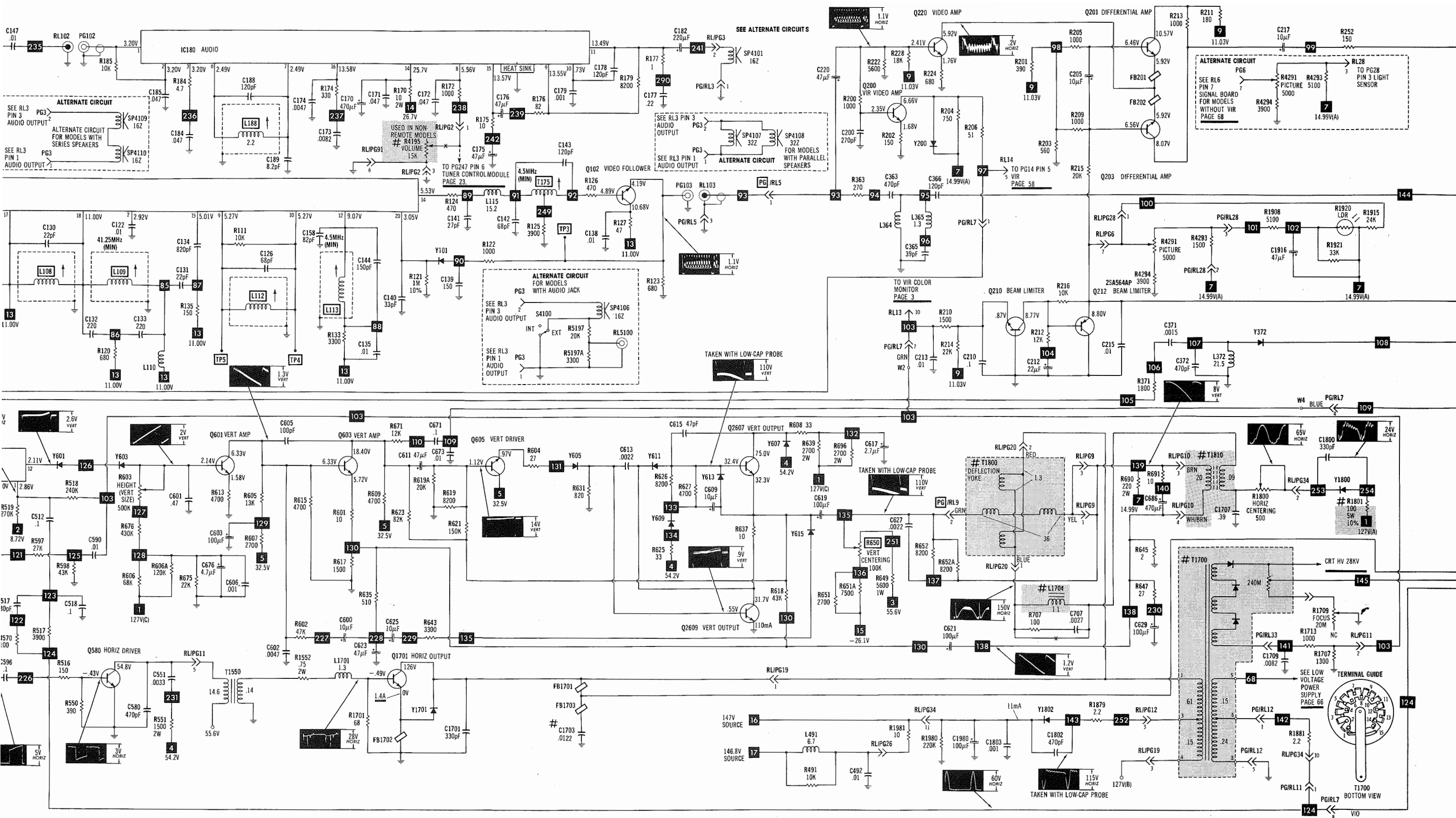
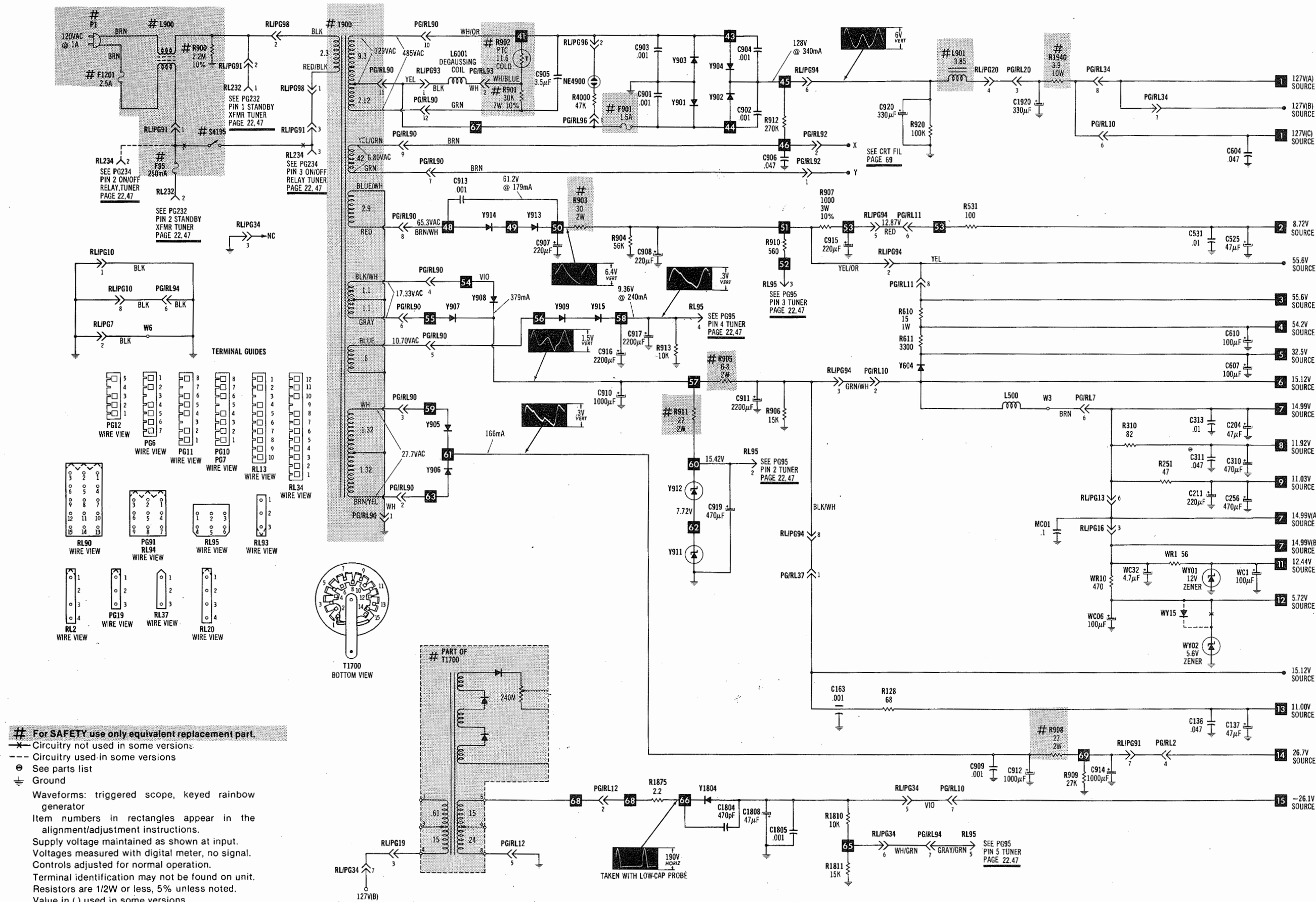


2



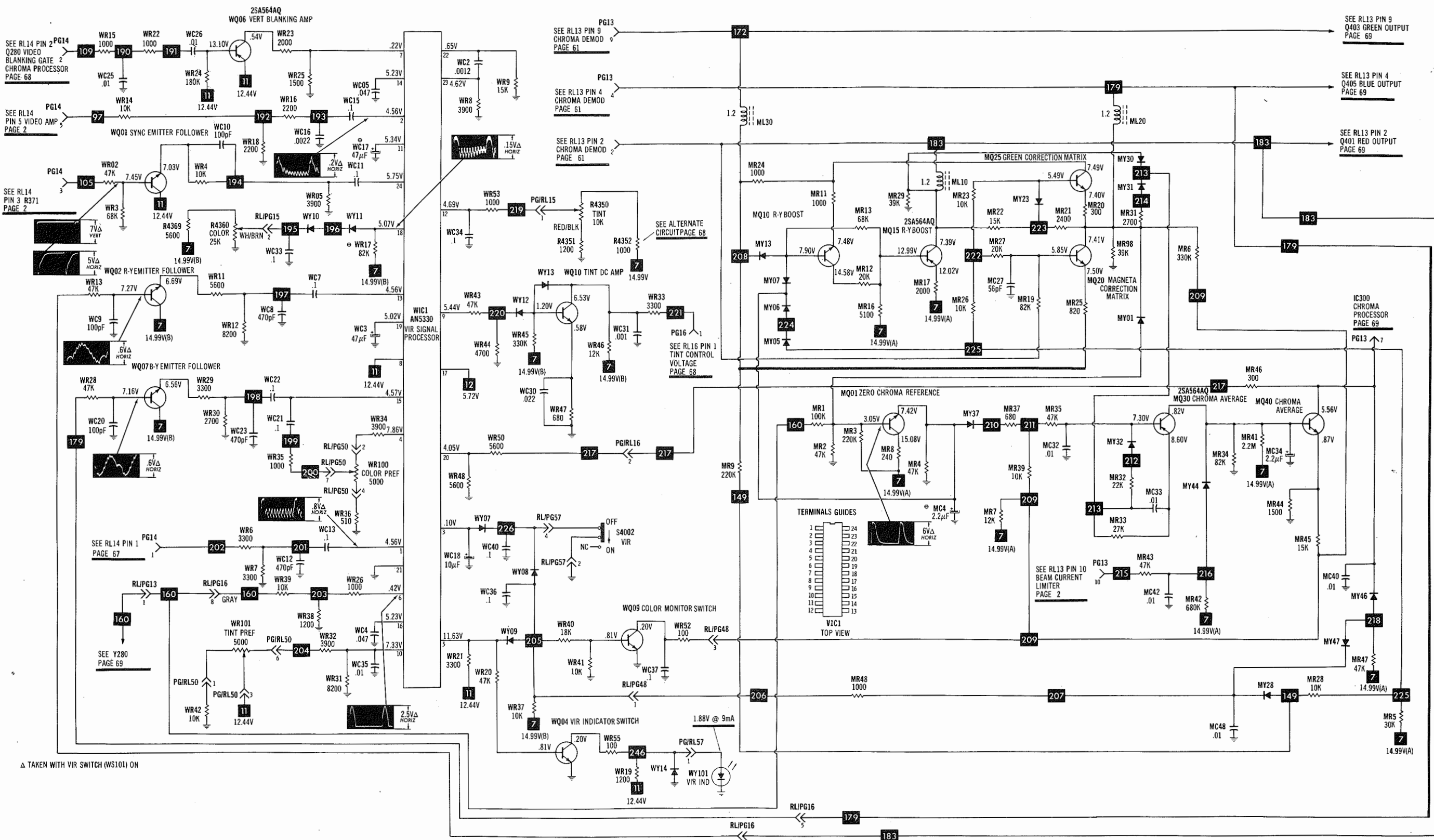
X-RAY RATINGS

GENERAL ELECTRIC
CHASSIS EM-A



POWER SUPPLY

POWER SUPPLY

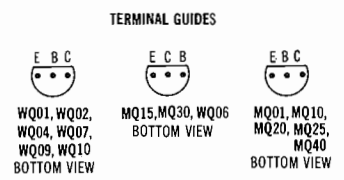


* Circuitry not used in some versions
 --- Circuitry used in some versions
 ⊕ See parts list
 ⊥ Ground

A PHOTOFAC STANDARD NOTATION SCHEMATIC
 WITH **CIRCUITRACE**
 © Howard W. Soms & Co., Inc. 1981

Waveforms: triggered scope, keyed rainbow generator
 Item numbers in rectangles appear in the alignment/adjustment instructions.
 Supply voltage maintained as shown at input.
 Voltages measured with digital meter, no signal.
 Controls adjusted for normal operation.
 Terminal identification may not be found on unit.
 Resistors are 1/2W or less, 5% unless noted.
 Value in () used in some versions.

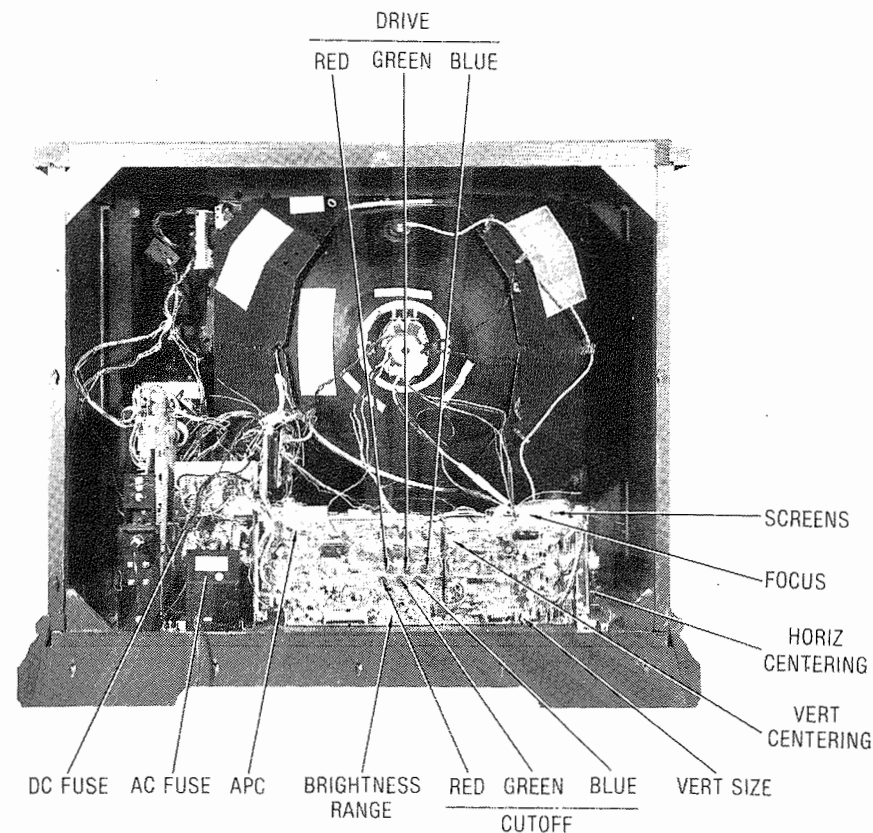
VIR, COLOR MONITOR



VIR, COLOR MONITOR

GENERAL ELECTRIC
 CHASSIS EM-A

FOLDER 2
 65



CABINET-REAR VIEW

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

Remove six screws and release four latches holding cabinet back, remove back. Disconnect HV anode, CRT socket, deflection yoke connectors, degaussing coil connector, speaker connector and ground leads. Remove five screws holding channel readout, VIR indicator, channel readout drive board and channel selector assembly to cabinet front and remove from cabinet. Remove five screws holding main chassis and tuner assemblies to cabinet bottom and remove assemblies from cabinet. Remove four screws

holding secondary control assembly and light sensor to cabinet front and remove assemblies from cabinet.

CRT REMOVAL

Follow "Chassis Removal" procedure and lay set facedown on a soft protective surface. Loosen and remove CRT neck assemblies and remove four nuts holding degaussing coil, shield and CRT to cabinet front. Lift shield out of cabinet and lift CRT out of cabinet. Do not lift CRT 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 DEVICES

A 1.5-amp fuse is used for low-voltage power-supply protection. (See photo, Cabinet-Rear View.)

A 2.5-amp fuse is used for AC line protection. (See photo, Cabinet-Rear View.)

CHANNEL READOUT ACCESSIBILITY

Channel readout is accessible after removing cabinet back. Remove five screws holding volume control, channel readout and readout interface assembly and remove assemblies from cabinet.

VHF/UHF TUNER

Fine tuning is automatic.

FOCUS

The focus may be varied by a focus control. (See photo, Cabinet-Rear View.)

AGC

The AGC may be varied by IF AGC and RF AGC controls. (See Placement Chart.)

CENTERING

Horizontal centering is accomplished by proper adjustment of the horizontal centering control. (See Placement Chart.)

Vertical centering is accomplished by proper adjustment of the vertical centering control. (See Placement Chart.)

SAFETY PRECAUTIONS

THE RECEIVER IS EQUIPPED WITH A POLARIZED POWER CORD TO INSURE THAT THE CHASSIS IS ALWAYS CONNECTED TO THE GROUNDED SIDE OF THE AC LINE THROUGH A 2.2 MEG RESISTOR R900.

SHATTER-PROOF SAFETY GLASSES SHOULD ALWAYS BE WORN WHEN WORKING AROUND AN EXPOSED PICTURE TUBE. BEFORE HANDLING THE TUBE, THOROUGHLY DISCHARGE THE SECOND ANODE TO THE OUTER AQUADAG COATING OF THE PICTURE TUBE.

AFTER SERVICING THE RECEIVER, CHECK THE HIGH VOLTAGE AND PERFORM THE SAFETY CHECK INDICATED AS FOLLOWS:

BEFORE INSTALLING THE CABINET BACK:

INSPECT LEAD DRESS:

1. No lead should be against a power resistor (2 watts or more).
2. High voltage connections must have no sharp points.
3. The insulation on antenna leads should not be damaged. The leads should not be dressed close to any high voltage point or AC line connection.
4. The AC wiring should be inspected for damaged insulation, frayed wires, pinched leads, or cold solder connections.
5. Inspect the AC line cord for broken or damaged insulation.

AFTER INSTALLING THE CABINET BACK:

- A. Do not plug the receiver into a power outlet. Connect both blades of the power plug together and place the ON-OFF switch in the ON position.
- B. Measure between the shorted power plug and the following points. Readings should be as indicated.

CAUTION: X-RAYS

AS PRECAUTIONS AGAINST EMISSION OF X-RAYS IN EXCESS OF THE FEDERAL STANDARD, NEVER APPLY POWER TO THE RECEIVER UNTIL THE FOLLOWING CONDITIONS HAVE BEEN VERIFIED.

1. ALL FACTORY-INSTALLED SHIELDS ARE IN PLACE AS INDICATED ON THE X-RADIATION WARNING LABEL ON THE CRT MAGNETIC SHIELD.
2. THE PICTURE TUBE IS A FACTORY SPECIFIED TYPE ONLY.
3. THE LINE INPUT VOLTAGE DOES NOT EXCEED 130 VOLTS AC.
4. THE HIGH VOLTAGE DOES NOT EXCEED 32.5KV WITH THE BRIGHTNESS AND CONTRAST CONTROLS AT MINIMUM (MINIMUM ILLUMINATION ON PICTURE TUBE SCREEN) AT 120 VAC.

NORMAL HIGH VOLTAGE IS 30.5KV AT ZERO BEAM CURRENT (BLACK PICTURE) WITH 120 VAC LINE INPUT. HIGH VOLTAGE IS NOT ADJUSTABLE.

TEST POINT	MIN. OHMS	MAX. OHMS
ANTENNA TERMINALS-UHF	600K	7.5 MEGS
ANTENNA TERMINALS-VHF	600K	5.2 MEGS
CABINET BACK SCREWS	600K	OPEN CIRCUIT
ALL METAL CONTROL OR CHANNEL SELECTOR SHAFTS (WITH KNOBS REMOVED)	OPEN CIRCUIT	
ALL NON-REMOVABLE METALLIC KNOBS, PUSH BUTTONS, EARPHONE JACKS, ETC.	OPEN CIRCUIT	
METAL ESCUTCHEONS AND OVERLAYS	OPEN CIRCUIT	
VHF COAX CABLE CONNECTOR	MINIMUM READING 600K OHMS	

IF ANY READING IS OUTSIDE LIMITS SPECIFIED, THE CAUSE SHOULD BE IDENTIFIED AND CORRECTED BEFORE OPERATING THE RECEIVER.

Courtesy of the Manufacturer

TV ALIGNMENT INSTRUCTIONS

Use an isolation transformer, or observe polarity, and maintain line voltage at 120VAC. Allow a 20-minute warm-up period for receiver and test equipment. Suggested Alignment Tools: GC ELECTRONICS L101 thru L109, L111 thru L114, L188, L209, T175 9296, 9297, 9300

PRELIMINARY INSTRUCTIONS

Set scope sweep to external. Connect scope vertical input to scope vertical input on sweep/marker generator. Connect scope external horizontal input to scope horizontal input on sweep/marker generator. Ground test equipment to TV chassis unless specified otherwise. Use only enough generator output to provide a usable indication. Note: Response may vary slightly from that shown. Connect a +5.6 volt bias to TP6. Disconnect IF Input (PG101). After L112 is adjusted connect a 220-ohm resistor between TP4 and TP5.

VIDEO IF ALIGNMENT (SWEEP MARKER GENERATOR)

VERTICAL INPUT OF OSCILLOSCOPE	VFO GENERATOR OUTPUT	MARKER GENERATOR FREQUENCY	REMARKS
To TP3	To IF Input (RL101)	45.75MHz (Modulated at 100Hz)	NOTE: Use VFO (Variable Frequency Oscillator) generator with a modulated output for this adjustment. Start adjustment of L112 with core 1/8" down from top of coil.
DIRECT PROBE FROM SWEEP/MARKER GENERATOR	SWEEP GENERATOR OUTPUT	SWEEP GENERATOR FREQUENCY	Adjust L112 for maximum response. See Figure 1.
To TP3	TO IF Input (RL101)	44MHz (10MHz Sweep)	Adjust L106 for MINIMUM. Adjust L104 and L109 for MINIMUM. Adjust L104 for MINIMUM. See Figure 2.
"	"	"	Adjust L101, L102, L103, L107, L108 L108 for maximum gain and symmetry of response. L101 affects overall response. L102 affects 42.17MHz and 45.75MHz. L103 and L108 affect 42.17MHz. L107 affects 45.75MHz. See Figure 3.

4.5MHz 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 T175 for MINIMUM beat interference.

SOUND IF ALIGNMENT

Tune in a station and adjust L113, L114 and L188 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 L188.

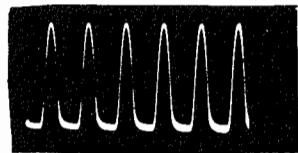


Figure 1

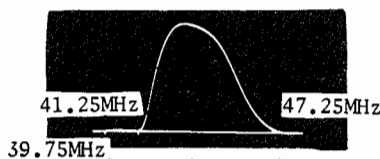


Figure 2

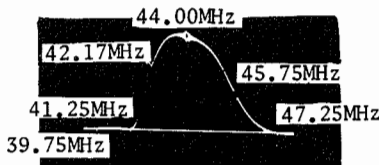
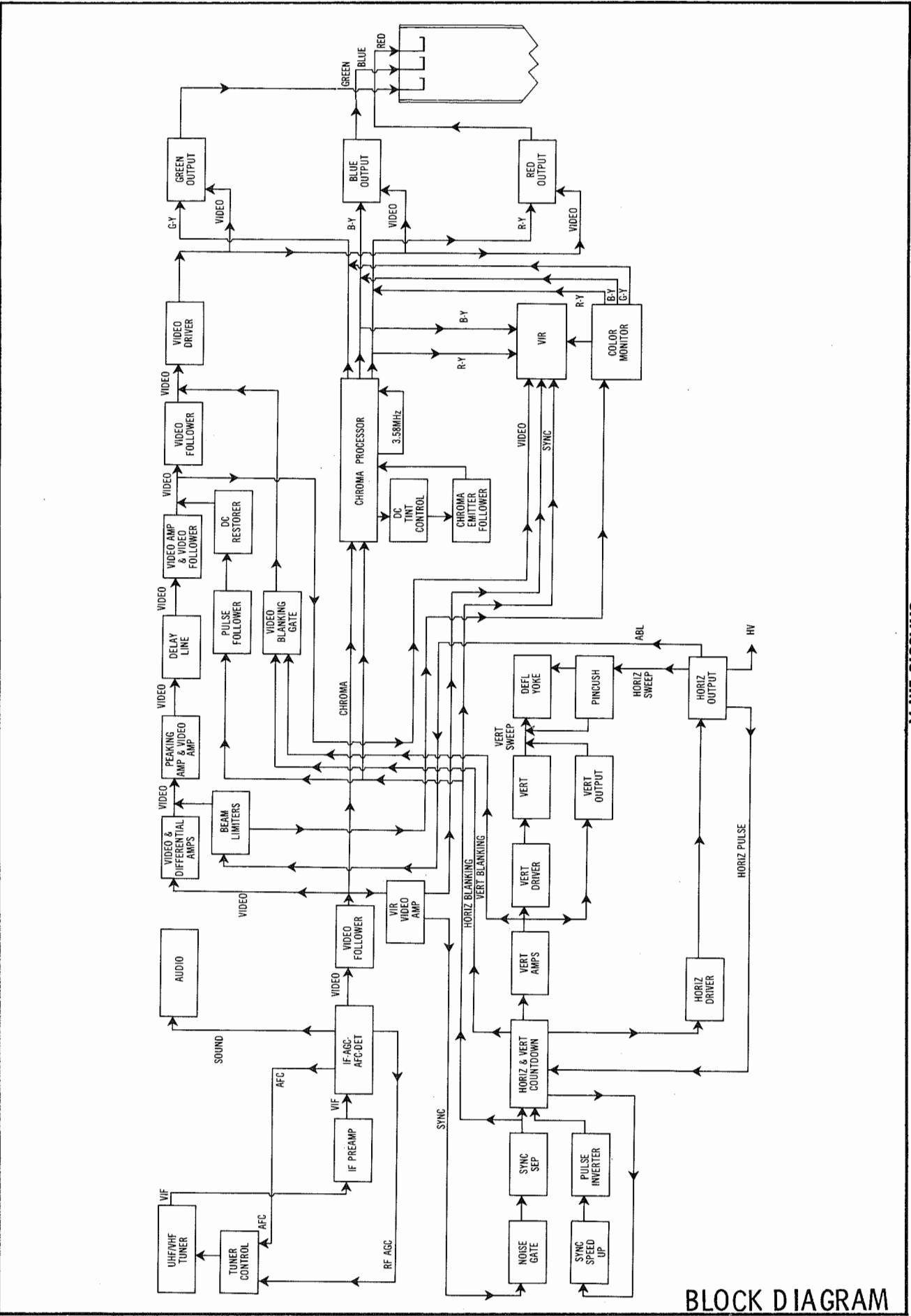


Figure 3.



MISCELLANEOUS ADJUSTMENTS

HIGH VOLTAGE CHECK

High voltage is not adjustable. Tune in a picture and adjust all controls for a normal picture. Adjust Brightness Control to MINIMUM. Connect high voltage meter to CRT anode. Reading should be 30.5KV.

AGC ADJUSTMENT

Tune in a strong station and set VIR Switch to Off position. Adjust Picture Control to center of its range and Brightness Control for a normal picture. Adjust IF AGC Control (R131) to center position. Adjust RF AGC Control (R132) to a point where snow just disappears. Adjust the IF AGC Control to a point just before instability (overload, jitter, tearing, etc.). Check reception on all available stations.

HORIZONTAL AND VERTICAL CENTERING

Adjust Horizontal Centering Control (R1800) for best horizontal centering. Adjust Vertical Centering Control (R650) for best vertical centering.

APC ADJUSTMENT

Connect color-bar generator to VHF antenna terminals. Adjust generator for maximum and tune in a color-bar pattern. Set VIR Switch to Off position. Connect a jumper to TP33, TP34 and TP35 to short them together. Adjust APC Control (R320) until color-bars stop or slowly float across the screen. Remove jumpers.

GRAY SCALE AND BRIGHTNESS RANGE ADJUSTMENT

Tune in a color picture, set the Brightness, Picture, Color, Red (R425), Blue (R485), Green (R455) Cutoff Controls and Screens Control (R1781), fully counterclockwise. Set Red (R411), Green (R441), Blue (R471) Drive Controls and Brightness Range Control (R271), fully clockwise. Place VIR to Off position. Place black tape over light sensor (not on all models). Disconnect the vertical yoke plug (PG9). Short TP40 on signal board to ground. Adjust Screens Control clockwise until a line just appears and then counterclockwise until it just disappears from the screen. Disconnect the short from TP40. Turn Brightness Control fully clockwise. Turn Brightness Range Control counterclockwise until a color line appears on the screen. Adjust the Red, Green and Blue Cutoff Controls until each just produces dim line. Reconnect vertical yoke plug (PG9). Turn Picture and Brightness Range Controls for a normal picture. Adjust the Drive Control of the predominate color for best gray scale in the high brightness areas. Readjust Cutoff Controls for the low brightness areas. Turn Brightness Control fully clockwise and Picture Control fully counterclockwise. Turn Brightness Range Control so that black areas in the picture are slightly gray.

PURITY ADJUSTMENT

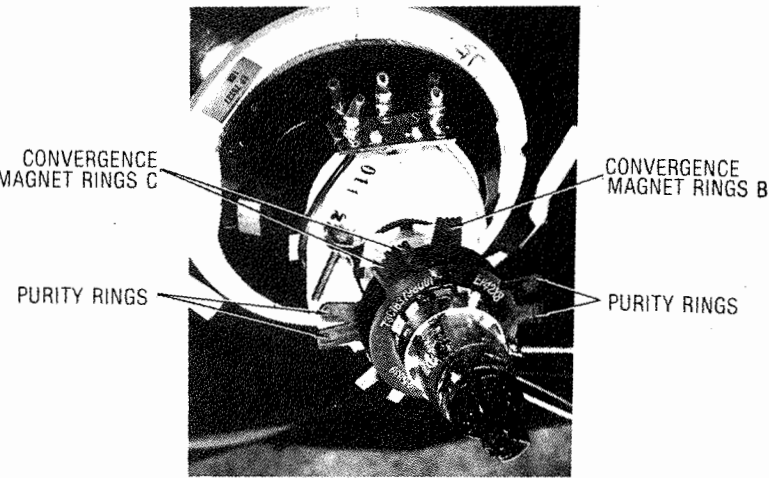
If the CRT appears to be magnetized use a de-gaussing coil to demagnetize the CRT and mounting brackets. Disconnect PG5 from signal board. Turn Blue (R485), Red (R425), and Green

(R455) Cutoff Controls fully counterclockwise. Turn Brightness Control fully clockwise. Adjust Brightness Range (R271), until raster is just cut-off. Adjust Red Cutoff Control clockwise for red raster. Loosen and slide deflection yoke back against convergence assembly. Set purity rings so that the squared tab and the rounded tab are together and horizontal. Separate the tabs to center the red bar. Slide the deflection yoke forward to produce a uniform red raster. Check the purity of the blue and green Cutoff Controls by advancing each control one at a time. Reconnect PG5 to signal board.

CONVERGENCE ADJUSTMENT

Connect a crosshatch generator to the antenna terminals and tune in a crosshatch pattern. Adjust the center tabs to converge the Red and Blue horizontal and vertical lines. Adjust the rear tabs to converge the Red, Blue and Green vertical and horizontal lines. Tilt the deflection yoke vertically to converge the top and bottom of the screen and to converge the horizontal center line at the right and left sides of the screen.

Position the yoke wedges at the top and bottom of the yoke. Tilt the deflection yoke to the right or left to converge the horizontal lines at the top and bottom of the screen and to converge the vertical lines at the right and left sides of the screen. Position the yoke wedges at the right and left sides of the yoke. Repeat procedure if necessary.



CRT NECK ASSEMBLY

TV ALIGNMENT INSTRUCTIONS (Continued)

AUTOMATIC FINE TUNING ALIGNMENT

Connect as explained in preliminary instructions unless specified otherwise. Disconnect lead at F (Lead to C161).				
DIRECT PROBE FROM SWEEP/MARKER GENERATOR	SWEEP GENERATOR OUTPUT	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
To Point F	To IF Input (RL101)	44MHz (10MHz Sweep)	45.75MHz	Adjust L111 to place 45.75MHz marker as shown. See Figure 4. Remove 220 Ohm resistor. Connect lead at Point F.

3.58MHz TRAP ALIGNMENT

This adjustment is made with the set turned off. Connect a scope and generator across 3.58MHz Trap (L209). Set generator for 3.58MHz and adjust L209 for MINIMUM indication on the scope.

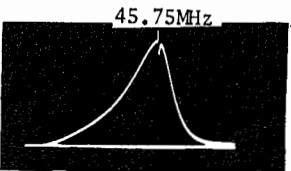


Figure 4

RESISTANCE MEASUREMENTS

MEASUREMENTS BELOW TAKEN WITH METER HAVING .08V MAX BETWEEN PROBE TIPS														
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
V6001	100M	NC	NC	NC	2700	220K	850K	220K	FIL	FIL	220K	NC	NC	
IC101	5830	5830	0	5790	INF	1541	93K	9500	INF	INF	9500	3320	18K	3040
							PIN 15	PIN 16	PIN 17	PIN 18	PIN 19	PIN 20	PIN 21	PIN 22
							5780	122	122	122	INF	997K	468K	12K
IC180	18K	18K	18K	0	0	5430	5430	14K	INF	INF	INF	0	0	14K(1)
													PIN 15	PIN 16
													6500(1)	INF
IC300	3300	2200	2300	2220	1774	7020	6460	8200	28K	27K	INF	0	11K	2440
					PIN 15	PIN 16	PIN 17	PIN 18	PIN 19	PIN 20	PIN 21	PIN 22	PIN 23	PIN 24
					4530	178K	4150	7000	7180	6680	INF	172	3300	3300
IC501	25K	INF	INF	12K	15K	3200	0	12K(1)	12K(1)	12K	28K	INF	INF	6000
WIC01	INF	INF	15K	4800	3600	1600	1500	160	52K	3600	INF(2)	3300	INF(1)	INF(1)
					PIN 15	PIN 16	PIN 17	PIN 18	PIN 19	PIN 20	PIN 21	PIN 22	PIN 23	PIN 24
					INF(1)	INF	580	88K	INF(2)	3200	0	15K	3900	11K
ITEM	E	B	C		ITEM	E	B	C		ITEM	E	B	C	
Q101	S 180	G1 4490	G2 239K	D 154	Q340	2200	12K	87		Q2609	0	820	27K	
Q102	680	3320	168		Q350	1823	13K	108		MQ1	47K	28.4K	1100	
Q200	150	5280	834		Q401	470	3900	220K		MQ10	5800	72.4K	24.9K	
Q201	INF(2)	1243	284		Q403	470	3900	220K		MQ15	2500	5500	2900	
Q203	INF(2)	1194	1267		Q405	458	3900	220K		MQ20	4400	34K	2900	
Q205	272	7560	109		Q407	351	2200	51		MQ25	3200	36.5K	4800	
Q207	321	4320	866		Q505	0	2700	1267		MQ30	4M	66K	82K	
Q209	460	867	510		Q510	0	163K	1910		MQ40	1500	80.5K	6400	
Q210	2500	0	13K		Q540	0	126K	8320		WQ1	14K	30K	160	
Q211	1000	510	107		Q545	0	680K	7450		WQ2	14K	51K	120	
Q212	3040	13K	0		Q580	0	390	11K(1)		WQ4	0	52K	1500	
Q213	1161	9390	107		Q601	4700	653K	4100		WQ6	160	9000	7040	
Q220	680	4310	INF(2)		Q603	1485	4100	12K(1)		WQ7	6020	49.8K	120	
Q260	2000	13K	107		Q605	INF(2)	5510	10K(1)		WQ9	0	10K	7000	
Q262	468	101K	9390		Q1701	0	1.2	40K(1)		WQ10	680	320K	12K	
Q280	0	100K	2170		Q2607	27K	INF(2)	40K(1)						

(1) This reading will vary depending upon the condition of the electrolytic in the circuit.
(2) Reading depends upon polarity of meter connections.

TROUBLESHOOTING CHECK CHART

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

PICTURE or SOUND

NO PIC, NO SOUND, NO RASTER: Fuse,Y901 thru Y909,Y911 thru Y914.

NO PIC, NO SOUND, HAS RASTER: Tuner,IF Preamp,IF(IC101).

NO PIC, NO SOUND, HAS SNOW: Tuner,AGC(IC101).
NO PIC, HAS SOUND, NO RASTER: Video Amps/ Followers/Driver,Differential Amps,Peaking Amp,Beam Limiters,Y407,Signal Board,Pulse Follower,DC Restorer,Video Blanking Gate, Y200,Y233,Y281,Y283,Y284,Y287.

NO PIC, HAS SOUND, HAS RASTER: Video Amps/ Emitter Followers/Driver,Signal Board, Differential Amps.

HAS PIC, NO SOUND: Audio(IC180).
OVERLOADED PICTURE: AGC(IC101).
LOW OR EXCESSIVE BRIGHTNESS: Video Blanking Gate,Y281,Y283,Y284,Y287,Video Driver,Y407.

SWEEP

NO RASTER, HAS SOUND: HV Rect(T1700),CRT.
NO RASTER, NO SOUND: Horiz & Vert Countdown (IC501),Horiz Driver/Output,Y1701.

NO VERT DEFLECTION: Horiz & Vert Countdown (IC501),Vert Amps/Driver/Outputs,Y604,Y611, Y609,Y613.

POOR VERT LIN OR FOLDOVER: Vert Amps/Drive/ Outputs,Y604,Y611,Y609,Y613.

POOR HORIZ LIN OR FOLDOVER: Horiz Driver/ Output,Y1701.

NARROW PICTURE: Horiz Driver/Output,Y1701.
VERT OFF FREQUENCY: Horiz & Vert Countdown (IC501).

HORIZ OFF FREQUENCY: Horiz & Vert Countdown (IC501).

SYNC

NO VERT SYNC: Horiz & Vert Countdown(IC501).
NO HORIZ SYNC: Horiz & Vert Countdown(IC501).
NO VERT/HORIZ SYNC: Sync Sep,Sync Speed Up.

RASTER

YELLOW (NO BLUE): Chroma Processor(IC300),Blue Output,CRT.

CYAN (NO RED): Chroma Processor(IC300),Red Output,CRT.

MAGENT (NO GREEN): Chroma Processor(IC300), Green Output,CRT.

COLOR (B/W operating normally)

NO COLOR: Chroma Processor(IC300),Signal Board,Color Monitor,VIR.

WEAK COLOR: Chroma Processor(IC300),Signal Board,Color Monitor,VIR.

NO COLOR SYNC: Chroma Processor(IC360).
NO GREEN: Chroma Processor(IC300),Signal Board,Color Monitor,VIR.

NO BLUE: Chroma Processor(IC300),Signal Board,Color Monitor,VIR.

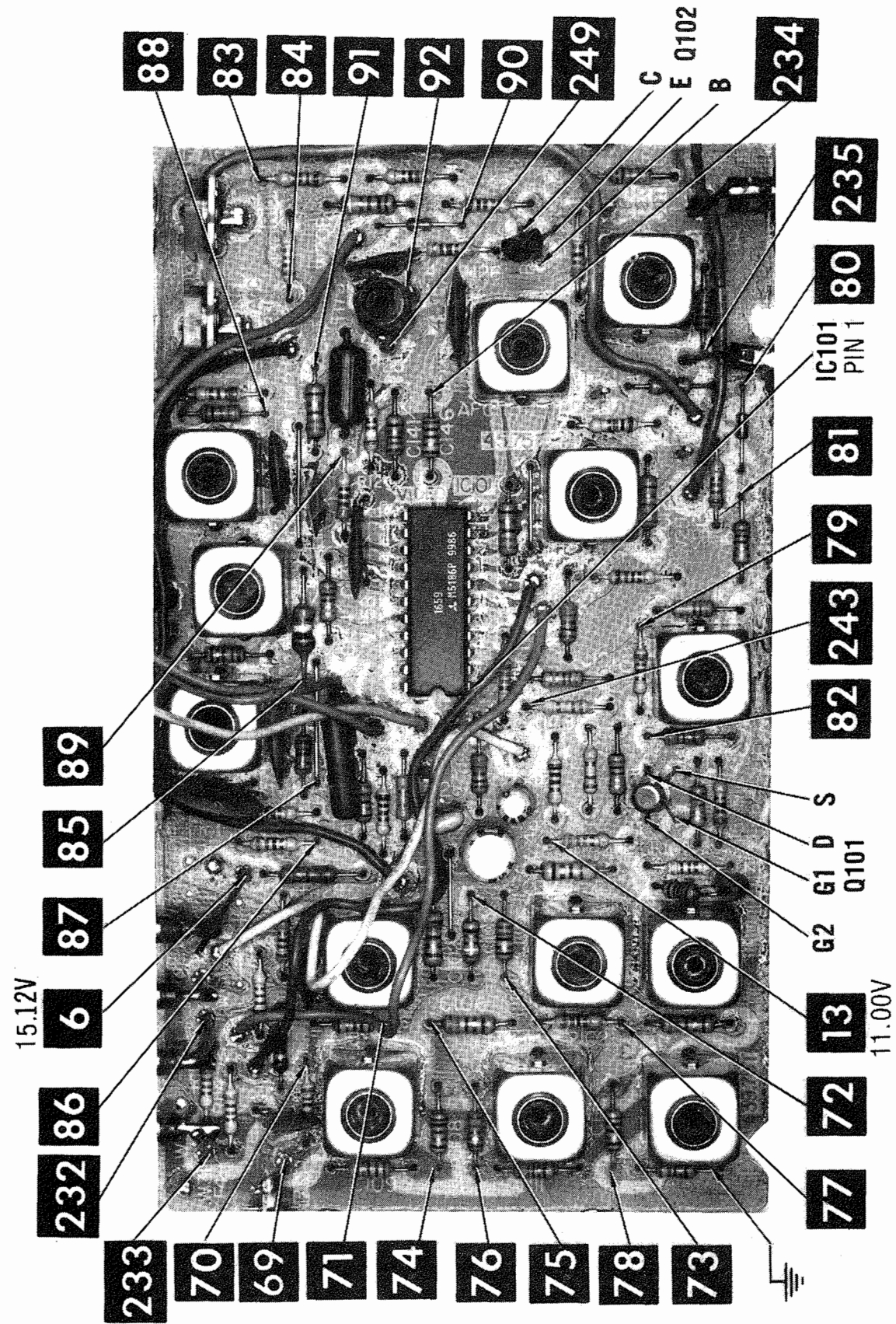
NO RED: Chroma Processor(IC300),Signal Board,Color Monitor,VIR.

INCORRECT HUE (TINT): Chroma Processor(IC300), Signal Board,Color Monitor,VIR.

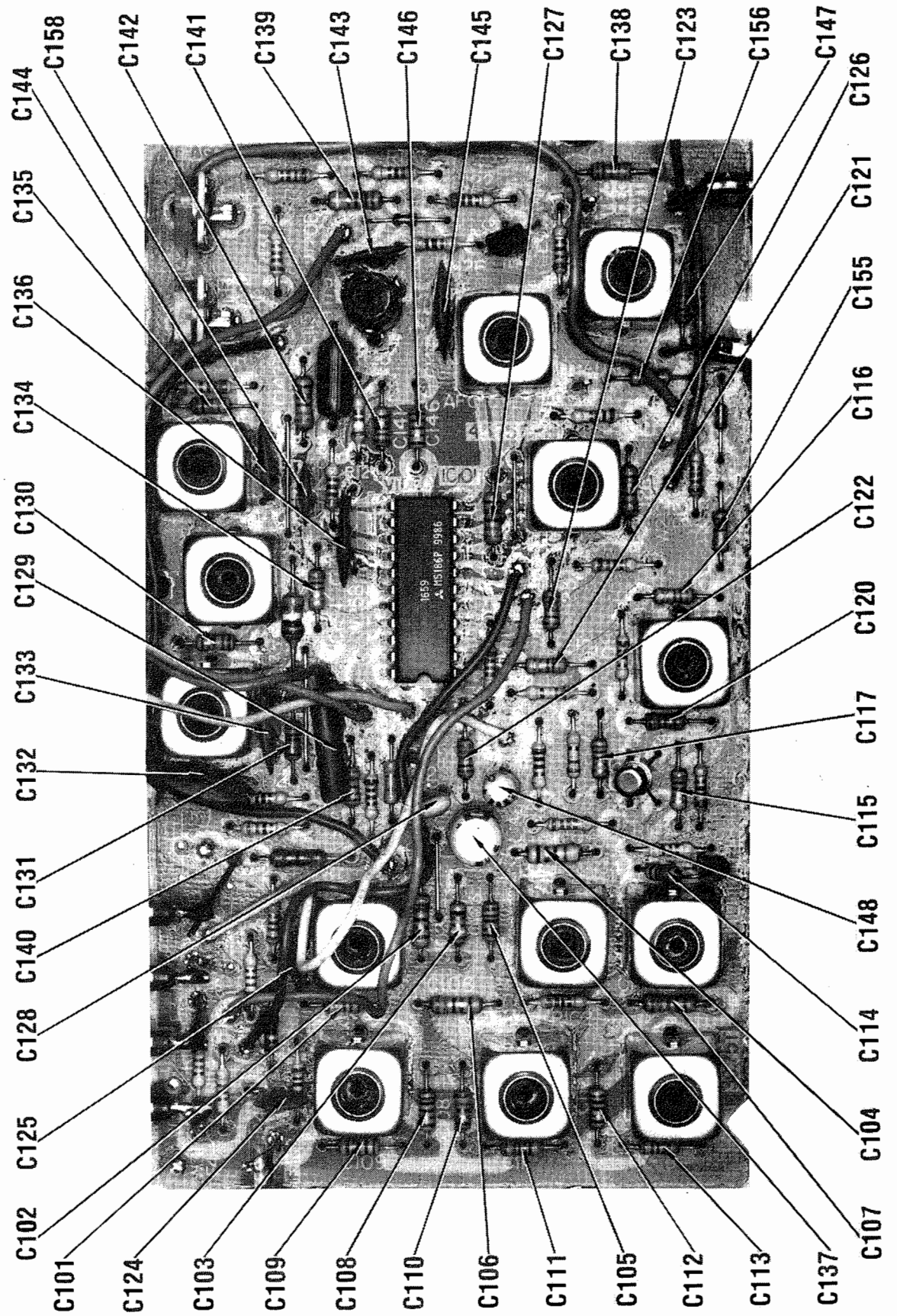


VIDEO IF BOARD

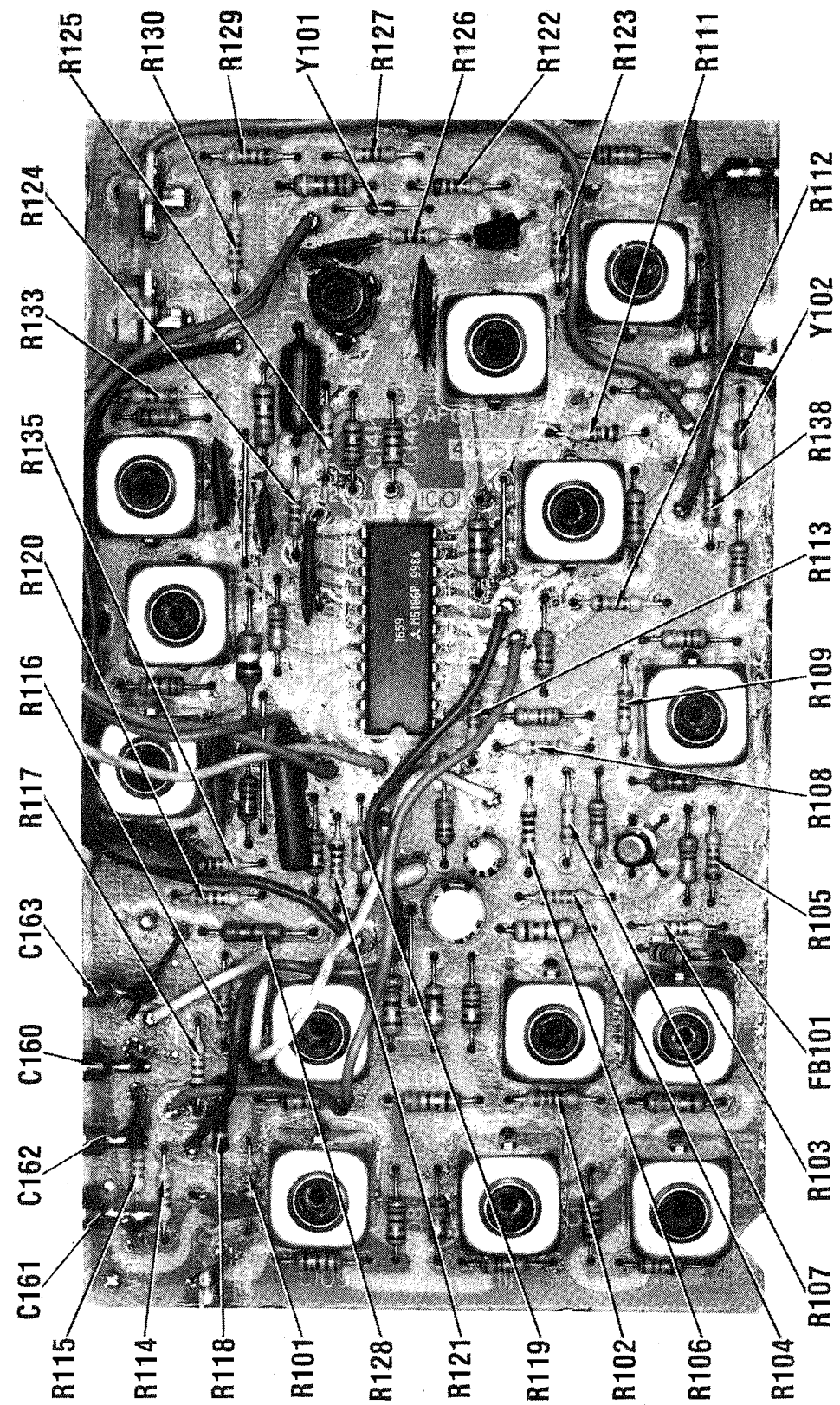
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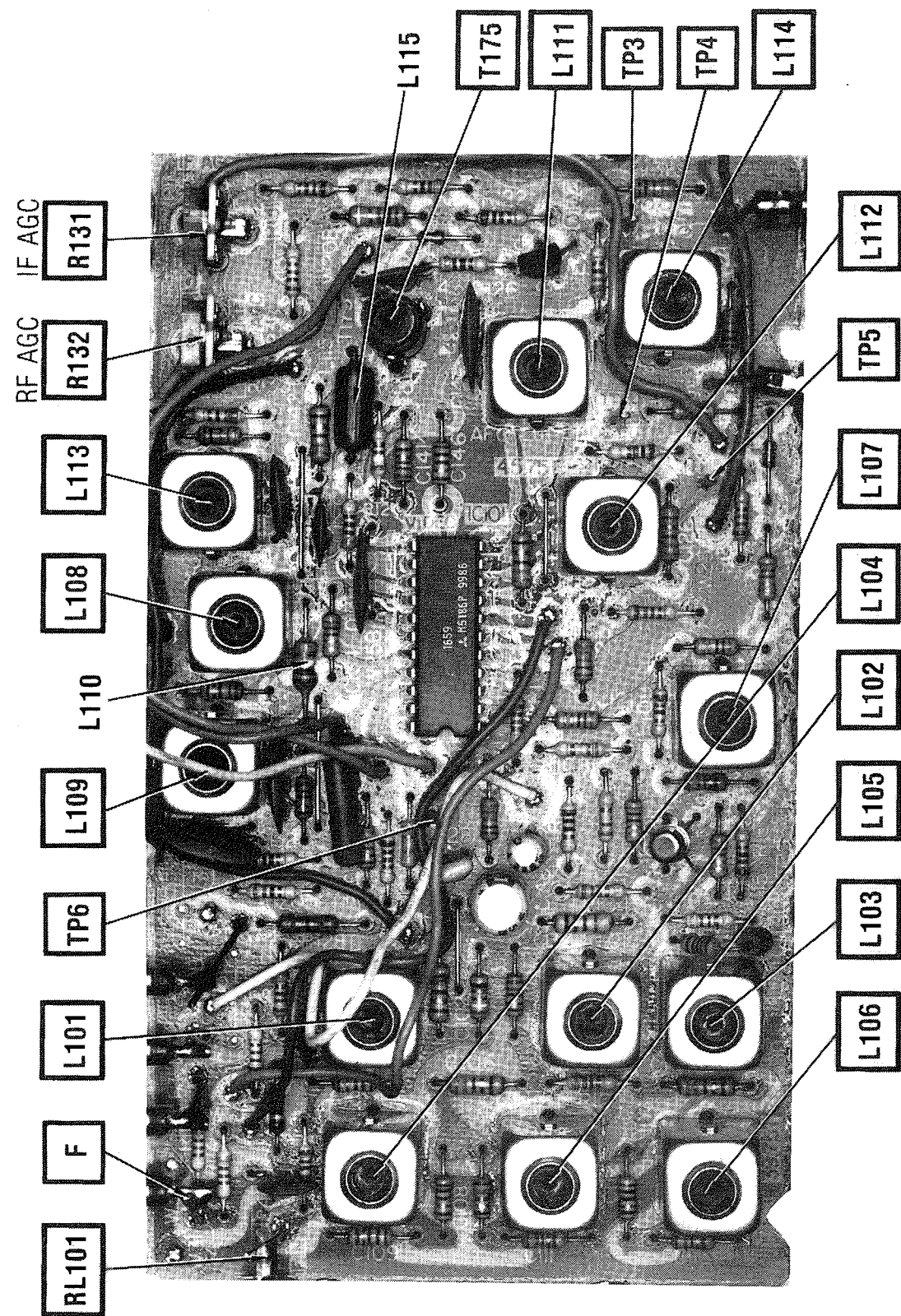
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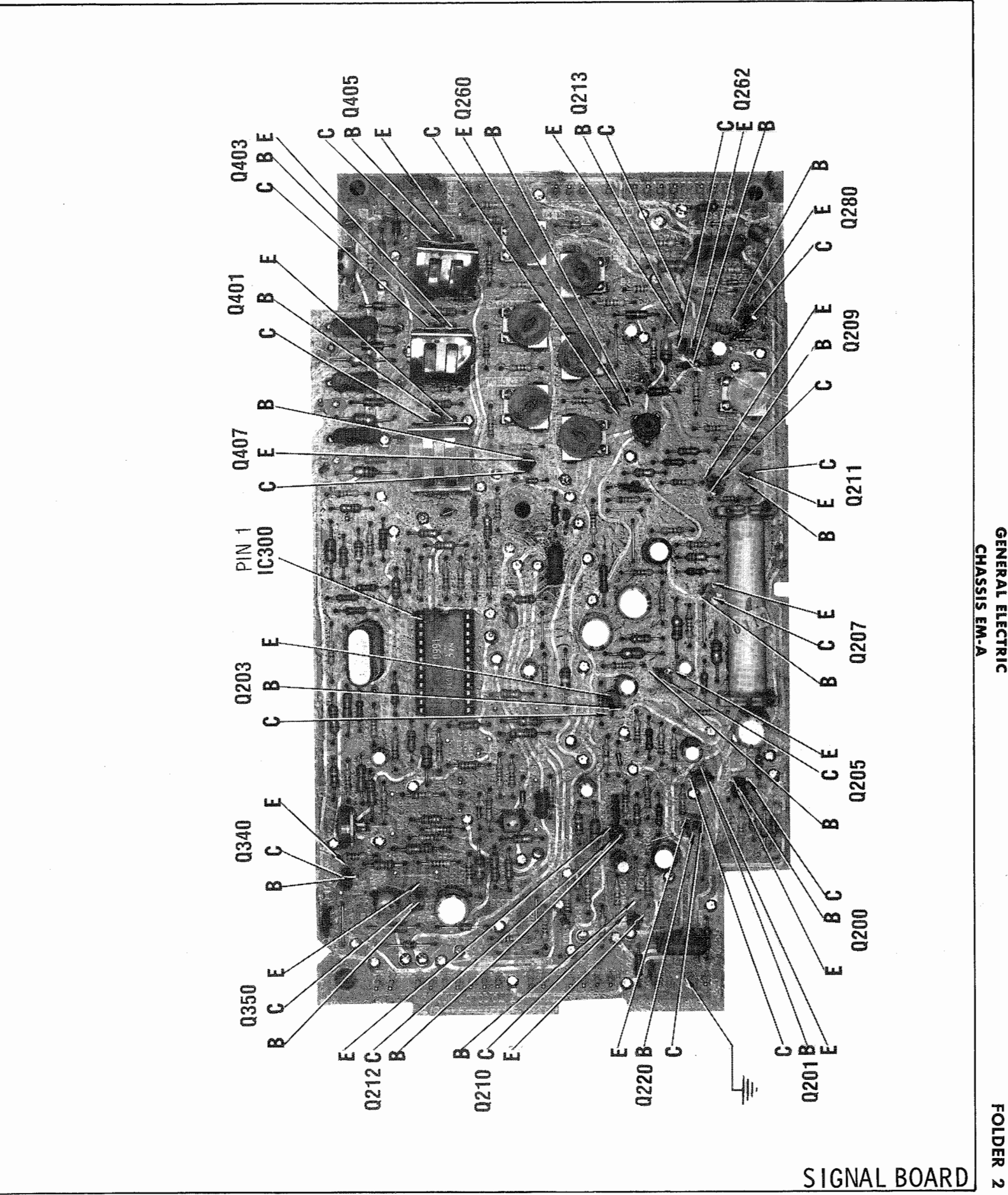
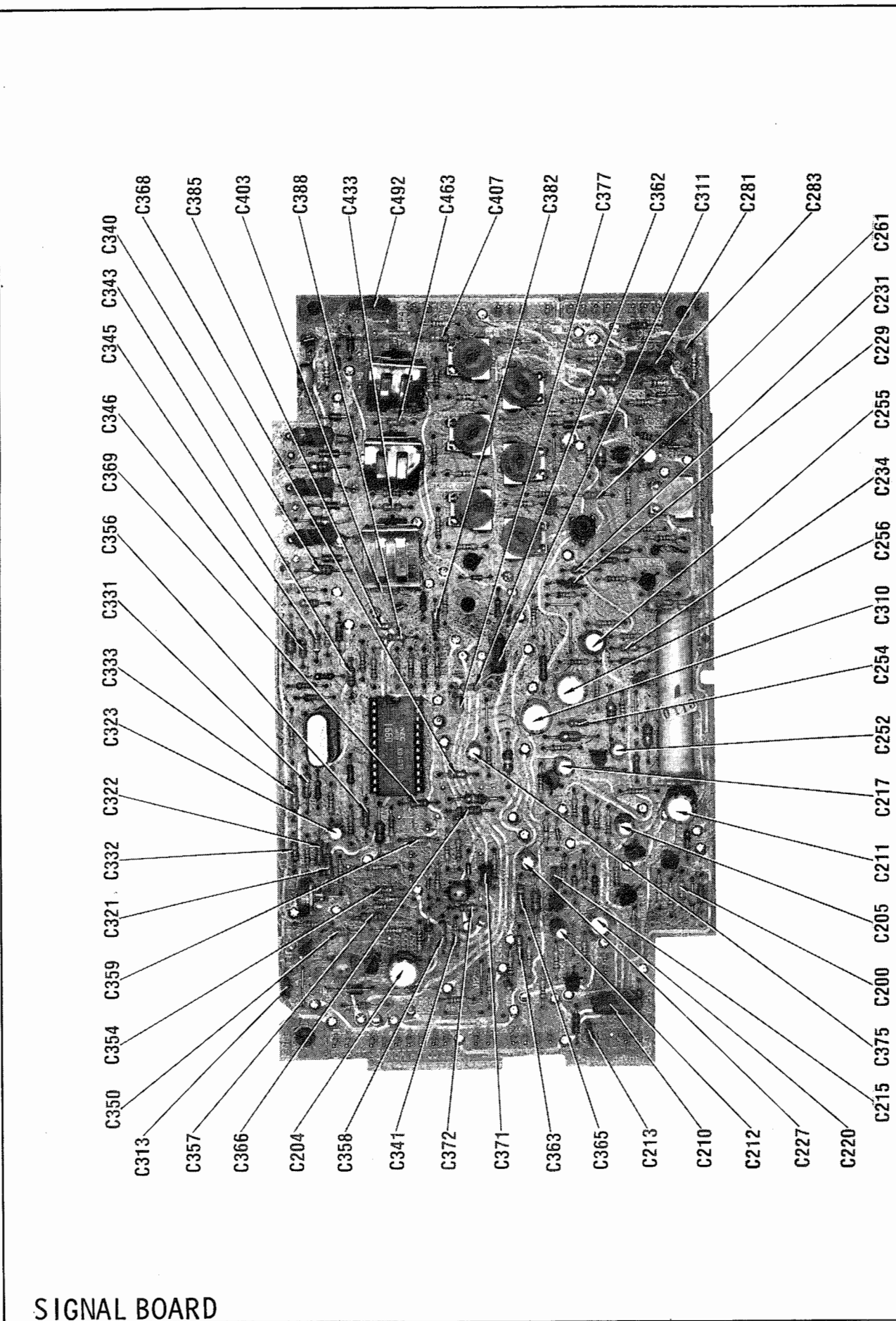
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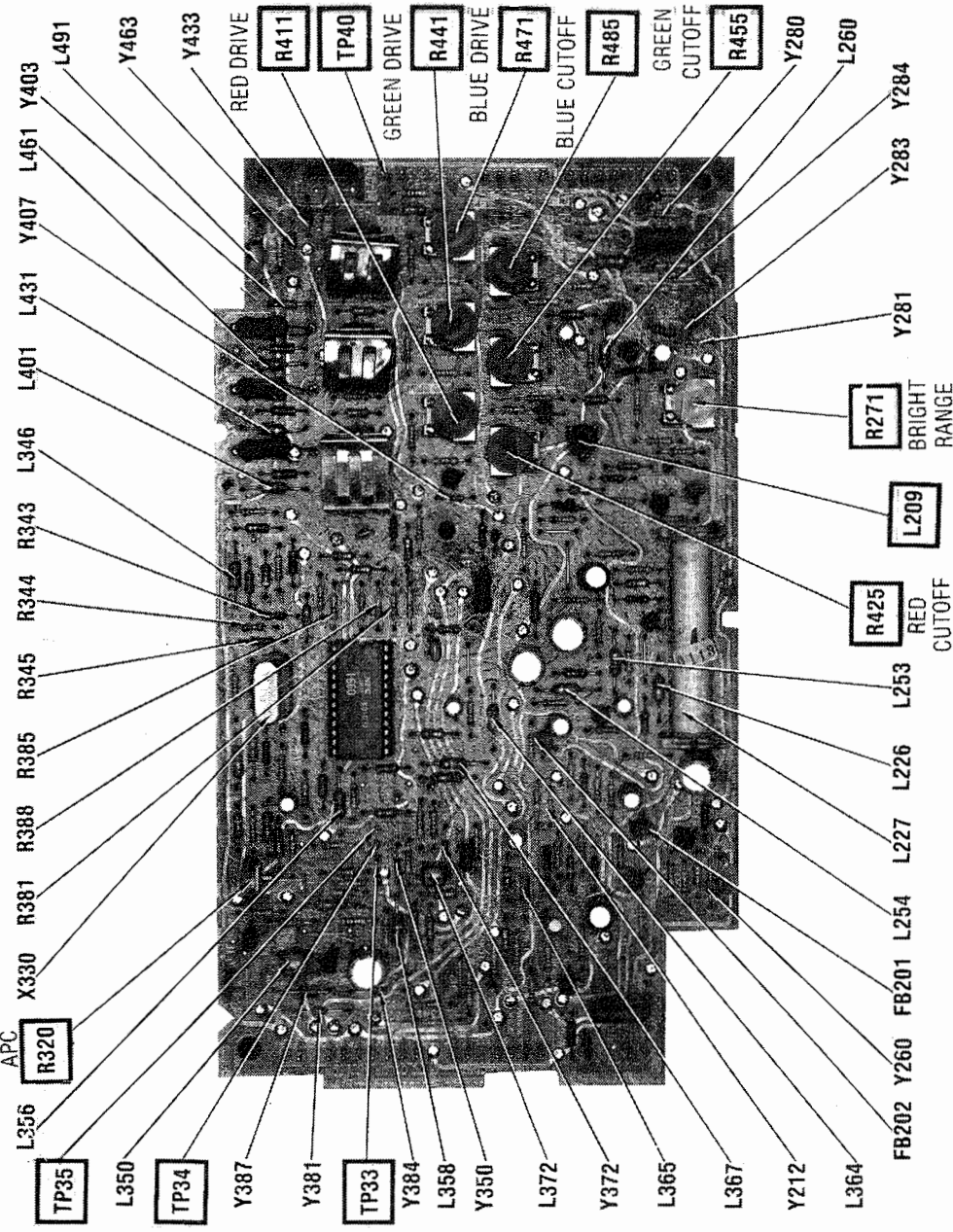
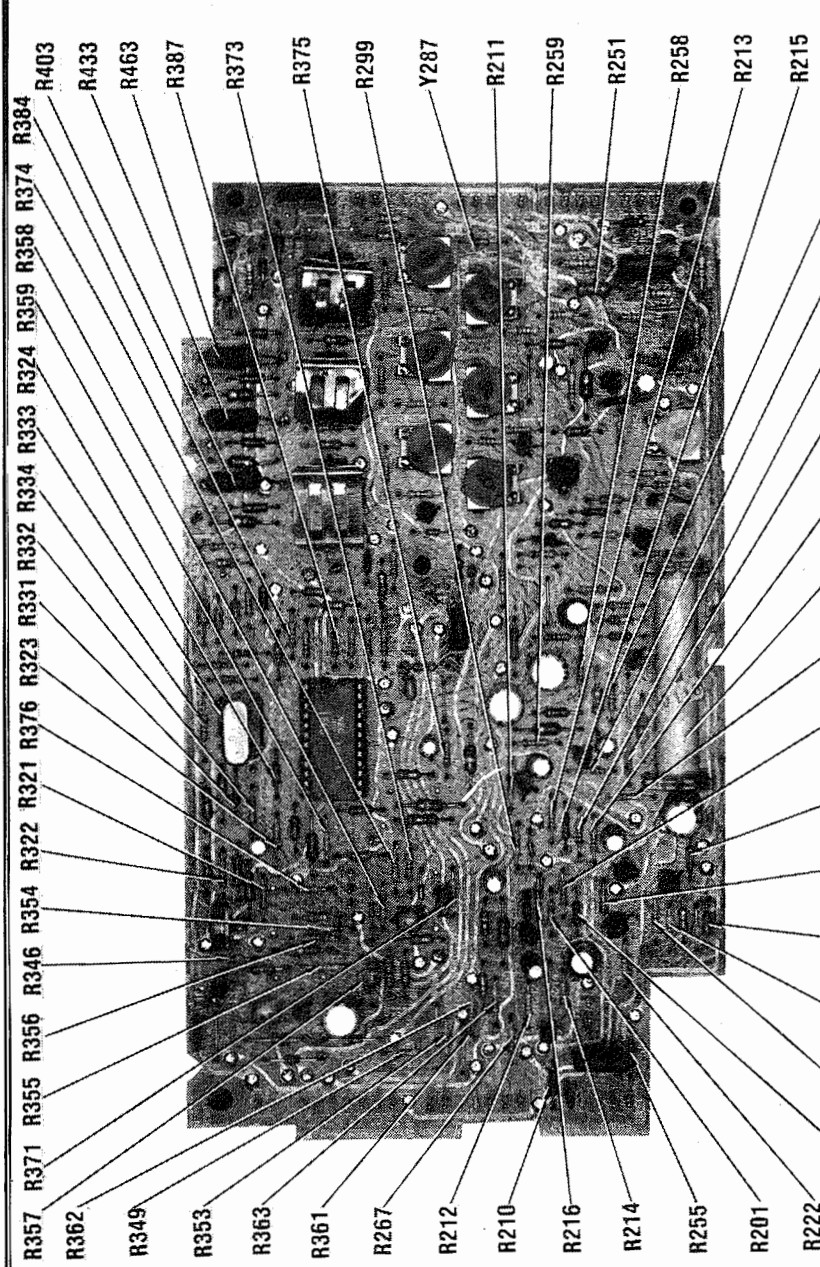
VIDEO IF BOARD



A Howard W. Sams **CIRCUITRACE®** Photo

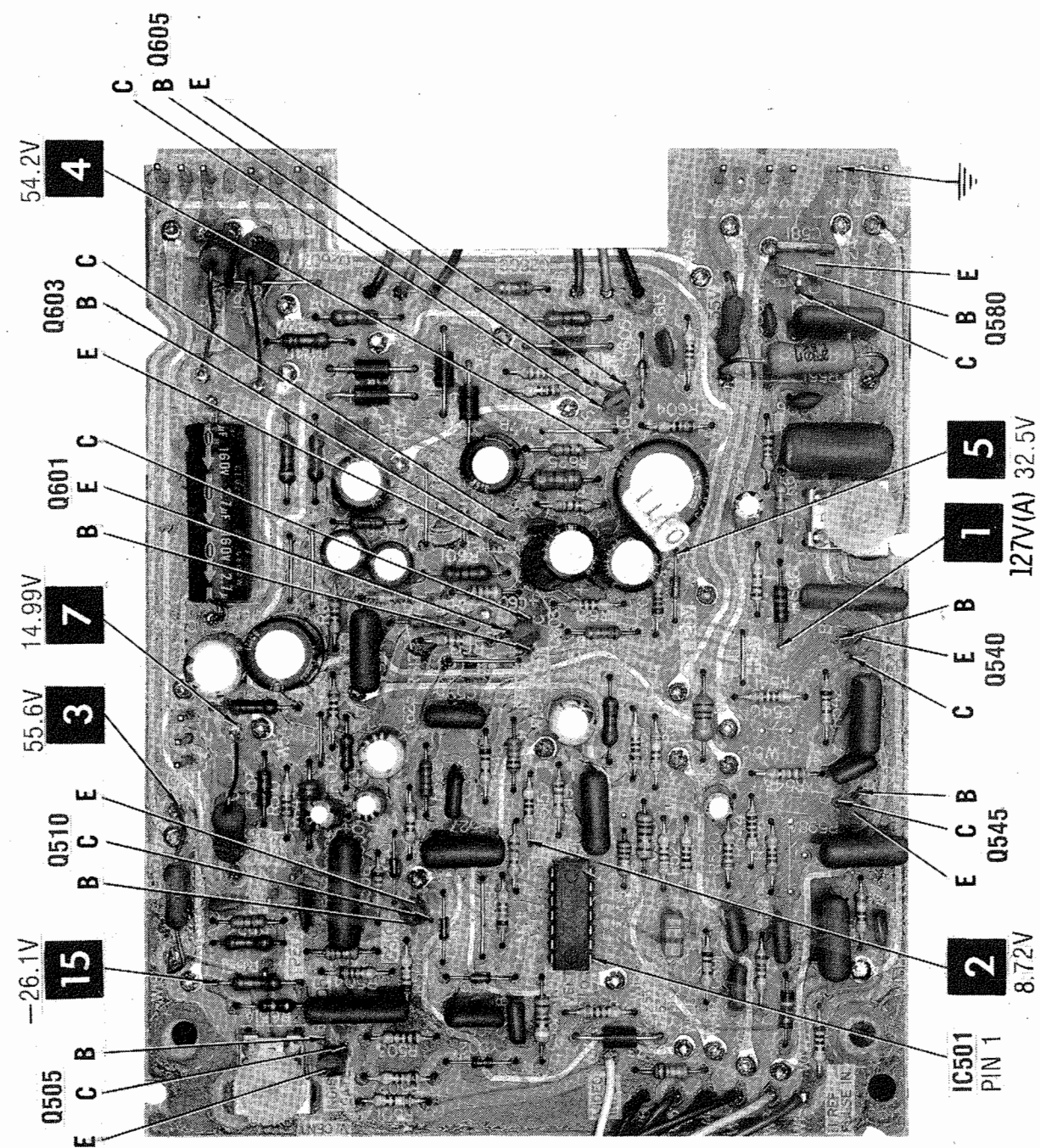
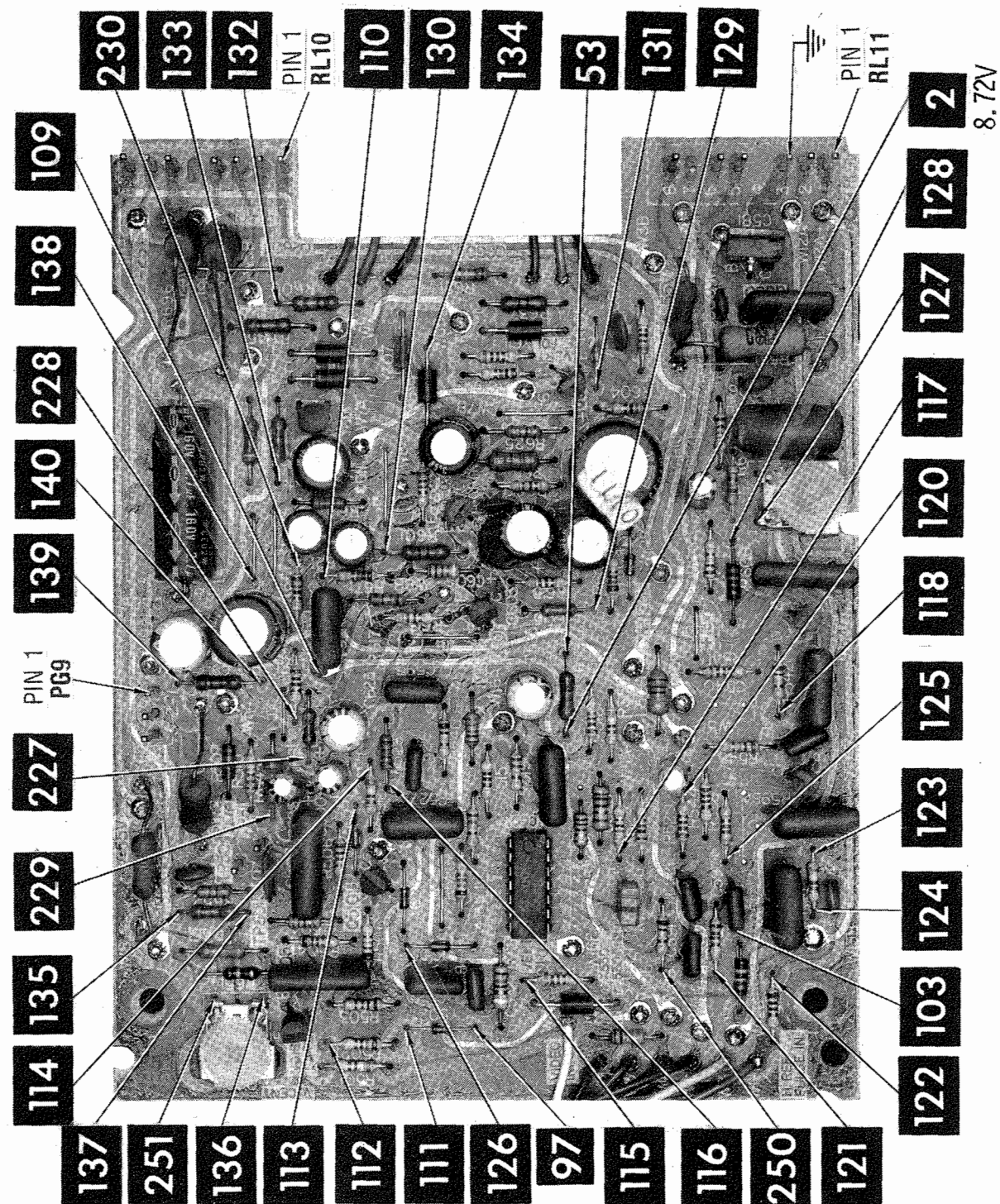


SIGNAL BOARD

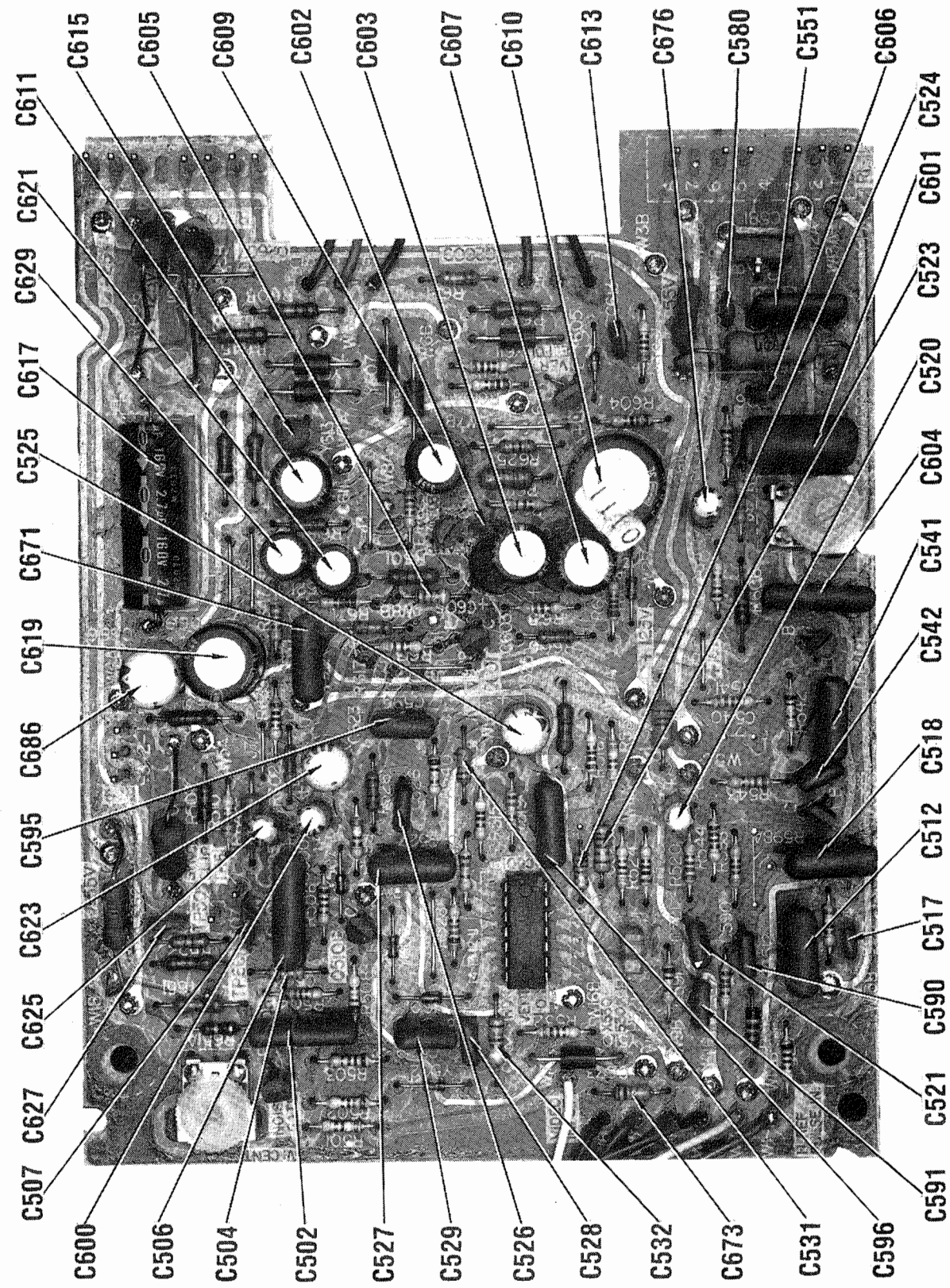


SIGNAL BOARD

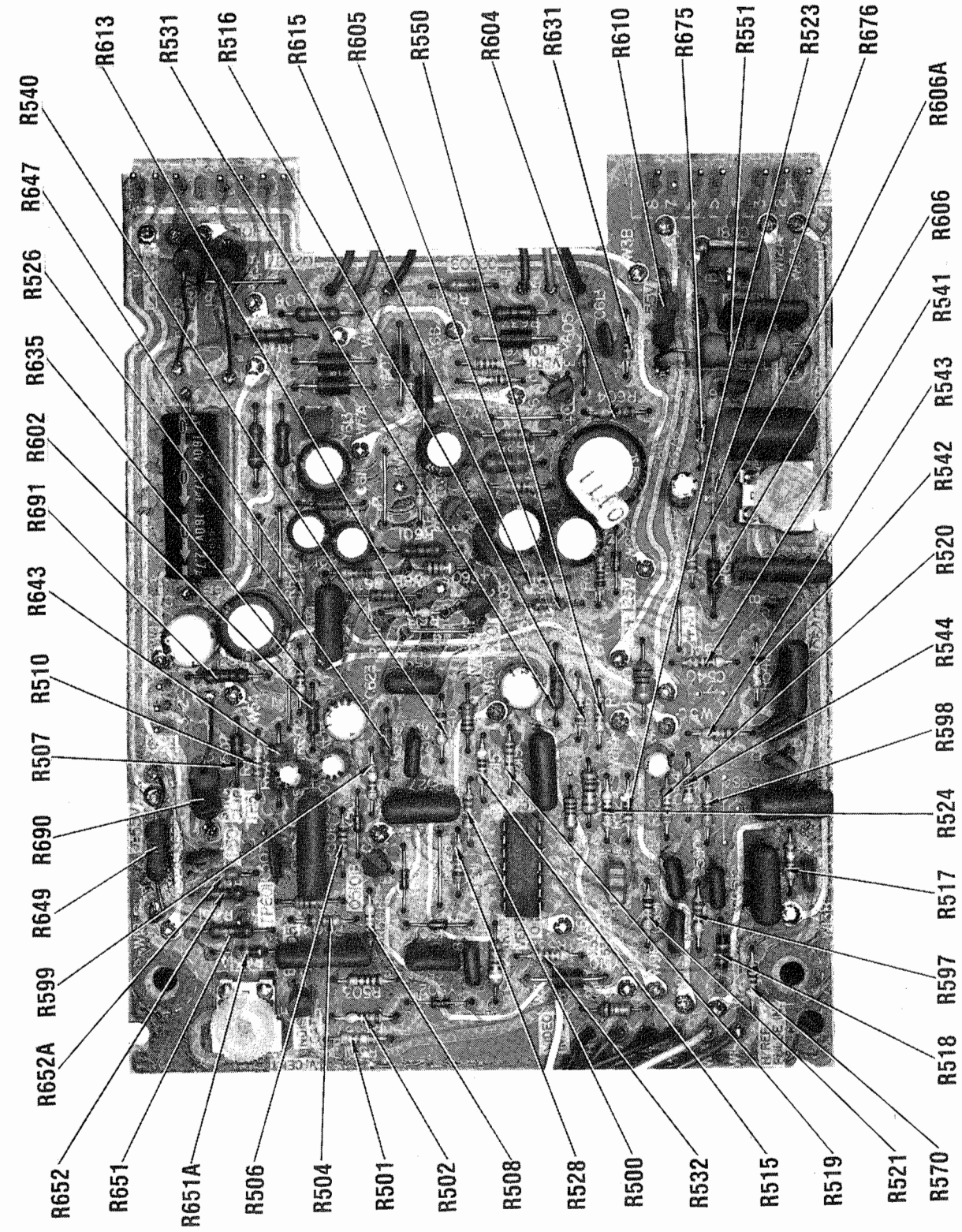
SWEEP BOARD

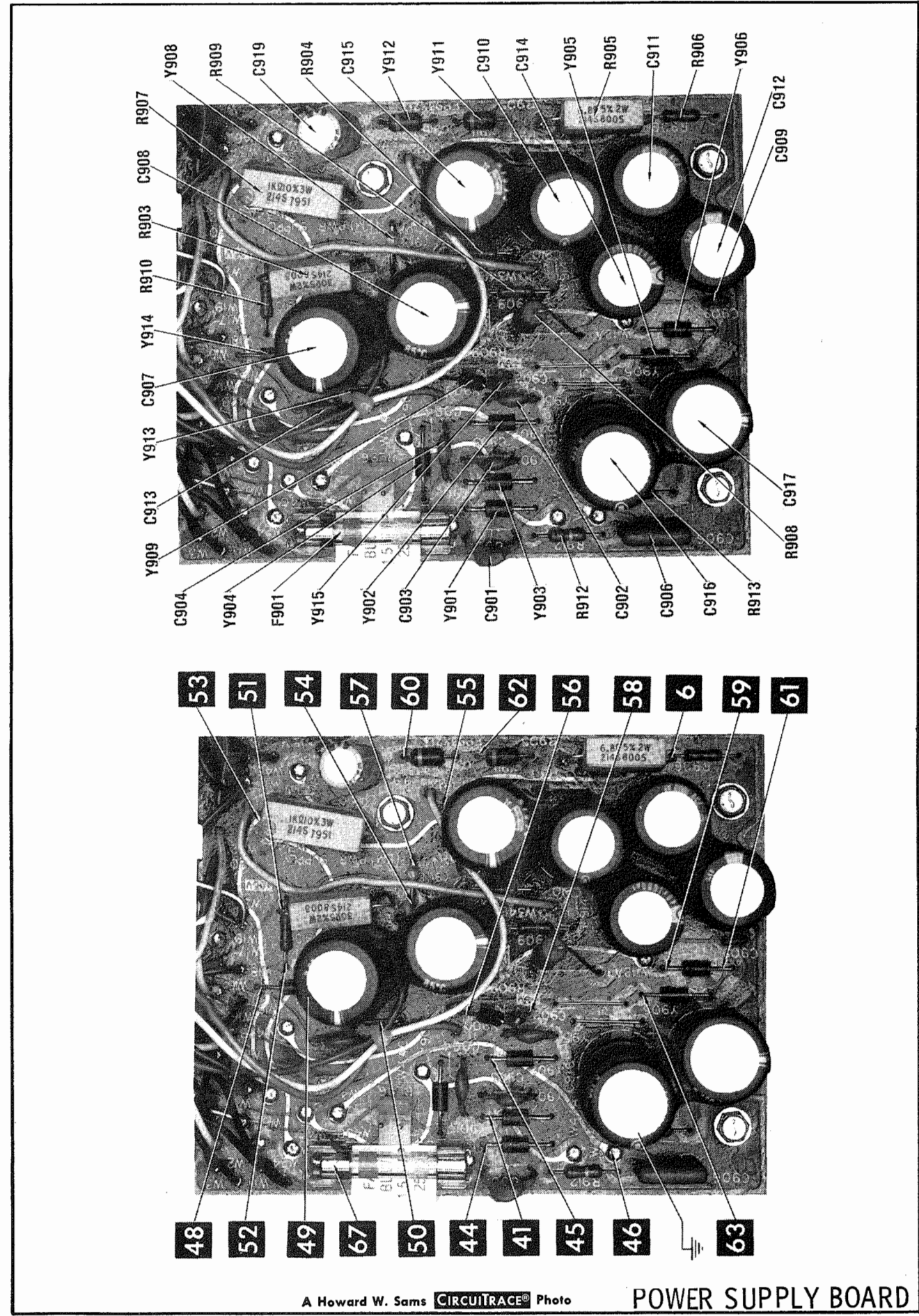
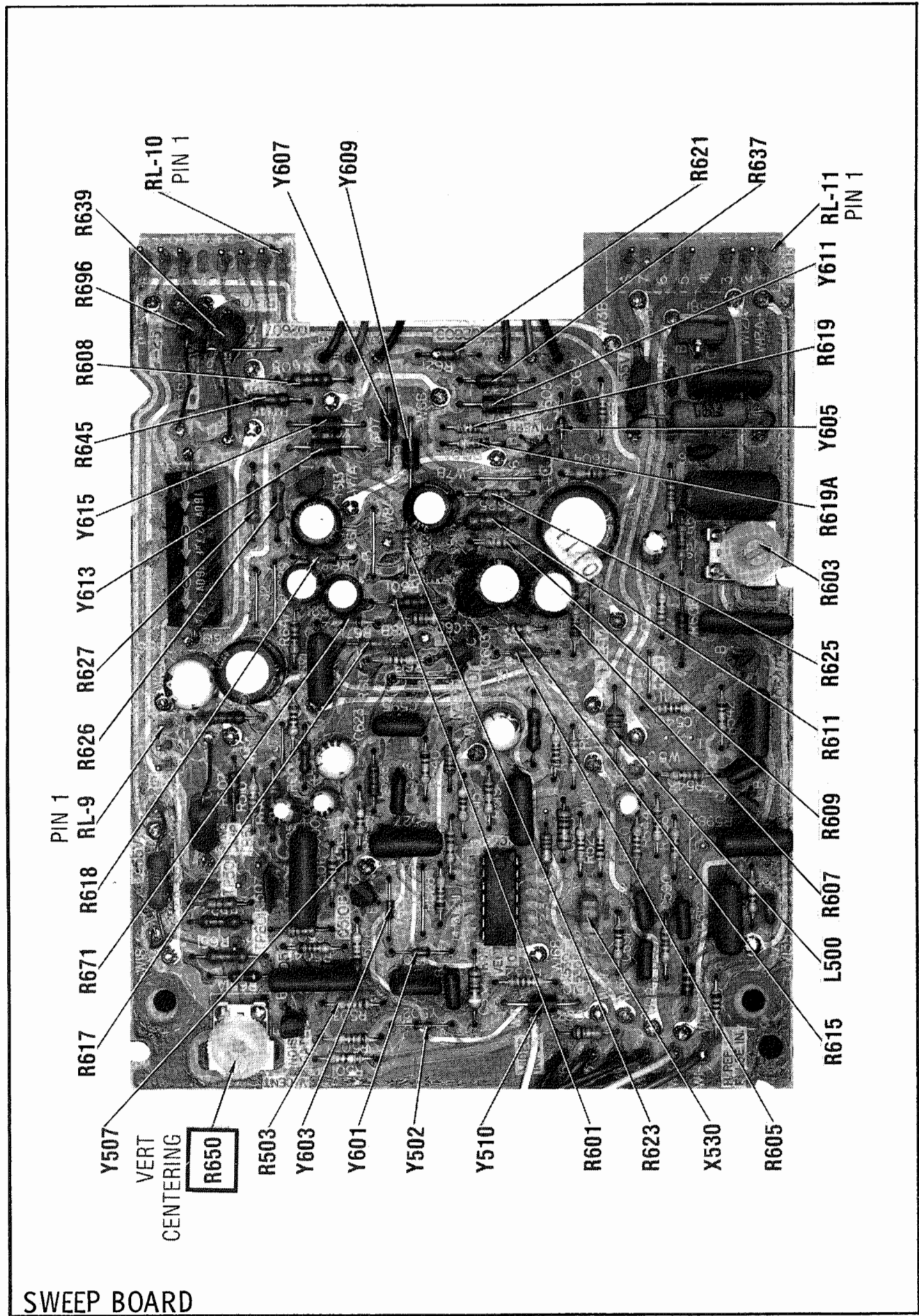


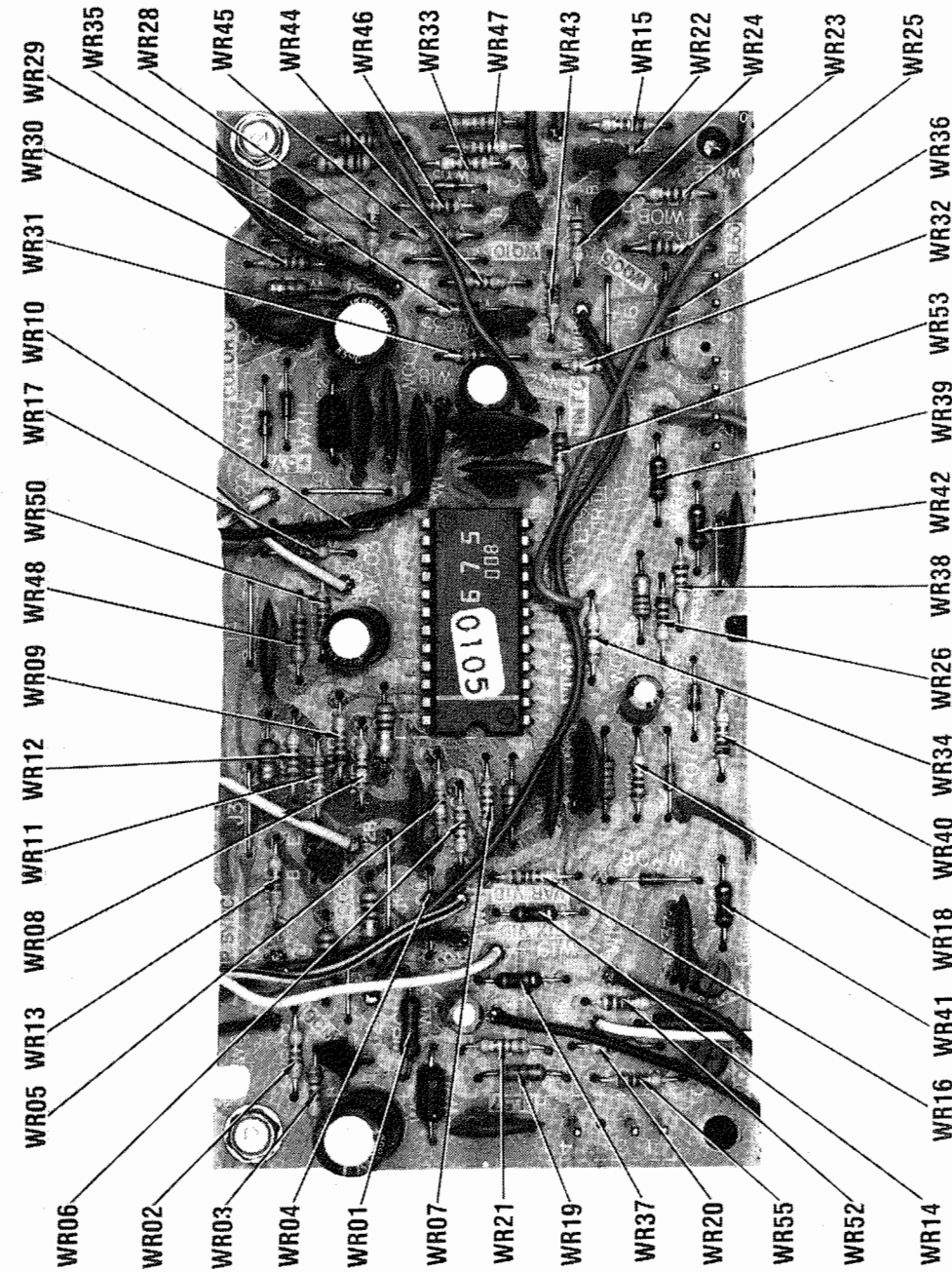
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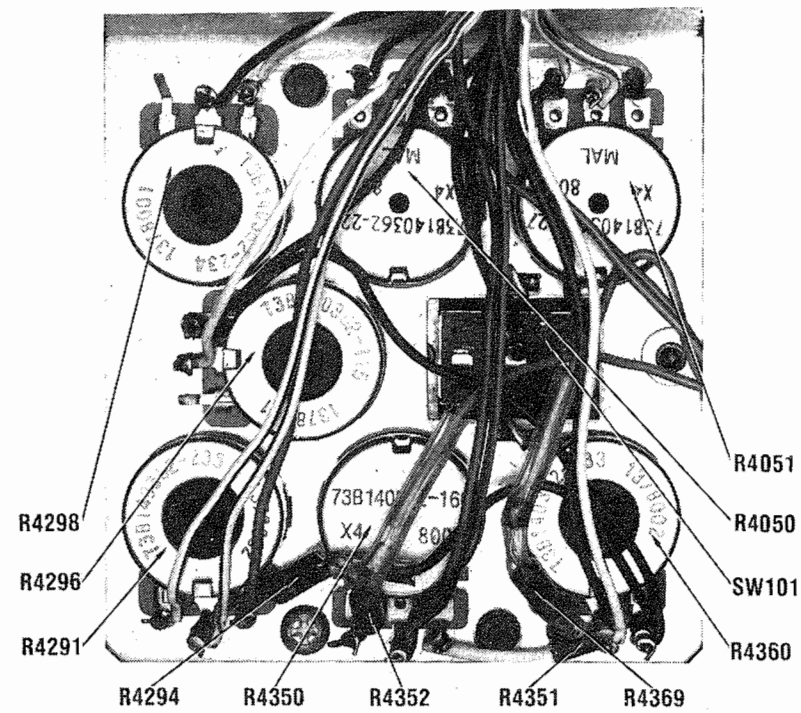


SWEEP BOARD

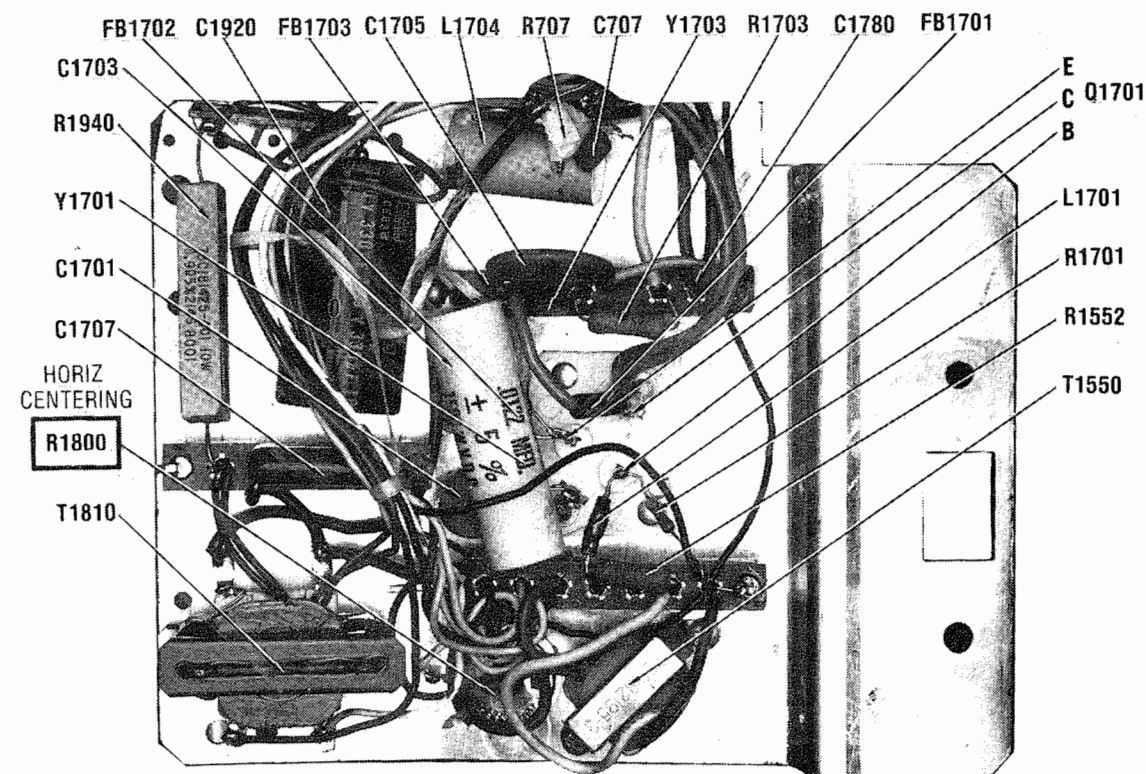




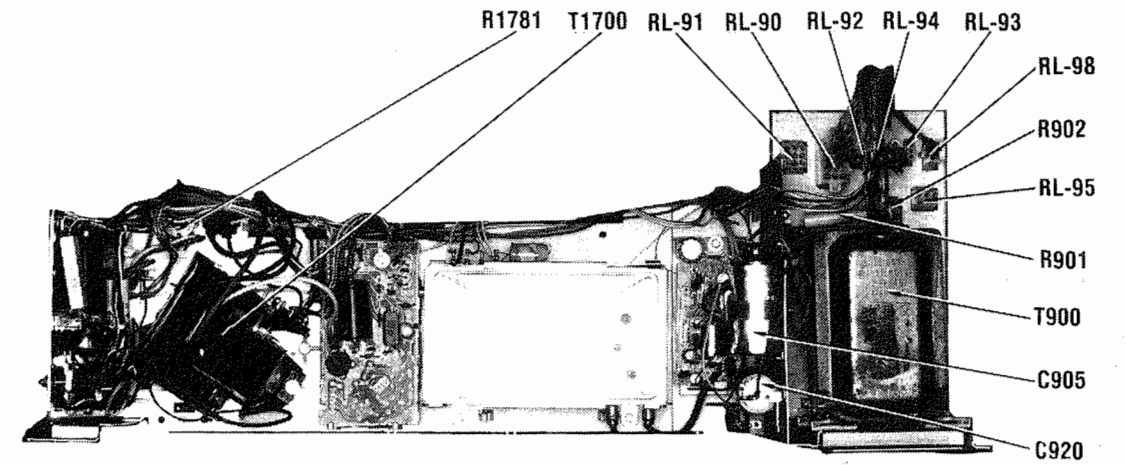




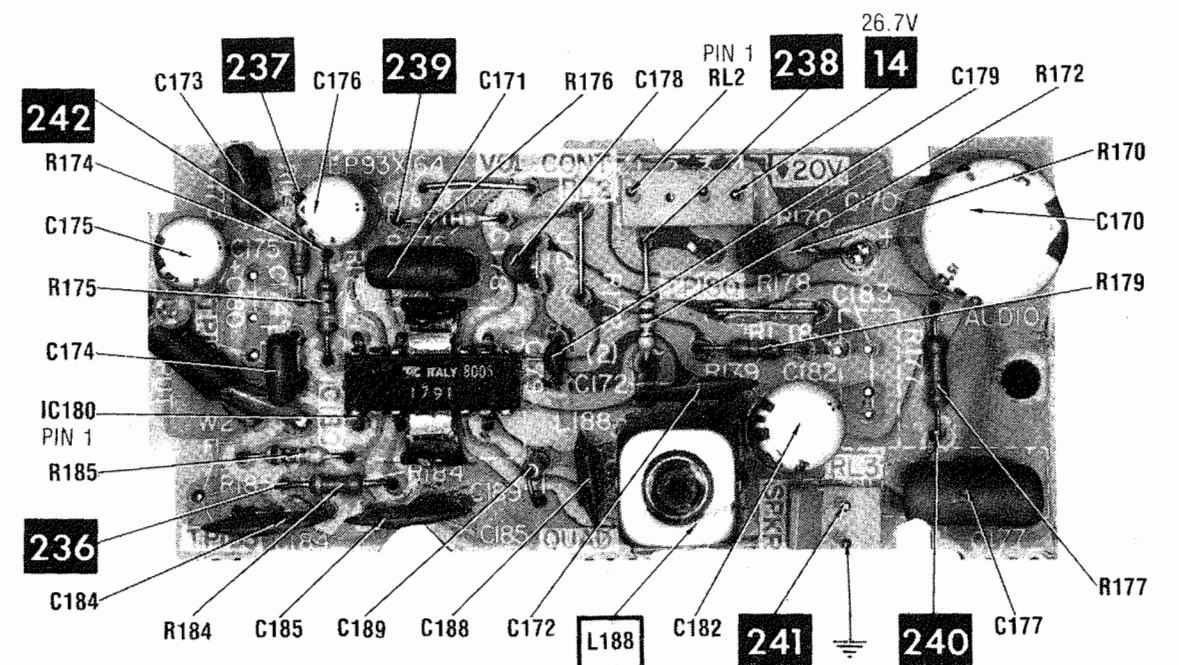
CONTROL CHASSIS



HORIZ CHASSIS



CHASSIS-FRONT VIEW

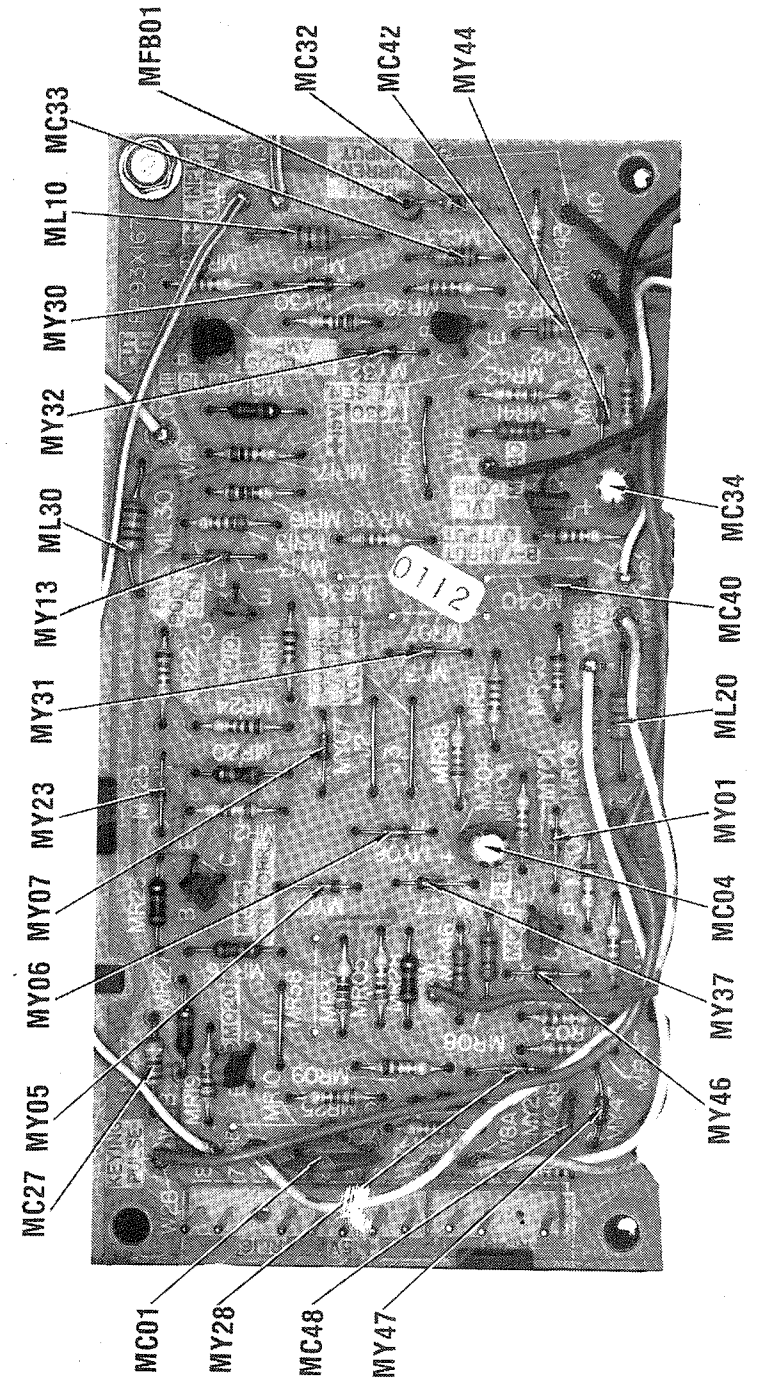
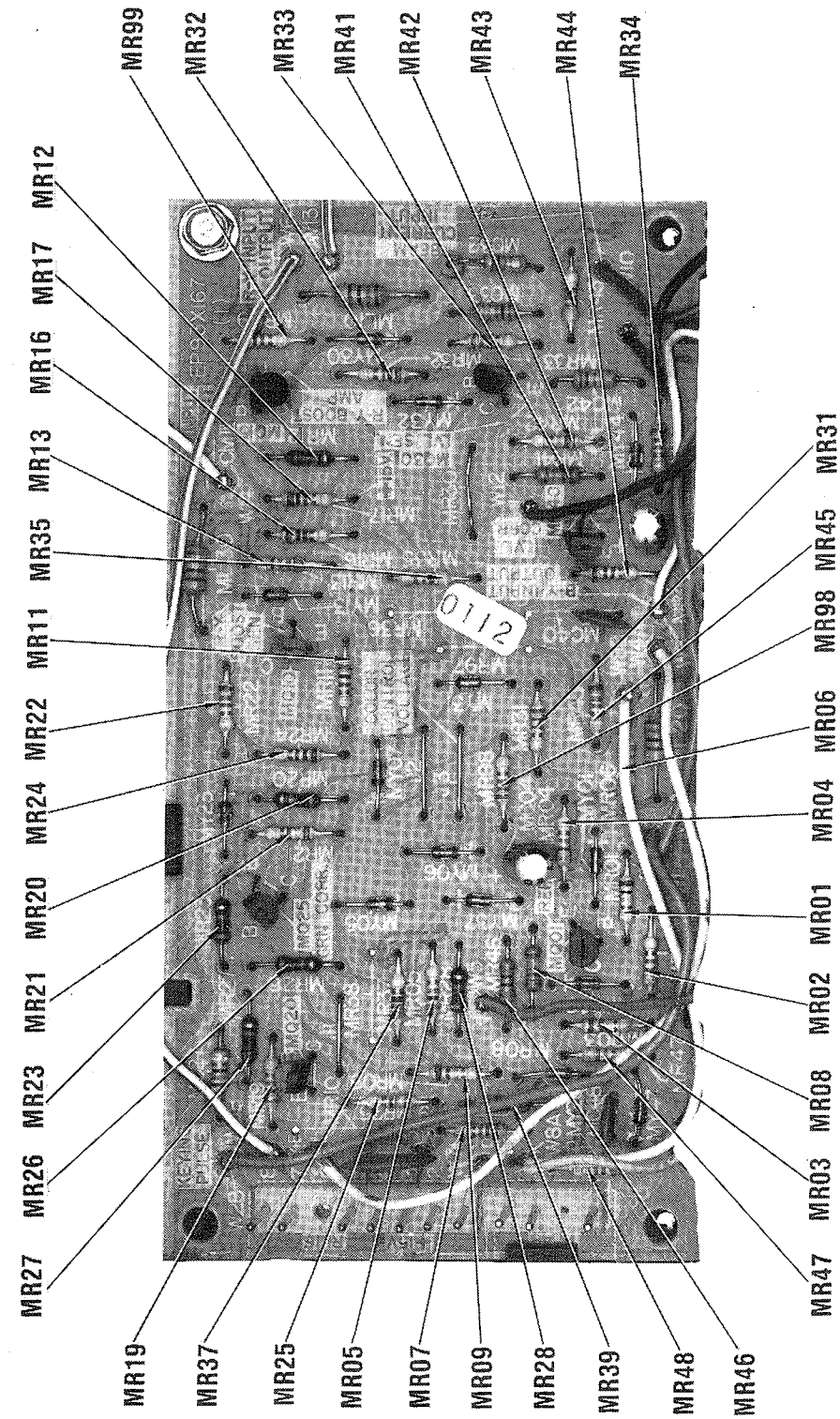
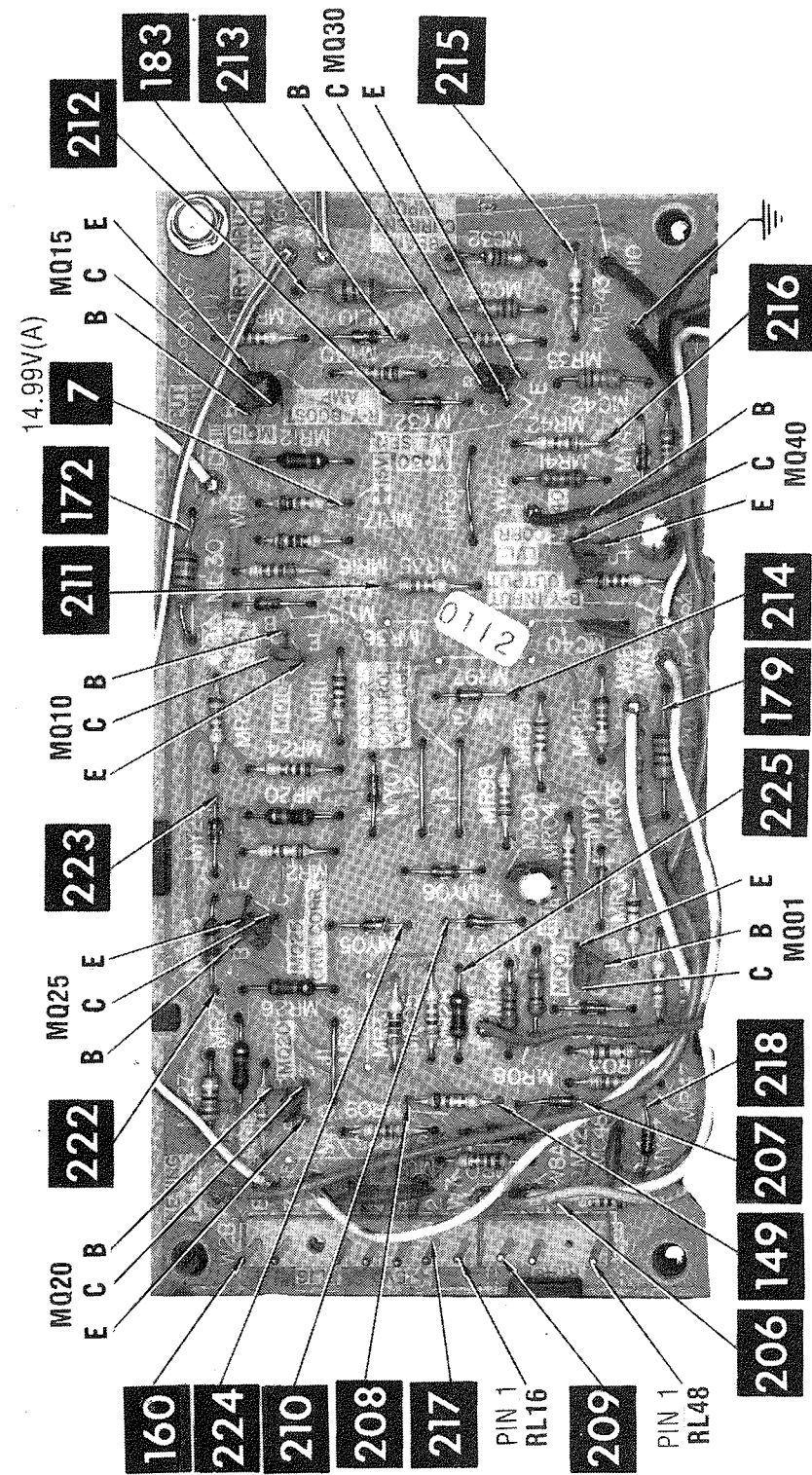


A Howard W. Sams CIRCUITRACE® Photo

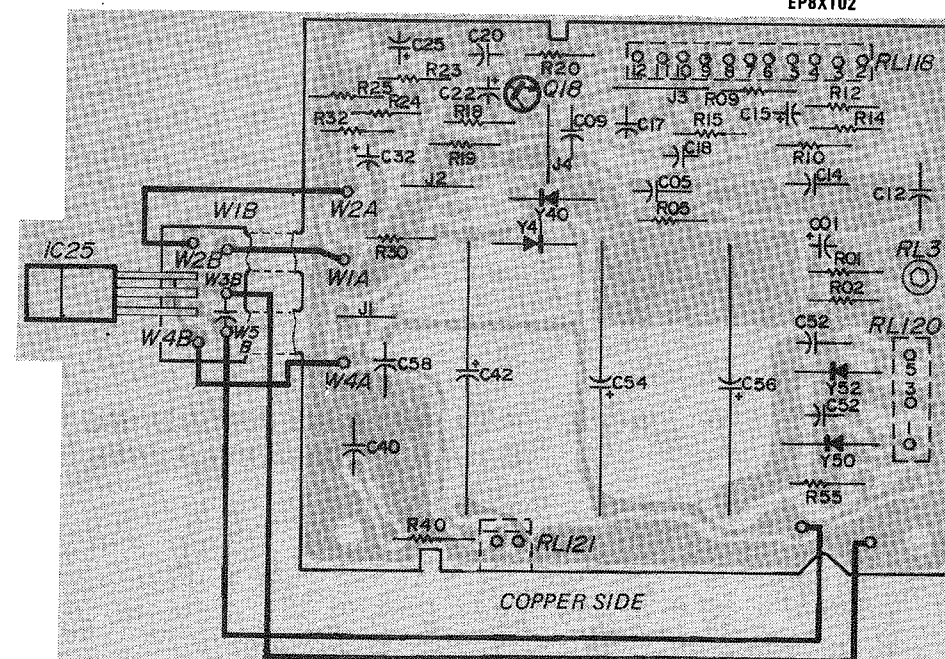
AUDIO BOARD

COLOR MONITOR BOARD

A Howard W. Sams CIRCUITRACE® Photo



COLOR MONITOR BOARD

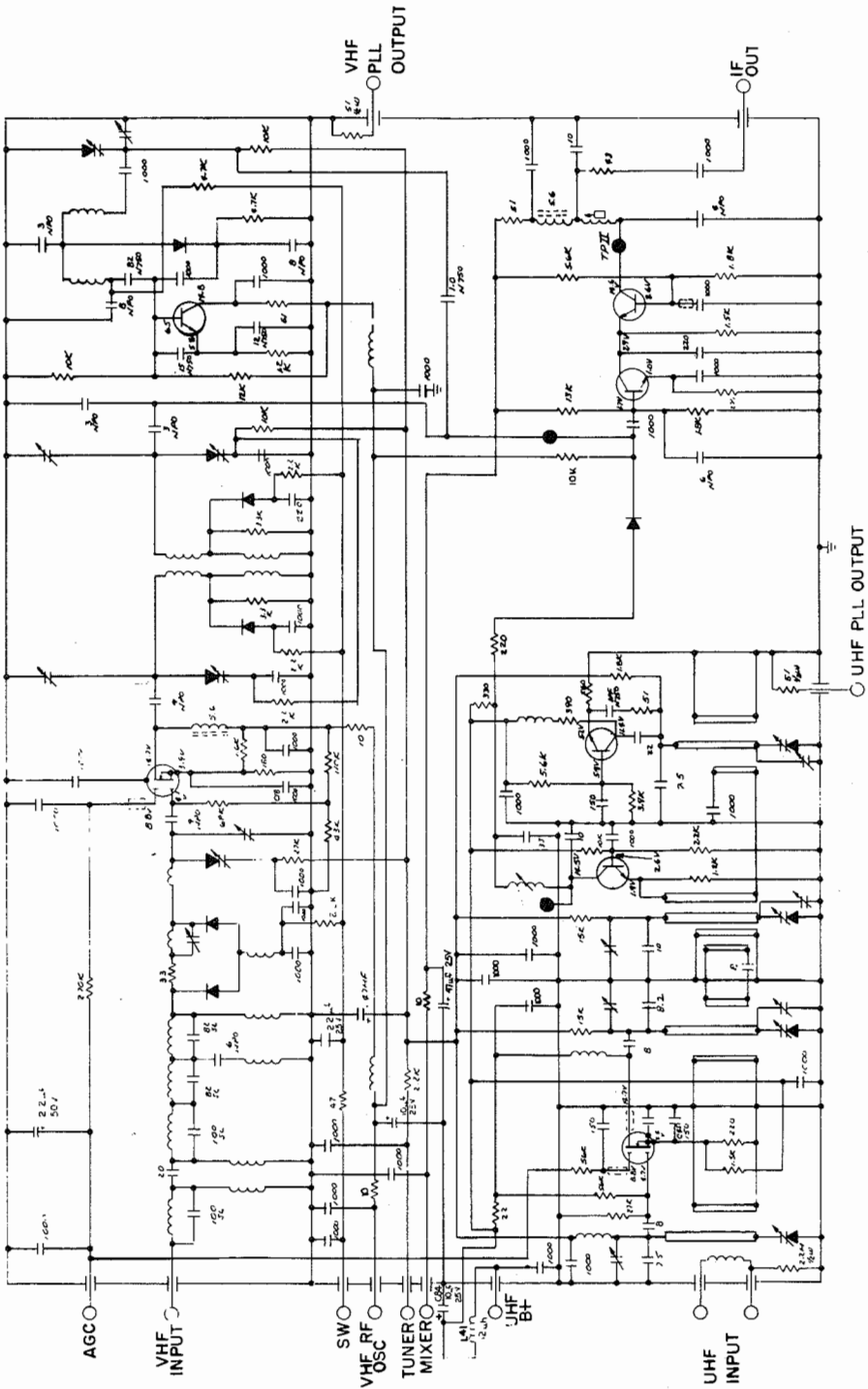


Phono Jack



21

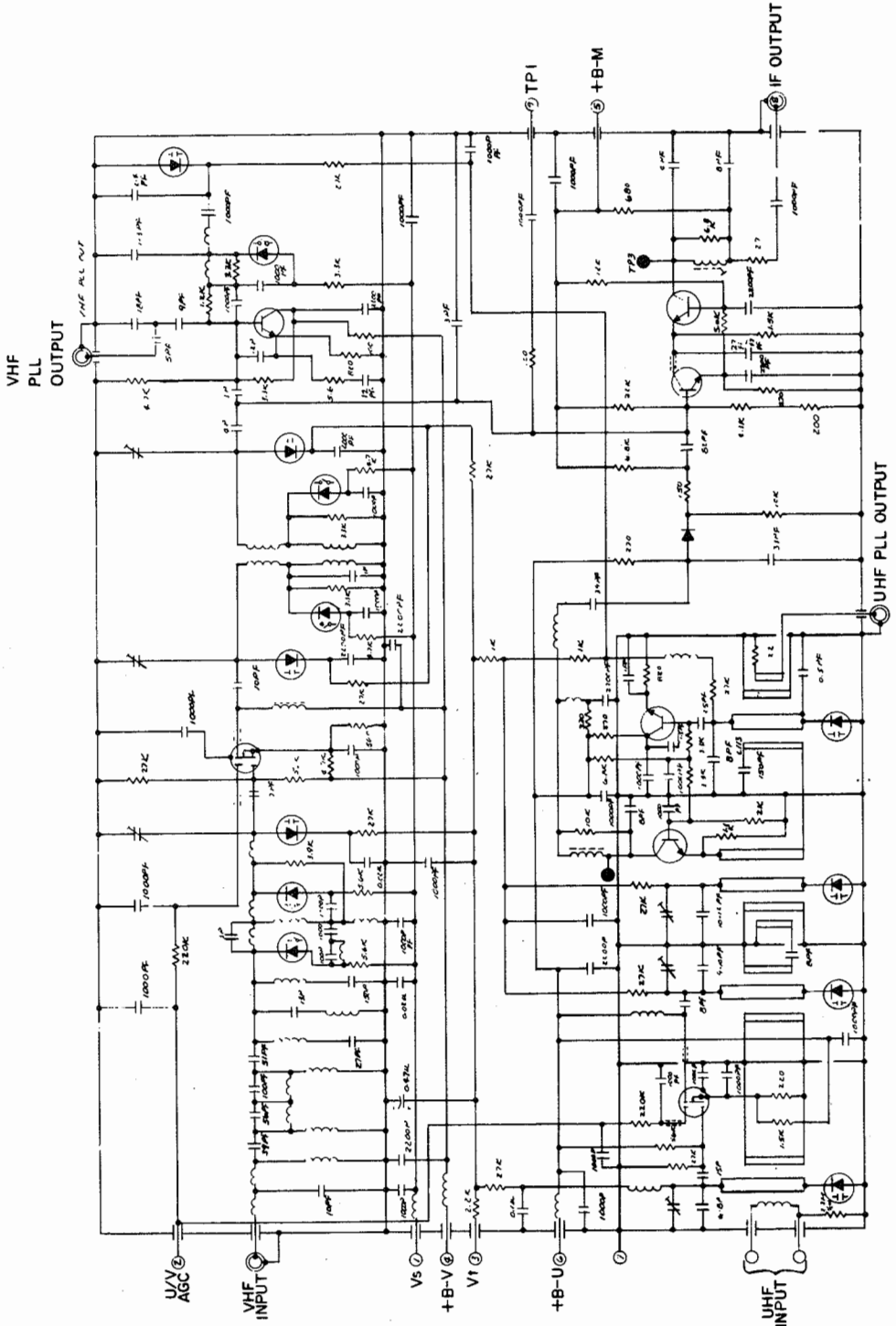
UHF/VHF TUNER EP93X192 AND EP93X223
(GE)



NOTE: FOR REPAIRS REQUIRING PARTS
ORDER A COMPLETE TUNER.

EP93X223 UHF/VHF TUNER

UHF/VHF TUNER EP93X230
(MITSUMI)



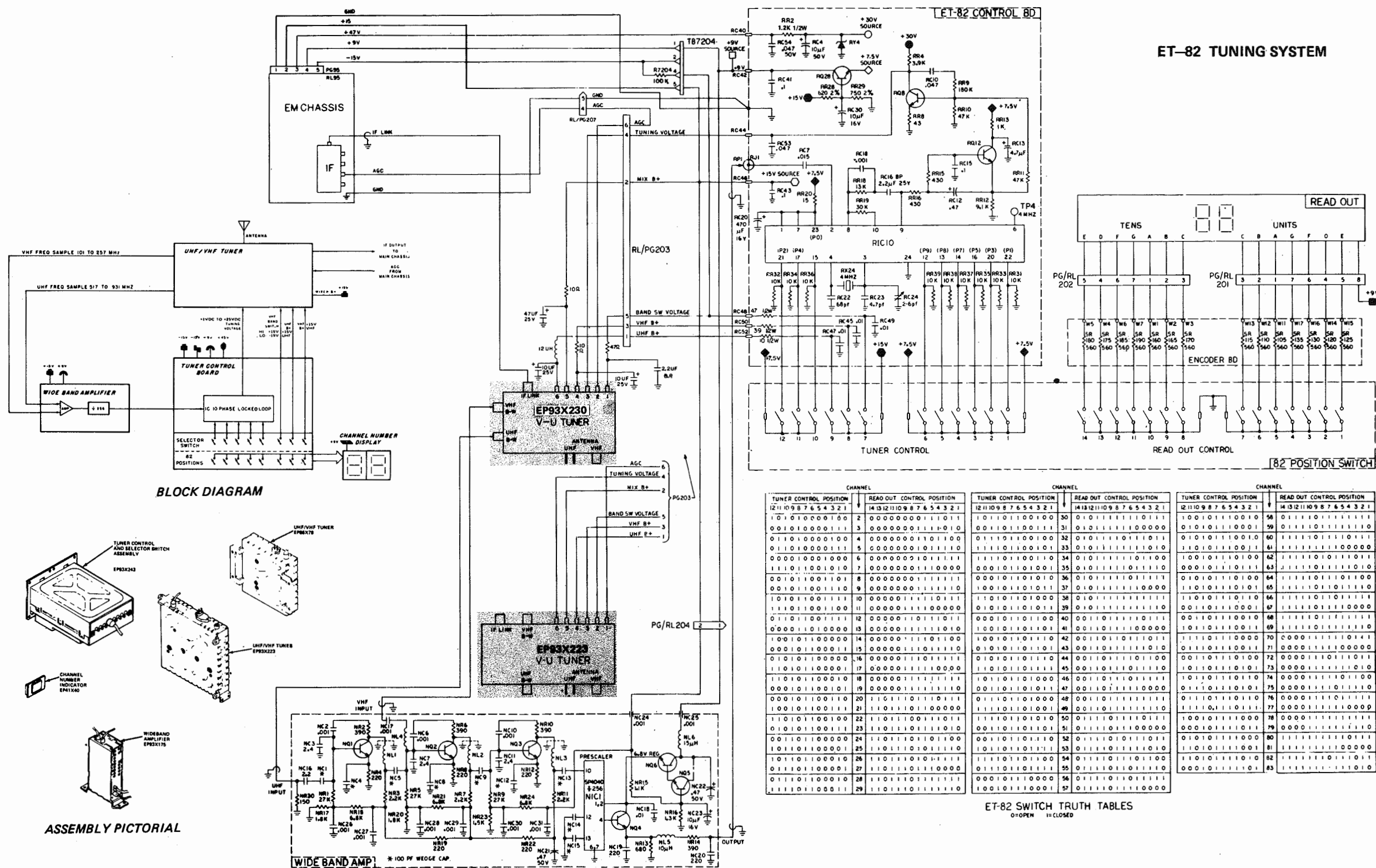
NOTE: FOR REPAIRS REQUIRING PARTS
ORDER A COMPLETE TUNER.

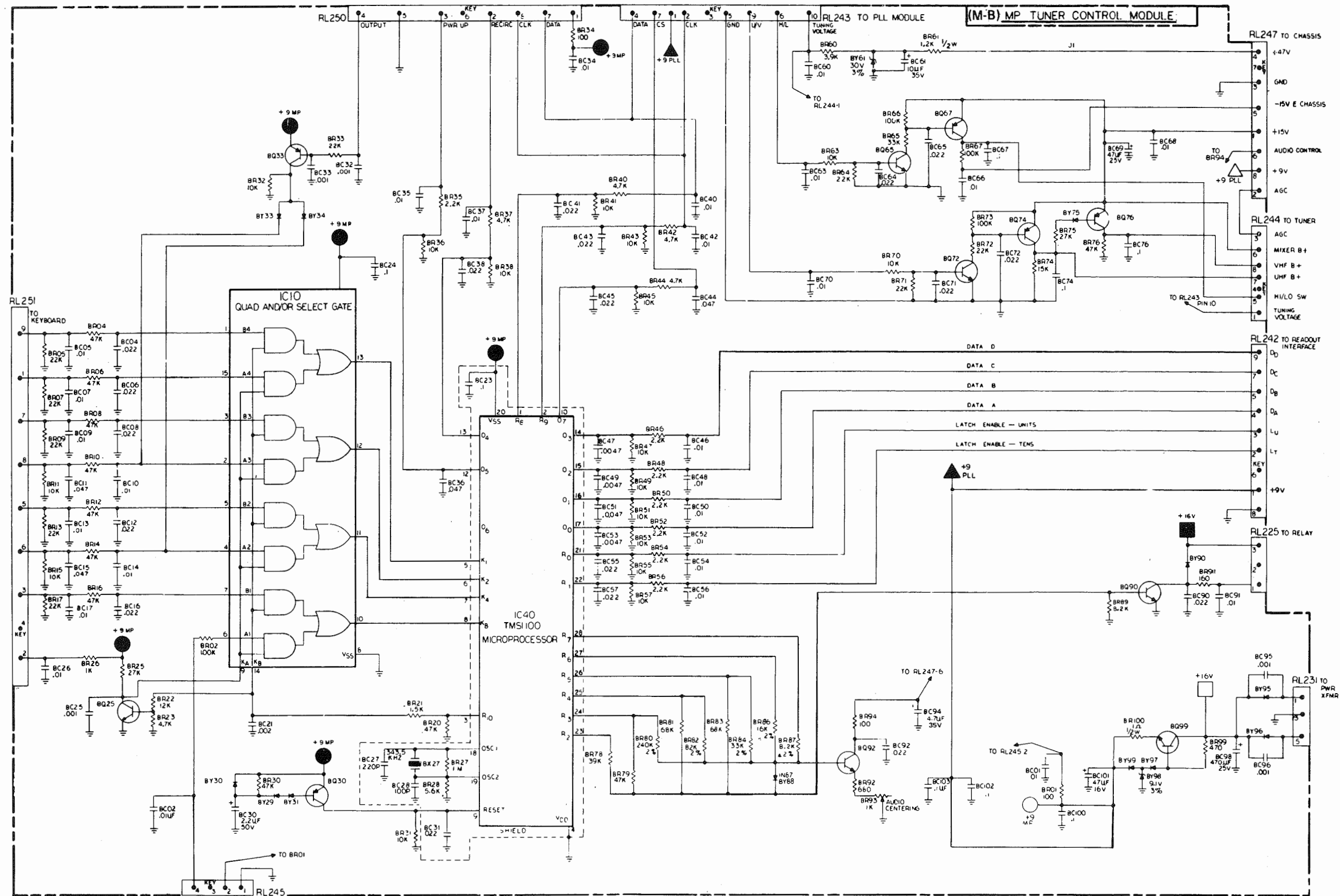
EP93X230 UHF/VHF TUNER

Courtesy of the Manufacturer



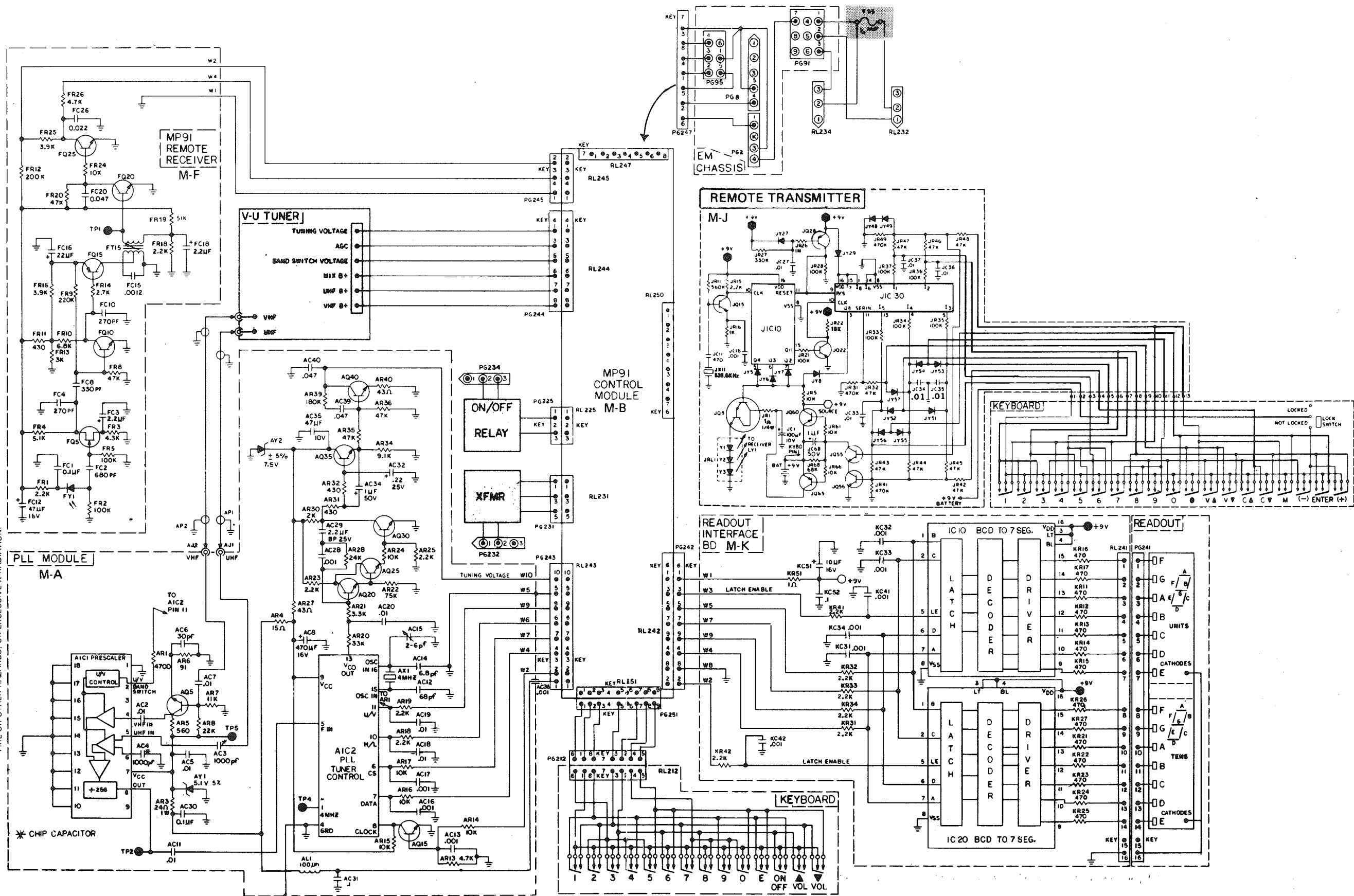
PRODUCT SAFETY SHOULD BE CONSIDERED WHEN COMPONENT REPLACEMENT IS MADE IN ANY AREA OF A RECEIVER. THE (*) BESIDE A PART IN THE PARTS LIST AND THE SHADED AREAS OF THE SCHEMATIC DIAGRAM DESIGNATES COMPONENTS IN WHICH SAFETY CAN BE OF SPECIAL SIGNIFICANCE. IT IS PARTICULARLY RECOMMENDED THAT EXACT CATALOGED PARTS BE USED FOR REPLACEMENT OF COMPONENTS WHICH ARE DESIGNATED BY A (*) IN THE PARTS LIST AND THE SHADED AREAS ON THE SCHEMATIC DIAGRAM. USE OF SUBSTITUTE REPLACEMENT PARTS WHICH DO NOT HAVE THE SAME SAFETY CHARACTERISTICS AS RECOMMENDED IN FACTORY SERVICE INFORMATION MAY CREATE SHOCK, FIRE OR OTHER HAZARDS, OR EXCESSIVE X-RADIATION.





MP-91 SCHEMATIC DIAGRAM (M-B) TUNER CONTROL MODULE

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN COMPONENT REPLACEMENT IS MADE IN ANY AREA OF A RECEIVER. THE (*) BESIDE A PART IN THE PARTS LIST AND THE SHADED AREAS OF THE SCHEMATIC DIAGRAM DESIGNATES COMPONENTS IN WHICH SAFETY CAN BE OF SPECIAL SIGNIFICANCE. IT IS PARTICULARLY RECOMMENDED THAT EXACT CATALOGED PARTS BE USED FOR REPLACEMENT OF COMPONENTS WHICH ARE DESIGNATED BY A (*) IN THE PARTS LIST AND THE SHADED AREAS ON THE SCHEMATIC DIAGRAM. USE OF SUBSTITUTE REPLACEMENT PARTS WHICH DO NOT HAVE THE SAME SAFETY CHARACTERISTICS AS RECOMMENDED IN FACTORY SERVICE INFORMATION MAY CREATE SHOCK, FIRE OR OTHER HAZARDS, OR EXCESSIVE X-RADIATION.



PRINTED CIRCUIT BOARD ASSEMBLIES			MP91 CONTROL MODULE (M-B)			MP91 REMOTE RECEIVER (M-F)			MP91 REMOTE TRANSMITTER (M-J)		
REF. NO.	PART NO.	DESCRIPTION	EP93X203			EP93X209			EP62X120		
M-A	EP93X231	Phase Lock Loop/Wide Band Amp Module	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
M-B	EP93X203	MP91 Control Module	CONTROLS			COILS & TRANSFORMERS			CRYSTALS		
M-F	EP93X209	MP91 Remote Receiver	BR93	EP49X381	Elect. Tuning, 1K ohm, 20%	FT15	EP38X382	Coil - Remote Control, 33.7KHz	JX11	EP41X55	Crystal, Ceramic Resonator, 566KHz
M-J	EP62X124	MP91 Remote Transmitter	CRYSTALS			DIODE			DIODES		
M-K	EP93X201	Readout Interface Board	8X27	EP41X67	Ceramic Resonator, 343.5KHz	FY01	EP18X26	Photo - Pin	JY01	EP16X33	Infrared Emitter
	EP93X192	VHF/UHF Tuner	DIODES			TRANSISTORS			JY02	EP16X33	Infrared Emitter
MISCELLANEOUS (Parts Not On Modules)			BY29	ES16X27	Silicon	FQ05	ES15X92	FET, Amplifier	JY03	EP16X33	Infrared Emitteer
F95	EP41X57	Channel Number Display Readout, Red	BY30	ES18X27	Silicon	FQ10	EP15X89	NPN, Amplifier	JY05	ES16X27	Diode, Isolation
	EP10X28	Fuse, 1/4 Amp, 250V, Fast Blow	BY31	ES16X27	Silicon	FQ15	EP15X48	PNP, Band Pass Amp.	JY08	ES16X27	Diode, Isolation
	EP93X188	Keyboard, ON/OFF, Volume, Up/Down, Channel Select	BY33	ES18X27	Silicon	FQ20	EP15X88	NPN, Pulse Detector	JY27	ES16X27	Diode, Bias
PT01	EP41X66	Relay and Cable Assembly	BY34	ES18X27	Silicon	FQ25	EP15X88	NPN, Pulse Amplifier	JY29	ES16X27	Diode, Isolation
	EP88X30	Power Transformer	BY81	EP18X32	Zener	READOUT INTERFACE BOARD (M-K)			JY48	ES16X27	Diode, Bias
PHASE LOCK LOOP WIDE BAND AMP BOARD (M-A)			BY75	ES18X27	Silicon	EP93X201			JY49	ES16X27	Diode, Bias
EP93X231			BY88	EP18X3	Germanium	REF. NO.	PART NO.	DESCRIPTION	JY51	ES16X27	Diode, Steering
REF. NO.	PART NO.	DESCRIPTION	BY90	ES18X27	Silicon	INTEGRATED CIRCUITS			JY52	ES16X27	Diode, Steering
DIODES			BY95	EP57X4	Rectifier	KIC10	EP84X110	7 - Seg. Driver	JY53	ES16X27	Diode, Steering
AY01	EP16X25	Zener, 1W	BY96	EP57X4	Rectifier	KIC20	EP84X110	7 - Seg. Driver	JY54	ES16X27	Diode, Steering
AY02	EP16X12	Zener, 1W	BY97	ES18X27	Silicon	INTEGRATED CIRCUITS			JY55	ES16X27	Diode, Steering
CRYSTALS			BY98	EP18X72	Zener	REF. NO.	PART NO.	DESCRIPTION	JY56	ES16X27	Diode, Steering
AX01	EP41X68	Crystal—Filter	BY99	ES18X27	Silicon	KIC10	EP84X110	7 - Seg. Driver	JY57	ES16X27	Diode, Steering
CHOKE			INTEGRATED CIRCUITS			KIC20	EP84X110	7 - Seg. Driver	INTEGRATED CIRCUITS		
AL01	ES36X28	Filament	BIC10	EP84X111	Select Gate	INTEGRATED CIRCUITS			JIC10	EP84X88	IC, Ripple Counter (12 Stage)
INTEGRATED CIRCUITS			BIC40	EP84X112	Microprocessor	REF. NO.	PART NO.	DESCRIPTION	JIC30	EP84X87	IC, Shift Register (8 Stage)
AIC01	EP84X113	256 W/Pre Amp	TRANSISTORS			KIC10	EP84X110	7 - Seg. Driver	TRANSISTORS		
AIC02	EP84X114	Serial Input PLL Freq. Syn.	BQ25	EP15X88	NPN, Gate Selection	KIC20	EP84X110	7 - Seg. Driver	JQ05	EP15X109	NPN, Darlington Amp.
TRANSISTORS			BQ30	ES15X90	PNP, Reset Microprocessor	INTEGRATED CIRCUITS			JQ15	EP15X85	NPN, Oscillator
AQ05	EP15X104	High Frequency	BQ33	ES15X90	PNP, Inverter	REF. NO.	PART NO.	DESCRIPTION	JQ22	EP15X88	NPN, Buffer
AQ15	EP15X88	NPN, Silicon	BQ65	EP15X88	NPN, Band Switch Hi-Lo	KIC10	EP84X110	7 - Seg. Driver	JQ28	ES15X90	PNP, Buffer
AQ20	EP15X88	NPN, Silicon	BQ67	EP15X57	PNP, Band Switch Hi-Lo	KIC20	EP84X110	7 - Seg. Driver	JQ55	EP15X88	NPN, B+ Turn On
AQ25	EP15X88	NPN, Silicon	BQ72	EP15X86	NPN, VHF/UHF Band Switch	INTEGRATED CIRCUITS			JQ56	EP15X88	NPN, B+ Turn On
AQ30	EP15X88	NPN, Silicon	BQ74	EP15X53	PNP, VHF/UHF Band Switch	REF. NO.	PART NO.	DESCRIPTION	JQ60	ES15X90	PNP, B+ Turn on
AQ35	EP15X88	NPN, Silicon	BQ76	EP15X53	PNP, VHF/UHF Band Switch	KIC10	EP84X110	7 - Seg. Driver	JQ65	EP15X53	PNP, B+ Turn on
AQ40	EP15X89	NPN, Silicon	BQ90	EP15X89	NPN, On/Off Control Driver	KIC20	EP84X110	7 - Seg. Driver	MISCELLANEOUS		
			BQ92	EP15X88	NPN, Vol. Control Driver	INTEGRATED CIRCUITS			EP93X177	EP93X177	Circuit Board, Remote Transmitter, Complete
			BQ99	ES15X125	NPN, Standby Power Supply	REF. NO.	PART NO.	DESCRIPTION	PG225/RL225	EP8X90	Connector, 3 Pin (Pins Incl.)
						KIC10	EP84X110	7 - Seg. Driver		EP4X176	Case for Remote Transmitter
						KIC20	EP84X110	7 - Seg. Driver		EP62X121	Keyboard for Remote Transmitter
										EP34X52	Socket, 16 Pin, IC
										EP4X227	Cover, Battery, Black, Plastic

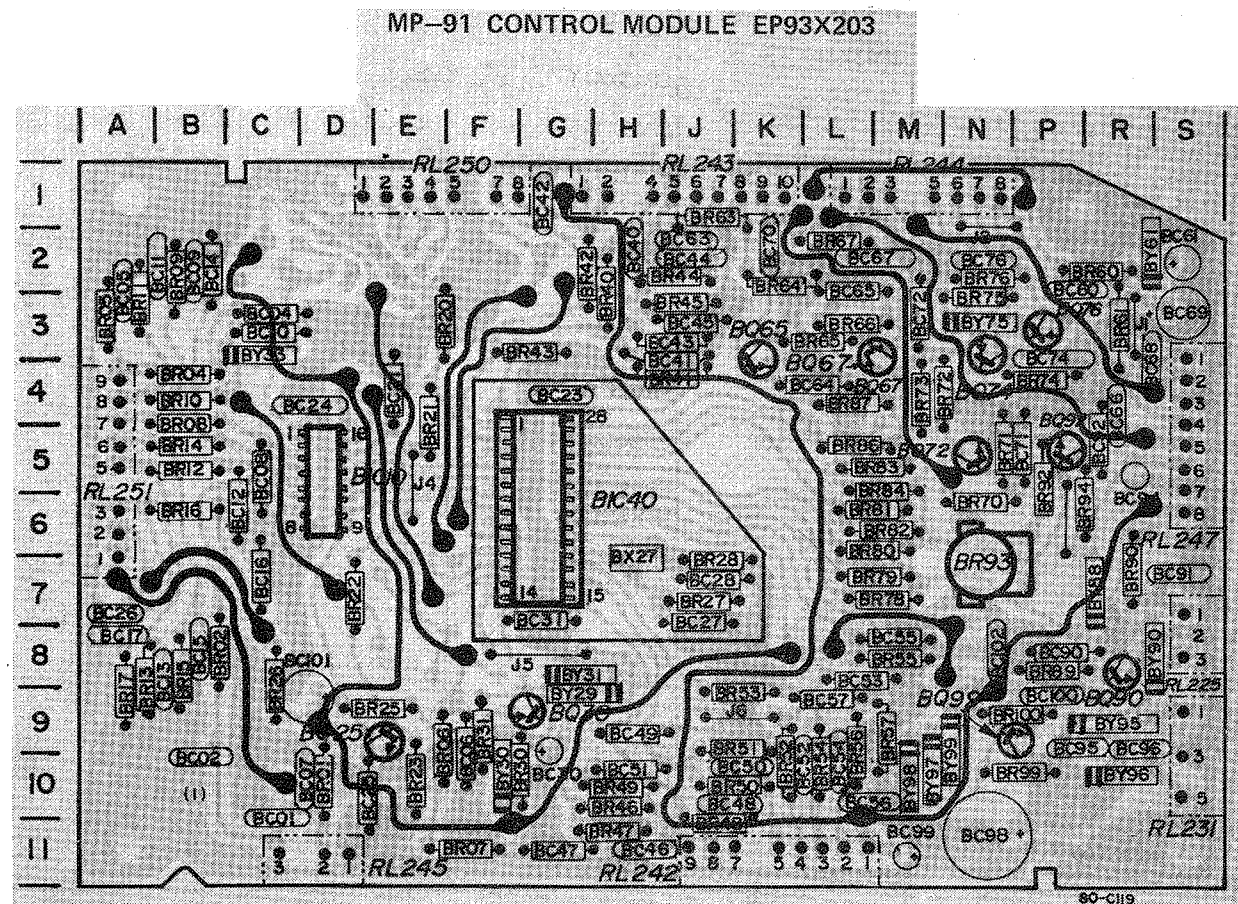
PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Port 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.	9865 (50 KV)
Shielded Hook-up Wire	Use BELDEN No.	8401 or 8421 (Single-Conductor)
		8208 (Two-Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No.	8528 (Solid) Available in 13 Colors
		8522 (Stranded) Available in 13 Colors
300-Ohm Tuner Input Lead	Use BELDEN No.	8225
75-Ohm Tuner Input Lead	Use BELDEN No.	8241
300-Ohm Antenna Lead-in	Use BELDEN No.	8275 (Foam Core) or 8285 (Foam Jacketed)
Antenna Rotor Cable	Use BELDEN No.	8464 (Flat) or 8484 (Round) 4-Conductor
		8485 (Round) 5-Conductor
		8488 (Round) 8-Conductor



MP-91 CONTROL MODULE

Courtesy of the Manufacturer

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.

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

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA							MOTOROLA PART No.
			GENERAL ELECTRIC PART No.	NEW-TONE PART No.	RCA PART No.	ECG PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.	
IC101	2SA564AQ	EP84X80	GE-1231	TG61231	SK3832/1231	EGG1231	TM1231	WEP2261/1196	221-98	MPSA05
IC180		EP84X81	GE-1196	TG61196	SK3725/1196	EGG1196	TM1196		221-Z9064	
IC300		EP84X35								
IC501		EP84X82								
MQ01		EP15X88		GE-20	TG6123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	
MQ10	2SA564AQ	EP15X86	GE-210*	TG6123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05
MQ15		ES15X90	GE-65	TG6290A	SK3247/234	ECG290A	TM290	WEP911/290	121-879*	
MQ20		EP15X86	GE-210*	TG6123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	
MQ25		EP15X86	GE-210*	TG6123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	
MQ30		ES15X90	GE-65	TG6290A	SK3247/234	ECG290A	TM290	WEP911/290	121-879*	
MQ40	2SA564AQ	EP15X86	GE-210*	TG6123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05
MY01		ES16X27	GE-300	TG6177	SK9091/177	ECG177	TM177	WEP1062/177	103-131	
MY05		ES16X27	GE-300	TG6177	SK9091/177	ECG177	TM177	WEP1062/177	103-131	
MY06		ES16X27	GE-300	TG6177	SK9091/177	ECG177	TM177	WEP1062/177	103-131	
MY07		ES16X27	GE-300	TG6177	SK9091/177	ECG177	TM177	WEP1062/177	103-131	
MY13		ES16X27	GE-300	TG6177	SK9091/177	ECG177	TM177	WEP1062/177	103-131	
MY23		ES16X27	GE-300	TG6177	SK9091/177	ECG177	TM177	WEP1062/177	103-131	
MY28	2SA564AP	ES16X27	GE-300	TG6177	SK9091/177	ECG177	TM177	WEP1062/177	103-131	MPSA05
MY30		ES16X27	GE-300	TG6177	SK9091/177	ECG177	TM177	WEP1062/177	103-131	
MY31		ES16X27	GE-300	TG6177	SK9091/177	ECG177	TM177	WEP1062/177	103-131	
MY32		ES16X27	GE-300	TG6177	SK9091/177	ECG177	TM177	WEP1062/177	103-131	
MY37		ES16X27	GE-300	TG6177	SK9091/177	ECG177	TM177	WEP1062/177	103-131	
MY44	2SA564AP	ES16X27	GE-300	TG6177	SK9091/177	ECG177	TM177	WEP1062/177	103-131	MPSA05
MY46		ES16X27	GE-300	TG6177	SK9091/177	ECG177	TM177	WEP1062/177	103-131	
MY47		ES16X27	GE-300	TG6177	SK9091/177	ECG177	TM177	WEP1062/177	103-131	
Q101		EP15X64	GE-FET-4	TG6222	SK3065/222	ECG222	TM222	WEP905/222	121-826	
Q102		EP15X86	GE-210*	TG6123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	
Q200	2SA564AP	EP15X88	GE-20	TG6123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05
Q201		EP15X88	GE-20	TG6123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	
Q203		EP15X88	GE-20	TG6123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	
Q205		EP15X88	GE-20	TG6123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	
Q207		EP15X88	GE-20	TG6123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	
Q209	2SA564AP	EP15X48	GE-65	TG6290A	SK3247/234	ECG290A	TM290	WEP911/290	121-879*	MPSA05
Q210		EP15X88	GE-20	TG6123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	
Q211		EP15X88	GE-20	TG6123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	
Q211		EP15X88	GE-20	TG6123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	

GENERAL ELECTRIC

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.

SEMICONDUCTORS (Select replacement transistor for best results) (cont)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA							ZENITH PART No.	MOTOROLA PART No.
			GENERAL ELECTRIC PART No.	NEW-TONE PART No.	RCA PART No.	EGG PART No.	THORDARSON PART No.	WORKMAN PART No.			
Q212	2SA564AP	EP15X48	GE-65	TCG290A	SK3247/234	EGG290A	TM290	WEP911/290	121-879*	2N5087*	
Q213		EP15X88	GE-20	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
Q220		EP15X88	GE-20	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
Q260		EP15X88	GE-20	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
Q262		EP15X88	GE-20	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
Q280		EP15X88	GE-20	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
Q340		EP15X86	GE-210*	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
Q350		EP15X86	GE-210*	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
Q401		EP15X61	GE-27	TCG171	SK3201/171	EGG171	TM171	WEP702/171	121-743	MPSU10	
Q403		EP15X61	GE-27	TCG171	SK3201/171	EGG171	TM171	WEP702/171	121-743	MPSU10	
Q405	2SA564AQ	EP15X61	GE-27	TCG171	SK3201/171	EGG171	TM171	WEP702/171	121-743	MPSU10	
Q407		EP15X57	GE-21*	TCG159*	SK3114/290	EGG159*	TM159*	WEP62/159*	121-Z9003*	MPS5401*	
Q505		EP15X88	GE-20	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
Q510		EP15X86	GE-210*	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
Q540		EP15X87	GE-20	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
Q545		EP15X86	GE-210*	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
Q580		EP15X19	GE-20	TCG375	SK3929	EGG375	TM375	WEP780/291	121-Z9106	MJE15030	
Q601		EP15X89	GE-20	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
Q603		EP15X88	GE-20	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
Q605		EP15X87	GE-20	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
Q1701	2SA564AQ	EP15X45	GE-259	TCG165	SK3710/238	EGG165	TM165	WEP740B/165	121-1029	BU208	
Q2607		EP15X105	GE-20	TCG375	SK3929	EGG375	TM375	WEP780/291	121-Z9106	MJE15030	
Q2609		EP15X105	GE-20	TCG375	SK3929	EGG375	TM375	WEP780/291	121-Z9106	MJE15030	
W1C1		EP84X60	GE-20	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
WQ01		EP15X88	GE-20	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
WQ02		EP15X88	GE-20	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
WQ04		EP15X88	GE-20	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
WQ06		ES15X90	GE-65	TCG290A	SK3247/234	EGG290A	TM290	WEP911/290	121-879*	2N5087*	
WQ07		EP15X88	GE-20	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123	121-Z9000A	MPSA05	
WQ09		EP15X88	GE-20	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
WQ10		EP15X88	GE-20	TCG123AP	SK3854/123AP	EGG123AP	TM123AP	WEP736/123A	121-Z9000A	MPSA05	
WY01		EP16X36	GEZD-12	TOG142A	SK3062/142A	EGG142A	TM142A	WEP1112/142	103-Z9003	1N4742	
WY02		EP16X19	GEZD-5.1	TOG135A	SK3056/135A	EGG135A	TM135A	WEP1103/135	103-Z9006	1N4733	
WY07		ES16X27	GE-300	TOG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	1N4935	
WY08		ES16X27	GE-300	TOG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	1N4935	

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.

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

ITEM	PART No.	PART No.	PART No.	PART No.
Door-Key-board Cover	EP4X209	EP4X209	EP4X209	EP4X209
Drawer-Front Cover	EP2X324	EP2X324	EP2X324	EP2X324
Knob-Color, Tint, Picture, Sharpness, VIR	EP43X415	EP43X415	EP43X415	EP43X415
Knob-Color VIR, Tint VIR	EP43X411	EP43X411	EP43X411	EP43X411
Light Pipe	EP2X157	EP2X157	EP2X157	EP2X157
Lens	EP4X178	EP4X178	EP4X178	EP4X178
Overlay-Drawer Inlay for Controls	EP4X249	EP4X249	EP4X249	EP4X249
Overlay-Drawer Front	EP4X250	EP4X250	EP4X250	EP4X250
Tube Cap-CRT Cover	EP91X63	EP91X63	EP91X63	EP91X63
Model	25EM1859KA01	25EM1860CA01	25EM1865KA01	25EMK814PA01
Cabinet Back	EP98X386	EP98X363	EP98X365	EP98X376
Cabinet Front	EP99X335	EP99X335	EP99X335	EP99X345
Escutcheon-Remote Control, Upper Controls	EP89X367	EP89X367	EP89X367	EP89X379
Escutcheon-Primary Controls				
Door-Key-board Cover	EP4X209	EP4X209	EP4X209	
Drawer-Front Cover	EP2X324	EP2X317	EP2X317	
Grille-Bin Front				EP89X372
Grille-Speaker		EP89X365	EP89X364	
Knob-On/Off Volume				EP43X390
Knob-Color, Tint, Brightness	EP43X415			EP43X338
Knob-Color, Tint, Picture, Sharpness, VIR	EP43X411	EP43X411	EP43X411	
Knob-Color VIR, Tint VIR		EP43X415	EP43X415	EP43X389
Knob-Brightness, VIR Color, VIR Tint		EP43X410	EP43X410	
Knob-Color, Picture, Tint		EP43X411	EP43X411	
Knob-Channel Selector		EP43X410	EP43X411	
Knob-Bass, Treble		EP43X411	EP43X411	
Knob-VIR Switch, Voice/				
Music Switch				
Light Pipe	EP2X157	EP2X157	EP2X157	
Lens	EP4X178	EP4X178	EP4X178	
Overlay-Bin Top				EP54X196
Overlay-Drawer Inlay for Controls	EP4X249	EP4X223	EP4X223	
Overlay-Drawer Front	EP4X250			
Tube Cap-CRT Cover	EP91X63	EP91X63	EP91X63	EP91X63
Model	25EMK815KA01	25EMK847PA01		
Cabinet Back	EP98X399	EP98X396		
Cabinet Front	EP99X345	EP99X349		
Escutcheon-Primary Controls	EP89X379			
Escutcheon-Upper Controls		EP89X384		
Door-Access		EP4X248		
Grille-Bin Front	EP89X372			
Knob-On/Off Volume	EP43X390			
Knob-Color, Tint, Brightness	EP43X338	EP43X338		
Knob-Color Preference, Tint Preference		EP43X335		
Knob-Channel Selector	EP43X389			
Light Pipe				
Lens		EP2X157		
Overlay-Bin Top	EP54X196	EP4X212		
Tilt Out Bin-Front				
Tilt Out Bin-Top		EP91X53		
Tube Cap-CRT Cover	EP91X63	EP4X150		
		EP91X63		

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.

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

ITEM	PART No.	PART No.	PART No.	PART No.
Model	25EM1820HA01	25EM1821PA01	25EM1824KA01	25EM1825KA01
Cabinet Back	EP98X375	EP98X376	EP98X377	EP98X374
Cabinet Front	EP99X293	EP99X293	EP99X293	EP99X293
Escutcheon-Primary Controls	EP89X382	EP89X382	EP89X382	EP89X382
Grille-w/Cloth			EP89X381	EP89X381
Knob-On/Off Volume	EP43X390	EP43X390	EP43X390	EP43X390
Knob-Color, Tint, Brightness	EP43X338	EP43X338	EP43X338	EP43X338
Knob-Color Preference, Tint Preference	EP43X335	EP43X335	EP43X335	EP43X335
Knob-Channel Selector	EP43X416	EP43X416	EP43X416	EP43X416
Light Pipe	EP2X157	EP2X157	EP2X157	EP2X157
Tilt Out Bin-Front	EP91X53	EP91X53	EP91X53	EP91X53
Tilt Out Bin-Top	EP4X150	EP4X150	EP4X150	EP4X150
Tube Cap-CRT Cover	EP91X63	EP91X63	EP91X63	EP91X63
Model	25EM1832KA01	25EM1836LA01	25EM1838PA01	25EM1840PA01
Cabinet Back	EP98X378	EP98X379	EP98X380	EP98X372
Cabinet Front	EP99X351	EP99X351	EP99X351	EP99X349
Escutcheon-Upper Controls	EP89X387	EP89X387	EP89X387	EP89X384
Door-Access			EP4X248	EP89X372
Grille-Bin Front				
Knob-On/Off Volume	EP43X390	EP43X390	EP43X390	
Knob-Color, Tint, Brightness	EP43X338	EP43X338	EP43X338	EP43X338
Knob-Color Preference, Tint Preference	EP43X335	EP43X335	EP43X335	EP43X335
Light Pipe	EP2X157	EP2X157	EP2X157	EP2X157
Lens			EP4X212	EP4X150
Overlay-Bin Controls			EP4X150	EP91X53
Tilt Out Bin-Front	EP91X53	EP91X53	EP91X53	EP91X53
Tilt Out Bin-Top	EP4X150	EP4X150	EP4X150	EP4X150
Tilt Out Bin-Handle			EP4X241	EP91X63
Tube Cap-CRT Cover	EP91X63	EP91X63	EP91X63	EP91X63
Model	25EM1842KA01	25EM1846LA01	25EM1848PA01	25EM1850KA01
Cabinet Back	EP98X378	EP98X379	EP98X380	EP98X381
Cabinet Front	EP99X349	EP99X349	EP99X394	EP99X335
Escutcheon-Remote Control, Upper Controls				EP89X367
Escutcheon-Upper Controls	EP89X384	EP89X384	EP89X384	
Door-KeyBoard Cover				EP4X209
Drawer-Front Cover				EP2X324
Grille-Speaker				EP89X388
Knob-Color, Tint, Brightness	EP43X338	EP43X338	EP43X338	
Knob-Color Preference, Tint Preference	EP43X335	EP43X335	EP43X335	
Knob-Color, Tint, Picture Sharpness, VIR				EP43X415
Knob-Color VIR, Tint VIR				
Light Pipe	EP2X157	EP2X157	EP2X157	EP43X411
Lens	EP4X212	EP4X212	EP4X212	EP2X157
Overlay-Drawer Inlay for Controls				EP4X178
Overlay-Drawer Front				EP4X249
Tilt Out Bin-Front	EP91X53	EP91X53	EP91X53	EP4X250
Tilt Out Bin-Top	EP4X150	EP4X150	EP4X150	
Tilt Out Bin-Handle	EP4X241	EP4X241	EP4X241	
Tube Cap-CRT Cover	EP91X63	EP91X63	EP91X63	EP91X63
Model	25EM1854PA01	25EM1855KA01	25EM1856AA01	25EM1858KA01
Cabinet Back	EP98X382	EP98X383	EP98X384	EP98X385
Cabinet Front	EP99X335	EP99X335	EP99X335	EP99X335
Escutcheon-Remote Control, Upper Controls	EP89X389	EP89X367	EP89X389	EP89X367

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.

SEMICONDUCTORS (Select replacement transistor for best results) (cont)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA						ZENITH PART No.	MOTOROLA PART No.
			GENERAL ELECTRIC PART No.	NEW-TONE PART No.	RCA PART No.	EGG PART No.	THORDARSON PART No.	WORKMAN PART No.		
WY09			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
WY10			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
WY11			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
WY12			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
WY13			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
WY14			GE-504A	TCG116	SK3313/116	EGG116	TM116	WEP158/116	212-76-02	IN4005
WY15			GE-504A	TCG116	SK3313/116	EGG116	TM116	WEP158/116	212-76-02	IN4005
Y101			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
Y102			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
Y200			GE-504A	TCG116	SK3313/116	EGG116	TM116	WEP158/116	212-76-02	IN4005
Y212			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
Y233			GE-504A	TCG116	SK3313/116	EGG116	TM116	WEP158/116	212-76-02	IN4005
Y280			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
Y281			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
Y283			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
Y284			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
Y287			GEZD-15	TCG5024A	SK3790/5024A	EGG5024A	TM5024A	WEP1426/5024	103-Z9013	IN5245A
Y350			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
Y372			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
Y381			GEZD-15	TCG5024A	SK3790/5024A	EGG5024A	TM5024A	WEP1426/5024	103-Z9013	IN5245A
Y384			GEZD-15	TCG5024A	SK3790/5024A	EGG5024A	TM5024A	WEP1426/5024	103-Z9013	IN5245A
Y387			GE-504A	TCG116	SK3311	EGG116	TM116	WEP156	212-76-02	IN4005
Y403			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
Y407			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
Y433			GE-504A	TCG116	SK3311	EGG116	TM116	WEP156	212-76-02	IN4005
Y463			GE-504A	TCG116	SK3311	EGG116	TM116	WEP156	212-76-02	IN4005
Y502			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
Y507			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
Y510			GE-504A	TCG116	SK3313/116	EGG116	TM116	WEP158/116	212-76-02	IN4005
Y601			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
Y603			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
Y604			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
Y605			GE-300	TCG177	SK9091/177	EGG177	TM177	WEP1062/177	103-131	IN4935
Y607			GE-504A	TCG116	SK3313/116	EGG116	TM116	WEP158/116	212-76-02	IN4005
Y609			GE-504A	TCG116	SK3313/116	EGG116	TM116	WEP158/116	212-76-02	IN4005

CHASSIS EM-A
GENERAL ELECTRIC

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.

SEMICONDUCTORS (Select replacement transistor for best results) (cont)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	NEW-TONE PART No.	RCA PART No.	EGG PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.	MOTOROLA PART No.
Y611		EP57X4	GE-504A	TCG116	SK3313/116	EGG116	TM116	WEP158/116	212-76-02	1N4005
Y613		EP57X4	GE-504A	TCG116	SK3313/116	EGG116	TM116	WEP158/116	212-76-02	1N4005
Y615		EP57X4	GE-504A	TCG116	SK3313/116	EGG116	TM116	WEP158/116	212-76-02	1N4005
Y901		EP57X4	GE-504A	TCG116	SK3313/116	EGG116	TM116	WEP158/116	212-76-02	1N4005
Thru										
Y906										
Y907		EP57X9	GE-504A	TCG116	SK3313/116	EGG116	TM116	WEP158/116	212-76-02	1N4005
Y908		EP57X9	GE-504A	TCG116	SK3313/116	EGG116	TM116	WEP158/116	212-76-02	1N4005
Y909		EP57X9	GE-504A	TCG116	SK3313/116	EGG116	TM116	WEP158/116	212-76-02	1N4005
Y911		EP16X12	GEZD-7.5	TCG138A	SK3059/138A	EGG138A	TM138A	WEP1107/138	103-Z9002	1N4737
Y912		EP16X12	GEZD-7.5	TCG138A	SK3059/138A	EGG138A	TM138A	WEP1107/138	103-Z9002	1N4737
Y913		EP57X4	GE-504A	TCG116	SK3313/116	EGG116	TM116	WEP158/116	212-76-02	1N4005
Y914		EP57X4	GE-504A	TCG116	SK3313/116	EGG116	TM116	WEP158/116	212-76-02	1N4005
Y915		EP57X9	GE-504A	TCG116	SK3313/116	EGG116	TM116	WEP158/116	212-76-02	1N4005
Y1701		EP16X11	GE-511	TCG506	SK3998/506	EGG506	TM506	WEP172/506	103-287	MR1-1400
Y1703		EP16X24	GE-511	TCG506	SK3998/506	EGG506	TM506	WEP172/506	103-287	MR1-1400
Y1800		EP57X5	GE-511	TCG552	SK9000/552	EGG552	TM552	WEP152/552	103-287	MR1-1400
Y1802		EP57X5	GE-511	TCG552	SK9000/552	EGG552	TM552	WEP152/552	103-287	MR1-1400
Y1804		EP57X5	GE-511	TCG552	SK9000/552	EGG552	TM552	WEP152/552	103-287	MR1-1400

* Lead configuration may vary from original.

ELECTROLYTIC CAPACITORS

REPLACEMENT DATA				
ITEM No.	RATING	MFGR. PART No.	MALLORY PART No.	
			Q-LINE	GENERAL LINE
C30	47 25V	(1)	VTT47E25	EV-1426.1
C90	10 25V	(1)	VTT10B25	EV-1422
C95	4.7 35V		VTT4R7D100	EV-1419
C128	4.7 35V		VTT4R7D100	EV-1419
C137	.22 25V	EP31X71	TD0224M050EL	SD50-R229
C148	47 16V	EP31X45	VTT47D16	EV-1226
C151	1 50V	EP31X16	VTT1A50	EV-1615
C170	1000 25V	EP31X59	VTT1000N25	EV-1360
C175	470 25V	ES31X31	VTT470M25	EV-1451
	47 16V		VTT47D16	EV-1226

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.

MISCELLANEOUS (cont)

ITEM No.	PART NAME	MFGR. PART No.	NOTES
#	Cable	EP8X103	IF Board to Tuner Assembly Models 25EM1832KA01/36LA01/38PA01/40PA01/42KA01/46LA01/48PA01/50KA01/54PA01/55KA01/56AA01/58KA01/59KA01/60CA01/65KA01, 25EMK847PA01
	Convergence	EP42X8	
	Channel Display	EP41X57	
	Channel Display	EP41X40	Models 25EMK814PA01/15KA01 Channel Select, Models 25EM1832KA01/36LA01/38PA01 Channel Select, On/Off/Volume, Models 25EM1840PA01/42KA01/46LA01/48PA01, 25EMK847PA01 Channel Select, On/Off/Volume, Models 25EM1850KA01/54PA01/55KA01/56AA01/58KA01/59KA01/60CA01/65KA01 Channel Indicator GE159 Model 25EM1804PA01
	Keyboard	EP93X185	
	Keyboard	EP93X208	
	Keyboard	EP93X186	
	Pilot Light	EU41X40	Audio IF Power Scan Signal Sweep Receiver, Models 25EM1850KA01/54PA01/55KA01/56AA01/58KA01/59KA01/60CA01/65KA01 Receiver, Models 25EM1840PA01/42KA01/46LA01/48PA01, 25EMK847PA01 Transmitter, Models 25EM1840PA01/42KA01/46LA01/48PA01, 25EMK847PA01 Transmitter, Models 25EM1850KA01/54PA01/55KA01/56AA01/58KA01/59KA01/60CA01/65KA01 CRT Color Monitor, Models 25EM1810PA01/12HA01/14PA01 Model 25EM1804PA01 Model 25EM1804PA04 Models 25EM1832KA01/36LA01/38PA01/40PA01/42KA01/46LA01/48PA01/50KA01/54PA01/55KA01/56AA01/58KA01/59KA01/60CA01/65KA01 Model 25EM1810PA01/12HA01/14PA01/20HA01/21PA01/24KA01/25KA01, 25EMK814PA01/15KA01
	Pilot Light	EP41X14	
	P.C. Board	EP93X240	
	P.C. Board	EP93X161	
	P.C. Board	EP93X213	
	P.C. Board	EP93X215	
	P.C. Board	EP93X235	
	P.C. Board	EP93X237	
	Remote	EP93X209	
	Remote	EP93X210	
	Remote	EP62X130	
	Remote	EP62X120	
	Socket	EP34X53	
	Switch	EP39X134	
	Tuner UHF	EP85X71	
	Tuner VHF	EP86X68	
	Tuner UHF/VHF	EP93X192	
	Tuner UHF/VHF	EP93X230	

For SAFETY use only equivalent replacement part.

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

ITEM	PART No.	PART No.	PART No.	PART No.
Model	25EM1804PA01	25EM1810PA01	25EM1812HA01	25EM1814PA01
Cabinet Back	EP98X394	EP98X372	EP98X370	EP98X371
Cabinet Front	EP99X363	EP99X345	EP99X345	EP99X345
Escutcheon-UHF/VHF, Secondary Controls	EP89X269			
Escutcheon-Primary Controls		EP89X379	EP89X379	EP89X379
Grille-Bin Front		EP89X372	EP89X372	EP89X372
Knob-On/Off Volume, Color Tint, Brightness, Picture	EP43X338			
Knob-On/Off Volume		EP43X390	EP43X390	EP43X390
Knob-Color, Tint, Brightness		EP43X338	EP43X338	EP43X338
Knob-UHF/VHF Channel Selector	EP43X291			
Knob-UHF/VHF Fine Tuning	EP43X292			
Knob-Channel Selector		EP43X389	EP43X389	EP43X389
Overlay-Bin Speaker	EP89X188			
Overlay-Bin Controls	EP4X191			
Overlay-Bin Top		EP54X196	EP54X196	EP54X196
Tilt Out Bin-Front	EP91X48	EP91X53	EP91X53	EP91X53
Tilt Out Bin-Top	EP4X111	EP4X150	EP4X150	EP4X150
Tilt Out Bin-Handle		EP4X241	EP4X241	EP4X241
Tube Cap-CRT Cover	EP91X63	EP91X63	EP91X63	EP91X63

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.

MISCELLANEOUS

ITEM No.	PART NAME	MFGR. PART No.	NOTES
FB101	Ferrite Bead	EP12X6	
FB201	Ferrite Bead	EP12X4	
FB202	Ferrite Bead	EP12X4	
FB1701	Ferrite Bead	EP12X2	
FB1702	Ferrite Bead	EP12X2	
FB1703	Ferrite Bead	EP12X2	
L6001	Degaussing Coil	EP36X173	
MC42	Ferrite Bead	EP12X4	
NE4900	Neon Lamp	EP41X18	Color Monitor
# P1	AC Cord	EP66X6	
PG101	Plug	ES8X6	Phono
PG102	Plug	ES8X6	
PG232	Connector	EP8X41	3 Pin
PG234	Connector	EP8X41	3 Pin
PG/RL2	Connector	EP8X67	4 Pin, Male
PG/RL4	Connector	EP8X90	3 Pin, Male
PG/RL5	Connector	EP8X29	3 Pin (Incl. Pins) Male/Female
PG/RL6	Connector	EP8X66	7 Pin, Male
PG/RL7	Connector	EP8X91	8 Pin (Incl. Pins) Male
PG/RL8	Connector	EP8X88	5 Pin (Incl. Pins) Male/Female
PG/RL10	Connector	EP8X91	8 Pin, Male
PG/RL11	Connector	EP8X92	8 Pin, Male
PG/RL13	Connector	EP8X92	10 Pin (Incl. Pins) Male
PG/RL14	Connector	EP8X90	5 Pin (Incl. Pins) Male
PG/RL15	Connector	EP8X43	2 Pin (Incl. Pins) Male
PG/RL16	Connector	EP8X92	8 Pin (Incl. Pins) Male
PG/RL19	Connector	EP8X41	3 Pin, Male
PG/RL20	Connector	EU8X144	4 Pin, Male
PG/RL28	Connector	EP8X42	4 Pin, Male
PG/RL37	Connector	EP8X41 or EP8X29	3 Pin (Incl. Pins) Male/Female
PG/RL40	Connector	EP8X41	3 Pin
PG/RL48	Connector	EP8X67	4 Pin (Incl. Pin) Male
PG/RL50	Connector	EP8X66	7 Pin
PG/RL57	Connector	EP8X94	4 Pin
PG/RL90	Connector	EP8X27	15 Pin
PG/RL91	Connector	EP8X40	9 Pin
PG/RL92	Connector	EP8X43	2 Pin
PG/RL93	Connector	EP8X29	3 Pin
PG/RL94	Connector	EP8X40 or EP8X57	9 Pin, Female
PG/RL95	Connector	EP8X44	6 Pin, Female
PG/RL119	Connector	EP8X43	2 Pin
PG/RL124	Connector	EP8X88	5 Pin
PG/RL207	Connector	EP8X92	8 Pin
PG/RL212	Connector	EP8X90	3 Pin
PG/RL225	Connector	EP8X90	5 Pin
PG/RL231	Connector	ET8X136	3 Pin
RL232	Connector	ET8X136	3 Pin
PG/RL247	Connector	EP8X92	8 Pin
PG/RL251	Connector	EP8X91	9 Pin
RL101	Jack	EP8X23	Phono
S4002	Switch	EP39X53	VIR
S4195	Switch	EP49X284	Power (Part of Volume Control R4195)
# V6001	CRT	25VFQP22	
WY101	LED	EP41X14	VIR Indicator
X330	Crystal	EP41X10	3.58MHz
X530	Crystal	EP41X53	503kHz
	Antenna Terminal	EP2X314	Bracket
	Antenna Terminal	EP31X29	Bracket, Model 25EM1804PA01

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.

ELECTROLYTIC CAPACITORS (cont)

ITEM No.	RATING	REPLACEMENT DATA			
		MFGR. PART No.	MALLORY PART No.	SPRAGUE PART No.	
				Q-LINE	GENERAL LINE
C176	47 16V	ES31X31	VTT47D16	QCP-3154-01	EV-1226
C182	220 16V	ES31X52	VTT220H16	QCP-3175-01	EV-1240
C204	47 25V	EP31X45	VTT47E25	QCP-3154-01	EV-1426.1
C205	10 35V	EP31X35	VTT10B35		EV-1422
C211	220 16V	EP31X73	VTT220H16	QCP-3175-01	EV-1240
C212	22 10V	EP31X44	VTT22B16		EV-1124
C217	10 35V	EP31X35	VTT10B35		EV-1422
C220	47 16V	EP31X45	VTT47D16	QCP-3154-01	EV-1226
C227	1 50V	EP31X16	VTT1A50	QCP-3107-01	EV-1615
C233	2.2 50V	EP31X80	VTT2R2A50	QCP-3114-01	EV-1617.1
C252	4.7 35V	EP31X11	VTT4R7B50		EV-1419
C255	47 16V	EP31X45	VTT47D16	QCP-3154-01	EV-1226
C256	470 16V	EP31X31	VTT470K16	QCP-3184-01	EV-1251
C263	10 35V	EP31X35	VTT10B35		EV-1422
C310	470 16V	EP31X31	VTT470K16	QCP-3184-01	EV-1251
C323	4.7 35V	EP31X11	VTT4R7B50		EV-1419
C375	1 50V	EP31X16	VTT1A50	QCP-3107-01	EV-1615
C377	1 16V	EP31X49	VTT1A50	QCP-3107-01	EV-1615
C520	1 16V	EP31X49	VTT1A50	QCP-3107-01	EV-1615
C525	47 16V	ES31X31	VTT47D16	QCP-3154-01	EV-1226
C600	10 16V	EP31X35	VTT10B25	QCP-3128-01	EV-1222
C603	100 35V	EP31X55	TT50X100*		EV-1430
C607	100 35V	EP31X55	TT50X100*		EV-1430
C609	10 100V	EP31X101	VTT10G100		TVA-1337*
C610	100 100V	EP31X95	TC10101B		TVA-1346
C611	47 25V	EP31X45	VTT47E25	QCP-3154-01	EV-1426.1
C617	2.7 160V	EP31X94	TT200X3*		TVA-1436*
C619	100 50V	EP31X55	VTT100K50	QCP-3168-01	EV-1530
C621	100 10V	EP31X55	VTT100D10	QCP-3165-01	EV-1131
C623	47 16V	EP31X45	VTT47D16	QCP-3154-01	EV-1226
C625	10 16V	EP31X35	VTT10B25	QCP-3128-01	EV-1222
C629	100 10V	EP31X55	VTT100D10	QCP-3165-01	EV-1131
C676	4.7 50V	EP31X11	VTT4R7B50	QCP-3122-01	EV-1619.1
C686	470 6.3V	EP31X31	VTT470K16		EV-1050
C907	220 100V	EP31X102	TC10251A*		TVA-1349*
C908	220 100V	EP31X102	TC10251A*		TVA-1349*
C910	1000 25V	EP31X37	VTT100N25	QCP-3195-01	EV-1360
C911	2200 25V	ES31X37			EV-1380
C912	1000 40V	EP31X103	TC50100C*		EV-1560
C914	1000 40V	EP31X103	TC50100C*		EV-1560
C915	220 100V	EP31X102	TC10251A*		TVA-1349*
C916	2200 16V	ES31X37	TC1520C*		TVA-1175.3*
C917	2200 16V	ES31X37	TC1520C*		TVA-1175.3*
C919	470 25V	EP31X59	VTT470M25	QCP-3187-01	EV-1451
C920	330 180V	EP31X66			
C1808	47 35V	EP31X45	VTT47E35	QCP-3154-01	EV-1426.1
C1916	47 16V	EP31X88	VTT47D16	QCP-3154-01	EV-1226
C1920	330 180V	EP31X66			
C1980	100 250V	EP31X62	TC1265B*		TVA-1522*
C4102	3.3 25V NP	EP31X63(2)			
C4105	3.3 25V NP	EP31X63(2)			
MC04	2.2 50V	EP31X52	VTT2R2A50	QCP-3114-01	EV-1617.1
MC34	2.2 50V	EP31X52	VTT2R2A50	QCP-3114-01	EV-1617.1
WC01	100 25V	EP31X55	VTT100G25	QCP-3168-01	EV-1331
WC03	47 16V	EP31X45	VTT47D16	QCP-3154-01	EV-1226
WC06	100 16V	EP31X55	VTT100E16	QCP-3168-01	EV-1231
WC17	47 16V	EP31X45	VTT47D16	QCP-3154-01	EV-1226
WC18	10 16V	EP31X35	VTT10B25	QCP-3128-01	EV-1222
WC32	4.7 35V	EP31X11	VTT4R7B50		EV-1419

* Axial replacement for radial device.
(1) Used in sets with mechanical tuners.
(2) Used in Models 25EM1860CA01/65KA01.

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.

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA	
			MALLORY PART No.	SPRAGUE PART No.
				Q-LINE GENERAL LINE
C60	.01 50V	(1)	EW1A110	1PB-S10
C101	10pF 50V 5%	EP18X181	CNO410	10TCC-Q10
C102	56 50V 5%		CNO456	10TCC-Q56
C103	3.9pF 50V 10%			10TCC-V39
C104	47 50V 5%		CNO447	10TCC-Q47
C105	22 50V 5%		CNO422	10TCC-Q22
C106	68 50V 5%		CNO468	10TCC-Q68
C107	68 50V 5%		CNO468	10TCC-Q68
C108	10pF 50V 5%		CNO410	10TCC-Q10
C109	15 50V 5%		CNO415	10TCC-Q15
C110	5.6pF 50V 10%			10TCC-V56
C111	27 50V 5%	EP18X182	CNO427	10TCC-Q27
C112	15 50V 5%		CNO415	10TCC-Q15
C113	27 50V 5%		CNO427	10TCC-Q27
C114	27 50V 5%		CNO427	10TCC-Q27
C115	820 50V 10%		GP382	10TS-T82
C116	820 50V 10%		GP382	10TS-T82
C117	820 50V 10%		GP382	10TS-T82
C120	27 50V 5%		CNO427	10TCC-Q27
C121	820 50V 10%		GP382	10TS-T82
C122	.01 25V		MAG2511	HY-520
C123	.01 25V	QCP-5192-01	MAG2511	HY-520
C124	.01 25V		MAG2511	HY-520
C125	.01 25V		MAG2511	HY-520
C126	68 50V 5%		CNO468	10TCC-Q68
C127	68 50V 5%		CNO468	10TCC-Q68
C129	.047 100V		EW1A147	1PB-S47
C130	22 50V 5%		CNO422	10TCC-Q22
C131	22 50V 5%		CNO422	10TCC-Q22
C132	220 50V 10%		GP322	10TS-T22
C133	220 50V 10%		GP322	10TS-T22
C134	820 50V 10%	QCP-5192-01	GP382	10TS-T82
C135	.01 25V		MAG2511	HY-520
C136	.047 50V		MAG5015	
C138	.01 25V		MAG2511	HY-520
C139	150 50V 5%		CNO315	10TCC-T15
C140	33 50V 5%		CNO433	10TCC-Q33
C141	27 50V 5%		CNO427	10TCC-Q27
C142	68 50V 5%		CNO468	10TCC-Q68
C143	120 50V 10%		CNO312	10TCC-T12
C144	150 500V 10%		GP315	10TS-T15
C145	220 50V 10%	QCP-5192-01	GP322	10TS-T22
C146	10pF 50V 5%		CNO410	10TCC-Q10
C147	.01 25V		MAG2511	HY-520
C155	820 50V 10%		GP382	10TS-T82
C156	820 50V 10%		GP382	10TS-T82
C158	82 50V 5%		GP382	10TCC-Q82
C160	.001 500V	EU23X4	CNO482	
	Feed thru			
C161	.001 500V			
	Feed thru	EU23X4		
C162	.001 500V			
	Feed thru			
C163	.001 500V	EU23X4		
	Feed thru			
	Feed thru			
C171	.047 100V	EP18X183	EW1A147	1PB-S47
C172	.047 50V		MAG5015	
C173	.0082 50V 10%		EW1A282	1PB-D82
C174	.0047 50V 10%		M192P4729R8	192P4729R8
C177	.22 50V		EW105022	431P2249R5
C178	120 50V 10%		CNO312	10TCC-T12
C179	.001 50V 10%		GP210	10TS-D10
C184	.047 50V		MAG5015	
C185	.047 50V		MAG5015	
C188	120 50V 5%		CNO312	10TCC-T12
C189	8.2pF 50V 10%			10TCC-V82

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.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFR. PART No.	THORDARSON PART No.	TRIAD PART No.	
# L901	340mA DC	3.85	69.0mH	EP63X16 73C184004-4(1)			#For SAFETY use only equivalent replacement part.

(1) Number on unit.

TRANSFORMER (Power)

ITEM No.	RATING			REPLACEMENT DATA		
	PRI.	SEC. 1	SEC. 2	MFR. PART No.	THORDARSON PART No.	TRIAD PART No.
# T900	120V AC @ 1A AC	485V AC Tap @ 129V AC @ 340mA DC	65.3V AC @ 179mA DC	EP88X28 73D221853-1(1)		
	SEC. 3	SEC. 4	SEC. 5			
	27.7V AC CT @ 166mA DC	17.33 V AC CT @ 379mA DC	10.7V AC @ 240mA DC			
	SEC. 6					
	6.8V AC @ 680mA AC					

For SAFETY use only equivalent replacement part.
(1) Number on unit.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFR. PART No.	QUAM PART No.	
SP4101	3" X 5" PM 16 Ohm 5" X 7" PM 32 Ohm 5" X 7" PM 16 Ohm 6" X 9" PM 8 Ohm 2" PM 6" X 9" PM 8 Ohm 2" PM	EP95X8 EP95X10 EP95X11 EP95X20 EP95X21 EP95X20 EP95X21		Models 25EM1856AA01/58KA01/59KA01 Models 25EM1850KA01/54PA01/55KA01 Models 25EM1860CA01/65KA01 Models 25EM1860CA01/65KA01 Models 25EM1860CA01/65KA01 Models 25EM1860CA01/65KA01

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA				NOTES
		MFR. PART No.		BUSS PART No.		
		DEVICE	HOLDER	DEVICE	HOLDER	
F95	250mA @ 250V Quick-Acting	EP10X28		AGC 1/4		
F901	1.5A @ 250V Quick-Acting	ET10X42	EP3X7	AGC 1-1/2	1A1119-02	
F1201	2.5A @ 125V Slow-Blow	EP10X13	EP2X315	MDL 2-1/2		

#For SAFETY use only equivalent replacement part.

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.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		
		MFGR. PART No.	SPRAGUE/ Q-LINE PART No.	WORKMAN PART No.
# R403	12K 5% 2W Metal Oxide	EP14X231	RB-2255	22-4122
# R433	12K 5% 2W Metal Oxide	EP14X231		22-4122
# R463	12K 5% 2W Metal Oxide	EP14X231		22-4122
# R900	2.2M 10% 1/2W Carbon	EP14X171		22-2176
# R901	30K 10% 7W Metal Film	EP14X166	240E3005	FR605
# R902	11.6 Cold PTC	EP14X113		
# R903	30 5% 2W WW	EP14X274		
# R905	6.8 5% 2W WW	EP14X272		
R907	1000 10% 3W WW	EP14X275	242E1025	20-015
# R908	27 5% 2W Metal Oxide	EP14X273	RB-2705	22-4058
# R911	27 5% 2W Carbon Film			22-4058
# R1703	56K 5% 2W Metal Oxide	EP14X153	243E1015	22-4138
# R1801	100 10% 5W WW	ES14X14		24-3062
R1920	LDR	EP14X225		
# R1940	3.9 5% 10W WW	EP14X219		

For SAFETY use only equivalent replacement part.

COILS (RF-IF)

ITEM No.	FUNCTION	MFGR. PART No.	ITEM No.	FUNCTION	MFGR. PART No.
L60	RF Choke (15uH)	EP36X200	L254	Peaking (47uH)	EP36X150
L101	Video IF		L260	Peaking (100uH)	ES36X127
L102	Video IF		L346	Peaking (47uH)	EP36X150
L103	Video IF		L350	RF Choke (3mH)	EP36X32
L104	47.25MHz Trap	EP36X201	L356	RF Choke (27uH)	EP36X144
L105	41.25MHz Trap	EP36X201	L358	RF Choke (5.6uH)	EP36X140
L106	39.75MHz Trap	EP36X201	L364	RF Choke (5.6uH)	EP36X140
L107	Video IF	EP36X201	L365	RF Choke (27uH)	EP36X144
L108	Video IF	EP36X201	L367	RF Choke (5.6uH)	EP36X140
L109	41.25MHz Trap	EP36X311	L372	RF Choke (3mH)	EP36X32
L110	RF Choke (1uH)	EP36X309	L401	Peaking (120uH)	EP36X67
L111	AFC	EP36X200	L431	Peaking (120uH)	EP36X67
L112	Video IF	EP36X200	L461	Peaking (120uH)	EP36X67
L113	4.5MHz Trap	EP36X310	L491	Peaking (220uH)	ES36X82
L114	4.5MHz Trap	EP36X310	L500	RF Choke (15uH)	EP36X136
L115	Peaking (35.7uH)	ES36X84	# L900	Line Choke	EP36X57
L188	Quadrature	EP36X313	L1701	RF Choke (5.6uH)	EU36X536
L190	RF Choke (15uH)	EP36X136	ML10	RF Choke (27uH)	EP36X144
L209	3.58MHz Trap	EP36X169	ML20	RF Choke (27uH)	EP36X144
L226	Peaking (56uH)	EP36X33	ML30	RF Choke (27uH)	EP36X144
L227	Delay Line	EP36X363	T50	Balun	EP51X5
L253	Peaking (30uH)	EP36X314	T175	4.5MHz Trap	EP36X312

For SAFETY use only equivalent replacement part.

COILS & TRANSFORMERS (Sweep Circuits)

ITEM No.	FUNCTION	REPLACEMENT DATA			
		MFGR. PART No.	OTHER IDENTIFICATION	THORDARSON PART No.	TRIAD PART No.
# L1704	Linearity 13uH	EP36X346	73C182195-3		
T1550	Horiz Driver	EP64X38			
# T1700	Horiz Output	EP77X50			
# T1800	Yoke Horiz 1.32mH	EP76X27			
# T1810	90° Vert 93mH Pincushion	EP36X315			

For SAFETY use only equivalent replacement part.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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CAPACITORS (cont)

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA		
			MALLORY PART No.	SPRAGUE PART No.	
				Q-LINE	GENERAL LINE
C190	82 50V 5%	EP18X203	CN0482	QCP-5192-01	10TCC-Q82
C200	270 50V 5%				
C210	.1 50V		EWFO5010		431P1049R5
C213	.01 50V		MAG5011		
C215	.01 50V	EP18X73	MAG5011		
C229	330 50V 5%				
C231	470 50V 10%		GP347		10TS-T47
C234	270 50V 10%		GP327		10TS-T27
C254	.001 50V 10%		GP210		10TS-D10
C261	.01 25V		MAG2511		HY-520
C281	.1 50V		EWFO5010		431P1049R5
C283	120 500V		GP312		5GA-T12
C311	.047 100V		EWFO5010		1PB-S47
	.1 50V		EWFO5010		431P1049R5
C313	.01 50V		MAG5011	QCP-5214-01	
C321	.022 25V				HY-725
C322	.022 25V				HY-725
C331	68 NPO 50V 5%				10TCC-Q68
C332	39 50V 5%		CN0468	QCP-5192-01	10TCC-Q39
C333	120 50V 5%		CN0439		10TCC-T12
C340	.001 50V 10%		CN0312		10TS-D10
C341	36 50V 5%		GP210		10TCC-Q39
C343	22 NPO 50V 5%		CN0439		10TCC-Q22
C345	100 50V 5%		CN0422		10TCC-T10
C346	.01 25V		CN0310		HY-520
C350	.01 25V		MAG2511		HY-520
C354	.001 50V 10%		MAG2511		10TS-D10
C356	.01 25V		GP210		HY-520
C357	120 50V 5%		MAG2511		10TS-D10
C358	75 50V 5%		CN0312	QCP-5192-01	10TCC-T12
C359	22 NPO 50V 5%		CN0475		10TCC-Q75
C362	.01 25V		CN0422		10TCC-Q22
C363	470 50V 10%		MAG2511		HY-520
C365	39 50V 5%		GP347		10TS-T47
C366	120 50V 5%		CN0439		10TCC-Q39
C368	220 50V 10%		CN0312		10TCC-T12
C369	.01 25V		GP322		10TS-T22
C371	.0015 50V 10%		MAG2511		HY-520
C372	470 50V 10%		EWFO5010		6PS-D15
C382	270 50V 10%		GP347	QCP-5196-01	10TS-T47
C385	270 50V 10%		GP327		10TS-T27
C388	270 50V 10%		GP327		10TS-T27
C403	820 50V 10%		GP327		10TS-T27
C407	820 50V 10%		GP382		10TS-T82
C433	820 50V 10%		GP382		10TS-T82
C463	820 50V 10%		GP382		10TS-T82
C492	.02 500V		GP382		10TS-T82
C502	.047 100V		GP110A		5GAS-S10
C504	330 50V 10%		EWFO5010		1PB-S47
C506	.22 100V 10%		GP333		10TS-T33
C507	.0056 50V 10%		EWFO5010		1PB-P22
C512	.1 50V 10%		JE256	QCP-5192-01	2SS-D56
C517	330 500V 10%		EWFO5010		431P1049R5
C518	.1 50V 10%		GP333		10TS-T33
C521	.01 50V 10%		EWFO5010		431P1049R5
C523	120 50V 5%		EWFO5010		1PB-S10
C524	.001 50V 10%		EWFO5010		10TCC-T12
C526	.01 50V 10%		GP210		10TS-D10
C527	.1 50V 10%		EWFO5010		1PB-S10
C528	.0047 50V 10%		EWFO5010		431P1049R5
C529	.027 50V 10%		M192P4729R8		192P4729R8
C531	.01 25V		M192P2739R8		192P2739R8
C532	180 50V 5%		MAG2511		HY-520
C541	.1 50V 10%				10TCC-T18
C542	.0022 50V 10%		EWFO5010	QCP-5192-01	431P1049R5
C551	.0033 100V 5%		M192P2229R8		192P2229R8
C580	470 500V		M192P3329R8		192P3329R8
			GP347		10TS-T47

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA		
			MALLORY PART No.	SPRAGUE PART No.	
				Q-LINE	GENERAL LINE
C590	.01 50V 10%		EW1A110		1PB-S10
C591	.01 50V 10%		EW1A110		1PB-S10
C595	.047 50V 10%		EW1A147		1PB-S47
C596	.1 50V 10%		EW1A147		431P1049R5
C601	.47 50V 10%		EW1A147		431P4749R5
C602	.0047 50V		GP247	QCP-5180-01	5GA-D47
C604	.047 200V		EW1A147		4PB-S47
C605	100 50V 5%		CNO310		10TCC-T10
C606	.001 500V		GP210	QCP-5166-01	5GA-D10
C613	.0022 500V		GP222	QCP-5172-01	5GA-D22
C615	47 500V		CNO447		10TCC-Q47
C627	.0022 500V		GP222	QCP-5172-01	5GA-D22
C671	.1 50V 10%		EW1A147		431P1049R5
C673	.01 25V		MAG2511	QCP-5192-01	HY-520
C707	.0027 100V 10%		PVC6227		6PS-D27
C901	.001 1KV		GP210	QCP-5166-01	5GA-D10
C902	.001 1KV		GP210	QCP-5166-01	5GA-D10
C903	.001 1KV		GP210	QCP-5166-01	5GA-D10
C904	.001 1KV		GP210	QCP-5166-01	5GA-D10
# C905	3.5uF 440V 6%	EP25X81	OPN3X40		
C906	.047 200V		EW1A147		4PB-S47
C909	.001 500V		GP210	QCP-5166-01	5GA-D10
C913	.001 500V		GP210	QCP-5166-01	5GA-D10
C1701	330 N2200 2KV	ES18X13			
# C1703	.0122 1.5KV 5%	EP25X105			
C1705	.01 2KV	EP18X128			BL-S10
C1707	.39 400V 5%	EP25X106			
C1709	.0082 500V 10%		JE282		2SS-D82
C1780	.001 1KV		GP210	QCP-5166-01	5GA-D10
C1800	330 500V		GP333		10TS-T33
C1802	470 50V		GP347		10TS-T47
C1803	.001 500V		GP210	QCP-5166-01	5GA-D10
C1804	470 500V		GP347		10TS-T47
C1805	.001 500V		GP210	QCP-5166-01	5GA-D10
MC01	.1 25V		MAG2501	QCP-5244-01	HY-750
MC27	56 50V 5%		CNO456		10TCC-Q56
MC32	.01 25V		MAG2511	QCP-5192-01	HY-520
MC33	.01 25V		MAG2511	QCP-5192-01	HY-520
MC40	.01 50V		MAG5011		HY-520
MC42	.01 25V		MAG2511	QCP-5192-01	HY-520
MC48	.01 50V		MAG5011		5GA-D12
WC02	.0012 50V		GP212	QCP-5168-01	
WC04	.047 50V		MAG5015		
WC05	.047 50V		MAG5015		
WC07	.1 25V		MAG2501	QCP-5244-01	HY-750
WC08	470 50V 10%		GP347		10TS-T47
WC09	100 N250 50V 5%	EP18X194			
WC10	100 N250 50V 5%	EP18X194			
WC11	.1 25V		MAG2501	QCP-5244-01	HY-750
WC12	470 50V 10%		GP347		10TS-T47
WC13	.1 25V		MAG2501	QCP-5244-01	HY-750
WC15	.1 25V		MAG2501	QCP-5244-01	HY-750
WC16	.0022 25V		GP222	QCP-5172-01	5GA-D22
WC20	100 N250 50V 5%	EP18X194			
WC21	.1 25V		MAG2501	QCP-5244-01	HY-750
WC22	.1 25V		MAG2501	QCP-5244-01	HY-750
WC23	470 50V 10%		GP347		10TS-T47
WC25	.01 50V		MAG5011		
WC26	.01 50V		MAG5011		
WC30	.022 25V			QCP-5214-01	HY-725
WC31	.001 50V		GP210	QCP-5166-01	5GA-D10
WC33	.1 25V		MAG2501	QCP-5244-01	HY-750
WC34	.1 25V		MAG2501	QCP-5244-01	HY-750
WC35	.01 50V		MAG5011		
WC36	.1 50V		MAG5001		
WC37	.1 25V		MAG2501	QCP-5244-01	HY-750
WC40	.1 25V		MAG2501	QCP-5244-01	HY-750

For SAFETY use only equivalent replacement part. (1) Used in models with mechanical tuners.

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.

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA		
			MFR. PART No.	MALLORY PART No.	TRW PART No.
R131	IF AGC	25K	EP49X336	MTC253L1	X201R253B
R132	RF AGC	25K	EP49X336	MTC253L1	X201R253B
R271	Brightness Range	500	EP49X345	MTC52L4	U201R501B
R320	APC	5000	EP49X299	MTC53L1	X201R502B
			110-33(5)		
R411	Red Drive	150	EP49X344	MTC22L4	U201R251B
R425	Red Cut Off	5000	EP49X346	MTC53L4	U201R502B
R441	Green Drive	150	EP49X344	MTC22L4	U201R251B
R455	Green Cut Off	5000	EP49X346	MTC53L4	U201R502B
R471	Blue Drive	150	EP49X344	MTC22L4	U201R251B
R485	Blue Cut Off	5000	EP49X346	MTC53L4	U201R502B
R603	Vert Height (Size)	500K	EP49X380	MTC55L4	U201R504B
R650	Vert Centering	100K	EP49X263	MTC15L4	U201R104B
			73C180110-25(5)		
R1709	Focus	20Meg	EP49X339		
R1781	Screens	1M	EP49X131	RU16L,SL37,SN1000	BU11,CF17,SS6A
			73B140142-45(5)		
R1800	Horiz Centering	500 2W	EP49X160	MR500T,MRS1250	P115R501A, P115-117-1
			P126J365-17(5)		
R4007	Bass/VIR Switch	10K	EP49X385(21)		
R4014	Treble/Voice/Music Switch	10K	EP49X385(21)		
R4050	Tint VIR	5000	EP49X357(18)	P53L,SLF37,RU14,	BU7,CF8,CR5,
R4350	Tint	10K	73C182936-22(5)(22)	OK1062,IS1937	SF53,SR11,DC1
R4051	Color VIR	5000	EP49X383(19)		
R4360	Color	25K	(22)		
# R4195	Volume/Switch	15K	EP49X284		
			73C183070-2(5)		
R4291	Picture	5000	EP49X388	RU53L,SL37,SN1250	BU11,CF8,SS6A
			73B140362-235(5)		
	Picture	5000	EP49X282(23)	RU53L,SL37,SN750	BU11,CF8,SS6A
			73B140362-227(5)		
R4291	Picture	5000	EP49X384(20)		
R4296	Brightness	1500	(22)		
R4296	Brightness	1500	EP49X386	RU152L,SL37,SN750	BU11,CF7,SS6A
			73B140360-115(5)		
	Brightness	1500	EP49X390(23)	RU152L,SL37,SN750	BU11,CF7,SS6A
			73B140362-110(5)		
R4298	Sharpness	1000	EP49X382	RU13A,SL37,SN750	BU11,CF80,SS6A
			73B140362-234(5)		
	Sharpness/Audio Switch	1000	EP49X391(24)		
R4350	Tint	10K	EP49X183	RU14L,SL37,SN1000	BU11,CF9,SS6A
			73B140362-166(5)		
R4360	Color	25K	EP49X387	RU253L,SL37,SN750	BU11,CF11,SS6A
			73B140362-233(5)		
WR100	Color Preference	5000	EP49X282	RU53L,SL37,SN750	BU11,CF4,SS6A
			73B140362-227(5)		
WR101	Tint Preference	5000	EP49X282	RU53L,SL37,SN750	BU11,CF4,SS6A
			73B140362-227(5)		

For SAFETY use only equivalent replacement part.
(5) Number on unit.
(18) Includes R4050 and R4350.
(19) Includes R4051 and R4360.
(20) Includes R4291 and R4296.
(21) Used in Models 25EM1860CA01/KA01.
(22) Used in Models 25EM1850KA01/54PA01/55KA01/56AA01/58KA01/59KA01/60CA01/65KA01.
(23) Used in Model 25EM1804PA01.
(24) Used in Models 25EM1850KA01/54PA01/55KA01/56AA01/58KA01/59KA01.