

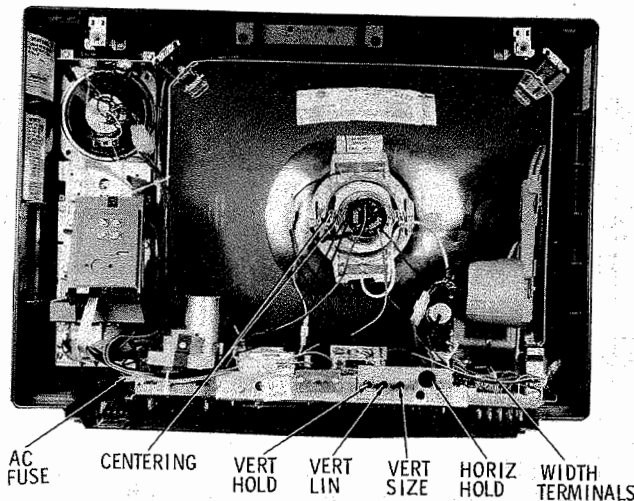
AGC ADJUSTMENT

Turn RF AGC control fully counterclockwise. Tune in a strong local station and adjust contrast control for maximum contrast. Turn AGC control fully clockwise, then slowly counterclockwise while watching the white areas of the picture. Adjust AGC control for maximum contrast without loss of detail in the white areas, unstable sync, or audio buzz.

Turn RF AGC control slowly clockwise until snow appears in the picture, then counterclockwise until the picture is free of snow. Check each channel for AGC action. Repeat above procedure if necessary.

HORIZ SWEEP CIRCUIT ADJUSTMENTS

Tune in a TV station and set all controls for normal operation. Adjust Horiz. Osc. (Hold) to a point where it is virtually impossible to lose horizontal sync while switching from channel to channel.



CABINET-REAR VIEW

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

Remove seven screws holding cabinet back. Disconnect antenna leads and remove cabinet back. Remove all knobs.

NOTE: Most components may be serviced without chassis removal.

Disconnect picture-tube socket, HV anode lead, three ground straps and speaker leads. Remove deflection yoke.

Remove four screws holding tuner assembly and two screws holding switch assembly. Release two spring clips holding chassis to cabinet. Remove chassis, tuner assembly, and switch assembly.

PICTURE TUBE REMOVAL

Follow "Chassis Removal" procedure and lay set facedown on a soft protective surface. Remove eight screws holding picture-tube mounting brackets and remove picture tube. Do not lift picture tube by the neck.

SERVICING IN THE FIELD

CRT - IMPLOSION PROTECTION AND CLEANING

Implosion protection is an integral part of the picture tube, cleaning accomplished without CRT removal.

FUSE/FUSE DEVICE

A 1/2-inch length of #36 fuse wire is used for AC line protection. (See "Cabinet -- Rear View" photo.)

VHF TUNER

Set fine tuning at the center of its range and adjust oscillator slug (one for each channel) for best sound and picture.

UHF TUNER

No provision is made to alter the continuous UHF tuning on this receiver.

HORIZONTAL OSCILLATOR

Adjustment of the horizontal hold is accomplished by the proper setting of the Horiz. Osc. (Hold) Coil. (See "Cabinet -- Rear View" photo.)

LAMP ACCESSIBILITY

Remove cabinet back and remove tuner assembly held by four screws.

WIDTH

A jumper across R265, R266 increases width, removing jumper decreases width. (See "Cabinet -- Rear View" photo.)

FOCUS

No provision is made to vary the focus on this receiver.

AGC

The AGC may be varied by means of RF AGC and AGC controls. (See "Transistor Placement Chart".)

CENTERING

Centering is accomplished by proper adjustment of two magnetic rings located on the yoke rear cover.

SET 1257 FOLDER 2

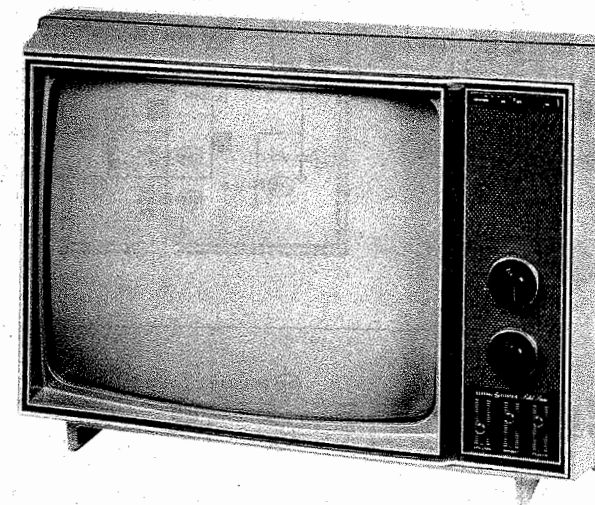
GENERAL ELECTRIC
CHASSIS U-1

PHOTOFACT® Folder

with CIRCUITRACE™

GENERAL ELECTRIC
CHASSIS U-1

For Supplier Address See PHOTOFACT Index



MODEL TR465UWD-1

SAFETY PRECAUTIONS

Make sure line voltage does not exceed rating of set. Check high-voltage regulation and adjust to correct value.

Be sure shields and rear cover are in place and secure.

Beware of shock from high voltage or AC line. Discharge high voltage to HV cage only.

Use extreme care when handling picture tube. Do not bump, scratch, or exert undue strain.

CAUTION: One side of AC line connected to chassis. Use isolation transformer for servicing. Make certain isolation networks are in place and exposed metal is safe to touch before returning set to customer.

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REMEMBER TO ASK— "What else needs fixing?"

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



The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. 2PC410

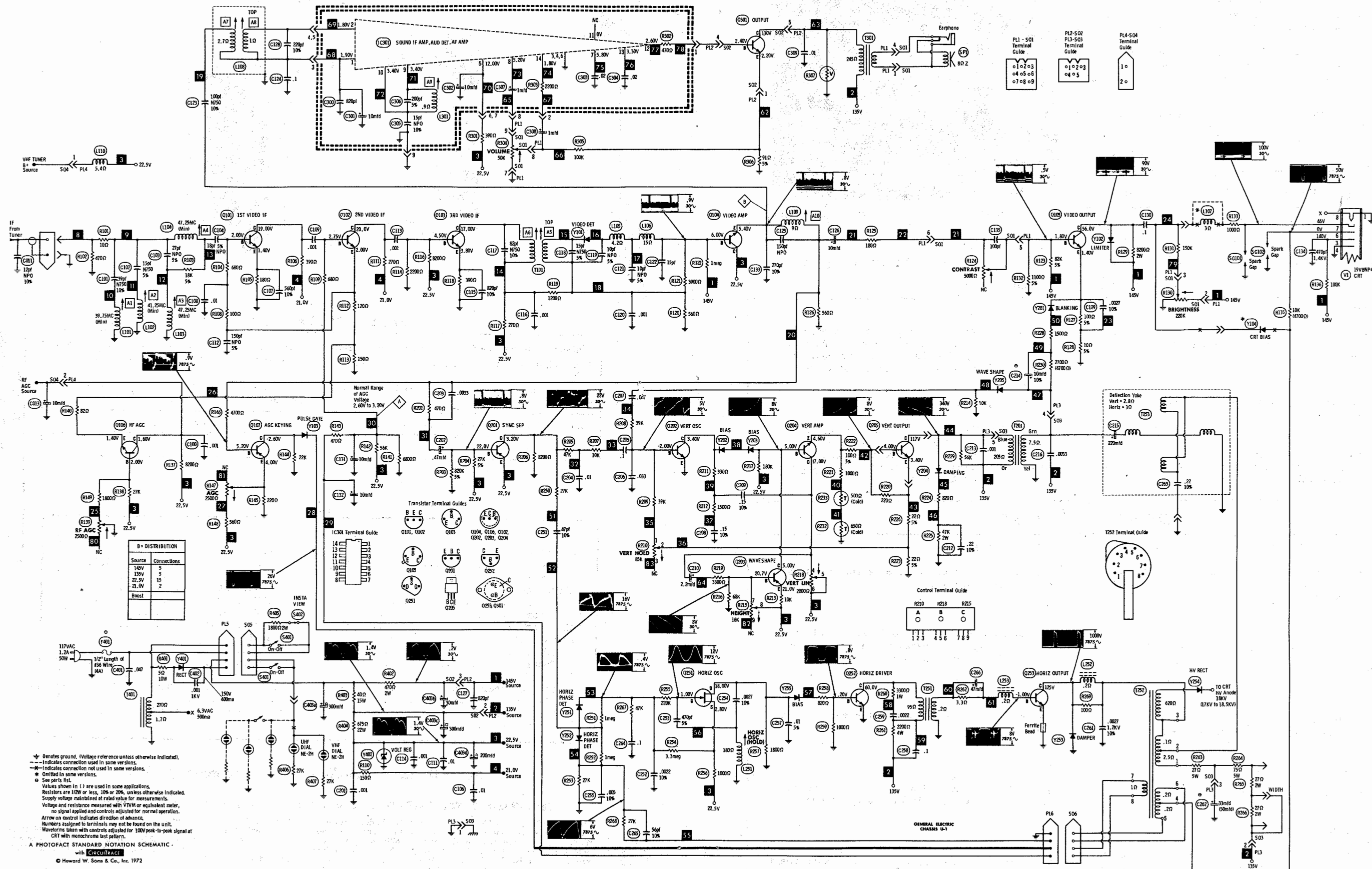
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DATE 7-72

SET 1257 FOLDER 2

GENERAL ELECTRIC
CHASSIS U-1

SET 1257 FOLDER 2



RESISTANCE MEASUREMENTS

ITEM	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12	PIN 13	PIN 14
V1	FIL	TP	100K \uparrow	0 Ω	TP	10K	200K	FIL						
1C301	1NF	1NF	0 Ω	0 Ω	850 Ω	0 Ω	7000 Ω	8500 Ω	4200 Ω	4200 Ω	1NF	9000 Ω	5000 Ω	50K
MEASUREMENTS BELOW TAKEN WITH METER HAVING .08V MAX BETWEEN PROBE TIPS														
ITEM	E	B	C		ITEM	E	B	C		ITEM	E	B	C	
Q101	180 Ω	1100 Ω	1000 Ω		Q202	0 Ω	75K	1NF \bullet		VHF TUNER				
Q102	270 Ω	6800 Ω	900 Ω		Q203	10K	6000 Ω	180K		Q201	220 Ω	10K	1800 Ω	
Q103	390 Ω	1800 Ω	600 Ω		Q204	300 Ω	180K	1400 Ω		Q202	680 Ω	3300 Ω	1NF	
Q104	560 Ω	3600 Ω	500 Ω		Q205	44 Ω	210 Ω	1300 Ω		Q203	1NF	3300 Ω	1000 Ω	
Q105	110 Ω	1100 Ω	10K		Q251	850 Ω ^S	1.5meg ^G	850 Ω ^D		Q204	2700 Ω	4300 Ω	1000 Ω	
Q106	210 Ω	2800 Ω	10K		Q252	0 Ω	1000 Ω	3000 Ω		UHF TUNER				
Q107	180 Ω	4700 Ω	20K		Q253	0 Ω	3.7 Ω	140 Ω \uparrow		Q301	330 Ω	3200 Ω	2200 Ω	
Q201	500 Ω	26K	8000 Ω		Q301	91 Ω	10K	200 Ω \uparrow						

† MEASURED FROM CATHODE OF Y401.
• READING DEPENDS ON POLARITY OF METER CONNECTIONS.

TROUBLESHOOTING CHECK CHART

The following chart lists component failures most likely to produce the indicated symptom.

SWEEP

No raster, has sound: Q251,Q252,Q253,Y253,Y254,V1

No vert deflection: Q202 thru Q205
Poor vert lin or foldover: Q202 thru Q205
Poor horiz lin or foldover: Q253,Y253
Narrow picture: Y401,Q251,Q252,Q253,Y253

Vert off freq: Q202
 Horiz off freq: Y251,Y252,Q251

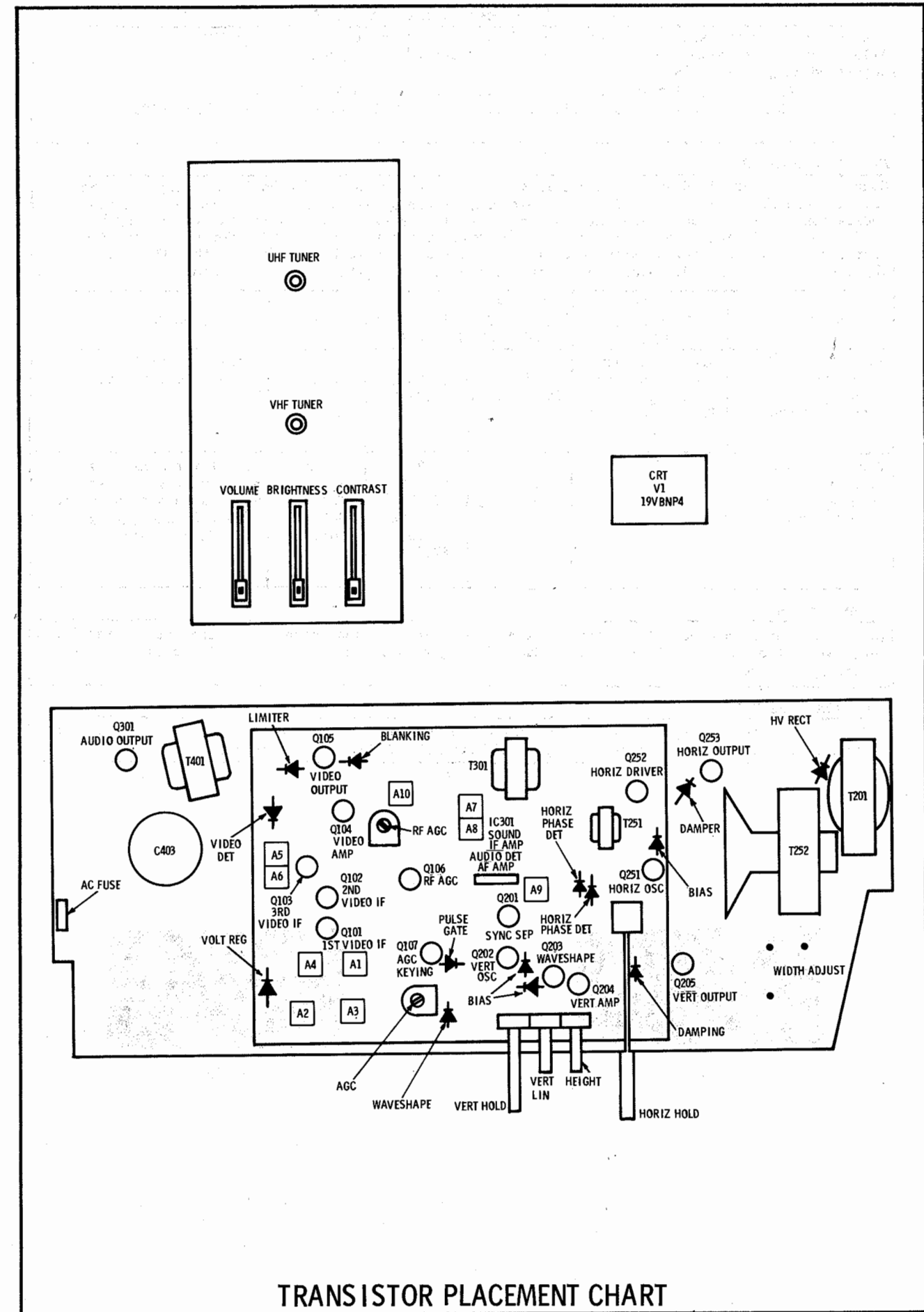
SYNC

```
No vert sync: Q202
No horiz sync: Y251,Y252,Q251
No vert/horiz sync: Q201
```

PICTURE or SOUND

No pic, no sound, no raster: F401,Y401

No pic, no sound, has raster: Q101,Q102,Q103,Q104,
Q202 (1), Q203 (1)
No pic, no sound, has snow: Q201 (1) thru Q204 (1)
No pic, has sound, no raster: Q105,V1
No pic, has sound, has raster: Q105
Has pic, no sound: IC301,Q301
Overloaded picture: Q106,Q107,Y101



TV ALIGNMENT INSTRUCTIONS

Use an isolation transformer, or observe polarity, and maintain voltage at 117VAC.
Allow a 20-minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools:
A1 thru A4, A7 thru A10..... GC ELECTRONICS #9440
A5,A6, Tuner IF Output Coil..... GC ELECTRONICS #9296, 9297, 9300

VIDEO IF ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. Use only enough generator output to provide a usable indication. Note: Response may vary slightly from that shown. Set channel selector to any high-band, non-interfering channel. Set volume and contrast controls to MINIMUM. Set RF AGC and AGC controls to fully counterclockwise position. Connect a variable bias supply to the AGC line (Point \diamond), negative to ground. Adjust to obtain a response curve with no overload. Remove Q253.

INDICATOR	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	ADJUST	REMARKS
Vertical input of scope to Point \diamond , low side to ground.	High side thru .002mfd cap to point \diamond on VHF Tuner, low side to ground.	44MC (10MC Sweep)	39.75MC 41.25MC 47.25MC	A1 thru A4	Adjust for MINIMUM with markers as shown in Figure 1.
Vertical input of scope to Point \diamond , low side to ground.	"	44MC (10MC Sweep)	39.75MC 41.25MC 42.67MC 44.25MC 45.75MC 47.25MC	A5, A6, and Tuner IF Output Coil	Adjust for maximum gain and symmetry of response with markers as shown in Figure 2. Readjust RF AGC and AGC controls.

SOUND IF ALIGNMENT

Tune in a station and adjust A 7 for maximum sound. Reduce signal strength at the antenna terminals until distortion appears. Continue to reduce the signal while aligning for undistorted output by adjusting A8 and A9.

4.5MC TRAP ALIGNMENT

Tune in a strong TV signal and set the contrast at maximum. Adjust the fine tuning until a beat pattern is visible on the screen. Adjust A¹⁰ for MINIMUM beat interference.

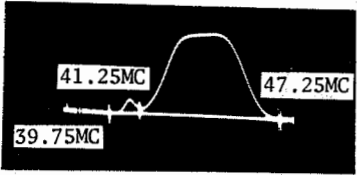


FIGURE 1

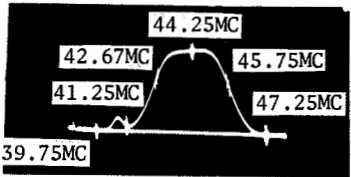
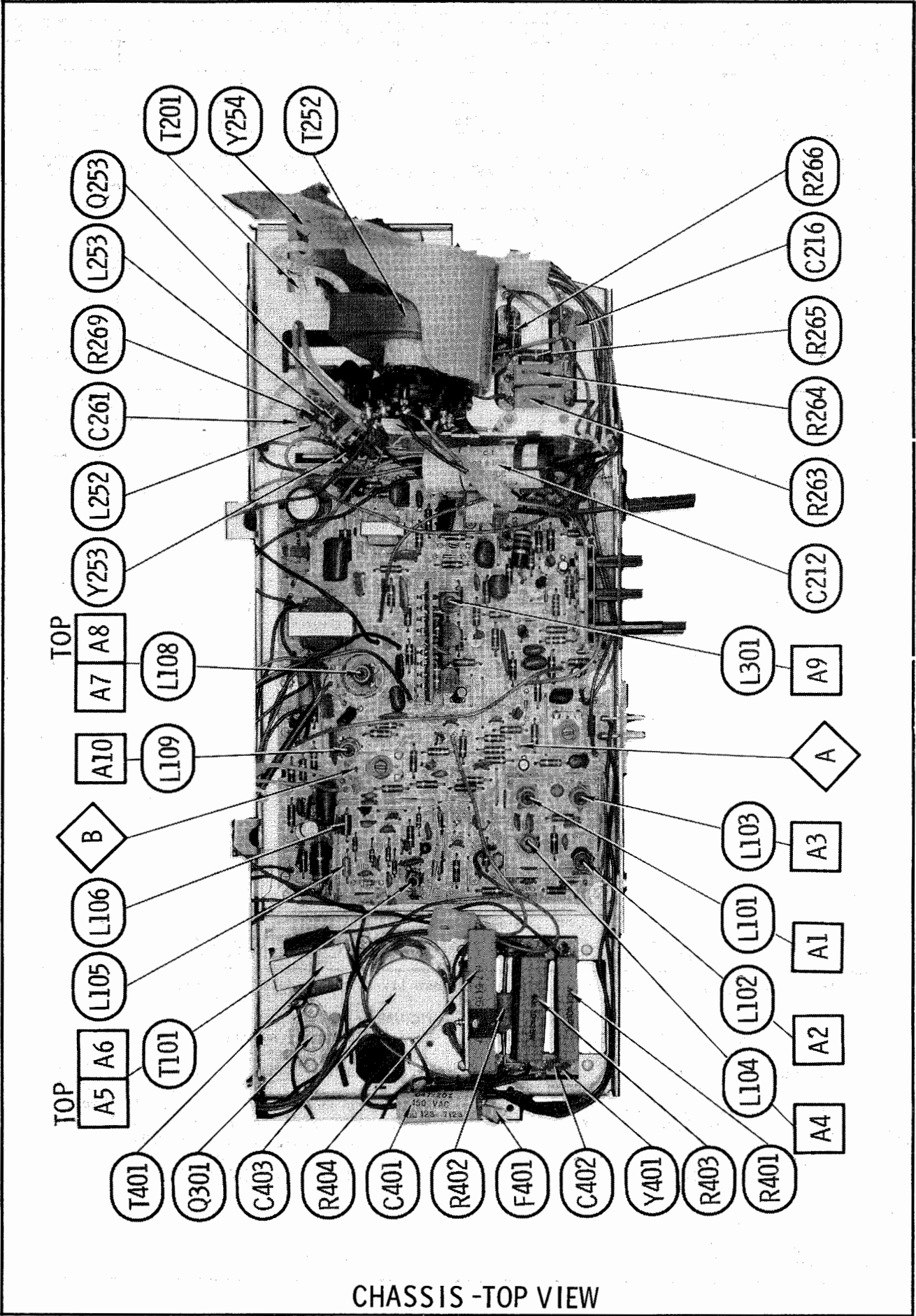
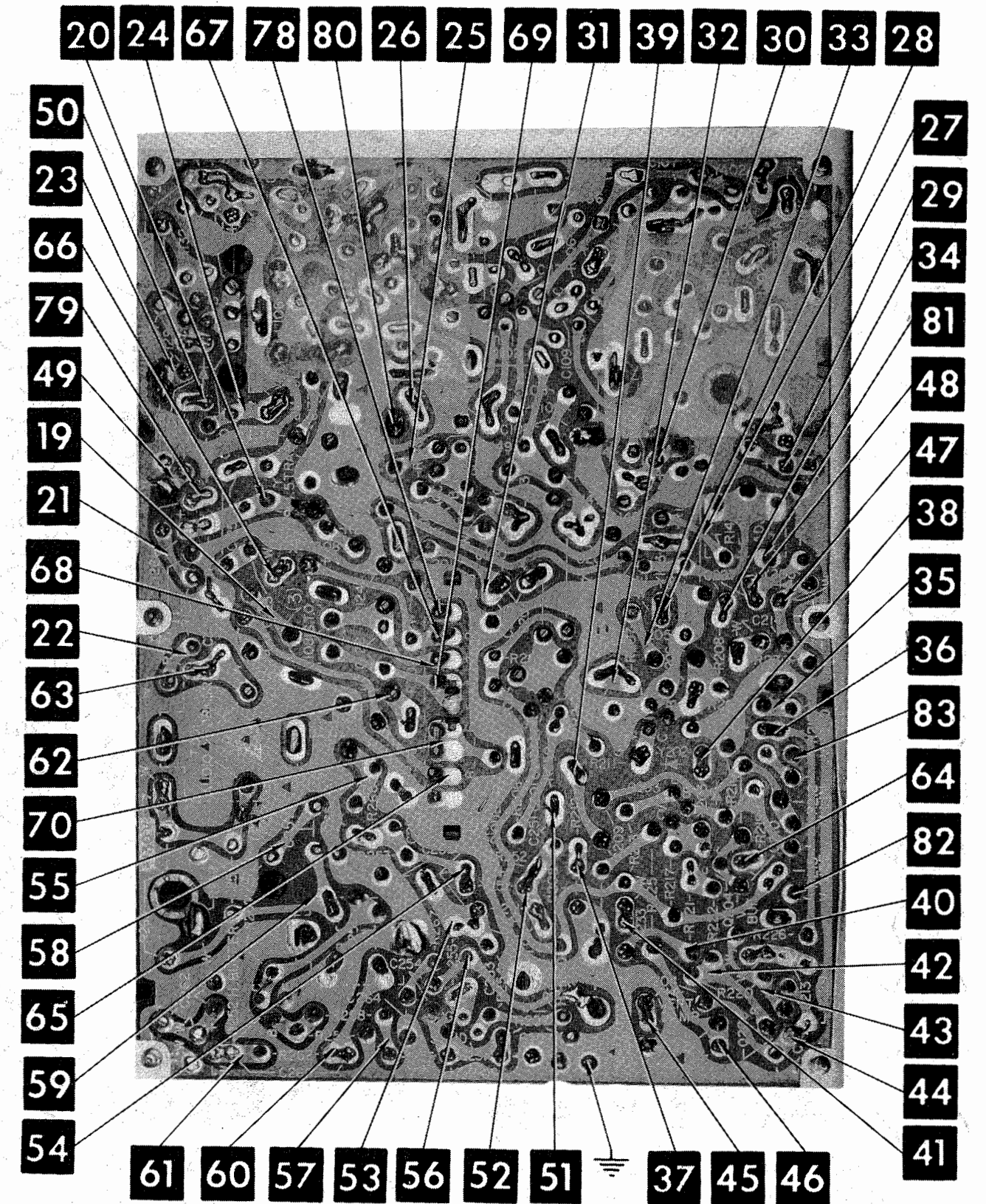
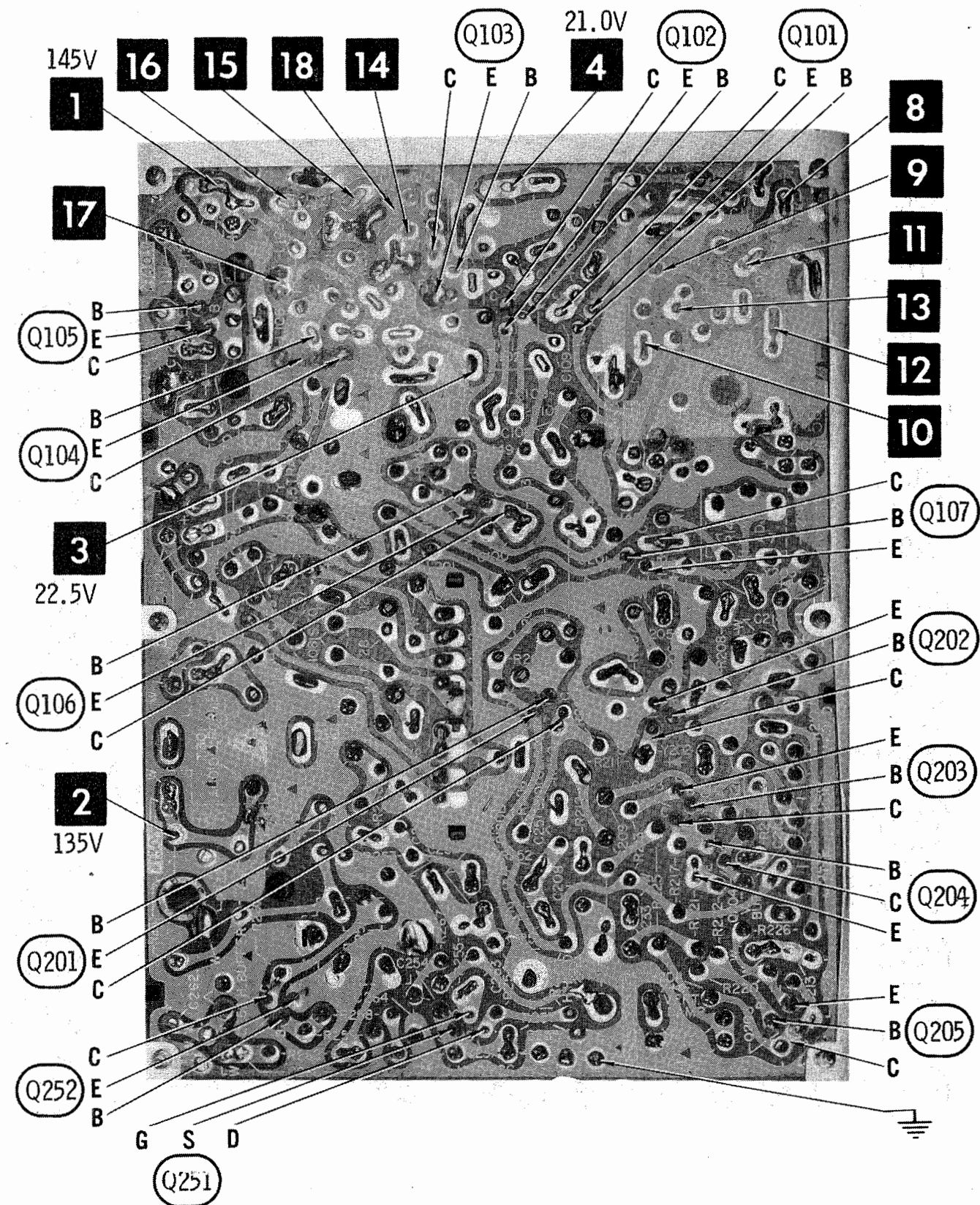
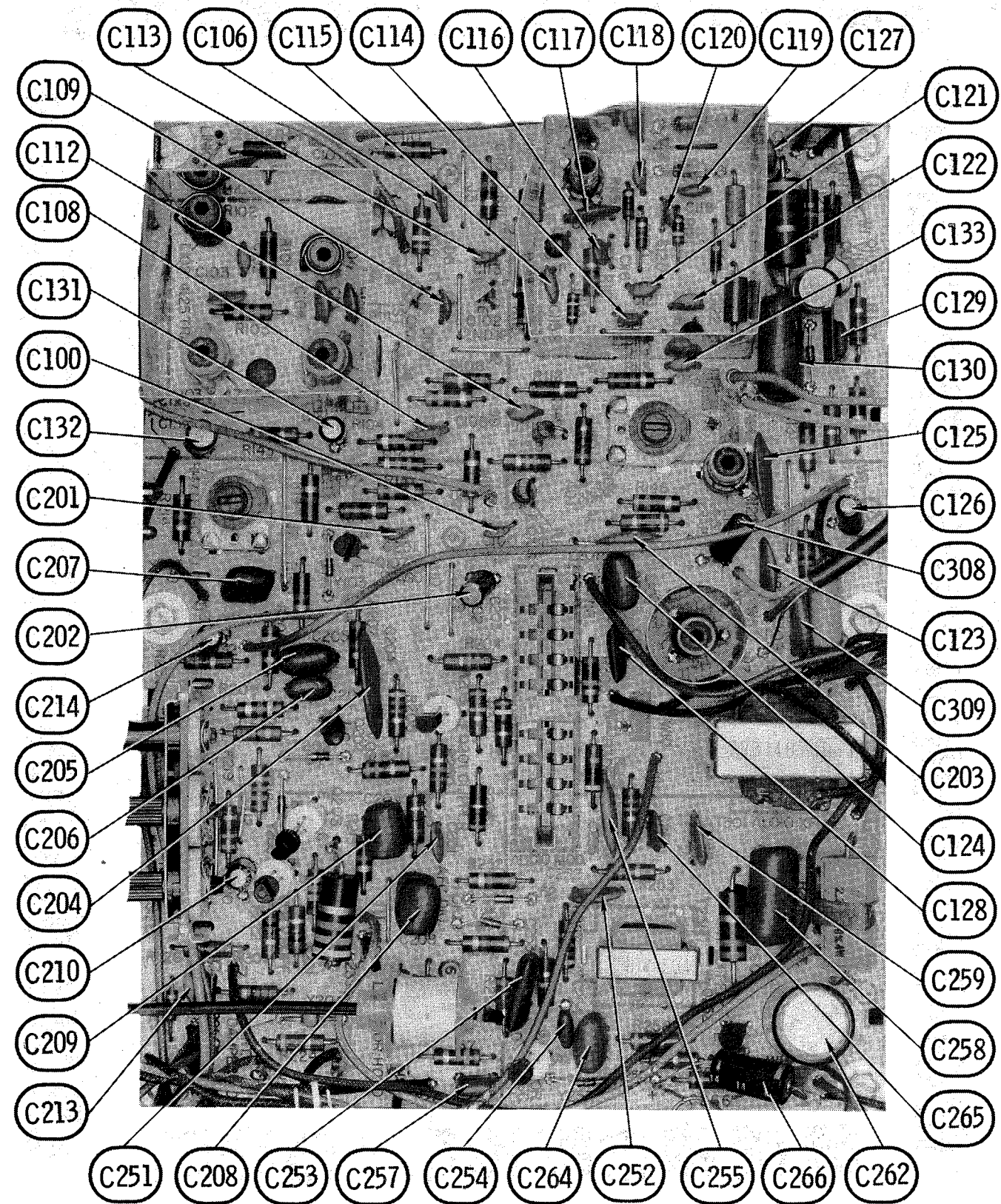


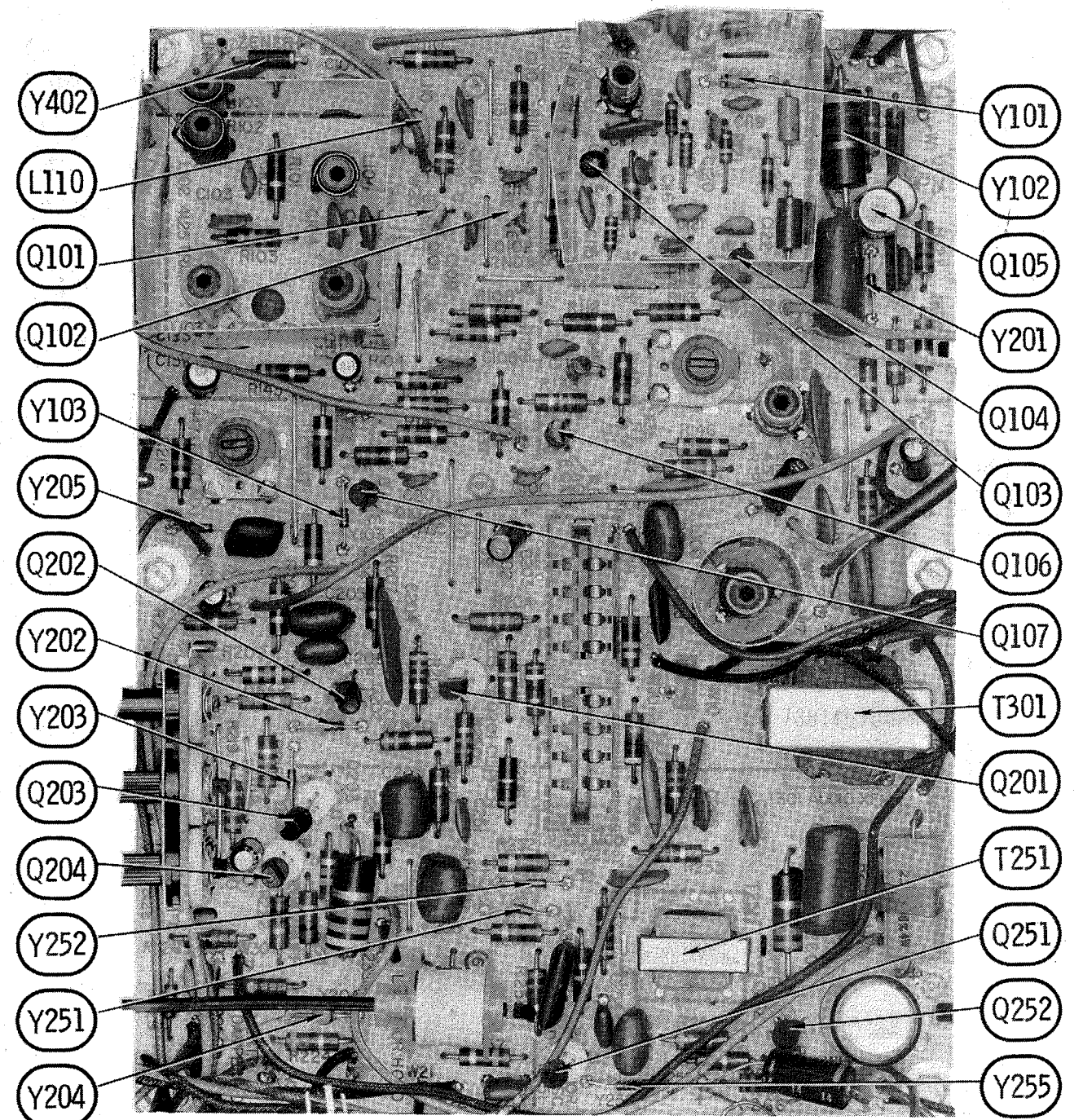
FIGURE 2

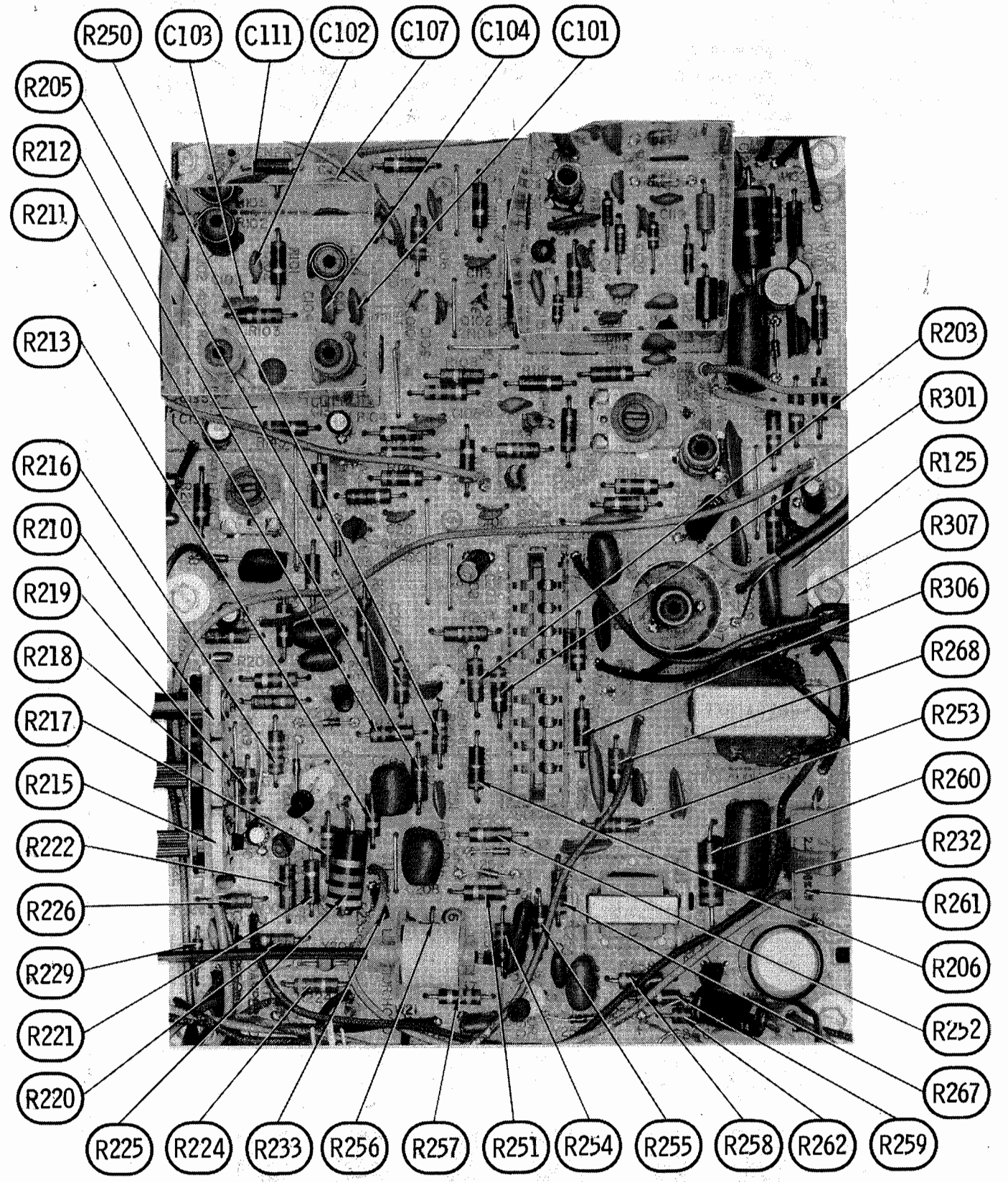
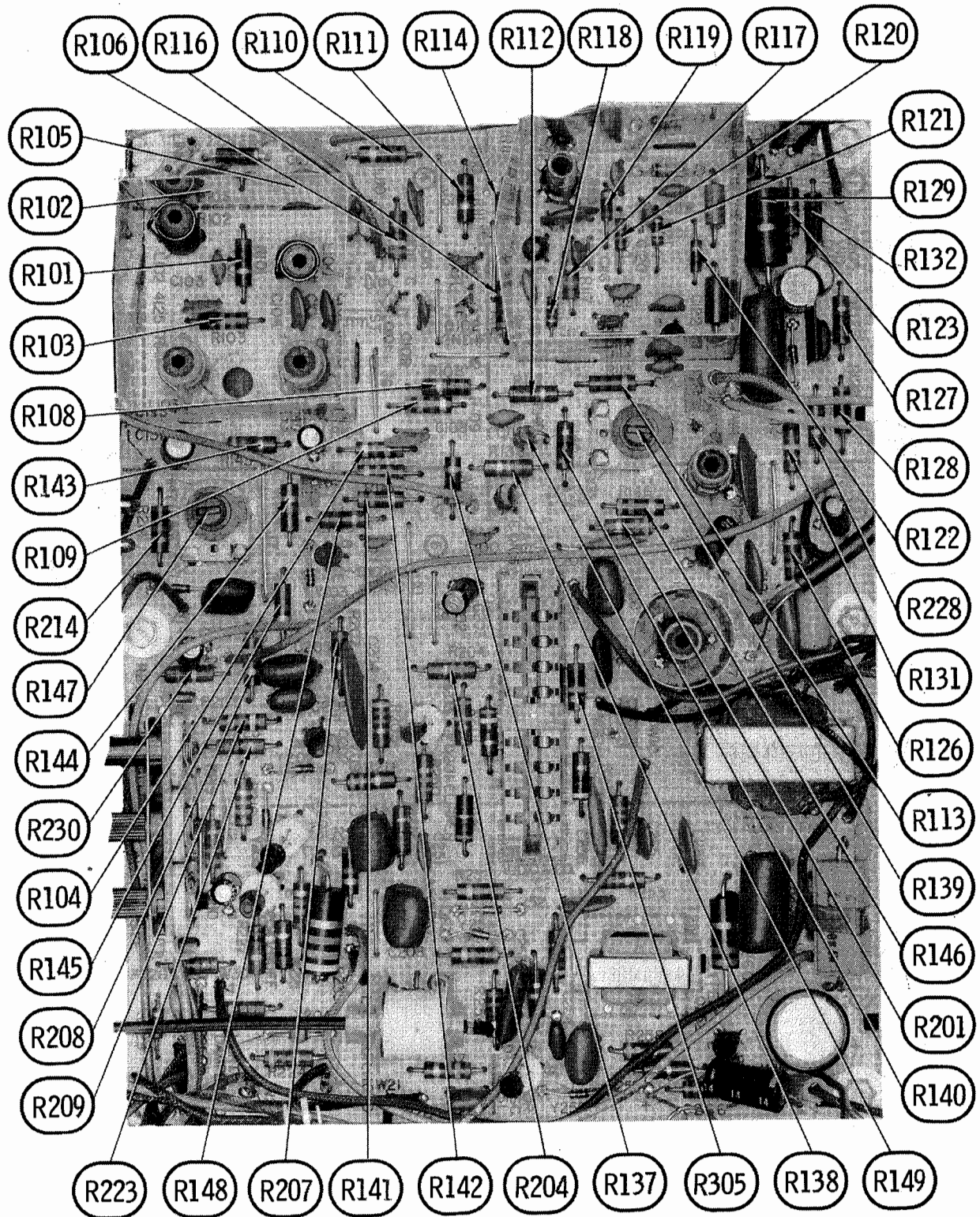




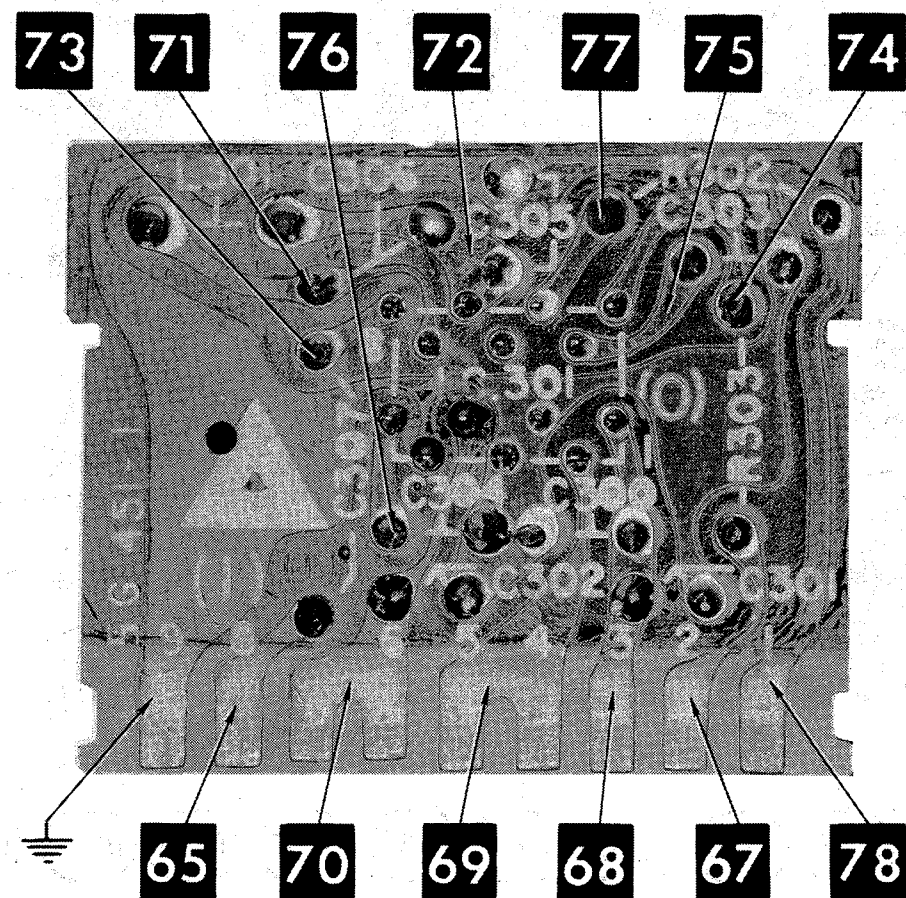
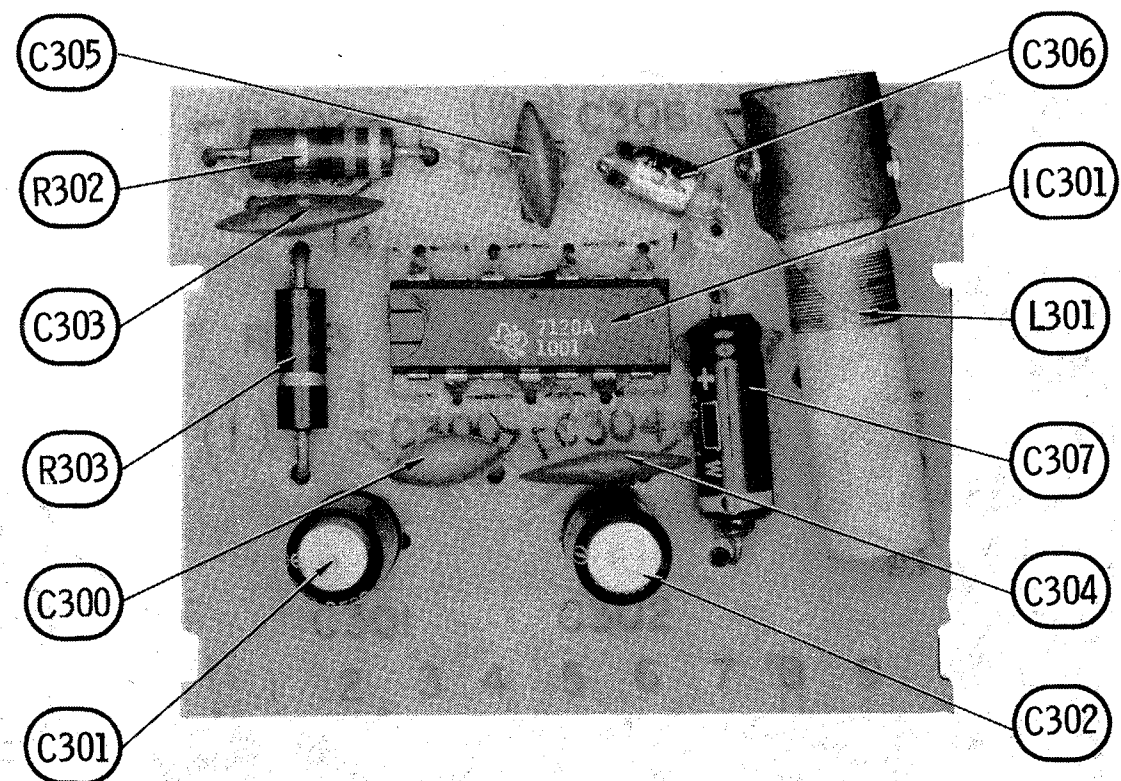


PRINTED BOARD



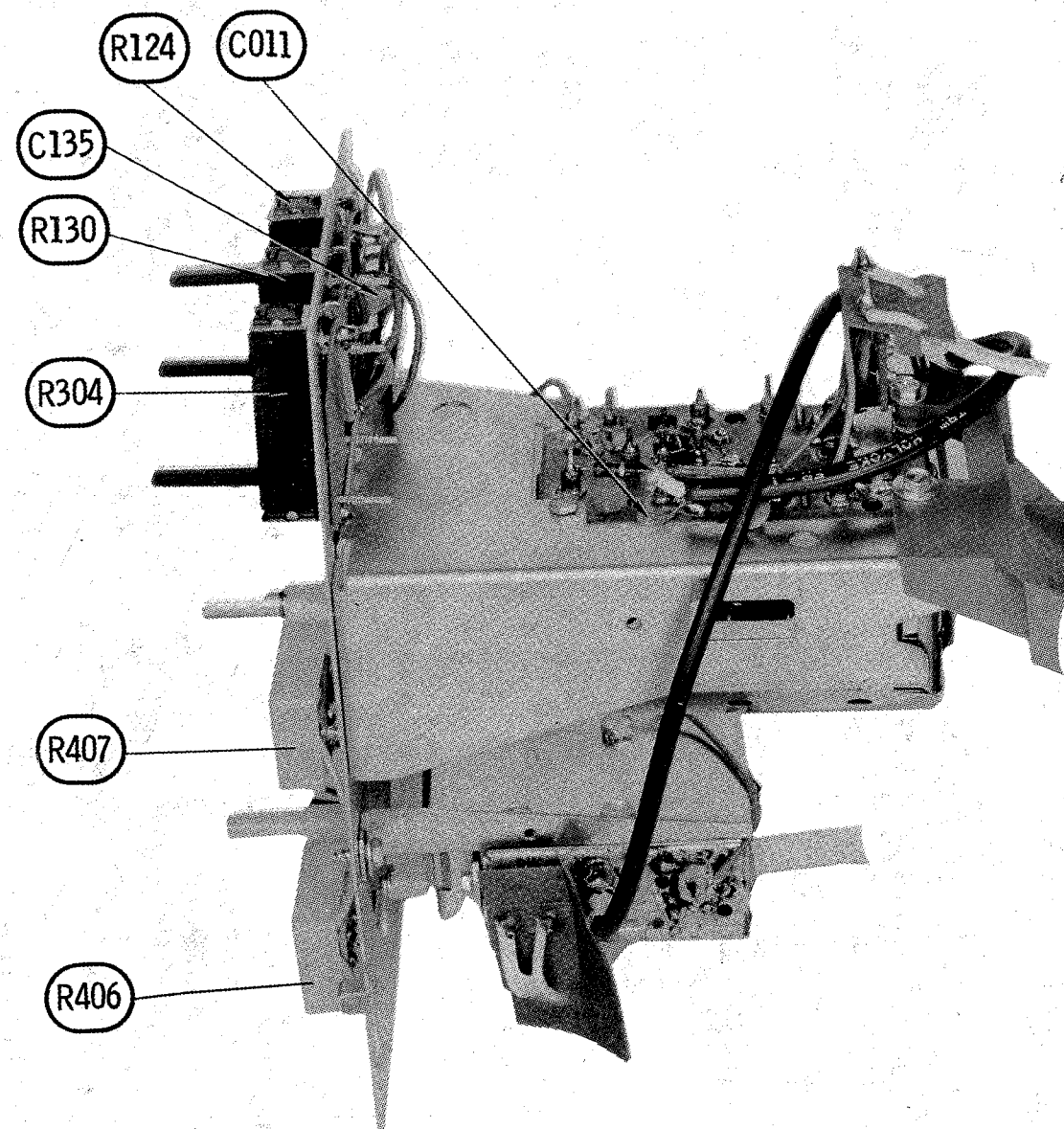


PRINTED BOARD



A Howard W. Sams CIRCUITRACE Photo

SOUND PRINTED BOARD



TUNER ASSEMBLY

VHF PARTS LIST AND DESCRIPTION

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

SEMICONDUCTORS

ITEM No.	TYPE No.	MFG. PART No.	REPLACEMENT DATA					
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	RCA PART No.	SYLVANIA PART No.	MOTOROLA PART No.
Q201			GE-11	TR-22	PTC115	SK3018	ECG 108	HEP56
Q202			GE-11	TR-22	PTC115	SK3018	ECG 108	HEP56
Q203			GE-11	TR-22	PTC115	SK3018	ECG 108	HEP56
Q204			GE-11	TR-22	PTC115	SK3018	ECG 108	HEP56

CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	ARCO/ELMENCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	100 N750 10%		N750-DI 100	CCTN-101	DTN-100	N100	CN7310	10TCU-T10
C202	27 N750 5%			CCTN-270	TCN-27		CN7427	10TCU-Q27
C203	27 N750 5%			CCTN-270	TCN-27		CN7427	10TCU-Q27
C204								
C205	4.7pf N220 ±.5pf			*			*	10TCR-V47
C206				*			*	
C207	22 N470 10%			*			*	10TCT-Q22
C208								
C209								
C210								
C211								
C212								
C213	15 N330 5%		GPD X5F821K	*	TCA-15	GP820	*	10TCS-Q15
C214								
C215								
C216								
C217								
C218								
C219								
C220								
C221								
C222	3.6pf N330 ±.5pf			*			*	10TCC-V56
C223	5.6pf							
C224			820	CCD-821	DD-821	GP382		10TS-T82
C225								
C226								
C227								
C228								
C229	8.2pf N330 ±.5pf			*			*	10TCS-V82

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

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
PC201	Component Combination		Antenna Isolation
PC202	Component Combination		Antenna Isolation

UHF PARTS LIST AND DESCRIPTION

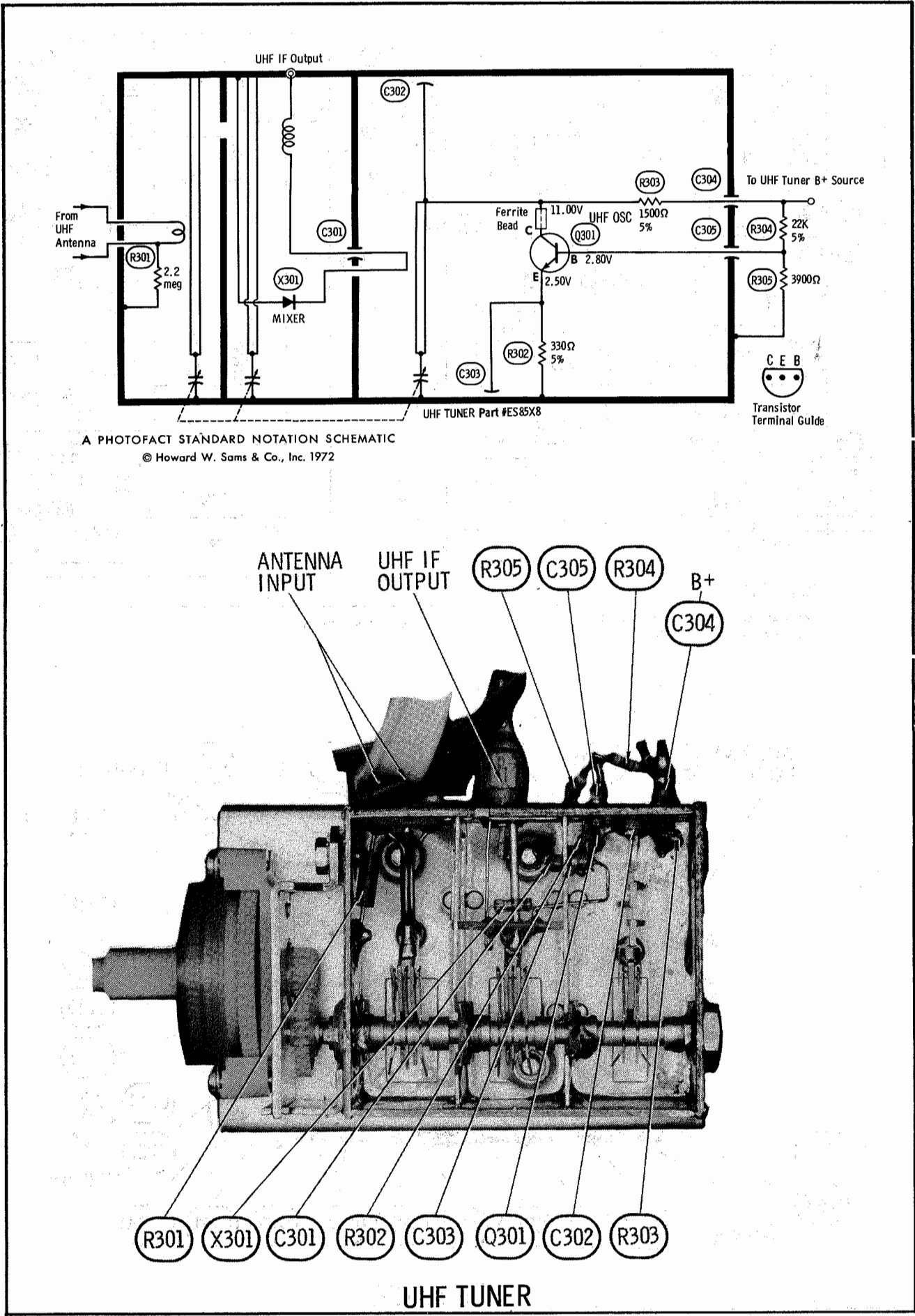
(When ordering parts, state Model, Part Number, and Description.)

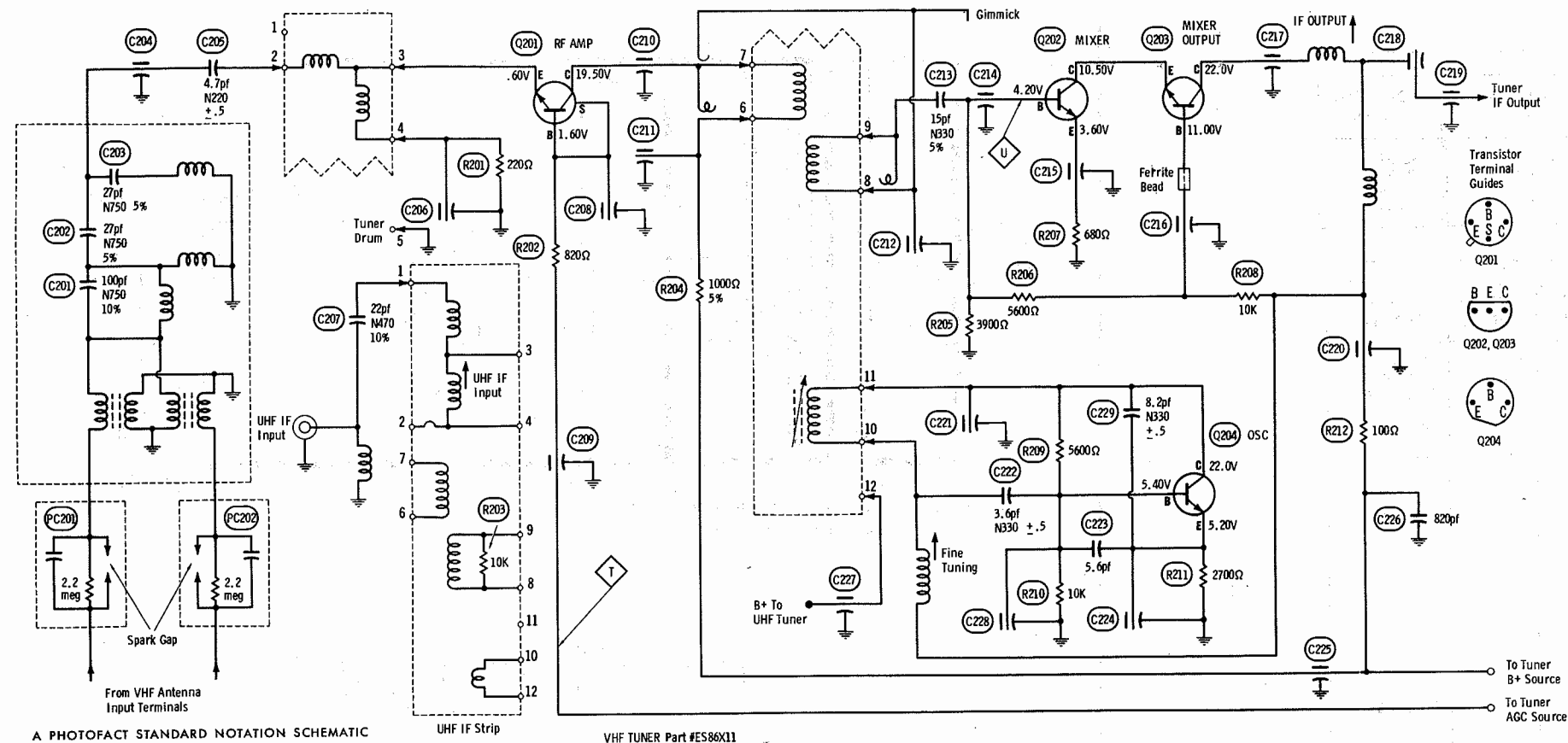
SEMICONDUCTORS

ITEM No.	TYPE No.	MFG. PART No.	REPLACEMENT DATA					
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	RCA PART No.	SYLVANIA PART No.	MOTOROLA PART No.
Q301			GE-11	TR-22	PTC115	SK3019	ECG 108	HEP56
X301			1N82A	1N82AG		SK3089	ECG 112	

CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	ARCO/ELMENCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C301								
C302								
C303								
C304								
C305								





VHF TUNER ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:

Tuner IF Output Coil ...GC ELECTRONICS #9296, 9297, 9300

OSCILLATOR ADJUSTMENTS

Individual oscillator slugs are accessible through a hole in the front of the tuner. Set the fine tuning at mid-range. Starting with the highest active channel, adjust the appropriate slugs, in descending order, for the best picture and sound.

RF AND MIXER ADJUSTMENTS

Connect the sweep generator across antenna terminals with 120-ohm carbon resistor in each lead. Refer to chart below for generator frequencies. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the scope for horizontal deflection. Use 10MC sweep unless otherwise noted. Connect a variable bias to the RF AGC line at Point \diamond . Adjust bias to obtain response curve showing no overload.

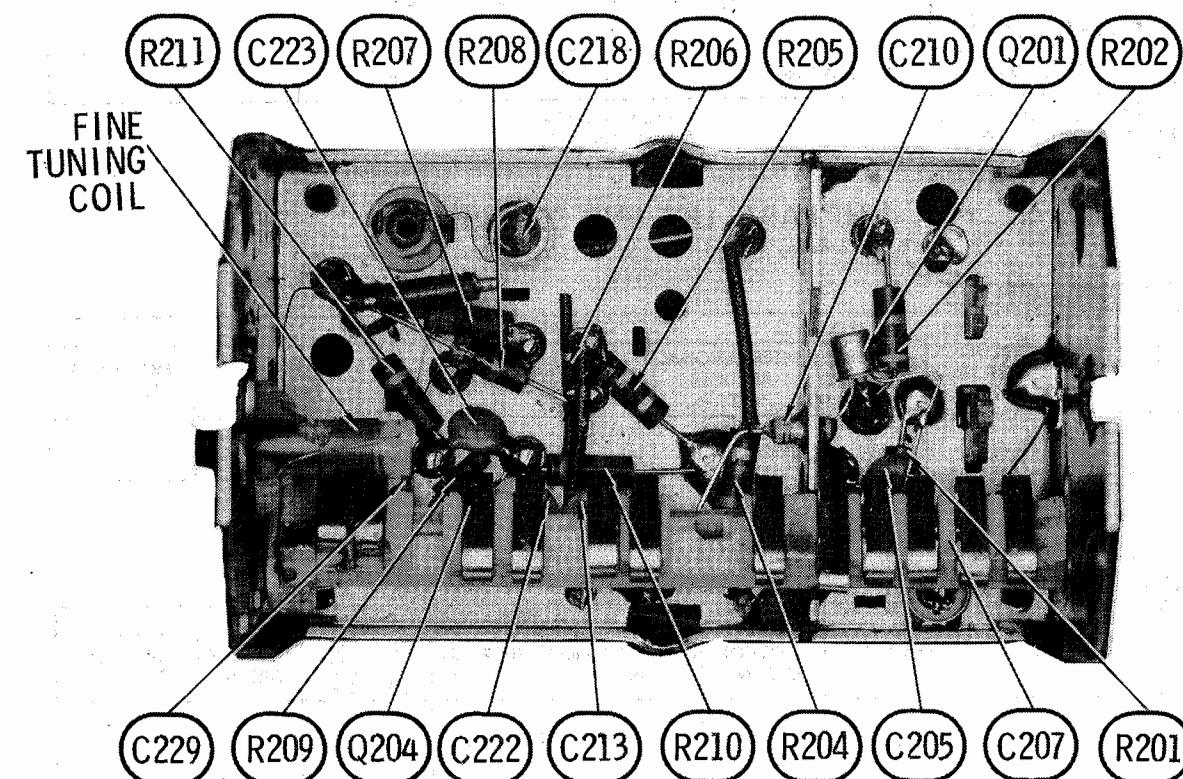
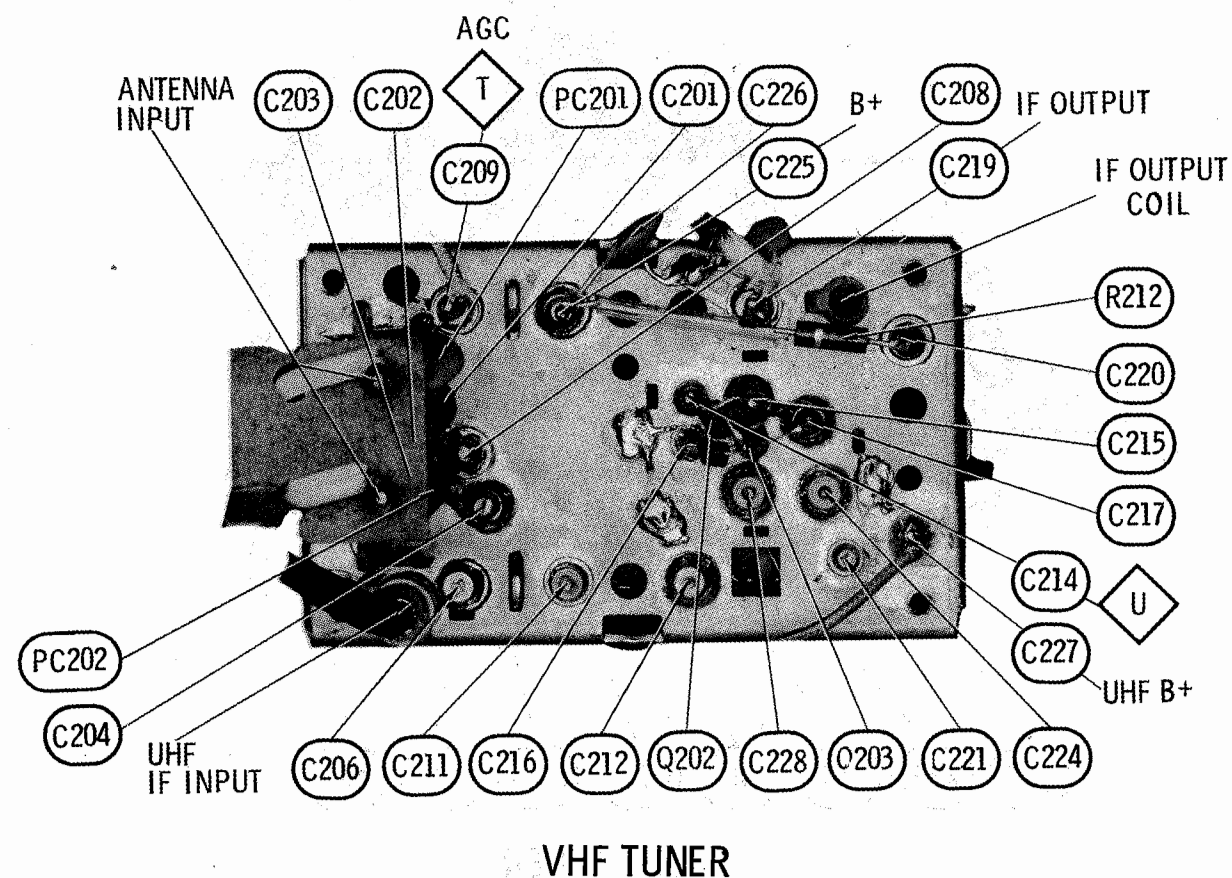
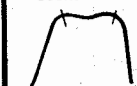
CHANNEL	CONNECT SCOPE	REMARKS
13	Vertical input to Point \diamond , low side to ground.	Expand or compress appropriate coils for maximum gain and symmetry of response similar to Fig. 201 with markers as shown.
12 thru 2	Vertical input to Point \diamond , low side to ground.	Check all channels and make compromise adjustments by expanding or compressing appropriate coils if necessary.

GENERATOR FREQUENCY
Numbers in () indicate channel number

SWEEP	MARKER	SWEEP	MARKER	SWEEP	MARKER
(2) 57MC	55.25MC	(6) 85MC	83.25MC	(10) 195MC	193.25MC
	59.75MC		87.75MC		197.75MC
(3) 63MC	61.25MC	(7) 177MC	175.25MC	(11) 201MC	199.25MC
	65.75MC		179.75MC		203.75MC
(4) 69MC	67.25MC	(8) 183MC	181.25MC	(12) 207MC	205.25MC
	71.75MC		185.75MC		209.75MC
(5) 79MC	77.25MC	(9) 189MC	187.25MC	(13) 213MC	211.25MC
	81.75MC		191.75MC		215.75MC

FIG. 201

SOUND VIDEO



PARTS LIST AND DESCRIPTION (CONTINUED)

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

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

COILS (Sweep Circuits)

ITEM No.	FUNCTION	REPLACEMENT DATA					
		MFGR. PART No.	MILLER PART No.	STANCOR PART No.	THORDARSON MEISSNER PART No.	TRIAD PART No.	WORKMAN PART No.
L251	Horiz. Osc. (Hold)	ES36X88					

TRANSFORMERS (Sweep Circuits)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T201	Vert. Output	ES64X11 (73C180600-1) ES64X12 (73B140584) ES77X12 ES76X6				
T251	Horiz. Driver					
T252	Horiz. Output					
T253	Yoke (Vert = 66mh) (Horiz = 2.45mh)					

TRANSFORMER (Power)

ITEM No.	RATING	REPLACEMENT DATA				NOTES
		MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T401	117VAC @ .8AAC - Tapped @ 6.3VAC @ .5AAC	ES64X10				

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA				NOTES
	PRI.	SEC.	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T301	6,000	8	ES64X13 (73B140700-1)				

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
F401	1/2" length of #36 Fuse Wire or 4A @ 250V Fast-acting Pigtail	EP10X52		6JV-4		318004		

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	4" PM, 8 ohms	ES95X5	4A1Z8	

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
	VHF Antenna	ES83X12	JFD Replacement TA-433
	UHF Antenna	EP83X1	
	VHF Tuner	ES86X11	
	UHF Tuner	ES85X8	
S401	Switch	ES39X10	Power (On-Off)
S402	Switch	ES39X9	
SG101	Spark Gap	ES41X4	Insta-View
SG102	Spark Gap Module	ES41X4	
		ES75X1	Audio

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

ITEM	PART No.	ITEM	PART No.
Cabinet Front	ES99X68	Knob, UHF Channel Selector	ES43X126
Cabinet Back	ES98X43	Knob, UHF/VHF Fine Tuning	ES43X129
Knob, VHF Channel Selector	ES43X127	Knob, Control (Slider)	ES43X128

PARTS LIST AND DESCRIPTION

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

Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

WIRING DATA

High Voltage Lead	Use BELDEN No. 8869 (17KV)
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor)
	8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
	8524 (Stranded) Available in 12 Colors
300-Ohm Tuner Input Lead	Use BELDEN No. 8225
300-Ohm Antenna Lead-in	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor
	8485 (Round) - 5 Conductor
	8488 (Round) - 8 Conductor

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	MFGR. PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V1	19VBNP4	19VBNP4			

SEMICONDUCTORS

ITEM No.	TYPE No.	MFGR. PART No.	REPLACEMENT DATA					
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	RCA PART No.	SYLVANIA PART No.	MOTOROLA PART No.
IC301	(2)							
Q101	1004	ES15X104	GE-20	TR-21	PTC132	SK3039	ECG 161	HEP718
Q102	1006	ES15X105	GE-20	TR-21	PTC132	SK3039	ECG 161	HEP718
Q103	1009	ES15X106	GE-20	TR-21	PTC132	SK3039	ECG 161	HEP718
Q104	1028	EP15X1	GE-20	TR-21	PTC132	SK3018	ECG 108	HEP54
Q105	1035	ES15X107	GE-18		PTC117	SK3044	ECG 154	HEP712
Q106	1027	EP15X1	GE-20	TR-21	PTC115	SK3018	ECG 123A	HEP54
Q107	1012	ES15X90	GE-21	TR-20	PTC131	SK3114	ECG 159	HEP52
Q201	1016	ES15X90	GE-21	TR-20	PTC131	SK3114	ECG 159	HEP52
Q202	1029	EP15X1	GE-20	TR-21	PTC115	SK3018	ECG 123A	HEP54
Q203	1012	ES15X90	GE-21	TR-20	PTC131	SK3114	ECG 159	HEP52
Q204	1028	EP15X1	GE-20	TR-21	PTC115	SK3018	ECG 123A	HEP54
Q205	1032	ES15X91				SK3104		HEP244
Q251	1021	ES15X92	GEFET-2	TRFE-100	PTC152	SK3116	ECG 132	HEP802
Q252	1038	ES15X93				SK3024	ECG 128	HEP50001
Q253	1030	ES15X94				SK3115	ECG 165	HEP740
Q301	7310	ES15X95				SK3021	ECG 124	HEP240
Y101		EP16X3	GE-12	TR-23	PTC104	SK3088	ECG 109	
Y102		EP16X30	GE-300	D200	PTC214	SK3100	ECG 177	
Y103		EP16X27	GE-300	D200	PTC214	SK3100	ECG 177	
Y104		ES16X30	GE-300	D200	PTC214	SK3100	ECG 177	
Y201		ES16X27	GE-300	D200	PTC214	SK3100	ECG 177	
Y202		ES16X27	GE-300	D200	PTC214	SK3100	ECG 177	
Y203		ES16X27	GE-300	D200	PTC214	SK3100	ECG 177	
Y204		ES57X12	GE-504A	8D4 or 5A4D	PTC201 or PTC202	SK3030 or SK3031	ECG 116 or ECG 117	
Y205		ES16X27	GE-300	D200	PTC214	SK3100	ECG 177	
Y251		ES16X27	GE-300	D200	PTC214	SK3100	ECG 177	
Y252		ES16X27	GE-300	D200	PTC214	SK3100	ECG 177	
Y253		ES16X28			PTC216	SK3043	ECG 506	
Y254		ES57X11			PTC213	SK3108	ECG 505	
Y255		ES16X27	GE-300	D200	PTC214	SK3100	ECG 177	
Y401		ES57X12	GE-504A	8D4 or 5A4D	PTC201 or PTC202	SK3030 or SK3031	ECG 116 or ECG 117	
Y402		ES16X29 (1)					ECG 5080	

(1) Zener 22V. (2) Part of Audio Module.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA							
		MFGR. PART No.	AEROVOX PART No.	ARCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C013	10 16V	ES31X36	CRE457A	ME-1-E-010	EA15-10	WBR10-25	MT1-5	MTA10D35	TE-1155
C126	10 16V	ES31X42	MCD-70	RME-B-E-010	EP15-10	WBR10-25	MT1-5	MTV10CB50	TE-1155
C131	10 16V	ES31X42	MCD-70	RME-B-E-010	EP15-10	WBR10-25	MT1-5	MTV10CB50	TE-1155
C132	10 10V	ES31X42	MCD-70	RME-B-E-010	EP15-10	WBR10-25	MT1-5	MTV10CB50	TE-1155
C202	10 25V	ES31X45	MCD-70	RME-B-E-010	EP30-10	WBR10-25	MT1-5	MTV10CB50	TE-1204
C210	.47 50V	ES31X40	MCD-70	RME-B-E-010	EP30-10	WBR10-25	MT1-5	MTV10CB50	TE-1204
C210	2.2 50V	ES31X41	MCD-100	RME-F-J-025	EP50-25	WBR25-50	MT1-11	MTV25CB50	TE-1305.5
C214	10 16V	ES31X42	MCD-70	RME-B-E-010	EP15-10	WBR10-25	MT1-5	MTV10CB50	TE-1155
C215	10 10V	ES31X42	MCD-70	RME-B-E-010	EP15-10	WBR10-25	MT1-5	MTV10CB50	TE-1155
C262	33 160V	ES31X39	CRE433A	ME-8-D-250	EA15-250	WBR250-16	MT1-25	MTA250F15	TE-1138
C266	50 150V	ES31X44	CRE467A	ME-3-E-050	EA15-50	WBR50-25	MT1-16	MTA50E15	TE-1160
C301	10 25V	ES31X43	MCD-70	RME-B-E-010	EP30-10	WBR10-25	MT1-5	MTV10CB50	TE-1204
C302	10 25V	ES31X43	MCD-70	RME-B-E-010	EP30-10	WBR10-25	MT1-5	MTV10CB50	TE-1204
C307	1 50V	EP31X14	CRE750A	ME-1-J-001	EA50-2	WBR1-50	MT1-1	MTA1D50	TE-1300
C308	1 50V	EP31X14	MCD-10	RME-A-H-001	EP50-2	WBR1-50	MT1-1	MTV1CB50	TE-1300
C403a	300 175V	ES31X38							
C403b	30 150V								
C403c	300 150V								
C403d	200 50V								

CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	ARCO/ELMENCOPART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C011	12 NPO 10%		GPD X5F102K	CCT0-120	TCZ-12	NP012	CN0412	10TCC-Q12
C100	.001 50V		GPD X5F102K	CCD-102	DM-102	GP1000	SM210	2SS-D10
C101	39 N750 10%		GPD U2J150K	CCTN-390	TCN-39		CN7439	10TCU-Q39
C102	15 N750 5%			CCTN-150	DTN-15	N15	CN7415	10TCU-Q15
C103	27 NPO 5%			CCT0-270	TCZ-27	NP027	CN0427	10TCC-Q27
C104	18 NPO 5%			CCT0-180	TCZ-18	NP018	CN0418	10TCC-Q18
C106	.01 50V		TTP-01	CCD-103	CK-103	MGPO1	TA110	TG-S10
C107	560 10%			CCD-561	DD-561	GP560	GP356	10TS-T56
C108	.01 50V		TTP-01	CCD-103	CK-103	MGPO1	TA110	TG-S10
C109	.001 50V		GPD X5F102K	CCD-102	DM-102	GP1000	SM210	2SS-D10
C111	.01 50V		TTP-01	CCD-103	CK-103	MGPO1	TA110	TG-S10
C112	150 NPO 5%		GPD X5F151K	CCD-151	DD-151	GP150	GP315	10TS-T15
C113	.001 50V		GPD X5F102K	CCD-102	DM-102	GP1000	SM210	2SS-D10
C114	.001 50V		GPD X5F102K	CCD-102	DM-102	GP1000	SM210	2SS-D10
C115	820 10%		GPD X5F821K	CCD-821	DD-821	GP820	GP382	10TS-T82
C116	.001 50V		GPD X5F102K	CCD-102	DM-102	GP1000	SM210	2SS-D10
C117	82 N750 10%			CCTN-820	TCN-82	N-82	CN7482	10TCU-Q82
C118	15 N750 5%		GPD U2J150K	CCTN-150	DTN-15	N15	CN7415	10TCU-Q15
C119	10pF NPO 5%			CCT0-100	DTZ-10	NP010	CN0410	10TCC-Q10
C120	.001 50V		GPD X5F102K	CCD-102	DM-102	GP1000	SM210	2SS-D10
C121	10pF NPO 5%			CCT0-100	DTZ-10	NP010	CN0410	10TCC-Q10
C122	15 10%			CCTN-101	DTN-100	N100	CN7310	10TCU-T10
C123	100 N750 10%			CCT0-150	DTZ-15	NP015	CN0415	10TCC-Q15
C124	.1 50V		DBE2P1	CCD-151	DD-151	GP150	GP315	10TS-T15
C125	150 NPO		GPD X5F151K	CCD-151	DD-151	GP150	GP315	10TS-T15
C127	820 10%		GPD X5F821K	CCD-821	DD-821	GP820	GP382	10TS-T82
C128	220 10%		ADM-15-221	DM-15-221	CPR-220J		SX322	MS-322
C129	.0027 50V 10%							
C130	.1 50V		DBE2P1	2DP-3-104	DD-271	DPMS2P1	PVC201	2PS-P10
C133	270 10%		GPD X5F271K	CCD-270	DD-271	GP270	GP327	10TS-T27
C134	470 1.4KV		HVD-30-470	3CCD-471	DD30-471	HV3-470	GP347	30GA-T47
C135	100 10%		GPD X5F101K	CCD-101	DD-101	GP100	GP310	10TS-T10
C201	.001 50V		GPD X5F102K	CCD-102	DM-102	GP1000	SM210	2SS-D10
C203	.0033 50V		GPD X5R332K	CCD-332	DD-332	GP3300	JF233	10TS-D33
C204	.01 50V		GPD X5S103K	CCD-103	DD-103	GP10000	JF110	10TS-S10
C205	.1 50V			1DP-2-104			PVC101	225P10491
C206	.033 50V		DBE6S33	4DP-2-333		DPMS6S33	PVC6133	4PS-S33
C207	.047 50V		VI612S47	1DP-2-473		DPMS6S47	PVC1147	225P47391WD3
C208	.15 50V 10%		VI614P15	4DP-4-154		DPMS4P15	PVC6015	4PS-P16
C209	.15 50V 10%		VI614P15	4DP-4-154		DPMS4P15	PVC6015	4PS-P16
C212	.22 10%		DBE6P22	6DP-5-224		DPMS6P22	PVC6022	4PS-P16
C213	.001 50V		GPD X5F102K	CCD-102	DD-102	GP1000	GP210	10TS-D10
C216	.0033 50V		GPD X5R332K	CCD-332	DD-332	GP3300	JF233	10TS-D33
C251	47 10%			CCT0-470	DTZ-47	NP047	CN0447	10TCC-Q47
C252	.0022 10%		GPD X5F222K	CCD-222	DD-222	GP2200	GP222	10TS-T22
C253	470 5%			DM-16-471	CPR-470J	CD15F471J500	SX347	MS-347
C254	.0027 50V 10%							225P27291
C255	.005 10%		GPD X5R502K	CCD-502	DD-502	GP5000	JF250	10TS-D50
C257	.01 50V 5%		VI612S1	1DP-1-103	CPR-10000J	DPMS6S1	PVC211	225P10391WD3
C258	.1 50V		DBE2P1	2DP-3-104		DPMS2P1	PVC201	2PS-P10

PARTS LIST AND DESCRIPTION (CONTINUED)

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CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	ARCO/ELMENCOPART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C259	.0022		GPD X5F222K	CCD-222	DD-222	GP2200	GP222	10TS-D22
C261	.0027 1.2KV 10%			16DP-2-272		DPMS-20D27	PVC16227	4PS-P22
C263	.22 10%		VI614P22	4DP-5-224		DPMS4P22	PVC4022	225P10491
C264	.1 50V			1DP-2-104			PVC101	10TS-Q56
C265	56 10%		GPD X5F560K	CCD-560	DD-560		GP456	10TS-T82
C300	820		GPD X5F821K	CCD-821	DD-821	GP820	GP382	TG-S20
C303	.02 50V		TTP-02	CCD-203	CK-203	MGPO2	TA120	10TCC-Q15
C304	.02 50V		TTP-02	CCD-203	CK-203	MGPO2	TA120	MS-32
C305	15 NPO 10%			CCT0-150	DTZ-15	NP015	CN0415	10TS-D10
C306	200 5%			DM-15-201	CPR-200J		SX320	
C309	.01		GPD X5S103K	CCD-103	DD-103	GP10000	JF110	
C401	.047 150VAC		GPD X5F102K	CCD-102	DD-102	GP1000	GP210	
C402	.001 1KV							

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA				
			MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R124	Contrast (Slider Type)	5000	ES49X59 (73C180581-3)				
R130	Brightness (Slider Type)	220K	ES49X58 (73C180581-2)				
R139	RF AGC	2500	ES49X60	TSV-2.5K (1) or T-2500 (1)		X201R252B (1)	MTC252L1 (1)
R147	AGC	2500	ES49X60	TSV-2.5K (1) or T-2500 (1)		X201R252B (1)	MTC252L1 (1)
R210	Vert. Hold	85K "a"	ES49X61 (2)				
R215	Height	16K "c"					
R218	Vert. Linearity	2000 "b"					
R304	Volume (Slider Type)	50K	ES49X57 (73C180581-1)				

(1) For horizontal mounting, bend the two outside terminals to fit "PC" board. Use jumper wire to connect center terminal to "PC" board.
(2) Includes R210, R215 and R218.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R101	10 1/2W	CA10	
R128	10 5 1/2W	CA10	
R232	Thermistor (650 CoId)		
R233	Thermistor (500 CoId)		
R261	2200 4W SQ	CA3.3	ES1AX25
R262	3.3 1/2W	5W-SQ27.5	
R263	27 5W SQ		

* Voltage-dependent Resistor.

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R264	75 5W SQ	5W-SQ75	ES14X26
R265	27 2W WW	CC27	ES14X31
R266	27 2W WW	CC27	ES14X31
R307	VDR * 180ma @ 200V		ES13X3
R401	5 10W SQ	10W-SQ5	ES14X23
R402	470 2W FilM		
R403	40 15W SQ		EP14X4
R404	675 22W SQ		ES14X24

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L101	39.75MC Trap	EP36X13			
L102	41.25MC Trap	ES36X83			
L103	47.25MC Trap	EP36X13			
L104	1st Video IF	ES36X83			
L105	RF Choke (11.5uh)	ES36X61		72F125AP	
L106	RF Choke (36uh)	ES36X84		6176	T301
L107	Peaking (220uh)	ES36X82		72F224AP	
L108	Sound Takeoff	ES36X86			
L109	4.5MC Trap	ES36X87			
L110	Peaking (150uh)	EP36X17			
L252	RF Choke (5.6uh)	ET36X536		72F154AP	T868
L253	RF Choke (5.6uh)	ET36X536		74F566AP	T820
L301	Quadrature			74F566AP	
T101	2nd Video IF - Video Det.	ES56X6			