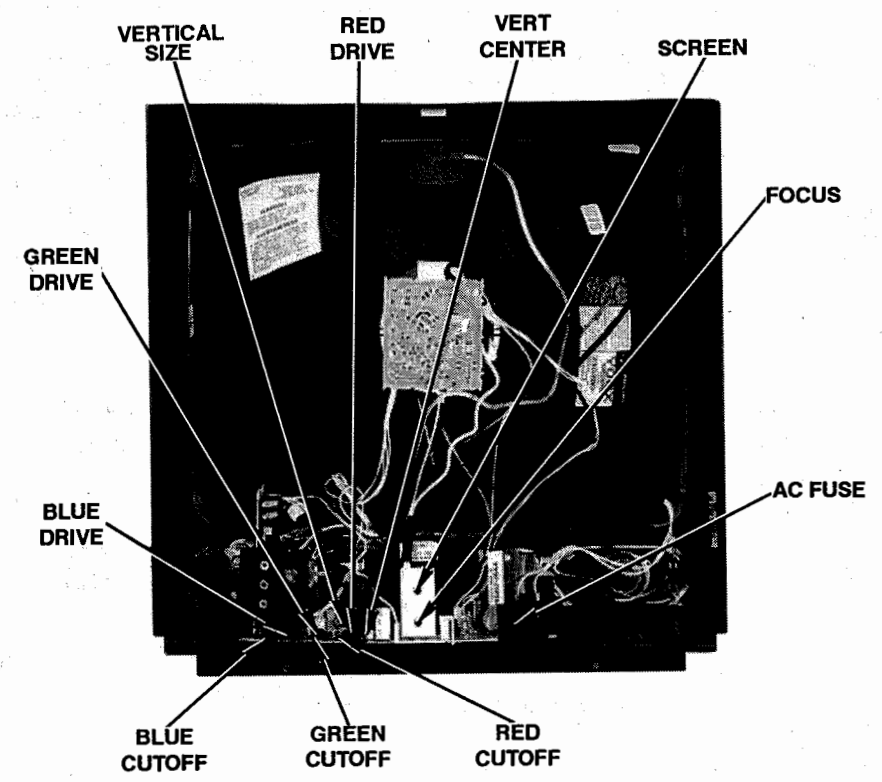


CABINET - REAR VIEW



TEST JIG HOOKUP				
Function	Chek-A-Color Adapter No.	PC Board Plug	Pin	Color
CRT	-	J500	1, 2	Red
Yoke	D482		3, 4	Blue
Yoke Setting	YP3	J550	1	Black
Comments	Focus Tap		2	Yellow

The listing of any available replacement part herein in no case constitutes a recommendation, warranty, or guarantee by Howard W. Sams & Company as to the quality and suitability of such replacement part. The numbers of the listed parts have been compiled from information furnished to Howard W. Sams & Company by the manufacturers of the specific type of replacement part listed.

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Indianapolis, IN 46214-2012

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92RG02217



PHOTOFACT® Technical Service Data

SET 2979

MODEL SRW2020121

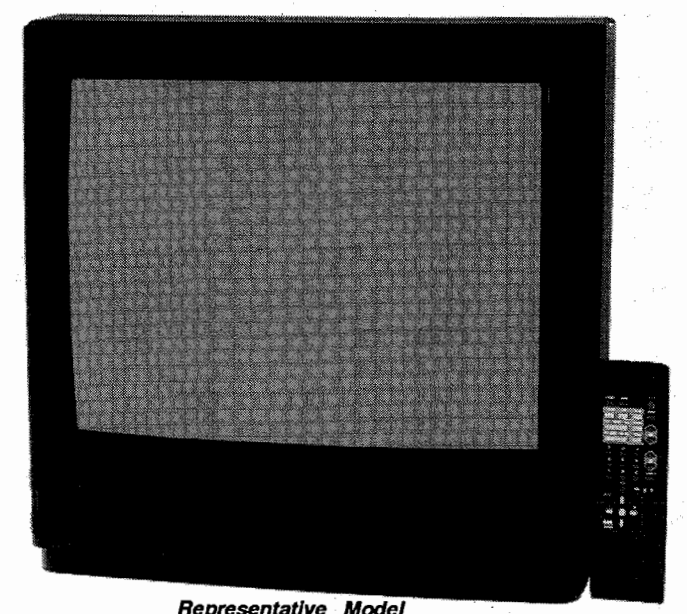
SYLVANIA

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For Supplier Address,
See PHOTOFACT Annual Index

SYLVANIA

Model SRW2020121 (Chassis 20S401)



Representative Model

Complete coverage
for servicing a television receiver...

- Schematics
- Parts lists
- Component locations
- Troubleshooting guide

Coverage includes these additional models and chassis:

MODELS	CHASSIS	MODELS	CHASSIS
SRC1949121	19S403	SRW2020122	20S401
SRW1350101	13S401	SRW2020123	20S401
SRW1950121	19S401	SSB1955101	19S405
SRW1950122	19S401	SSB1955121	19S405



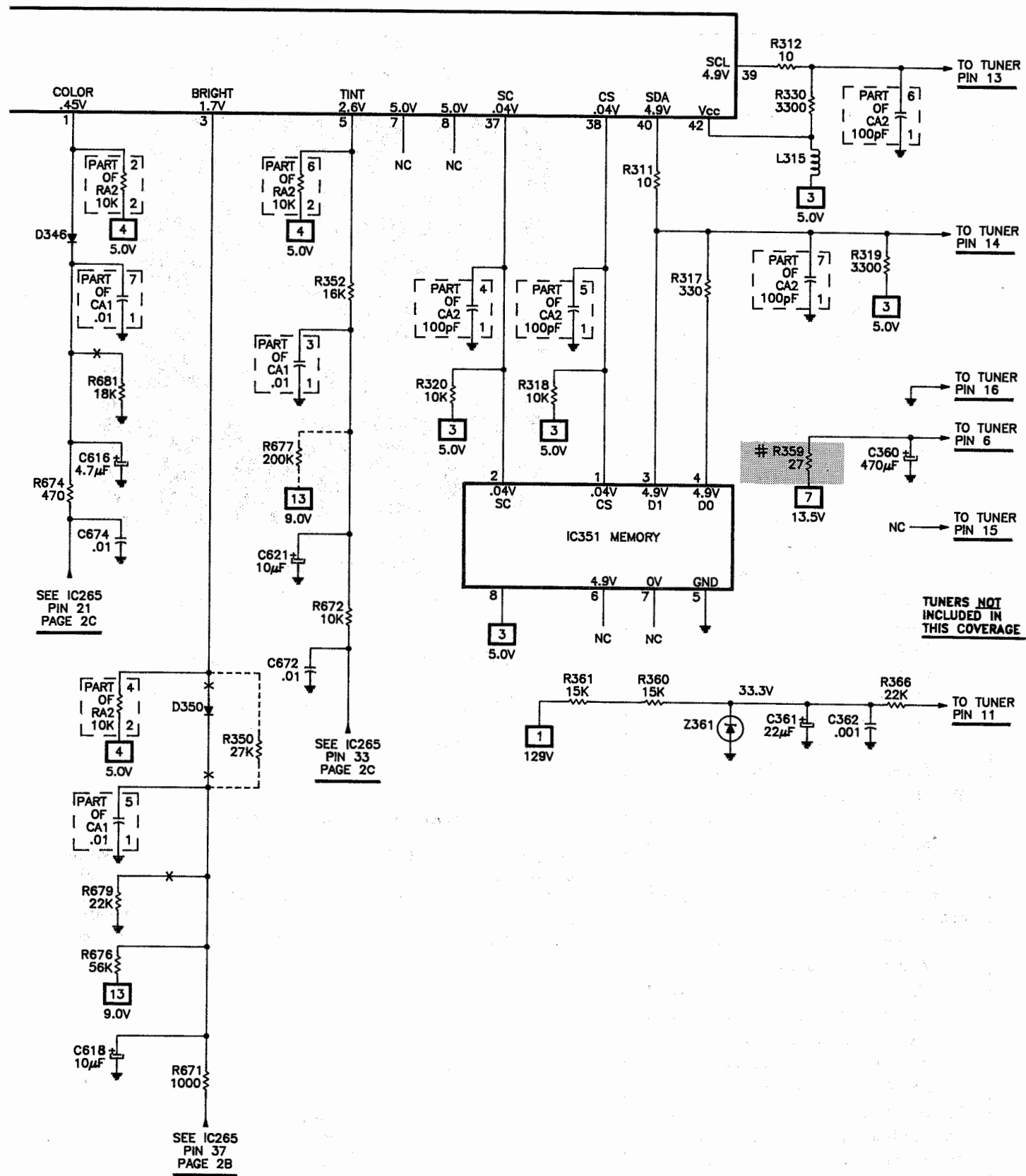
HOWARD W. SAMS & COMPANY

MAY 1992 SET 2979

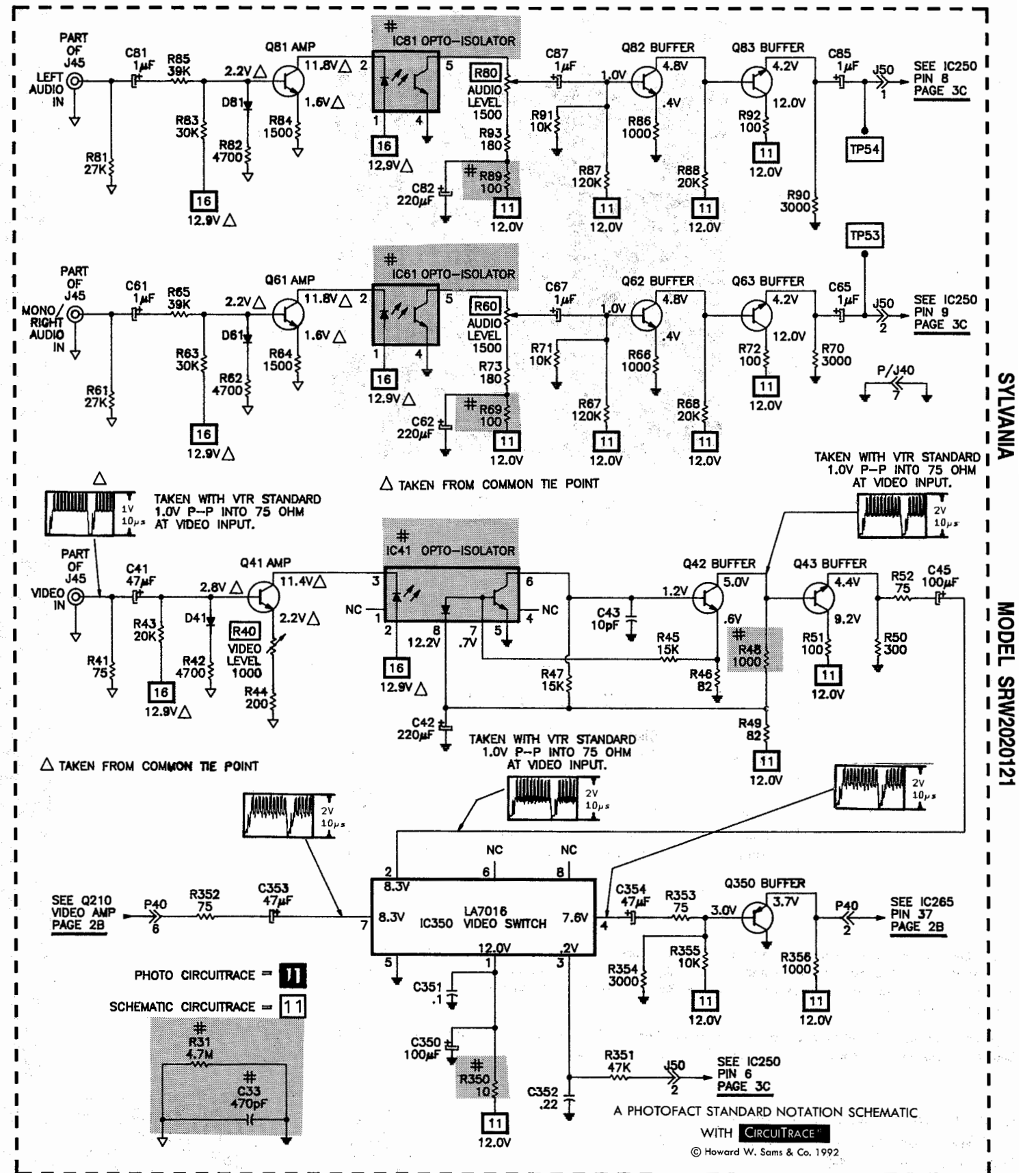
2979

2979

TUNER CONTROL SCHEMATIC continued



AUDIO / VIDEO JACK SCHEMATIC



MISCELLANEOUS ADJUSTMENTS

PRETUNING

Note: All procedures require an antenna connected and power applied to the set. Select TV / CATV Switch setting.

ADD/DELETE CHANNELS

1. Select the channel to be added or deleted.
2. Press the menu key until the Channel ADD/DELETE menu is displayed on screen.
3. Press the + key to add the selected channel.
4. Press the - key to delete the selected channel.

SLEEP TIMER

1. Press the Sleep key.
2. Press the Sleep key to select the desired Sleep Time setting.

HIGH VOLTAGE CHECK

Connect a high voltage probe to CRT anode. Tune in an active channel. High voltage should be between 25.0KV and 27.5KV.

RF AGC

Tune in a medium strength station. Rotate RF AGC Control (R206) Clockwise until snow appears, then Counterclockwise to a point where snow just disappears.

HORIZONTAL CENTERING

Tune in a picture. Adjust Horizontal Centering Control (R520) for best horizontal centering.

VERTICAL CENTERING

Tune in a picture. Adjust Vertical Centering Control (R545) for best vertical centering.

VERTICAL SIZE

Tune in a picture. Adjust Vertical Size Control (R559) to obtain a slight underscan of raster at top and bottom of screen.

VIDEO INPUT

Connect a VTR Standard 1V p-p video signal to the Video input jack. Connect an Oscilloscope to Q42 Collector, low side to ground. Adjust Video Input Control (R40) for 1.0V p-p.

COLOR TEMPERATURE

Disconnect the antenna. Set the Brightness, and Contrast Controls to Mid-range. Set the Color, and Screen Controls, Red (R644), Green (R643), and Blue (R642) Drive Controls, Red (R650), Green (R649), and Blue, (R648) Cutoff Controls to MINIMUM. Disconnect the Vertical Yoke Plug (P/J550). Adjust Screen Control to obtain a faintly visible line of one predominant color, then back off until line just disappears. Set the Drive and Cutoff Controls to Maximum. Adjust two remaining Cutoff Controls for best white balance of line. Reconnect the Vertical Yoke Plug (P/J550), and Set the Color Control to Mid-range. Tune in a Color picture and adjust the Drive Controls for best white balance at all brightness levels.

CONVERGENCE

Operate the receiver for fifteen minutes. Tune in a dot pattern. Adjust the four pole magnet tabs to converge the red and blue dots at the center of the screen. Adjust the six pole magnet tabs to converge the red/blue dots with the green dots at the center of the screen.
NOTE: Rotate the two tabs of each set of magnets equally and opposite to converge vertically, and rotate both tabs in the same direction to converge horizontally. Four and six pole magnets interact, repeat adjustment until center convergence is correct. Tune in a crosshatch pattern. Remove the rubber wedges between the Deflection Yoke and the CRT. 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 right or left to converge the Horizontal lines at the top and bottom of the screen, and vertical lines at the right and left sides of the screen. Repeat convergence procedure as necessary to obtain best overall convergence. Apply adhesive to wedges and replace between the Deflection Yoke and the CRT.

STEREO ADJUSTMENTS

Note: Adjustments made using B&K Model 2009 MTS TV/Stereo generator connected to antenna terminals or an equivalent generator may be used. Use the following Control setting, unless otherwise indicated: Use RESET. Select Stereo mode on receiver.

INPUT LEVEL

Select Pilot, 1kHz audio frequency, L - R Modulating signal Connect an oscilloscope to IC250 pin 1, low side to ground. Adjust Input Level Control (R250) for 1V p-p.

PLL

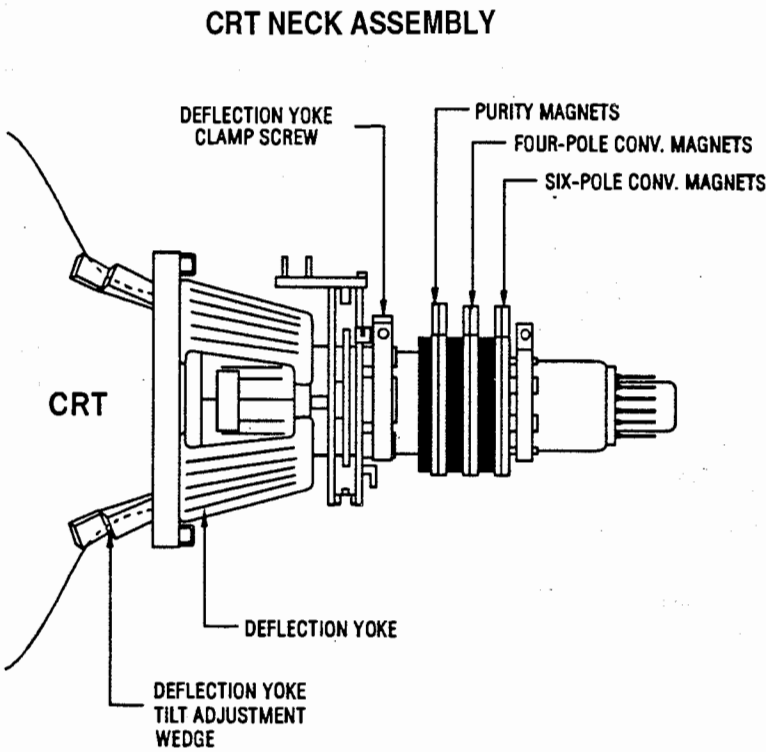
Select Pilot, 1kHz audio frequency, L - R Modulating signal. Connect an oscilloscope to IC250 pin 4, low side to ground. Adjust PLL Control (R254) for .8V p-p.

RIGHT AUDIO INPUT

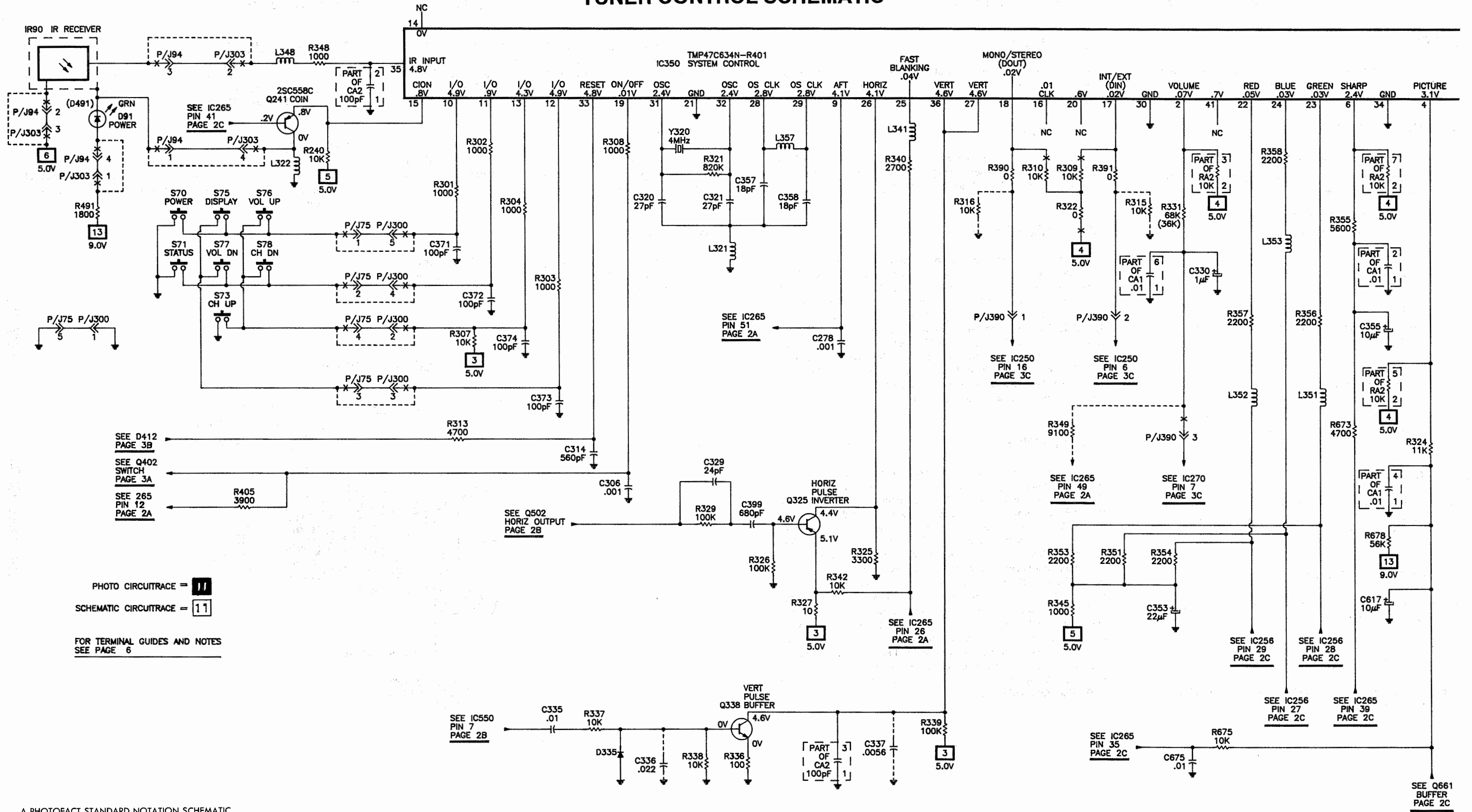
Inject a 2V p-p 1kHz Audio signal into the right audio jack. Connect an oscilloscope to TP53, low side to ground. Adjust Right Audio Input Control (R60) for 2.0V p-p.

LEFT AUDIO INPUT

Inject a 2V p-p 1kHz Audio signal into the left audio jack. Connect an oscilloscope to TP54, low side to ground. Adjust Right Audio Input Control (R80) for 2.0V p-p.



TUNER CONTROL SCHEMATIC



A PHOTOFACT STANDARD NOTATION SCHEMATIC
WITH **CIRCUITRACE™**
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SAFETY PRECAUTIONS

SERVICE WARNING

ONLY qualified service technicians who are familiar with safety checks and guidelines should perform service work. For continued SAFETY:

- 1. Before replacing parts, disconnect power source to protect electrostatically sensitive parts.
- 2. Do not attempt to modify any circuit unless so recommended by the manufacturer.
- 3. When servicing chassis, use an isolation transformer between the line cord and power receptacle.

SERVICING HIGH VOLTAGE AND PICTURE TUBE

Use EXTREME CAUTION when servicing the High Voltage circuits.

- 1. To discharge static High Voltage, connect a 10 kilohm resistor in series with a test lead between chassis and picture tube anode lead.
- 2. DO NOT lift picture tube by the neck.
- 3. ALWAYS wear shatterproof goggles when handling picture tube to protect eyes in case of implosion.

X-RAY RADIATION AND HIGH VOLTAGE LIMITS

Be aware of the instructions and procedures covering x-ray radiation. In solid-state receivers and monitors, the picture tube is the only potential source of x-rays.

- 1. Keep an accurate High Voltage meter available at all times. Check meter calibration periodically.
- 2. Whenever servicing a chassis, check High Voltage at various brightness levels to be sure it is regulating properly.
- 3. Keep High Voltage at rated value, NO HIGHER. Excessive High Voltage may cause x-ray radiation or failure of associated components. DO NOT depend on protection circuits to keep voltage at rated value.
- 4. When troubleshooting a set with excessive High Voltage, avoid close contact with picture tube. DO NOT operate set longer than necessary. To locate the cause of excessive High Voltage, use a variable AC transformer to regulate voltage.
- 5. In present chassis, many electrical and mechanical components have safety-related characteristics which are not detectable by visual inspection. Such components are identified by a # on both the schematic and the parts list. For SAFETY, use only equivalent replacement parts when replacing these components.

SAFETY CHECKS – FIRE AND SHOCK HAZARD

Cold Leakage Checks for Sets with Isolated Ground

- 1. Unplug the AC cord, connect a jumper across the plug prongs, and turn the power switch ON.
- 2. Use an ohmmeter to measure the resistance between the jumpered AC plug and any exposed metal cabinet parts such as antenna screw heads, control shafts, or handle brackets. Exposed metal parts with a return path should measure between 200 kilohms and 5 megohms. Parts without a return path must register infinity.

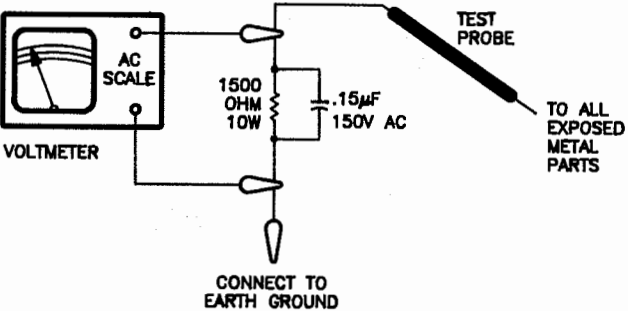
Hot Leakage Current Check

- 1. Plug the AC cord directly into AC outlet. DO NOT use an isolation transformer.
- 2. Use a 1500-ohm, 10-watt resistor in parallel with a .15-microfarad 150 Volts AC capacitor to connect between any exposed metal parts on the set and a good earth ground. (See figure below.)
- 3. Use an AC voltmeter with at least 1000 ohms-per-volt sensitivity to measure the voltage across the resistor. Check all exposed metal parts and measure voltage at each point.
- 4. Voltage readings should not exceed .75 volts RMS (5 milliamps AC). Any value exceeding this limit constitutes a potential shock hazard and must be corrected.
- 5. If AC plug is not polarized, reverse the AC plug and repeat exposed metal part voltage measurement at each point.

GENERAL GUIDELINES

Perform a final SAFETY CHECK before returning set to customer.

- 1. Check repaired area for poorly soldered or de-soldered connections, and check entire circuit board for solder splashes.
- 2. Check inner board wiring for pinched wires or wires contacting any high-wattage resistors.
- 3. Check that all control knobs, shields, covers, grounds and mounting hardware have been replaced. Be sure to replace all insulators and restore proper lead dress.



TROUBLESHOOTING

POWER SUPPLY

Check AC Fuse (F400).
If Fuse is open, check Bridge Rectifier Diodes (D401 thru D404), Resistor R401, Capacitors C400 thru C404, Electrolytic C405, and components associated with Degaussing Relay (K400).

Check DC Fuse (F401).
If Fuse is open, check Regulator IC (IC430), Zener Diode (Z406), and Horizontal Output Transistor (Q502).

Apply 120VAC, check for 12.5VDC at the emitter of Q403.
If voltage is missing, check Transistor Q403, Resistors R407, R408, Zener Diode (Z406), and check Regulator IC (IC430) for approximately 15V at pins 2 and 4 in the "off" state.

Check for a voltage when pressing the Power button at the emitter of Transistor Q405.
If Toggling does not occur, check System Control IC (IC350) pins 19, 42, Transistors Q405, and Q402.

Check for 129VDC at pin 4 of IC430.
If voltage is missing check Transistors Q400, and Q502 (Horizontal Output).

IF-AGC

Inject a video IF signal at the IF input and check for video on the CRT.
If video is present, check the tuner, tuner control and the tuner AFC circuits.

Check for a video waveform at Pin 52 of TV Signal Processor IC (IC265).
If video is present, refer to the "Video" section of this Troubleshooting guide.

If there is no video, Apply AGC bias to pin 5 of IC265. If video is now present, check the voltages, waveforms and components associated with pins 1, 5, 7, 8, 9, 34, 46, 47, 48, 50, 51, and 52 of IC265.

A defective AGC circuit can cause an overloaded picture, excessive snow or loss of audio and video. See the AGC Voltage Chart for AGC voltages with signal.

AGC VOLTAGE CHART

IC265	
PIN 1	4.7V
PIN 5	2.1V

HORIZONTAL OSCILLATOR DISABLE TEST

Connect a variable 50V DC power supply to the Cathode of Z530, low side to ground. When the power supply voltage reaches 31V, the set should shut off. If the set does not shut off, the X-ray protect circuit needs repair.

VIDEO

Inject a video signal at pin 52 of TV Signal Processor IC (IC265) and check for video on the CRT.
If video is present refer to the "IF-AGC" section of this Troubleshooting guide.

Check for a video waveform at pin 37 of IC265.
If there is no video, check the voltages waveforms and components associated with IC350 on A/V Jack Board, Transistor Q350, and check pins 35, 37, 39, 40, 41, and 42 of IC265.

If video is present, refer to the "Raster" section of this Troubleshooting guide.

If the brightness is inadequate or cannot be controlled, check the voltages waveforms and components associated with pin 37 of IC265 and pin 7 of the CRT.

CHROMA

Check for a chroma waveform at pin 37 of the TV Signal Processor IC (IC265).
If the waveform is missing, check the voltages, waveforms and components associated with pins 21 thru 28, 30 thru 34, 36, and 38 of IC265.

Check for the proper waveforms at pins 23, 24, and 25 of IC265.
If these waveforms are missing, check the voltages, waveforms and components associated with pins 21 thru 28, 30 thru 34, 36, and 38 of IC265.

Check the 3.58MHz oscillator at pins 30, and 31 of IC265. Check the voltages and components associated with the color control, pin 21 of IC265. If there is inadequate tint range, check the voltages, waveforms and components associated with the Tint Control, pin 33 of IC265. If the proper chroma waveforms are present at pins 23, 24, and 25 of IC265, refer to the "Raster" section of this Troubleshooting guide.

RASTER

Check the CRT and CRT voltages.

If there is no Red, check the voltages, waveforms and components associated with pin 23 of the TV Signal Processor IC (IC265) and the Red Output Transistor (Q21)).

If there is no Green, check the voltages, waveforms and components associated with pin 24 of IC265 and the Green Output Transistor (Q22).

If there is no Blue, check the voltages, waveforms and components associated with pin 25 of IC265 and the Blue Output Transistor (Q23).

If the raster has height or width problems, refer to the "Vertical", "Horizontal" and "Power" sections of this Troubleshooting guide.

TELEVISION SCHEMATIC continued

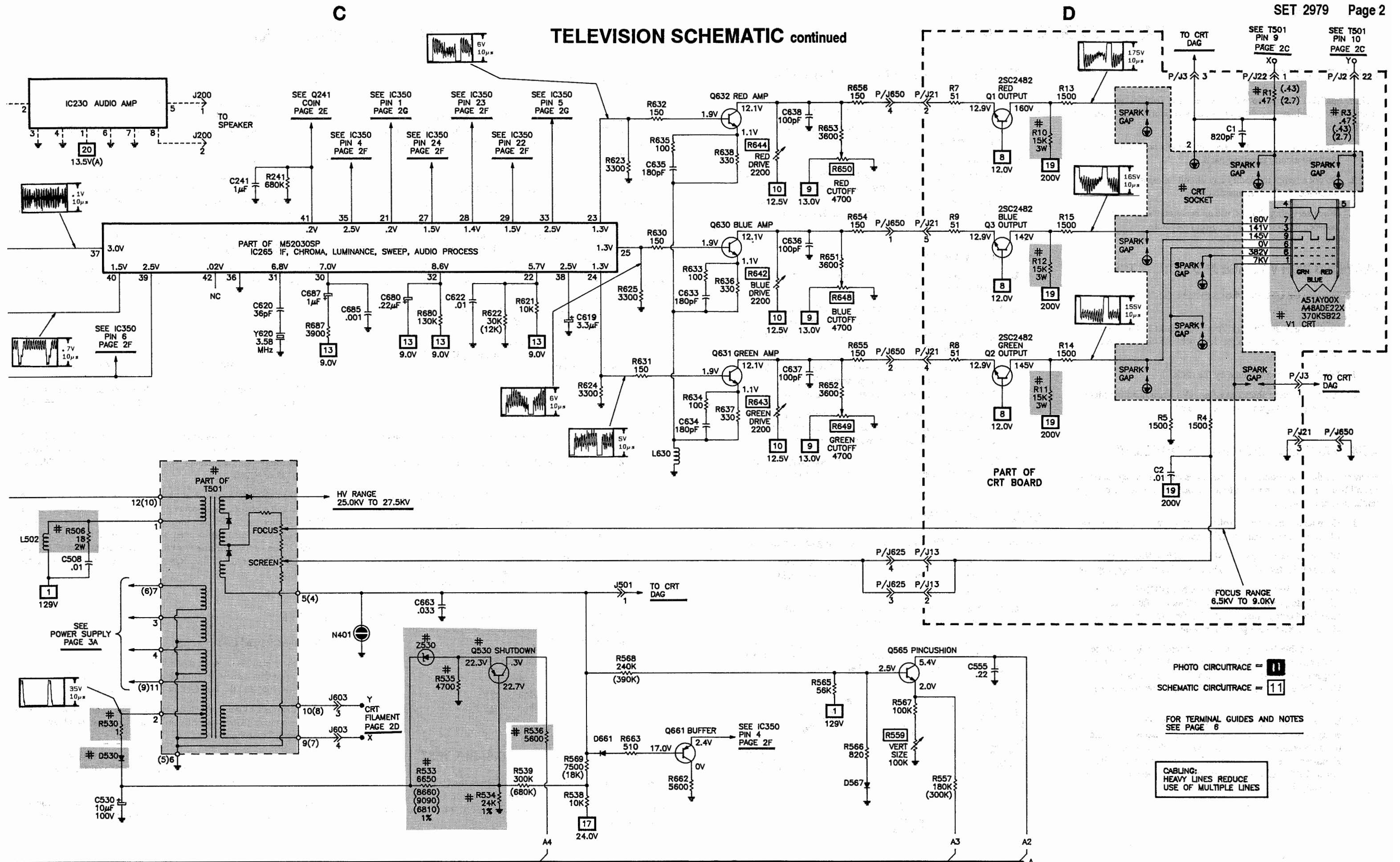


PHOTO CIRCUITRACE = 11
 SCHEMATIC CIRCUITRACE = 11
 FOR TERMINAL GUIDES AND NOTES
 SEE PAGE 6
 CABLING:
 HEAVY LINES REDUCE
 USE OF MULTIPLE LINES

TROUBLESHOOTING
continued

SYNC

- If there is no vertical or horizontal sync
 - Check the voltages, **waveforms** and components associated with pin 44 of the TV Signal Processor IC (IC265).
- If the proper waveforms are present at pin 44 of IC265, check for
 - Vertical waveforms at pins 18, and 45 of IC265
 - Horizontal waveforms at pins 20, and 43 of IC265

HORIZONTAL

- Determine if the TV is in shutdown and refer to the "High Voltage Shutdown" section of this Troubleshooting guide. If the TV is not in shutdown, inject a horizontal signal at the base of the Horizontal Output Transistor (Q502) .
 - If horizontal deflection is now present, check the voltages, waveforms and components associated with the Horizontal Drive Transistor (Q501) and pins 13, 19, 20 of the TV Signal Processor IC (IC265)
 - If there is still no horizontal deflection, check the voltages, waveforms and components associated with Transistor Q502 and the Horizontal Output Transformer (T501).
 - Check Diodes D409, D455, D460, and associated components for defects.

The High Voltage Rectifier is part of Transformer T501 and if defective it will affect the performance of the horizontal circuits. If the Horizontal Oscillator is off frequency, check the voltages, waveforms and components associated with pins 13, 19, 20, 43, and 44 of IC265. Horizontal linearity or width problems may be caused by Capacitors C505, C506, C507, C510, Diode D510, Coil L507, and associated components.

VERTICAL

- Inject a vertical signal at pin 6 of the Vertical Output IC (IC550).
 - If vertical deflection is present, check the voltages, waveforms and components associated with pins 16, 17, and 18 of TV Signal Processor IC (IC265).
 - If there is still no vertical deflection, check the voltages, waveforms and components associated with IC550.
- Vertical linearity or height problems may be caused by vertical feedback and bias circuits, check Electrolytic Capacitors C553A, C551, C554, Pincushion Transistor (Q565).

AUDIO

- Select an active channel and check for an audio waveform at pins 3, and 4 of the TV Signal Processor IC (IC265).
 - If there is no audio, check the voltages, waveforms, and components associated with pins 2, 3, 4, 49 of IC265.
- Select a station that is transmitting a stereo signal and check for audio waveforms at pin 1 of the Stereo Decoder IC (IC250).
 - If waveforms are missing check the voltages, waveforms, and components associated with IC265, and Q250.
- Select a station that is transmitting a Stereo signal and check for audio waveform at pins 10, and 11 of IC250.
 - If waveforms are missing check the voltages, waveforms, and components associated with IC250.
- If audio is present at pins 10, and 11 of IC250 in Mono, Stereo, and SAP modes, Check for audio at pins 2, 6, 9, and 16 of the Audio Amplifier IC (IC290).
 - If audio is missing check the voltages, waveforms, and components associated with IC290, and Audio Control IC (IC270).
- Check the voltage at Pin 7 of IC270 it should measure 1.0V at mute and 3.5V at Maximum volume.

HIGH VOLTAGE SHUTDOWN

- The high voltage is monitored by the Diode D530, rectifying pulses from the Horizontal Output Transformer (T501). Should the high voltage increase, the rectified voltage at the Cathode of Zener Diode (Z530) causes the diode to go into conduction triggering the X-ray protect circuit Q530, shutting down the set. To troubleshoot, remove Resistor R536 from the circuit and use a variac for AC power. Start at 90 VAC and increase as necessary to locate and repair the defect. Return R536 to the circuit.
- NOTE: Care should be taken in defeating the high voltage shutdown circuit, as this may cause excessive X-radiation and damage to the CRT, Transformer T501 and associated components. Monitor the high voltage and troubleshoot.

Voltages Taken With TV in Shutdown

Q530	
Emitter	24.9V
Base	24.3V
Collector	21.3V

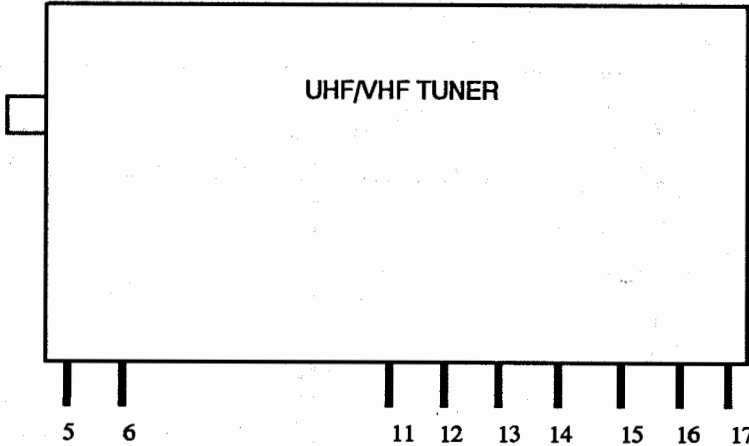
TUNER INFORMATION

TUNER VOLTAGE CHART

	VHF Low Band	VHF High Band	UHF Band
5	8.7V	8.7	8.7
6	12.0V	12.0V	12.0V
11	.8V	1.5V	1.3V
12	4.8V	4.8	4.8
13	5.0V	5.0V	5.0V
14	5.0V	5.0V	5.0V
15	2.8V	2.8V	3.8V
16	0V	0V	0V
17	0V	0V	0V

Note: VHF Low Band voltages taken on channel 2.
 VHF High Band voltages taken on channel 7.
 UHF Band voltages taken on channel 14.

TUNER TERMINAL GUIDE



SEE IC350
PIN 9
PAGE 2F

2SC120
Q510 SWITCH

IF FROM TUNER
PIN 17

AGC TO TUNER
PIN 5

TUNERS NOT
INCLUDED IN
THIS COVERAGE

RF AGC RANGE
3.8V TO 8.8V

IF AGC RANGE
2.3V TO 4.8V

PART OF M52030SP
IC265 IF, CHROMA, LUMINANCE, SWEEP, AUDIO PROCESS

2SC588B
VIDEO AMP

Q210

SEE IC350
PIN 2
PAGE 2F

SEE IC350
PIN 7
PAGE 2H

SEE Q350
VIDEO SWITCH
PAGE 2H

Q602 BUFFER

LA7830
IC550 VERT OUTPUT

Q501 HORIZ DRIVER

Q502 HORIZ OUTPUT

DY1 DEFLECTION YOKE

R507 680

L507 LINEARITY

SEE IC350
PIN 19
PAGE 2E

SEE Q338
VERT PULSE BUFFER
PAGE 2E

SEE Q325
HORIZ PULSE INVERTER
PAGE 2E

A1 A4 A2 A3 A1

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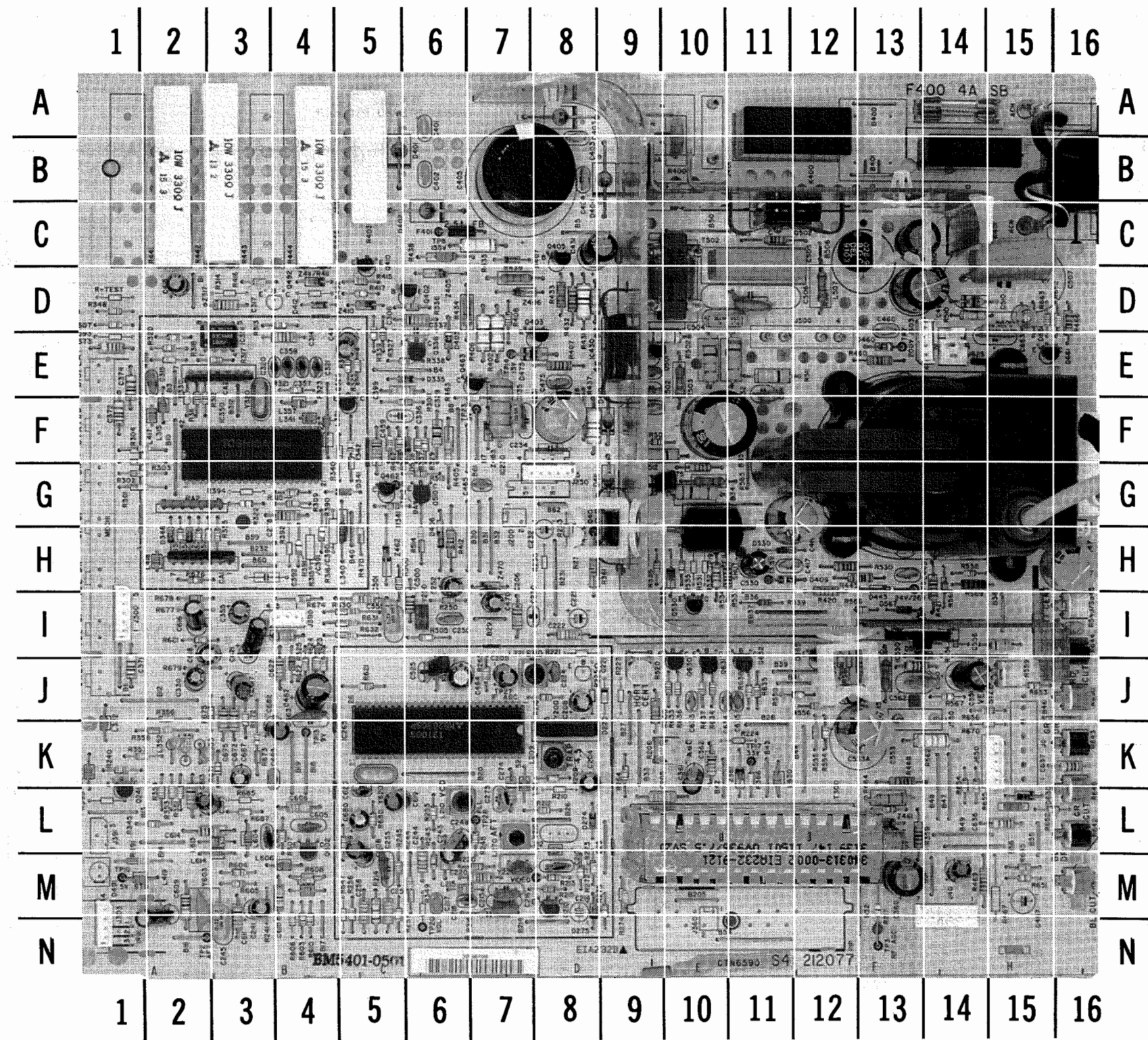
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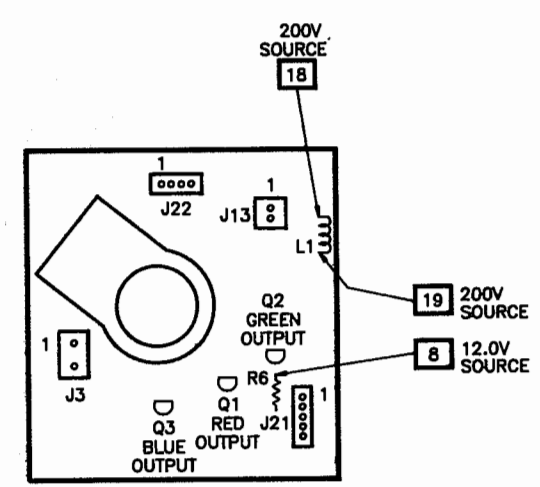
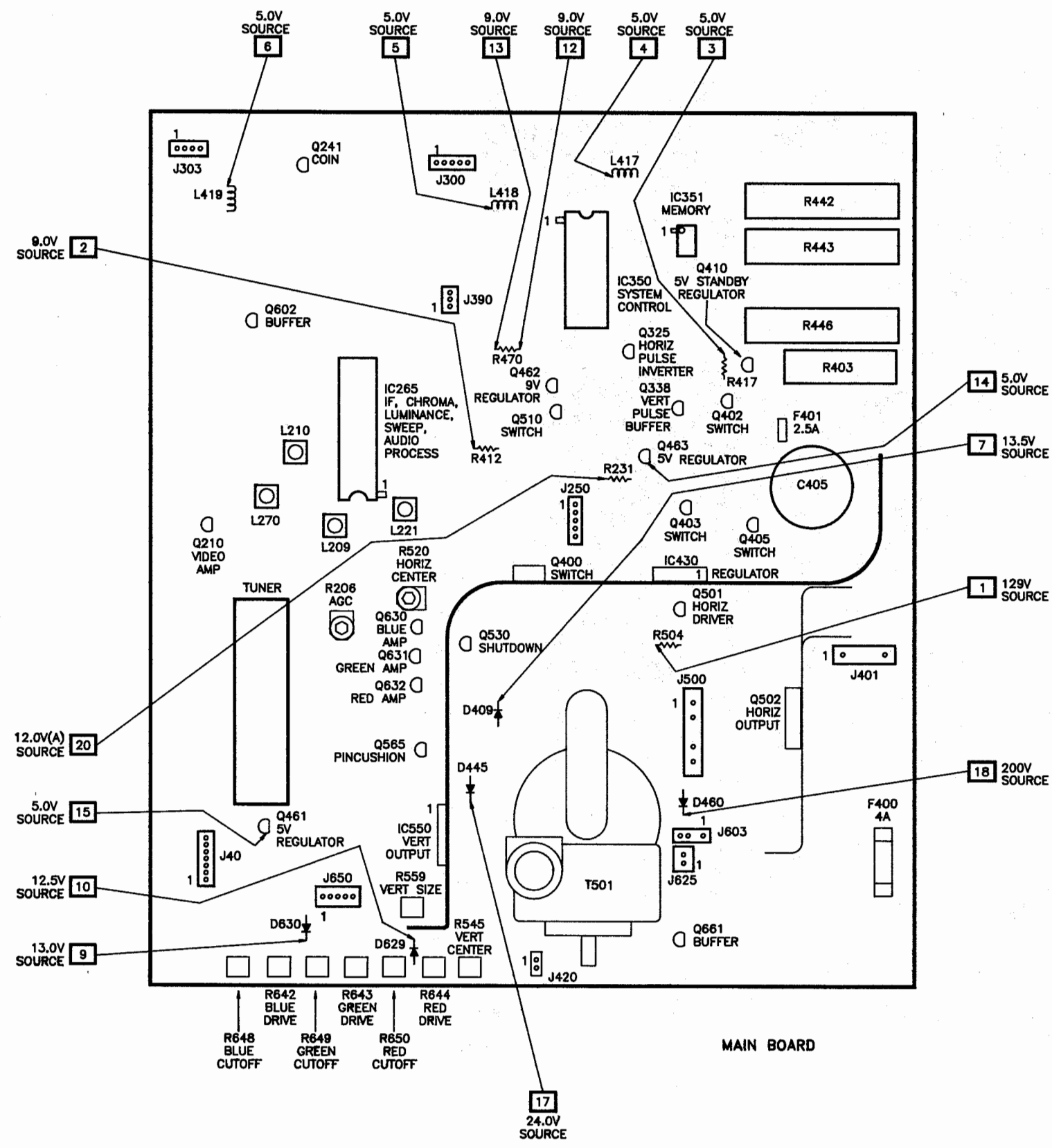
MAIN BOARD, GRIDTRACE LOCATION GUIDE

CA1	H-2	C404	B-8	C622	J-4	L221	J-7	R231	F-7	R355	H-3	R509	F-5	R644	I-16
CA2	E-3	C405	B-7	C633	J-10	L270	L-7	R240	K-1	R356	J-2	R510	D-14	R645	M-14
C204	K-8	C411	E-5	C634	J-10	L315	F-2	R241	M-3	R357	K-1	R511	E-11	R648	M-16
C205	L-9	C415	D-2	C635	J-11	L321	F-4	R243	M-6	R358	K-2	R512	F-9	R649	L-16
C206	I-7	C417	H-11	C636	L-15	L322	K-1	R244	M-6	R359	L-13	R513	G-6	R650	J-16
C208	J-8	C419	G-12	C637	K-16	L340	H-5	R245	M-5	R360	J-9	R514	H-6	R651	M-14
C209	J-7	C431	C-9	C638	I-16	L341	F-4	R248	L-7	R361	H-8	R515	C-11	R652	L-16
C210	M-8	C432	F-10	C663	D-15	L348	K-1	R250	I-6	R366	K-11	R520	J-9	R653	J-15
C215	M-7	C445	H-13	C672	J-3	L351	K-2	R251	J-6	R390	H-4	R524	E-11	R654	K-14
C216	M-7	C447	H-16	C674	I-4	L352	K-2	R255	L-6	R391	H-4	R530	H-12	R655	K-14
C217	M-6	C459	F-5	C675	J-3	L353	K-2	R256	M-5	R400	A-10	R533	H-10	R656	J-14
C218	M-6	C460	D-13	C680	L-5	L357	F-4	R257	M-5	R401	C-15	R534	H-10	R662	D-16
C220	M-7	C461	D-14	C682	K-4	L417	F-2	R264	K-9	R402	E-7	R535	H-10	R663	D-15
C222	I-8	C462	J-4	C685	K-3	L418	H-2	R265	J-7	R403	B-5	R536	H-9	R671	K-3
C224	J-8	C463	J-4	C687	K-3	L419	M-1	R272	M-8	R405	F-6	R538	H-14	R672	J-3
C231	F-8	C464	J-6	D274	L-8	L502	H-10	R273	M-8	R406	E-7	R539	I-11	R673	K-3
C235	F-7	C465	G-7	D275	M-8	L507	C-12	R274	M-9	R407	E-8	R545	I-16	R674	I-4
C241	M-3	C470	I-7	D335	E-6	L604	L-3	R275	M-9	R408	D-7	R550	J-12	R675	J-2
C243	M-6	C475	E-8	D341	G-5	L605	M-4	R301	G-1	R412	H-6	R551	I-14	R676	H-2
C244	M-6	C500	I-6	D346	H-2	L606	M-4	R302	G-1	R415	D5	R552	J-13	R678	I-2
C245	N-3	C501	I-5	D350	H-2	L614	L-3	R303	F-1	R416	D-3	R553	J-13	R679	J-2
C248	L-6	C502	E-9	D401	B-5	L615	L-3	R304	F-1	R417	D-5	R554	K-12	R680	L-5
C250	I-6	C503	F-9	D402	C-6	L630	K-11	R307	D-1	R420	H-12	R555	K-12	R681	I-2
C252	H-6	C504	D-10	D403	A-8	N401	D-15	R308	F-6	R421	H-14	R556	J-12	R687	L-3
C255	M-5	C505	C-11	D404	B-9	Q210	M-8	R309	G-4	R431	D-8	R557	J-12	RA2	G-2
C256	M-5	C506	D-11	D405	E-6	Q241	L-1	R310	G-4	R432	D-8	R559	J-15	T501	F-13
C257	M-5	C507	C-15	D406	H-6	Q325	F-5	R311	F-2	R433	D-8	R560	J-13	T502	D-10
C273	L-7	C508	G-9	D407	C-7	Q338	E-6	R312	F-2	R434	D-6	R565	G-10	Y200	K-8
C274	L-7	C509	E-9	D409	H-11	Q400	H-9	R313	D-4	R435	C-7	R566	I-13	Y220	M-7
C278	G-4	C510	C-13	D410	F-9	Q402	D-6	R316	H-4	R436	D-8	R567	J-14	Y250	I-6
C306	D-6	C511	E-11	D411	G-9	Q403	E-8	R317	E-3	R437	F-8	R568	H-14	Y320	F-3
C314	E-4	C525	J-6	D412	D-4	Q405	C-8	R318	E-2	R438	C-6	R569	H-14	Y603	M-2
C315	E-2	C530	H-11	D445	H-13	Q410	C-5	R319	E-2	R439	D-7	R603	N-4	Y620	K-5
C317	D-3	C550	J-13	D460	E-13	Q461	L-13	R320	E-2	R442	B-2	R604	M-3	Z361	K-11
C320	E-4	C551	J-14	D475	E-7	Q462	G-5	R321	E-4	R443	B-3	R605	M-3	Z405	D-6
C321	E-4	C553	K-13	D508	F-6	Q463	E-7	R322	G-3	R445	H-12	R606	N-4	Z406	D-7
C329	F-6	C554	J-12	D510	D-14	Q501	E-9	R324	H-2	R446	B-4	R607	L-4	Z410	D-5
C330	J-2	C555	I-5	D530	H-11	Q502	C-12	R325	E-5	R460	E-13	R608	M-4	Z411	D-4
C335	H-9	C556	I-15	D550	I-14	Q510	G-6	R326	E-5	R461	L-13	R609	L-5	Z461	L-13
C353	L-2	C562	J-13	D567	I-13	Q530	I-10	R327	E-5	R462	F-5	R610	N-4	Z462	H-5
C355	I-3	C603	M-2	D629	J-16	Q565	J-12	R329	F-6	R463	F-7	R621	J-5	Z463	F-7
C357	E-4	C604	L-3	D630	L-15	Q602	L-4	R330	F-2	R464	L-13	R622	J-4	Z470	H-7
C358	E-4	C605	L-4	D661	D-15	Q630	J-10	R331	H-2	R466	D-16	R623	J-4	Z530	H-10
C360	M-13	C606	L-4	F400	A-14	Q631	J-10	R336	D-6	R468	K-13	R624	J-4		
C361	K-10	C608	M-5	F401	C-6	Q632	J-11	R337	F-6	R469	M-14	R625	J-4		
C362	K-10	C609	M-2	IC265	K-5	Q661	E-15	R338	E-6	R470	H-5	R630	I-5		
C365	M-14	C610	M-4	IC350	G-2	R206	K-10	R339	E-5	R475	G-10	R631	I-5		
C371	J-1	C611	N-3	IC351	E-3	R209	K-8	R340	F-5	R491	M-1	R632	I-5		
C372	F-1	C613	L-2	IC430	E-9	R212	L-8	R341	G-4	R500	H-5	R633	J-10		
C373	E-1	C614	L-3	IC550	I-14	R213	M-8	R342	F-5	R501	F-9	R634	J-10		
C374	E-1	C616	I-2	K400	A-12	R214	M-5	R345	L-2	R502	E-10	R635	J-11		
C399	E-5	C617	J-3	L209	K-8	R215	M-8	R348	D-1	R503	E-10	R636	J-10		
C400	B-14	C618	I-2	L210	L-6	R216	M-7	R351	L-2	R504	E-10	R637	J-10		
C401	A-5	C619	L-5	L211	K-7	R217	M-13	R352	H-2	R505	I-6	R638	J-11		
C402	B-6	C620	L-5	L212	L-8	R218	J-8	R353	L-2	R506	G-10	R642	L-16		
C403	A-8	C621	I-3	L215	M-6	R220	M-7	R354	L-2	R507	D-12	R643	K-16		

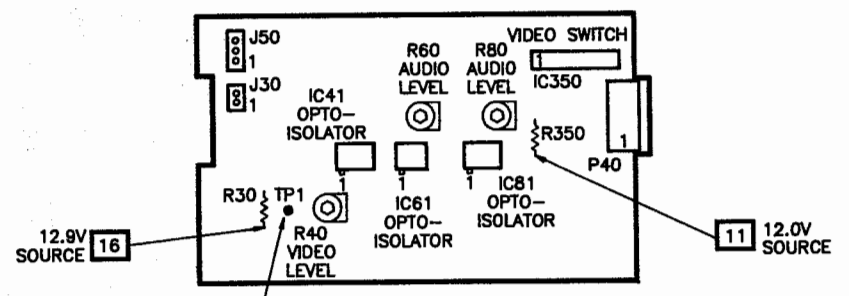
MAIN BOARD



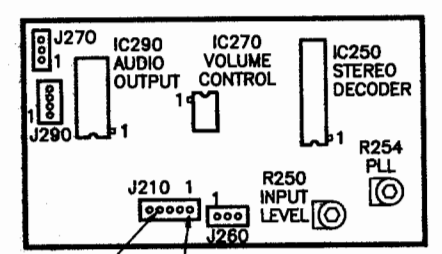
PLACEMENT CHART



CRT BOARD

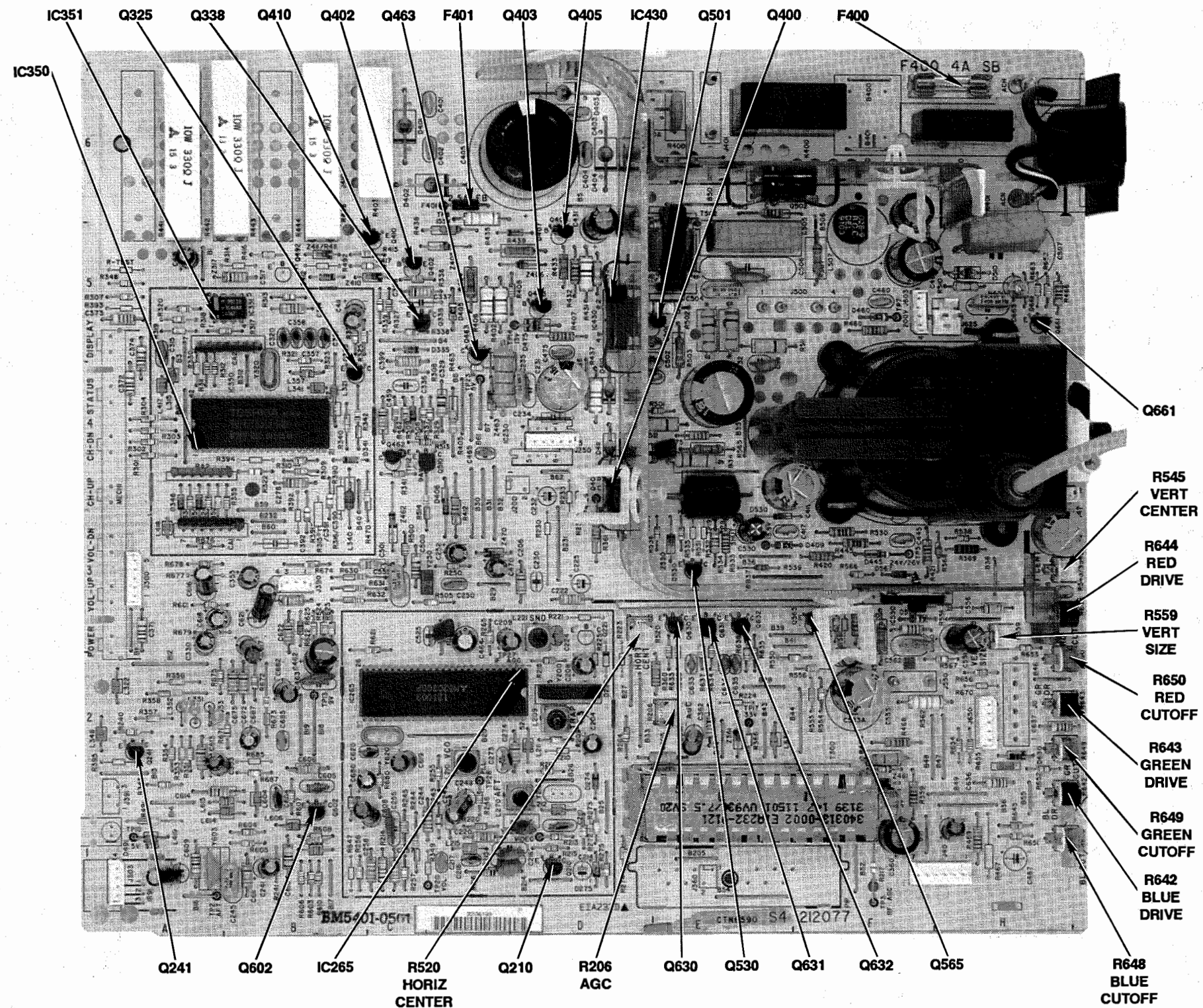


AUDIO / VIDEO JACK BOARD



STEREO AMP BOARD

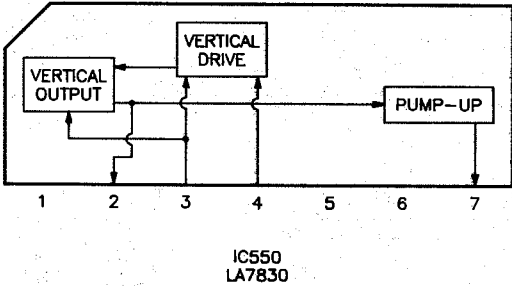
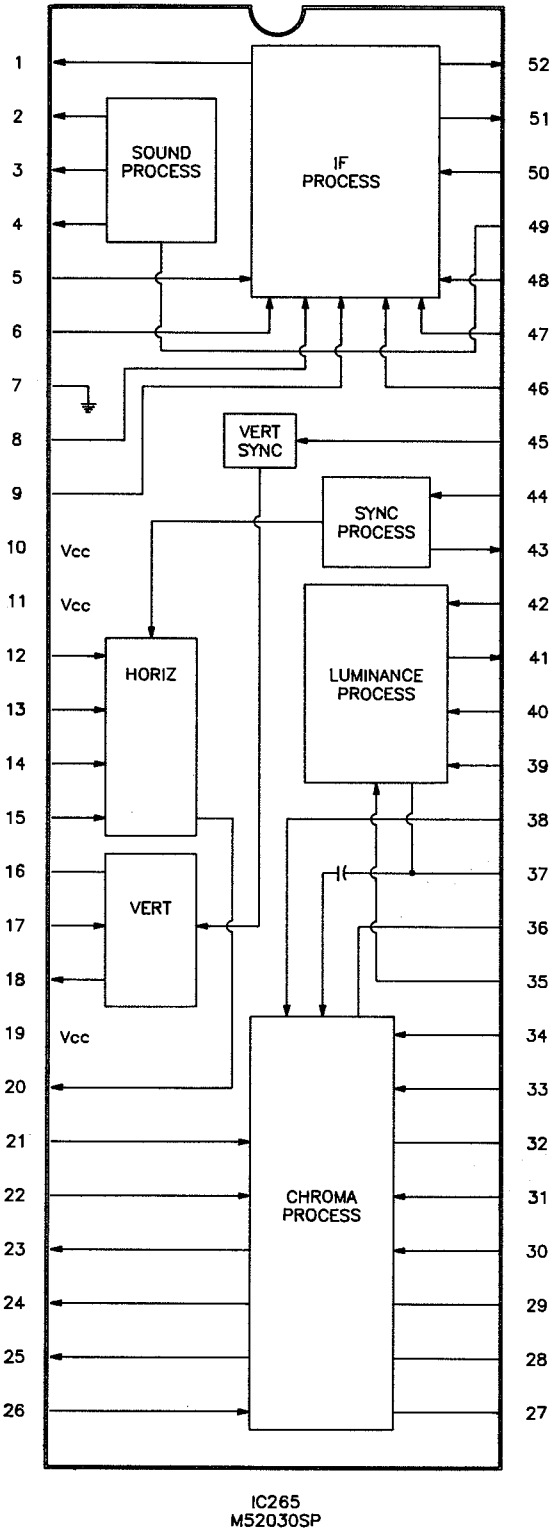
MAIN BOARD



NOTE: ARROWS ON IC'S INDICATE PIN 1 UNLESS NOTED
 NOTE: ARROWS ON TRANSISTORS INDICATE BASE UNLESS NOTED

IC FUNCTIONS

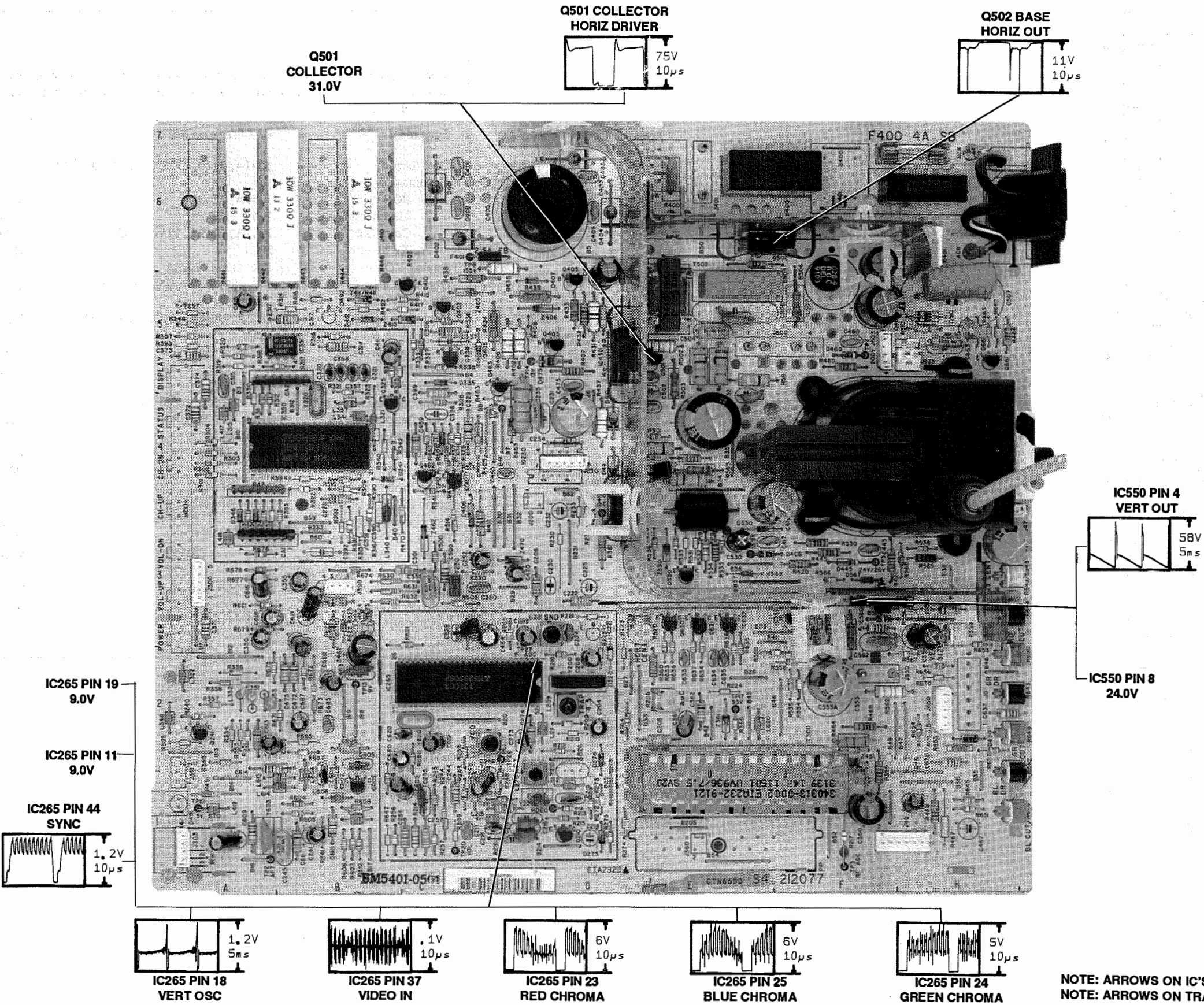
TEST EQUIPMENT



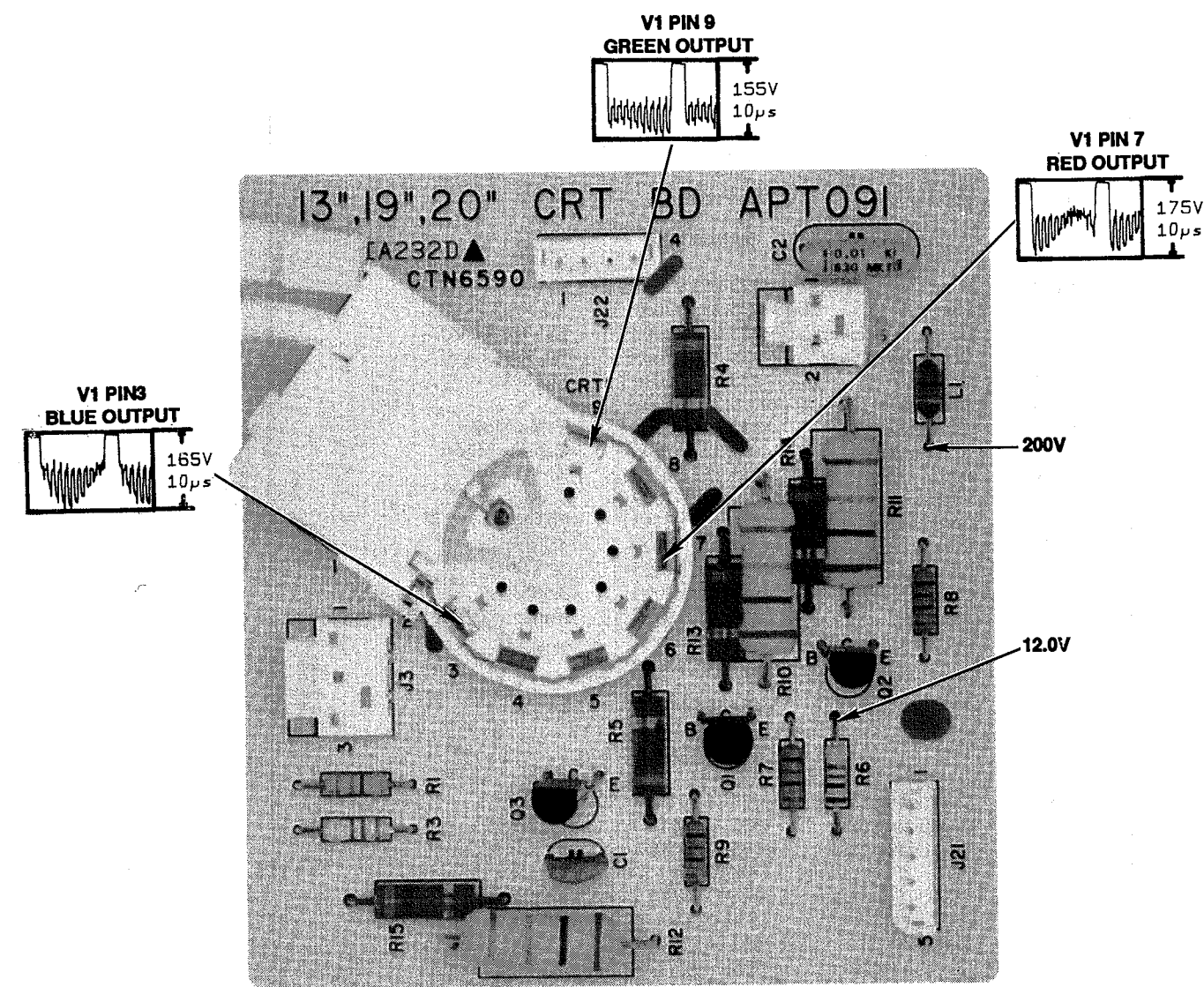
Test equipment listed by participating manufacturers illustrates typical or equivalent equipment used by Sams engineers to obtain measurements. This equipment is compatible with most types used by field service technicians.

Equipment	B&K Precision No.	Sencore No.
Oscilloscope	1541A, 2120, 2125, 2160, 2190, 2522	SC61
Generators		
RGB	1249A, 1260	RG67
Multiburst Signal	1251, 1260	VA62A
Color Bar	1211A, 1249A, 1251, 1260	VA62A, CG25, NT64
TV Stereo	2009	ST65, ST66
Analog VOM	114, 117, 177, 214	-
Digital VOM	377, 388HD, 2700 Series, 2831A, 2860, 2900 Series	DVM37, DVM56A, SC61
Frequency Meter	1803A, 1804A, 1805, 1822, 1851, 1855	FC71, SC61
Hi-Voltage Probe	HV-44	HP200
VOM/DMM	-	TP212
Accessory Probes	PR-28(HV)	-
Isolation Transformer	TR110, 1604, 1653, 1655	PR57
Capacitance Analyzer	810A, 815, 820, 830	LC76, LC101, LC102
CRT Analyzer	480, 490	CR70
Temperature Probe	TP-28, TP-30	-
AC Leakage Tester	1655	PR57
Logic Probe	DP21, DP51	-
Logic Pulser	DP31, DP101	-
Inductance Analyzer	875A	LC76, LC101, LC102
Flyback Yoke Tester	875A	VA62A, LC76, LC101, LC102
TV Stereo Power Monitor	-	SR68
Field Strength Meter	-	FS73, FS74
Transistor Tester	510, 520B, 530	TF46
Video Analyzer	-	VA62A
Modulator/Converter	1201	-

MAIN BOARD

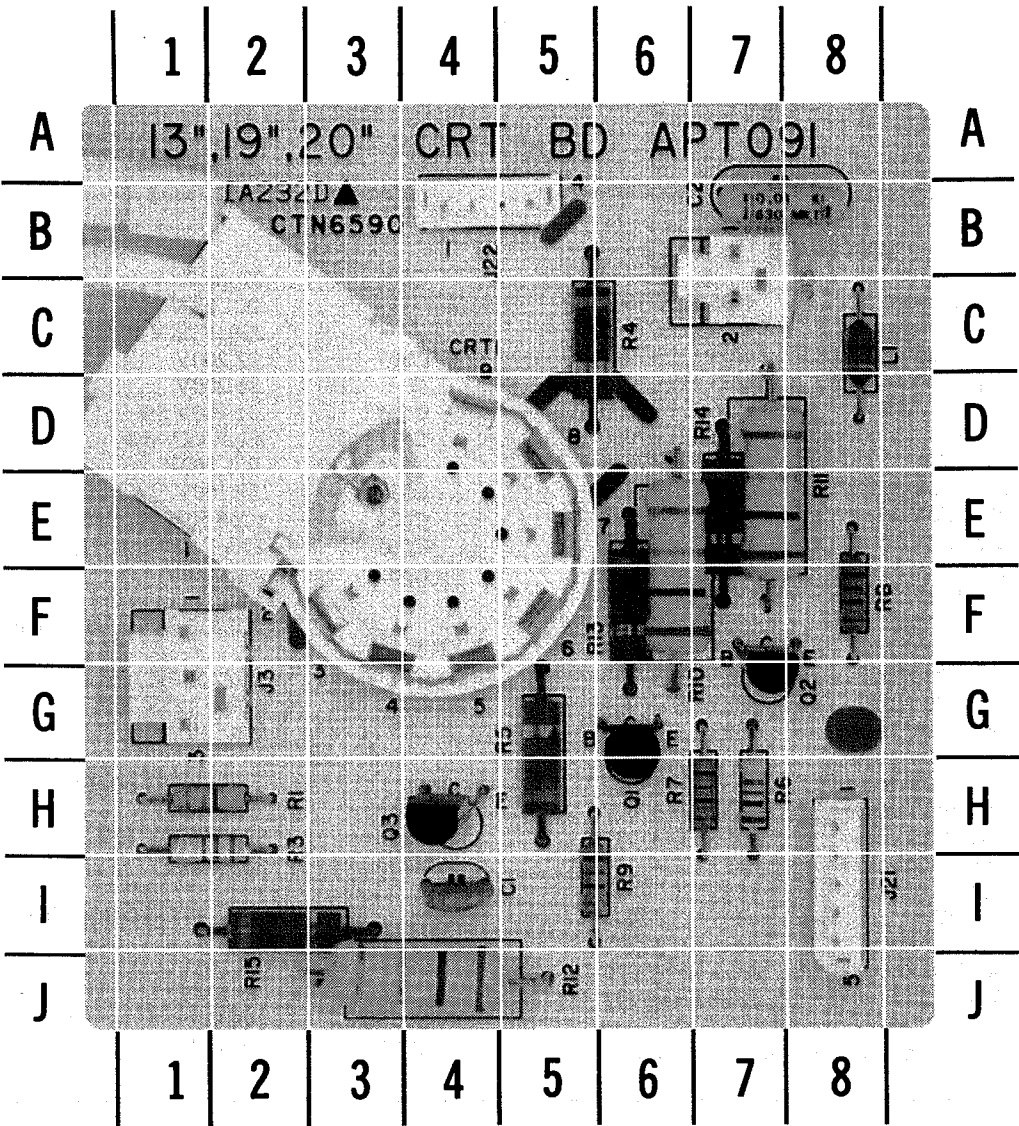


CRT BOARD



A HOWARD W. SAMS QUICK-CHECKS™ PHOTO

CRT BOARD



A HOWARD W. SAMS GRIDTRACE™ PHOTO

CRT BOARD, GRIDTRACE LOCATION GUIDE

C1	I-4	Q2	G-7	R4	C-6	R8	F-8	R12	J-4
C2	B-7	Q3	H-4	R5	G-5	R9	I-6	R13	F-6
L1	C-8	R1	H-2	R6	H-7	R10	E-6	R14	E-7
Q1	G-6	R3	H-2	R7	H-7	R11	E-7	R15	I-2

PARTS LIST continued

CAPACITORS

Item No.	Rating	Mfr. Part No.	Item No.	Rating	Mfr. Part No.
MAIN BOARD			C506	270pF 2KV	4835 122 47075
CA1	.01 Network	4835 122 97003		.001 2KV 10%	4835 122 37031
CA2	100pF Network	4835 122 97042		330pF 2KV 10%	4835 122 47058
C210	150pF 50V 5% NPO	4835 122 47042	# C507	.27 200V	4835 121 47024
C218	27pF 50V 5% NPO	4835 122 47018		.36 200V	4835 121 47126
C230	.01 100V 5%	4835 121 47056	C508	.01 100V 5%	4835 121 47056
C235	.1 100V	4835 121 47036	C511	39pF 1KV 5%	4835 122 47224
C245	.22 100V	4835 121 47038	C525	.001 100V	4835 122 47372
C273	56pF 50V 5% NPO	4835 122 47053	C555	.22 100V	4835 121 47038
C320	27pF 50V 5% NPO	4835 122 47018	C604	82pF 50V 5% NPO	4835 122 47024
C321	27pF 50V 5% NPO	4835 122 47018	C605	220pF 50V 5% N750	4835 122 47025
C357	18pF 50V 5% NPO	4835 122 47086	C663	.033 400V	4835 121 47035
C358	18pF 50V 5% NPO	4835 122 47086	AUDIO / VIDEO JACK BOARD		
# C400	.22 125VAC	4835 121 47013			
C401	.001 500V 10%	4835 122 37027	C31	.0022 500V 10%	4835 122 47057
C402	.001 500V 10%	4835 122 37027	# C33	470pF 125V 20%	4835 121 97001
C403	.001 500V 10%	4835 122 37027	C43	10pF 50V ±.5pF	4835 122 87045
C404	.001 500V 10%	4835 122 37027	CRT BOARD		
C417	.001 500V 10%	4835 122 37027			
C445	.001 500V 10%	4835 122 37027	C1	820pF 500V 10%	4835 122 47213
C460	.001 500V 10%	4835 122 37027	C2	.01 630V	4835 121 47127
C475	.001 500V 10%	4835 122 37027	STEREO BOARD		
C502	470pF 500V 10%	4835 122 47211			
C503	.001 500V 10%	4835 122 37027	C255	.15 100V	4835 121 47052
C504	.1 250V	4835 121 47025	C258	.15 100V	4835 121 47052
# C505	.0056 1.5KV	4835 121 47101	C261	1 63V	4835 121 47053
	.0047 1.5KV	4835 121 47026	C262	.33 63V	4835 121 47294
	.0039 1.5KV	4835 121 47242			

For SAFETY use only equivalent replacement part.

ELECTROLYTIC CAPACITORS

Item	Rating	Mfr. Part No.
MAIN BOARD		
C405	470 200V	4835 124 47097
	330 200V	4835 124 47297
C431	3.3 200V	4835 124 47381
C432	100 200V	4835 124 47255
C461	22 250V	4835 124 47021
C510	10 200V	4835 124 47254
C530	10 100V	4835 124 47135

MISCELLANEOUS

Item No.	Description	Mfr. Part No.	Notes
MAIN BOARD			
# F400	Fuse	4835 253 97095	4 Amp
# F401	Fuse	4835 253 97031	2.5 Amp
IR90	IR Mini Receiver	4835 210 27002	Ext. Keyboard
IR91	IR Mini Receiver	4835 210 27003	Int. Keyboard
K400	Relay	4835 277 27016	Degauss
N401	Neon Bulb	0018 220 50001	-
# P1	AC Line Cord	4835 321 17007	Table Model
	AC Line Cord	4835 321 17006	Cabinet Model
Y200	Filter	4835 153 97022	SAW
Y220	Filter	4835 158 97009	4.5MHz
Y250	Ceramic Resonator	4835 157 57145	503.5kHz
Y320	Crystal	4835 242 77002	4MHz
Y603	LC Trap	4835 154 97025	3.58MHz
Y620	Crystal	4835 242 77022	3.58MHz
	Tuner (1)	003403131002	Varactor UHF / VHF
CRT BOARD			
#	CRT Socket	0018 167 70005	-
CHASSIS			
# L499	Degaussing Coil	4835 157 97012	13" CRT
	Degaussing Coil	4835 157 97027	19" CRT
	Degaussing Coil	4835 157 97003	20" CRT
# V1	CRT	370KSB22	13" CRT
	CRT	A48ADE22X	19" CRT
	CRT	A51ADY00X	20" CRT
	Antenna	4835 303 37001	-
#	Antenna Isolator	4835 219 47173	-
	Balun	4835 218 27003	-
#	Magnet	4835 150 27007	Convergence & Purity
	PC Board (1)	4835 219 57306	CRT (APT091 A001)
	PC Board (1)	4835 219 57318	Stereo (ASD013 B022)
			Used in Chassis:
			13S403, 19S405,
	PC Board (1)	4835 219 57319	Stereo (ASD014 B022)
			Used in Chassis:
			13S405, 20S403
	PC Board (1)	4835 219 57325	Keyboard (ASW100 A001)
	PC Board (1)	4835 219 57291	A / V Jack (AVJ096 A001)
	Remote Receiver	4835 219 57323	ALR008A001
	Remote Transmitter	T251AG-SA01	Used in 13S401, 19S401
" "	" "	S1232A-AA01	Used in 19S405, 20S401
" "	" "	T089AG-SA01	Used in 19S403.
	Yoke Wedges	4835 535 27001	3 used

For SAFETY use only equivalent replacement part.

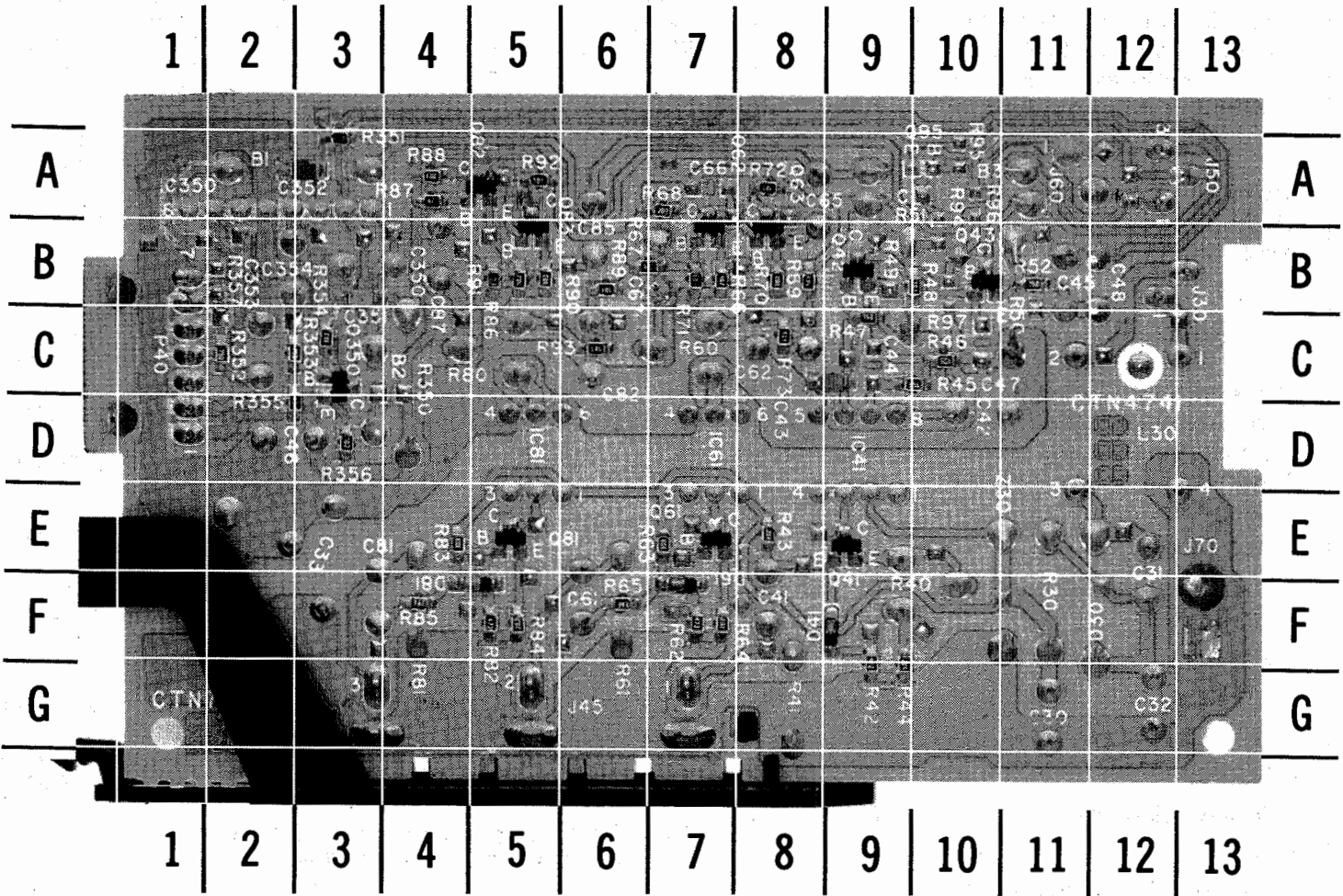
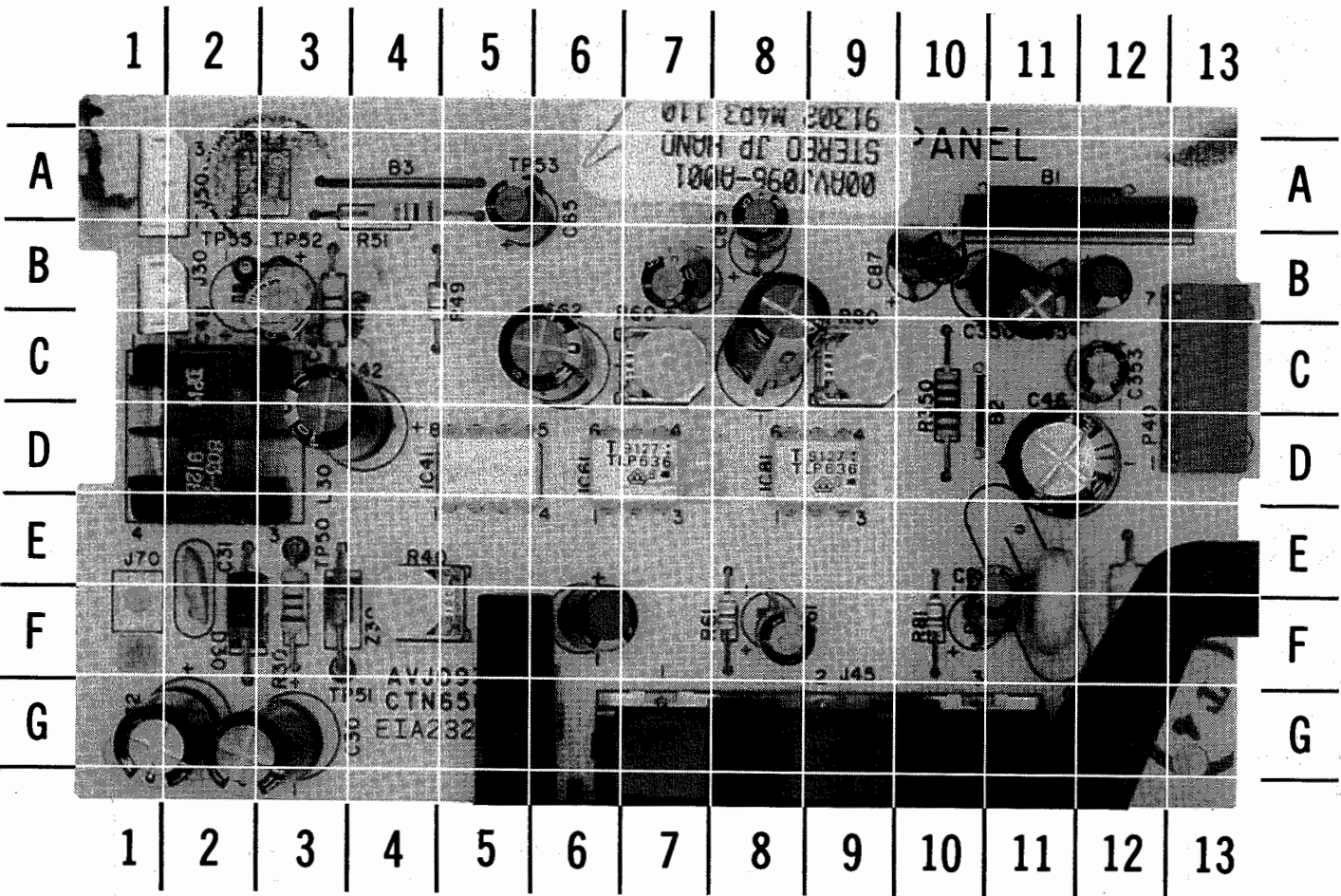
(1) Contact PTS Electronics Corporation for replacement; order by manufacturer's part number.

AUDIO / VIDEO JACK BOARD - TOP VIEW

AUDIO / VIDEO JACK BOARD - BOTTOM VIEW

AUDIO / VIDEO JACK BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE									
C30	G-2	C61	F-8	C350	B-11	L30	D-2	R60	C-7
C31	E-2	C62	C-6	C353	C-12	R30	F-3	R61	F-8
C32	G-1	C65	A-5	C354	B-12	R31	F-12	R80	C-9
C33	F-11	C67	B-7	D30	F-2	R40	F-4	R81	F-10
C41	F-6	C81	F-11	IC350	A-11	R41	G-6	R350	C-10
C42	D-3	C82	C-8	IC41	D-5	R49	B-4	Z30	F-3
C45	B-3	C85	A-8	IC61	D-6	R50	B-3		
C46	D-11	C87	B-10	IC81	D-8	R51	A-4		

AUDIO / VIDEO JACK BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE									
C351	B-3	Q81	E-5	R52	B-11	R72	A-8	R91	B-5
C352	A-3	Q82	A-5	R62	F-7	R73	C-8	R92	A-5
D41	F-9	Q83	B-5	R63	E-7	R82	F-5	R93	C-6
D61	F-7	Q350	C-3	R64	F-7	R83	E-4	R351	A-3
D81	F-5	R42	G-9	R65	F-6	R84	F-5	R352	C-2
Q41	E-9	R43	E-8	R66	B-7	R85	F-4	R353	C-3
Q42	B-9	R44	G-9	R67	B-7	R86	B-5	R354	C-3
Q43	B-10	R45	C-10	R68	A-7	R87	A-4	R355	D-2
Q61	E-7	R46	C-10	R69	B-8	R88	A-4	R356	D-3
Q62	B-7	R47	C-9	R70	B-8	R89	B-6		
Q63	B-8	R48	B-10	R71	B-7	R90	B-5		



PARTS LIST

Important Parts Information

- The parts listed here are those not usually available from a well-stocked supply cabinet or bin.
- Where items may be replaced with equivalent parts, several alternates are shown from participating vendors.
- On the parts lists, safety items are marked with a # to remind you that only exact replacements are recommended for these items.
- When ordering parts, state the model number, part number, and description.

Obtaining Parts

Many of these parts are available from your local Sams authorized distributor or the manufacturer of the equipment. Call Sams for the name of your nearest distributor:

800-428-7267

Or consult the Sams *Annual Index* for the address of the original equipment manufacturer.

Participating Vendors

Information on test equipment and replacement parts is listed in these pages for the following participating vendors. Consult the Sams *Annual Index* for their current address.

- B&K Precision
- Custom Components Corporation (Chek-A-Color)
- EVG / Russell Industries, Inc.
- NTE Electronics, Inc. (NTE)
- Philips ECG Company (ECG)
- PTS Electronics Corporation (PTS)
- Quam-Nichols Co. (Quam)
- Sencore, Inc.
- Thomson Consumer Electronics, Inc. (SK, TCE)

SEMICONDUCTORS

(Select replacement for best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
MAIN BOARD					
D91	-	4835-130-37516	-	-	-
D220	-	4835-130-37048	NTE519	ECG519	SK3100
D274, 5	-	4835-130-37048	NTE519	ECG519	SK3100
D335	-	4835-130-37048	NTE519	ECG519	SK3100
D341, 6	-	4835-130-37048	NTE519	ECG519	SK3100
D350	-	4835-130-37048	NTE519	ECG519	SK3100
D401 - D404	1N5062	4822-130-41275	NTE125	ECG125	SK3081
D405	-	4835-130-37389	-	-	-
D406, 7	-	4835-130-37048	NTE519	ECG519	SK3100
D409	-	4835-130-37094	NTE580	ECG580	SK5036
D410, 11	-	4822-130-41275	-	-	-
D412	-	4835-130-37048	NTE519	ECG519	SK3100
D445	-	4835-130-37094	NTE580	ECG580	SK5036
D460	-	4835-130-37094	NTE580	ECG580	SK5036
D475	-	4835-130-37052	NTE580	ECG580	SK5036
D491	-	4835-130-87001	-	-	-
D508	-	4835-130-37048	NTE519	ECG519	SK3100
D510	-	4835-130-37052	NTE580	ECG580	SK5036
# D530	-	4835-130-37048	NTE519	ECG519	SK3100
D550	-	4835-130-37389	-	-	-
D567	-	4835-130-37048	NTE519	ECG519	SK3100
D629	-	4835-130-37048	NTE519	ECG519	SK3100
D630	-	4835-130-37058	NTE587	ECG587	SK9937
D661	-	4835-130-37053	NTE552	ECG552	SK9000
IC230	-	4835-209-47005	-	-	-
IC265	M52030SP	4835-209-87741	-	-	-
IC350	TMP47C634N-R401	4835-209-17314	-	-	-
IC351	CAT93C46AN	4835-209-17315	-	-	-
IC430	STR30130	4835-209-47056	NTE1777	ECG1777	SK9870
IC550	-	4835-209-87069	NTE1773	ECG1773	SK9752
IR90	-	4835-210-27002	-	-	-
Q210	-	4835-130-47126	NTE159*	ECG159*	SK3466*
Q241	-	4835-130-47173	-	-	-
Q325	-	4835-130-47126	NTE159*	ECG159*	SK3466*
Q338	-	4835-130-47064	NTE123AP*	ECG123AP*	SK3854*
Q400	-	4835-130-47072	-	-	-
Q402, 3, 5	-	4835-130-47059	NTE399	ECG399	SK9352
Q410	-	4835-130-47051	NTE123AP	ECG123AP	SK3854
Q461 - Q463	-	4835-130-47051	NTE123AP	ECG123AP	SK3854
Q501	-	4835-130-47059	NTE399	ECG399	SK9352
Q502	-	4835-130-47749	-	-	-
Q510	-	4835-130-47064	NTE123AP*	ECG123AP*	SK3854*
# Q530	-	4835-130-47126	NTE159*	ECG159*	SK3466*
Q565	-	4835-130-47064	NTE123AP*	ECG123AP*	SK3854*
Q602	-	4835-130-47064	NTE123AP*	ECG123AP*	SK3854*
Q630 - Q632	-	4835-130-47064	NTE123AP*	ECG123AP*	SK3854*
Q661	-	4835-130-47126	NTE159*	ECG159*	SK3466*

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

SEMICONDUCTORS continued

(Select replacement for best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
MAIN BOARD continued					
Z361	-	4835-130-37502	-	-	-
Z405	-	4835-130-37501	-	-	-
Z406	-	4835-130-37203	-	-	-
Z410	-	4835-130-37008	-	-	-
Z411	-	4835-130-37005	-	-	-
Z461	-	4835-130-37007	-	-	-
Z462	-	4835-130-37203	-	-	-
Z463	-	4835-130-37007	-	-	-
Z470	-	4835-130-37503	-	-	-
# Z530	-	4835-130-37121	NTE5013T1	ECG5013T1	SK9969

AUDIO / VIDEO JACK BOARD

D30	BYV95C	4835-130-37052	NTE580	ECG580	SK5036
D41	-	4835-130-37066	-	-	-
D61	-	4835-130-37066	-	-	-
D81	-	4835-130-37066	-	-	-
# IC41	TLP651	4835-130-97042	-	-	-
# IC61	TLP636	4835-130-97042	-	-	-
# IC81	TLP636	4835-130-97042	-	-	-
IC350	LA7016	4835-209-87074	NTE1781	ECG1781	SK9746
Q41, 2	-	4835-130-47094	-	-	-
Q43	-	4835-130-47751	-	-	-
Q61 - Q63	-	4835-130-47094	-	-	-
Q81 - Q83	-	4835-130-47094	-	-	-
Q350	-	4835-130-47112	-	-	-
Z30	-	4835-130-37423	-	-	-

CRT BOARD

Q1, 2, 3	-	4835-130-47059	NTE399	ECG399	SK9352
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STEREO BOARD

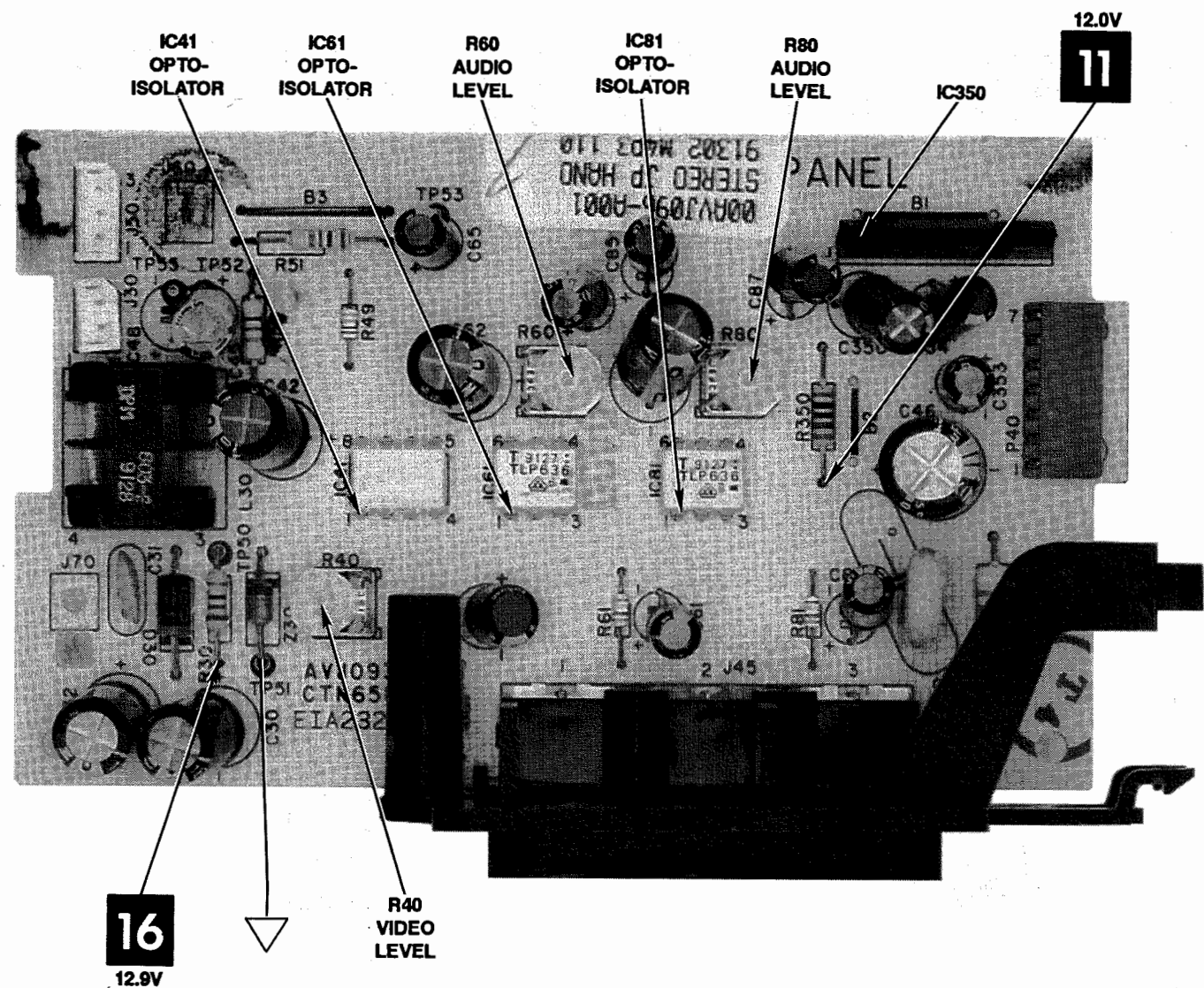
IC250	TEA5582	4835-209-87808	-	-	-
IC270	TDA8199	4835-209-87806	-	-	-
IC290	-	4835-209-47008	-	-	-
Q250	-	4835-130-47086	NTE2406*	ECG2406*	SK10097
Z260	-	4835-130-37544	-	-	-

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

SPEAKERS

Item No.	Description	Mfr. Part No.	Quam Part No.
SP1	2 1/4 X 5 inch 8 Ohm	4835 240 27007	30A05Z16R
	3 inch 8 Ohm	4835 240 37002	-
SP2	2 1/4 X 5 inch 8 Ohm	4835 240 27007	30A05Z16R
	3 inch 8 Ohm	4835 240 37002	-

AUDIO / VIDEO JACK BOARD - TOP VIEW

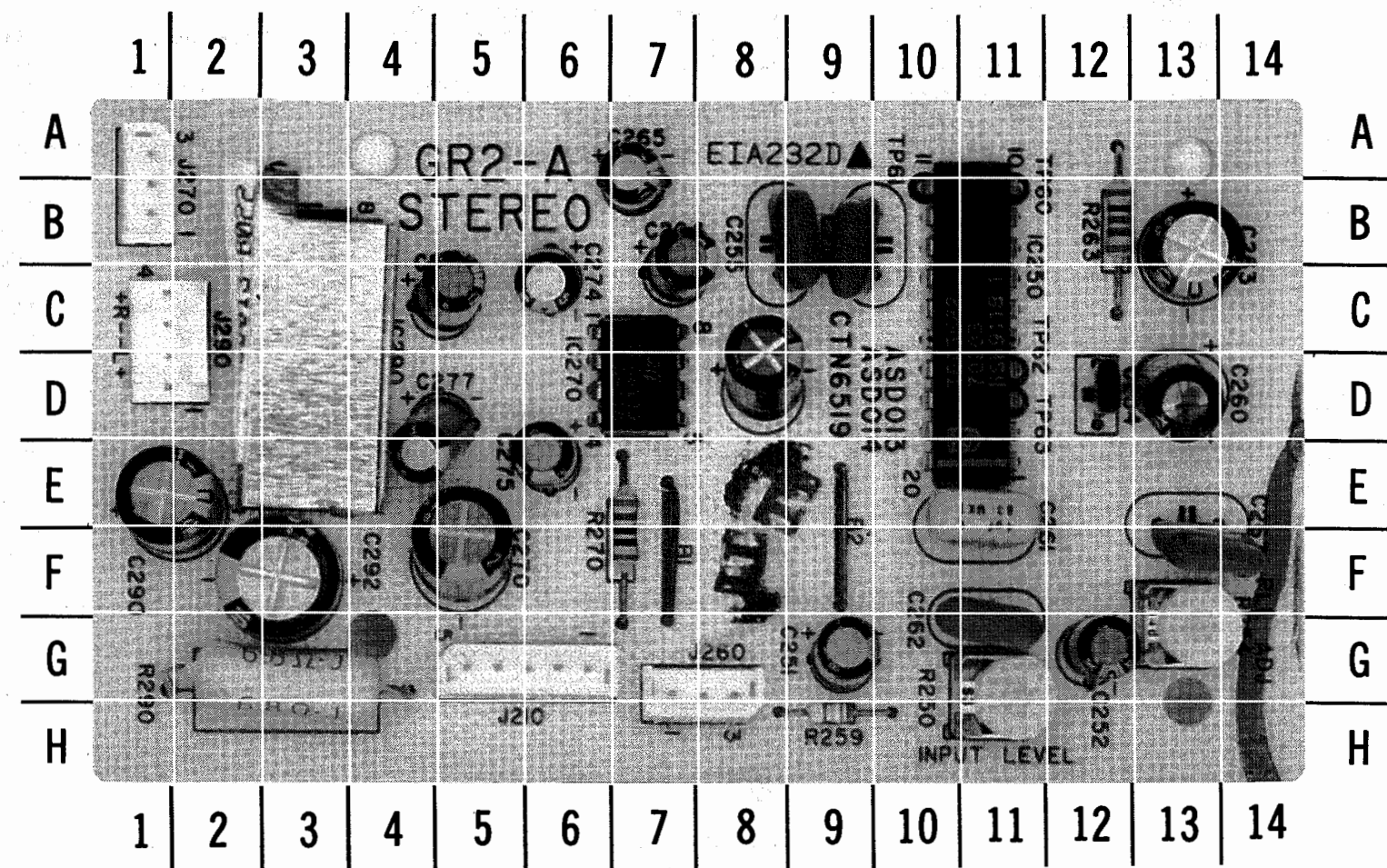


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STEREO AMP BOARD - TOP VIEW

STEREO BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE

C251	G-9	C261	E-11	C270	F-5	C290	E-1	R254	G-13
C252	G-12	C262	G-11	C271	D-8	C292	F-3	R259	H-9
C254	D-12	C263	B-13	C274	C-6	IC250	D-11	R263	B-12
C255	B-9	C264	B-7	C275	E-6	IC270	D-7	R270	F-7
C258	B-9	C265	A-7	C276	C-5	IC290	D-3	R290	G-3
C260	D-13	C267	F-13	C277	D-5	R250	G-11		



A HOWARD W. SAMS GRIDTRACE™ PHOTO

PARTS LIST continued

COILS (RF-IF)

Item No.	Rating	Mfr. Part No.
CRT BOARD		
L1	100uH	4835 157 57047
MAIN BOARD		
L209	4.5MHz	4835 157 57113
L210	45.75MHz	4835 157 57485
L211	2.2uH	4835 157 67005
L212	4.76uH	4835 157 67011
L215	3.9uH	4835 157 67007
L221	4.5MHz	4835 157 57113
L270	45.8MHz AFT	4835 157 57484
L315	2.7uH	4835 157 67006
L321	1.2uH	4835 157 67003
L322	2.7uH	4835 157 67006
L340	100uH	4835 157 57141
L341	2.7uH	4835 157 67008
L348	2.7uH	4835 157 67006
L351	330uH	4835 157 67009
L352	330uH	4835 157 67009
L353	330uH	4835 157 67009
L357	39uH	4835 157 67021
L417	2.7uH	4835 157 67008
L418	2.7uH	4835 157 67008
L419	2.7uH	4835 157 67006
L502	42uH	4835 152 37007
# L507	Linearity	4835 150 57001
L604	27uH	4835 157 67019
L605	22uH	4835 157 67018
L606	33uH	4835 150 57009
L614	15uH	4835 157 57083
L615	47uH	4835 157 67013
L630	47uH	4835 157 67002

For SAFETY use only equivalent replacement part.

CABINET PARTS

MODEL SRC1949121

Item	Part No.
Cabinet Front	4835 430 27036
Cabinet Rear	4835 432 97064
Lens - I.R.	4835 381 17005
Button Assembly	4835 219 47187
Panel - Jack	4835 268 57017

MODEL SRW1350101

Item	Part No.
Cabinet Front	4835 430 17026
Cabinet Rear	4835 432 97003
Lens - I.R.	4835 381 17005
Button Assembly	4835 219 47176
Panel - Jack	4835 268 57014

MODEL SEW1950121

Item	Part No.
Cabinet Front	4835 430 27047
Cabinet Rear	4835 432 97263
Lens - I.R.	4835 381 17006
Button Assembly	4835 219 47197
Panel - Jack	4835 268 57017

MODEL SEW1950121

Item	Part No.
Cabinet Front	4835 430 27047
Cabinet Rear	4835 432 97263
Lens - I.R.	4835 381 17006
Button Assembly	4835 219 47197
Panel - Jack	4835 268 57017

CABINET PARTS

MODEL SRW2020121

Item	Part No.
Cabinet Front	4835 430 37033
Cabinet Rear	4835 432 97318
Lens - I.R.	4835 381 17005
Button Assembly	4835 219 47219
Panel - Jack	4835 268 57017

MODEL SRW2020122

Item	Part No.
Cabinet Front	4835 430 37033
Cabinet Rear	4835 432 97318
Lens - I.R.	4835 381 17005
Button Assembly	4835 219 47219
Panel - Jack	4835 268 57017

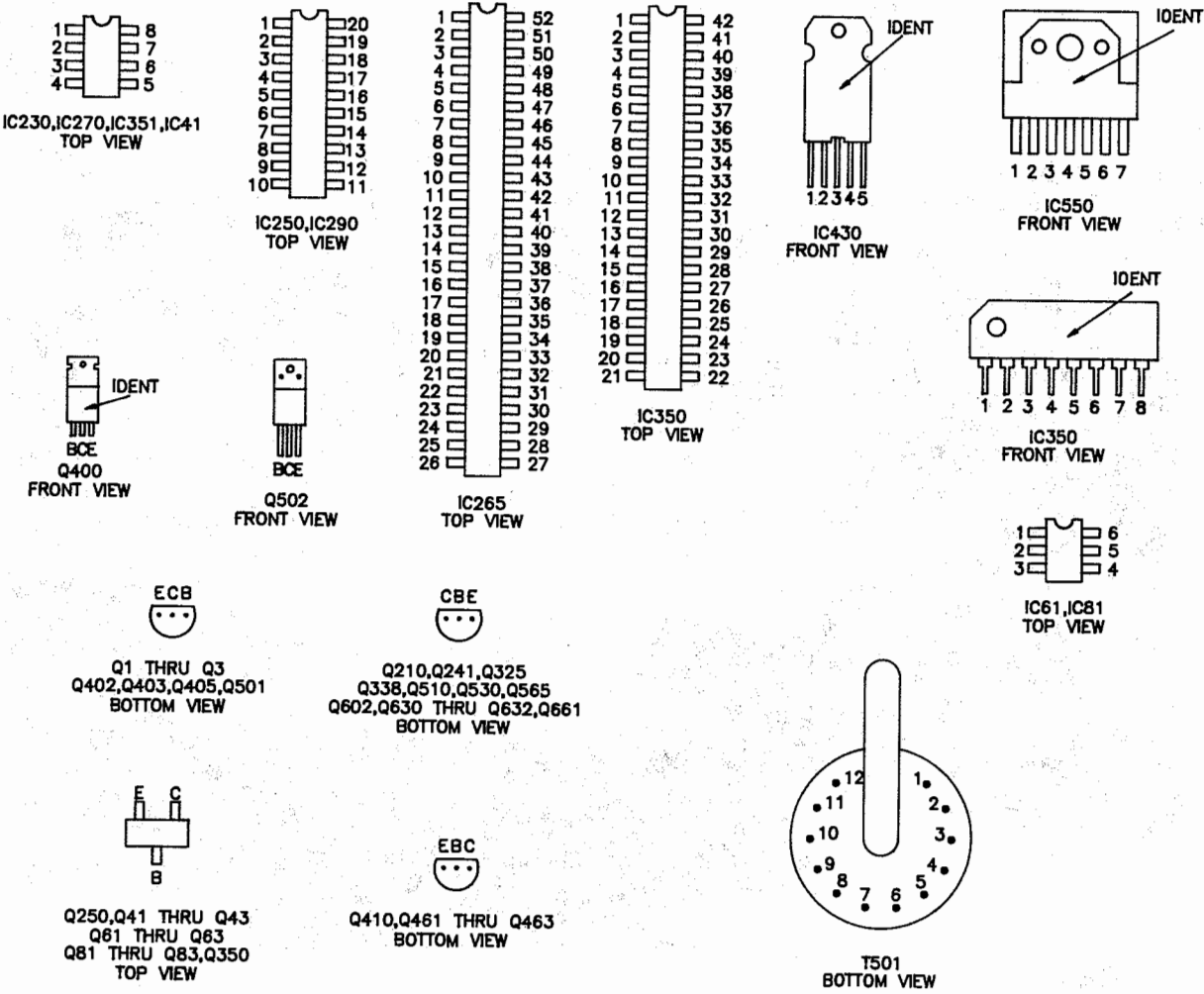
MODEL SRW2020123

Item	Part No.
Cabinet Front	4835 430 37033
Cabinet Rear	4835 432 97318
Lens - I.R.	4835 381 17005
Button Assembly	4835 219 47219
Panel - Jack	4835 268 57017

MODEL SSB1955121

Item	Part No.
Cabinet Front	4835 430 27033
Cabinet Rear	4835 432 97313
Lens - I.R.	4835 381 17006
Button Assembly	4835 410 37133
Panel - Jack	4835 268 57018

TERMINAL GUIDES AND NOTES



For SAFETY use only equivalent replacement part; see parts list.

- X- Circuitry not used in some versions
- Circuitry used in some versions
- ↓ Ground
- ⇩ Common tie point

Waveforms and voltages are taken from ground, unless otherwise noted.
Waveforms: triggered scope, keyed rainbow generator.
Item numbers in rectangles appear in 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.
Capacitors are 50 volts or less,
5% or greater unless noted.
Electrolytic capacitors are 50 volts or less,
20% or greater unless noted.
Resistors are 1/2W or less,
5% or greater unless noted.
Value in () used in some versions.
Measurements with switching as shown, unless noted.



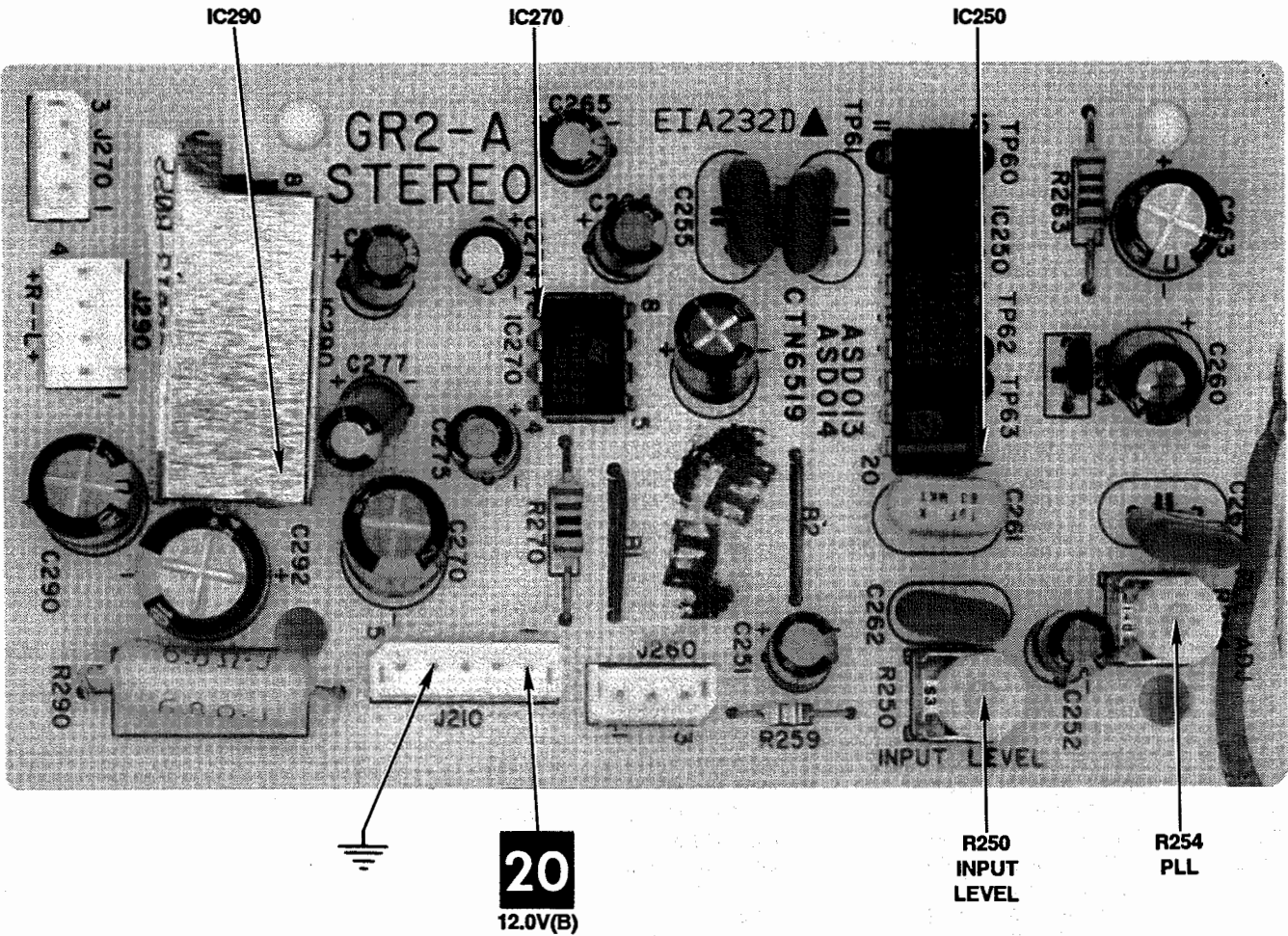
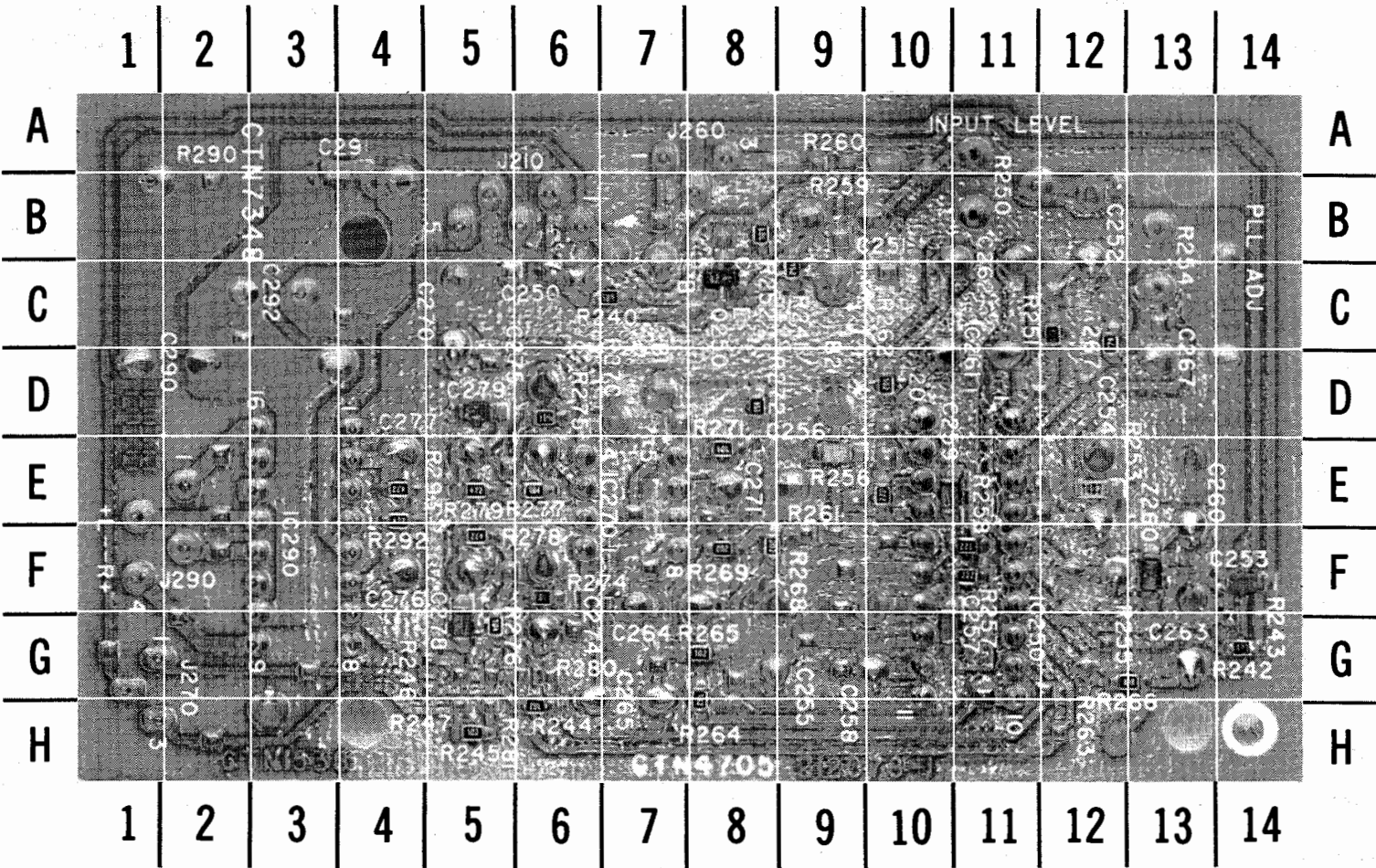
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B. Smith, J. Watson

STEREO AMP BOARD - BOTTOM VIEW

STEREO AMP BOARD - TOP VIEW

STEREO BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE									
C253	F-14	R240	C-7	R256	E-10	R268	F-8	R278	F-5
C256	E-9	R241	C-9	R257	F-11	R269	F-8	R279	E-5
C257	G-10	R242	G-14	R258	F-11	R271	E-8	R292	F-4
C259	E-10	R244	H-6	R262	D-10	R272	D-8	R293	E-4
C278	G-5	R245	H-5	R264	H-8	R274	F-6	Z260	F-13
C279	D-5	R251	C-12	R265	G-8	R275	D-6		
C291	A-4	R252	B-8	R266	G-13	R276	G-5		
Q250	C-8	R253	E-12	R267	C-12	R277	E-6		



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PARTS LIST continued

RESISTORS

Item No.	Rating	Mfr. Part No.	NTE Replacement
MAIN BOARD			
RA2	10K Resistor Network	4835 11 97013	-
R230	7500 2% 1/8W Carbon Film	4835 110 67094	EW275
# R231	2.2 5% 3W Metal Film	4835 116 67069	3W2D2
	18 5% 3W Metal Film	4835 116 57042	3W018
# R359	27 5% 1/3W Metal Film	4835 116 57278	-
R400	13 Cold Thermistor	4835 116 47001	-
# R401	4.7M 5% 1/2W Carbon Comp	4835 110 47024	HW547
# R403	1.5 10% 7W WW	-	-
	1.8 10% 7W WW	4835 112 47006	-
# R420	.51 5% 1/2W Metal Film	4835 116 67001	HWD51
# R421	1 5% 1/3W Metal Film	4822 111 30483	-
# R442	330 5% 10W WW	4835 112 37001	10W133
# R443	330 5% 10W WW	4835 112 37001	10W133
# R445	1 5% 1/3W Metal Film	4822 111 30483	-
# R446	330 5% 10W WW	4835 112 37001	10W133
# R460	2.2 5% 1/3W Metal Film	4822 111 30492	-
# R464	68 5% 1W Metal Film	4835 116 57279	1W068
# R466	47 5% 1/3W Metal Film	4835 116 57069	-
# R468	1 5% 1/3W Metal Film	4822 111 30483	-
# R470	4.3 5% 1/8W Carbon Film	4835 110 67174	EW4D3
# R504	16K 5% 2W Metal Film	4835 116 67087	2W316
# R506	18 5% 2W Metal Film	4835 116 67017	2W018
# R507	680 5% 1/2W Carbon Film	4835 110 57014	HW168
# R515	20 5% 1/3W Metal Film	4835 116 57065	-
# R524	16K 5% 2W Metal Film	4835 116 67087	2W316
# R530	1 5% 1/3W Metal Film	4822 111 30483	-
# R533	6650 1% 1/4W Metal Film	4835 116 57283	-
	8660 1% 1/4W Metal Film	4835 116 57285	-
	9090 1% 1/4W Metal Film	4835 116 57274	-
	6810 1% 1/4W Metal Film	4835 116 57284	-
# R534	24K 1% 1/4W Metal Film	4835 116 57273	QW324
# R535	4700 5% 1/8W Carbon Film	4835 110 67033	EW247
# R536	5600 5% 1/8W Carbon Film	4835 110 67034	EW256
CRT BOARD			
# R1	.47 5% 1/2W Metal Film	4835 116 57139	HWD47
	2.7 5% 1/2W Metal Film	4835 116 57051	HW2D7
	.43 5% 1/2W Metal Film	4835 116 67085	HWD43
# R3	.47 5% 1/2W Metal Film	4835 116 57139	HWD47
	2.7 5% 1/2W Metal Film	4835 116 57051	HW2D7
	.43 5% 1/2W Metal Film	4835 116 67085	HWD43
# R10	15K 5% 3W Metal Film	4835 116 67018	3W315
# R11	15K 5% 3W Metal Film	4835 116 67018	3W315
# R12	15K 5% 3W Metal Film	4835 116 67018	3W315

For SAFETY use only equivalent replacement part.

RESISTORS continued

Item No.	Rating	Mfr. Part No.	NTE Replacement
STEREO AMP BOARD			
R253	14K 1% 1/8W Metal Film	4835 111 37312	-
# R263	100 5% 1/3W Metal Film	4835 116 87002	-
# R270	10 5% 1/3W Metal Film	4822 111 30508	-
# R290	6.8 5% 3W Metal Film	4835 116 67088	3W6D8
AUDIO / VIDEO JACK BOARD			
# R30	51 5% 1/2W Metal Film	4835 116 67086	HW051
# R31	4.7M 5% 1/2W Metal Film	4835 116 57009	HW547
# R48	1000 5% 1/10W Metal Film	4835 111 37002	-
# R69	100 5% 1/10W Metal Film	4835 111 37001	-
# R89	100 5% 1/10W Metal Film	4835 111 37001	-
# R350	10 5% 1/3W Metal Film	4835 110 67045	-

For SAFETY use only equivalent replacement part.

CONTROLS

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

Item No.	Function	Resistance	Mfr. Part No.
AUDIO / VIDEO JACK BOARD			
R40	Video Level	1000	4835 100 97031
R60	Audio Level	1500	4835 100 17032
R80	Audio Level	1500	4835 100 17032
MAIN BOARD			
R206	AGC	47K	4835 100 97033
R520	Horiz Center	100K	4835 101 37003
R545	Vert Center	10K	4835 100 17002
R559	Vert Size	100K	4835 100 17007
R642	Blue Drive	2200	4835 100 97035
R643	Green Drive	2200	4835 100 97035
R644	Red Drive	2200	4835 100 97035
R648	Blue Cutoff	4700	4835 100 97036
R649	Green Cutoff	4700	4835 100 97036
R650	Red Cutoff	4700	4835 100 97036
STEREO BOARD			
R250	Input Level	4700	4835 100 97039
R254	PLL	10K	4835 100 97032

COILS & TRANSFORMERS

Item No.	Function	Mfr. Part No.	On-Unit No.	Russell Part No.
# DY1	Yoke 90° Horiz 3.06mH Vert 27.6mH	4835 150 17009 (3)	362073-3M	-
	Yoke	4835 150 17004 (1)	-	-
	Yoke	4835 150 17023 (2)	-	-
MAIN BOARD				
# L507	Linearity	4835 150 57001 (3)	-	-
# T501	Horiz Output	4835 140 67052 (2)(3)(5)(6)	00364061-0001	FBT-244
	Horiz Output	4835 140 67048 (1)(4)(6)	-	-
	Horiz Output	4835 140 67053 (1)(5)(6)	-	-
	Horiz Output	4835 140 67054 (2)(3)(4)(6)	-	-
T502	Horiz Driver	4835 142 47012	9124	-

AUDIO / VIDEO JACK BOARD

# L30	Power	4835 148 27024	-	-
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For SAFETY use only equivalent replacement part.

- (1) 13" CRT
- (2) 19" CRT
- (3) 20" CRT
- (4) MONO
- (5) Stereo
- (6) The Screen and Focus Controls are part of T501.