

PHOTOFACT[®] with

CIRCUITRACE[®]

For Supplier Address See PHOTOFACT Index

NOTE

ONLY THOSE PERSONS PROPERLY LICENSED ARE PERMITTED TO MAKE REPAIRS OR ADJUSTMENTS WHICH MAY RESULT IN ILLEGAL OPERATION. (REFER TO FCC RULES AND REGULATIONS PART 95, SUBPARTS 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 13-863

ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:	GC ELECTRONICS
L103 thru L107	8290, 5000
ALL Others	9440

RECEIVER

Connect an AC VTVM or AF Wattmeter across speaker voice coil.
Adjustments made with 120-volt AC input to power supply.
Adjust volume control to obtain suitable reading.

SIGNAL GENERATOR	GEN FREQ	CHANNEL	ADJUST	REMARKS
High side thru .01uF to cathode of D112, low side to ground.	455kHz, 1000Hz @ 30% modulation.	Any	L105, L106, L107	Set generator for a 0.5V reading across voice coil. Set delta tune to "0". Set ANL to "ON". Adjust for maximum.
High side thru .01uF to antenna jack, low side to ground.	27.115MHz, 1000Hz @ 30% modulation, output 1uV.	13	L101, L102, L103, L104	Adjust for maximum.

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

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MIDLAND MODEL 13-863

RECEIVER ADJUSTMENTS

Connect an AC VTVM or AF Wattmeter across speaker voice coil.
These adjustments made with 120-volt DC input to power supply.
Adjust volume control to obtain a suitable reading.

SIGNAL GENERATOR	GEN FREQ	CHANNEL	ADJUST	REMARKS
SQUELCH RANGE High side thru .01uF to antenna jack, low side to ground.	27.115MHz, 1000Hz @ 30% modulation, output 100uV.	13	RV101	Set squelch control fully clockwise. Adjust so that squelch just breaks.
"S" METER High side thru .01uF to antenna jack, low side to ground.	27.115MHz, 1000Hz @ 30% modulation, output 100uV.	13	RV102	Adjust for "S"9 reading on panel meter.

TRANSMITTER

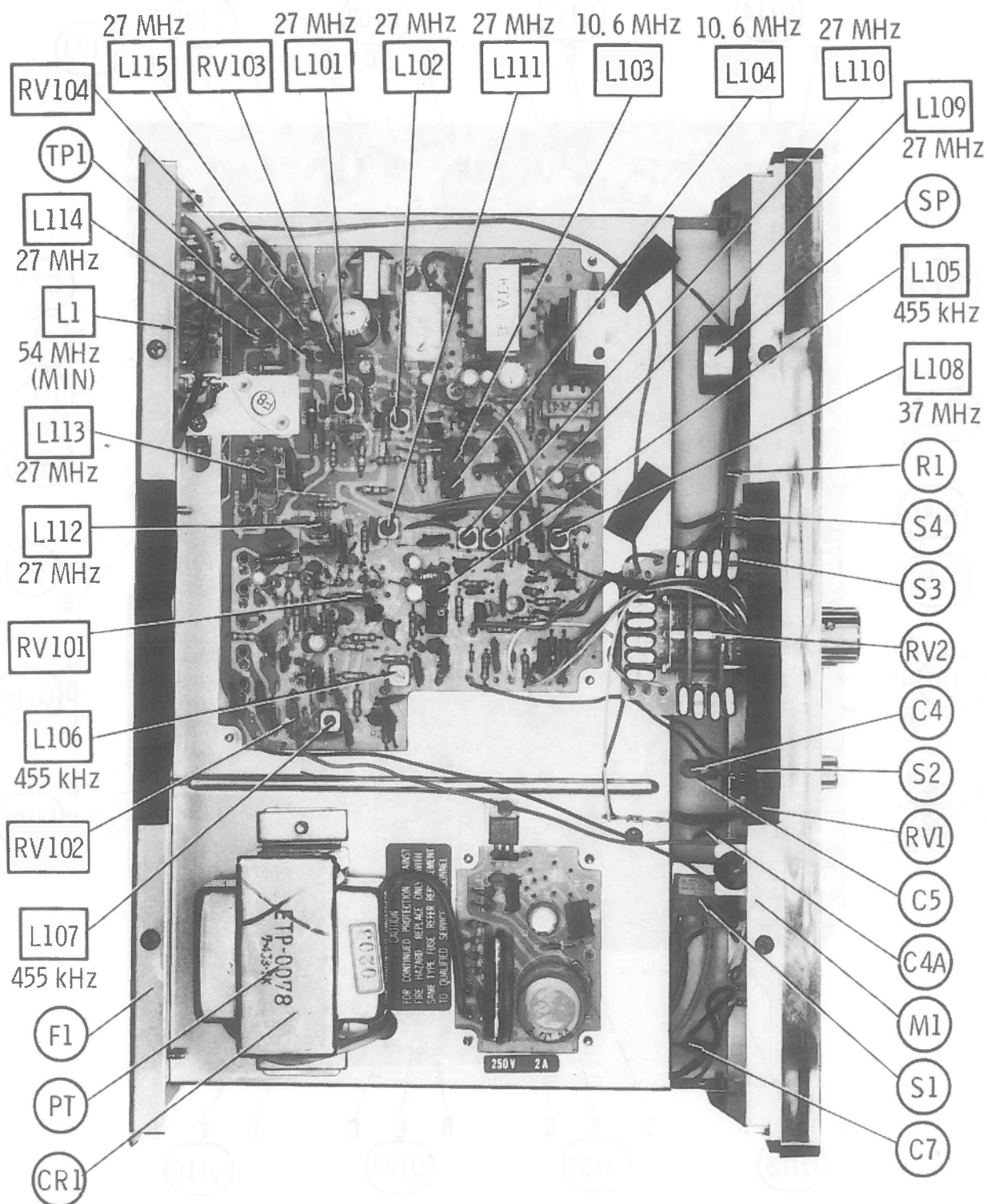
Connect an RF Wattmeter or 50-ohm, 25-watt dummy load to antenna connector.
Adjustments made with 120-volt AC input to power supply.

INDICATOR	ADJUST	REMARKS
OSCILLATOR, MIXER, BUFFER, DRIVER, FINAL RF Wattmeter	L108,L109, L110,L111, L112,L113	Channel selector to CH. 13. Key transmitter. Adjust for maximum.
TVI TRAP TV (Ch. 2)	L1	Key transmitter. Adjust for MINIMUM interference on TV.
FINAL INPUT POWER Remove jumper at TP1 and connect 0-1000 DC milliammeter between RFC104 and R171.	L114,L115	Adjust for 5 watts (maximum).

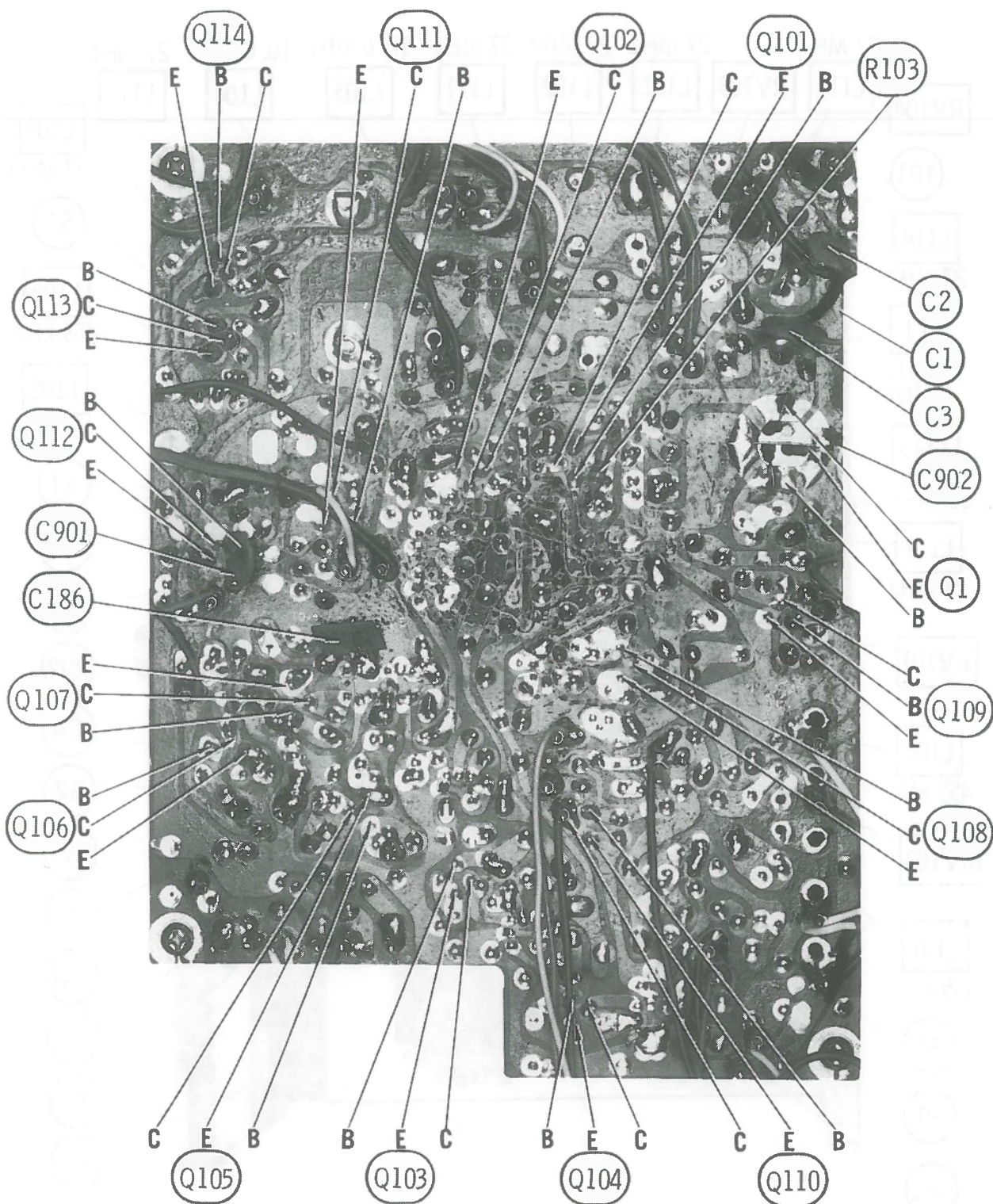
TRANSMITTER ADJUSTMENTS

Connect an RF Wattmeter or 50-ohm, 25-watt dummy load to antenna connector.
Adjustments made with 120-volt AC input to power supply.

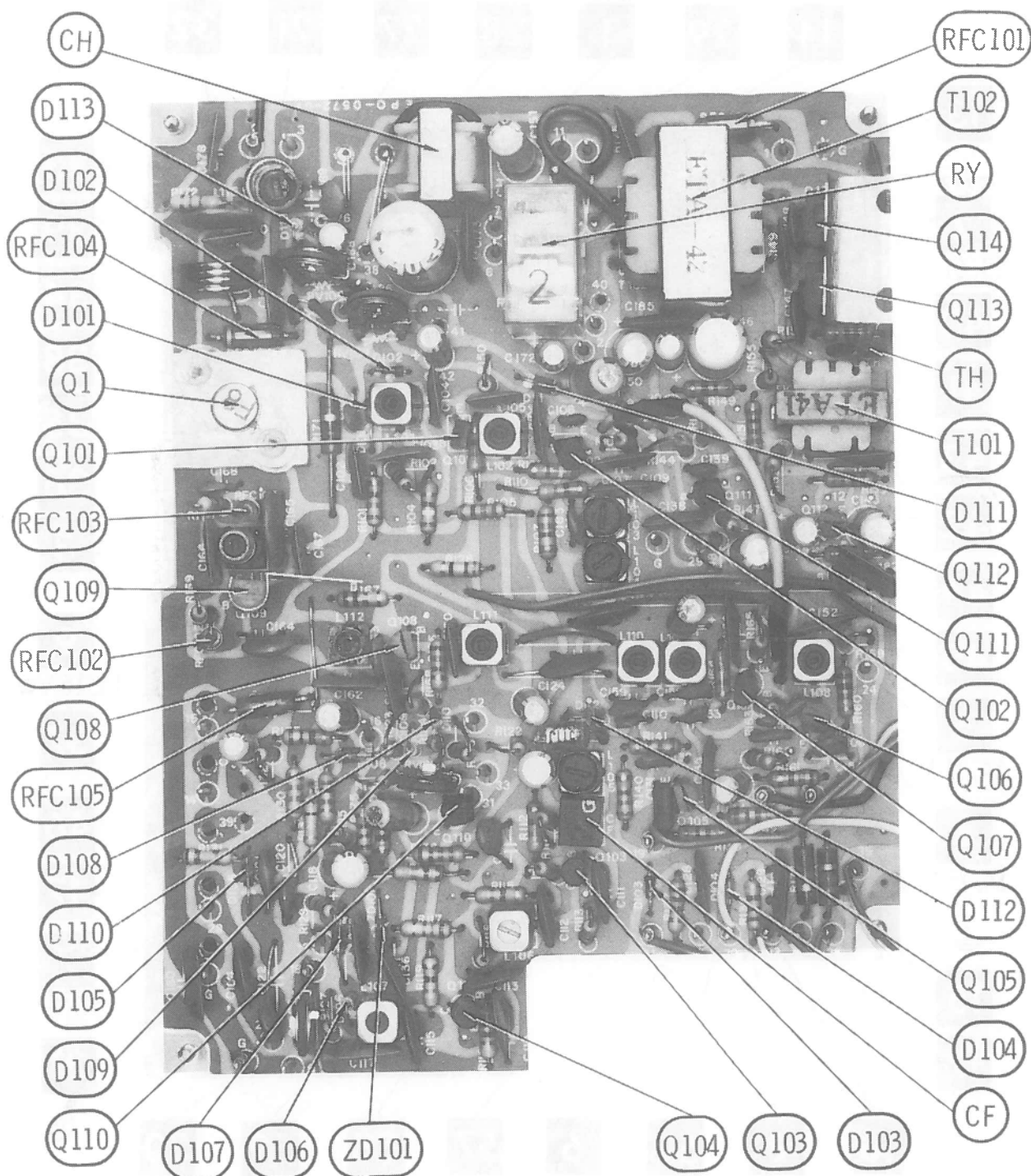
INDICATOR	ADJUST	REMARKS
AMC Modulation meter connected to antenna jack.	RV103	Inject a 1000Hz, 20mV audio signal at mic input. Key transmitter. Adjust for 100% modulation maximum.
RF PANEL METER RF Wattmeter	RV104	Key transmitter. Adjust so that panel RF meter agrees with RF wattmeter.
ANTENNA WARNING LAMP	RV401	Connect a 250-ohm, 5-watt noninductive resistor to antenna jack. Set mode switch to CH13. Key transmitter. Adjust so that lamp just starts to light.



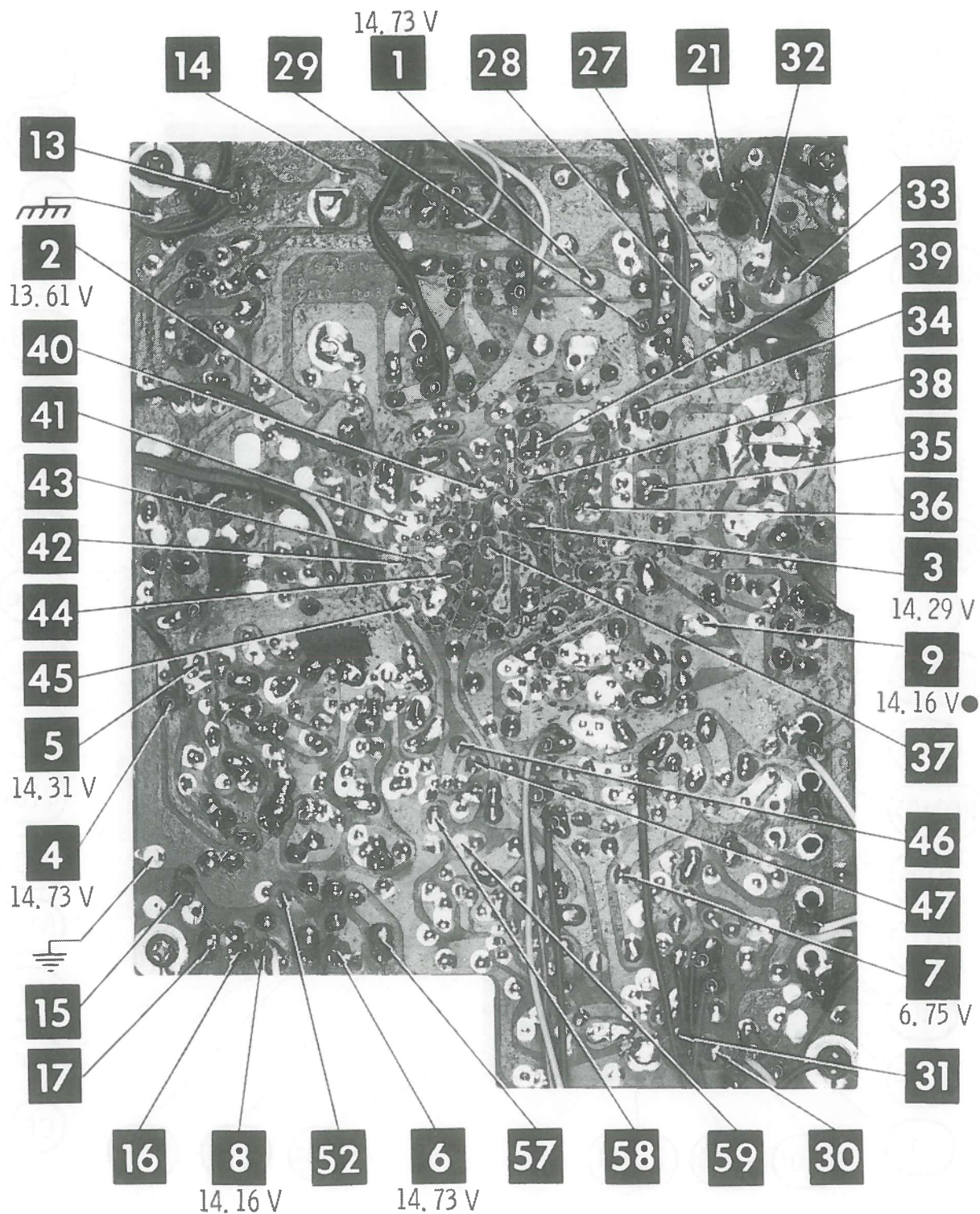
CHASSIS-TOP VIEW



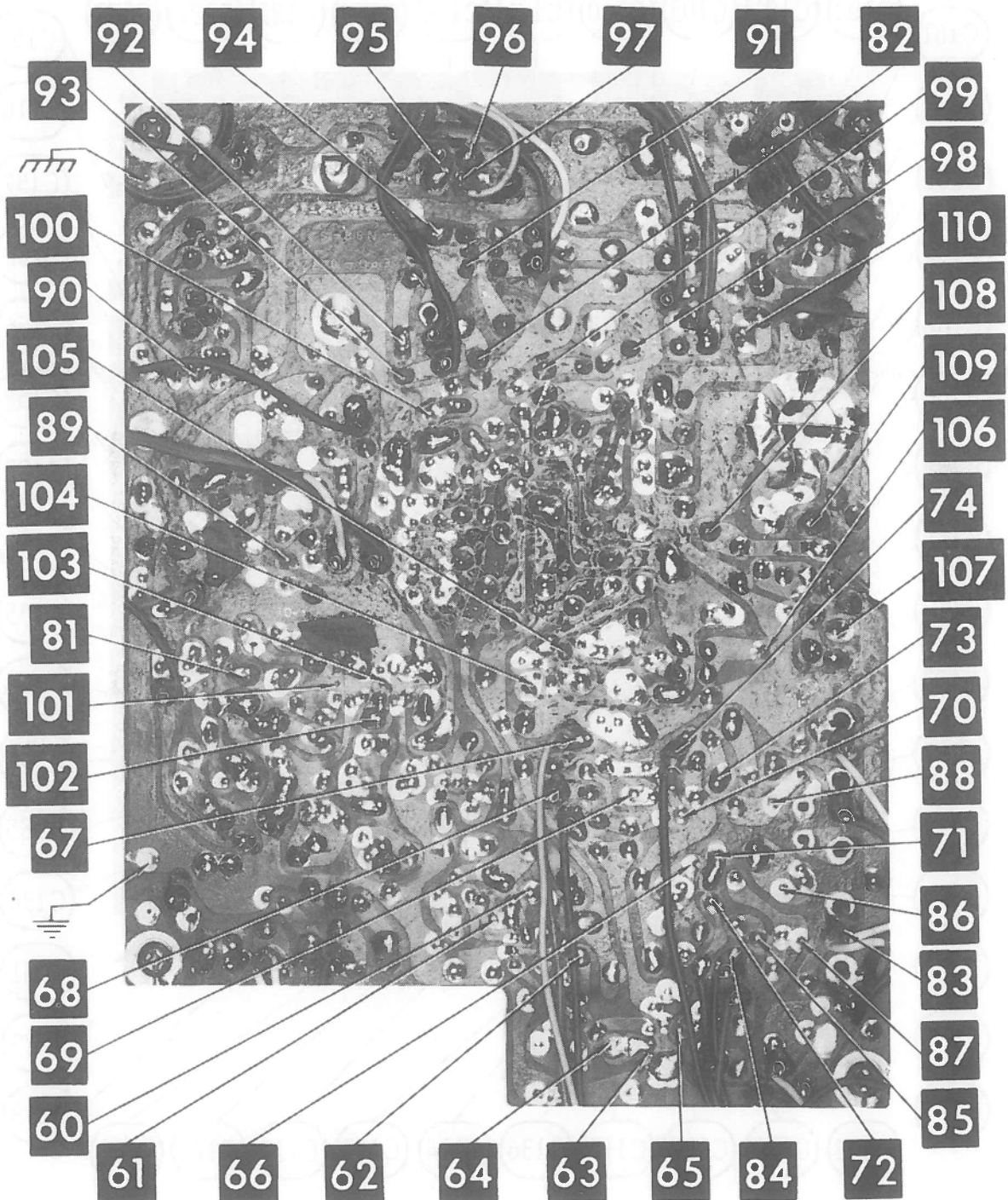
MAIN BOARD-BOTTOM VIEW



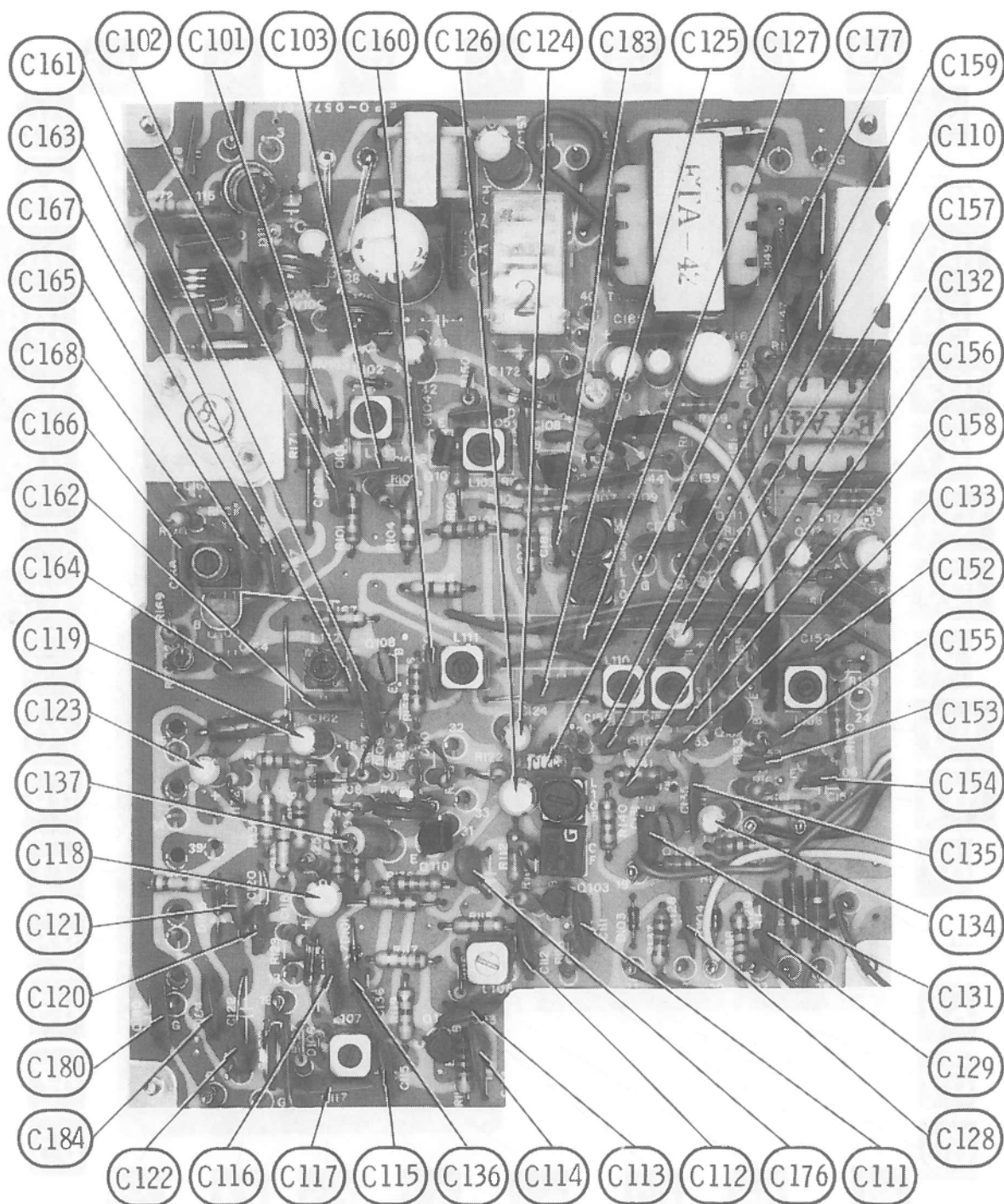
MAIN BOARD-TOP VIEW



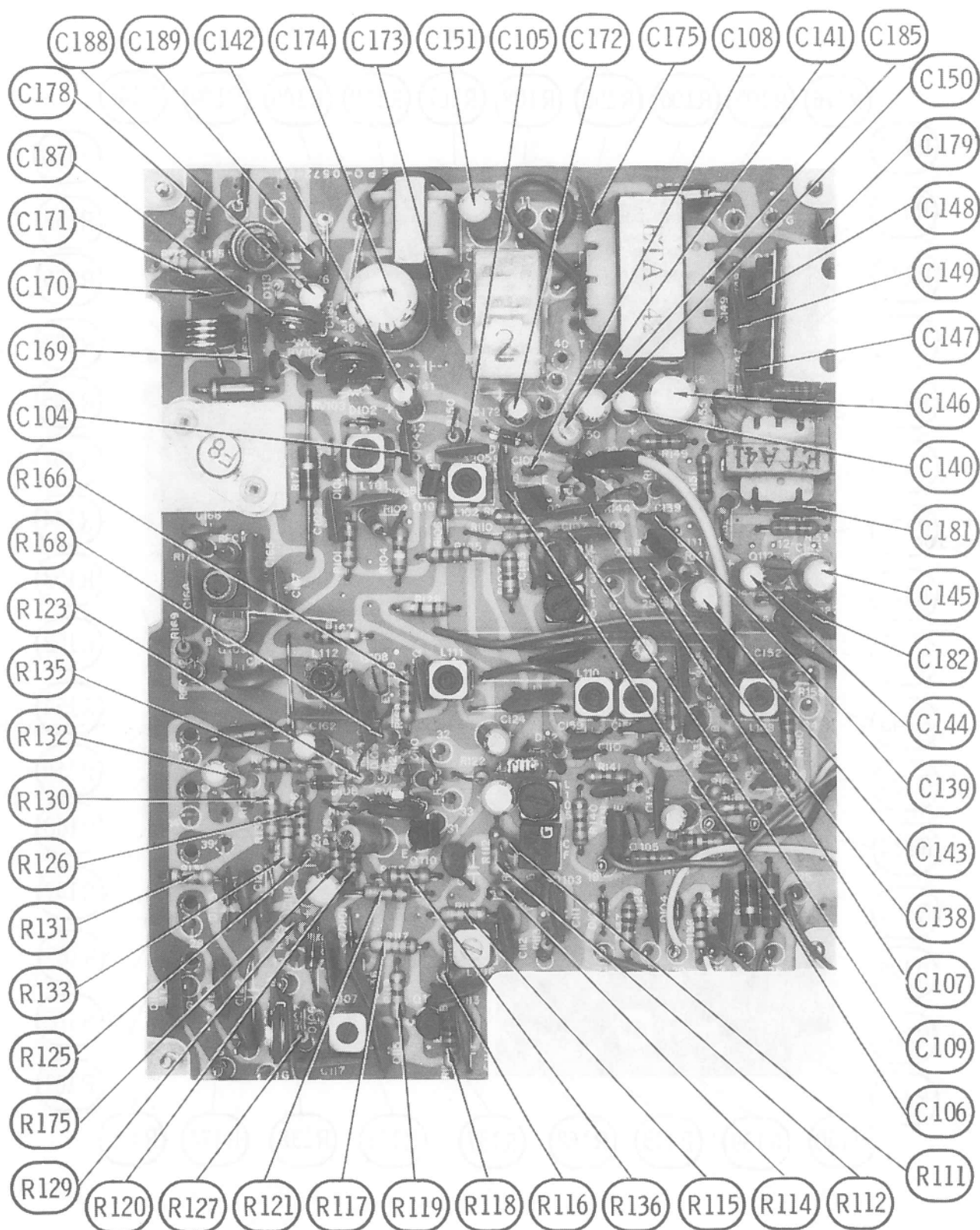
MAIN BOARD-BOTTOM VIEW



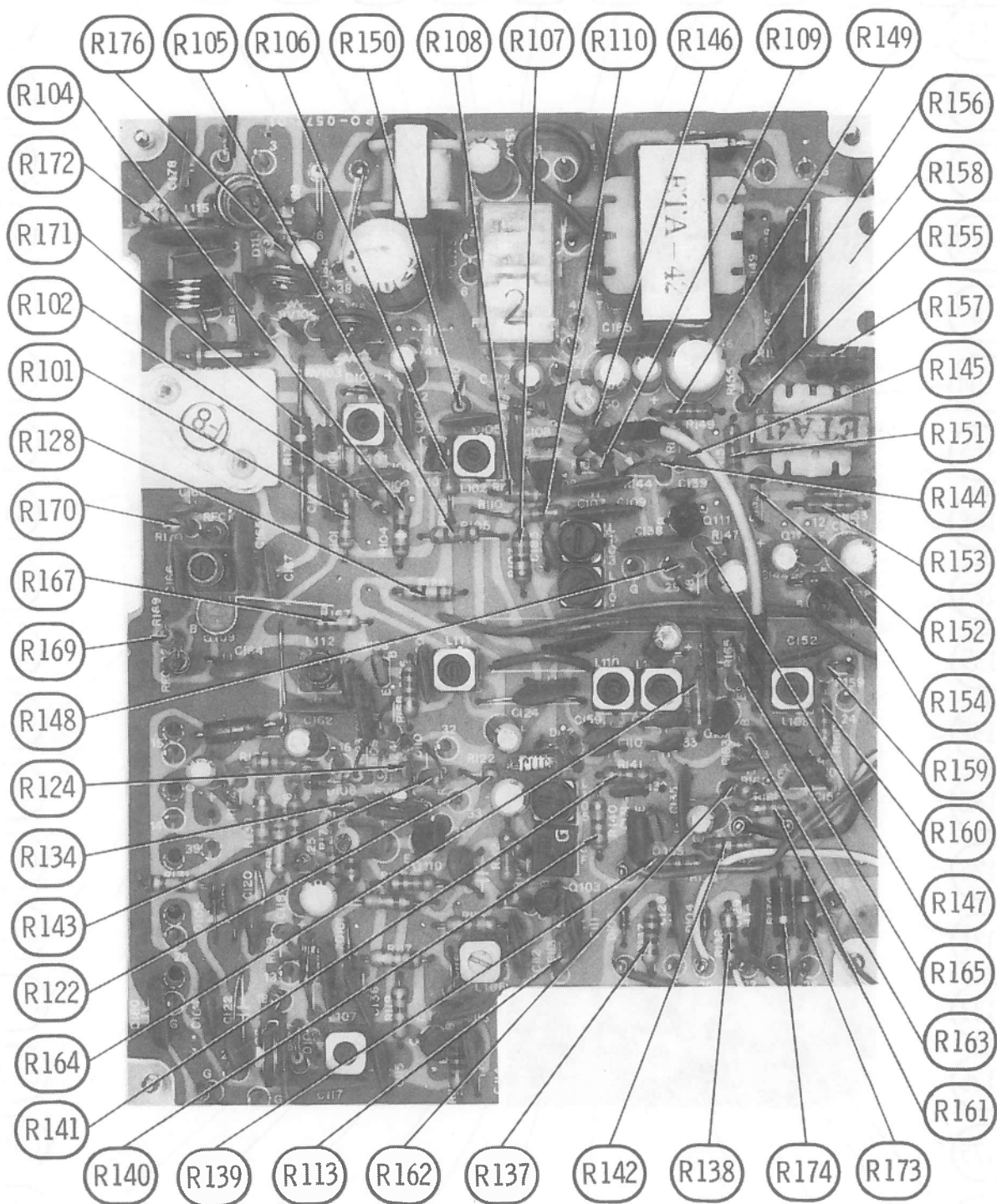
MAIN BOARD-BOTTOM VIEW



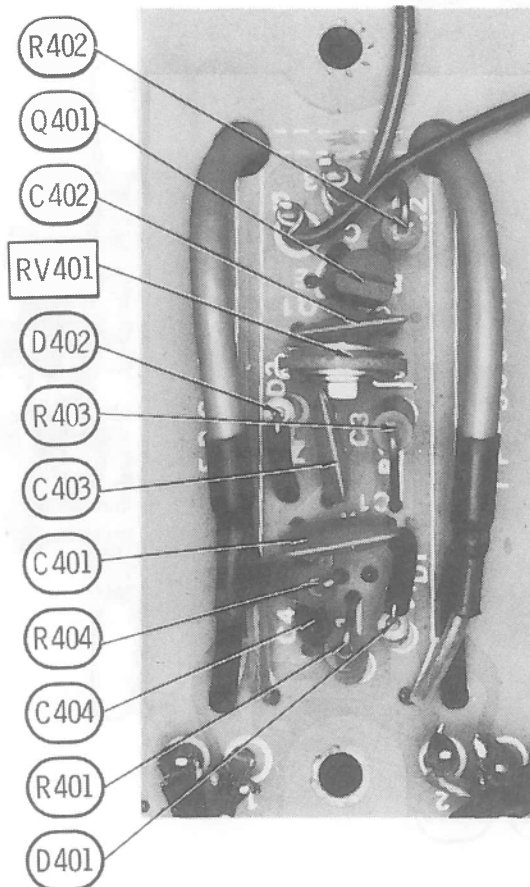
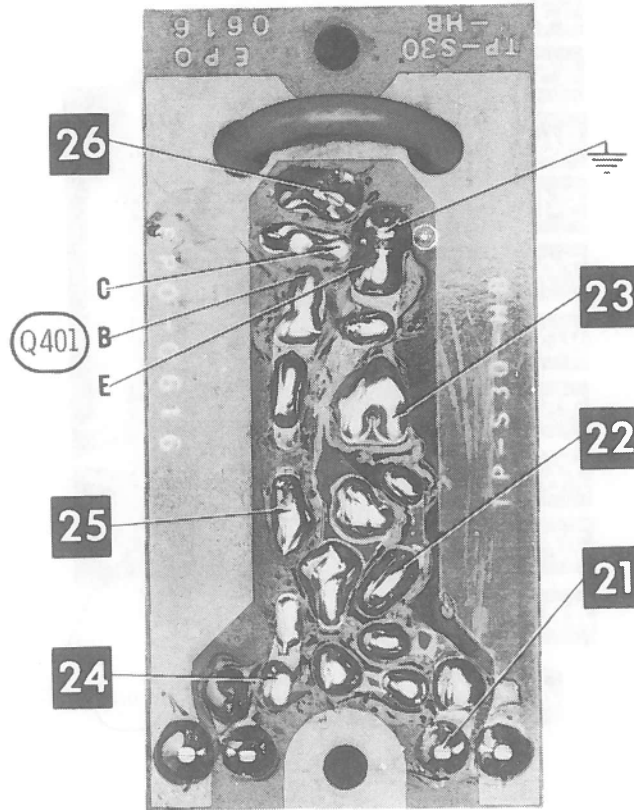
MAIN BOARD-TOP VIEW



MAIN BOARD-TOP VIEW

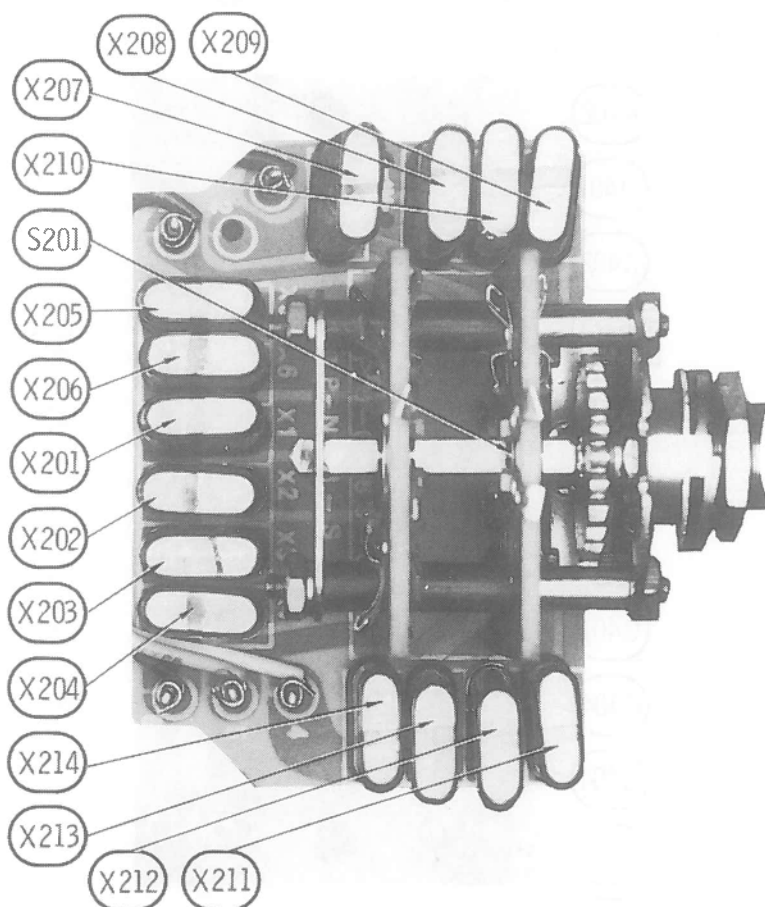
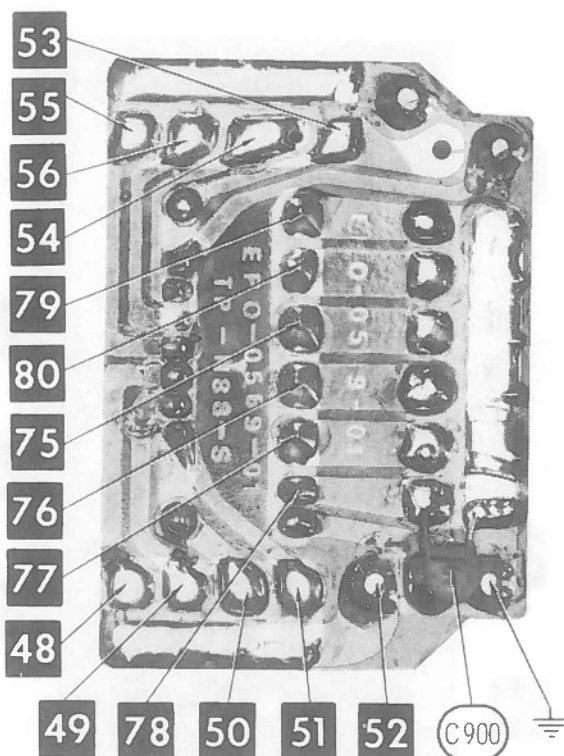


MAIN BOARD-TOP VIEW

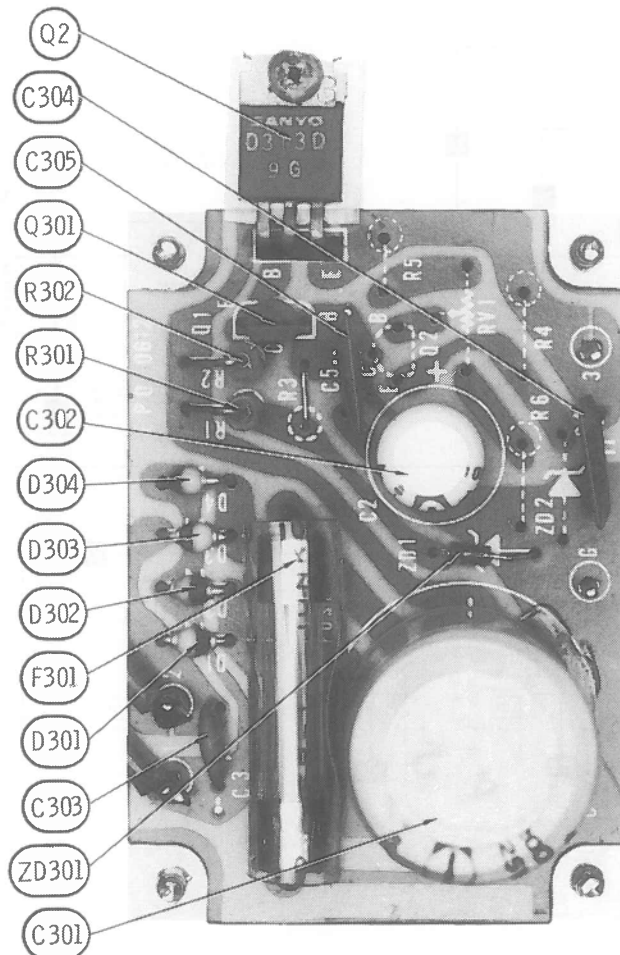
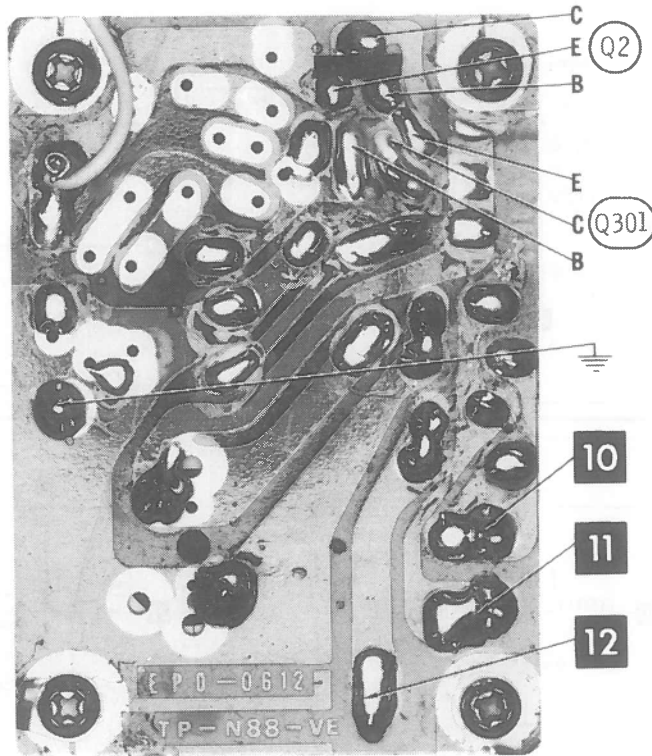


MIDLAND MODEL 13-863

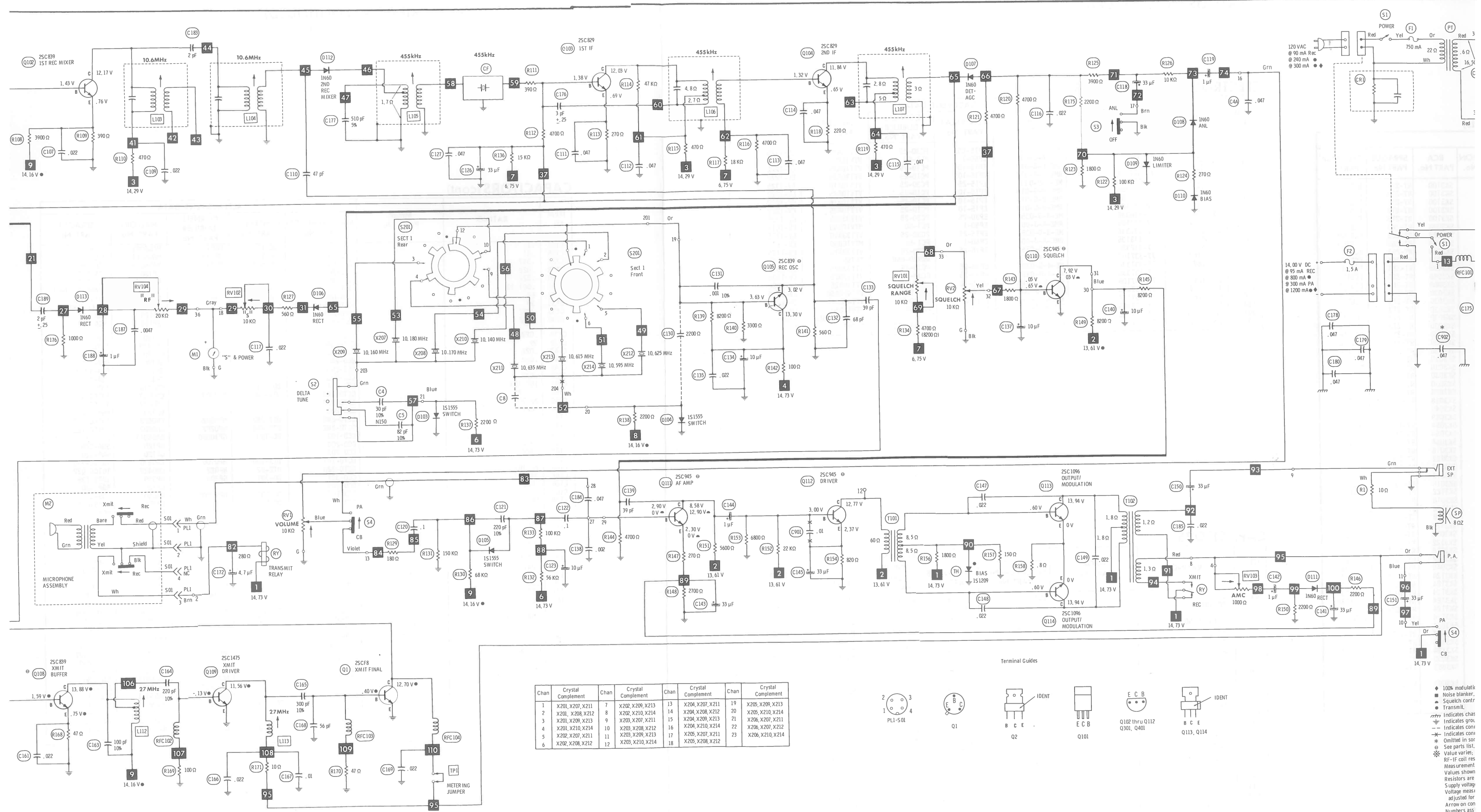
ANTENNA BOARD

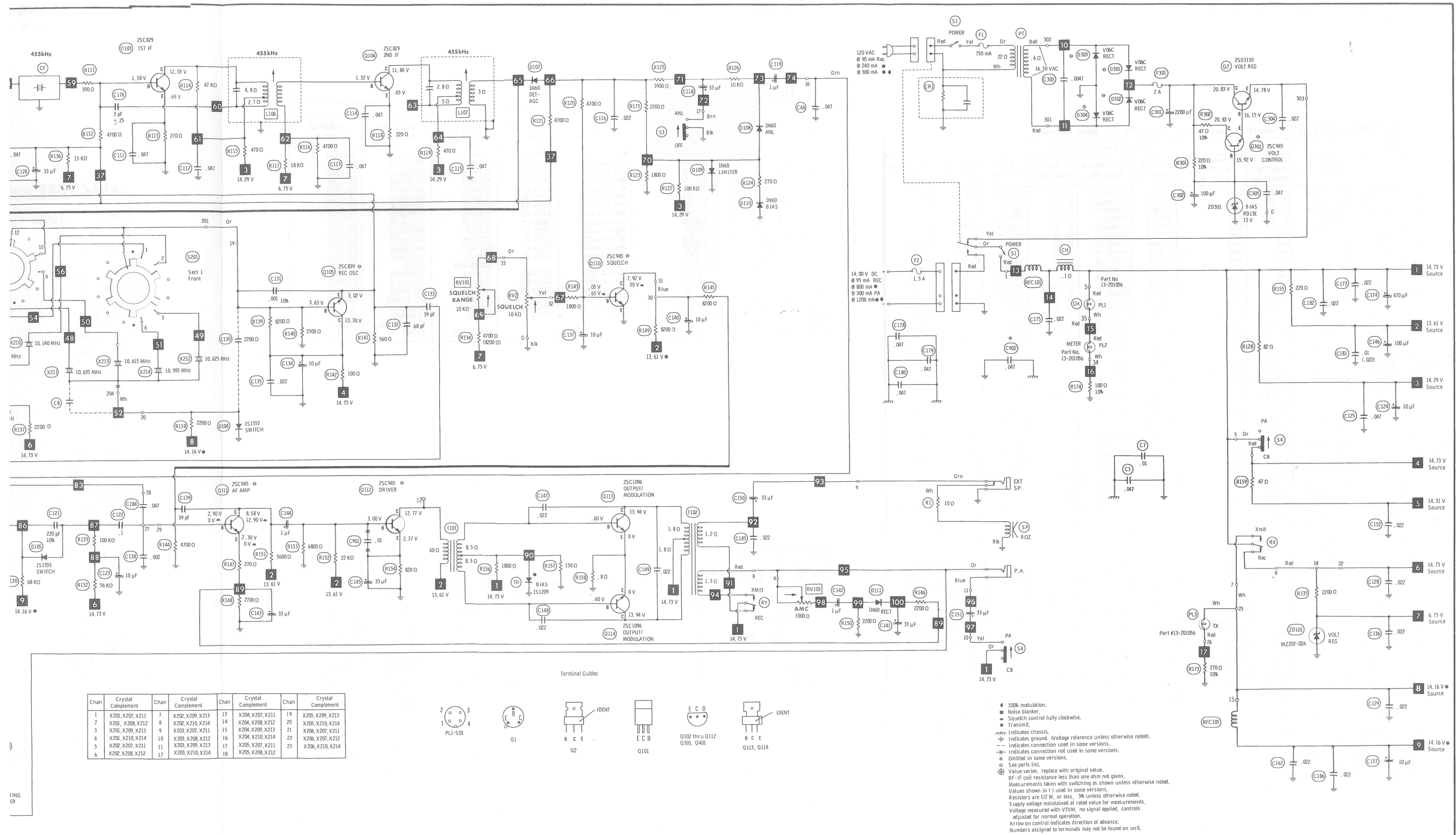


SWITCH & CRYSTAL BOARD



POWER SUPPLY 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.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D101	1S1555	09-306154	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D102	1S1555	09-306154	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D103	1S1555	09-306154	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D104	1S1555	09-306154	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D105	1S1555	09-306154	GE-300	D200	PTC214	HEPR0602	RE 52	SK3100	RT-218	ECG177
D106	1N60		1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D107	1N60		1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D108	1N60		1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D109	1N60		1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D110	1N60		1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D111	1N60		1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D112	1N60		1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D113	1N60		1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D301	V06C	09-306042	GE-504A	8D4	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
	F14A(1)		GE-504A	8D4	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
	SR1K(1)		GE-504A	8D4	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D302	V06C	09-306042	GE-504A	8D4	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
	F14A(1)		GE-504A	8D4	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
	SR1K(1)		GE-504A	8D4	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D303	V06C	09-306042	GE-504A	8D4	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
	F14A(1)		GE-504A	8D4	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
	SR1K(1)		GE-504A	8D4	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D304	V06C	09-306042	GE-504A	8D4	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
	F14A(1)		GE-504A	8D4	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
	SR1K(1)		GE-504A	8D4	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
D401	1N60		1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
D402	1N60		1N60	1N60	PTC206	HEPR9135	RE 47	SK3088	RT-263	ECG109
Q1	2SCF8	09-302117	GE-46		PTC176			SK3049		ECG237
	2SC1239(1)	(2)	GE-46		PTC176			SK3049		ECG237
Q2	2SD313D	(3)	GE-66	TR-76	PTC154	HEPS5000		SK3054	RT-154	ECG196
	2SD313(1)	(3)	GE-66	TR-76	PTC154	HEPS5000		SK3054	RT-154	ECG196
	2SD234(1)	(4)	GE-28	TR-76	PTC110	HEPS5000	RE 21	SK3054	RT-154	ECG152
Q101	2SC460	09-302004	GE-210	TR-24	PTC136	HEPS0014	RE 9	SK3018	RT-187	ECG107
	2SC829(1)	09-302033	GE-20	TR-24	PTC121	HEPS0015	RE 13	SK3122	RT-100	ECG123A
	2SC930(1)		GE-60	TR-24	PTC132	HEPS0016	RE 64	SK3018	RT-108	ECG199
Q102	2SC839	09-302124	GE-20	TR-24	PTC121	HEPS0015	RE 13	SK3018	RT-107A	ECG123A
Q103	2SC829	09-302033	GE-20	TR-24	PTC121	HEPS0015	RE 13	SK3018	RT-107A	ECG123A
Q104	2SC829	09-302033	GE-20	TR-24	PTC121	HEPS0015	RE 13	SK3122	RT-100	ECG123A
Q105	2SC839	09-302124	GE-20	TR-24	PTC121	HEPS0015	RE 13	SK3018	RT-107A	ECG123A
	2SC829(1)	09-302033	GE-20	TR-24	PTC121	HEPS0015	RE 13	SK3122	RT-100	ECG123A
Q106	2SC839	09-302124	GE-20	TR-24	PTC121	HEPS0015	RE 13	SK3018	RT-107A	ECG123A
	2SC829(1)	09-302033	GE-20	TR-24	PTC121	HEPS0015	RE 13	SK3122	RT-100	ECG123A
Q107	2SC839	09-302124	GE-20	TR-24	PTC121	HEPS0015	RE 13	SK3018	RT-107A	ECG123A
	2SC829(1)	09-302033	GE-20	TR-24	PTC121	HEPS0015	RE 13	SK3122	RT-100	ECG123A
Q108	2SC839	09-302124	GE-20	TR-24	PTC121	HEPS0015	RE 13	SK3018	RT-107A	ECG123A
	2SC829(1)	09-302033	GE-20	TR-24	PTC121	HEPS0015	RE 13	SK3122	RT-100	ECG123A
Q109	2SC1475	09-302202	GE-45	TR-64	PTC143	HEPS5014	RE 79	SK3048	RT-114	ECG195
Q110	2SC945	09-302125	GE-18	(1R)2SC945	PTC121	HEPS0015	RE 13	SK3124	RT-107A	ECG123A
	2SC828(1)		GE-18	TR-24	PTC132	HEPS0015	RE 13	SK3124	RT-107A	ECG123A
Q111	2SC945	09-302125	GE-18	(1R)2SC945	PTC121	HEPS0015	RE 13	SK3124	RT-107A	ECG123A
	2SC828(1)		GE-18	TR-24	PTC132	HEPS0015	RE 13	SK3124	RT-107A	ECG123A
Q112	2SC945	09-302125	GE-18	(1R)2SC945	PTC121	HEPS0015	RE 13	SK3124	RT-107A	ECG123A
	2SC828(1)		GE-18	TR-24	PTC132	HEPS0015	RE 13	SK3124	RT-107A	ECG123A
Q113	2SC1096	09-302126(5)	GE-28	TR-55	PTC110	HEPS5000	RE 42	SK3054	RT-197	ECG186
Q114	2SC1096	09-302126(5)	GE-28	TR-55	PTC110	HEPS5000	RE 42	SK3054	RT-197	ECG186
Q301	2SC945	09-302125	GE-18	(1R)2SC945	PTC121	HEPS0015	RE 13	SK3124	RT-107A	ECG123A
Q401	2SC945	09-302125	GE-18	(1R)2SC945	PTC121	HEPS0015	RE 13	SK3124	RT-107A	ECG123A
TH	1S1209	09-306129	GE-504A	8D4	PTC201	HEPR0052	RE 49	SK3030	RT-213	ECG116
ZD101	MZ207-02A	09-306325	GEZD-6.8	Z1206	ZB6.8	HEPZ0409	RE 110	SK3058	RT-238	ECG5071
ZD301	7V Zener		GEZD-12	Z1212	PTC508	HEPZ0416	RE 119	SK3093	RT-244	ECG5022
	RD13E									
	13V Zener	09-306367	GEZD-15	Z1214	PTC509	HEPZ0418	RE 121	SK3063	RT-245	ECG145
	EZ150(1)									
	15V Zener									

- (1) Alternate
(2) Rating 12 watts @ 4 amps.
(3) Rating 30 watts @ 3 amps.
(4) Rating 1.5 watts @ 3 amps.
(5) Rating 10 watts @ 2 amps.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA					
		MFR. PART No.	ARCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C118	33 6.3V	77-332336	ME-3-D-035	EP15-25	PC30-25	VTT33A10	EV-1125
C119	1 50V	77-333105	RME-A-J-001	EP50-1	PC1-50	MTV1CB50	EV-1615
C123	10 16V	77-337106	RME-B-G-010	EP15-10	PC10-25	VTT10A25	EV-1222
C124	10 16V	77-337106	RME-B-G-010	EP15-10	PC10-25	VTT10A25	EV-1222
C126	33 6.3V	77-332336	ME-3-D-035	EP15-25	PC30-25	VTT33A10	EV-1125
C134	10 16V	77-337106	RME-B-G-010	EP15-10	PC10-25	VTT10A25	EV-1222
C137	10 16V	77-337106	RME-B-G-010	EP15-10	PC10-25	VTT10A25	EV-1222
C140	10 16V	77-337106	RME-B-G-010	EP15-10	PC10-25	VTT10A25	EV-1222
C141	33 10V	77-336336	ME-4-G-035	EP30-25	PC30-25	VTT33D25	EV-1325
C142	1 50V	77-333105	RME-A-J-001	EP50-1	PC1-50	MTV1CB50	EV-1615
C143	33 6.3V	77-332336	ME-3-D-035	EP15-25	PC30-25	VTT33A10	EV-1125
C144	1 50V	77-333105	RME-A-J-001	EP50-1	PC1-50	MTV1CB50	EV-1615
C145	33 6.3V	77-332336	ME-3-D-035	EP15-25	PC30-25	VTT33A10	EV-1125
C146	100 16V	77-337107	CTA-1450		WBR50-450	TC79B	TVA-1713
C150	33 16V	77-337336	ME-4-G-035	EP30-25	PC30-25	VTT33D25	EV-1325
C151	33 16V	77-337336	ME-4-G-035	EP30-25	PC30-25	VTT33D25	EV-1325
C157	10 16V	77-337106	RME-B-G-010	EP15-10	PC10-25	VTT10A25	EV-1222
C172	4.7 25V	77-337475	RME-A-J-005	EP30-5	PC5-50	VTT4R7A50	EV-1319
C174	470 16V	77-337477	RME-L-E-500	EP15-500	PC500-16	VTT47QJ16	EV-1250
C188	1 50V	77-333105	RME-A-J-001	EP50-1	PC1-50	MTV1CB50	EV-1615
C301	2200 25V	77-339228				TDC105M050EL	SD50-19
C302	100 16V	77-337107	CTA-1450		WBR50-450	TC79B	TVA-1713

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENCOPART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	22		CCT0-220	DTZ-22	NP022	CN0422	10TCC-Q22
C2	180 10%		CCD-181	DD-181		GP318	10TS-T18
C3	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C4	33 10% N150		*			*	10TCN-Q33
C4A	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C5	82 10%		CCD-820	DD-820		GP482	10TS-Q82
C7	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C101	39		CCT0-390			CN0439	10TCC-Q39
C102	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C103	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C104	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C105	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C106	.022		CCD-203			GP120	5GA-S20
C107	.022		CCD-203			GP120	5GA-S20
C108	22		CCT0-220	DTZ-22	NP022	CN0422	10TCC-Q22
C109	.022		CCD-203			GP120	5GA-S20
C110	47		CCT0-470	DTZ-47	NP047	CN0447	10TCC-Q47
C111	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C112	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C113	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C114	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C115	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C116	.022		CCD-203			GP120	5GA-S20
C117	.022		CCD-203			GP120	5GA-S20
C120	.1			DC-104	MGP1	MAG5001	TG-P10
C121	220 10%		CCD-221	DD-221		GP322	10TS-T22

PARTS LIST AND DESCRIPTION (CONTINUED)

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

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C122	.1			DC-104	MGP1	MAG5001	TG-P10
C125	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C127	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C128	.022		CCD-203			GP120	5GA-S20
C129	.022		CCD-203			GP120	5GA-S20
C131	.001 10%		DM19-102J	CPR-1000J	CD19FD102J03	SX210	424ME1001J501
C132	.68		CCD-680	DD-680	GP68	GP468	10TS-Q68
C133	.39		CCTO-390			CN0439	10TCC-Q39
C135	.022		CCD-203			GP120	5GA-S20
C136	.022		CCD-203			GP120	5GA-S20
C138	.022		CCD-203			GP120	5GA-S20
C139	.39		CCTO-390			CN0439	10TCC-Q39
C147	.022		CCD-203			GP120	5GA-S20
C148	.022		CCD-203			GP120	5GA-S20
C149	.022		CCD-203			GP120	5GA-S20
C152	.022		CCD-203			GP120	5GA-S20
C153	150 10%		CCD-151	DD-151		CN0315	10TCC-T15
C154	3 +.25		CCTO-3R3	DTZ-3R3	NP03P3	CN0533	10TCC-V33
C155	27 10%		CCTO-270			CN0427	10TCC-Q27
C156	.027		CCD-203			GP120	5GA-S20
C158	2 +.25		CCTO-2R2	DTZ-2R2	NP02P2	CN0522	10TCC-V22
C159	2 +.25		CCTO-2R2	DTZ-2R2	NP02P2	CN0522	10TCC-V22
C160	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C161	.022		CCD-203			GP120	5GA-S20
C162	.022		CCD-203			GP120	5GA-S20
C163	100 10%		CCTO-101	DTZ-100	NP0100	CN0310	10TCC-T10
C164	22 10%		CCTO-220	DTZ-22	NP022	CN0422	10TCC-Q22
C165	390 10%		CCD-391	DD-391	GP390	GP339	10TS-T39
C166	.022		CCD-203			GP120	5GA-S20
C167	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C168	.56		CCD-560	DD-560		GP456	10TS-Q56
C169	.022		CCD-203			GP120	5GA-S20
C170	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C171	.330		CCD-331	DD-331	GP330	GP333	10TS-T33
C173	.022		CCD-203			GP120	5GA-S20
C175	.022		CCD-203			GP120	5GA-S20
C176	3 +.25		CCTO-3R3	DTZ-3R3	NP03P3	CN0533	10TCC-V33
C177	510 5%		DM15-511J	CPR-510J	CD15FD511J03	SX351	424ME5100J501
C178	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C179	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C180	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C181	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C182	.022		CCD-203			GP120	5GA-S20
C183	.2		CCTO-2R2	DTZ-2R2	NP02P2	CN0522	10TCC-V22
C184	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C185	.022		CCD-203			GP120	5GA-S20
C186	.022		CCD-203			GP120	5GA-S20
C187	.0047		CCD-472				10TS-D47
C189	2 +.25		CCTO-2R2	DTZ-2R2	NP02P2	CN0522	10TCC-V22
C303	.0047		CCD-472				10TS-D47
C304	.022		CCD-203			GP120	5GA-S20
C305	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50
C401	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C402	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C403	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C404	5 NPO		CCTO-050				10TCC-V50
C900	.3		CCTO-3R3	DTZ-3R3	NP03P3	CN0533	10TCC-V33
C901	.01		CCD-103	DC-103	GP10000	MAG5011	2SS-S10
C902	.047		CCD-503	DC-503	MGP05	MAG5015	TGL-S50

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

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				
			MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
RV1	Volume	10K	13-160113				
RV2	Squelch	10K	13-166058				
RV102	"S"	10K	13-164087	TSV-10K (2) or T-10K (2)	C-103 (2)	MTC14L1 (2)	X201R103B (2)
RV103	AMC	1000	13-164083	TSV-1K (2) or T-1000 (2)	C-102 (2)	MTC13L1 (2)	X201R102B (2)
RV104	RF	20K	13-164099	T-20K (2) or TSV-25K (2)	C-253 (2)	MTC24L1 (2)	X201R253B (2)
RV401	Ant. Warning	10K		TSV-10K (2) or T-10K (2)	C-103 (2)	MTC14L1 (2)	X201R103B (2)

(2) Cut off one of the end terminals and bend to fit PC board.

MIDLAND MODEL 13-863

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	TVI Trap (54MHz)				
L101	Rec. RF (27MHz)	13-090341			
L102	Rec. Mixer (27MHz)	13-090306	ETA104		
L103	10.6 IF	13-090307	A279		
L104	10.6 IF	13-090307	A279		
L105	Input IF (455kHz)	13-090308			
L106	Interstage IF (455kHz)	13-090309	ET117		
L107	Output IF (455kHz)	13-090310	ET118		
L108	Synth Osc. (37MHz)	13-090311	ETR196		
L109	Xmit Mixer (27MHz)	13-090312	R30		
L110	Xmit Mixer (27MHz)	13-090312	R30		
L111	Xmit Mixer (27MHz)	13-090313	ETA194		
L112	Xmit Buffer (27MHz)	13-094014			
L113	Xmit Driver (27MHz)	13-090314			
L114	Xmit Ant. (27MHz)	13-090315			
L115	Xmit Ant. (27MHz)	13-090316			
RFC101	RF Choke	13-178182			
RFC102	RF Choke	13-178136			
RFC103	RF Choke	13-178136			
RFC104	RF Choke	13-178136			
RFC105	RF Choke	13-178136			

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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.	
CH	1200mA	.1	.21mH	13-178181 ELA-2 (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.	
PT	120V AC @ 300mA AC	16.50V AC @ 1800mA AC	13-098021 ETP-0078 (1)			(1) Number on unit.

TRANSFORMER (Driver)

ITEM No.	TURNS RATIO			REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	SEC. 2	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T101	2	1		13-096164 ETA-41 (1)			(1) Number on unit.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T102	18	8	13-096165 ETA-42 (1)			(1) Number on unit.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP	3" PM, 8 Ohms	13-060100	30A05RZ8	

FUSE DEVICES

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	3/4 Amp, Fast-Acting		13-15831	AGC3/4	HKP	312.750	342013AL	

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF	Ceramic Filter	13-179045	455kHz
CR1	CR Module	13-130012	
M1	Meter	13-200059	"S"/P/RF
RY	Relay	13-105021	(280 Ohms)
S201	Switch	13-183199	Channel Selector
S1	Switch	13-183198	Power
S2	Switch	13-180092	Delta Tune
S3	Switch	13-158360	ANL
S4	Switch	13-158360	PA/CB
X1	Crystal	13-128302	37.600MHz
X2	Crystal	13-128303	37.650MHz

PARTS LIST AND DESCRIPTION (CONTINUED)

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

MISCELLANEOUS (cont)

ITEM No.	PART NAME	PART No.	NOTES
X3	Crystal	13-128304	37.700MHz
X4	Crystal	13-128305	37.750MHz
X5	Crystal	13-128306	37.800MHz
X6	Crystal	13-128307	37.850MHz
X7	Crystal	13-128308	10.635MHz
X8	Crystal	13-128309	10.625MHz
X9	Crystal	13-128310	10.615MHz
X10	Crystal	13-128311	10.595MHz
X11	Crystal	13-128312	10.180MHz
X12	Crystal	13-128313	10.170MHz
X13	Crystal	13-128314	10.160MHz
X14	Crystal	13-128315	10.140MHz

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

ITEM	PART No.	ITEM	PART No.
Cabinet	13-010261	Knob, Channel	13-115109
Rear Panel	13-013113	Knob, Volume/Squelch	13-115110
Front Mtg. Bracket	13-158360	Push Button	13-115111
Escutcheon Assembly	13-011019		

ACCESSORIES

ITEM	MFGR. PART No.	REMARKS
Microphone	13-038050	
DC Power Cord	13-034069	
AC Power Cord	13-034059	

WIRING DATA

General-use Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
	8524 (Stranded) Available in 12 Colors
Power Cord, 2-Wire	Use BELDEN No. 17106 (Plastic) or 17126 (Rubber) -6 feet
	17109 (Plastic) or 17129 (Rubber) -9 feet
Shielded Antenna Lead	Use BELDEN No. 8214 Lowest-loss (RG-8/U Type)
	8237 Low-loss (RG-8/U)
	8240 (Solid) Miniature (RG-58/U)
	8259 (Stranded) Miniature (RG-58A/U)
Coiled Microphone Cable	Use BELDEN No. 8497 3-Conductor (1 shielded for Press-to-Talk) Neoprene
	8491 4-Conductor (2 shielded, 2 unshielded) Neoprene
Ignition Noise Suppression	Use BELDEN No. 7300-Series Spark-Plug Sets
Bonding Strap	Use BELDEN No. 8661 (3/8 inch)