



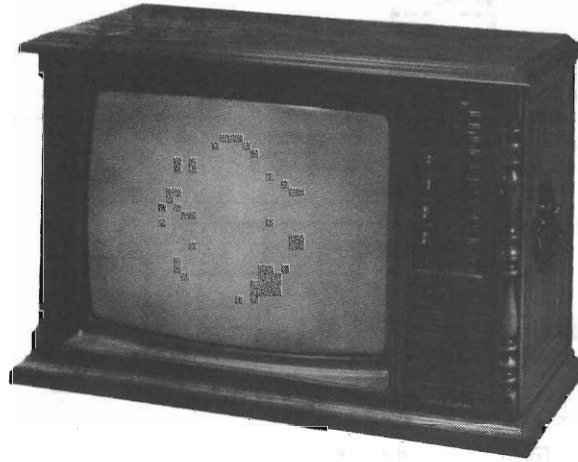
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with **CIRCUITRACE**

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CURTIS MATHES
CHASSIS CMC84-1,CMC84-2

COLOR TV



SAFETY PRECAUTIONS

See pages 4,5.

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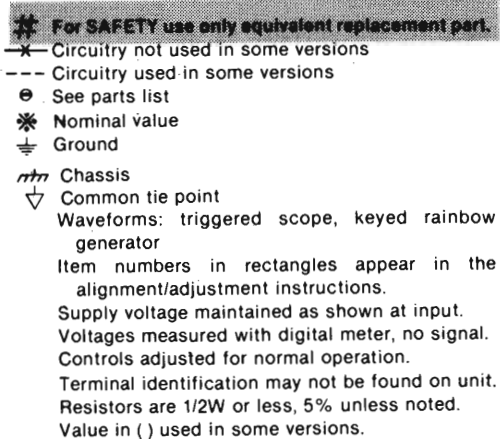
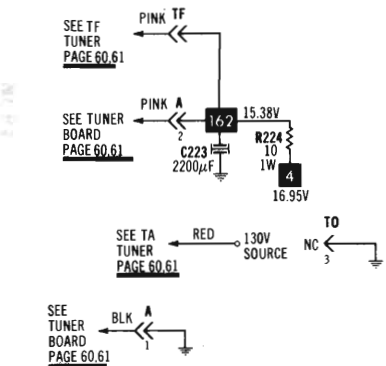
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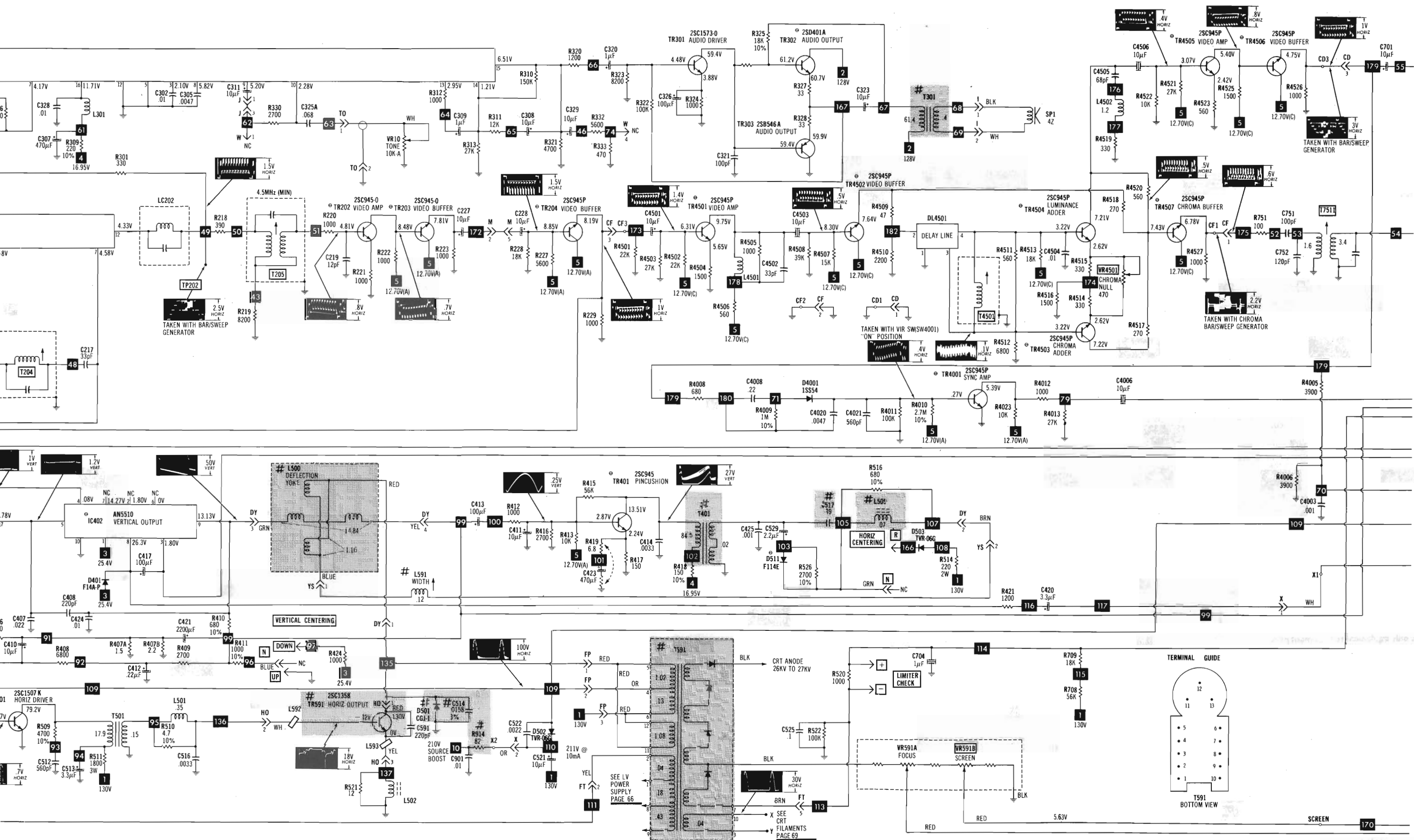
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DATE 9-82 SET 2101 FOLDER 1





2



SAFETY PRECAUTIONS

Before servicing the chassis, it is important that the service technician read and follow the safety precautions outlined below.

CRITICAL COMPONENT REPLACEMENT

- Replacement parts which have special safety characteristics are identified by # on the schematics.
- Replace these critical components with genuine Curtis Mathes replacement parts.
- Do not degrade the safety of the set through improper servicing.

SAFETY PRECAUTIONS

- Comply with all caution and safety related notes on or inside the receiver cabinet, on the receiver chassis, and on the picture tube.
- When service is required, maintain correct lead dress and part placement. Extra precaution should be taken to ensure proper lead dress in the high voltage area.
- When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as: non metallic control knobs, insulating fishpapers, adjustment and component covers/shields, isolation resistor capacitor networks, etc.
- Before returning the receiver to the customer, be sure that no protective device built into the set by the manufacturer has become defective, or inadvertently defeated during servicing. Therefore, the following checks are recommended for the continued protection of the customer and service technician.

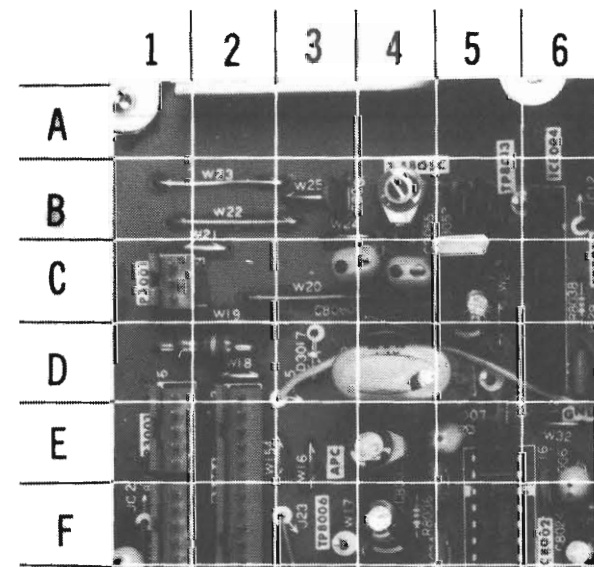
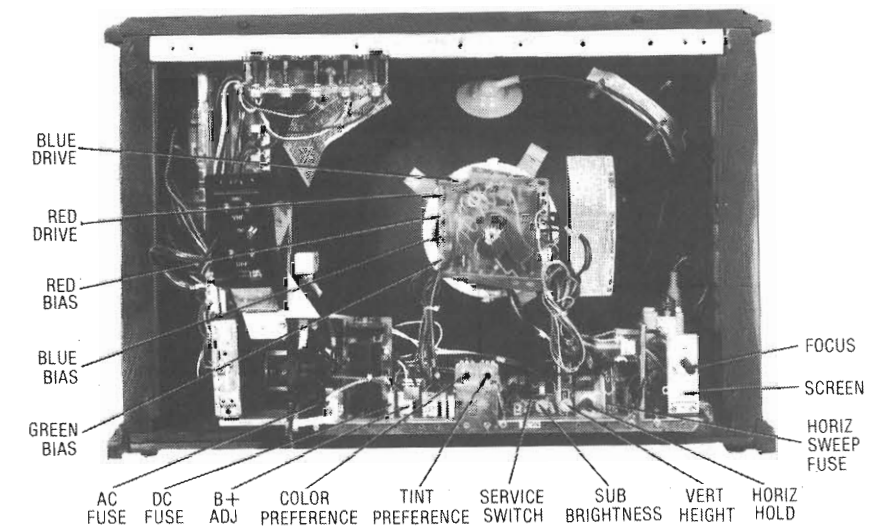
Courtesy of the Manufacturer

GRIDTRACE INSTRUCTIONS

1. Locate item numbers and grid coordinates on GridTrace location guide.
2. Locate component on GridTrace photo using grid coordinates.
3. Item numbers on PC Board are used for positive identification of components.

GRIDTRACE LOCATION GUIDE

C8022	F-6	D3017	D-3
C8024	F-6	IC8002	F-5
C8025	F-6	IC8004	B-6
C8028	D-6	L8006	E-6
C8030	E-4	L8007	E-5
C8031	D-4	L8011	C-3
C8032	E-5	L8012	C-4
C8033	F-4	P3001	C-1
C8034	F-4	P3003	E-1
C8035	E-4	P3006	E-2
C8050	C-4	R3212	D-2
C8051	C-5	R8032	F-6
C8053	B-5	R8036	F-4
C8054	B-5	TP8006	F-3
C8055	B-4	TP8013	B-5
C8056	B-4	X8001	D-4
C8061	B-3	X8002	C-5

A Howard W. Sams **GRIDTRACE™** Photo

CABINET-REAR VIEW

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

Remove knobs from cabinet front. Remove eight screws holding cabinet back and remove back. Disconnect HV anode, CRT socket, deflection yoke connectors, degaussing coil connector, speaker connector and ground leads. Lift control assembly out of slots in rear upper cabinet frame and remove assembly from cabinet. Release two latches holding main chassis assembly to cabinet bottom and slide assembly back. Remove three screws holding control assembly and remote receiver to cabinet front and remove assemblies from cabinet. Disconnect connectors TF, RC, TA, and TH from tuning assembly, re-

release tuning access panel latch, slide panel out of cabinet front and release latch on top of tuning assembly and remove tuning assembly from cabinet front.

CRT REMOVAL

Follow "Chassis Removal" procedure and lay set
facedown on a soft protective surface. Loosen
and remove CRT neck assemblies, remove four
screws holding degaussing shield to cabinet
front and lift shield out of cabinet. Remove
four screws holding CRT to cabinet front and
lift CRT from cabinet. Do not lift CRT by the
neck.

SERVICING IN THE FIELD

CRT IMPLOSION PROTECTION AND CLEANING

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

FUSE DEVICES

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

A 4-amp fuse is used for AC line protection.
(See photo, Cabinet-Rear View.)

A 2-amp fuse is used for horizontal sweep circuit protection. (See Placement Chart.)

CHANNEL INDICATOR LAMP ACCESSIBILITY

Move tuning panel release button to right to move tuning panel into fine tuning position. Remove cover on left side of tuning assembly for access to indicator lamps.

VHF/UHF TUNER

Twelve buttons are provided for electronic channel selection. Twelve band switches and twelve tuning knobs are provided for channel pretuning. Fine tuning is adjusted by rotating tuning knobs. See Channel Pretuning Procedures.

HORIZONTAL OSCILLATOR

Adjustment of the horizontal hold is accomplished by the proper setting of the Horiz Hold Control (VR501).

WIDTH

- The width may be varied by adjusting the Width Coil (L591). (See Placement Chart.)

FOCUS

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

AGC

The AGC may be varied by an RF AGC control.
(See Placement Chart.)

o CENTERING

Horizontal centering is accomplished by placement of the horizontal centering jumper. (See Placement Chart.)

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

SAFETY PRECAUTIONS (CONTINUED)

ANTENNA COLD CHECK

With AC plug removed from the 120V AC source, place a jumper across two plug prongs. Turn the set AC power switch ON, and connect one lead of an ohmmeter to the jumpered AC plug and touch the other lead to each exposed antenna terminal screw, coaxial connector, metal cabinet, and exposed metal cabinet screws (when applicable). The resistance measured should not be less than 1.0 megohm or greater than 5.2 megohms. Any resistance value below or above this range indicates an abnormality which requires corrective action. Repeat the test with the AC power switch in the OFF position.

LEAKAGE CURRENT HOT CHECK

Plug the AC line cord directly into a 120V AC outlet (do not use an isolation transformer in this check). Use a leakage current tester which complies with American National Standards Institute (ANSI C101.1-1971 "Leakage Current for Appliances"), and Underwriters Laboratories (UL) 1410. Measure for leakage current from all exposed metal parts of the cabinet (antenna, handle, bracket, metal cabinet, screwheads, metal overlays, control shafts, etc.) to a known earth ground. The test should be conducted with the AC power switch ON, and then repeated with the AC power switch OFF. Any leakage current measured must not exceed 0.5mA with the AC line cord inserted in the AC supply circuit receptacle. Any measurement not within the limits outlined above are indicative of a potential shock hazard and corrective action must be taken before returning the set to the customer.

X-RADIATION PRECAUTION

This product contains critical electrical and mechanical parts essential for X-RADIATION protection. The normal anode voltage is 28KV on CMC84 Series Chassis with 120V AC line voltage, and must not exceed 33.0KV under any operating conditions. To measure anode voltage, turn the brightness control fully counterclockwise, and connect a high impedance meter between the anode lead and the chassis. If the high voltage exceeds the specified limits, corrective action must be taken.

WARNING TO SERVICE PERSONNEL

Do not remove, install, or handle the picture tube in any manner unless shatter-proof goggles are worn. People not so equipped should be kept away while picture tubes are being handled. Keep the picture tube away from the body while handling.

CAUTION

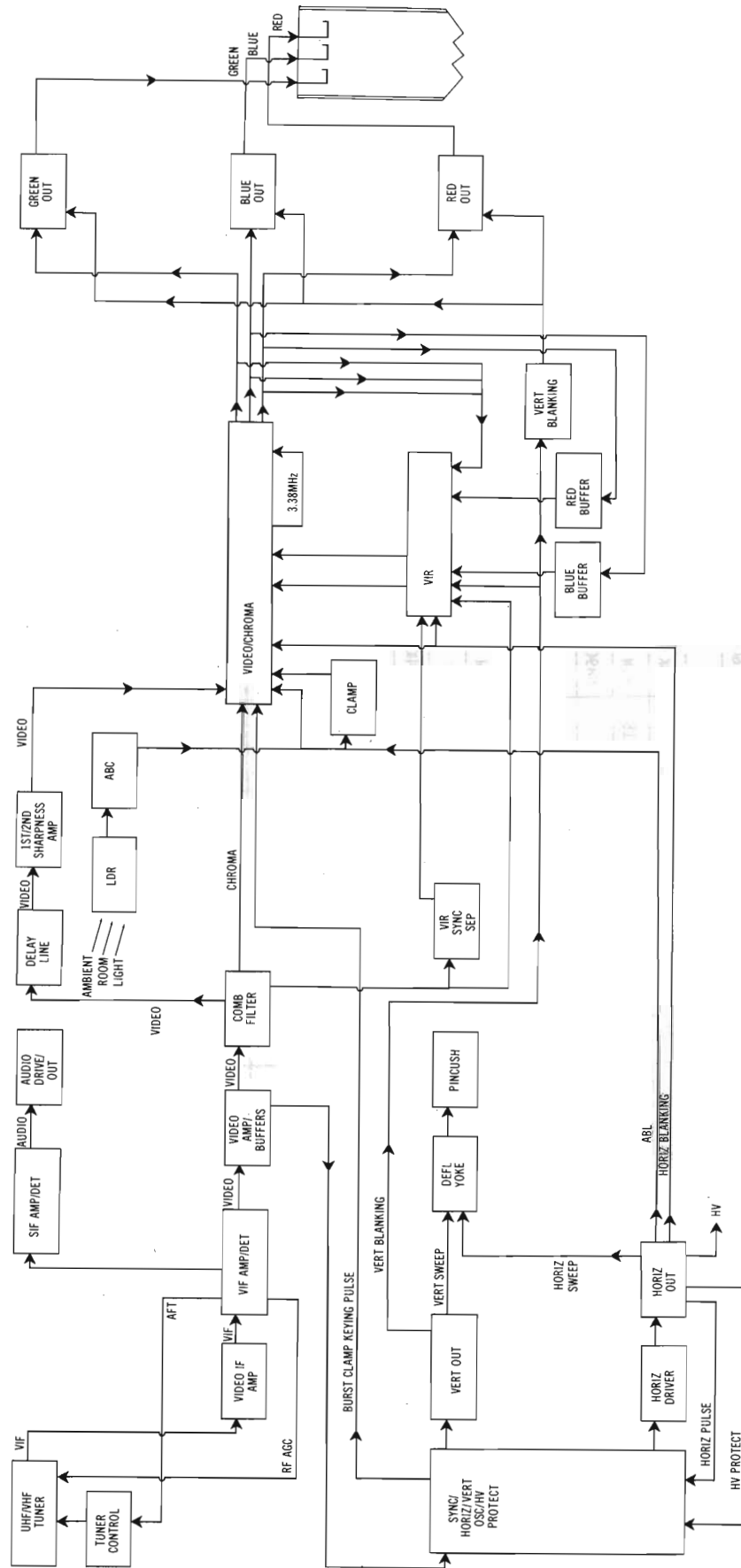
THE CHASSIS OF THIS RECEIVER IS CONNECTED TO THE AC POWER LINE. Operation of the chassis outside the cabinet or with covers removed should not be attempted by anyone not thoroughly familiar with the precautions necessary when working with this type of equipment.

SHOCK HAZARD

**120V AC RMS CHASSIS TO EARTH GROUND
POTENTIAL. USE ISOLATION TRANSFORMER
DURING SERVICING.**

CAUTION

The Primary Power Supply and High Voltage protect circuits are critical in regard to the safe operation of the receiver. To ensure protection against possible X-RADIATION and to ensure continued SAFETY in respect to fire and shock hazard, do not attempt to repair these circuits. These circuits are factory adjusted and sealed. If a malfunction develops in the Primary Power Supply circuit (other than TR691 and R691) or the High Voltage Protect circuit, the Main Module must be sent to the factory for replacement.



BLOCK DIAGRAM

TV ALIGNMENT INSTRUCTIONS

Use an isolation transformer, or observe polarity, and maintain line voltage at 120VAC. Allow a 20-minute warm-up period for receiver and test equipment.
Suggested Alignment Tools: GC ELECTRONICS
T203,T204,T205.....9296,9297,9300

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.
Disconnect IF Input Cable on main P.C. Board (TP1).
Connect a +7.5V Bias to TP201.

VIDEO IF ALIGNMENT (SWEEP MARKER GENERATOR)

VERTICAL INPUT OF OSCILLOSCOPE	VFO GENERATOR OUTPUT	GENERATOR FREQUENCY	REMARKS
To TP202	To TP1 (IF Input)	45.75MHz (Modulated at 1000Hz)	Adjust T203 for Maximum gain of response. See Figure 1. NOTE: Use a VFO (Variable Frequency Generator) with a modulated output for this adjustment.

VIDEO IF ALIGNMENT (BAR SWEEP GENERATOR)

BAR SWEEP GENERATOR	SCOPE INPUT	REMARKS
To TP1 (IF Input)	To TP202 VERTICAL INPUT OF OSCILLOSCOPE	Perform Video IF Adjustments per SWEEP/MARKER GENERATOR instructions above. See Figure 3.

4.5MHz TRAP ALIGNMENT

Tune in a strong TV signal and set the contrast at Maximum. Adjust T205 for MINIMUM beat interference.

AUTOMATIC FINE TUNING ALIGNMENT

Connect as explained in preliminary instructions unless specified otherwise. Turn AFT switch On.				
DIRECT PROBE FROM SWEEP/MARKER GENERATOR	SWEEP GENERATOR OUTPUT	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
To TP2 (Junction R213 and R225)	To TP1 (IF Input)	44MHz (10MHz Sweep)	45.75MHz	Adjust T204 to place 45.75MHz marker as shown. See Figure 2.

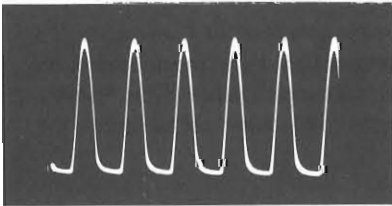


Figure 1

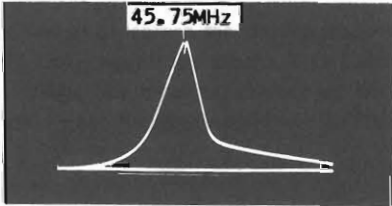


Figure 2

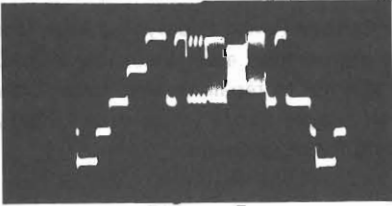


Figure 3

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													
IC201	11K	8410	1720	47K	8290	8830	11K	2220	2220	14K	79	8740	0	560K													
													PIN 15	PIN 16													
													8360	11K													
IC301	3450	3650	7630	1450	0	385	6130	10K	8160	22K	36K	0	INF	23K													
													4530	304													
IC401	1980	13K	20K	0	25K	3480	INF	26K	26K	26K	47K	12K	INF	2200													
					PIN 15	PIN 16	PIN 17	PIN 18	PIN 19	PIN 20	PIN 21	PIN 22	PIN 23	PIN 24													
					19K	0	11K	4390	8890	79	4020	3960	22K	30K													
IC402	INF	INF	INF	4390	11K	INF	INF	24K	12K	0																	
IC701	102	INF	7590	102	12K	INF	67K	102	26K	6610	5250	INF	4710	0													
	PIN 15	PIN 16	PIN 17	PIN 18	PIN 19	PIN 20	PIN 21	PIN 22	PIN 23	PIN 24	PIN 25	PIN 26	PIN 27	PIN 28													
	330K	INF	INF	INF	INF	17	INF	INF	INF	INF	INF	19K	6170	23K													
IC4001	INF	INF	15K	4070	INF	6850	6580	79	114K	3070	INF	2550	INF	INF													
					PIN 15	PIN 16	PIN 17	PIN 18	PIN 19	PIN 20	PIN 21	PIN 22	PIN 23	PIN 24													
					INF	INF	321	2580	INF	9510	0	14K	5570	11K													
V1	INF	NC	NC	NC	31K	170K	7M	170K	FIL	FIL	170K																
ITEM	E	B	C		ITEM	E	B	C		ITEM	E	B	C														
TR201	33	1200	387		TR602	54K	2110	81K		TR4001	0	96K	7320														
TR202	1000	9350	1080		TR691	15K	INF	15K		TR4002	330	24K	79														
TR203	1000	1080	79		TR701	560	1494	639		TR4003	330	19K	79														
TR204	952	4360	79		TR702	892	639	79		TR4501	1480	12K	635														
TR301	996	8220	37K		TR703	8120	59K	79		TR4502	2220	11K	79														
TR302	107K	37K	15K		TR704	INF	9890	14K		TR4503	1673	4910	2760														
TR303	107K	37K	0		TR901	321	19K	167K		TR4504	1671	4910	2780														
TR401	145	2040	300		TR902	287	6170	167K		TR4505	555	7250	1560														
TR501	0	26K	17K		TR903	330	23K	167K		TR4506	891	1560	79														
TR591	.47	.94	15K		TR904	INF	489			TR4507	997	2490	79														
TR601	INF	43K	15K																								

TROUBLESHOOTING

POWER SUPPLY

Check the AC Line Fuse (F601) and DC Line Fuse (F602). If the AC Fuse is bad, check for possible shorts at the Bridge Rectifiers (D601 thru D604), Degaussing Coil (L101), Power Transformer (T5091), Relay (RL5001) and Capacitor C601. If the DC Line Fuse is bad, check for possible shorts to ground at the Regulator Transistor (TR691). Apply AC power and check for 120V AC from the cathode of Rectifier (D601) to the cathode of Rectifier (D602). If 120V AC is not present, check Resistor (R602), Plugs CP, QF, T and AZ, Relay (RL5001), Vacation Switch (SW691) and Line Choke (L601). Check the remote section by moving Plug QF from pins QF1 and QF2 to pins Q1 and Q2. If the TV turns On, troubleshoot the remote module. Check for approximately 155.8V at the cathode of Rectifier (D603). If 155.8V is not present, check the Bridge Rectifiers (D601 thru D604). Check for 130V at the emitter of the Regulator Transistor (TR691) and check the ripple level with a scope. If 130V is not present or not regulated, check the voltages and associated components of the Error Amp Transistor (TR602), Regulator Control Transistor (TR601) and Regulator Transistor (TR691). If the ripple level is too high, check the Electrolytic Capacitors C324, C606, C607 and C523. If the voltage at the emitter of TR691 measures approximately 164V, check the High Voltage Shutdown Circuit (IC401 pins 9, 11 and 12) for possible shutdown conditions.

HORIZONTAL

To determine if the TV is in shutdown, check the voltage at pin 12 of the Sync/Horiz/Vert Osc/HV Protector IC (IC401). The voltage will be approximately .41V, if the TV is in shutdown. If the TV is in shutdown, see the High Voltage Shutdown Circuit Defeat section of this Troubleshooting Aid. If the TV has no picture, sound or raster or has a narrow picture, check the B+ voltages at pin 6 of the Horizontal Output Transformer (T591) and pin 8 of IC401. If the B+ voltage is not present at pin 6 of T591, check pins DY5 and DY6 of Plug DY and pins YS3 and YS4 of Plug YS. If no problem is found, refer to the Power Supply section of this Troubleshooting Aid. If the B+ voltage is not present at pin 8 of IC401, check Resistor (R412), Capacitor C526 and check for possible shorts at pin 8 of IC401. Inject a horizontal signal at the base of the Horizontal Output Transistor (TR591). If the high voltage returns, check the voltages, waveforms and associated components at IC401 (pins 1 thru 7 and 10) and the Horizontal Driver (TR501). If the high voltage does not return, check the Horizontal Output Transistor (TR591), Damper Diode (D5010, Yoke (L500), Width Coil (L591), Horizontal Output Transformer (T591) and associated components. Also check for possible shorted B+ sources at Rectifiers (D502, D504, D506, D508 and D2001) that could load down the horizontal circuits. The high voltage rectifier is part of the Horizontal Output Transformer (T591) and may be defective. If the TV has a raster with no sound or picture, check the B+ sources developed off of the Horizontal Output Transformer (T591) at Rectifiers (D502, D504, D508 and D506). If any of the B+ sources are not present, check the rectifier and components associated with the missing source. If the TV

has sound with no raster or picture, check the Horizontal Output Transformer (T591) and check the B+ sources developed from T591 at Rectifiers (D502, D504, D508 and D506). If any of the B+ Sources are not present, check the rectifier and components associated with the missing source. Poor horizontal linearity or foldover problems may be caused by the condition of Capacitors C516, C517, C591 and C514, Damper Diode (D501), Width Coil (L591), Horizontal Lin Coil (L505) and Pincushion Transformer (T401). If the horizontal is Off frequency, check the voltages, waveforms and components of the AFC circuit at IC401 (pins 1, 2, 3 and 5) and check the horizontal oscillator at (pins 6 and 7) of IC401.

IF-AGC

If the TV has a raster with no picture or sound, Inject an IF signal at the IF Input Cable and check for proper picture information on the picture tube. If the proper picture is present, check the Tuners and Tuner AGC and pins 3, 4, 5 and 6 of the VIF Amp/Det IC (IC201). If a picture is not present, check for a proper video waveform at TP202. If the video waveform is present, refer to the video section of the Troubleshooting Aid. If no video waveform is present, apply AGC bias to TP201 while monitoring TP202 with a scope. If the video returns, check the voltage and components on IC201 (pins 12 and 14). See the AGC Voltage Chart for voltages that change with signal. If the video does not return, check the components and voltages associated with the Video IF Amp Transistor (TR201) and pins 1, 2, 7 thru 12, 15 and 16 of the VIF Amp/Det IC (IC201). If the TV has an overloaded picture, check the voltages and components of IC201 (pins 3, 4 and 14).

AGC VOLTAGE CHART

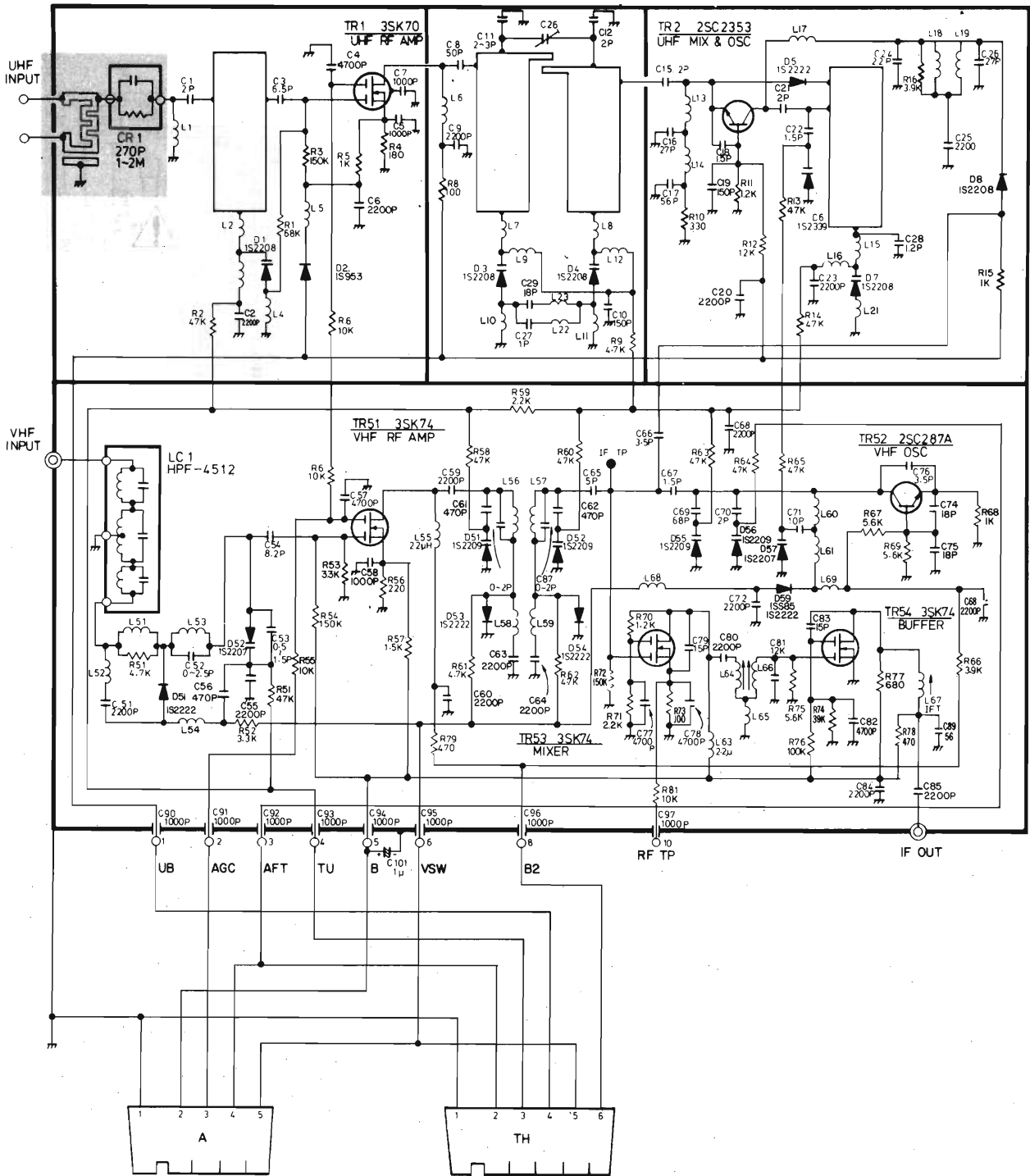
ITEM	PIN 4	PIN 14
IC201	3.12V	7.07V

NOTE: Voltages measured while using a Keyed-Rainbow generator for signal.

AUDIO

If the TV has a picture with no sound, check the B+ Source voltages at pin 16 of the SIF Amp/Det IC (IC301) and at the collector of the Audio Output Transistor (TR302). If the B+ voltage is not present at pin 16 of IC301, check Coil L301, Capacitor C328 and C307 and Resistor R309. If no problem is found, check Rectifier (D504) and the components associated with D504. If the B+ voltage is not present at the collector of TR302, check Capacitor C324 and Resistor R329. Check the remote module by removing Plug 0 from the main module. If the sound comes On at the Maximum level, troubleshoot the remote module. If the sound does not come On, reconnect Plug 0 to the main module and check for a voltage change from 1.0V to 5.5V at pin 11 of IC301 while the volume button is pushed. Set the volume to Maximum. Inject an audio signal at pin 15 of IC301. If no audio appears at the Speaker, check the Speaker (SP1) Plug 1, Audio Output Transformer (T301) and check the voltages and components associated with the Audio Driver Transistor (TR301) and Audio Output Transistors (TR302 and TR303).

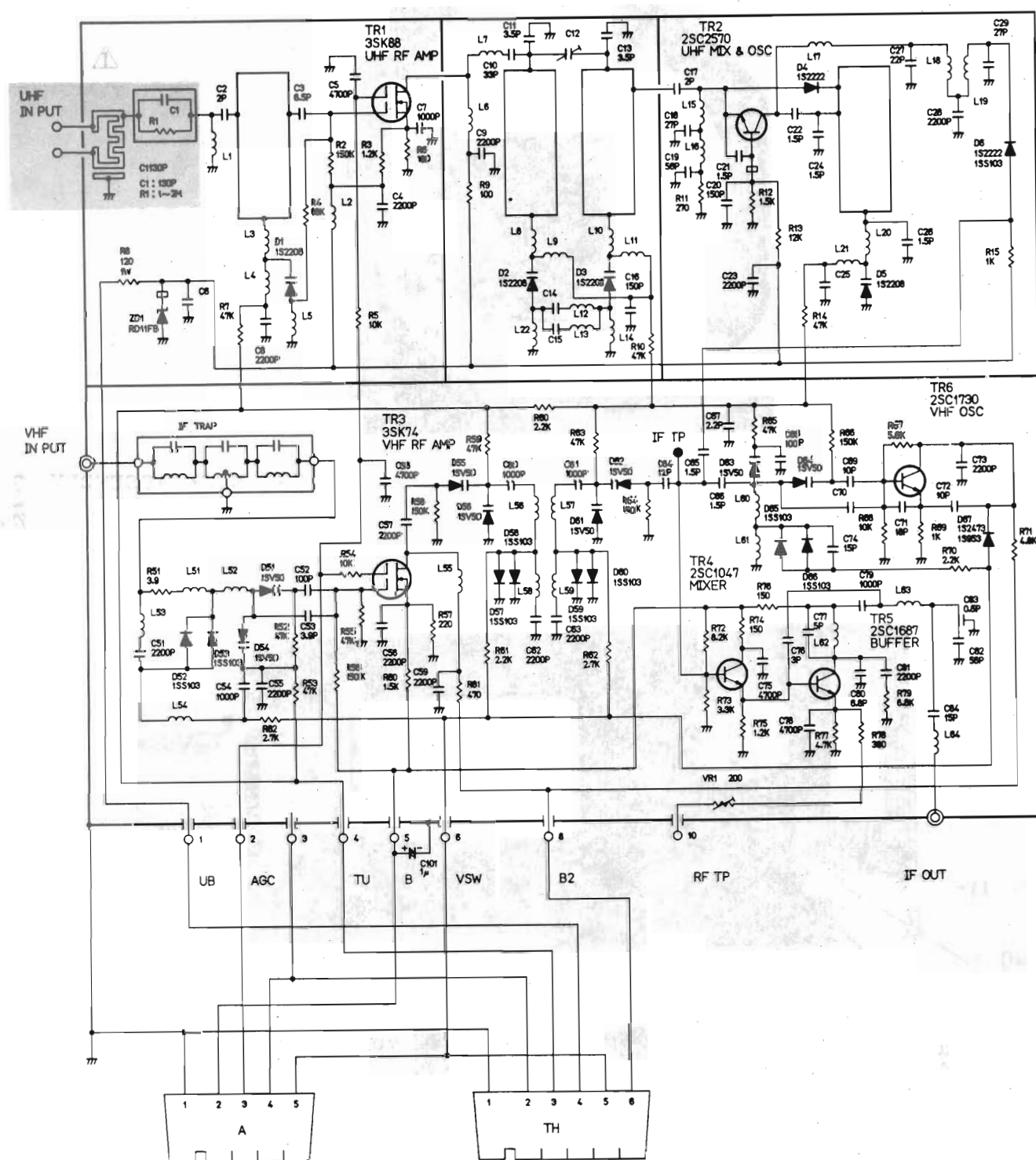
UHF/VHF COMBO TUNER
SCHEMATIC DIAGRAM(CMC84-2)



Parts which are CRITICAL with respect to SAFETY are shaded . Replace these CRITICAL COMPONENTS with genuine Curtis Mathes replacement parts for continued safe operation of the television receiver.

Courtesy of the Manufacturer
UHF/VHF COMBO TUNER USED IN CMC84-2

UHF/VHF COMBO TUNER SCHEMATIC DIAGRAM (CMC84-1)



Parts which are CRITICAL with respect to SAFETY are shaded. Replace these CRITICAL COMPONENTS with genuine Curtis Mathes replacement parts for continued safe operation of the television receiver.

Courtesy of the Manufacturer
UHF/VHF COMBO TUNER USED IN CMC84-1

TROUBLESHOOTING (Continued)

If audio appears at the Speaker, inject an audio signal at pin 9 to IC301. If no audio appears at the Speaker, check Plug J and check the voltages and components associated with pins 9 thru 15 of IC301. If audio appears at the Speaker, check the voltages and components associated with pins 1 thru 8 of IC301.

VIDEO

If the TV has no raster or low or excessive brightness, check the voltages and waveforms on the CRT and check the CRT. Check the voltages on the Red Output Transistor (TR901), Green Output Transistor (TR902), Blue Output Transistor (TR903) and Vertical Blanking Transistor (TR904). If the TV has a raster and sound with no picture, check the waveform at the base of the Video Amp Transistor (TR202). If no video waveform is present, see the IF-AGC section of this Troubleshooting Aid. To help determine the defective stage, inject a video signal at TP202 and check the waveforms at the bases of the Video Buffer Transistors (TR203 and TR204), Video Amp Transistor (TR4501), Video Buffer Transistor (TR4502), Luminance Added Transistor (TR4504), Video Amp Transistor (TR4505), Video Buffer Transistor (TR4506). 1st and 2nd Sharpness Amp (TR701 and TR702), pins 5, 26, 27 and 28 of the Video/Chroma IC (IC701) and the bases of the Red Output Transistor (TR901), Green Output Transistor (TR902) and Blue Output Transistor (TR903). Check the horizontal blanking waveform at pin 24 of IC701 and check the vertical blanking waveform at the base of the Vertical Blanking Transistor (TR904). If any of the waveforms are not correct, check the voltages and associated components of the defective stage.

SYNC

If there is no vertical or horizontal sync, check the waveforms, voltages and components associated with pins 23 and 24 of the Sync/Horiz/Vert Osc/HV Protector IC (IC401). If there is no vertical sync, check the voltage on pin 21 of IC401 and check Capacitor C405. If there is no horizontal sync, check the waveforms, voltages and components associated with pins 1, 2, 3, 5 and 6 of IC401.

VERTICAL

If the TV has no vertical deflection, check the B+ source voltages at pin 20 of IC (IC401) and pin 1 of the Vertical Output IC (IC402). If the B+ voltage is not present at pin 20 of IC401, check Rectifier (D504) and the components associated with it. If the B+ voltage is not present at pin 1 of IC402, check Rectifier (D506) and the components associated with it. Inject a vertical signal at pin 3 of IC402. If the vertical deflection returns, check the waveforms, voltages and associated components at pins 13 thru 20 of IC401 and pins 3 and 4 of IC402. If the vertical deflection does not return, check the waveforms, voltages and associated components of pins 5, 8 and 9 of IC402. Also check Diode D401, Plug DY and Yoke L500. Vertical linearity or foldover problems can be caused by problems in the vertical feedback and bias circuits. Check Diode D401 and check the condition of Electrolytic Capacitors C410, C412, C417, C421 and C409. Use the Resistance Measurements Chart to check for possible

changes in feedback and bias circuits. If the vertical is Off frequency, check the waveforms, voltages and components associated with pins 18 and 19 of IC401.

RASTER

Check the CRT and CRT voltages and waveforms. If the raster is magenta, check the voltages and waveforms on the Video/Chroma IC (IC701) pin 27, Diode D702 and the Green Output Transistor (TR902). If the raster is yellow, check the voltages and waveforms on pin 28 of IC701, Diode D703 and the Blue Output Transistor (TR903). If the raster is cyan, check the voltages and waveforms on pin 26 of IC701, Diode D704 and the Red Output Transistor (TR901). If the raster has a keystone shape, check the Yoke L500. If the raster has height or width problems, refer to the Vertical, Horizontal and Power Supply sections of this Troubleshooting Aid.

COLOR

If there is no color or weak color, check the color waveform at pin 13 of the Video/Chroma IC (IC701). If the color waveform is not present, check the waveform at the emitter of the Chroma Buffer Transistor (TR4507). If the waveform at the emitter is good, check the components connecting the emitter of TR4507 to pin 13 of IC701. If the waveform is not present, check the waveforms at the bases of the Chroma Adder Transistor (TR4503) and Chroma Buffer Transistor (TR4507). If either waveform is not correct, check the voltages and components associated with TR4503 and TR4507 and check the Delay Line (DL4501). Check the horizontal keying waveform at pin 20 of the Video/Chroma IC (IC701). If the waveform is not present, check the voltages at pin 20 of IC701 and pin 22 of IC (IC401) and check Capacitor C404 and Coil L401. Check the 3.58MHz oscillator at pins 21, 22 and 23 of IC701. Check the voltages and components associated with pins 7 thru 19 of IC701. If the TV has no color sync, check the horizontal keying waveform at pin 20 of IC701, the 3.58MHz oscillator at pins 21, 22 and 23 of IC701 and the voltages and components associated with pins 16 thru 19 of IC701. If the TV has incorrect hue, check the voltages and components associated with the VIR IC (IC4001) and Transistors TR4002 and TR4003. Also check the waveforms at pins 6, 7 and 24 of IC4001. See the VIR Voltage Chart and Color Voltage Chart for voltages that change with signal.

COLOR VOLTAGE CHART

ITEM	PIN 5	PIN 6	PIN 18
IC701	2.91V	2.22V	9.09V

NOTE: Voltages measured while using a Keyed-Rainbow generator for signal.

VIR VOLTAGE CHART

ITEM	PIN 3	PIN 5
IC4001	3.12V	.09V

NOTE: Voltages measured while receiving a VIR color signal.

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FOLDER 1

CIRCUIT DESCRIPTION

COMB FILTER

The luminance information of the composite video signal occupies a bandwidth of 0 to 4.5MHz and the chroma information occurs at about 2.8MHz to 4.4MHz. The comb filter is designed to separate the luminance and chroma signals without losing the high frequency component of the luminance signal. The composite video signal is fed to the Video Amp Transistor (TR4501) and buffered by the Video Buffer Transistor (TR4502). The signal at the emitter of TR4502 is applied to the collectors of the Chroma Adder Transistor (TR4503) and Luminance Adder Transistor (TR4504) and to the Delay Line (DL4501). The Delay Line (DL4501) delays the signal at pin 4 and an inverted (180°) signal at pin 3. The delayed noninverted signal at pin 4 of DL4501 is applied to the base of the Luminance Adder Transistor (TR4504) where it is added with the nondelayed signal at the collector. Since the chroma portion of the two signals is 180° out of phase, it is canceled leaving only the luminance signal which is amplified by the Video Amp Transistor (TR4505) and buffered by the Video Buffer Transistor (TR4506). The delayed inverted signal at pin 3 of DL4501 is fed to the base of the Chroma Adder Transistor (TR4503) where it is added to the nondelayed signal at the collector. Since the luminance portion of the two signals is 180° out of phase it is canceled leaving only the chroma signal which is fed to the Chroma Buffer Transistor (TR4507).

VIR

The VIR (Vertical Interval Reference) circuit automatically controls the chroma level and tint by comparing the black reference level of the "Y" signal on line 19 of the video signal to the R-Y and B-Y outputs of the Video/Chroma IC (IC701 pins 26 and 28). When the VIR Switch (SW4001) is turned On and a VIR signal is received at pin 2 of the VIR IC (IC4001) the Color Control (VR5) connected to pin 18 of IC4001 and the Tint Control (VR6) connected to pin 12 of IC4001 are disabled and the VIR IC (IC4001) automatically controls the Color Control Line (pin 20) and Tint Control Line (Pin 9). The VIR IC (IC4001) finds line 19 by using a Pulse Generator/Counter that counts 19 horizontal retrace pulses at pin 6 after being enabled at pin 24 by the vertical equalization sync pulses. The Pulse Generator then produces a pulse to turn the VIR detector section of IC4001 On to detect the VIR signal at pin 2 of IC4001.

HIGH VOLTAGE SHUTDOWN

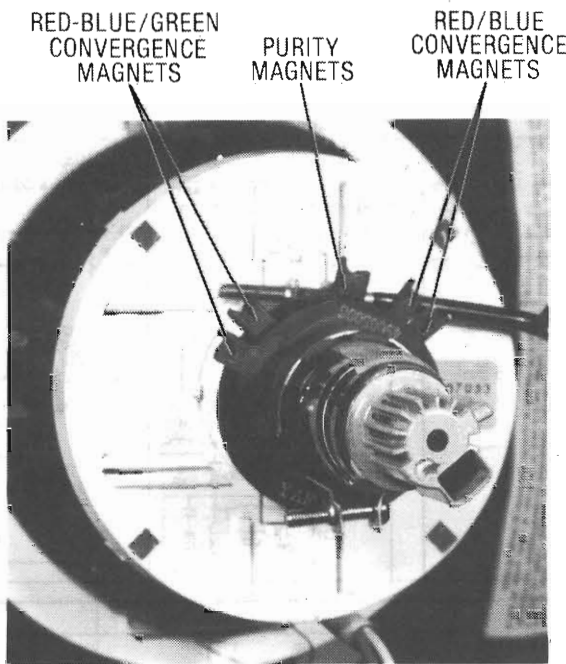
The High Voltage Shutdown circuit monitors the high voltage by monitoring the horizontal pulse from pin 2 of the Horizontal Output Transformer (T591). The horizontal pulse is rectified by Rectifier (D2001), filtered by Capacitor C2001 and applied to pin 12 of the Sync/ Horiz/Vert Osc/HV Protector IC (IC401) through a resistor divider network. The voltage at pin 12 of IC401 is compared to the reference voltage of 9.40V at pin 9 of IC401. The reference voltage is set by Zener Diode ZD2001 and Diode D2002. If the high voltage rises, the voltage at pin 12 of IC401 will also rise. If the voltage at pin 12 of IC401 rises above 9.40V, the shutdown circuit in IC401 will trigger on and shut down

the Horizontal Oscillator section of IC401 and kill the Horizontal drive signal at pin 10 of IC401.

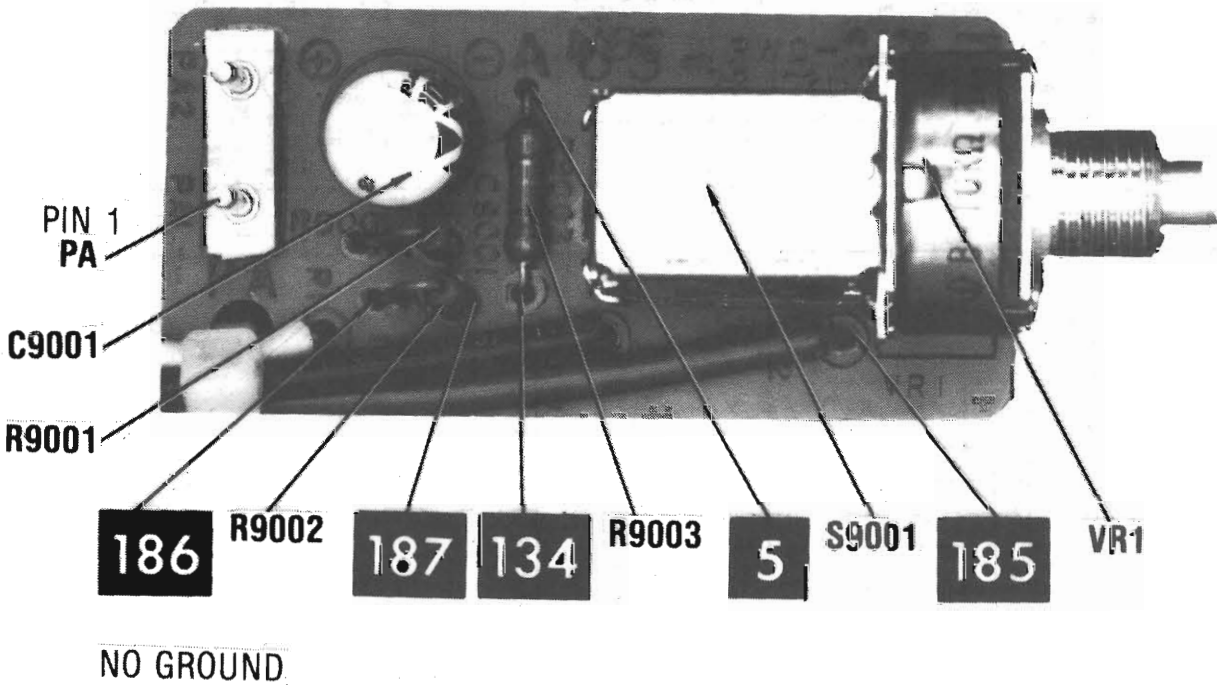
HIGH VOLTAGE SHUTDOWN CIRCUIT DEFEAT

To defeat the High Voltage Shutdown circuit, uncolder one end of Resistor R2001 and lift it from the circuit. If this does not defeat the High Voltage Shutdown, check the voltages and components on (pins 2, 11 and 12) of the Sync/ Horiz/Vert Osc/HV Protector IC (IC401).

NOTE: Care should be taken in defeating the High Voltage Shutdown circuit as this may cause excessive high voltage and damage to the high voltage transformer, picture tube or other circuits supplied B+ from the High Voltage Transformer (T591). Monitor the high voltage, if it exceeds 33KV, do not defeat the shutdown circuit. Use an isolation transformer for AC power supply with stepdown control to troubleshoot a set with excessive high voltage.



CRT NECK ASSEMBLY



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FOLDER 1

MISCELLANEOUS ADJUSTMENTS

130 VOLT DC ADJUSTMENT

130V DC Adjust (VR601) is factory adjusted and sealed. IF (VR601) is replaced, connect a DC meter to FU3, low side to ground and adjust (VR601) for 130V DC.

HIGH VOLTAGE PROTECT CONTROL ADJUSTMENT

High Voltage Protect Adjust Control (VR2001) is factory set and sealed.

RF AGC ADJUSTMENT

Connect a color bar generator to the antenna terminals and tune in a color bar pattern. Connect a DC meter to terminal (A3) on the main P.C. Board, low side to ground. Set AFT Switch to On and adjust RF AGC Control (VR202) for 7V DC.

Tune in a strong local station and check for proper AGC action, if overload (picture pulling, jitter, etc.) adjust (VR202) to eliminate.

VERTICAL-HORIZONTAL CENTERING ADJUSTMENT

For coarse Horizontal Centering Adjustment change the Horizontal Center Jumper to N or R. For fine adjustment, adjust Horizontal Centering Control (VR502).

For Vertical Centering Adjustment use the Vertical Centering Jumper, set at up, down or N for desired results.

APC ADJUSTMENT

Connect a color bar generator to the antenna terminals and tune in a color bar pattern. Set Color and Tint Controls to midrange. Connect a 100K ohm resistor between TP751 and terminal Y1 on main P.C. Board, connect a 0.1 capacitor between TP752 and ground. Adjust APC Capacitor (CT751) until the color bars stop or slowly float across the screen. Remove the resistor and capacitor.

PURITY ADJUSTMENTS

If the picture tube appears to be magnetized, use a degaussing coil to demagnetize the tube and mounting brackets. Disconnect tuner IF cable, B and G connectors. Loosen deflection yoke and slide it back until a red vertical bar appears near the center of the screen. Adjust purity tabs to center red vertical bar horizontally and vertically. Slide the yoke forward until a pure red raster is obtained over the entire screen. Reconnect tuner IF cable, B and G connectors.

CONVERGENCE ADJUSTMENTS

Connect a color bar generator to the antenna terminals and tune in a dot pattern. Adjust 4-Pole magnets to converge the red and blue dots at the center of the screen. Adjust 6-Pole magnets to converge the red/blue dots over the green dots at the center of the screen. Tune in a crosshatch pattern. Remove the rubber wedges between the deflection yoke and picture tube. Tilt the deflection yoke up or down to converge the vertical lines at the top and bottom of the screen and the horizontal lines at the right and left sides of the screen. Tilt the deflection yoke to the right or left to converge the horizontal lines at the top and bottom of the screen and the vertical

lines at the right and left sides of the screen. Repeat convergence procedure if necessary to obtain the best overall convergence. Replace the rubber wedges.

COLOR PRESET ADJUSTMENTS

Place VIR, and AFT switches to Off position. Tune in a color picture. Place ABC and AFT switches to On. Adjust Color Control (VR8) for desired color. Adjust Tint Preference Control (VR7) for proper tint.

Place VIR switch to On. Adjust Color Preset Control (VR4001) for desired color. Adjust Tint Preset Control (VR4002) for proper tint.

FAILSAFE

If B+ or high voltage rises to an unsafe level the High Voltage Protect Circuit will be activated and shut down high voltage and sound.

HORIZONTAL OSCILLATOR ADJUSTMENT

Tune in a local station and adjust all controls for a normal picture. Adjust Horizontal Hold Control (VR501) to a point where it is virtually impossible to lose sync while switching from channel to channel.

COMB FILTER ADJUSTMENT

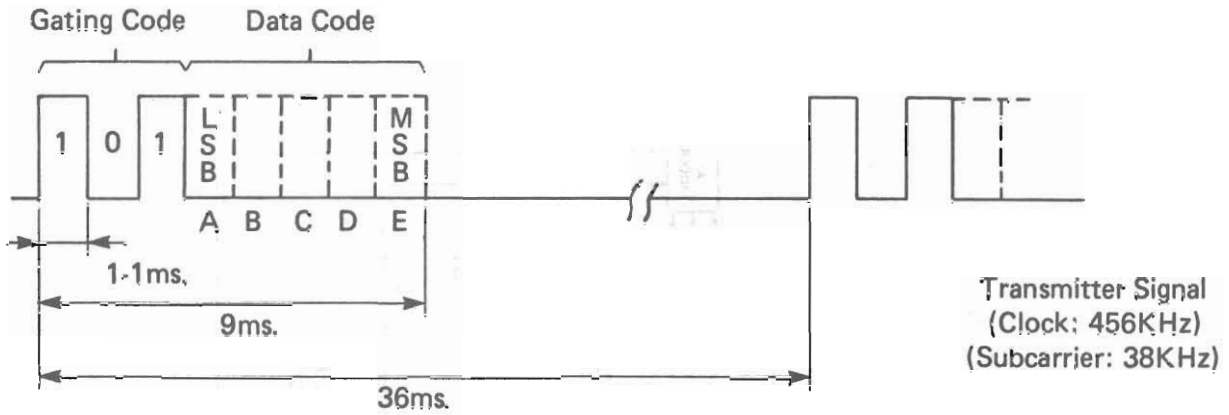
Connect a color bar generator to the antenna terminals and tune in a color bar pattern. Connect an oscilloscope to "C03" on the Comb Filter Module. Alternately adjust T4501 and VR4501 for MINIMUM chroma burst signal.

COLOR TEMPERATURE AND SUB BRIGHTNESS ADJUSTMENTS

Tune in a station and set Brightness and Picture Controls to Maximum. Color Control to MINIMUM. Turn Sub Brightness Control (VR701) fully counterclockwise. Red (VR901), Green (VR902) and Blue (VR903) Bias Controls fully counterclockwise. Set Red (VR904) and Blue (VR905) Drive Controls to midrange. Set Screen Control (VR591B) to MINIMUM. Set Service Switch (SW701) to service position. Connect a DC meter to the collector of Green Video Output (TR902), low side to ground. Adjust Sub Brightness Control to obtain a reading of 200V DC. Adjust Screen Control (VR591B) to produce a dim line on the screen. Adjust the Bias Controls for two missing colors to produce a dim white line. Reset Service Switch to normal. Turn Brightness Control to Maximum and Picture Control to MINIMUM. Adjust Drive Controls to obtain best white in highlight areas. Connect a DC meter to the "Limiter Check" terminals. Positive lead to + test point, negative lead to - test point. Adjust Sub Brightness Control to obtain 1.0V. Remove meter.

CHANNEL PRETUNING

1. Connect antenna.
2. Pull "On-Vol" knob.
3. Release tuning access panel latch.
4. Touch selector button for channel to be pretuned.
5. Set appropriate band switch to VL, VH, UHF.
6. Rotate tuning knob to tune desired channel.
7. Repeat steps 4, 5, and 6 for each channel to be pretuned.
8. After pretuning procedure is complete, push tuning panel in and latch.



FUNCTION	A CODE E
POSITION 1	00000
POSITION 2	10000
POSITION 3	01000
POSITION 4	11000
POSITION 5	00100
POSITION 6	10100
POSITION 7	01100
POSITION 8	11100
POSITION 9	00010
POSITION 10	10010
POSITION 11	01010
POSITION 12	11010
POSITION 13	00110
POSITION 14	10110
POSITION 15	01110
POSITION 16	11110
POSITION 17	00001
POSITION 18	10001
POSITION 19	01001
POSITION 20	11001
VOLUME DOWN	00011
VOLUME UP	10011
MUTE	10111
POWER	11111

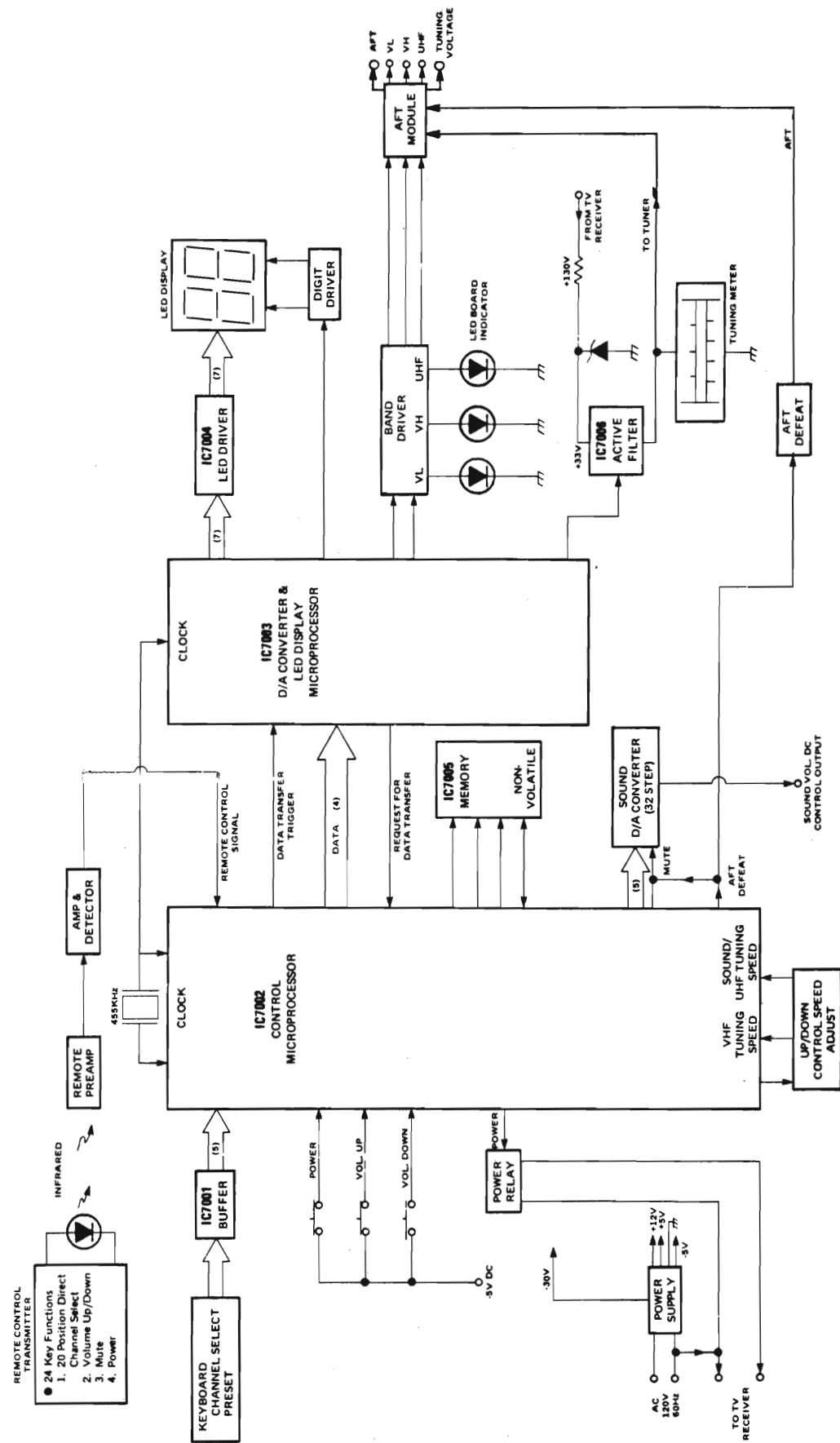
Courtesy of the Manufacturer

20 POSITION REMOTE CONTROL FUNCTION CHART

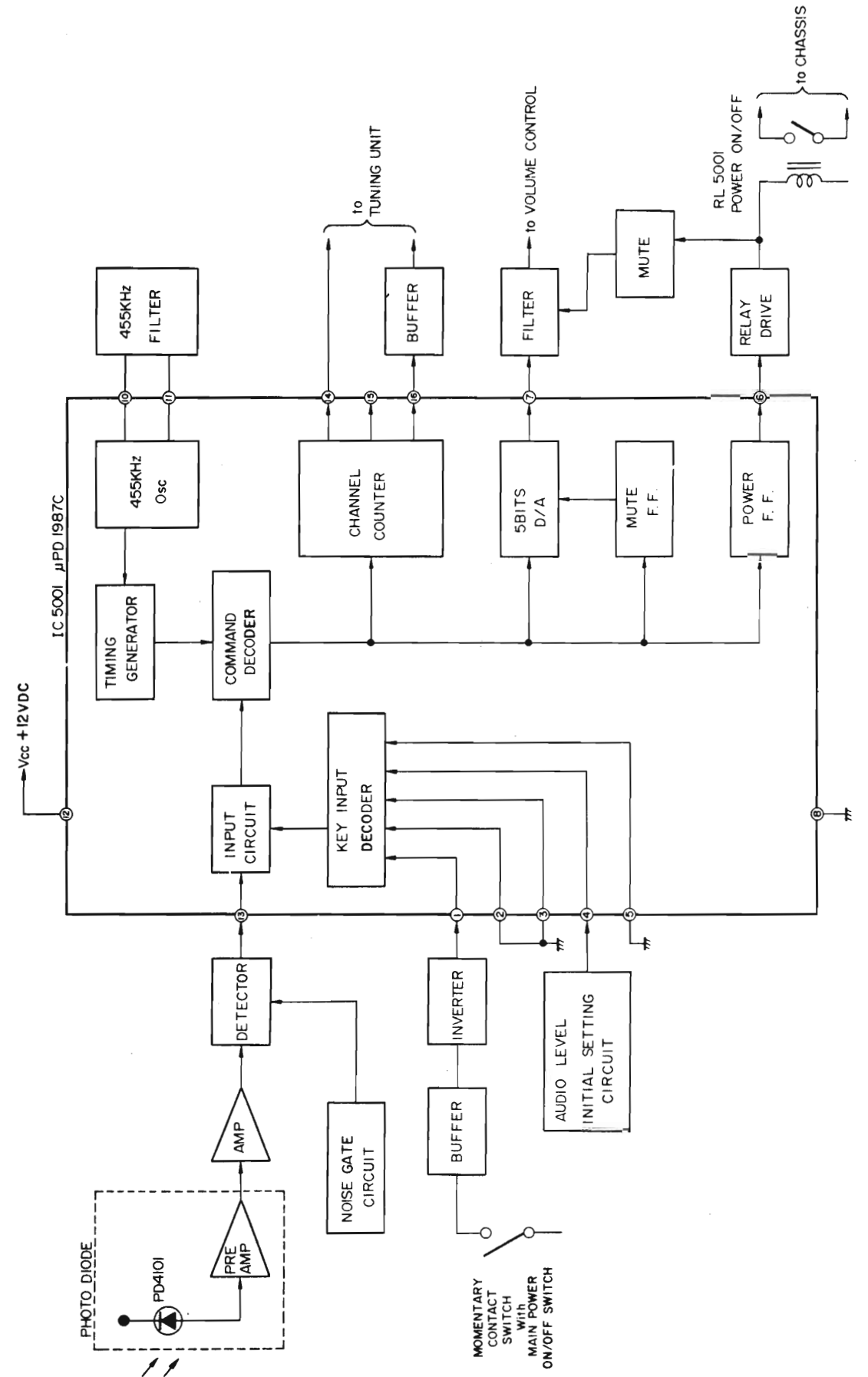
SET 2101 FOLDER 1

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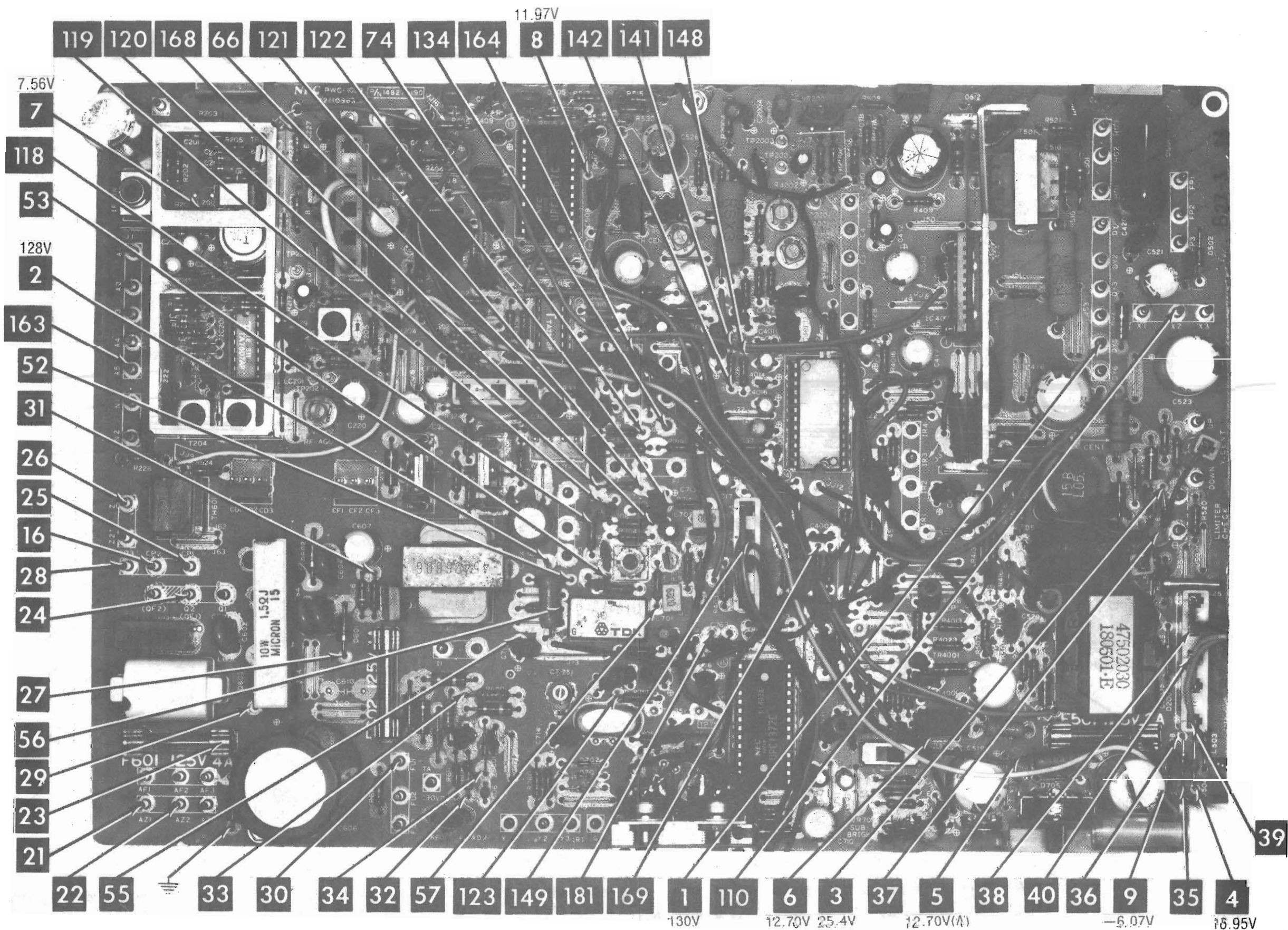
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Courtesy of the Manufacturer
BLOCK DIAGRAM-20 POSITION TUNING SYSTEM



Courtesy of the Manufacturer
BLOCK DIAGRAM-12 POSITION TUNING SYSTEM

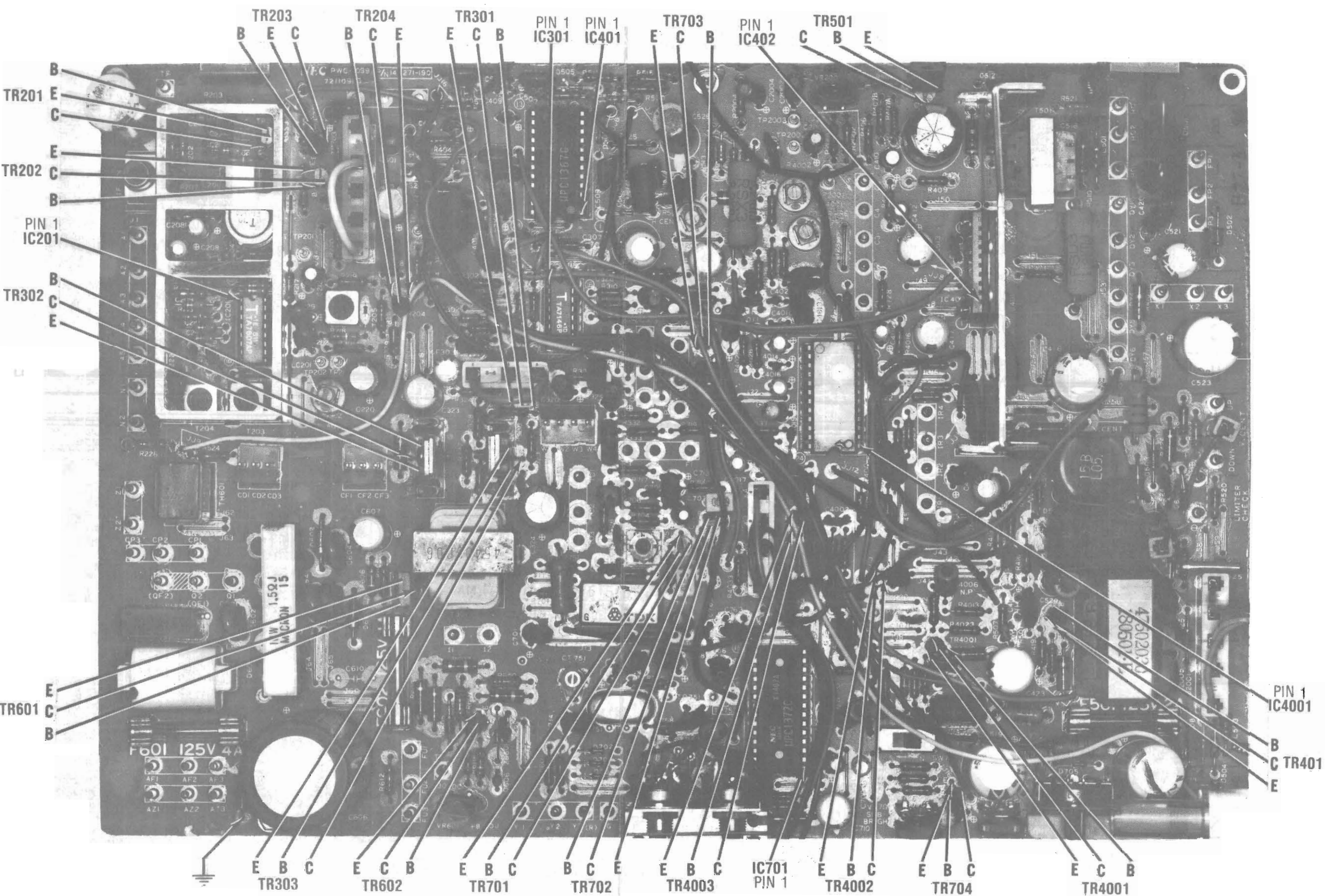


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FOLDER 1

MAIN BOARD

MAIN BOARD

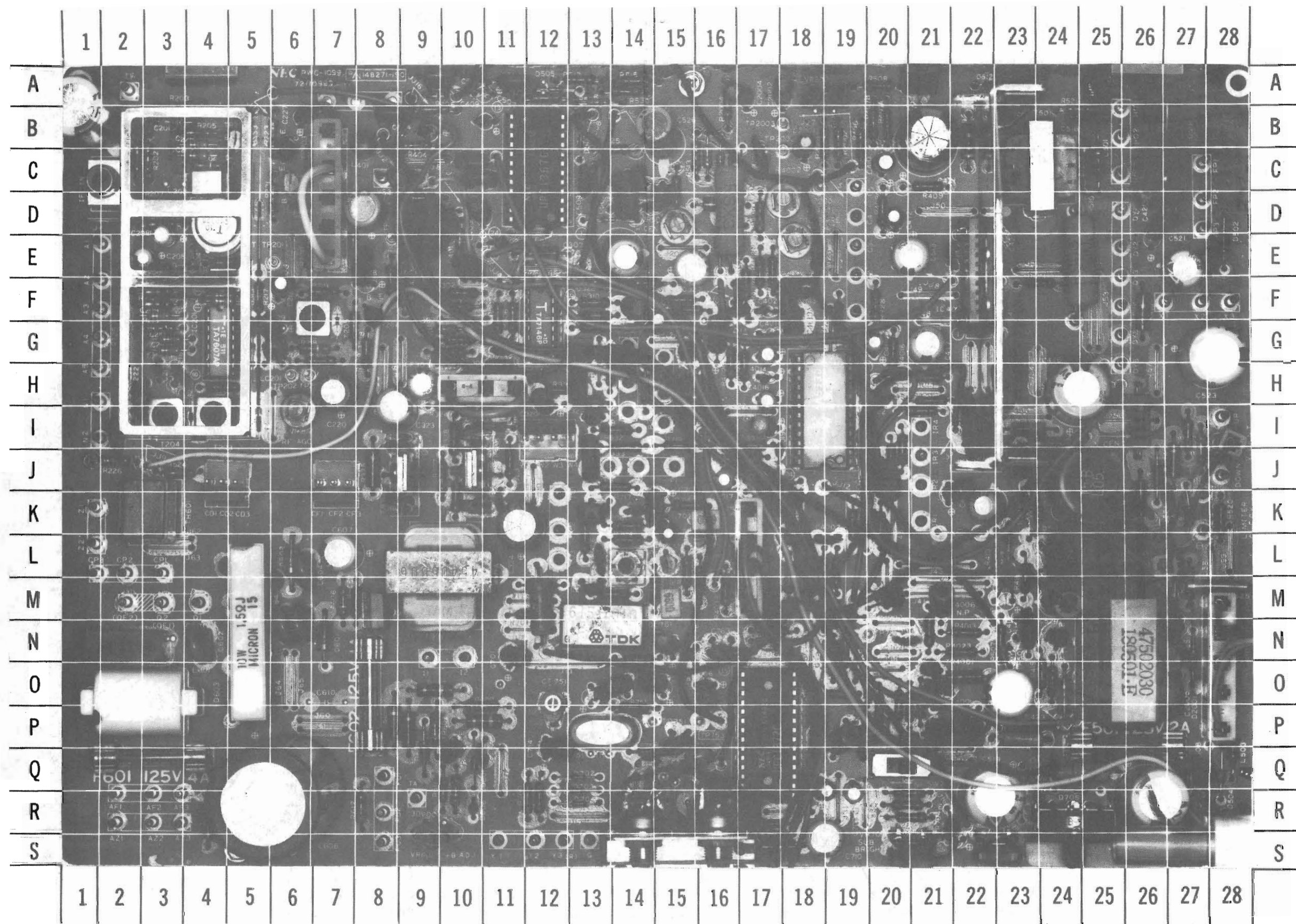


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FOLDER 1

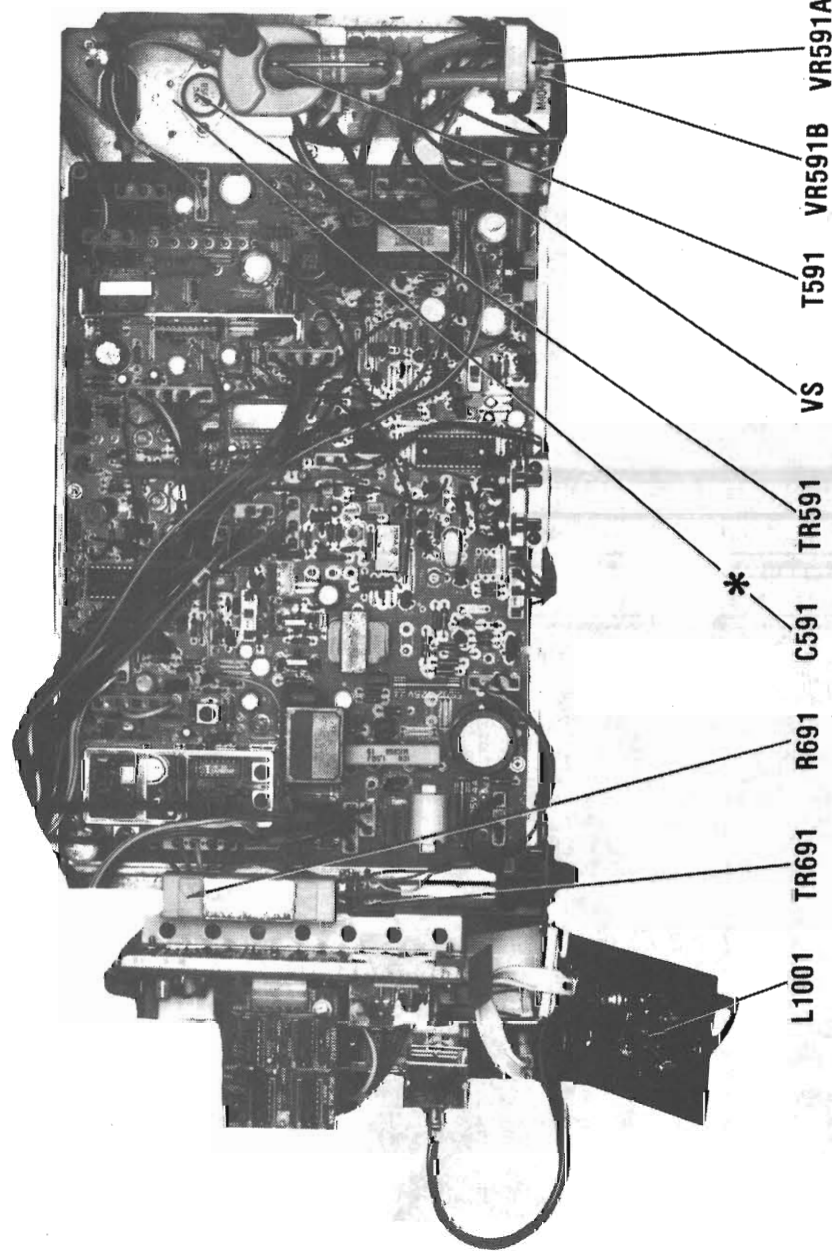
MAIN BOARD

MAIN BOARD



MAIN BOARD

A Howard W. Sams GRIDTRACE™ Photo



* LOCATED ON OTHER SIDE OF BOARD

MAIN BOARD GridTrace LOCATION GUIDE

A	E-1	C502	H-23
AF	R-2	C503	C-15
AZ	R-2	C504	C-14
B	S-14	C505	D-14
C	F-19	C506	A-10
C201	B-3	C507	A-11
C202	C-4	C508	C-13
C203	C-5	C509	C-13
C204	E-4	C510	C-16
C206	F-4	C511	C-16
C207	F-3	C512	A-22
C208A	E-3	C513	E-21
C208B	D-3	C514	B-27
C209	F-3	C515	D-14
C210	G-3	C516	B-25
C211	G-3	C517	L-25
C212	F-6	C518	R-26
C213	H-5	C519	R-22
C215	H-4	C520	Q-27
C216	H-3	C521	E-27
C217	H-3	C522	E-28
C219	D-6	C523	G-28
C220	H-7	C524	K-27
C222	H-2	C525	M-28
C223	A-1	C526	B-15
C225	H-2	C527	I-22
C226	B-4	C529	M-24
C227	B-6	C530	S-28
C228	F-8	C601	N-2
C301	F-11	C602	N-4
C302	F-10	C603	N-6
C303	F-10	C604	L-6
C304	G-11	C605	N-6
C305	G-11	C606	R-5
C306	H-15	C607	L-7
C307	E-14	C609	Q-10
C308	F-14	C701	N-11
C309	G-15	C703	K-15
C310	H-14	C704	S-27
C311	H-13	C705	K-14
C320	I-12	C707	P-19
C321	K-11	C708	Q-19
C323	I-9	C709	R-19
C324	K-11	C710	S-18
C325	J-13	C712	Q-18
C326	H-9	C713	K-15
C327	E-15	C714	Q-12
C328	F-13	C715	O-20
C329	I-13	C717	G-16
C401	D-10	C718	S-21
C402	E-11	C751	M-13
C403	D-10	C752	L-13
C404	B-8	C753	N-17
C405	C-10	C754	O-19
C406	B-9	C755	N-15
C407	C-10	C756	O-16
C408	E-22	C757	O-13
C409	B-11	C758	O-15
C410	C-20	C759	O-14
C411	M-23	C760	N-15
C412	D-20	C761	P-15
C413	K-22	C762	Q-14
C414	N-23	C763	N-16
C416	H-24	C2001	B-18
C417	G-21	C2002	A-17
C418	D-9	C2003	C-17
C419	A-9	C2004	A-17
C420	D-26	C2005	O-27
C421	B-21	C4001	J-20
C422	H-20	C4002	L-18
C423	O-23	C4003	P-21
C424	E-23	C4004	J-20
C425	N-27	C4005	K-21

C4006	M-21
C4007	G-20
C4008	P-21
C4009	F-18
C4009A	F-18
C4010	G-17
C4011	F-16
C4012	G-17
C4013	F-18
C4013A	F-18
C4014	H-17
C4015	F-17
C4016	H-17
C4017	J-16
C4018	I-17
C4019	J-17
C4020	O-21
C4021	N-20
C4022	F-17
CF301	E-10
CF303	G-10
CP	L-3
CT751	O-12
D401	F-23
D501	B-27
D502	E-28
D503	J-26
D504	Q-28
D505	A-12
D506	K-27
D507	B-13
D508	Q-27
D509	D-13
D510	E-16
D511	K-25
D601	N-7
D602	L-6
D603	O-4
D604	N-5
D605	Q-9
D606	R-10
D701	Q-25
D702	Q-13
D703	Q-13
D704	R-13
D705	R-24
D2001	N-27
D2002	D-16
D4001	P-22
D4002	K-22
DL701	N-13
DY	D-25
F	J-15
F501	P-25
F601	Q-2
F602	P-8
FL201	D-4
FP	C-27
FT	P-28
FU	Q-8
G	S-13
HC	C-12
H Center	L-26
HO	C-25
I	N-9
IC201	G-4
IC301	F-12
IC401	C-12
IC402	E-22
IC701	P-17
IC4001	I-18
IR	K-21
J	H-10

K	M-17
L201	C-4
L202	E-4
L301	F-14
L501	C-25
L502	A-25
L503	Q-28
L505	J-25
L506	L-27
L591	S-28
L601	O-2
L701	M-15
L703	K-16
L704	P-19
L705	K-13
L751	Q-16
LC201	G-6
LC202	G-5
LC751	R-16
LC752	R-16
LC753	R-16
LIMITER	K-27
M	B-7
N	H-1
O	G-14
P	G-15
Q	M-4
Q751	P-13
QF1	M-3
R201	C-2
R202	C-3
R203	A-3
R204	C-5
R205	B-4
R206	C-4
R207	D-3
R208	D-3
R209	D-3
R210	E-3
R211	F-3
R213	G-3
R214	F-3
R215	E-4
R216	H-4
R217	F-5
R218	G-7
R219	F-7
R220	E-6
R221	C-6
R222	C-6
R223	B-6
R224	P-23
R225	G-2
R226	J-2
R227	E-7
R228	G-7
R229	G-8
R230	H-3
R301	G-7
R302	F-10
R304	G-10
R305	G-10
R306	F-11
R307	F-11
R308	F-15
R309	E-12
R310	F-13
R311	F-13
R312	G-13
R313	H-13
R320	H-13
R321	F-15
R322	I-11

R323	J-11
R324	I-10
R325	J-8
R326	K-10
R327	J-10
R328	I-10
R329	M-12
R330	H-12
R332	I-14
R333	I-14
R401	D-9
R402	D-9
R404	B-9
R405	B-9
R406	B-19
R407A	B-20
R407B	B-20
R408	D-20
R409	C-21
R410	F-26
R411	I-24
R412	L-23
R413	L-23
R414	F-9
R415	N-23
R416	M-23
R417	O-24
R418	O-24
R419	O-24
R420	H-21
R421	F-24
R422	F-8
R423	E-10
R424	J-27
R501	I-23
R502	D-16
R503	C-15
R504	A-11
R505	A-12
R506	A-13
R507	N-23
R508	A-20
R509	B-22
R510	C-25
R511	E-24
R512	D-16
R513	C-16
R514	I-26
R515	A-14
R516	K-26
R517	A-13
R518	I-21
R519	Q-24
R520	K-28
R521	B-24
R522	M-27
R523	R-27
R524	J-3
R525	C-14
R526	K-24
R527	S-24
R530	A-14
R601	R-4
R602	N-5
R603	P-8
R604	P-9
R605	M-8
R606	M-7
R607	O-9
R608	P-10
R609	P-10
R610	P-9
R611	Q-10

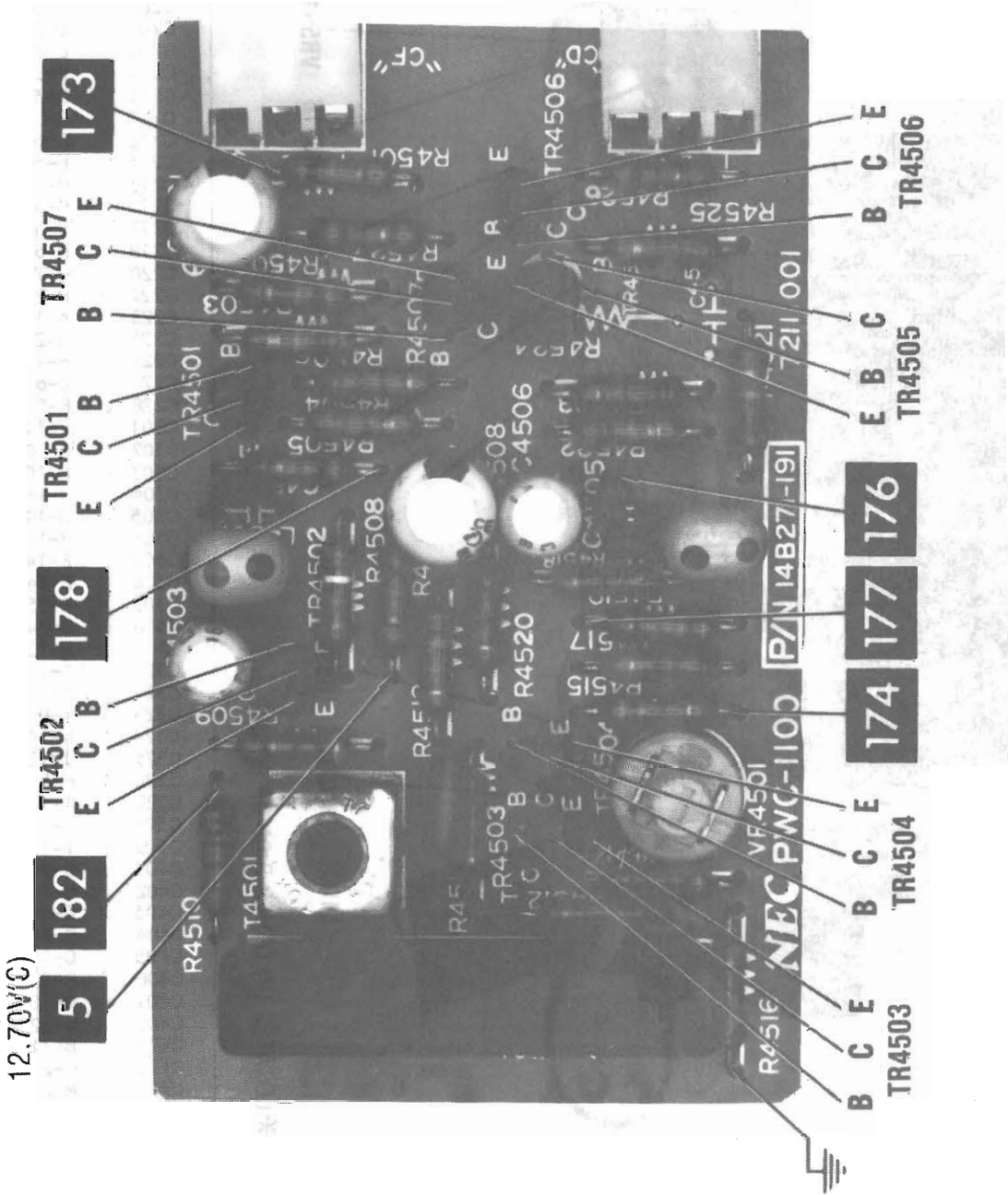
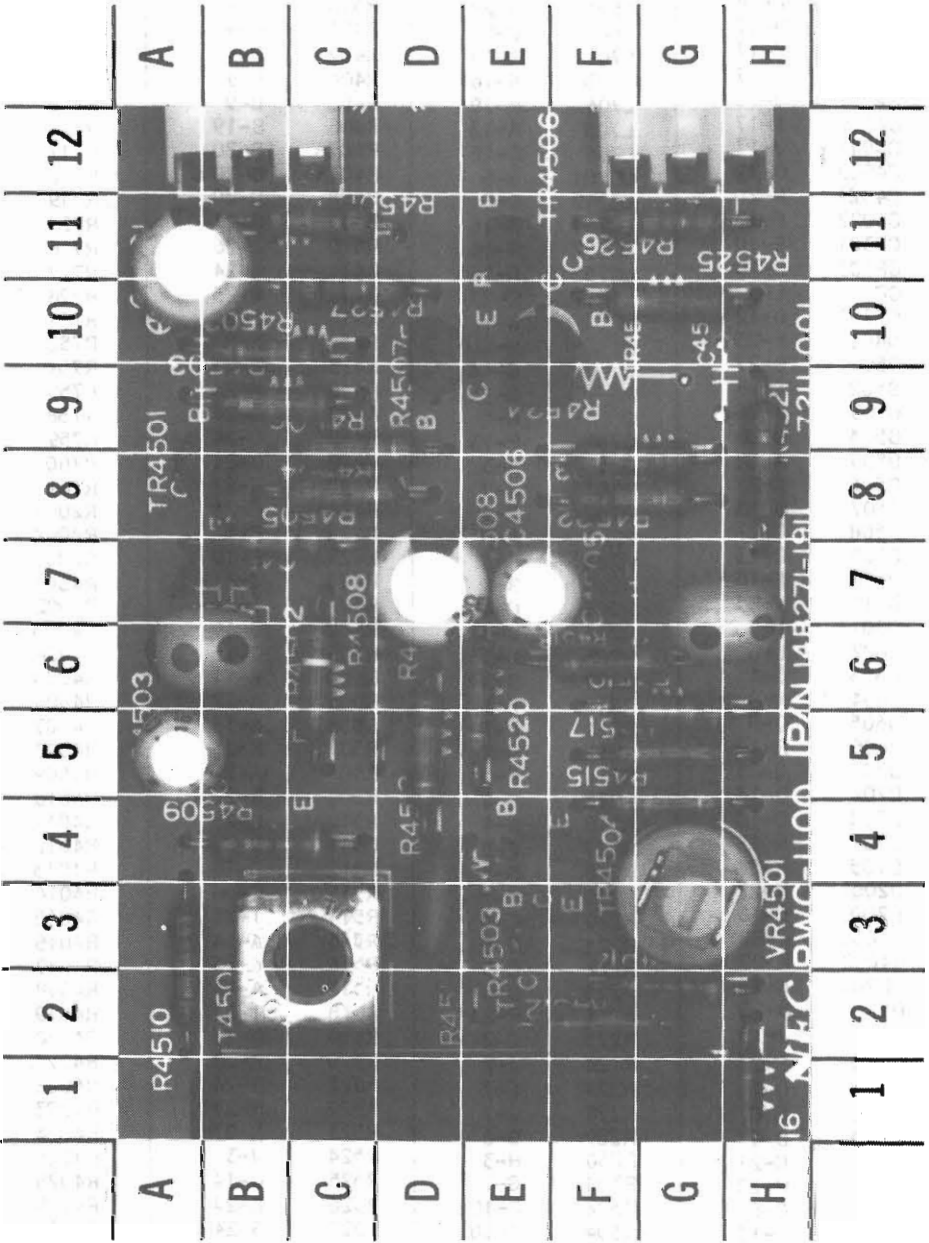
R611A	Q-10
R612	R-8
R701	M-12
R702	M-15
R703	M-16
R704	L-14
R705	L-15
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R708	I-27
R709	J-27
R710	R-20
R711	R-20
R714	K-15
R715	P-20
R716	L-13
R717	J-14
R718	S-17
R719	I-15
R721	H-16
R726	R-20
R727	S-21
R728	F-20
R751	M-12
R752	M-14
R754	N-14
R755	P-14
R758	Q-14
R759	R-12
R760	R-12
R761	N-16
R2001	B-18
R2002	B-19
R2004	A-16
R4001	L-19
R4002	L-18
R4003	M-18
R4004	K-19
R4005	P-20
R4006	K-20
R4007	I-20
R4008	P-20
R4009	P-21
R4010	O-22
R4011	O-21
R4012	N-21
R4013	N-22
R4014	R-17
R4015	H-21
R4016	G-20
R4017	N-19
R4018	J-17
R4019	J-17
R4020	N-19
R4021	S-17
R4022	K-17
R4023	N-22
R4024	D-17
R4025	G-16
R4026	H-17
R4028	E-17
R4029	E-17
R4030	M-19
R4031	M-17
R4032	M-18
R4033	M-16
R4034	D-17
R4035	F-19
R4036	E-18
R4037	I-17
R4038	J-20
R4039	F-17
SW701	Q-20
T203	I-4

T204	I-3
T205	F-7
T301	M-9
T401	O-25
T501	C-24
T751	L-14
TH501	N-23
TH601	K-3
TO	J-12
TP1	C-2
TP2	G-4
TP31	E-8
TP201	E-6
TP202	H-6
TP751	P-14
TP752	P-16
TR201	B-5
TR202	C-6
TR203	B-6
TR204	F-8
TR301	I-11
TR302	J-8
TR303	J-10
TR401	N-24
TR501	A-21
TR601	M-8
TR602	Q-10
TR701	L-15
TR702	L-16
TR703	G-15
TR704	R-21
TR4001	O-21
TR4002	M-20
TR4003	L-18
TU	K-12
V CENTER	I-28
VR7	R-16
VR8	R-14
VR202	I-6
VR401	S-22
VR501	R-24
VR502	D-15
VR601	S-9
VR701	S-21
VR2001	A-18
VR4001	E-18
VR4002	D-18
VS	C-9
W	I-12
X	F-27
Y	S-11
Z	K-1
ZD601	Q-10
ZD2001	C-17
ZD4001	J-17

CURTIS MATHES
CHASSIS CMC84-1,CMC84-2

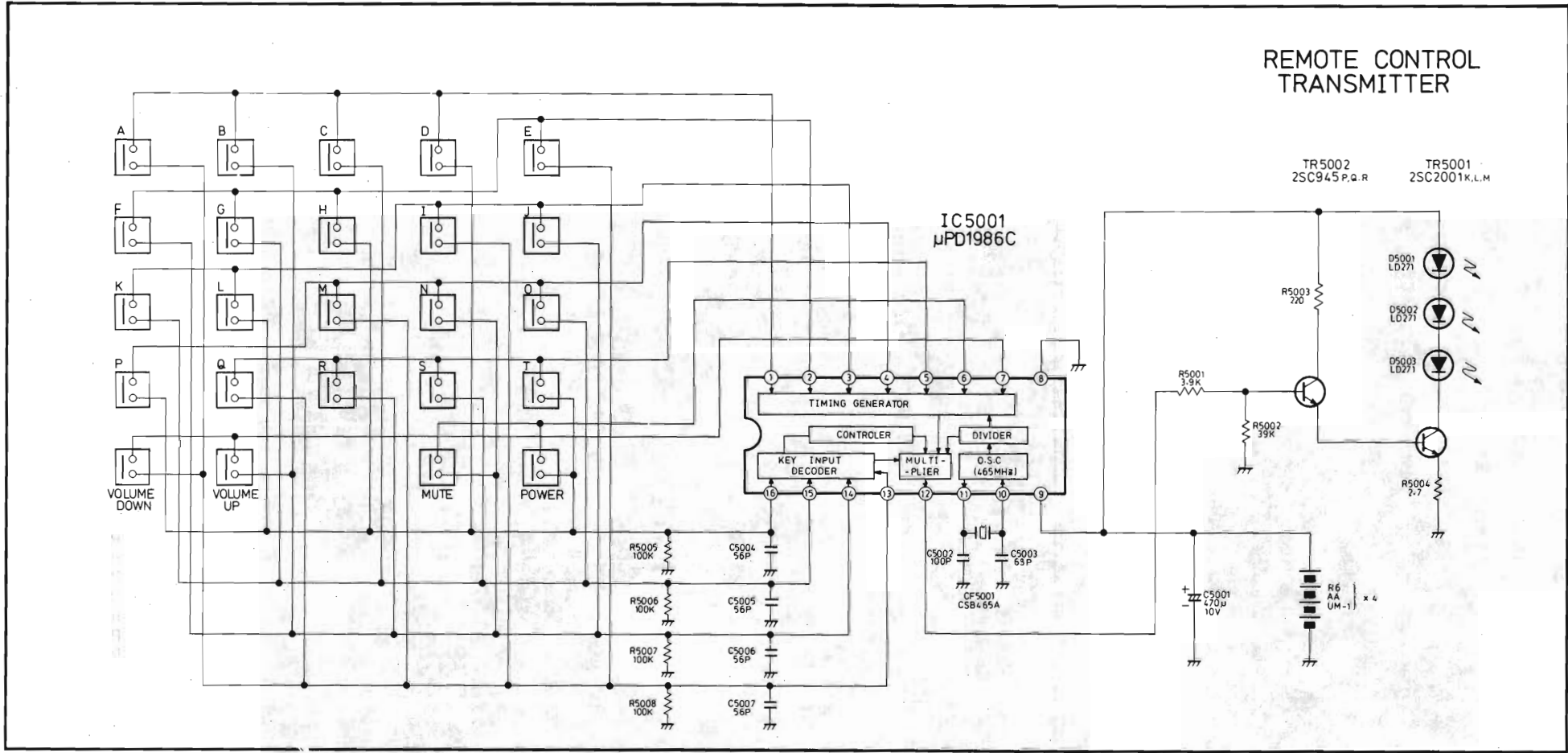
FOLDER 1

- C4501 A-11
- C4502 B-7
- C4503 A-5
- C4504 D-3
- C4505 F-7
- C4506 E-7
- C4508 D-7
- CD G-12
- CF B-12
- DL4501 D-1
- L4501 A-6
- L4502 G-7
- R4501 C-11
- R4502 C-6
- R4503 B-10
- R4504 C-8
- R4505 B-7
- R4506 B-9
- R4507 C-9
- R4508 C-6
- R4509 B-4
- R4510 A-2
- R4511 D-2
- R4512 F-2
- R4513 D-5
- R4514 G-2
- R4515 G-4
- R4516 H-1
- R4517 G-5
- R4518 F-6
- R4519 G-5
- R4520 E-5
- R4521 H-9
- R4522 F-8
- R4523 F-8
- R4525 G-10
- R4526 G-11
- R4527 C-10
- T4501 C-3
- TR4501 A-8
- TR4502 B-5
- TR4503 F-3
- TR4504 F-4
- TR4505 E-10
- TR4506 E-11
- TR4507 D-10
- VR4501 G-3





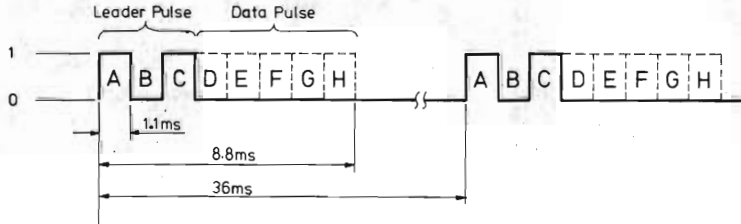
CRT SOCKET BOARD



o The Commands vs. Output Pulse at Pin #12 on IC5001(μPD1986C)

Command	Leader Pulse								Data Pulse							
	A	B	C	D	E	F	G	H	A	B	C	D	E	F	G	H
CH. A	1	0	1	0	0	0	0	0								
CH. B	1	0	1	1	0	0	0	0								
CH. C	1	0	1	0	1	0	0	0								
CH. D	1	0	1	1	1	0	0	0								
CH. E	1	0	1	0	0	1	0	0								
CH. F	1	0	1	1	0	1	0	0								
CH. G	1	0	1	0	1	1	0	0								
CH. H	1	0	1	1	1	1	0	0								
CH. I	1	0	1	0	0	0	1	0								
CH. J	1	0	1	1	0	0	1	0								
CH. K	1	0	1	0	1	0	1	0								
CH. L	1	0	1	1	1	0	1	0								

Command	Leader Pulse								Data Pulse							
	A	B	C	D	E	F	G	H	A	B	C	D	E	F	G	H
CH. M	1	0	1	0	0	1	1	0								
CH. N	1	0	1	1	0	1	1	0								
CH. O	1	0	1	0	1	1	1	0								
CH. P	1	0	1	1	1	1	1	0								
CH. Q	1	0	1	0	0	0	0	1								
CH. R	1	0	1	1	0	0	0	1								
CH. S	1	0	1	0	1	0	0	1								
CH. T	1	0	1	1	1	0	0	1								
VOL. DOWN	1	0	1	0	0	0	1	1								
VOL. UP	1	0	1	1	0	0	1	1								
MUTE	1	0	1	1	0	1	1	1								
POWER	1	0	1	1	1	1	1	1								



Note 1 :The carrier frequency is 38.76KHz.
It is modulated by the pulse cord (A~H).

Note 2 :2 Groups of 8bits pulse Train come up
from IC5001 (μPD1986C) terminal 12,
except volume up and down commands.

Note 3 :Use Dry battery type R6,AA,UM-1
or Equivalent x 4. (1.5V x 4)

Note

- (1) Resistor values are in Ω (Ohm)
K=1000 Ω M=1000,000 Ω
- (2) All resistors are $\frac{1}{4}$ watt except where otherwise indicated.
- (3) Capacitor values are in μ F unless otherwise indicated. P=PF
- (4) All capacitors are 50volts except where otherwise indicated.

REF. NO. PART NO. DESCRIPTION

RESISTORS

R5001	40R239-405	Carbon 3.9K 5% $\frac{1}{4}$ W
R5002	40R239-405	Carbon 3.9K 5% $\frac{1}{4}$ W
R5003	40R422-405	Carbon 220K 5% $\frac{1}{4}$ W
R5004	40R727-405	Carbon 2.7 ohms 5% $\frac{1}{4}$ W
R5005	40R410-405	Carbon 100K 5% $\frac{1}{4}$ W
R5006	40R410-405	Carbon 100K 5% $\frac{1}{4}$ W
R5007	40R410-405	Carbon 100K 5% $\frac{1}{4}$ W
R5008	40R410-405	Carbon 100K 5% $\frac{1}{4}$ W

CAPACITORS

C5001	04A111-116	Electric 450V 470uf
C5002	05A051-224	Ceramic 50V 100pf
C5003	05A155-260	Ceramic 50V 68pf
C5004	05A155-261	Ceramic 50V 56pf
C5005	05A155-261	Ceramic 50V 56pf
C5006	05A155-261	Ceramic 50V 56pf
C5007	05A155-261	Ceramic 50V 56pf
CF5001	09A024-015	Ceramic Resonator

LIGHT EMITTING DIODES

D5001	21A119-110	LD271
D5002	21A119-110	LD271
D5003	21A119-110	LD271

TRANSISTORS

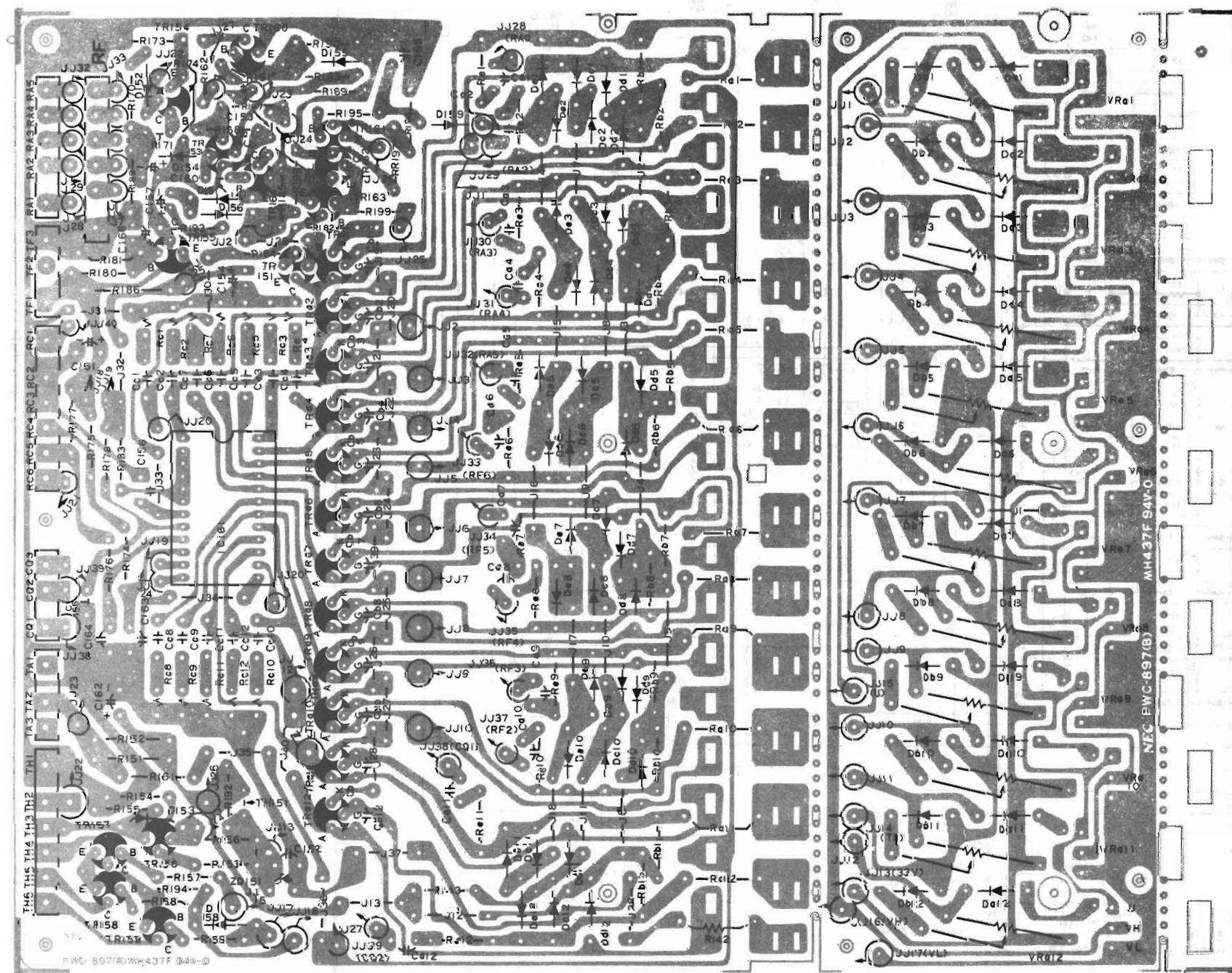
TR5001	21A118-137	2SC945
TR5002	21A118-152	2SC2001

INTEGRATED CIRCUITS

IC5001	21A120-080	IC MPD1986C (Transmit)
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MECHANICAL PARTS

30B190-169	Top Case
30B190-170	Bottom Case
30B190-168	Battery Cover
30B190-171	Button
30B190-175	Foot
05B564-035	Volume Up, Volume Down, Mute, Power Indicating Tabs (complete set)
05B564-043	Indicating Tabs (2-83) (complete set)
05B564-027	Transmitter Decorative Front (complete set)
30B190-176	Infrared Filter



12 POSITION SST PANEL
PARTS LOCATION

BOTTOM VIEW (Foil Side)

12 POSITION REMOTE CONTROL SYSTEM
PARTS LIST

REMOTE RECEIVER MODULE

DIODES

D5001	21A110-012	SI-F14A
D5002	21A110-012	SI-F14A
D5003	21A110-012	SI-F14A
D5004	21A110-012	SI-F14A
D5005	21A119-107	SI-1SS54
D5006	21A119-107	SI-1SS54
D5007	21A119-107	SI-1SS54
D5008	21A119-107	SI-1SS54
D5009	21A119-107	SI-1SS54
D5010	21A119-107	SI-1SS54
D5011	21A119-107	SI-1SS54

TRANSISTORS

TR5001	21A118-138	2SK118
TR5002	21A118-140	2SC945
TR5003	21A118-140	2SC945
TR5004	21A118-140	2SC945
TR5005	21A118-140	2SC945
TR5006	21A118-140	2SC945
TR5007	21A118-140	2SC945
TR5008	21A118-140	2SC945
TR5009	21A118-140	2SC945

INTERGRATED CIRCUITS

IC5001	21A120-100	MPD1987
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RELAYS

RL5001	06A106-143	MCIV TV-5 DC12V
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MECHANICAL PARTS

12A113-031	Power Transformer
13A166-401	Connector 3 Pin "Y"
13A166-408	Connector 3 Pin "CP"
13A166-390	Connector 6 Pin "RC"
13A166-389	Connector 3 Pin "O"
13A166-407	Connector 3 Pin "PO"

NOISE GATE MODULE

DIODES

D4201	21A119-107	1SS54
D4202	21A119-107	1SS54

TRANSISTORS

TR4201	21A118-137	2SC945P, Q, R
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INTERGRATED CIRCUITS

IC4201	21A120-046	uPD4011C
IC4202	21A120-046	uPD4011C
IC4203	21A120-046	uPD4011C
IC4204	21A120-101	uPD4040C

MODULES AND ASSEMBLIES

14B370-216	Remote Receiver w/bracket
14B370-212	Noise Gate Module
14B370-151	Remote Preamp

12 POSITION SELECTIVE SENSOR TUNING UNIT
PARTS LIST

REF. NO. PART NO. DESCRIPTION

RESISTORS

RA N	08A158-157	Solid 4.7M 10% 1/4W
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VARIABLE RESISTORS

VRA N	02A178-287	30K Variable Tuning
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INTEGRATED CIRCUITS

IC151	21A120-047	MPC1360
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DIODES

D151	21A108-003	SI-1S-2473
D152	21A108-003	SI-1S-2473
D153	21A108-003	SI-1S-2473
D154	21A108-003	SI-1S-2473
D155	21A108-003	SI-1S-2473
D156	21A108-003	SI-1S-2473
D158	21A119-107	SI-1SS54
D159	21A108-003	SI-1S-2473
DAN	21A108-003	SI-1S-2473
DBN	21A108-003	SI-1S-2473
DCN	21A108-004	SI-1S-2472
DDN	21A108-004	SI-1S-2472
DEN	21A108-003	SI-1S-2473
ZD151	21A119-045	Zener, MPC-574J

TRANSISTORS

TR151	21A118-137	2SC945
TR153	21A118-089	2SA733/733A
TR154	21A112-063	2SC-828
TR155	21A118-119	2SD471
TR156	21A112-063	2SC-828
TR157	21A118-089	2SA733/733A
TR158	21A118-089	2SA733/733A
TR159	21A118-096	2SC1941
TR161	21A118-089	2SA733/733A
TR162	21A118-137	2SC945
TR163	21A118-137	2SC945
TR164	21A118-137	2SC945
TRA N	21A118-097	N1371N

THERMISTOR

TH151	Positive
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MECHANICAL PARTS

30B190-182	Sensor Panel Case Less Channel Indicator Strip
30B190-174	Sensor Panel Case Cover
30B190-052	Front Panel
30B190-051	Channel Indicator Strip Less Tabs
05B570-004	Channel Number Tabs (VHF)
05B570-003	Channel Number Tabs (UHF)
04B148-151	IC Socket 24 pin
04B148-132	Connector 3 pin
04B148-157	Connector 6 pin

CURTIS MATHES
CHASSIS CMC84-1, CMC84-2

NL PWB

PST-SLT PWB

NL #1
NL #2
NL #3
NL #4
NL #5
NL #6
NL #7
NL #8
NL #9
NL #10
NL #11
NL #12

NL # NEON LAMP

Da 1SS54 / 1S2473
Db 1S2472
VRa 30K-B

TR161 2SC945
TR162 2SC945
TR163 2SC945

IC151 µPC 1360C
IC152 µPC 1360C
IC153 µPC 1360C

TR151 2SC945
TR152 2SC945
TR153 2SC945
TR154 2SC945
TR155 2SC945
TR156 2SC945
TR157 2SC945
TR158 2SC945
TR159 2SC945

TO LINE OF REM
TO M MOD
TO TUNER

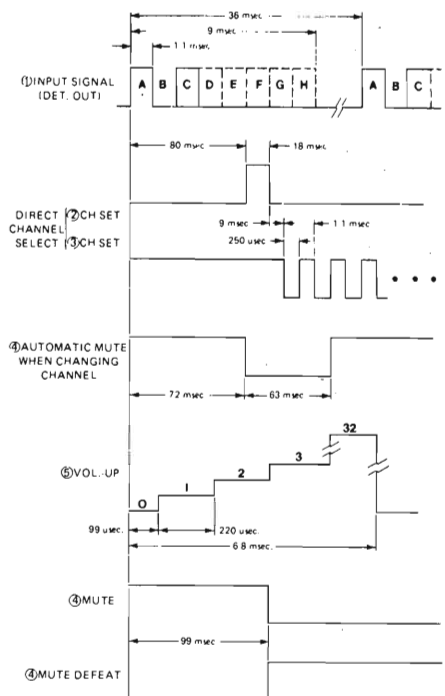
Courtesy of the Manufacturer

CURTIS MATHES
CHASSIS CMC84-1,CMC84-2

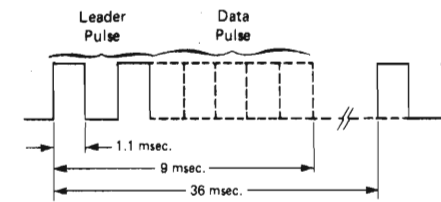
FOLDER 1

12 POSITION SELECTIVE SENSOR TUNING UNIT

Parts which are CRITICAL with respect to SAFETY are shaded . Replace these CRITICAL COMPONENTS with genuine Curtis Mathes replacement parts for continued safe operation of the television receiver.



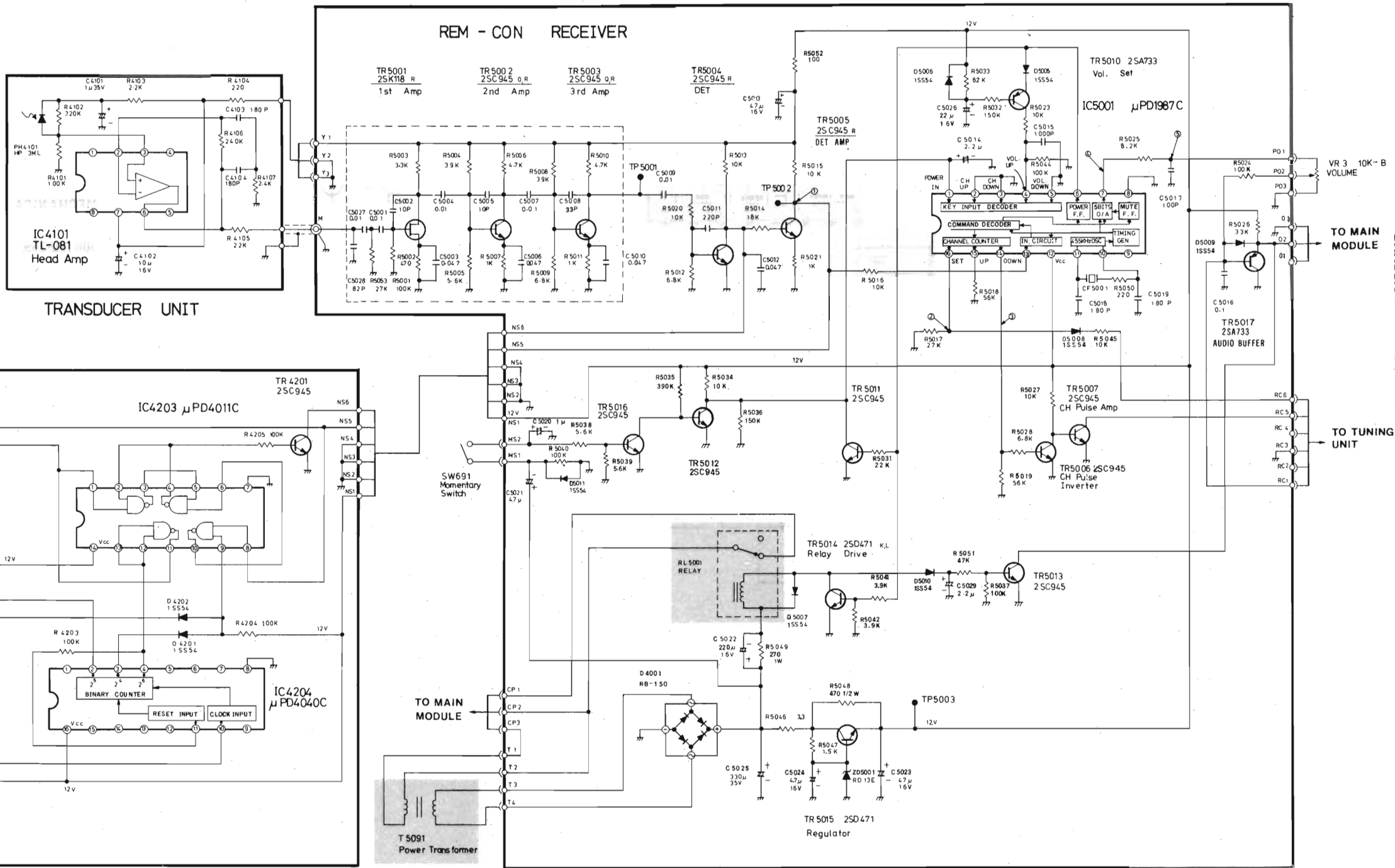
Parts which are CRITICAL with respect to SAFETY are shaded. Replace these CRITICAL COMPONENTS with genuine Curtis Mathes replacement parts for continued safe operation of the television receiver.

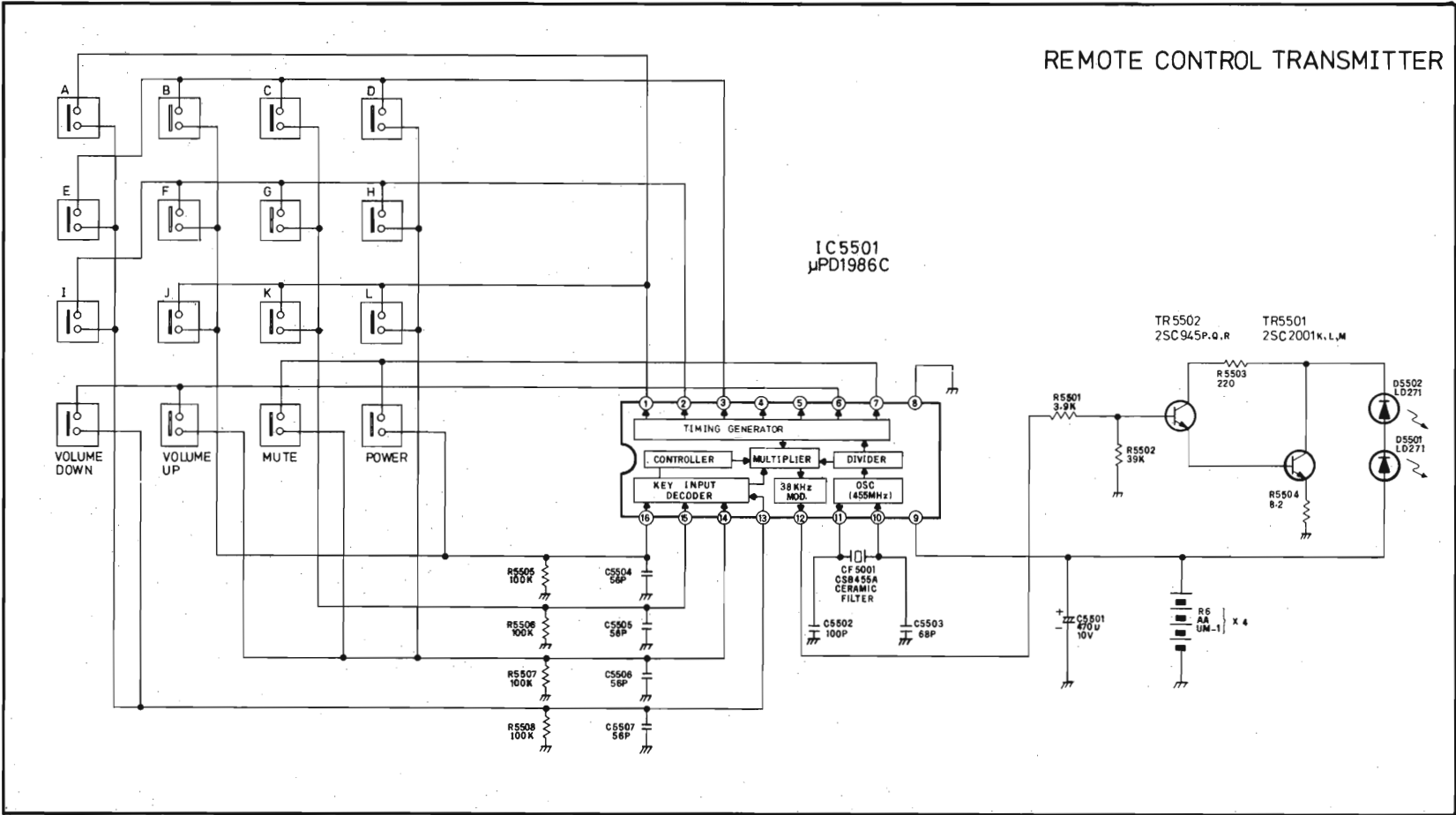


NOTE: The carrier frequency is 38.76KHz. It is modulated by the pulse code (A-H).

THE COMMAND vs. OUTPUT PULSE

Command	Leader Pulse								Data Pulse							
	A	B	C	D	E	F	G	H	A	B	C	D	E	F	G	H
CH - A	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0
CH - B	1	0	1	1	1	0	1	0	1	0	1	1	1	0	1	0
CH - C	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
CH - D	1	0	1	1	0	0	1	0	1	0	1	1	0	0	1	0
CH - E	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0
CH - F	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0
CH - G	1	0	1	0	1	1	0	0	1	0	1	0	1	1	0	0
CH - H	1	0	1	1	0	1	0	0	1	0	1	1	0	1	0	0
Vol. - Down	1	0	1	0	0	0	1	1	1	0	1	0	0	0	1	1
Vol. - Up	1	0	1	1	1	1	0	0	1	0	1	1	1	0	0	1
Mute	1	0	1	1	0	1	1	0	0	1	0	1	1	0	0	1
Power On/Off	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1





LIGHT EMITTING DIODES

D5501	21A119-110	LED LD271
D5502	21A119-110	LED LD271
D5503	21A119-110	LED LD271

TRANSISTORS

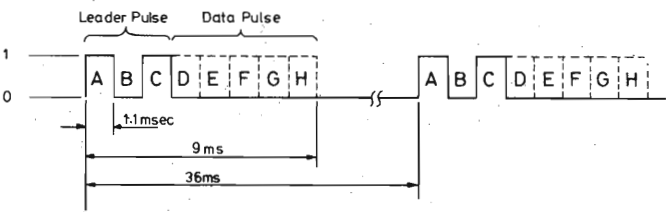
TR5501	21A118-137	2SC945
TR5502	21A118-152	2SC2001

INTEGRATED CIRCUITS

IC5001	21A120-080	MPD1986
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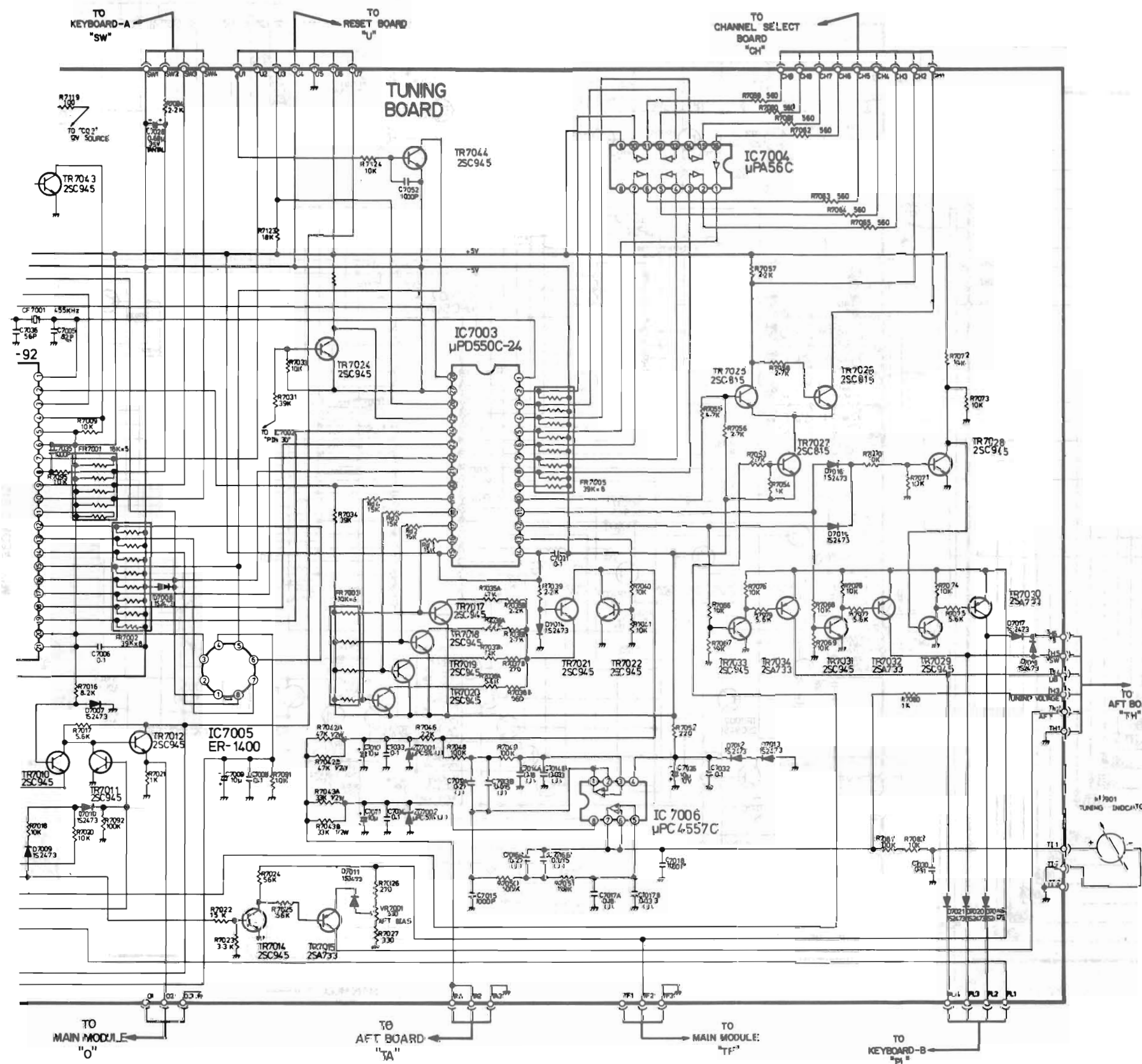
MECHANICAL PARTS

30B190-169	Case Top
30B190-170	Case Bottom
30B190-168	Battery Cover
05B564-043	Indicating Tabs (2-83) (complete set)
05B564-041	Indicating Tabs (Volume, Mute, Power) (complete set)
30B190-171	Button
30B190-176	Infrared Filter
30B190-175	Foot
05B564-040	Decorative Plate



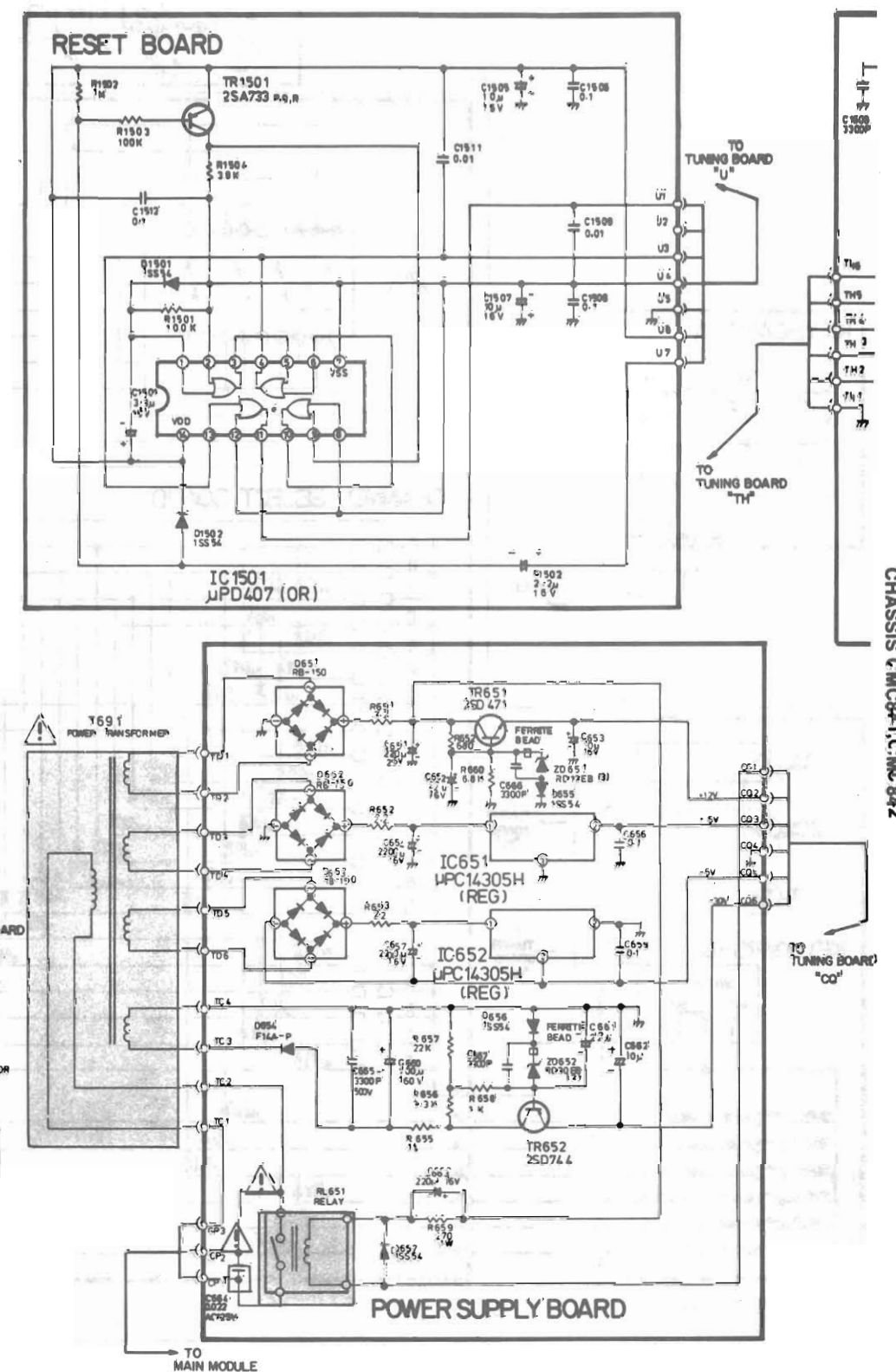
- Note 1 :The carrier frequency is 38.76 KHz.
It is modulated by the pulse code (A~H).

Note 2 : 2 Groups of 8 bits pulse Train come up
from IC5501 (μPD1986C) terminal 12.
- Note 3 :Use Dry battery type R6,AA,UM-1
or Equivalent x 4. (1.5Vx4)



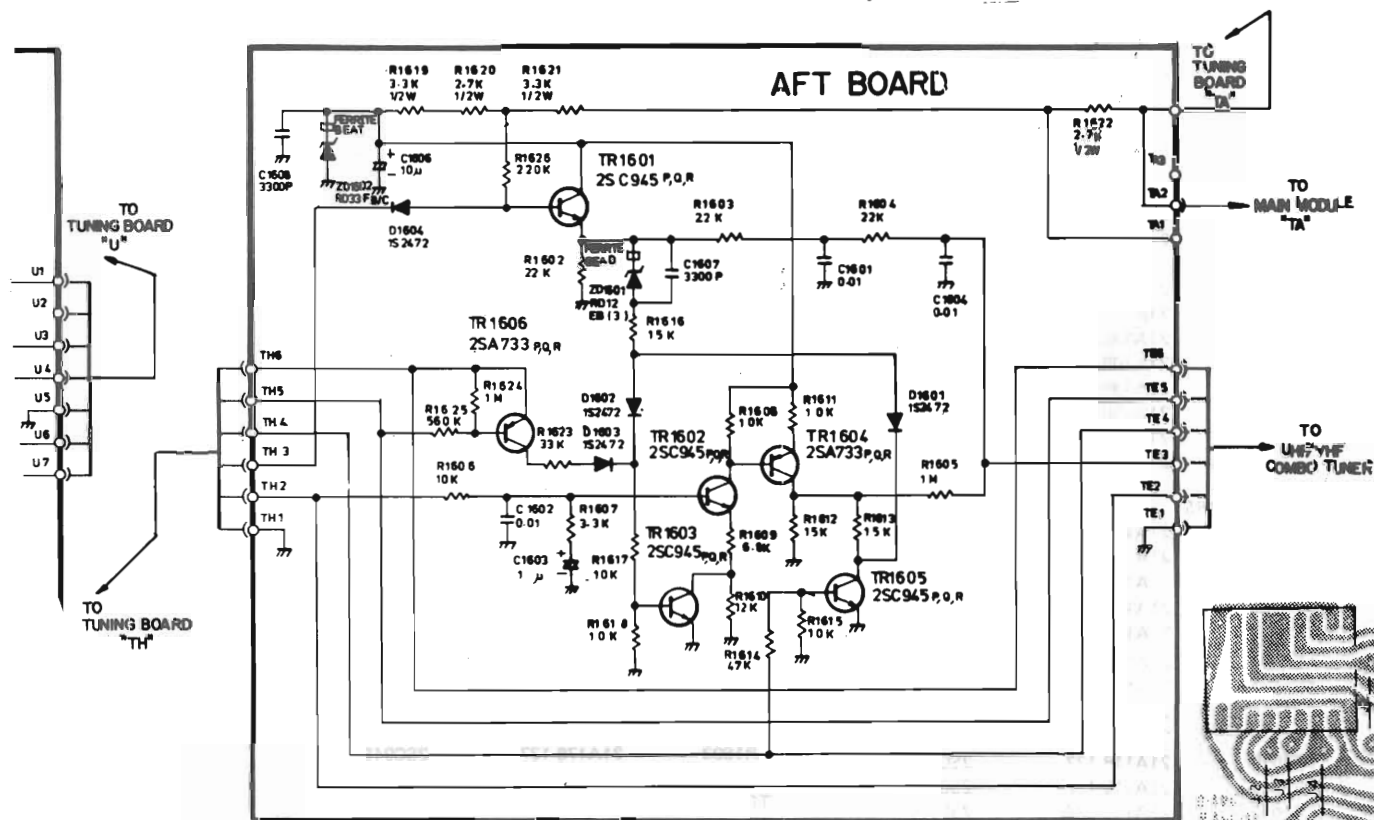
105 CHANNEL 20 POSITION TUNING SCHEMATIC

Courtesy of the Manufacturer

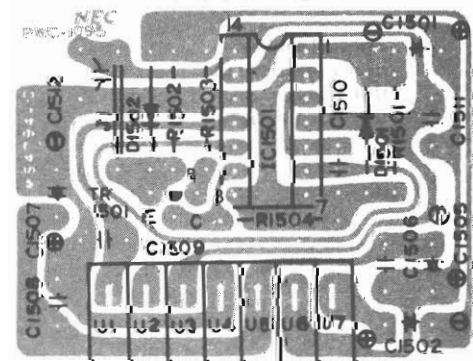
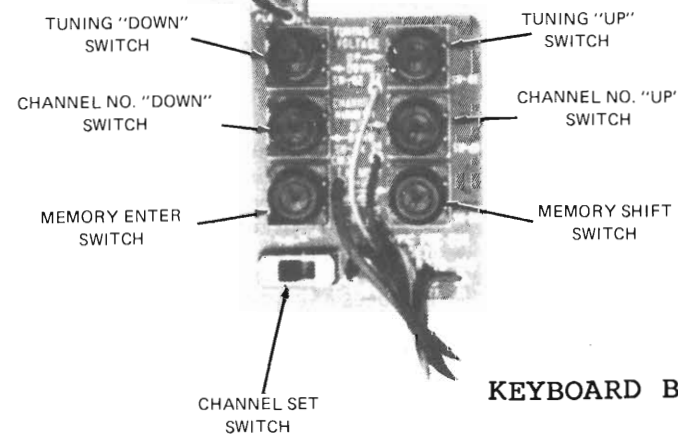


105 CHANNEL 20 POSITION TUNING SCHEMATIC

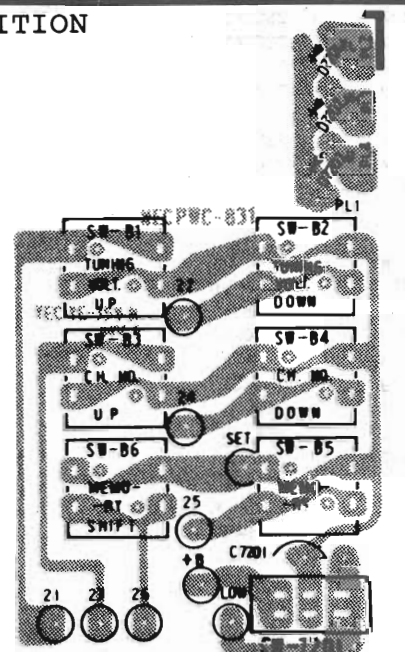
Courtesy of the Manufacturer



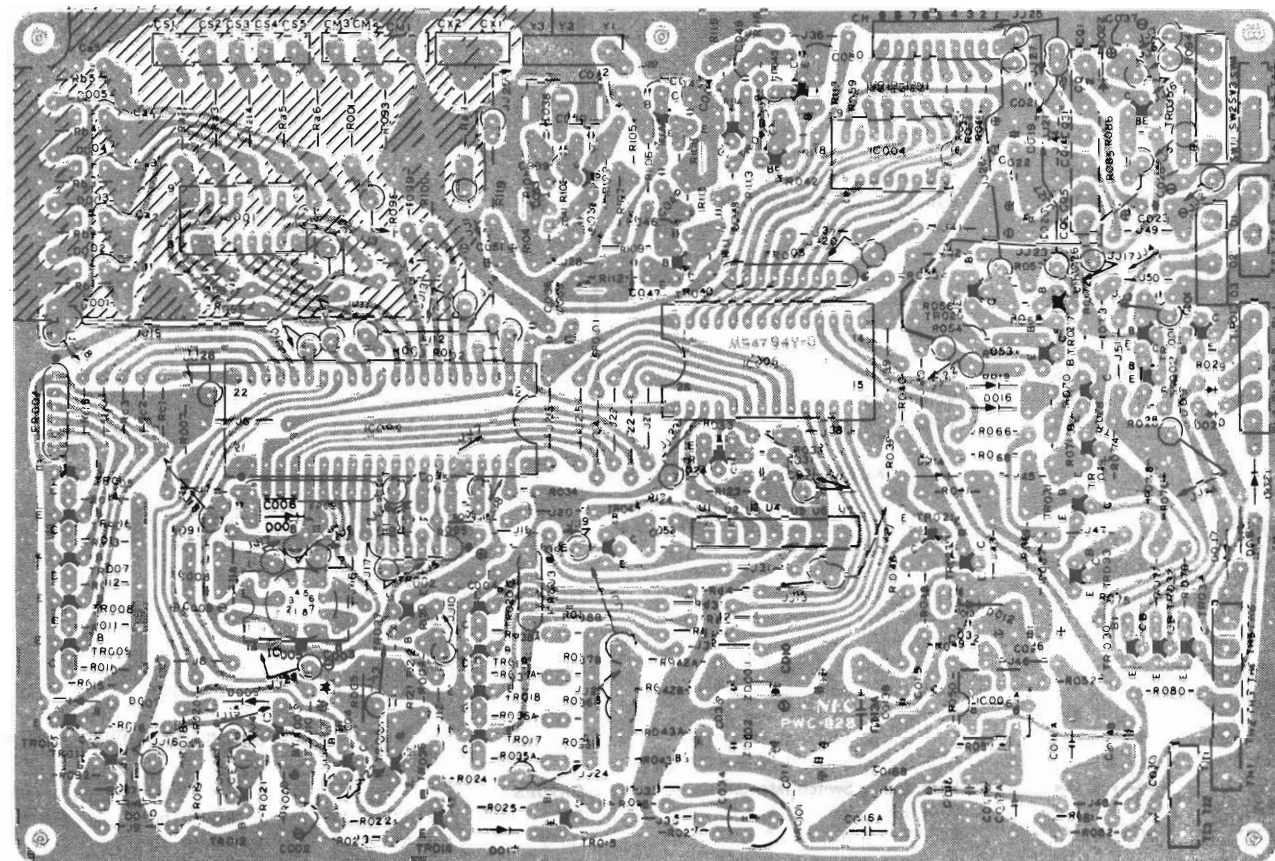
105 CHANNEL 20 POSITION TUNING SCHEMATIC



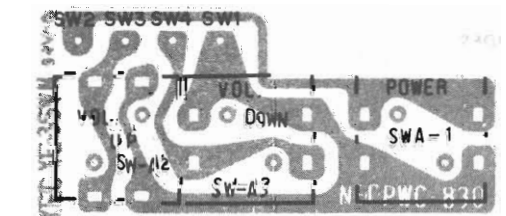
105 CHANNEL 20 POSITION TUNING



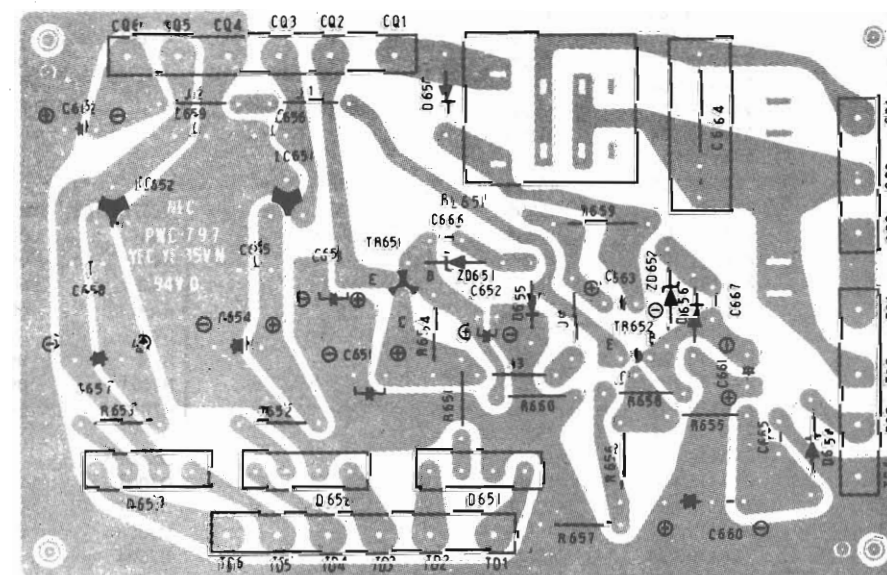
105 CHANNEL 20 POSITION TUNING



105 CHANNEL 20 POSITION TUNING



105 CHANNEL 20 POSITION TUNING



105 CHANNEL 20 POSITION TUNING

SET 2101 FOLDER 1

CURTIS MATHES
CHASSIS CMC84-1, CMC84-2

FOLDER 1

REF. NO.	PART NO.	DESC.	REF. NO.	PART NO.	DESC.	REF. NO.	PART NO.	DESC.	REF. NO.	PART NO.	DESC.
KEYBOARD - A			D35	21A119-104	1SS55	D7005	21A108-003	1S2473	RESISTOR PACKAGES		
SWITCHES	06A106-144	Push Button Switch (Power)	D36	21A119-104	1SS55	D7007	21A108-003	1S2473	FR7001	08A158-332	Resistor Package 1/8W 5x18KM
			D37	21A119-104	1SS55	D7008	21A108-003	1S2473	FR7002	05A158-333	Resistor Package 1/8W 8x39KM
			D38	21A119-104	1SS55	D7009	21A108-003	1S2473	FR7003	08A158-334	Resistor Package 1/8W 4x10KM
			D39	21A119-104	1SS55	D7010	21A108-003	1S2473	FR7004	08A158-335	Resistor Package 1/8W 5x10KM
SWA2	06A106-144	Push Button Switch (Volume UP)	D40	21A119-104	1SS55	D7011	21A108-003	1S2473	FR7005	08A158-333	Resistor Package 1/8W 8x39KM
			D41	21A119-104	1SS55	D7012	21A108-003	1S2473	SOCKETS		
			D42	21A119-104	1SS55	D7013	21A108-003	1S2473		04B148-090	Jack
			D43	21A119-104	1SS55	D7014	21A108-003	1S2473		04B148-158	IC Socket - 16 Pin
			D44	21A119-104	1SS55	D7015	21A108-003	1S2473		04B148-159	IC Socket - 28 Pin
SWA3	06A106-144	Push Button Switch (Volume DOWN)	D45	21A119-104	1SS55	D7016	21A108-003	1S2473		04B148-175	IC Socket - 42 Pin
			D46	21A119-104	1SS55	D7017	21A108-003	1S2473		04B148-176	IC Socket - 8 Pin
			LD7301	21A119-097	LED Display; TLR324	D7018	21A108-003	1S2473	AFT BOARD		
CONNECTORS						D7019	21A108-003	1S2473			
	13A166-393	Connector 4 Pin (SW)				D7020	21A108-003	1S2473			
BUTTONS						D7021	21A108-003	1S2473			
	11B183-148	On/Off Button				D7022	21A108-003	1S2473			
	11B183-149	Volume Up				TRANSISTORS					
	11B183-149	Volume Down				TR7001	21A118-137	2SC945			
KEYBOARD B						TR7002	21A118-137	2SC945			
DIODES						TR7003	21A118-137	2SC945			
D7201	21A119-098	Light; SEL105RC				TR7004	21A118-137	2SC945			
D7202	21A119-098	Light; SEL106RC				TR7005	21A118-137	2SC945			
D7203	21A119-098	Light; SEL106RC				TR7006	21A118-137	2SC945			
M6001	22A030-018	Tuning Meter				TR7007	21A118-137	2SC945			
SWITCHES						TR7008	21A118-137	2SC945			
SWB1	06A106-144	Push Button Switch (Tune UP)				TR7009	21A118-137	2SC945			
SWB2	06A106-144	Push Button Switch (Tune DOWN)				TR7010	21A118-137	2SC945			
SWB3	06A106-144	Push Button Switch (Channel UP)				TR7011	21A118-137	2SC945			
SWB4	06A106-144	Push Button Switch (Channel DOWN)				TR7012	21A118-137	2SC945			
SWB5	06A106-144	Push Button Switch (Memory)				TR7013	21A118-137	2SC945			
SWB6	06A106-144	Push Button Switch (Memory shift)				TR7014	21A118-137	2SC945			
SW7201	06A106-115	Slide Switch (Normal, Set)				TR7015	21A118-139	2SA733			
CHANNEL SELECT BOARD						TR7017	21A118-139	2SA733			
DIODES						TR7018	21A118-139	2SA733			
D01	21A119-104	1SS55				TR7019	21A118-137	2SC945			
D02	21A119-104	1SS55				TR7020	21A118-137	2SC945			
D03	21A119-104	1SS55				TR7021	21A118-137	2SC945			
D04	21A119-104	1SS55				TR7022	21A118-137	2SC945			
D05	21A119-104	1SS55				TR7024	21A118-137	2SC945			
D06	21A119-104	1SS55				TR7025	21A112-016	2SC815K			
D07	21A119-104	1SS55				TR7026	21A112-016	2SC815K			
D08	21A119-104	1SS55				TR7027	21A112-016	2SC815K			
D09	21A119-104	1SS55				TR7028	21A118-137	2SC945			
D10	21A119-104	1SS55				TR7029	21A118-137	2SC945			
D11	21A119-104	1SS55				TR7030	21A118-139	2SA733			
D12	21A119-104	1SS55				TR7031	21A118-137	2SC945			
D13	21A119-104	1SS55				TR7032	21A118-139	2SA733			
D14	21A119-104	1SS55				TR7033	21A118-137	2SC945			
D15	21A119-104	1SS55				TR7034	21A118-139	2SA733			
D16	21A119-104	1SS55				TR7035	21A112-016	2SC815K			
D17	21A119-104	1SS55				TR7036	21A118-137	2SC945			
D18	21A119-104	1SS55				TR7037	21A118-137	2SC945			
D19	21A119-104	1SS55				TR7038	21A118-138	2SK118			
D20	21A119-104	1SS55				TR7039	21A118-137	2SC945			
D21	21A119-104	1SS55				TR7040	21A118-137	2SC945			
D22	21A119-104	1SS55				TR7041	21A118-137	2SC945			
D23	21A119-104	1SS55				TR7042	21A118-137	2SC945			
D24	21A119-104	1SS55				TR7043	21A118-137	2SC945			
D25	21A119-104	1SS55				TR7044	21A118-137	2SC945			
D26	21A119-104	1SS55				INTEGRATED CIRCUITS					
D27	21A119-104	1SS55				IC7001	21A120-075	UPD4050C			
D28	21A119-104	1SS55				IC7002	21A120-078	UPD547C-51			
D29	21A119-104	1SS55				IC7003	21A120-089	UPD550C-40			
D30	21A119-104	1SS55				IC7004	21A120-096	MPA56C			
D31	21A119-104	1SS55				IC7005	21A120-097	ER1400			
D32	21A119-104	1SS55				IC7006	21A120-076	MPC4557C			
D33	21A119-104	1SS55				CONNECTORS					
D34	21A119-104	1SS55									
RESISTORS											
RA1	05R518-410	Solid 1.8M 10% ½W									
RA2	05R518-410	Solid 1.8M 10% ½W									
RA3	05R518-410	Solid 1.8M 10% ½W									
RA4	05R518-410	Solid 1.8M 10% ½W									
RA5	05R518-410	Solid 1.8M 10% ½W									
RA6	05R518-410	Solid 1.8M 10% ½W									
R7091	05R610-410	Solid 10M 10% ½W									
R7093	05R518-410	Solid 1.8M 10% ½W									
DIODES											
D7001	21A108-003	1S2473									
D7002	21A108-003	1S2473									
D7003	21A108-003	1S2473									
D7004	21A108-003	1S2473									
RESET BOARD											
DIODES											
D1501	21A119-104	SI1SS54									
D1502	21A119-104	SI1SS54									
TRANSISTORS											
TR1501	21A118-139	2SA733									
INTEGRATED CIRCUITS											
IC1501	21A120-098	TC4071BP									
TUNING UNIT POWER SUPPLY BOARD											
DIODES											
D651	21A119-106	GE-RB150									
D652	21A119-106	GE-RB150									
D653	21A119-106	GE-RB150									
D654	21A119-075	SI-F14A-P									
D655	21A108-003	SI-1S2473									
D656	21A119-107	SI-1SS54									

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)
Replacement parts shown may be superseded by the availability of newly introduced replacements.
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

MISCELLANEOUS

ITEM No.	PART NAME	MFGR. PART No.	NOTES
CF301	Filter	09A024-021	Ceramic, 4.5MHz
CF303	Filter	09A024-014	Ceramic, 4.5MHz
CR1001	Component Combination		Antenna Isolation (270pF, 1Meg-2Meg)
CR1002	Component Combination		Antenna Isolation (270pF, 1Meg-2Meg)
CR1003	Component Combination		Antenna Isolation (270pF, 1Meg-2Meg)
CR1004	Component Combination		Antenna Isolation (270pF, 1Meg-2Meg)
D4002	LED		VIR Indicator
FL201	Filter	09A024-022	SAW
L101	Degaussing Coil	01A249-016	Used in 25" Models
		01A249-015	Used in 19" Models
L592	Ferrite Bead		
L593	Ferrite Bead		
P601	Cord		AC Power
Q751	Crystal	09A021-001	3.58MHz OSC
SW291	Switch	06A119-001	AFT On/Off
SW691	Switch	02A178-291	Power On/Off (Part of Volume, VR3)
		02A178-311	
SW701	Switch		Service/Off
SW5001	Switch	068106-143	Power On/Off (Part of RL5001, Relay)
SW9001	Switch	02A178-318	ABC-On/Off
V1	CRT	19VKFP22	19" Models
		25VFEP22	25" Models
	Board		Antenna Terminal 1 (Part of Tuner)
	Control Assembly	14B370-166	Front (Remote)
		14B370-309	(Non-Remote)
	P.C. Board	02A178-318	ABC/Picture Control
	P.C. Board	14B370-454	RGB Output
	P.C. Board	14B386-045	Main
	P.C. Board	14B370-454	20 Position, 105 Channel Tuning Unit
	P.C. Board	14B370-163	Tuning Unit Power Supply
	P.C. Board	14B271-191	Comb Filter

For SAFETY use only ewulvalent replacement part.

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.	MFR. PART No.	REPLACEMENT DATA						ZENITH PART No.	WORKMAN PART No.	MOTOROLA PART No.
			GENERAL ELECTRIC PART No.	TCG PART No.	RCA PART No.	ECG PART No.	THORDARSON PART No.				
D401	F14A-P	21A119-075	GE-504A	TCG116	SK3311	ECG116	TM116	212-76-02	WEP155	1N4002	
D402	1SS54	21A119-080	GE-300	TCG177	SK9091/177	ECG177	TM177	103-131	WEP1062/177	1N4935	
D403	1SS54	21A119-080	GE-300	TCG177	SK9091/177	ECG177	TM177	103-131	WEP1062/177	1N4935	
D501	CGJ-1	21A110-014	GE-533	TCG525	SK3925/525	ECG525		212-Z9010	WEP177/525		
D502	TVR-06G	21A119-079	GE-504A	TCG116	SK3313/116	ECG116	TM116	212-76-02	WEP158/116	1N4005	
D503	TVR-06G	21A119-079	GE-504A	TCG116	SK3313/116	ECG116	TM116	212-76-02	WEP158/116	1N4005	
D504	F114E	21A119-068	GE-511	TCG506	SK3998/506	ECG506	TM506	103-287	WEP172/506	NR1-1400	
D505	1SS54	21A119-080	GE-300	TCG177	SK9091/177	ECG177	TM177	103-131	WEP1062/177	1N4935	
D506	TVR-06G	21A119-079	GE-504A	TCG116	SK3313/116	ECG116	TM116	212-76-02	WEP158/116	1N4005	
D507	1SS54	21A119-080	GE-300	TCG177	SK9091/177	ECG177	TM177	103-131	WEP1062/177	1N4935	
D508	TVR-06G	21A119-079	GE-504A	TCG116	SK3313/116	ECG116	TM116	212-76-02	WEP158/116	1N4005	
D509	1SS54	21A119-080	GE-300	TCG177	SK9091/177	ECG177	TM177	103-131	WEP1062/177	1N4935	
D510	TVR-06G	21A119-079	GE-504A	TCG116	SK3313/116	ECG116	TM116	212-76-02	WEP158/116	1N4005	
D511	F114E	21A119-068	GE-511	TCG506	SK3998/506	ECG506	TM506	103-287	WEP172/506	NR1-1400	
D601	RM-2C	21A119-077	GE-510	TCG125	SK3081/125	ECG125	TM125	212-Z9000	WEP170/125	1N4007	
D602	RM-2C	21A119-077	GE-510	TCG125	SK3081/125	ECG125	TM125	212-Z9000	WEP170/125	1N4007	
D603	RM-2C	21A119-077	GE-510	TCG125	SK3081/125	ECG125	TM125	212-Z9000	WEP170/125	1N4007	
D604	RM-2C	21A119-077	GE-510	TCG125	SK3081/125	ECG125	TM125	212-Z9000	WEP170/125	1N4007	
D605	TVR-06G	21A119-079	GE-504A	TCG116	SK3313/116	ECG116	TM116	212-76-02	WEP158/116	1N4005	
D606	VD1122	08A159-009		TCG601	SK3463/601	ECG601		103-Z9039			
D701	1SS54	21A119-080	GE-300	TCG177	SK9091/177	ECG177	TM177	103-131	WEP1062/177	1N4935	
D702	1SS54	21A119-080	GE-300	TCG177	SK9091/177	ECG177	TM177	103-131	WEP1062/177	1N4935	
D703	1SS54	21A119-080	GE-300	TCG177	SK9091/177	ECG177	TM177	103-131	WEP1062/177	1N4935	
D704	1SS54	21A119-080	GE-300	TCG177	SK9091/177	ECG177	TM177	103-131	WEP1062/177	1N4935	
D705	1SS54	21A119-080	GE-300	TCG177	SK9091/177	ECG177	TM177	103-131	WEP1062/177	1N4935	
D901	1S2473	21A108-004	GE-514	TCG519	SK3100/519	ECG519	TM519	103-131	WEP925/519	1N4935	
D902	1S2473	21A108-004	GE-514	TCG519	SK3100/519	ECG519	TM519	103-131	WEP925/519	1N4935	
D903	1S2473	21A108-004	GE-514	TCG519	SK3100/519	ECG519	TM519	103-131	WEP925/519	1N4935	
D904	1S2473	21A108-004	GE-514	TCG519	SK3100/519	ECG519	TM519	103-131	WEP925/519	1N4935	
D905	1S2473	21A108-004	GE-514	TCG519	SK3100/519	ECG519	TM519	103-131	WEP925/519	1N4935	

CURTIS MATHES
CHASSIS CMC84-1,CMC84-2

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.

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

ITEM No.	TYPE No.	MFR. PART No.	REPLACEMENT DATA						ZENITH PART No.	MOTOROLA PART No.
			GENERAL ELECTRIC PART No.	TCG PART No.	RCA PART No.	ECG PART No.	THORDARSON PART No.	WORKMAN PART No.		
# D2001	TVR-06G	21A119-079	GE-504A	TCG116	SK3313/116	ECG116	TM116	WEP158/116	212-76-02	1N4005
# D2002	VD1122	08A159-001	GE-300	TCG601	SK3463/601	ECG601	TM177	WEP1062/177	103-Z9039	1N4935
# D4001	1SS54	21A119-080		TCG177	SK9091/177	ECG177			103-131	
# IC201	TA7607AP	21A120-099			SK9056					
# IC301	TA7146P	21A120-071	GE1C-107	TCG1133	SK3490/1133	ECG1133	TM1133	WEP2102/1133		
# IC401	UPC1367C				SK9015					
# IC402	MPC1367C	21A120-052			SK9015					
# IC701	UPC1372C	21A120-050			SK9059					
	MPC1372C	21A120-185			SK9016					
					SK9016					
IC4001	AN5330	21A120-074			SK3885					
TR201	2SC2026K	21A118-131	GE61*	TCG107*	SK9139	ECG107*	TM107*	WEP535/107*	121-722*	MPSH34
TR202	2SC945-0,P	21A118-137	GE-212	TCG85	SK3124/289	ECG85	TM289	WEP1945	121-972*	MPSA18*
	2SC1684Q,R		GE-62	TCG289A	SK3124/289	ECG289A	TM199	WEP373	121-972*	MPSA18*
TR203	2SC945-Q,P	21A118-137	GE-212	TCG85	SK3124/289	ECG85	TM289	WEP1945	121-972*	MPSA18*
			GE-212							
TR204	2SC1684Q,R		GE-62	TCG289A	SK3124/289	ECG289A	TM199	WEP373	121-972*	MPSA18*
TR301	2SC1573-0	21A118-096	GE-222*	TCG399	SK9352/399	ECG399	TM199	WEP68/287*	121-972*	MPSA42
TR302	2SC1941K		GE-222*	TCG399	SK3866	ECG399	TM287*	WEP68/287*	121-Z9045*	MPSA42*
TR303	2SD401A			TCG375	SK3929	ECG375	TM375	WEP763/375	121-Z9106	MJE15030
TR401	2SB546A			TCG398	SK3930	ECG398	TM292	WEP781/292	121-Z9048	MJE15031
TR501	2SC945P,Q,R	21A118-137	GE-212	TCG85	SK3124/289	ECG85	TM289	WEP1945	121-972*	MPSA18*
	2SC1507K,L,M	21A112-098	GE-251	TCG198	SK3219	ECG198	TM198	WEP779/198	121-Z9028	TIP50
TR591	2SC1358	21A112-036	GE-38	TCG238	SK3710/238	ECG165	TM238	WEP764/238	121-Z9001	BU208
TR601	2SC1507K,L,M	21A112-098	GE-251	TCG198	SK3219	ECG198	TM198	WEP779/198	121-Z9028	TIP50
TR602	2SC1573Q		GE-222*	TCG399	SK3433/287*	ECG399	TM287*	WEP68/287*	121-Z9045*	MPSA42*
	2SC1941K,L		GE-222*	TCG399	SK3866	ECG399	TM287*	WEP68/287*	121-Z9045*	MPSA42
TR691	2SC1114	21A112-124	GE-14	TCG283	SK3438	ECG94	TM283	WEP770/283	121-Z9090	2N6547
TR701	2SC1684HE	21A040-032	GE-62	TCG289A	SK3124/289	ECG289A	TM199	WEP373	121-972*	MPSA18*
	2SC828R		GE-61*	TCG85	SK3866	ECG85	TM199	WEP828	121-972*	MPSA18*

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.

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA		NOTES
	PRI.	SEC.	MFR. PART No.	THORDARSON PART No.	
# T301	576	4	10A119-018 45406605 on unit		

For SAFETY use only equivalent replacement part.

TRANSFORMER (Power) REMOTE CONTROL

ITEM No.	RATING			REPLACEMENT DATA		
	PRI.	SEC. 1	SEC. 2	MFR. PART No.	THORDARSON PART No.	NOTES
T5091				12A113-031		

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

ITEM	PART No.	ITEM	PART No.
Knob, Control (CMC84-2)	11B183-162	Pushbutton (CMC84-1)	11B233-003
Pushbutton, Volume Up/Volume Down (CMC84-1)	11B183-149	Pushbutton (CMC84-1)	11B253-002
Pushbutton, On/Off (CMC84-1)	11B183-148	Door, Control (CMC84-1)	30B400-001

CURTIS MATHES
CHASSIS CMC84-1,CMC84-2

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		
		MFGR. PART No.	OTHER IDENTIFICATION	THORDARSON PART No.
# L500	Yoke Horiz 1.25mH 90° Vert 31.9mH	01A557-002 01A558-002 (1)	48007053	
# L591	Width		60908-009E	
# T401	Pincushion	10A119-017	47502030	
# T501	Horiz Driver	01A108-001	45801002	
# T591	Horiz Output	01A560-001	01A560-001	

(1) Used in 25" Model.
For SAFETY use only equivalent replacement part.

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA				NOTES
		MFGR. PART No.		BUSS PART No.		
		DEVICE	HOLDER	DEVICE	HOLDER	
F501	2A @ 125V Slow Blow	08T001-013		MDL2	1A1907-02	
F601	4A @ 125V Slow Blow	08T001-010		MDX4	1A1907-02	
F602	1A @ 125V Fast Acting	08T001-009		AGC1	1A1907-02	

For SAFETY use only equivalent replacement part.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	4"PM 4 Ohm	29B069-002 (1)	4A1 (2)	(1) Number on unit (2) Mounting hole enlargement may be required

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.

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

ITEM No.	TYPE No.	MFG'R. PART No.	REPLACEMENT DATA							MOTOROLA PART No.
			GENERAL ELECTRIC PART No.	TCG PART No.	RCA PART No.	ECG PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.	
TR702	2SC1684HE 2SC828R	21A040-032	GE-62 GE-61*	TCG289A TCG85	SK3124/289 SK3866	ECG289A ECG85	TM199 TM199	WEP373 WEP828	121-972* 121-972*	MPSA18* MPSA18*
TR703	2SC945,P,Q, R	21A118-137	GE-212	TCG85	SK3124/289	ECG85	TM289	WEP1945	121-972*	MPSA18*
TR704	2SC945,P,Q, R	21A118-137	GE-212	TCG85	SK3124/289	ECG85	TM289	WEP1945	121-972*	MPSA18*
TR901	2SC1507M,K, L	21A118-100	GE-251	TCG198	SK3219	ECG198	TM198	WEP779/198	121-Z9028	TIP50
TR902	2SC1507M,K, L	21A118-100	GE-251	TCG198	SK3219	ECG198	TM198	WEP779/198	121-Z9028	TIP50
TR903	2SC1507M,K, L	21A118-100	GE-251	TCG198	SK3219	ECG198	TM198	WEP779/198	121-Z9028	TIP50
TR904	2SC945,P,Q, R	21A118-137	GE-212	TCG85	SK3124/289	ECG85	TM289	WEP1945	121-972*	MPSA18*
TR4001	2SC945,P,Q, R	21A118-137	GE-212	TCG85	SK3124/289	ECG85	TM289	WEP1945	121-972*	MPSA18*
TR4002	2SC945,P,Q, R	21A118-137	GE-212	TCG85	SK3124/289	ECG85	TM289	WEP1945	121-972*	MPSA18*
TR4003	2SC945,P,Q, R	21A118-137	GE-212	TCG85	SK3124/289	ECG85	TM289	WEP1945	121-972*	MPSA18*
TR4501	2SC945,P,Q, R	21A118-137	GE-212	TCG85	SK3124/289	ECG85	TM289	WEP1945	121-972*	MPSA18*
TR4502	2SC945,P,Q, R	21A118-137	GE-212	TCG85	SK3124/289	ECG85	TM289	WEP1945	121-972*	MPSA18*
TR4503	2SC945,P,Q, R	21A118-137	GE-212	TCG85	SK3124/289	ECG85	TM289	WEP1945	121-972*	MPSA18*
TR4504	2SC945,P,Q, R	21A118-137	GE-212	TCG85	SK3124/289	ECG85	TM289	WEP1945	121-972*	MPSA18*
TR4505	2SC945,P,Q, R	21A118-137	GE-212	TCG85	SK3124/289	ECG85	TM289	WEP1945	121-972*	MPSA18*
TR4506	2SC945,P,Q, R	21A118-137	GE-212	TCG85	SK3124/289	ECG85	TM289	WEP1945	121-972*	MPSA18*

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.	MFR. PART No.	REPLACEMENT DATA							
			GENERAL ELECTRIC PART No.	TCG PART No.	RCA PART No.	ECG PART No.	THORDARSON PART No.	WORKMAN PART No.	ZENITH PART No.	MOTOROLA PART No.
TR4507	2SC945,P,Q, _R	21A118-137	GE-212	TCG85	SK3124/289	ECG85	TM289	WEP1945	121-972 *	MPSA18*
ZD601	RD8.2E	21A037-012	GEZD-8.2	TCG5016A	SK3782 /5016A	ECG5016A	TM5016A	WEP1417 /5016	103-Z9019	1N5237B
ZD2001	RD8.2E	21A037-012	GEZD-8.2	TCG5016A	SK3782/5016A	ECG5016A	TM5016A	WEP1417/5016	103-Z9019	1N5237B
ZD4001	RD5.1E	21A119-108	GEZD-5.1	ICG5010A	SK3776/5010A	ECG5010A	TM5010A	WEP1411/5010	103-279-10	1N5231B

For SAFETY use only equivalent replacement part.
* Lead configuration may vary from original.

WIRING DATA

High voltage Lead	Use BELDEN No. 9867 (30 KV)
Shielded Hook-up Wire	Use BELDEN No. 8401 or 8421 (Single-Conductor)
General-use Unshielded Hook-up Wire	8208 (Two-Conductor) 8528 (Solid) Available in 13 Colors 8522 (Stranded) Available in 13 Colors
300-Ohm Tuner Input Lead	Use BELDEN No. 8225
75-Ohm Tuner Input Lead	Use BELDEN No. 8241
300-Ohm Antenna Lead-in	Use BELDEN No. 8275 (Foam Core) or 8285 (Foam Jacketed)
Antenna Rotor Cable	8464 (Flat) or 8484 (Round) 4-Conductor 8485 (Round) 5-Conductor 8488 (Round) 8-Conductor

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.
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RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		
		MFGR. PART No.	SPRAGUE/ Q-LINE PART No.	WORKMAN PART No.
R511	1800 5% 3W Metal Oxide	08A158-179 08A158-315 08A158-339 08A158-304	RB-1055 247E1R55	22-2168
R512	8200 3W 5% Metal Oxide			
R601	1M 10% 1/2W Carbon Film			
R602	1.5 5% 10W WW			
R609	15K 10% 1/2W Carbon Film-Flameproof			
R610	13K 10% 1/2W Carbon Film-Flameproof	RA-3935 08A158-318 25R082-005	QUP-1272	22-1134
R611	2200 10% 1/4W Carbon Film-Flameproof			
R611A	39K 5% 1/4W Carbon Film			
R691	160 5% 16W WW (1)			
R914	82 5% 1/4W Carbon Film		QUP-1144	22-1070
R918A	4.7 5% 2W Metal Oxide			
R918B	22 10% 1/2W Carbon Film			
R918C	22 10% 1/2W Carbon Film			
R2001	10K 5% 1/4W Carbon Film			
R2002	10K 5% 1/4W Carbon Film	05A268-710 05R268-710 25R310-405 25R310-405 25R347-405	RB-2205 RB-2205 RA-1035 RA-1035 RA-4735	22-2056 22-2056 22-2210 22-1120 22-1136
R2004	47K 5% 1/4W Carbon Film			
TH501	100 Cold NTC			
TH601	9 Cold PTC			
PC9901	LDR			

(1) 160 Ohm Variable Tapped at 10 Ohms.
For SAFETY use only equivalent replacement part.

COILS (RF-IF)

ITEM No.	FUNCTION	MFR. PART No.	ITEM No.	FUNCTION	MFR. PART No.
DL701	Delay Line	01A405-593	L751	Color OSC (38uH)	01A405-583
DL4501	Delay Line	01A405-679	L901	RF Choke (100uH)	01A405-681
L201	Video IF	04A405-668	L1001	Balun (1)	01A405-661
L202	Video IF	04A405-669	L4501	RF Choke (27uH)	01A405-661
L301	RF Choke	01A405-537	L4502	RF Choke (27uH)	01A405-564
L401	RF Choke	01A405-475	LC201	177MHz Trap	01A405-564
L501	RF Choke	01A405-537	LC202	177MHz Trap	01A405-573
L502	RF Choke	01A405-611	LC751	7.16MHz Trap	01A405-573
L503	RF Choke	01A405-537	LC752	7.16MHz Trap	01A405-573
L505	Horiz Linearity	01A405-571	LC753	7.16MHz Trap	01A405-631
L506	RF Choke	01A405-537	T203	Video IF	01A405-631
L601	Line Choke	01A405-367	T204	AFT (AFC)	01A405-581
L701	Peaking (68uH)	01A405-670	T205	4.5MHz Trap	01A405-484
L703	Peaking (68uH)	01A405-670	T751	Chroma Band Pass	01A405-675
L704	RF Choke (38uH)	01A405-583			
L705	Peaking	01A405-671			

For SAFETY use only equivalent replacement part.
(1) Part of UHF/VHF Tuner Assembly, Part No.14B370-456

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

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

ITEM No.	FUNCTION	RESISTANCE	MFR. PART No.	REPLACEMENT DATA	NOTES
				TRW PART No.	
# VR1	Picture/ABC Switch	10K	02A178-318		
# VR2	Picture/ABC Switch	1000			
# VR2	Brightness	10K	02A178-372		
# VR3	Brightness	Detent @	02A178-287		
		50%			
		10K			
# VR3	Volume/Switch/	10K	02A178-291		
#	Switch	10K	02A178-311		
# VR4	Vert Hold	10K	02A178-287		
# VR5	Vert Hold	1000	02A178-371		
# VR5	Color	10K	02A178-287		
# VR6	Color	1000	02A178-371		
# VR6	Tint	10K	02A178-287		
# VR7	Color	1000	02A178-371		
# VR7	Tint Preference	1000	02A178-299		
# VR8	Color Preference	Detent @	02A178-301		
		50%			
# VR10	Color Preference	1000	02A178-307		
# VR11	Tone	10K	02A178-373(6)		
# VR11	Sharpness	1000	02A178-374		
# VR202	Sharpness	10K	02A178-287		
VR401	RF AGC	4700	02A178-329	X201R502B	
VR501	Vert Height	20K	02A178-279	X201R253B	
VR502	Horiz Hold	500	02A178-334		
VR502	Horiz Centering	4700	02A178-239	U260R502B	
# VR591A	Focus		02A178-286		
# VR601	Screen		(3960310)		
# VR601	B+ Adjust	500	02A178-296		
VR701	Sub Brightness	10K	02A178-232	X201R103B	
VR901	Red Bias	3300	02A178-278	X201R502B	
VR902	Green Bias	3300	02A178-278	X201R502B	
VR903	Blue Bias	3300	02A178-278	X201R502B	
VR904	Red Drive	220	02A178-233	X201R251B	
VR905	Blue Drive	220	02A178-233	X201R251B	
# VR2001	H.V. Protector	3000	02A178-218		
VR4001	Color Preset	10K	02A178-303	U260R103B	
VR4002	Tint Preset	3300	02A178-241	U260R502B	
VR4501	Chroma Null	470	02A178-375	U260R501B	

For SAFETY use only equivalent replacement part.
(6) Alternate part, may be used in some versions.

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	MFR. PART No.	REPLACEMENT DATA		NOTES	
			SPRAGUE PART No.			
			Q-LINE	GENERAL LINE		
C208	4.7 50V	04A111-098	QCP-3122-01	EV-1619.1		
C208B	2.2 50V		QCP-3114-01	EV-1617.1		
C212	2.2 50V		QCP-3114-01	EV-1617.1		
	1 50V		QCP-3107-01	EV-1615		
C220	220 25V	04A111-113	QCP-3175-01	EV-1340		
	100 25V		QCP-3168-01	EV-1331		
C223	2200 25V			TVA-1213.5		
C227	10 50V		QCP-3132-01	EV-1622		
C228	10 50V	04A111-113	QCP-3132-01	EV-1622		
C306	10 25V		QCP-3132-01	EV-1422		
C307	470 16V		QCP-3184-01	EV-1251		
C308	10 25		QCP-3132-01	EV-1422		
C309	1 50V	04A111-098	QCP-3107-01	EV-1615		
C311	10 25V	04A111-113	QCP-3132-01	EV-1422		
C320	1 50V	04A111-098	QCP-3107-01	EV-1615		
C323	10 160V	04A030-090		TVA-1504*		
C324	22 160V					
C326	100 10V		QCP-3165-01	EV-1131		
C327	220 16V		QCP-3175-01	EV-1240		
C329	10 50V		QCP-3132-01	EV-1622		
C403	10 25V	04A111-113	QCP-3132-01	EV-1422		
C406	3.3 16V	04A111-111	QCP-2117-01	SD35-3R39		
C409	2.2 16V		QCP-2115-01	SD35-2R29		
C410	10 25V	04A111-113	QCP-3132-01	EV-1422		
C411	10 16V		QCP-3128-01	EV-1222		
C412	.22 50V					
C413	100 16V		QCP-3168-01	EV-1231		
C416	330 35V		QCP-3181-01	EV-1445		
C417	100 35V		QCP-3168-01	EV-1530		
C420	3.3 50V		QCP-3118-01	EV-1618.1		
C421	2200 16V			TVA-1175.3		
C423	470 10V		QCP-3184-01	EV-1251		
C426	100 16V	04A111-111	QCP-3168-01	EV-1231		
C506	3.3 16V		QCP-3118-01	EV-1618.1		
C513	3.3 160V					
C518	2200 25V			TVA-1213.5		
	470 25V	04A111-012	QCP-3187-01	EV-1451		
C519	1000 16V	04A111-112	QCP-3195-01	EV-1261		
C521	10 160V	04A030-090		TVA-1504*		
C523	47 160V	04A111-102				
C526	470 16V		QCP-3184-01	EV-1251		
C529	2.2 160V					
C530	1 50V		04A111-098	QCP-3107-01		EV-1615
C606	680 200V		04A111-088			TVA-1504*
C607	10 160V	04A030-090				
C701	10 25V	04A111-113	QCP-3132-01	EV-1422		
C703	10 25V	04A111-113	QCP-3132-01	EV-1422		
C704	1 16V NP			TVAN-1200		
C707	10 25V NP	04A111-098	QCP-4148-01	TVAN-1304.1		
C709	4.7 50V		QCP-3122-01	EV-1619.1		
C710	220 16V		QCP-3175-01	EV-1240		
C712	2.2 50V		QCP-3114-01	EV-1617.1		
C713	10 25V	04A111-113	QCP-3132-01	EV-1422		
C714	10 25V		QCP-3132-01	EV-1422		
C717	3.3 50V		QCP-3118-01	EV-1618.1		
C718	22 16V		QCP-3137-01	EV-1224		
C756	.22 50V					
C757	4.7 16V			SD35-4R79		
C758	.22 50V					
C759	.22 50V					
C909	22 25V	04A111-098	QCP-3137-01	EV-1424		
C910	1 50V		QCP-3107-01	EV-1615		
# C2001	10 25V		04A111-113	QCP-3132-01		EV-1422
# C2002	10 25V		04A111-113	QCP-3132-01		EV-1422
# C2004	1 50V	04A111-098	QCP-3107-01	EV-1615		

CURTIS MATHES
CHASSIS CMC84-1, CMC84-2

FOLDER 1

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

ELECTROLYTIC CAPACITORS (cont)

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA		NOTES
			SPRAGUE PART No.		
			Q-LINE	GENERAL LINE	
C4005	10 25V	04A111-113	QCP-3132-01	EV-1422	
C4006	10 25V NP		QCP-4148-01	TVAN-1304.1	
C4007	33 16V		QCP-3146-01	EV-1325	
C4010	.1 35V		QCP-2101-01	SD50-R109	
C4012	2.2 50V		QCP-3114-01	EV-1617.1	
C4014	.1 35V		QCP-2101-01	SD50-R109	
C4016	2.2 50V		QCP-3114-01	EV-1617.1	
C4017	33 16V		QCP-3146-01	EV-1325	
C4018	33 16V		QCP-3146-01	EV-1325	
C4022	.1 35V		QCP-2101-01	SD50-R109	
C9001	100 10V		QCP-3165-01	EV-1131	

* Axial replacement for radial device.

For SAFETY use only equivalent replacement part.

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA		
			SPRAGUE PART No.		
			Q-LINE	GENERAL LINE	
C201	.0022 50V		QCP-5172-01	5GA-D22	
C202	.01 50V		QCP-5194-01	TG-S10	
C203	.0022 50V		QCP-5172-01	5GA-D22	
C204	.0022 50V		QCP-5172-01	5GA-D22	
C206	.01 25V		QCP-5194-01	TG-S10	
C207	.01 25V		QCP-5194-01	TG-S10	
C209	.01 25V		QCP-5194-01	TG-S10	
C210	.01 50V 10%				
C211	.01 50V 10%				
C213	.01 25V		QCP-5194-01	TG-S10	
C215	3pF NPO 50V			10TCC-V33	
C216	3pF NPO 50V			10TCC-V33	
C217	33 NPO 50V 5%			10TCC-Q33	
C219	12 50V			10TCC-Q12	
C222	.1 50V		QCP-5247-01	TG-P10	
C225	.1 50V		QCP-5247-01	TG-P10	
C226	.01 50V		QCP-5194-01	TG-S10	
C301	.01 25V		QCP-5194-01	TG-S10	
C302	.01 25V		QCP-5194-01	TG-S10	
C303	.01 25V		QCP-5194-01	TG-S10	
C304	33 NPO 50V 5%			10TCC-Q33	
C305	.0047 50V 10%			192P4729R8	
C310	.01 25V		QCP-5194-01	TG-S10	
C321	100 500V 10%			10TS-T10	
C325	.068 50V 10%			1PB-S68	
C328	.01 25V		QCP-5194-01	TG-S10	
C401	.015 50V 10%			192P1539R8	
C402	.001 50V		QCP-5166-01	5GA-D10	
C404	.0027 50V 10%			6PS-D27	
C405	.027 50V 10%			1FT-S27	
C407	.022 25V			192P2239R8	
C408	220 50V 5%			10TCC-T22	
C414	.0033 500V 10%				
C418	.22 50V 10%			431P2249R5	
C419	.01 50V		QCP-5194-01	TG-S10	
C422	.01 50V		QCP-5194-01	TG-S10	
C424	.01 50V		QCP-5194-01	TG-S10	
C425	.001 500V 10%			10TS-D10	
C502	.01 500V 10%				
C503	.0022 500V 10%			10TS-D22	
C504	.0082 50V 10%		QCP-6153-01	1FT-D82	
C505	.1 50V 10%			431P1049R5	

PARTS LIST AND DESCRIPTION (CONTINUED)

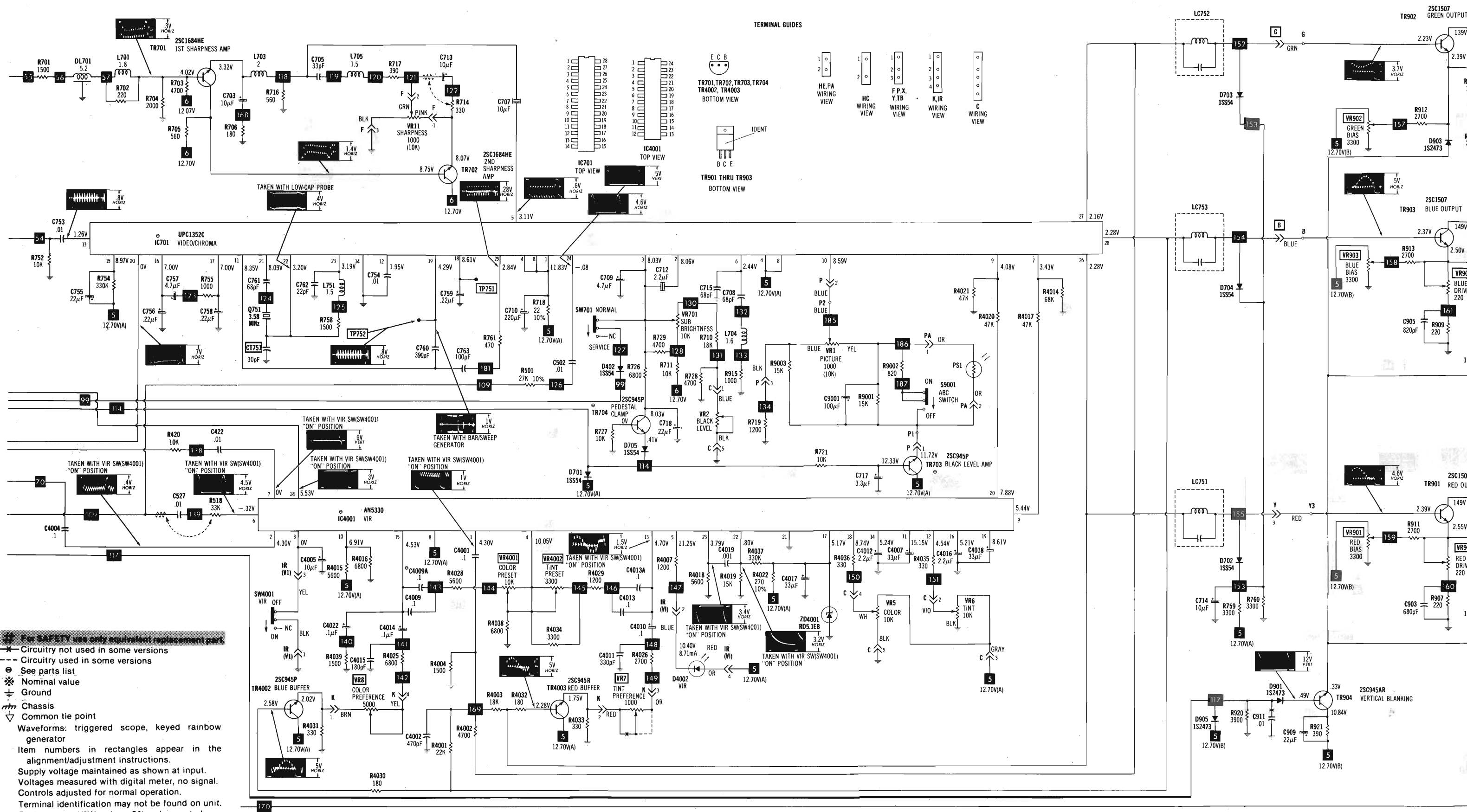
(When ordering parts, state Model, Part Number, and Description.)

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)

			REPLACEMENT DATA			
ITEM No.	RATING	MFR. PART No.	SPRAGUE PART No.			
			Q-LINE	GENERAL LINE		
C507	.022 50V 5%	05A155-251	QCP-6104-01	1FT-D10		
C508	.01 50V 2%	05A155-252		10TS-T47		
C509	.001 50V 10%			10TS-T47		
C510	470 50V 10%			10TS-T56		
C511	470 50V 10%					
C512	560 500V 10%					
C514	.0158 2KV 3%	05A155-241				10TS-D22
C515	.0022 500V 10%					
C516	.0033 500V 10%					
C517	.39 400V 5%	05A155-277				
C520	.0022 500V 10%			10TS-D22		
C522	.0022 500V 10%			10TS-D22		
C524	.0022 500V 10%			10TS-D22		
C525	.1 250V					
C527	.01 50V 10%					
C591	220 2KV					
C601	.0047 125V AC	015A155-254				
C602	.0047 125V AC					
C603	.0047 125V AC	05A155-128				
C604	.0047 125V AC	05A155-128				
C605	.0047 125V AC	05A155-128				
C609	.0022 500V		QCP-5172-01	5GA-D22		
C705	56 NPO 50V 5%			10TCC-Q56		
C708	47 NPO 50V 5%			10TCC-Q47		
C715	39 NPO 50V 5%			10TCC-Q39		
C751	100 N150 50V 5%					
C752	120 NPO 50V 5%			10TCC-T12		
C753	.01 25V		QCP-5194-01	TG-S10		
C754	.01 25V		QCP-5194-01	TG-S10		
C760	390 50V			10TS-T39		
C761	68 NPO 50V 5%			10TCC-Q68		
C762	22 NPO 50V			10TCC-Q22		
C763	100 N150 50V 5%					
C901	.01 500V		QCP-5194-01	TG-S10		
C902	.001 1KV		QCP-5166-01	5GA-D10		
C903	680 50V			10TS-T68		
C904	680 50V			10TS-T68		
C905	820 50V			10TS-T82		
C906	.1 50V		QCP-5247-01	TG-P10		
C907	.01 50V		QCP-5194-01	TG-S10		
C2003	.1 50V	05A155-138	QCP-5247-01	TG-P10		
C2005	.0022 500V 10%	05A255-257				
C4001	.1 500V					
C4002	470 50V 5%			10TS-T47		
C4003	.001 50V		QCP-5166-01	5GA-D10		
C4004	.1 500V					
C4008	.22 50V			431P2249R5		
C4009	.1 500V					
C4011	330 50V 5%					
C4013	.1 500V					
C4015	180 50V 5%			10TCC-T18		
C4019	.001 50V		QCP-5166-01	5GA-D10		
C4020	.0047 50V			192P4729R8		
C4021	560 50V			10TS-T56		
C4502	33					
C4504	.01 50V		QCP-5194-01	TG-S10		
C4505	68 NPO 50V 5%					
CT751	30 Trimmer	03A046-24				

For SAFETY use only equivalent replacement part.



For SAFETY use only equivalent replacement part.

- ✕ Circuitry not used in some versions
- Circuitry used in some versions
- ⊙ See parts list
- ✱ Nominal value
- ⊥ Ground
- ⏏ Chassis
- ▽ Common tie point

Waveforms: triggered scope, keyed rainbow generator

Item numbers in rectangles appear in the alignment/adjustment instructions.

Supply voltage maintained as shown at input.

Voltages measured with digital meter, no signal.

Controls adjusted for normal operation.

Terminal identification may not be found on unit.

Resistors are 1/2W or less, 5% unless noted.

Value in () used in some versions.

A PHOTOFAC STANDARD NOTATION SCHEMATIC
WITH CIRCUITRACE

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TERMINAL GUIDES

