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 ground 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.

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 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.

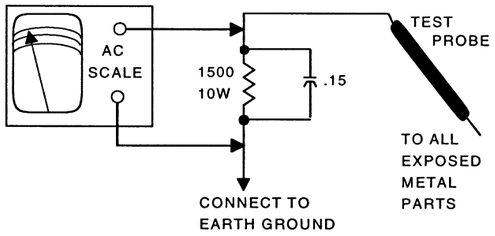
SAFETY CHECKS — FIRE AND SHOCK HAZARD

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.



HIGH VOLTAGE SHUTDOWN TEST

Apply 120VAC to set, turn set on, and adjust brightness and contrast to maximum. Short XRP-1 to XRP-2. The set should shut down and then cycle on and off. If the set does not shut down and then cycle on and off, the shutdown circuoit requires repair. To resume normal operation remove the short from XRP-1 to XRP-2.

5436 West 78th Street
Indianapolis, IN 46268-4149

Printed in the United States of America 5 4 3 2 1 02PF01839

UPC
HERE

INDEX

High Voltage Shutdown Test 1
IC Functions 1
Important Parts Information 1
Miscellaneous Adjustments 1
New Circuit 1
Parts List 6
Placement Chart 4, 5
Safety Precautions 1
Schematic Component Location 4
Schematic Notes 2
Schematics
- Audio 3
- CRT 2
- PIP 4
- Power Supply 2
- SRS Audio 4
- System Control 3
- Television 2
- Tuner 1
- Video Switching/Comb Filter/ Black Stretch 3

Test Equipment 1
Tuner Information 1

For Supplier Address, See PHOTOFACT Annual Index

4552

PHOTOFACT® *Technical Service Data*

RCA

Model F27730EMFB1 (Chassis CTC169CF5)

Representative Model

Essential coverage for servicing a television receiver...

- **Schematics**
- **Component locations**
- **Parts list**

Coverage includes these additional models and chassis:

Models	Chassis
F27730EMJX1	CTC169CF5
F27731BKFE1	CTC169CK5
F27731BKJX1	CTC169CK5
F27732SBFE1	CTC169CK5
G27750WKALM1	CTC169CF5
G27750WKDX1	CTC169CF5
G27750WKLM1	CTC169CF5
G27751ATLM1	CTC169CF5

SAMS™ Technical Publishing

FEBRUARY 2002 SET 4552

4552

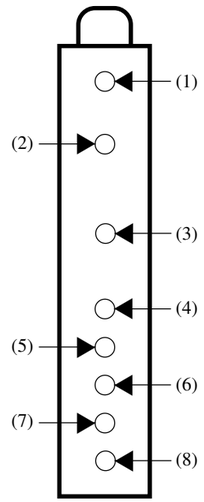
TUNER INFORMATION

TUNER VOLTAGE CHART

Pin	VHF Low Band	VHF High Band	UHF Band
1 (AGC)	5.4V	4.1V	7.9V
2 (+12V)	12.0V	12.0V	12.0V
3 (IF)	11.7V	11.6V	11.7V
4 (+33V)	33.0V	33.0V	33.0V
5 (-12V)	-10.0V	-10.0V	-10.0V
6 (+5V)	5.0V	5.0V	5.0V
7 (SDA)	5.0V	5.0V	5.0V
8 (SCK)	5.0V	5.0V	5.0V

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



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.

- NTE Electronics, Inc. (NTE)
- Sencore, Inc.

MISCELLANEOUS ADJUSTMENTS

B+ STANDBY

Tune in a picture. Set brightness, contrast, and color to minimum. Connect a voltmeter to the cathode of CR4116. With 120VAC line input, adjust R4113 for 140V ±.5V.

HIGH VOLTAGE CHECK

Tune in a picture. Set brightness, contrast, and color to minimum. Connect a high voltage probe to the CRT anode. High voltage must measure 27.5kV to 30kV. High voltage must never exceed 30kV.

RF AGC

NOTE: R2311 should not require adjustment unless the tuner, U1001, or R2311 has been replaced.

Tune in the weakest local station. Adjust R2311 fully counterclockwise, and then clockwise for best picture. Check all other available channels for proper adjustment.

CONTRAST PRESET

Tune in a crosshatch pattern. Set brightness and color to minimum, contrast to midrange. Adjust R2730 to a point where highlights are visible.

TINT PRESET

Tune in an active channel. Adjust R2816 for proper flesh tones.

HORIZONTAL PHASE

Tune in a crosshatch pattern. Adjust R4306 to center the pattern horizontally.

VERTICAL HEIGHT

Tune in a crosshatch pattern. Adjust R4522 for slight over scan on top and bottom.

PINCUSHION

Tune in a crosshatch pattern. Adjust R4805 for straight vertical lines at the top and bottom of the screen. Adjust R4802 for a slight overscan.

SUB BRIGHTNESS

Tune in a crosshatch pattern. Set contrast, brightness, and color to minimum. Adjust R3346 for faintly visible highlights. Set contrast, brightness, and color to maximum. Check for blooming, readjust if necessary.

CHROMA FILTER

Tune in a color bar pattern. Adjust R2802 for the proper color display.

COMB FILTER

Tune in a color bar pattern. Connect oscilloscope to pin 7 of U2601. Adjust R2603 and L2601 for minimum level of chroma burst on the waveform.

COLOR TEMPERATURE

Tune in a crosshatch pattern. Set color, contrast, R2913, R2917, R2921, and screen control to minimum. Set R2926, R2928, and brightness to midrange. Obtain a service line by shorting the collector of Q4505 to ground. Advance screen control until a line of one predominate color is just visible. Adjust R2913, R2917, and R2921 to obtain a white line. Set brightness and contrast to maximum. Adjust R2926 and R2928 for best black and white picture. Check tracking at low and high brightness.

SYNC LEVEL

Tune in a color bar signal. Connect an oscilloscope to the emitter of Q6416. Adjust R6448 for 1.8V p-p waveform.

CONVERGENCE/ PURITY

The deflection yoke is bonded to the CRT. Purity and convergence adjustments are not required.

STEREO ADJUSTMENTS

NOTE: Adjustments were made using a TV/stereo generator connected to the antenna terminals. Set receiver to stereo mode.

WIDE BAND AUDIO LEVEL

Select 300Hz audio frequency, and L+R modulating signal. Connect oscilloscope to TP1205. Adjust R1204 for .3Vp-p.

STEREO/SAP FILTER

Select SAP, 1kHz audio frequency, and L+R modulating signal. Connect oscilloscope to pin 3 of U1600. Adjust R1604 for minimum indication.

STEREO VCO

Select pilot, 1kHz audio frequency, and L+R modulating signal. Connect a digital voltmeter to pin 42 of U1600. Adjust R1616 for 1.3V.

BASE BAND FILTER (LPF)

Remove power and unsolder jumper wire JW212. Connect an audio generator to TP212. Apply AC power, and set the frequency on the audio generator for 15734Hz. Short pin 39 to pin 40 of U1600. Connect oscilloscope to pin 39 of U1600. Adjust R1606 for minimum response. Remove short and reconnect jumper wire JW212 to the circuit.

SEPARATION

Select pilot, 300Hz audio frequency, and right modulating signal. Connect an oscilloscope to pin 35 of U1600, adjust R1609 for minimum amplitude. Change audio frequency to 8kHz. Adjust R1611 for minimum amplitude. Repeat process until no further decrease in the waveform amplitude is obtained.

PIP ADJUSTMENTS

LUMINANCE REFERENCE LEVEL

Tune in a color bar signal. Select PIP mode to display the color bar signal on the main and PIP picture. Set color level on menu to minimum. Adjust R8031 for equal luminance levels on both the main and PIP picture.

CHROMA REFERENCE LEVEL

Tune in a color bar signal. Select PIP mode to display the color bar signal on the main and PIP picture. Tune in a color picture off the air, adjust R8037 for equal color levels on both the main and PIP picture.

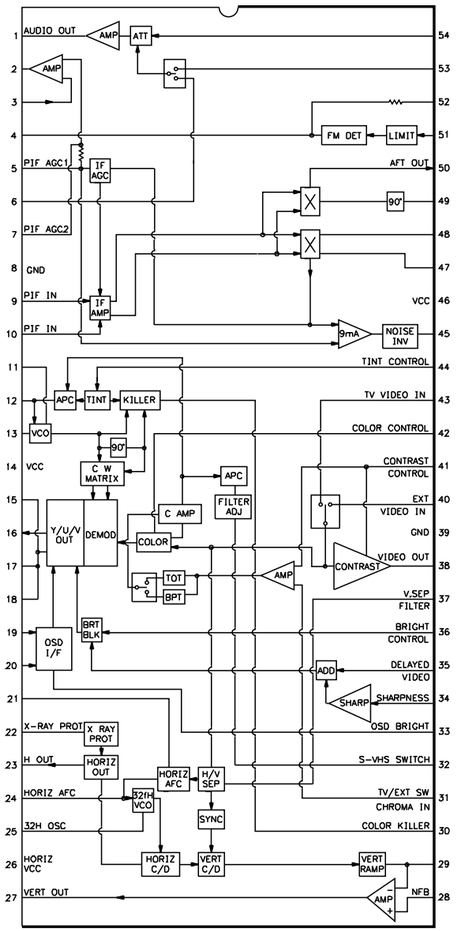
NEW CIRCUIT

VERTICAL CIRCUIT

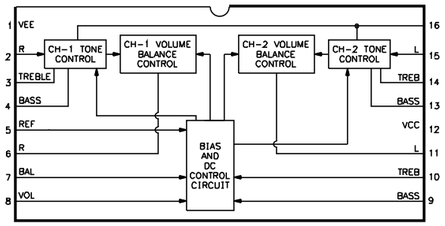
The vertical reset pulse from pin 29 of U1001 turns on Q4505 which allows C4518 and C4519 to discharge thru R4504 and resets Q4506. When Q4505 is turned off, C4518 and C4519 charge thru R4507. R4522 adjusts the amount of voltage to C4518 and C4519. This causes a vertical ramp signal to be applied to pin 3 of U4501. Current for vertical deflection is supplied from pins 2 and 3 of T4401. During horizontal retrace, pin 2 of T4401 is more positive than pin 3 of T4401 which causes upward deflection. During horizontal trace, pin 2 of T4401 is more negative than pin 3 of T4401 which causes downward deflection. The net current is controlled by the ON and OFF time of SCR501. U4501 controls the ON and OFF time of SCR501. A horizontal ramp signal is applied to pin 2 of U4501. When the voltage at pin 3 of U4501 exceeds the voltage at pin 2 of U4501, SCR501 is turned on which allows negative current flow through the yoke.

IC FUNCTIONS

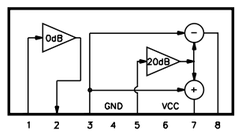
U1001
TA8680N



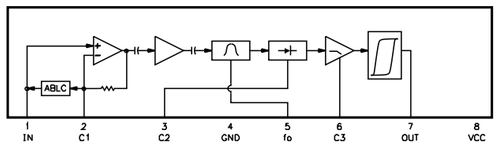
U1501



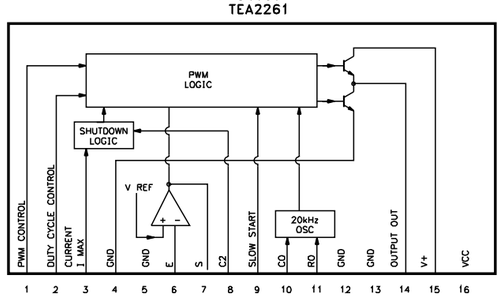
U2601



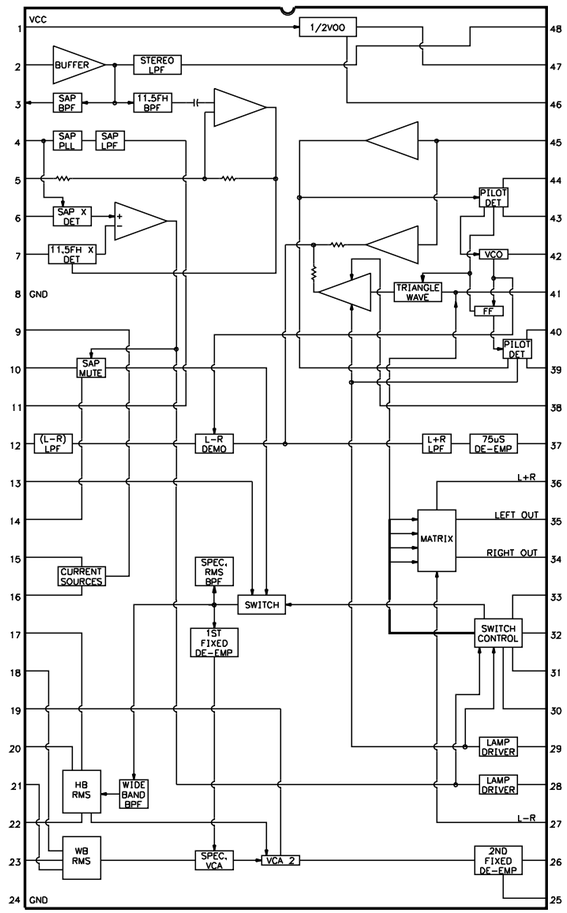
U3401



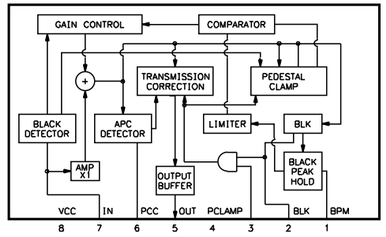
U4101
TEA2261



U1600



U6401
CX20125



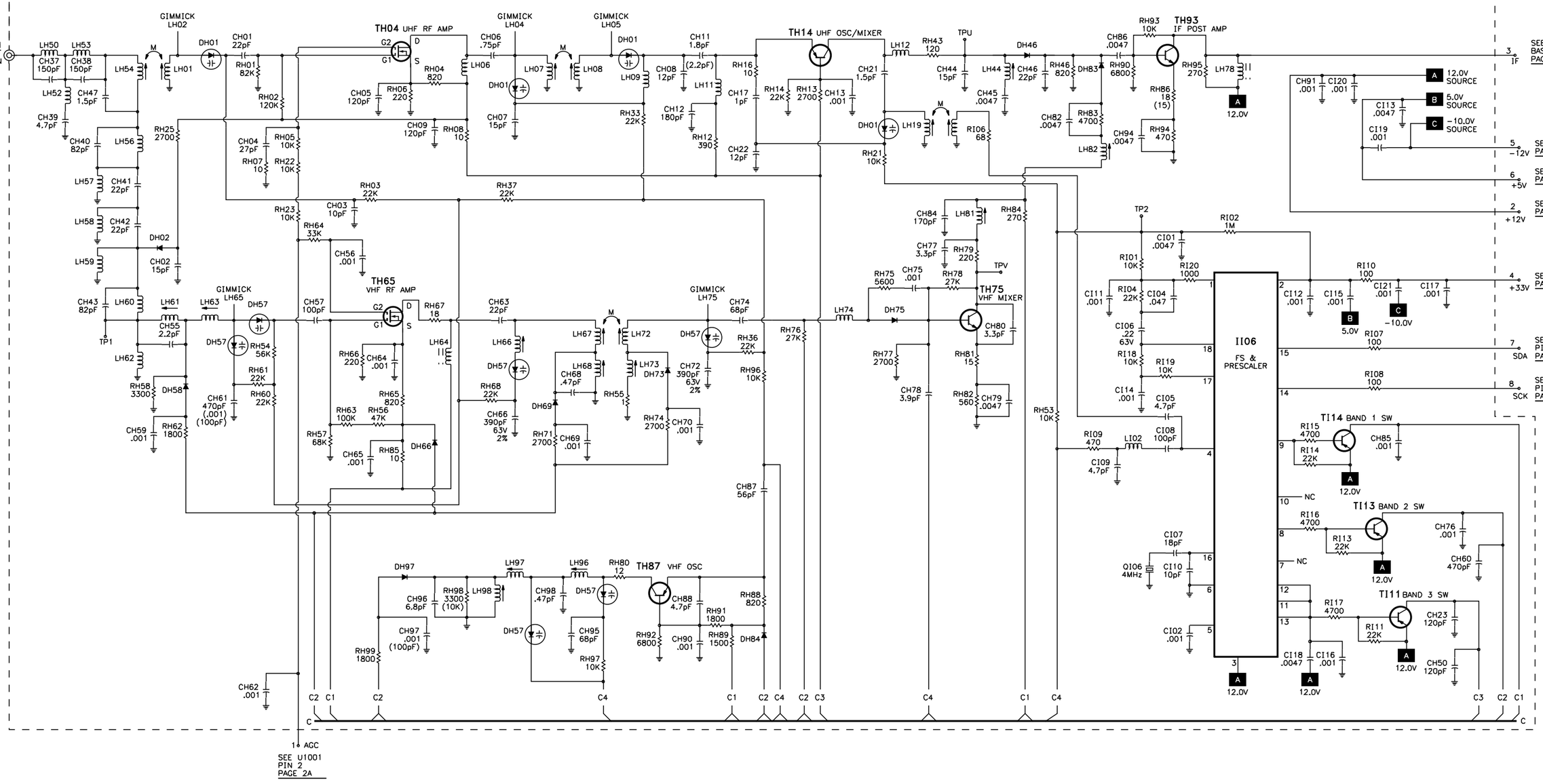
TEST EQUIPMENT

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.
Oscilloscope	SC3100
Generators	
RGB	CM2125
Multiburst Signal	VG91
Color Bar	VG91
TV Stereo	VG91
Digital VOM	SC3100
Frequency Meter	SC3100
Hi-Voltage Probe	HP200
Accessory Probes	TP212
Isolation Transformer	PR570
Capacitance Analyzer	LC102
CRT Analyzer	CR7000
AC Leakage Tester	PR570
Inductance Analyzer	LC102
Flyback Yoke Tester	TVA92
Field Strength Meter	SL753
Transistor Tester	TF46
Horizontal Analyzer	HA-2500
Video Analyzer	VG91, TVA92

TUNER SCHEMATIC

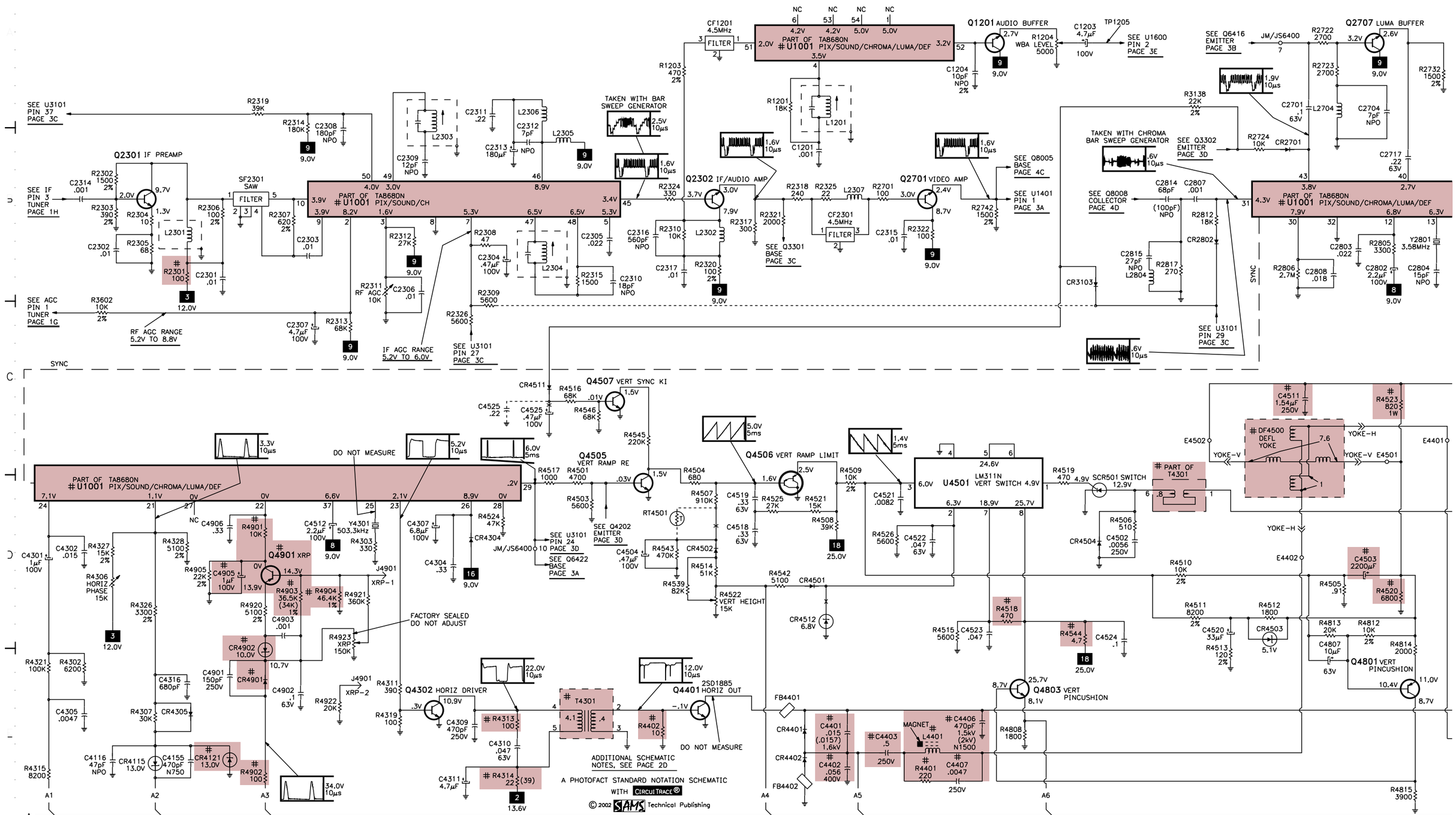
FOR REFERENCE ONLY



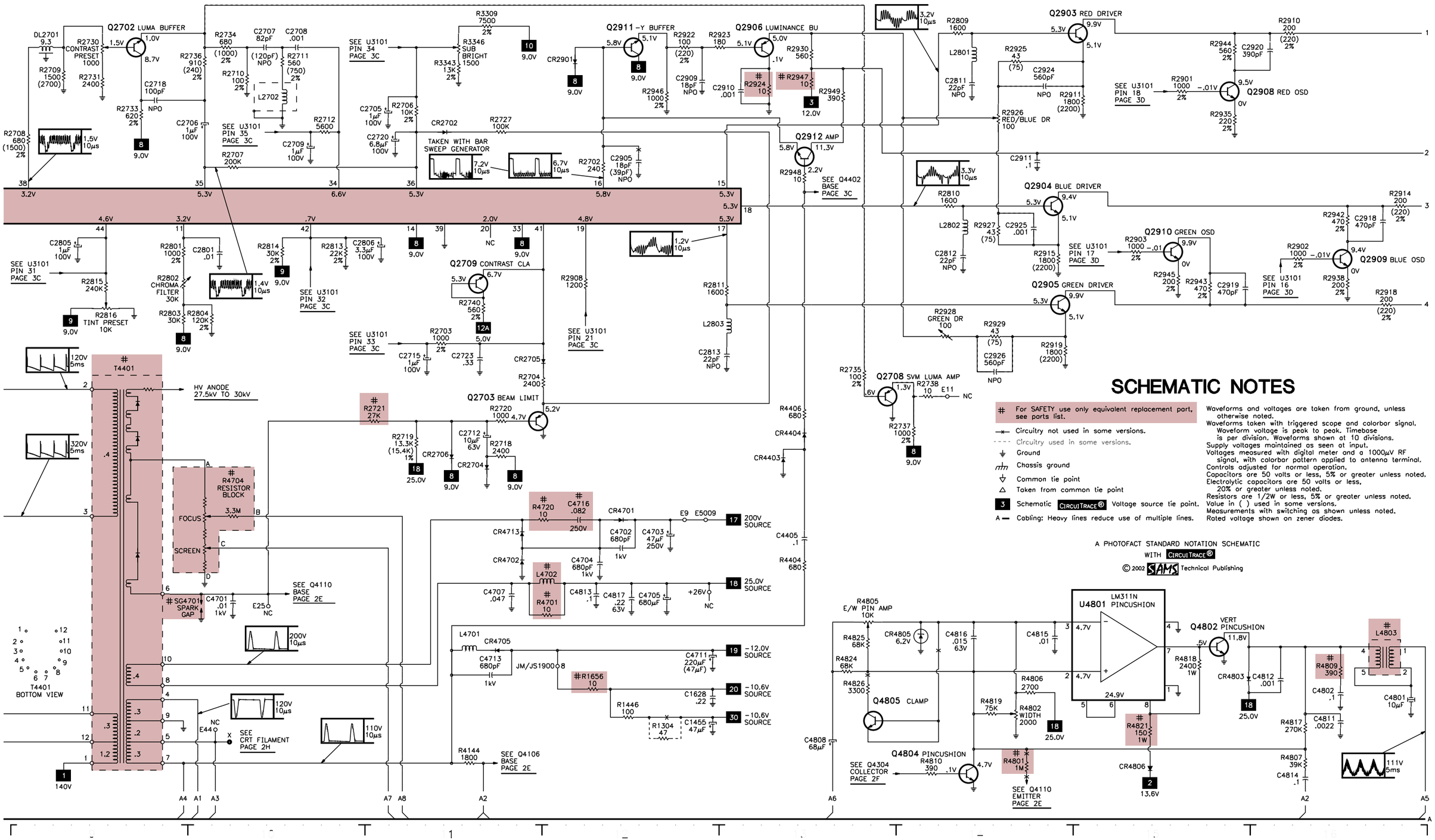
ADDITIONAL SCHEMATIC NOTES, SEE PAGE 2D

A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE®

TELEVISION SCHEMATIC



TELEVISION SCHEMATIC continued



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

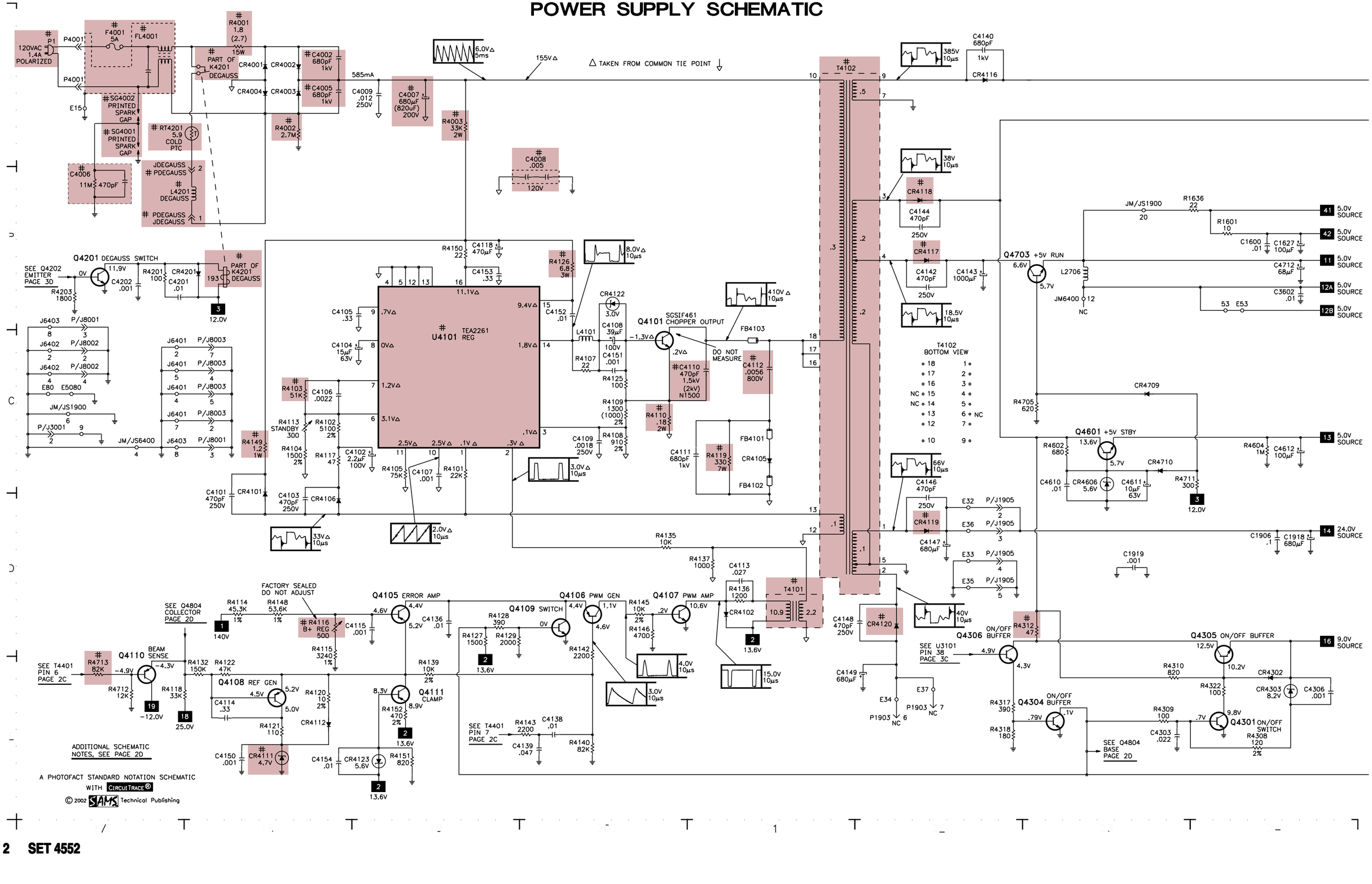
3 Schematic CIRCUITRACE® Voltage source tie point.

A — Cabling: Heavy lines reduce use of multiple lines.

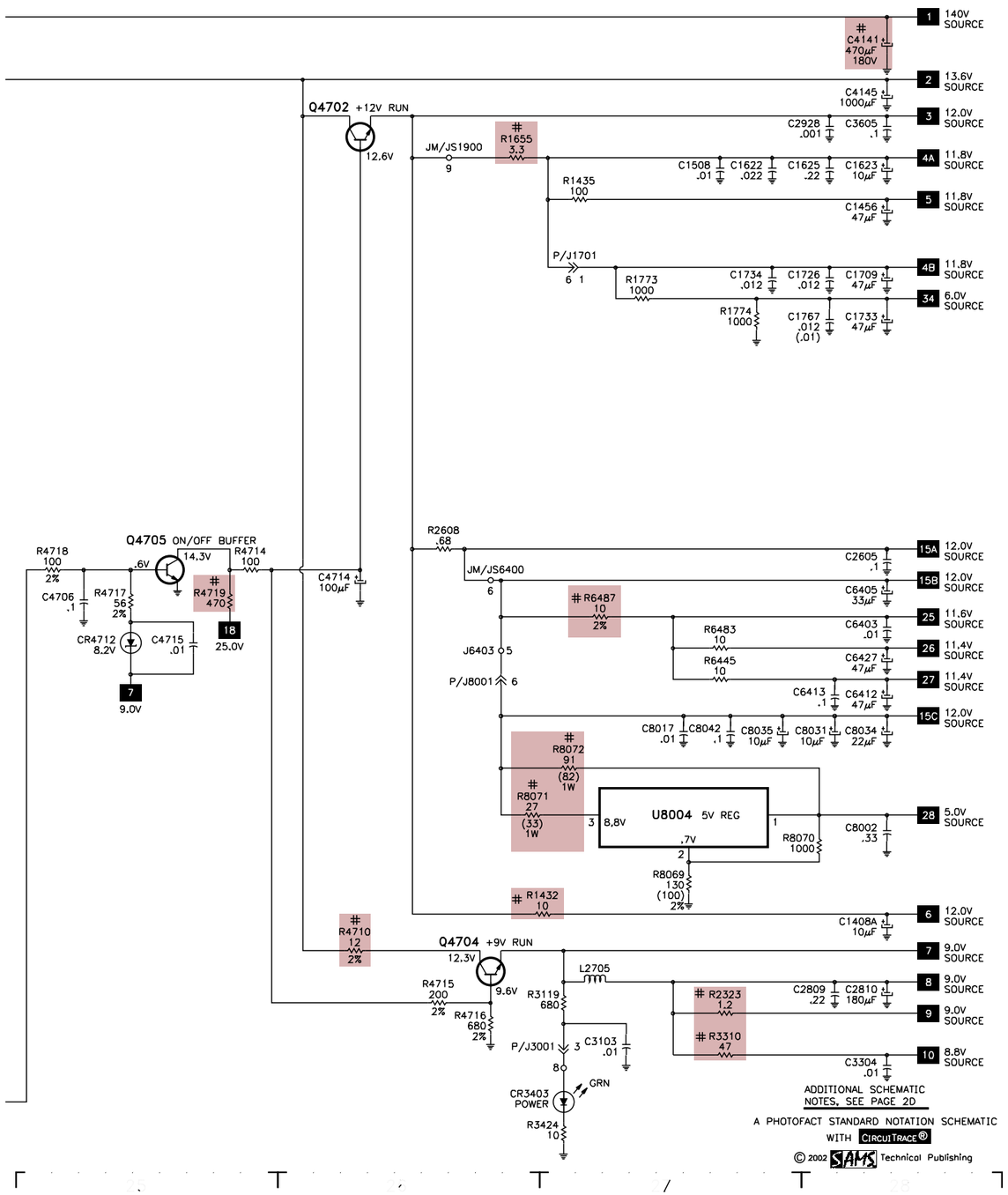
Waveforms and voltages are taken from ground, unless otherwise noted.
Waveforms taken with triggered scope and colorbar signal. Waveform voltage is peak to peak. Timebase is per division. Waveforms shown at 10 divisions.
Supply voltages maintained as seen at input.
Voltages measured with digital meter 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.

A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE®

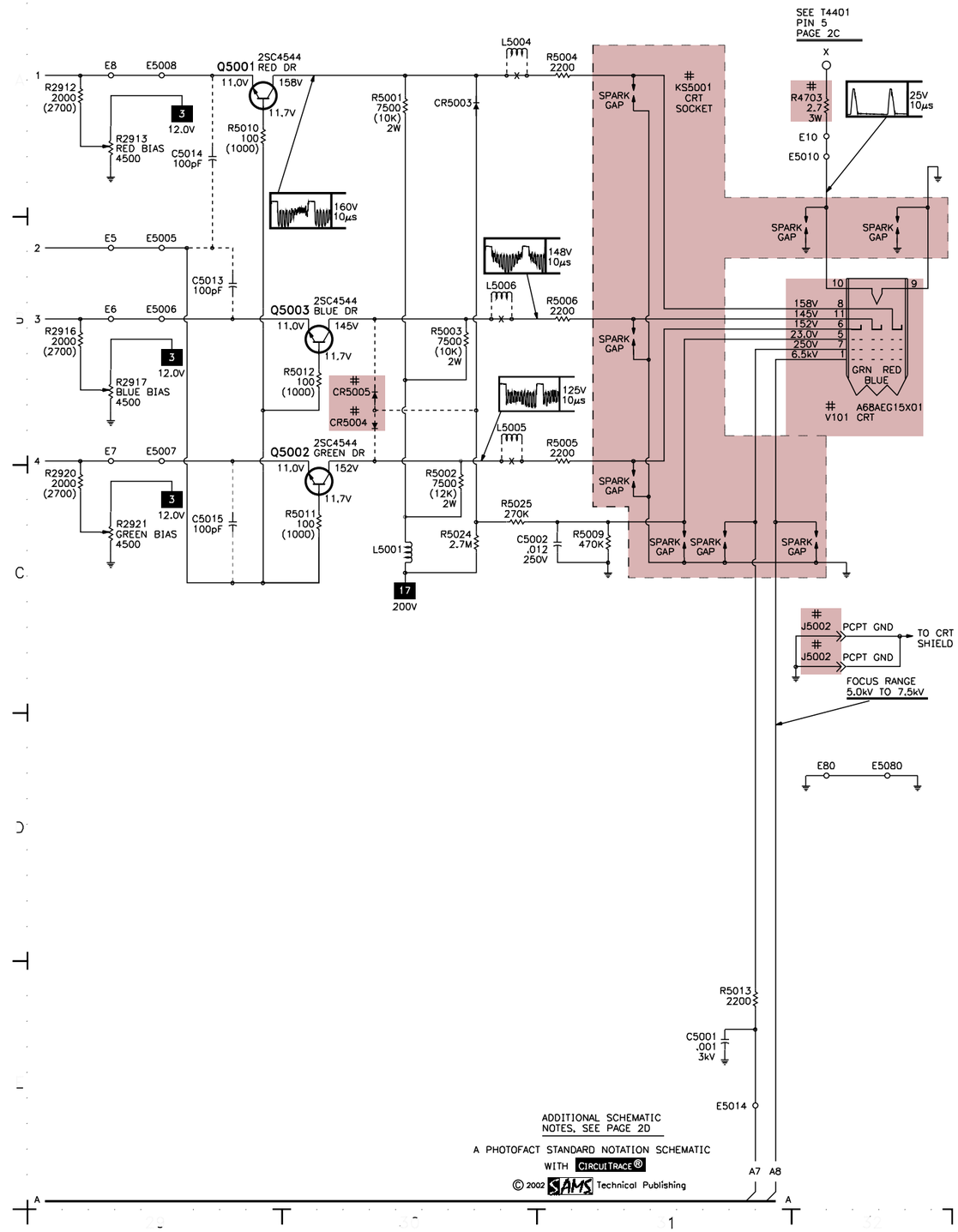
POWER SUPPLY SCHEMATIC



G
POWER SUPPLY SCHEMATIC continued



H
CRT SCHEMATIC



RCA MODEL F27730EMFB1 (CHASSIS CTC169CF5)

A

B

VIDEO SWITCHING/COMB FILTER/ BLACK STRETCH SCHEMATIC

U1401 VIDEO SW

U2601 COMB FILTER

CX20125 U6401 BLACK STRETCH PROCESSOR

SEE Q2701 EMITTER PAGE 2B

J1402 AUX 2 VIDEO IN

J1401 AUX 1 VIDEO IN

J1404 S-VIDEO

SEE Q8002 COLLECTOR PAGE 4D

SEE Q8009 EMITTER PAGE 4D

SEE Q8017 EMITTER PAGE 4D

SEE U1001 PIN 29 PAGE 2A

SEE Q4402 EMITTER PAGE 3C

SEE U3101 PIN 10 PAGE 3D

SEE U3101 PIN 9 PAGE 3D

SEE Q3304 BASE PAGE 3C

SEE Q8001 BASE PAGE 4C

SEE Q8016 BASE PAGE 4D

SEE U8003 PIN 2 PAGE 4D

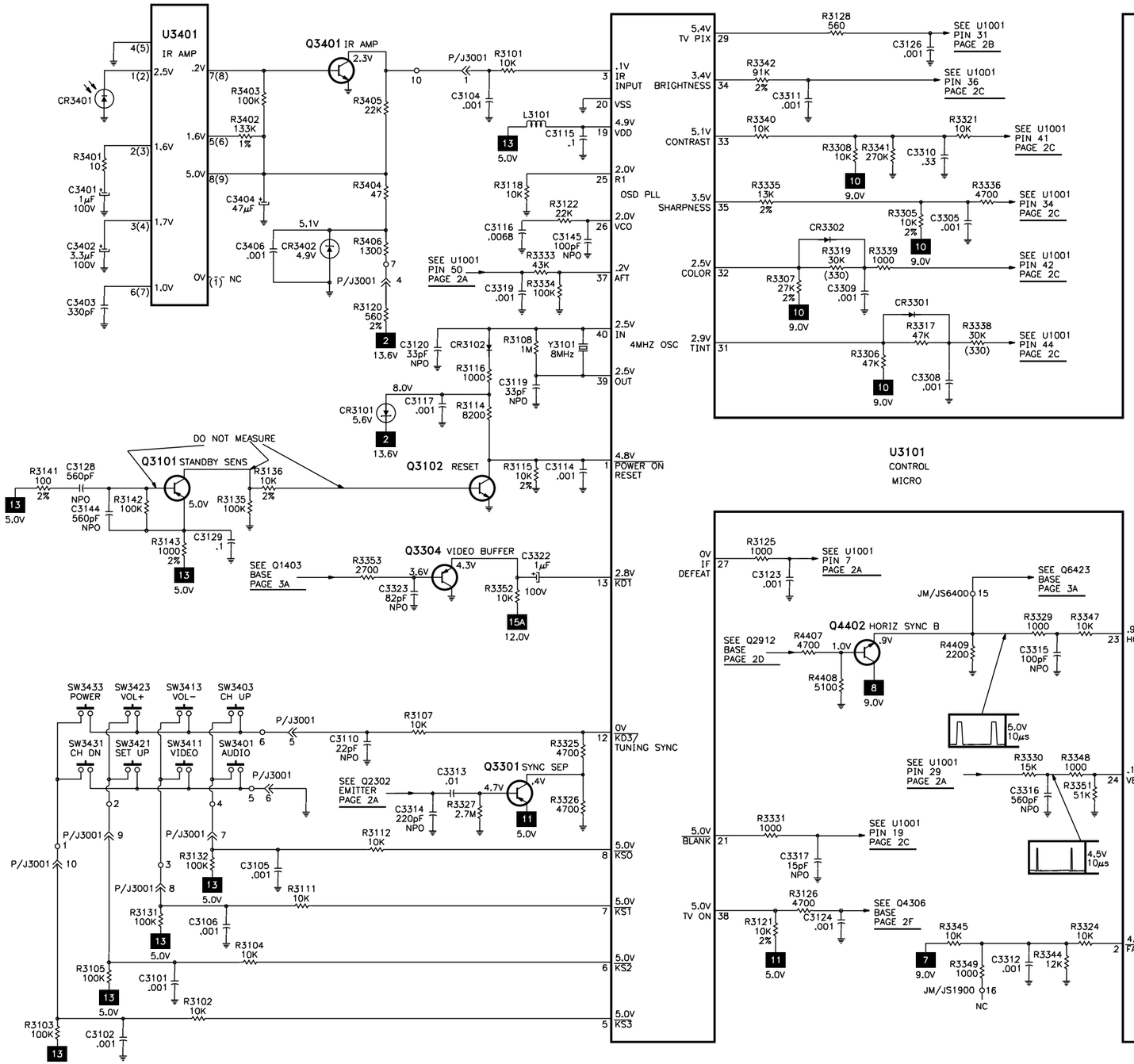
SEE U8001 PIN 19 PAGE 4C

SEE U1001 PIN 43 PAGE 2B

ADDITIONAL SCHEMATIC NOTES, SEE PAGE 2D

A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE®

SYSTEM CONTROL SCHEMATIC



AUDIO SCHEMATIC

E F

U1600 STEREO DBX DECODER

U1410 AUDIO SWITCH

U1602 I/O BUS EXPANDER

SEE Q1201 EMITTER PAGE 2B

JM/JS1900

R1618 150

C1601 .22

C1602 .15

C1603 .001

R1602 1800

C1604 .1

C1605 .47µF 100V

C1607 22µF

R1624 3900

C1620 22µF

C1624 .022

C1619 100µF

C1621 1µF 100V

R1615 82K

R1616 STEREO VCO 50K

R1604 STEREO SAP FILTER 20K

R1603 12K

R1625 20K

R1605 75K

R1606 BASE BAND FILTER 50K

R1607 180K

C1613 3.3µF 100V

C1610 .47µF 100V

R1610 91K

R1611 HF SEPARATOR 250K

C1611 .47µF 100V

C1612 10µF

C1609 .47µF 100V

NC

C1615 22µF

R1617 1000

C1617 3.3µF (100V)

C1618 4.7µF (100V)

LEFT OUT 5.9V

C1452 1µF 100V

R1484 150

R1482 100K

R1608 27K

R1609 LF SEPARATOR 100K

TP212

RIGHT OUT 5.9V

C1453 1µF 100V

R1483 150

R1481 100K

J1407 LEFT AUX 1 AUDIO IN

J1408 RIGHT/MONO AUX 1 AUDIO IN

J1409 LEFT AUX 2 AUDIO IN

J1410 RIGHT/MONO AUX 2 AUDIO IN

SG1407 SPARK GAP

SG1406 SPARK GAP

SG1408 SPARK GAP

SG1409 SPARK GAP

R1452 1000 2%

R1454 1000 2%

R1456 1000 2%

R1458 1000 2%

R1451 220K

R1453 220K

R1455 220K

R1457 220K

CONTROL LOGIC

INH

R1480 10K

C1451 .01

R1479 10K

R1622 1000

R1643 15K

R1648 10K

C1616 2.2µF (100V)

R1623 1000

R1644 15K

R1649 10K

C1608 22µF

R1621 150

R1640 15K

R1645 10K

C1614 22µF

R1620 150

R1641 15K

R1646 10K

R1613 27K

R1650 150

R1642 15K

R1647 10K

R1694 1000

SEE U3101 PIN 22 PAGE 3D

R1419A 1000

C1454 .001

C1406 1µF 100V

R1495 220K

R1488 2200 2%

SG14112 SPARK GAP

J1412 AUDIO LEFT OUT

Q1406A BUFFER

R1461 47K

R1408A 47K

R1409A 150

R1490 10K

C1407 1µF 100V

R1496 220K

R1494 2200 2%

SG14110 SPARK GAP

J1414 AUDIO RIGHT OUT

Q1407 BUFFER

C1415 .22

C1416 .22

R1462 47K

R1407A 47K

R1410A 150

R1491 10K

R1702 100 P/J1702 4 4

SEE U1700 PIN 49 PAGE 4A

R1701 100 P/J1702 3 5

SEE U1700 PIN 50 PAGE 4A

SEE U1703 PIN 13 PAGE 4B

AMP PART OF U1402

R1523 20K

C1520 .0047

SEE U1703 PIN 3 PAGE 4B

AMP PART OF U1402

R1526 20K

C1522 .0047

Q1507 LEFT FOLLOWER

CR1501

R1521 10K

Q1551 EXPANDER

R1524 10M

R1525 15K

C1521 .047

R1519 10K

R1522 100K

Q1500 SWITCH

Q1503 SWITCH

R1506 10K

R1520 10K

R1544 10K

C1450 .01

R1459 10K

R1460 10K

R1633 100K

R1631 100K

R1632 100K

R1630 100K

R1705 100 P/J1701 1 5

R1706 100 P/J1701 2 6

R1707 100 P/J1702 1 7

R1708 100 P/J1702 2 6

SEE Q1702 BASE PAGE 4B

SEE Q1704 BASE PAGE 4B

SEE Q1705 BASE PAGE 4B

Q1601 MUTE

R1693 100K

R1901 39K

Q1409 SLOW START

R1493 4700

R1422A 22K

R1416A 3600

C1411 22µF

R1423A 100

Q1400 SLOW START

R1463 47

R1464 47

R1414A 10K

R1412A 4700

Q1408 SLOW START

C1414 1µF

R1411A 4700

R1434 1000

Q1401A SLOW START

R1433A 1000

Q1410 SLOW START

R1413A 2200

R1465 47

SRC SEL 1 PA6 5.5V

SRC SEL 0 PA5 0V

STEREO SENSE PA0 4.6V

SAP SENSE PA1 4.8V

RESET 5.0V

STEREO/ MONO PA2 0V

SAP SEL PA3 4.8V

CCM PA4 0V

GND

GND

GND

PC0 0V

PC1 5.0V

PA7 EXP STEREO 0V

PC2 5.0V

PB1 4.4V

PB2 5.0V

PB3 4.4V

PB4 4.4V

DATA 0 5.0V

DATA 1

CLK 5.0V

PB0 0V

PB6 0V

PB7 0V

PB5 0V

PC3 0V

VDD

ADDITIONAL SCHEMATIC NOTES, SEE PAGE 2D

A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE®

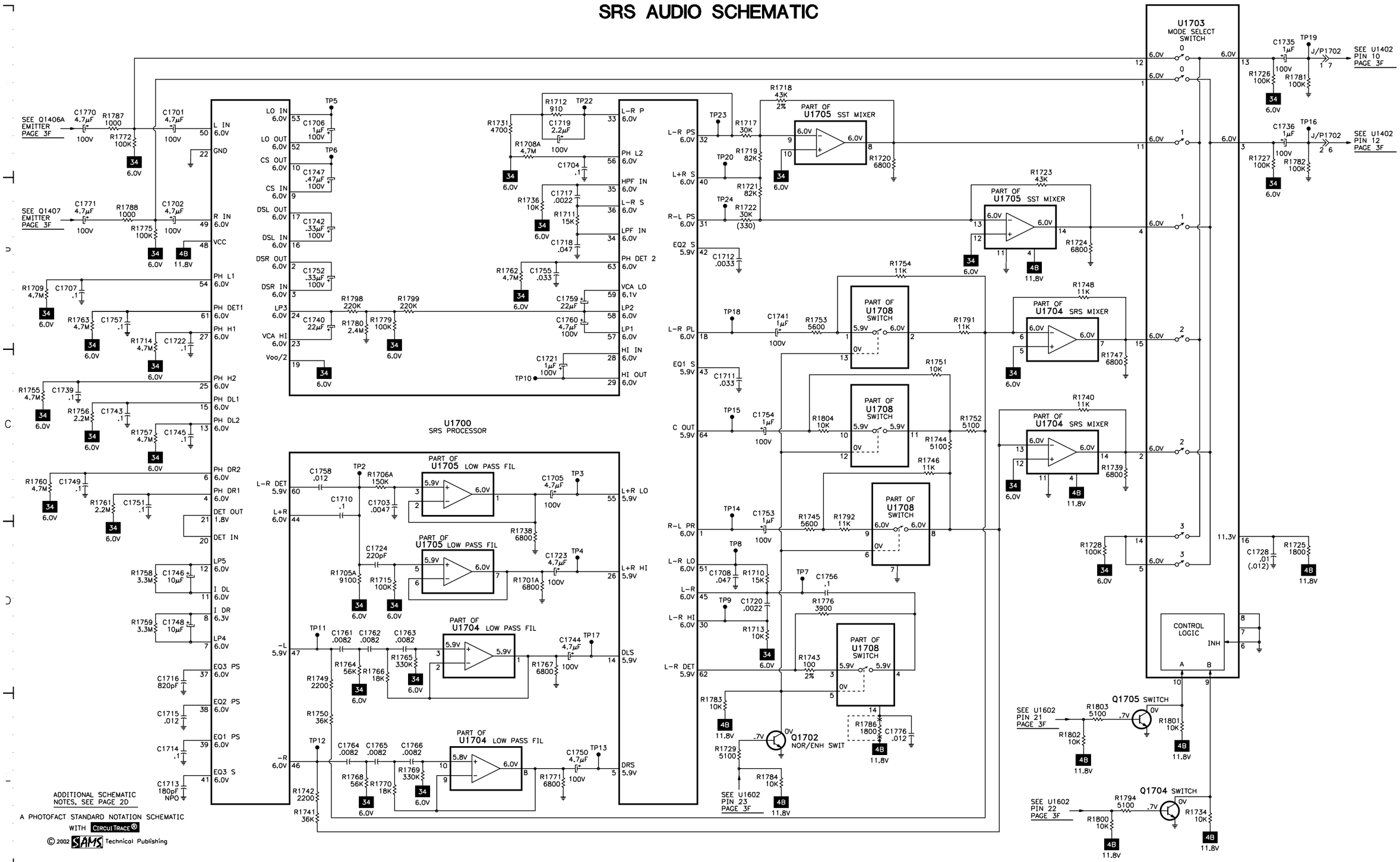
AUDIO SCHEMATIC continued

U1501 TVB
U1601 TDA8444 DAC
U1900 DUAL AUDIO OUTPUT
Q1552 BUFFER
Q1550 BUFFER
Q1901 SWITCH
Q1902 LIMITER
Q1903 LIMITER
Q1904 REG
Q1404A TOP OUTPUT
Q1405A BOTTOM OUTPU
Q1402A TOP OUTPUT
Q1403A BOTTOM OUTPU
THERMAL SHUTDOWN
FILTER
SW1 EXT SPEAKER OFF ON
LEFT CHANNEL
RIGHT CHANNEL
LEFT EXT SPK
RIGHT EXT SPK
LEFT HI-FI AUDIO OUT
RIGHT HI-FI AUDIO OUT
TO HEADPHONES
SEE U3101 PIN 14 PAGE 3D
SEE U3101 PIN 15 PAGE 3D

ADDITIONAL SCHEMATIC NOTES, SEE PAGE 2D

A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE®

SRS AUDIO SCHEMATIC



PIP SCHEMATIC

C D

Q8005 VIDEO 2 BUFFER
Q8001 VIDEO 1 BUFFER
Q8006 Y AMP
Q8007 C AMP
Q8017 BLK STRETCH
Q8013 LEVEL SHIFT
Q8015 SWITCH
Q8012 SWITCH
Q8003 VIDEO AMP
Q8002 VIDEO AMP
Q8014 SWITCH
Q8016 LUMA BUFFER
Q8009 LUMA BUFFER
Q8008 CHROMA BUFFE
U8001 DPIP
U8002 SRAM
U8003 FAST SW

SEE Q2701 EMITTER PAGE 2B
SEE Q1406 EMITTER PAGE 3A
SEE Q6422 EMITTER PAGE 3A
SEE U3101 PIN 15 PAGE 3D
SEE U3101 PIN 14 PAGE 3D
SEE U3101 PIN 11 PAGE 3D
SEE Q6405 EMITTER PAGE 3B
SEE Q6421 BASE PAGE 3A
SEE Q6406 BASE PAGE 3A
SEE U2601 PIN 7 PAGE 3B
SEE Q6409 BASE PAGE 3B
SEE U1001 PIN 31 PAGE 2B

ADDITIONAL SCHEMATIC NOTES, SEE PAGE 2D

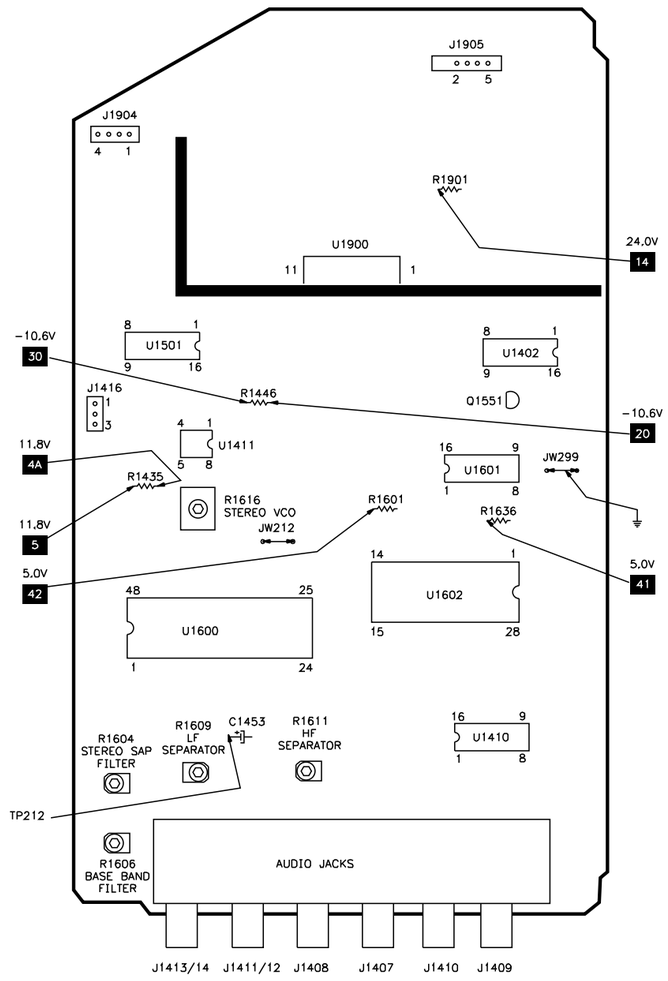
A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE®

SCHEMATIC COMPONENT LOCATION GUIDE

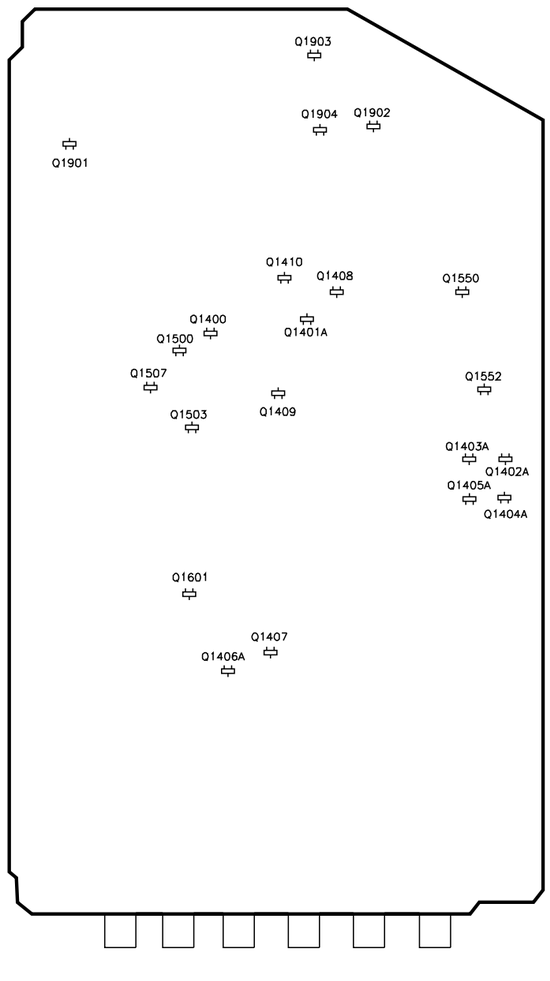
C1201	B5	C1713	E65	C2708	A10	C3603	C48	C4713	E11	C8049	C78	DF4500	D7	Q1702	E69	Q8001	B73	R1463	E55	R1694	D52	R1803	E71	R2740	C11	R3142	C41	R4139	E19	R4719	C25	R6465	D37	R8085	B79
C1203	A6	C1714	E65	C2709	B10	C3604	C48	C4714	C26	C8050	A73	DL2601	B37	Q1704	E71	Q8002	D77	R1464	E55	R1701	A54	R1804	C69	R2741	A33	R3143	C41	R4140	E20	R4720	D11	R6466	D36	R8087	E34
C1204	A6	C1715	E65	C2712	C11	C3605	B28	C4715	C25	CF1201	A4	DL2701	A9	Q1705	E71	Q8003	D77	R1465	E56	R1701A	D67	R1901	D55	R2742	B6	R3144	E46	R4142	E20	R4801	E14	R6467	D37	R8088	B78
C1401	B33	C1716	D65	C2715	C11	C4002	A18	C4716	D12	CF2301	B5	F4001	A17	Q1901	D60	Q8005	A74	R1479	D51	R1702	B54	R1902	D60	R2801	B9	R3201	A48	R4143	E19	R4802	E14	R6468	D37	R8089	A78
C1402	B33	C1717	B68	C2717	B8	C4005	A18	C4801	E16	CR1401	B34	FB4101	C21	Q1902	C62	Q8006	A78	R1480	D51	R1705	C53	R1903	A62	R2802	B9	R3301	B46	R4144	E11	R4805	D13	R6469	D37	RT4201	A18
C1403	C33	C1718	B68	C2718	A9	C4007	A19	C4802	E16	CR1402	B34	FB4102	C21	Q1903	C62	Q8007	B77	R1481	B51	R1705A	D66	R1904	B62	R2803	C9	R3302	A46	R4145	D20	R4806	E14	R6470	D37	RT4501	D4
C1404	A33	C1719	A68	C2720	B11	C4008	B19	C4807	E8	CR1403	D33	FB4103	C21	Q1904	C62	Q8008	C79	R1482	A51	R1706	C53	R1905	D60	R2804	C10	R3303	B46	R4146	D20	R4807	E16	R6471	D38	SCR501	D6
C1405	C36	C1720	D69	C2723	C11	C4009	A19	C4808	E13	CR1404	A34	FB4401	E5	Q2301	B1	Q8009	A79	R1483	B51	R1706A	C67	R1906	A62	R2805	B8	R3304	A48	R4147	C47	R4808	E6	R6472	D38	SF2301	B2
C1406	A53	C1721	C68	C2724	A33	C4101	D18	C4811	E16	CR1405	C36	FB4402	E5	Q2302	B4	Q8012	D78	R1484	A51	R1707	C53	R1907	C62	R2806	B8	R3305	B44	R4148	D18	R4809	E16	R6473	D34	SG1401	B33
C1406A	C33	C1722	C65	C2801	B10	C4102	C19	C4812	E16	CR1406	C34	FB8001	A75	Q2701	B6	Q8013	C77	R1488	A54	R1708	C53	R1908	D60	R2809	A14	R3306	B44	R4149	C18	R4810	E14	R6474	D35	SG1402	C36
C1407	B53	C1723	D68	C2802	B8	C4103	D18	C4813	D12	CR1501	B55	FL4001	A17	Q2702	A9	Q8014	E78	R1490	A53	R1708A	B67	R1909	A60	R2810	B14	R3307	B44	R4150	B19	R4812	D8	R6475	E35	SG1403	B33
C1407A	A35	C1724	D67	C2803	B8	C4104	C19	C4814	E16	CR1502	C59	J1401	B33	Q2703	C11	Q8015	D77	R1491	B53	R1709	B65	R1910	B61	R2811	B13	R3308	B44	R4151	E19	R4813	D8	R6476	E39	SG1404	C34
C1408	D59	C1726	B28	C2804	B8	C4105	B19	C4815	D14	CR1901	B62	J1402	B33	Q2707	A8	Q8016	E78	R1493	E53	R1710	D69	R1935	B62	R2812	B7	R3309	A11	R4152	E19	R4814	E8	R6477	D39	SG1405	C33
C1408A	E28	C1728	D72	C2805	B9	C4106	C18	C4816	D14	CR1902	B62	J1403	C36	Q2708	C13	Q8017	C77	R1494	A54	R1711	B68	R1936	B62	R2813	B10	R3310	E27	R4201	B17	R4815	E8	R6478	D39	SG1406	B51
C1409	D59	C1733	B28	C2806	B11	C4107	C19	C4817	D12	CR1903	B63	J1407	B50	Q2709	B11	R3	B64	R1495	A54	R1712	A67	R1937	B62	R2814	B10	R3312	D46	R4202	E47	R4817	E16	R6479	D39	SG1407	B51
C1409A	A35	C1734	B27	C2807	B7	C4108	C20	C4901	E2	CR1904	B63	J1408	B50	Q2903	A14	R4	B63	R1496	B54	R1713	D69	R1938	A62	R2815	B9	R3314	C46	R4203	B17	R4818	E15	R6480	D40	SG1408	C51
C1410	C34	C1735	A72	C2808	B8	C4109	C20	C4902	E2	CR1905	C61	J1409	C50	Q2904	B14	R1201	A5	R1501	A57	R1714	C65	R1940	C63	R2816	C9	R3317	B44	R4302	E1	R4819	E14	R6481	D40	SG1409	C51
C1411	E54	C1736	A72	C2809	E28	C4110	C21	C4903	D2	CR2701	B8	J1410	C50	Q2905	C14	R1203	A4	R1502	B57	R1715	D67	R1941	C63	R2817	B7	R3318	E46	R4303	D2	R4821	E15	R6482	E37	SG1414	D63
C1411A	C35	C1739	C65	C2810	E28	C4111	C21	C4905	D2	CR2702	B11	J1411	D63	Q2906	A13	R1204	A6	R1503	A60	R1717	A69	R1942	C59	R2901	A15	R3319	B44	R4306	D1	R4824	E13	R6483	D27	SG1415	E63
C1412	E61	C1740	B66	C2811	A14	C4112	C21	C4906	D2	CR2704	C11	J1412	A54	Q2908	A15	R1304	E12	R1504	B59	R1718	A69	R1943	C63	R2902	B16	R3320	E46	R4307	E1	R4825	D13	R6484	E38	SG4701	D10
C1412A	B35	C1741	C69	C2812	B14	C4113	D21	C5001	E31	CR2705	C12	J1413	D63	Q2909	B16	R1401	B33	R1505	B59	R1719	A69	R1944	C63	R2903	B15	R3321	B45	R4308	E24	R4826	E13	R6485	E37	SP1900	A64
C1413	E60	C1742	B66	C2813	C13	C4114	E18	C5002	C31	CR2706	C11	J1414	A54	Q2910	B15	R1402	B33	R1506	C53	R1720	B69	R1945	C61	R2908	B12	R3324	E45	R4309	E23	R4901	D2	R6486	D34	SP1903	B64
C1414	E56	C1743	C65	C2814	B7	C4115	D19	C5013	B29	CR2802	B7	K4201	A18	Q2911	A12	R1403	B33	R1507	C59	R1721	B69	R1946	C61	R2910	A16	R3325	D43	R4310	E23	R4902	E2	R6487	C27	SW3401	D41
C1415	A52	C1744	D68	C2815	B7	C4116	E1	C5014	A29	CR2901	A12	K4201	B18	Q2912	B13	R1404	B34	R1508	C58	R1722	B69	R1947	C62	R2911	A15	R3326	D43	R4311	E3	R4903	D2	R8001	C74	SW3403	D41
C1416	B52	C1745	C65	C2905	B12	C4118	B19	C5015	C29	CR3101	C42	KS5001	A31	Q3101	C41	R1405	B33	R1509	B58	R1723	B70	R1948	C62	R2912	A29	R3327	D43	R4312	D23	R4904	D2	R8002	B74	SW3411	D41
C1450	B52	C1746	D65	C2909	A12	C4136	D19	C6401	C39	CR3102	B43	L1201	A5	Q3102	C42	R1406	B33	R1510	B58	R1724	B71	R2301	B1	R2913	A29	R3329	D45	R4313	E3	R4905	D2	R8003	D74	SW3413	D41
C1451	D51	C1747	B66	C2910	A13	C4138	E20	C6402	D35	CR3103	B7	L2301	B1	Q3301	D43	R1407A	B52	R1511	B59	R1725	D72	R2302	B1	R2914	B16	R3330	D45	R4314	E3	R4920	D2	R8004	C77	SW3421	D41
C1452	A51	C1748	D65	C2911	B14	C4139	E20	C6403	C28	CR3301	B44	L2302	B4	Q3302	D47	R1408	C33	R1514	A57	R1726	A72	R2303	B1	R2915	B14	R3331	E44	R4315	E1	R4921	D2	R8005	D74	SW3423	D41
C1453	B50	C1749	C65	C2918	B16	C4140	A22	C6404	D37	CR3302	B44	L2303	B3	Q3303	B46	R1408A	A52	R1515	B57	R1727	B72	R2304	B1	R2916	B29	R3332	D46	R4317	E22	R4922	E2	R8006	C73	SW3431	D41
C1454	D52	C1750	E68	C2919	B15	C4141	A28	C6405	C28	CR3401	A41	L2304	B3	Q3304	C42	R1409	C33	R1519	B55	R1728	D71	R2305	B1	R2917	B29	R3333	B43	R4318	E22	R4923	D2	R8007	B73	SW3433	D41
C1455	E12	C1751	C65	C2920	A16	C4142	B22	C6406	B35	CR3402	B42	L2305	B3	Q3401	A42	R1409A	A53	R1520	C54	R1729	E69	R2306	B2	R2918	C16	R3334	B43	R4319	E3	R5001	A30	R8008	B73	T4101	D21
C1456	B28	C1752	B66	C2924	A14	C4143	B22	C6406	B35	CR3403	E27	L2306	B3	Q4101	C20	R1410	C33	R1521	B55	R1731	A67	R2307	B2	R2919	C14	R3335	B44	R4321	E1	R5002	C30	R8009	B73	T4102	A21
C1500	A57	C1753	D69	C2925	B14	C4144	B22	C6407	B36	CR3601	C48	L2307	B5	Q4105	D19	R1410A	B53	R1522	B55	R1734	E71	R2308	B3	R2920	C29	R3336	B45	R4322	E24	R5003	B30	R8010	C74	T4301	D7
C1501	B57	C1754	C69	C2926	C14	C4145	A28	C6408	B37	CR4001	A18	L2601	C37	Q4106	D20	R1411	A34	R1523	B55	R1736	B67	R2309	C3	R2921	C29	R3338	B45	R4326	D1	R5004	A31	R8013	D76	T4301	E4
C1502	B57	C1755	B68	C2928	B28	C4146	D22	C6409	C39	CR4002	A18	L2602	B38	Q4107	D20	R1411A	E56	R1524	B56	R1738	D67	R2310	B4	R2922	A12	R3339	B44	R4327	D1	R5005	C31	R8014	D76	T4401	C9
C1503	A57	C1756	D69	C3101	E41	C4147	D22	C6412	D28	CR4003	A18	L2603	B37	Q4108	E18	R1412	A35	R1525	B56	R1739	C71	R2311	C3	R2923	A12	R3340	B44	R4328	D1	R5006	B31	R8015	C74	U1001	B2
C1504	A58	C1757	B65	C3102	E41	C4148	D21	C6413	D28	CR4004	A18	L2702	A10	Q4109	D20	R1412A	E55	R1526	B56	R1740	C70	R2312	B3	R2924	A13	R3341	B44	R4401	E6	R5009	C31	R8016	D77	U1401	A34
C1506	A58	C1758	C66	C3103	E27	C4149	E21	C6414	E38	CR4101	D18	L2704	B8	Q4110	E17	R1413	A35	R1544	C54	R1741	E66	R2313	C2	R2925	A14	R3342	A44	R4402	E4	R5010	A29	R8017	D77	U1402	A55
C1507	A59	C1759	B68	C3104	A43	C4150	E18	C6415	E39	CR4102	D21	L2705	E27	Q4111	E19	R1413A	E55	R1563	C60	R1742	E66	R2314	B2	R2926	A14	R3343	A11	R4404	D13	R5011	C30	R8018	D77	U1402	B56
C1508	B27	C1760	B68	C3105	E42	C4151	C20	C6416	E38	CR4105	C21	L2706	B23	Q4201	B17	R1414	A36	R1564	A60	R1743	D69	R2315	B4	R2927	B14	R3344	E45	R4406	C13	R5012	B30	R8019	D77	U1402	D60
C1509	B59	C1761	D66	C3106	E41	C4152	B20	C6417	E37	CR4106	D18	L2801	A14	Q4202	E47	R1414A	E55	R1577	B58	R1744	C70	R2317	B5	R2928	C14	R3345	E44	R4407	D44	R5013	E31	R8020	E77	U1402	E60
C1510	B59	C1762	D66	C3107	C46	C4153	B19	C6418	D36	CR4111	E18	L2802	B14	Q4301	E24	R1416	C33	R1578	B58	R1745	D69	R2318	B5	R2929	C14	R3346	A11	R4408	D44	R5024	C30	R8021	E77	U1410	A52
C1511	B58	C1763	D67	C3108	C46	C4154	E18	C6419	E36	CR4112	E18	L2803	C13	Q4302	E3	R1416A	E54	R1579	B58	R1746	C70	R2319	B2	R2930	A13	R3347	D45	R4409	D45	R5025	C30	R8022	A75	U1411	D61
C1512	B58	C1764	E66	C3110	D42	C4155	E1	C6420	E37	CR4115	E1	L2804	B7	Q4304	E23	R1417	C35	R1582	B59	R1747	C71	R2320	B4	R2935	B15	R3348	D45	R4501	D4	R6401	C35	R8023	B74	U1411	E61
C1513	B58	C1765	E67	C3114	C43	C4201	B17	C6421	D36	CR4116	A22	L3101	B43	Q4305	E24	R1418	B35	R1583	B60	R1748	B70	R2321	B5	R2938	B16	R3349	E45	R4502	E47	R6402	C35	R8024	D74	U1501	A58
C1514	B59	C1766	E67	C3115	B43	C4202	B17	C6422	D36	CR4117	B22	L3601	C47	Q4306	E22	R1419	A35	R1584	C59	R1749	D66	R2322	B6	R2942	B16	R3351	D45	R4503	D4	R6403	D35	R8025	A74	U1600	A50
C1520	B55	C1767	B28	C3116	B43	C4301	D1	C6423	D38	CR4118	B22	L3602	C48	Q4401	E4	R1419A	D52	R1601	B24	R1750	E66	R2323	E27	R2943	B15	R3352	C43	R4504	D4	R6404	D35	R8026	B78	U1601	C58
C1521	B56	C1770	A65	C3117	C42	C4302	D1	C6424	D38	CR4119	D22	L4101	C20	Q4402	D44	R1420	A35	R1602	A49	R1751	C70	R2324	B4	R2944	A15	R3353	C42	R4505	D8	R6405	C39	R8027	A73	U1602	C53
C1522	B56	C1771	B65	C3119	C43	C4303	E23	C6425	D34	CR4120	D22	L4201	B18	Q4505	D4	R1420A	D59	R1603	D49	R1752	C70	R2325	B5	R2945	B15	R3401	B41	R4506	D7	R6406	C39	R8028	A74	U1700	C67
C1525	A61	C1776	E70	C3120	B42	C4304	D3	C6426	E38	CR4121	E2	L4401	E6	Q4506	D5	R1421	A35	R1604	D49	R1753	C69	R2326	C3	R2946	A12	R3402	B42	R4507	D4	R6407	C39	R8029	A75	U1703	A71
C1526	B61	C1905	D61	C3121	D48	C4305	E1	C6427	D28	CR4122	B20	L4701	E11	Q4507	C4	R1421A	D59	R1605	D49	R1754	B69	R2601	B37	R2947	A13	R3403	A42	R4508	D5	R6408	C39	R8030	A78	U1704	C70
C1600	B24	C1906	D24	C3122	E46	C4306	E24	C6430	B40	CR4123	E19	L4702	D11	Q4601	C23	R1422	A36	R1606	D49	R1755	C65	R2602	C37	R2948	B13	R3404	B42	R4509	D5	R6409	C39	R8031	A78	U1704	C70
C1601	A49	C1909	A62	C3123	C44	C4307	D3	C6431	D35	CR4201	B18	L4803	E16	Q4702	B26	R1422A	E54	R1607	D49	R1756	C65	R2603	C37	R2949	A13	R3405	A42	R4510	D7	R6410	B39	R8032	A78	U1704	D67
C1602	A49	C1910	B62	C3124	E44	C4309	E3	C8002	D28	CR4302	E24	L5001	C30	Q4703	B23	R1423	C36	R1608	B50	R1757	C65	R2604	B38	R3101	A43	R3406	B42	R4511	D7	R6411	B39	R8033	A77	U1704	E67
C1603	A49	C1912	A62	C3125	D46	C4310	E3	C8003	B73	CR4303	E24	L5004	A30	Q4704	E26	R1423A	E54	R1609	B50	R1758	D65	R2605	B37	R3102	E41	R3424	E27	R4512	D7	R6412	B39	R8034	A76	U1705	A69
C1604	B49	C1913	B62	C3126	A44	C4311	E3	C8004	A75	CR4304	D3	L5005	C30	Q4705	C25	R1424	C36	R1610	D49	R1759	D65	R2606	B37	R3103	E41	R3601	C48	R4513	E7	R6414	D34	R8035	A77	U1705	B70
C1605	B49	C1916	B63	C3127	C46	C4316	E1	C8005	C74	CR4305	E1	L5006	B30	Q4801	E8	R1424A	D60	R1611	E49	R1760	C65	R2607	C37	R3104	E42	R3602	C1	R4514	D4	R6416	B40	R8036	B77	U1705	C67
C1607	B49	C1917	A63	C3128	C41	C4401	E5	C8006	C74	CR4401	E5	L6401	D35	Q4802	E15	R1425	C34	R1613	E50	R1761	C65	R2608	C26	R3105	E41	R3604	A48	R4515	D6	R6417	B36	R8037	B77	U1705	D67
C1608	D50	C1918	D24	C3129	C41	C4402	E5	C8007	D77	CR4402	E5	L6402	B37	Q4803	E6	R1425A	D60	R1615	C49	R1762	B67	R2609	C37	R3107	D42	R3605	B48	R4516	C4	R6418	B35	R8038	B77	U1708	B69
C1609	E49	C1919	D23	C3144	C41	C4403	E5	C8008	B74	CR4403	C13	L6403	C39	Q4804	E14	R1426	C35	R1616	C49	R1763	B65	R2701	B5	R3108	B43	R4001	A18	R4517	D3	R6419	B35	R8039	B77	U1708	C69
C1610	D49	C1920	C62	C3145	B43	C4405	D13	C8009	B74	CR4404	C13	L6406	D39	Q4805	E13	R1426A	E60	R1617	A50	R1764	D66	R2702	B12	R3109	C46	R4002	A18	R4518	D6	R6420	B36	R8040	B76	U1708	C69
C1611	E49	C1921	C63	C3201	A48	C4406	E6	C8010	A74	CR4501	D5	L8001	D78	Q4901	D2	R1427	C35	R1618	A49	R1765	D67	R2703	C11	R3110	C46	R4003	A19	R4519	D6	R6421	B36	R8041	B77	U1708	D69
C1612	E49	C2301	B2	C3301	B46	C4407	E6	C8011	C76	CR4502	D4	L8002	B78	Q5001	A29	R1427A	E60	R1620	E51	R1766	D67	R2704	C12	R3111	E42	R4101	C19	R4520	D8	R6422	B36	R8042	B78	U1900	A61
C1613	D49	C2302	B1	C3302	A46	C4501	E47	C8012	B75	CR4503	E7	L8003	A78	Q5002	C30	R1428	C35	R1621	E51	R1767	D68	R2706	A11	R3112	E42	R4102	C18	R4521	D5	R6423	B36	R8043	B78	U2601	B38
C1614	E50	C2303	B2	C3303	B46	C4502	D7	C8015	A78	CR4504	D7	P1	A17	Q5003	B30	R1429	B34	R1622	D51	R1768	E66	R2707	B10	R3113	D46	R4103	C18	R4522	D4	R6424	B37	R8045	E78	U3101	C44
C1615	A50	C2304	B3	C3304	E28	C4503	D8	C8016	B77	CR4511	C3	Q1201	A6	Q6401	D35	R1429A	D63	R1623	D51	R1769	E67	R2708	B9	R3113A	C46	R4104	C18	R4523	C8	R6425	B36	R8046	C79	U3200	A47
C1616	D50	C2305	B4	C3305	B45	C4504	D4	C8017	D27	CR4512	D5	Q1400	E54	Q6402	C39	R1430	C33	R1624	B49	R1770	E67	R2709	A9	R3114	C43	R4105	C19	R4524	D3	R6426	B37	R8047	C79	U3401	A41
C1617	A50	C2306	C3	C3307	C46	C4511	C8	C8018	B78	CR4606	C23	Q1401	A36	Q6403	C39	R1431	A35	R1625	D49	R1771	E68	R2710	A10	R3115	C43	R4107	C20	R4525	D5	R6427	C40	R8048	C80	U4101	C19
C1618	A50	C2307	C2	C3308	C45	C4512	D2	C8019	B78	CR4701	D12	Q1401A	E56	Q6404	C40	R1431A	D63	R1630	C52	R1772	A65	R2711	A10	R3116	C43	R4108	C20	R4526	D5	R6428	C39	R8051	B80	U4501	D6
C1619	C49	C2308	B2	C3309	B44	C4518	D5	C8021	C73	CR4702	D11	Q1402	A35	Q6405	B39	R1432	E26	R1631	C52	R1773	B27	R2712	B10	R3117	B46	R4109	C20	R4539	D4	R6443	D34	R8055	E78	U4801	D15
C1620	B49	C2309	B3	C3310	B44	C4519	D5	C8022	B74	CR4705	E11	Q1402A	E63	Q6406	B36	R1433	A36	R1632	C52	R1774	B27	R2718	C11	R3118	B43	R4110	C20	R4542	D5	R6445	D27	R8059	C77	U6401	E38
C1621	C49	C2310	B4	C3311	A44	C4520	D7	C8024	E78	CR4709	C23	Q1403	C35	Q6407	B36	R1433A	E56	R1633	C52	R1775	B65	R2719	C11	R3119	E27	R4113	C18	R4543	D4	R6446	E38	R8060	E78	U8001	B75
C1622	B27	C2311	B3	C3312	E45	C4521	D5	C8025	D77	CR4710	C23	Q1403A	E63	Q6408	D36	R1434	E56	R1636	B23	R1776	D69	R2720	C11	R3120	B42	R4114	D18	R4544	D6	R6447	D38	R8061	C77	U8002	C75
C1623	B28	C2312	B3	C3313	D42	C4522	D6	C8026	D78	CR4712	C25	Q1404	C35	Q6409	D37	R1435	B27	R1640	E51	R1779	B67	R2721	C11	R3121	E44	R4115	E18	R4545	C4	R6448	D38	R8062	D78	U8003	A79
C1624	B49	C2313	B3	C3314	D42	C4523	D6	C8027	B76	CR4713	D11	Q1404A	D62	Q6410	D38	R1436	E63	R1641	E50	R1780	B66	R2722	A8	R3122	B43	R4116	D18	R4546	C4	R6449	E39	R8063	C77	U8004	D27
C1625	B28	C2314	B1	C3315	D45	C4524	D7	C8028	B76	CR4803	E16	Q1405	C35	Q6411	D36	R1442	D62	R1642	E50	R1781	A72	R2723	A8	R3123	D47	R4117	C18	R4602	C23	R6450	E37	R8064	C78	V101	B32
C1627	B24	C2315	B5	C3316	D45	C4525	C3	C8030	B76	CR4805	D14	Q1405A	E62	Q6412	E37	R1443	E63	R1643	D51	R1782	B72	R2724	B7	R3124	E46	R4118	E17	R4604	C24	R6451	E37	R8065	C77	Y2801	B8
C1628	E12	C2316	B4	C3317	E44	C4525	C3	C8031	D28	CR4806	E15	Q1406	A36	Q6413	E37	R1446	E12	R1644	D51	R1783	E68	R2725	A33	R3125	C44	R4119	C21	R4701	D11	R6452	E38	R8066	D78	Y3101	B43
C1701	A65	C2317	B4	C3318	D46	C4610	C23	C8033	A75	CR4901	E2	Q1406A	A53	Q6414	E37	R1451	B51	R1645	E51	R1784	E69	R2726	A33	R3126	E44	R4120	E18	R4703	A32	R6453	D38	R8067	D78	Y4301	D2
C1702	B65	C2601	C38	C3319	B43	C4611	C23	C8034	D28	CR4902	E2	Q1407	B53	Q6415	D39	R1452	B51	R1646	E51	R1786	E69	R2727	B11	R3128	A44	R4121	E18	R4704	D10	R6454	D38	R8068	D78	Y8001	B74
C1703	C67	C2602	B37	C3320	E46	C4612	C24	C8035	D27	CR5003	A30	Q1408	E55	Q6416	D40	R1453	B51	R1647	E51	R1787	A65	R2730	A9	R3129	D46	R4122	E18	R4705	C23	R6455	E36	R8069	D27		
C1704	B68	C2603	B38	C3321	E46	C4701	D10	C8036	D74	CR5004	B30	Q1409	E54	Q6417	D35	R1454	B51	R1648	D51	R1788	B65	R2731	A9	R3130	B46	R4125	C20	R4710	E26	R6456	E36	R8070	D28		
C1705	C67	C2604	B38	C3322	C43	C4702	D12	C8037	D74	CR5005	B30	Q1410	E55	Q6418	E39	R1455	C51	R1649	D51	R1791	C70	R2732	A8	R3131	E41	R4126	B20	R4711	C23	R6457	D35	R8071	D26		
C1706	A66	C2605	C28	C3323	C42	C4703	D12	C8038	D74	CR6401	B35	Q1500	C55	Q6419	E39	R1456	C51	R1650	E51	R1792	D69	R2733	A9	R3132	E41	R4127	D19	R4712	E17	R6458	D36	R8072	D27		
C1707	B65	C2606	B38	C3401	B41	C4704	D12	C8041	E78	CR6402	D34	Q1503	C54	Q6420	D34	R1457	C51	R1655	B26	R1794	E71	R2734	A10	R3135	C42	R4128	D19	R4713	E17	R6459	D37	R8073	C75		
C1708	D69	C2701	A8	C3402	B41	C4705	D12	C8042	D27	CR6403	D34	Q1507	B55	Q6421	D35	R1458	C51	R1656	E12	R1798	B66	R2735	C13	R3136	C42	R4129	D19	R4714	C25	R6460	D36	R8080	A74		
C1709	B28	C2704	B8	C3403	B41	C4706	C25	C8044	A74	CR8001	E33	Q1550	B60	Q6422	D34	R1459	B52	R1690	C57	R1799	B67	R2736	A10	R3138	B7	R4132	E18	R4715	E26	R6461	E36	R8081	B74		
C1710	D66	C2705	A11	C3404	B42	C4707	D11	C8045	B73	CR8002	E34	Q1551	B55	Q6423	E34	R1460	B52	R1691	D57	R1800	E71	R2737	C14	R3139	C46	R4135	D20	R4716	E26	R6462	E36	R8082	C75		
C1711	C69	C2706	B10	C3406	B42	C4711	E12	C8046	B79	CR8003	C77	Q1552	A60	Q6424	D34	R1461	A52	R1692	C58	R1801	E71	R2738	C14	R3140	C46	R4136	D21	R4717	C25	R6463	D35	R8083	B79		
C1712	B69	C2707	A10	C3602	B24	C4712	B24	C8048	E34	CR8004	C74	Q1601	D54	Q6425	D34	R1462	B52	R1693	D54	R1802	E71	R2739	B35	R3141	C41	R4137	D21	R4718	C25	R6464	E36	R8084	B79		

PLACEMENT CHART

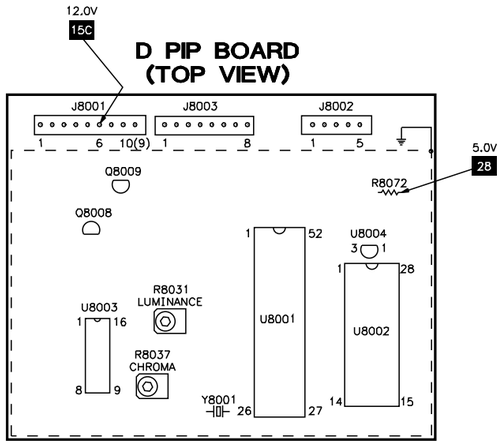
5W ANALOG AUDIO BOARD (TOP VIEW)



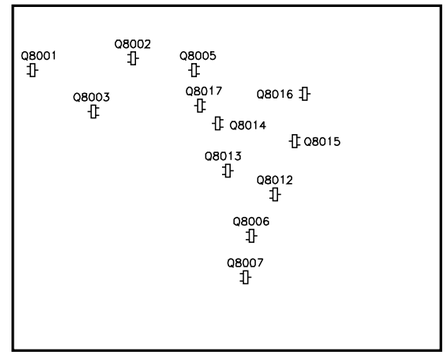
5W ANALOG AUDIO BOARD (BOTTOM VIEW)



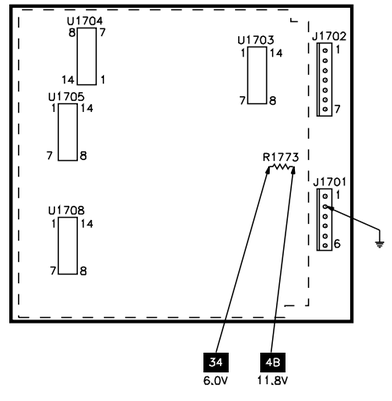
D PIP BOARD (TOP VIEW)



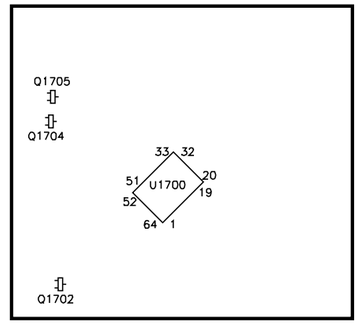
D PIP BOARD (BOTTOM VIEW)



SRS AUDIO BOARD (TOP VIEW)



SRS AUDIO BOARD (BOTTOM VIEW)

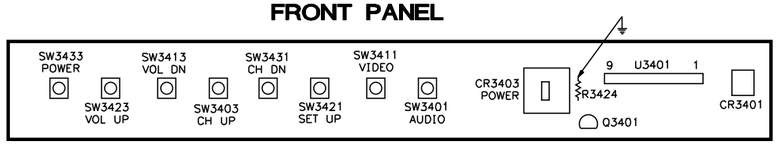


RCA MODEL F27730EMFB1 (CHASSIS CTC169CF5)

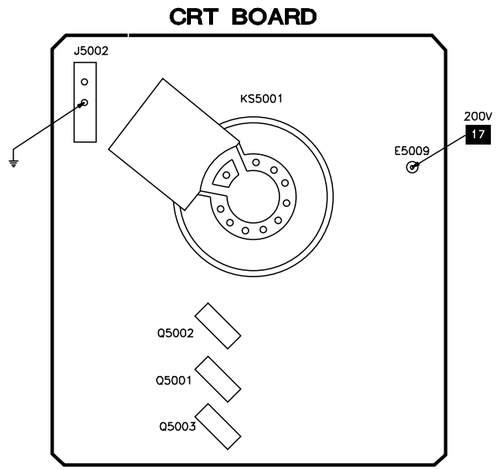
SET 4552 Page 5

PLACEMENT CHART continued

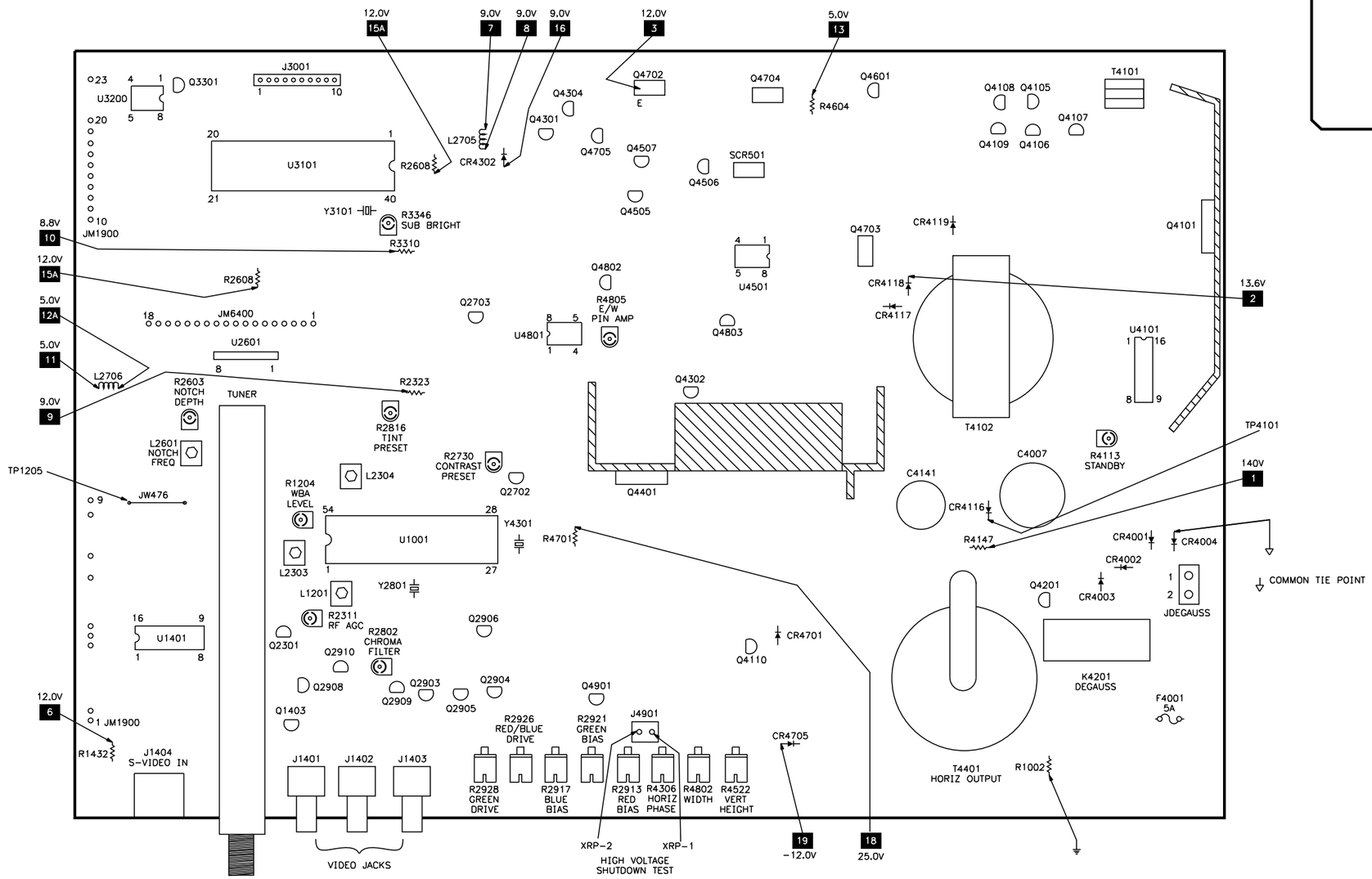
FRONT PANEL



CRT BOARD

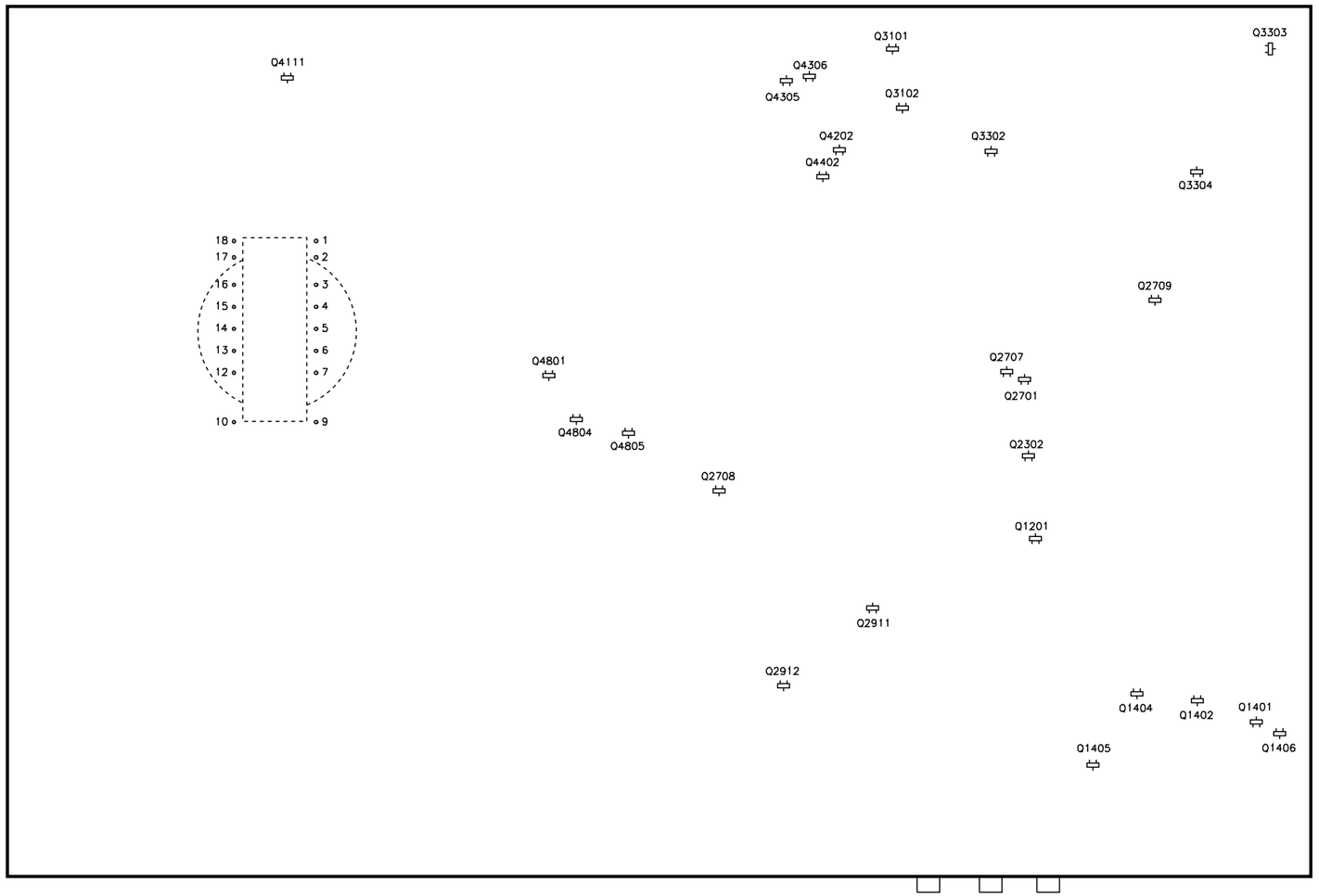


MAIN BOARD (TOP VIEW)

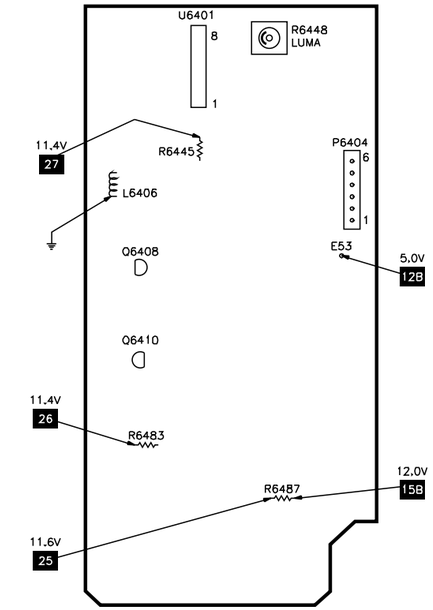


PLACEMENT CHART continued

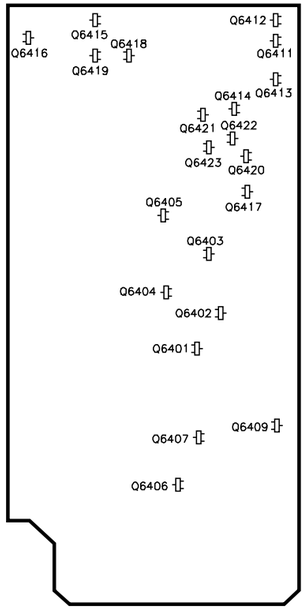
MAIN BOARD (BOTTOM VIEW)



BLACK STRETCH ADAPTER BOARD (TOP VIEW)



BLACK STRETCH ADAPTER BOARD (BOTTOM VIEW)



SET 4552 Page 6

PARTS LIST

Item No.	Type No.	Mfr. Part No.	NTE Part No.
CR1401 Thru			
CR1404	-	176746	NTE5011A
CR1405	-	192848	NTE5018A
CR1406	-	164874	NTE177
CR1501, 02	-	164717	NTE519
CR1901, 02	-	147015	NTE125
CR1903, 04	-	164717	NTE519
CR1905	-	161081	NTE5011T1
CR2701, 02	-	164717	NTE519
CR2704, 05, 06	-	164717	NTE519
CR2802	-	164717	NTE519
CR2901	-	164717	NTE519
CR3101	-	176746	NTE5011A
	-	215488	NTE136A
CR3102, 03	-	164717	NTE519
CR3301, 02	-	164717	NTE519
CR3401	-	150711	-
CR3402	-	182827	NTE5010A
CR3403	-	175393	-
CR3601	-	200155	NTE5035A
	-	215489	-
CR4001 Thru			
CR4004	-	147015	NTE125
CR4101	-	207878	NTE519
	-	223338	-
CR4102	-	164717	NTE519
CR4105	-	207878	NTE519
CR4106	-	176296	NTE552
# **CR4111** (1)	-	-	-
CR4112	-	164874	NTE177
CR4115	-	136634	NTE143A
	-	226783	-
CR4116	-	200157	NTE142A
# **CR4117**	-	176296	NTE552
# **CR4118, 19, 20**	-	164590	NTE580
# **CR4121**	-	136634	NTE143A
	-	226783	-
CR4122	-	200158	-
CR4123	-	176746	NTE5011A
	-	215488	NTE136A
CR4201	-	164717	NTE519
CR4302	-	164717	NTE519
CR4303	-	161871	NTE145A
	-	228429	-
CR4304, 05	-	164717	NTE519
CR4401	-	198596	-
CR4402	-	164589	NTE580
CR4403	-	139706	NTE177
CR4404	-	164717	NTE519
CR4501	-	164717	NTE519
CR4502	-	139706	NTE177
CR4503	-	146320	NTE135A
	-	198602	-
CR4504	-	164589	NTE580
CR4511	-	164717	NTE519
CR4512	-	132616	NTE5014A
CR4606	-	161081	NTE5011T1
CR4701	-	176296	NTE552
CR4702	-	153672	NTE552
	-	207878	NTE519
CR4705	-	176296	NTE552
CR4709	-	164717	NTE519
	-	196062	NTE519
CR4710	-	139706	NTE177
CR4712	-	209741	-
CR4713	-	153672	NTE552
	-	207878	NTE519
CR4803	-	176296	NTE552
CR4805	-	138974	NTE5069A
	-	227919	-
CR4806	-	164717	NTE519
# **CR4901**	-	157301	NTE177
# **CR4902**	-	159429	NTE5019T1
CR5003	-	174489	NTE177
	-	139706	NTE177
# **CR5004, 05**	-	174489	NTE177
CR6401, 02, 03	-	164717	NTE519
CR8001 Thru			
CR8004	-	201133	NTE519
Q1201	-	215495	-
Q1400	-	179740	NTE2406
Q1401	-	215496	-
Q1401A	-	179740	NTE2406
Q1402	-	215495	-
Q1402A	-	179740	NTE2406
Q1403	-	143806	NTE159
Q1403A	-	179741	NTE2407
Q1404	-	215495	-
Q1404A	-	179740	NTE2406
Q1405	-	215495	-
Q1405A	-	179741	NTE2407
Q1406	-	215495	-
Q1406A	-	179741	NTE2407
Q1407, 08	-	179741	NTE2407
Q1409	-	179740	NTE2406
Q1410	-	179741	NTE2407
Q1500	-	179741	NTE2407
Q1503	-	179740	NTE2406
Q1507	-	179741	NTE2407
Q1550	-	179740	NTE2406
Q1551	-	192849	-
Q1552	-	179740	NTE2406
Q1601	-	179740	NTE2406
Q1702	-	179740	NTE2406
Q1704, 05	-	179740	NTE2406
Q1901 Thru			
Q1904	-	179740	NTE2406
Q2301	-	146848	NTE229
Q2302	-	215495	-
Q2701	-	215495	-
Q2702	-	146847	NTE123AP
	-	223704	-
Q2703	-	143806	NTE159
Q2707	-	215495	-
Q2708	-	215496	-
Q2709	-	215495	-

Item No.	Type No.	Mfr. Part No.	NTE Part No.
Q2903, 04, 05	-	176980	NTE123AP
Q2906	-	143806	NTE159
	-	177789	NTE32
Q2908, 09, 10	-	176980	NTE123AP
Q2911	-	215495	-
Q2912	-	219412	-
Q3101	-	215496	-
Q3102	-	215495	-
Q3301	-	145410	NTE159
	-	219025	NTE159
Q3302, 03	-	215495	-
Q3304	-	215496	-
Q3401	-	146847	NTE123AP
Q4101	SGSIF461	200165	NTE2311
Q4105	-	143802	NTE159
	-	219025	NTE159
Q4106	-	143802	NTE159
	-	219025	NTE159
Q4107	-	146847	NTE123AP
	-	223704	-
Q4108	-	143802	NTE159
	-	219025	NTE159
Q4109	-	146847	NTE123AP
	-	223704	-
Q4110	-	143802	NTE159
Q4111	-	215496	-
Q4201	-	146847	NTE123AP
	-	223704	-
Q4202	-	215495	-
Q4301	-	146847	NTE123AP
	-	223704	-
Q4302	-	200168	-
Q4304	-	146847	NTE123AP
	-	223704	-
Q4305, 06	-	215495	-
Q4401	2SD1885	200167	NTE2324%
Q4402	-	215495	-
Q4505	-	146847	NTE123AP
	-	223704	-
Q4506	-	148970	-
Q4507	-	146847	NTE123AP
	-	223704	-
Q4601	-	146847	NTE123AP
	-	223704	-
Q4702, 03, 04	-	157627	NTE54
Q4705	-	146847	NTE123AP
	-	223704	-
Q4801	-	215496	-
Q4802	-	200168	-
Q4803	-	146847	NTE123AP
	-	223704	-
Q4804, 05	-	215495	-
# **Q4901**	-	147665	NTE159
Q5001 (2)	2SC4544	146826	NTE376%
Q5001 (3)	-	208434	NTE376%
Q5002 (2)	2SC4544	146826	NTE376%
Q5002 (3)	-	208434	NTE376%
Q5003 (2)	2SC4544	146826	NTE376%
Q5003 (3)	-	208434	NTE376%
	-	215495	-
Q6401, 02	-	179740	NTE2406
Q6403	-	179741	NTE2407
Q6404, 05	-	179740	NTE2406
Q6406	-	179741	NTE2407
Q6407	-	179740	NTE2406
Q6408	-	146847	NTE123AP
Q6409	-	179741	NTE2407
Q6410	-	146847	NTE123AP
Q6411, 12, 13	-	179741	NTE2407
Q6414	-	179740	NTE2406
Q6415, 16	-	179741	NTE2407
Q6417 Thru			
Q6420	-	179740	NTE2406
Q6421	-	179741	NTE2407
Q6422, 23	-	179740	NTE2406
Q6424	-	146847	NTE123AP
Q6425	-	179740	NTE2406
Q8001, 02	-	179741	NTE2407
Q8003	-	179740	NTE2406
Q8005	-	179741	NTE2407
Q8006, 07	-	179740	NTE2406
Q8008, 09	-	146847	NTE123AP
Q8012, 13	-	179740	NTE2406
Q8014	-	179741	NTE2407
Q8015	-	179740	NTE2406
Q8016	-	179741	NTE2407
Q8017	-	179740	NTE2406
SCR501	-	194320	-
# **U1001**	TA8680N	200137	NTE7010
U1401	-	161079	NTE4052B
	-	218520	-
U1402	LM324N	207827	NTE987
U1410	HCF4052BE	161079	NTE4052B
U1411	-	204292	-
U1501	-	176226	NTE1576
U1600	-	190484	-
U1601	TDA8444	204290	-
U1602	-	207828	-
U1700	-	207831	-
U1703	-	161079	NTE4052B
U1704, 05	LM324N	149018	NTE987
U1708	-	154027	NTE4016B
U1900	-	210911	-
U2601	-	179729	-
	-	182321	-
U3101	-	218817	-
U3200	-	219830	-
U3401	-	195885	-
# **U4101**	TEA2261	200419	-
U4501	LM311N	200420	NTE922M
	-	227357	-
U4801	LM311N	200420	NTE922M
	-	227357	-
U6401	CX20125	201146	-
U8001	-	204279	-
U8002	-	204280	-

Item No.	Function/Rating	Mfr. Part No.	Notes
U8003	-	197646	-
U8004	-	204281	-
C1204	10pF 2% 50V NPO	174402	-
C1406A	39pF 5% 50V NPO	181090	-
C1407A	150pF 5% 50V NPO	181091	-
C1410	470pF 5% 50V N750	210893	-
C1616	2.2µF 50V NP	190527	-
	2.2µF 100V NP	195691	-
C1617	3.3µF 50V NP	190528	-
	3.3µF 100V NP	151119	-
C1618	4.7µF 50V NP	190529	-
	4.7µF 100V NP	189992	-
C1713	180pF 5% 50V NPO	190543	-
C2308	180pF 5% 50V NPO	190543	-
C2309	12pF 5% 50V NPO	174403	-
C2310	18pF 5% 50V NPO	214028	-
C2312	7pF ±.5pF 50V NPO	174401	-
C2316	560pF 5% 50V NPO	200139	-
C2602	33pF 5% 50V NPO	174408	-
C2603	100pF 5% 50V NPO	174412	-
C2604	15pF 5% 50V NPO	174404	-
	22pF 5% 50V NPO	174406	-
C2606	470pF 5% 50V NPO	214035	-
	.001 10% 50V	197600	-
C2704	7pF ±.5pF 50V NPO	174401	-
C2707	82pF 5% 50V NPO	176828	-
	120pF 5% 50V NPO	174414	-
C2718	100pF 5% 50V NPO	174412	-
C2724	180pF 5% 50V NPO	193338	-
C2804	15pF 5% 50V NPO	174404	-
C2811, 12, 13	22pF 5% 50V NPO	194903	-
C2814	68pF 5% 50V NPO	174410	-
	100pF 5% 50V NPO	174412	-
C2815	27pF 10% 50V NPO	192050	-
C2905	18pF 5% 50V NPO	174405	-
	39pF 5% 50V NPO	181090	-
C2909	18pF 5% 50V NPO	174405	-
C2924, 26	560pF 5% 50V NPO	200139	-
C3110	22pF 5% 50V NPO	194903	-
C3119, 20	33pF 5% 50V NPO	174408	-
C3128	560pF 5% 50V NPO	200139	-
C3144	560pF 10% 50V NPO	202904	-
C3145	100pF 5% 50V NPO	193340	-
C3301, 02	100pF 5% 50V NPO	174412	-
C3303	100pF 5% 50V NPO	193340	-
C3314	220pF 5% 50V NPO	178188	-
C3315	100pF 5% 50V NPO	174412	-
C3316	560pF 10% 50V NPO	202904	-
C3317	15pF 5% 50V NPO	202907	-
C3318, 20, 21	27pF 5% 50V NPO	174407	-
C3323	82pF 5% 50V NPO	192049	-
# **C4002, 05**	680pF 20% 1kV	190538	-
# **C4006**	Capristor	250102	-
# **C4007**	680µF 10% 200V	190560	-
	820µF 10% 200V	190561	-
# **C4008**	.005 20% 120V	195697	-
# **C4110**	470pF 5% 1.5kV N1500	143242	-
	470pF 5% 2kV	227068	-
C4111	680pF 20% 1kV	190538	-
# **C4112**	.0056 5% 800V	201619	-
C4116	47pF 5% 50V NPO	143867	-
C4140	680pF 20% 1kV	190538	-
# **C4141**	470µF 20% 180V	200147	-
C4155	470pF 5% 50V N750	210893	-
# **C4401**	.015 1.6kV	206007	-
	.0157 1.6kV	206008	-
# **C4402**	.056 5% 400V	200149	-
# **C4403**	.5 5% 250V	200150	-
# **C4406**	470pF 5% 1.5kV N1500	143242	-
	470pF 5% 2kV N1500	227068	-
# **C4407**	.0047 10% 250V	190534	-
# **C4503**	2200µF 10% 35V	200151	-
# **C4511**	1.54uF 5% 250V	200152	-
C4701	.01 20% 1kV	137583	-
C4702, 04, 13	680pF 20% 1kV	190538	-
# **C4716**	.082 10% 250V	181404	-
C4801	10µF 20% 50V NP	227053	-
# **C4905**	1µF 20% 100V	220998	-
C5001	.001 3KV 10%	120696	-
	560pF 5% 50V NPO	200139	-
C6402	33pF 5% 50V NPO	174408	-
C6404	47pF 5% 50V NPO	174409	-
C6406	10µF 20% 25V NP	146256	-
C6407	100pF 5% 50V NPO	174412	-
C6408	82pF 5% 50V NPO	176828	-
C6409	10pF 2% 50V NPO	174402	-
C6417	470pF 10% 50V NPO	174416	-
C6420, 21	220pF 5% 50V NPO	178188	-
C8007	680pF 5% 50V NPO	181845	-
C8008	8pF ±.5pF 50V NPO	181463	-
	15pF 5% 50V NPO	174404	-
C8019	100pF 5% 50V NPO	193340	-
	.01 10% 50V	174423	-
C8022	47pF 5% 50V NPO	174409	-
	56pF 5% 50V NPO	190542	-
	33pF 5% 50V NPO	174408	-
C8025	390pF 5% 50V NPO	204274	-
C8030, 36	100pF 5% 50V NPO	174412	-
C8037, 38	100pF 5% 50V NPO	174412	-
C8041	220pF 5% 50V NPO	178188	-
C8050	39pF 5% 50V NPO	181090	-
CF1201	Filter	195702	4.5MHz
CF2301	Filter	181125	4.5MHz
# **DF4500**	Yoke	-	Horiz 1mH Vert 21mH
DL2601	Delay Line	223169	-
DL2701 (2)	Delay Line	195704	-
DL2701 (3)	Delay Line	202013	-
# **F4001**	Fuse	175425	5Amp, 125V, Fast Acting
FB4101, 02	Ferrite Bead	152102	-
FB4103	Ferrite Bead	153328	-
	Ferrite Bead	226467	-
FB4401	Ferrite Bead	161237	-
	Ferrite Bead	227410	-
FB4402	Ferrite Bead	206390	-
FB8001	Ferrite Bead	181469	-
# **FL4001**	Line Filter	207879	-

PARTS LIST continued

Item No.	Function/Rating	Mfr. Part No.	Notes
J1	Jack	161073	External Speakers
J1401	Jack	190514	Aux 1 Video In
J1402	Jack	190514	Aux 2 Video In
J1403	Jack	190514	Video Out
J1404	Jack	195705	S-Video
J1407	Jack	190514	Left Aux1 Audio In
J1408	Jack	203767	Right/Mono Aux1 Audio In
J1409	Jack	203768	Left Aux2 Audio In
J1410	Jack	190512	Right/Mono Aux2 Audio In
J1411	Jack	203765	Left HI FI Audio Out
J1412	Jack	203765	Audio Left Out
J1413	Jack	190515	Right HI FI Audio Out
J1414	Jack	190515	Audio Right Out
# **K4201**	Relay	190490	Degaussing
# **KS5001**	Socket	189986	CRT
# **L1**	Line Filter	-	-
L2	Line Filter	-	-
L1201	SIF	190504	-
L2301	.68µH	195708	-
L2302	2.2µH	197616	-
L2303	AFT	190506	-
L2304	PIF	190503	-
L2305	2.2µH	197616	-
L2306	-	206035	-
L2307	12µH	210687	-
L2601	18µH	223800	-
L2602	39µH	195710	-
L2603	10µH	161243	-
L2702	39µH	195710	-
L2704	-	195750	-
L2705	4.7µH	158726	-
L2706	10µH	175409	-
L2801, 02, 03	22µH	195712	-
L2804	-	200161	-
L3101	10µH	175409	-
# **L3601**	-	161243	-
L3602	-	207880	-
L4101	2.2µH	190480	-
# **L4201**	Degaussing	250050	-
# **L4401**	-	196064	-
L4701	47µH	190729	-
# **L4702**	10µH	175409	-
# **L4803**	Pincushion	206391	-
L5001	120µH	195750	-
	220µH	195707	-
L5004, 05, 06	47µH	195713	-
L6401, 02	22µH	195712	-
L6403	120µH	195750	-
L6406	-	176622	-
L8001	330µH	196125	-
L8002	22µH	195712	-
L8003	47µH	195713	-
# **P1**	Line Cord	187802	AC, Polarized
# **R3**	33 5% 2W	196014	-
# **R4**	39 5% 2W	175788	-
R1203	470 2% 1/8W	182628	-
R1204	5000 WBA Level	181113	-
# **R1402**	430 5% 1/4W	829143	-
R1403	3000 2% 1/10W	194917	-
R1404	3000 2% 1/8W	190464	-
# **R1406**	430 5% 1/4W	829143	-
R1409	1000 2% 1/8W	190462	-
# **R1410**	430 5% 1/4W	829143	-
R1411	3000 2% 1/10W	194917	-
R1412	1100 2% 1/10W	202586	-
R1413	330 2% 1/8W	181488	-
R1414	2000 2% 1/4W	175321	-
R1417	10K 2% 1/8W	174364	-
R1419	910 2% 1/10W	205291	-
R1420	1300 2% 1/8W	182823	-
R1421	510 2% 1/10W	202585	-
R1422	1100 2% 1/10W	202586	-
R1425	120K 2% 1/8W	180816	-
R1426	470 2% 1/8W	182628	-
R1427	1500 2% 1/8W	181482	-
R1428	330 2% 1/8W	181488	-
# **R1429A**	2200 5% 1/2W	176632	-
R1430	2700 2% 1/4W	176648	-
# **R1431A**	2200 5% 1/2W	176632	-
# **R1432**	10 10% 1/4W	829010	-
# **R1452, 54**	1000 2% 1/4W	108865	-
# **R1456, 58**	1000 2% 1/4W	108865	-
# **R1463, 64, 65**	47 5% 1/4W	829047	-
# **R1488, 94**	2200 2% 1/4W	176632	-
R1604	20K Stereo SAP Filter	191389	-
R1606	50K Base Band Filter	190526	-
R1609	100K LF Separator	181108	-
R1611	250K HF Separator	195951	-
R1616	50K Stereo VCO	190526	-
# **R1655**	3.3 5% 1/2W	175772	-
# **R1656**	10 10% 1/4W	829010	-
R1718	43K 2% 1/10W	205363	-
R1743	100 2% 1/4W	175325	-
R1903	1600 2% 1/2W	175311	-
# **R1906, 07**	4.7 5% 1/4W	147960	-
R1936	1600 2% 1/2W	175311	-
R1941, 44, 46	10K 2% 1/10W	195937	-
R1947	12K 2% 1/10W	205352	-
R1948	2400 2% 1/10W	205342	-
# **R2301**	100 5% 1/4W	175325	-
R2302	1500 2% 1/8W	181482	-
R2303	390 2% 1/8W	178284	-
R2306	100 2% 1/8W	181486	-
R2307	620 2% 1/8W	181493	-
R2311	10K RF AGC	181107	-
	10K RF AGC	189853	-
R2320	100 2% 1/8W	181486	-
# **R2323**	1.2 5% 1/4W	200172	-
R2602	240 2% 1/8W	190460	-
R2603	500 Notch Depth	181112	-
R2604	1300 2% 1/8W	182823	-
	1200 2% 1/8W	190463	-
R2606	750 2% 1/8W	181056	-
R2703	1000 2% 1/8W	190462	-
R2706	10K 2% 1/8W	174364	-
R2708	1500 2% 1/4W	175367	-
R2710	100 2% 1/8W	181486	-
R2711	750 2% 1/8W	181056	-
	560 2% 1/8W	182822	-
R2719	13.3K 1% 1/4W	173370	-
	15.4K 1% 1/4W	200175	-
# **R2721**	27K 5% 1/2W	206037	-
R2725	750 2% 1/10W	202914	-
R2730	1000 Contrast Preset	181109	-
R2731	2400 5% 1/8W	181071	-
	1200 2% 1/8W	190463	-
R2732	1500 2% 1/8W	181482	-
R2733	620 2% 1/8W	181493	-
R2734	1000 2% 1/8W	190462	-
	680 2% 1/8W	178286	-
R2735	100 2% 1/8W	181486	-
R2736	910 2% 1/8W	205291	-
R2737	1000 2% 1/8W	190462	-
R2740	560 2% 1/8W	182822	-
R2742	1500 2% 1/8W	181482	-
R2801	1000 2% 1/8W	190462	-
R2802	30K Chroma Filter	177366	-
R2804	120K 2% 1/8W	180816	-
R2813	22K 2% 1/8W	174367	-
R2814	30K 2% 1/10W	200176	-
R2816	10K Tint Preset	181107	-
	10K Tint Preset	189853	-
R2901, 02, 03	1000 2% 1/8W	190462	-
R2910	220 2% 1/8W	181492	-
	200 2% 1/8W	178280	-
R2913	4500 Red Bias	190533	-
R2914	220 2% 1/8W	181492	-
	200 2% 1/8W	178280	-
R2917	4500 Blue Bias	190533	-
R2918	220 2% 1/8W	181492	-
	200 2% 1/8W	178280	-
R2921	4500 Green Bias	190533	-
R2922	220 2% 1/8W	181492	-
	100 2% 1/8W	181486	-
# **R2924**	10 10% 1/4W	829010	-
R2926	100 Red/Blue Drive	190531	-
R2928	100 Green Drive	190531	-
R2935	220 2% 1/8W	181492	-
R2938	200 2% 1/8W	178280	-
R2942, 43	470 2% 1/8W	182628	-
R2944	560 2% 1/8W	182822	-
R2945	200 2% 1/8W	178280	-
R2946	1000 2% 1/8W	190462	-
# **R2947**	10 10% 1/4W	829010	-
R3115, 17	10K 2% 1/8W	174364	-
R3120	560 2% 1/8W	182822	-
R3121, 36	10K 2% 1/8W	174364	-
R3138	22K 2% 1/8W	174367	-
R3141	100 2% 1/8W	181486	-
R3143	1000 2% 1/8W	190462	-
R3305	10K 2% 1/8W	174364	-
R3307	27K 2% 1/10W	205245	-
R3309	7500 2% 1/8W	200178	-
# **R3310**	47 5% 1/4W	175040	-
R3335	13K 2% 1/10W	205353	-
R3342	91K 2% 1/10W	200180	-
R3343	13K 2% 1/8W	178285	-
R3346	1500 Sub-Bright	200181	-
R3402	133K 1% 1/4W	195752	-
R3602	10K 2% 1/8W	174364	-
# **R4001**	1.8 10% 15W Wirewound	200444	-
	2.7 10% 15W Wirewound	190487	-
# **R4002**	2.7M 10% 1/2W	217662	-
# **R4003**	33K 5% 2W	200182	-
R4102	5100 2% 1/4W	175417	-
# **R4103**	51K 5% 1/4W	175315	-
R4104	1500 2% 1/4W	175367	-
R4108	910 2% 1/4W	203097	-
R4109	1300 2% 1/4W	203745	-
	1000 5% 1/4W	175055	-
# **R4110**	.18 5% 2W Wirewound	200183	-
R4113	300 Standby	190525	-
R4114	45.3K 1% 1/4W	176506	-
R4115	3240 1% 1/4W	200184	-
# **R4116** (1)	500 B+ Reg	-	-
# **R4119**	330 5% 7W Wirewound	200185	-
R4120	10 2% 1/4W	829010	-
# **R4126**	6.8 5% 3W Wirewound	206016	-
R4139, 45	10K 2% 1/8W	174364	-
R4148	53.6K 1% 1/4W	200189	-
# **R4149**	1.2 5% 1W	831A12	-
R4152	470 2% 1/8W	182628	-
R4306	15K Horizontal Phase	200417	-
R4308	120 2% 1/8W	181485	-
# **R4312**	47 5% 1/4W	175040	-
# **R4313**	100 5% 1/2W	176796	-
# **R4314**	39 5% 1/2W	200192	-
	22 5% 1/2W	175374	-
R4326	3300 2% 1/10W	195938	-
R4327	15K 2% 1/4W	175360	-
R4328	5100 2% 1/8W	175418	-
# **R4401**	220 5% 1/2W	176651	-
# **R4402**	10 5% 1/2W	181098	-
R4509, 10	10K 2% 1/8W	174364	-
R4511	8200 2% 1/8W	181065	-
R4513	120 2% 1/8W	181485	-
# **R4518**	470 5% 1/4W	829147	-
# **R4520**	6800 5% 1/2W	179248	-
R4522	15K Vert Height	200417	-
# **R4523**	820 5% 1W Nonflammable	175349	-
# **R4544**	4.7 5% 1/4W	200197	-
# **R4701**	10 5% 1/2W	830010	-
# **R4703**	2.7 5% 3W Wirewound	229882	-
# **R4704**	Resistor Block	196072	-
# **R4710**	12 2% 1/4W	829012	-
# **R4713**	82K 5% 1/2W	830382	-
R4715	200 2% 1/4W	175363	-
R4716	680 2% 1/4W	175312	-
R4717	56 2% 1/4W	175318	-
R4718	100 2% 1/8W	181486	-
# **R4719**	470 5% 1/2W	830147	-
# **R4720**	10 5% 1/2W	830010	-
# **R4801**	1M 5% 1/8W	174361	-
R4802	2000 Width	200199	-
R4805	10K E/W Pin Amp	189853	-
# **R4809**	390 5% 1/2W	175769	-
R4812	10K 2% 1/8W	174364	-
# **R4821**	150 5% 1W	175784	-
# **R4901**	10K 5% 1/4W	175317	-
# **R4902**	100 5% 1/4W	175325	-
# **R4903**	34K 1% 1/4W	207881	-
	36.5K 1% 1/4W	207882	-
# **R4904**	46.4K 1% 1/4W	204794	-
R4905	22K 2% 1/4W	175054	-
R4920	5100 2% 1/4W	175417	-
R4923	150K XRP	207883	-
R6401	1000 2% 1/4W	175055	-
R6402	2200 2% 1/8W	181079	-
R6403	18K 2% 1/8W	174366	-
	27K 2% 1/8W	193061	-
R6404	10K 2% 1/8W	174364	-
R6407	4700 2% 1/8W	178287	-
R6408	15K 2% 1/8W	192835	-
	13K 2% 1/8W	178285	-
R6417	1500 2% 1/8W	181482	-
	150 5% 1/8W	179379	-
R6418	680 2% 1/8W	178286	-
	330 5% 1/8W	155497	-
R6420	1800 2% 1/8W	181484	-
R6421	1500 2% 1/8W	181482	-
R6422	1000 2% 1/8W	190462	-
R6423	750 2% 1/8W	181056	-
R6424	620 2% 1/8W	181493	-
R6425	680 2% 1/8W	178286	-
R6426	390 2% 1/8W	178284	-
R6443	4700 2% 1/8W	178287	-
R6447	750 2% 1/8W	181056	-
R6448	300 Luma	190525	-
R6449	5100 2% 1/8W	175418	-
R6465	1000 2% 1/8W	190462	-
R6469	10K 2% 1/8W	174364	-
	12K 5% 1/8W	174365	-
R6470	3900 2% 1/8W	157377	-
R6476	6200 2% 1/8W	181058	-
R6478	2700 2% 1/8W	181064	-
R6486	220k 2% 1/8W	174353	-
# **R6487**	10 2% 1/4W	829010	-
R8008	1600 2% 1/8W	182824	-
R8009	1500 2% 1/8W	181482	-
	1600 2% 1/8W	182824	-
R8020	100 5% 1/8W	176818	-
	120 2% 1/8W	181485	-
R8021	330 2% 1/8W	181488	-
R8027	1500 2% 1/8W	181482	-
	1600 2% 1/8W	182824	-
R8028	1600 2% 1/10W	197625	-
R8031	1000 Luminance	181106	-
R8037	500 Chroma	181112	-
R8038	10K 2% 1/8W	174364	-
R8039	1500 2% 1/8W	181482	-
R8040	470 2% 1/10W	194926	-
R8069	130 2% 1/8W	205194	-
	100 2% 1/8W	181486	-
# **R8071**	27 5% 1W	210480	-
	33 5% 1W	180278	-
# **R8072**	91 5% 1W	180173	-
	82 5% 1W	181232	-
R8087	4700 2% 1/8W	178278	-
# **RT4201**	5.9 Cold PTC	207768	-
RT4501	Thermistor	181161	-
SP1900, 03	Speaker	183159	2 ¼" X 5", 8 Ohms, 10W
SF2301	Filter	200203	SAW
SW1	Switch	211982	External Speakers
SW3401	Switch	181724	Audio
	Switch	207842	Audio
SW3403	Switch	181724	Channel Up
	Switch	207842	Channel Up
SW3411	Switch	181724	Video
	Switch	207842	Video
SW3413	Switch	181724	Volume Down
	Switch	207842	Volume Down
SW3421	Switch	181724	Set Up
	Switch	207842	Set Up
SW3423	Switch	181724	Volume Up
	Switch	207842	Volume Up
SW3431	Switch	181724	Channel Down
	Switch	207842	Channel Down
SW3433	Switch	207842	Power
# **T4101**	Regulator Feedback	200204	-
# **T4102**	Chopper	207884	-
# **T4301**	Horizontal Drive	205196	-
# **T4401** (2)	Horizontal Output	200207	-
# **T4401** (3)	Horizontal Output	202016	-
# **V101**	CRT	A68AEG151	A89AEJ15X01
# **V101**	CRT	A68AER142	A68AER14X02
# **V101**	CRT	A68AER352	A68AER35X02
# **V101**	CRT	A68AEG101	A68AEG10X01
Y2801	Crystal	161235	3.58MHz
Y3101	Crystal	209856	8MHz
Y4301	Crystal	200210	503.3kHz
Y8001	Crystal	197652	14.318MHz
	Adapter	193983	75 To 300 Ohm
	Magnet	179806	Beam Bender
	Transmitter	225838	Remote
	Transmitter	210672	Remote
	Transmitter	212234	Remote
	Transmitter	210672	Remote, F27730

 # For SAFETY use only equivalent replacement part.
% Use insulating hardware supplied with replacement.
(1) Part of CR4f11 B+ Reg Kit part no. 202055.
(2) Used in Chassis CTC169CF5.
(3) Used in Chassis CTC169CK5.

SET 4552 Page 6