

SAFETY PRECAUTIONS

SERVICE WARNING

Only qualified service technicians who are familiar with safety checks and guidelines should perform service work. Before replacing parts, disconnect power source to protect electrostatically sensitive parts. Do not attempt to modify any circuit unless so recommended by the manufacturer. When servicing the receiver, use an isolation transformer between the line cord and power receptacle.

SERVICING THE HIGH VOLTAGE AND CRT

Use EXTREME CAUTION when servicing the high voltage circuits. To discharge static high voltage, connect a 10K ohms resistor in series with a test lead between the receiver and CRT anode lead. DO NOT lift the CRT by the neck. Always wear shatterproof goggles when handling the CRT 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 CRT is the only potential source of X-rays. Keep an accurate high voltage meter available at all times. Check meter calibration periodically. Whenever servicing a receiver, check the high voltage at various brightness levels to be sure it is regulating properly. 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. When troubleshooting a receiver with excessive high voltage, avoid close contact with the CRT. DO NOT operate the receiver longer than necessary. To locate the cause of excessive high voltage, use a variable AC transformer to regulate voltage. In present receivers, 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 Receivers with Isolated Ground

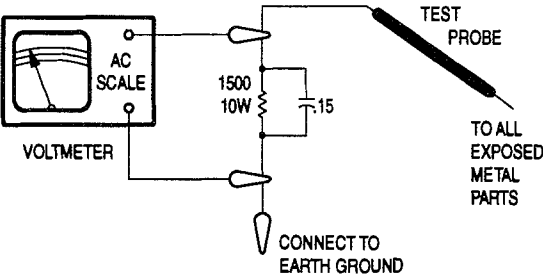
Unplug the AC cord, connect a jumper across the plug prongs, and turn the power switch on (if applicable). Use an ohmmeter to measure the resistance between the jumped AC plug and any exposed metal cabinet parts such as antenna screw heads, control shafts, or handle brackets. Exposed metal parts with a return path should measure between 1M ohms and 5.2M ohms. Parts without a return path must measure infinity.

Hot Leakage Current Check

Plug the AC cord directly into an AC outlet. DO NOT use an isolation transformer. Use a 1500 ohms, 10W resistor in parallel with a .15µF capacitor to connect between any exposed metal parts on the receiver and a good earth ground. (See figure below.) Use an AC voltmeter with at least 5000 ohms per volt sensitivity to measure the voltage across the resistor. Check all exposed metal parts and measure voltage at each point. Voltage measurements should not exceed .75VAC, 500µA. Any value exceeding this limit constitutes a potential shock hazard and must be corrected. If the 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 receiver to customer. Check repaired area for poorly soldered connections, and check entire circuit board for solder splashes. Check inner board wiring for pinched wires or wires contacting any high wattage resistors. 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.



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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2647 Waterfront Parkway East Drive, Suite 300
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Printed in the United States of America 5 4 3 2 1



95PF02815



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PHOTOFACT. Technical Service Data

SET 3497

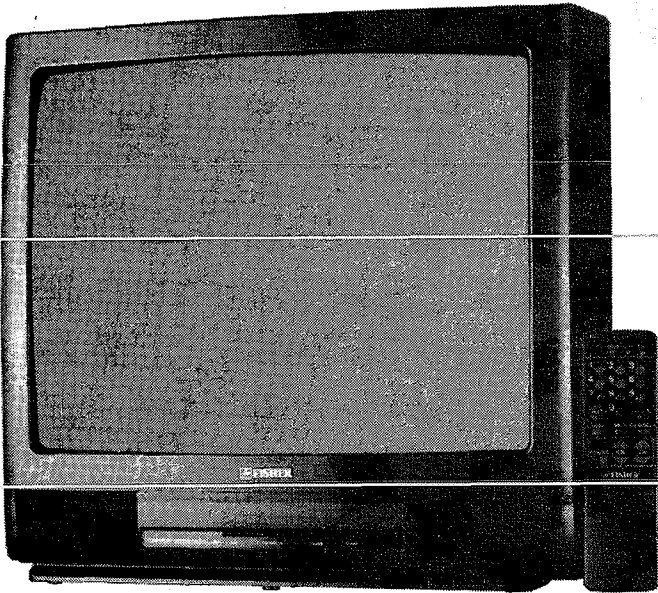
MODEL PC-4525 (CHASSIS G3M-45250)

FISHER

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For Supplier Address,
See PHOTOFACT Annual Index

FISHER
Model PC-4525 (Chassis G3M-45250)



Complete coverage
for servicing a television receiver...

- Schematics
- Parts list
- Component locations
- Troubleshooting guide

Coverage includes this additional model and chassis:

MODEL
PC-4620

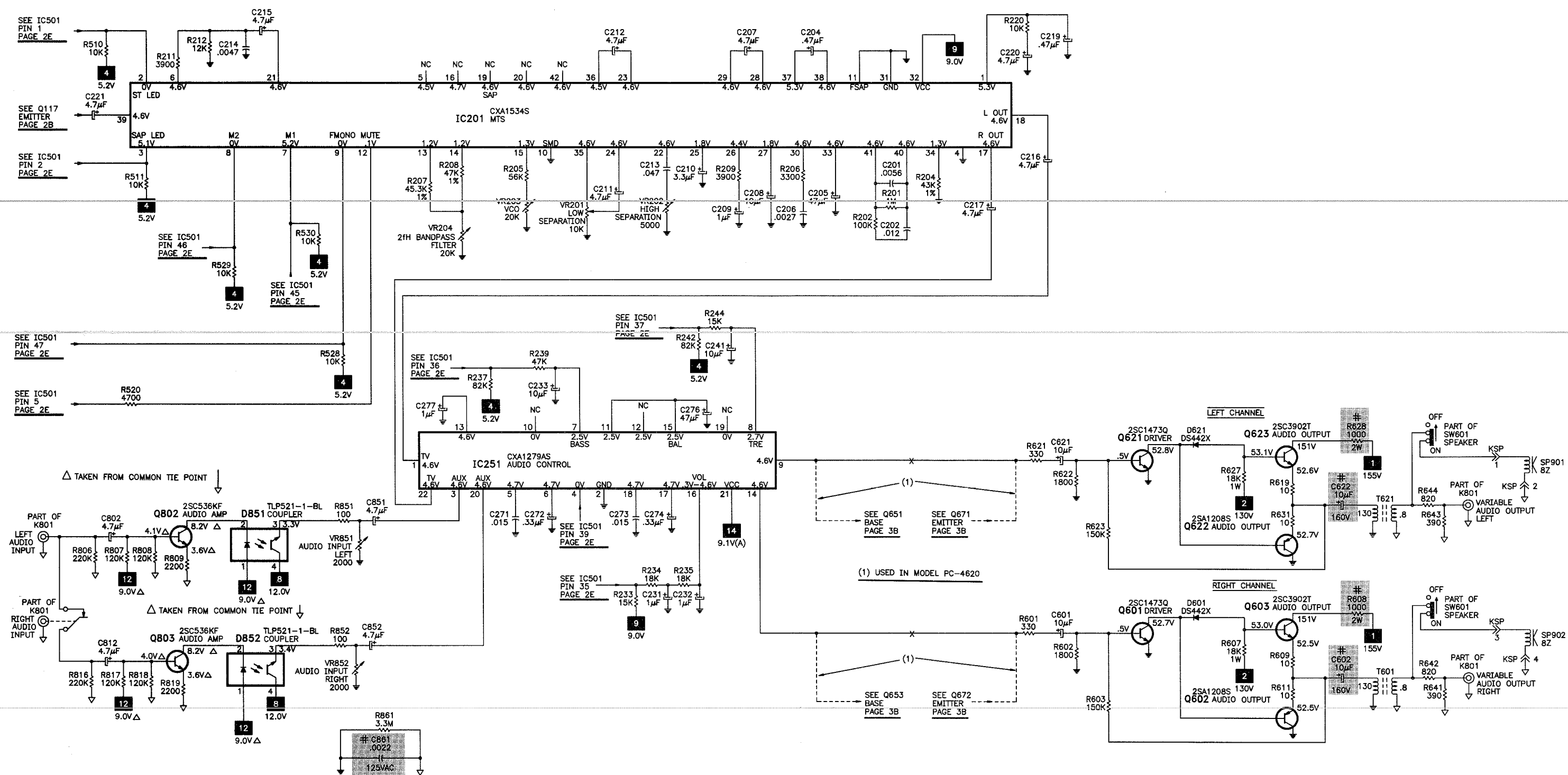
CHASSIS
G4L-46200



HOWARD W. SAMS & COMPANY

JUNE 1995 SET 3497

AUDIO SCHEMATIC



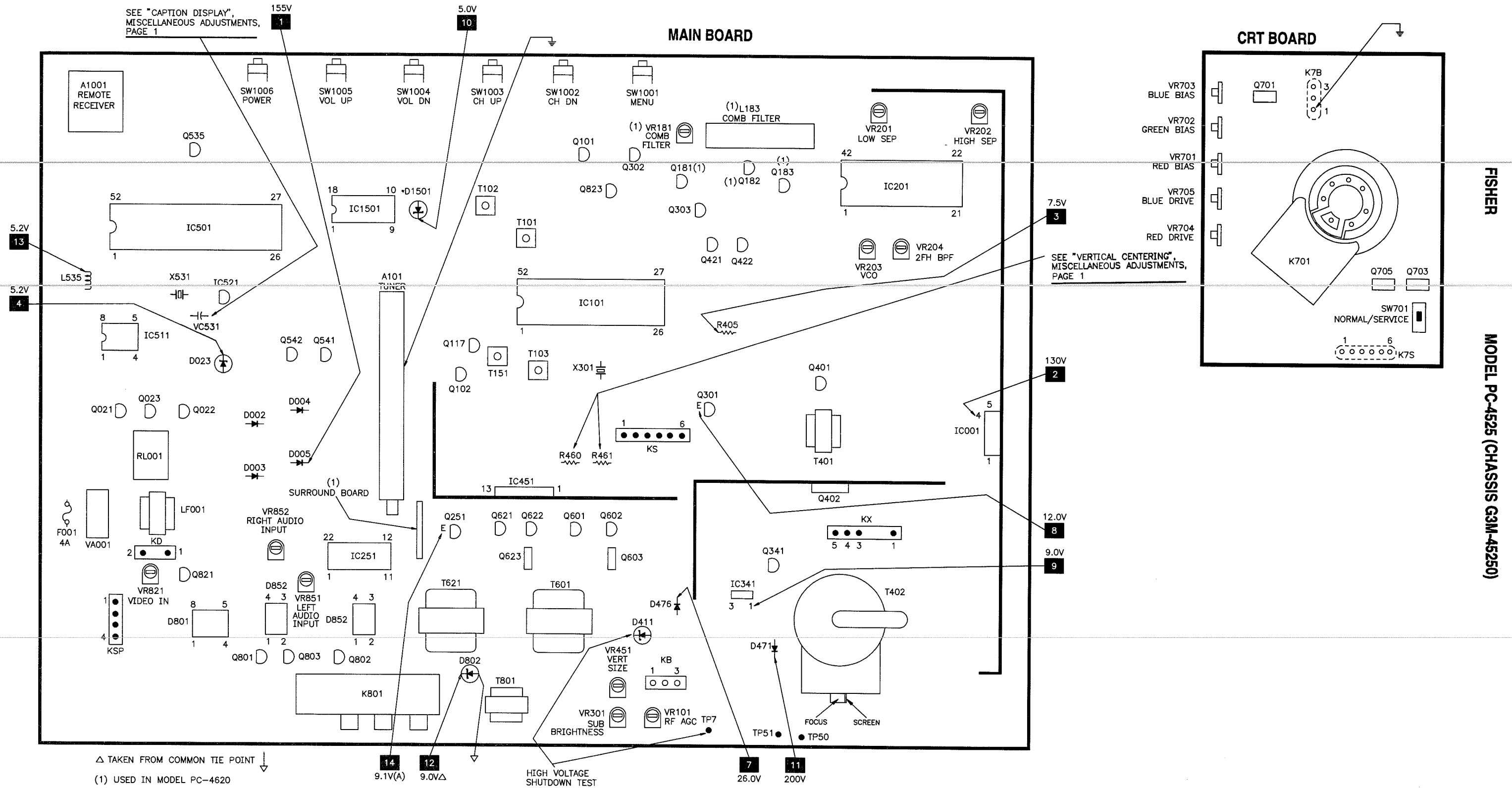
VOLTAGES TAKEN WITH SIGNAL
ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 3

A PHOTOFAC STANDARD NOTATION SCHEMATIC
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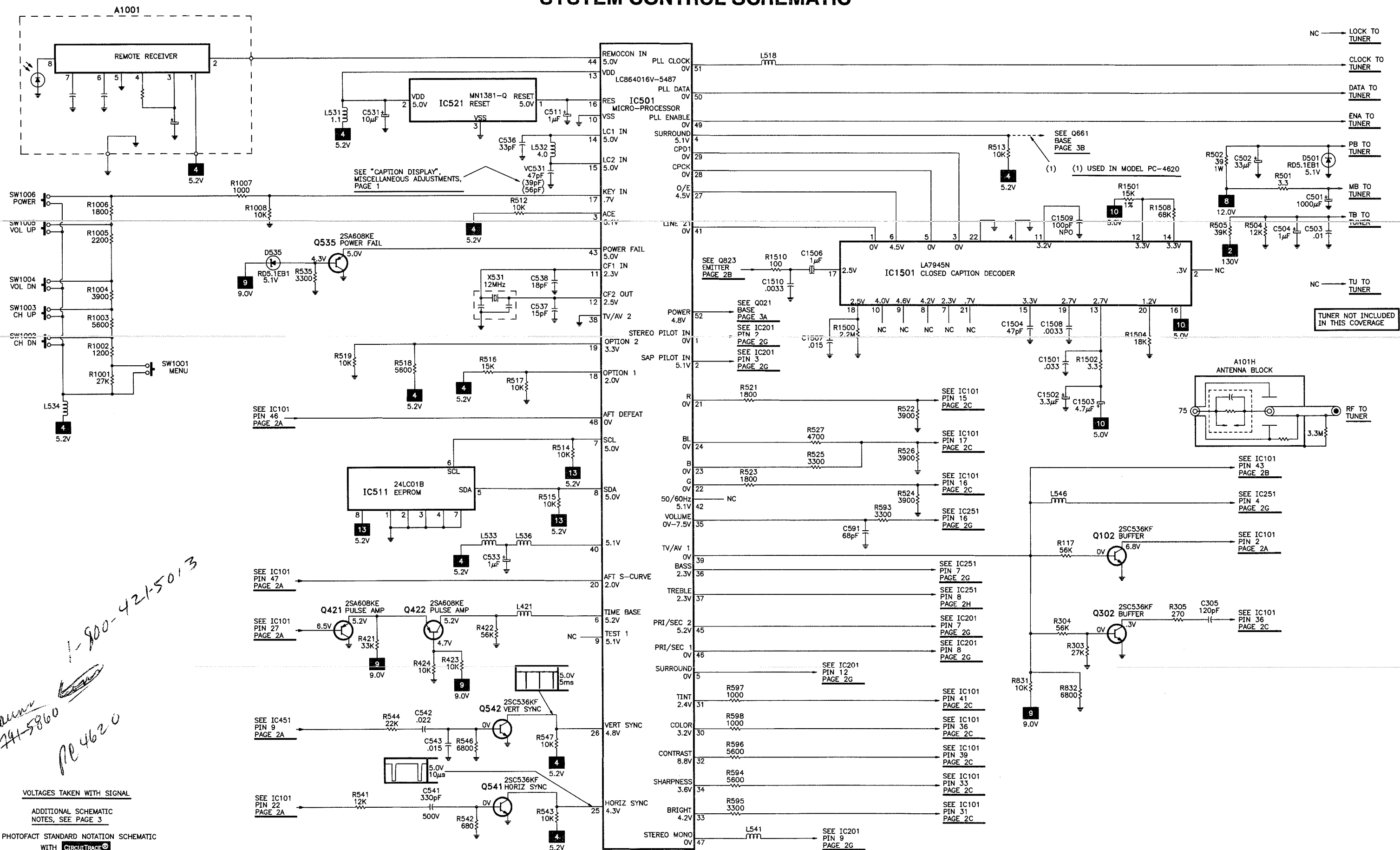
G

H

PLACEMENT CHART



SYSTEM CONTROL SCHEMATIC



VOLTAGES TAKEN WITH SIGNAL

ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 3

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TROUBLESHOOTING

POWER SUPPLY

Check F001. If open, check D002 thru D005, C001, C006 and IC001. Apply 120VAC and check standby voltage 5.2V at the emitter of Q022. If the voltage is incorrect or missing, check D021, D023, and Q022. Turn receiver on and check for 130V at pin 4 of IC001. If voltage is missing, check IC001, Q021, Q023, RL001, R001, and D002 thru D005. If 130V is present, refer to "Horizontal" section of this Troubleshooting guide.

HIGH VOLTAGE SHUTDOWN TEST

Apply 120VAC, turn the receiver on, and set all customer controls for normal operation. Measure the voltage at TP7. Voltage should measure between 14.5V and 21.0V. If voltage exceeds this range the circuit must be repaired. Connect a jumper between TP7 and the cathode of D411. The receiver should lose raster and sound. If receiver does not lose raster and sound, the shutdown circuit should be repaired. To resume normal operation, remove AC power and wait 30 seconds, then turn the receiver on.

HIGH VOLTAGE SHUTDOWN

NOTE: Care should be taken in defeating the high voltage shutdown circuit as this may cause excessive X-Ray radiation and damage to the CRT and T402. Monitor the high voltage and troubleshoot. The high voltage from T402 is monitored and rectified by D483. Should the high voltage increase, the voltage at the cathode of D412 will also increase and trigger D412, and D411. This will cause deflection portion of IC101 to shut down the horizontal drive signal at pin 23 of IC101, causing the receiver to lose audio and raster.

Voltages Taken in shutdown

IC101	
Pin 22	0V
Pin 24	.7V

HORIZONTAL

Determine if the TV is in shutdown, refer to the "High Voltage Shutdown" section of this Troubleshooting guide. If TV is not in shutdown, inject a horizontal signal at base of Q402. If horizontal deflection is now present, check Q401, T401, and pins 22 thru 27 of IC101. If horizontal deflection is still missing, check Q402 and T402. The high voltage rectifier is part of T402 and if defective will affect the performance of the horizontal circuits. Width or foldover problems may be caused by C431, C432, C436, C437, and L413 being defective.

VERTICAL

Inject a vertical signal at pin 2 of IC451. If vertical deflection is present, check pin 28 and 29 of IC101. If there is still no vertical deflection, check IC451 and the deflection yoke. Vertical linearity or foldover problems may be caused by sweep shaping and bias circuits, check C451 thru C453, C457, and C458.

VIDEO

Inject a video signal at the base of Q101. If video is present on the CRT, refer to the "IF AGC" section of this Troubleshooting guide. Check for a video waveform at pin 38 of IC101. If the waveform is missing, check pins 38, 40, 42, and 43 of IC101 and Q101. Check for a video waveform at the emitter of Q303. If the waveform is missing in model PC-4525, check Q323 and Q303. If the waveform is missing in model PC-4620, check Q323, Q181, L183, Q183, and Q303. If waveform is present, check for waveform at emitter of

Q301. If waveform is missing, check Q301 and pins 21, 31 thru 35, and 39 of IC101. If brightness is inadequate or cannot be controlled, check pin 31 of IC101, pin 33 of IC501, and pin 8 of the CRT.

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 and tuner control circuits. If video is missing on the CRT, check for a video waveform at pin 44 of IC101. If video waveform is present, refer to the "Video" section of this Troubleshooting guide. Apply AGC bias to pin 2 of IC101 and check for a video waveform at pin 44 of IC101. If video waveform is present, check pins 2, 10, 47, and 49 of IC101 and Q102. If there is no video waveform, check IC101.

RASTER

Check the CRT and CRT voltages. If red is missing, check pin 18 of IC101 and Q705. If green is missing, check pin 19 of IC101 and Q703. If blue is missing, check pin 20 of IC101 and Q701. If the raster has a keystone shape, check the deflection yoke. If the raster has height or width problems, refer to the "Vertical," "Horizontal," and "Power Supply" sections of this Troubleshooting guide.

CHROMA

Check for a chroma waveform at pin 36 of IC101. If the waveform is missing, check Q182 and L183. Check for the proper waveforms at pins 18 thru 20 of IC101. If these waveforms are missing, check pins 12 thru 20, 36, and 41 of IC101. Check for proper tint control at pin 41 of IC101 and pin 31 of IC501. Check the 3.58MHz oscillator at pin 13 of IC101. If the proper waveforms are present, refer to the "Raster" section of this Troubleshooting guide.

AUDIO

Connect MTS TV/stereo generator to antenna terminal and check for an MTS waveform at pin 1 of IC101. If waveform is missing, check pins 4, 5, 6, and, 48 of IC101. If waveform is present, check for audio waveform at pins 1 and 22 of IC251. If waveforms are not present, check Q117 and IC201. If waveforms are present check for audio waveforms at collectors of Q621 and Q601. If those waveforms are missing, check Q621, Q601, IC251, and Q251. If waveforms are present, check Q623, Q622, Q602, and Q603. Check volume control line at pin 16 of IC251. Check the voltage at pin 35 of IC501. It should measure 0V at mute and 7.5V at maximum volume.

POWER FAILURE DETECTOR

This receiver uses a power failure detector, pin 43 of IC501, which checks for an abnormal failure of power supply circuits. If an unexpected failure is caused by any one of three conditions, the receiver will shut itself off in about 1 second to prevent damage.

The three conditions are:

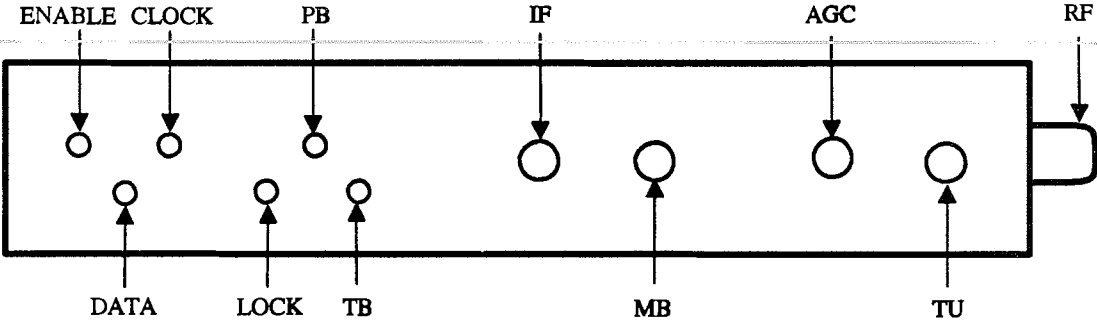
- 1. Failure within the power supply.
- 2. A short circuit on the load side of the power supply.
- 3. Stoppage of horizontal oscillation caused by shutdown circuits.

The power will shut itself off within 2.5 seconds if any of these conditions remain uncorrected. To see if this circuit has been activated, check pin 1 of IC341 for a voltage of 9.0V.

TUNER INFORMATION

TUNER VOLTAGE CHART							
Pin	VHF Low Band	VHF High Band	UHF Band	Pin	VHF Low Band	VHF High Band	UHF Band
ENABLE	0V	0V	0V	MB	11.9V	11.9V	11.9V
DATA	0V	0V	0V	AGC	4.5V	4.6V	5.2V
CLOCK	0V	0V	0V	TU	1.5V	4.2V	6.3V
LOCK	.1V	.1V	.1V	NOTE: VHF Low Band voltages taken on channel 2. VHF High Band voltages taken on channel 7. UHF Band voltages taken on channel 14.			
PB	5.1V	5.1V	5.1V				
TB	19.5V	20.5V	21.3V				
IF	0V	0V	0V				

TUNER TERMINAL GUIDE



STEREO ADJUSTMENTS

All adjustments were made using an MTS TV/stereo generator connected to the antenna terminals. Set customer controls to normal listening levels. Select the stereo mode.

SAP VCO

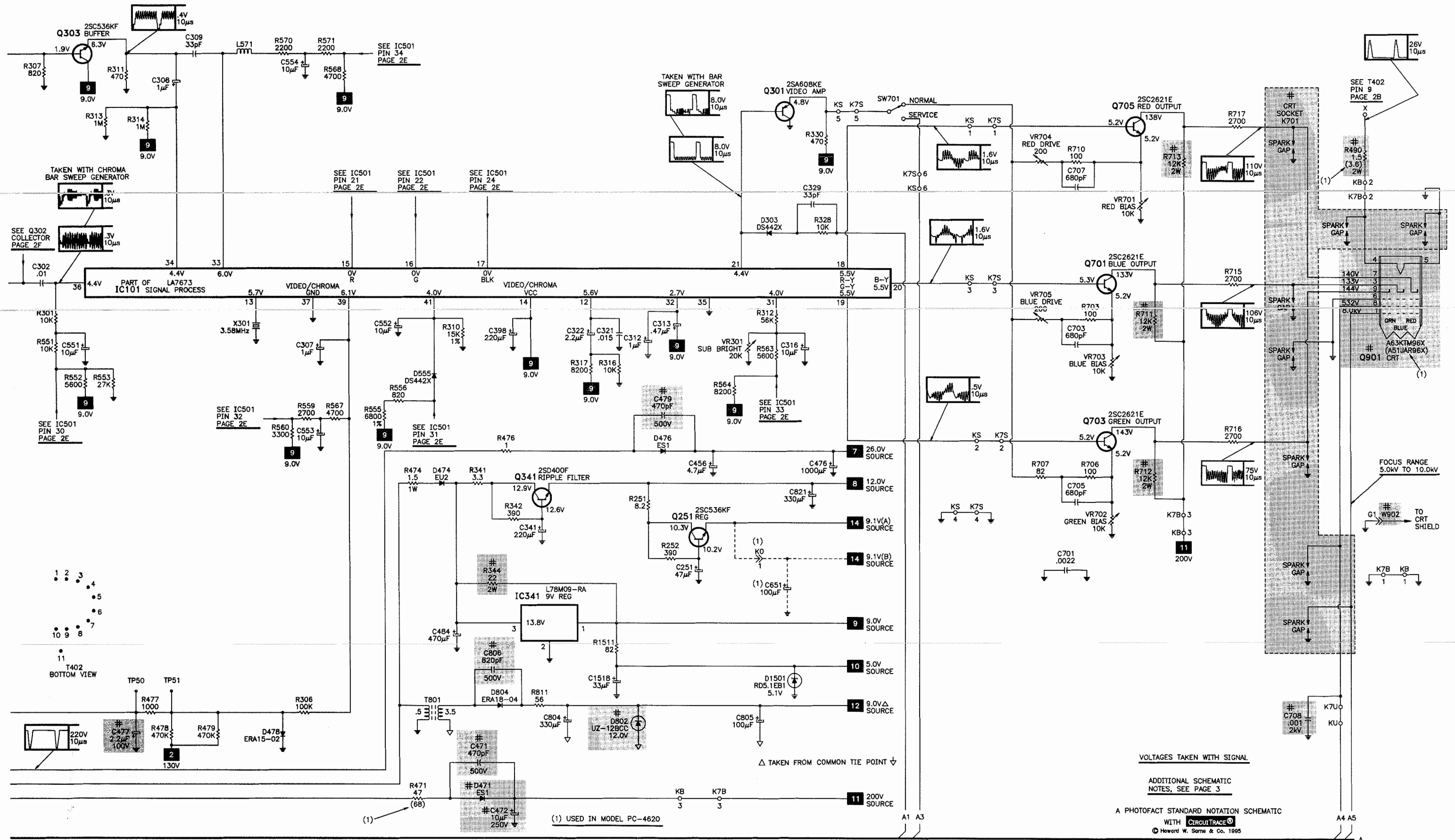
Select SAP mode on the receiver. Set generator to SAP, 1kHz, and L-R modulated signal. Connect oscilloscope to pin 42 of IC201. Adjust VR204 for maximum amplitude of waveform.

STEREO VCO

Set generator to pilot, 1kHz, and L-R modulated signal. Connect oscilloscope to pin 26 of IC201. Adjust VR203 for maximum amplitude of waveform.

SEPARATION

Set generator to pilot, 300Hz and left modulated signal. Connect oscilloscope to pin 17 of IC201. Adjust VR201 for minimum amplitude. Change to 8kHz and adjust VR202 for minimum amplitude of waveform.



VOLTAGES TAKEN WITH SIGNAL

ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 3

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MISCELLANEOUS ADJUSTMENTS

HIGH VOLTAGE CHECK

Tune in a picture, set brightness, contrast, and color to minimum. Connect a high voltage probe to CRT anode. High voltage should range between about 26kV and 29kV.

RF AGC

Turn receiver on and tune in an active station. Turn VR101 fully clockwise, then counterclockwise to a point where snow just disappears.

SUB BRIGHTNESS

Tune in a crosshatch pattern. Set auto to off mode, and set brightness, sharpness, and contrast controls to maximum. Set color to minimum. Connect positive lead of a digital voltmeter to TP51 and the negative lead to TP50. Adjust VR301 for .05V.

VERTICAL CENTERING

Tune in a crosshatch pattern. If pattern is low, install R460. If pattern is high, install R461. See schematic page 2B.

COMB FILTER

Tune in a colorbar pattern. Set auto to on. Connect oscilloscope to pin 21 of IC101, and adjust VR181 for minimum chroma component.

VIDEO INPUT

Input a video signal at video input jack. Connect an oscilloscope to the base of Q181. Adjust VR821 for 1.0V p-p.

CAPTION DISPLAY

Turn on closed caption box. If box is off center to the left, change value of VC531 to 56pF. If box is off center to the right, change value to 39pF. See schematic page 2E.

WHITE BALANCE

Turn receiver on. Allow a 10 to 30 minute warm up time. Tune in an inactive channel. Set screen, VR703, VR702, and VR701 to minimum. Set VR704 and VR705 to midrange. Set SW701 to service position. Advance the screen control until a faint line of one predominant color appears on the screen. Adjust VR701, VR702, and VR703 for a dim white line. Set SW701 to normal position. Adjust VR704 and VR705 for best black and white picture on screen.

PURITY

NOTE: Operate the set for 15 minutes to allow warm-up of CRT. Use a degaussing coil to demagnetize the CRT. Tune in a green raster. Loosen the retainer screw. Slide deflection yoke back as far as possible. Adjust purity tabs to center the vertical green band. Loosen the clamp screw. Slide the deflection yoke forward to produce a uniform green screen. Tighten the clamp screw. Tighten the screw on retainer.

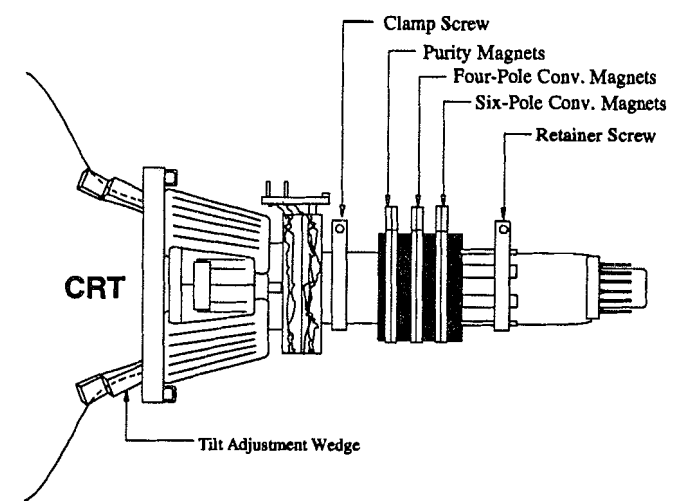
CONVERGENCE

Tune in a dot pattern. Loosen the screw on retainer. Adjust the 4 pole magnets to converge the red and blue dots at the center of the screen. Adjust the 6 pole magnets to converge the red/blue dots over 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. The 4 and 6 pole magnets interact, repeat adjustment until center convergence is correct.

Tune in a crosshatch pattern. Remove the tilt adjustment wedges between deflection yoke and the CRT. Loosen the clamp screw. 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 line at the top and bottom of the screen and the vertical line at the right and left sides of the screen. Repeat convergence procedure if necessary to obtain best overall convergence. Replace the tilt adjustment wedges. Tighten the clamp and retainer screw.

CRT NECK ASSEMBLY



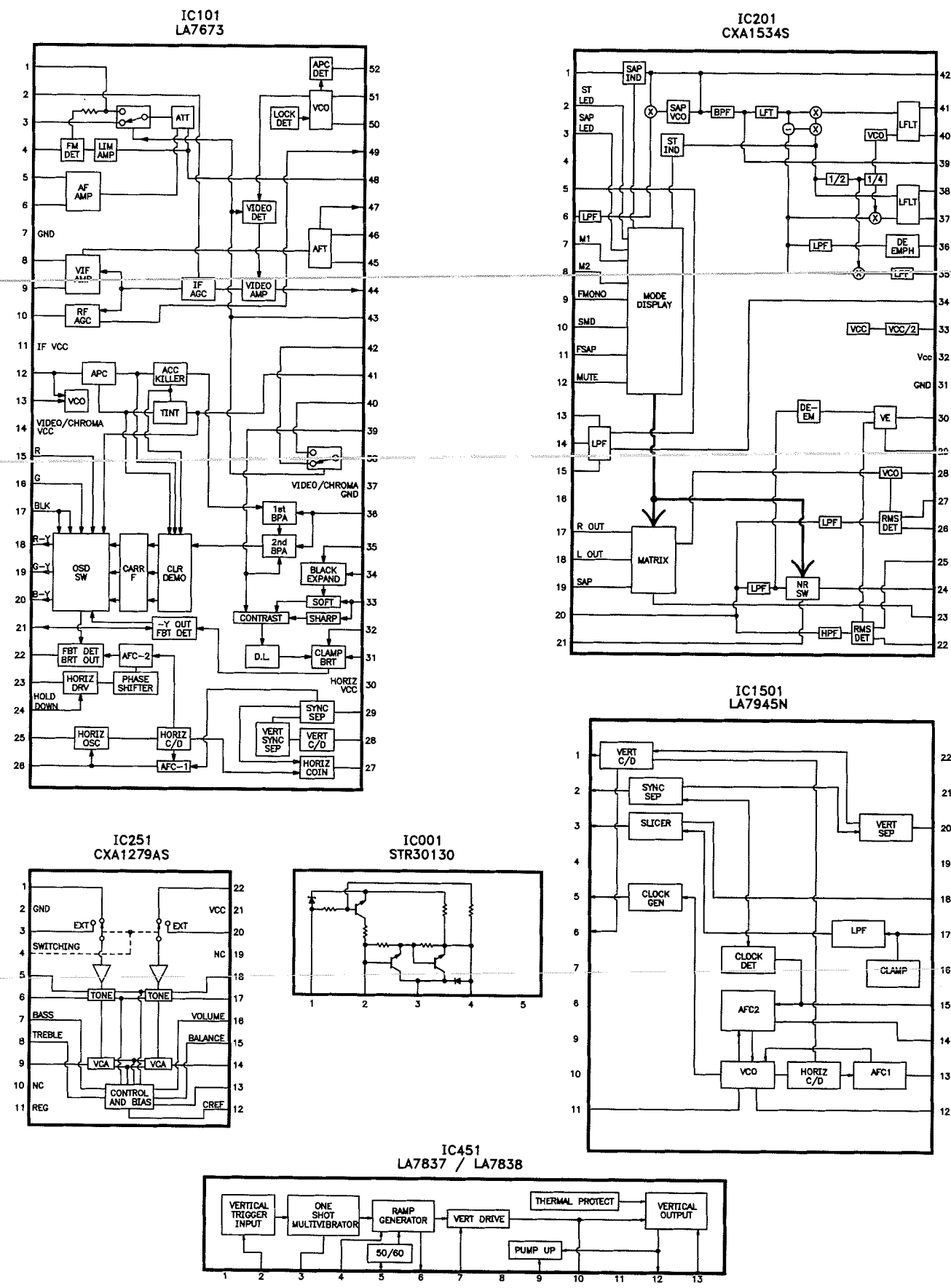
LEFT AUDIO INPUT

Input an audio signal to the left audio input jack. Connect an oscilloscope to pin 3 of IC251. Adjust VR851 for .5V p-p.

RIGHT AUDIO INPUT

Input an audio signal to the right audio input jack. Connect an oscilloscope to pin 20 of IC251. Adjust VR852 for .5V p-p.

IC FUNCTIONS

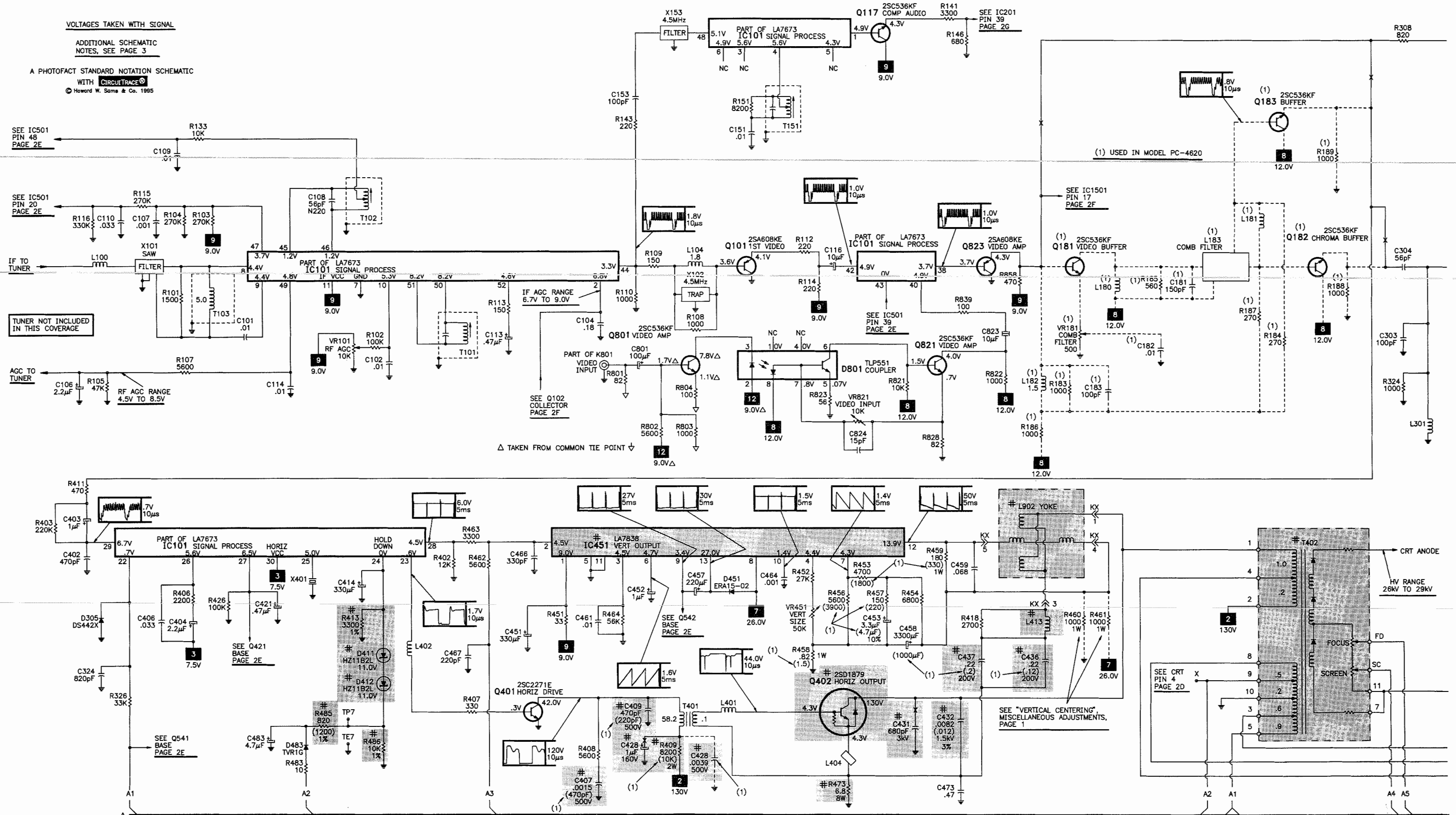


VOLTAGES TAKEN WITH SIGNAL

ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 3

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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.

- Custom Components Corporation (Chek-A-Color)
 - NTE Electronics, Inc. (NTE)
 - Philips ECG Company (ECG)
- PTS Electronics Corporation (PTS)
 - Sencore, Inc.
 - Thomson Consumer Electronics, Inc. (SK, TCE)



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SEMICONDUCTORS

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
# D002 Thru					
# D005	EM2B	407 005 7605	NTE125	ECG125	SK3081
	1S1887A	407 013 3200	NTE552	ECG552	SK9000
	GP15G	408 008 8606	NTE125	ECG125	SK3081
# D021	ERA15-02	407 005 8602	NTE552	ECG552	SK9000
	1N4002ID	408 009 9404	NTE116	ECG116	SK3311
	S5277B	407 011 3004	NTE552	ECG552	SK9000
	MPG06D	407 088 6502	NTE552	ECG552	SK9000
D022	DS442X	407 005 4505	NTE519	ECG519	SK3100
	1S1555	407 013 1206	NTE177	ECG177	SK9091
	1S2076	407 013 4207	NTE177	ECG177	SK9091
	1S2473	407 013 7109	NTE177	ECG177	SK9091
	1N4148	407 008 2406	NTE519	ECG519	SK3100
D023	RD5.1EB1	407 056 7906	NTE5010A	ECG5010A	SK5A1
	RD5.1EB2	407 056 8002	NTE5010A	ECG5010A	SK5A1
	UZ-5.1BCB	407 151 8402	-	-	-
	UZ-5.1BCC	407 163 8209	-	-	-
D303, 05	DS442X	407 005 4505	NTE519	ECG519	SK3100
	1S1555	407 013 1206	NTE177	ECG177	SK9091
	1S2076	407 013 4207	NTE177	ECG177	SK9091
	1S2473	407 013 7109	NTE177	ECG177	SK9091
	1N4148	407 008 2406	NTE519	ECG519	SK3100
# D411, 12	HZ11B2L	407 158 1307	NTE5020A	ECG5020A	SK11A
D451	ERA15-02	407 005 8602	NTE552	ECG552	SK9000
	S5277B	407 011 3004	NTE552	ECG552	SK9000
	MPG06D	407 088 6502	NTE552	ECG552	SK9000
	1N4002ID	408 009 9404	NTE116	ECG116	SK3311
# D471	ES1	407-007-6606	NTE552	ECG552	SK9000
	ERA18-04	407-124-6404	NTE552	ECG552	SK9000
	RMPG06G	407-124-5506	NTE552	ECG552	SK9000
D474	EU2	407 007 7603	NTE552	ECG552	SK9000
D476	ES1	407-007-6606	NTE552	ECG552	SK9000
	ERA18-04	407-124-6404	NTE552	ECG552	SK9000
	RMPG06G	407-124-5506	NTE552	ECG552	SK9000
D478	ERA15-02	407 005 8602	NTE552	ECG552	SK9000
	S5277B	407 011 3004	NTE552	ECG552	SK9000
	MPG06D	407 088 6502	NTE552	ECG552	SK9000
	1N4002ID	408 009 9404	NTE116	ECG116	SK3311
D483	TVR1G	407 011 4407	NTE552	ECG552	SK9000
D501, 35	RD5.1EB1	407 056 7906	NTE5010A	ECG5010A	SK5A1
	RD5.1EB2	407 056 8002	NTE5010A	ECG5010A	SK5A1
	UZ-5.1BCB	407 151 8402	-	-	-
	UZ-5.1BCC	407 163 8209	-	-	-
D555	DS442X	407 005 4505	NTE519	ECG519	SK3100
	1S1555	407 013 1206	NTE177	ECG177	SK9091
	1S2076	407 013 4207	NTE177	ECG177	SK9091
	1S2473	407 013 7109	NTE177	ECG177	SK9091
	1N4148	407 008 2406	NTE519	ECG519	SK3100

For SAFETY use only equivalent replacement part.

PARTS LIST continued

COILS & TRANSFORMERS		
Item No.	Function/Rating	Mfr. Part No.
L100	Filter	610 032 9386
L104	15μH	610 031 3958
L180 (1)	15μH	610 031 3958
L181 (1)	18μH	610 031 3996
L182 (1)	15μH	610 031 3958
L183 (1)	Comb Filter	610 030 0828
L301	10μH	610 031 3873
L401	Filter	610 032 4381
	Filter	610 032 4404
L402	120μH	610 031 3934
L404	Ferrite Bead	610 078 4727
# L413	Linearity	610 000 1046
(1)	Linearity	610 000 0704
L421	5.6μH	610 031 4214
L518, 31	5.6μH	610 031 4214
L532	6.8μH	610 029 5841
	6.8μH	610 029 7821
L533 Thru		
L536	5.6μH	610 031 4214
L541, 46	5.6μH	610 031 4214
L571	100μH	610 031 3897
# L901	Degaussing	645 001 7186
	Degaussing	645 001 7193
(1)	Degaussing	610 228 8605
(1)	Degaussing	610 229 3197
# L902	Yoke	645 000 2472
(1)	Yoke	645 000 2465
# LF001	Line Filter	610 031 5938
	Line Filter	610 223 1212
T101	VCO, 45.75MHz	645 000 5206
T102	AFT	610 037 6564
T103	VIF, 45.75MHz	645 000 5237
T151	FM Detect	610 037 7615
T401	Horizontal Drive	610 000 7901
	Horizontal Drive	610 223 7918
# T402 (2)	Horizontal Output	645 000 0881
(2)	Horizontal Output	645 004 7411
(1)(2)	Horizontal Output	645 000 4810
(1)(2)	Horizontal Output	645 004 7428
T601, 21	Sound Output	610 055 6751
	Sound Output	610 055 6904
	Sound Output	610 216 2899
	Sound Output	610 238 5731
T801	Pulse	610 229 9007
# For SAFETY use only equivalent replacement part.		
(1) Used in model PC-4620.		
(2) Focus and screen controls are part of T402.		

MISCELLANEOUS			
Item No.	Description	Mfr. Part No.	Notes
# A101 (1)	Tuner	645 000 0843	UHF/VHF
A101H	Block	645 002 7864	Antenna
A1001	Receiver	610 224 5806	Remote, 409-1L
# F001	Fuse	423 007 1601	4Amp, 125V, Slow Blow
	Fuse	423 007 1809	4Amp, 125V, Slow Blow
	Fuse	423 018 8101	4Amp, 125V, Slow Blow
# K701	Socket	610 010 4181	CRT
(2)	Socket	610 010 4310	CRT
K801	Jack	645 001 6097	Assembly
# Q901	CRT	413 007 4108	A63KTM96X
(2)	CRT	414 001 1100	A51JAR96X
# RL001	Relay	610 009 5540	Power
	Relay	610 009 5649	Power
	Relay	610 215 6355	Power
	Relay	610 215 6362	Power
	Relay	645 000 4155	Power
SP901, 02	Speaker	610 055 6614	3", 8 Ohms, 2W
	Speaker	645 004 3314	8 Ohms
SW601	Switch	610 011 2667	Speaker
	Switch	610 208 3132	Speaker
SW701	Switch	610 011 4227	Service
SW1001	Switch	610 011 2698	Menu
SW1002	Switch	610 011 2698	Channel Down
SW1003	Switch	610 011 2698	Channel Up
SW1004	Switch	610 011 2698	Volume Down
SW1005	Switch	610 011 2698	Volume Up
SW1006	Switch	610 011 2698	Power
# W901	Line Cord	610 222 9639	AC, Polarized
# W902	Connector	610 246 1671	CRT Shield
(2)	Connector	610 246 1718	CRT Shield
X101	Filter	421 001 9104	SAW
X102	Trap	610 015 3059	4.5MHz
	Trap	610 015 3066	4.5MHz
X153	Filter	610 015 2946	4.5MHz
X301	Crystal	610 012 0655	3.58MHz
	Crystal	610 211 6441	3.58MHz
X401	Crystal	610 012 2970	-
X531	Crystal	645 002 8885	12MHz
	Fuse Holder	610 012 4356	For F001
	Fuse Holder	610 212 8543	For F001
	Magnet	610 003 1678	Purity/Convergence
	Magnet	610 003 1708	Purity/Convergence
	Magnet	610 003 1739	Purity/Convergence
	Magnet	610 217 7794	Purity/Convergence
	Magnet (2)	610 003 1722	Purity/Convergence
	Magnet (2)	610 003 1791	Purity/Convergence
	Magnet (2)	610 004 3008	Purity/Convergence
	Magnet (2)	610 217 7787	Purity/Convergence
# For SAFETY use only equivalent replacement part.			
(1) Contact PTS Electronics Corporation for replacement; order by manufacturer's part number.			
(2) Used in model PC-4620.			

MISCELLANEOUS continued			
Item No.	Description	Mfr. Part No.	Notes
	PC Board (1)	610 249 5690	CRT (A701)
	PC Board (1)	610 249 5669	Main (A001)
	PC Board (1)	610 244 3868	Remote Control (A9901)
	PC Board (1)(2)	610 249 5706	CRT (A701)
	PC Board (1)(2)	610 249 5683	Main (A001)
	PC Board (1)(2)	610 244 3875	Remote Control (A9901)
	PC Board (1)(2)	610 244 5713	Surround (A601)
	Transmitter	645 001 6028	Remote
	Transmitter	645 001 5878	Remote
	Wedge	610 117 0154	Deflection Yoke (3 Used)
	Wedge	610 117 7924	Deflection Yoke (3 Used)
	Wedge (2)	610 250 3180	Deflection Yoke (3 Used)
# For SAFETY use only equivalent replacement part.			
(1) Contact PTS Electronics Corporation for replacement; order by manufacturer's part number.			
(2) Used in model PC-4620.			

CABINET PARTS	
Item	Mfr. Part No.
MODEL PC-4525	
Button Unit	610 245 5816
Cabinet Back	610 245 7445
Cabinet Front	610 245 7414
Remote Control Transmitter	
Battery Cover	610 230 0307
MODEL PC-4620	
Button Unit	610 237 0713
Cabinet Back	610 245 6240
Cabinet Front	610 237 6593
Remote Control Transmitter	
Battery Cover	610 245 3041

FISHER

MODEL PC-4525 (CHASSIS G3M-45250)

PARTS LIST continued

SEMICONDUCTORS continued					
(Select the replacement that gives the best results.)					
Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
D601, 21	DS442X	407 005 4505	NTE519	ECG519	SK3100
	1S1555	407 013 1206	NTE177	ECG177	SK9091
	1S2076	407 013 4207	NTE177	ECG177	SK9091
	1S2473	407 013 7109	NTE177	ECG177	SK9091
	1N4148	407 008 2406	NTE519	ECG519	SK3100
D801	TLP551	408 000 0301	NTE3092	ECG3092	SK9770
# D802	UZ-12BCC	407 162 5308	-	-	-
D804	ES1	407 007 6606	NTE552	ECG552	SK9000
	RMPG06G	407 124 5506	NTE552	ECG552	SK9000
	ERA18-04	407 124 6404	NTE552	ECG552	SK9000
D851, 52	TLP521-1-BL	407 002 6809	NTE3098	ECG3098	SK9763
	PC817C	407 104 2402	NTE3098	ECG3098	SK9763
	ON3131S	407 147 5705	-	-	-
D1501	PC817B	407 104 2204	NTE3098	ECG3098	SK9763
	RD5.1EB1	407 056 7906	NTE5010A	ECG5010A	SK5A1
	RD5.1EB2	407 056 8002	NTE5010A	ECG5010A	SK5A1
# IC001	UZ-5.1BCB	407 151 8402	-	-	-
	UZ-5.1BCC	407 163 8209	-	-	-
	STR30130	409 243 0806	NTE1777	ECG1777	SK9870
IC101	LA7673	409 274 3302	-	-	-
IC201	CXA1534S	409 272 3205	-	-	-
IC251	CXA1279AS	409 279 3109	-	-	-
IC341	L78M09-RA	409 026 9101	NTE1902	ECG1902	SK3962
# IC451	LA7838	409 173 2802	NTE7039	ECG7039	-
(1)	LA7837	409 173 2703	NTE7104	ECG7104	-
IC501	LC864016V-5487	410 191 1203	-	-	-
IC511	24LC01B	-	-	-	-
	ST24C01B1	409 270 0008	-	-	-
	24LC01B/P	409 321 0902	-	-	-
	XL524C01AP	409 321 7307	-	-	-
IC521	MN1381-Q	409 301 2803	-	-	-
IC1501	LA7945N	409 307 2401	-	-	-
Q021, 22	2SC536KF	-	NTE85	ECG85	SK3245
	2SC1740-Q	405 011 7305	NTE85	ECG85	SK3122
	2SC1740-R	405 011 7404	NTE85	ECG85	SK3122
	2SC1740-S	405 011 7503	NTE85	ECG85	SK3122
	2SC1815-GR	405 012 2002	NTE85	ECG85	SK3124A
	2SC1815-O	405 012 2101	NTE85	ECG85	SK3124A
	2SC1815-Y	405 012 2309	NTE85	ECG85	SK3124A
	2SC536-E-NP	405 019 1909	NTE85	ECG85	SK3245
	2SC536-F-NP	405 019 2708	NTE85	ECG85	SK3245
	2SC536-G-NP	405 019 3804	NTE85	ECG85	SK3245
	2SC945A-PA	405 020 7501	NTE85	ECG85	SK3124A
	2SC945A-QA	405 020 7709	NTE85	ECG85	SK3124A
	2SC945A-RA	405 020 7907	NTE85	ECG85	SK3124A
	# For SAFETY use only equivalent replacement part.				
	(1) Used in model PC-4620.				

SEMICONDUCTORS continued					
(Select the replacement that gives the best results.)					
Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
Q023	2SA608KE	-	NTE290A	ECG290A	SK3114A
	2SA1015-O(SAN)	405 001 7407	NTE290A	ECG290A	SK9132
	2SA1015-Y(SAN)	405 001 7605	NTE290A	ECG290A	SK9132
	2SA564A-Q(CU)	405 004 3109	NTE290A	ECG290A	SK3932
	2SA564A-R(CU)	405 004 3208	NTE290A	ECG290A	SK3932
	2SA608-E-CTV-NP	405 004 4205	NTE290A	ECG290A	SK3114A
	2SA608-F-CTV-NP	405 004 4809	NTE290A	ECG290A	SK3114A
	2SA933-Q	405 006 1103	NTE290A	ECG290A	SK9132
	2SA933-R	405 006 1202	NTE290A	ECG290A	SK9132
	2SA1015-GR(SAN)	406 000 6804	NTE290A	ECG290A	SK9132
Q101	2SA564A-Q(CU)	405 004 3109	NTE290A	ECG290A	SK3932
	2SA564A-R(CU)	405 004 3208	NTE290A	ECG290A	SK3932
	2SA608-E-CTV-NP	405 004 4205	NTE290A	ECG290A	SK3114A
	2SA608-F-CTV-NP	405 004 4809	NTE290A	ECG290A	SK3114A
	2SA933-Q	405 006 1103	NTE290A	ECG290A	SK9132
	2SA933-R	405 006 1202	NTE290A	ECG290A	SK9132
	2SA1015-GR(SAN)	406 000 6804	NTE290A	ECG290A	SK9132
	2SA608KE	-	NTE290A	ECG290A	SK3114A
	2SA1015-O(SAN)	405 001 7407	NTE290A	ECG290A	SK9132
	2SA1015-Y(SAN)	405 001 7605	NTE290A	ECG290A	SK9132
Q102, 17	2SC536KF	-	NTE85	ECG85	SK3245
	2SC1740-Q	405 011 7305	NTE85	ECG85	SK3122
	2SC1740-R	405 011 7404	NTE85	ECG85	SK3122
	2SC1740-S	405 011 7503	NTE85	ECG85	SK3122
	2SC1815-GR	405 012 2002	NTE85	ECG85	SK3124A
	2SC1815-O	405 012 2101	NTE85	ECG85	SK3124A
	2SC1815-Y	405 012 2309	NTE85	ECG85	SK3124A
	2SC536-E-NP	405 019 1909	NTE85	ECG85	SK3245
	2SC536-F-NP	405 019 2708	NTE85	ECG85	SK3245
	2SC536-G-NP	405 019 3804	NTE85	ECG85	SK3245
Q181, 82, 83 (1)	2SC945A-PA	405 020 7501	NTE85	ECG85	SK3124A
	2SC945A-QA	405 020 7709	NTE85	ECG85	SK3124A
	2SC945A-RA	405 020 7907	NTE85	ECG85	SK3124A
	2SC536KF	-	NTE85	ECG85	SK3245
	2SC1740-Q	405 011 7305	NTE85	ECG85	SK3122
	2SC1740-R	405 011 7404	NTE85	ECG85	SK3122
	2SC1740-S	405 011 7503	NTE85	ECG85	SK3122
	2SC1815-GR	405 012 2002	NTE85	ECG85	SK3124A
	2SC1815-O	405 012 2101	NTE85	ECG85	SK3124A
	2SC1815-Y	405 012 2309	NTE85	ECG85	SK3124A
	2SC536-E-NP	405 019 1909	NTE85	ECG85	SK3245
	2SC536-F-NP	405 019 2708	NTE85	ECG85	SK3245
	2SC536-G-NP	405 019 3804	NTE85	ECG85	SK3245
	2SC945A-PA	405 020 7501	NTE85	ECG85	SK3124A
	2SC945A-QA	405 020 7709	NTE85	ECG85	SK3124A
	2SC945A-RA	405 020 7907	NTE85	ECG85	SK3124A
(1) Used in model PC-4620.					

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MODEL PC-4525 (CHASSIS G3M-45250)

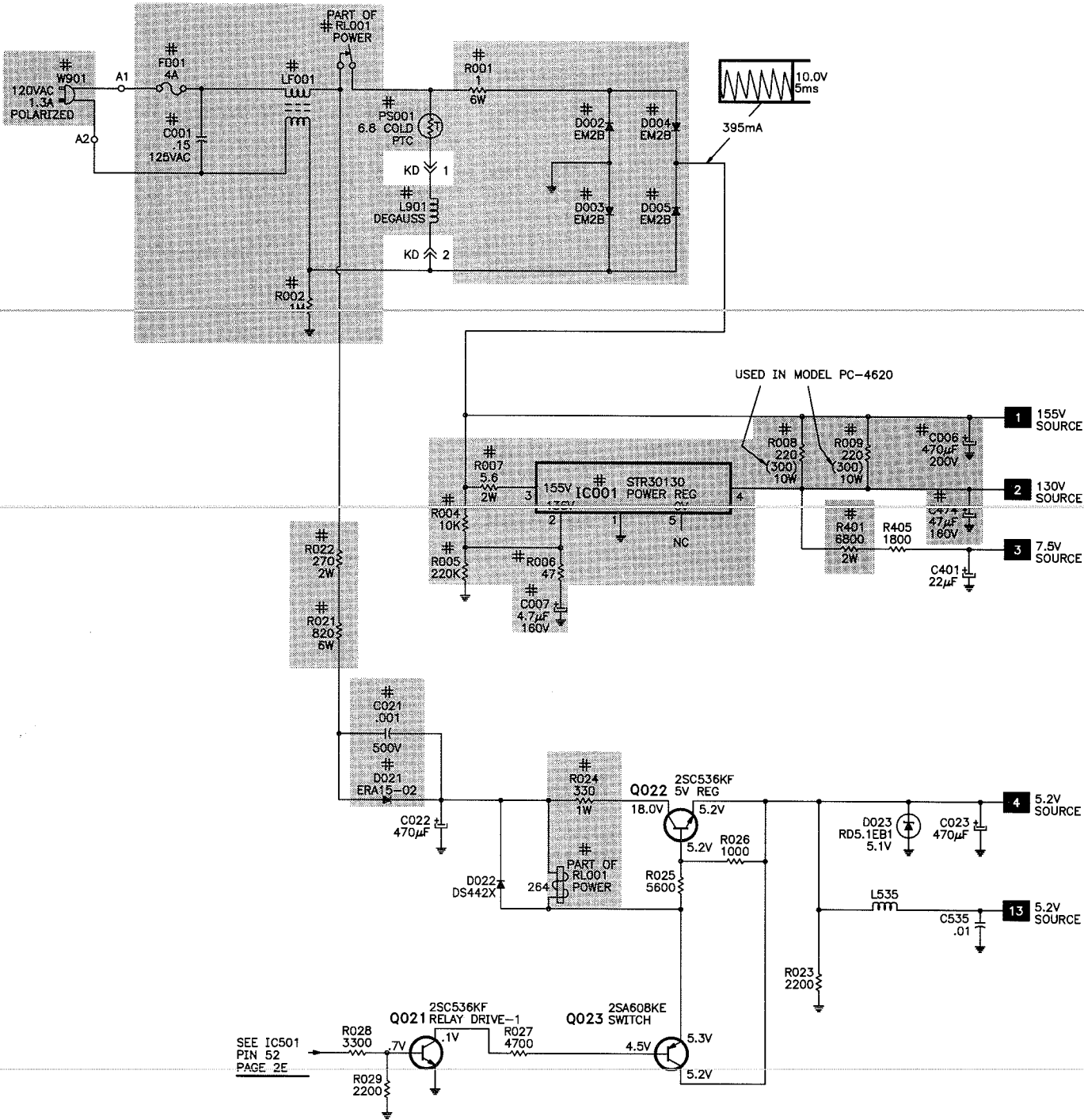
PARTS LIST continued

CONTROLS & RESISTORS			
Item No.	Function/Rating	Mfr. Part No.	NTE Part No.
# PS001	6.8 Cold PTC	408 000 3203	-
	6.8 Cold PTC	408 003 6409	-
# R001	1 10% 6W Wirewound	402 055 3201	-
	1 10% 6W Wirewound	402 055 3300	-
# R002	1M 5% 1/2W	401 007 2903	HW510
# R004	10K 5% 1/4W	401 012 7009	QW310
# R005	220K 5% 1/4W	401 016 5803	QW422
# R006	47 5% 1/2W Nonflammable	401 010 2600	HW047
# R007	5.6 5% 2W	401 068 6209	2W5D6
# R008, 09	220 10% 10W Wirewound	402 060 4606	10W122
(1)	300 10% 10W Wirewound	402 068 3403	10W130
# R021	820 10% 6W Wirewound	402 057 4107	-
	820 10% 6W Wirewound	402 057 4206	-
# R022	270 5% 2W	401 067 0000	2W127
# R024	330 5% 1W	401 061 2505	1W133
R204	43K 1% 1/6W	401 180 8006	-
R207	45.3K 1% 1/6W	401 103 1503	-
R208	47K 1% 1/6W	401 095 0409	-
R310	15K 1% 1/6W	401 052 9308	-
R341	3.3 5% 1/4W Nonflammable	401 017 6304	QW3D3
# R344	22 5% 2W	401 066 5204	2W022
# R401	6800 5% 2W	401 069 3702	2W268
# R409	8200 5% 2W	401 069 8202	2W282
(1)	10K 5% 2W	401 064 9907	2W310
# R413	3300 1% 1/6W	401 053 2605	-
R418	2700 5% 1/2W Nonflammable	401 009 1607	HW227
R471	47 5% 1/2W Nonflammable	401 010 2600	HW047
(1)	68 5% 1/2W Nonflammable	401 011 1206	HW068
# R473	6.8 10% 8W	402 057 2707	-
	6.8 10% 8W	402 067 8201	-
R476	1 5% 1/2W Nonflammable	401 006 7701	HW1D0
R483	10 5% 1/4W Nonflammable	401 012 3506	QW010
# R485	820 1% 1/6W	401 148 7409	-
(1)	1200 1% 1/6W	401 083 8301	-
# R486	10K 1% 1/6W	401 052 6802	-
# R490	1.5 5% 2W	401 064 5305	2W1D5
(1)	3.6 5% 2W	401 202 4801	2W3.6
R555	6800 1% 1/6W	401 053 4708	-
# R608	1000 5% 2W	401 064 8702	2W210
# R628	1000 5% 2W	401 064 8702	2W210
# R711, 12, 13	12K 5% 2W	401 065 4604	2W312
R1501	15K 1% 1/6W	401 052 9308	-
VR101	10K RF AGC	610 019 2584	-
	10K RF AGC	610 019 3901	-
VR181 (1)	500 Comb Filter	610 019 3857	-
	500 Comb Filter	610 231 6506	-
VR201	10K Low Separation	610 019 2584	-
	10K Low Separation	610 019 3901	-
VR202	5000 High Separation	610 019 2577	-
	5000 High Separation	610 019 3895	-
# For SAFETY use only equivalent replacement part.			
(1) Used in model PC-4620.			

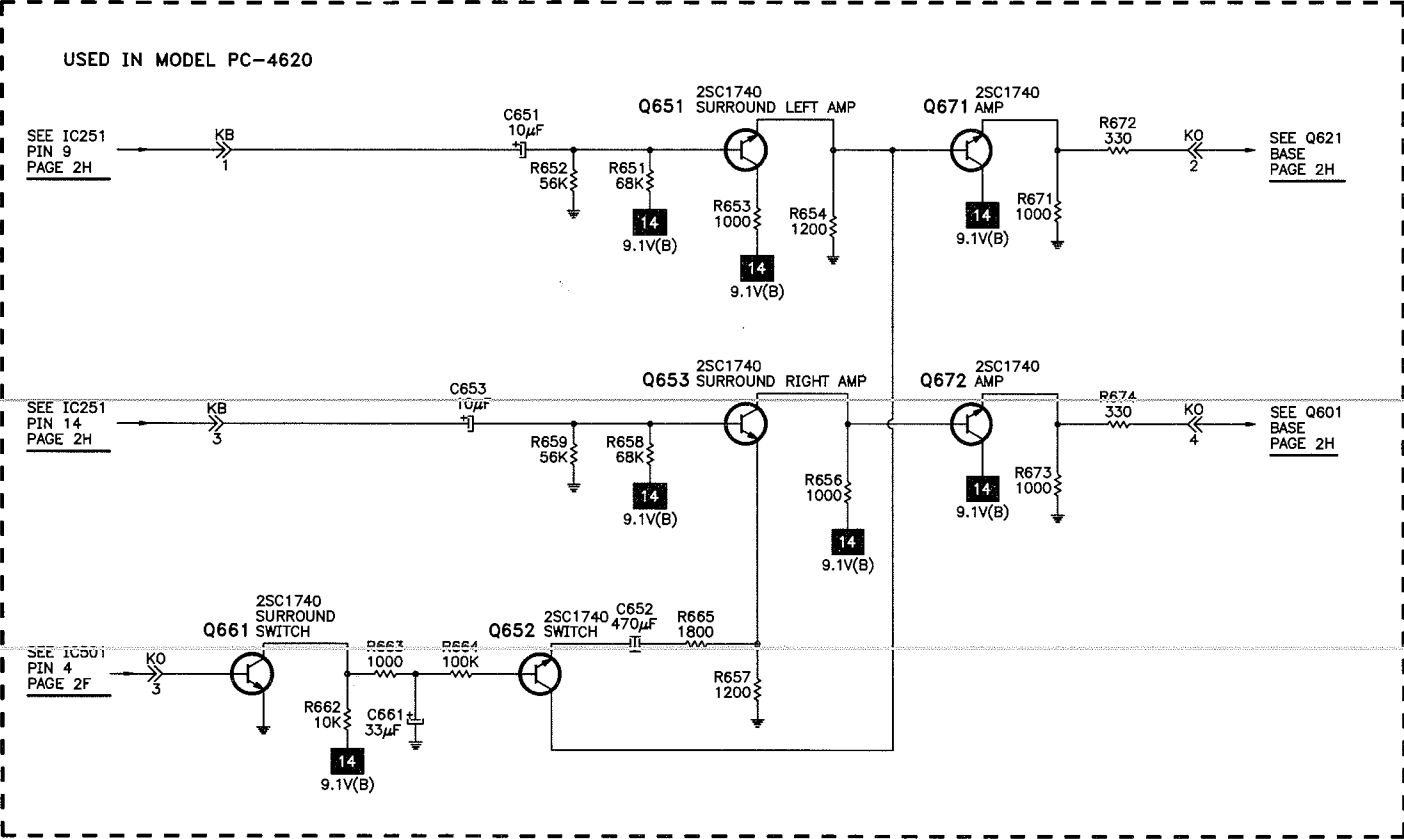
CONTROLS & RESISTORS continued			
Item No.	Function/Rating	Mfr. Part No.	NTE Part No.
VR203	20K VCO	610 019 2591	-
	20K VCO	610 019 3918	-
VR204	20K 2fH Bandpass Filter	610 019 2591	-
	20K 2fH Bandpass Filter	610 019 3918	-
VR301	20K Sub Brightness	610 019 2591	-
	20K Sub Brightness	610 019 3918	-
VR451	50K Vertical Size	610 019 2607	-
	50K Vertical Size	610 019 3932	-
VR701	10K Red Bias	610 020 9053	-
	10K Red Bias	610 020 9077	-
	10K Red Bias	610 020 9084	-
VR702	10K Green Bias	610 020 9053	-
	10K Green Bias	610 020 9077	-
	10K Green Bias	610 020 9084	-
VR703	10K Blue Bias	610 020 9053	-
	10K Blue Bias	610 020 9077	-
	10K Blue Bias	610 020 9084	-
VR704	200 Red Drive	610 020 8599	-
	200 Red Drive	610 020 8612	-
	200 Red Drive	610 020 8629	-
VR705	200 Blue Drive	610 020 8599	-
	200 Blue Drive	610 020 8612	-
	200 Blue Drive	610 020 8629	-
VR821	10K Video Input	610 019 2584	-
	10K Video Input	610 019 3901	-
VR851	2000 Left Audio Input	610 019 3871	-
	2000 Left Audio Input	610 231 5219	-
VR852	2000 Right Audio Input	610 019 3871	-
	2000 Right Audio Input	610 231 5219	-

CAPACITORS & ELECTROLYTICS		
Item No.	Rating	Mfr. Part No.
# C001	.15 20% 125VAC	404 007 9408
	.15 20% 125VAC	404 047 3701
# C006	470µF 20% 200V	404 049 4805
# C007	4.7µF 20% 160V	403 103 0005
# C021	.001 10% 500V	403 075 7101
C108	56pF 5% 50V N220	403 028 2009
C208	10µF 10% 10V Tantalum	403 090 3607
	10µF 10% 10V Tantalum	403 090 3706
C210	3.3µF 10% 10V Tantalum	403 090 6004
	3.3µF 10% 10V Tantalum	403 124 7908
# C407	.0015 10% 500V	403 075 9204
(1)	470pF 10% 500V	403 076 3607
# C409	470pF 10% 500V	403 076 3607
(1)	220pF 10% 500V	403 076 0200
# C428	1µF 20% 160V	403 055 0504
(1)	.0039 10% 500V	403 076 3102
# C431	680pF 10% 3kV	403 165 6760
	680pF 10% 3kV	403 185 9408
# C432	.012 3% 1.5kV	404 057 8406
(1)	.0082 3% 1.5kV	404 052 1907
# C436	.22 5% 200V	403 082 8405
(1)	.12 5% 200V	403 082 6906
# C437	.22 5% 200V	403 082 8405
(1)	.2 5% 200V	403 082 8009
# C471	470pF 10% 500V	403 076 3607
# C472	10µF 20% 250V	403 055 7206
# C474	47µF +50% -10% 160V	404 001 3709
# C477	2.2µF 20% 100V	404 056 5109
# C479	470pF 10% 500V	403 076 3607
# C602	10µF 20% 160V	403 055 1006
# C622	10µF 20% 160V	403 055 1006
C652	.47µF 20% 50V	403 086 1808
# C708	.001 +100% -0% 2kV	403 077 2708
	.001 +100% -0% 2kV	403 175 3409
# C806	820pF 10% 500V	403 076 6103
C823	10µF 20% 16V NP	403 085 4008
# C861	.0022 20% 125VAC	404 008 6802
C1506	1µF 20% 50V NP	403 049 0008
C1509	100pF 2% 50V NPO	403 266 6203
# For SAFETY use only equivalent replacement part.		
(1) Used in model PC-4620.		

A
POWER SUPPLY SCHEMATIC



B
SURROUND SOUND SCHEMATIC



SCHEMATIC NOTES

- # For SAFETY use only equivalent replacement part, see parts list.
- ✕ Circuitry not used in some versions.
- Circuitry used in some versions.
- ⊥ Ground
- ⏏ Chassis ground
- ⏏ Common tie point
- △ Taken from common tie point
- 3 Schematic CIRCUITRACE®: Voltage source tie point.
- A Cabling: Heavy lines reduce use of multiple lines.

Waveforms and voltages are taken from ground, unless noted otherwise.
Waveforms taken with triggered scope and colorbar signal. Waveform voltage is peak to peak. Timebase is per division. Waveforms shown at 10 divisions.
Supply voltages maintained as seen at input.
Voltages measured with digital meter and a 1000µV RF signal, with colorbar pattern, applied to antenna terminal. Controls adjusted for normal operation.
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. Rated voltage shown on zener diodes.

PARTS LIST continued

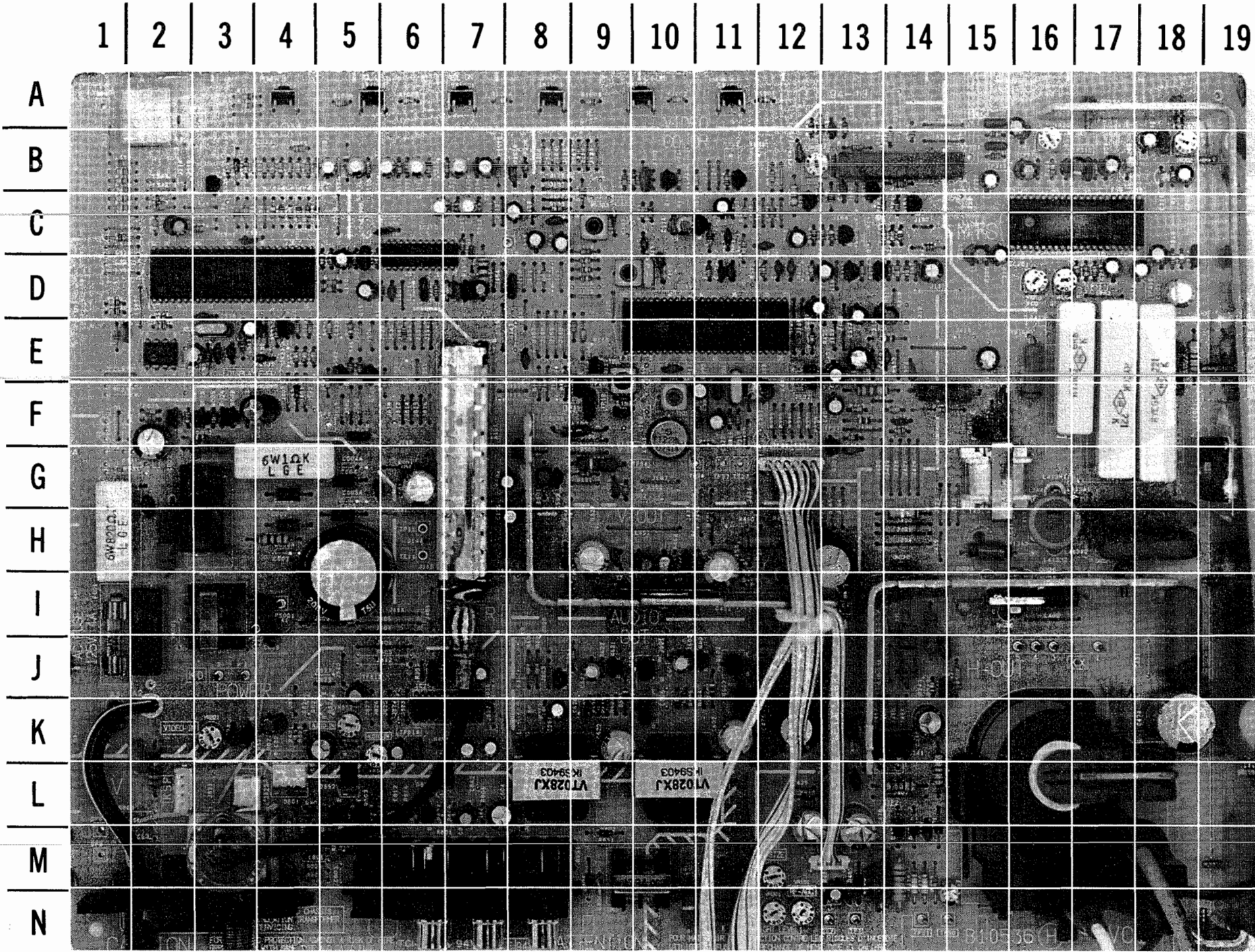
SEMICONDUCTORS continued					
(Select the replacement that gives the best results.)					
Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
Q623	2SC3902T	-	NTE373	ECG373	SK9041
	2SC3902-S-CTV-YA	405 114 7103	NTE373*	ECG373*	SK9041*
	2SC3902-T-CTV-YA	405 114 7301	NTE373*	ECG373*	SK9041*
	2SC3621-0(LB-SAN-2)	406 000 2905	NTE373	ECG373	SK9041
	2SC3621-R(LB-SAN-2)	406 000 3100	NTE373	ECG373	SK9041
Q651, 52, 53 (1)	2SC1740-Q	405 011 7305	NTE85	ECG85	SK3122
	2SC1740-R	405 011 7404	NTE85	ECG85	SK3122
	2SC1740-S	405 011 7503	NTE85	ECG85	SK3122
	2SC1815-GR	405 012 2002	NTE85	ECG85	SK3124A
	2SC1815-O	405 012 2101	NTE85	ECG85	SK3124A
	2SC1815-Y	405 012 2309	NTE85	ECG85	SK3124A
	2SC536-E-NP	405 019 1909	NTE85	ECG85	SK3245
	2SC536-F-NP	405 019 2708	NTE85	ECG85	SK3245
	2SC536-G-NP	405 019 3804	NTE85	ECG85	SK3245
	2SC945A-PA	405 020 7501	NTE85	ECG85	SK3124A
	2SC945A-QA	405 020 7709	NTE85	ECG85	SK3124A
	2SC945A-RA	405 020 7907	NTE85	ECG85	SK3124A
	2SC1740-Q	405 011 7305	NTE85	ECG85	SK3122
	2SC1740-R	405 011 7404	NTE85	ECG85	SK3122
	2SC1740-S	405 011 7503	NTE85	ECG85	SK3122
	2SC1815-GR	405 012 2002	NTE85	ECG85	SK3124A
	2SC1815-O	405 012 2101	NTE85	ECG85	SK3124A
Q661, 71, 72 (1)	2SC1815-Y	405 012 2309	NTE85	ECG85	SK3124A
	2SC536-E-NP	405 019 1909	NTE85	ECG85	SK3245
	2SC536-F-NP	405 019 2708	NTE85	ECG85	SK3245
	2SC536-G-NP	405 019 3804	NTE85	ECG85	SK3245
	2SC945A-PA	405 020 7501	NTE85	ECG85	SK3124A
	2SC945A-QA	405 020 7709	NTE85	ECG85	SK3124A
	2SC945A-RA	405 020 7907	NTE85	ECG85	SK3124A
	2SC2621E	-	NTE157	ECG157	SK3747
	2SC2621-D-RA	405 041 6507	NTE157	ECG157	SK3747
	2SC2621-E-RA	405 041 6705	NTE157	ECG157	SK3747
	2SC2621-C-RA	405 066 4304	NTE157	ECG157	SK3747
	2SC2568(1)-K	405 014 8408	NTE157	ECG157	SK3747
	2SC2568(1)-L	405 014 8507	NTE157	ECG157	SK3747
	2SC2568(1)-M	405 014 8606	NTE157	ECG157	SK3747
	2SC3620(LB-SAN-1)	406 000 3605	NTE157	ECG157	SK3747
Q701, 03, 05	2SC536KF	-	NTE85	ECG85	SK3245
	2SC1740-Q	405 011 7305	NTE85	ECG85	SK3122
	2SC1740-R	405 011 7404	NTE85	ECG85	SK3122
	2SC1740-S	405 011 7503	NTE85	ECG85	SK3122
	2SC1815-GR	405 012 2002	NTE85	ECG85	SK3124A
	2SC1815-O	405 012 2101	NTE85	ECG85	SK3124A
	2SC1815-Y	405 012 2309	NTE85	ECG85	SK3124A
	2SC536-E-NP	405 019 1909	NTE85	ECG85	SK3245
	2SC536-F-NP	405 019 2708	NTE85	ECG85	SK3245
	2SC536-G-NP	405 019 3804	NTE85	ECG85	SK3245
	2SC945A-PA	405 020 7501	NTE85	ECG85	SK3124A
	2SC945A-QA	405 020 7709	NTE85	ECG85	SK3124A
	2SC945A-RA	405 020 7907	NTE85	ECG85	SK3124A
Q801, 02, 03	2SC536KF	-	NTE85	ECG85	SK3245
	2SC1740-Q	405 011 7305	NTE85	ECG85	SK3122
	2SC1740-R	405 011 7404	NTE85	ECG85	SK3122
	2SC1740-S	405 011 7503	NTE85	ECG85	SK3122
	2SC1815-GR	405 012 2002	NTE85	ECG85	SK3124A
	2SC1815-O	405 012 2101	NTE85	ECG85	SK3124A
	2SC1815-Y	405 012 2309	NTE85	ECG85	SK3124A
	2SC536-E-NP	405 019 1909	NTE85	ECG85	SK3245
	2SC536-F-NP	405 019 2708	NTE85	ECG85	SK3245
	2SC536-G-NP	405 019 3804	NTE85	ECG85	SK3245
	2SC945A-PA	405 020 7501	NTE85	ECG85	SK3124A
	2SC945A-QA	405 020 7709	NTE85	ECG85	SK3124A
	2SC945A-RA	405 020 7907	NTE85	ECG85	SK3124A

(1) Used in model PC-4620.
* Lead configuration may vary from original.

SEMICONDUCTORS continued					
(Select the replacement that gives the best results.)					
Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
Q821	2SC536KF	-	NTE85	ECG85	SK3245
	2SC1740-R	405 011 7404	NTE85	ECG85	SK3122
	2SC1740-S	405 011 7503	NTE85	ECG85	SK3122
	2SC536-F-NP	405 019 2708	NTE85	ECG85	SK3245
	2SC536-G-NP	405 019 3804	NTE85	ECG85	SK3245
	2SC945A-PA	405 020 7501	NTE85	ECG85	SK3124A
	2SC1815-GR	405 012 2002	NTE85	ECG85	SK3124A
	2SA608KE	-	NTE290A	ECG290A	SK3114A
Q823	2SA1015-O(SAN)	405 001 7407	NTE290A	ECG290A	SK9132
	2SA1015-Y(SAN)	405 001 7605	NTE290A	ECG290A	SK9132
	2SA564A-Q(CU)	405 004 3109	NTE290A	ECG290A	SK3932
	2SA564A-R(CU)	405 004 3208	NTE290A	ECG290A	SK3932
	2SA608-E-CTV-NP	405 004 4205	NTE290A	ECG290A	SK3114A
	2SA608-F-CTV-NP	405 004 4809	NTE290A	ECG290A	SK3114A
	2SA933-Q	405 006 1103	NTE290A	ECG290A	SK9132
	2SA933-R	405 006 1202	NTE290A	ECG290A	SK9132
	2SA1015-GR(SAN)	406 000 6804	NTE290A	ECG290A	SK9132

TEST EQUIPMENT			
Test equipment listed by participating manufacturer 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	Sencore No.	Equipment	Sencore No.
Oscilloscope	SC3100	Isolation Transformer	PR57
Generators		Capacitance Analyzer	LC101, LC102
RGB	CM2000	CRT Analyzer	CR70
Multiburst Signal	VG91	AC Leakage Tester	PR57
Color Bar	VG91	Inductance Analyzer	LC101, LC102
TV Stereo	VG91	Flyback Yoke Tester	TVA92
Digital VOM	SC3100	TV Stereo Power Monitor	SR68, PA81
Frequency Meter	SC3100	Field Strength Meter	SL750
Hi-Voltage Probe	HP200	Transistor Tester	TF46
Accessory Probes	TP212	Video Analyzer	VG91, TVA92

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MAIN BOARD, GRIDTRACE LOCATION GUIDE

A1001	A-2	C407	F-15	D004	G-5	Q251	J-8	R211	C-18	R510	B-1	R817	L-6
C001	I-2	C409	F-15	D005	H-5	Q301	F-13	R212	C-18	R511	B-1	R818	L-6
C006	H-5	C414	E-13	D021	G-1	Q302	B-11	R220	C-15	R512	D-1	R819	L-5
C007	D-18	C421	D-12	D022	F-3	Q303	C-13	R233	B-4	R513	D-1	R821	K-4
C021	G-2	C428	E-15	D023	F-4	Q341	J-14	R234	B-7	R514	D-2	R822	K-4
C022	F-2	C432	J-18	D303	F-13	Q401	F-15	R235	B-8	R515	E-2	R823	K-4
C023	F-4	C436	H-18	D305	E-14	Q402	I-16	R237	B-3	R516	D-5	R828	K-4
C101	E-10	C437	H-18	D411	L-12	Q421	D-13	R239	C-7	R517	D-5	R831	B-3
C102	F-11	C451	H-11	D412	L-12	Q422	D-13	R242	B-3	R518	D-5	R832	C-3
C104	F-9	C452	H-10	D451	H-8	Q535	B-3	R244	C-7	R519	D-5	R839	E-6
C106	H-8	C453	I-12	D471	M-14	Q541	E-5	R251	J-9	R520	C-2	R851	K-6
C107	D-10	C456	H-10	D474	M-14	Q542	E-5	R252	K-8	R521	E-4	R852	K-5
C108	C-9	C457	H-9	D476	L-13	Q601	J-11	R301	C-11	R522	E-4	R858	C-12
C109	C-8	C458	H-13	D478	M-14	Q602	J-11	R303	C-11	R523	E-4	R861	L-2
C110	D-8	C459	J-14	D483	M-13	Q603	K-11	R304	B-11	R524	E-4	R1001	A-12
C113	C-8	C461	F-11	D501	G-8	Q621	J-9	R305	C-11	R525	E-5	R1002	A-10
C114	E-8	C464	H-9	D535	B-3	Q622	J-10	R306	B-14	R526	E-4	R1003	A-9
C116	C-10	C466	H-11	D555	B-5	Q623	K-10	R307	C-13	R527	E-5	R1004	A-7
C151	F-9	C467	G-13	D601	J-11	Q801	L-5	R308	C-14	R528	C-1	R1005	A-6
C153	C-10	C471	M-14	D621	K-9	Q802	L-6	R310	C-9	R529	C-1	R1005	A-6
C181	B-13	C472	M-13	D801	L-4	Q803	L-5	R311	C-13	R530	B-1	R1006	A-5
C182	B-12	C473	E-16	D802	M-9	Q821	K-3	R312	D-12	R535	B-3	R1007	A-3
C183	A-13	C474	K-18	D804	M-9	Q823	C-11	R313	C-12	R541	I-12	R1008	A-3
C201	B-15	C476	K-12	D851	L-7	R001	G-4	R314	C-13	R542	E-5	R1500	D-6
C202	A-15	C477	N-15	D852	L-5	R002	H-4	R316	F-11	R543	E-6	R1501	D-6
C204	B-16	C479	L-13	D1501	C-7	R004	E-18	R317	F-11	R544	H-9	R1502	D-5
C205	B-16	C483	N-13	F001	I-1	R005	E-18	R324	D-11	R546	E-5	R1504	C-7
C206	B-17	C484	M-12	IC001	G-19	R006	E-18	R326	F-14	R547	E-5	R1508	D-5
C207	B-17	C501	G-6	IC101	E-11	R007	E-18	R328	F-14	R551	B-6	R1510	B-7
C208	B-17	C502	G-8	IC201	C-17	R008	E-18	R330	F-12	R552	B-4	R1511	D-7
C209	B-18	C503	G-9	IC251	K-7	R009	E-17	R341	J-15	R553	B-6	RL001	H-3
C210	B-18	C504	G-7	IC341	K-14	R021	H-1	R342	J-14	R555	B-4	SW601	L-3
C211	B-18	C511	E-3	IC451	I-10	R022	H-2	R344	J-14	R556	B-4	SW1001	A-11
C212	A-16	C531	E-3	IC501	D-3	R023	F-3	R401	F-14	R559	B-5	SW1002	A-10
C213	B-18	C533	C-2	IC511	E-2	R024	G-3	R402	E-12	R560	B-4	SW1003	A-8
C214	D-18	C535	E-1	IC521	E-4	R025	F-3	R403	D-12	R563	B-6	SW1004	A-7
C215	C-18	C536	E-3	IC1501	C-6	R026	F-3	R405	F-13	R564	B-4	SW1005	A-5
C216	D-18	C537	E-3	K801	M-7	R027	F-2	R406	E-13	R567	B-9	SW1006	A-4
C217	D-17	C538	D-3	KB	M-13	R028	F-2	R407	F-14	R568	B-4	T101	D-9
C219	C-15	C541	G-5	KD	J-3	R029	F-2	R408	F-15	R570	B-12	T102	C-9
C220	C-15	C542	H-8	KS	G-12	R101	E-10	R409	E-16	R571	B-7	T103	F-10
C221	B-15	C543	F-5	KSP	L-2	R102	F-11	R411	C-14	R593	C-14	T151	E-9
C231	B-7	C551	B-6	KX	J-16	R103	D-9	R413	K-13	R594	C-4	T401	G-15
C232	C-8	C552	B-5	L100	F-9	R104	D-9	R418	H-17	R595	C-4	T402	L-16
C233	C-6	C553	B-5	L104	B-10	R105	G-9	R421	D-13	R596	C-4	T601	L-10
C241	C-7	C554	B-7	L180	C-13	R107	F-8	R422	D-14	R597	C-4	T621	L-8
C251	K-8	C591	C-3	L181	B-14	R108	B-10	R423	D-14	R598	C-4	T801	M-10
C271	K-6	C601	J-10	L182	A-12	R109	B-9	R424	D-14	R601	J-8	TE11	H-6
C272	K-7	C602	K-11	L301	C-11	R110	C-10	R426	D-13	R602	J-10	TE7	N-13
C273	J-6	C621	J-9	L401	H-15	R112	B-10	R451	H-11	R603	K-10	TP11	H-6
C274	J-7	C622	K-9	L402	E-13	R113	C-9	R452	I-11	R607	N-11	TP50	N-15
C276	K-7	C801	M-4	L404	I-16	R114	B-11	R453	H-11	R608	N-11	TP51	N-14
C277	J-7	C802	L-7	L413	H-16	R115	D-9	R454	H-12	R609	J-10	TP7	N-13
C302	D-11	C804	L-7	L421	C-14	R116	D-8	R456	I-11	R611	J-10	VC531	E-4
C303	D-11	C805	M-4	L518	C-1	R117	F-8	R457	H-11	R619	K-9	VR101	N-12
C304	C-12	C806	M-9	L531	E-3	R133	C-8	R458	H-11	R621	J-8	VR181	B-12
C305	C-11	C812	L-6	L532	E-3	R141	E-9	R459	I-14	R622	J-9	VR201	B-16
C307	C-11	C821	K-5	L533	C-2	R143	C-10	R462	F-13	R623	K-9	VR202	B-18
C308	C-12	C823	K-4	L534	B-1	R146	E-9	R463	F-13	R627	N-10	VR203	D-16
C309	D-12	C824	K-3	L535	E-1	R151	F-9	R464	H-10	R628	N-11	VR204	D-16
C312	D-13	C851	K-6	L536	C-3	R183	A-12	R471	L-14	R631	K-9	VR301	N-12
C313	D-14	C852	J-5	L541	C-2	R184	B-14	R473	E-16	R641	M-3	VR451	M-12
C316	B-6	C861	K-2	L546	C-3	R185	C-12	R474	M-14	R642	M-3	VR821	K-3
C321	F-11	C1501	D-5	L571	C-12	R186	A-13	R476	L-14	R643	M-3	VR851	K-5
C322	F-11	C1502	D-5	LF001	I-3	R187	B-13	R477	M-14	R644	L-3	VR852	K-5
C324	E-14	C1503	D-5	PS001	I-4	R188	C-13	R478	M-14	R801	M-4	W901	K-1
C329	F-14	C1504	D-6	Q021	F-2	R189	C-14	R479	M-14	R802	M-5	X101	F-10
C341	K-14	C1506	C-8	Q022	F-3	R201	B-15	R483	M-14	R803	M-5	X102	B-10
C398	F-12	C1507	D-6	Q023	F-3	R202	B-15	R485	N-13	R804	L-4	X153	D-10
C399	F-11	C1508	D-7	Q101	B-10	R204	B-16	R486	N-13	R806	L-7	X301	F-11
C401	F-13	C1509	C-6	Q102	F-9	R205	D-17	R490	M-13	R807	L-6	X401	E-12
C402	D-12	C1510	B-8	Q117	E-9	R206	B-17	R501	G-6	R808	L-7	X531	E-3
C403	D-13	C1518	D-7	Q181	C-12	R207	D-17	R502	F-9	R809	L-6		
C404	E-13	D002	G-4	Q182	B-13	R208	D-17	R504	G-9	R811	M-9		
C406	E-12	D003	H-4	Q183	C-14	R209	B-18	R505	H-14	R816	L-6		

PARTS LIST continued

SEMICONDUCTORS continued					
(Select the replacement that gives the best results.)					
Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
Q251	2SC536KF	-	NTE85	ECG85	SK3245
	2SC1740-Q	405 011 7305	NTE85	ECG85	SK3122
	2SC1740-R	405 011 7404	NTE85	ECG85	SK3122
	2SC1740-S	405 011 7503	NTE85	ECG85	SK3122
	2SC1815-GR	405 012 2002	NTE85	ECG85	SK3124A
	2SC1815-O	405 012 2101	NTE85	ECG85	SK3124A
	2SC1815-Y	405 012 2309	NTE85	ECG85	SK3124A
Q301	2SC536-E-NP	405 019 1909	NTE85	ECG85	SK3245
	2SC536-F-NP	405 019 2708	NTE85	ECG85	SK3245
	2SC536-G-NP	405 019 3804	NTE85	ECG85	SK3245
	2SC945A-PA	405 020 7501	NTE85	ECG85	SK3124A
	2SC945A-QA	405 020 7709	NTE85	ECG85	SK3124A
	2SC945A-RA	405 020 7907	NTE85	ECG85	SK3124A
	2SA608KE	-	NTE290A	ECG290A	SK3114A
Q302, 03	2SA1015-O(SAN)	405 001 7407	NTE290A	ECG290A	SK9132
	2SA1015-Y(SAN)	405 001 7605	NTE290A	ECG290A	SK9132
	2SA608-E-CTV-NP	405 004 4205	NTE290A	ECG290A	SK3114A
	2SA608-F-CTV-NP	405 004 4809	NTE290A	ECG290A	SK3114A
	2SA1015-GR(SAN)	406 000 6804	NTE290A	ECG290A	SK9132
	2SC536KF	-	NTE85	ECG85	SK3245
	2SC1740-Q	405 011 7305	NTE85	ECG85	SK3122
Q341	2SC1740-R	405 011 7404	NTE85	ECG85	SK3122
	2SC1740-S	405 011 7503	NTE85	ECG85	SK3122
	2SC1815-GR	405 012 2002	NTE85	ECG85	SK3124A
	2SC1815-O	405 012 2101	NTE85	ECG85	SK3124A
	2SC1815-Y	405 012 2309	NTE85	ECG85	SK3124A
	2SC536-E-NP	405 019 1909	NTE85	ECG85	SK3245
	2SC536-F-NP	405 019 2708	NTE85	ECG85	SK3245
Q401	2SC536-G-NP	405 019 3804	NTE85	ECG85	SK3245
	2SC945A-PA	405 020 7501	NTE85	ECG85	SK3124A
	2SC945A-QA	405 020 7709	NTE85	ECG85	SK3124A
	2SC945A-RA	405 020 7907	NTE85	ECG85	SK3124A
	2SD400F	-	NTE382	ECG382	SK3849
	2SD400-E-MP	405 023 5009	NTE382	ECG382	SK3849
	2SD400-F-MP	405 023 5306	NTE382	ECG382	SK3849
(1)	2SC2271E	-	NTE399	ECG399	SK9352
	2SC2271-D-CTV	405 013 6207	NTE399	ECG399	SK9352
	2SC2271-E-CTV	405 013 6306	NTE399	ECG399	SK9352
	2SC2228M	405 040 6102	NTE399	ECG399	SK3866A
	2SC2229-M(SAN-1)	406 000 5302	NTE399	ECG399	SK3244
	2SD1879	-	NTE2331	ECG2331	SK10088
	2SD1879-CTV-YB	405 082 2407	NTE2331	ECG2331	SK10088
# Q402	2SD1651-CTV-YB	405 022 6809	NTE2331	ECG2331	SK9422
# For SAFETY use only equivalent replacement part.					
(1) Used in model PC-4620.					

SEMICONDUCTORS continued					
(Select the replacement that gives the best results.)					
Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
Q421, 22	2SA608KE	-	NTE290A	ECG290A	SK3114A
	2SA1015-O(SAN)	405 001 7407	NTE290A	ECG290A	SK9132
	2SA1015-Y(SAN)	405 001 7605	NTE290A	ECG290A	SK9132
	2SA564A-Q(CU)	405 004 3109	NTE290A	ECG290A	SK3932
	2SA564A-R(CU)	405 004 3208	NTE290A	ECG290A	SK3932
	2SA608-E-CTV-NP	405 004 4205	NTE290A	ECG290A	SK3114A
	2SA608-F-CTV-NP	405 004 4809	NTE290A	ECG290A	SK3114A
Q535	2SA933-Q	405 006 1103	NTE290A	ECG290A	SK9132
	2SA933-R	405 006 1202	NTE290A	ECG290A	SK9132
	2SA1015-GR(SAN)	406 000 6804	NTE290A	ECG290A	SK9132
	2SA608KE	-	NTE290A	ECG290A	SK3114A
	2SA1015-O(SAN)	405 001 7407	NTE290A	ECG290A	SK9132
	2SA1015-Y(SAN)	405 001 7605	NTE290A	ECG290A	SK9132
	2SA564A-Q(CU)	405 004 3109	NTE290A	ECG290A	SK3932
Q541, 42	2SA564A-R(CU)	405 004 3208	NTE290A	ECG290A	SK3932
	2SA608-E-CTV-NP	405 004 4205	NTE290A	ECG290A	SK3114A
	2SA608-F-CTV-NP	405 004 4809	NTE290A	ECG290A	SK3114A
	2SA933-Q	405 006 1103	NTE290A	ECG290A	SK9132
	2SA933-R	405 006 1202	NTE290A	ECG290A	SK9132
	2SA1015-GR(SAN)	406 000 6804	NTE290A	ECG290A	SK9132
	2SC536KF	-	NTE85	ECG85	SK3245
Q601	2SC1740-Q	405 011 7305	NTE85	ECG85	SK3122
	2SC1740-R	405 011 7404	NTE85	ECG85	SK3122
	2SC1740-S	405 011 7503	NTE85	ECG85	SK3122
	2SC1815-GR	405 012 2002	NTE85	ECG85	SK3124A
	2SC1815-O	405 012 2101	NTE85	ECG85	SK3124A
	2SC1815-Y	405 012 2309	NTE85	ECG85	SK3124A
	2SC536-E-NP	405 019 1909	NTE85	ECG85	SK3245
Q602	2SC536-F-NP	405 019 2708	NTE85	ECG85	SK3245
	2SC536-G-NP	405 019 3804	NTE85	ECG85	SK3245
	2SC945A-PA	405 020 7501	NTE85	ECG85	SK3124A
	2SC945A-QA	405 020 7709	NTE85	ECG85	SK3124A
	2SC945A-RA	405 020 7907	NTE85	ECG85	SK3124A
	2SC1473Q	-	NTE399	ECG399	SK9352
	2SC1473NC-Q	405 010 6606	NTE399	ECG399	SK9352
Q603	2SC1473NC-R	405 010 6705	NTE399	ECG399	SK9352
	2SA1208S	-	-	-	SK3867A
	2SA1208-S	405 002 8908	-	-	-
	2SA1208-T	405 002 9004	-	-	-
	2SC3902T	-	NTE373	ECG373	SK9041
	2SC3902-S-CTV-YA	405 114 7103	NTE373*	ECG373*	SK9041*
	2SC3902-T-CTV-YA	405 114 7301	NTE373*	ECG373*	SK9041*
Q621	2SC3621-Q(LB-SAN-2)	406 000 2905	NTE373	ECG373	SK9041
	2SC3621-R(LB-SAN-2)	406 000 3100	NTE373	ECG373	SK9041
	2SC1473Q	-	NTE399	ECG399	SK9352
	2SC1473NC-Q	405 010 6606	NTE399	ECG399	SK9352
	2SC1473NC-R	405 010 6705	NTE399	ECG399	SK9352
	2SA1208S	-	-	-	SK3867A
	2SA1208-S	405 002 8908	-	-	-
Q622	2SA1208-T	405 002 9004	-	-	-
* Lead configuration may vary from original.					