



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 GEN-775A

MANUFACTURER'S SPECIFICATIONS

Frequency Range : 26.965MHz–27.405MHz (channels 1 through 40)

Antenna Impedance : 50 ohms

Modulation : AM (Amplitude Modulation)

Channel Display : 7-segment LED x 2

Controls : Volume control with power on-off switch

Variable squelch control

Delta-tune switch

Automatic noise limiter (ANL) switch

Channel selector

PA push switch

Connectors and Jacks : Microphone connector

SO-239 antenna connector (50 ohms)

Public Address (PA) speaker jack (8 ohms)

External speaker jack (8 ohms)

Speaker : 3-1/2 inch, 8 ohms

Microphone : Dynamic microphone (500 ohms)

Power Supply : 13.8 volts DC (positive or negative ground)

Dimensions : 7-1/2"(W) x 2-7/16"(H) x 8-1/8"(D)

19 cm(W) x 6.2 cm(H) x 20.6 cm(D)

Weight : 4 lbs. 3 oz. (1.9 kg.)

RECEIVER NOMINAL SPECIFICATIONS

Circuit : PLL synthesized dual conversion superheterodyne

IF Frequency : 1st IF ... 10.695MHz, 2nd IF ... 455kHz

Sensitivity at S/N 10 dB : 0.5 micro-volt

Selectivity : (±10kHz) 60 dB

AGC : 80 dB

S/N at 1 mV input : 50 dB

Audio Power Output : 5.5 watts

Audio Frequency Response : 300–2.5kHz

Spurious Response : –50 dB

Squelch Range : 1 micro-volt to 350 micro-volt

Current Drain (no signal) : 280 mA

TRANSMITTER NOMINAL SPECIFICATIONS

RF Output Power : 4 watts maximum

Modulation Capability : 100% maximum

Spurious Response : –70 dB

Courtesy of the Manufacturer

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

© 1978 Howard W. Sams & Co., Inc. Printed in U. S. of America 8CE809

WARDS MODEL GEN-775A

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.
Suggested Alignment Tools: GC ELECTRONICS:
TC101, TC102, TC201..... 8276, 5000
L106, T101, T201 thru T205..... 5009, 8728A, 8728
L208 thru L212..... 9091, 8728A, 8728
L101 thru L105, L201 thru L207..... 9440

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of frequency counter to TPJ (T101, Secondary).	Ch. 19	TC101	Adjust for 10.240MHz.
Input of oscilloscope to TPJ (T101, Secondary).	Ch. 19	T101	Adjust for maximum RF.
Input of frequency counter to TPK (L105, Secondary).	Ch. 19 Delta Tune 0	TC102	Adjust for 36.190MHz.
Input of oscilloscope to TPK (L105, Secondary).	Ch. 19 Delta Tune 0	L105	Adjust for maximum RF.
Input of DC meter to TPN (Junction of R117 and R106).	Ch. 19 Delta Tune 0	L102	Adjust for 2.68 volts.
Input of oscilloscope to TPR (L101, Secondary).	Ch. 19	L101	Adjust for maximum RF.
Input of oscilloscope to TPL (TC101, Pin 4).	Ch. 19	L106	Adjust for symmetric square wave.
Input of oscilloscope to TPD (L104, Secondary).	Ch. 19	L103, L104	Adjust for maximum RF voltage.
Input of frequency counter to TPD (L104, Secondary).	Ch. 19 Delta Tune +	VR202	Adjust for 37.881MHz.
	Ch. 19 Delta Tune -	VR203	Adjust for 37.879MHz.
Input of frequency counter to TPD (L104, Secondary).	Ch. 1 Delta Tune 0		Check for 37.660MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to TPS (Q215, Emitter).	Ch. 1, XMT	TC201	Disconnect C274. Adjust for 10.695MHz. Reconnect C274.
Input of frequency counter to TPL (IC101, Pin 4).	Ch. 1		Check for 1.470MHz. Check all channels. (See Truth Chart for correct frequencies.)
Input of frequency counter to antenna jack.	Ch. 1, XMT	TC201	Check for 26.965MHz. If necessary readjust TC201 for 26.965MHz.

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.
Squelch MINIMUM, Delta Tune 0, ANL Switch Off.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to TPU (Q203, Base). 455kHz, 1000Hz @ 30% modulation.	Ch. 19	T205, T204 T203	Adjust for maximum output.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation	Ch. 19	T202, T201, L202, L201	Adjust for maximum output. If necessary, readjust T205, T204 and T203.

RECEIVER ADJUSTMENTS

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.
Delta Tune 0, ANL Switch Off.

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation. Output 1000uV.	Ch. 19 Squelch Maximum	VR204	SQUELCH RANGE Adjust so that squelch just breaks.
Output of signal generator thru .01uF to antenna jack. 27.185MHz, 1000Hz @ 30% modulation Output 100uV.	Ch. 19 Squelch MINIMUM	VR201	SIGNAL METER Adjust for 9 on signal 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	TRANSCIVER	ADJUST	REMARKS
Input of spectrum analyzer or harmonic meter to antenna jack.	Ch. 19	L203, L204, L205, L206, L207, L208, L209, L210, L211	Adjust for maximum.
	Ch. 19	L209	Adjust for 4 watts maximum.
	Ch. 19	L212	Adjust for MINIMUM at 54MHz.

TRANSMITTER ADJUSTMENTS

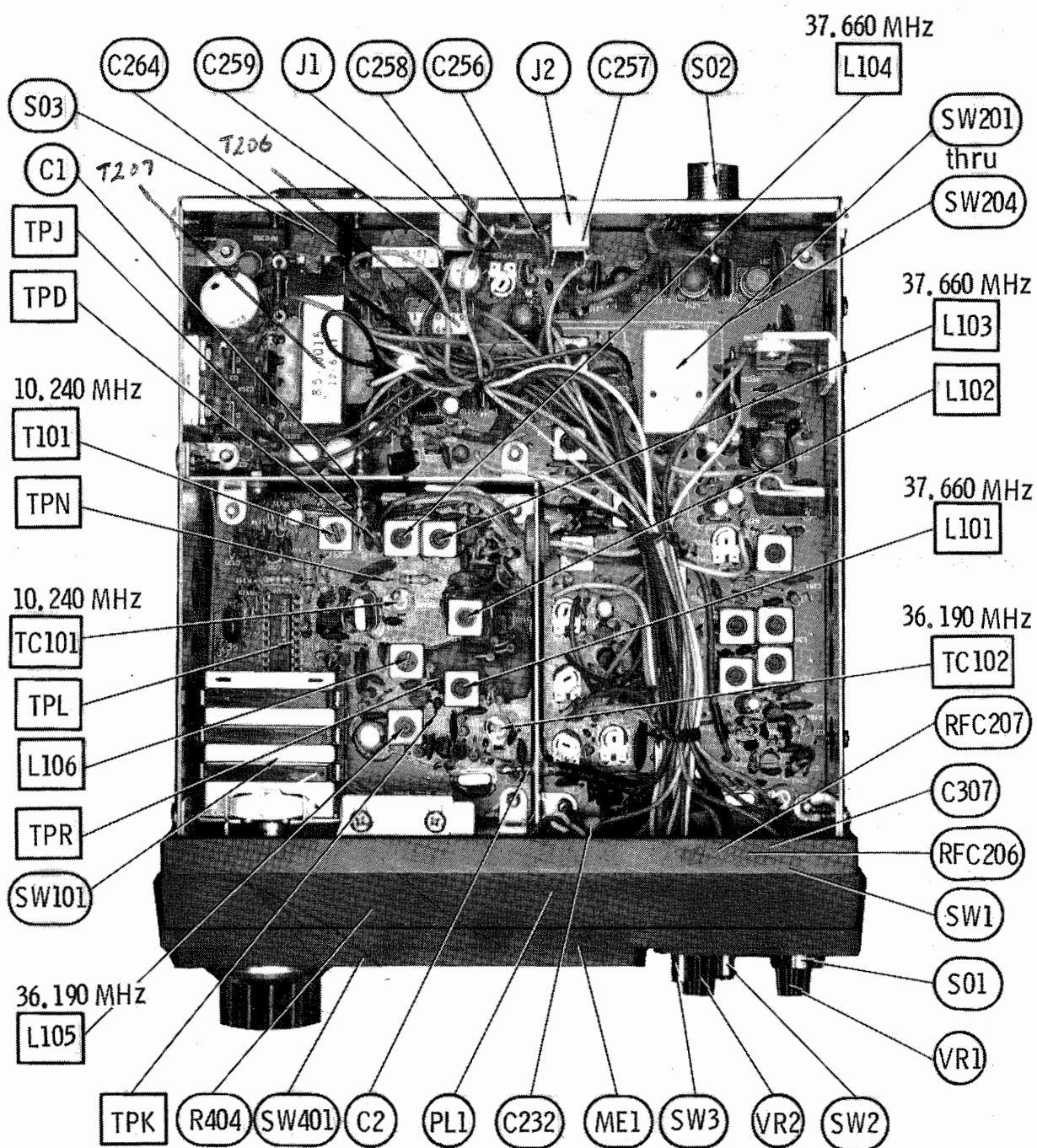
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.
NOTE: Be sure to check transmit frequency and power on all active channels after adjustment of transmitter.
See page 4 for channel frequencies.

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Modulation meter to antenna jack. Inject a 1000Hz, 20mV signal at Mic input.	Ch. 19	VR206	AMC Adjust for 100% modulation maximum.
Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.	Ch. 19	VR205	RF POWER METER Adjust to a point just below the red on the RF power scale of meter.

WARDS MODEL GEN-775A

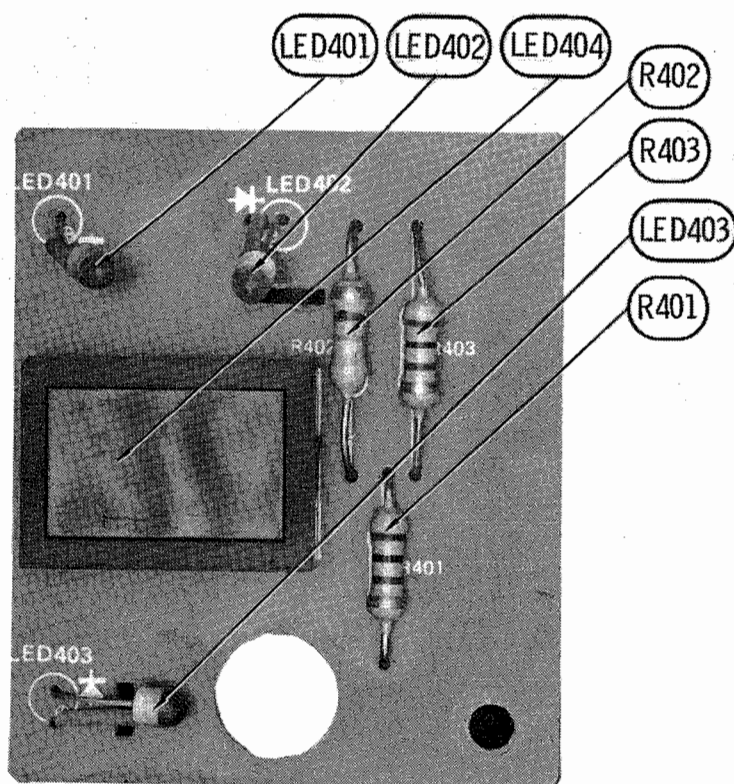
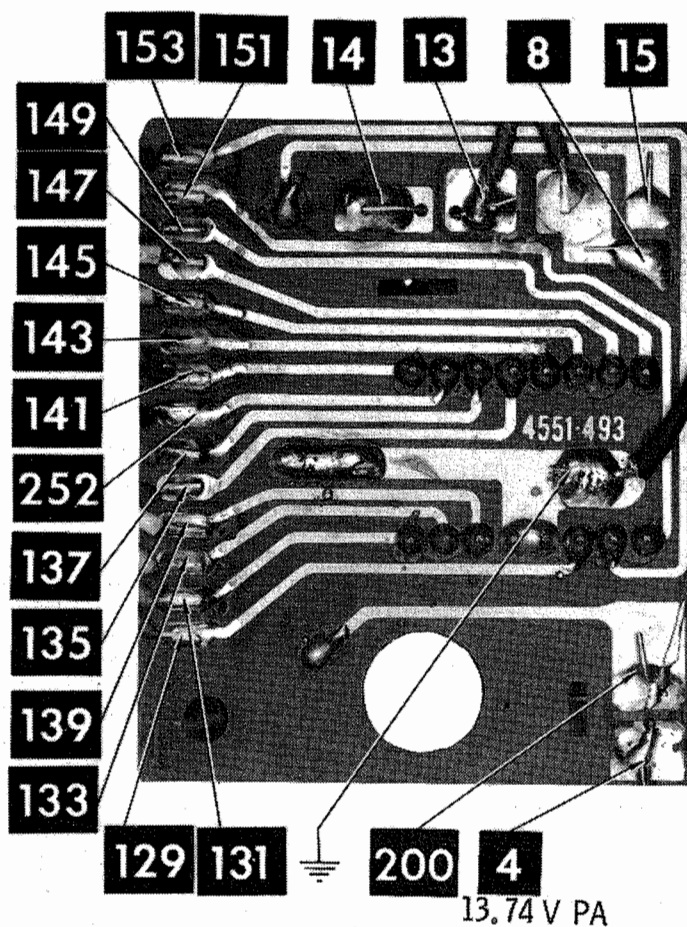
TRUTH CHART

C H A N N E L	1 = 6.51 Volts 0 = 0 Volts							REC & XMT SYNTHESIZER OUTPUT IN MHz AT AT TPD	DIVIDER INPUT IN MHz AT TPL		
	IC101 PROGRAM DIVIDER										
	PINS										
	3	2	1	17	16	15					
1	0	0	0	0	0	0			37.660	1.470	
2	0	0	0	0	0	1			37.670	1.480	
3	0	0	0	0	1	0			37.680	1.490	
4	0	0	0	1	0	0			37.700	1.510	
5	0	0	0	1	0	1			37.710	1.520	
6	0	0	0	1	1	0			37.720	1.530	
7	0	0	0	1	1	1			37.730	1.540	
8	0	0	1	0	0	1			37.750	1.560	
9	0	0	1	0	1	0			37.760	1.570	
10	0	0	1	0	1	1			37.770	1.580	
11	0	0	1	1	0	0			37.780	1.590	
12	0	0	1	1	1	0			37.800	1.610	
13	0	0	1	1	1	1			37.810	1.620	
14	0	1	0	0	0	0			37.820	1.630	
15	0	1	0	0	0	1			37.830	1.640	
16	0	1	0	0	1	1			37.850	1.660	
17	0	1	0	1	0	0			37.860	1.670	
18	0	1	0	1	0	1			37.870	1.680	
19	0	1	0	1	1	0			37.880	1.690	
20	0	1	1	0	0	0			37.900	1.710	
21	0	1	1	0	0	1			37.910	1.720	
22	0	1	1	0	1	0			37.920	1.730	
23	0	1	1	1	0	1			37.950	1.760	
24	0	1	1	0	1	1			37.930	1.740	
25	0	1	1	1	0	0			37.940	1.750	
26	0	1	1	1	1	0			37.960	1.770	
27	0	1	1	1	1	1			37.970	1.780	
28	1	0	0	0	0	0			37.980	1.790	
29	1	0	0	0	0	1			37.990	1.800	
30	1	0	0	0	1	0			38.000	1.810	
31	1	0	0	0	1	1			38.010	1.820	
32	1	0	0	1	0	0			38.020	1.830	
33	1	0	0	1	0	1			38.030	1.840	
34	1	0	0	1	1	0			38.040	1.850	
35	1	0	0	1	1	1			38.050	1.860	
36	1	0	1	0	0	0			38.060	1.870	
37	1	0	1	0	0	1			38.070	1.880	
38	1	0	1	0	1	0			38.080	1.890	
39	1	0	1	0	1	1			38.090	1.900	
40	1	0	1	1	0	0			38.100	1.910	

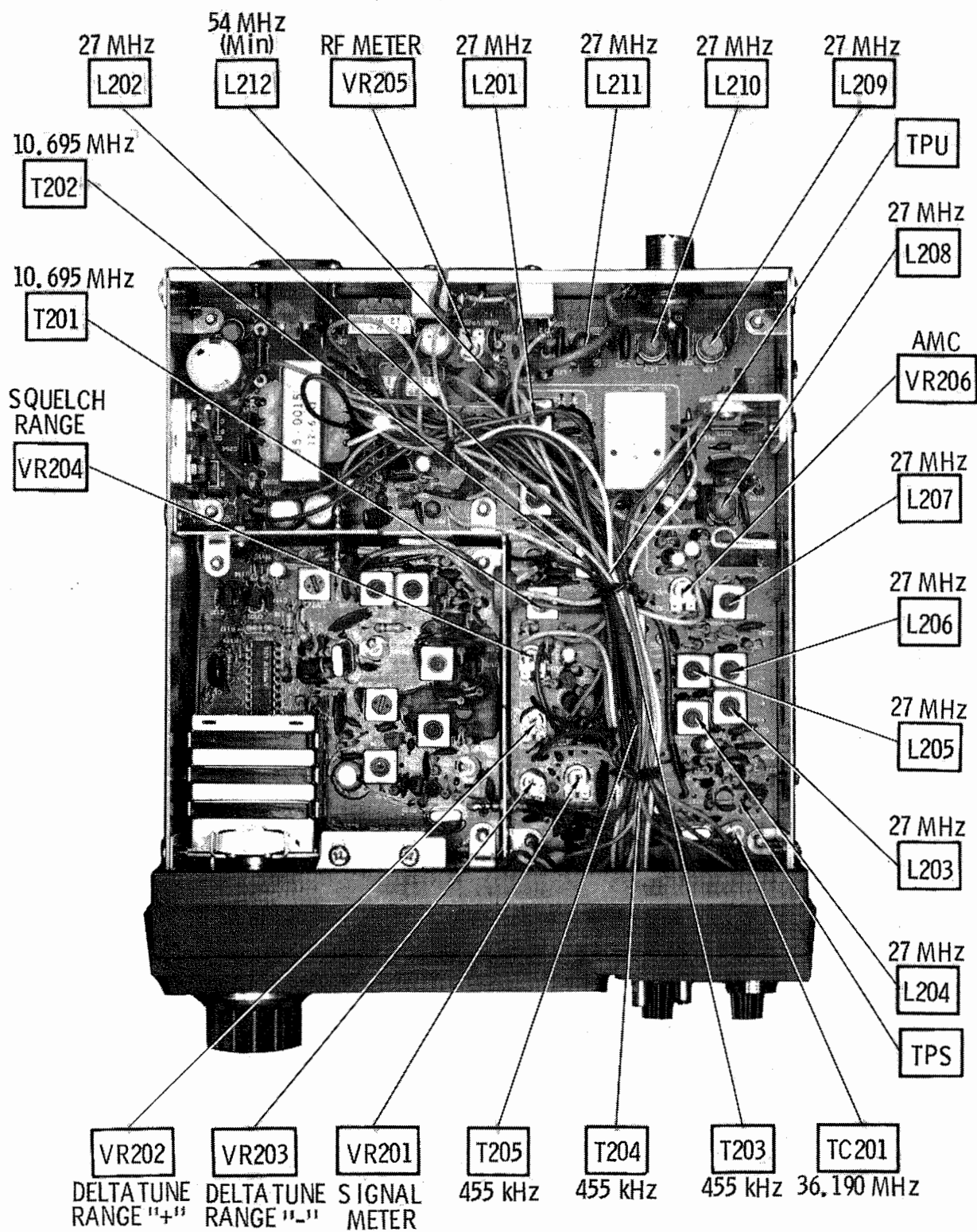


WARDS MODEL GEN-775A

CHASSIS - BOTTOM

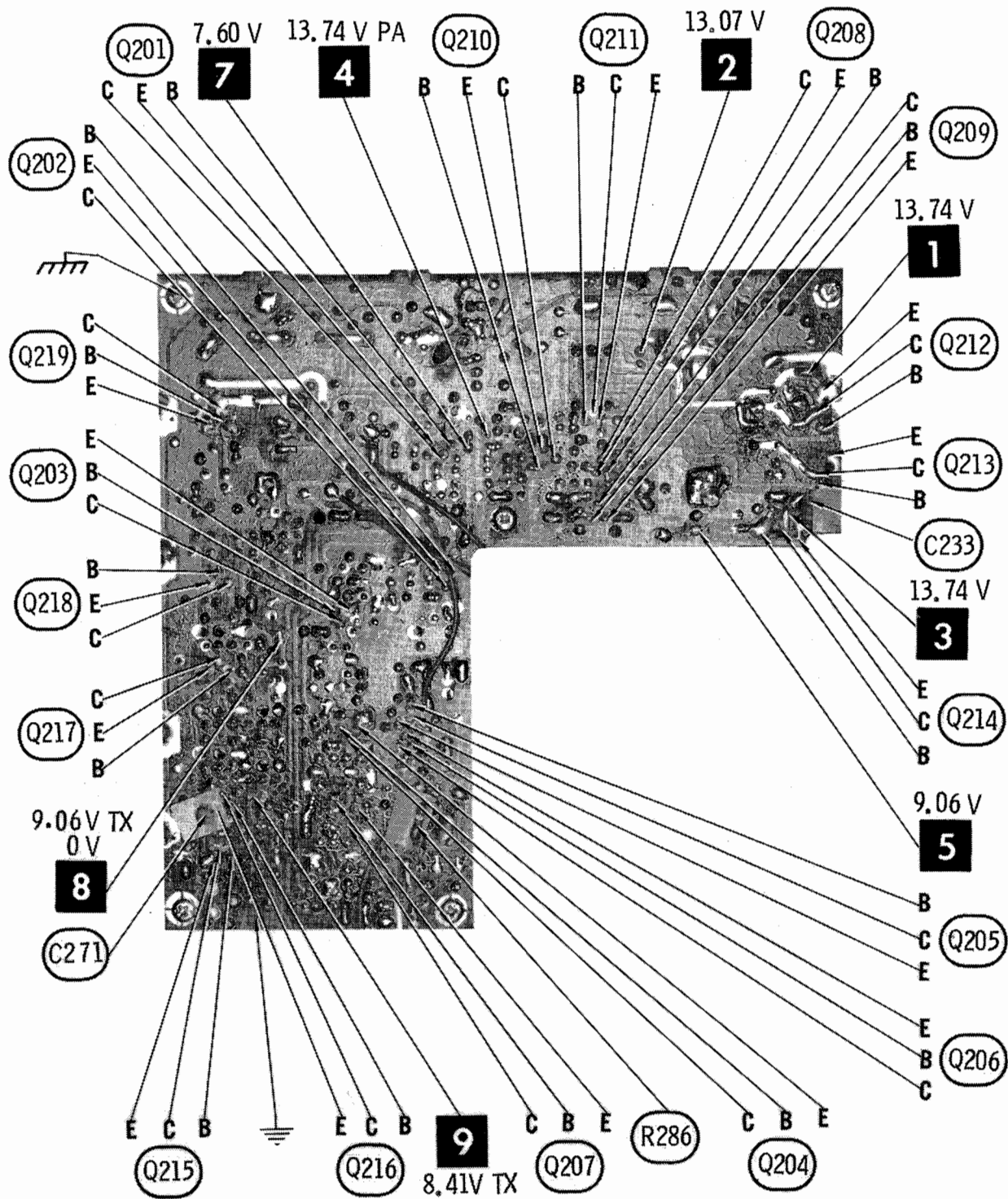


LED READOUT BOARD

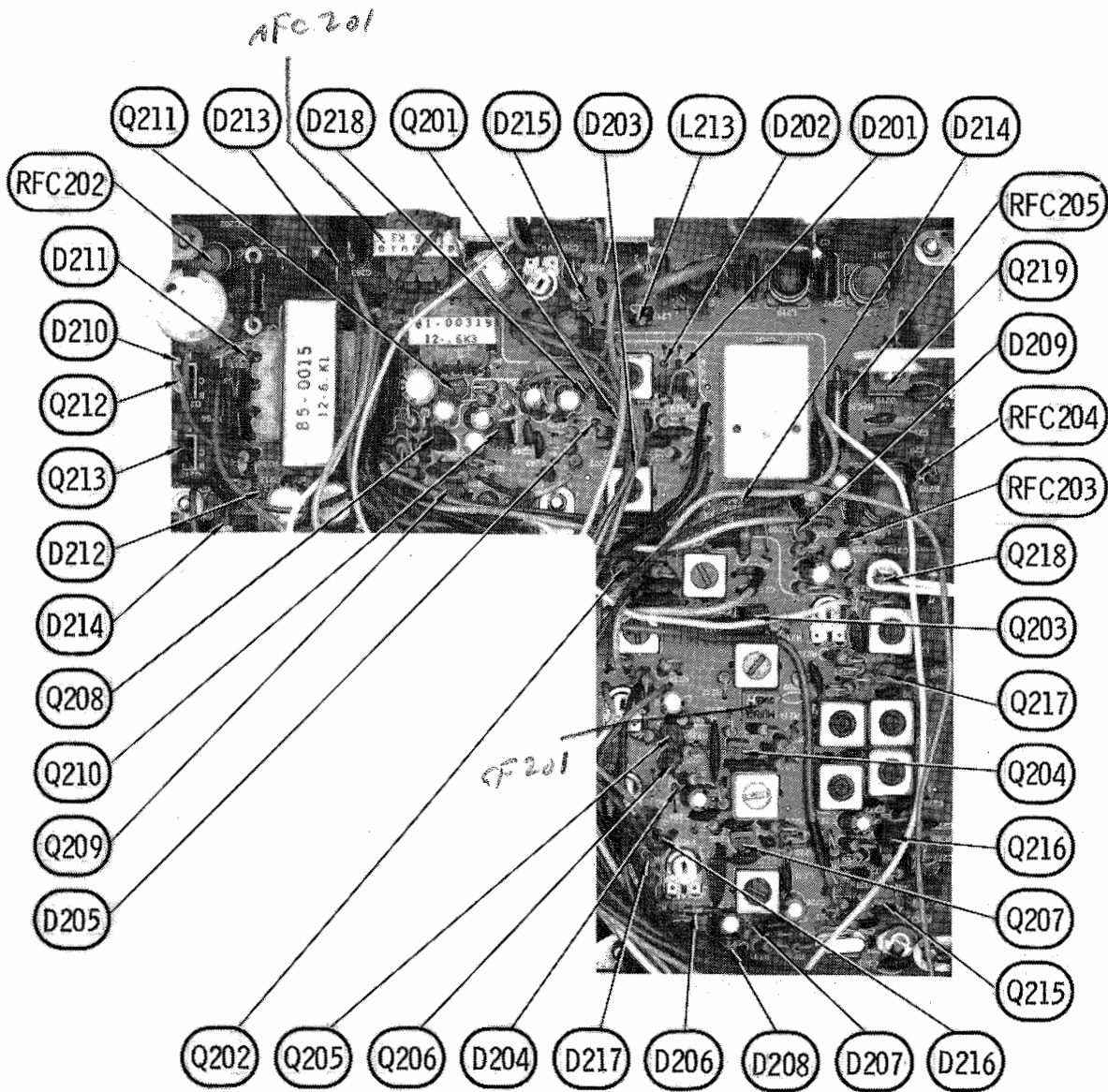


WARDS MODEL GEN-775A

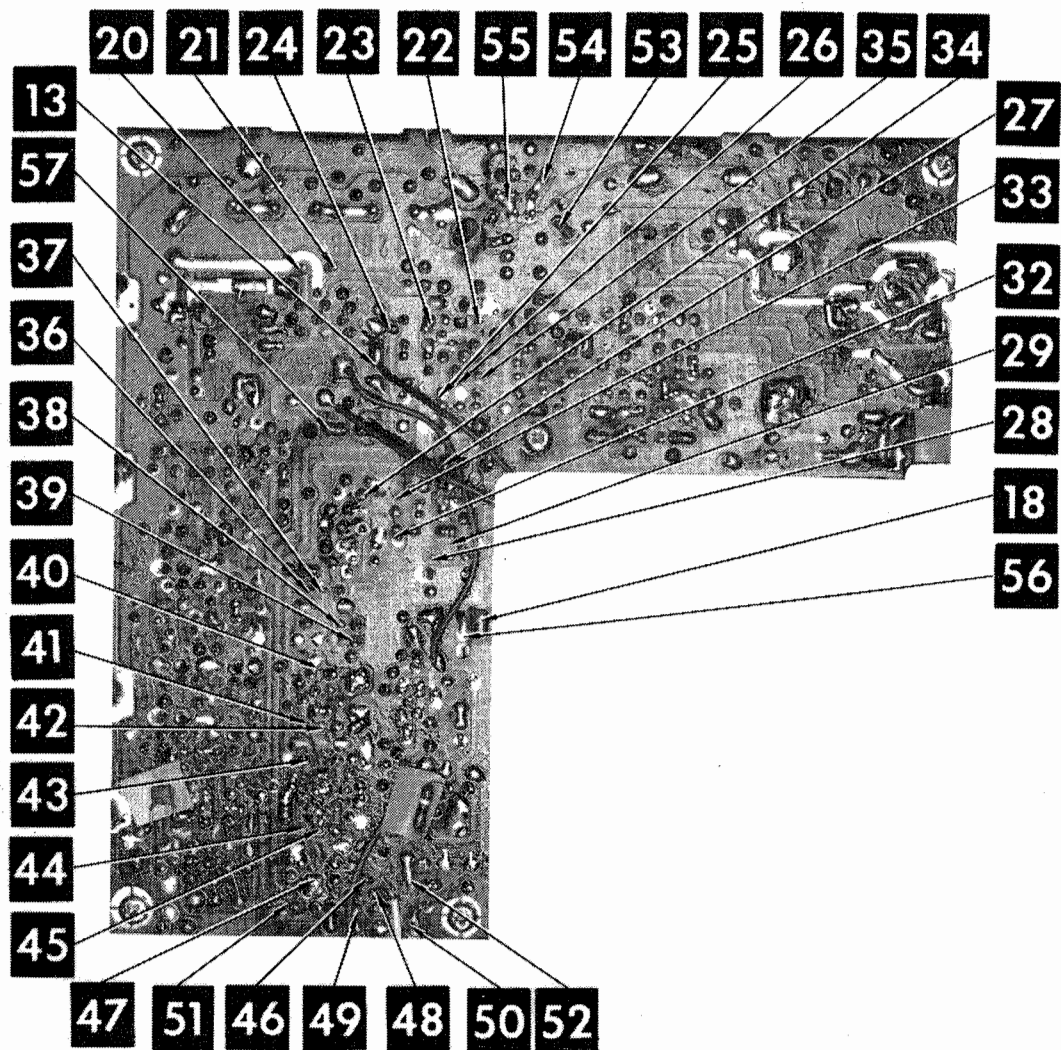
CHASSIS - BOTTOM



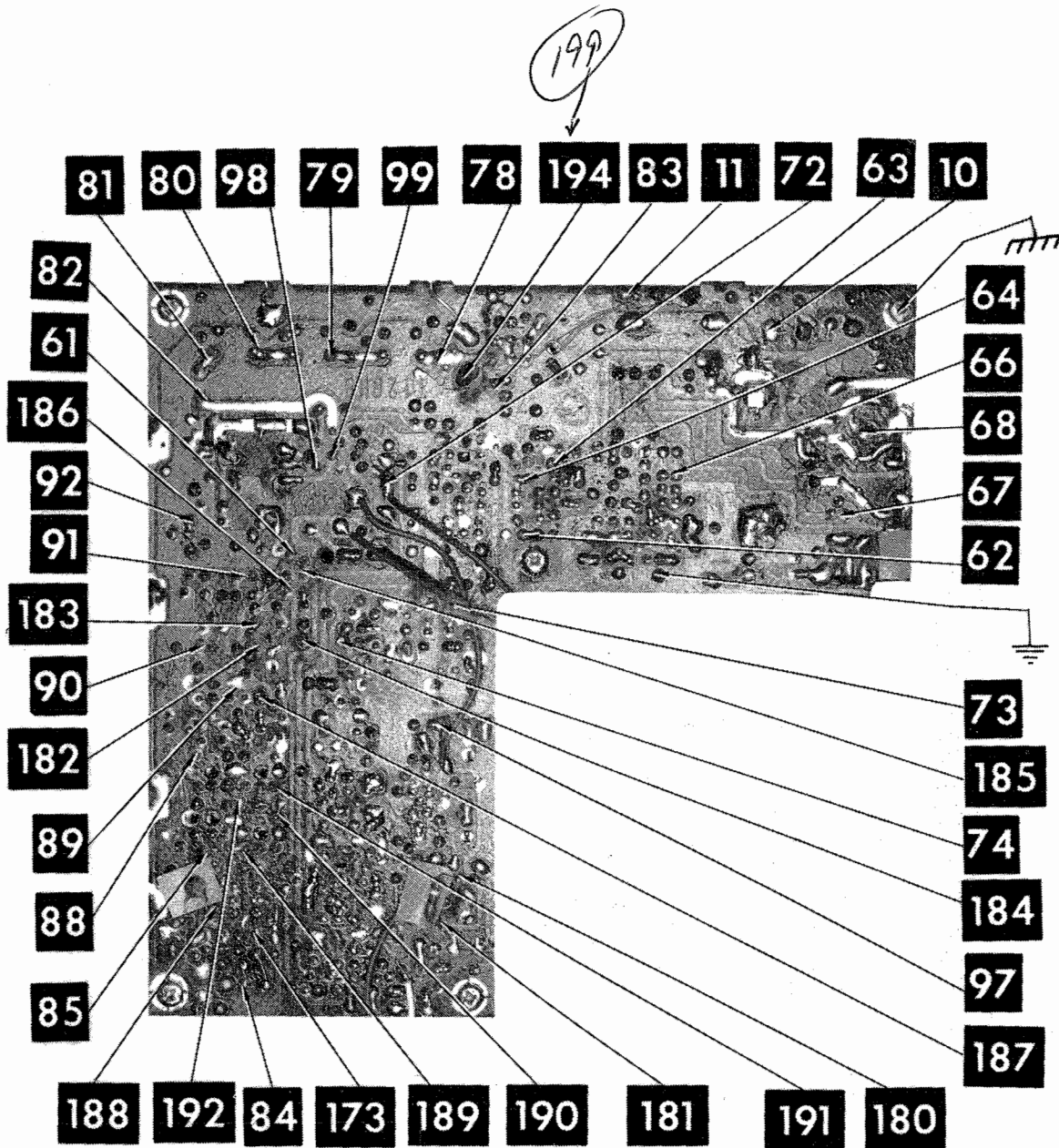
MAIN BOARD



MAIN BOARD

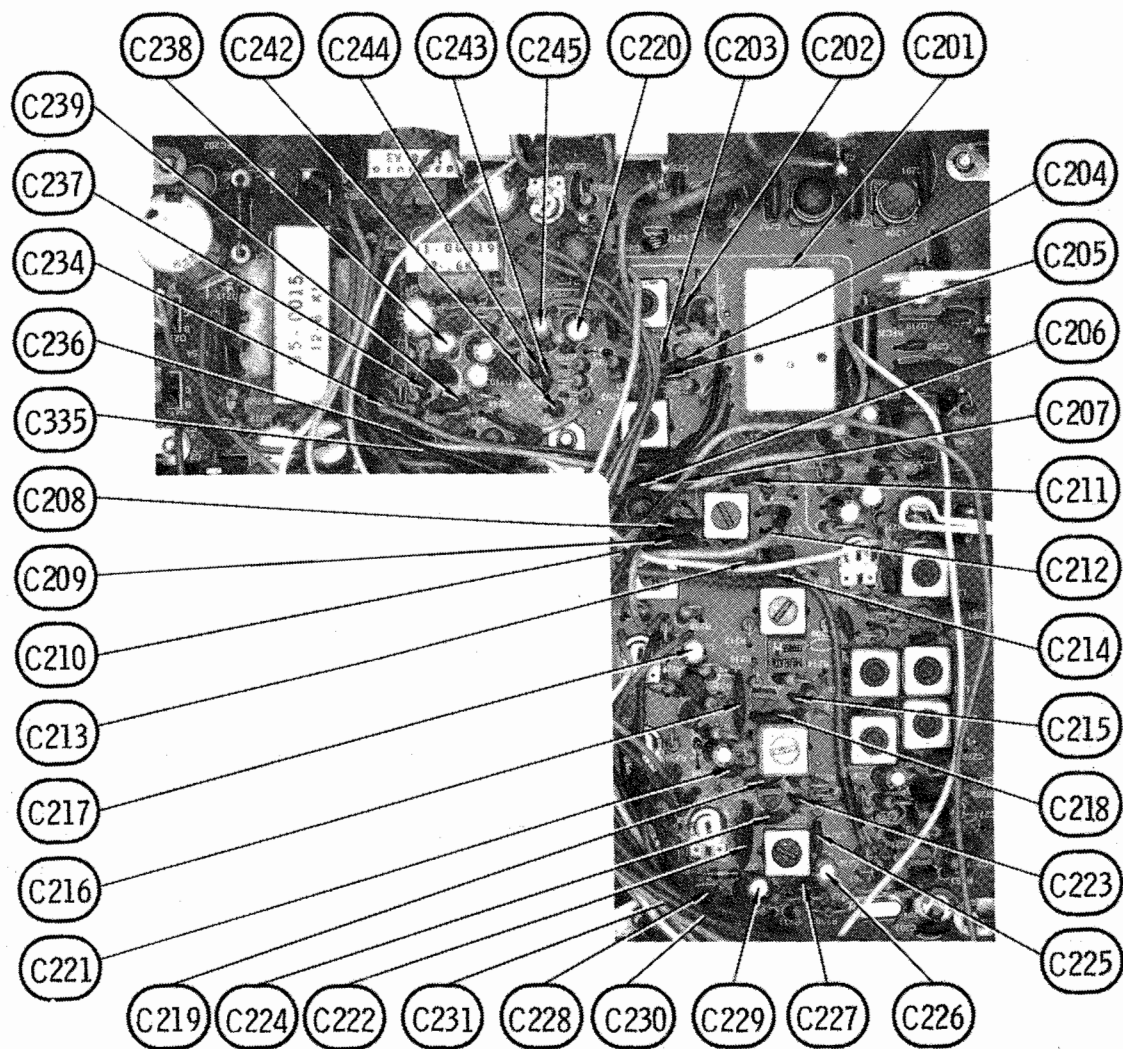


MAIN BOARD

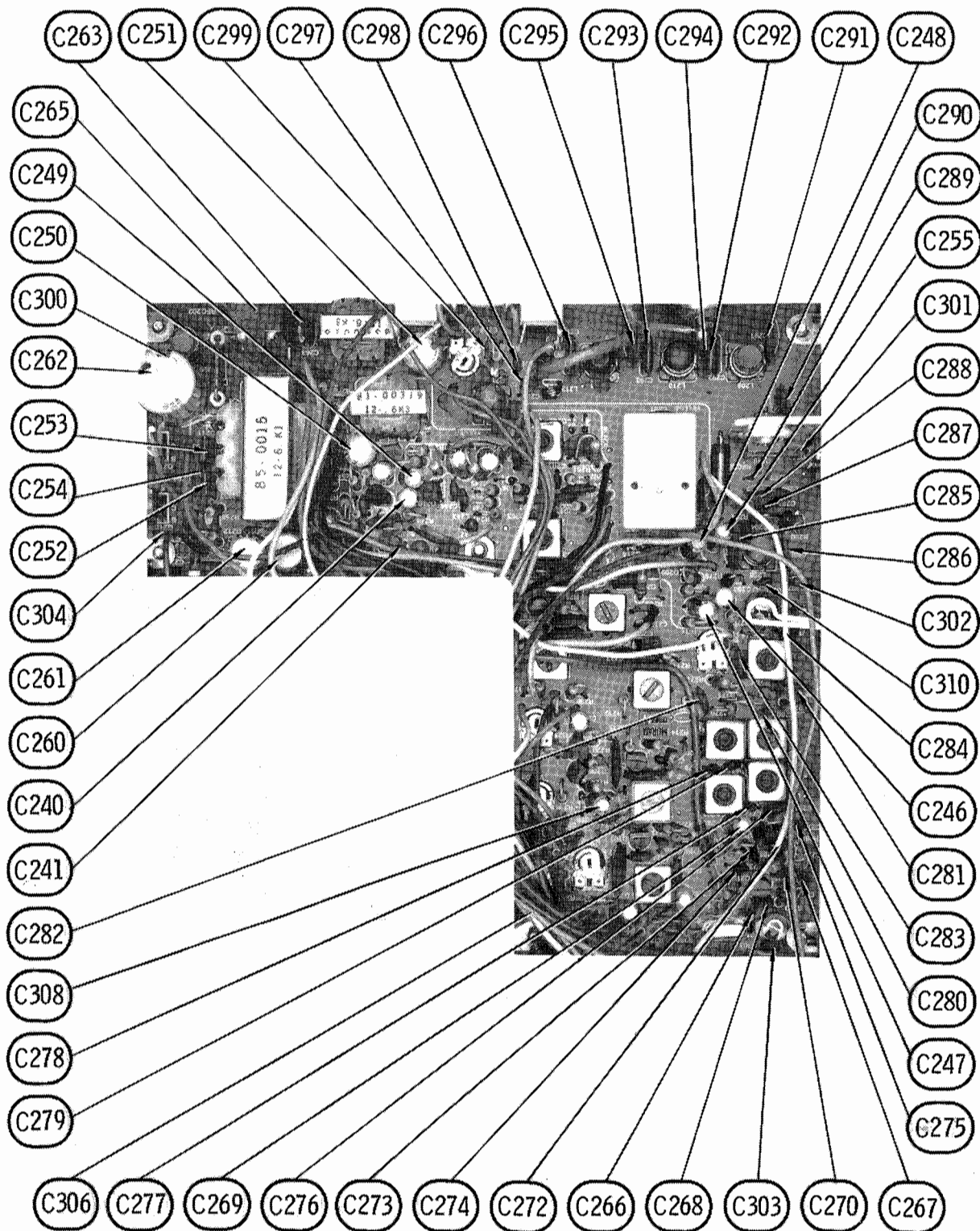


WARDS MODEL GEN-775A

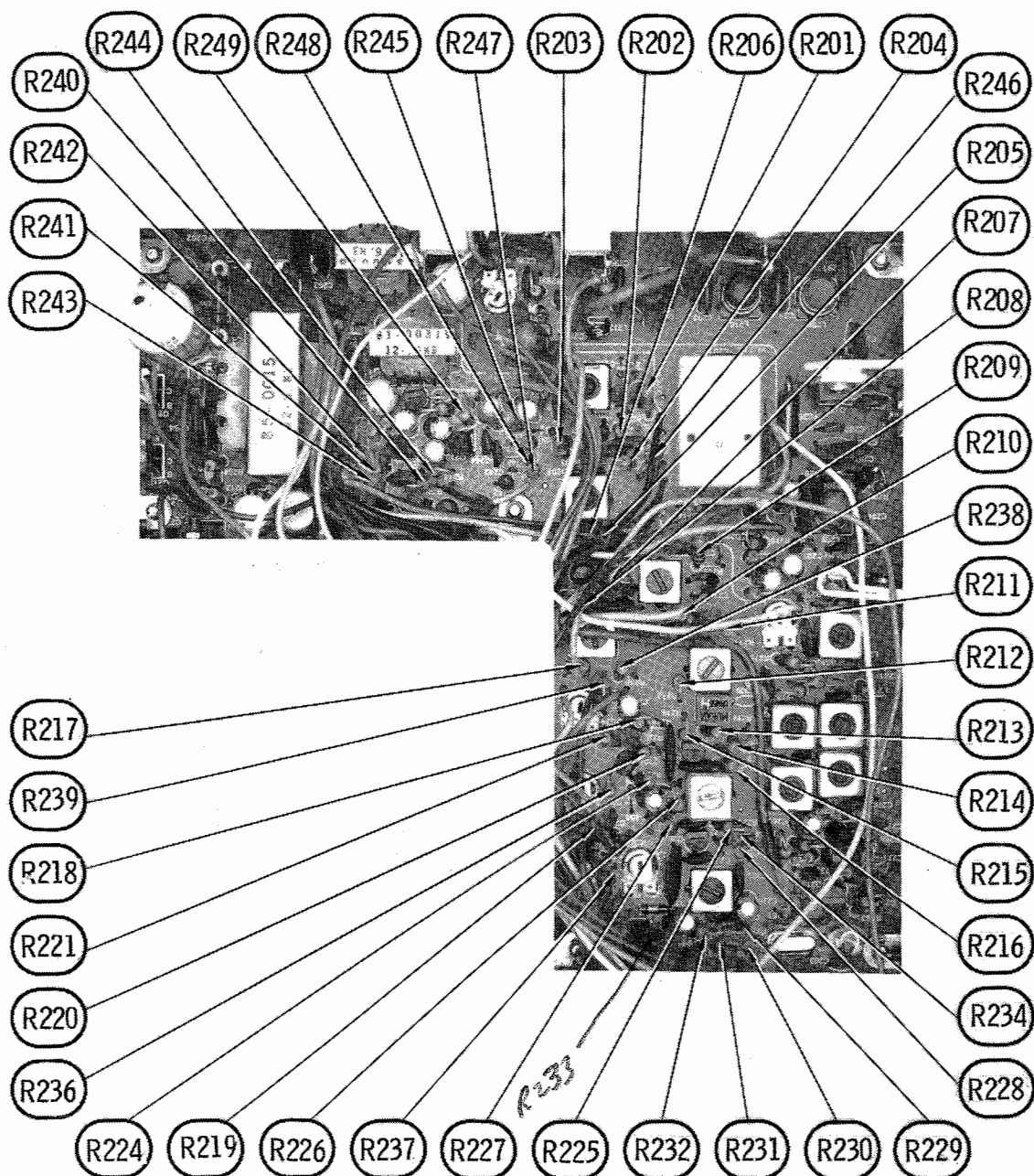
MAIN BOARD



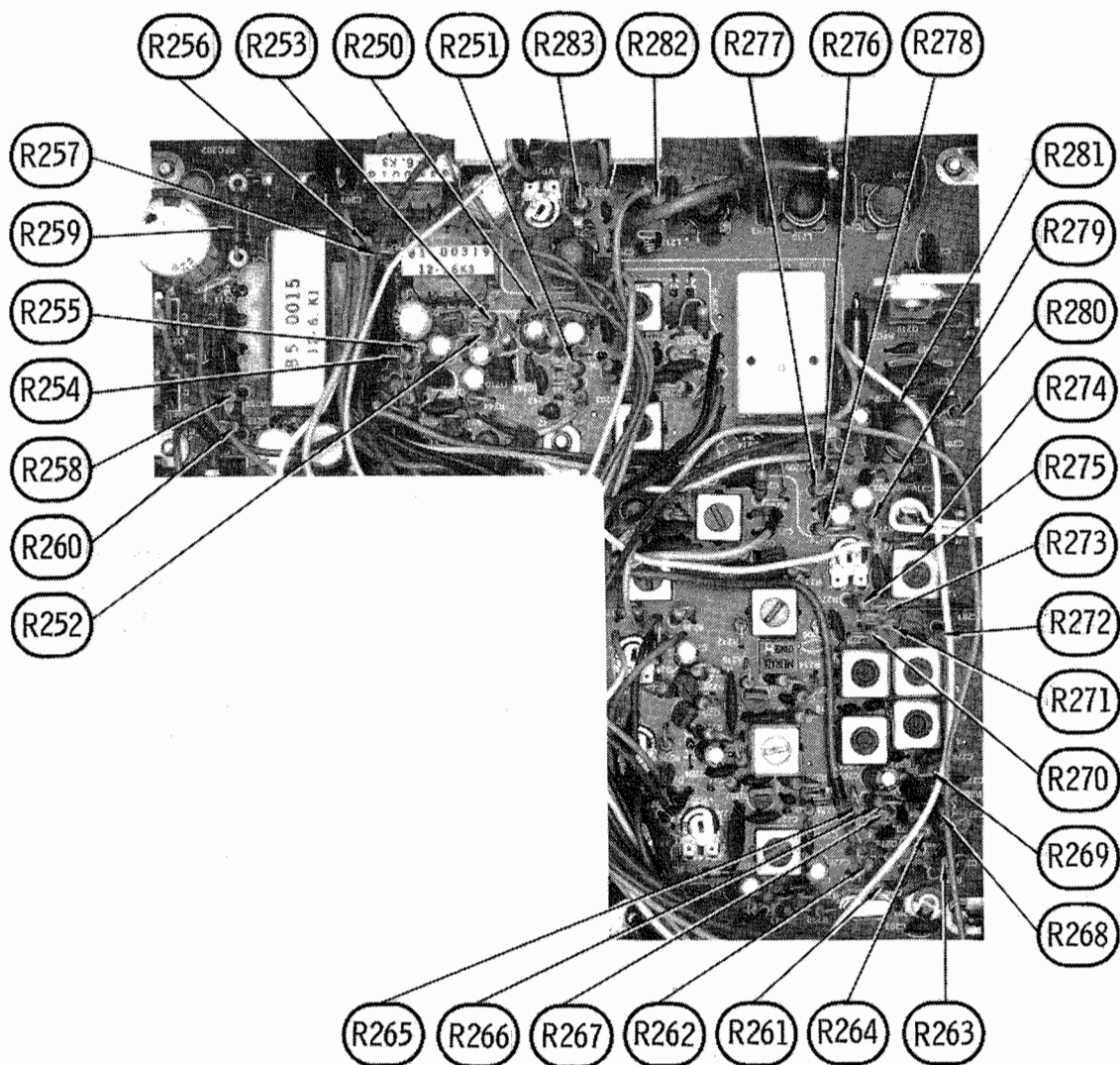
MAIN BOARD



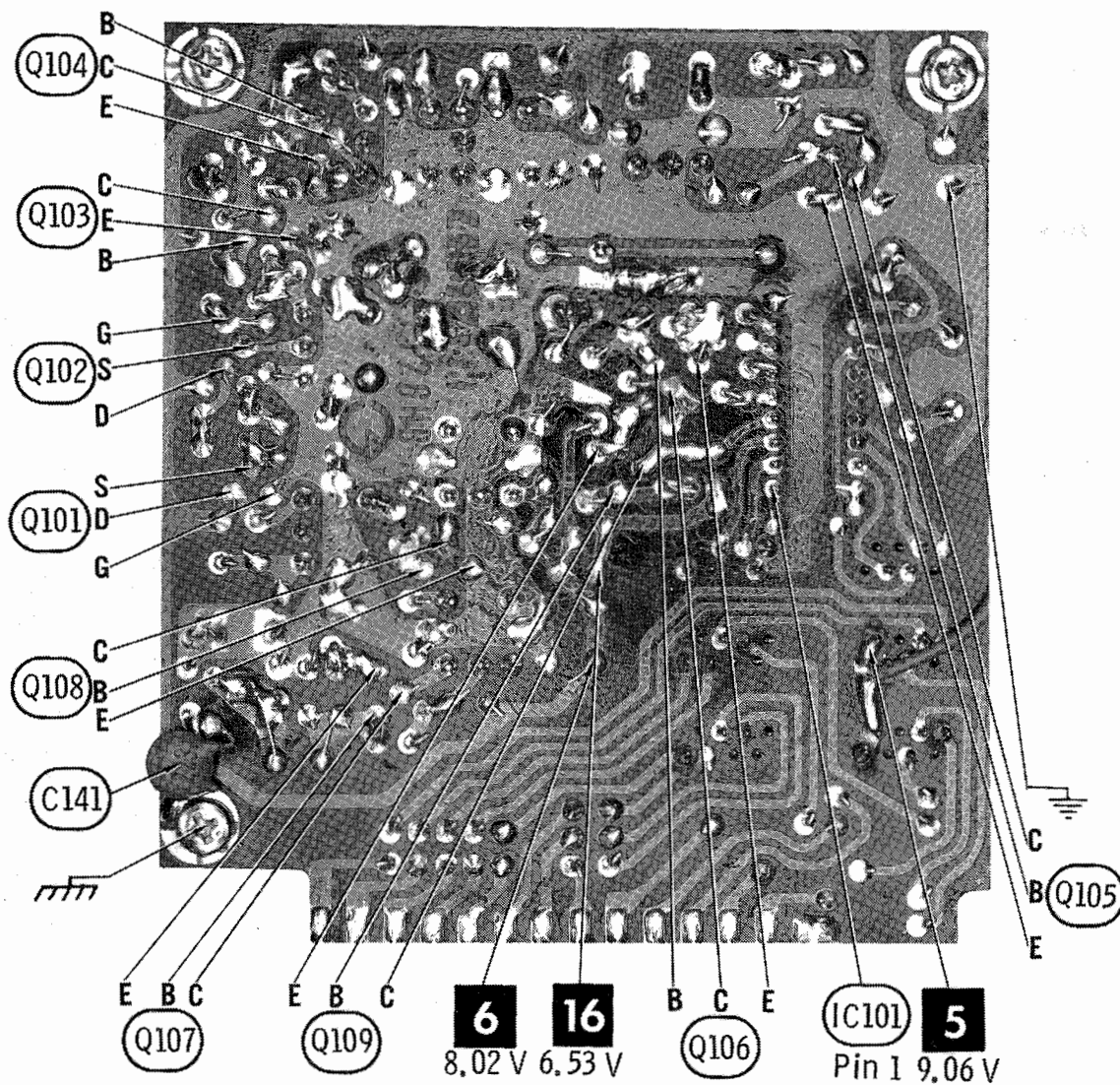
MAIN BOARD



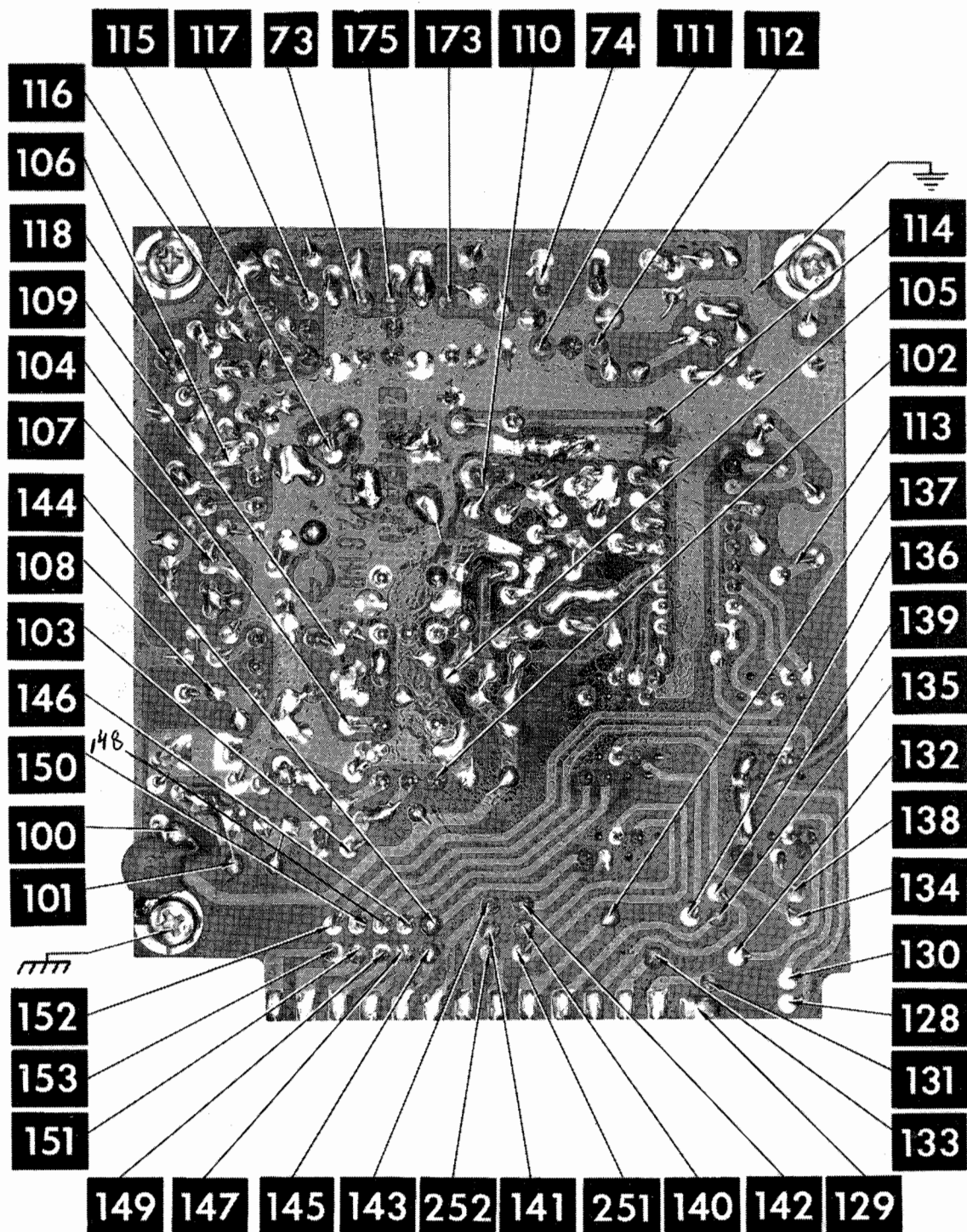
MAIN BOARD



MAIN BOARD

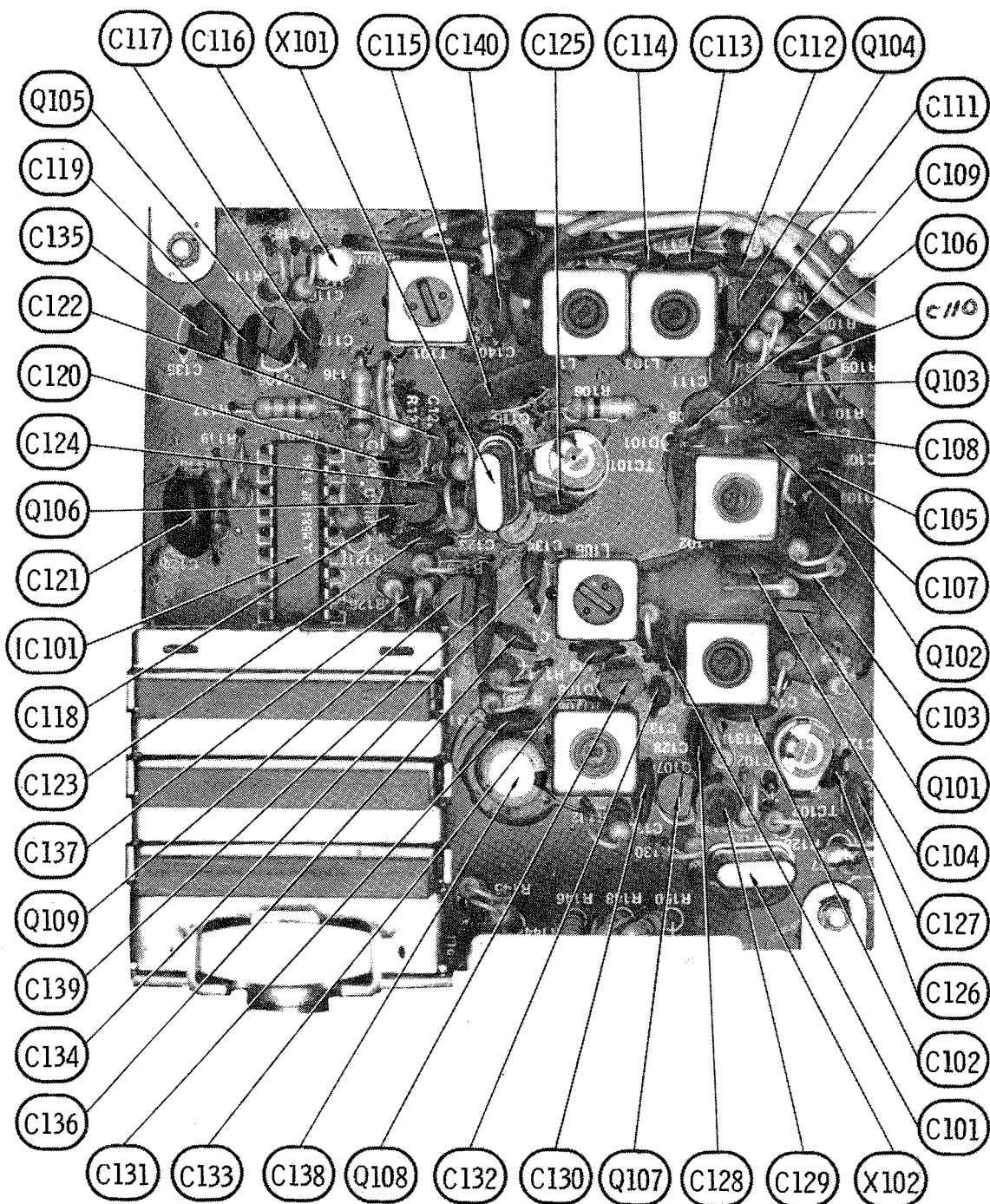


PLL BOARD

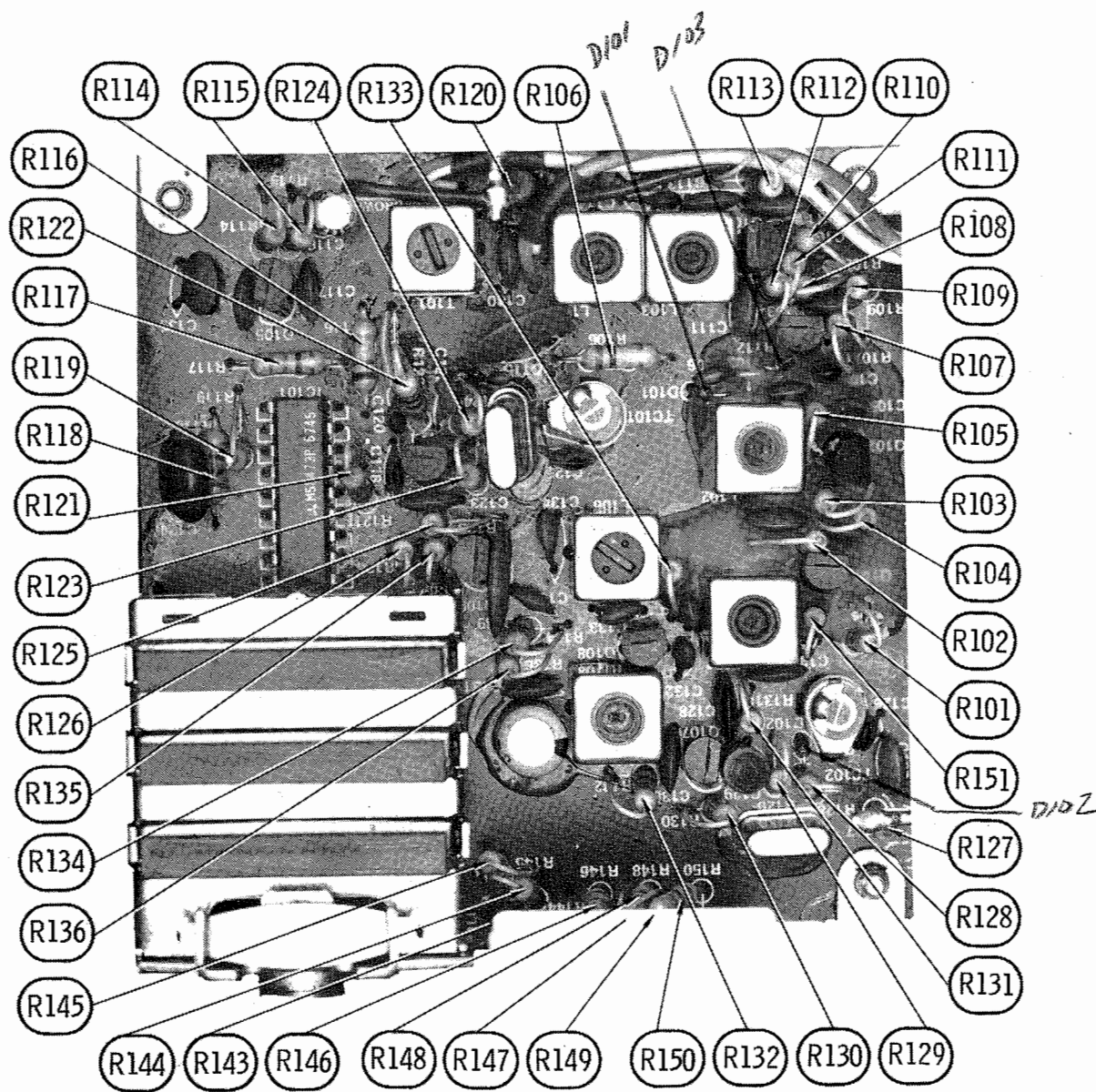


WARDS MODEL GEN-775A

PLL BOARD



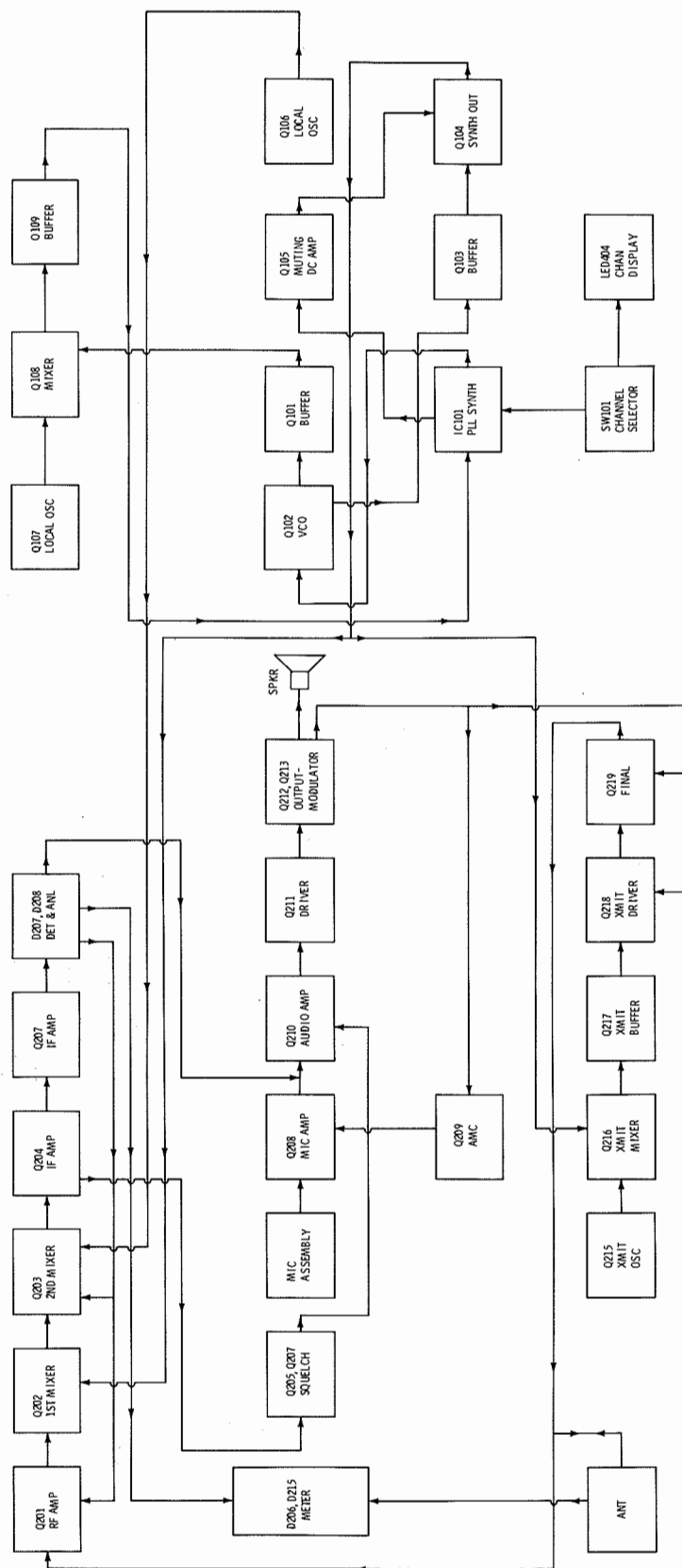
PLL BOARD



R137 thru R142 under switch but on top of board

PLL BOARD

BLOCK DIAGRAM



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.	
AFC-201	1.2A	.125	1.12mH	J62855 83-0018(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.	
T206	1	1		J11474 81-00319(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.	
T207	32	1 18 2 8	J11477 85-0015 (1)			(1) Number on unit.

SPEAKER

ITEM No.	TYPE		REPLACEMENT DATA		NOTES
			MFGR. PART No.	QUAM PART No.	
SP1	3 1/2" PM	8 Ohms	J10173	3A05Z8	

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA					
		PART No.		BUSS PART No.		LITTELFUSE PART No.	
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER
FU1	3A Quick Acting	J18544		AGC3	HDJ	312003	150145
							F63-2

PARTS LIST AND DESCRIPTION (CONTINUED)

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

CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				SPRAGUE PART No.
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	Q-LINE	
C275	.01 20%	CC3P50V.25P	UK50-103		MAG5011		
C276	.01 20%		UK50-103		MAG5011		
C277	3 NPO ±.25						
C278	6 NPO ±.5						
C279	3 NPO ±.25						
C280	220 20%		DTZ-220				10TCC-T22
C281	.01 20%		UK50-103		MAG5011		HY-725
C282	.022 25V		UK25-223				
C283	.01 20%		UK50-103		MAG5011		10TS-T47
C284	470 20%		DO-471	GP470	GP347		TG-S25
C285	.022 20% 50V	CC200P50V10	DC-253	MGP025	TA125		10TCR-T20
C286	200 N220 10%				*		10TCC-T10
C287	100 10%		DTZ-100	NP0100	CN0310		TG-S25
C288	.022 20%		DC-253	MGP025	TA125		10TS-010
C289	.001 20%		DC-102		GP210		
C290	.01 20%		UK50-103		MAG5011		
C291	.022 20%		DC-253	MGP025	TA125		TG-S25
C292	250 10%			CD15FD241J03	SX324	QW1-36	MWA-241
C293	300 10%			CD15FD301J03	SX330	QW1-38	MWA-301
C294	.022 25V		UK25-223				HY-725
C295	.022 20%	CC2P50V.5P	DC-253	MGP025	TA125		TG-S25
C296	150 10%			CD15FD151J03	SX315	QW1-31	MWA-151
C297	10 NPO ±.5		DTZ-10	NP010	CN0410		10TCC-Q10
C298	2 ±.5						
C299	.022 25V		UK25-223				HY-725
C300	.022 25V		UK25-223				HY-725
C301	.022 25V		UK25-223				HY-725
C302	.022 25V		UK25-223				HY-725
C303	.022 25V		UK25-223				HY-725
C304	.022 25V		UK25-223				HY-725
C306	.022 25V		UK25-223				HY-725
C307	.022 25V	CC30P50V5	UK25-223				HY-725
C310	30 5%				*		10TCC-Q30
TC101	Trimmer	J35471					
TC102	Trimmer	J35471					
T201	Trimmer	J35471					

*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.
VR1	Volume/Power Switch	10K	J25751	1030352 (5)		
VR2	Squelch	10K	J25752	1032821 (5)		
VR201	S Meter	50K	J25778			
VR202	Delta Tune Range "A"	10K	J25783			U260R503B
VR203	Delta Tune Range	50K	J25778			U260R603B
VR204	Squelch Range	50K	J25778			U260R503B
VR205	RF Meter	50K	J25778			U260R503B
VR206	AMC	10K	J25783			U260R103B

(5) Number on unit.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L101	Buffer (37.660MHz)	J611272			
L102	VCO	J611318			
L103	Synth Out (37.660MHz)	J611272			
L104	Synth Out (37.660MHz)	J611272			
L105	Mixer (36.190MHz)	J611274			
L106	Buffer	J611275			
L201	Rec RF (27MHz)	J611268			
L202	Mixer (27MHz)	J611269			
L203	XMT Mixer (27MHz)	J611270			
L204	XMT Buffer (27MHz)	J611271			
L205	XMT Buffer (27MHz)	J611270			
L206	XMT Buffer	J611271			
L207	XMT Driver (27MHz)	J611271			
L208	Final (27MHz)	J611267			
L209	Loading Final (27MHz)	J611265			
L210	Pi Filter (27MHz)	J611285			
L211	Pi Filter (27MHz)	J611286			
L212	TVI Trap (54MHz)	J611307			
L213	RF Choke	J611068			
RFC201	RF Choke	J611283			
RFC202	RF Choke	J611260			
RFC203	RF Choke (2.7uH)	J611262			
RFC204	RF Choke (5.6uH)	J611263			
RFC205	RF Choke	J611261			
T101	Buffer (10.240MHz)	J62853			
T201	IF (10.695MHz)	J62853			
T202	IF (10.695MHz)	J62854			
T203	IF (10.695MHz)	J62852			
T204	IF (455kHz)	62MM564			
T205	IF (455kHz)	J62570			

RF 206 RF Choke 3611283
IF 207 RF Choke 3611283

WARDS MODEL GEN-775A

PARTS LIST AND DESCRIPTION (CONTINUED)

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

MICROPHONE

ITEM No.	REPLACEMENT DATA				CONNECTION DATA						
	MFRG. 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	J63349	18-032	18-034	18-010	18-092	1	2	4	NC	NC	2

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF201	Filter	J302	455kHz
J1	Jack	63MW297	External Speaker
J2	Jack	63MW297	PA
LED401	LED	GL3AR1	Xmit (1.95V @ 14mA)
LED402	LED	GL3PG1	Rec (1.59V @ 7mA)
LED403	LED	GL3AR1	PA (1.61V @ 12.5mA)
LED404	LED	LKA4022	Channel Display
ME1	Meter	J1366	Signal/Power
PL1	Lamp	J18545	Meter (12.30V @ 87mA)
RL1	Relay	J12591	Rec/XMT (Includes SW201, 202, 203, 204)
S01	Jack	J26828	Mic
S02	Jack	J26856	Antenna
S03	Jack	J26827	Power
P1	Cord	J92100	Power (With Fuse Holder)
SW1	Power		Power (Part of Volume Control)
SW2	Switch	J12589	ANL
SW3	Switch	J12590	Delta Tune
SW101	Switch	J12602	Channel Selector

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
SW401	Switch	J12601	CB/PA
X101	Crystal	J241284	10.240MHz
X102	Crystal	J241283	36.190MHz
X201	Crystal	J241285	10.695MHz
	Printed Circuit Board	J56460	Channel Display
		J56461	Main
		J56462	PLL

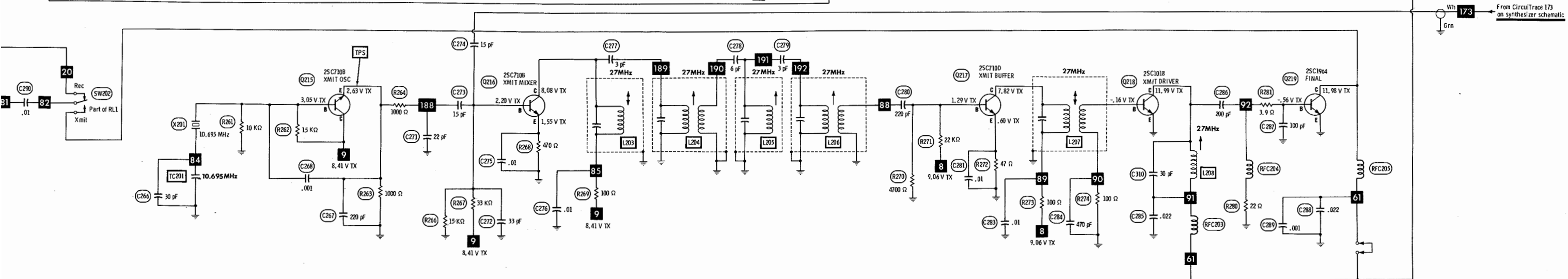
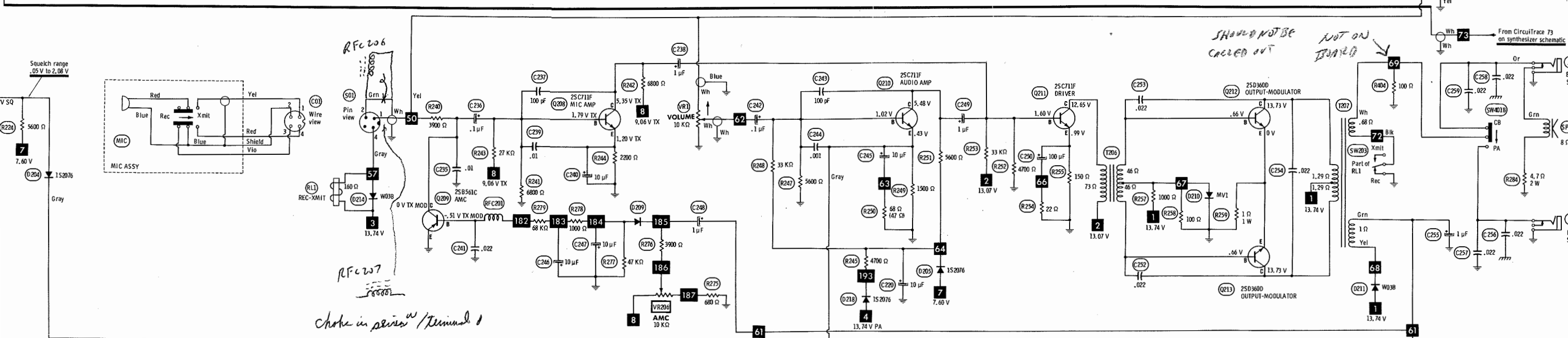
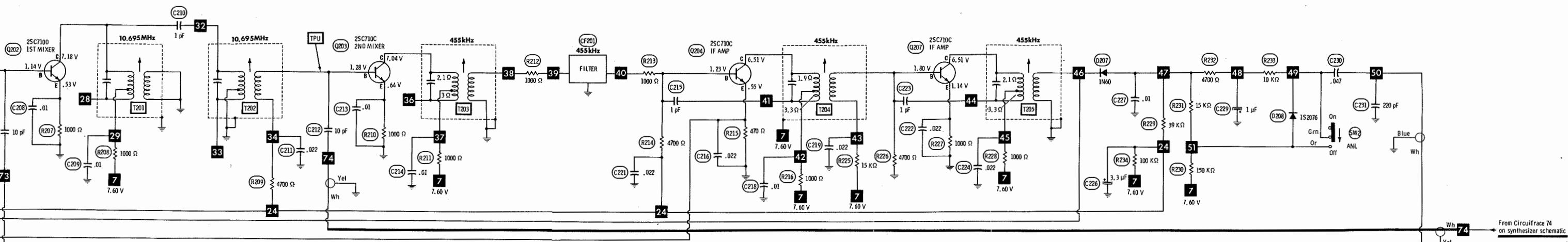
CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

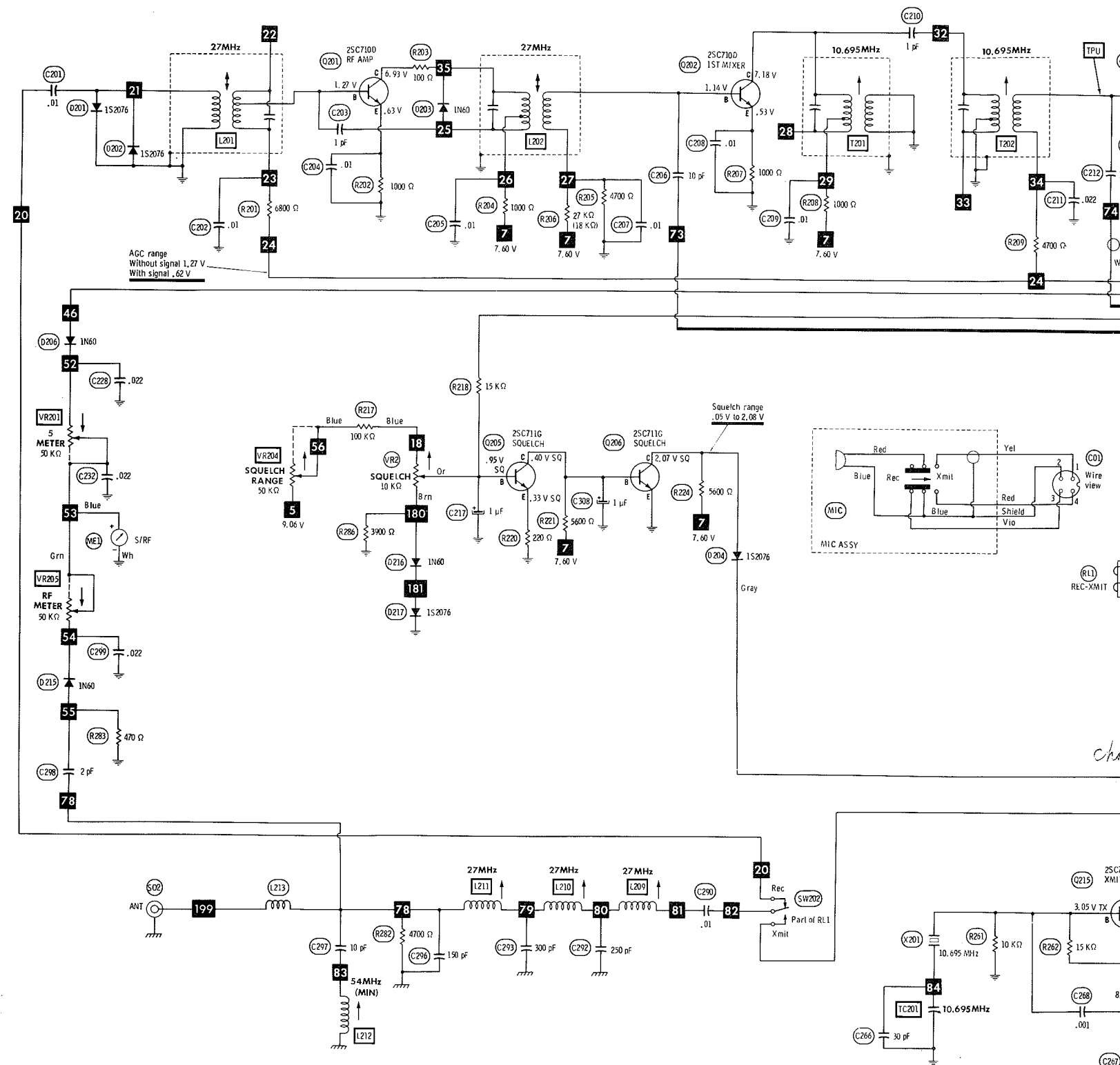
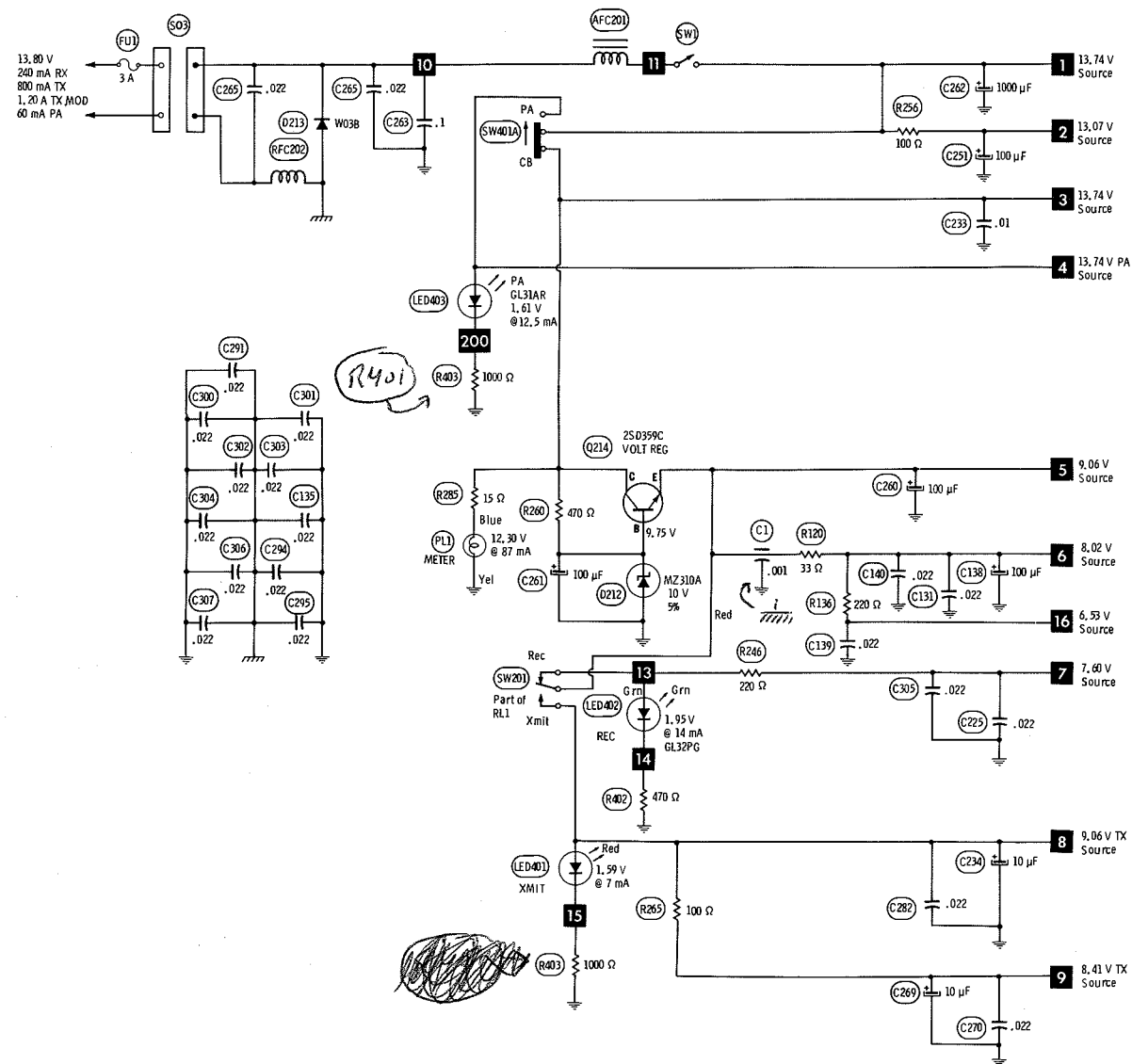
ITEM	PART No.	ITEM	PART No.
Chassis, Back	J381011	Cabinet, Bottom	J98849
Chassis, Front	J381009	Cabinet, Top	J70708
Chassis, Left Side	J38973	Knob, Channel	J501098
Button, PA	J501099	Knob, Control	J501140
		Panel, Front	J70713

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')

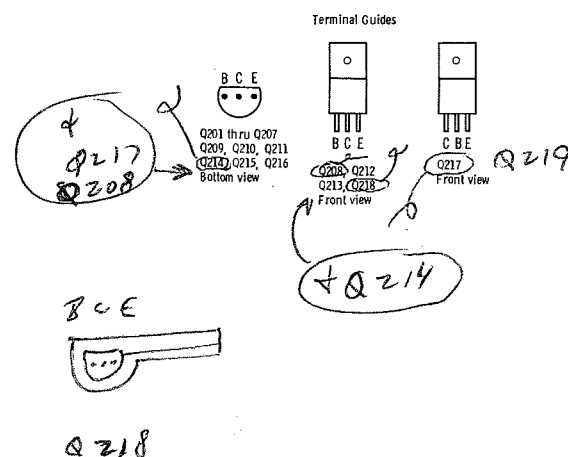
WARDS MODEL GEN-775A





- * Circuitry not used in some versions
 - - - Circuitry used in some versions
 - See parts list
 - * Nominal value
 - Ground
 - Chassis
 - Common tie point
- 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®**
© Howard W. Sams & Co., Inc. 1978



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
C1	.001	J311057					
C2	.001	J311057					
C101	100 10%		DTZ-100	NP0100	CN0310	10TCC-T10	
C102	.022 25V		UK25-223			HY-725	
C103	82 10%		DTZ-82	NP082	CN0482	10TCC-Q82	
C104	.022 25V		UK25-223			HY-725	
C105	20 NPO 5%		DTZ-20	NP020	CN0420	10TCC-Q20	
C106	24 N330 10%	CC24P50V10			*	10TCS-Q25	
C107	47 N330 5%	CC47P50V10			*	10TCS-Q47	
C108	3 NPO +.25	CC3P50V.25P			*		
C109	5 NPO +.5	CC5P50V.5P			*		
C110	.022 25V		UK25-223			10TCC-V50	
C111	.022 25V		UK25-223			HY-725	
C112	.022 25V		UK25-223			HY-725	
C113	.022 25V		UK25-223			HY-725	
C114	5 NPO +.5	CC5P50V.5P			*	10TCC-V50	
C115	.022 20%		OC-253	MGP025	TA125	TG-S25	
C117	.022 25V		UK25-223			HY-725	
C118	33 NPO 5%		DTZ-33	NP033	CN0433	10TCC-Q33	
C119	.022 20% 25V		UK25-223			HY-725	
C120	5 NPO +.5	CC5P50V.5P			*	10TCC-V50	
C121	1 20%		DTZ-100	WMF05P1	EWFO5010	1FT-P10	
C122	100 10%		UK25-223	NP0100	CN0310	10TCC-T10	
C123	.022 20% 25V		DTZ-102			HY-725	
C124	.001 20%		DTZ-102	NP025	GP210	10TCC-Q10	
C125	24 NPO 5%		DTZ-25	NP010	CN0425	10TCC-Q25	
C126	10 NPO +.5		DTZ-10		CN0410	10TCC-Q10	
C127	.022 25V		UK25-223			HY-725	
C128	100 NPO 5%		DTZ-100	NP0100	CN0310	10TCC-T10	
C129	330 5%		DTZ-100	CD15FD331J03	SX333	MMA-331	
C130	.022 25V		UK25-223			HY-725	
C131	.022 25V		UK25-223			HY-725	
C132	10 10%		DTZ-10	NP010	CN0410	10TCC-Q10	
C133	220 20%		DTZ-220			10TCC-T22	
C134	390 10%		DO-391	GP390	GP339	10TS-T39	
C135	.022 25V		UK25-223			HY-725	
C136	.001 20%		DO-102			10TS-D10	
C137	18 10%		DC-253	MGP025	TA125	10TCC-Q18	
C139	.022 20%		UK25-223			TG-S25	
C140	.022 25V		UK25-223			HY-725	
C141	.022 25V		UK25-223			HY-725	
C201	.01 20%		UK50-103			10TCC-V10	
C202	.01 20%		UK50-103			10TCC-Q10	
C203	1 +.5		UK50-103			10TCC-V10	
C204	.01 20%		UK50-103			10TCC-Q10	
C205	.01 20%		UK50-103			10TCC-Q10	
C206	10 NPO +.5		DTZ-10	NP010	CN0410	10TCC-Q10	
C207	.01 20%		UK50-103			10TCC-V10	
C208	.01 20%		UK50-103			10TCC-Q10	
C209	.01 20%		UK50-103			10TCC-Q10	
C210	1 +.5		UK50-103			10TCC-Q10	
C211	.022 25V		UK25-223			10TCC-V10	
C212	10 NPO +.5		DTZ-10	NP010	CN0410	10TCC-Q10	
C213	.01 20%		UK50-103			10TCC-V10	
C214	.01 20%		UK50-103			10TCC-Q10	
C215	1 +.5		UK50-103			10TCC-V10	
C216	.022 20%		DC-253	MGP025	TA125	TG-S25	
C218	.01 20%		UK50-103			HY-725	
C219	.022 25V		UK25-223			HY-725	
C221	.022 25V		UK25-223			TG-S25	
C222	.022 20%		OC-253	MGP025	TA125	10TCC-V10	
C223	1 +.5		UK25-223			HY-725	
C224	.022 25V		UK25-223			HY-725	
C225	.022 25V		UK25-223			HY-725	
C227	.01 20%		UK25-223	WMF1S1	EWFTA110	1FT-S10	
C228	.022 25V		UK25-223			HY-725	
C230	.047		DTZ-220	DPMS2S47	EWFTA147	1FT-S47	
C231	220 20%		DTZ-220			10TCC-T22	
C232	.022 25V		UK25-223			HY-725	
C233	.022 25V		UK25-223			HY-725	
C235	.01 20%		DTZ-100	WMF1S1	EWFTA110	1FT-S10	
C237	100 10%		UK50-103	NP0100	CN0310	10TCC-T10	
C239	.01 20%		UK25-223			10TCC-Q10	
C241	.022 25V		DTZ-100			HY-725	
C243	100 10%		DTZ-100	NP0100	CN0310	10TCC-T10	
C244	.001 20%		DD-102			10TS-D10	
C252	.022 20%		OC-253	MGP025	TA125	1FT-S22	
C253	.022 20%		UK25-223			1FT-S22	
C254	.022 20%		UK25-223			TG-S25	
C256	.022 25V		UK25-223			HY-725	
C257	.022 25V		UK25-223			HY-725	
C258	.022 25V		UK25-223			HY-725	
C259	.022 25V		UK25-223			HY-725	
C263	.1 20%		UK25-223	WMF05P1	EWFO5010	1FT-P10	
C264	.022 25V		UK25-223			HY-725	
C265	.022 25V		UK25-223			10TCC-Q30	
C266	30 NPO 5%		DD-102	C015FD221J03	SX322	MMA-221	
C267	220 5%		DD-102		GP210	HY-725	
C268	.001 20%		DTZ-22	NP022	CN0422	10TCC-Q22	
C270	.022 25V		DTZ-33	NP033	CN0433	10TCC-Q33	
C271	22 NPO 5%		DTZ-15	NP015	CN0415	10TCC-Q15	
C272	33 NPO 5%		DTZ-15			10TCC-Q15	
C273	15 NPO 5%		DTZ-15			10TCC-Q15	
C274	15 NPO 5%		DTZ-15			10TCC-Q15	

PARTS LIST AND DESCRIPTION

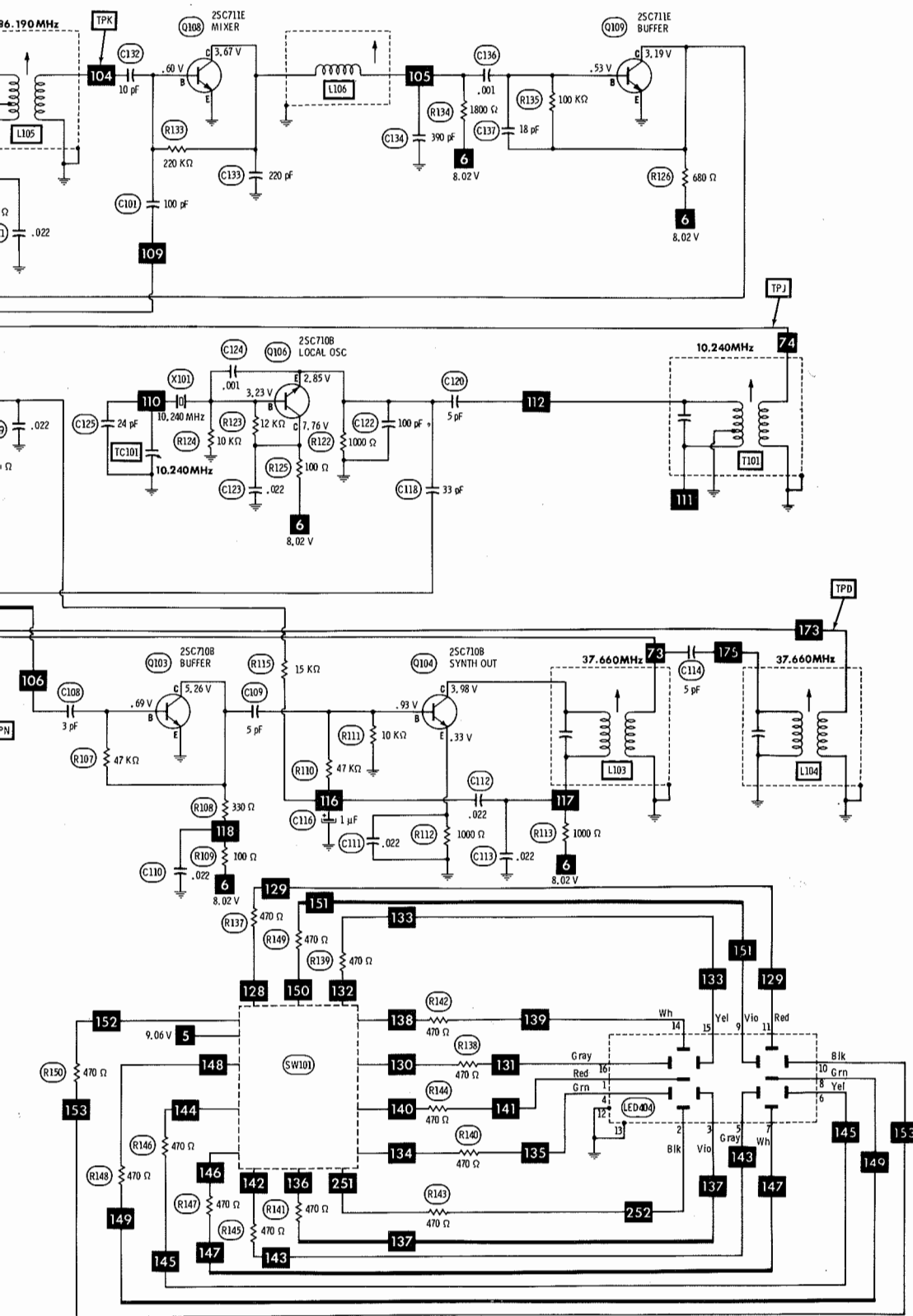
(When ordering parts, state Model, Part Number, and Description.)

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA										
			GENERAL ELECTRIC PART No.	MALLORY PART No.	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	MV201	5633-MV201			HEPR2502	REN 612			ECG612			ZEN-452	
D102	MV201	5633-MV201			HEPR2502	REN 612			ECG612			ZEN-452	
D103	1S2076	5631-1S2076	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925		
D201	1S2076	5613-1S2076	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925		
D202	1S2076	5613-1S2076	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925		
D203	1N60		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430	
D204	1S2076	5613-1S2076	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925		
D205	1S2076	5613-1S2076	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925		
D206	1N60		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430	
D207	1N60		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430	
D208	1S2076	5613-1S2076	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925		
D209	1S2076	5613-1S2076	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925		
D210	MV1	5641-MV1		PTC301		REN 601	SK3463		ECG601				
D211	W038	5632-W038	GE-512	PTC204	HEPR0098	REN 156	SK3051	RT-201	ECG156		WEP4008		
D212	MZ310A	5635-MZ310A	GE-512	ZB108		REN 140	SK3061	RT-241	ECG140A	1N4740A	WEP1110		
D213	W038	5632-W038	GE-512	PTC204	HEPR0098	REN 156	SK3051	RT-201	ECG156		WEP4008		
D214	W038	5632-W038	GE-512	PTC204	HEPR0098	REN 156	SK3051	RT-201	ECG156		WEP4008		
D215	1N60		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430	
D216	1N60		1N60	PTC206	HEPR9135	REN 109	SK3088	RT-263	ECG109	1N60	WEP134	ZEN-430	
D217	1S2076	5613-1S2076	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925		
D218	1S2076	5613-1S2076	GE-514	PTC214	HEPR0602	REN 177	SK3100	RT-218	ECG519	1N4148	WEP925		
IC101	M58473P	5654-M58473P				REN 132	SK3448	RT-175	ECG312			ZEN-123	
Q101	2SK33E	5616-2SK33(E)	GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312			ZEN-123	
Q102	2SK33D	5616-2SK33(D)	GE-FET-2	PTC161	HEPF0021	REN 132	SK3448	RT-175	ECG312			ZEN-123	
Q103	2SC710B	5163-710(B)	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-Z9000*	
Q104	2SC710B	5163-710(B)	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-Z9000*	
Q105	2SC711E	5613-711E	GE-62*	PTC121	HEPS0024*	REN 199*	SK3124*	RT-302*	ECG199*	2SC711	WEP66*	ZEN-116	
Q106	2SC710B	5613-710B	GE-62*	PTC121	HEPS0024*	REN 199*	SK3124*	RT-302*	ECG199*	2SC711	WEP66*	ZEN-116	
Q107	2SC710D	5613-710D	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-Z9000*	
Q108	2SC711E	5613-711E	GE-62*	PTC121	HEPS0024*	REN 199*	SK3124*	RT-302*	ECG199*	2SC711	WEP66*	ZEN-116	
Q109	2SC711E	5613-711E	GE-62*	PTC121	HEPS0024*	REN 199*	SK3124*	RT-302*	ECG199*	2SC711	WEP66*	ZEN-116	
Q201	2SC710D	5613-710D	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-Z9000*	
Q202	2SC710D	5613-710D	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-Z9000*	
Q203	2SC710C	5613-710C	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-Z9000*	
Q204	2SC710C	5613-710C	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-Z9000*	
Q205	2SC711G	5613-711G	GE-62*	PTC121	HEPS0024*	REN 199*	SK3124*	RT-302*	ECG199*	2SC711	WEP66*	ZEN-116	
Q206	2SC711G	5613-711G	GE-62*	PTC121	HEPS0024*	REN 199*	SK3124*	RT-302*	ECG199*	2SC711	WEP66*	ZEN-116	
Q207	2SC710C	5613-710C	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-Z9000*	
Q208	2SC711F	5613-711F	GE-62*	PTC121	HEPS0024*	REN 199*	SK3124*	RT-302*	ECG199*	2SC711	WEP66*	ZEN-116	
Q209	2SB561C	5612-561C	GE-244	PTC103	HEPS0019	RE 26	SK3466	RT-126A	ECG159		WEP62	921-383	
Q210	2SC711F	5613-711F	GE-62*	PTC121	HEPS0024*	REN 199*	SK3124*	RT-302*	ECG199*	2SC711	WEP66*	ZEN-116	
Q211	2SC711F	5613-711F	GE-62*	PTC121	HEPS0024*	REN 199*	SK3124*	RT-302*	ECG199*	2SC711	WEP66*	ZEN-116	
Q212	2SD360D	5614-360D	GE-337	PTC186		REN 235	SK3197	RT-146	ECG235	2SC1306	WEP785		
Q213	2SD360D	5614-360D	GE-337	PTC186		REN 235	SK3197	RT-146	ECG235	2SC1306	WEP785		
Q214	2SD359C	5614-359C	GE-247	PTC110	HEPS5027	REN 186	SK3041	RT-158	ECG186A		WEP900		
Q215	2SC710B	5613-710B	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-Z9000*	
Q216	2SC710B	5613-710B	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-Z9000*	
Q217	2SC710D	5613-710D	GE-211*	PTC132	HEPS0016*	REN 123A*	SK3444	RT-308*	ECG123A*	2SC710	WEP710	121-Z9000*	
Q218	2SC2086	5613-2086	GE-47*	PTC143*	HEPS3001*	REN 293*			ECG293*		WEP912*		
Q219	2SC1964	5613-1964(12)	GE-215	PTC186		REN 235	SK3197	RT-146	ECG235		WEP785		

CAPACITORS

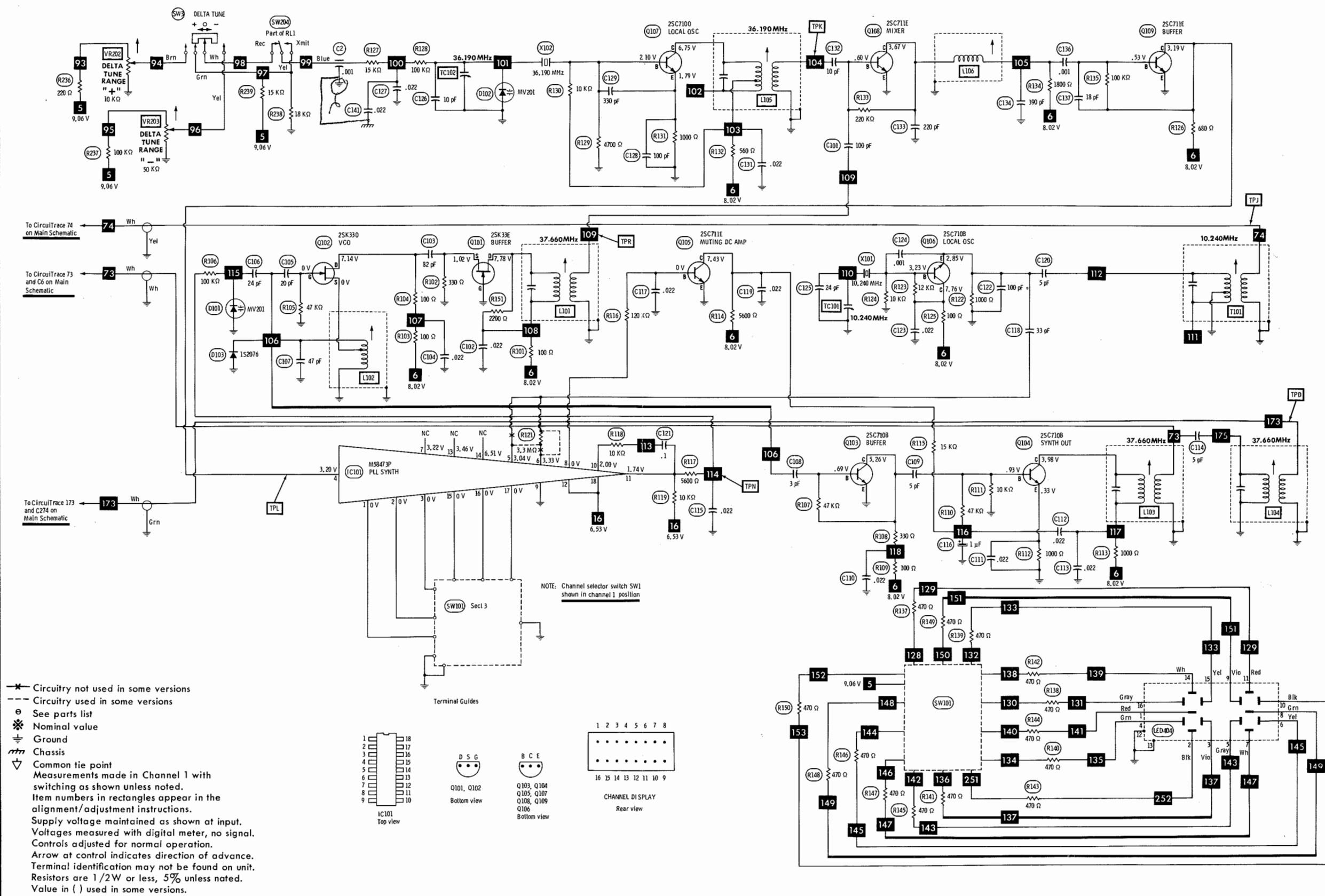
ITEM No.	VALUE
C1	.001
C2	.001
C101	100 10
C102	.022 2
C103	.022 2
C104	.022 2
C105	20 NPO
C106	24 N33
C107	47 N33
C108	3 NPO
C109	5 NPO
C110	.022 2
C111	.022 2
C112	.022 2
C113	.022 2
C114	5 NPO
C115	.022 2
C117	.022 2
C118	33 NPO
C119	.022 2
C120	5 NPO
C121	.1 20
C122	100 10
C123	.022 2
C124	.001 2
C125	24 NPO
C126	10 NPO
C127	.022 2
C128	100 NPO
C129	330 5
C130	.022 2
C131	.022 2
C132	10 10
C133	220 20
C134	390 10
C135	.022 2
C136	.001 2
C137	18 10
C139	.022 2
C140	.022 2
C141	.022 2
C201	.01 20
C202	.01 20
C203	1 + .5
C204	.01 20
C205	.01 20
C206	10 NPO
C207	.01 20
C208	.01 20
C209	.01 20
C210	1 + .5
C211	.022 2
C212	10 NPO
C213	.01 20
C214	.01 20
C215	1 + .5
C216	.022 2
C218	.01 20
C219	.022 2
C221	.022 2
C222	.022 2
C223	1 + .5
C224	.022 2
C225	.022 2
C227	.01 20
C228	.022 2
C230	.047
C231	220 2
C232	.022 2
C233	.022 2
C235	.01 20
C237	100 1
C239	.01 20
C241	.022 2
C243	100 1
C244	.001
C252	.022 2
C253	.022 2
C254	.022 2
C256	.022 2
C257	.022 2
C258	.022 2
C259	.022 2
C263	.1 20
C264	.022 2
C265	.022 2
C266	30 NPO
C267	220 5
C268	.001
C270	.022 2
C271	22 NPO
C272	33 NPO
C273	15 NPO
C274	15 NPO



WARDS MODEL GEN-775A

ITEM No.	R
C1	.001
C2	.001
C101	100 10
C102	.022 2
C103	.82 10
C104	.022 2
C105	20 NPO
C106	24 N33
C107	47 N33
C108	3 NPO
C109	5 NPO
C110	.022 2
C111	.022 2
C112	.022 2
C113	.022 2
C114	5 NPO
C115	.022 2
C117	.022 2
C118	33 NPO
C119	.022 2
C120	5 NPO
C121	.1 20
C122	100 10
C123	.022 2
C124	.001 2
C125	24 NPO
C126	10 NPO
C127	.022 2
C128	100 NPO
C129	330 5
C130	.022 2
C131	.022 2
C132	10 10
C133	220 20
C134	390 10
C135	.022 2
C136	.001 2
C137	18 10
C139	.022 2
C140	.022 2
C141	.022 2
C201	.01 20
C202	.01 20
C203	1 + 5
C204	.01 20
C205	.01 20
C206	10 NPO
C207	.01 20
C208	.01 20
C209	.01 20
C210	1 + 5
C211	.022 2
C212	10 NPO
C213	.01 20
C214	.01 20
C215	1 + 5
C216	.022 2
C218	.01 20
C219	.022 2
C221	.022 2
C222	.022 2
C223	1 + 5
C224	.022 2
C225	.022 2
C227	.01 20
C228	.022 2
C230	.047
C231	220 2
C232	.022 2
C233	.022 2
C235	.01 20
C237	100 1
C239	.01 20
C241	.022 2
C243	100 1
C244	.001
C252	.022 2
C253	.022 2
C254	.022 2
C256	.022 2
C257	.022 2
C258	.022 2
C259	.022 2
C263	.1 20
C264	.022 2
C265	.022 2
C266	30 NPO
C267	220 5
C268	.001
C270	.022 2
C271	22 NPO
C272	33 NPO
C273	15 NPO
C274	15 NPO

WARDS MODEL GEN-775A



* Circuitry not used in some versions
 - - - Circuitry used in some versions
 e See parts list
 * Nominal value
 G Ground
 Chassis
 Common tie point
 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 PHOTOFACT STANDARD NOTATION SCHEMATIC
 WITH **CIRCUITRACE**[®]
 © Howard W. Soms & Co., Inc. 1978