



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 3-5813B

MANUFACTURER'S SPECIFICATIONS

SPECIFICATIONS:

CHANNELS: 40 channels, PLL digital logic synthesizer circuitry

POWER REQUIREMENT: Consumption: 25 watts; current drain: 1.8 amps (100% mod.) at 13.8-volt DC

POWER SUPPLY: 12 volts DC nominal (positive or negative ground)

SEMICONDUCTORS: Integrated circuits, transistors and diodes

OPERATING TEMPERATURE RANGE: -30 to +50°C

MICROPHONE: Dynamic with push-to-talk switch, 500-ohm

BUILT-IN SPEAKER: 8 ohms impedance, 77mm (3 inches) in size

CONTROLS: Volume with ON/OFF switch, squelch control, R.F. Gain control, channel selector switch, automatic noise limiter switch, CB/PA control.

CONNECTORS: External speaker jack 3.5mm (8 ohms impedance), antenna receptacle to match PL-259 coax plug (50 ohms impedance), 12-volt DC power jack (polarized type), PA Speaker Jack 3.5mm (8 ohms impedance)

CIRCUIT PROTECTION: Prevents transistor burn-out when transmitting without antenna (5-minute limit); 2-amp fuse in DC power cord

RECEIVER

SENSITIVITY: 10 db (S+N)/N: Less than 1.0 uv.

FREQUENCY COVERAGE: 26.965 to 27.405 MHz

ADJACENT CHANNEL SELECTIVITY: Better than 40 db

AUDIO OUTPUT POWER (power to speaker): @ 10% DIST., better than 3 watts

SPURIOUS REJECTION: Better than 50 db

IF FREQUENCIES: 455 kHz, 10.695 MHz.

SQUELCH RANGE (SENSITIVITY): 0.5 to 2000 uv nominal

IMAGE REJECTION RATIO: Better than 40 db

TRANSMITTER

FREQUENCY RESPONSE: 400 Hz to 2.5 KHz

FREQUENCY COVERAGE: 26.965 to 27.405 MHz

TRANSMIT POWER OUTPUT [RF (radio frequency) power to antenna]: 4 watts maximum as limited by FCC Regulations at 13.8 volts DC nominal between 3.5 and 4 watts

MODULATION: Capable of 100%; factory pre-set limit 85-100%

FREQUENCY TOLERANCE: Better than $\pm .004\%$ MAX.

Courtesy of the Manufacturer

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

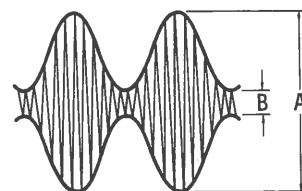
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GENERAL ELECTRIC MODELS 3-5804D/-5813B

ALIGNMENT INSTRUCTIONS

CAUTION: Use isolation transformer or observe polarity when connecting test equipment.
 Allow a 15-minute warm-up period.
 Adjustments made with 13.8 volt DC input.
 Connect low sides of test equipment to ground unless specified otherwise.
 Connect 50-ohm dummy load or antenna before keying transmitter.
 Connect microphone.

Suggested Alignment Tools: GC ELECTRONICS
 L1, L2, T1 thru T6..... 9440
 L7, L11, L12..... 9300, 9302, 9304
 T8, T10, L14..... 5000, 5009, 8276, 8728, 8728A
 CT1..... 5000, 8276



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

FIGURE 1

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of frequency counter to TP1 (Q10 base).	Ch. 19	CT1	Adjust for 10.240MHz $\pm$ 50Hz.
Input of oscilloscope to TP2 (T1 secondary).	Ch. 19	T1	Adjust for maximum RF.
Input of DC meter to TP8.	Ch. 1	L1	Adjust for 3.60 volts $\pm$.1 volt. Check for approx. 1.90 volts on Channel 40.
Input of frequency counter to TP3 (IC1 pin 2).	Ch. 1		Check for 3.300MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of oscilloscope to TP4 (T2 secondary).	Ch. 19	L2,T2	Adjust for maximum RF.
Input of frequency counter to TP4 (T2 secondary).	Ch. 1		Check for 37.660MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TP5 (Q2 emitter).	Ch. 19, XMT		Check for 10.695MHz.
Input of frequency counter to TP6 (IC3 pin 9).	Ch. 1, XMT		Check for 26.965MHz. Check all channels. (See Truth Chart for correct frequencies.)

RECEIVER ALIGNMENT

Connect an AC VTVM or AF wattmeter across speaker voice coil.
 Adjust volume control to obtain a suitable indication.
 Set generator output low enough to prevent AGC limiting.
 RF Gain Maximum, Squelch MINIMUM, ANL Off.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TP1 (Q10 base). 455kHz, 1000Hz @ 30% modulation.	Ch. 19	T10,T8	Adjust for maximum RF.
Output of signal generator thru .01uF to antenna input. 27.185MHz, 1000Hz @ 30% modulation.	Ch. 19	L14,T6,T5	Adjust for maximum output. Readjust T8 and T10 for maximum.

RECEIVER ADJUSTMENTS

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.
RF Gain Maximum, ANL Off.

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Output 500uV.	Ch. 19 Squelch Maximum	RV1	SQUELCH RANGE Adjust so that squelch just breaks.
Output of signal generator thru .01uF to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Output 100uV.	Ch. 19	RV3	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	TRANSCIVER	ADJUST	REMARKS
Input of RF wattmeter to antenna input.	Ch. 19	T3,T4	Adjust for maximum RF output.
Input of RF wattmeter to antenna input.	Ch. 19	L7,L11,L12	Adjust for 4.0 watts RF output maximum.

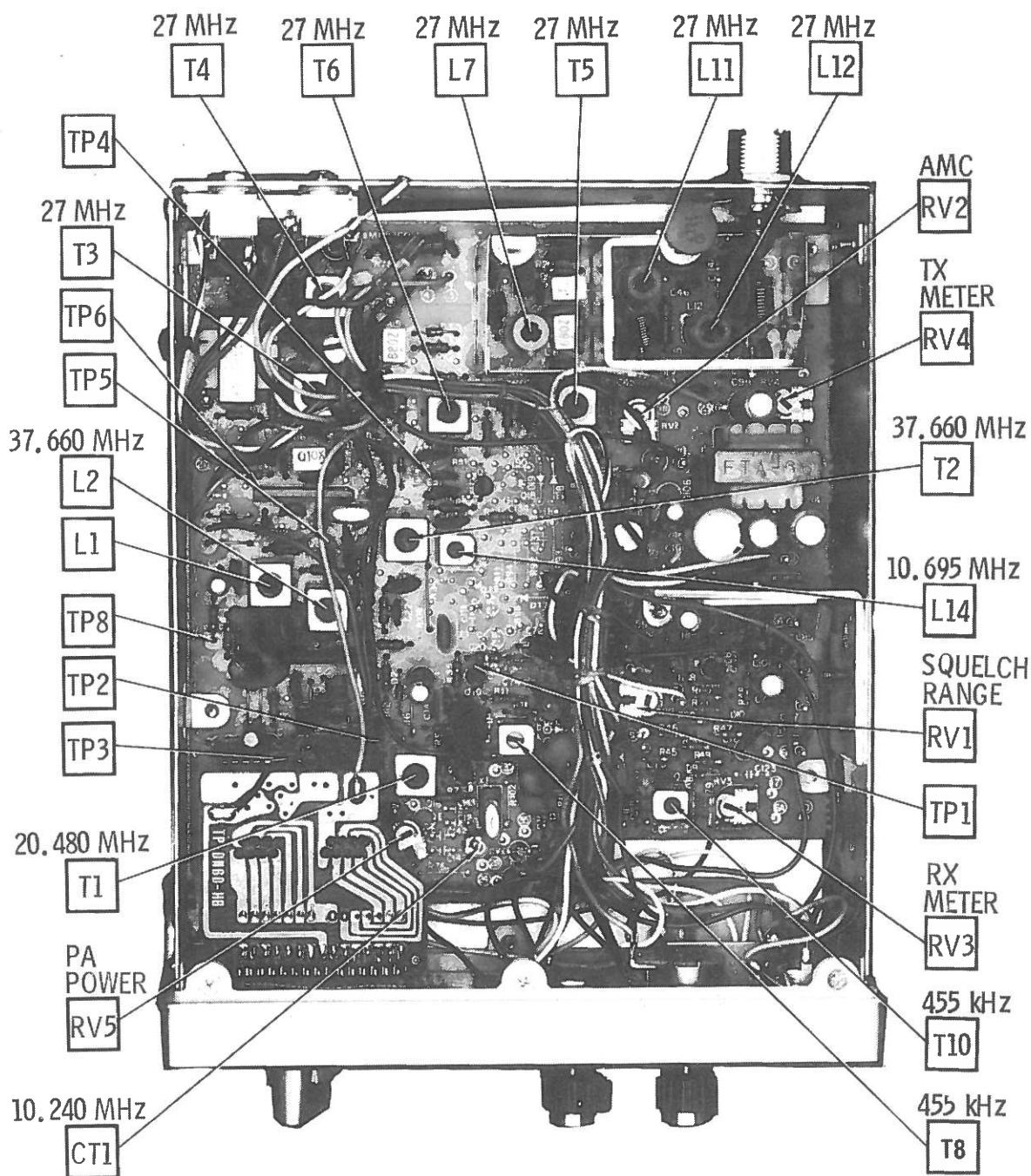
TRANSMITTER ADJUSTMENTS

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.

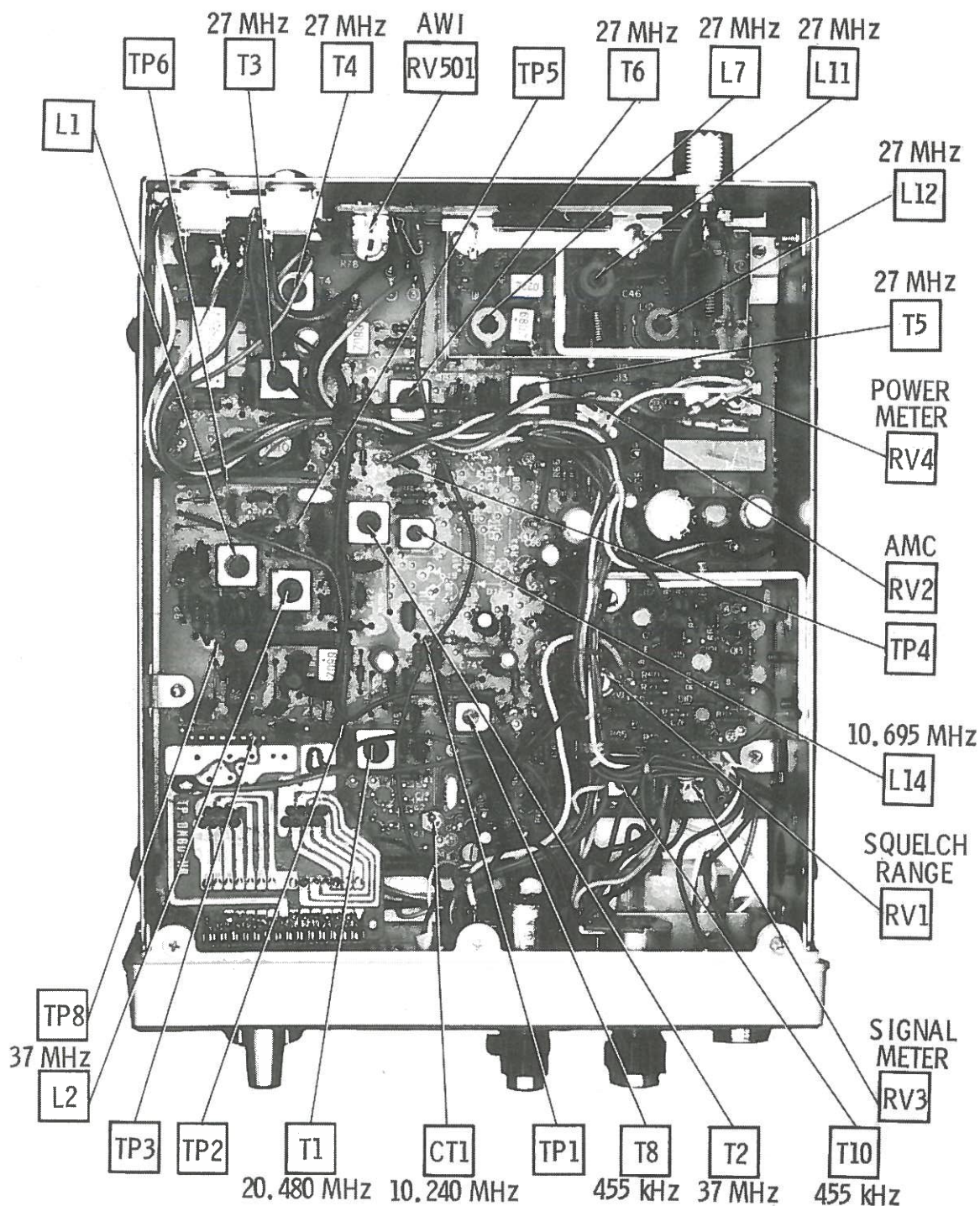
TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Input of oscilloscope or modulation meter to antenna input. Inject a 1000Hz, 8mV signal at mic input.	Ch. 19	RV2	AMC Adjust for 90% modulation maximum. See Figure 1.
Input of RF wattmeter to antenna input.	Ch. 19	RV4	POWER METER Adjust so that power meter agrees with RF wattmeter.
Connect a 250 ohm, non-inductive resistor to antenna input.	Ch. 19	*RV501	AWI Adjust so that AWI light just turns on.
Inject a 1000Hz, 8mV signal at mic input. Input of AC VTVM or AF wattmeter across PA speaker.	XMT CB/PA CB	**RV5	PA POWER Adjust for 6.30 volts RMS (5 watts) audio output.

* Used Model 3-5813B only.

** Used Model 3-5804D only.



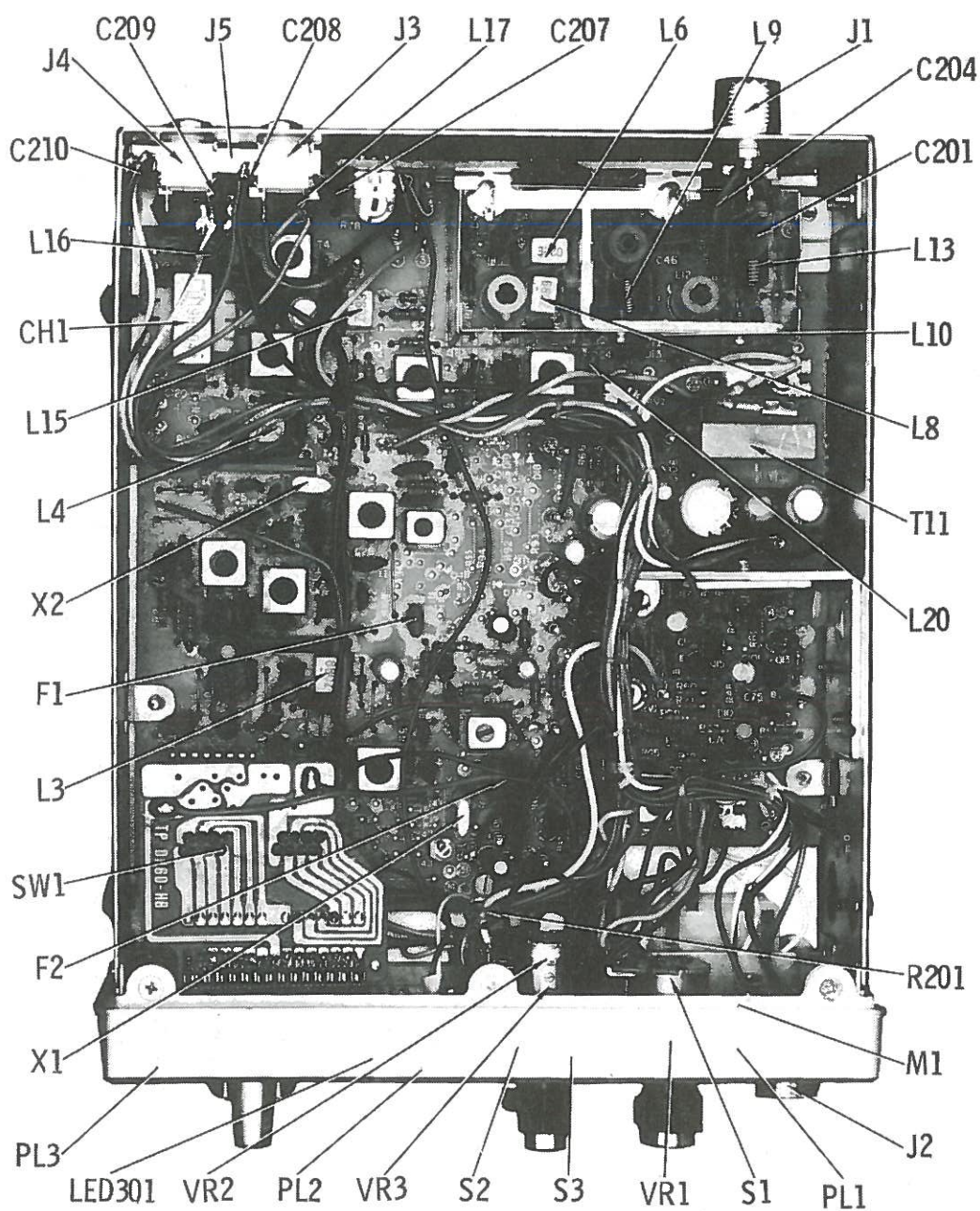
CH. BOTTOM (MODEL 3-5804D)



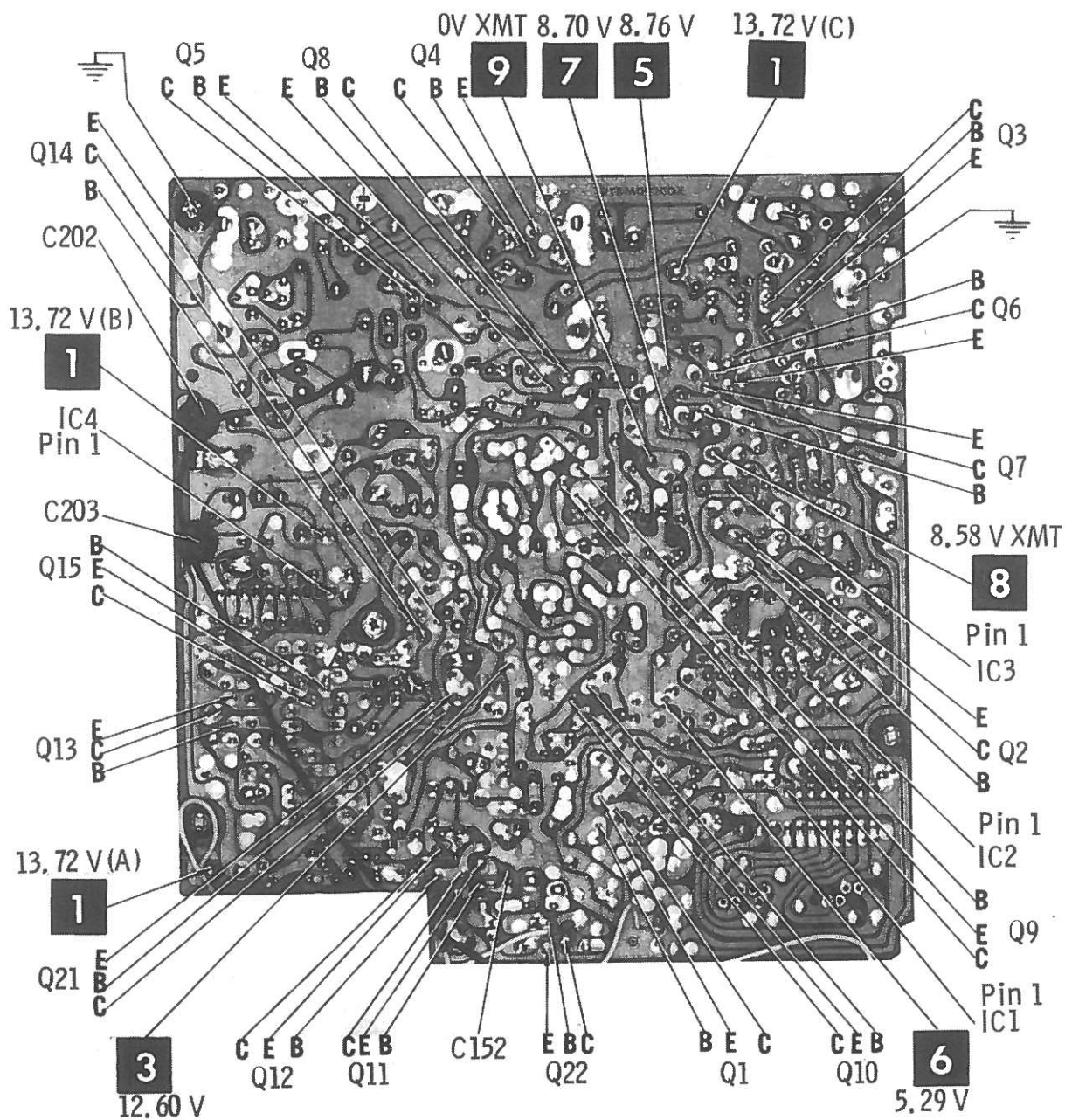
CH. BOTTOM (MODEL 3-5813B)

TRUTH CHART

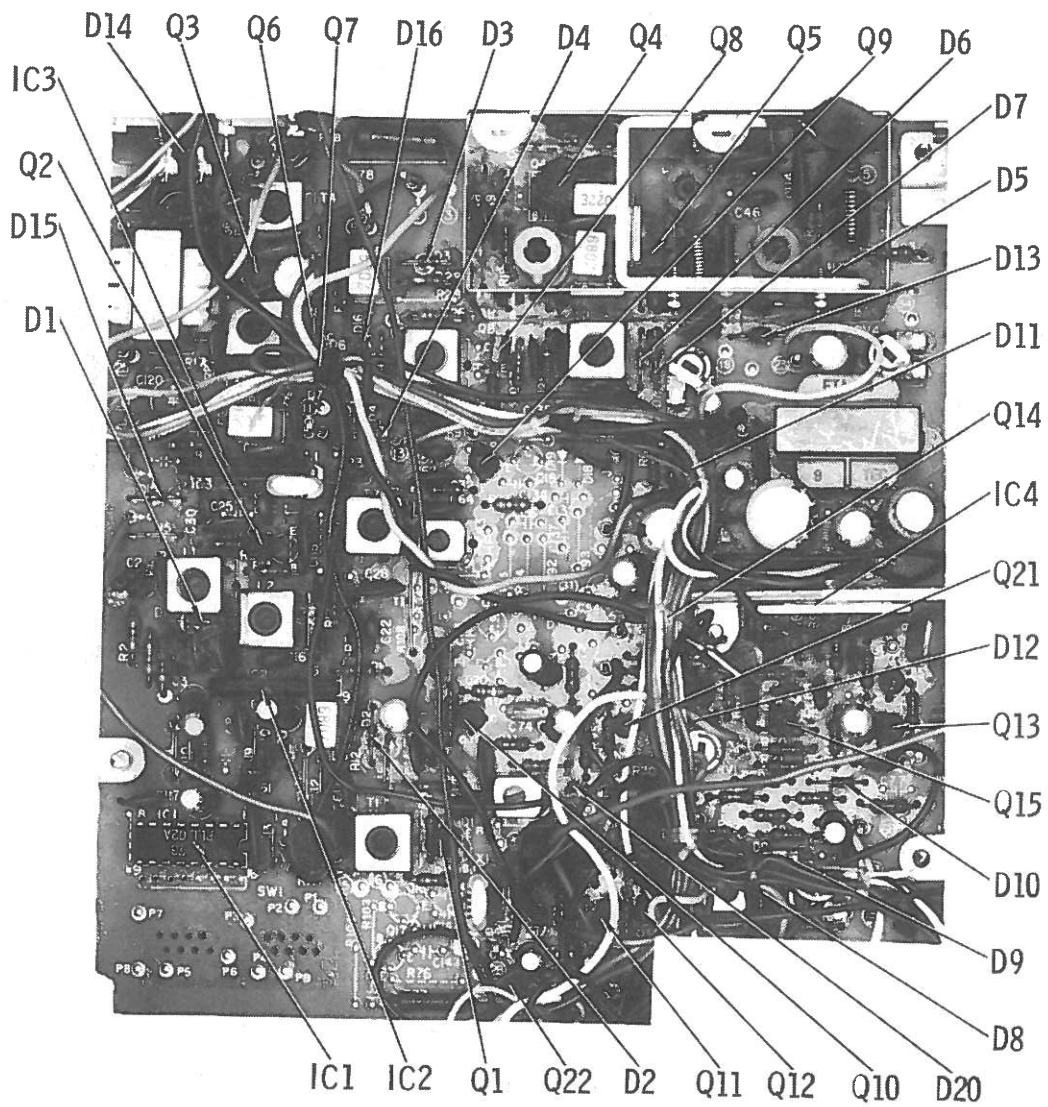
1 = 5.95 Volts 0 = 0 Volts PROGRAM DIVIDER										DIVIDER INPUT IN MHz AT TP3	REC SYNTH OUTPUT IN MHz AT TP4	XMT SYNTH OUTPUT IN MHz AT TP6
PINS												
	9	10	11	12	13	14	15					
1	1	0	0	1	0	1	0	3.300	37.660	26.965		
2	1	0	0	1	0	0	1	3.290	37.670	26.975		
3	1	0	0	1	0	0	0	3.280	37.680	26.985		
4	1	0	0	0	1	1	0	3.260	37.700	27.005		
5	1	0	0	0	1	0	1	3.250	37.710	27.015		
6	1	0	0	0	1	0	0	3.240	37.720	27.025		
7	1	0	0	0	0	1	1	3.230	37.730	27.035		
8	1	0	0	0	0	0	1	3.210	37.750	27.055		
9	1	0	0	0	0	0	0	3.200	37.760	27.065		
10	0	1	1	1	1	1	1	3.190	37.770	27.075		
11	0	1	1	1	1	1	0	3.180	37.780	27.085		
12	0	1	1	1	1	0	0	3.160	37.800	27.105		
13	0	1	1	1	0	1	1	3.150	37.810	27.115		
14	0	1	1	1	0	1	0	3.140	37.820	27.125		
15	0	1	1	1	0	0	1	3.130	37.830	27.135		
16	0	1	1	0	1	1	1	3.110	37.850	27.155		
17	0	1	1	0	1	1	0	3.100	37.860	27.165		
18	0	1	1	0	1	0	1	3.090	37.870	27.175		
19	0	1	1	0	1	0	0	3.080	37.880	27.185		
20	0	1	1	0	0	1	0	3.060	37.900	27.205		
21	0	1	1	0	0	0	1	3.050	37.910	27.215		
22	0	1	1	0	0	0	0	3.040	37.920	27.225		
23	0	1	0	1	1	0	1	3.010	37.950	27.255		
24	0	1	0	1	1	1	1	3.030	37.930	27.235		
25	0	1	0	1	1	1	0	3.020	37.940	27.245		
26	0	1	0	1	1	0	0	3.000	37.960	27.265		
27	0	1	0	1	0	1	1	2.990	37.970	27.275		
28	0	1	0	1	0	1	0	2.980	37.980	27.285		
29	0	1	0	1	0	0	1	2.970	37.990	27.295		
30	0	1	0	1	0	0	0	2.960	38.000	27.305		
31	0	1	0	0	1	1	1	2.950	38.010	27.315		
32	0	1	0	0	1	1	0	2.940	38.020	27.325		
33	0	1	0	0	1	0	1	2.930	38.030	27.335		
34	0	1	0	0	1	0	0	2.920	38.040	27.345		
35	0	1	0	0	0	1	1	2.910	38.050	27.355		
36	0	1	0	0	0	1	0	2.900	38.060	27.365		
37	0	1	0	0	0	0	1	2.890	38.070	27.375		
38	0	1	0	0	0	0	0	2.880	38.080	27.385		
39	0	0	1	1	1	1	1	2.870	38.090	27.395		
40	0	0	1	1	1	1	0	2.860	38.100	27.405		



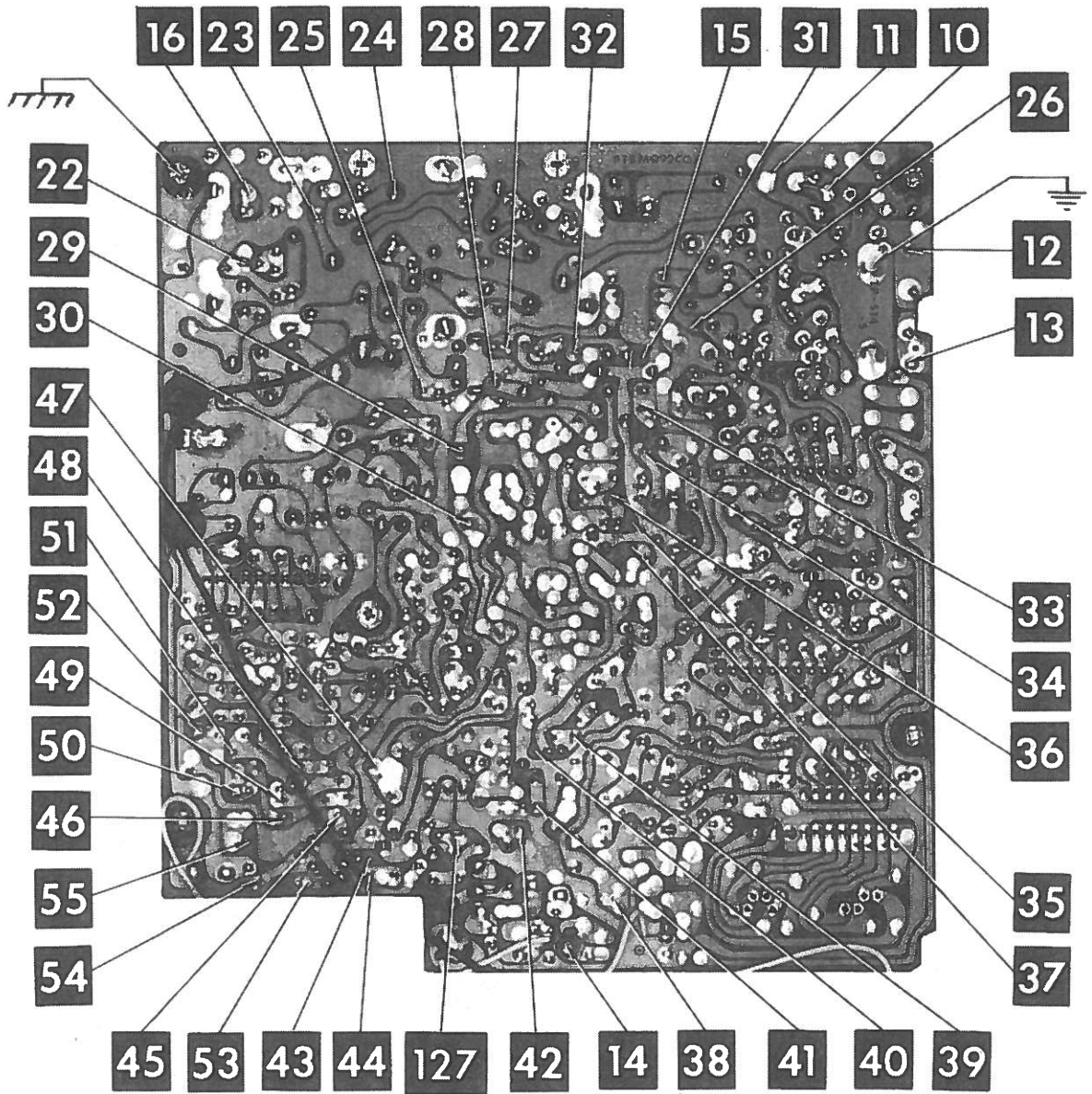
CH. BOTTOM (MODEL 3-5813B)



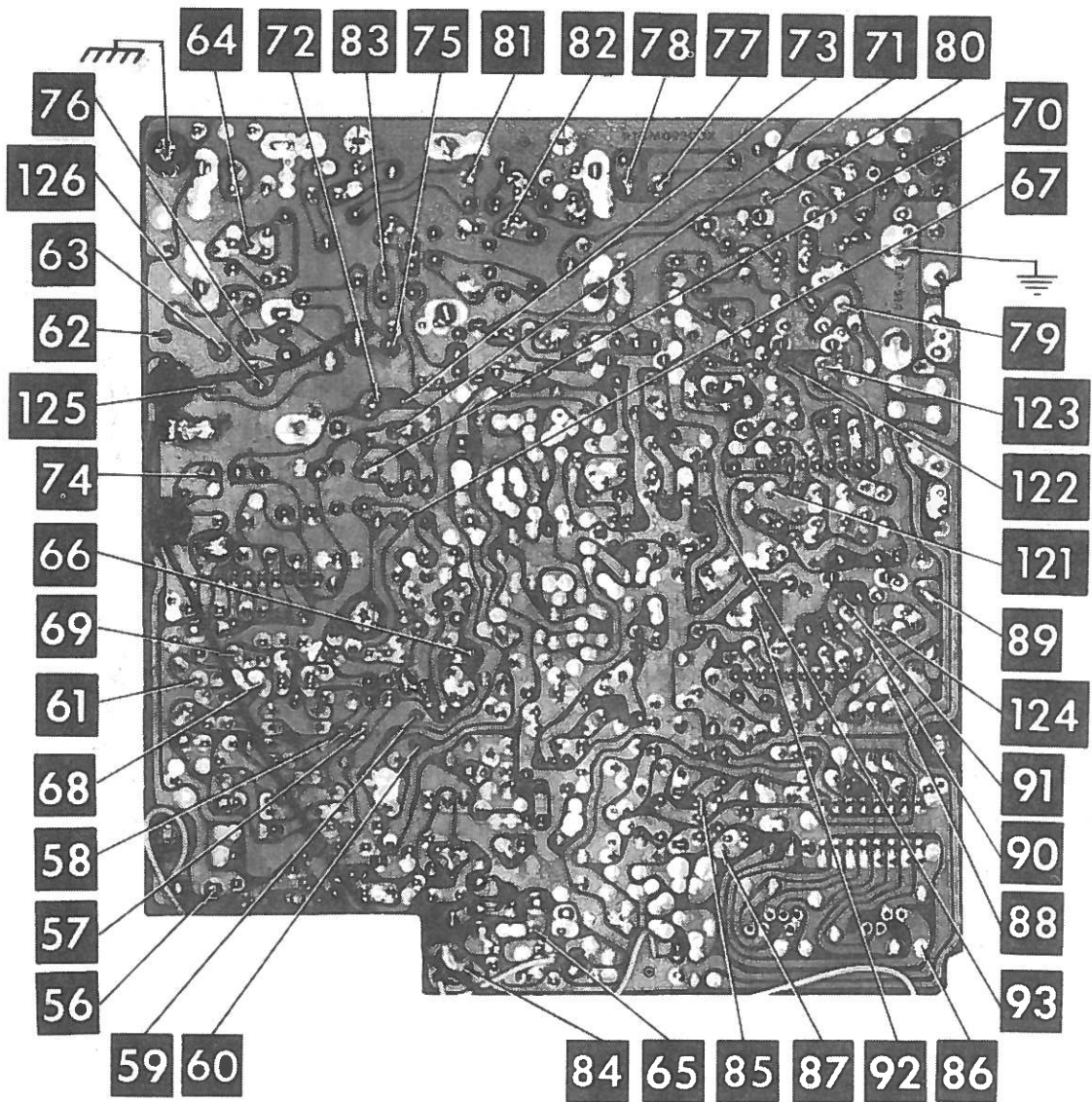
MAIN BOARD



MAIN BOARD

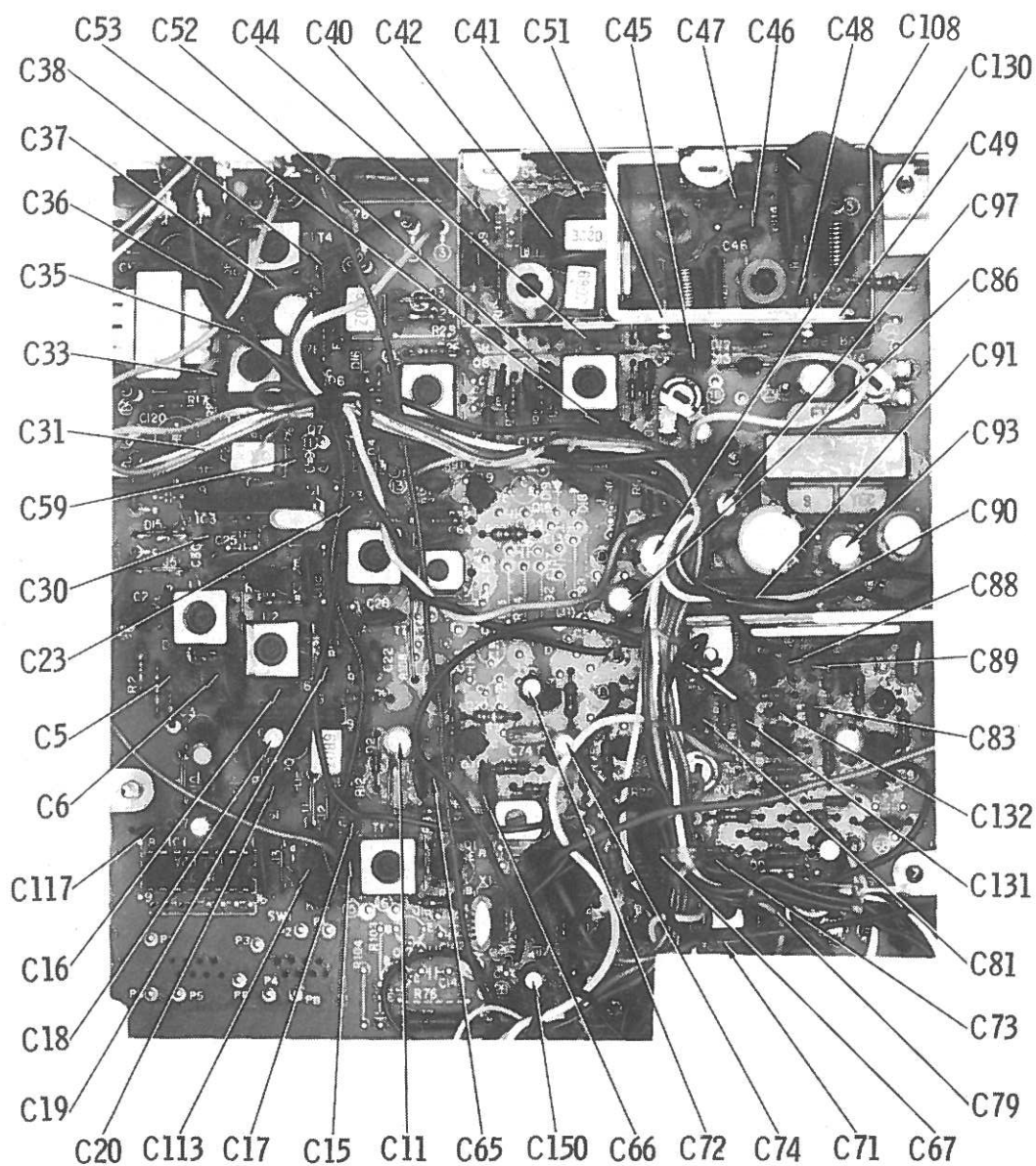


MAIN BOARD

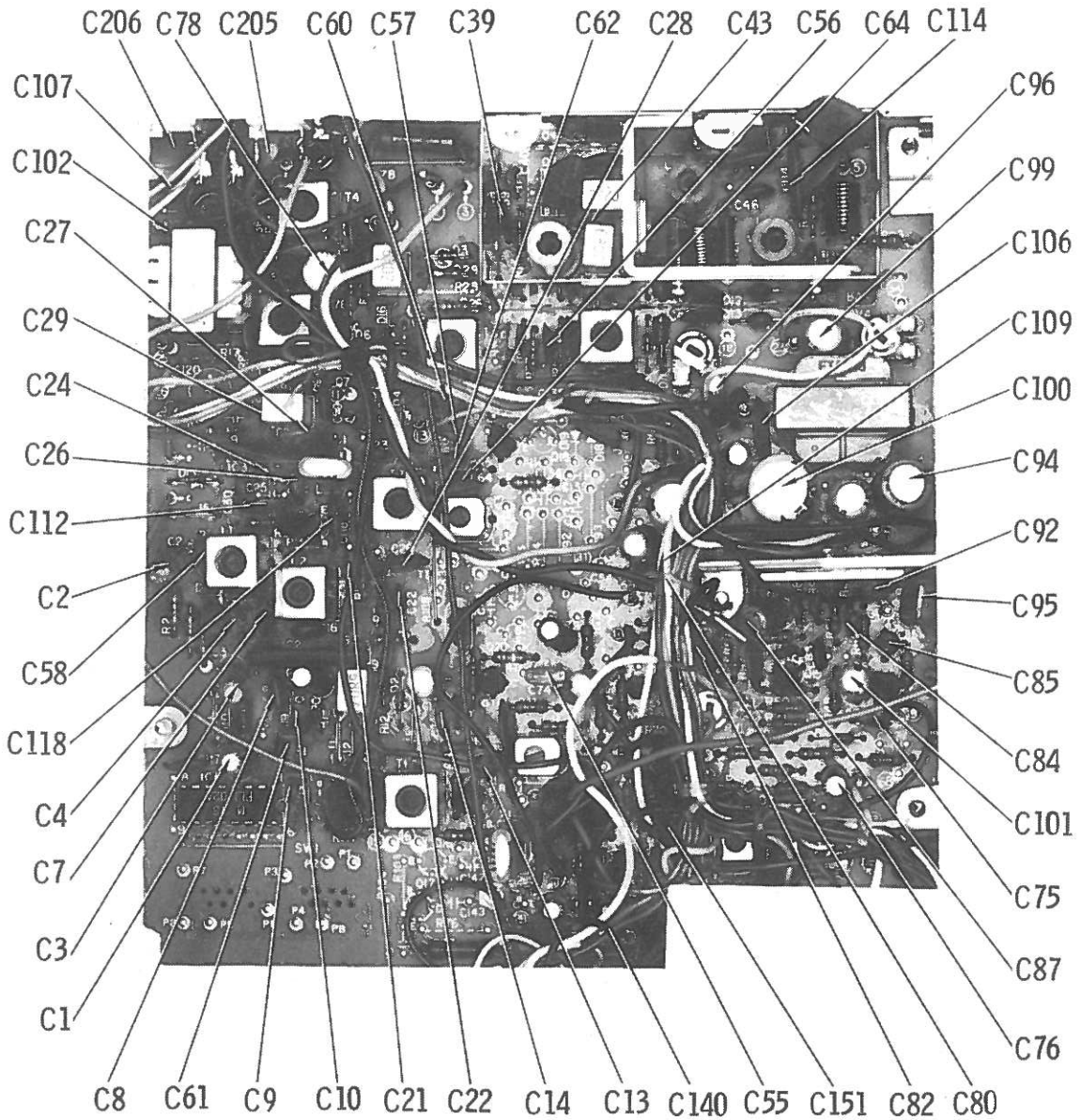


GENERAL ELECTRIC MODELS 3-5804D/-5813B

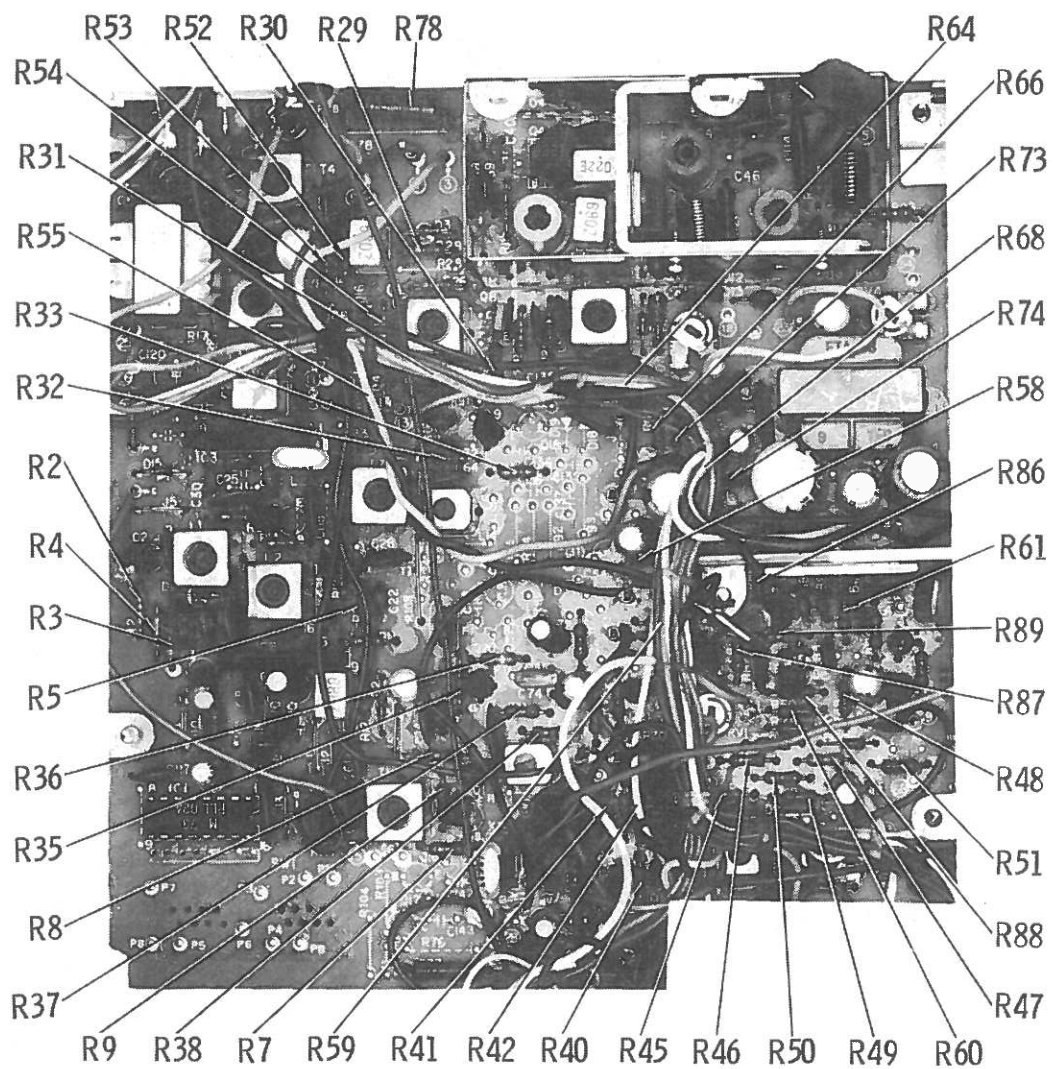
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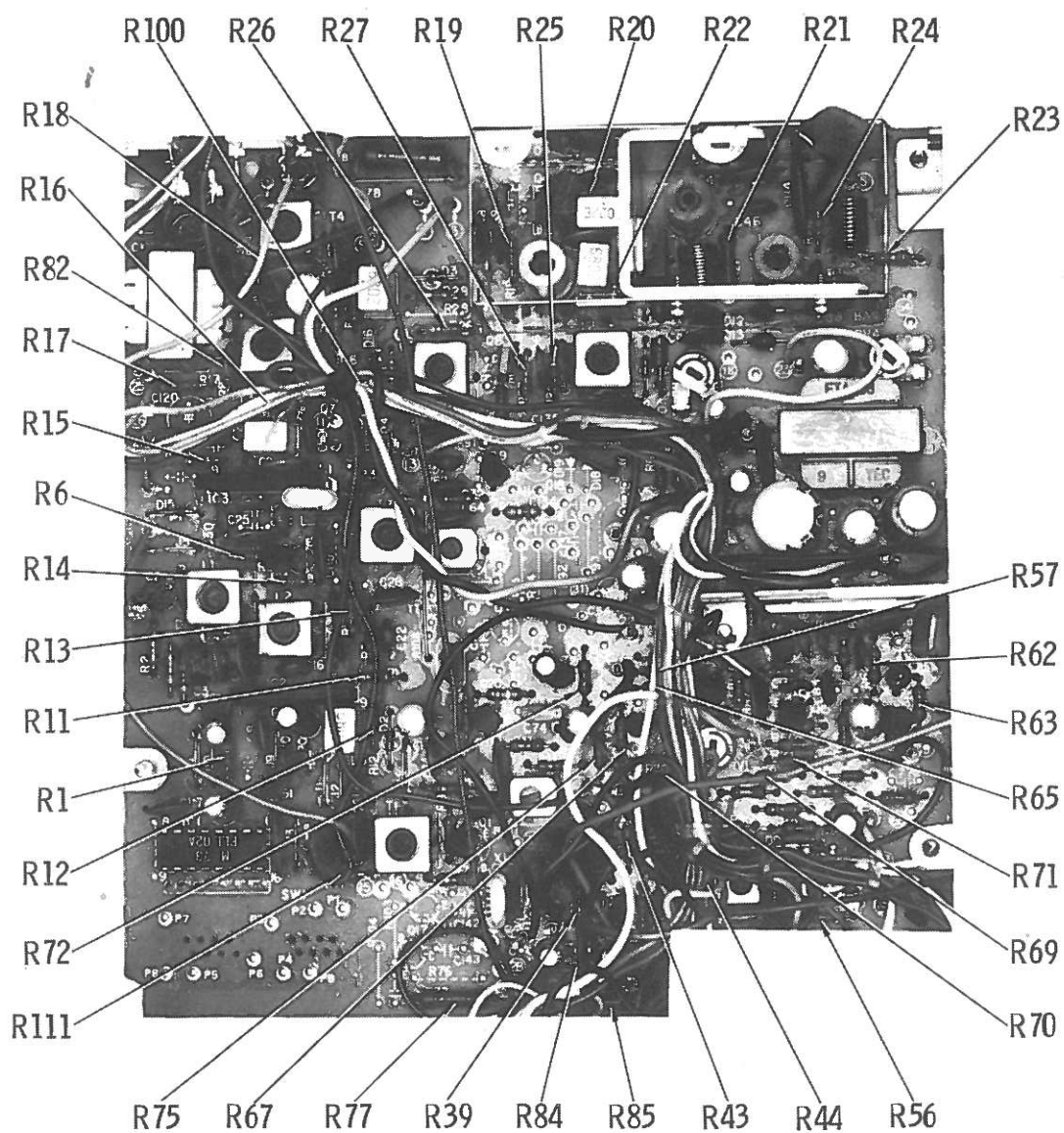
MAIN BOARD



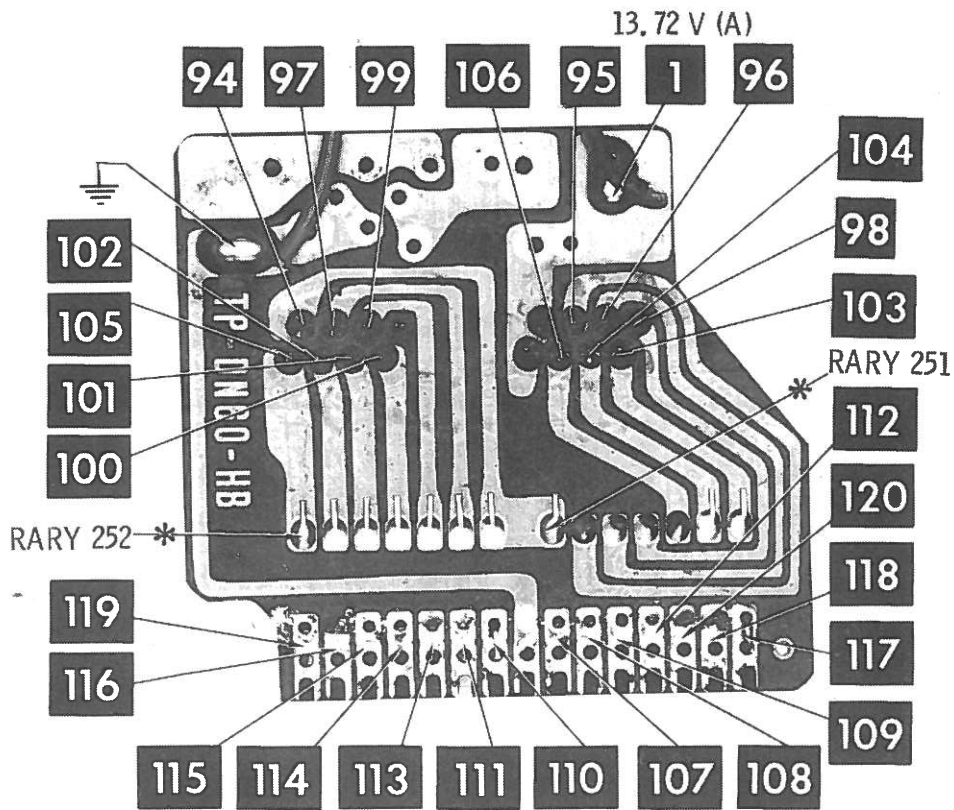
MAIN BOARD



MAIN BOARD

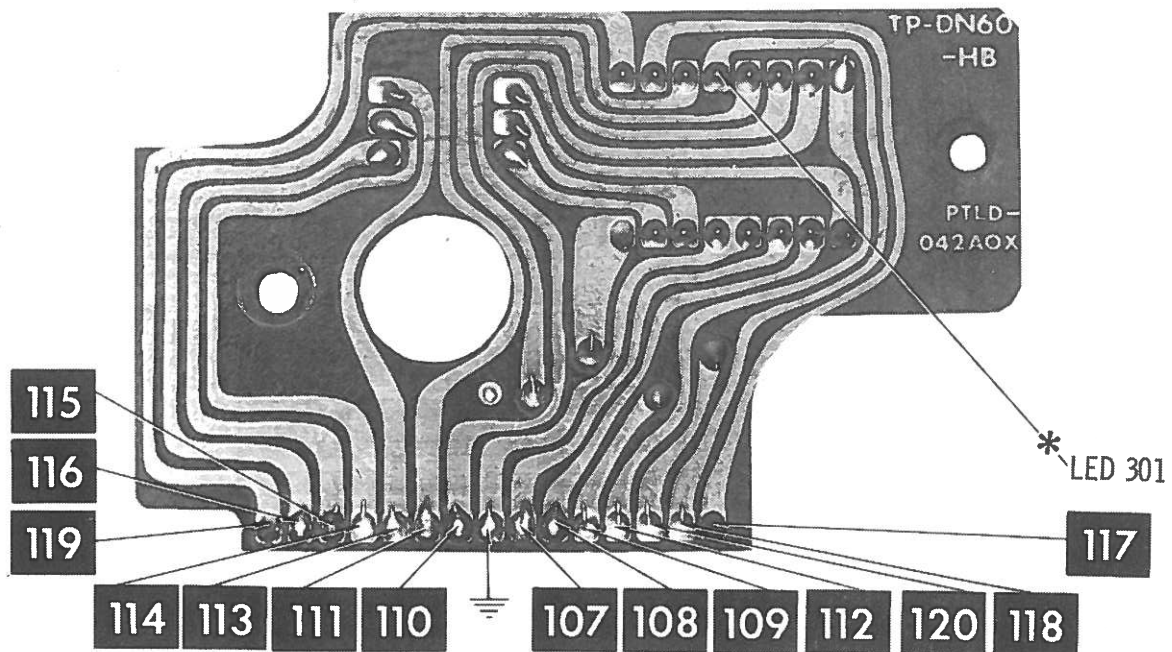


MAIN BOARD



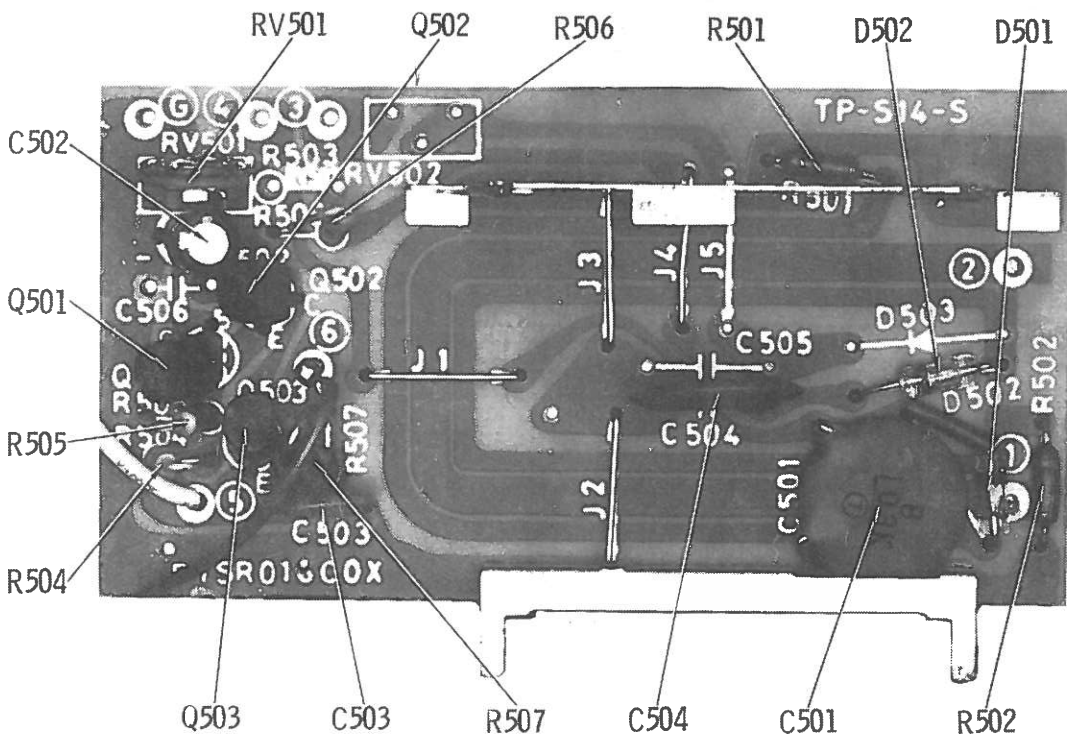
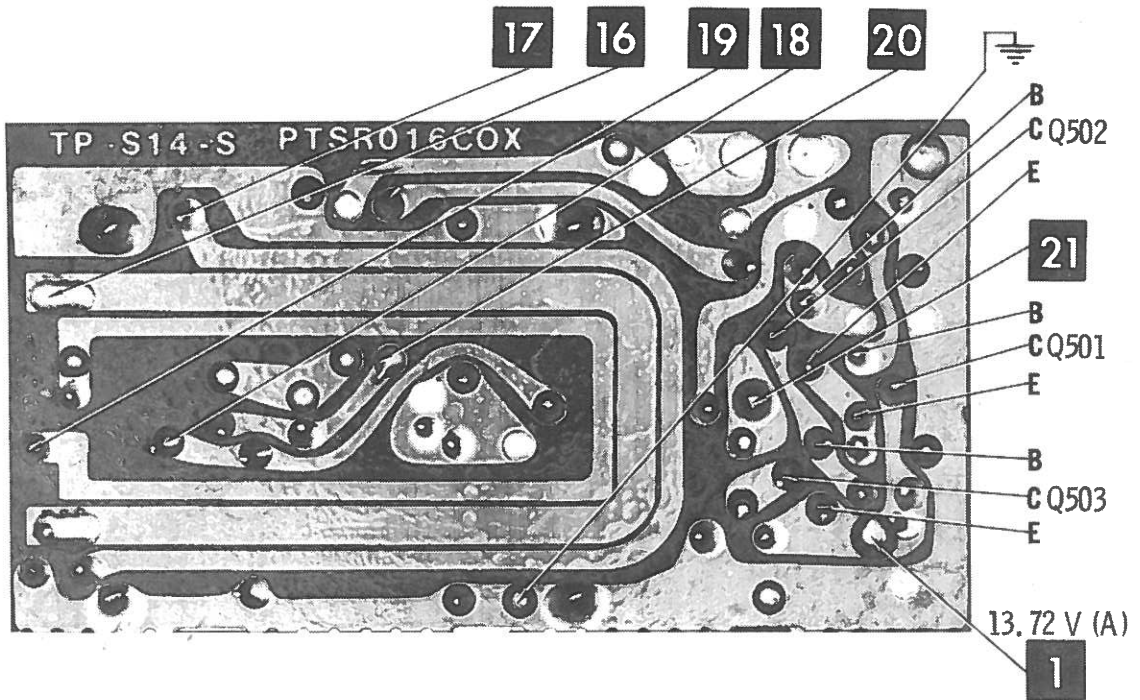
*Located on top of board

Ch. SELECTOR BOARD

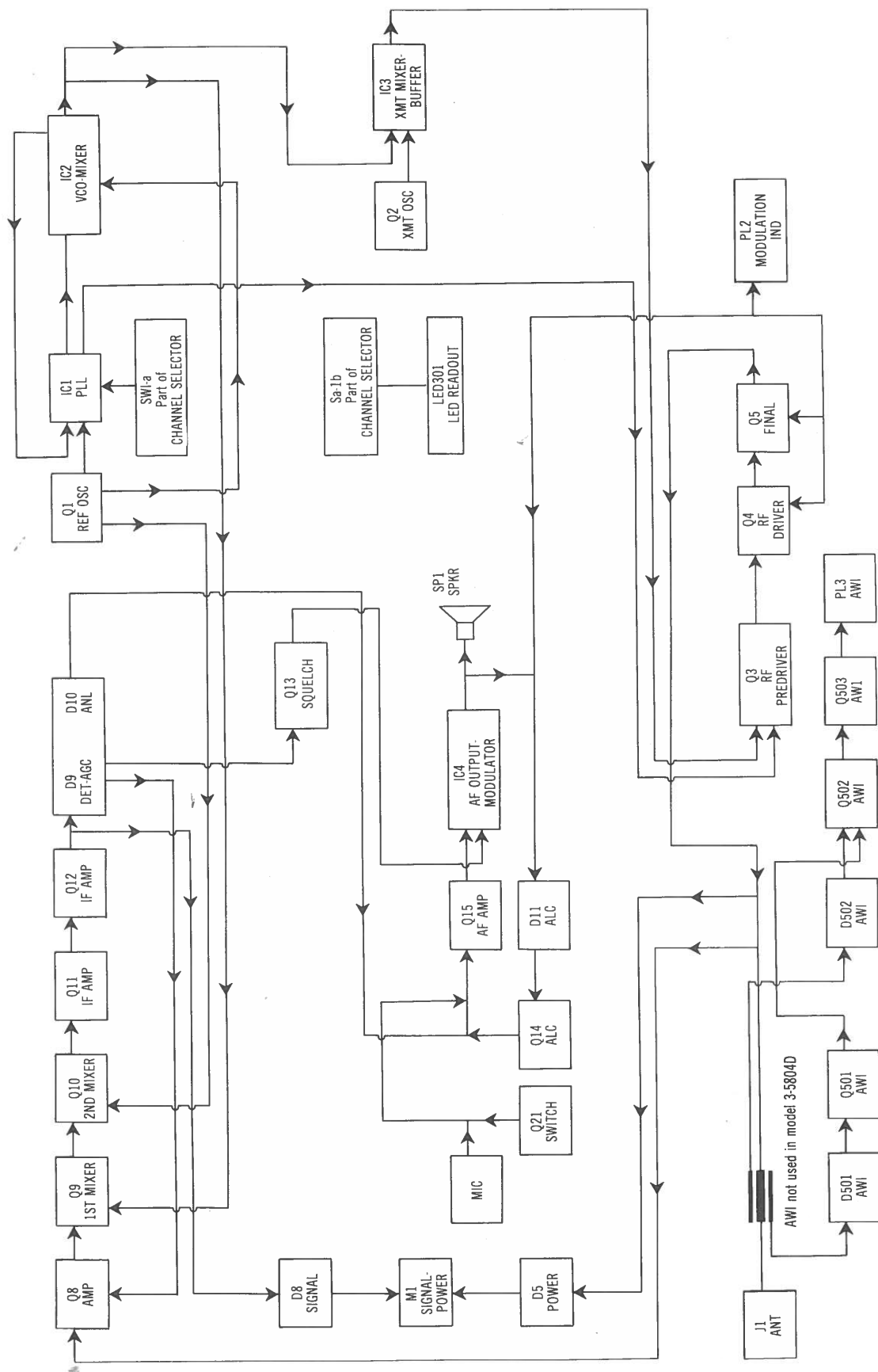


*Located on top of board

LED BOARD



AWI BOARD



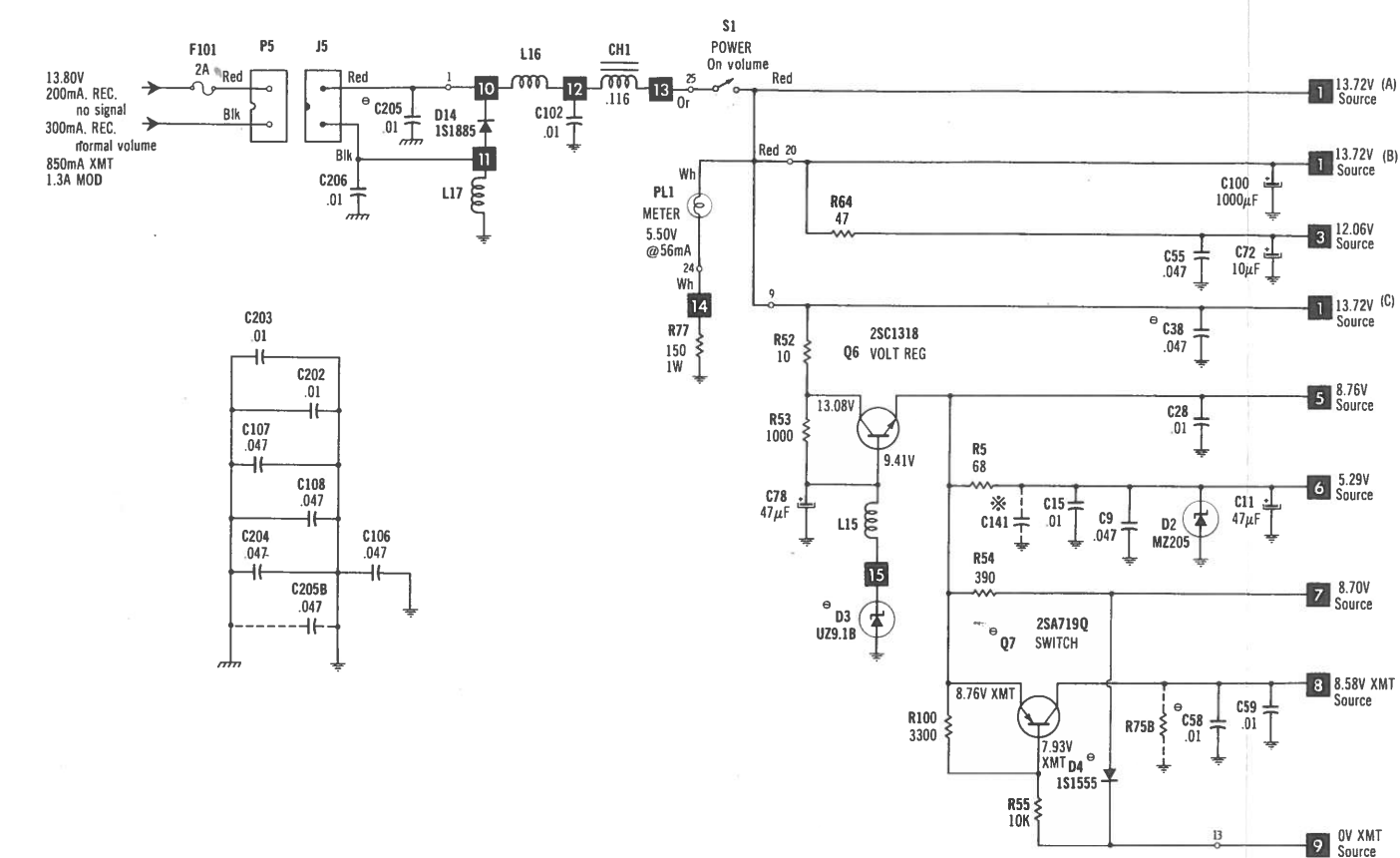
BLOCK DIAGRAM

— Circuitry not used in some versions
 --- Circuitry used in some versions
 Chassis
 Common tie point
 Signal path
 Voltage path
 See parts list
 Nominal value
 Ground
 Measurements made in Channel 1 with switching as shown 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.
 Arrow at control indicates direction of advance.
 Terminal identification may not be found on unit.
 Resistors are 1/2W or less, 5% unless noted.
 Value in () used in some versions.

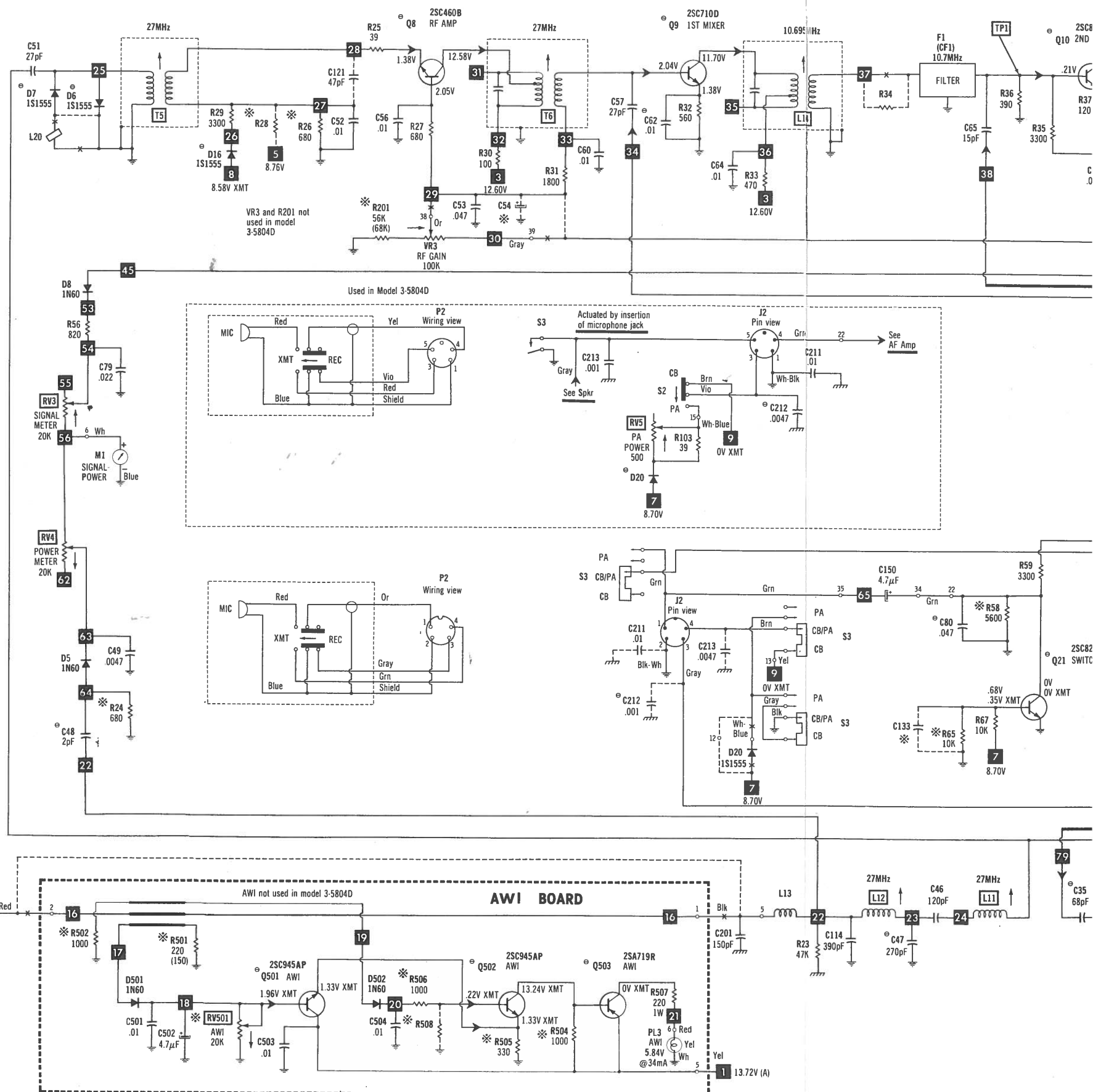
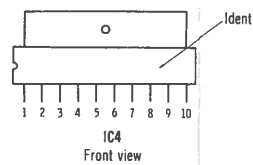
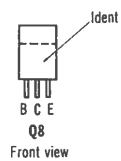
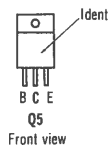
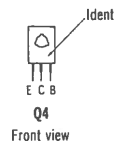
A PHOTOFAC STANDARD NOTATION SCHEMATIC

WITH CIRCUITRACE

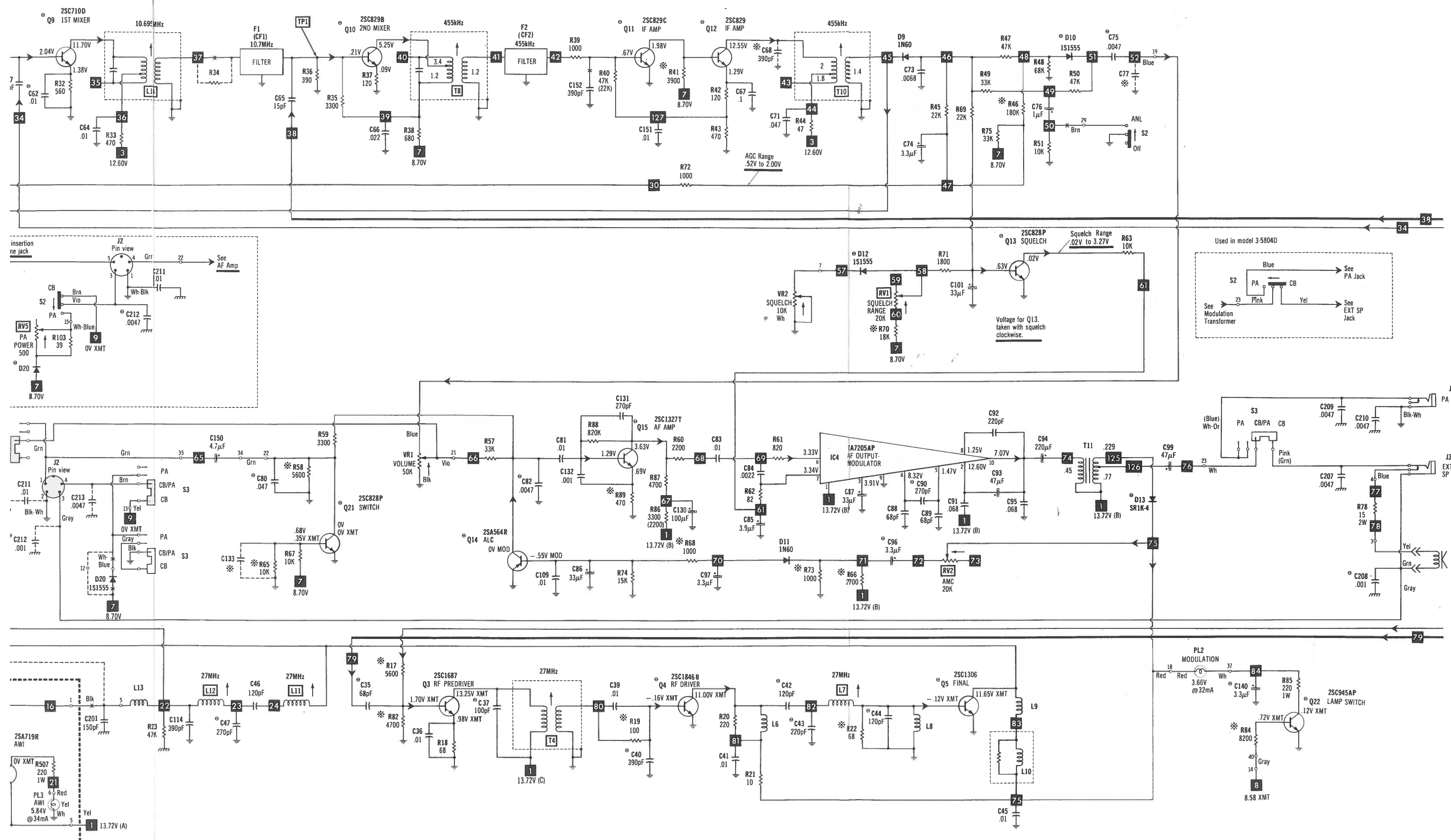
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Terminal Guides

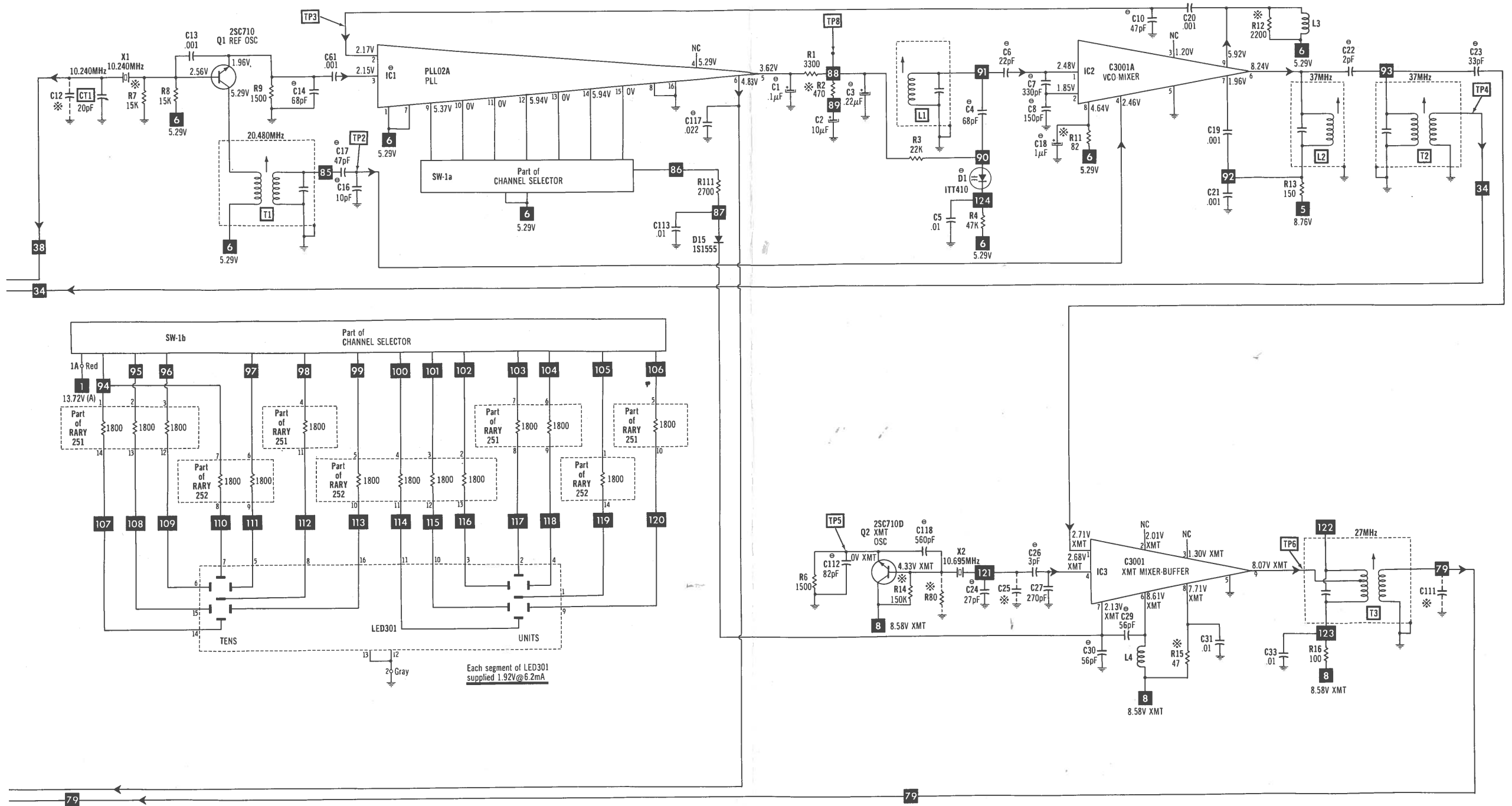


MAIN SCHEMATIC



MAIN SCHEMATIC

GENERAL ELECTRIC MODELS 3-5804D/-5813B



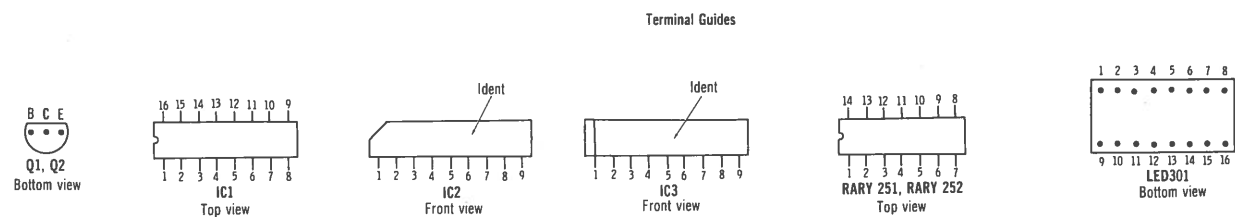
- Circuitry not used in some versions
- - - Circuitry used in some versions
- Chassis
- Common tie point
- Signal path
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- Value in () used in some versions.

A PHOTOFAC STANDARD NOTATION SCHEMATIC

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PLL 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)	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')

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFG. 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.
D1	ITT410	EA16X106			HEPR2502	REN 612			ECG612			103-176
	BB122				HEPR2502	REN 612			ECG612			103-176
	MV201				HEPR2502	REN 612			ECG612			103-176
D2	MZ205	EA16X136	GEZD-5.0						ECG135	TM135	WEP1103	103-29006
D3	UZ9.1B	EA16X314	GEZD-9.1	ZB9.1A	HEPZ0412	REN 139	SK3060	RT-240	ECG139	TM139/**	WEP1109	103-272
	RD9.1E		GE-300	PTC214	HEPR0602	REN 139	SK3060	RT-240	ECG139A	TM139/**	WEP1109	103-272
D4	1S1555	RT5217	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
	SN4448		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D5	1N60	EA16X48	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-29001
D6	1S1555	RT5217	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
	SN4448		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D7	1S1555	RT5217	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
	SN4448		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D8	1N60	EA16X48	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-29001
D9	1N60	EA16X48	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-29001
D10	1S1555	RT5217	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
	SN4448		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D11	1N60	EA16X48	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-29001
D12	1S1555	RT5217	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
	SN4448		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D13	SR1K-4		GE-504A	PTC201	HEPR0052	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
	1S1555	RT5217	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D14	1S1885	RV1189	GE-504A	PTC201	HEPR0052	REN 116	SK3311	RT-213	ECG116	TM116	WEP156	212-76-02
D15	1S1555	RT5217	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D16	1S1555	RT5217	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
	SN4448		GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	TM519	WEP925	103-287
D20	1S1555	RT5217	GE-300	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG177	TM177	WEP1062	103-131
D501	1N60	EA16X48(11)	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-29001
D502	1N60	EA16X48(11)	1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	TM109/**	WEP134	103-29001
IC1	PLL02A						SK3732		ECG1233			
	PLL02						SK3732		ECG1167	TM1167	WEP2007	
IC2	C3001A	EA33X8388				REN 1192	SK3445		ECG1192			
	C3001					REN 1192	SK3445		ECG1192			
	TA7310P	EA33X8394				REN 1192	SK3445		ECG1192			
	AN103G					REN 1192	SK3445		ECG1192			
IC3	C3001					REN 1192	SK3445		ECG1192			
	TA7310P	EA33X8394				REN 1192	SK3445		ECG1192			
IC4	TA7205AP		GEIC-179	PTC780		REN 1155	SK3231	TVCM-81	ECG1155	TM1155	WEP949	
	TA7205		GEIC-179	PTC780		REN 1155	SK3231	TVCM-81	ECG1155	TM1155	WEP949	
	TA7205P	EA33X8389	GEIC-179	PTC780		REN 1155	SK3231	TVCM-81	ECG1155	TM1155	WEP949	
Q1	2SC710D	EA15X364	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A/**	WEP710	121-29000A
	2SC710		GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A/**	WEP710	121-29000A
Q2	2SC710D	EA15X364	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A/**	WEP710	121-29000A
	2SC710		GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A/**	WEP710	121-29000A
Q3	2SC1687	EA15X379	GE-20*	PTC121*	HEPS0015*	REN 123A*	SK3444	RT-107A*	ECG123A*	TM123A/**	WEP736*	121-29000A
Q4	2SC1846B		GE-336	PTC904		REN 295	SK3253		ECG295	TM295	WEP913	121-880
	2SC1846Q/R/S	EA15X383	GE-336	PTC904		REN 295	SK3253		ECG295	TM295	WEP913	121-880
	2SC1760		GE-276	PTC180		REN 306	SK3197	RT-310	ECG306	TM306	WEP771	
	2SC2074		GE-275			REN 322			ECG322	TM322	WEP771	
Q5	2SC1306	EA15X381	GE-215	PTC186		REN 235	SK3197	RT-146	ECG235	TM235/**	WEP785	121-29039
	2SC2075		GE-215	PTC186		REN 235	SK3197	RT-146	ECG235	TM235	WEP785	121-29039
	2SC1678		GE-322	PTC186		REN 235	SK3197	RT-146	ECG235	TM235	WEP785	121-29039
	2SC1974		GE-337	PTC186		REN 235	SK3197	RT-146	ECG235	TM235	WEP785	121-29039
Q6	2SC1318R		GE-210	PTC123	HEPS0015*	REN 128	SK3122	RT-302	ECG297	TM297	WEP59*	121-1007
	2SC1318		GE-210	PTC123	HEPS0015*	REN 128	SK3122	RT-302	ECG297	TM297	WEP59*	121-1007
	2SC1318Q	EA15X378	GE-210	PTC123	HEPS0015*	REN 128	SK3122	RT-302	ECG297	TM297	WEP59*	121-1007
Q7	2SA719Q	RV2355	GE-269	PTC103*	HEPS0019*	REN 290	SK3114	RT-305	ECG290	TM290/**	WEP911	121-1019
	2SA720		GE-272	PTC103*	HEPS0019*	REN 298	SK3450	RT-305	ECG298	TM298	WEP915*	121-879*
Q8	2SC460B		GE-61*	PTC136*	HEPS0014*	REN 107	SK3122	RT-134	ECG107	TM107/**	WEP460	121-522
	2SC1047		GE-60*	PTC132*	HEPS0016*	REN 229*	SK3018*	RT-107	ECG229*	TM229*	WEP63*	121-29021
	2SC710		GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A/**	WEP710	121-29000A
	2SC460	RT 6204	GE-61*	PTC136*	HEPS0014*	REN 107	SK3122	RT-134	ECG107	TM107/**	WEP460	121-522
Q9	2SC710D	EA15X364	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A/**	WEP710	121-29000A
	2SC710		GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A/**	WEP710	121-29000A
	2SC1359		GE-212	PTC121*	HEPS0014*	REN 199	SK3122	RT-308	ECG229*	TM229*	WEP66	121-29021*
Q10	2SC829B	RT 6733	GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-29021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-29021*
	2SC710		GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A/**	WEP710	121-29000A

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.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.
Q11	2SC829C	RT6733	GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-29021*
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-29021*
Q12	2SC829B	RT6733	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A*/**	WEP710	121-29000A
	2SC829		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-29021*
Q13	2SC829C	RV2354	GE-211*	PTC139*	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	TM123A*/**	WEP710	121-29000A
	2SC829C		GE-20*	PTC139*	HEPS0015*	REN 123A	SK3444	RT-308	ECG229*	TM229*/**	WEP829	121-29021*
Q14	2SA564R	RV2353	GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
	2SA564		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
Q15	2SA733	EA15X386	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC1327T		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
Q21	2SC828P	EA15X325	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC828		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
Q22	2SC945	EA15X404	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC828R		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
Q501	2SC945AP	(11)	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC828		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
Q502	2SC945A/D	RT7557 (11)	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC945AP		GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
Q503	2SC945	(11)	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SC828		GE-61*	PTC139*	HEPS0015*	REN 199	SK3444	RT-302	ECG199	TM199/**	WEP828	121-972
Q503	2SC945A/D	RT7557 (11)	GE-212	PTC121*	HEPS0015*	REN 199	SK3124	RT-107A	ECG199	TM199/**	WEP1945	121-972
	2SA719R		GE-269	PTC103*	HEPS0019*	REN 290	SK3114	RT-305	ECG290	TM290/**	WEP911	121-1019
Q503	2SA719	(11)	GE-269	PTC103*	HEPS0019*	REN 290	SK3114	RT-305	ECG290	TM290/**	WEP911	121-1019
	2SA733		GE-48	PTC127	HEPS0019*	REN 294	SK3138	RT-303	ECG294	TM294/**	WEP916	121-952
Q503	2SA719K	RV2355 (11)	GE-269	PTC103*	HEPS0019*	REN 290	SK3114	RT-305	ECG290	TM290/**	WEP911	121-1019

* Lead configuration may vary from original.

/** Also available as exact type replacement.

(11) Used in model 3-5813B.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C1	.1 50V	EA31X241	PC10-25	TDC104M050EL	QDT1-2	SD50-R109
C2	10 16V	EA31X246		VTT10825	QV1-41	EV-1222
C3	.22 50V	EA31X271	PC50-16	TDC224M050EL	QDT1-10	SD50-R229
C11	47 16V	EA31X214		VTT47D16	QV1-73	EV-1226
C18	1 50V	EA31X204	PC1-50	VTT1A50	QV1-11	EV-1615
C72	10 16V	EA31X246	PC10-25	VTT10825	QV1-41	EV-1222
C74	3.3 25V	EA2552	PC5-50	VTT3R3A50	QV1-23	EV-1318
C76	1 50V	EA31X204	PC1-50	VTT1A50	QV1-11	EV-1615
C78	47 16V	EA31X214	PC50-16	VTT47D16	QV1-73	EV-1226
C85	3.9 25V	EA31X242	PC30-25	VTT33B10	QV1-61	SD35-3R99
C86	33 6.3V	RT5269				EV-1125
C87	33 6.3V	RT5269	PC30-25	VTT33B10	QV1-61	EV-1125
C93	47 16V	EA31X214	PC50-16	VTT47D16	QV1-73	EV-1226
C94	220 16V	RT5047	PC250-25	VTT220H16	QV1-117	EV-1240
C96	3.3 25V	EA2552	PC5-50	VTT3R3A50	QV1-23	EV-1318
C97	3.3 25V	EA2552	PC5-50	VTT3R3A50	QV1-23	EV-1318
C99	47 25V	RT4632	PC50-25	VTT47E25	QV1-75	EV-1326
C100	1000 16V	EA31X200	PC1000-16	VTT1000L16	QV1-183	EV-1260
C101	33 6.3V	RT5269	PC30-25	VTT33B10	QV1-61	EV-1125
C130	100 16V	EA31X269	PC100-16	VTT100F16	QV1-95	EV-1230
C140	3.3 50V	EA31X239	PC5-50	VTT3R3A50	QV1-25	EV-1618
C150	4.7 25V	EA31X211	PC5-50	VTT4R7B50	QV1-27	EV-1319
C502	4.7 25V	EA31X211	PC5-50	VTT4R7B50	QV1-27	EV-1319

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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 10% 50V	EA118X173	UK50-103		* MAG5011		10TCP-Q68
C5	.01 50V				*		
C6	22 N150 50V	EA18X155		GP330	GP333		10TCP-Q22
C7	330 10% 50V		DD-331		CN0315		10TS-T33
C8	150 50V		DTZ-150		MAG2515		10TCC-T15
C9	.047 50V		UK25-503		CN0447		HY-735
C10	47 50V		DTZ-47	NP047	EWFA1210	QFT2-1	10TCC-Q47
C13	.001 10% 50V			DPMS6D1	*		1FT-D10
C14	68 N150 10% 50V	EA118X173			*		10TCP-Q68
C15	.01 N150 50V	EA18X228			*		
C16	10 50V		DTZ-10	NP010	CN0410		10TCC-Q10
C17	47 N150 50V	RT3281			*		
C19	.001 10% 50V			DPMS6D1	EWFA1210	QFT2-1	1FT-D10
C20	.001 50V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C21	.001 10% 50V			DPMS6D1	EWFA1210	QFT2-1	1FT-D10
C22	2 50V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C23	33 50V		DTZ-33	NP033	CN0433		10TCC-Q33
C24	27 N150 50V	EA18X181			*		10TCP-Q27
C26	3 50V		DTZ-3R3	NP03P3	CN0533		10TCC-V33
C27	270 10% 50V		DTZ-270				10TCC-T27
C28	.01 50V		UK50-103		MAG5011		
C29	56 50V				CN0456		10TCC-Q56
C30	56 50V				CN0456		10TCC-Q56
C31	.01 50V		UK50-103		MAG5011		
C33	.01 50V		UK50-103		MAG5011		
C35	68 N150 10% 50V	EA118X173			*		10TCP-Q68
C36	.01 50V		UK50-103		MAG5011		
C37	100 50V		DTZ-100	NP0100	CN0310	QFT2-91	10TCC-T10
C38	.047		UK50-503		MAG5015		
C39	.01 10% 50V			WMF1S1	EWFA1110		1FT-S10
C40	390 10%		DD-391	GP390	GP339		10TS-T39
C41	.01 50V		UK50-103		MAG5011		
C42	120 50V		DTZ-120		CN0312		10TCC-T12
C43	220 10% 50V		DTZ-220		MAG5011		10TCC-T22
C44	120 50V		DTZ-120		CN0312		10TCC-T12
C45	.01 50V		UK50-103		MAG5011		
C46	120 50V		DTZ-120		CN0312		10TCC-T12
C47	270 50V		DTZ-270				10TCC-T27
C48	2 50V		DTZ-2R2	NP02P2	CN0522		10TCC-V22
C49	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C51	27 50V				CN0427		10TCC-Q27
C52	.01 50V		UK50-103		MAG5011		
C53	.047 50V		UK50-503		MAG5015	QFT20171	1FT-S47
C55	.047 10% 50V			DPMS247	EWFA147		
C56	.01 10% 50V		UK50-103		MAG5011		10TCC-Q27
C57	27 50V				CN0427		
C58	.01 50V		UK50-103		MAG5011		
C59	.01 50V		UK50-103		MAG5011		
C60	.01 50V		UK50-103		MAG5011		
C61	.001 10% 50V			DPMS6D1	EWFA1210	QFT2-1	1FT-D10
C62	.01 50V		UK50-103		MAG5011		
C64	.01 50V		UK50-103		MAG5011		
C65	15 N150 50V	EA18X200			*		10TCP-Q15
C66	.022 50V		DC-253	MGP025	TA125		TG-S25
C67	.1 10% 50V			WMF05P1	EWFO5010	QFT2-215	1FT-P10
C68	390 10% 50V		DD-391	GP390	GP339		10TS-T39
C71	.047 50V		UK50-503		MAG5015		5GA-D68
C73	.0068 50V		DD-682	GP6800	GP268	QFT2-63	1FT-D47
C75	.0047 10% 50V			WMF1D47	M192P4729R8		HY-725
C79	.022 50V		UK25-223				1FT-S47
C80	.047 10% 50V			DPMS247	EWFA147	QFT2-171	1FT-S10
C81	.01 10% 50V			WMF1S1	EWFA1110	QFT2-91	5GA-D47
C82	.0047 50V		DD-472	GP4700	GP247	QFT2-91	1FT-S10
C83	.01 10% 50V			WMF1S1	EWFA1110		10TS-D22
C84	.0022				GP222		10TCP-Q68
C88	68 N150 10% 50V	EA118X173			*		10TCP-Q68
C89	68 N150 10% 50V	EA118X173			*		10TCC-T27
C90	270 50V		DTZ-270				
C91	.068 50V		UK50-683		MAG50168		10TCC-T22
C92	220 50V		DTZ-220				
C95	.068 10% 50V	EA22X24				QF1-195	1PB-S68
C102	.01 50V		UK50-103		MAG5011		
C106	.047 50V		UK50-503		MAG5015		
C107	.047 50V		UK50-503		MAG5015		
C108	.047 50V		UK50-503		MAG5015		
C109	.01 50V		UK50-503		MAG5011		
C112	82 10% N150 50V	EA18X234	UK50-103		*		10TCP-Q82

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
C113	.01 50V		UK50-103		MAG5011		
C114	390 50V		DD-391	GP390	GP339		10TS-T39
C117	.022 50V		DC-253	MGP025	TA125		TG-S25
C118	560 50V		DD-561		GP356		10TS-T56
C121	47 50V		DTZ-47	NP047	CN0447		10TCC-Q47
C131	270 10% 50V		DTZ-270				10TCC-T27
C132	.001 50V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C151	.01 50V		UK50-103		MAG5011		
C152	390 10% 50V		DD-391	GP390	GP339		10TS-T39
C201	150 50V		DD-151		GP315		10TS-T15
C202	.01 50V		UK50-103		MAG5011		
C203	.01 50V		UK50-103		MAG5011		
C205	.01 50V		UK50-103		MAG5011		
C205B	.047 50V		UK50-503		MAG5015		
C206	.01 50V		UK50-103		MAG5011		
C207	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C208	.001 50V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C209	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C210	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C211	.01 50V		UK50-103		MAG5011		
C212	.0047 50V		DD-472	GP4700	GP247		5GA-D47
C213	.001 50V		DD-102G	GP1000	GP210	QC2-81	5GA-D10
C501	.01 10% 50V		UK50-103		MAG5011		
C503	.01 50V		UK50-103		MAG5011		
C504	.01 10% 50V		UK50-103		MAG5011		
CT1		EA30X52					

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

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA			
			MFR. PART No.	CENTRALAB PART No.	MALLORY PART No.	TRW PART No.
RV1	Squelch Range	20K	EA49X332			U260R253B
RV2	AMC	2000	EA49X331			U260R252B
RV3	Signal Meter	20K	EA49X332			U260R253B
RV4	Power Meter	20K	EA49X332			U260R253B
RV5	PA Power	500	(A)			
RV501	AWI	20K	EA49X332(20)			U260R253B
VR1	Volume/Power Switch	50K	EA49X392			
VR2	Squelch	10K	EA49X479(18)(20)			
VR3	RF Gain	100K				
VR2	Squelch	10K	EQ49X480(19)			

(18) Includes VR2 and VR3.

(19) Used in Model 3-5804D.

(20) Used in Model 3-5813B.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFR. PART No.			WORKMAN PART No.	MFR. PART No.
RARY 251	Resistor Network		EA62X167(1)				

(1) Consists of thirteen 18 ohm resistors.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L1	VCO	EA36X257			
L2	Mixer IF	EA36X258			
L3	RF Choke (68uH)	EA36X239			
L4	RF Choke (1uH)	EA36X259			
L6	RF Choke (2.2uH)	EA36X237			
L7	Driver (27MHz)	EA36X238			
L8	RF Choke (68uH)	EA36X239			
L9	RF Choke (.55uH)	EA36X245			
L10	RF Choke (1uH)	EA36X240			
L11	Final Amp (27MHz)	EA36X241			
L12	Pi Filter	EA36X242			
L13	RF Choke (.40uH)	EA36X261			
L14	Mixer IF (10.695MHz)	EA61X204			
L15	RF Choke (68uH)	EA36X239			
L16	RF Choke (1.15uH)	EA36X263			
L17	RF Choke (1.15uH)	EA36X263			
T1	Ref Osc. (20.480MHz)	EA35X102			
T2	Mixer IF (37MHz)	EA36X264			
T3	Xmt Mixer (27MHz)	EA36X260			
T4	Pre Driver (27MHz)	EA36X248			
T5	Rec Antenna (27MHz)	EA36X249			
T6	Rec RF (27MHz)	EA36X265			
T8	IF (455kHz)	EA61X188			
T10	IF (455kHz)	EA61X190			

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.	
CH1	1.3A	.241	3.72MH	EA36X256 LJ119H004W(1)			(1) Number on unit.

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFGR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T11	2.88	1 8 2 13.52	EA64X30 ETA66(1)	TR723	MCB-16	(1) Number on unit.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP-1	3" PM 8 ohms	EA95X137	30A05Z8R	

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	2A Quick-Acting	5-1725		AGC2	HDJ	312002	150145	FG2-2

MICROPHONE

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	EA68X123B (1)	18-032	18-034	18-010	18-092	1	2	4	3	NC	2
	EA68X63B (2)	18-032	18-034	18-010	18-105	4	1	3	5	NC	1

(1) Number on unit, Model 3-5813A (2) Number on unit, Model 3-5804D

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
F1	Filter	EA36X448	10.7MHz
F2	Filter	EA36X332	455kHz
J1	Socket	EA41X217	Antenna
J2	Socket	EA41X175	Mic
J3	Socket	EA41X135	Ext. Speaker
J4	Socket	EA41X135	PA
J5	Socket	EA41X149	Power, DC
LED301	LED	EA93X362	Channel Display
L20	Ferrite Core		
M1	Meter	EA62X151	S/Rf (Used in Model 3-5813B)
	Meter	EA62X219	S/Rf (Used in Model 3-5804D)
PL2	Lamp	EA41X145	Modulation (3.66V @ 32mA)
P13	Lamp	EA41X179	AWI (5.84V @ 34mA)
S2	Switch	EA39X225	ANL
S3	Switch	EA55X133	CB/PA
SW1	Switch	EA55X140	Channel Selector
X1	Crystal	EA75X6	10.24MHz
X2	Crystal	EA75X7	10.7MHz
	Power Cord	EA68X119	AC (Includes Plug, P5)
	Earphone	5-1082	

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

ITEM	PART No.	ITEM	PART No.
Cabinet, Top	EA98X542	Knob, RF Gain	EA43X729
Cabinet, Bottom	EA98X654	Knob, Squelch	EA43X730
Escutcheon	EA89X271	Knob, Volume	EA43X727
Knob, Channel Selector	EA43X897		