

CABINET-REAR VIEW

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

A circuit breaker is used for AC line protection. (See photo, Cabinet - Rear View.)

Two 1-amp fuses are used for horizontal sweep circuit protection. (See Placement Chart.)

LAMP ACCESSIBILITY

Lamp is accessible from cabinet front.

VHF/UHF TUNER

Push thumb release holding tuner control panel and slide control panel out for tuning. Select desired location for desired channel. Place channel indicator tab in desired channel indicator window. Place bandswitch lever to correct band for desired station. (VL: Channels 2-6, VH: Channels 7-13, UHF: Channels 14-83.) Tune in desired station with corresponding thumb wheel for best picture and sound. Refer to channel guide for approximate channel location.

HORIZONTAL OSCILLATOR

Coarse adjustment of the horizontal hold is accomplished by the proper setting of the horiz sub hold control. (See photo, Cabinet - Rear View.)

Fine adjustment of the horizontal hold is accomplished by the proper setting of the horiz hold control. (See photo, Cabinet - Rear View.)

HIGH VOLTAGE

For adjustment of the high voltage, refer to Miscellaneous Adjustments.

FOCUS

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

AGC

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

CENTERING

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

Vertical centering is accomplished by proper placement of the vertical centering plug. (See Placement Chart.)

SET 1702 FOLDER 1

CURTIS MATHES
CHASSIS CMC-58

PHOTOFACT® Folder

with CIRCUITRACE®

For Supplier Address See PHOTOFACT Index

MODEL CHASSIS

B319	CMC-58
*B319R	CMC-58
B526	CMC-58
*B526R	CMC-58
B527	CMC-58
*B527R	CMC-58
*B533R	CMC-58
*B631	CMC-58
*B631R	CMC-58
*B632	CMC-58
*B632R	CMC-58
*B635	CMC-58
*B635R	CMC-58
*B636R	CMC-58

* Uses Remote Receiver 14B379-001,
Remote Transmitter 14B380-001.
+ Covering TV Chassis ONLY.



MODEL B527R

CURTIS MATHES
CHASSIS CMC-58

COLOR TV

WARNING
HI VOLTAGE
MAY EXCEED
SOME CRT
OR TEST JIG
X-RAY RATINGS

SERVICE INFORMATION

See Page 55.

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.

INDEX

	Page		Page
Alignment		Photos (Cont.)	
TV	6,7	PWC-431 Video IF Board	9,52
Block Diagram	60	PWC-475 ABC Board	56
Convergence Adjustments	39	PWC-482 AC Power Supply Board	13
Disassembly Instructions	59	PWC-491 ITT Control Board	57
Fail Safe	55	Placement Chart	5
Miscellaneous Adjustments	48	Remote Control	Set 1702, Folder 1-A
Parts List		Resistance Measurements	56
Channel Select Board	36	Safety Precautions	1
Preset Board	36	Schematics	
TV	25 thru 35	Channel Select Board	24
Photos		Preset Board	24
Cabinet - Rear View	61	PWC-277 Sound Board	17
Chassis View	7	PWC-317 Chroma Board	14,47
CRT Neck Assembly	39	PWC-345 Convergence Board	23
PWC-256 High Voltage Protect Board	13	PWC-367 Deflection Board	18,43
PWC-277 Sound Board	44	PWC-368 Video Output Board	10,51
PWC-311 DC Power Supply	54	PWC-431 Video IF Board	8,53
PWC-317 Chroma Board	15,16,45,46	Tuner Driver	37
PWC-344 CRT Socket Board	4	TV	2,3,58
PWC-345 Convergence Board	38	U IF Amp	37
PWC-367 Deflection Board	19,42	UHF Tuner	37
PWC-368 Video Output Board	11,12,49,50	VHF Tuner	37
PWC-369 Deflection Output Board	20,21,22,40,41	Service Information	55
		Servicing in The Field	61
		Troubleshooting Check Chart	55

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. 7PD1940
10 9 8 7 6 5 4 3 2 1 0

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DATE 12-77

SET 1702 FOLDER 1

CURTIS MATHES
CHASSIS CMC-58

SET 1702 FOLDER 1

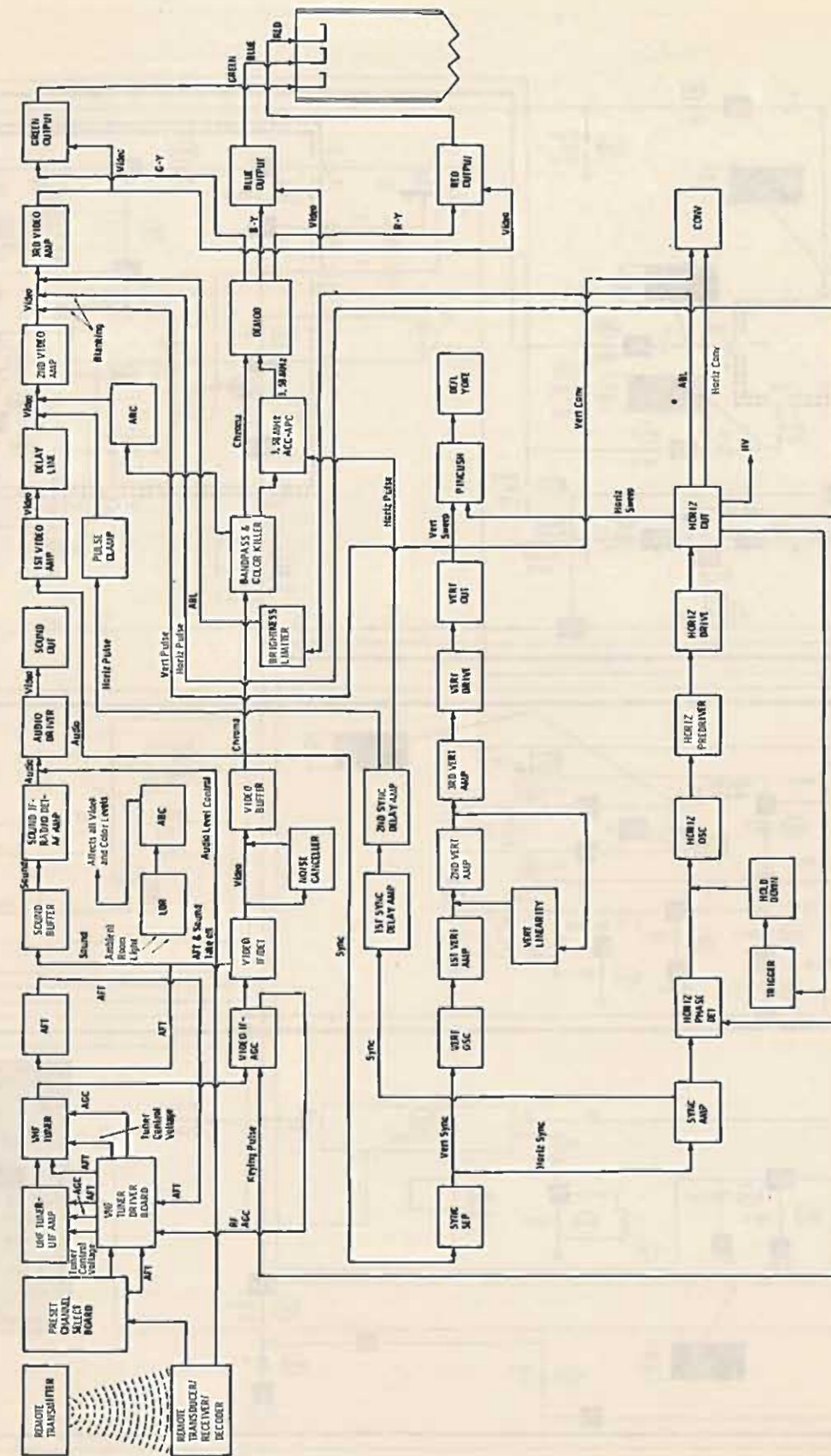
DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

Remove thirteen screws holding cabinet back and lift back from set. Remove four screws holding volume control bracket. Remove four screws holding front panel control PC board. Disconnect six plugs from tuner control assembly. Remove two screws holding antenna block. Disconnect CRT socket, HV anode lead, deflection yoke plug, convergence board plug, degaussing coil plug, speaker leads, and ground wires. Remove three screws holding chassis assemblies and lift assemblies from cabinet.

CRT REMOVAL

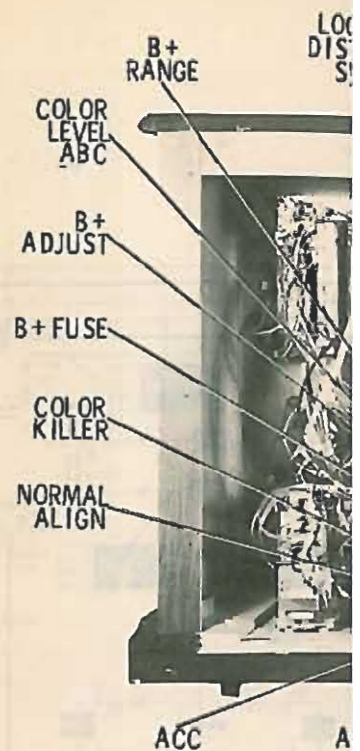
Follow "Chassis Removal" procedure and lay set face down on a soft protective surface. Loosen and remove blue lateral, convergence, and deflection yoke assemblies from neck of CRT. Remove four screws holding degaussing shield and lift degaussing shield and deflection yoke bracket from cabinet. Remove four screws holding CRT and lift CRT from cabinet. Do not lift CRT by the neck.



BLOCK DIAGRAM

CURTIS MATHES
CHASSIS CMC-58

FOLDER 1



SERVICING IN THE FIELD

CRT IMPLOSION PROTECTION AND CLE.

Implosion protection is an integral picture tube, cleaning accomplished by removal.

FUSE DEVICES

A .5-amp fuse is used for low-voltage supply protection. (See photo, 1 View.)

A circuit breaker is used for AC
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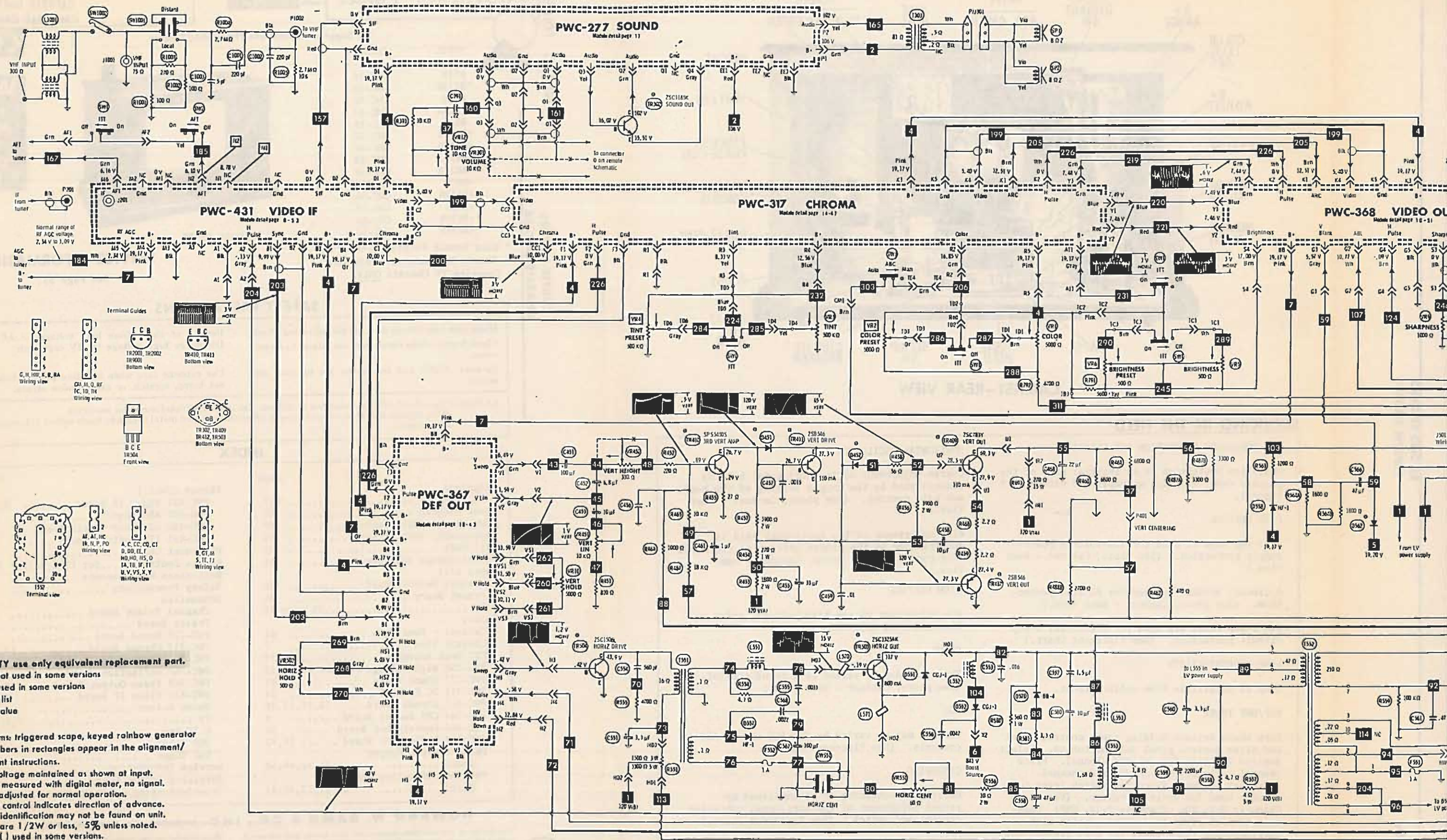
Two 1-amp fuses are used for horizontal circuit protection. (See Placement

LAMP ACCESSIBILITY

Lamp is accessible from cabinet :

VHF/UHF TUNER

Push thumb release holding tuner and slide control panel out for desired location for desired channel indicator tab in desired indicator window. Place bandswi correct band for desired station. Channels 2-6, VH: Channels 7-13 nels 14-83.) Tune in desired st corresponding thumb wheel for be sound. Refer to channel guide f channel location.

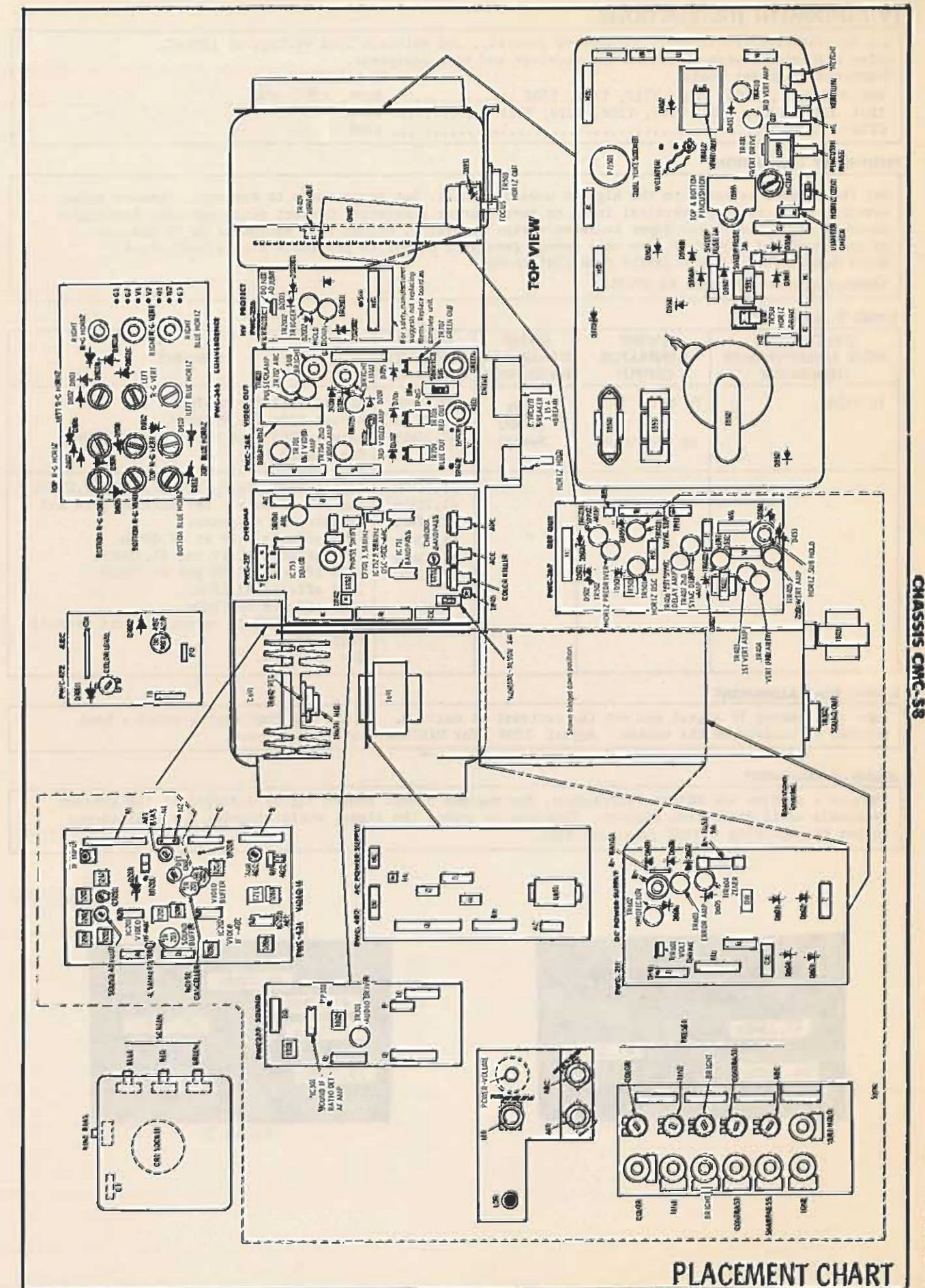
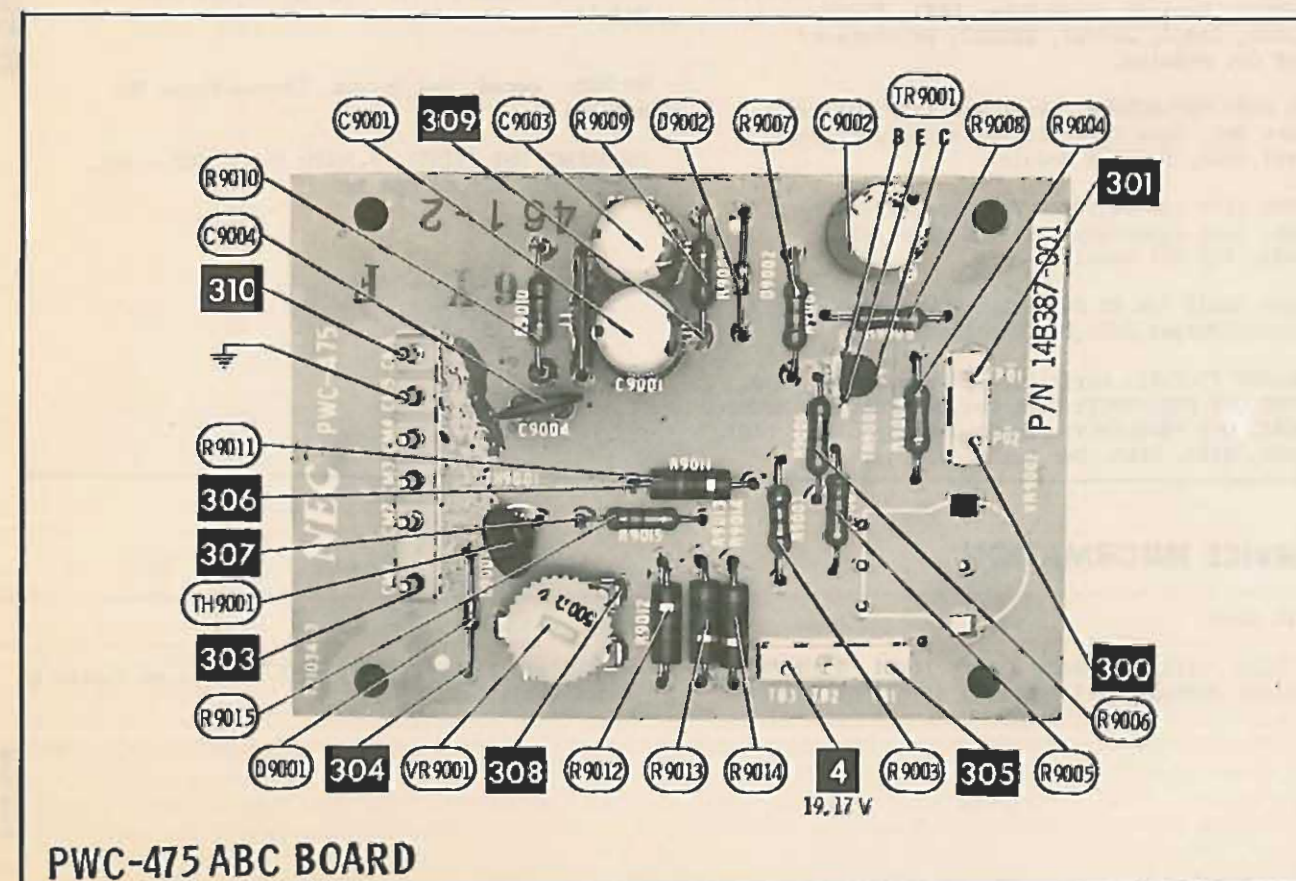




RESISTANCE MEASUREMENTS

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
V1	1FL	1NF(2)	141K	700K	700K	1NF(2)	135K	NC	60M	NC	1NF(2)	142K	700K	1FL
IC201	9000	9000	0	0	4780	5500	1000	1000	820K	1060	250	2200	2380	1NF
IC202	6740	1NF	1NF	1500	2000	190	8300	0						
IC203	0	116K	128K	4200	4200	1150	0	122K	1NF	122K	1NF	1NF	1NF	310
IC301	1NF	2800	750	1NF	3000	3000	0	2670	750	3550	750	1NF	1NF	1NF
IC751	38K	2100	200	0	1NF	3200	29K	210	2700	2000	3870	14K	6350	37K
IC752	8000	570	570	1570	0	4000	410	910	1NF	410	39K	39K	720K	720K
IC753	3300	3300	3100	3300	1NF	10K	0	3870	3870	3870	1NF	4900	4800	220
ITEM	E	B	C		ITEM	E	B	C		ITEM	E	B	C	
TR201	0	4700	2970		TR410	27	980	12K(1)		TR701	1700	36K	1700	
TR202	1030	2970	290		TR411	1NF(2)	12K(1)	0		TR702	570	60K	22K	
TR203	1000	1500	290		TR412	660	1NF(2)	0		TR703	550	25K	100K	
TR301	1100	8200	1660		TR501	3900	12K	15		TR704	1540	100K	4740	
TR302	270	1660	7000(1)		TR502	3600	5100	4700		TR705	0	13K	3900	
TR401	0	98K	5200		TR503	0	.4	7000(1)		TR706	1NF(2)	4700	56	
TR402	4900	5800	290		TR504	0	5700	8500(1)		TR707	1NF(2)	3400	1NF(2)	
TR403	1000	1000	4200		TR501	1NF(2)	70K(1)	7000(1)		TR708	1NF(2)	3400	1NF(2)	
TR404	1500	2000	4200		TR602	7000(1)	50K(2)	70K(1)		TR709	1NF(2)	3400	1NF(2)	
TR405	2200	4200	280		TR603	45K(1)	1200	100K(1)		TR751	0	10K	33K	
TR406	560	5200	12K		TR604	45K(1)	1NF(2)	1NF(2)		TR2001	9000(1)	1NF(2)	8200	
TR407	1000	12K	190		TR691	7000(1)	1NF(2)	7000(1)		TR2002	5100	8200	1NF(2)	
TR408	840	7000	470		TR692	7000(1)	1NF(2)	7000(1)		TR9001	1470	3830	7000	
TR409	660	13K(1)	7000(1)											

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



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:

VHF IF Output, T203, T204, T212, T301, T302	GC ELECTRONICS
T201, T202, T205, T206, T207, T208, T210, T211	9296, 9297, 9300
CT201	9440
	5000

PRELIMINARY INSTRUCTIONS

Set the channel selector to the highest unused channel. 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 +5.0 volt bias to TP2D1.

VIDEO IF ALIGNMENT

DIRECT PROBE FROM SWEEP/MARKER GENERATOR	SWEEP GENERATOR OUTPUT	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
To TP208.	To TP1 on VHF tuner.	44MHz (10MHz Sweep)	39.75MHz 41.25MHz 47.25MHz	Adjust T212 for MINIMUM. Adjust T204 for MINIMUM. Adjust T203 and VR204 for MINIMUM. See Figure 1.
"	"	"	39.75MHz 41.25MHz 42.17MHz 44.00MHz 45.75MHz 47.25MHz	Adjust T201, T202, T205, T206, T207, CT201 and VHF IF Output for maximum gain and symmetry of response. T202 affects tilt at 44.00MHz. T201 affects 42.17 and 45.75MHz. T205 affects 44.00 and 45.75MHz. T206 affects 42.17MHz. T207 affects 45.75MHz. CT201 and VHF IF output affects overall response. See Figure 2.

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 T208 for MINIMUM beat interference.

SOUND IF ALIGNMENT

Tune in a station and adjust T302(Bottom) 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 T302 (Top) and T301.

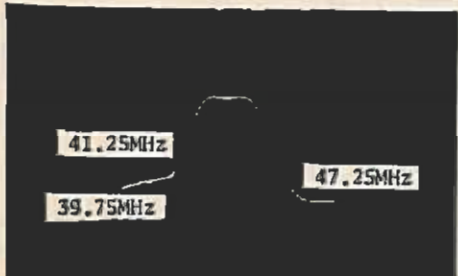


Figure 1

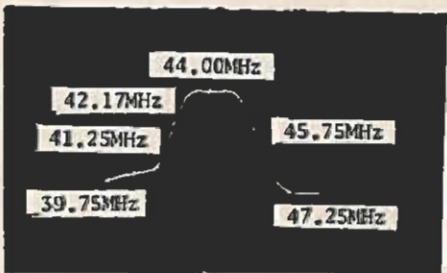


Figure 2

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: Circuit Breaker, Fuse, Regulator, Voltage Driver, Protector, Error Amp, Zener, D601, D602, D603, D604, D605, D606, D607, D608, D609, D554, D556A, D556B.

NO PIC, NO SOUND, HAS RASTER: Tuner, Video IF-AGC, Video IF/Det, Video IF Module.

NO PIC, NO SOUND, HAS SNOW: Tuner, Video IF-AGC, D201, Video IF Module

NO PIC, HAS SOUND, NO RASTER: 2nd/3rd Video Amp, Brightness Limiter, Pulse Clamp, CRT, D704, D708, D709, Video Out Module.

NO PIC, HAS SOUND, HAS RASTER: Video IF/Det, Video Buffer, 1st/2nd/3rd Video Amp, Video IF/Video Out Modules.

HAS PIC, NO SOUND: Sound Buffer, Sound IF, Ratio Det-AF Amp, Audio Driver, Sound Out, Video IF/Sound Modules.

OVERLOADED PICTURE: Video IF-AGC, Video IF/Det, Video IF Module.

LOW OR EXCESSIVE BRIGHTNESS: 2nd/3rd Video Amp, Brightness Limiter, Pulse Clamp, D704, D708, D709, Video Out Module.

SWEEP

NO RASTER, HAS SOUND: HV Tripler, CRT
NO RASTER, NO SOUND: Horiz Osc/Pre Driver/Driver/Output, Trigger, Hold Down, D551, D2001, D2002, D2003, ZD2001, ZD2002, HV Protect/Def Out Modules.

NO VERT DEFLECTION: Vert Osc, 1st/2nd/3rd Vert Amp, Vert Linearity/Drive/Outputs, D402, D451, D452, Def Out Module.

POOR VERT LIN OR FOLDOVER: 1st/2nd/3rd Vert Amp, Vert Linearity/Drive/Outputs, D451, D452, Def Out Module.

POOR HORIZ LIN OR FOLDOVER: Horiz Pre Driver/Driver/Output, D551, Def Out Module.

NARROW PICTURE: Horiz Driver/Output, D551, D570.
VERT OFF FREQUENCY: Vert Osc, D402, Def Out Module.
HORIZ OFF FREQUENCY: Horiz Osc, Sync Amp, D501, D502, D503, D504, Def Out Module.

SYNC

NO VERT SYNC: Vert Osc, Def Out Module.
NO HORIZ SYNC: Horiz Osc, Sync Amp, D501, D502, Def Out Module.

NO VERT/HORIZ SYNC: Sync Sep, D455, Def Out Module.

RASTER

YELLOW (NO BLUE): Demod, Blue Output, CRT, D707, Chroma/Video Out Modules.

CYAN (NO RED): Demod, Red Output, CRT, D706, Chroma/Video Out Modules.

MAGENTA (NO GREEN): Demod, Green Output, CRT, D705, Chroma/Video Out Modules.

COLOR (B/W operating normally)

NO COLOR: Bandpass, 3.58MHz Osc - ACC - APC, Demod, 1st/2nd Sync Delay Amps, Def Out/Chroma Modules.

WEAK COLOR: Bandpass, 3.58MHz Osc - ACC - APC, Demod, Chroma Module.

NO COLOR SYNC: 3.58MHz Osc - ACC - APC, Chroma Module.

NO GREEN: Demod, Green Output, Chroma/Video Out Modules.

NO BLUE: Demod, Blue Output, Chroma/Video Out Modules.

NO RED: Demod, Red Output, Chroma/Video Out Modules.

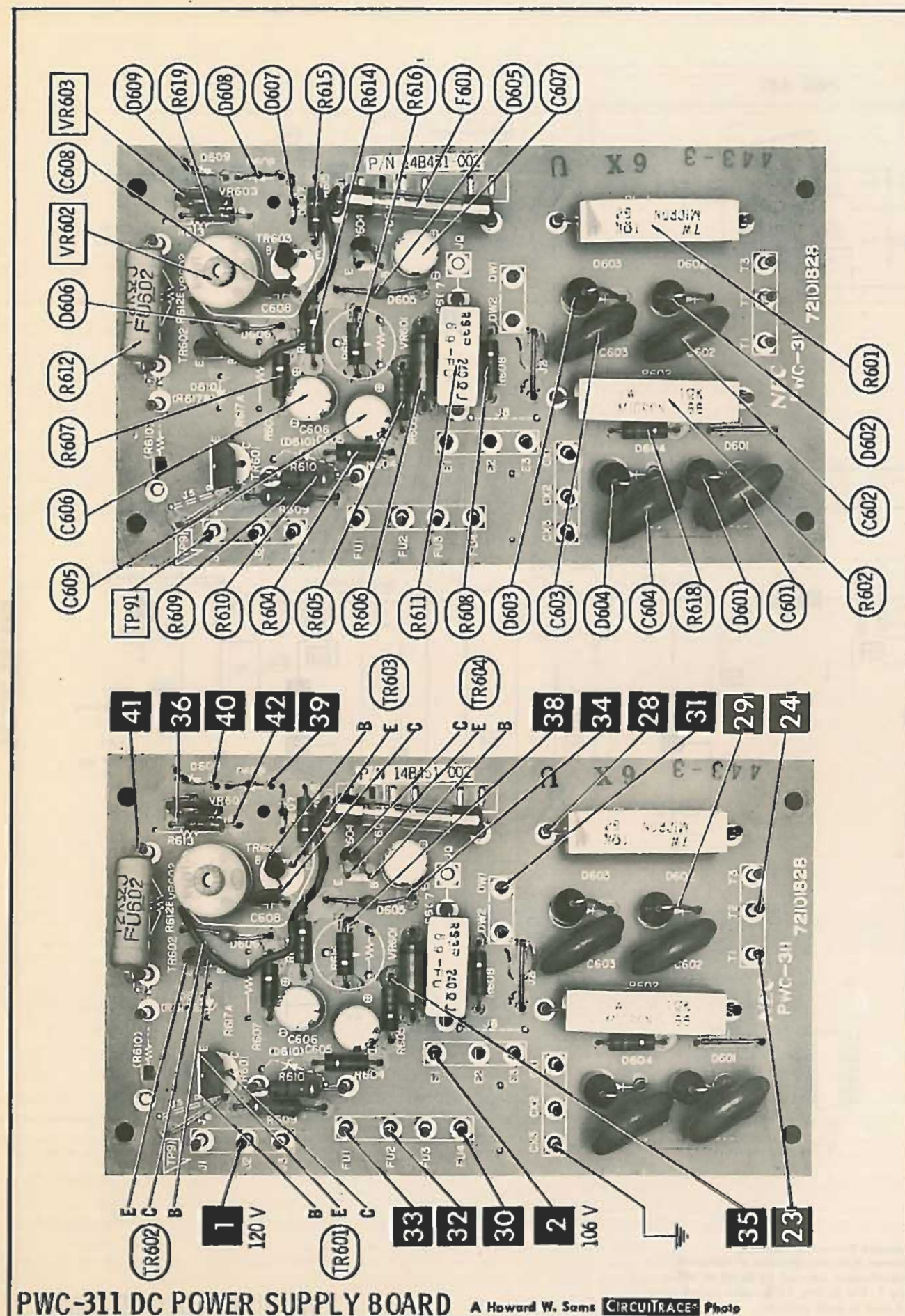
INCORRECT HUE (TINT): 3.58MHz Osc - ACC - APC, Demod, ATL, Chroma Module.

SERVICE INFORMATION

FAIL SAFE

If high voltage exceeds a safe level, high-voltage protect circuit will activate, disabling the hori-

zontal oscillator. This will cause a no raster no sound condition.



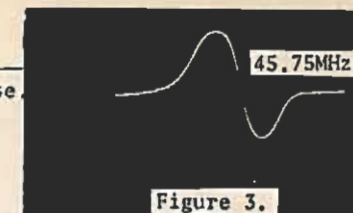
TV ALIGNMENT INSTRUCTIONS (Continued)

AUTOMATIC FINE TUNING ALIGNMENT

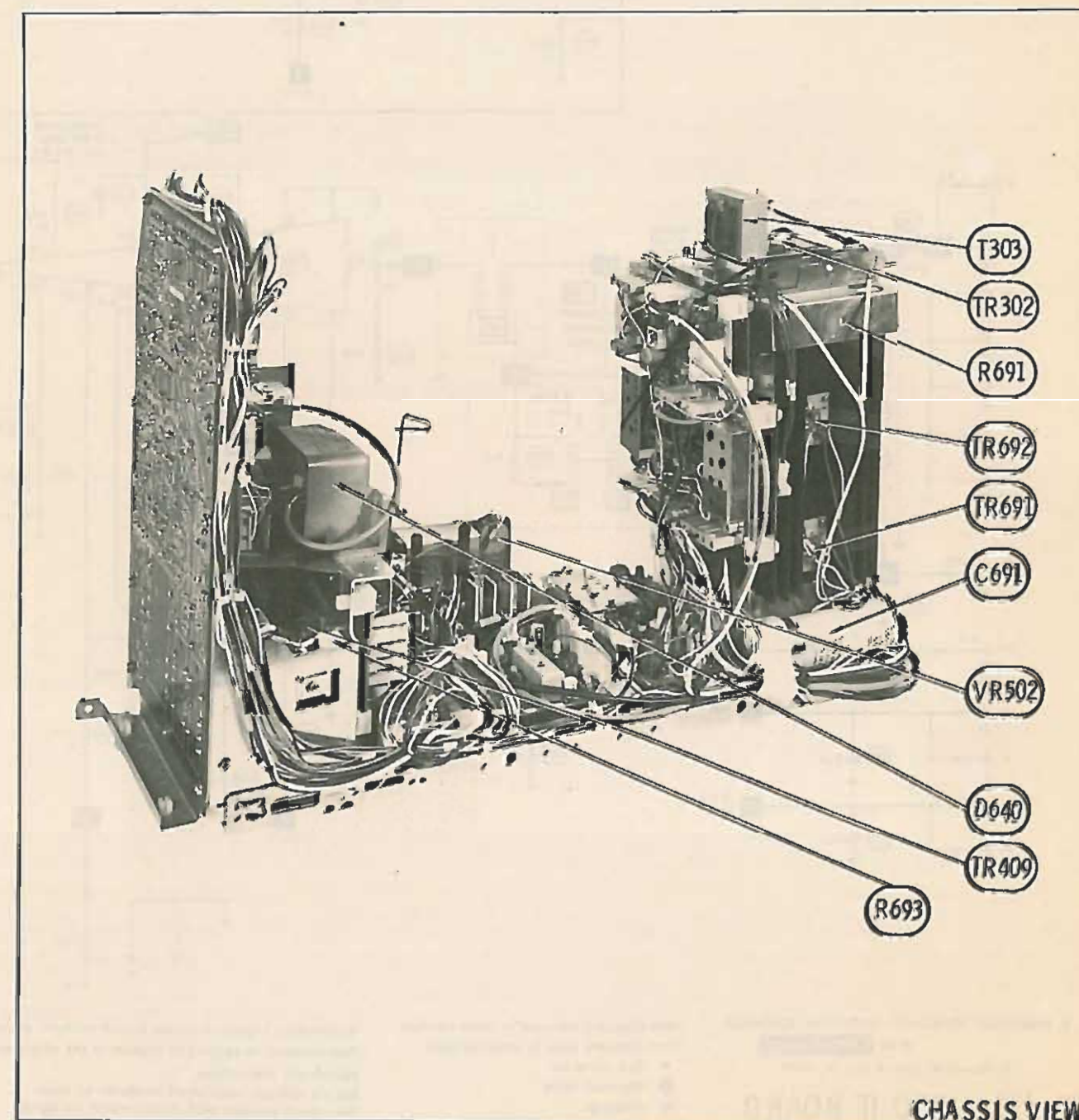
Connect as explained in preliminary instructions unless specified otherwise.

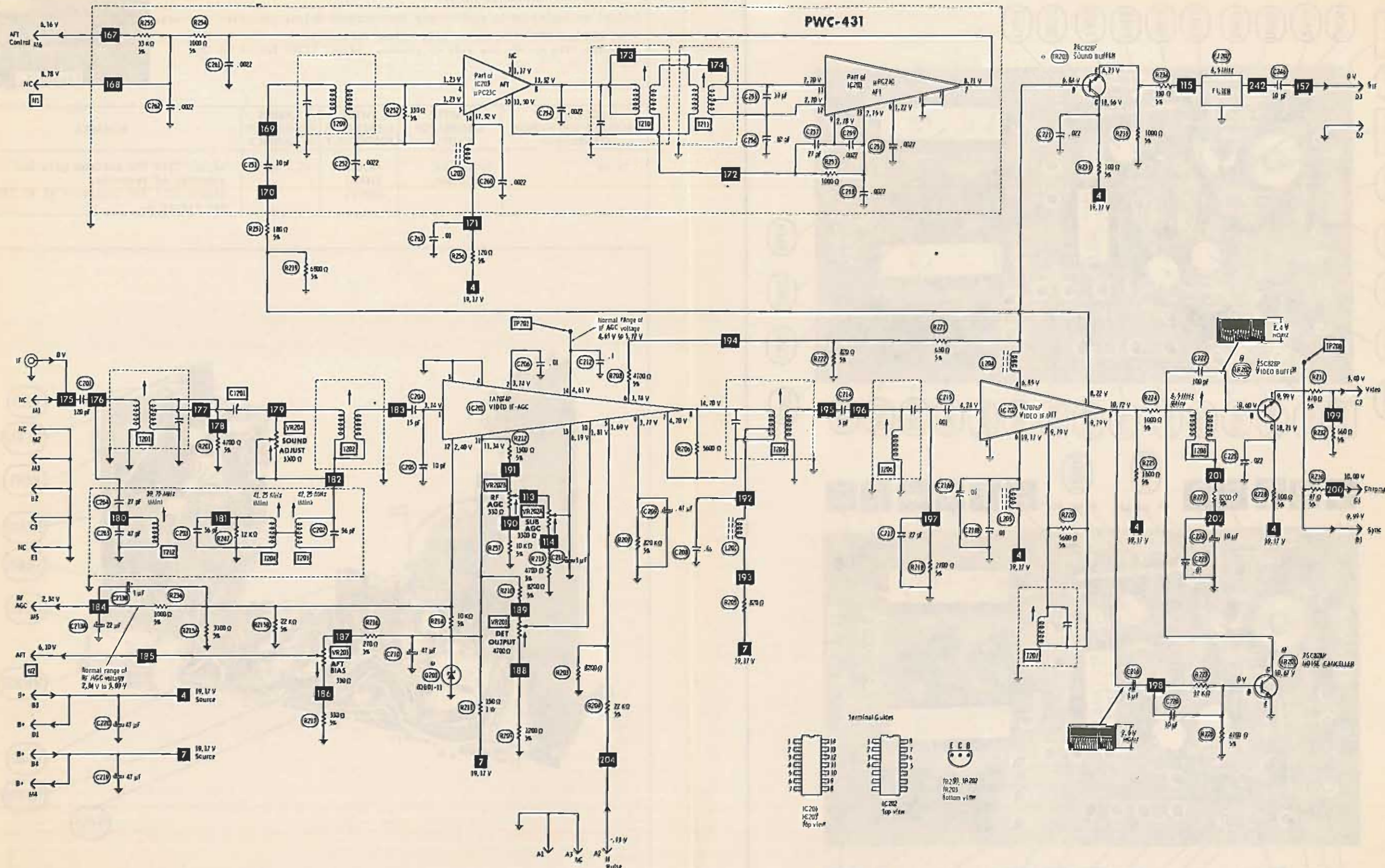
Set AFT and IFT switches to Off. (Some versions).

Connect VTVM to N2, low side to ground. Adjust VR203 for +6 volts.



DIRECT PROBE FROM SWEEP/MARKER GENERATOR	SWEEP GENERATOR OUTPUT	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
To N1	To TP1 on VHF Tuner.	44.00MHz (10MHz Sweep)	45.75MHz	Adjust T210 for maximum gain and symmetry of response. Adjust T211 for crossover at 45.75MHz. See Figure 3.





A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH **CIRCUITRACE**
 © Howard W. Sams & Co., Inc. 1977

PWC-431 VIDEO IF BOARD

— Circuitry not used in some versions
 --- Circuitry used in some versions
 ⊕ See parts list
 * Nominal value
 ⚡ Ground

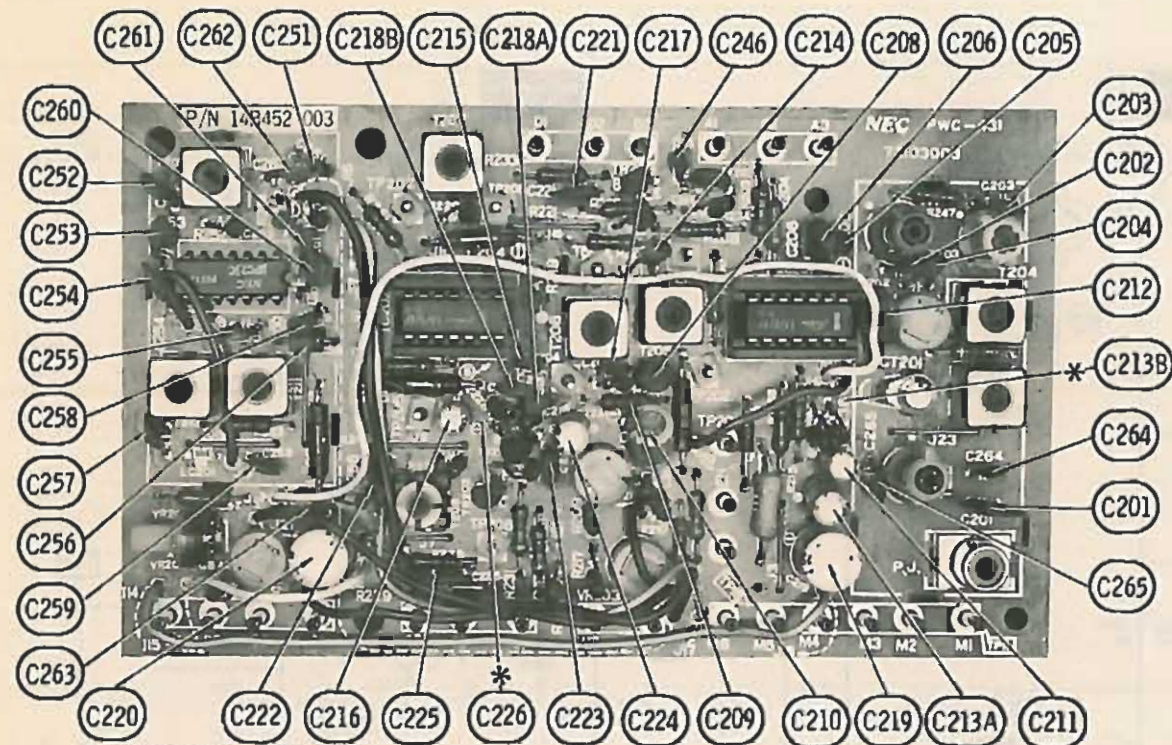
Waveforms: triggered scope, keyed rainbow generator
 Item numbers in rectangles appear in the alignment/adjustment instructions.
 Supply voltage maintained as shown at input.
 Voltages measured with digital meter, no signal.

Controls adjusted for normal operation.
 Arrow at control indicates direction of advance.
 Terminal identification may not be found on unit.
 Resistors are 1/2W or less, 10% unless noted.
 Value in () used in some versions.

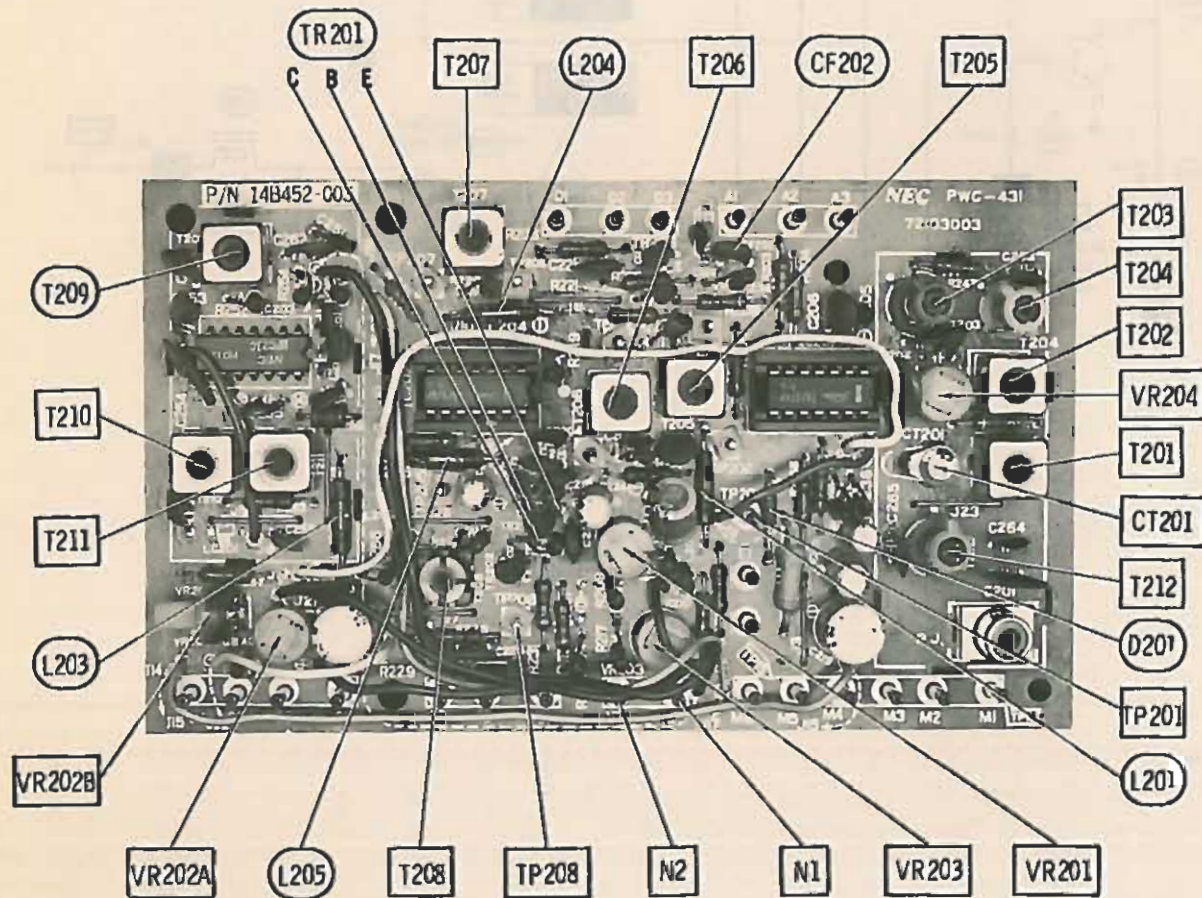
PWC-431 VIDEO IF BOARD

CURTIS MATHES
 CHASSIS CMC-58

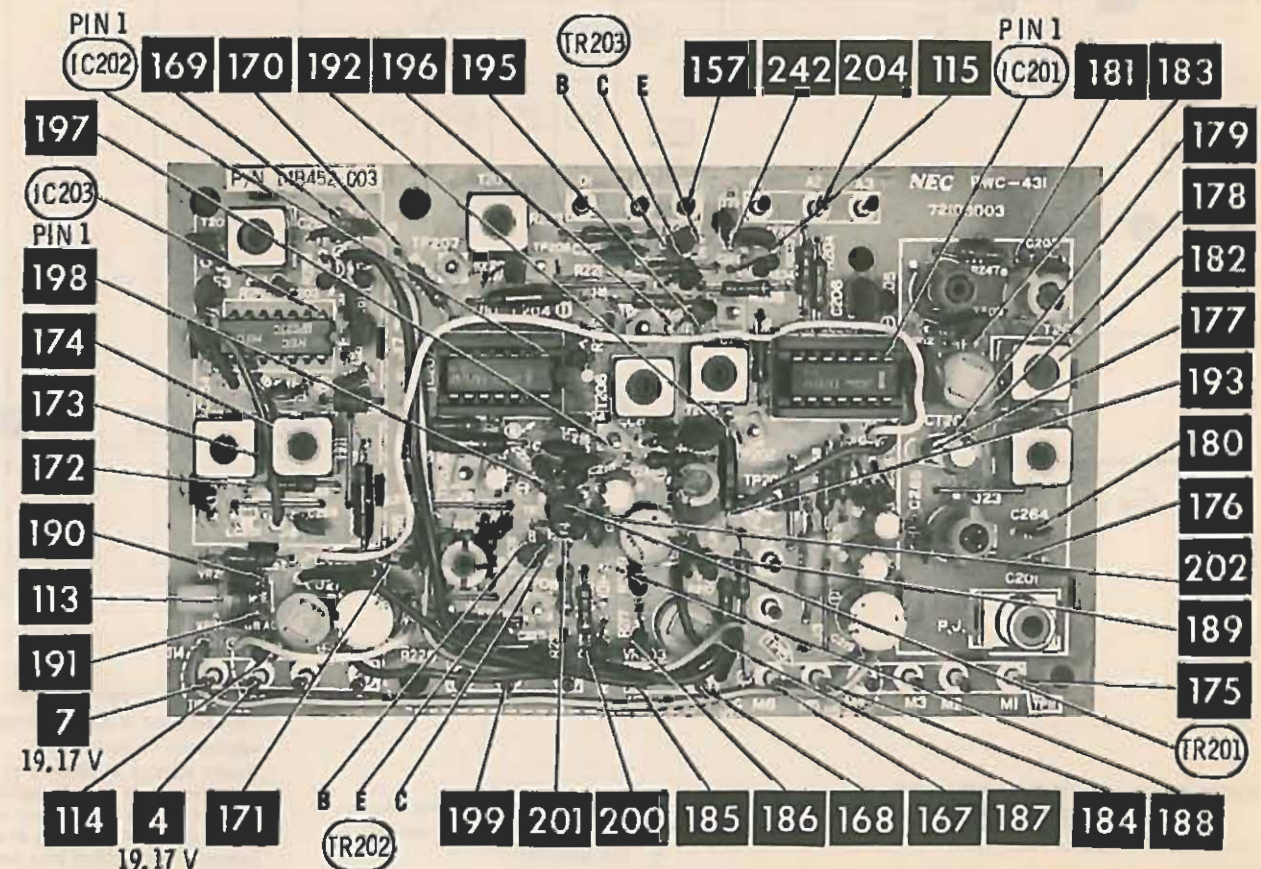
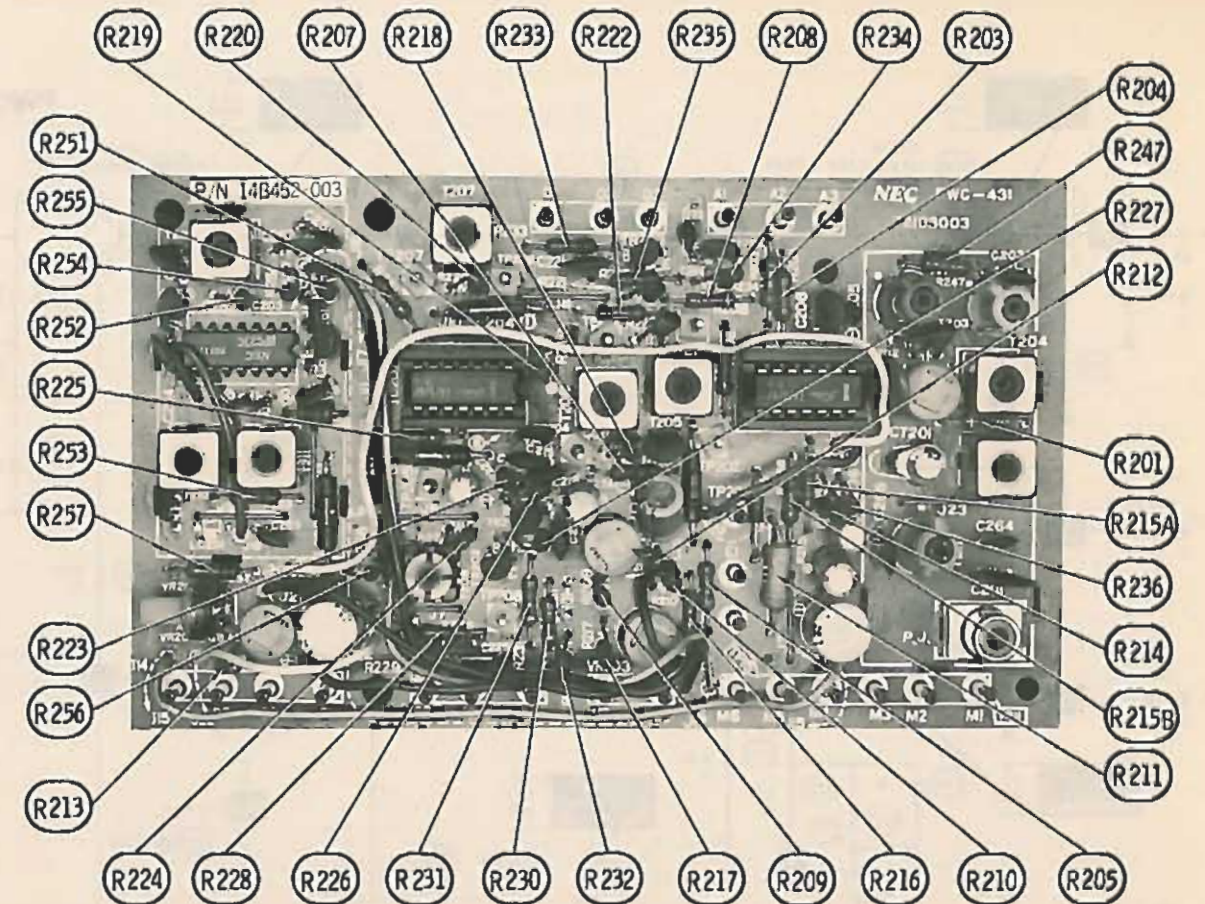
FOLDER 1



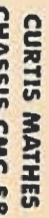
* Located on bottom of board

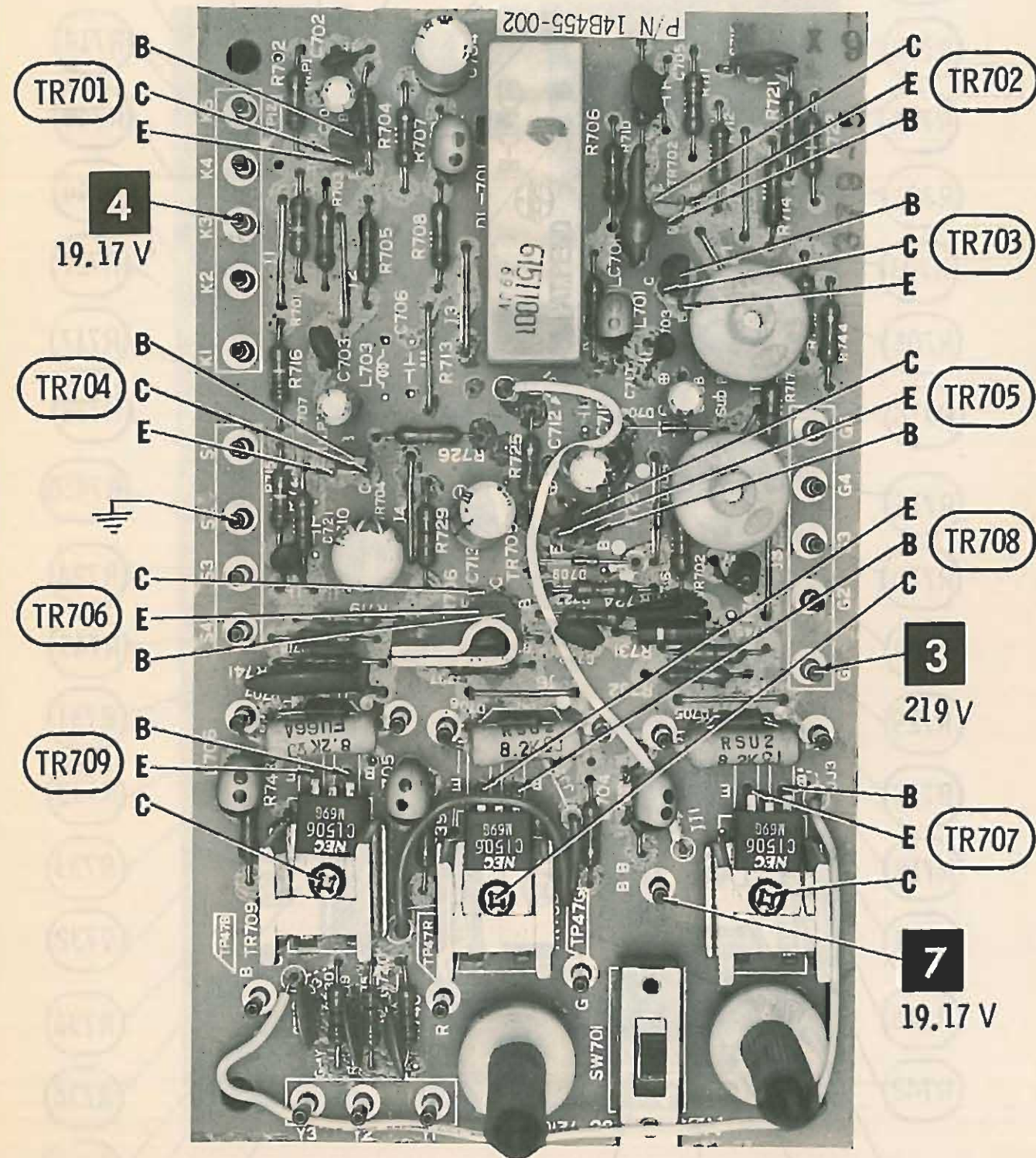


PWC-431 VIDEO IF BOARD

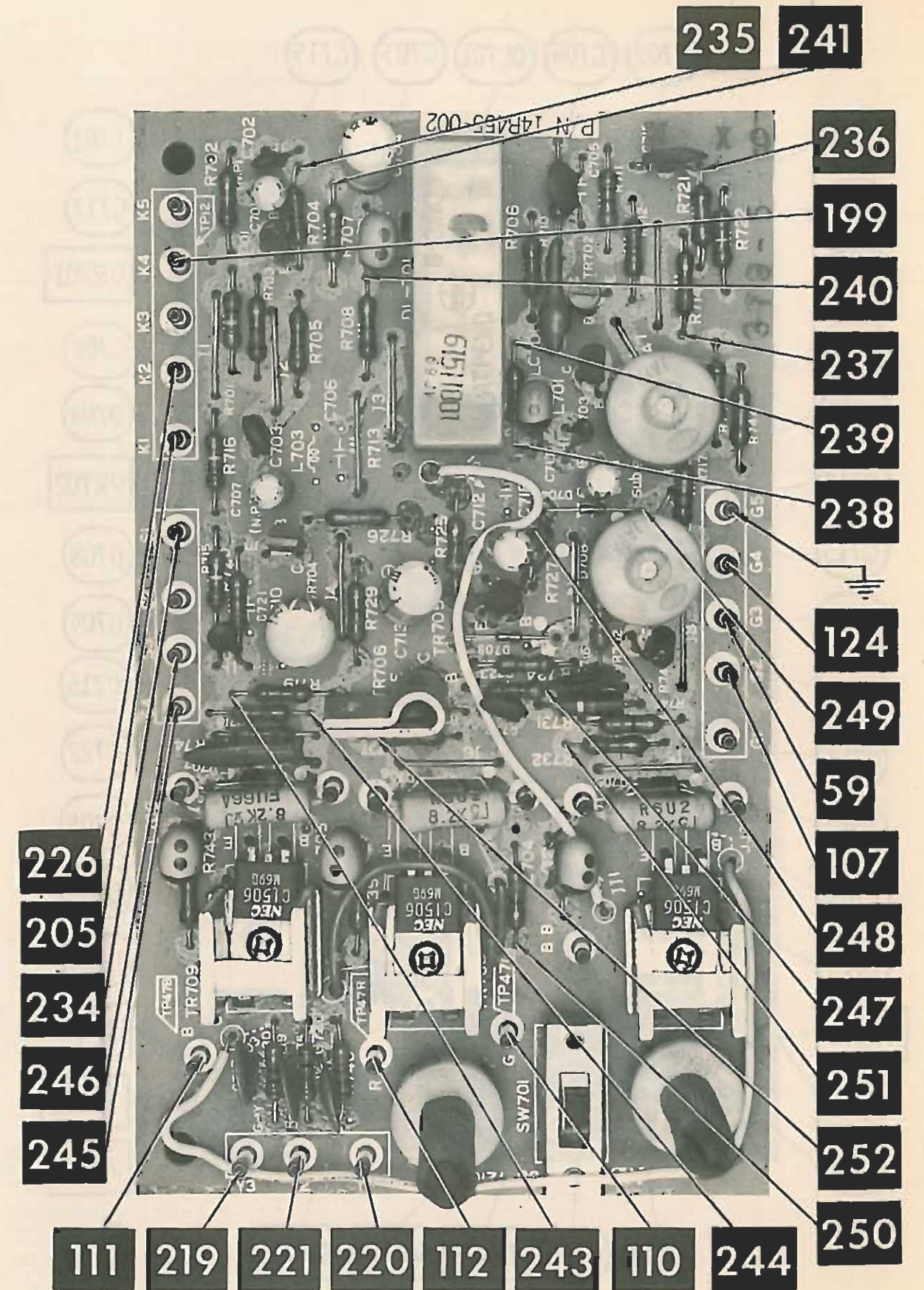


A Howard W. Sams CIRCUITRACE Photo PWC-431 VIDEO IF BOARD

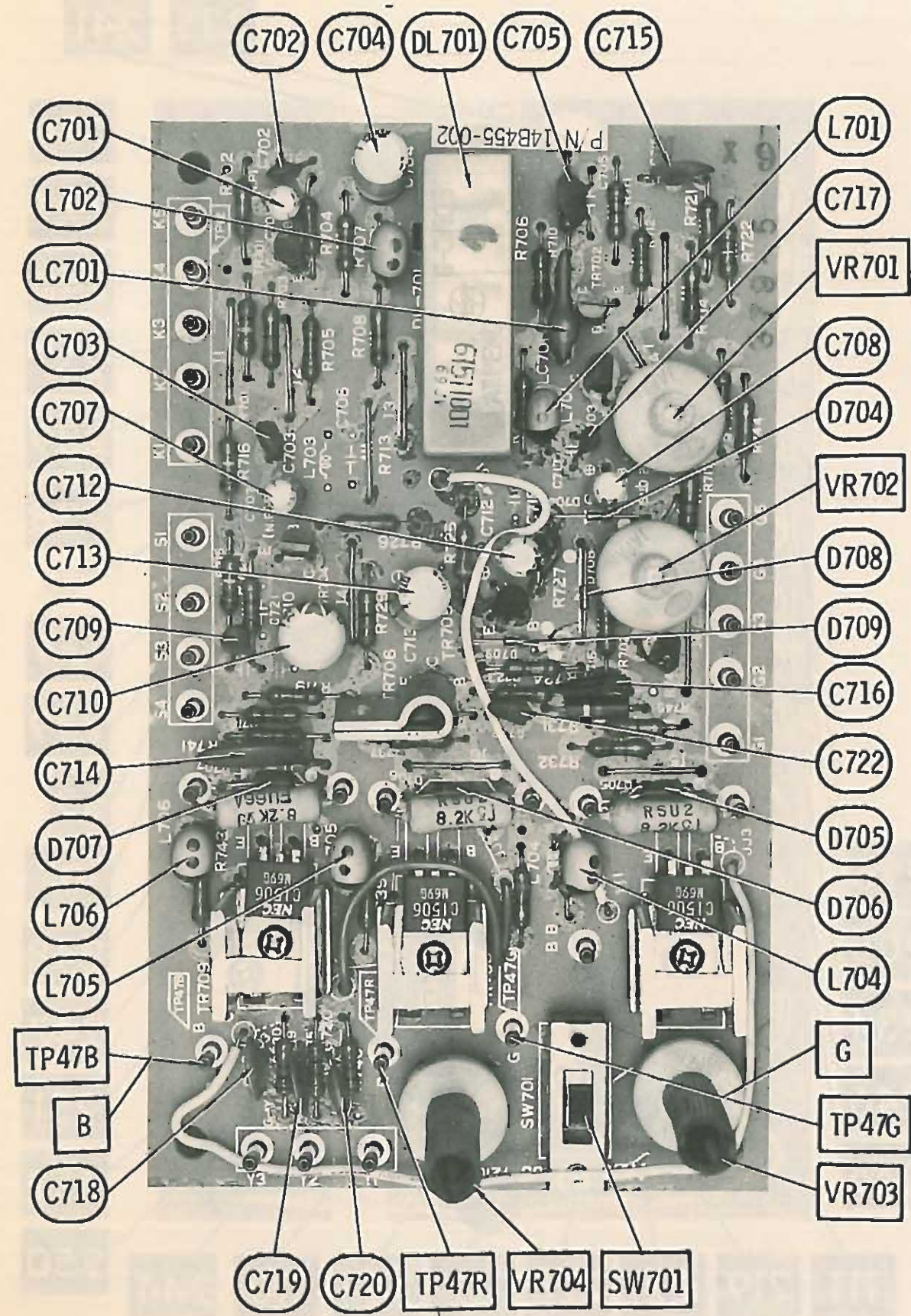




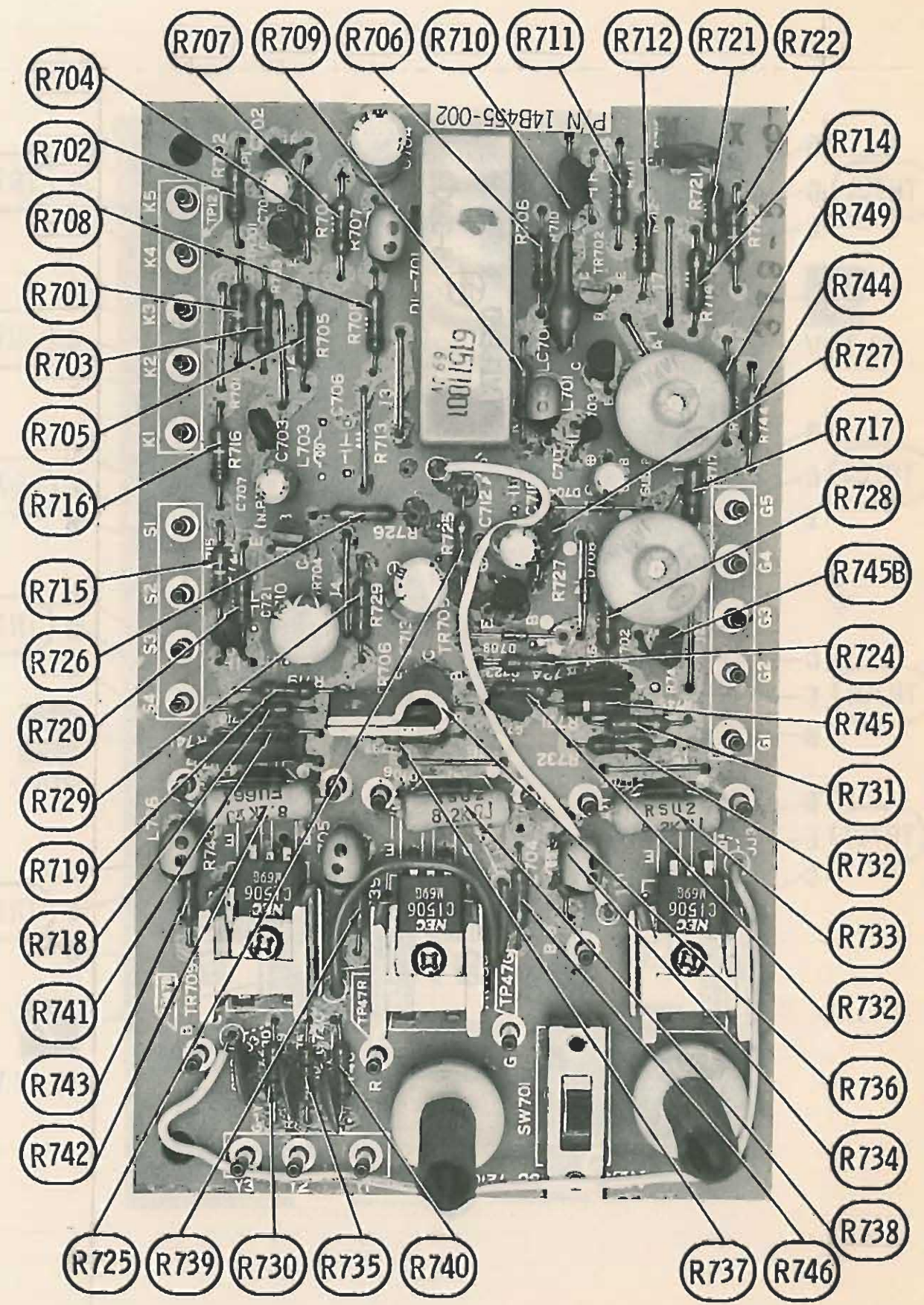
PWC-368 VIDEO OUTPUT BOARD



A Howard W. Sams CIRCUITRACE Photo PWC-368 VIDEO OUTPUT BOARD



PWC-368 VIDEO OUTPUT BOARD



PWC-368 VIDEO OUTPUT BOARD

B+ ADJUSTMENT

Connect a DC Meter to TP91, low side to ground. Tune in a local station and adjust for a normal picture. Adjust B+ Adjust Control (VR602) for +120 volts DC with 120 volts AC line. B+ Range Control (VR603) is factory adjusted and sealed. If adjustment is needed, place VR602 to maximum counterclockwise position. Adjust VR603 for +125 volts DC and seal the control to prevent further adjustment. Adjust VR602 for +120 volts DC.

HORIZONTAL OSCILLATOR ADJUSTMENT

With set turned off, turn Horizontal Hold Control (VR502) to midrange. Turn Sub Horizontal Hold Control (VR501) fully counterclockwise. Connect a short jumper from TP31 to ground. Turn set on. Adjust VR501 until picture stops or floats on screen. Remove jumper from TP31. (If necessary, touch up T501.)

VHF AGC ADJUSTMENT

Tune in a strong VHF station and advance Detector Output Control (VR201) until instability appears in the picture (pulling, jitter, overload, etc.). Reduce the control to the point just below the instability. Tune in a weak station and adjust RF AGC Delay Control (VR202B) and Sub AGC Range Control (VR202A) for maximum contrast and MINIMUM snow.

UHF AGC ADJUSTMENT

Tune in a UHF station and adjust UHF RF Gain Control (VR101) for best picture and MINIMUM snow.

SUB-BRIGHTNESS AND BRIGHTNESS LIMITER ADJUSTMENT

Push ITT Switch to Off position. Turn the Brightness and Color Controls to maximum. turn the Contrast Control to MINIMUM. Turn the Tint Control to midrange. Connect a color-bar generator to the antenna terminals and tune in a 100% modulated color-bar pattern. Turn Sub-Brightness Control (VR701) on PWC-368 Board fully counterclockwise. Turn Brightness Limiter Control (VR702) on PWC-368 Board fully clockwise. Connect VTVM to positive (+), low side to negative (-) across R560. Adjust Sub-Brightness Control (VR701) for +1.9V. Adjust Brightness Limiter Control (VR702) for +1.7V.

APFC ADJUSTMENT

Connect a color-bar generator to the antenna terminals and adjust for normal color bars. Set AFT Switch (SW2) to On position. Turn Tint Control to midrange. Turn Color Killer (VR708) on PWC-317 Board fully clockwise. Slide Align-Norm Switch (SW751) on PWC-317 Board to Align position. Adjust APC Control (VR706) on PWC-317 Board until color bars float on screen.

Return Norm-Align Switch (SW751) on PWC-317 Board to Normal position. Connect vertical input of scope to TP45 and adjust ACC Control (VR707) on PWC-317 Board for 0.5 volts p-p. Recheck APC adjustment. Connect vertical input of scope to TP47R on PWC-368 Board and adjust VR709 on PWC-317 Board for 6th bar crossover. Check B-Y and G-Y (points TP47B and TP47G) outputs on PWC-368 Board for proper waveforms.

CHROMA BANDPASS ADJUSTMENT

With the receiver adjusted for normal color-bar pattern, adjust Chroma Bandpass Control (VR705) on PWC-317 Board for proper registration of color

MISCELLANEOUS ADJUSTMENTS

bars; eliminate color smear. This can best be observed on the green and magenta bars. COLOR KILLER ADJUSTMENT

Tune in a weak signal, or reduce the signal at the antenna terminals to obtain a snowy picture. Adjust Color Killer Control (VR708) on PWC-317 Board to eliminate the color in the snow. Check with a color signal to make sure the killer is not killing the color signal.

HV PROTECT ADJUSTMENT

Do not adjust VR2001, it is factory adjusted and sealed. If board is defective, it must be replaced as a complete unit.

PURITY ADJUSTMENTS

Unplug connector C from PWC-431 Board, and B and G connectors from TP47B and TP47G on PWC-368 Board. Move ITT Switch at Off position and Color Control at MINIMUM. Perform center dot convergence using convergence magnets. If the picture tube appears to be magnetized, use a degaussing coil to demagnetize tube and mounting brackets.

Slide the deflection yoke back until it is against the convergence yoke. Rotate the tabs on the purity magnet until a red spot appears at the center of the picture tube. Slide the deflection yoke forward to obtain a uniform red over entire picture-tube face. Reconnect the C, B, and G connectors.

VERTICAL PINCUSHION ADJUSTMENT

Connect a crosshatch generator to the antenna terminals and adjust set for a normal crosshatch pattern. Turn T555 to center mechanical position. Adjust Pincushion Phase Coil (LS59) to move curvature to the center of the screen. Readjust T555 for straight horizontal lines.

GRAY SCALE ADJUSTMENT

Turn Color, Brightness, and Contrast Controls to MINIMUM. Turn Red (VR704) and Green (VR703) Drive Controls to midrange. Turn Kine Bias Control (VR904) fully counterclockwise. Slide Normal-Service Switch to Service position. Turn Blue Screen (VR901), Red Screen (VR903), and Green Screen (VR902) Controls fully clockwise. If a line is visible, reduce the proper screen control to just extinguish the line. Advance the Kine Bias Control until the weakest of the three colors is just visible. Then, reduce the other two screens to obtain a white line.

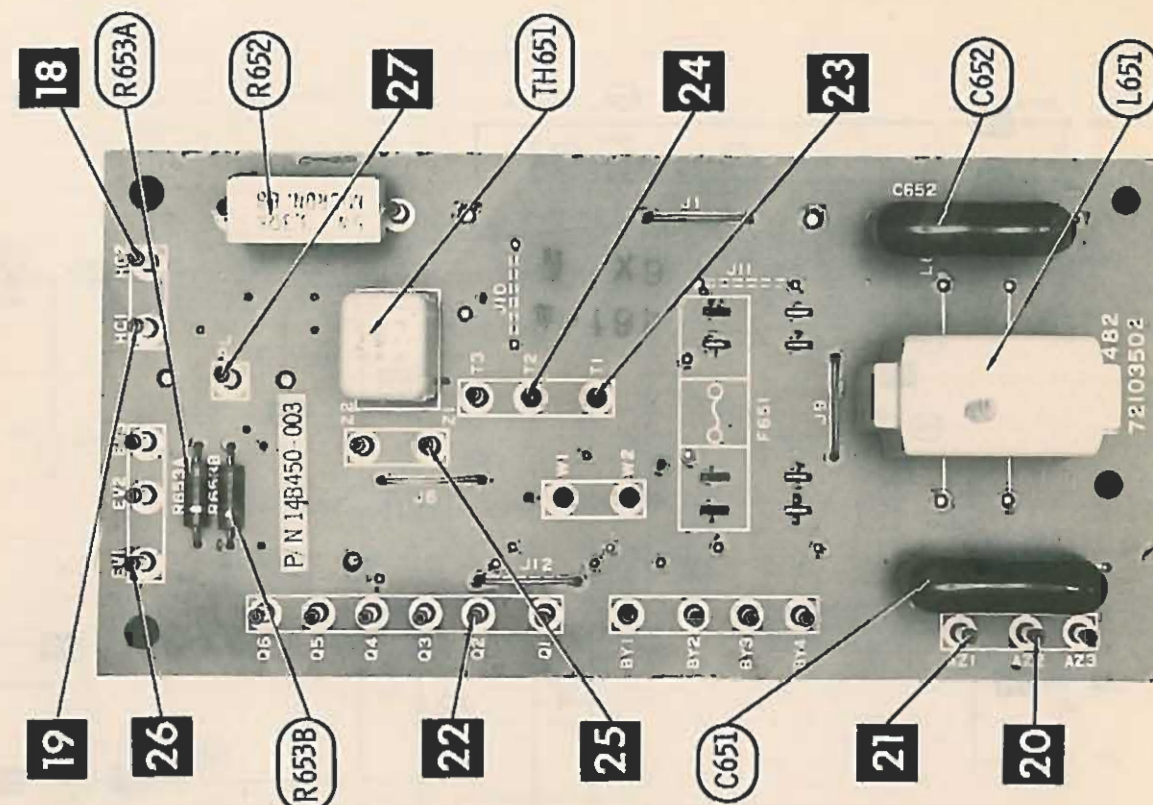
Return the Normal-Service Switch to the Normal position. Tune in a TV station with the Color Control at MINIMUM. Adjust the Red and Green Drive Controls to eliminate coloring in the bright areas of the picture.

ITT ADJUSTMENT

Push ITT Switch to On position. Adjust Pre-Set Brightness (VR-6), Contrast (VR-8), Color (VR-2), and Tint Controls (VR-4) for desired level.

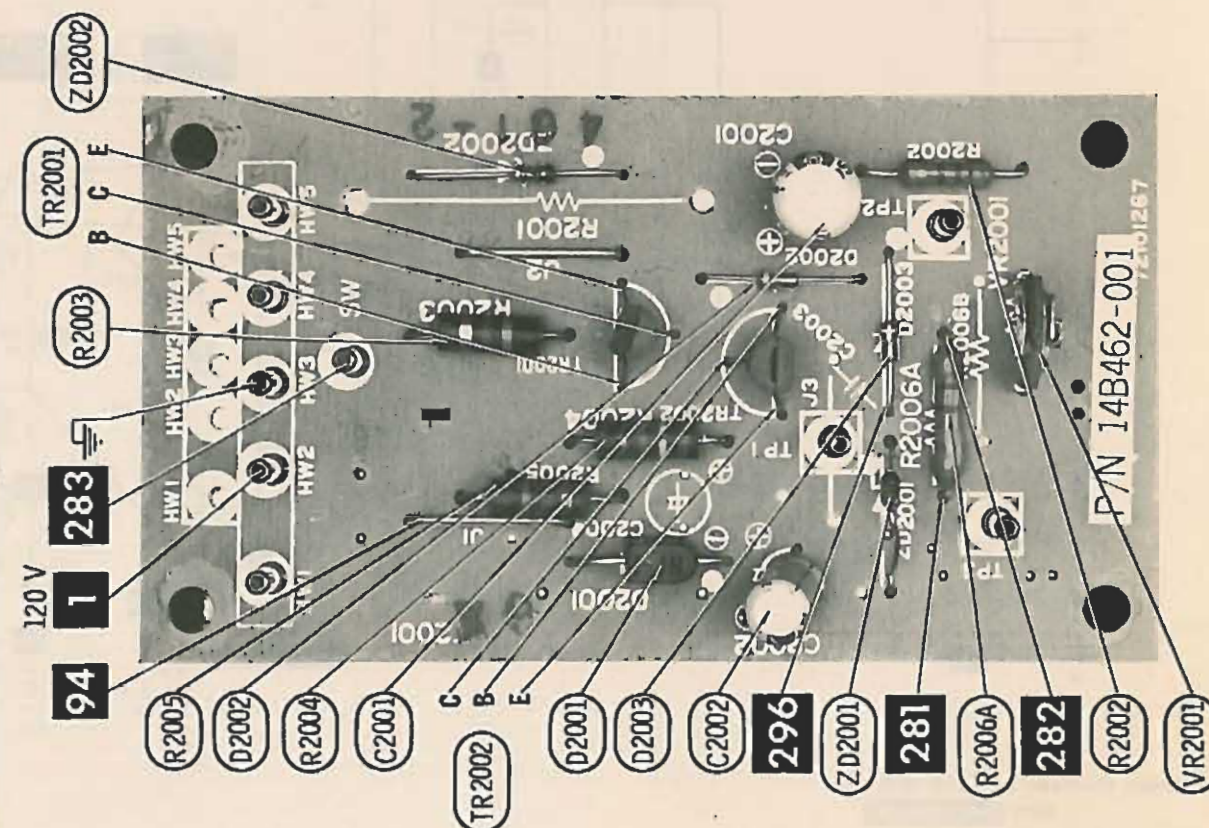
ABC LIGHT SENSOR ADJUSTMENT

With a normal room lighting, tune in a local station and adjust for a normal color picture. Adjust ABC Sensitivity Control (VR9001) to maximum counterclockwise position. Completely cover the Light Sensor. Advance VR9001 until color level is slightly washed out. Uncover the Light Sensor. The brightness level and color level should increase.



PWC-482 AC POWER SUPPLY BOARD

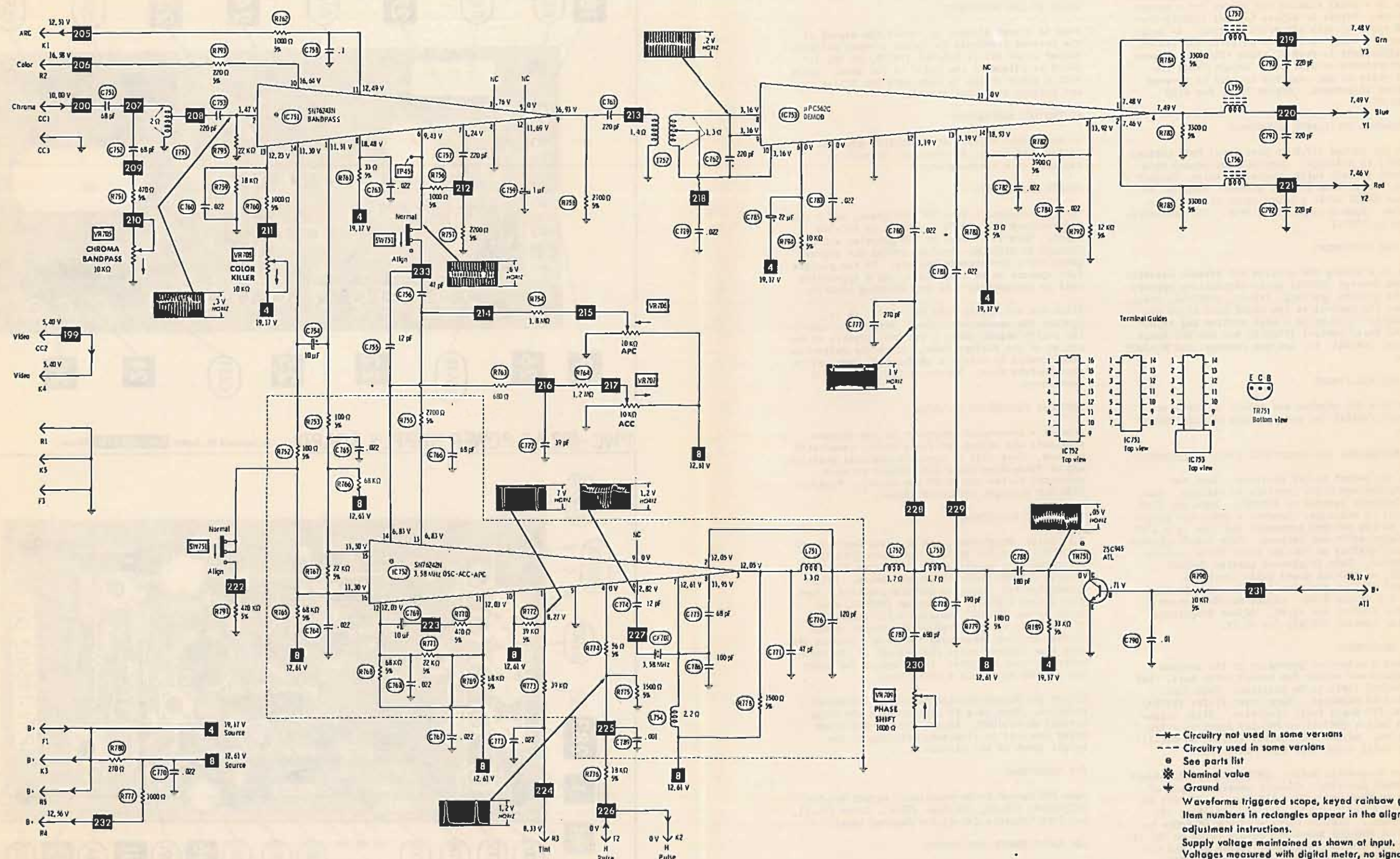
A Howard W. Sams CIRCUITRACE® Photo



PWC-256 HIGH VOLTAGE PROTECT BOARD

A Howard W. Sams CIRCUITRACE® Photo

PWC-317

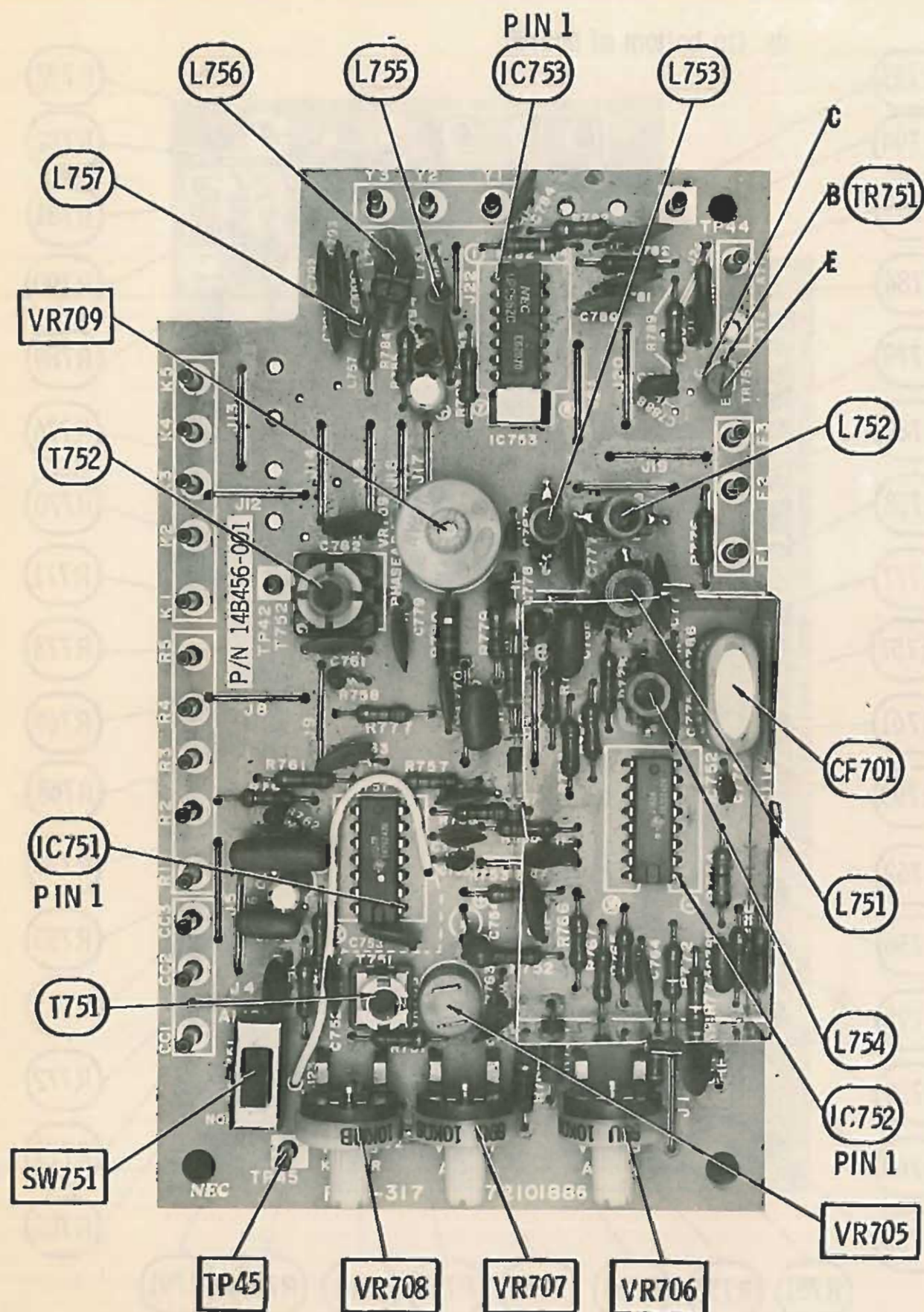


A PHOTOFAC STANDARD NOTATION SCHEMATIC
WITH **CIRCUITTRACE**
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PWC-317 CHROMA BOARD

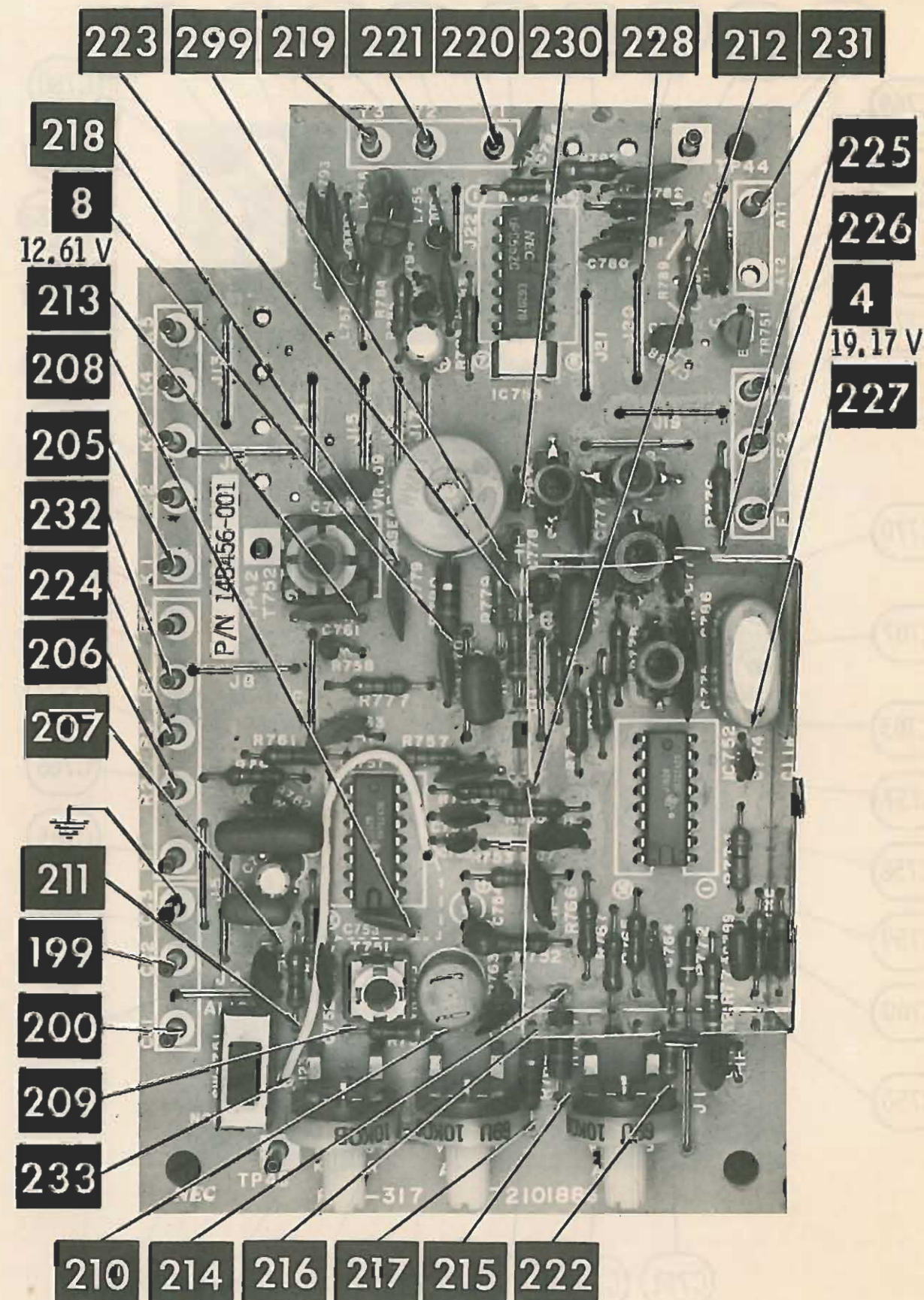
PWC-317 CHROMA BOARD

CURTIS MATHES
CHASSIS CMC-58

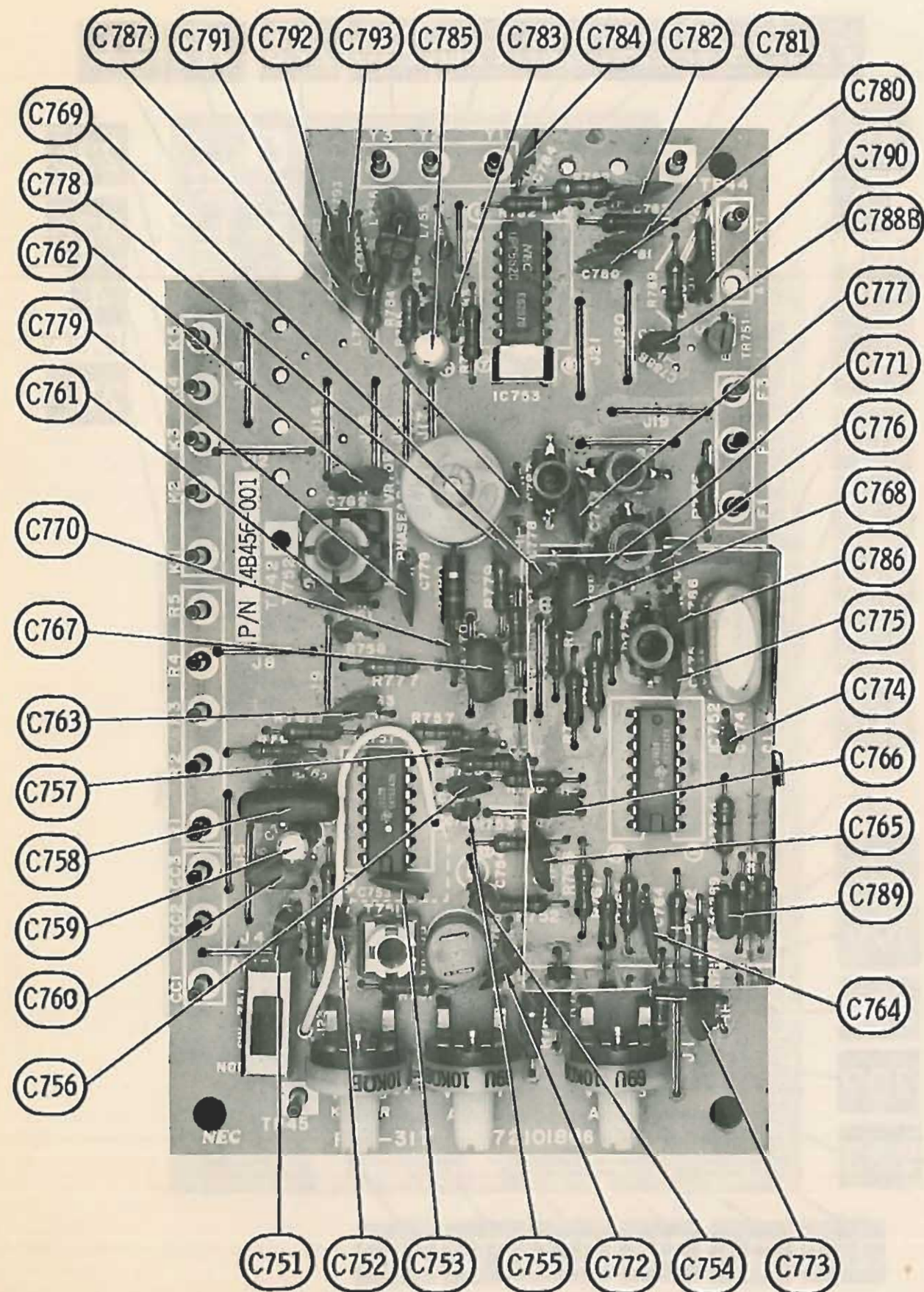
FOLDER 1



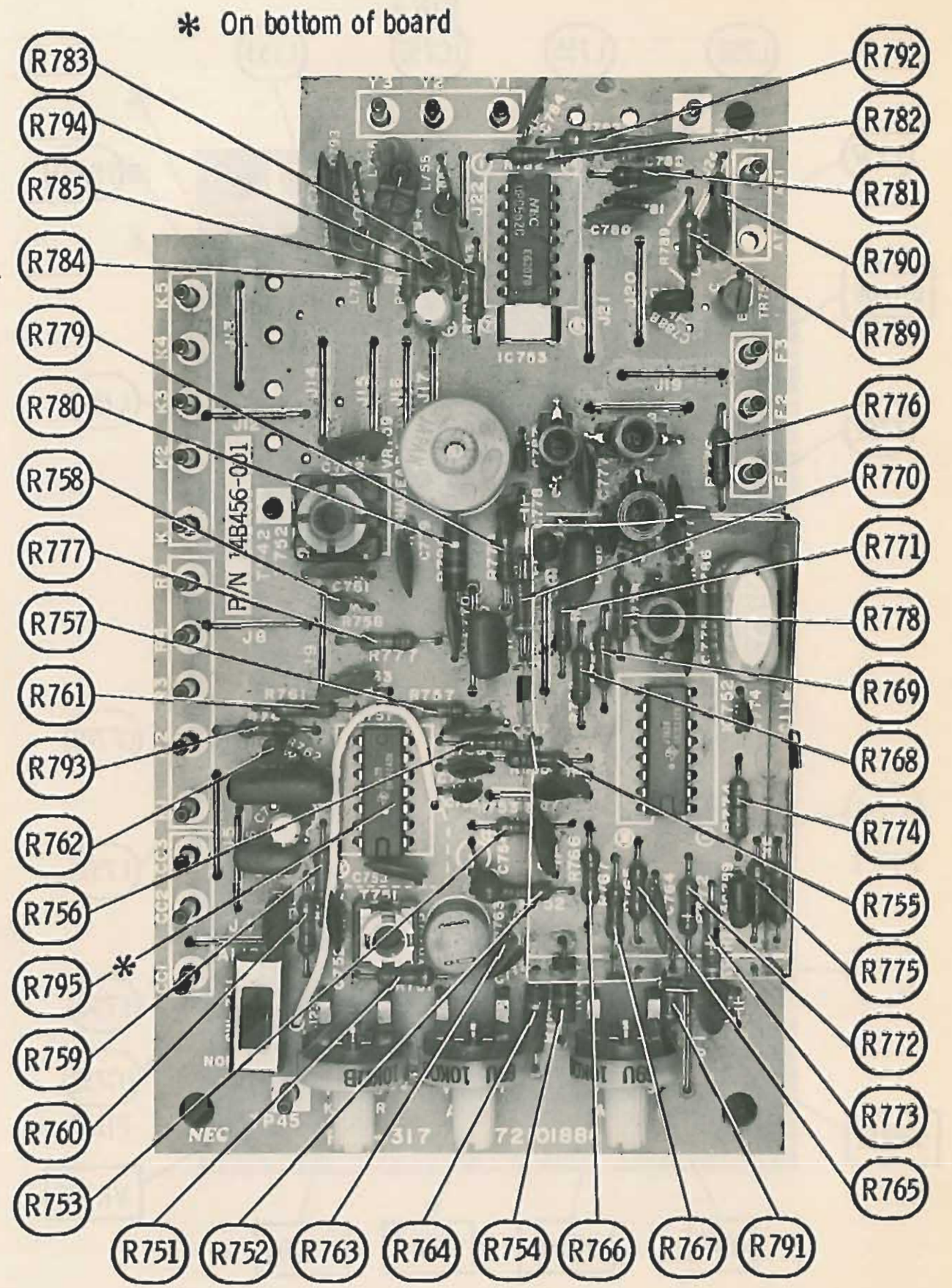
PWC-317 CHROMA BOARD



A. Howard W. Sams CIRCUITRACE Photo PWC-317 CHROMA BOARD



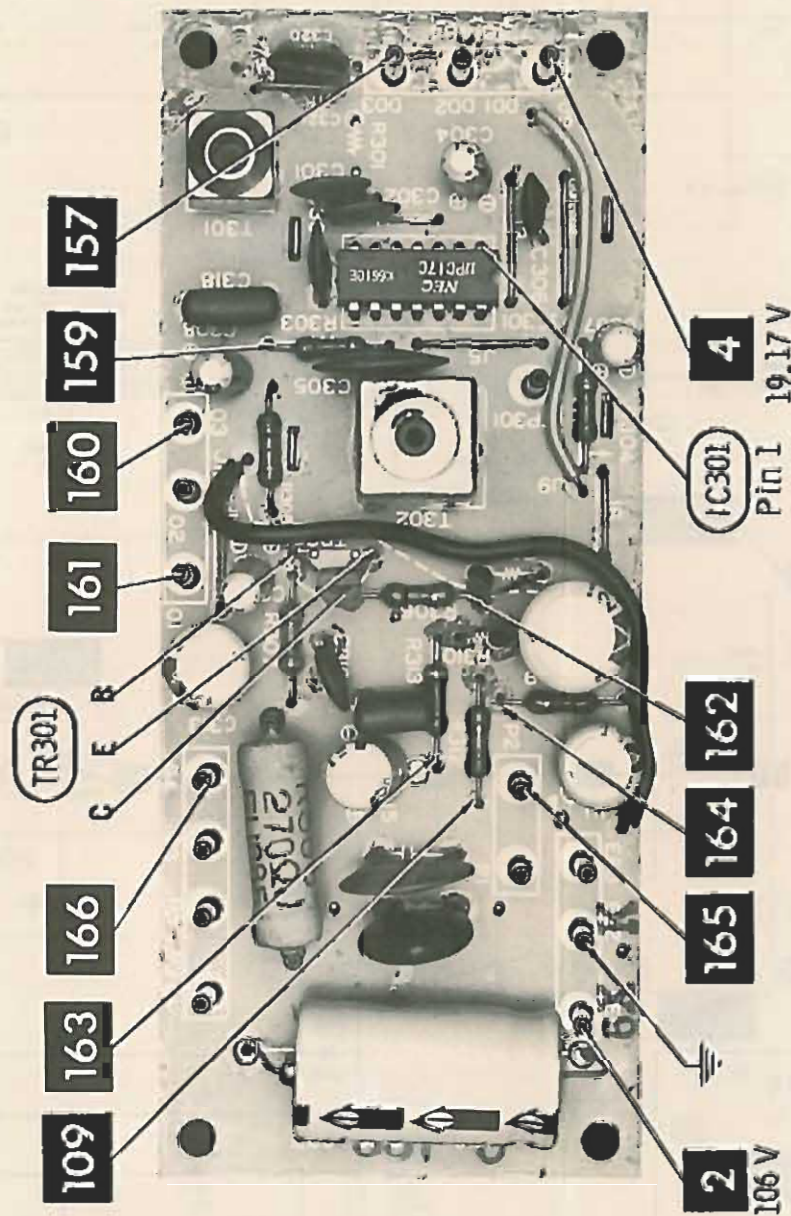
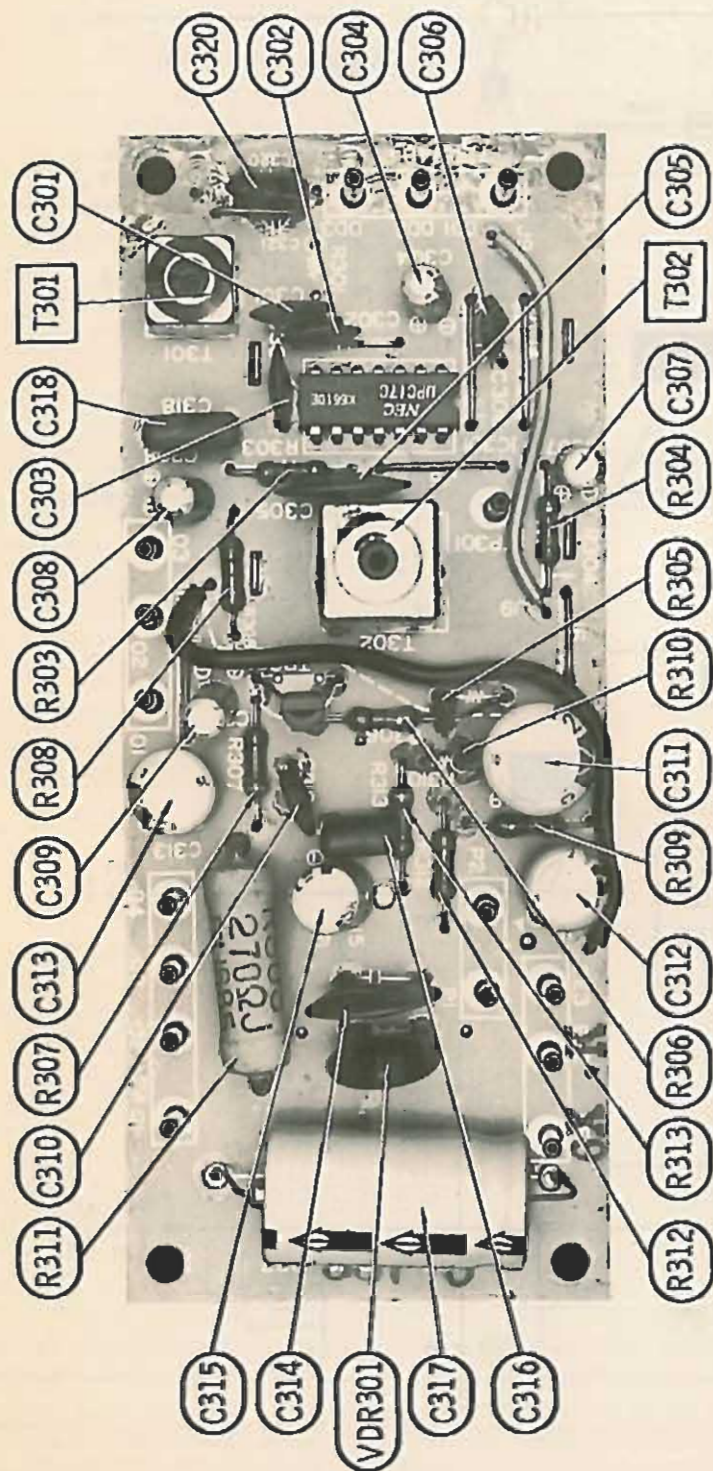
PWC-317 CHROMA BOARD



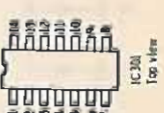
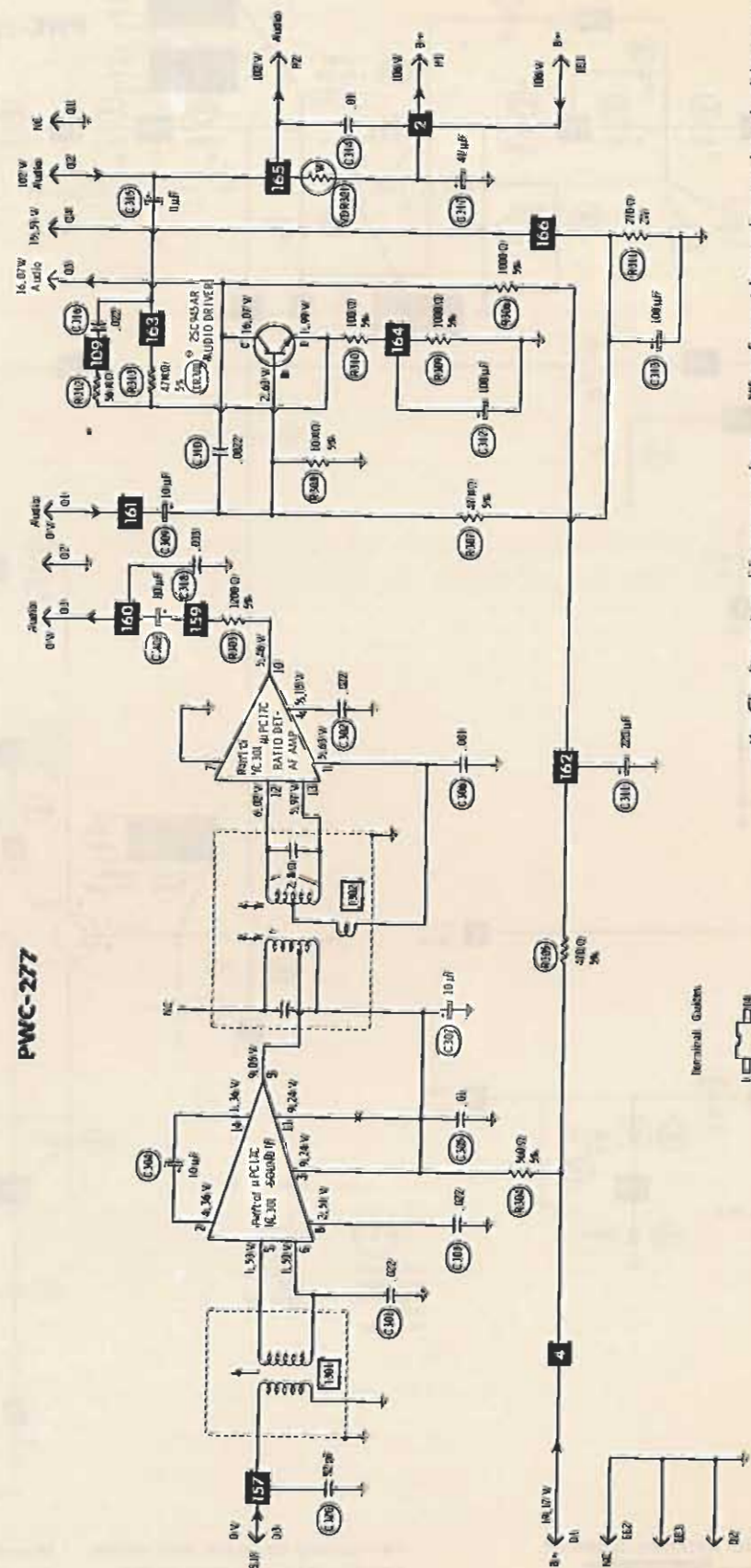
PWC-317 CHROMA BOARD

PWC-277 SOUND BOARD

A Howard W. Sams CIRCUITRACE Photo



PWC-277

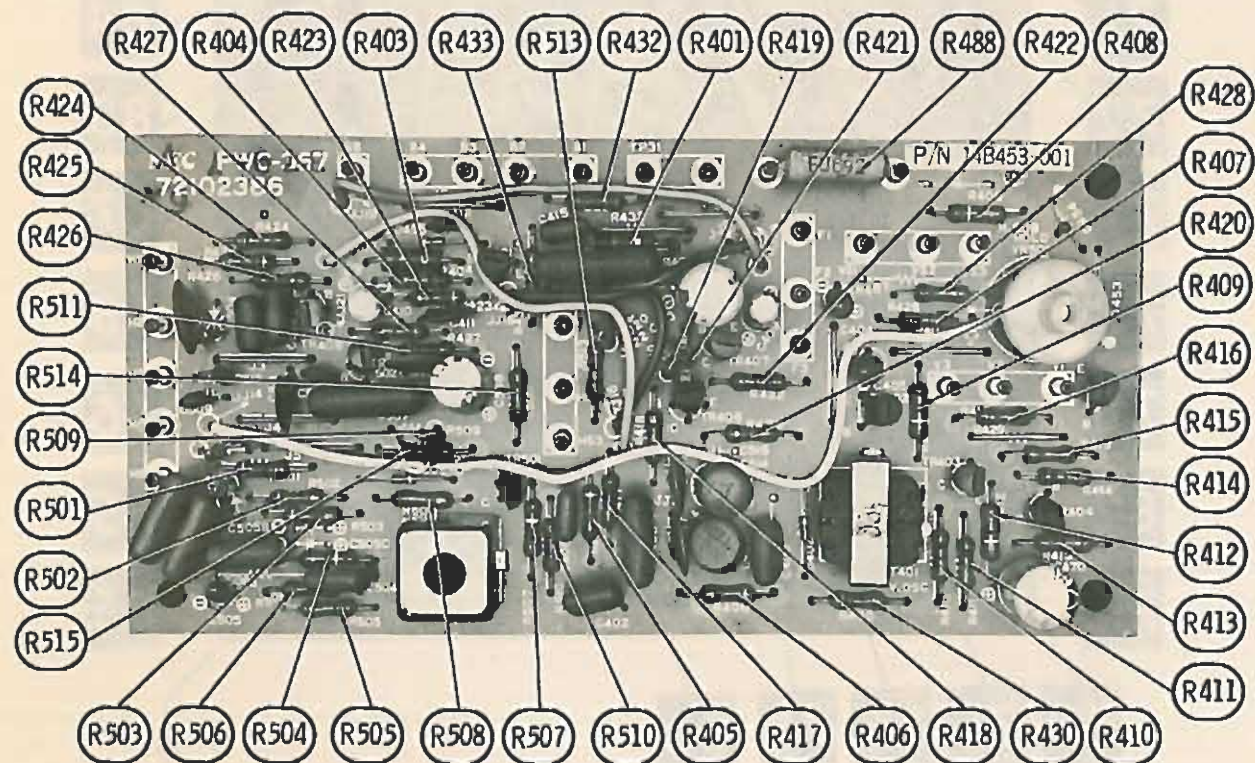
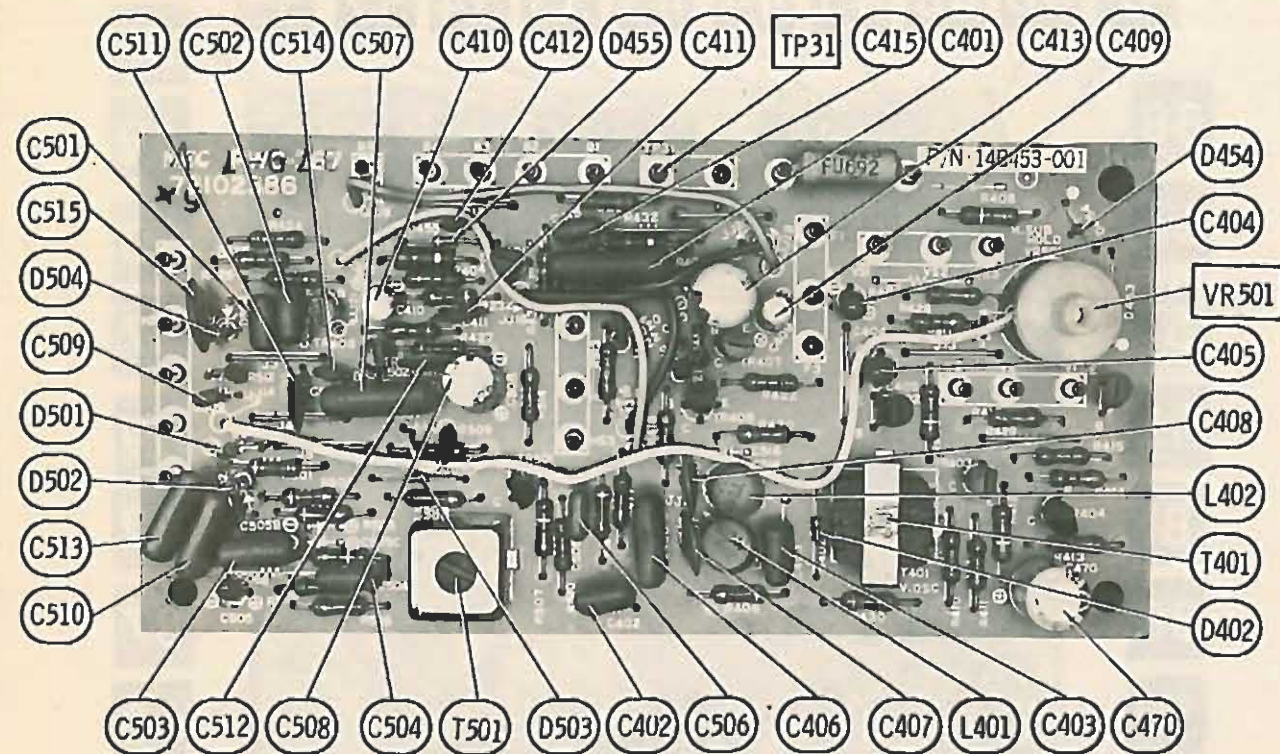


- Circuitry not used in some versions
- Circuitry used in some versions
- See parts list
- Nominal value
- Ground

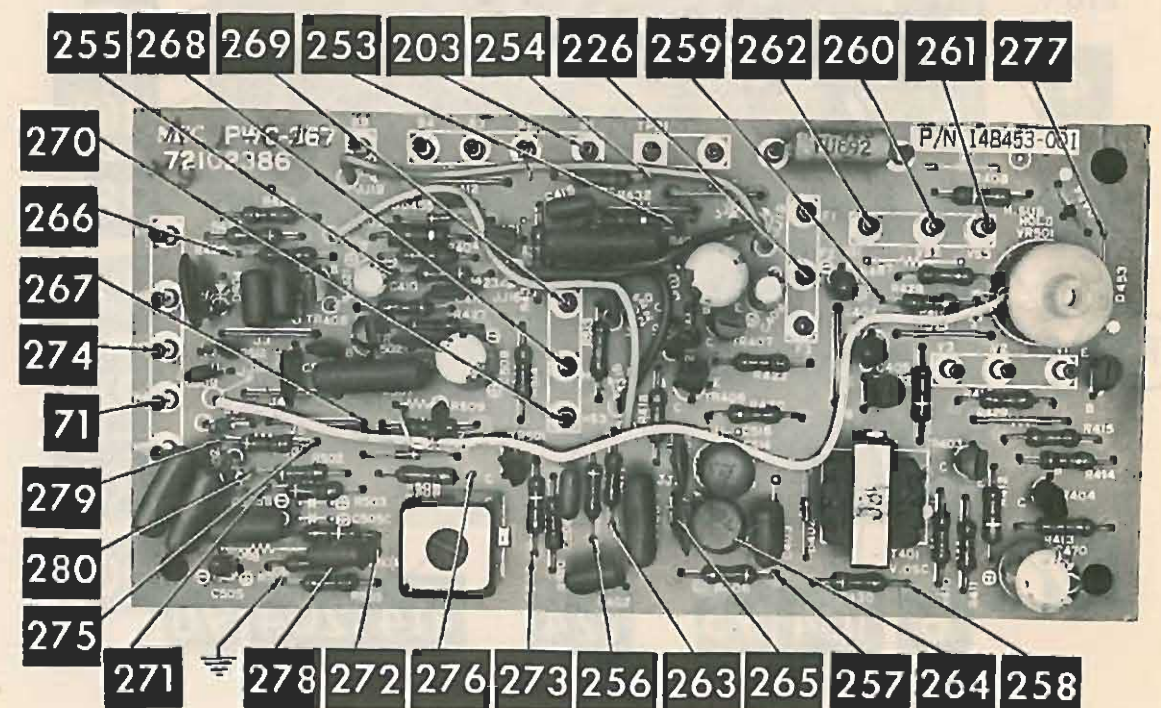
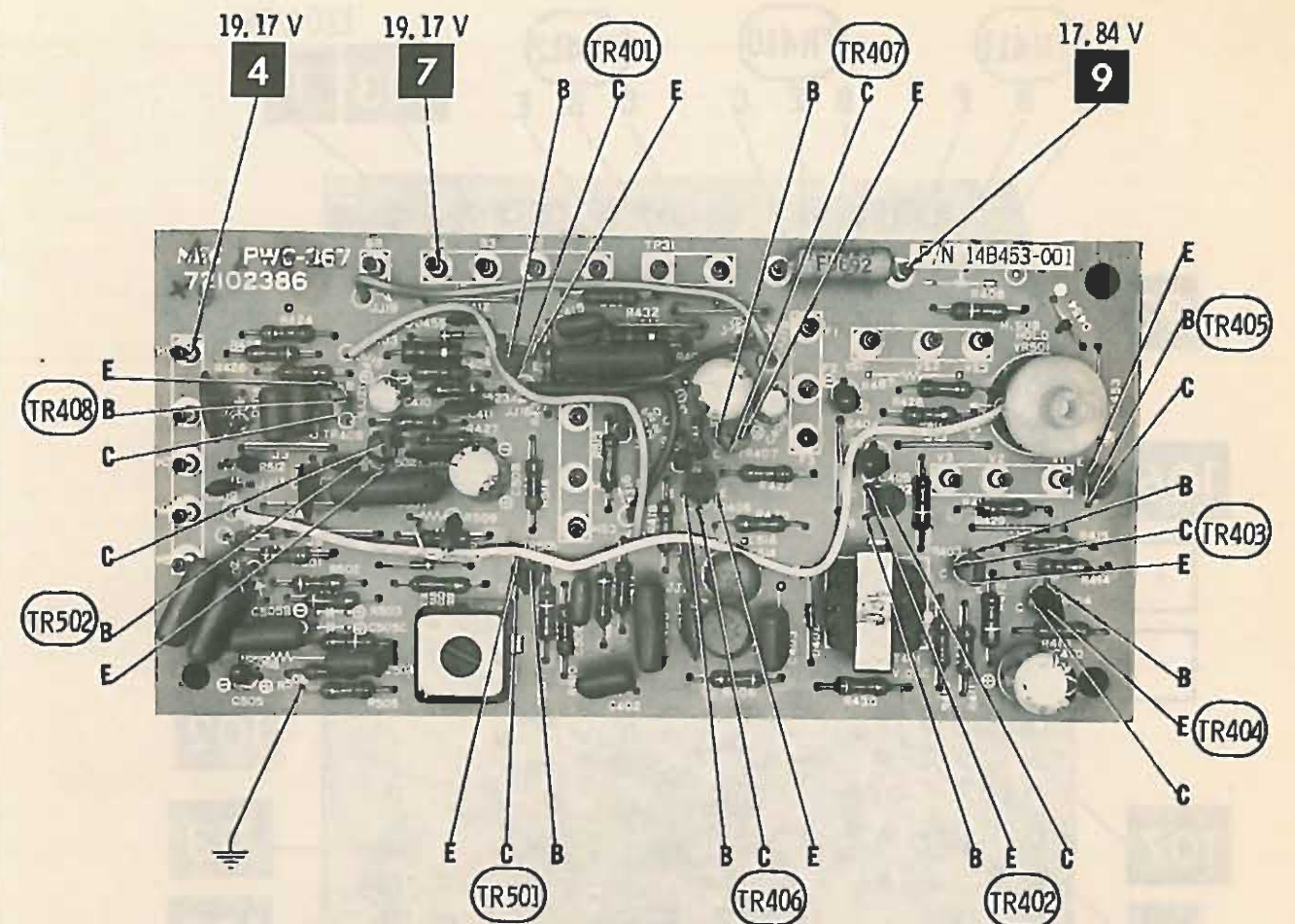
Waveforms: triggered scope, keyed rainbow generator
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltage maintained as shown at input.
Voltages measured with digital meter, no signal.
Controls adjusted for normal operation.
Arrow at center indicates direction of advance.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 10% unless noted.
Value in () used in some versions.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
WITH CIRCUITRACE[®]
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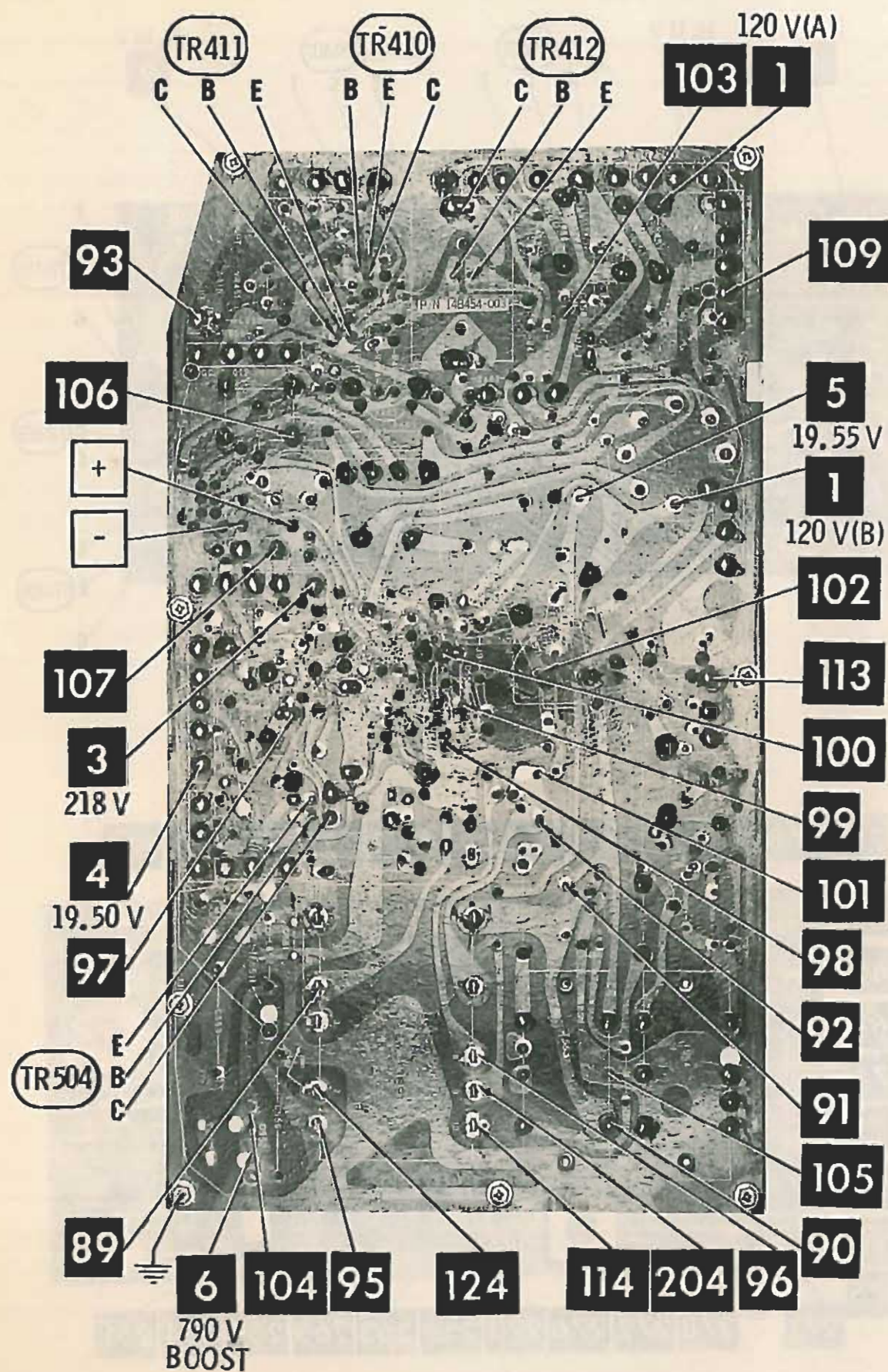
PWC-277 SOUND BOARD



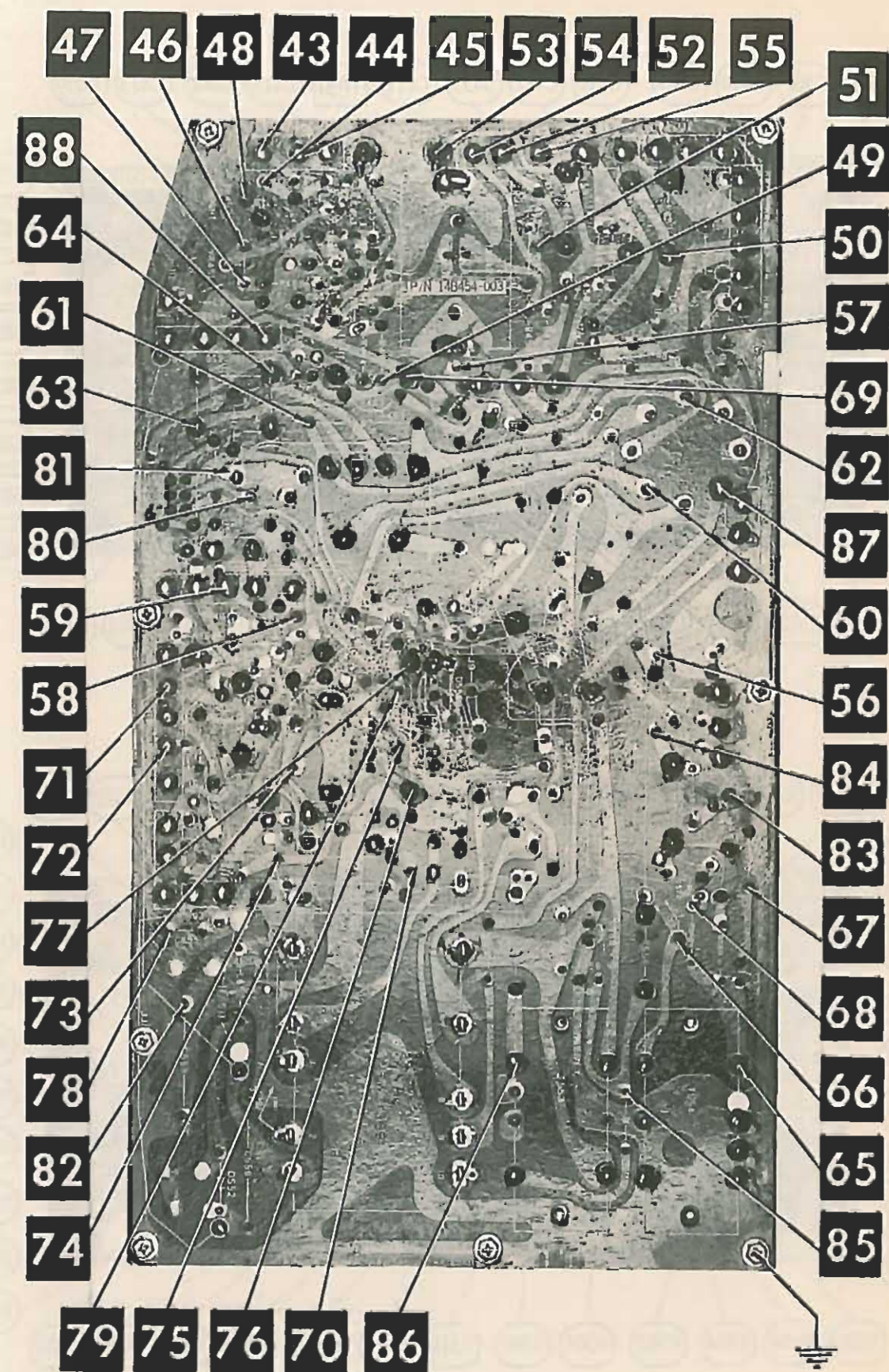
PWC-367 DEFLECTION BOARD



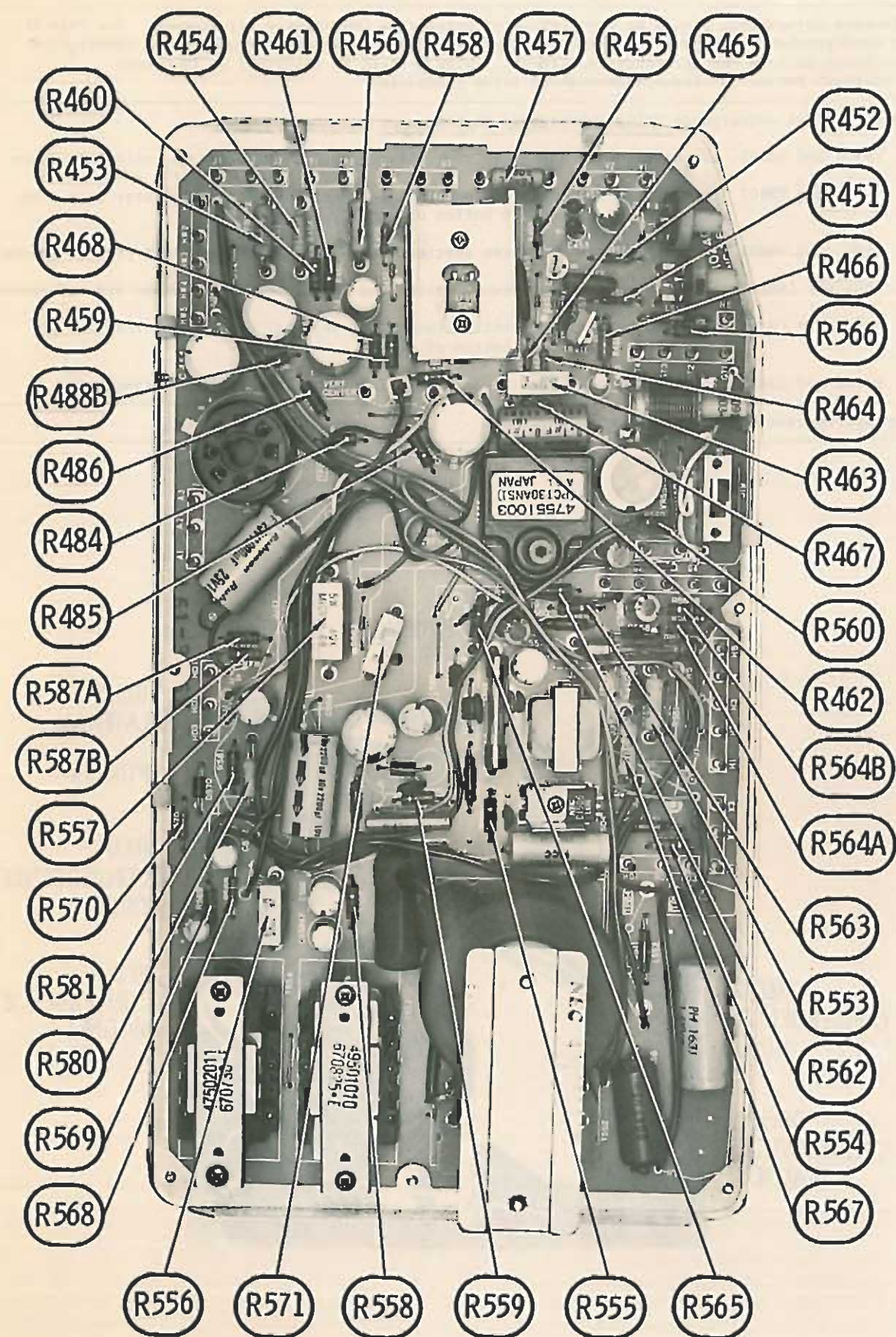
A Howard W. Sams CIRCUITRACE Photo PWC-367 DEFLECTION BOARD



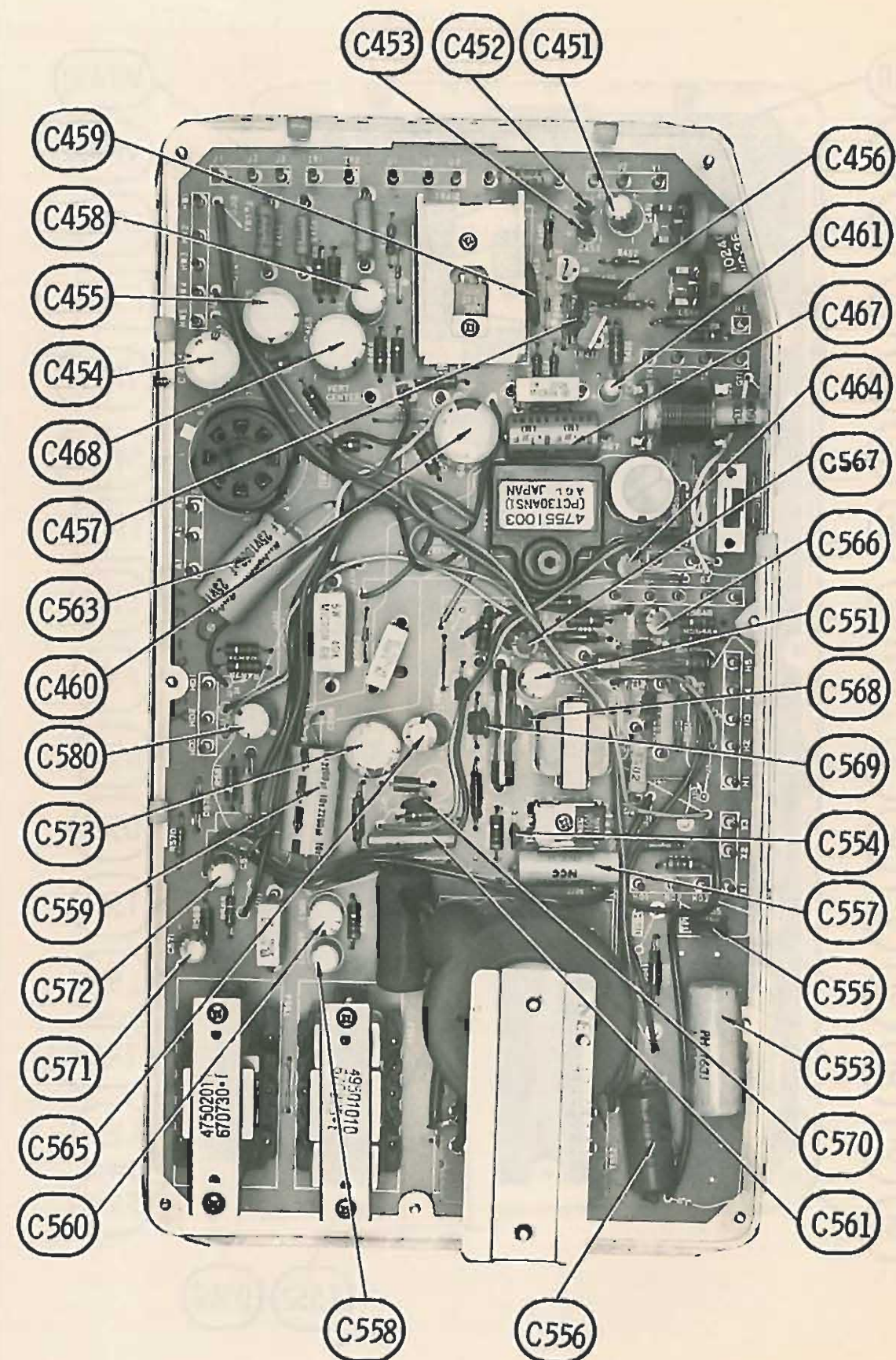
PWC-369 DEFLECTION OUTPUT BOARD A. Howard W. Sams CIRCUITRACE Photo



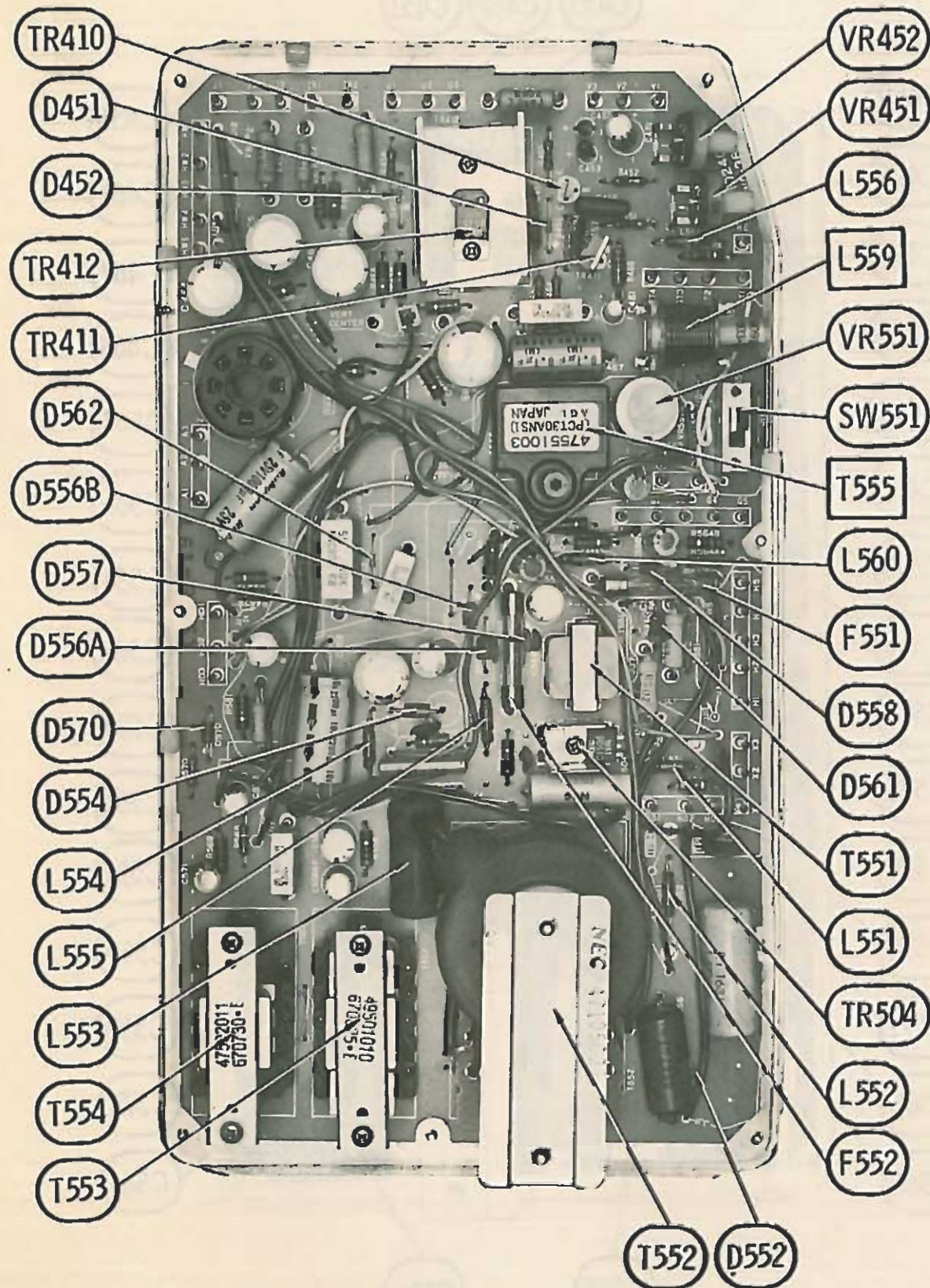
PWC-369 DEFLECTION OUTPUT BOARD



PWC-369 DEFLECTION OUTPUT BOARD



PWC-369 DEFLECTION OUTPUT BOARD



PWC-369 DEFLECTION OUTPUT BOARD

CONVERGENCE ADJUSTMENTS

Miscellaneous Adjustments should be made before proceeding to Convergence Adjustments. See Page 48. Connect dot/crosshatch generator to antenna terminals. Use dot pattern for center dot convergence. Use crosshatch pattern for all other adjustments. View pattern as displayed on TV screen.
NOTE: Maintain center convergence throughout setup procedure.

Perform center dot convergence using convergence magnets.

Adjust VR804 and VR805 to converge red and green vertical center line from top to bottom of screen.

Adjust VR806 and VR807 to converge red and green horizontal lines along vertical center line from top to bottom of screen.

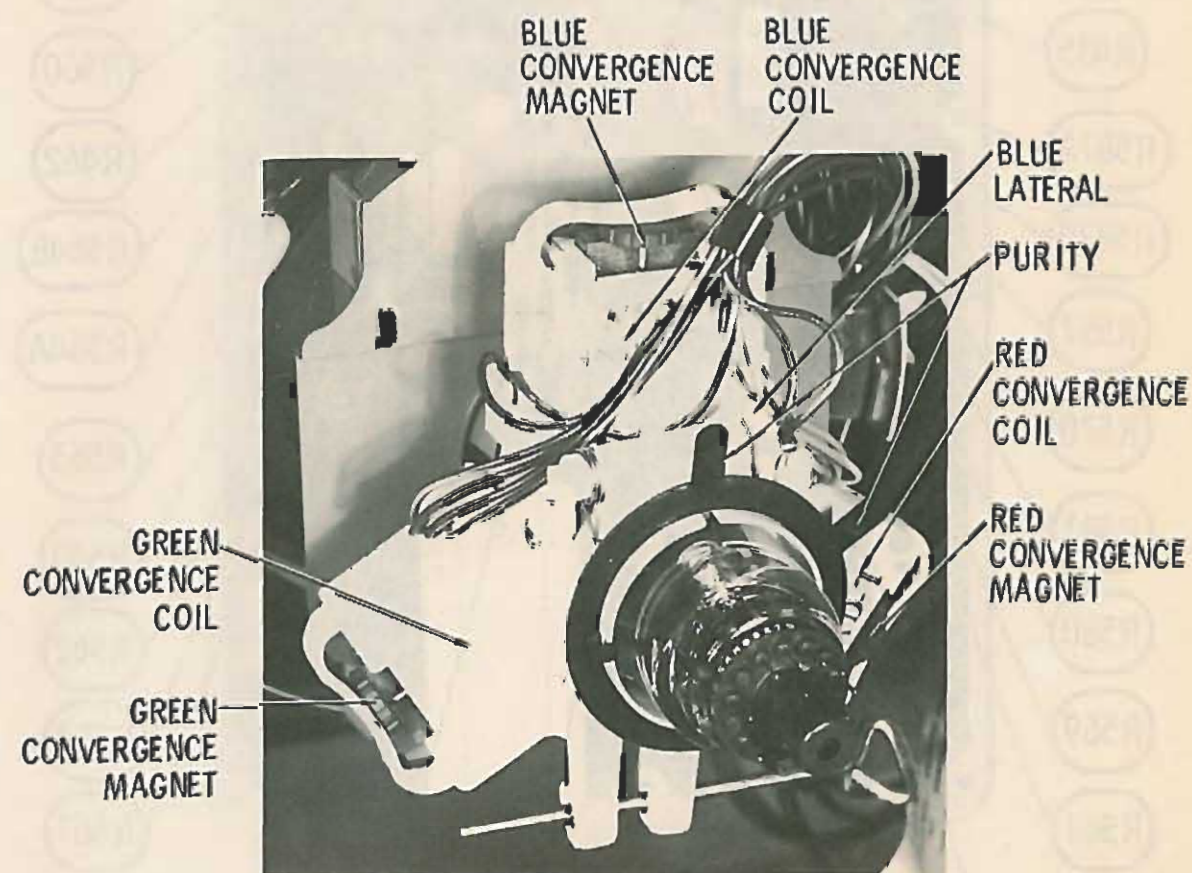
Adjust VR802 and VR803 to converge red and green vertical and horizontal lines, left side of screen.

Adjust L801 and L802 to converge red and green vertical and horizontal lines, right side of screen.

Adjust VR808 and VR809 to converge blue horizontal lines along vertical center line from top to bottom of screen.

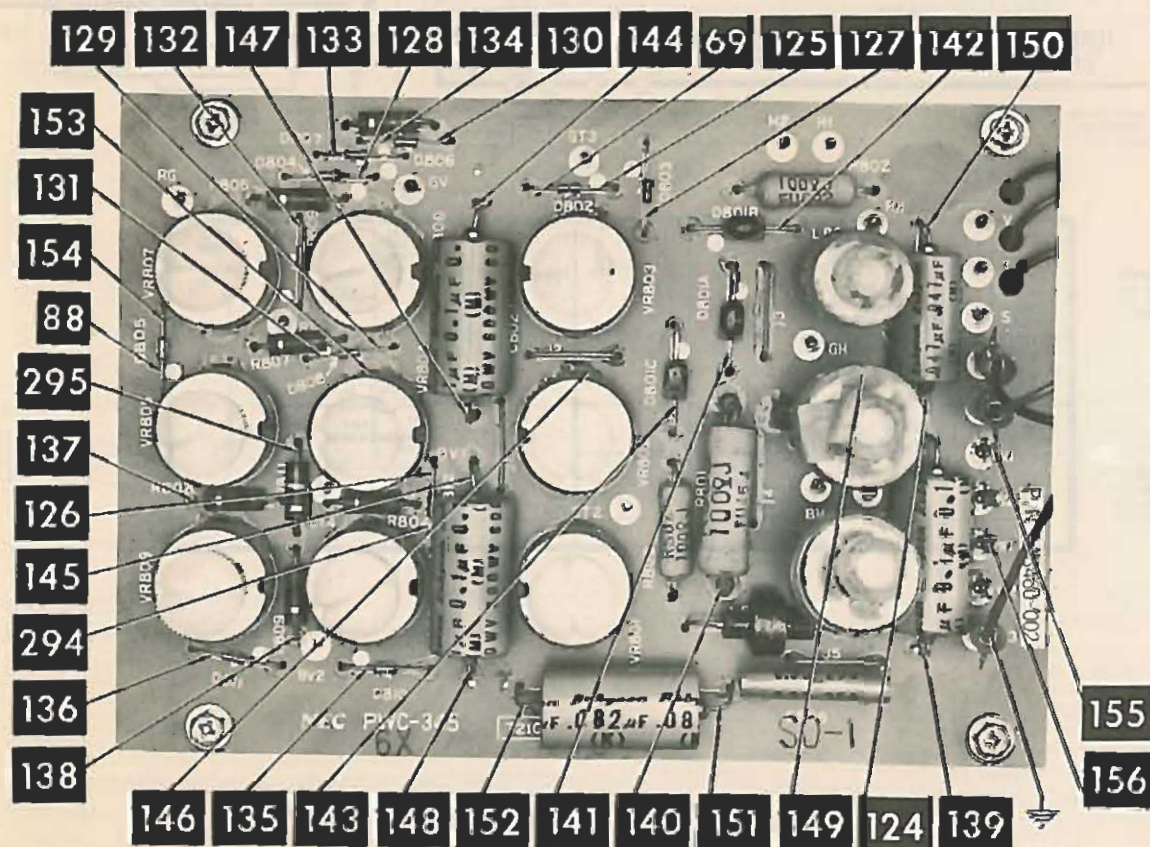
Adjust VR801 and L803 to converge blue horizontal lines, left and right sides of screen.

Touch up appropriate controls if necessary

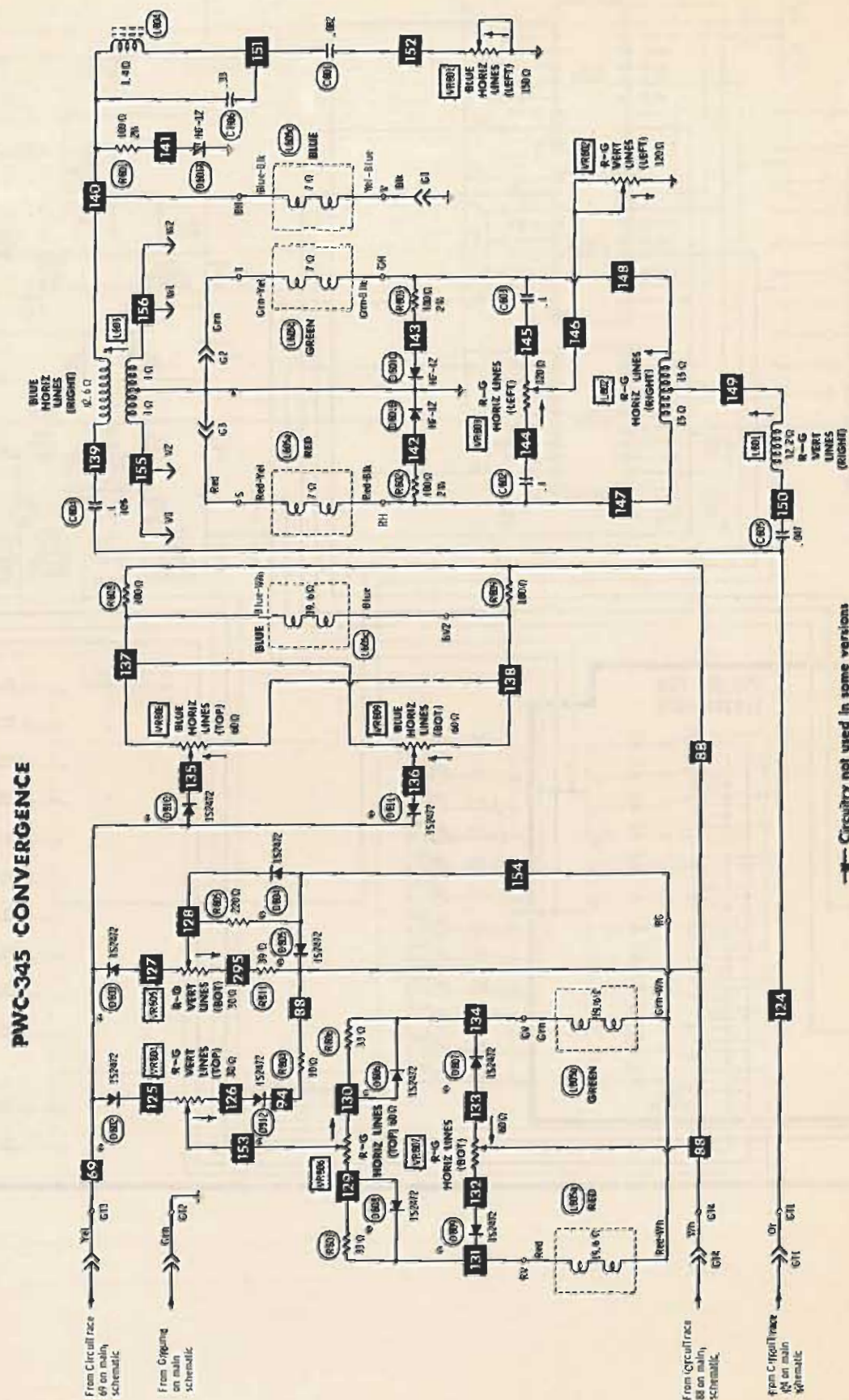


CURTIS MATHES
CHASSIS CMC-58

FOLDER 7
CRT NECK ASSEMBLY



PWC-345 CONVERGENCE BOARD A Howard W. Sams CIRCUITRACE® Photo



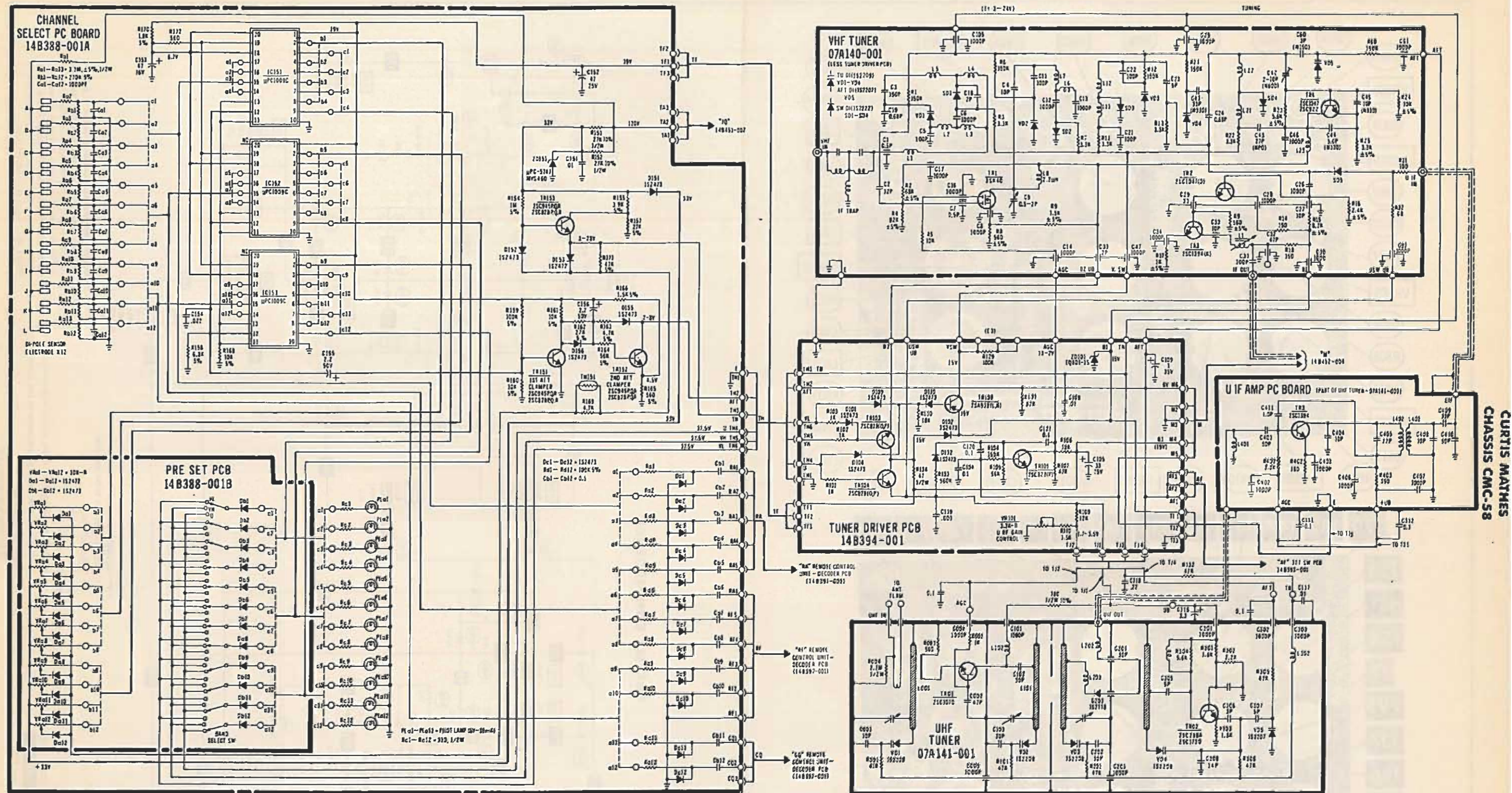
Supply voltage maintained as shown at input.
 Voltages measured with digital meter, no signal.
 Controls adjusted for normal operation.
 Arrow at control indicates direction of advance.
 Terminal identification may not be found on unit.
 Resistors are 1/2W or less, 10% unless noted.
 Value in {} used in some versions.

Waveforms: triggered scope, keyed rainbow generator
item numbers in rectangles appear in the alignment/
adjustment instructions.

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CURTIS MATHES
CHASSIS CMC-58

FOLDER 1



CURTIS MATHEWS
CHASSIS CMC-58

FOLDER 1

Courtesy of the Manufacturer

CHANNEL SELECT BOARD

SYMBOL PART NO. DESCRIPTION

DIODES (Channel Select Board Cont.)

Dc1 21A108-004
Dc2 21A108-004
Dc3 21A108-004
Dc4 21A108-004
Dc5 21A108-004
Dc6 21A108-004
Dc7 21A108-004
Dc8 21A108-004
Dc9 21A108-004
Dc10 21A108-004
Dc11 21A108-004
Dc12 21A108-004
D151 21A108-004
D152 21A108-004
D153 21A108-004
D155 21A108-004
D156 21A108-004
ZD151 21A119-045

TRANSISTORS

TR151 21A112-046 1st AFT Clamper
TR152 21A112-046 2nd AFT Clamper
TR153 21A112-046

INTEGRATED CIRCUITS

IC151 21A120-021
IC152 21A120-021
IC153 21A120-021

PILOT LAMPS

PLa1-5 03D030-057
PLa6-10 03D030-057
PLa11-12 03D030-057

THERMISTOR

TI151 08A158-253

CABLE ASSEMBLIES

REF. NO.	PART NO.	DESCRIPTION
TF	13A166-156	1 Wire, 3 Pin Connector from "TF" on the Channel Select Board to "TF" on the Tuner Driver Board
TH	13A166-163	6 Wire, 6 Pin Connector from "TH" on the Channel Select Board to "TH" on the Tuner Driver Board

Courtesy of the Manufacturer

PRESET BOARD

DIODES

Da1-4 21A108-004
Da5-10 21A108-004
Da11-12 21A108-004
Db1-5 21A108-004
Db6-10 21A108-004
Db11-12 21A108-004

VARIABLE RESISTORS

VRa1-5 02A178-209 30K-B
VRa6-10 02A178-209 30K-B
VRa11-12 02A178-209 30K-B

ELECTRICAL CHASSIS PARTS

CAPACITORS

C111 05A068-183 0.1µf +80%-20% 50V Z5V Ceramic
C112 05A068-183 0.1µf +80%-20% 50V Z5V Ceramic
C116 04A111-073 3.3µf 50V Electrolytic
C117 05A155-078 0.01µf +80%-20% 50V Ceramic
C118 05A148-029 .22µf 50V Mylar
C119 05A068-183 0.1µf +80%-20% 50V Z5V Ceramic
C120 05A068-183 0.1µf +80%-20% 50V Z5V Ceramic

RESISTORS

R132 40R347-305 47K ±5% 1/4W Carbon Film
05R118-710 180ohm ±10% 1/4W Carbon Comp.

MISCELLANEOUS

14B386-004 Full Tuner Assembly
14B523-001 Sensor Panel (complete)

MECHANICAL PARTS

14B370-041 Sensor Panel Case - Less 05B570-001
30B190-051 Channel Indicator Strip less Tabs
05B570-001 Channel Number Tabs for Sensor Panel
30B190-052 Front Panel for Sensor Unit

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.

MODULES/PLUG-IN BOARDS

ITEM No.	PART NAME	MFR. PART No.	NOTES
PHC-256	Plug-In Board	14B462-001 (1)	High Voltage Protect
PHC-277	Plug-In Board	14B314-005	Sound
PHC-311	Plug-In Board	14B451-002	DC Power Supply
PHC-317	Plug-In Board	14B456-001	Chroma
PHC-367	Plug-In Board	14B453-001	Deflection
PHC-368	Plug-In Board	14B455-002	Video Output
PHC-369	Plug-In Board	14B454-002	Deflection Output
PHC-431	Plug-In Board	14B452-004	Video IF
PHC-475	Plug-In Board	14B387-001	ABC Control
PHC-482	Plug-In Board	14B450-003	AC Power Supply

(1) To insure protection against possible x-radiation, do not attempt to repair the HV protect board. This board is factory adjusted and sealed. If the board is defective, it must be replaced as a complete unit.

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	MFR. PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V1	25VCZP22	25VCZP22	H-25VCZP22 (1)	25VCZP22	(1) Hi-Lite Matrix (2) Used in Models 8319 and 8319P.
	15VEDP22 (2)	15VEDP22	H-15VEDP22 (1)		

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D201	1N4741	21A037-020	GEZD-11		ZB11A	HEP20414	RE 116	SK3139	RT-242	ECG5074
	EQ801-11		GEZD-11		ZB11A	HEP20414	RE 116	SK3139	RT-242	ECG5074
D402	1S2472	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2473(1)	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D451	1S2473	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2472(1)	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D452	1S2473	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2472(1)	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D453	RD-16-N	21A037-017	GEZD-17				RE 123			ECG5076A
	RD-16E-C		GEZD-17				RE 123			ECG5076A
D454	1S1212	21A111-002	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D455	1S2472	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2473(1)	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D501	S046	21A109-003								
	1N34A(1)		1N34A(7)	1N34A (7)	PTC207M(6)	HEPR9134A(7)	RE 86(G)	SK3087(7)	RT-203(7)	ECG110(6)
D502	S046	21A109-003								
	1N34A(1)									
D503	1S2472	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2473(1)	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D504	RD-13A(N)	21A037-018	GEZD-13				RE 119	SK3093	RT-244	ECG143A
	RD-13E(B)		GEZD-13				RE 119	SK3093	RT-244	ECG143A
D551	EGJ-1	21A110-014	GE-511	D172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
D552	CGJ-1	21A110-014	GE-511	D172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
D554	S-34	21A110-010	GE-504A	SA40	PTC201	HEPRO052	RE 49	SK3030	RT-213	ECG116
D556A	HF-1	21A110-013	GE-511	D172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
	HF-1	21A110-013	GE-511	D172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
D557	HF-1	21A110-013	GE-511	D172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
D558	HF-1	21A110-013	GE-511	D172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
D561	HF-1	21A110-013	GE-511	D172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
D562	1S1554	21A108-001	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2472(1)	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D570	BB-4	21A110-006	GE-511	D172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
D601	HR-1	21A110-001	GE-504A	SA40	PTC201	HEPRO053	RE 49	SK3016	RT-214	ECG116
	SA-2	21A110-001	GE-510	R210	PTC205	HEPR0170	RE 51	SK3051	RT-201	ECG125
D602	HR-1	21A110-001	GE-504A	SA40	PTC201	HEPRO053	RE 49	SK3016	RT-214	ECG116
	SA-2	21A110-001	GE-510	R210	PTC205	HEPR0170	RE 51	SK3051	RT-201	ECG125
D603	HR-1	21A110-001	GE-504A	SA40	PTC201	HEPRO053	RE 49	SK3016	RT-214	ECG116
	SA-2	21A110-001	GE-510	R210	PTC205	HEPR0170	RE 51	SK3051	RT-201	ECG125
D604	HR-1	21A110-001	GE-504A	SA40	PTC201	HEPRO053	RE 49	SK3016	RT-214	ECG116
	SA-2	21A110-001	GE-510	R210	PTC205	HEPR0170	RE 51	SK3051	RT-201	ECG125
D605	V06B	21A110-012	GE-504A	SA40	PTC201	HEPRO052	RE 49	SK3030	RT-213	ECG116
	F-14C(1)		GE-504A	SA60	PTC202	HEPRO054	RE 49	SK3017A	RT-215	ECG116
D606	V06E	21A110-004	GE-504A	SA40	PTC201	HEPRO052	RE 49	SK3030	RT-213	ECG116
	F-14C(1)		GE-504A	SA60	PTC202	HEPRO054	RE 49	SK3017A	RT-215	ECG116
D607	1S1212	21A111-002	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D608	1S1212	21A111-002	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D609	1S1212	21A111-002	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D640	14B348-003									
D704	1S2472	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2473(1)	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D705	BB-4	21A110-006	GE-511	D172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
	UF01 (1)		GE-511	D172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
D706	BB-4	21A110-006	GE-511	D172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
	UF01 (1)		GE-511	D172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
D707	BB-4	21A110-006	GE-511	D172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
	UF01 (1)		GE-511	D172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
D708	1S2473	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2472(1)	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177

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.	MFG. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLOY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D709	1S2472	21A108-001	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D801A	1S2473(1)	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	HF-1Z	21A110-003	GE-504A	SA60	PTC202	HEPRO054	RE 49	SK3017A	RT-215	ECG116
D802	1S2472	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	HF-1Z	21A110-003	GE-504A	SA60	PTC202	HEPRO054	RE 49	SK3017A	RT-215	ECG116
D803	1S2472	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2473(1)	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D804	1S2472	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2473(1)	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D805	1S2472	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2473(1)	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D806	1S2472	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2473(1)	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D807	1S2472	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2473(1)	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D808	1S2472	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2473(1)	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D809	1S2472	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2473(1)	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D810	1S2472	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2473(1)	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D811	1S2472	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2473(1)	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D812	1S2472	21A108-003	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2473(1)	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D2001	HF-1	21A110-013#	GE-511	0172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
D2002	BB-2(1)	#	GE-511	0172	PTC216	HEPR3012	RE 55	SK3130	RT-203	ECG506
	1S2472	21A108-003#	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D2003	1S2473(1)	21A108-004#	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2472	21A108-003#	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D9001	1S2473(1)	21A108-004#	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2472(1)	21A108-003#	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D9002	1S2473(1)	21A108-004#	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
	1S2472(1)	21A108-003#	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
IC201	TA7074P	21A120-001	GEIC-97		PTC746	HEPC6079P	RE 304-1C	SK3168	TVCH-42	ECG749
IC202	TA7075P	21A120-002	GEIC-99		PTC746	HEPC6079P	RE 304-1C	SK3168	TVCH-42	ECG1109
IC203	UPC23C	21A101-005	GEIC-110							ECG1046
IC301	UPC17C	21A101-004	GEIC-116							ECG1047
IC751	SH76243N	21A101-016	GEIC-6	1C-510	PTC719	HEPC6071P	RE 308-1C	SK3076	TVCH-9	ECG715
IC752	SH76242N	21A101-017	GEIC-6	1C-510	PTC719	HEPC6071P	RE 308-1C	SK3076	TVCH-9	ECG715
	MC1370(1)		GEIC-4	1C-509	PTC715	HEPC6070P	RE 304-1C	SK3075	TVCH-8	ECG714
IC753	UPC562C	21A101-010	GEIC-133							ECG1050
	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR201	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR202	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR203	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR301	2S 945AR	21A112-062	GE-212	(1R)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR302	2SC1185L	21A112-003	GE-38	TR-61	PTC129A	HEPS5020	RE 29	SK3079	RT-149	ECG162
	2SC828P	21A112-019	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR401	2SC828P	21A112-019	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
	2SC828P	21A112-019	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR402	2SC945AR	21A112-046	GE-212	(1R)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
	2SC945AR	21A112-046	GE-212	(1R)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
TR403	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR404	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR405	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR406	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR407	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
	2SC828P	21A112-062	GE-61	(1R)2SC828A	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR408	JA105CG	21A112-065	GE-82	TR-30	PTC103	HEPSC019	RE 26	SK3114	RT-126A	ECG159
	LJ152		GE-82	TR-30	PTC103	HEPSC019	RE 26	SK3114	RT-126A	ECG159
TR409	2SC783Y	21A112-096	GE-12	TR-57	PTC112	HEPSC019	RE 26	SK3114	RT-126A	ECG159
	2SC1104L									
TR410	SP55450S	21A112-074	GE-220	TR-32	PTC144	HEPSC005	RE 78	SK3024	RT-114	ECG194
	JA1300		GE-220	TR-32	PTC144	HEPSC005	RE 78	SK3024	RT-114	ECG194
TR411	2S8546	21A112-125			PTC166	HEPSC055	RE 22		RT-196	ECG292
	2S8536H	(1)(12)			PTC166	HEPSC055	RE 22		RT-196	ECG292

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.

MISCELLANEOUS (cont)

ITEM No.	PART NAME	PART No.	NOTES
	UHF Tuner	07A141-001	
	VHF Tuner	07A141-001	
CABLE ASSEMBLIES			
A	Connector	13A162-036	2 wire, 3 pin (A. Video IF)
AF	Connector	13A166-165	2 wire, 3 pin (AF on ITT Switch Board)
AT	Connector	13A162-116	1 wire, 2 pin (AT on ITT Switch Board)
AZ	Connector	13A166-167	2 wire, 3 pin (AZ on AC Power Supply Board)
B	Connector	13A162-041	4 wire, 4 pin (B on Deflection Board to B on Video IF Board)
BB	Connector	13A162-009	1 wire, 1 pin (BB on Deflection Board to BB on Video Output Board)
BZ	Connector	13A162-125	2 wire, 2 pin (BZ on AC Interlock to Accessory Outlet)
C	Connector	13A162-042	3 wire, 3 pin (C on Chroma Board to C on Video IF Board)
CM	Connector	13A166-160	6 wire, 6 pin (CM on ABL Switch Board to CM on ABC Board)
CK	Connector	13A162-047	2 wire, 3 pin (CK on DC Power Supply Board to C691 and R692)
D	Connector	13A146-013	3 wire, 3 pin (D on Audio Board to D on Video IF Board)
DM	Connector	13A162-051	2 wire, 2 pin (DM on DC Power Board to R 691)
E	Connector	13A162-006	2 wire, 3 pin (E on Audio Board to E on DC Power Board)
F	Connector	13A162-040	3 wire, 3 pin (F on Chroma Board to F on Deflection Board)
FU	Connector	13A162-050	4 wire, 4 pin (FU on DC Power Board to TR691 and TR692)
G	Connector	13A162-043	5 wire, 5 pin (G on Video Board to G on Deflection Board)
GT	Connector		4 wire, 4 pin (GT on Deflection Board to GT on Deflection Output Board)
H	Connector	13A162-044	5 wire, 5 pin (H on Deflection Board to H on Deflection Output Board)
HC	Connector		2 wire, 2 pin (CRT Socket to HC on AC Power)
HD	Connector	13A162-124	3 wire, 3 pin (HD on Deflection Output Board to R551 and R552)
HE	Connector	13A162-004	1 wire, 1 pin (HE on Deflection Output Board to High Voltage Rectifier)
HO	Connector	13A162-007	3 wire, 3 pin (HO on Deflection Output Board to TR503)
HS	Connector	13A162-008	3 wire, 3 pin (HS on Deflection Board to Horizontal Hold Control VR502)
HW	Connector	13A166-153	5 wire, 5 pin (HW on Deflection Output Board to HH High Voltage Protect Board)
IR	Connector	13A162-003	2 wire, 2 pin (IR on Deflection Output Board to R693)
J	Connector	13A162-039	2 wire, 3 pin (J on Deflection Output Board to J on DC Power Board)
K	Connector	13A162-046	5 wire, 5 pin (K on Video Output Board to K on Chroma Board)
M	Connector	13A162-120	4 wire, 6 pin (M on Video IF Board to 4 wire, 4 pin on the Tuner Board)
N	Connector	13A146-028	1 wire, 1 pin (N2 on Video IF Board to AFT Switch)
O	Connector	13A166-151	3 wire, 3 pin (O on Sound Board to O on Control Board)
P	Connector	13A166-152	3 wire, 3 pin (P on Audio Board to Audio Output Transformer)
Q	Connector	13A162-038	2 wire, 3 pin (Q on Audio Board to Audio Output Transformer)
Q	Connector	13A166-164	4 wire, 6 pin (Q on AC Power Supply Board to SW601/VR301)
R	Connector	13A162-054	3 wire, 4 pin (R on Audio Board to TR302)
S	Connector	13A162-119	5 wire, 5 pin (S on ITT Switch Board to R on Chroma Board)
SW	Connector	13A162-118	4 wire, 4 pin (S on ITT Board to S on Video Output Board)
T	Connector	13A162-037	1 wire, 1 pin (SW on High Voltage Protect Board to SW601)
TA	Connector	13A162-034	2 wire, 3 pin (T on DC Power Board to T on AC Power Board)
TB	Connector	13A166-166	1 wire, 3 pin (JQ on DC Power Board to TA on Channel Select Board)
TC	Connector	13A166-165	3 wire, 3 pin (TB on ABC Board to TB on Control Board)
TD	Connector	13A166-161	6 wire, 6 pin (TC on ITT switch Board to TC on Control Board)
TE	Connector	13A166-132	6 wire, 6 pin (TD on Control Board to TD on

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	5" PH 8 Ohms	298001-000 (1)	5A0528	(1) Number on unit.
SP2	5" PH 8 Ohms	298001-000 (1)	5A0528	

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA					
		PART No.		BUSS PART No.		LITTELFUSE PART No.	
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER
CB600	Circuit Breaker Break @ 3.15A	06A046-005				01502.7	FA3.25
F551	1A @ 125V Quick-acting Pigtail	05T010-012		GJV1		318001	
F552	1A @ 125V Quick-acting Pigtail	05T010-012		GJV1		318001	
F601	.5A @ 250V Quick-acting Pigtail	05T005-012		GJV 1/2		318.500(s)	

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CF202	Ceramic Filter	09A024-001	4.5MHz
CF701	Crystal	09A021-001	3.58MHz
J501	Socket	04B169-001	Yoke, 8 Pins
J1001	Connector		VHF Input
J/P201	Connector		Video IF Input
J/P301	Connector	13A162-011	Speakers
L570	Ferrite Bead	10A116-001	
L571	Ferrite Bead	10A116-001	
L691	Degaussing Coil	01A249-012	25-inch Models
	Degaussing Coil	01A249-008	19-inch Models
P602	AC		
P603	Power Cord		AC (Polarized)
P1002	Connector		VHF Tuner
P/S601	AC Interlock	04B161-002	
PHC-344	Printed Circuit Board	14B459-002	CRT Socket Assembly
PHC-346	Printed Circuit Board	14B460-002	Convergence
PHC-491	Printed Circuit Board	14B392-001	ITT Control
PHC-492	Printed Circuit Board	14B393-001	ITT Switch
PHC-494	Printed Circuit Board	14B391-001	ABC Switch
SG501	Spark Gap	13A163-001	7KV CRT Socket with Spark Gap (05A082-009)
SG901	Spark Gap	05A082-011	2KV
SG902	Spark Gap	05A082-011	2KV
SG903	Spark Gap	05A082-011	2KV
SG904	Spark Gap	05A156-001	1.2KV
SG905	Spark Gap	05A156-001	1.2KV
SG906	Spark Gap	05A156-001	1.2KV
SG907	Spark Gap	05A156-001	1.2KV
SG908	Spark Gap	05A156-001	1.2KV
SG909	Spark Gap	05A156-001	1.2KV
SW1	Switch	06A124-001	ITT Push Button
SW2	Switch	06A119-001	AFT
SW3	Switch	06A119-001	ABC
SW551	Switch	06A132-001	Horiz Centering
SW601	Switch		Power, Part of Volume Control
SW701	Switch	06A121-002	Service
SW751	Switch	06A121-001	Normal-Align
SW1001	Switch		Distant/Local
SW1002	Switch		VHF Input, 300-ohm Disconnect

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

ITEM No.	TYPE No.	MPGR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
TR412	2S8546	21A112-126 (12)			PTC166	HEPS3055	RE 222		RT-196	ECG292
	2SAG53L (1)(11)		GE-234	TR-50	PTC113	HEPS5019			RT-189	
	2S8537K, L (1)(12)				PTC166	HEPS3055	RE 222		RT-196	ECG292
TR501	JA1050G LJ152(1)	21A112-065	GE-02	TR-30	PTC103	HEPS0019	RE 26	SK3114 *	RT-126A	ECG159
TR502	JA1050G LJ152(1)	21A112-065	GE-02	TR-30	PTC103	HEPS0019	RE 26	SK3114 *	RT-126A	ECG159
TR503	25C1325 AK, AL	21A112-103 (13)	GE-02	TR-30	PTC103	HEPS0019	RE 26	SK3114 *	RT-126A	ECG159
TR504	25C1506L, H	21A112-071	GE-251				RE 191	SK3220	RT-135	ECG198
TR601	25C1521L, H		GE-251				RE 191		RT-135	ECG198
	25C1520		GE-251				RE 191		RT-135	ECG198
	25C1520L, H	21A112-098 (1)	GE-251				RE 191	SK3220	RT-135	ECG198
TR602	25C1507K, L, M	21A112-013	GE-210 *	TR-21 *	PTC121 *	HEPS0015 *	RE 13 *	SK3030 *	RT-302	ECG123A *
TR603	SPS5450S, JA130(1)	21A112-099	GE-290	TR-32 *	PTC144	HEPS0005	RE 78	SK3024	RT-114	ECG194
	25C1520K, L		GE-290	TR-32 *	PTC144	HEPS0005	RE 78	SK3024	RT-114	ECG194
TR604	25C945	21A112-046 (1)	GE-212		PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	25C945R		GE-212		PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR691	5D-632(1)	21A108-002	GEZD-9.1	Z1209	ZB9.1A	HEP20412	RE 114	SK3060	RT-240	ECG139
	25C1454	21A112-031 (14)	GE-35	TR-61	PTC118	HEPS5020	RE 29	SK3115	RT-139	ECG162
TR692	25C1106K, L, P, Q (1)	21A112-031 (14)	GE-73	TR-61	PTC118	HEPS5020	RE 29	SK3115	RT-139	ECG162
	25C1106K, L, P, Q (1)(15)		GE-73	TR-61	PTC118	HEPS5020	RE 29			ECG162
TR701	25C8298	21A112-101	GE-20 *	TR-20 *	PTC121 *	HEPS0015 *	RE 9 *	SK3122	RT-308	ECG229 *
	25C838(1)		GE-20 *	TR-20 *	PTC121 *	HEPS0015 *	RE 10 *	SK3122	RT-301	ECG108 *
TR702	JA1050G 25A495T (1)	21A112-100	GE-02	TR-30	PTC103	HEPS0019	RE 26	SK3114 *	RT-126A	ECG159
	LJ152(1)		GE-221 *	TR-30	PTC103	HEPS0019	RE 26 *	SK3114	RT-303	ECG159 *
TR703	25C945	21A112-063 (1)	GE-02	TR-30	PTC103	HEPS0019	RE 26	SK3114 *	RT-126A	ECG159
	25C828P, Q		GE-212	TR-30	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR704	JA1050B 25A495-0, (1)	21A112-102	GE-02	TR-30	PTC103	HEPS0019	RE 26	SK3114 *	RT-126A	ECG159
	LJ152(1)		GE-221 *	TR-30	PTC103	HEPS0019	RE 26 *	SK3114	RT-303	ECG159 *
TR705	25C945	21A112-063	GE-02	TR-30	PTC103	HEPS0019	RE 26	SK3114 *	RT-126A	ECG159
	25C828P, Q		GE-212	TR-30	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR706	25A545L, K, M	21A112-004	GE-02 *	TR-30 *	PTC103 *	HEPS5022 *	RE 26 *	SK3114	RT-126A *	ECG159 *
TR707	25C1506H, K, L	21A112-009	GE-251				RE 191	SK3220	RT-135	ECG198
TR708	25C1506H, K, L	21A112-008	GE-251				RE 191	SK3220	RT-135	ECG198
TR709	25C1506H, K, L	21A112-008	GE-251				RE 191	SK3220	RT-135	ECG198
TR751	25C945AQ 25C945QR	21A112-046 (1)	GE-20	TR-30	PTC121 *	HEPS0015 *	RE 10 *	SK3122	RT-301	ECG108 *
			GE-212	TR-30	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR2001	25A539K, L, M	21A112-046 (1)	GE-02 *	TR-20 *	PTC103 *	HEPS0019 *	RE 26 *	SK3114	RT-115 *	ECG159 *
TR2002	25C945 25C945AQ	21A112-046 (1)	GE-212	TR-30	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR5001	25C828P 25C945R	21A112-062 (1)	GE-01 *	TR-30	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
			GE-212	TR-30	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
ZB2001	ROB.2E #		GEZD-0.2				RE 112	SK3334	RT-257	ECG5072A
ZB2002	ROB.0E #		GEZD-0.8				RE 110		RT-238	ECG5071A

- * Lead configuration may vary from original.
- # For SAFETY use only equivalent replacement part.
- (1) Used in some versions.
- (6) Matched pair.
- (7) Two required - select matched pair.
- (11) Rating, 15 Watts @ 1.0 Amp.
- (12) Rating, 20 Watts @ 1.5 Amp.
- (13) Rating, 80 Watts @ 6.0 Amp.
- (14) Rating, 50 Watts @ 4.0 Amp.
- (15) Rating, 80 Watts @ 2.0 Amp.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA				
		MFR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C209	.47 35V	04A110-610	PC50-16	TDC474H050EL	QBT1-19	SD50-R479
C210	47 16V	04A030-074	PC1-50	VTT47016	QV1-73	EV-1226
C211	1 50V	04A111-053	PC25-25	VTT1A50	QV1-11	EV-1615
C213A	22 16V	04A030-109	WNP1-50	VTT22B16	QV1-55	EV-1224
C213B	1 35V	04A110-614	PC1-50	TCN501A	QV1-20	TVAN-1560
C216	1 50V	04A111-053	PC1-50	VTT1A50	QV1-11	EV-1615
C219	47 25V	04A030-075	PC50-25	VTT47E25	QV1-75	EV-1326
C220	47 25V	04A030-075	PC50-25	VTT47E25	QV1-75	EV-1326
C224	10 25V	04A030-111	PC10-25	VTT10B25	QV1-43	EV-1322
C304	10 16V	04A030-073	PC10-25	VTT10B25	QV1-41	EV-1222
C307	10 16V	04A030-073	PC10-25	VTT10B25	QV1-41	EV-1222
C308	10 16V	04A030-073	PC10-25	VTT10B25	QV1-41	EV-1222
C309	10 16V	04A030-073	PC10-25	VTT10B25	QV1-41	EV-1222
C311	220 25V	04A030-077	PC250-25	VTT220K25	QV1-119	EV-1340
C312	100 16V	04A030-091	PC100-16	VTT100F16	QV1-95	EV-1230
C313	100 25V	04A030-092	PC100-25	VTT100G25	QV1-97	EV-1330
C315	1 160V	04A030-110	WDR1-450	TC56A		TVA-1500
C317	47 160V	04A030-086	WBR50-250	TC590		TVA-1512
C404	10 16V	04A110-326		TDC106H025FL	QBT1-64	SD25-109
C405	10 16V	04A110-326		TDC106H025FL	QBT1-64	SD25-109
C409	1 50V	04A030-112	PC1-50	VTT1A50	QV1-11	EV-1615
C410	3.3 50V	04A030-076	PC5-50	VTT3R3A50	QV1-23	EV-1318
C413	100 25V	04A030-092	PC100-25	VTT100G25	QV1-97	EV-1330
C451	100 10V	04A030-079	PC100-10	VTT100E10	QV1-93	EV-1130
C452	6.8 16V	04A110-324		TDC686H025FL	QBT1-55	SD25-6R89
C453	10 16V	04A110-326		TDC106H025FL	QBT1-64	SD25-109
C454	33 160V	04A030-113	WBR30-250	TC57D		TVA-1510
C455	33 160V	04A030-113	WBR30-250	TC57B		TVA-1510
C458	10 160V	04A030-090	WBR12-250	TC52A		TVA-1504
C460	470 63V	04A030-114	WBR500-75			TVA-1319.5
C461	1 50V	04A111-053	PC1-50	VTT1A50	QV1-11	EV-1615
C468	22 160V	04A030-115	WBR20-250	TC55B		TVA-1500
C470	100 25V	04A030-092	PC100-25	VTT100G25	QV1-97	EV-1330
C505	4.7 16V	04A110-322	PC5-50	VTT47016	QV1-27	EV-1319
C508	47 16V	04A030-074	PC50-16	VTT47016	QV1-73	EV-1226
C551	3.3 160V	04A030-088	WBR4-250	TC50XB		TVA-1500.2
C558	47 10V NP	04A030-089	WBR4-250	TC50XB		TVAN-1117
C559	2200 10V	04A030-099	WBR2000-16	TT10X2400	QET-641	TVA-1134.5
C560	3.3 160V	04A030-088	WBR4-250	TC50XB		TVA-1500.2
C563	1000 25V	04A111-074	WBR1000-25	TC2510A	QET-593	TVA-1211
C564	22 25V	04A030-101	PC25-25	VTT22025	QV1-57	EV-1324
C565	10 160V	04A030-090	WBR12-250	TC52A		TVA-1504
C566	47 16V	04A030-074	PC50-16	VTT47016	QV1-73	EV-1226
C567	100 10V	04A030-079	PC100-10	VTT100E10	QV1-93	EV-1130
C571	100 10V	04A030-079	PC100-10	VTT100E10	QV1-93	EV-1130
C572	47 16V	04A030-074	PC50-16	VTT47016	QV1-73	EV-1226
C573	470 25V	04A030-078	WBR500-25	VTT470M25	QV1-153	EV-1350
C580	10 160V	04A030-090	WBR12-250	TC52A		TVA-1504
C605	3.3 200V	04A030-110	WBR4-250	TC50XB		TVA-1500.2
C606	3.3 160V	04A030-088	WBR4-250	TC50XB		TVA-1500.2
C607	3.3 160V	04A030-088	WBR4-250	TC50XB		TVA-1500.2
C691	1000 200V	04A109-002	DD001B.4A(1)	FP123.3		TVAN-1301.1
C701	2.2 25V NP	04A030-117	WNP2-50	TCN502A	QENT-37	EV-1325
C704	33 25V	04A030-080	PC30-25	VTT33025	QV1-63	TVAN-1301.1
C707	2.2 25V NP	04A030-117	WNP2-50	TCN502A	QENT-37	EV-1325
C708	1 50V	04A030-112	PC1-50	VTT1A50	QV1-11	EV-1615
C710	100 25V	04A030-092	PC100-25	VTT100G25	QV1-97	EV-1330
C712	10 25V	04A030-111	PC10-25	VTT10B25	QV1-43	EV-1322
C713	33 25V	04A030-080	PC30-25	VTT33025	QV1-63	EV-1325
C754	10 16V	04A110-326		TDC106H025FL	QBT1-64	SD25-109
C759	1 50V	04A030-112	PC1-50	VTT1A50	QV1-11	EV-1615
C769	10 16V	04A110-326		TDC106H025FL	QBT1-64	SD25-109
C785	22 16V	04A030-109	PC25-25	VTT22016	QV1-55	EV-1224
C791	47 16V	04A030-074	PC50-16	VTT47016	QV1-73	EV-1226
C909	1 160V	04A030-118	WDR1-450	TC56A		TVA-1500
C910	1 160V	04A030-118	WDR1-450	TC56A		TVA-1500
C911	1 160V	04A030-118	WDR1-450	TC56A		TVA-1500
C2001	22 25V	#				
C2202	10 25V	#				
C9001	100 25V	04A030-092	PC100-25	VTT100G25	QV1-97	EV-1330
C9002	100 16V	04A030-091	PC100-16	VTT100F16	QV1-95	EV-1230
C9003	100 25V	04A030-092	PC100-25	VTT100G25	QV1-97	EV-1330

For SAFETY manufacturer suggests not replacing item, replace board as a complete unit.
(1) Parallel all sections.

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.

COILS & TRANSFORMERS (Sweep Circuits)

ITEM No.	FUNCTION	REPLACEMENT DATA				
		MFR. PART No.	OTHER IDENTIFICATION	MILLER PART No.	THORDARSON PART No.	TRIAD PART No.
DY100	Yoke Horiz = 1.28mH 90° Vert = 25.5mH	01A548-002	01A548-002		Y213 (1)	YC-329-2 (1)
L559	Yoke, Alternate	01A548-001 (2)				
L801	Pincushion Phase	01A522-001	60915003			
L802	Right R/G Vert	01A498-001	60929006S			
L803	Right R/G Horiz	01A499-001	60929007S			
L805	Right Blue Horiz	01A500-001	60929005S			
T401	Convergence Yoke	16A062-001	48501027			
T501	Vert Blocking Osc	10A114-001	45603002			
T551	Horiz Osc	01A546-001	60952003			
T552	Horiz Driver	01A540-001	45801004			
T553	Horiz Output	01A541-001	47105023			
T554	Saturable Reactor	10A115-001	49501010			
T555	Side Pincushion	10A111-001	47502011			
	T/B Pincushion	10A117-001	47551003			

(1) See Component Connection Data Chart.
(2) Used in 19-inch Models.

SWEEP COMPONENT CONNECTION DATA

ORIGINAL	HORIZONTAL OUTPUT								VERTICAL OUTPUT							
	Original Connections								Original Connections							
REPLACEMENT																
THORDARSON																
TRIAD																
ORIGINAL	YOKE								YOKE PLUG							
REPLACEMENT	Original Connections								TO YOKE TERMINALS							
THORDARSON																
TRIAD																

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	MFR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T691	120V AC @ .067A AC	6.6V AC @ .04A AC	12A113-012 45052103 (1)		F-395X	(1) Number on unit.

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA			NOTES
	PRI.	SEC.	MFG.	THORDARSON	TRIAD	
			PART No.	PART No.	PART No.	
T303	1000	8	10A105-001 45409001 (1)			(1) Number on unit.

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.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.			WORKMAN PART No.	MFGR. PART No.
LDR9001	LDR		14B524-002 (1)	R2003	270 10% 1/2W		(3) #
R551	4800 5W WW Tap 0		08A158-248	R2004	39K 5% 1/2W		(3) #
R557	4 10% 5W WW		28A118-035	R2005	5600 5% 1/2W		(3) #
R601	1 10% 7W WW	10W-SQ-1	C8A110-033	R2006A	6800 1% 1/2W		(3) #
R602	1 10% 7W WW	10W-SQ-1	C8A118-033	TH651	32 Cold PTC	FR605	08A162-002
R611	240 5% 3W WW		08A117-042 (2)	TH9001	50 Cold NTC	FR100G	08A158-249
R652	240 5% 3W Film	5W-SQ-3	08A118-032	VDR301	Varistor		08A151-007
R691	120 10% 40W WW		08A118-030				
R693	270 10% 15W WW		08A118-031				
R2002	8200 5% 1/2W Carbon		(3) #				

For SAFETY use only equivalent replacement part.

(1) Light Dependent Resistor.

(2) Used in some versions.

(3) Manufacturer suggests not replacing individual component. Replace board as a complete unit.

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
DL701	Delay Line	01A494-001	61511001		
L201	RF Choke (12uH)	14A052-034			
L203	RF Choke (12uH)	14A052-034			
L204	RF Choke (5.6uH)	14A052-040			
L205	RF Choke (5.6uH)	14A052-040			
L401	Peaking (8.5uH)	01A527-001	852J		
L402	Peaking (8.5uH)	01A527-001	852J		
L551	RF Choke (5.6uH)	14A052-040			
L552	RF Choke (5.6uH)	14A528-001			
L553	Peaking (2uH)	01A528-001			
L554	RF Choke (5.6uH)	14A052-040			
L555	RF Choke (5.6uH)	14A052-040			
L556	RF Choke (5.6uH)	14A052-040			
L560	RF Choke (5.6uH)	14A052-040			
L651	Line Choke	01A405-367			
L701	Peaking (47uH)	01A545-001			
L702	Peaking (68uH)	01A545-002			
L704	Peaking (220uH)	14A052-029		72F224AP	
L705	Peaking (220uH)	14A052-029		72F224AP	
L706	Peaking (220uH)	14A052-029		72F224AP	
L751	Peaking (47uH)	01A512-004	470		
L752	RF Choke (15uH)	01A512-001	150		
L753	RF Choke (6.8uH)	01A512-005	688		
L754	RF Choke (22uH)	01A512-002	220	72F155AP	
L755	RF Choke (5.6uH)	14A052-040			
L756	RF Choke (5.6uH)	14A052-040			
L757	RF Choke (5.6uH)	14A052-040			
L804	Convergence (16uH)	14A052-032			
LC701	3.58MHz Trap	01A514-001 (1)			
T201	Video Input IF	01A538-001	60253005		
T202	Video IF	01A538-002	60253006		
T203	47.25MHz Trap	01A539-002			
T204	41.25MHz Trap	01A539-001			
T205	Video IF	01A538-003	60253007		
T206	Video IF	01A538-004	60253008		
T207	Video Detector	01A538-005	60253009		
T208	4.5MHz Trap	01A508-001			
T209	AFT Input	01A509-001	60251013		
T210	AFT Discriminator (Pri)	01A510-001	60250001		
T211	AFT Discriminator (Sec)	01A511-001	60250002		
T212	39.75MHz Trap	01A539-003			
T301	Sound Input IF	01A525-001	60310001		
T302	Ratio Detector	01A526-001	60323004		
T751	Chroma Take-Off	01A543-001	02003		
T752	Chroma Bandpass	01A542-001			

(1) Includes Capacitor.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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CAPACITORS

ITEM No.	RATING	MFGR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE Q-LINE	PART No. GENERAL LINE
C201	120 NPO 50V 5%		DTZ-120		CN0312		10TCC-112
C202	56 NPO 50V 5%				CN0456		10TCC-Q56
C203	56 NPO 50V 5%				CN0456		10TCC-Q56
C204	15 NPO 50V 5%		DTZ-15	NPD15	CN0415		10TCC-Q15
C205	10 NPO 50V 5%		DTZ-10	NPD10	CN0410		10TCC-Q10
C206	.01 50V		UK50-103		MAG5011		
C208	.01 50V		UK50-103		MAG5011		
C212	.1 50V		CK-104		MAG5001		
C214	3 NPO 50V +.5		DTZ-3R3	NPD3P3	CN0533		10TCC-V33
C215	.001 50V 10%		DD-102		GP210		10TS-010
C217	22 NPO 50V 5%		DTZ-22	NPD22	CN0422		10TCC-Q22
C218A	.01 50V		UK50-103		MAG5011		
C218B	.01 50V		UK50-103		MAG5011		
C221	.022 50V				M192P2239RB		192P2239RB
C222	100 NPO 50V 5%		DTZ-100	NPD100	CN0310		10TCC-T10
C223	.01 50V		UK50-103		MAG5011		
C225	.022 50V				M192P2239RB		192P2239RB
C226	10 NPO 50V 5%		DTZ-10	NPD10	CN0410		10TCC-Q10
C246	10 NPO 50V 5%		DTZ-10	NPD10	CN0410		10TCC-Q10
C251	10 NPO 50V 5%		DTZ-10	NPD10	CN0410		10TCC-Q10
C252	.0022 50V		DD-222		GP222	QC2-97	56A-022
C253	.0022 50V		DD-222		GP222	QC2-97	56A-022
C254	.0022 50V		DD-222		GP222	QC2-97	56A-022
C255	.39 50V 5%				CN0439		10TCC-Q39
C256	.82 500V 5%						
C257	27 NPO 50V 10%	05A072-123			CN0427		10TCC-Q27
C258	.0022 50V		DD-222		GP222	QC2-97	56A-022
C259	.0022 50V		DD-222		GP222	QC2-97	56A-022
C260	.0022 50V		DD-222		GP222	QC2-97	56A-022
C261	.0022 50V		DD-222		GP222	QC2-97	56A-022
C262	.0022 50V		DD-222		GP222	QC2-97	56A-022
C263	.01 50V		UK50-103		MAG5011		
C264	27 NPO 50V 5%				CN0427		10TCC-Q27
C265	47 NPO 50V 5%		DTZ-47	NPD47	CN0447		10TCC-Q47
C301	.022 50V				M192P2239RB		192P2239RB
C302	.022 50V				M192P2239RB		192P2239RB
C303	.022 50V				M192P2239RB		192P2239RB
C305	.01 500V				EW6110		6PS-S10
C306	.001 500V 10%		DD-102	DPMS6S1	GP210		10TS-010
C310	.0022 500V		DD-222		GP222	QC2-97	56A-022
C314	.01 500V	05A148-067			EW6110		6PS-S10
C316	.022 50V 5%				5XN122		
C318	.033 50V				M192P3339RB		192P3339RB
C320	.82 500V 5%		DTZ-82	NPD82	CN0482		10TCC-Q82
C391	.22 50V				EW05022		431P2249R5
C401	.22 50V				EW1A022	QF1-253	1PB-P22
C402	.0082 50V 10%				EW1A282		1PB-082
C403	.015 50V 10%				M192P1539RB		192P1539RB
C406	.1 50V 10%				EW05010		431P1049R5
C407	270 50V 10%		DD-271	WMF05P1	GP327		10TS-T27
C408	270 50V 10%		DD-271	GP270	GP327		10TS-T27
C411	270 50V 5%		DTZ-270	GP270	GP327		10TCC-T27
C412	560 50V 10%		DD-561		GP356		10TS-T56
C415	.0047 50V				M192P4729RB		192P4729RB
C456	.1 50V 10%				EW05010		431P1049R5
C457	.0015 500V 10%		DD-152	WMF05P1	GP215		10TS-015
C459	.01 500V 10%				EW6110		6PS-S10
C467	.1 600V				EW6010		6PS-P10
C501	.01 50V 10%				EW1A110	QF1-91	1PB-S10
C502	.01 50V 10%				EW1A110	QF1-91	1PB-S10
C503	.047 50V 10%				EW1A147	QF1-171	1PB-S47
C504	.022 50V 10%				M192P2239RB		192P2239RB
C506	.0033 50V 10%				M192P3329RB		192P3329RB
C507	.15 50V 10%				EW05015		431P1549R5
C509	470 50V 10%		DD-471	WMF05P15	GP347		10TS-T47
C510	.056 50V 10%				EW1A156	QF1-105	1PB-S56
C511	100 NPO 50V 5%		DTZ-100	WMF1556	CN0310		10TCC-T10
C512	.022 50V			NPD100	M192P2239RB		192P2239RB
C513	.1 50V 10%				EW05010		431P1049R5
C514	100 NPO 50V 5%		DTZ-100	WMF05P1	CN0310		10TCC-T10

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				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	Q-LINE
C515	.0022 500V 10%	05A151-120	DD-561		GP222	10TS-D22	
C553	.016 1.5KV 5%						
C554	560 500V 10%				GP356	10TS-T56	
C555	.0033 500V 10%	05A155-046		DPMS6033	EW6233	6PS-D33	
C556	.0047 1KV	05A152-058		DPMS16047	PVC16247	10PS-D47	
C557	1.5uF 400V 10%			NMF4W1P5			
C561	.47 250V			NMF6P47	EW6047	6PS-P47	
C568	.0022 500V		DD-222		GP222	6GA-D22	
C569	.0022 500V		DD-222		GP222	6GA-D22	
C570	.0022 500V		DD-222		GP222	6GA-D22	
C601	.0047 125V AC	05A155-128					
C602	.0047 125V AC	05A155-128					
C603	.0047 125V AC	05A155-128					
C604	.0047 125V AC	05A155-128					
C608	.0022 500V		DD-222		GP222	5GA-D22	
C651	.1 125V AC	05A146-005		ST6P1			
C652	.1 125V AC	05A146-005		ST6P1			
C702	470 50V 10%		DD-471	GP470	GP347	10TS-T47	
C703	180 500V 10%		DTZ-180			10TCC-T18	
C705	.01 100V		DC-103	MCP01	TA110	TG-S10	
C709	470 50V 10%		DD-471	GP470	GP347	10TS-T47	
C714	.01 500V			DPMS651	EW6110	6PS-S10	
C715	.022 50V				M192P2239RB	192P2239RB	
C716	68 NPO 500V 5%		DTZ-68	HP068	CND468	10TCC-Q68	
C717	12 50V 5%				CND412	10TCC-Q12	
C718	220 50V 5%		DTZ-220			10TCC-T22	
C719	220 50V 5%		DTZ-220			10TCC-T22	
C720	220 50V 5%		DTZ-220			10TCC-T22	
C722	.001 500V 10%		DD-102		GP210	10TS-D10	
C751	68 NPO 50V 5%		DTZ-68	HP068	CND468	10TCC-Q68	
C752	68 NPO 50V 5%		DTZ-68	HP068	CND468	10TCC-Q68	
C753	220 50V 5%		DTZ-220			10TCC-T22	
C755	12 NPO 500V 5%				CND412	10TCC-Q12	
C756	47 NPO 50V 5%		DTZ-47	HP047	CND447	10TCC-Q47	
C757	220 50V 5%		DTZ-220			10TCC-T22	
C758	.1 50V 10%			NMF05P1	EW60510	431P1049R5	
C760	.022 50V				M192P2239RB	192P2239RB	
C761	220 50V 5%		DTZ-220			10TCC-T22	
C762	220 50V 5%		DTZ-220			10TCC-T22	
C763	.022 50V				M192P2239RB	192P2239RB	
C764	.022 50V				M192P2239RB	192P2239RB	
C765	.022 50V				M192P2239RB	192P2239RB	
C766	68 NPO 50V 5%		DTZ-68	HP068	CND468	10TCC-Q68	
C767	.022 50V				M192P2239RB	192P2239RB	
C768	.022 50V				M192P2239RB	192P2239RB	
C770	.022 50V				M192P2239RB	192P2239RB	
C771	47 NPO 50V 5%		DTZ-47	HP047	CND447	10TCC-Q47	
C772	39 NPO 50V 5%				CND439	10TCC-Q39	
C773	.022 50V				M192P2239RB	192P2239RB	
C774	12 NPO 500V 5%				CND412	10TCC-Q12	
C775	68 NPO 50V 5%		DTZ-68	HP068	CND468	10TCC-Q68	
C776	120 50V 5%		DTZ-120			10TCC-T12	
C777	270 50V 5%		DTZ-270			10TCC-T27	
C778	390 500V 10%		DD-391	GP390	GP139	10TS-T39	
C779	.022 50V				M192P2239RB	192P2239RB	
C780	.022 50V				M192P2239RB	192P2239RB	
C781	.022 50V				M192P2239RB	192P2239RB	
C782	.022 50V				M192P2239RB	192P2239RB	
C783	.022 50V				M192P2239RB	192P2239RB	
C784	.022 50V				M192P2239RB	192P2239RB	
C786	100 NPO 50V 5%		DTZ-100	HP0100	CND310	10TCC-T10	
C787	680 50V 10%		DD-681	GP680	GP368	10TS-T68	
C788	180 500V 10%		DTZ-180			10TCC-T18	
C789	.001 50V 10%			DPMS601	ENF1A210	1P8-D10	
C790	.01 50V		UK50-103		RAG5011		
C791	220 50V 5%		DTZ-220			10TCC-T22	
C792	220 50V 5%		DTZ-220			10TCC-T22	
C793	220 50V 5%		DTZ-220			10TCC-T22	
C801	.082 600V 10%			DPMS602	PVC6182	6PS-S82	
C802	.1 600V			DPMS6P1	EW6010	6PS-P10	
C803	.1 600V			DPMS6P1	EW6010	6PS-P10	
C804	.1 600V			DPMS6P1	EW6010	6PS-P10	
C805	.047 600V			DPMS6547	EW6147	6PS-S47	
C806	.33 250V			DPMS6P33	EW6033	6PS-P33	
C901	.001 1KV		DD-102G	GP1000	GP210	5GA-D10	
C902	.001 1KV		DD-102G	GP1000	GP210	5GA-D10	
C903	.001 1KV		DD-102G	GP1000	GP210	5GA-D10	
C904	.0047 1.4KV	05A145-003	DD30-472	HY3-5000	PVC16247	30GA-D47	

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 (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA			
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C912	.1 600V					
C913	.1 50V 10%					
C1001	220 1.4KV		DD30-221	DPMS6P1	EW6010	6PS-P10
C1002	220 1.4KV		DD30-221	DPMS6P1	EW6010	431P1049R5
C1003	5		DTZ-4R7	NP04P7	3HV322	30GA-T22
C9004	.1 50V		CK-104		CND547	30GA-T22
CT201	Trimmer	03A053-001			MAG5001	10TCC-V47

(1) Specify tolerance of 5% when ordering.

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA				
			MFR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
VR1	Color	5000	02A178-196				
VR2	Preset Color	5000	02A178-197	T-5000 (3)	C-502 (3)	MTC53L1 (3)	X201R502B (3)
VR3	Tint	500K	02A178-198				
VR4	Preset Tint	500K	02A178-199				
VR5	Brightness	500	02A178-200				
VR6	Preset Brightness	500	02A178-201	T-500 (3)	C-501 (3)	MTC52L1 (3)	X201R501B (3)
VR7	Contrast	500	02A178-202				
VR8	Preset Contrast	500	02A178-203	T-1000 (3)	C-102 (3)	MTC13L1 (3)	X201R102B (3)
VR9	Sharpness	500	02A178-202				
VR10	Vert Hold	500	02A178-196				
VR11	ABC Range	10K	02A178-204	T-10K (3)	C-103 (3)	MTC14L1 (3)	X201R103B (3)
VR12	Audio Tone	10K	02A178-205				
VR101	u RF Gain	3300	02A188-001	T-5000 (18)	C-502 (18)	MTC33L1 (18)	X201R302B (18)
VR201	Detector Output	4700	02A178-135	T-5000 (18)	C-502 (18)	MTC53L1 (18)	X201R502B (18)
VR202A	Sub AGC	3300	02A188-001	T-5000 (18)	C-502 (18)	MTC33L1 (18)	X201R302B (18)
VR202B	RF AGC	330	02A178-176	T-300		MTC32L1 (18)	X201R351B (18)
VR203	AFT Bias	330	02A188-005	T-300 (18)		MTC32L1 (18)	X201R351B (18)
VR204	Sound Reject	3300	02A188-001	T-5000 (18)	C-502 (18)	MTC33L1 (18)	X201R302B (18)
VR301	Volume/Switch/	10K	02A191-001				
VR451	Vert Linearity	10K	02A187-009	T-10K	C-103	MTC14L1	X201R103B
VR452	Vert Height	330	02A187-015	T-300	C-501	MTC32L1	X201R351B
VR501	Sub Horiz Hold	3300	02A187-00	T-2500 (18)	C-252 (18)	MTC33L1 (18)	X201R302B (18)
VR502	Horiz Hold	500	02A094-034	F1-500 (1), 5N100	A47-500K-5 (1), RM-3 or [HP-500-5 (1), NHL-A-300]	RU52L, SL36, SL1500 or [UA52L (1), 5N1125]	BUI (1), CF4, 556A
VR503	Focus	15meg	02A178-206				
VR551	Horiz Centering	60 2W	08A052-003	WCP-60 or V-60	U39-75	MTC13L1 (18)	110C60
VR602	B+ Adjust	1000	02A187-008	T-1000 (18)	C-102 (18)	MTC13L1 (18)	X201R102B (18)
VR603	B+ Range	1000	02A187-158	T-1000	C-102	MTC13L1 (18)	X201R102B (18)
VR701	Sub Brightness	3300	02A187-010	T-2500 (18)	C-252 (18)	MTC33L1 (18)	X201R302B (18)
VR702	Brightness Limiter	470	02A187-013	T-500 (18)	C-501 (18)	MTC52L1 (18)	X201R501B (18)
VR703	Green Drive	220	02A107-003	TSC100251C (18)		MTC52L1 (18)	X201R251B (18)
VR704	Red Drive	220	02A107-003	TSC100251C (18)		MTC52L1 (18)	X201R251B (18)
VR705	Chroma Bandpass	10K	02A188-006	T-10K (18)	C-103 (18)	MTC14L1 (18)	X201R103B (18)
VR706	APC	10K	02A187-009	T-10K	C-103	MTC14L1	X201R103B
VR707	ACC	10K	02A187-009	T-10K	C-103	MTC14L1	X201R103B
VR708	Color Killer	10K	02A187-009	T-10K	C-103	MTC14L1	X201R103B
VR709	Phase Shift	1000	02A187-008	T-1000 (18)	C-102 (18)	MTC13L1 (18)	X201R102B (18)
VR801	Blue Horiz Lines	150	08A052-006	WCP-150 or V-150	U39-150	MTC150P	110C150
VR802	R/G Vert Lines	120	08A052-024	WCP-120 or V-120	U39-125	MTC120P	110C120
VR803	R/G Horiz Lines	120	08A052-024	WCP-120 or V-120	U39-125	MTC120P	110C120
VR804	R/G Vert Lines (Top)	30 2W	08A052-023	WCP-30 or V-30	U39-50	MTC30P	110C30
VR805	R/G Vert Lines (Bottom)	30 2W	08A052-23	WCP-30 or V-30	U39-50	MTC30P	110C30
VR806	R/G Horiz Lines (Top)	60 2W	08A052-003	WCP-60 or V-60	U39-75	MTC60P	110C60
VR807	R/G Horiz Lines (Bottom)	60 2W	08A052-003	WCP-60 or V-60	U39-75	MTC60P	110C60
VR808	Blue Horiz Lines	60	08A052-003	WCP-60 or V-60	U39-75	MTC60P	110C60
VR809	Blue Horiz Lines	60	08A052-003	WCP-60 or V-60	U39-75	MTC60P	110C60
VR901	Blue Screen	1meg	02A187-012	T-1Meg	C-105	MTC16L1	X201R105B
VR902	Green Screen	1meg	02A187-012	T-1Meg	C-105	MTC16L1	X201R105B
VR903	Red Screen	1meg	02A187-012	T-1Meg	C-105	MTC16L1	X201R105B
VR904	Kine Bias	47K	02A187-011	T-50K	C-503	MTC54L1	X201R503B
VR2001	HV Protect	3000	# (20)				
VR9001	ABC Sensitivity	500	02A178-201	T-500 (3)	C-501 (3)	MTC52L1 (3)	X201R502B (3)

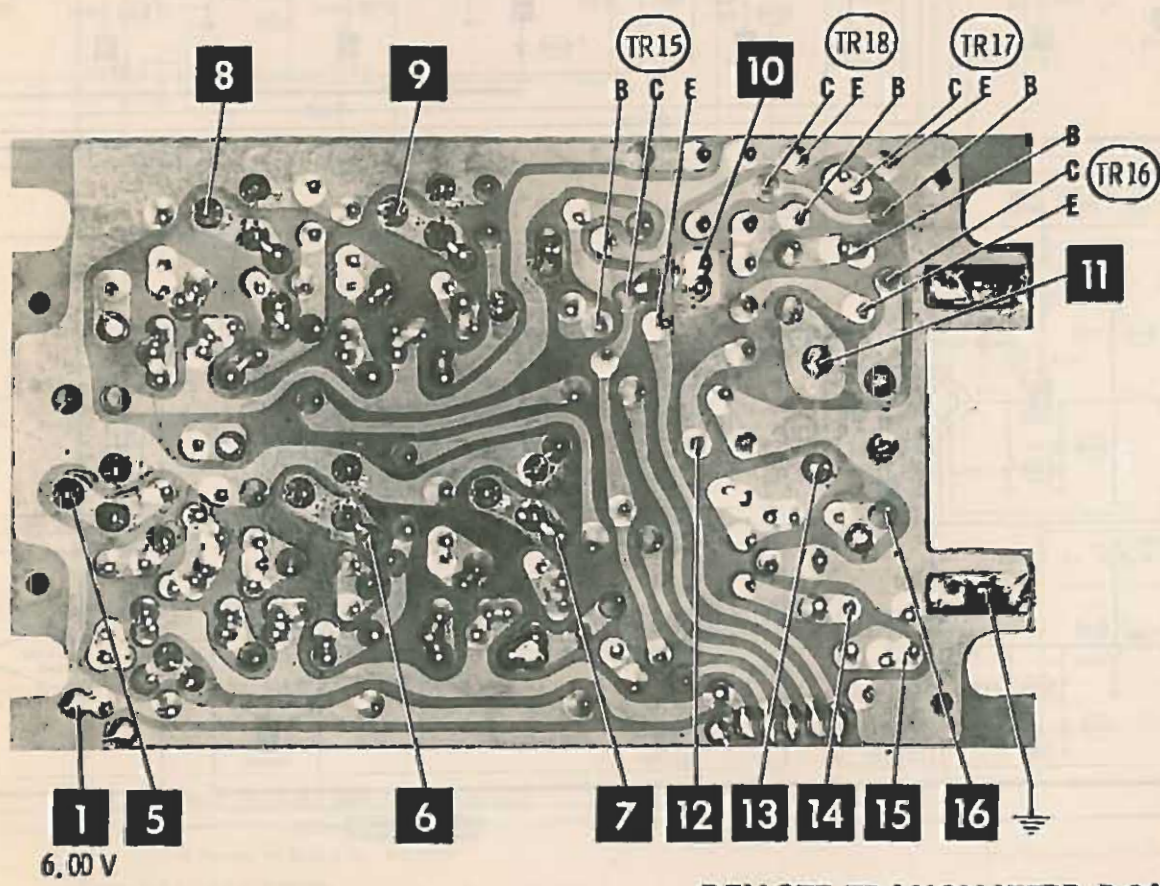
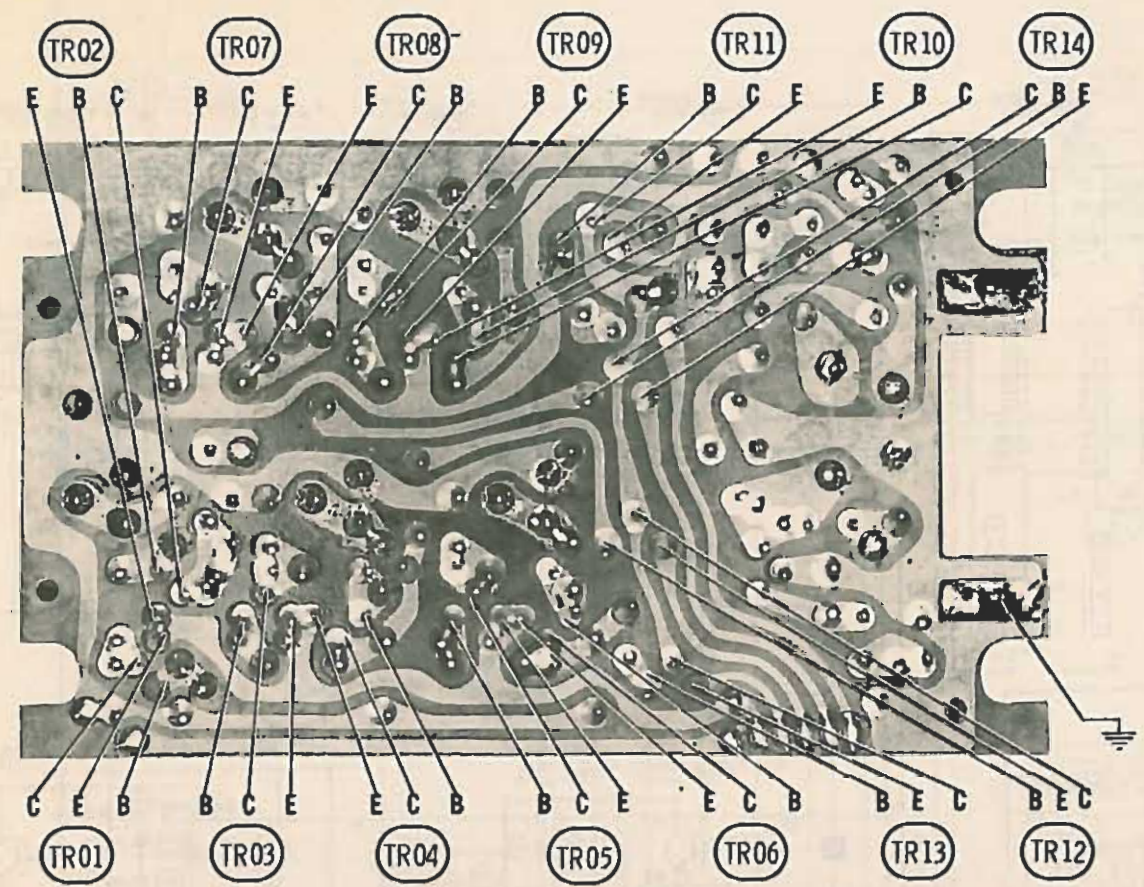
For SAFETY use only equivalent replacement part.

(3) For horizontal mounting, bend the two outside terminals to fit PC board. Use jumper to connect center terminal to PC board.

(18) Mount vertically and use jumper wires to "PC" boards.

(19) Used in non-remote models.

(20) WARNING: To insure protection against possible x-radiation, do not attempt to repair the H.V. protect board. This board is factory adjusted and sealed. If the board is defective it must be replaced as a complete unit.



A Howard W. Sams **CIRCUITRACE** Photo **REMOTE TRANSMITTER BOARD**

SET 1702 FOLDER 1-A

PHOTOFACT® Folder with **CIRCUITRACE**

CURTIS MATHES MODELS
14B379-001, 14B380-001

IMPORTANT FILING NOTICE
This PHOTOFACT Folder covers equipment used with the TV chassis covered in PHOTOFACT SET 1702 FOLDER 1. File this Folder with the TV Folder in the yellow filing jacket provided.

REMOTE CONTROL TRANSMITTER ALIGNMENT

Using a frequency counter, adjust T01 for 41.5kHz, ± 0.5 kHz.

CONNECT SCOPE	TRANSMITTER BUTTON	ADJUST	REMARKS
To Point G.	A	VR01	Adjust for a cycle of 33 milliseconds. See Figure 4.
"	A	VR02	Adjust pulse width for 15 milliseconds. See Figure 4.
"	E	VR03	Adjust narrow pulse for a pulse width of 3 milliseconds. See Figure 5.
"	I	VR04	Adjust narrow pulse for a pulse width of 3 milliseconds. See Figure 6.
"	T	VR05	Adjust narrow pulse for a pulse width of 3 milliseconds. See Figure 7.



Figure 4.



Figure 5.



Figure 6.



Figure 7.

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

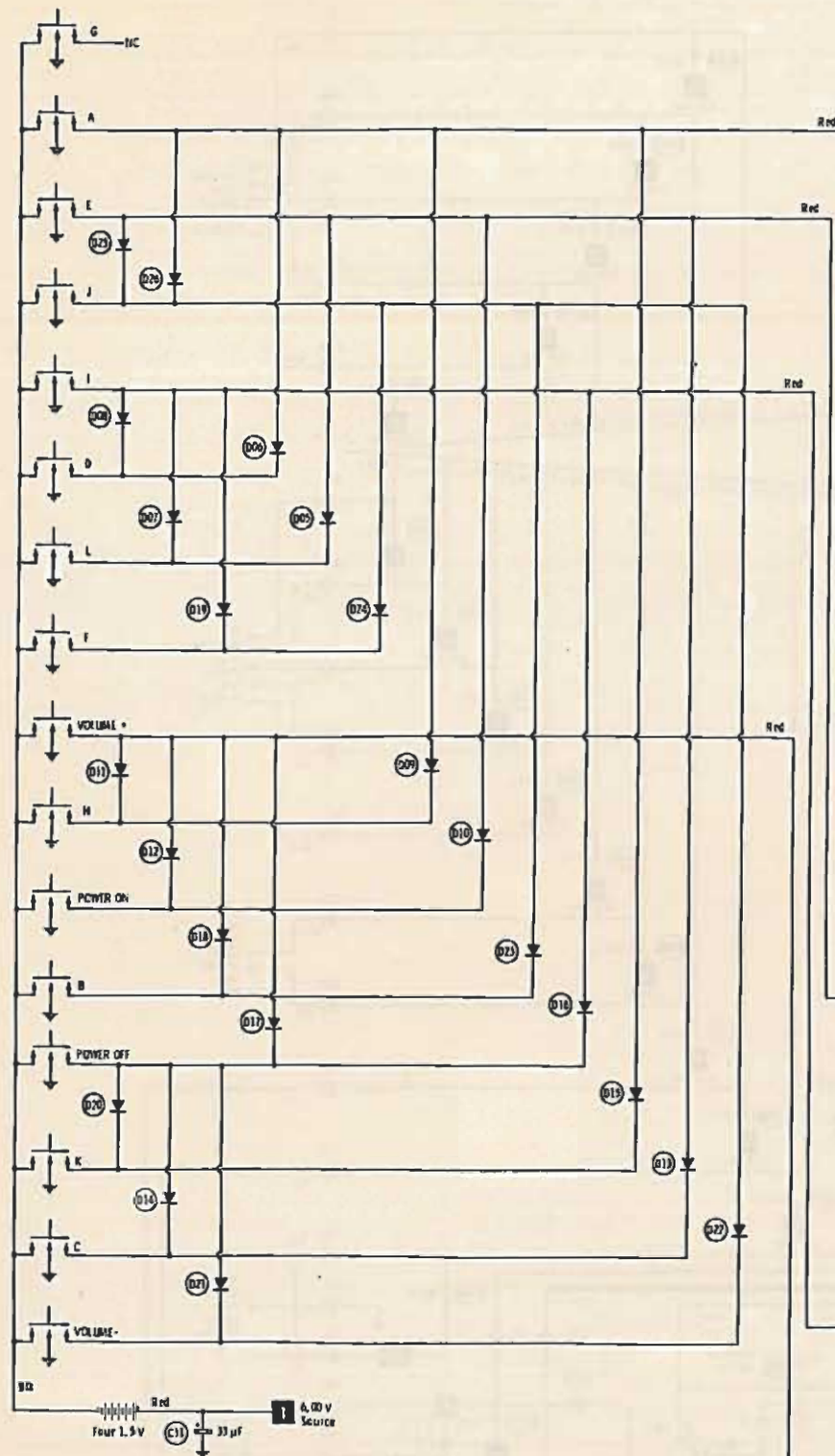
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W.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

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DATE 12-77 SET 1702 FOLDER 1-A

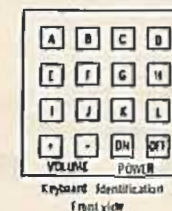
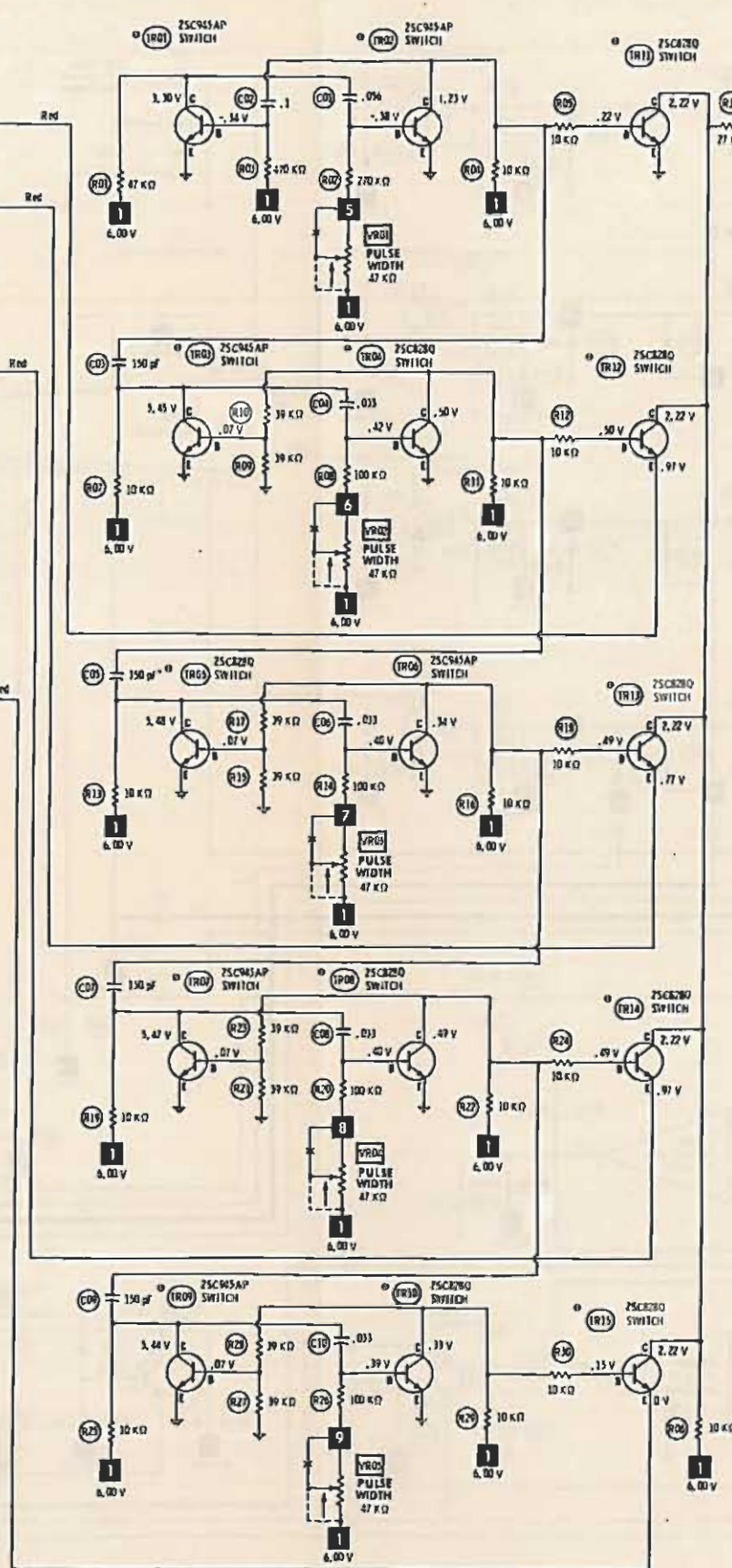
CURTIS MATHES MODELS
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SET 1702 FOLDER 1-A

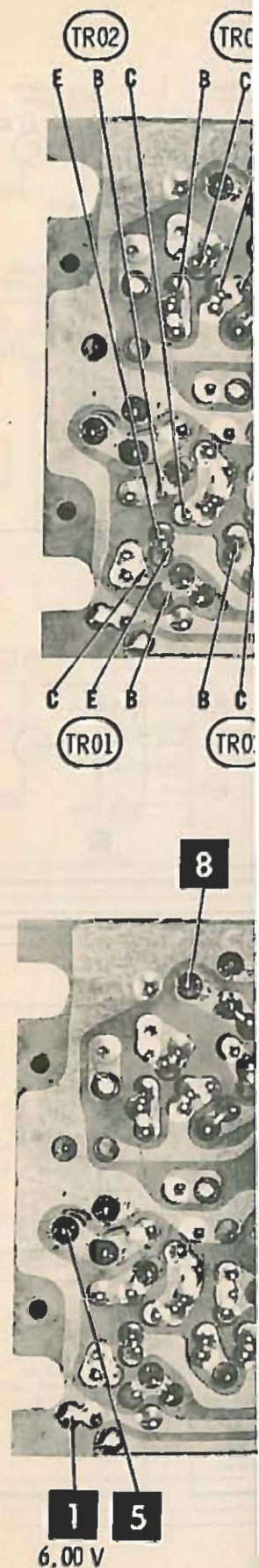


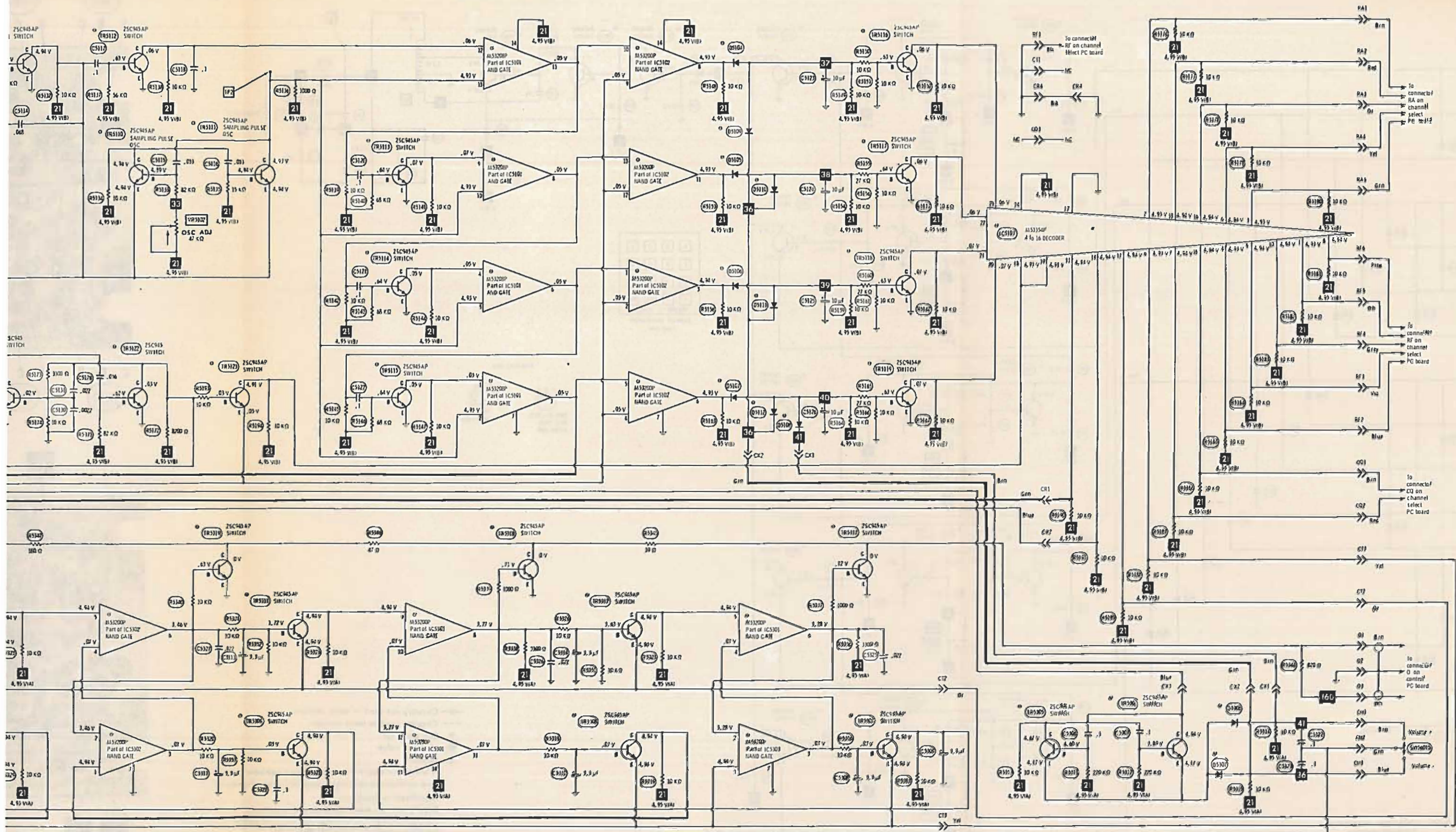
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WITH CIRCUITTRACE™
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TRANSMITTER



- Circuitry not used in some versions
 - - - Circuitry used in some versions
 - See parts list
 - * Nominal value
 - ⊕ Ground
- 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.
Arrow at control indicates direction of advance.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 5% unless noted.
Value in () used in some versions.





REMOTE CONTROL RECEIVER 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
TR01	0	490K	66K		TR07	0	23K	28K		TR13	INF	36K	32K
TR02	0	318K	29K		TR08	0	140K	22K		TR14	INF	36K	32K
TR03	0	23K	27K		TR09	0	22K	28K		TR15	INF	36K	32K
TR04	0	134K	23K		TR10	0	140K	22K		TR16	INF	1HF	1.2
TR05	0	22K	28K		TR11	0	43K	32K		TR17	0	32K	1HF
TR06	0	142K	23K		TR12	INF	36K	32K		TR18	0	10K	32K

REMOTE CONTROL TRANSMITTER RESISTANCE MEASUREMENTS

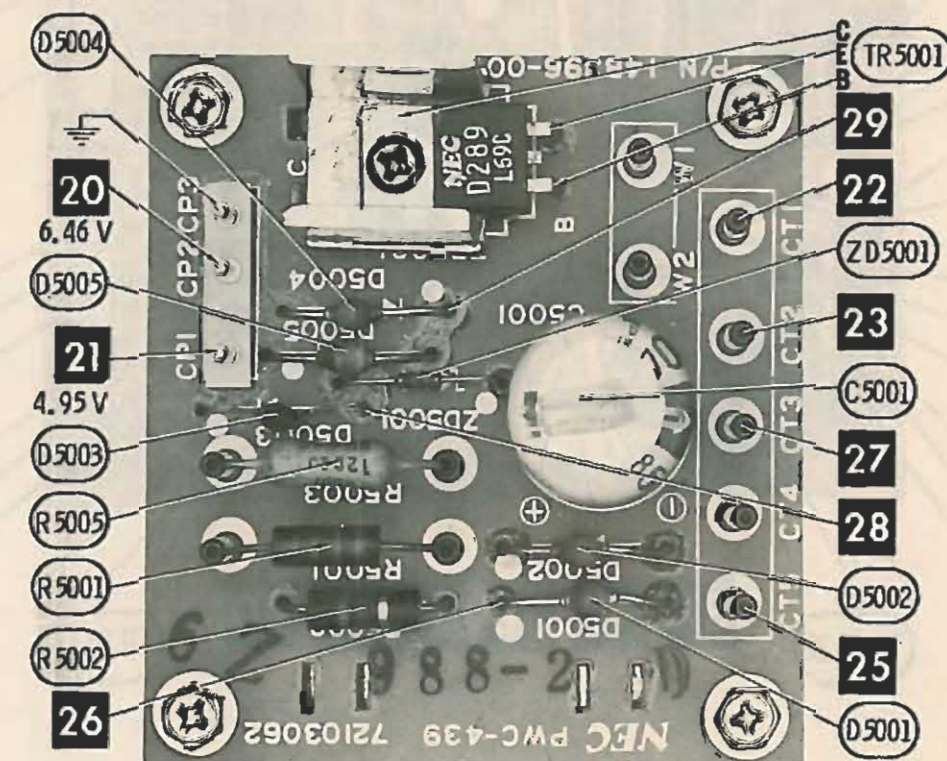
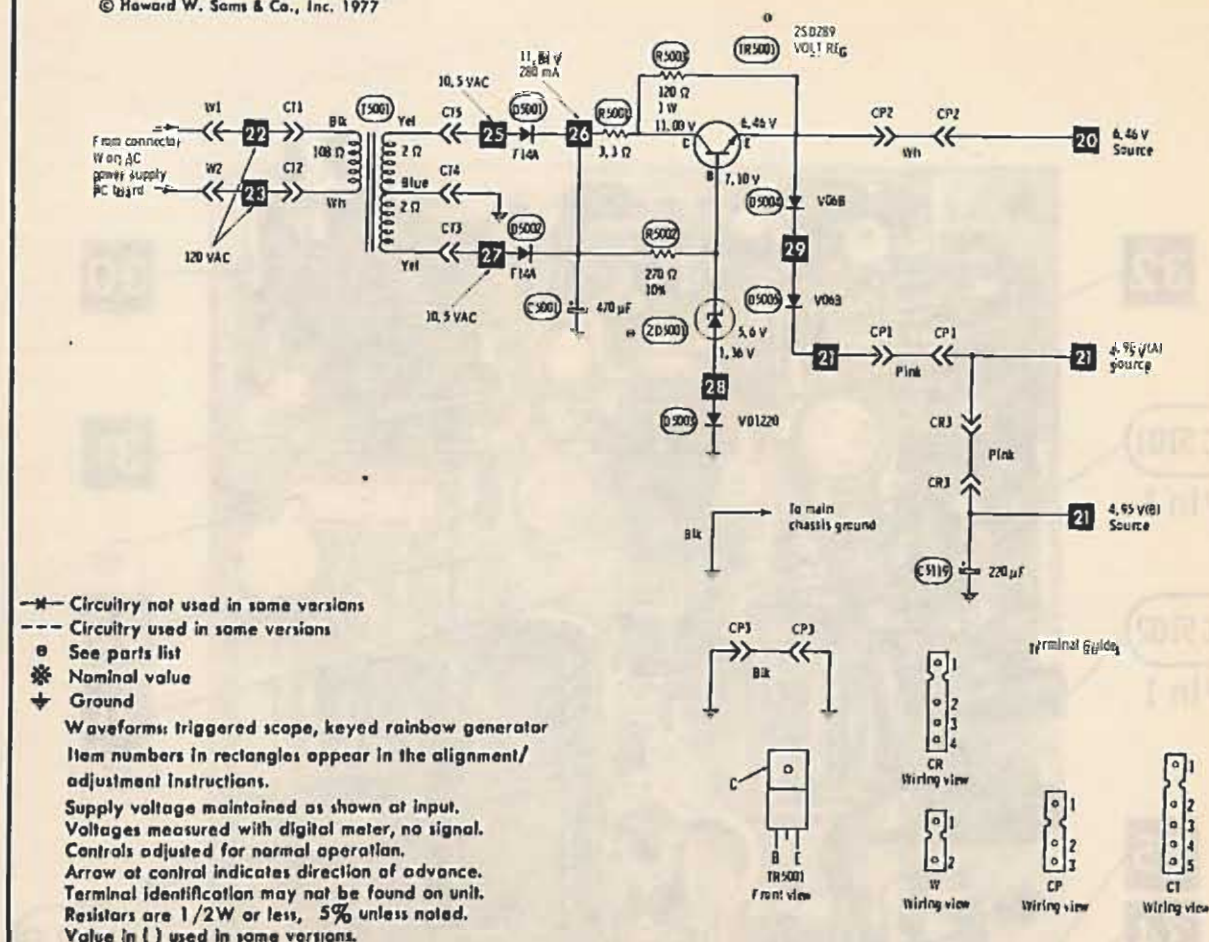
MEASUREMENTS BELOW TAKEN WITH METER HAVING .08V MAX BETWEEN PROBE TIPS													
ITEM	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12	PIN 13
IC5101	11K	1520	INF	11K	1520	11K	0	11K	11K	1520	11K	11K	530
IC5102	11K	11K	11K	11K	INF	11K	0	11K	11K	11K	11K	11K	530
IC5103	11K	11K	11K	11K	11K	11K	11K	11K	11K	11K	0	11K	11K
					PIN 15	PIN 16	PIN 17	PIN 18	PIN 19	PIN 20	PIN 21	PIN 22	PIN 23
					11K	11K	11K	11K	11K	11K	11K	11K	530
IC5301	11K	3800	INF	INF	11K	3800	0	3200	11K	INF	INF	3200	11K
IC5302	11K	20K	20K	20K	11K	20K	0	20K	11K	20K	20K	20K	11K
IC5303	11K	INF	20K	20K	11K	INF	0	INF	11K	INF	INF	11K	530
ITEM	E	B	C		ITEM	E	B	C		ITEM	E	B	C
TR5001	INF	INF	INF		TR5116	0	7900	11K		TR5307	11K	INF	11K
TR5101	1000	80K	11K		TR5117	0	7900	11K		TR5308	11K	INF	11K
TR5102	1000	9760	5240		TR5118	0	7900	11K		TR5309	11K	10K	11K
TR5103	1000	9200	5170		TR5119	0	7900	11K		TR5310	11K	10K	11K
TR5104	100	10K	11K		TR5120	0	INF(2)	11K		TR5311	11K	10K	11K
TR5105	0	4250	4240		TR5121	0	5400	11K		TR5312	11K	5760	11K
TR5106	0	3120	11K		TR5122	0	83K	5200		TR5313	11K	10K	11K
TR5107	320	190K	11K		TR5123	11K	15K	11K		TR5314	11K	70K	11K
TR5108	0	330K	8700		TR5124	0	15K	INF(2)		TR5315	11K	INF	11K
TR5109	0	7200	11K		TR5125	310	INF(2)	INF(2)		TR5316	11K	INF	11K
TR5110	11K	114K	11K		TR5301	0	2140	2500		TR5317	0	4800	100K
TR5111	11K	16K	1520		TR5302	0	2500	1290		TR5318	0	4200	100K
TR5112	0	57K	11K		TR5303	0	4540	1010		TR5319	0	30K	100K
TR5113	0	69K	11K		TR5304	0	1010	INF(2)		TR5320	0	30K	100K
TR5114	0	69K	11K		TR5305	INF(2)	220K	11K		TR5321	0	INF	100K
TR5115	0	69K	11K		TR5306	INF(2)	220K	11K		TR5322	0	INF	100K

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

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WITH CIRCUITRACE™

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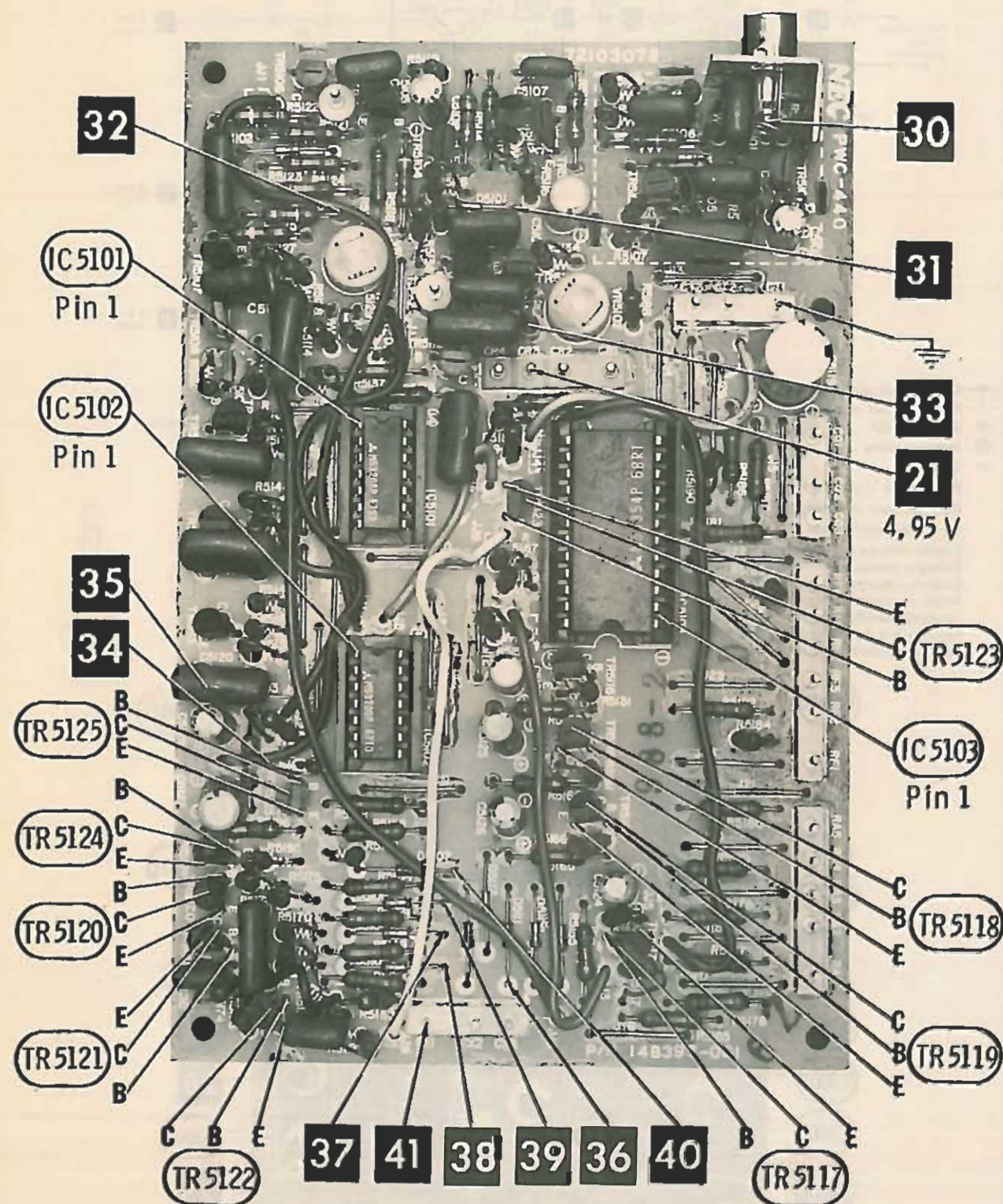


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REMOTE RECEIVER POWER SUPPLY

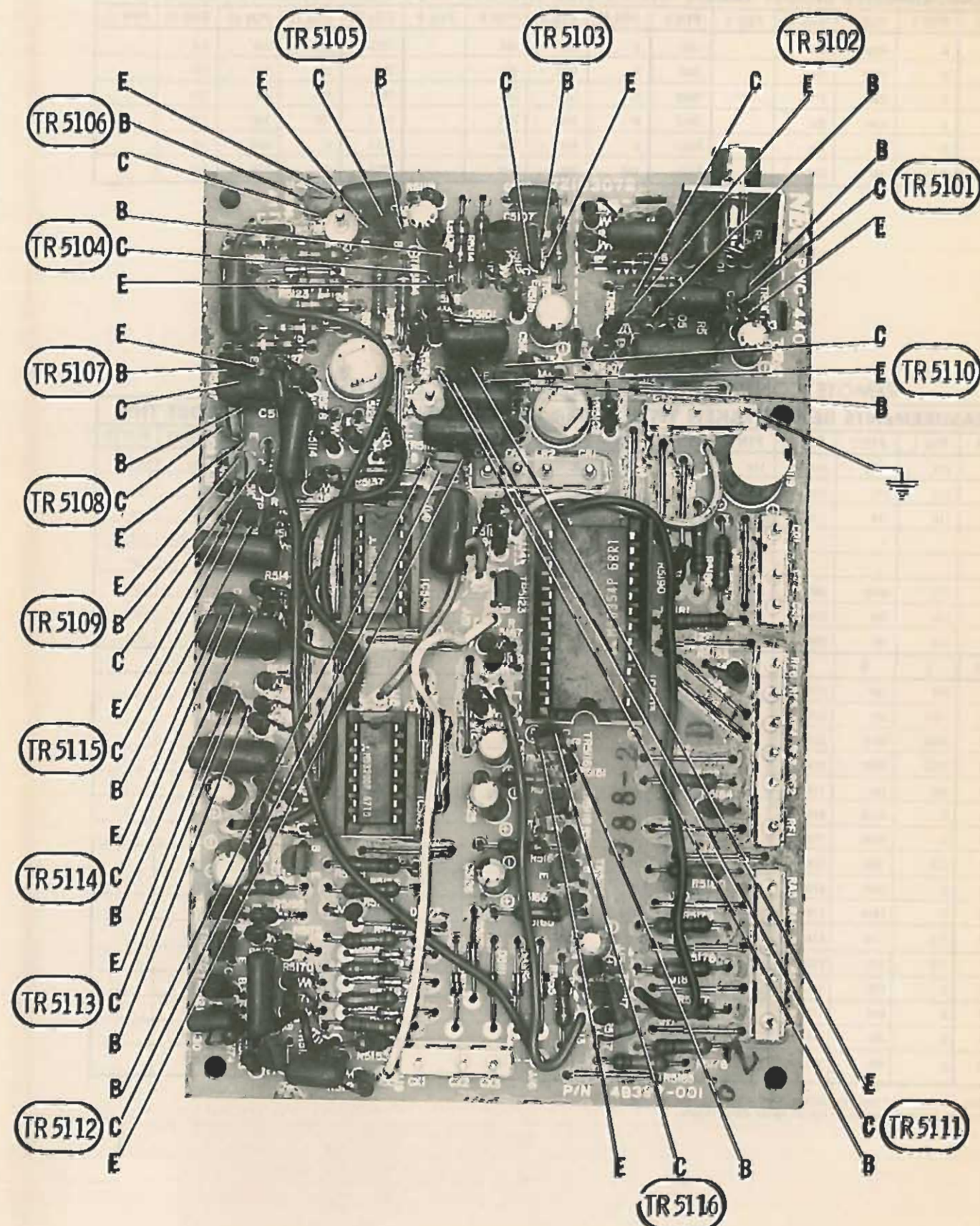
CURTIS MATHES MODELS
14B379-001, 14B380-001

FOLDER 1-A

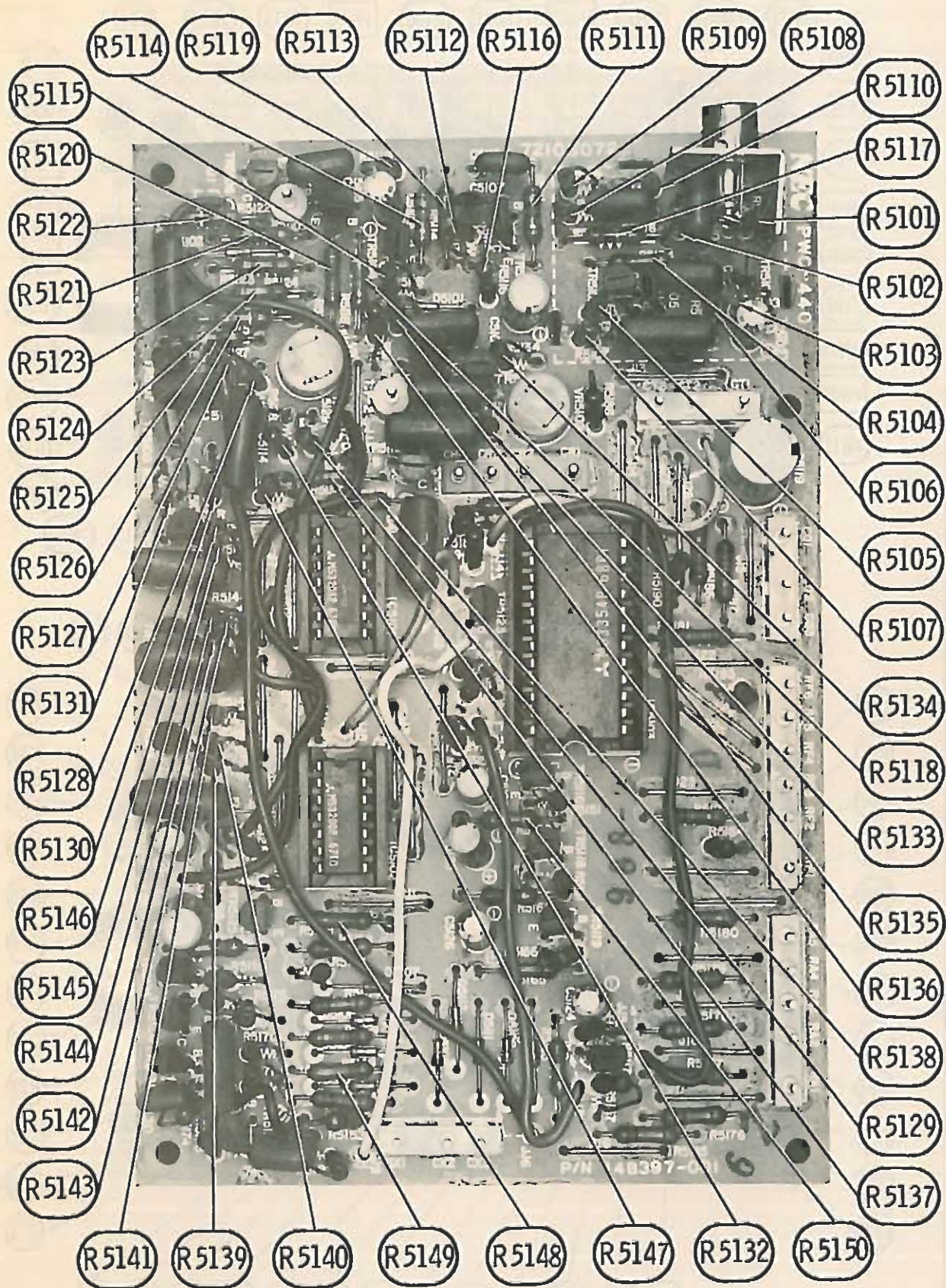


DECODER BOARD

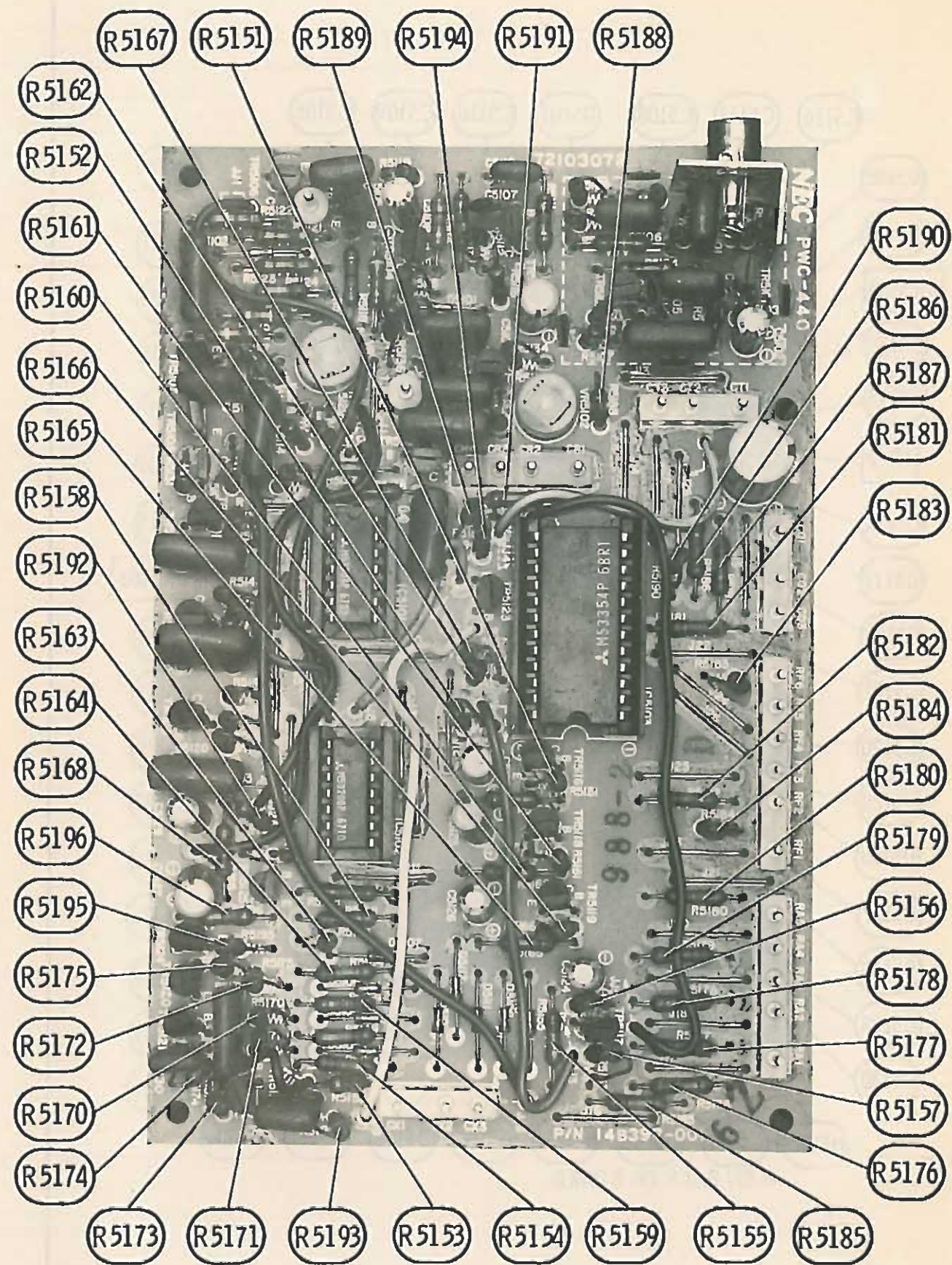
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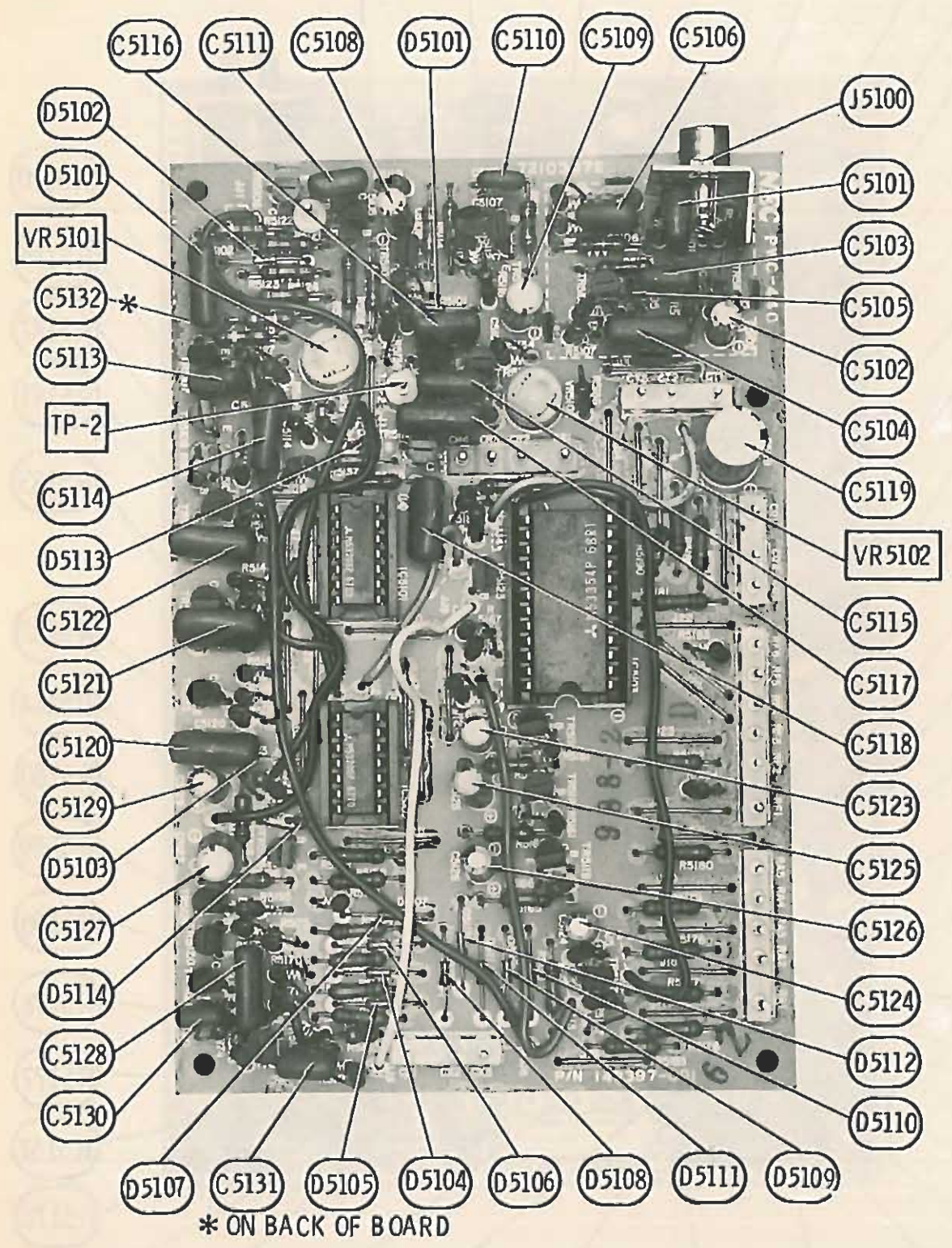
DECODER BOARD



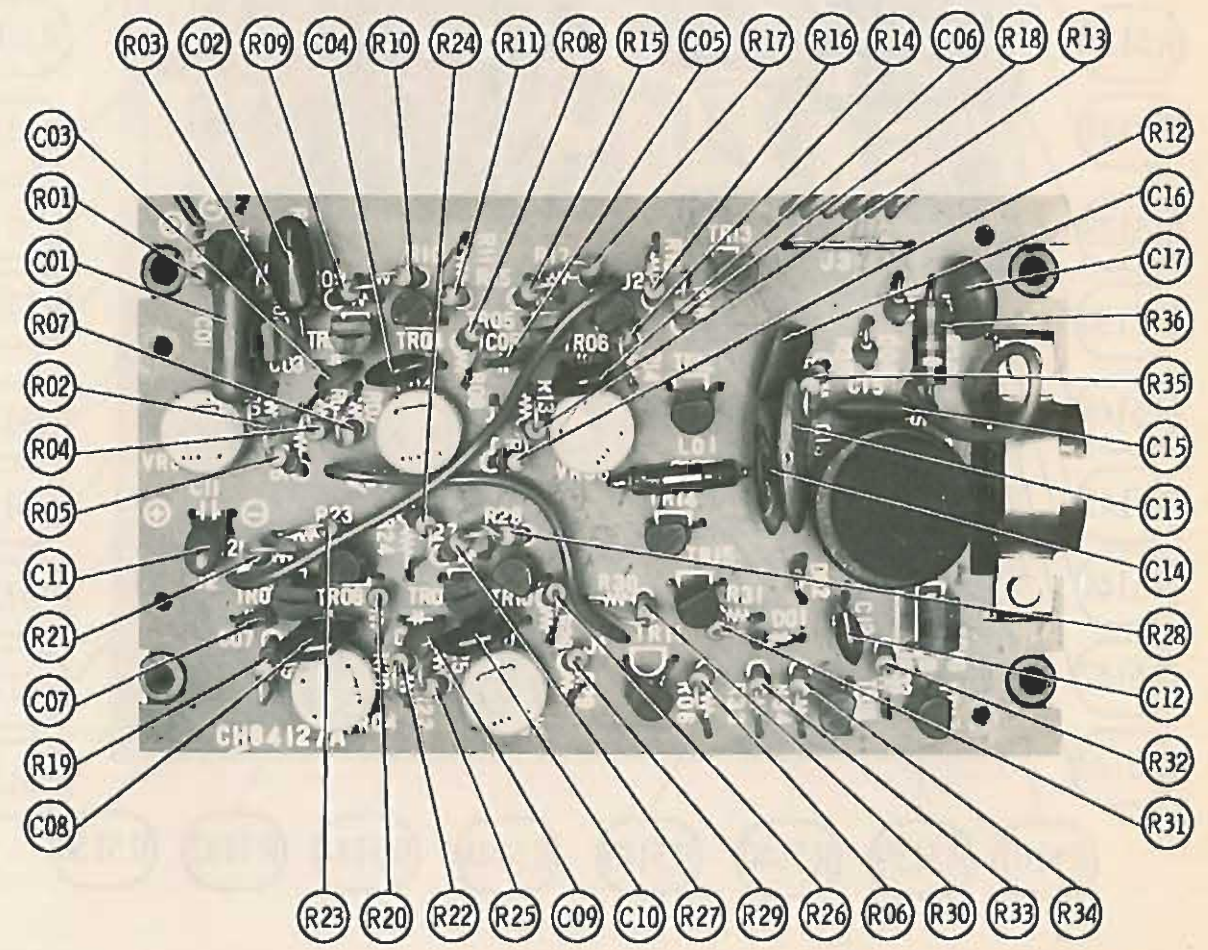
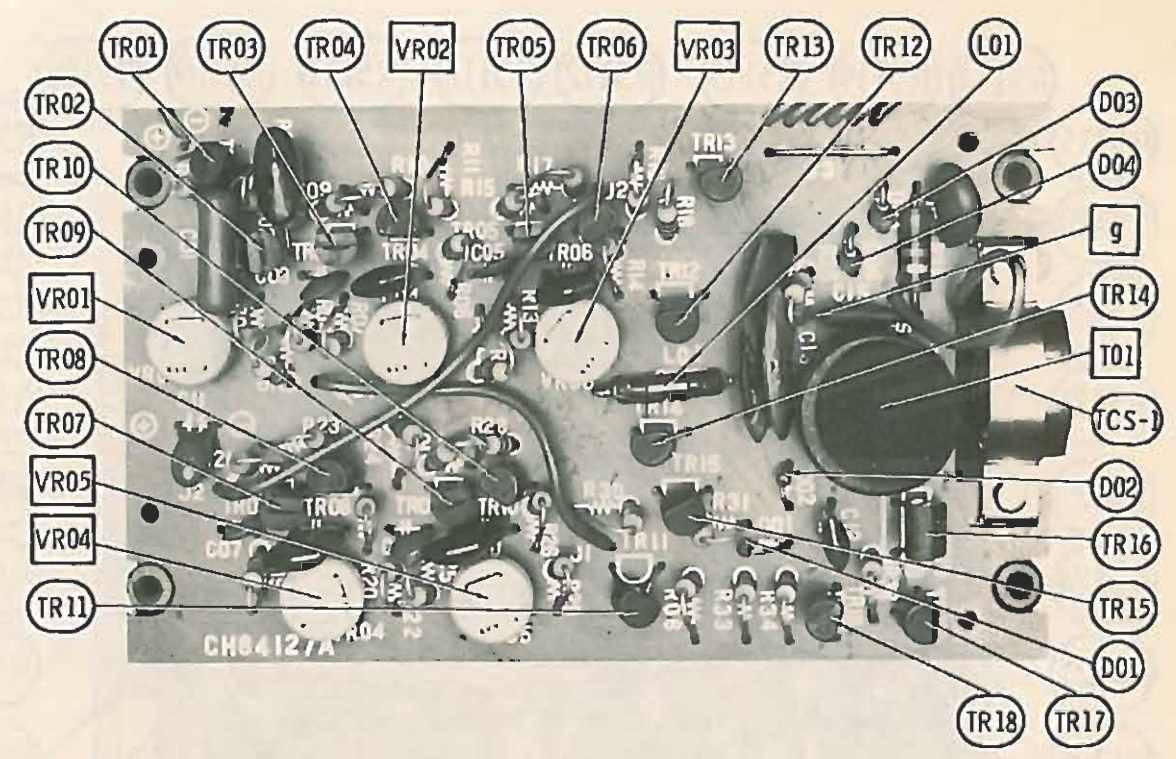
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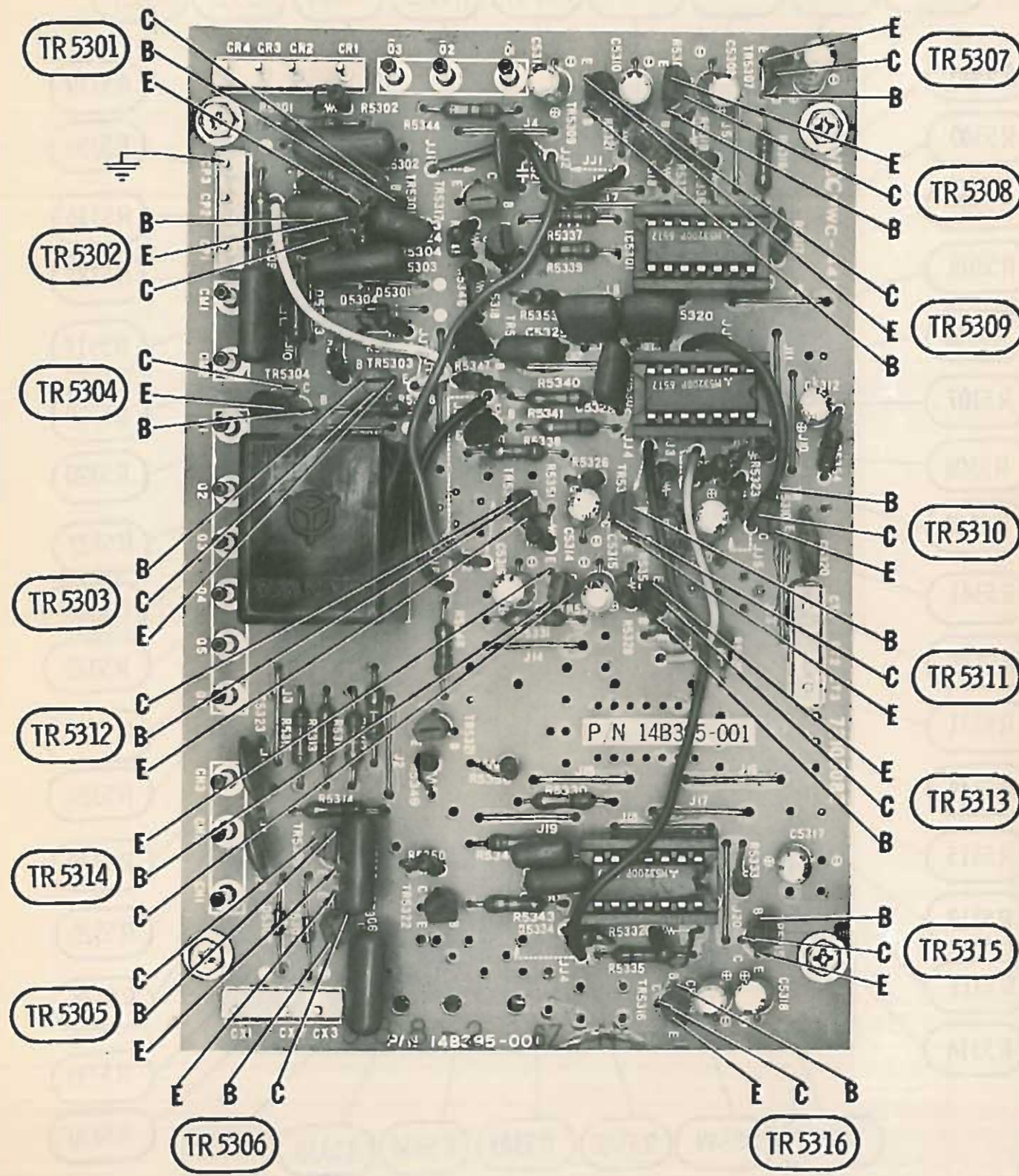
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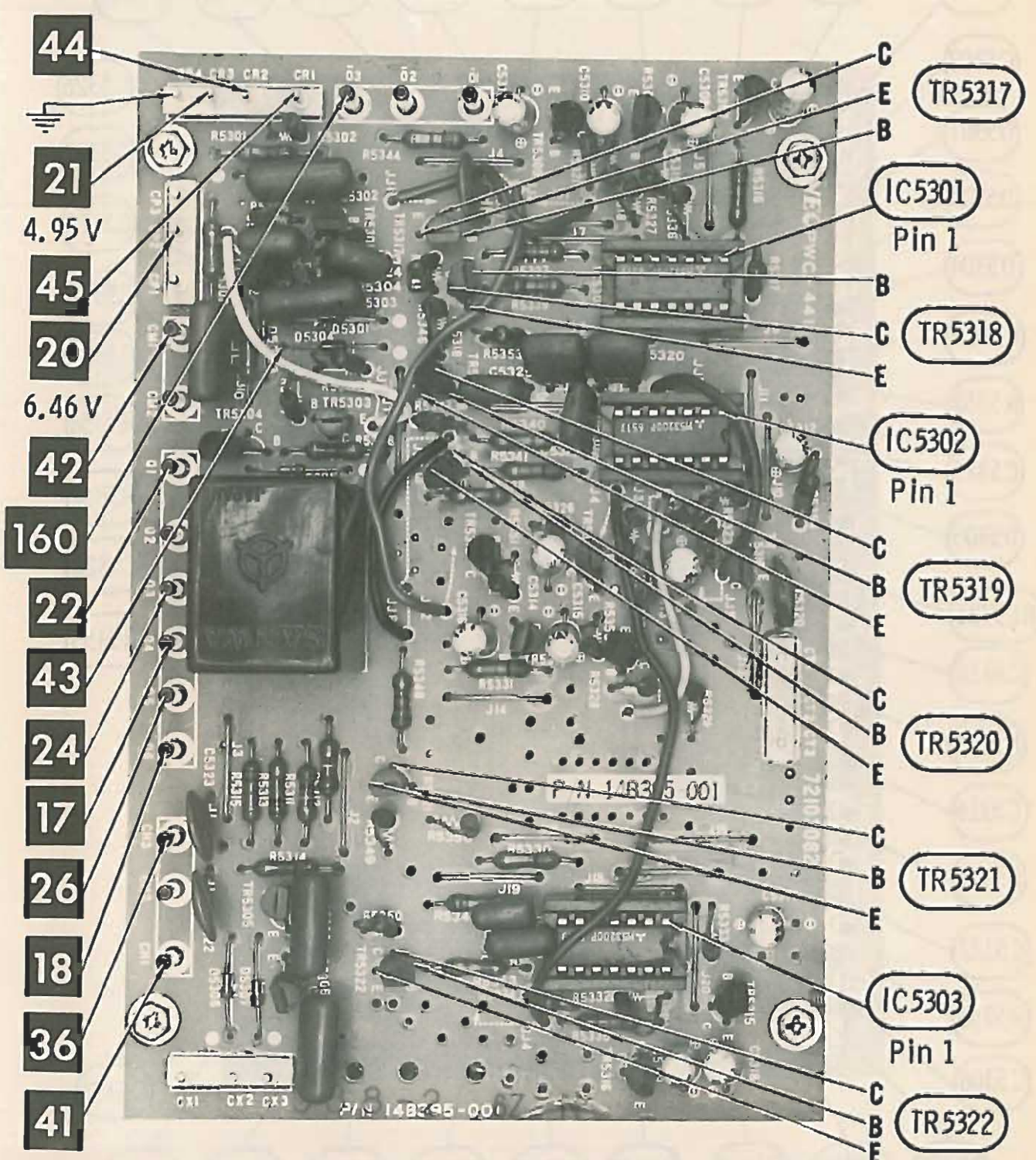
DECODER BOARD



REMOTE TRANSMITTER BOARD

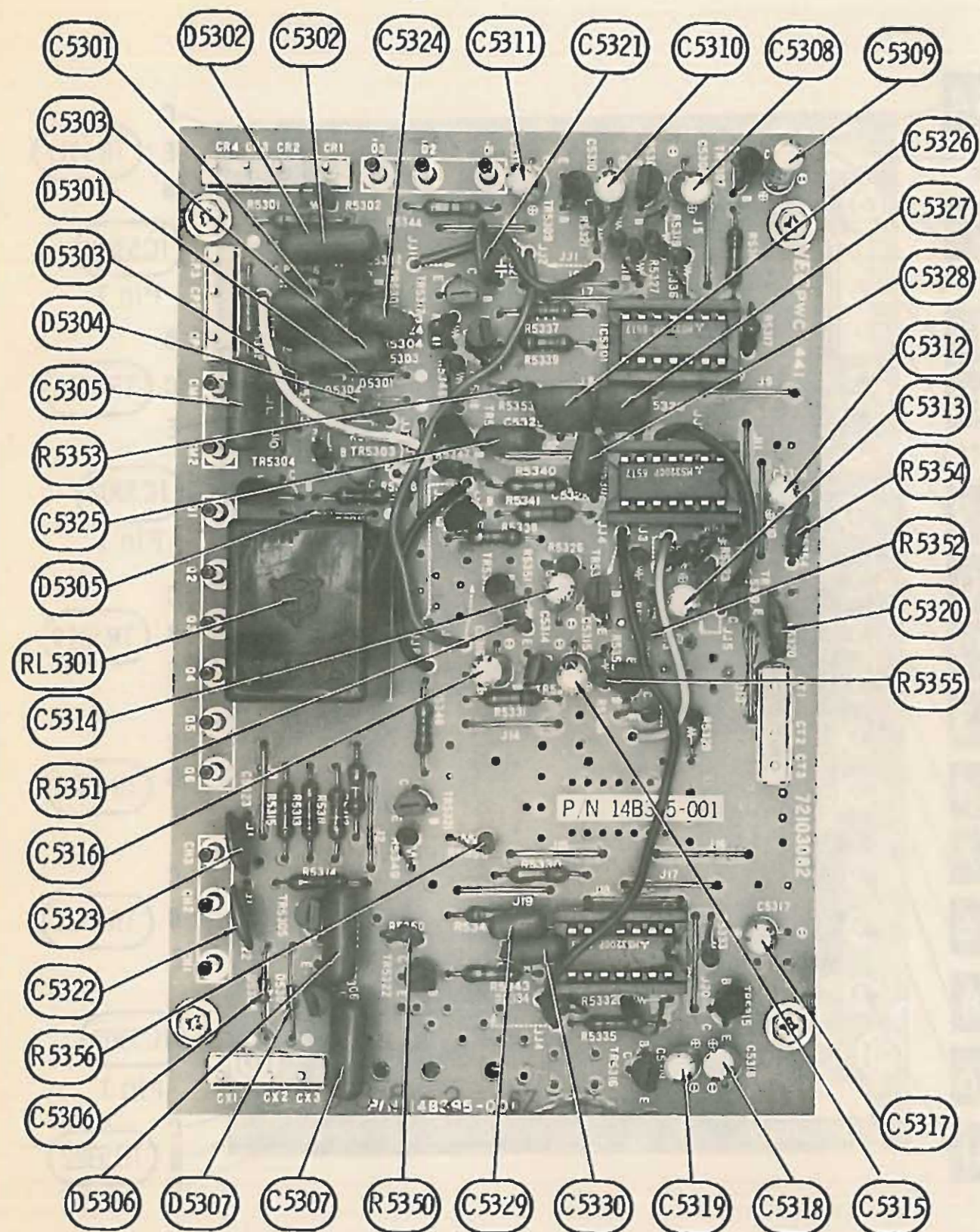


LINEAR CONTROL BOARD

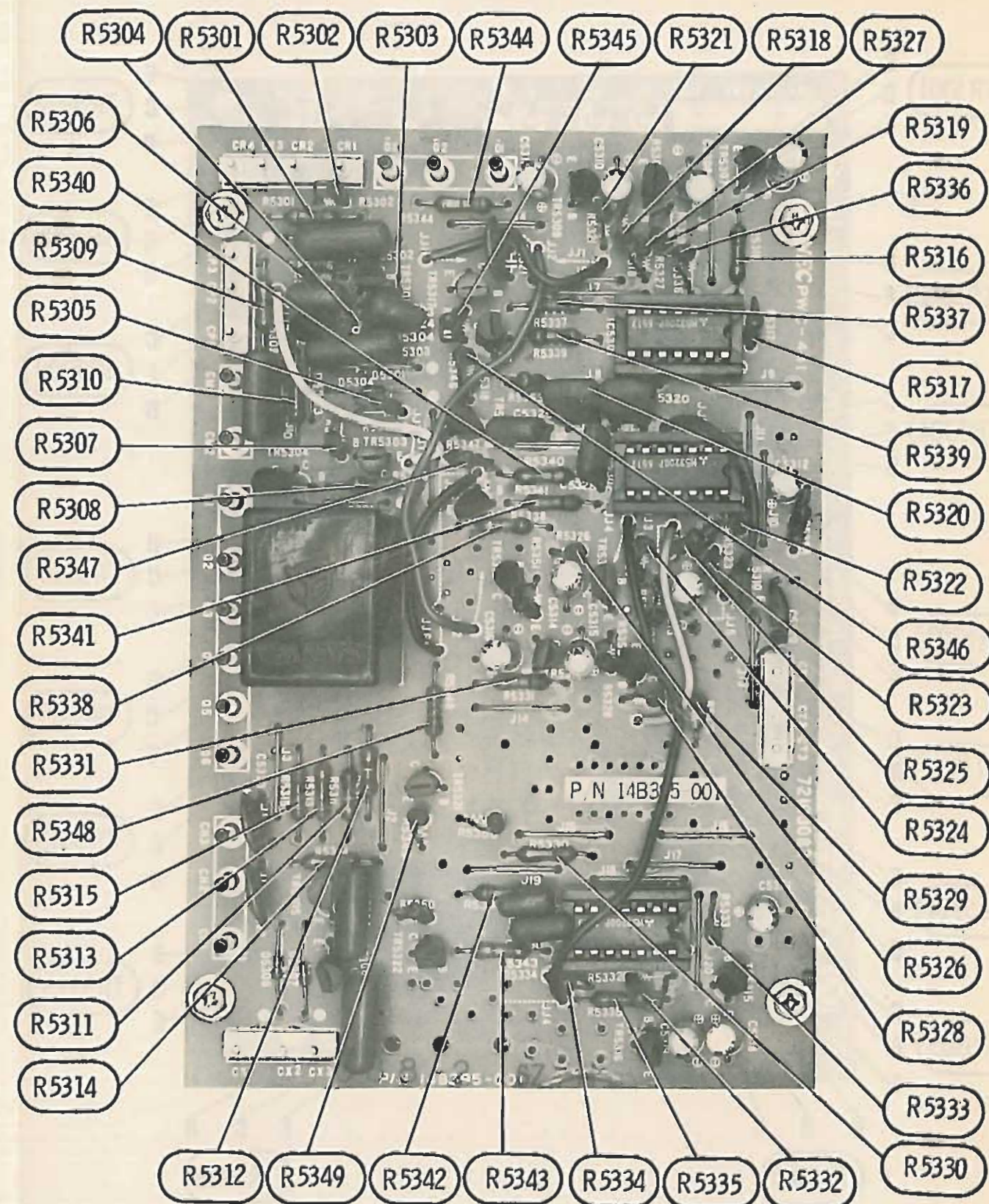


LINEAR CONTROL BOARD

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LINEAR CONTROL BOARD



LINEAR CONTROL BOARD

RECEIVER 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 (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA			
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C5128	.056 50V 10%			WMF1556	EMF1A156	QF1-185
C5130	.0022 50V 10%				H192P2239RB	192P2239RB
C5131	.022 50V 10%				H192P2239RB	192P2239RB
C5301	.022 50V 10%				H192P2239RB	192P2239RB
C5302	.1 50V			WMF05P1	EMF05010	431P1049R5
C5303	.1 50V			WMF05P1	EMF05010	431P1049R5
C5305	.1 50V			WMF05P1	EMF05010	431P1049R5
C5306	.1 50V			WMF05P1	EMF05010	431P1049R5
C5307	.1 50V			WMF05P1	EMF05010	431P1049R5
C5320	.1 50V		DC-104	MGP1	TA010	QC2-233
C5321	.1 50V		DC-104	MGP1	TA010	QC2-233
C5322	.1 50V		DC-104	MGP1	TA010	QC2-233
C5323	.1 50V		DC-104	MGP1	TA010	QC2-233
C5324	.022 50V 10%				H192P2239RB	192P2239RB
C5325	.022 50V 10%				H192P2239RB	192P2239RB
C5326	.022 50V 10%				H192P2239RB	192P2239RB
C5327	.022 50V 10%				H192P2239RB	192P2239RB
C5328	.022 50V 10%				H192P2239RB	192P2239RB
C5329	.022 50V 10%				H192P2239RB	192P2239RB
C5330	.022 50V 10%				H192P2239RB	192P2239RB

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA				
			MFR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
VR5101	Sensitivity	470	02A178-268	T-500 (18)	C-501 (18)	MTC52L1 (18)	X201R501B (18)
VR5102	Osc Adj	47K	02A188-004	T-50K (18)	C-503 (18)	MTC54L1 (18)	X201R503B (18)

(18) Mount vertically and use jumper wires to "PC" board.

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	PRI.	SEC. 1	MFR. PART No.	THORDARSON PART No.	TRIAD PART No.	
T5001	120V AC 0.055A AC	21V AC CT 0.28A DC	12A113-013 45052104 (1)			(1) Number on Unit.

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
CH1-3	Connector	13A166-143	3 pin (From Linear Control Board to On-Off Volume Control SW5601B)
CH1-2	Connector	13A166-144	2 pin (From Linear Control Board to On-Off Volume SW5601A)
CP1-3	Connector	13A166-171	3 pin (From Power Supply Board to Linear Control Board)
CQ1-3	Connector	13A166-148	3 pin (From Decoder Board to Channel Select Board)
CR1-4	Connector	13A166-168	4 pin (From Decoder Board to CR on Linear Control Board)
CT1-5	Connector	13A166-172	5 pin (From CT on Power Supply Board to T5001)
CX1-3	Connector	13A166-170	3 pin (From CX on Decode Board to CS on Linear Control Board)
Q1-3	Connector	13A166-147	3 pin (From Linear Control Board to Q on Main Chassis Board)
Q1-6	Connector	13A166-145	6 pin (From Linear Control Board to Q on Main Chassis Board)
RA1-5	Connector	13A166-146	5 pin (From Decoder Board to RA on Channel Select)
RF1-6	Connector	13A166-149	6 pin (From Decoder Board to RF on Channel Select)
RL5301	Relay	06A106-096	Relay
SW5601A/B	Switch	06A106-093	Power (On Volume Control)
TC55100	Transducer	03C014-013	
WT-2	Connector	13A166-150	2 pin (From Power Supply Board to W on AC Power Supply, Main Chassis)
	Printed Circuit Board	14B397-001	Decoder
	Printed Circuit Board	14B395-001	Linear Control
	Printed Circuit Board	14B396-001	Power Supply
	Switch	14B370-033	On/Off Volume with Cables
	Transducer Cable	14B561-04C	

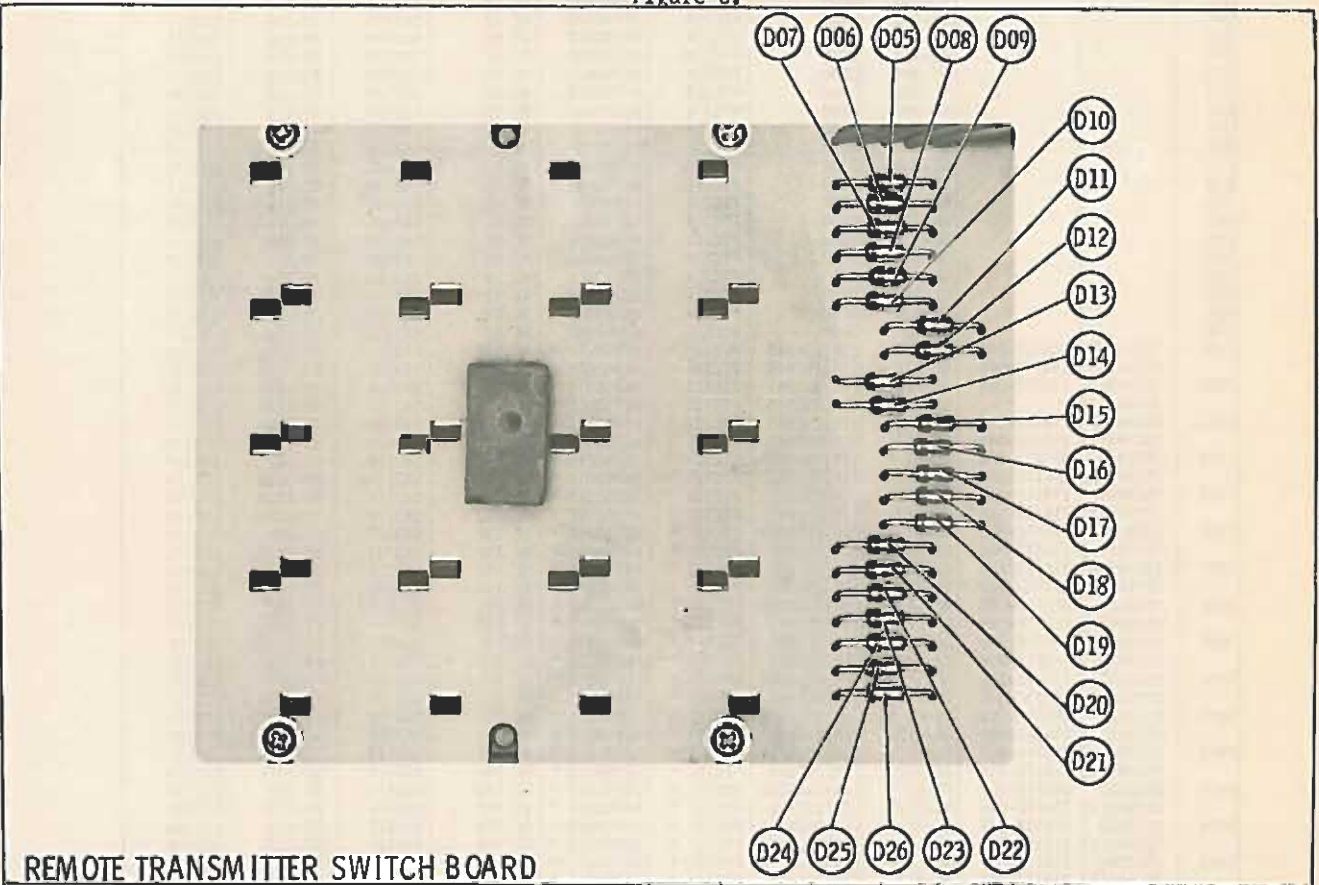
REMOTE CONTROL RECEIVER ALIGNMENT

Hold Transmitter approximately 10 feet from receiver.

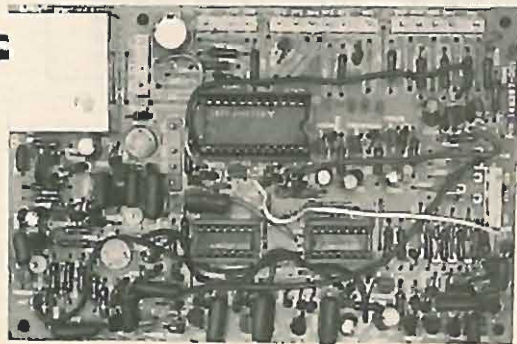
	CONNECT SCOPE	ADJUST	REMARKS
Push On button.	To TP2	VR5102	Adjust for five pulses. See Figure 8.
Set VR5101 fully counterclockwise. Push "On" button.		VR5101	Adjust VR5101 clockwise until set comes on.



Figure 8.



REMOTE TRANSMITTER SWITCH BOARD



DECODER BOARD-SHIELD LOCATION

TRANSMITTER 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.

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFG. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
D01	1S2473	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D02	1S2473	21A108-004	GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D03	F14D		GE-504A	5A4D	PTC201	HEPRO053	RE 49	SK3016	RT-214	ECG116
D04	F14D		GE-504A	5A4D	PTC201	HEPRO053	RE 49	SK3016	RT-214	ECG116
D05			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D06			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D07			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D08			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D09			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D10			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D11			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D12			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D13			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D14			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D15			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D16			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D17			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D18			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D19			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D20			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D21			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D22			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D23			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D24			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D25			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
D26			GE-300	D200	PTC214	HEPRO602	RE 52	SK3100	RT-218	ECG177
TR01	2SC945AP	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945(1)	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR02	2SC945AP	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945(1)	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR03	2SC945AP	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945(1)	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR04	2SC828Q	21A112-062	GE-61 *	(IR) 2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
	2SC945(1)	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR05	2SC945AP	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945(1)	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR06	2SC828Q	21A112-062	GE-61 *	(IR) 2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
	2SC945(1)	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR07	2SC945AP	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945(1)	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR08	2SC828Q	21A112-062	GE-61 *	(IR) 2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
	2SC945(1)	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR09	2SC945AP	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945(1)	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR10	2SC828Q	21A112-062	GE-61 *	(IR) 2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
	2SC945(1)	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR11	2SC828Q	21A112-062	GE-61 *	(IR) 2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
	2SC945(1)	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR12	2SC828Q	21A112-062	GE-61 *	(IR) 2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
	2SC945(1)	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR13	2SC828Q	21A112-062	GE-61 *	(IR) 2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
	2SC945(1)	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR14	2SC828Q	21A112-062	GE-61 *	(IR) 2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
	2SC945(1)	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR15	2SC828Q	21A112-062	GE-61 *	(IR) 2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
	2SC945(1)	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR16	2SB564L		GE-67	HEP242	PTC177	HEPS3032	RE 197	SK3114	RT-115	ECG193
	2SB564(1)		GE-67	HEP242	PTC177	HEPS3032	RE 197	SK3114	RT-115	ECG193
TR17	2SC828Q	21A112-062	GE-61 *	(IR) 2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
	2SC945(1)	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
TR18	2SC828Q	21A112-062	GE-61 *	(IR) 2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
	2SC945(1)	21A112-046	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199

* Lead configuration may vary from original.
(1) Used in some versions.

RECEIVER 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.	MFG. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
TR5317	2SC945AP	21A112-058(1)	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945P, Q, R		GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC828Q	21A112-062(1)	GE-61 *	(IR) 2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
TR5318	2SC945AP	21A112-058(1)	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945P, Q, R		GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC828Q	21A112-062(1)	GE-61 *	(IR) 2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
TR5319	2SC945AP	21A112-058(1)	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945P, Q, R		GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC828Q	21A112-062(1)	GE-61 *	(IR) 2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
TR5320	2SC945AP	21A112-058(1)	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945P, Q, R		GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC828Q	21A112-062(1)	GE-61 *	(IR) 2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
TR5321	2SC945AP	21A112-058(1)	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945P, Q, R		GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC828Q	21A112-062(1)	GE-61 *	(IR) 2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
TR5322	2SC945AP	21A112-058(1)	GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC945P, Q, R		GE-212	(IR) 2SC945	PTC121 *	HEPS0015 *	RE 192	SK3124	RT-107A	ECG199
	2SC828Q	21A112-062(1)	GE-61 *	(IR) 2SC828A	PTC121 *	HEPS0015 *	RE 192	SK3122	RT-302	ECG199
ZD5001		21A119-041	GEZO-5.6	Z120A	ZD5.6A	HEP20407	RE 107	SK3057	RT-236	ECG136

* Lead configuration may vary from original.
(1) Used in some versions.

ELECTROLYTIC CAPACITORS

		REPLACEMENT DATA				
ITEM No.	RATING	MFG. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C5001	470 25V	04A030-070	W8R500-25	YTT470H25	QV1-153	EV-1350
C5102	4.7 16V	04A111-050	PCS-50	YTT47R7850	QV1-27	EV-1319
C5100	10 16V	04A030-073	PCS-25	YTT10B25	QV1-41	EV-1222
C5109	22 16V	04A030-109	PCS-25	YTT22B25	QV1-57	EV-1324
C5119	220 16V	04A111-042	PCS-25	YTT220H16	QV1-117	EV-1240
C5123	10 16V	04A030-073	PCS-25	YTT10B25	QV1-41	EV-1222
C5124	10 16V	04A030-073	PCS-25	YTT10B25	QV1-41	EV-1222
C5125	10 16V	04A030-073	PCS-25	YTT10B25	QV1-41	EV-1222
C5126	10 16V	04A030-073	PCS-25	YTT10B25	QV1-41	EV-1222
C5127	22 16V	04A030-109	PCS-25	YTT22B25	QV1-57	EV-1324
C5129	3.3 16V	04A030-076	PCS-50	YTT3R3A50	QV1-25	EV-1618
C5132	10 16V	04A030-073	PCS-25	YTT10B25	QV1-41	EV-1222
C5308	3.3 16V	04A030-076	PCS-50	YTT3R3A50	QV1-25	EV-1618
C5309	3.3 16V	04A030-076	PCS-50	YTT3R3A50	QV1-25	EV-1618
C5310	3.3 16V	04A030-076	PCS-50	YTT3R3A50	QV1-25	EV-1618
C5311	3.3 16V	04A030-076	PCS-50	YTT3R3A50	QV1-25	EV-1618
C5312	3.3 16V	04A030-076	PCS-50	YTT3R3A50	QV1-25	EV-1618
C5313	3.3 16V	04A030-076	PCS-50	YTT3R3A50	QV1-25	EV-1618
C5314	3.3 16V	04A030-076	PCS-50	YTT3R3A50	QV1-25	EV-1618
C5315	3.3 16V	04A030-076	PCS-50	YTT3R3A50	QV1-25	EV-1618
C5316	3.3 16V	04A030-076	PCS-50	YTT3R3A50	QV1-25	EV-1618
C5317	3.3 16V	04A030-076	PCS-50	YTT3R3A50	QV1-25	EV-1618
C5318	3.3 16V	04A030-076	PCS-50	YTT3R3A50	QV1-25	EV-1618
C5319	3.3 16V	04A030-076	PCS-50	YTT3R3A50	QV1-25	EV-1618

RECEIVER 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.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
TR5123	2SC945AP	21A112-046(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
	2SC945P, Q,R		GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
TR5124	2SC828P, Q,R	21A112-062(1)	GE-61	(IR)2SC828P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
	2SC945AP		GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
TR5125	2SC945P, Q,R	21A112-046(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
	2SC828P, Q,R		GE-61	(IR)2SC828P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR5301	2SC945AP	21A112-058(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
	2SC945P, Q,R		GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
TR5302	2SC828P, Q,R	21A112-062(1)	GE-61	(IR)2SC828P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
	2SC945AP		GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
TR5303	2SC945P, Q,R	21A112-058(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
	2SC828P, Q,R		GE-61	(IR)2SC828P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR5304	2SC815	21A112-015	GE-210	TR-21	PTC121	HEPS0015	RE 13	SK3038	RT-302	ECG123A
	2SC945P, Q,R		GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
TR5305	2SC828P, Q,R	21A112-062(1)	GE-61	(IR)2SC828P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
	2SC945AP		GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
TR5306	2SC945P, Q,R	21A112-058(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
	2SC828P, Q,R		GE-61	(IR)2SC828P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR5307	2SC945AP	21A112-058(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
	2SC828P, Q,R		GE-61	(IR)2SC828P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR5308	2SC945P, Q,R	21A112-058(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
	2SC828P, Q,R		GE-61	(IR)2SC828P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR5309	2SC945AP	21A112-058(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
	2SC828P, Q,R		GE-61	(IR)2SC828P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR5310	2SC945P, Q,R	21A112-058(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
	2SC828P, Q,R		GE-61	(IR)2SC828P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR5311	2SC945AP	21A112-058(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
	2SC828P, Q,R		GE-61	(IR)2SC828P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR5312	2SC945P, Q,R	21A112-058(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
	2SC828P, Q,R		GE-61	(IR)2SC828P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR5313	2SC945AP	21A112-058(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
	2SC828P, Q,R		GE-61	(IR)2SC828P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR5314	2SC945P, Q,R	21A112-058(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
	2SC828P, Q,R		GE-61	(IR)2SC828P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR5315	2SC945AP	21A112-058(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
	2SC828P, Q,R		GE-61	(IR)2SC828P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199
TR5316	2SC945P, Q,R	21A112-058(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199
	2SC828P, Q,R		GE-61	(IR)2SC828P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199

TRANSMITTER 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

ITEM No.	RATING	REPLACEMENT DATA				
		MFR. PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
					Q-LINE	GENERAL LINE
C11	33 10V		PC30-25	VTT33B10	QV1-61	EY-1125

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
						Q-LINE	GENERAL LINE
C01	.056 50V 10%			WMF1556	EHF1A156	QF1-185	1PB-556
C02	.1 50V 10%			WMF05P1	EHF05010		431P1049R5
C03	150		DTZ-150		CM0315		10TCC-T15
C04	.033 50V 10%				M192P3339RB		192P3339RB
C05	150		DTZ-150		CM0315		10TCC-T15
C06	.033 50V 10%				M192P3339RB		192P3339RB
C07	150		DTZ-150		CM0315		10TCC-T15
C08	.033 50V 10%				M192P3339RB		192P3339RB
C09	150		DTZ-150		CM0315		10TCC-T15
C10	.033 50V 10%				M192P3339RB	QF1-91	192P3339RB
C12	.01 50V 10%			WMF151	EHF1A110		1PB-510
C13	120 NPO 5%		DTZ-120		CM0312		10TCC-T12
C14	150 NPO 5%		DTZ-150		CM0315		10TCC-T15
C15	100 5%		DTZ-100	NP0100	CM0310		10TCC-T10
C16	100 5%		DTZ-100	NP0100	CM0310		10TCC-T10
C17	.001 250V AC						

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA				
			MFR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	MALLORY PART No.	TRW PART No.
YRD1	Pulse Width	47K					
YRD2	Pulse Width	47K					
YRD3	Pulse Width	47K					
YRD4	Pulse Width	47K					
YRD5	Pulse Width	47K					

COILS (RF-IF)

ITEM No.	FUNCTION	REPLACEMENT DATA			REMARKS
		PART No.	OTHER IDENTIFICATION	MILLER PART No.	
L01	RF Choke				
T01	Oscillator				

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
TCS-1	Transducer		ULTRASONIC

RECEIVER 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.

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFG. PART No.	REPLACEMENT DATA									
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.		
05001	F14A	21A110-12	GE-504A	5A4D	PTC201	NEPRO052	RE 49	SK3030	RT-213	ECG116		
05002	F14A	21A110-12	GE-504A	5A4D	PTC201	NEPRO052	RE 49	SK3030	RT-213	ECG116		
05003	W01220	21A119-040	GE-504A	5A4D	PTC301	NEPRO052	RE 49	SK3030	RT-213	ECG116		
05004	W06B	21A119-013	GE-504A	5A4D	PTC201	NEPRO052	RE 49	SK3030	RT-213	ECG116		
05005	W06B	21A119-013	GE-504A	5A4D	PTC201	NEPRO052	RE 49	SK3030	RT-213	ECG116		
05101	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05102	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05103	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05104	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05105	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05106	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05107	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05108	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05109	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05110	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05111	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05112	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05113	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05114	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05301	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05302	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05303	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05304	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05305	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05306	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
05307	1S2472	21A108-003(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S953	(1)	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
	1S2473	21A108-004	GE-300	D200	PTC214	NEPRO602	RE 52	SK3100	RT-218	ECG177		
IC5101	MS1208P	21A120-017	GE-216	MEP7400	PTC186	NEPE3000P	RE 201	SK3197	RT-158	ECG236		
IC5102	MS1208P	21A120-016	GE-216	MEP7400	PTC186	NEPE3000P	RE 192	SK3124	RT-107A	ECG199		
IC5103	MS1354P	21A120-018	GE-216	MEP7400	PTC186	NEPE3000P	RE 192	SK3124	RT-107A	ECG199		
IC5301	MS1208P	21A120-016	GE-216	MEP7400	PTC186	NEPE3000P	RE 201	SK3197	RT-158	ECG236		
IC5302	MS1208P	21A120-016	GE-216	MEP7400	PTC186	NEPE3000P	RE 192	SK3124	RT-107A	ECG199		
IC5303	MS1208P	21A120-016	GE-216	MEP7400	PTC186	NEPE3000P	RE 192	SK3124	RT-107A	ECG199		
TR5001	2SC945AP	21A112-046(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5101	2SC945AP	21A112-046(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5102	2SC945AP	21A112-046(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5103	2SC945AP	21A112-046(1)	GE-212	(IR)2SC945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		

RECEIVER 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.	MFG. PART No.	REPLACEMENT DATA								
			GENERAL ELECTRIC PART No.	IR WORKMAN PART No.	MALLORY PART No.	MOTOROLA PART No.	RAYTHEON PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.	
TR5104	25C945AP	21A112-046(1)	GE-212	(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199	
	25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5105	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5106	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5107	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5108	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5109	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5110	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5111	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5112	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5113	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5114	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5115	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5116	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5117	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5118	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5119	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5120	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5121	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		
TR5122	25C820P, Q, R	21A112-062(1)	GE-61	(IR)25C820P	PTC121	HEPS0015	RE 192	SK3122	RT-302	ECG199	
	25C945AP, 25C945P, Q, R		(IR)25C945	PTC121	HEPS0015	RE 192	SK3124	RT-107A	ECG199		