

PHOTOFACT[®] with

CIRCUITRACE[®]

For Supplier Address See PHOTOFACT Index

NOTE

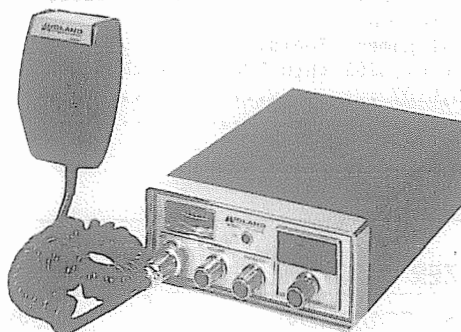
Repair or adjustment of transmitter circuits must be under supervision of a person with first-or second-class radiotelephone license.

(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 77-101B

MANUFACTURER'S SPECIFICATIONS

Circuitry:	3 ICs, 15 Transistors, 17 Diodes, 1 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 55 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 (F.C.C. Maximum)
Squelch Range:	0.5 μ V — 500 μ V
Audio Output Power:	More than 3W (EXT. SP at 8 ohms)
Controls:	VOLUME CONTROL/POWER SWITCH, P.A./SQUELCH CONTROL CHANNEL SELECTOR
Jacks and Connectors:	Microphone, EXT. SP, P.A. Antenna DC POWER CORD
Speaker:	3" dynamic, 8 ohms
Microphone:	Dynamic CB mike
Power Source:	DC 13.8V
Size:	8.59 (W) x 10.32 (D) x 3.27 (H) inches
Weight:	4.4 lbs.

MIDLAND MODEL 77-101B

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. 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.

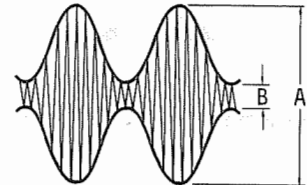
Suggested Alignment Tools:

GC ELECTRONICS

L101 thru L104, L202 thru L205, L301 thru L304... 9440

L105, L106, L107 5000, 5009, 8276, 8728, 8728A

L305, L306 8728, 8728A, 9304



$$\text{Modulation Ratio} = \frac{A - B}{A + B} \times 100 (\%)$$

FIGURE 1

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCIEVER	ADJUST	REMARKS
Input of frequency counter to TP10 (IC202 Pin 12).	Ch. 19		Check for 10.240MHz ± 100 Hz.
Input of oscilloscope to TP11 (L204 Secondary).	Ch. 19	L204	Adjust for maximum RF (150mv p-p typical).
Input of DC meter to TP1.	Ch. 40, XMT	L203	Adjust for 6.80 volts.
Input of DC meter to TP1.	Ch. 1		Check for .3 to 1.00 volt. Check for approx. 2.80 volts on channel 40.
Input of frequency counter to TP13 (IC202 pin 13).	Ch. 19		Check for 5.120MHz.
Input of oscilloscope to TP2.	Ch. 19	L202	Adjust for maximum RF (750mv p-p typical).
Input of frequency counter to TP2.	Ch. 1		Check for .910 MHz. Check all channels (See Truth Chart for correct frequencies.)
Input of frequency counter to TP2.	Ch. 1, XMT		Check for 1.365MHz. Check all channels (See Truth Chart for correct frequencies.)
Input of frequency counter to TP14 (IC203 Pin 3).	Ch. 1		Check for 16.270MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of oscilloscope to TP15 (IC203 Pin 9).	Ch. 19, XMT	L205	Adjust for maximum RF (260mv p-p typical).
Input of frequency counter to TP15 (IC203 Pin 9).	Ch. 1, XMT		Check for 26.965MHz. Check all channels. (See Truth Chart for correct frequencies.)

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.	
CH301	1.3 A	.070	.52mH	77-178023			

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T201	2.5	1 2 8 13.2	77-096007		MCB-16	

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP	3" PM 8 Ohms	77-060002	30A052BR	

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
F2	1.5A 250 V Quick Acting 2A 250 V Quick Acting	13-204013		AGC 1 1/2 AGC 2	HRK HRK	31201.5 312002	150145 150145	F61 F62.2

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	77-038011	18-032	18-034	18-010	18-092	1	2	4	3	NC	2

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF1	Filter	13-179021	10.695MHz
CF2	Filter	13-179036	455kHz
D208	LED	77-202009	XMT Indicator
D401	LED	77-202008	Channel Display
J1	Jack	13-153141	External Speaker
J2	Jack	13-153141	PA Speaker
J4	Plug	77-159032	Power
J5	Socket	13-159213	Antenna
J6	Plug	13-153114	Microphone
M1	Meter	77-200008	Signal/Power
SW1	Switch	77-180012	Channel Selector
SW2	Switch		PA/CB
S3	Switch		Power On/Off (Part of Volume Control)
	PC Board	77-070010	XMT Indicator (w/out Components)
	PC Board	77-070011	Channel Display (w/out Components)
	PC Board	77-070012	Channel Switch (w/out Components)
	Cord	13-034055	DC Power

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

ITEM	PART No.	ITEM	PART No.
Case, Top	77-010034	Knob, Control	77-110007
Case, Bottom	77-013012	Knob, Channel Selector	77-115020
Escutcheon	77-010033		

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
C254A	.068 50V		DTZ-82	WMF1S68	ENF1A168	QF1-195	1PB-S68
C254B	82 10%		UK50-103	NP082	CN0482		10TCC-Q82
C255	.01		UK50-103		MAG5011		
C258	.01		UK50-103		MAG5011		
C280	47 N220 5%		UK50-103		*		10TCRQ47
C301	.01		UK50-103		MAG5011		
C302	.01		UK50-103		MAG5011		
C304	.047		UK25-503		MAG2515		HY-735
C305	.047		UK25-503		MAG2515		HY-735
C306	.001		DD-102G	GP1000	GP210	QC2-81	5GA-010
C308	2		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C310	.01		UK50-103		MAG5011		
C311	.01		UK50-103		MAG5011		
C312	.01		UK50-103		MAG5011		
C313	.01		UK50-103		MAG5011		
C315	330		DD-331	GP330	GP333		10TS-T33
C316	82 10%		DTZ-82	NP082	CN0482		10TCC-Q82
C317	.01		UK50-103		MAG5011		
C318	220		DD-221		GP322		10TS-T22
C320	.01		UK50-103		MAG5011		
C321	8 N220				*		10TCR-V82
C322	100 10%		DTZ-2R2	C015F0101J03	SX310	QW1-27	MMA-101
C323	2			NP02P2	CN0522		10TCC-V22
C324	270 10%			C015F0271J03	SX327	QW1-37	MW8-271
C325	.01		UK50-103		MAG5011		
C327	390 10%			C015F0391J03	SX339	QW1-41	MMA-391
C328	180 10%			C015F0181J03	SX318	QW1-33	MMA-181
C329	.047		UK25-503		MAG2515		HY-735
C330	.01		UK50-103		MAG5011		
C331	.01		UK50-103		MAG5011		
C332	.01		UK50-103		MAG5011		
C333	.01		UK50-103		MAG5011		
C335	.01		UK50-103		MAG5011		
C336	100 10%			C015FD101J03	SX310	QW1-27	MMA-101
C337	330 10%		DD-331	GP330	GP333		10TS-T33
C338A	.01		UK50-103		MAG5011		
C338B	.01		UK50-103		MAG5011		
C339	3		DTZ-3R3	NP03P3	CN0533		10TCC-V33
C340	2.5 NPO				*		10TCC-V27
C346	.01		UK50-103		MAG5011		

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

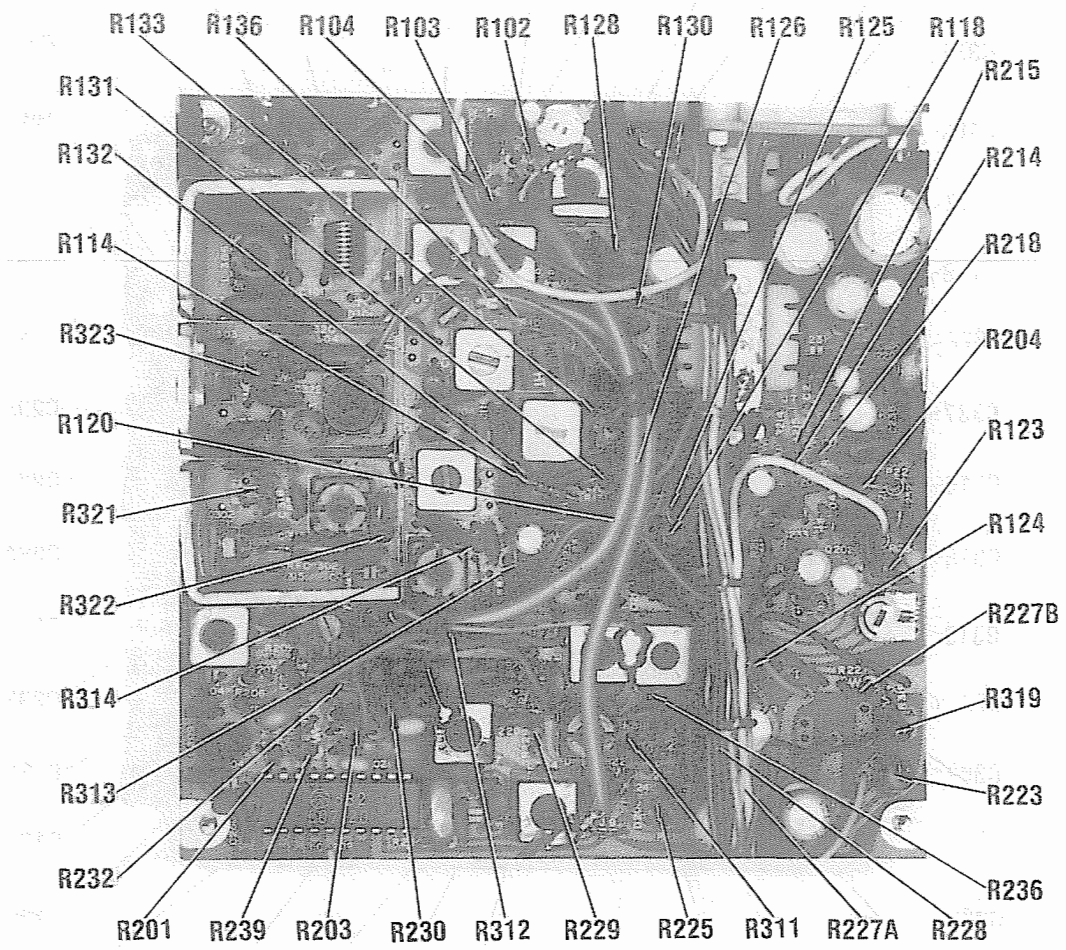
CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA			
			MFR. PART No.	CENTRALAB PART No.	MALLORY PART No.	TRW PART No.
RV101	Squelch Range	10K	13-164132			U260R103B
RV102	Volume/Power Switch	50K	77-160011			
RV103	Signal Meter	20K	13-164142			U260R253B
RV201	AMC	10K	13-164132			U260R103B
RV202	Power Meter	20K	13-164142			U260R253B
VR101	Squelch/PA Switch	10K	77-166007			

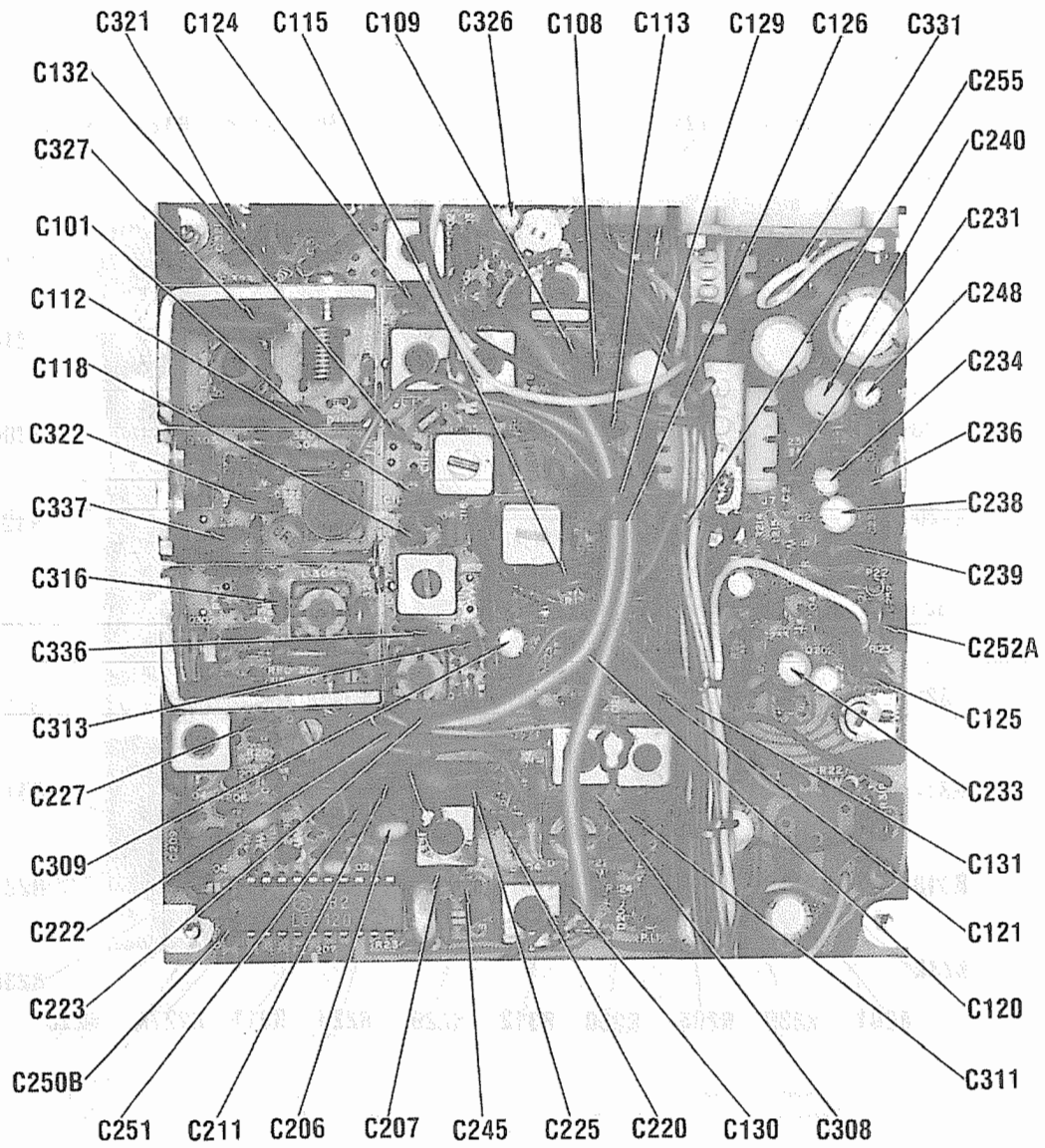
COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L101	REC Antenna (27MHz)	77-090014			
L102	REC RF (27MHz)	77-090015			
L103	REC Mixer (10.695MHz)	77-090016			
L104	REC Mixer (10.695MHz)	77-090016			
L105	IF (455kHz)	77-090017			
L106	IF (455kHz)	77-090018			
L107	IF (455kHz)	77-090019			
L201	Pi Filter (25uH)	77-178024			
L202	VCO Buffer (15.630MHz)	77-176054			
L203	VCO	77-176055			
L204	VCO (10.240MHz)	77-090016			
L205	XMT Mixer (27MHz)	77-090022			
L301	XMT Mixer (27MHz)	77-090020			
L302	XMT Mixer (27MHz)	77-090021			
L303	XMT Buffer (27MHz)	77-090022			
L304	XMT Driver (27MHz)	77-090023			
L305	Final (27MHz)	77-176052			
L306	XMT Antenna (27MHz)	77-176053			
L307	Pi Filter	77-176051			
RFC302	RF Choke (2.2uH)	77-178026			
RFC303	RF Choke (6.8uH)	77-178025			
RFC304	RF Choke (.8uH)	77-178027			
RFC305	RF Choke (.8uH)	77-178027			
RFC306	RF Choke (.8uH)	77-178027			

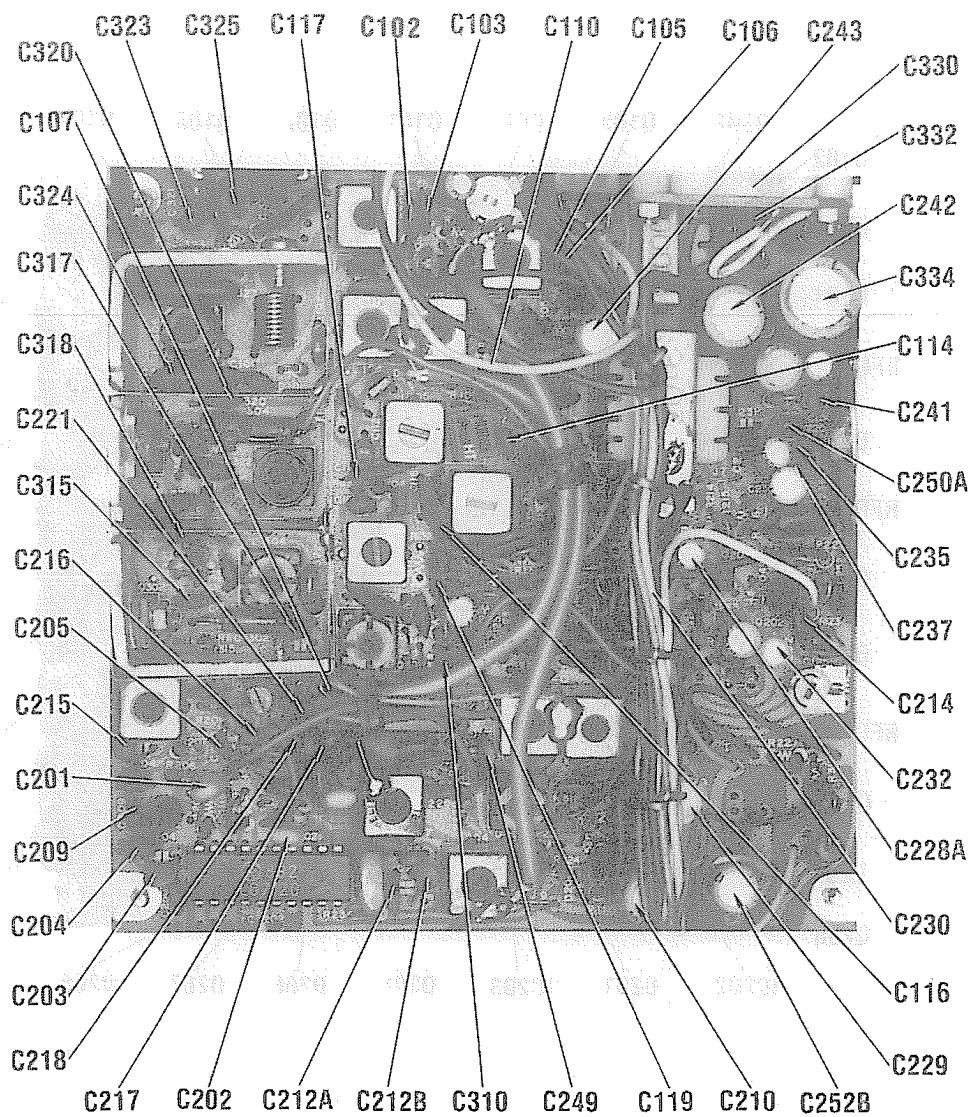
MIDLAND MODEL 77-101B



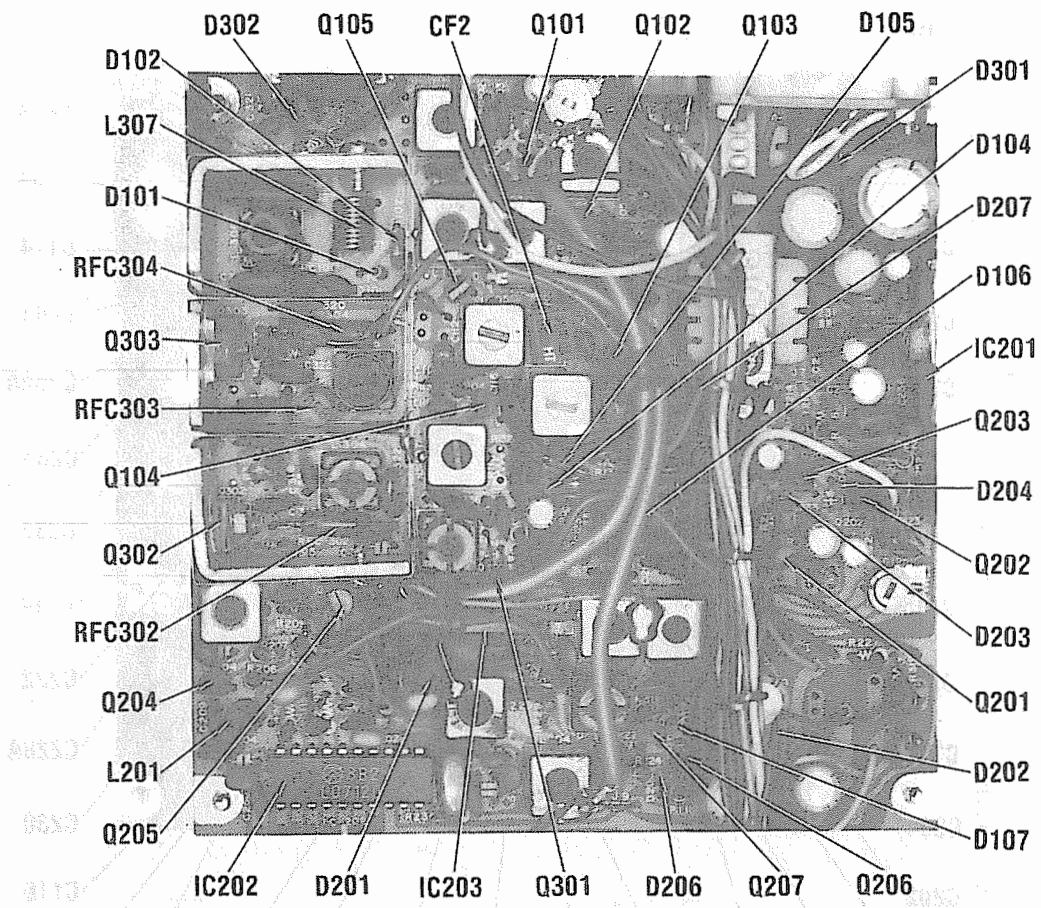
MAIN BOARD



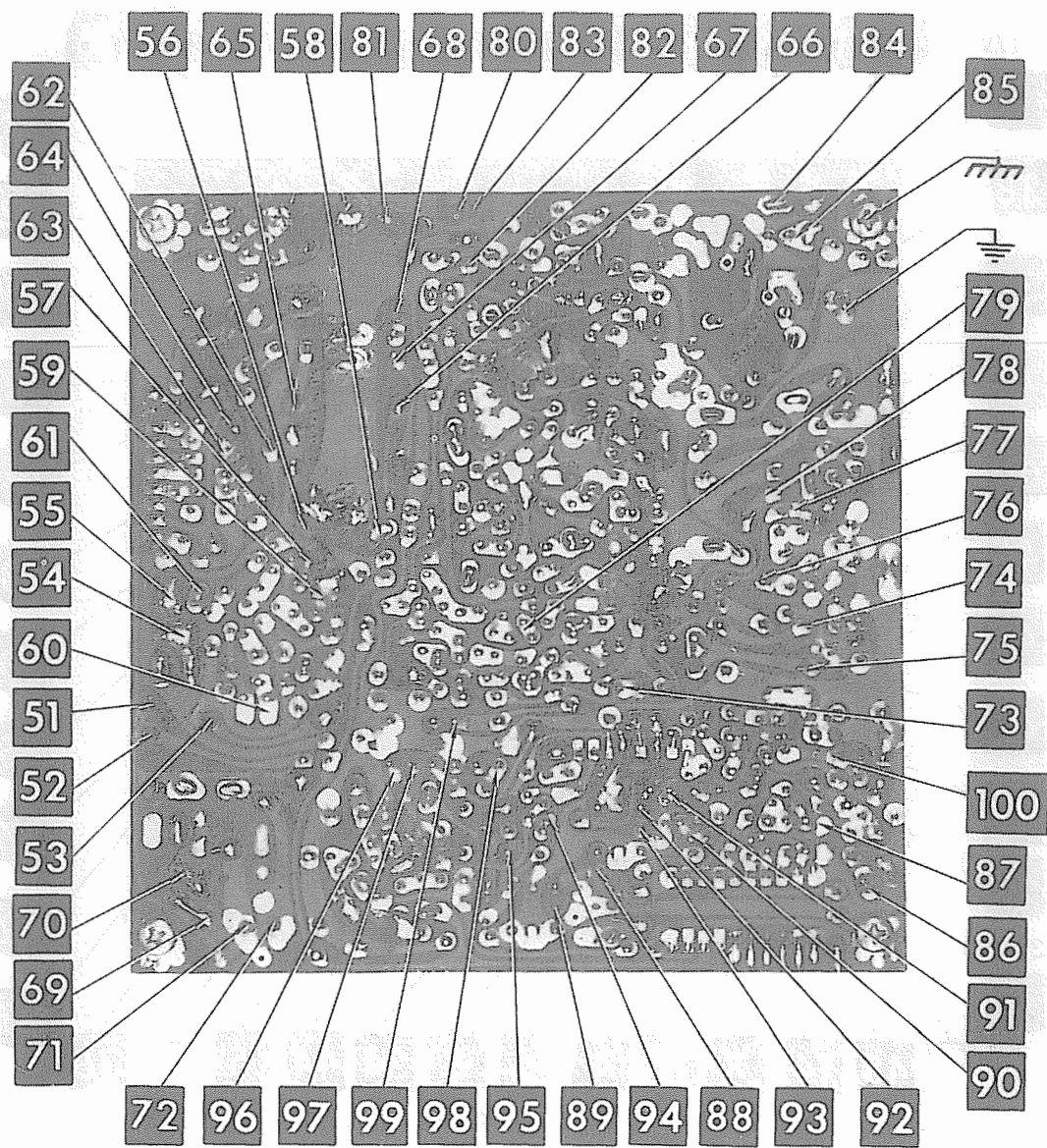
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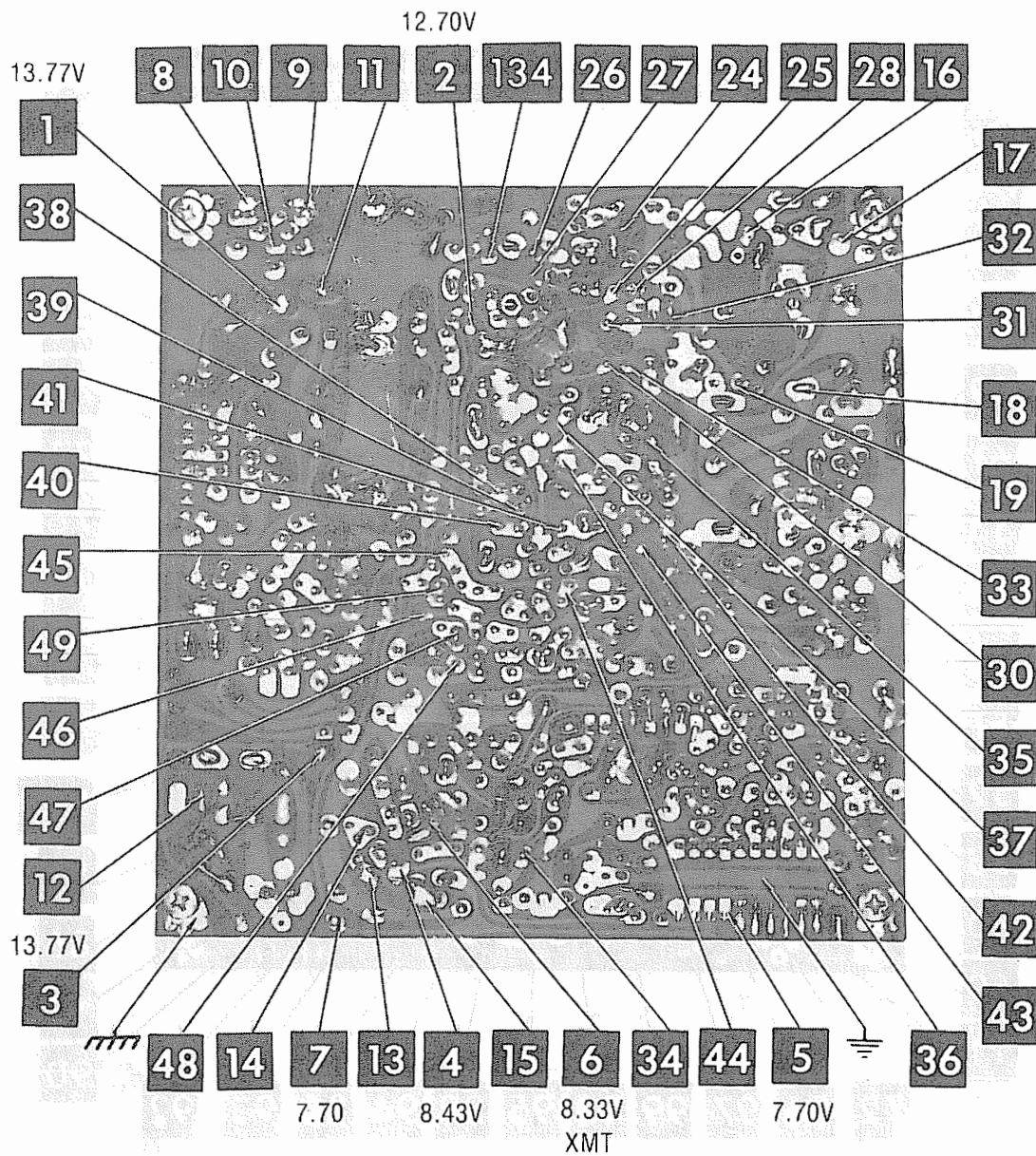
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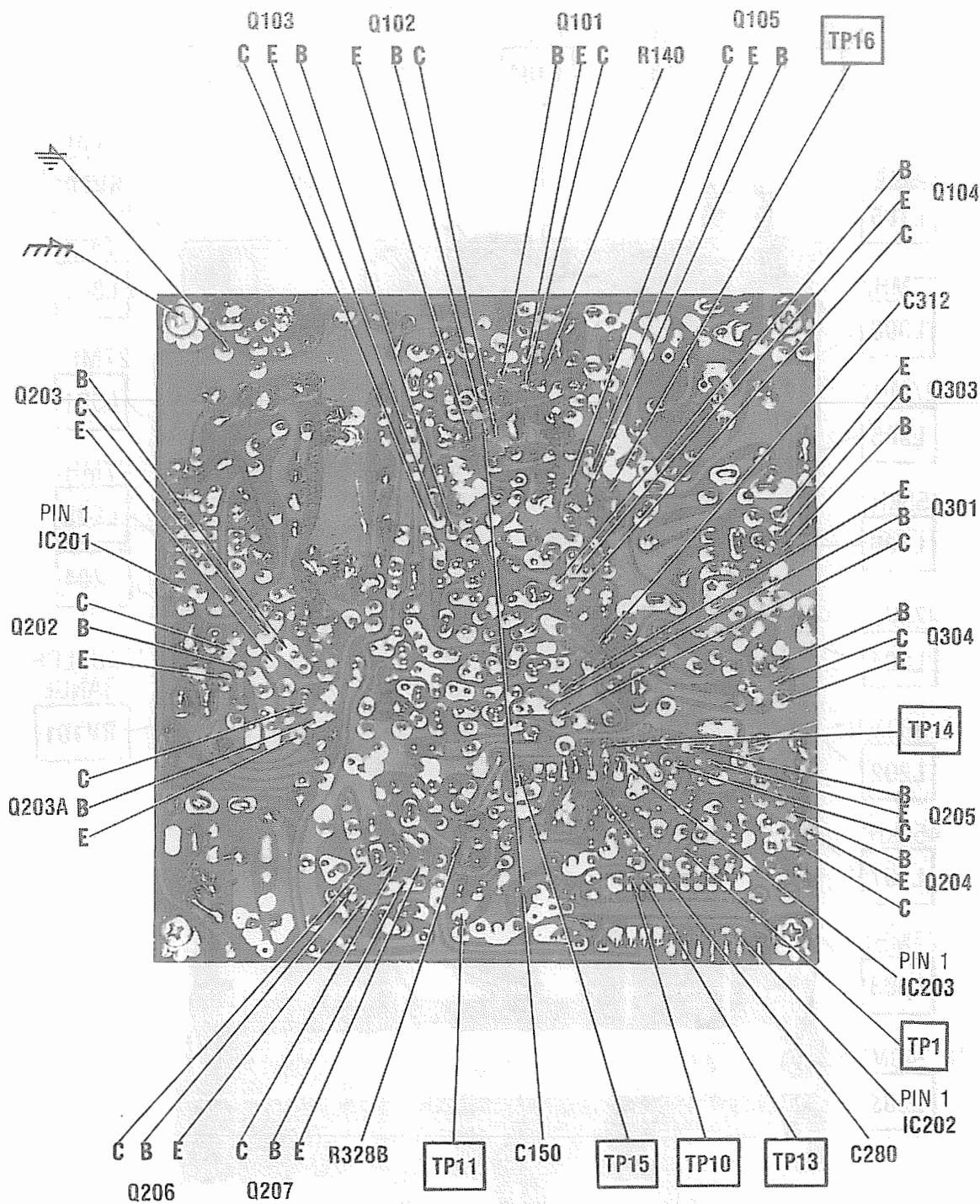
MAIN BOARD



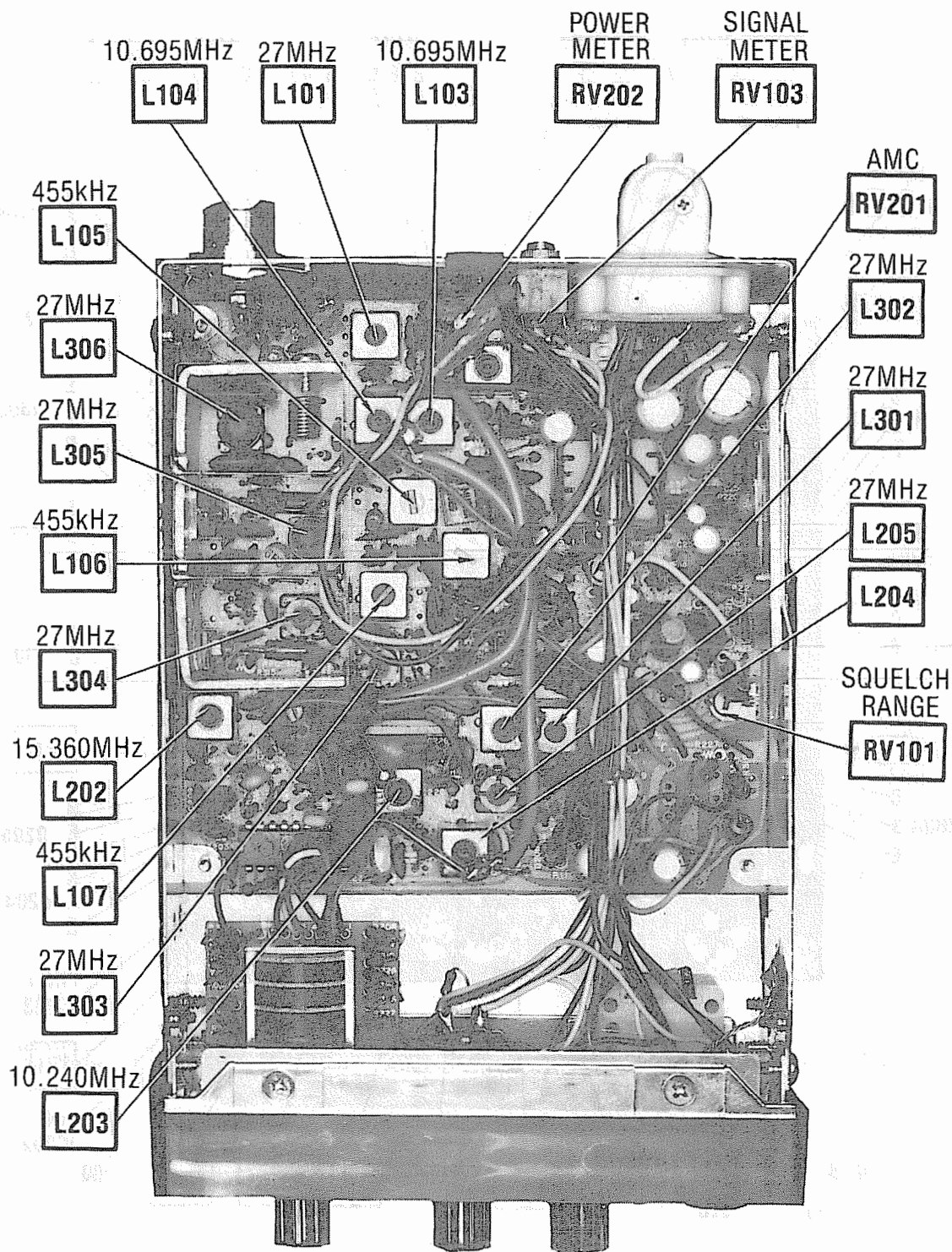
MAIN BOARD



MIDLAND MODEL 77-1018



MAIN BOARD



CHASSIS-BOTTOM

TRUTH CHART

CHANNEL	1=7.70 Volts CHANNEL INPUT CODES IC202							0=0 Volts							REC DIVIDER INPUT IN MHz AT @ TP2	REC VCO OUTPUT IN MHz AT @ TP14	XMT DIVIDER INPUT IN MHz AT @ TP2	XMT SYNTH OUTPUT IN MHz AT @ TP15
	PINS																	
	7	6	5	4	3	2	1											
1	1	0	0	0	0	0	1		.910	16.270	1.365	26.965						
2	1	0	0	0	0	1	0		.920	16.280	1.375	26.975						
3	1	0	0	0	0	1	1		.930	16.290	1.385	26.985						
4	1	0	0	0	1	0	0		.950	16.310	1.405	27.005						
5	1	0	0	0	1	0	1		.960	16.320	1.415	27.015						
6	1	0	0	0	1	1	0		.970	16.330	1.425	27.025						
7	1	0	0	0	1	1	1		.980	16.340	1.435	27.035						
8	1	0	0	1	0	0	0		1.000	16.360	1.455	27.055						
9	1	0	0	1	0	0	1		1.010	16.370	1.465	27.065						
10	1	0	1	0	0	0	0		1.020	16.380	1.475	27.075						
11	1	0	1	0	0	0	1		1.030	16.390	1.485	27.085						
12	1	0	1	0	0	1	0		1.050	16.410	1.505	27.105						
13	1	0	1	0	0	1	1		1.060	16.420	1.515	27.115						
14	1	0	1	0	1	0	0		1.070	16.430	1.525	27.125						
15	1	0	1	0	1	0	1		1.080	16.440	1.535	27.135						
16	1	0	1	0	1	1	0		1.100	16.460	1.555	27.155						
17	1	0	1	0	1	1	1		1.110	16.470	1.565	27.165						
18	1	0	1	1	0	0	0		1.120	16.480	1.575	27.175						
19	1	0	1	1	0	0	1		1.130	16.490	1.585	27.185						
20	1	1	0	0	0	0	0		1.150	16.510	1.605	27.205						
21	1	1	0	0	0	0	1		1.160	16.520	1.615	27.215						
22	1	1	0	0	0	1	0		1.170	16.530	1.625	27.225						
23	1	1	0	0	0	1	1		1.200	16.560	1.655	27.255						
24	1	1	0	0	1	0	0		1.180	16.540	1.635	27.235						
25	1	1	0	0	1	0	1		1.190	16.550	1.645	27.245						
26	1	1	0	0	1	1	0		1.210	16.570	1.665	27.265						
27	1	1	0	0	1	1	1		1.220	16.580	1.675	27.275						
28	1	1	0	1	0	0	0		1.230	16.590	1.685	27.285						
29	1	1	0	1	0	0	1		1.240	16.600	1.695	27.295						
30	1	1	0	0	0	0	0		1.250	16.610	1.705	27.305						
31	1	1	1	0	0	0	1		1.260	16.620	1.715	27.315						
32	1	1	1	0	0	1	0		1.270	16.630	1.725	27.325						
33	1	1	1	0	0	1	1		1.280	16.640	1.735	27.335						
34	1	1	1	0	1	0	0		1.290	16.650	1.745	27.345						
35	1	1	1	0	1	0	1		1.300	16.660	1.755	27.355						
36	1	1	1	0	1	1	0		1.310	16.670	1.765	27.365						
37	1	1	1	0	1	1	1		1.320	16.680	1.775	27.375						
38	1	1	1	1	0	0	0		1.330	16.690	1.785	27.385						
39	1	1	1	1	0	0	1		1.340	16.700	1.795	27.395						
40	1	0	0	0	0	0	0		1.350	16.710	1.805	27.405						

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. Preset controls as follows, unless otherwise noted:
Squelch MINIMUM.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP16 (Q105 emitter) 455kHz, 1000Hz @ 30% mod.	Ch. 19	L107, L106, L105	Adjust for maximum output.
Output of signal generator thru .01uF to antenna input. 27.185MHz, 1000Hz @ 30% mod.	Ch. 19	L104, L103, L102, L101	Adjust for maximum output. Readjust L105, L106 and L107 for maximum.

RECEIVER ADJUSTMENTS

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.
Preset controls as follows, unless otherwise noted:
Squelch MINIMUM

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna input. 27.185MHz 1000Hz @ 30% mod. Output 500uV.	Ch. 19, Squelch Max.	RV101	SQUELCH RANGE Adjust so squelch just breaks.
Output of signal generator thru .01uF to antenna input. 27.185MHz 1000Hz @ 30% mod. output	Ch. 19	RV103	SIGNAL METER Adjust for 9 on signal scale of meter.

TRANSMITTER ALIGNMENT

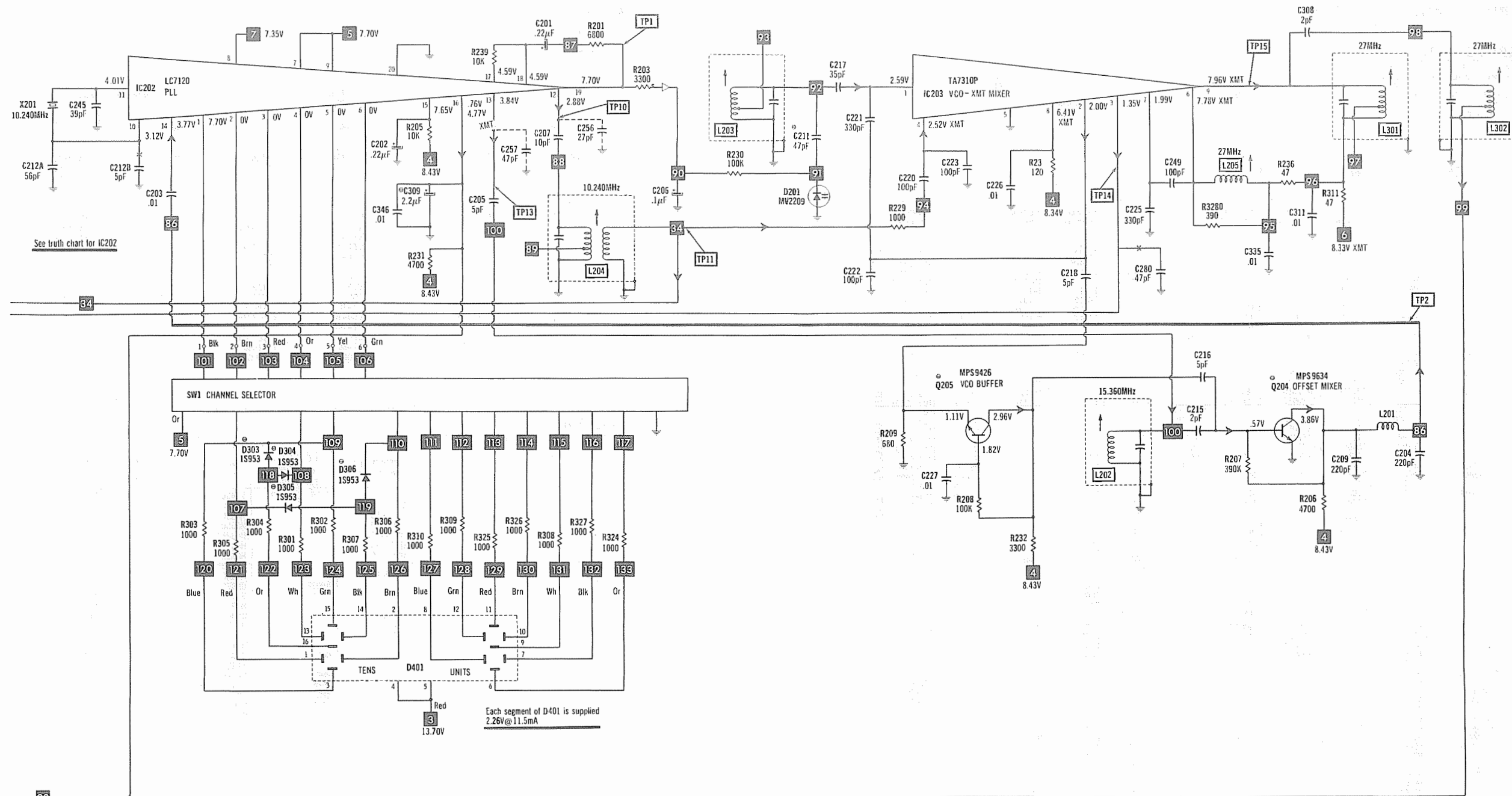
Connect a 50-ohm, 25-watt dummy load to antenna connector.
NOTE: Be sure to check transmit frequency and power on all active channels after alignment of transmitter.
See page 4 for channel frequencies.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of RF Wattmeter to antenna input.	Ch. 19	L301, L302, L303, L304	Adjust for maximum RF output.
Input of RF Wattmeter to antenna input.	Ch. 19	L305, L306	Adjust for 4.0 watts RF output maximum.

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 oscilloscope or modulation meter to antenna input. Inject a 1000Hz, 20mv signal at MIC input.	Ch. 19	RV201	AMC Adjust for 85% modulation maximum. (See Figure 1).
Input of RF Wattmeter to antenna input.	Ch. 19	RV202	POWER METER Adjust so power meter agrees with RF Wattmeter.



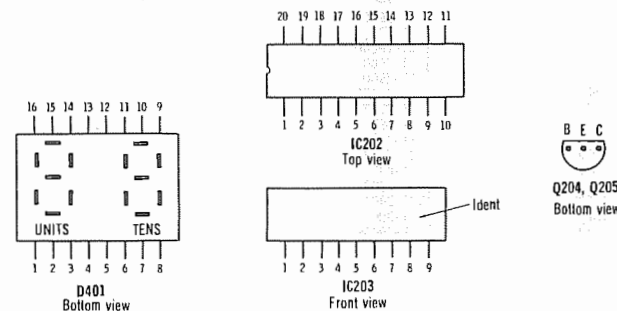
MIDLAND MODEL 77-101B

- * Circuitry not used in some versions.
- Circuitry used in some versions.
- ⊗ Nominal value
- ⊕ Ground
- ⊞ Chassis
- ⊙ See parts list
- ▽ Common tie point
- Signal path
- ⤴ Voltage path

A PHOTOFAC STANDARD NOTATION SCHEMATIC
WITH **CIRCUITRAGE**
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Measurements made 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).

Terminal Guides



PLL & CHANNEL SELECTOR SCHEMATIC

PARTS LIST AND DESCRIPTION

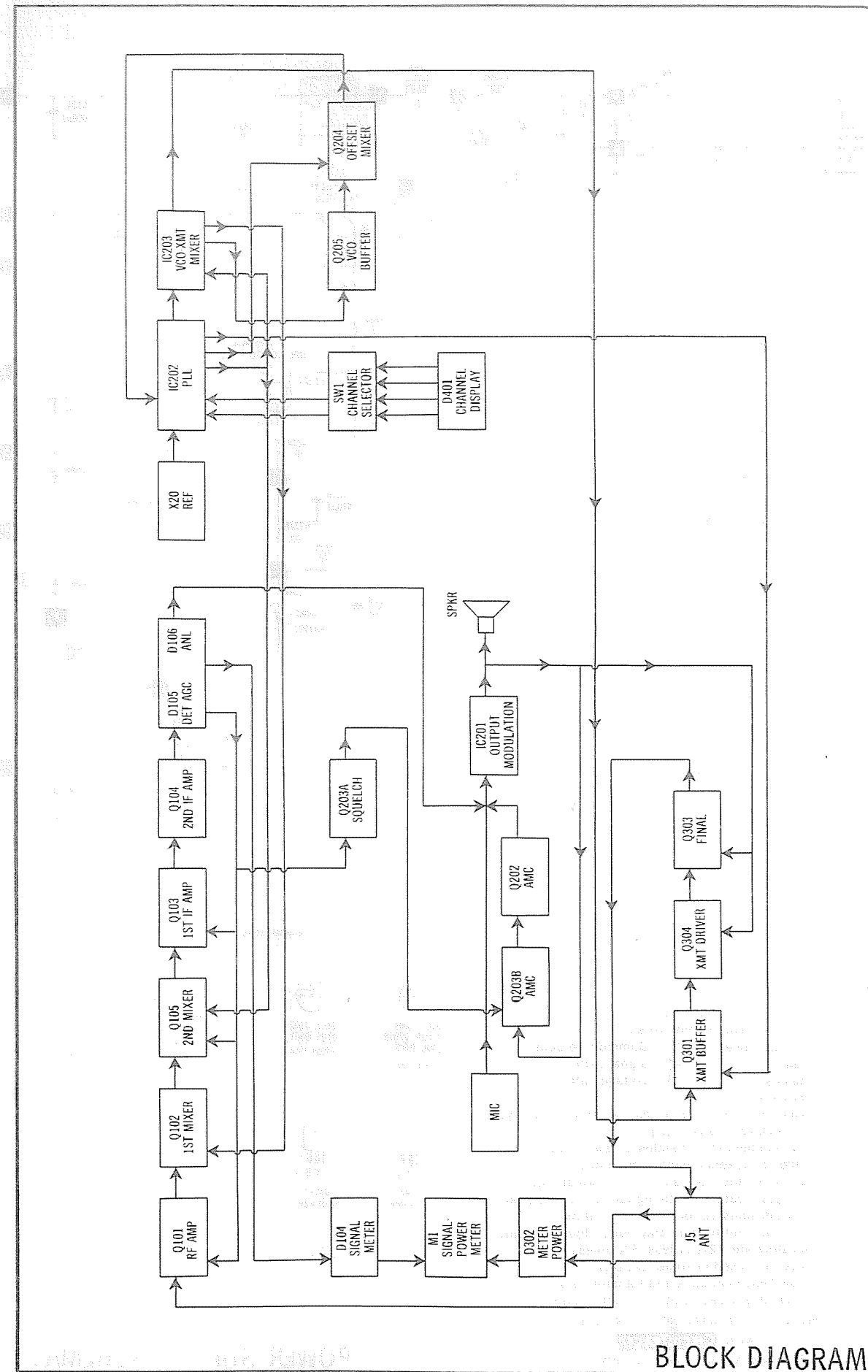
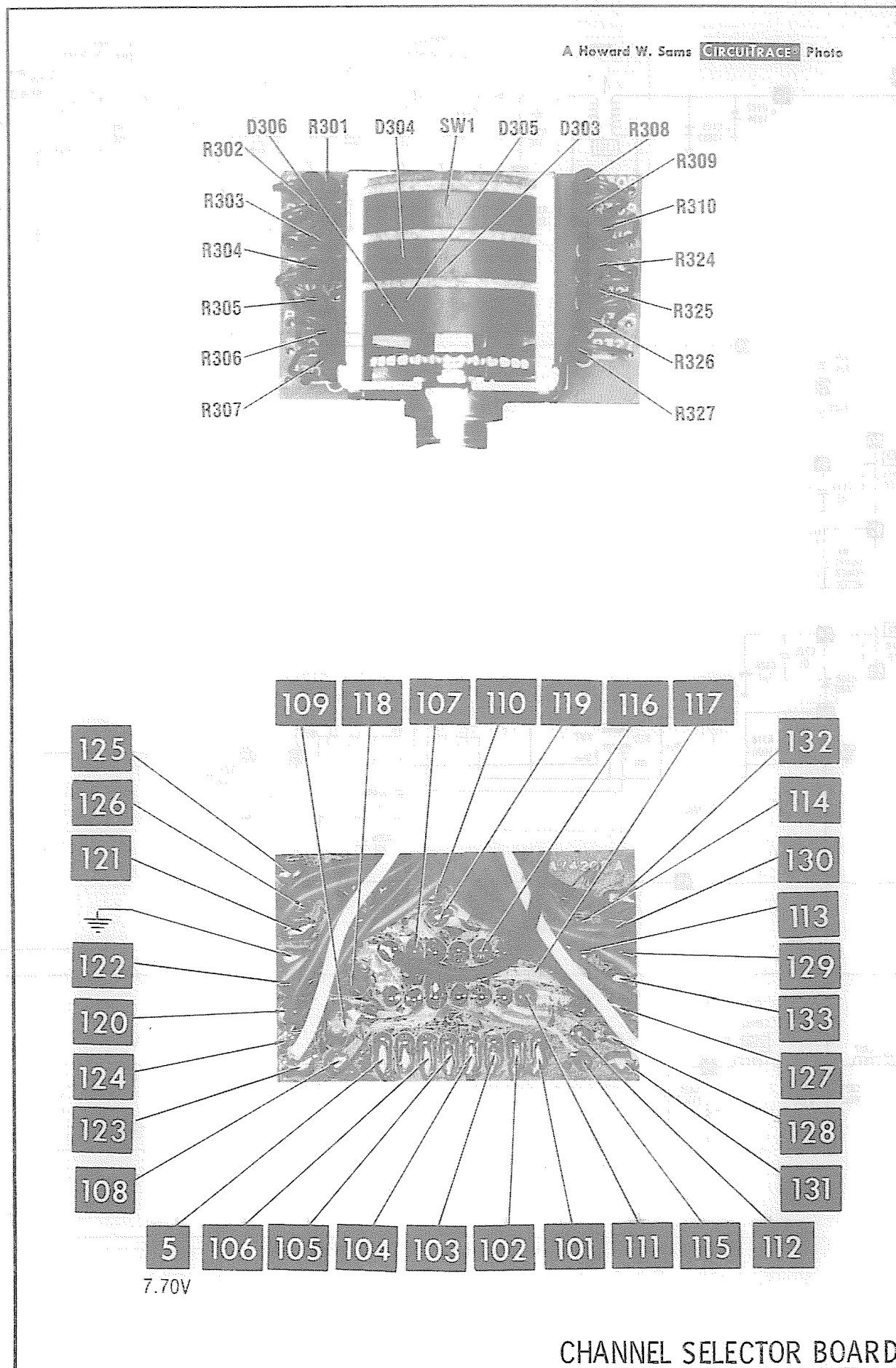
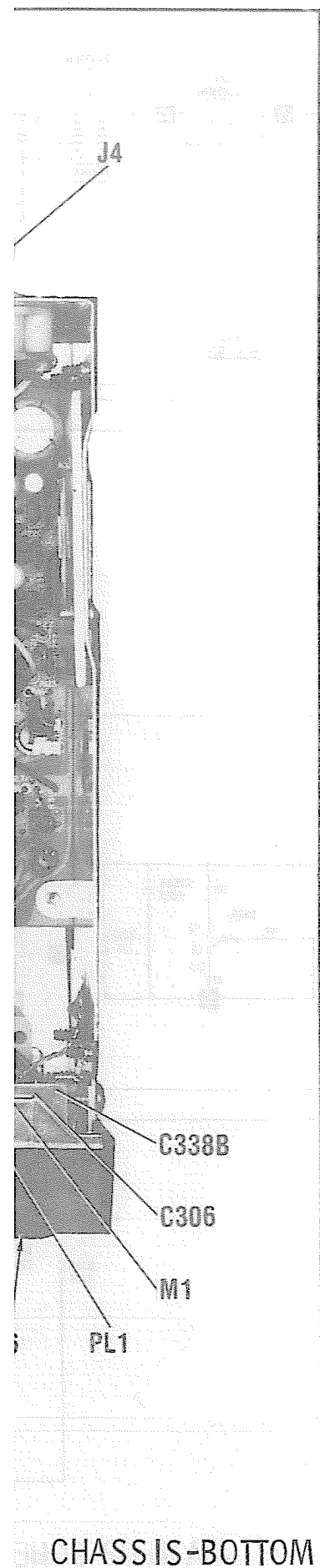
(When ordering parts, state Model, Part Number, and Description.)

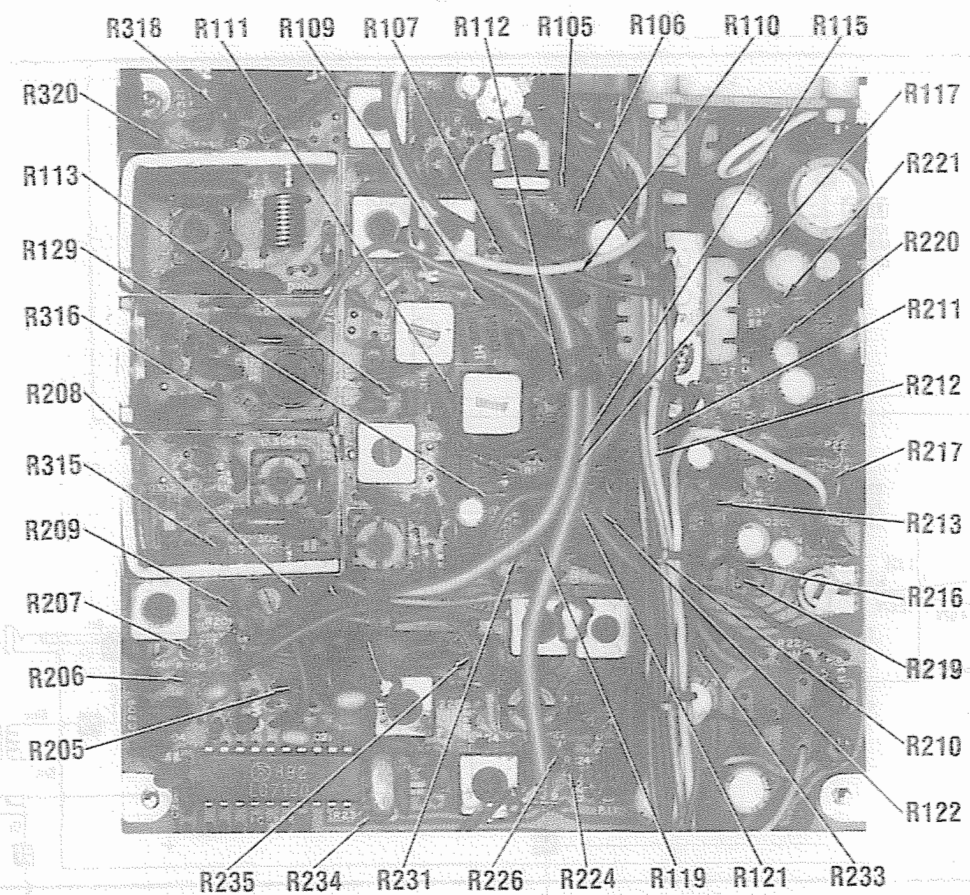
WIRING DATA

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

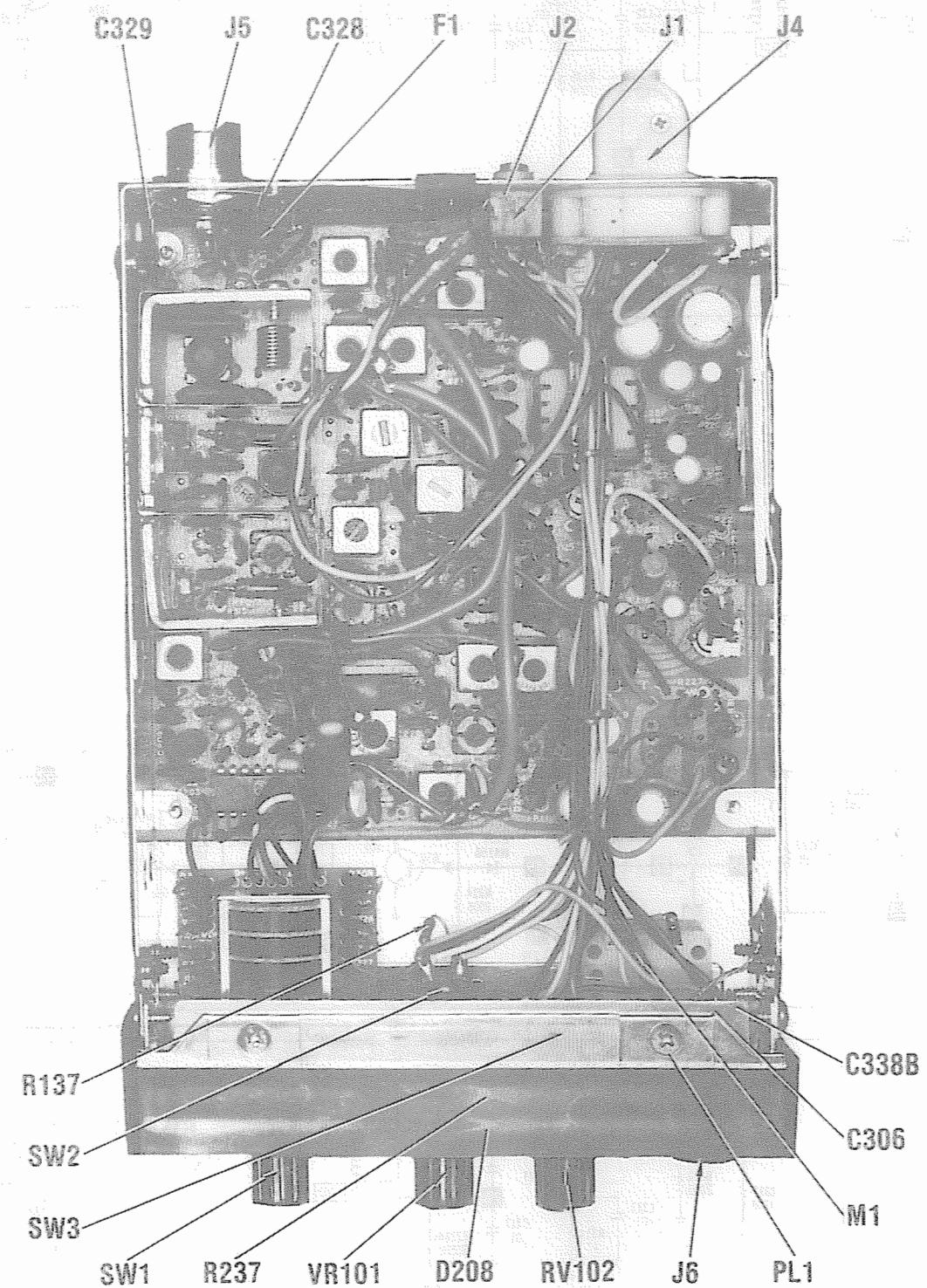
SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA									
			GENERAL ELECTRIC PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
D101	1S953	05-330150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
D102	1S34	05-170060	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
D104	1N60	05-170060	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
D105	1S34	05-170060	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
D106	1S1555	05-330150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
D107	MA150	05-330150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
D201	MA-1091	05-330150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
D202	MA150	05-330150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
D203	1S953	05-330150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
D204	MA150	05-330150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
D205	MA150	05-330150(1)	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
D206	1S953	05-330150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
D207	MA150	05-330150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
D208	1N-4002	05-174002	GE-504A	PTC203	HEPR0055	REN 125	SK3032	RT-210	ECG125	TM125	WEPI59	212-95
D301	1N-4002	05-174002	GE-504A	PTC203	HEPR0055	REN 125	SK3032	RT-210	ECG125	TM125	WEPI59	212-95
D302	1N60	05-170060	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
D303	MA150	05-330150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
D304	1S953	05-330150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
D305	MA150	05-330150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
D306	1S953	05-330150	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEPI062	103-131
IC201	TA7205P	02-257205	GE-1C-179	PTC780	HEPR0602	REN 1155	SK3231	TVCM-81	ECG1155	TM1155	WEPI062	103-131
IC202	TA7205AP	02-507120	GE-1C-179	PTC780	HEPR0602	REN 1155	SK3231	TVCM-81	ECG1155	TM1155	WEPI062	103-131
IC203	TA7310P	02-257310	GE-61	PTC121	HEPS0040	REN 229	SK3018	RT-172	ECG229	TM229	WEPI062	121-29021
Q101	MP59426C	01-349426	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q102	2SC784-D	01-030784	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q103	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q104	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q105	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q106	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q107	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q108	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q109	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q110	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q111	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q112	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q113	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q114	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q115	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q116	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q117	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q118	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q119	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q120	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q121	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q122	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q123	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q124	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q125	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q126	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q127	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q128	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q129	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q130	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q131	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q132	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q133	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q134	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q135	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q136	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q137	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q138	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q139	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q140	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q141	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q142	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q143	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q144	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q145	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q146	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q147	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q148	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q149	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q150	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q151	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q152	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q153	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q154	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q155	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q156	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q157	2SC784-D	01-349623	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021
Q158	2SC784-D	01-030380	GE-60*	PTC132*	HEPS0008*	REN 229*	SK3122	RT-187	ECG229*	TM229**	WEPI062	121-29021





MAIN BOARD



CHASSIS-BOTTOM

125

126

121

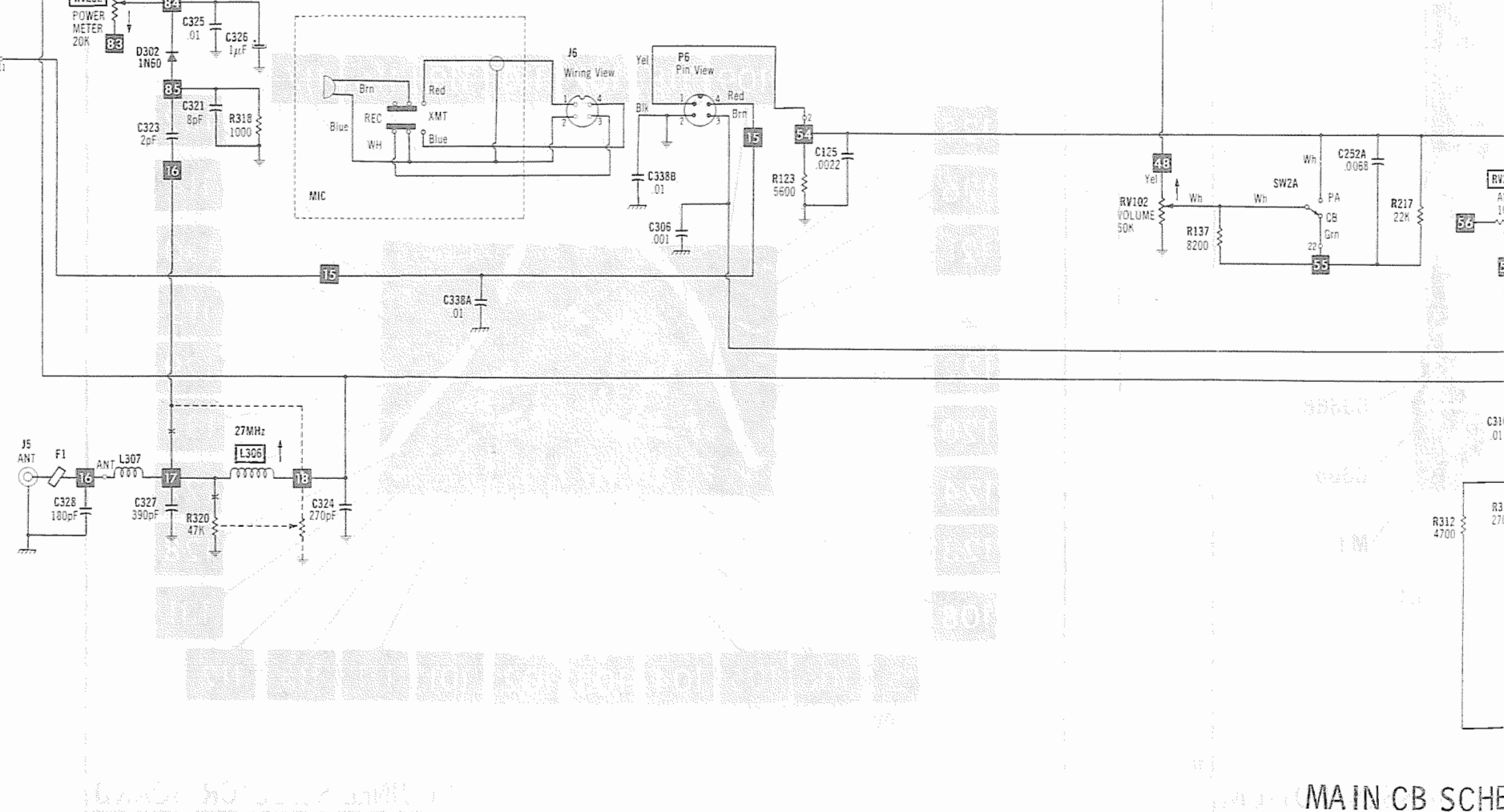
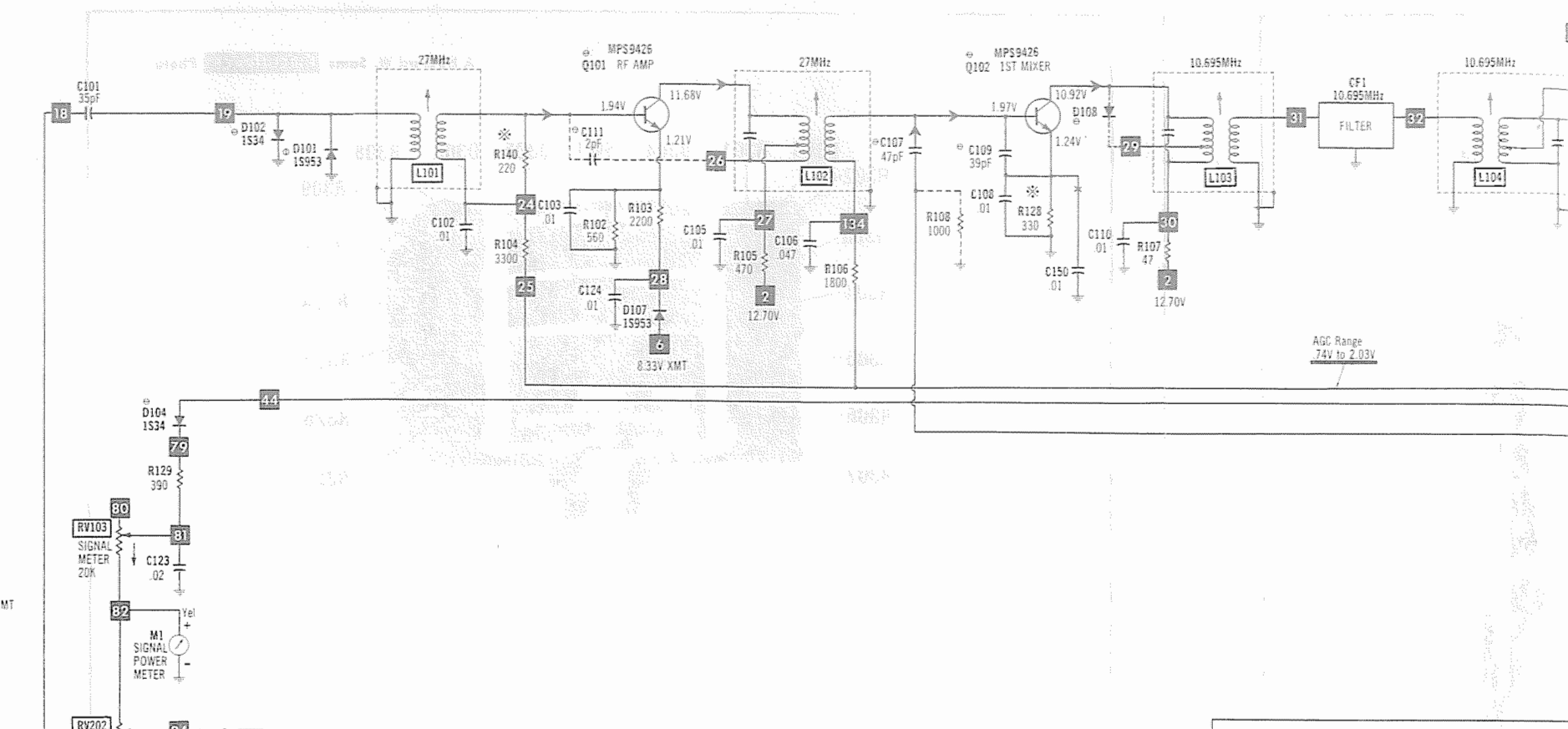
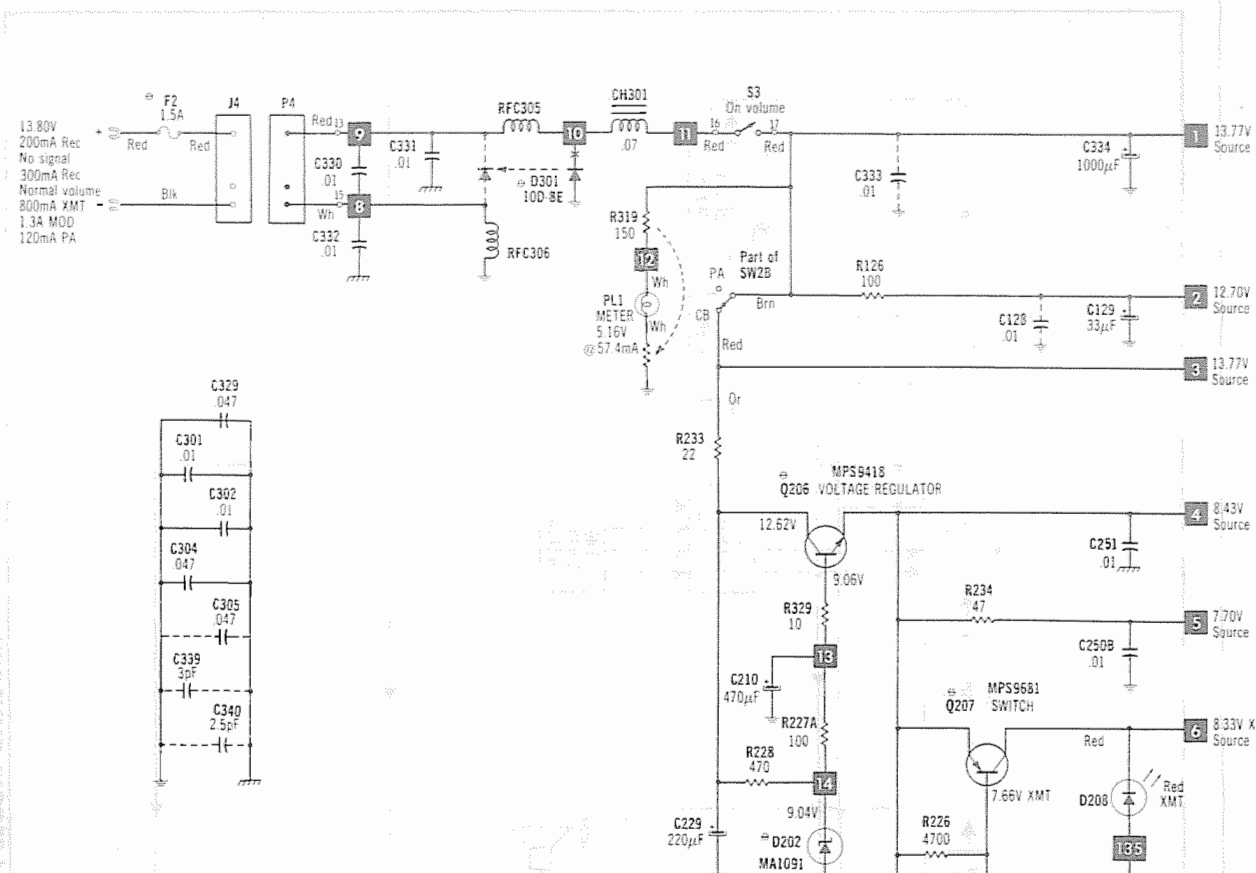
122

120

124

123

108



- Circuitry not used in some versions.
- - - Circuitry used in some versions.
- * Nominal value
- ⊥ Ground
- ⏏ Chassis
- ⊕ See parts list
- ↔ Common tie point
- Signal path
- ↖ Voltage path

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

A PHOTOFACT STANDARD NOTATION SCHEMATIC

WITH **CIRCUITRACE**

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POWER SUPPLY SCHEMATIC

MAIN CB SCHE