1618.1
C73	33 10V	00-132505		PC30-25	QV1-25	EV-1225
C75	4.7 25V					
C76	4.7 25V					
C83	33 25V	00-132465		VTT3R3A50	QV1-25	EV-1618.1
C85	47 16V	00-132630		VTT47D16	QV1-73	EV-1226
C103	4.7 25V			VTT4R7B50	QV1-31	EV-1619.1
C107	47 16V	00-132630		VTT47D16	QV1-73	EV-1226
C201	10 10V	03-003056		TDC106M025FL	QDT1-64	SD25-109
C202	1 35V	03-003039		TDC105M035EL		SD35-19
C219	100 10V	00-132165		VTT100E10	QV1-93	EV-1131
C233	47 25V			VTT47E25	QV1-77	EV-1426.1
	47 6.3V	00-132500		PC50-16	QV1-73	EV-1226
C261	3.3 25V	00-132465		PC5-50	QV1-25	EV-1618.1
C277	3.3 25V	00-132465		PC5-50	QV1-25	EV-1618.1
C282	1 50V	00-132055		VTT1A50	QV1-11	EV-1615
C284	10 16V	00-132115		PC10-25	QV1-41	EV-1222
C286	1 50V	00-132055		PC1-50	QV1-11	EV-1615
C299	1 50V	00-132055		PC1-50	QV1-11	EV-1615
C303	33 10V	00-132505		PC30-25		EV-1225
C307	1 35V	03-003039		TDC105M035EL		SD35-19
POWER SUPPLY BOARD						
C1	2200 25V	00-132410		TC2520A*	QE1-645*	TVA-1213.5*
C2	100 25V	00-132180		PC100-25	QV1-97	EV-1331

\* Axial replacement for radial device.

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C1	.0022 50V 10%			DPMS6D22	M192P2229R8	QFT2-27	1FT-D22
C2	33 N150 50V 10%				*		10TCP-Q33
	47 N150 50V 10%				*		10TCP-Q47
C3	150 N150 50V 10%				*		10TCP-T15
C4	47 N150 50V 10%				*		10TCP-Q47
C5	.047 50V		UK50-503		MAG5015		
C6	10 N150 50V				*		10TCP-Q10
C7	33 N150 50V 10%				*		10TCP-Q33
C8	22 N150 50V				*		10TCP-Q22
C9	22 N150 50V				*		10TCP-Q22
C10	10 N150 50V				*		10TCP-Q10
C11	100 50V 10%		DD-101	GP100	GP310		10TS-T10
C12	5 N150 50V				*		10TCP-V50
C13	.01 50V		UK50-103		MAG5011		
C14	.022 50V		DC-253	MGP025	TA125		TG-S25
C15	15 N150 50V				*		10TCR-Q15
C17	.01 50V		UK50-103		MAG5011		
C18	.047 50V 10%				EWFA1A147	QFT2-171	1FT-S47
C19	.01 50V		UK50-103	DPMS2S47	MAG5011		10TCP-Q22
C20	22 N150 50V				*		
C21	.01 50V		UK50-103		MAG5011		
C22	.047 50V		UK50-503		MAG5015		
C23	15 N150 50V				*		10TCR-Q15
C24	10 N150 50V				*		10TCP-Q10
C25	.047 50V		UK50-503		MAG5015		
C26	.01 50V		UK50-103		MAG5011		
C27	100 N150 50V				*		10TCP-T10
C28	100 N150 50V				*		10TCP-T10
C29	.022 50V 10%			DPMS2S22	M192P22239R8	QFT2-127	1FT-S22
C31	.022 50V 10%			DPMS2S22	M192P22239R8	QFT2-127	1FT-S22
C32	100 N150 50V 10%				*		10TCP-T10
C33	.01 50V		UK50-103		MAG5011		
C35	.01 50V		UK50-103		MAG5011		
C36	.0068 50V 10%			WMF1D68	EWFA1A268	QFT2-73	1FT-D68
C40	.0047 50V 10%			WMF1D47	M192P4729R8	QFT2-63	1FT-D47

BOLD LISTING INDICATES LOCATION OF PART

PARTS LIST AND DESCRIPTION (CONTINUED)

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

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C42	.012 50V 10%			WMF1S15	M192P1539R8	QFT2-105	1FT-S15
C43	10 N150 50V				*		10TCP-Q10
C44	5 N150 50V				*		10TCP-V50
C45	39 N150 50V 10%				*		10TCP-Q39
C46	.0022 50V 10%			DPMS6D22	M192P2229R8	QFT2-27	1FT-D22
C47	.047 50V 10%			DPMS2S47	EWFA1A147	QFT2-171	1FT-S47
C48	.0022 50V				GP222		10TS-D22
C49	.0022 50V 10%			DPMS6D22	M192P2229R8	QFT2-27	1FT-D22
C53	.033 50V 10%			DPMS6S33	M192P3339R8	QFT2-149	1FT-S33
C54	.001 50V		DD-102		GP210		10TS-D10
C55	.0047 50V		DD-472		GP247		5GA-D47
C57	.01 50V			GP4700	GP247	QFT2-91	1FT-S10
C58	390 50V 10%		DD-391	WMF1S1	GP339		10TS-T39
C61	270 50V		DD-271	GP390	GP327		10TS-T27
C62	.068 50V 10%		UK50-683	GP270	MAG50168		
C64	390 50V 10%		DD-391		GP339		
C65	.068 50V 10%			GP390	EWFA1A68	QF1-195	1PB-S68
C74	.0022 50V 10%			WMF1S68	M192P2229R8	QFT2-27	1FT-D22
C77	.047 50V 10%			DPMS6D22	EWFA1A147	QFT2-171	1FT-S47
C78	.047 50V 10%			DPMS2S47	EWFA1A147	QFT2-171	1FT-S47
C80	.0022 50V 10%			DPMS2S47	M192P2229R8	QFT2-27	1FT-D22
C86	.047 50V		UK50-503	DPMS6D22	MAG5015		
C87	.01 50V		UK50-103		MAG5011		
C88	.0022 50V				GP222		10TS-D22
C89	.01 50V		UK50-103		MAG5011		
C90	.01 50V		UK50-103		MAG5011		
C91	.01 50V		UK50-103		MAG5011		
C92	.01 50V		UK50-103		MAG5011		
C93	.047 50V		UK50-503		MAG5015		
C94	.047 50V		UK50-503		MAG5015		
C100	100 N150 50V 10%				*		10TCP-T10
C101	.01 50V		UK50-103		MAG5011		
C102	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C104	.01 50V		UK50-103		MAG5011		
C105	.01 50V		UK50-103		MAG5011		
C106	.047 50V				MAG5015		
C203	.01 50V		UK50-103		MAG5011		
C204	.022 50V		DC-253	MGP025	TA125		TG-S25
C205	.01 50V		UK50-103		MAG5011		
C206	33 N150 50V 10%				*		10TCP-Q33
C207	220 N150 50V 10%				*		10TCP-T22
C208	82 N150 50V 10%				*		10TCP-Q82
C209	.001 50V 10%				*		1FT-D10
C210	22 N150 50V 10%				*		10TCP-Q22
C212	33 N150 50V 10%				*		10TCP-Q33
C213	12 N150 50V				*		10TCP-Q12
C214	.01 50V		UK50-103		MAG5011		
C215	27 N150 50V				*		10TCP-Q27
C216	.001 50V 10%				*		1FT-D10
C217	220 N150 50V 10%				*		10TCP-T22
C218	.0022 50V				GP222		10TS-D22
C220	.01 50V		UK50-103		MAG5011		
C221	100 N150 50V 10%				*		10TCP-T10
C222	.001 50V		DD-102		GP210		10TS-D10
C223	.001 50V		DD-102		GP210		10TS-D10
C224	.0018 50V 10%			DPMS6D22	M192P2229R8	QFT2-27	1FT-D22
C225	2 N150 50V				*		10TCP-V22
C226	.01 50V		UK50-103		MAG5011		
C228	33 N150 50V 10%				*		10TCP-Q33
C229	15 N150 50V				*		10TCP-Q15
C230	82 N150 50V 10%				*		10TCP-Q82
C231	56 N150 50V 10%				*		10TCP-Q56
C232	.01 50V		UK50-103		MAG5011		
C234	.01 50V		UK50-103		MAG5011		
C235	3 N150 50V				*		10TCP-V30
C236	.01 50V		UK50-103		MAG5011		
C238	.01 50V		UK50-103		MAG5011		
C240	.01 50V		UK50-103		MAG5011		
C241	82 N150 50V 10%				*		10TCP-Q82
C242	39 N150 50V 10%				*		10TCP-Q39
C243	.047 50V		UK50-503		MAG5015		
C244	47 N150 50V 10%				*		
C245	.01 50V		UK50-103		MAG5011		10TCP-Q47
C246	390 50V		DD-391	GP390	GP339		10TS-T39
	470 NPO 50V				*		
C247	.022 50V			MGP025	TA125		TG-S25
C248	82 N150 50V 10%				*		10TCP-Q82
C249	220 NPO 50V		DTZ-220				10TCC-T22
C250	.047 50V		UK50-503		MAG5015		
C251	68 N150 50V 10%				*		10TCP-Q68
C252	150 NPO 50V				CN0315		10TCC-T15
C253	560 50V 10%		DTZ-150		GP356		10TS-T56
C254	470 NPO 50V		DD-561		*		
C255	270 NPO 50V				*		
C257	.022 50V		DTZ-270				10TCC-T27
C258	.01 50V		DC-253	MGP025	TA125		TG-S25
C259	5 N150 50V		UK50-103		MAG5011		
C260	33 N150 50V 10%				*		10TCP-V50
C262	22 N150 50V				*		10TCP-Q33
C263	.01 50V		UK50-103		MAG5011		10TCP-Q22
C265	.01 50V		UK50-103		MAG5011		
C268	.01 50V		UK50-103		MAG5011		
C269	.01 50V		UK50-103		MAG5011		
C270	.01 50V		UK50-103		MAG5011		

PARTS LIST AND DESCRIPTION (

(When ordering parts, state Model, Part Number, and D

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	CE P.
C271	.01 50V		UK
C272	47 N150 50V		
C273	220 N150 50V 10%		
C274	.0047 50V		DC
C275	220 N150 50V 10%		
C276	.01 50V		UK
C278	82 N150 50V 10%		
C279	2 N150 50V		
C280	.01 50V		UK
C281	.01 50V		UK
C283	.01 50V		UK
C285	.01 50V		UF
C287	3 N150 50V		
C288	.047 50V		UF
C289	.022 50V		DC
C290	.022 50V		DC
C291	.047 50V		UF
C292	.047 50V		UF
C293	15 N150 50V		
C294	15 N150 50V		
C298	.01 50V		UF
C302	.022		
C304	.01 50V		UF
C308	.01 50V		UF
C309	.01 50V		UF
C311	.047 50V		UF
C313	.01 50V		UF
C314	.01 50V		UF
C340	.01 50V		UF
C501	.01		
C502	.001		
C503	.01		
C504	.01 50V		UF
C505	.01 50V		UF
C506	.001 50V		DC
C507	.047 50V		UF
C508	.047 50V		UF
C509	.001 50V		DC
C510	33 N150 50V 10%		
C511	33 N150 50V 10%		
C512	270 50V 10%		DC
C513	.01		
C514	.01		
CT1	20	13-123080	
CT2	20	13-123080	
CT201	20	13-123080	
CT202	20	13-123080	
CT203	20	13-123080	
POWER SUPPLY BOARD			
C3	.022 50V		DI
C4	.01 50V		U
C5	.047 50V		U
C6	.022 50V		U
	.02 50V		DI

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

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C271	.01 50V		UK50-103		MAG5011		
C272	47 N150 50V				*		10TCP-Q47
C273	220 N150 50V 10%				*		10TCP-T22
C274	.0047 50V		DD-472	GP4700	GP247		5GA-Q47
C275	220 N150 50V 10%				*		10TCP-T22
C276	.01 50V		UK50-103		MAG5011		
C278	82 N150 50V 10%				*		10TCP-Q82
C279	2 N150 50V				*		10TCP-V22
C280	.01 50V		UK50-103		MAG5011		
C281	.01 50V		UK50-103		MAG5011		
C283	.01 50V		UK50-103		MAG5011		
C285	.01 50V		UK50-103		MAG5011		
C287	3 N150 50V				*		10TCP-V30
C288	.047 50V		UK50-503		MAG5015		
C289	.022 50V		DC-253	MGP025	TA125		TG-S25
C290	.022 50V		DC-253	MGP025	TA125		TG-S25
C291	.047 50V		UK50-503		MAG5015		
C292	.047 50V		UK50-503		MAG5015		
C293	15 N150 50V				*		10TCP-Q15
C294	15 N150 50V				*		10TCP-Q15
C298	.01 50V		UK50-103		MAG5011		
C302	.022						
C304	.01 50V		UK50-103		MAG5011		
C308	.01 50V		UK50-103		MAG5011		
C309	.01 50V		UK50-103		MAG5011		
C311	.047 50V		UK50-503		MAG5015		
C313	.01 50V		UK50-103		MAG5011		
C314	.01 50V		UK50-103		MAG5011		
C340	.01 50V		UK50-103		MAG5011		
C501	.01						
C502	.001						
C503	.01						
C504	.01 50V		UK50-103		MAG5011		
C505	.01 50V		UK50-103		MAG5011		
C506	.001 50V		DD-102		GP210		10TS-D10
C507	.047 50V		UK50-503		MAG5015		
C508	.047 50V		UK50-503		MAG5015		
C509	.001 50V		DD-102		GP210		10TS-D10
C510	33 N150 50V 10%				*		10TCP-Q33
C511	33 N150 50V 10%				*		10TCP-Q33
C512	270 50V 10%		DD-271	GP270	GP327		10TS-T27
C513	.01						
C514	.01						
CT1	20	13-123080					
CT2	20	13-123080					
CT201	20	13-123080					
CT202	20	13-123080					
CT203	20	13-123080					
POWER SUPPLY BOARD							
C3	.022 50V		DC-253	MGP025	TA125		TG-S25
C4	.01 50V		UK50-103		MAG5011		
C5	.047 50V		UK50-503		MAG5015		
C6	.022 50V		DC-253	MGP025	TA125		TG-S25
	.02 50V		DC-203	MGP02	TA120	QC2-157	TG-S20

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

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

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA			
			MFR. PART No.	CENTRALAB PART No.	MALLORY PART No.	TRW PART No.
RV1	Carrier Balance	10K	79-164016			U260R103B
	Carrier Balance	1000	78-164001			
RV2	Carrier Balance	10K	79-164016			U260R103B
RV3	SSB Mod Gain	1000	79-164003			U260R102B
RV4	SSB S Meter	5000	79-164002			U260R502B
RV5	AM S Meter	10K	77-164003			U260R103B
RV6	SSB AGC	5000	79-164002			U260R502B
RV7	AM Squelch Range	20K	13-164134			
RV8	SSB Squelch Range	50K	77-164013			U260R503B
RV9	AM AMC	1000	79-164003			U260R102B
RV10	RF Gain Range	100K	77-164012			U260R104B
RV201	SSB RF ALC	5000	79-164017			U260R502B
RV202	RF Meter	20K	13-164134			U260R253B
RV206	XMT Final Bias	500	79-164018			X201R501B(2)
VR1	AM Power	10 5W	13-164156	T-500(2)	MTC52L1(2)	
VR2	Volume/Power Switch	50K	78-160002	F2-50K(1), SSK012, KR7	RU54A,SL36,SL1500, US42	BU1(1)CF63,SS1, WF
				F2-50K,SSK012	RU54A,SL36,SL1500	BU1(1),CF63,SS1, DC1
VR3	Squelch	50K	78-160003			BU1(1),CF63,SS1, DC1
VR4	Clarifier	50K	78-160004	F2-50K(1), SSK012	RU54A,SL36,SL1500	
POWER SUPPLY BOARD						
RV1	Voltage	500	13-164141			U260R501B

(1) Enlarge mounting hole.  
(2) Cut off one of the end terminals and bend to fit P.C. board.

BOLD LISTING INDICATES LOCATION OF PART

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

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		MFR. PART No.	WORKMAN PART No.			MFR. PART No.	WORKMAN PART No.
R501	15 Ohm 5 Watt	04-050150		RA1	Resistor Network	77-140005(1)	
				RA2	Resistor Network	77-140005(1)	

(1) Consists of seven 1800-ohm, 1/4 watt resistors.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	RF Choke (8.2uH)	79-176031			
L3	RF Choke (150uH)	79-176032			
L4	RF Choke (150uH)	79-176032			
L5	RF Choke (150uH)	79-176032			
L6	RF Choke (150uH)	79-176032			
L7	RF Choke (150uH)	79-178011			
L8	RF Choke (150uH)	79-178011			
L202	RF Choke (2.2uH)	13-176564	022F		
L203	RF Choke (68uH)	13-178210	680X		
L204	Mixer/RF/ALC	13-176034			
L205	RF Choke	13-178209			
L206	RF Choke	79-176035			
L207	RF Choke	13-178209			
L208	RF Choke	79-176035			
L209	RF Driver (27MHz)	79-178005			
L210	RF Choke	79-176035			
L212	RF Power (27MHz)	79-178005			
L213	Pi Filter	79-178006			
L214	Antenna Matching (27MHz)	79-178007			
L215	RF Choke (68uH)	13-178210	680X		
T1	IF (455kHz)	79-090005			
T2	IF (455kHz)	79-090013	10LA023S		
T3	SSB IF Amp (10.694MHz)	79-090003	10MA015S		
T4	SSB AM IF Amp (10.695MHz)	79-090003	10MA015S		
T201	Oscillator (20MHz)	77-176010			
T202	VCO/Mixer (37MHz)	13-090405	10DB002S		
T203	VCO/Mixer (37MHz)	76-176001	10MB005S		
T204	RF Amp (27MHz)	79-176002	10CA006		
T205	RF Amp (27MHz)	13-090405			
T206	Rec Antenna (27MHz)	13-094234	10MP003S		
T207	Noise Amp (10.695MHz)	79-176036	MA07N		
T208	Mixer (10.695MHz)	79-176036	MA07N		
T209	RF Preamp (27MHz)				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFR. PART No.	THORDARSON PART No.	TRIAD PART No.	
CH	2A	.23	3.3mH	13-178234 LJ119H004W(1)			(1) Number on unit.

## PARTS LIST AND DESCRIPTION (CONTINUED)

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

### TRANSFORMER

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T5	32	8	79-096003 TBH28B001W(1)			(1) Number on unit.

### TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T6	120V AC @ .47A AC	18.50V AC @ 3.2A AC @ 2.8A DC	78-098001 TP-H68U004Y(1)		PCB-5	(1) Number on unit.

### SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	3" PH, 8 Ohms	13-060118	30A05Z8R	

### FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA							
		PART No.		BUSS PART No.		LITTELFUSE PART No.		WORKMAN PART No.	
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	
F1	3A 250V Quick-acting	13-204017		GJV-3		318003			
F2	3A Quick-acting			AGC-3	HRK	312003		150145	FG3-2
F3	1A Quick-acting	13-204016	13-158522	AGC-1	HKP	312001		342-013AL	FG1-2

### MICROPHONE

ITEM No.	REPLACEMENT DATA				CONNECTION DATA							
	MFGR. PART No.	GC PART No.	GC NOISE CANCEL	GC POWER	GC CONNECTOR	GC Red	GC Shield	GC Yellow	GC Blue	GC White	GC Black	
MIC	78-038001	18-032	18-034	18-010	18-092	1	2	4	3	NC	2	

MIDLAND MODEL 78-574

## PARTS LIST AND DESCRIPTION (CONTINUED)

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

### MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF1	Filter	77-179001	455kHz
F201	Ferrite Bead	79-050001	
F202	Ferrite Bead	79-050001	
F203	Ferrite Bead	79-050001	
F204	Ferrite Bead	79-050001	
F205	Ferrite Bead	79-050001	
J1	Jack	77-159030	Antenna
J2	Jack	77-159031	PA Speaker
J3	Jack	77-159031	External Speaker
J4	Jack	13-159235	DC Power
J5	Jack	77-159021	Microphone
J6	Jack	13-159236	AC Power
L20	Ferrite Bead	79-050001	
LED301	LED	78-202001	Channel Display, Tens & Units, SL1222 (Each Segment Supplied 1.57V @ 5.7mA)
M1	Meter	78-200001	S/R
MXF1	Filter	79-179005	10.6935MHz
MXF2	Filter	79-179006	10.695MHz
PL1	Lamp	78-201001	Meter, 16V @ 65mA
S1	Switch		On/Volume (Part of VR2)
S2	Switch	78-180001	Mode LSB/USB/AM
S3	Switch	79-183001	Noise Blanker
S4	Switch	79-183001	PA/CB
S5	Switch	79-183001	Tone Hi/Lo
S6	Switch	79-183001	Local/DX
SS01	Switch		AC/DC (Activated by insertion of AC cord)
SW1	Switch	78-180002	Channel Selector
VCO	Block	79-075004	
X1	Crystal	79-128012	10.695MHz
X201	Crystal	79-128013	10.240MHz
X202	Crystal	79-128014	10.0525MHz
	Cord	78-034002	AC W/Plug
	Cord	78-034001	DC W/Plug
	P.C. Board	78-075007	AVR (Assembly)
	P.C. Board	78-075004	Channel Switch (Assembly)
	P.C. Board	78-075003	LED (Assembly)
	P.C. Board	78-075005	RF (Assembly)

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

ITEM	PART No.	ITEM	PART No.
Case, Bottom	78-013003	Knob, Channel Selector	78-115002
Case, Front	78-010004	Knob, Vol/Squelch/Mode/Clarifier	78-110001
Case, Main	78-010005		

### 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)
Coax (Transmission Line).....	Use BELDEN No. 8216 (RG-174/U, 50 ohms)
Microphone Cable (Coiled).....	Use BELDEN No. 8491 (4 conductor-2 shielded)(6 ft.)(AWG23)
AC Power Cord.....	Use BELDEN No. 17106 (6 ft.)(2 conductors)
AC Power Cord.....	Use BELDEN No. 17109 (9 ft.)(2 conductors)