

PHOTOFACT® with

CIRCUITRACE®

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 77-857

MANUFACTURER'S SPECIFICATIONS

Circuitry:	3 ICs, 21 Transistors, 13 Diodes, 2 Zener Diodes, 1 Vari-cap
Frequency Control:	PLL (Phase Lock Loop) Synthesizing System
Channels:	40 channels all installed
Mode of operation:	AM
Receiver System:	Dual Conversion Superheterodyne
Sensitivity:	Nominal 0.7 μ V (S/N 10 dB)
Selectivity:	More than 45 dB down at ± 10 KHz
Intermediate Frequency:	1st: 10.695 MHz 2nd: 455 KHz
Frequency Tolerance:	$\pm 0.005\%$
Spurious Rejection:	More than 60 dB
RF Output Power:	Maximum 4.0W
Squelch Range:	0.5 μ V—500 μ V
Delta Tune:	About ± 1 KHz (Receiving only)
Audio Output Power:	More than 3W (EXT. SP at 8 ohms)
Controls:	Volume, Squelch, Delta Tune, Channel Selector, ANL-OFF Switch, EXT. CB-OFF Switch
Jacks and Connectors:	Microphone, EXT. SP, Antenna, EXT. CB/PA Speaker, DC Power
Speaker:	3" dynamic, 8 ohms
Microphone:	Dynamic CB mike
Power Source:	DC 13.8V
Size:	6-3/8 (W) $\times$ 7-7/8 (D) $\times$ 2-1/4 (H) inches
Weight:	3.8 lbs.

Courtesy of the Manufacturer

MIDLAND MODEL 77-857

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. 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:

L14, T7, T8, T9, T10	5009
L7, L11, L12	9304
L1, L2, L5, T1, T2, T3, T4, T5, T6	944C
CT1	5000

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Input of frequency counter to TP1.	Ch. 19	CT1	Adjust for 10.240MHz.
Input of RF VTVM to TP2.	Ch. 19	T1	Adjust for maximum.
Input of DC meter to TP8.	Ch. 19	L1	Adjust for 2.8 volts.
Input of frequency counter to TP3.	Ch. 19, Xmit		Check for 10.695MHz.
Input of RF VTVM to TP4.	Ch. 19	L2, T2	Adjust for maximum.
Input of frequency counter to TP4.	Ch. 1		Check for 37.660MHz. Check all channels (Channel frequency +10.695MHz = frequency on counter).

RECEIVER ALIGNMENT

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

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP10. 455kHz, 1000Hz @ 30% modulation.	Ch. 19, Delta Tune 0.	T10, T9, T8	Adjust for maximum output.
Output of signal generator thru .01uF to TP11. 10.695MHz, 1000Hz @ 30% modulation.	Ch. 19, Delta Tune 0.	T7, L14	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation.	Ch. 19, Delta Tune 0.	T6, T5	Adjust for maximum output. Repeat above steps if necessary.

RECEIVER ADJUSTMENTS

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

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 1000uV.	Ch. 19, Delta Tune 0.	RV1	SQUELCH RANGE Set squelch control VR2 fully clockwise. Adjust VR1 so that squelch just breaks.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 100uV.	Ch. 19, Delta Tune 0.	RV3	S METER Adjust RV3 for 9 on S scale of meter.

TRANSMITTER ALIGNMENT

Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.

NOTE: Be sure to check transmit frequency and power on all active channels after alignment of transmitter.

See page 4 for channel frequencies.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
	Ch. 19	L5, T3, T4, L7, L11, L12	Adjust for maximum.
	Ch. 19	L12	Adjust for 4 watts maximum.

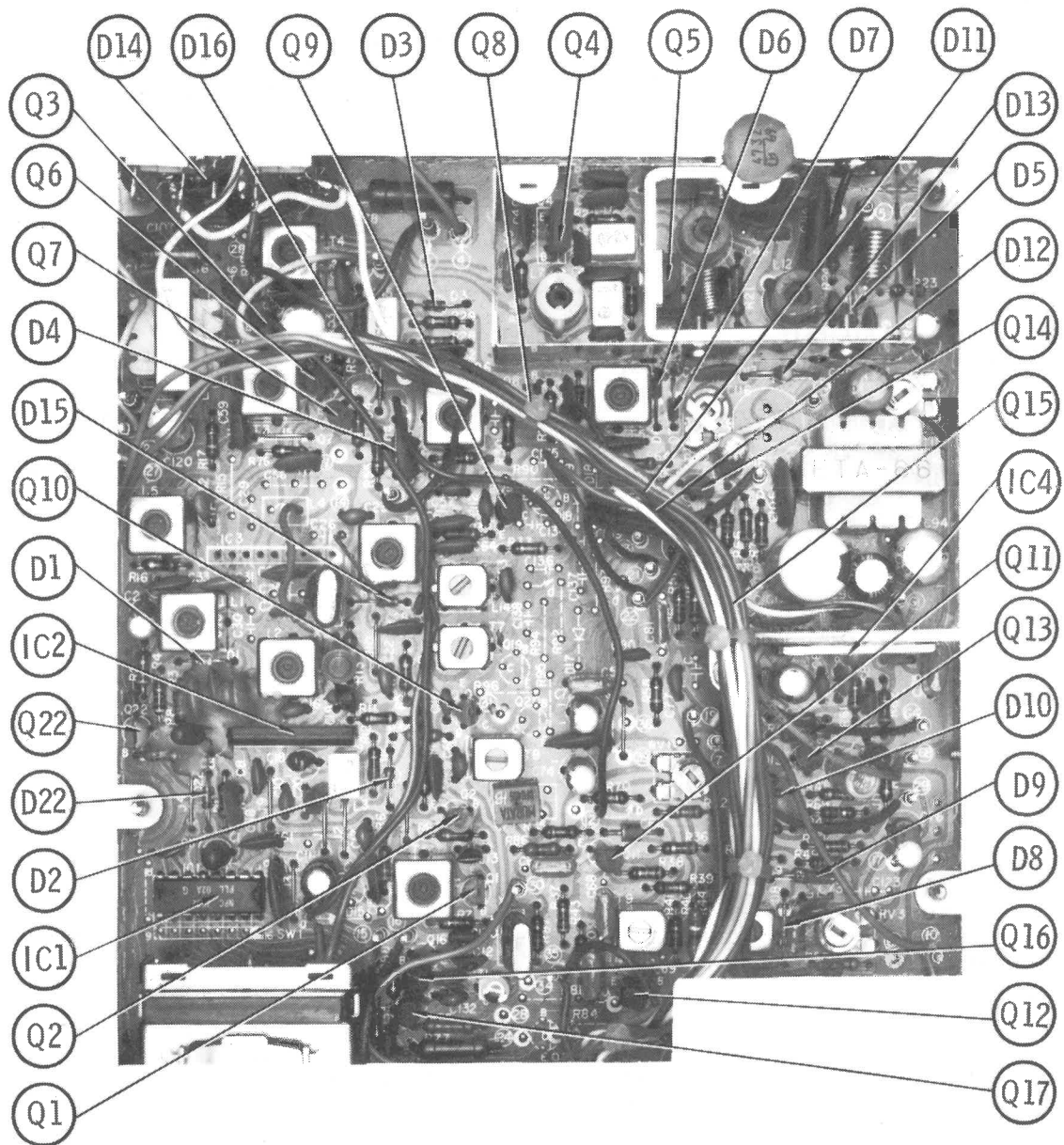
TRANSMITTER ADJUSTMENTS

Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.

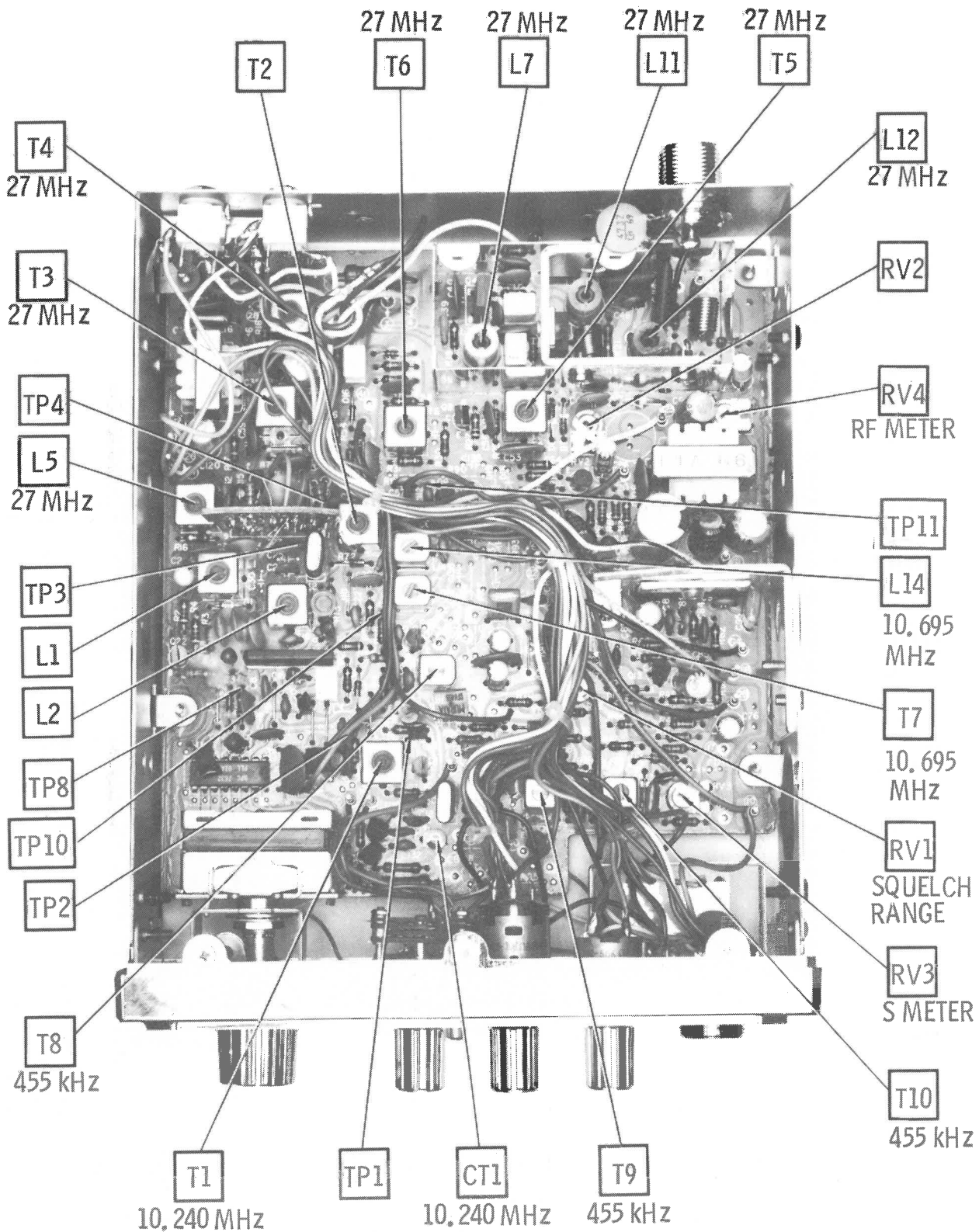
NOTE: Be sure to check transmit frequency and power on all active channels after adjustments of transmitter.

See Page 4 for channel frequencies.

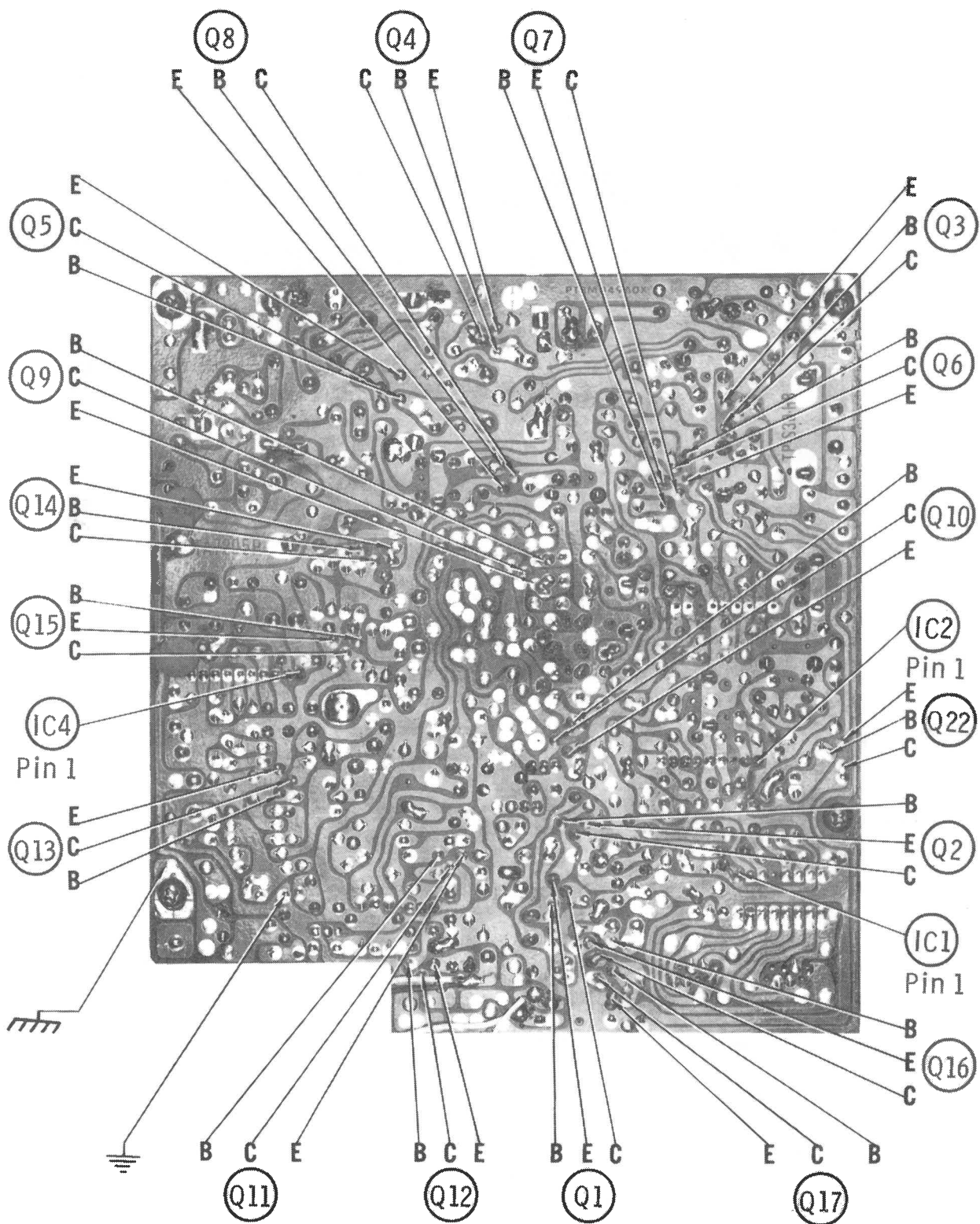
TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Modulation meter to antenna jack. Inject a 100mV 1000Hz signal at MIC input.	Ch. 19	RV2	AMC Adjust for 95% modulation.
	Ch. 19	RV4	RF PANEL METER Adjust for 3/4 reading on RF scale of meter.



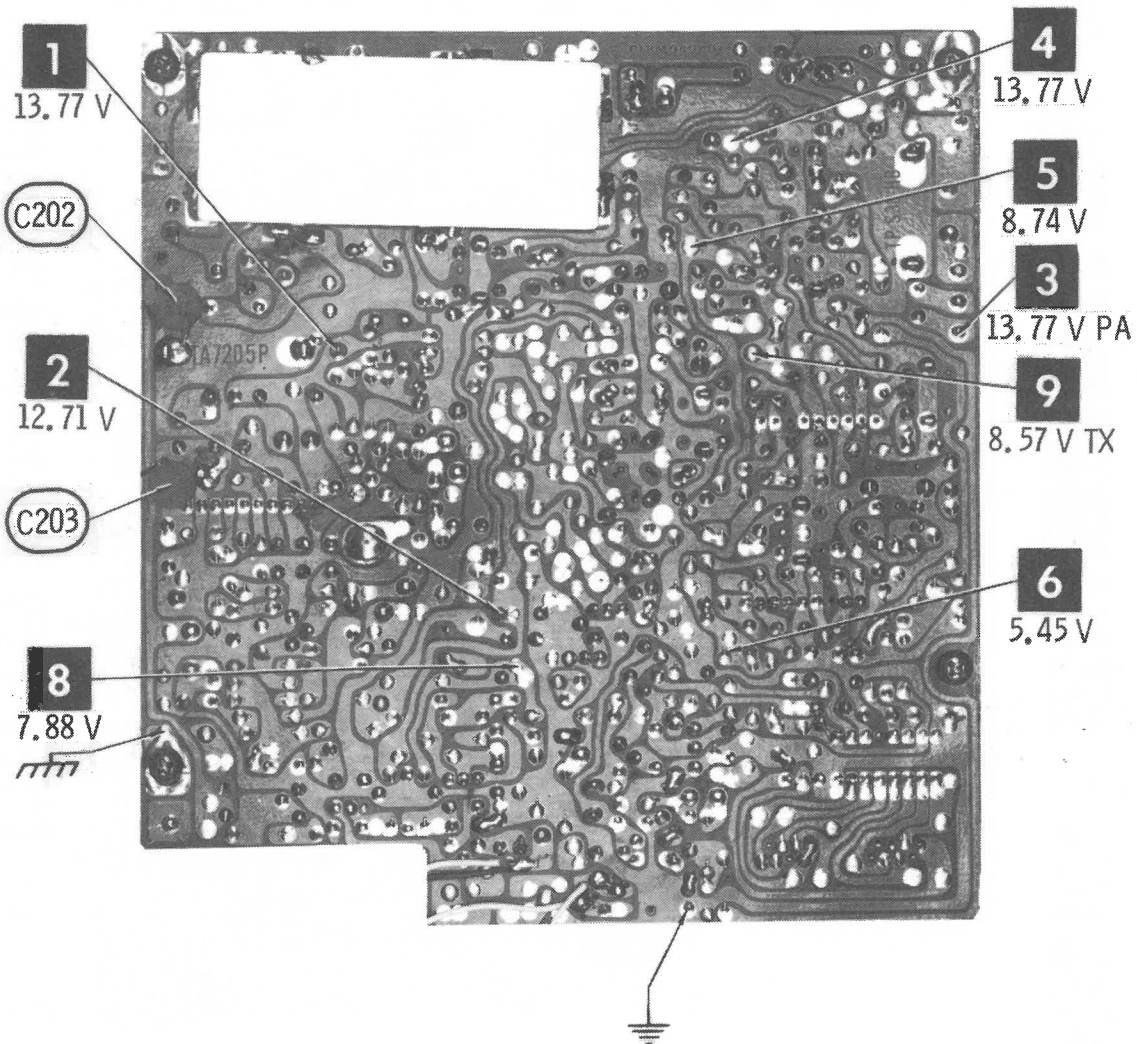
MAIN BOARD



CHASSIS - BOTTOM

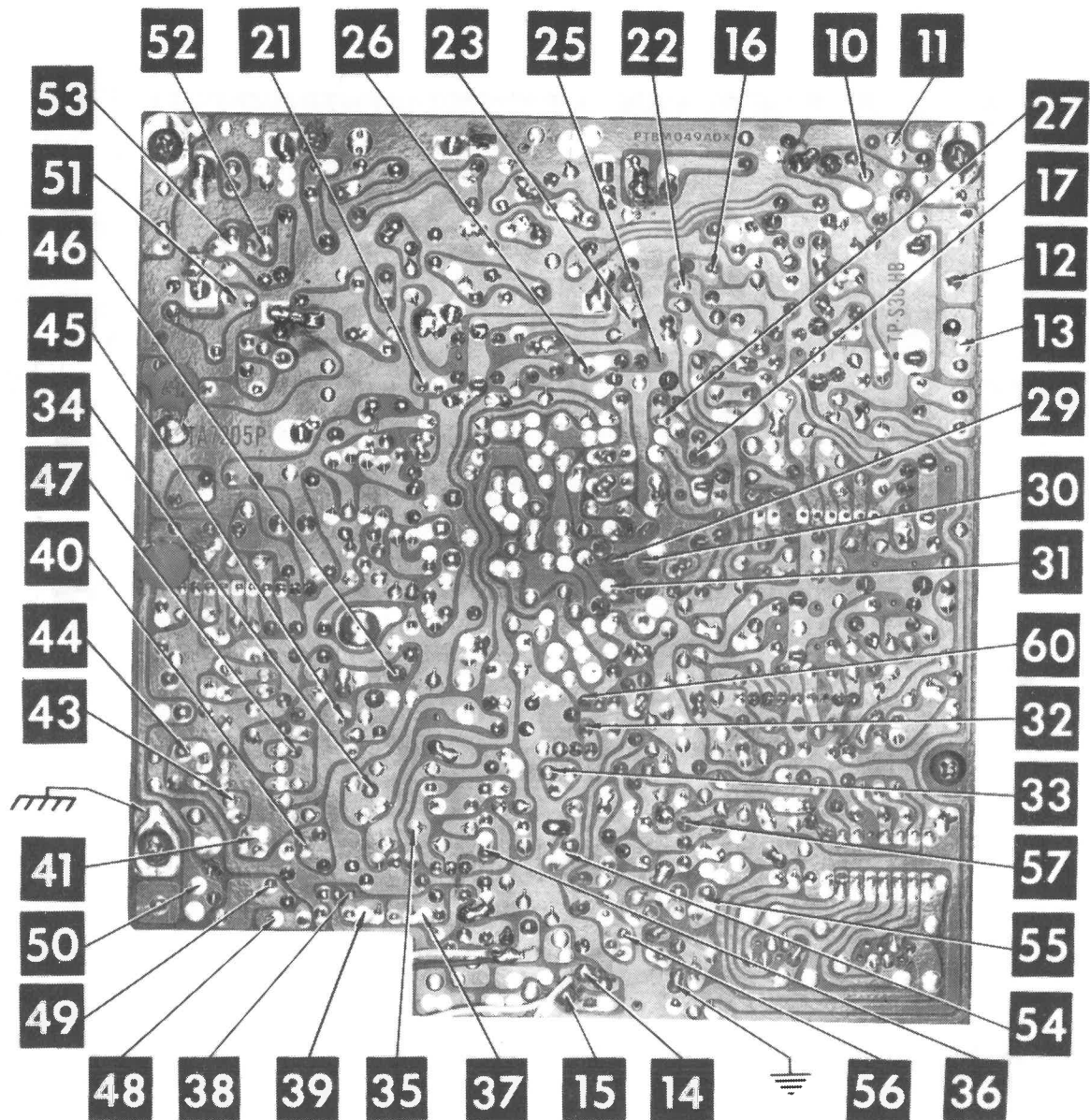


MAIN BOARD

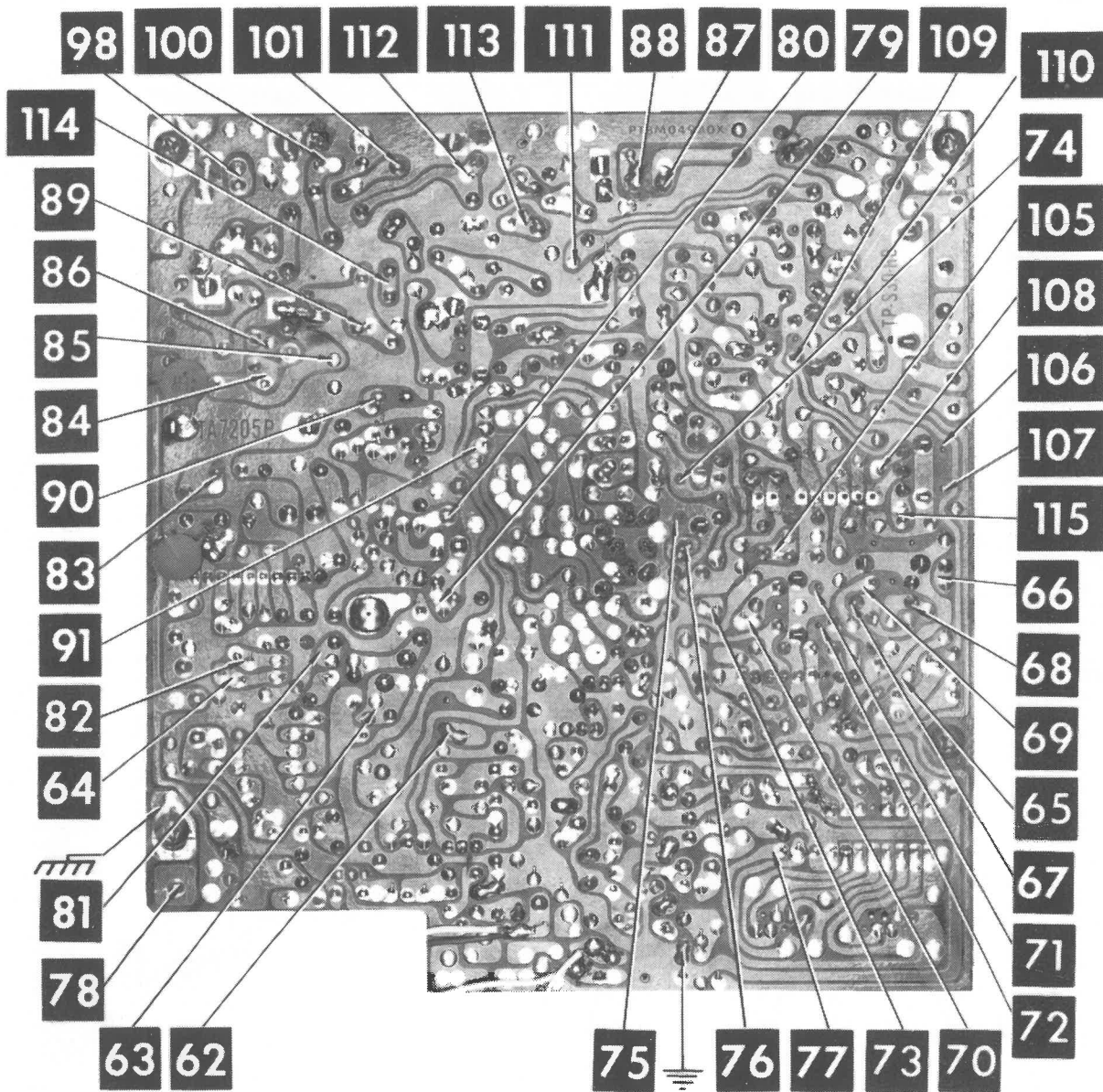


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MAIN BOARD

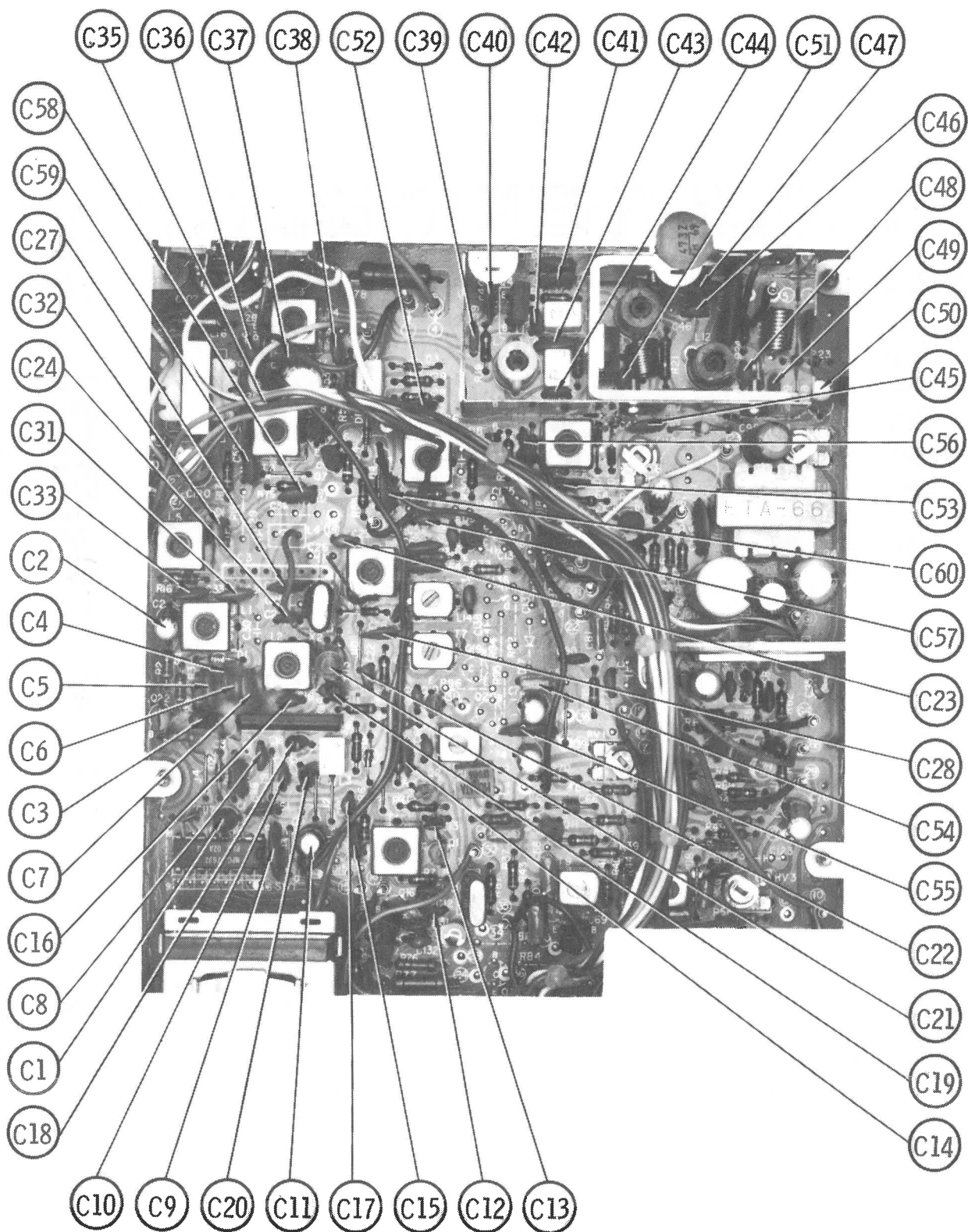


MAIN BOARD

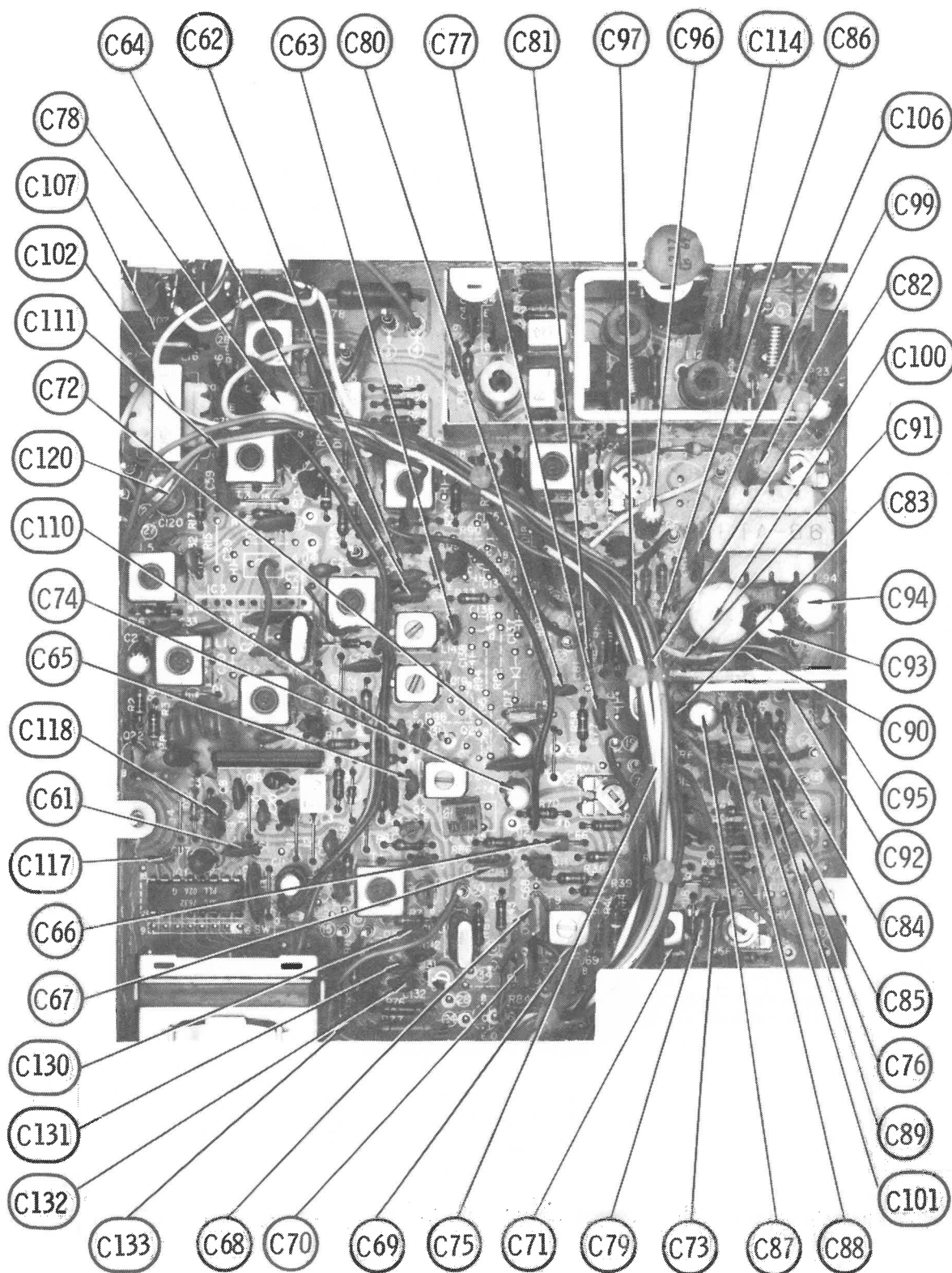


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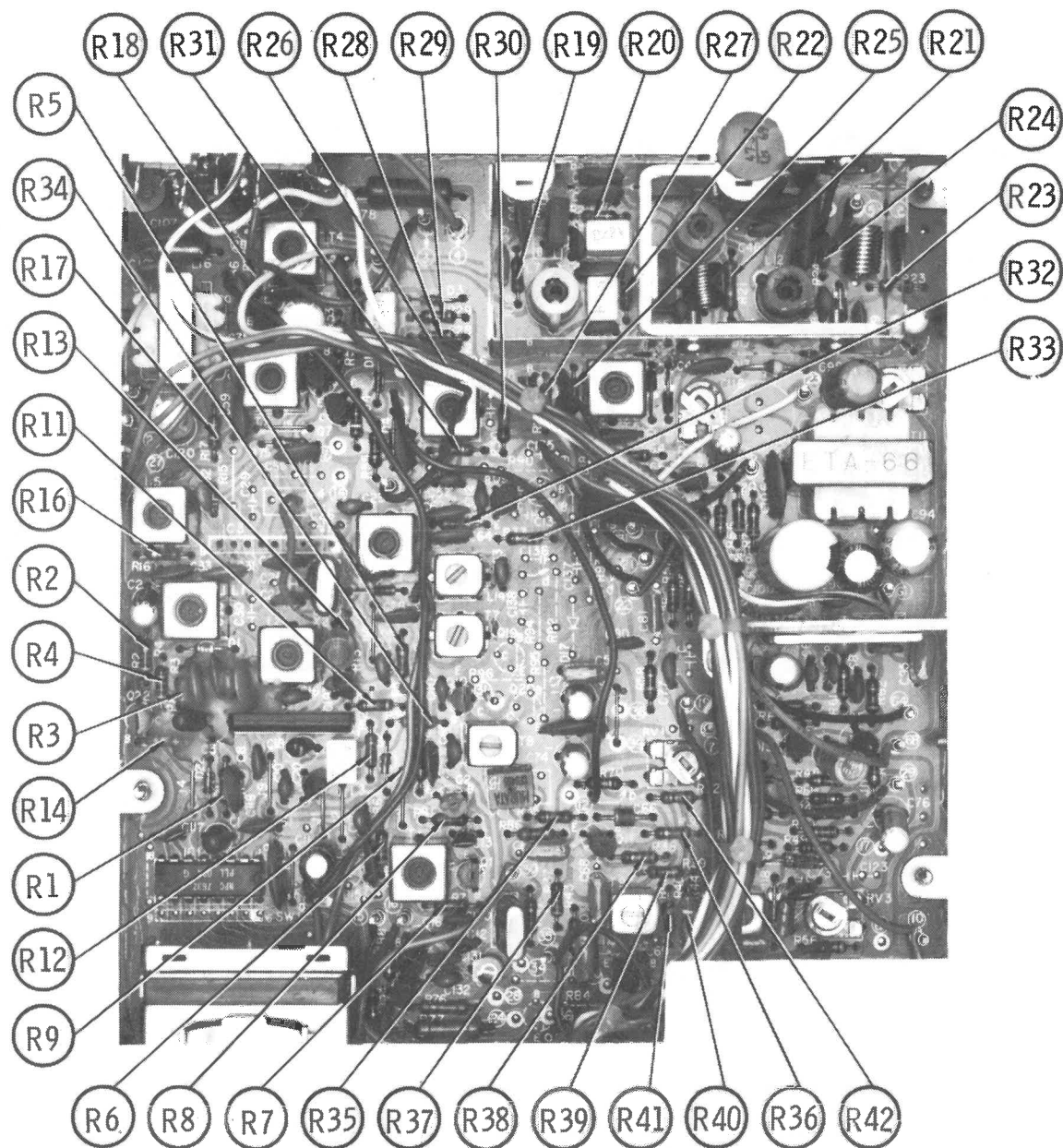
MAIN BOARD



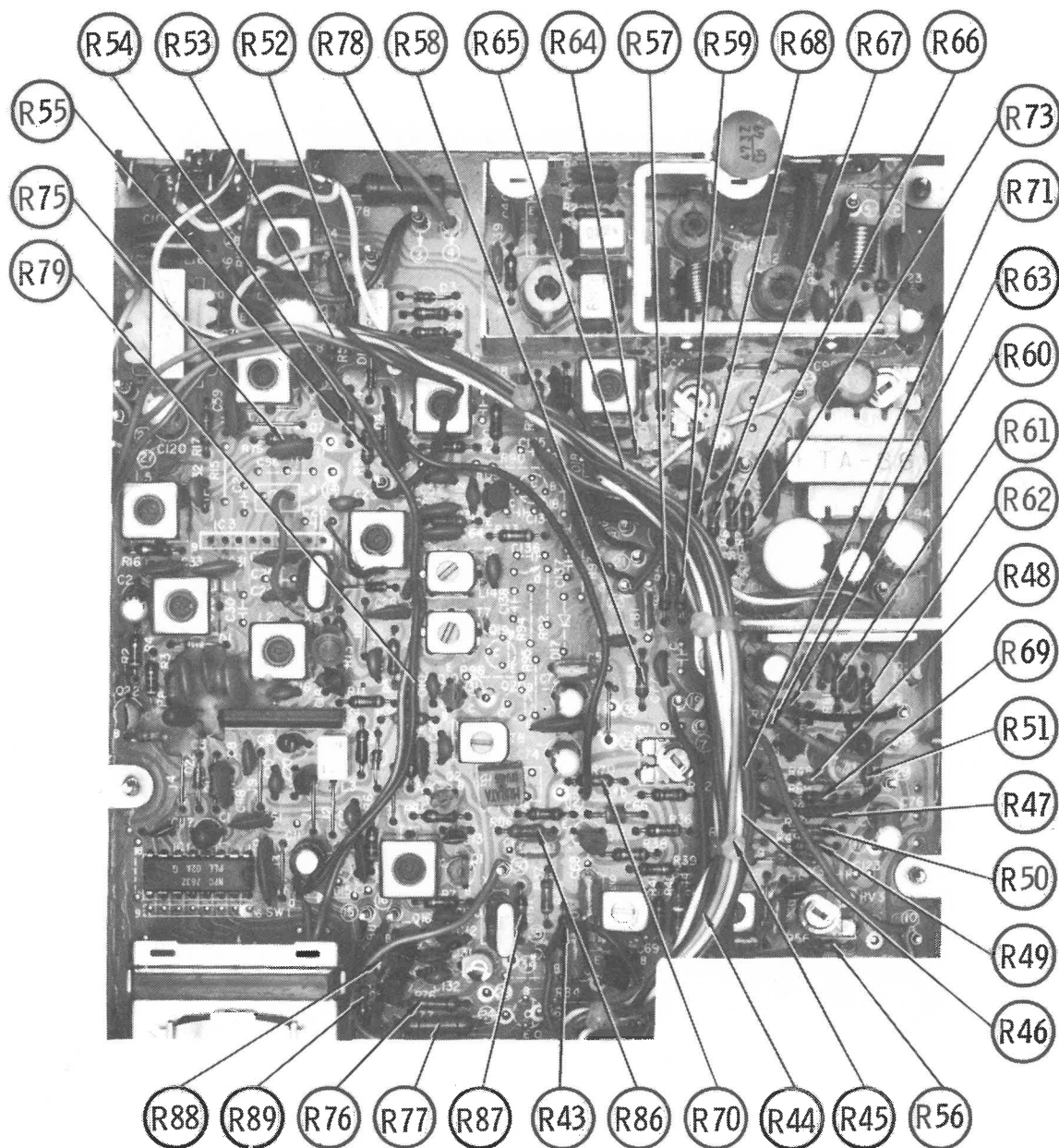
MAIN BOARD



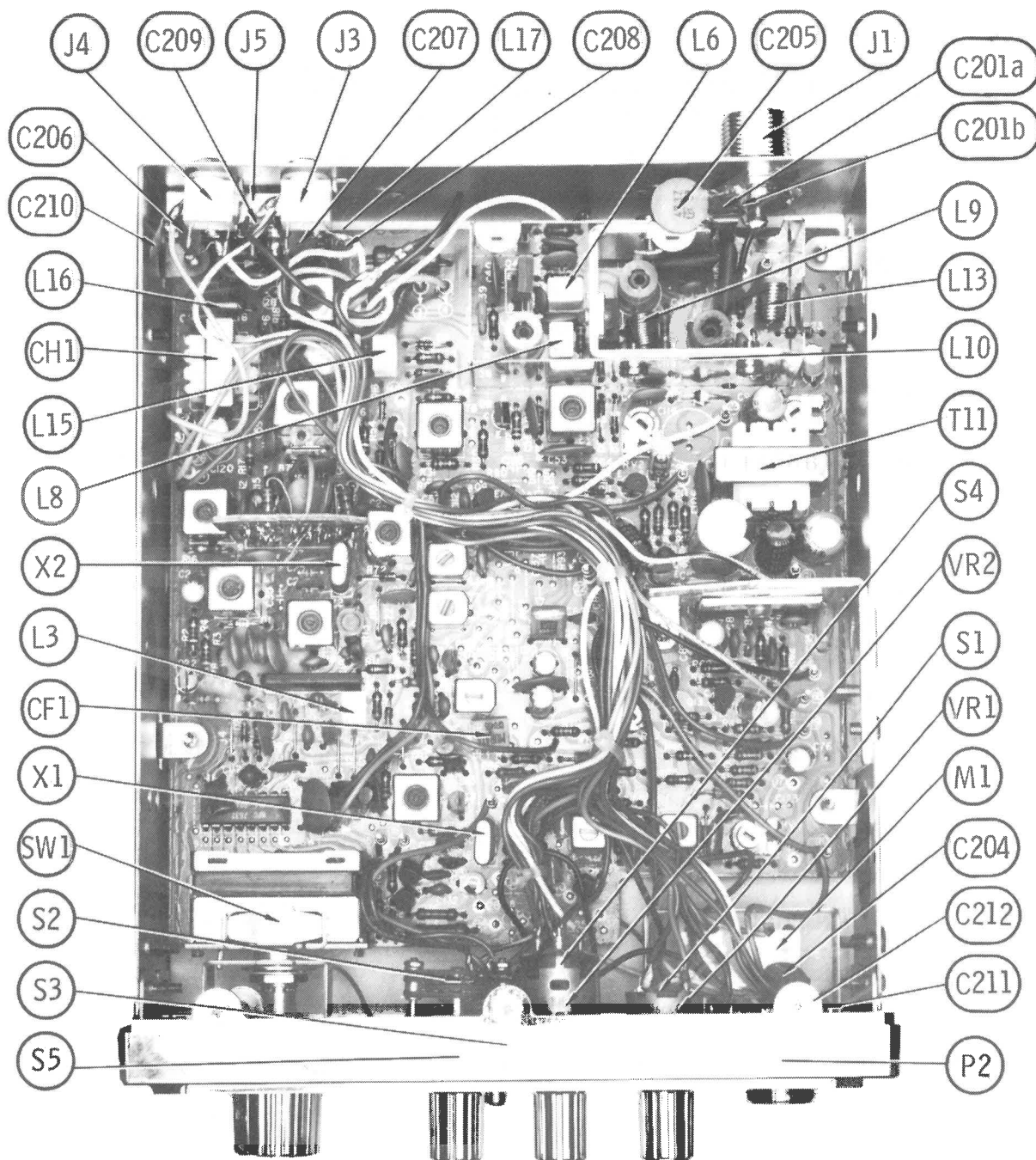
MAIN BOARD



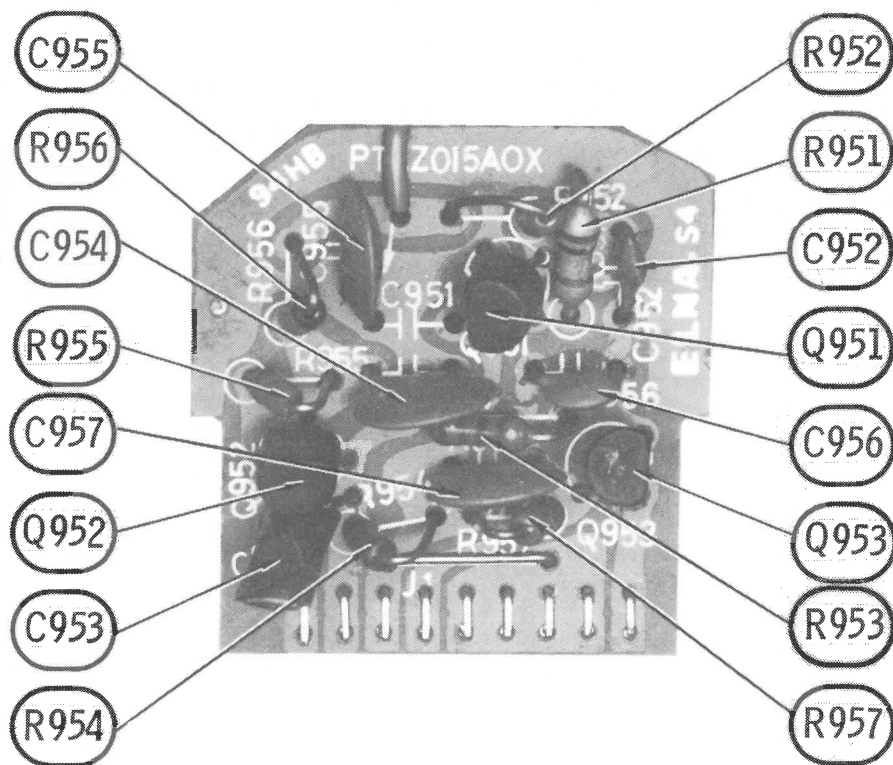
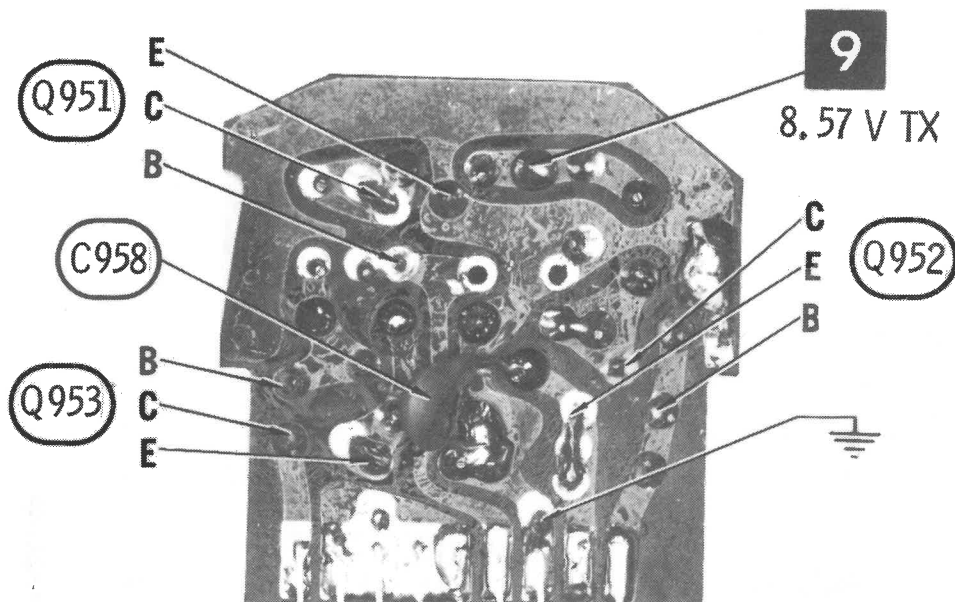
MAIN BOARD



MAIN BOARD



CHASSIS - BOTTOM



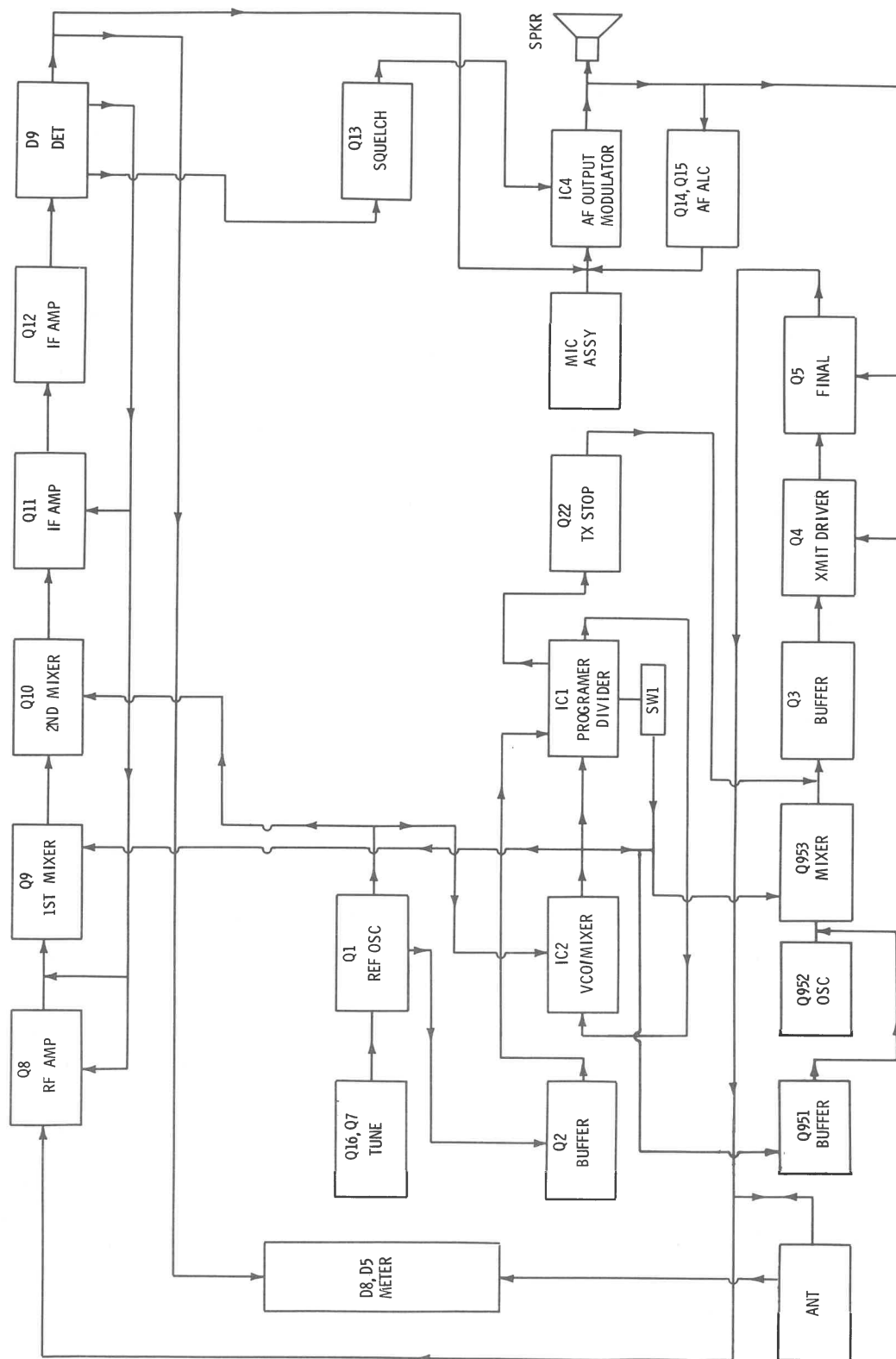
XMT OSC BOARD

MIDLAND MODEL 77-857

TRUTH CHART

1 = <u>5.22</u> Volts 0 = <u>0</u> Volts								
C H A N N E L	IC1 PROGRAM DIVIDER							REC & XMIT VCO OUTPUT IN MHz
	PINS							
	9	10	11	12	13	14	15	AT TP4
1	1	0	0	1	0	1	0	37.660
2	1	0	0	1	0	0	1	37.670
3	1	0	0	1	0	0	0	37.680
4	1	0	0	0	1	1	0	37.700
5	1	0	0	0	1	0	1	37.710
6	1	0	0	0	1	0	0	37.720
7	1	0	0	0	0	1	1	37.730
8	1	0	0	0	0	0	1	37.750
9	1	0	0	0	0	0	0	37.760
10	0	1	1	1	1	1	1	37.770
11	0	1	1	1	1	1	0	37.780
12	0	1	1	1	1	0	0	37.800
13	0	1	1	1	0	1	1	37.810
14	0	1	1	1	0	1	0	37.820
15	0	1	1	1	0	0	1	37.830
16	0	1	1	0	1	1	1	37.850
17	0	1	1	0	1	1	0	37.860
18	0	1	1	0	0	0	1	37.870
19	0	1	1	0	1	0	0	37.880
20	0	1	1	0	0	1	0	37.900

1 = <u>5.22</u> Volts 0 = <u>0</u> Volts								
C H A N N E L	IC1 PROGRAM DIVIDER							REC & XMIT VCO OUTPUT IN MHz
	PINS							
	9	10	11	12	13	14	15	AT TP4
21	0	1	1	0	0	0	1	37.910
22	0	1	1	0	0	0	0	37.920
23	0	1	0	1	1	0	1	37.950
24	0	1	0	1	1	1	1	37.930
25	0	1	0	1	0	1	0	37.940
26	0	1	0	1	1	0	0	37.960
27	0	1	0	1	0	1	1	37.970
28	0	1	0	1	0	1	0	37.980
29	0	1	0	1	0	0	1	37.990
30	0	1	0	1	0	0	0	38.000
31	0	1	0	0	1	1	1	38.010
32	0	1	0	0	1	1	0	38.020
33	0	1	0	0	1	0	1	38.030
34	0	1	0	0	1	0	0	38.040
35	0	1	0	0	0	1	1	38.050
36	0	1	0	0	0	1	0	38.060
37	0	1	0	0	0	0	1	38.070
38	0	1	0	0	0	0	0	38.080
39	0	0	1	1	1	1	1	38.090
40	0	0	1	1	1	1	0	38.100



BLOCK DIAGRAM

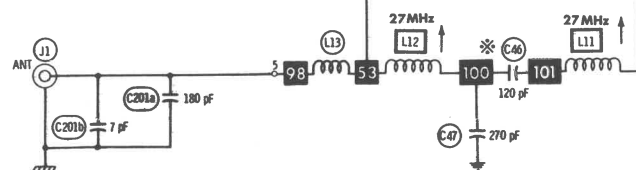
PARTS LIST AND DESCRIPTION

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

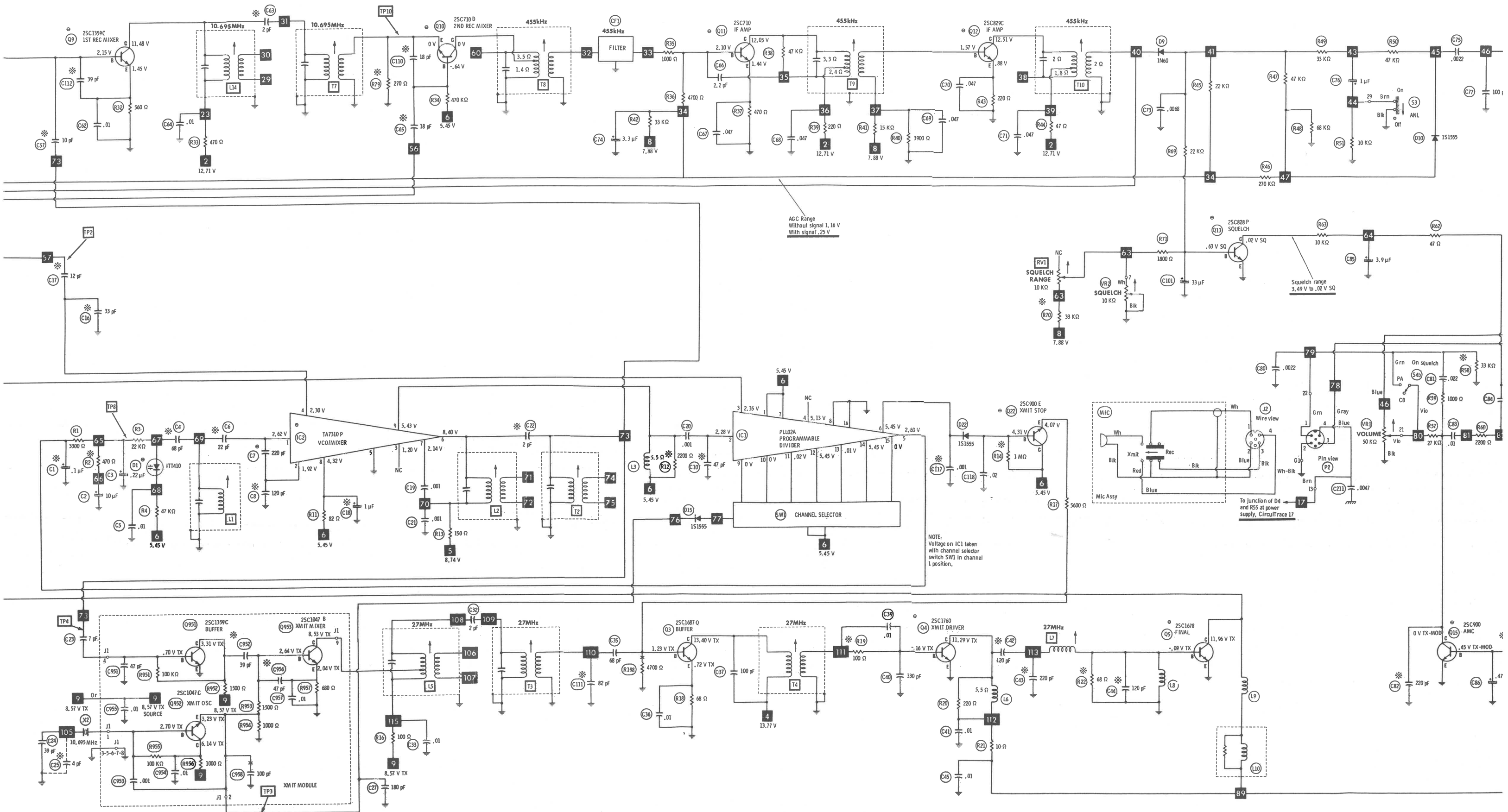
SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D1	ITT410		GE-90	D201	PTC311	HEPR2503	RE 195	SK3126	RT-262	ECG610
D2	MZ205			WEP602			RE 105			ECG135
D3	RD9.1E		GEZD-9.1		ZB9.1B		RE 114		RT-240	ECG139A
D4	1S1555		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D5	1N60		1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D6	1S1555		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D7	1S1555		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D8	1N60		1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D9	1N60		1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D10	1S1555		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D11	1S1555		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D12	1S1555		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D13	V06C		GE-504A	5A6D	PTC202	HEPR0054	RE 49	SK3017A	RT-215	ECG116
D14	1S1885		GE-504A	5A4D	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D15	1S1555		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D16	1S1555		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D22	1S1555		GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
IC1	PLL02A						RE 360-1C			ECG1167
IC2	TA7310P									ECG1192
IC4	TA7205P		GEIC-179	WEP949	PTC780		RE 357-1C	SK3231	TVCM-81	ECG1155
Q1	2SC710	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q2	2SC710	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q3	2SC710	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q4	2SC1687		GE-20 *	TR-24 *	PTC121 *	HEPS0016 *	RE 13 *	SK3018 *	RT-107A *	ECG123A *
	2SC1760		GE-276	WEP1014			RE 224		RT-310	ECG306
	2SC1846Q	(1)	GE-336				RE 209			ECG295
	2SC1846R	(1)	GE-336				RE 209			ECG295
	2SC1846S	(1)	GE-336				RE 209			ECG295
Q5	2SC1678	(1)	GE-322	WEP1678	PTC186		RE 203	SK3197	RT-146	ECG235
	2SC1306	(1)	GE-215	WEP1306	PTC186		RE 203	SK3197	RT-146	ECG235
Q6	2SC1318		GE-210 *	TR-21 *	PTC178	HEPS0015 *	RE 17 *	SK3122	RT-302	ECG128 *
	2SC1318Q	(1)	GE-210 *	TR-21 *	PTC178	HEPS0015 *	RE 17 *	SK3122	RT-302	ECG128 *
	2SC1318R	(1)	GE-210 *	TR-21 *	PTC178	HEPS0015 *	RE 17 *	SK3122	RT-302	ECG128 *
Q7	2SA719		GE-269	TR-28 *	PTC103 *	HEPS0019 *	RE 26 *	SK3114	RT-305	ECG290
	2SA719P	(1)	GE-269	TR-28 *	PTC103 *	HEPS0019 *	RE 26 *	SK3114	RT-305	ECG290
	2SA719Q	(1)	GE-269	TR-28 *	PTC103 *	HEPS0019 *	RE 26 *	SK3114	RT-305	ECG290
	2SA719R	(1)	GE-269	TR-28 *	PTC103 *	HEPS0019 *	RE 26 *	SK3114	RT-305	ECG290
Q8	2SC460A		GE-61 *	(IR)2SC460B	PTC136 *	HEPS0014 *	RE 9	SK3018 *	RT-134	ECG107
	2SC460	(1)	GE-61 *	(IR)2SC460B	PTC136 *	HEPS0014 *	RE 9	SK3018 *	RT-134	ECG107
	2SC1047	(1)	GE-60 *	(IR)2SC829B	PTC132 *	HEPS0016 *	RE 28 *	SK3018 *	RT-107	ECG161 *
	2SC1047B	(1)	GE-60 *	(IR)2SC829B	PTC132 *	HEPS0016 *	RE 28 *	SK3018 *	RT-107	ECG161 *
	2SC1047C	(1)	GE-60 *	(IR)2SC829B	PTC132 *	HEPS0016 *	RE 28 *	SK3018 *	RT-107	ECG161 *
	2SC710	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q9	2SC1359C		GE-212	(IR)2SC380A0	PTC121 *	HEPS0014 *	RE 192	SK3038 *	RT-308	ECG199
	2SC1359B	(1)	GE-212	(IR)2SC380A0	PTC121 *	HEPS0014 *	RE 192	SK3038 *	RT-308	ECG199
	2SC1359	(1)	GE-212	(IR)2SC380A0	PTC121 *	HEPS0014 *	RE 192	SK3038 *	RT-308	ECG199
	2SC710	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q10	2SC710		GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC710D	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC829	(1)	GE-20 *	(IR)2SC829B	PTC121 *	HEPS0015 *	RE 9 *	SK3122	RT-308	ECG229 *
	2SC839	(1)	GE-61 *	(IR)2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
Q11	2SC710		GE-20 **	(IR)2SC829B	PTC121 *	HEPS0015 *	RE 9 **	SK3122 *	RT-308 *	ECG229 **
	2SC829	(1)	GE-20 *	(IR)2SC829B	PTC121 *	HEPS0015 *	RE 9 *	SK3122	RT-308	ECG229 *
Q12	2SC829B		GE-20 *	(IR)2SC829B	PTC121 *	HEPS0015 *	RE 9 *	SK3122	RT-308	ECG229 *
	2SC829C	(1)	GE-20 *	(IR)2SC829B	PTC121 *	HEPS0015 *	RE 9 *	SK3122	RT-308	ECG229 *
	2SC710	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q13	2SC828		GE-61 *	(IR)2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
	2SC945	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC372	(1)	GE-61 *	(IR)2SC372	PTC121 *	HEPS0015 *	RE 13 *	SK3122	RT-308	ECG123A *
	2SC828P	(1)	GE-61 *	(IR)2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
Q14	2SA719Q		GE-269	TR-28 *	PTC103 *	HEPS0019 *	RE 26 *	SK3114	RT-305	ECG290
	2SA719	(1)	GE-269	TR-28 *	PTC103 *	HEPS0019 *	RE 26 *	SK3114	RT-305	ECG290
	2SA720	(1)	GE-82	TR-19	PTC127	HEPS0026	RE 211	SK3114	RT-126A	ECG298
	2SA564	(1)	GE-65	(IR)2SA564A	PTC103 *	HEPS0019 *	RE 193	SK3114	RT-303	ECG234
Q15	2SC900		GE-62	(IR)2SC644	PTC139 *	HEPS0015 *	RE 192	SK3124	RT-302	ECG199
	2SC945	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945L	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945P	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945Q	(1)	GE-212	(IR)2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
Q16	2SC829C		GE-20 *	(IR)2SC829B	PTC121 *	HEPS0015 *	RE 9 *	SK3122	RT-308	ECG229 *
	2SC829	(1)	GE-20 *	(IR)2SC829B	PTC121 *	HEPS0015 *	RE 9 *	SK3122	RT-308	ECG229 *
	2SC710	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC839	(1)	GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
Q17	2SC710DE	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC829C		GE-20 *	(IR)2SC829B	PTC121 *	HEPS0015 *	RE 9 *	SK3122	RT-308	ECG229 *
	2SC829	(1)	GE-20 *	(IR)2SC829B	PTC121 *	HEPS0015 *	RE 9 *	SK3122	RT-308	ECG229 *
	2SC710	(1)	GE-211 *	(IR)2SC710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	2SC839	(1)	GE-61 *	(IR)2SC644	PTC132 *	HEPS0015 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *

MIDLAND MODEL 77-857



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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.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
Q22	25C710DE	(1)	GE-211 *	(IR)25C710	PTC115	HEPS0016 *	RE 13 *	SK3018 *	RT-308 *	ECG123A *
	25C900E		GE-62	(IR)25C644	PTC139 *	HEPS0015 *	RE 192	SK3124	RT-302	ECG199
	25C900V		GE-62	(IR)25C644	PTC139 *	HEPS0015 *	RE 192	SK3124	RT-302	ECG199
Q951	25C1359C		GE-212	(IR)25C380A0	PTC121 *	HEPS0014 *	RE 192	SK3038 *	RT-308	ECG199
	25C1359		GE-212	(IR)25C380A0	PTC121 *	HEPS0014 *	RE 192	SK3038 *	RT-308	ECG199
	25C1359B		GE-212	(IR)25C380A0	PTC121 *	HEPS0014 *	RE 192	SK3038 *	RT-308	ECG199
Q952	25C1359C		GE-212	(IR)25C380A0	PTC121 *	HEPS0014 *	RE 192	SK3038 *	RT-308	ECG199
	25C1047C		GE-60 *	(IR)25C829B	PTC132 *	HEPS0016 *	RE 28 *	SK3018 *	RT-107	ECG161 *
	25C1047		GE-60 *	(IR)25C829B	PTC132 *	HEPS0016 *	RE 28 *	SK3018 *	RT-107	ECG161 *
Q953	25C1047B		GE-60 *	(IR)25C829B	PTC132 *	HEPS0016 *	RE 28 *	SK3018 *	RT-107	ECG161 *
	25C1047		GE-60 *	(IR)25C829B	PTC132 *	HEPS0016 *	RE 28 *	SK3018 *	RT-107	ECG161 *
	25C1047C		GE-60 *	(IR)25C829B	PTC132 *	HEPS0016 *	RE 28 *	SK3018 *	RT-107	ECG161 *

* Lead configuration may vary from original.
(1) Used in some versions.
(11) Rating 10 W @ 3 AMP.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFRG. PART No.	CORNELL- DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C1	.1 10V		PC10-25	TDC104M050EL	QDT1-2	SD50-R109
C2	10 10V			VTT10B25	QV1-41	EV-1222
C3	.22 10V			TDC224M050EL	QDT1-10	SD50-R229
C11	47 10V			VTT47D16	QV1-73	EV-1226
C18	1 50V		PC50-16	TDC105M050EL	QDT1-25	SD50-19
C50	1 50V			VTT1A50	QV1-11	EV-1615
C72	10 16V			VTT10B25	QV1-41	EV-1222
C74	3.3 25V			VTT3R3A50	QV1-23	EV-1318
C76	1 50V		PC1-50	VTT1A50	QV1-11	EV-1615
C78	47 16V			VTT47D16	QV1-73	EV-1226
C85	3.9 10V			TDC475M010EL	QDT1-48	SD10-4R79
C86	.47 10V			TDC474M050EL	QDT1-19	SD50-R479
C87	33 6.3V		PC30-25	VTT33B10	QV1-61	EV-1125
C93	47 16V			VTT47D16	QV1-73	EV-1226
C94	220 16V			VTT220H16	QV1-117	EV-1240
C96	3.3 25V			VTT3R3A50	QV1-23	EV-1318
C97	47 10V		PC50-16	VTT47D16	QV1-73	EV-1226
C99	47 25V			VTT47E25	QV1-75	EV-1326
C100	1000 16V			VTT1000L16	QV1-183	EV-1260
C101	33 6.3V			VTT33B10	QV1-61	EV-1125
C120	33 16V		PC30-25	VTT33D25	QV1-63	EV-1325

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	
C4	68 N150 50V	(1) (1)	DC-103	MGP01	*	QC2-141	10TCP-Q68	
C5	.01 50V				TG-S10			
C6	22 N150 50V				10TCP-Q22			
C7	220 50V				GP322			
C8	120 50V				CN0312			
C9	.047 50V				MAG5015			
C10	47 50V				CN0447		QF1-1	10TCC-Q47
C12	4 NPO 50V				CN0547			10TCC-V47
C13	.001 50V				DPMS6D1			1PB-D10
C14	68 N150 50V				*			10TCP-Q68
C15	.01 50V		DC-103	QC2-141	TG-S10			
C16	33 50V		DTZ-33		10TCC-Q33			
C17	12 N150 50V		NP033		10TCP-Q12			
C19	.001 50V		DPMS6D1		QF1-1	1PB-D10		
C20	.001 50V		DPMS6D1			1PB-D10		
C21	.001 100V		CD19FD102J03			MWC-102		
C22	2 50V		DTZ-2R2			10TCC-V22		
C23	7 50V		DTZ-6R8			10TCC-V68		
C24	39 N150 50V		NP06P8			10TCP-Q39		
C25	4 50V		DTZ-33			10TCC-Q33		
C27	180 N150 50V		DTZ-4R7	10TCP-V47				
C28	.01 50V		DC-103	QC2-141		10TCP-T18		
C31	.01 50V		MGP01			TG-S10		
C32	2 50V		DC-103		10TCC-V22			
C33	.01 50V		DTZ-2R2		TG-S10			
C35	68 50V		NP01		QC2-141	10TS-Q68		
C36	.01 50V		DD-680			TG-S10		
C37	100 N150 50V		GP68			10TCP-T10		
C38	.01 50V		DC-103			TG-S10		
C39	.01 50V		MGP01			1PB-S10		
C40	330 50V		WMF1S1			10TS-T33		
C41	.01 50V		DD-331	QC2-141		TG-S10		
C42	120 50V		DC-103			10TCC-T12		
C43	220 50V		GP330			10TS-T22		
		MGP01						

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
C44	120 50V	(1) 13-123069	DTZ-120	MGP01	CN0312	QC2-141	10TCC-T12
C45	.01 50V		DC-103		TA110		TG-S10
C46	120 50V		DTZ-120		CN0312		10TCC-T12
C47	270 500V		DTZ-2R2	CD15FD271J03	SX327	QW1-37	MWB-271
C48	2 500V			NP02P2	CN0522		10TCC-V22
C49	.0047 50V			DD-472	GP247		5GA-D47
C51	27 50V		DC-103	MGP01	CN0427	QC2-141	10TCC-Q27
C52	.01 50V				TA110		TG-S10
C53	.047 50V				MAG5015		
C54	.047 50V		UK50-503	DPMS2S47	EWF1A147	QF1-171	1PB-S47
C55	.047 50V				MAG5015		
C56	.01 50V				DC-103		TA110
C57	10 50V		DTZ-10	NP010	CN0410	QC2-141	10TCC-Q10
C58	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C59	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C60	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C61	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C62	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C63	2 50V		DTZ-2R2	NP02P2	CN0522	QC2-141	10TCC-V22
C64	.01 50V		DC-103	MGP01	TA110		TG-S10
C65	18 N150 50V			*			10TCP-Q18
C66	2.2 500V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C67	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C68	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C69	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C70	.047 50V			DPMS6S5	PVC615		6PS-S50
C71	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C73	.0068 50V			WMF1D68	EWF1A268	QF1-73	1PB-D68
C75	.0022 50V			DPMS6D22	EWF6222		6PS-D22
C77	100 50V		DTZ-100	NP0100	CN0310		10TCC-T10
C79	.022 50V			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C80	.0022 50V		DD-222		GP222	QC2-97	5GA-D22
C81	.022 50V			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C82	220 50V		DD-221		GP322		10TS-T22
C83	.01 50V			WMF1S1	EWF1A110	QF1-91	1PB-S10
C84	.0022 50V		DD-222		GP222	QC2-97	5GA-D22
C88	68 50V		DD-680	GP68	GP468		10TS-Q68
C89	68 50V		DD-680	GP68	GP468		10TS-Q68
C90	100 50V		DD-101	GP100	GP310		10TS-T10
C91	.068 50V			WMF1S68	EWF1A168	QF1-195	1PB-S68
C92	100 50V		DD-101	GP100	GP310		10TS-T10
C95	.068 50V			WMF1S68	EWF1A168	QF1-195	1PB-S68
C102	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C106	.047 50V		UK50-503		MAG5015		
C107	.047 50V		UK50-503		MAG5015		
C110	18 50V				CN0418		10TCC-Q18
C111	82 50V		DD-820		GP482		10TS-Q82
C114	390 50V			CD15FD391J03	SX339	QW1-41	MWA-391
C117	.001 50V			DPMS6D1	EWF1A210	QF1-1	1PB-D10
C118	.022 50V		DC-203	MGP02	TA120	QC2-157	TG-S20
C130	.0022 50V		DD-222		GP222	QC2-97	5GA-D22
C131	39 N150 50V				*		10TCP-Q39
C132	15 N150 50V				*		10TCP-Q15
C133	.0022 50V		DD-222		GP222	QC2-97	5GA-D22
C201a	180 500V			CD15FD181J03	SX318	QW1-33	MWA-181
C201b	7 500V		DTZ-6R8	NP06P8	CN0568		10TCC-V68
C202	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C203	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C204	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C205	.047 50V		UK50-503		MAG5015		
C206	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C207	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C208	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C209	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C210	.0047 50V	DD-472	GP4700	GP247		5GA-D47	
C211	.0047 50V	DD-472	GP4700	GP247		5GA-D47	
C212	.0047 50V	DD-472	GP4700	GP247		5GA-D47	
C951	47 50V	DTZ-47	NP047	CN0447		10TCC-Q47	
C952	39 50V			CN0439		10TCC-Q39	
C953	.001 50V		DPMS6D1	EWF1A210	QF1-1	1PB-D10	
C954	.01 50V	DC-103	MGP01	TA110	QC2-141	TG-S10	
C955	.01 50V	DC-103	MGP01	TA110	QC2-141	TG-S10	
C956	47 50V	DTZ-47	NP047	CN0447		10TCC-Q47	
C957	.01 50V	DC-103	MGP01	TA110	QC2-141	TG-S10	
C958	100 50V	DD-101	GP100	GP310		10TS-T10	
CT1	20 50V						

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
C44	120 50V		DTZ-120		CN0312		10TCC-T12
C45	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C46	120 50V		DTZ-120		CN0312		10TCC-T12
C47	270 500V			CD15FD271J03	SX327	QW1-37	MMB-271
C48	2 500V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C49	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C51	27 50V				CN0427		10TCC-Q27
C52	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C53	.047 50V		UK50-503		MAG5015		
C54	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C55	.047 50V		UK50-503		MAG5015		
C56	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C57	10 50V		DTZ-10	NP010	CN0410		10TCC-Q10
C58	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C59	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C60	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C61	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C62	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C63	2 50V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C64	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C65	18 N150 50V			*			10TCP-Q18
C66	2.2 500V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C67	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C68	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C69	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C70	.047 50V			DPMS6S5	PVC615		6PS-S50
C71	.047 50V			DPMS2S47	EWF1A147	QF1-171	1PB-S47
C73	.0068 50V			WMF1D68	EWF1A268	QF1-73	1PB-D68
C75	.0022 50V			DPMS6D22	EFW6222		6PS-D22
C77	100 50V		DTZ-100	NP0100	CN0310		10TCC-T10
C79	.022 50V			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C80	.0022 50V		DD-222		GP222	QC2-97	5GA-D22
C81	.022 50V			DPMS2S22	EWF1A122	QF1-127	1PB-S22
C82	220 50V		DD-221		GP322		10TS-T22
C83	.01 50V			WMF1S1	EWF1A110	QF1-91	1PB-S10
C84	.0022 50V		DD-222		GP222	QC2-97	5GA-D22
C88	68 50V		DD-680	GP68	GP468		10TS-Q68
C89	68 50V		DD-680	GP68	GP468		10TS-Q68
C90	100 50V		DD-101	GP100	GP310		10TS-T10
C91	.068 50V			WMF1S68	EWF1A168	QF1-195	1PB-S68
C92	100 50V		DD-101	GP100	GP310		10TS-T10
C95	.068 50V			WMF1S68	EWF1A168	QF1-195	1PB-S68
C102	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C106	.047 50V		UK50-503		MAG5015		
C107	.047 50V		UK50-503		MAG5015		
C110	18 50V				CN0418		10TCC-Q18
C111	82 50V		DD-820		GP482		10TS-Q82
C114	390 50V			CD15FD391J03	SX339	QW1-41	MWA-391
C117	.001 50V			DPMS6D1	EWF1A210	QF1-1	1PB-D10
C118	.022 50V		DC-203	MGP02	TA120	QC2-157	TG-S20
C130	.0022 50V		DD-222		GP222	QC2-97	5GA-D22
C131	39 N150 50V			*			10TCP-Q39
C132	15 N150 50V			*			10TCP-Q15
C133	.0022 50V		DD-222		GP222	QC2-97	5GA-D22
C201a	180 500V			CD15FD181J03	SX318	QW1-33	MWA-181
C201b	7 500V		DTZ-6R8	NP06P8	CN0568		10TCC-V68
C202	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C203	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C204	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C205	.047 50V		UK50-503		MAG5015		
C206	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C207	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C208	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C209	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C210	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C211	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C212	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C951	.47 50V		DTZ-47	NP047	CN0447		10TCC-Q47
C952	39 50V				CN0439		10TCC-Q39
C953	.001 50V			DPMS6D1	EWF1A210	QF1-1	1PB-D10
C954	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C955	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C956	.47 50V		DTZ-47	NP047	CN0447		10TCC-Q47
C957	.01 50V		DC-103	MGP01	TA110	QC2-141	TG-S10
C958	100 50V		DD-101	GP100	GP310		10TS-T10
CT1	20 50V	(1) 13-123069					

*Not normally in distributor's stock. Available thru distributor on order to manufacturer.
(1) Used in some versions.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
RV1	Squelch Range	10K	13-164132	T-10K (3)	C-103 (3)	MTC14L4	U201R103B
RV2	AMC	5000	13-164146				
RV3	S Meter	20K	13-164134				
RV4	RF Meter	20K	13-164134				
VR1	Volume/Power Switch	50K	77-160001				
VR2	Squelch/PA Switch	10K	77-166001				

(3) For horizontal mounting, bend the two outside terminals to fit PC board. Use jumper to connect center terminal to PC Board.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	VCO	77-176001			
L2	VCO (37MHz)	13-090405			
L3	RF Choke (68uH)	13-178210			
L5	Xmit Mixer (27MHz)	77-176003			
L6	RF Choke (2.2uH)	13-176564			
L7	Xmit Driver (27MHz)	13-176508			
L8	RF Choke (68uH)	13-178210			
L9	RF Choke (.55uH)	13-176567			
L10	RF Choke (1uH)	13-176565			
L11	Final (27MHz)	13-176509			
L12	Antenna Match (27MHz)	13-176510			
L13	RF Choke (.4uH)	77-176004			
L14	IF (10.7MHz)	13-176615			
L15	RF Choke (68uH)	13-178210			
L16	RF Choke (.75uH)	13-178209			
L17	RF Choke (.75uH)	13-178209			
T1	Ref Oscillator(10.240MHz)	77-094001			
T2	VCO Mixer (37Mhz)	77-094002			
T3	Xmit Mixer (27MHz)	13-094232			
T4	Xmit Buffer (27MHz)				
T5	Rec Antenna (27MHz)	13-094234			
T6	Rec RF (27MHz)	77-094003			
T7	IF (10.7MHz)				
T8	IF (455kHz)	13-090371			
T9	IF (455kHz)	13-090375			
T10	IF (455kHz)	13-090372			

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.	
CH1	1.1A	.12	.48mH	13-178208 ELA-16 (1)	TR523		(1) Number on unit.

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T11	2.8	1 8 2	13-096200 ETA-66 (1)	TR723	MCB-16	(1) Number on unit.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFR. PART No.	QUAM PART No.	
SP1	3" PM 8 ohms	13-060118	30A0528R	

MIDLAND MODEL 77-857

PARTS LIST AND DESCRIPTION (CONTINUED)

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

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA						
		PART No.		BUSS PART No.		LITTELFUSE PART No.		WORKMAN PART No.
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE
F1	2 Amp		13-034097	AGC2	HDJ	312002	150145	FG2-2

MICROPHONE

ITEM No.	REPLACEMENT DATA				CONNECTION DATA						
	MFG. 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	77-038001	18-032	18-034	18-010	18-092	1	2	4	3	NC	2

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF1	Ceramic Filter	13-179059	455kHz
J1	Jack	13-159220	Antenna
J2	Jack	13-159234	Microphone
J3	Jack	13-153168	PA
J4	Jack	13-153168	External Speaker
J5	Jack	13-159235	Power
M1	Meter	13-200078	S/Rf
PL1	Lamp	13-201076	Channel (32mA @ 4.98V)
PL2	Lamp	13-201076	Meter (56mA @ 4.98V)
S1	Switch		Power (Part of Volume Control)
S2	Switch	13-180117	Delta Tune
S3	Switch	13-183236	ANL
S4	Switch		PA (Part of Squelch Control)
S5	Switch	13-183236	External CB SP
SW1	Switch	77-180001	Channel Selector
X1	Crystal	77-128001	Ref Oscillator (10.240MHz)
X2	Crystal	77-128002	Xmit Oscillator (10.695MHz)

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

ITEM	PART No.	ITEM	PART No.
Cabinet Top	77-010003	Channel Indicator Disc	77-115001
Cabinet Bottom	77-013002	Mounting Bracket	13-158510
Knob, Control	13-110198	Microphone Hanger	13-158509
Knob, Channel	13-115141		

WIRING DATA

General-use Hook-up Wire (available in 5 colors)	BELDEN No. 8523	Coiled Microphone Cable	
Shielded Hook-up Wire (spiral wrapped)	BELDEN No. 8421	3-conductor (1 shielded)	23AWG BELDEN No. 9471 (5')
(braided)	BELDEN No. 8401		BELDEN No. 8497 (6')
Speaker Cable (available in 4 colors)	BELDEN No. 8782		BELDEN No. 9472 (7-1/2')
Bonding Strap	BELDEN No. 8672		28AWG BELDEN No. 9466 (6')
AC Power Cord	(6') BELDEN No. 17106		31AWG BELDEN No. 9468 (10')
	(9') BELDEN No. 17109	4-conductor (unshielded)	23AWG BELDEN No. 8415 (6')
		5-conductor (1 shielded)	28AWG BELDEN No. 9467 (6')
			BELDEN No. 9465 (7-1/2')

MIDLAND MODEL 77-857

