

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.

HIGH VOLTAGE SHUTDOWN TEST

Momentarily short BC14901 (see base of Q14901 to ground. 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 for approximately 30 seconds and then turn the receiver on.

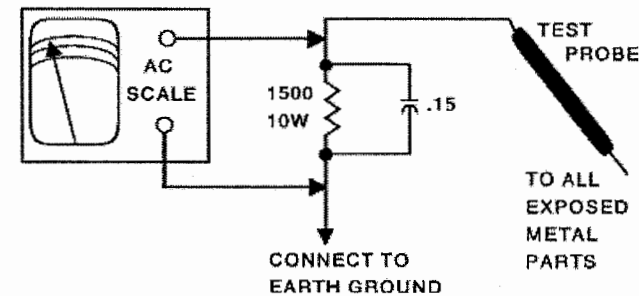
SAFETY CHECKS — FIRE AND SHOCK HAZARD

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.



PHOTOFACT® Technical Service Data

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SET 5057

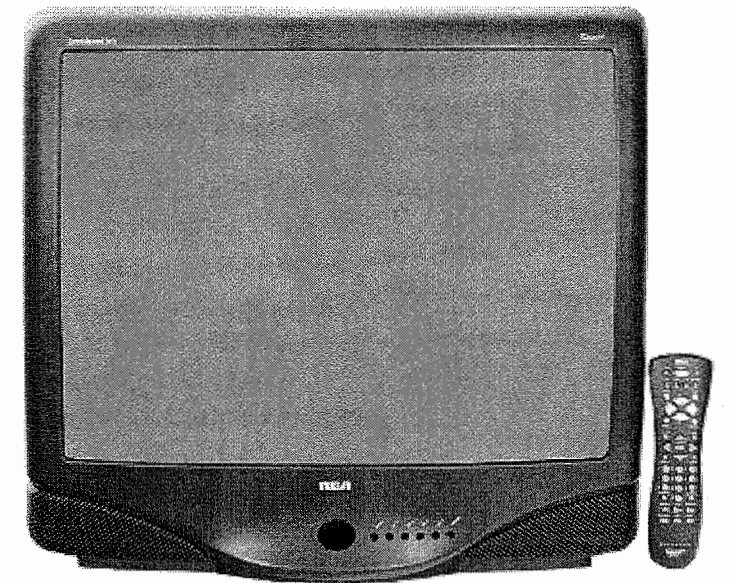
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MODEL F25424TX51 (CHASSIS CTC203AC9)

RCA

RCA Model F25424TX51 (Chassis CTC203AC9)



Representative Model

Essential coverage
for servicing a television receiver...

- Schematics
- Component locations
- Parts list

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For a Complete List of Manuals,
Visit www.samswebsite.com

SEPTEMBER 2005 SET 5057

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TUNER CIRCUIT VOLTAGE CHART

Pin No.	VHF Low Band	VHF High Band	UHF Band
U17301			
1	4.9V	4.8V	4.8V
2	3.1V	3.1V	3.1V
3	7.6V	7.6V	7.5V
4	3.1V	3.1V	3.1V
5	7.6V	7.6V	7.5V
6	0V	0V	0V
7	6.4V	6.3V	.2V
8	9.2V	9.2V	9.2V
9	3.4V	3.4V	3.4V
10	3.2V	3.2V	3.0V
11	7.2V	6.8V	9.2V
12	3.2V	3.2V	3.0V
13	0V	0V	0V
14	9.3V	9.2V	6.4V
15	3.5V	3.5V	3.2V
16	3.5V	3.5V	3.2V
U17401			
1	1.8V	1.8V	1.9V
2	2.6V	2.6V	2.6V
3	0V	0V	2.6V
4	34.0V	34.0V	34.0V
5	2.3V	4.4V	4.8V
6	1.6V	4.8V	4.9V
7	1.8V	4.4V	4.8V
8	2.1V	5.1V	4.3V
9	5.0V	5.0V	5.0V
10	1.5V	1.5V	1.5V
11	1.5V	1.5V	1.5V
12	0V	0V	0V
13	1.2V	1.2V	1.2V
14	11.1V	11.1V	.3V
15	0V	0V	3.9V
16	3.9V	3.9V	3.9V
17	11.7V	11.7V	11.7V
18	4.9V	4.9V	4.9V
19	4.9V	4.9V	4.9V
20	0V	0V	0V

Pin No.	VHF Low Band	VHF High Band	UHF Band
Q17101			
G1	0V	0V	1.8V
G2	5.1V	5.1V	5.1V
D	0V	0V	11.5V
S	0V	0V	0V
Q17102			
G1	1.8V	1.8V	0V
G2	5.3V	5.3V	5.3V
D	11.7V	11.6V	0V
S	0V	0V	0V
Q17402			
E	12.0V	12.0V	12.0V
B	11.7V	11.0V	11.7V
C	-11.3V	-11.6V	-11.1V
Q17403			
E	12.0V	12.0V	12.0V
B	.5V	.6V	11.4V
C	11.8V	11.6V	.1V
Q17404			
E	12.0V	12.0V	12.0V
B	11.8V	11.7V	11.0V
C	.5V	.6V	11.4V

NOTE: Voltages taken with signal.
 VHF Low Band voltages taken on channel 2.
 VHF High Band voltages taken on channel 7.
 UHF Band voltages taken on channel 14.

Important Parts Information

- Parts not listed in the parts list are commonly available at your local electronics parts retailer.
- 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

Participating Vendors

Information on test equipment and replacement parts is listed in these pages for the following participating vendors.

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

MISCELLANEOUS ADJUSTMENTS

NOTE: All procedures require an antenna connected and power applied to the set.

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 should measure 25.5kV to 27.5kV.

SERVICE MENU

The following adjustment procedures are accessed thru a service menu. To access the service menu, turn the receiver on, press the menu button and hold it down while pressing the power button. While holding down the menu button, release the power button and press the volume + button. The screen will display a one line menu, on the left the parameter P0, and on the right the value of that parameter V0. Release buttons. Adjustments are made by selecting the proper parameter and changing the value of that parameter. To change the parameter number use channel up and down buttons. To adjust the current value of that parameter use volume + and - buttons. To access and change any of the adjustments, the proper parameter pass number must be entered. This information is listed at the beginning of the alignment. When these parameters are modified, the T-Chip and the corresponding EEPROM are updated. All service adjustments are bus controlled, except focus and screen.

NOTE: In order to adjust the RF AGC, audio or video levels, tuner, PIP, or stereo circuits, the ChipperCheck hardware and software must be used. This can be purchased from Thomson Electronics. Before making any changes to any of the values, record the On Set values.

SERVICE ADJUSTMENT PARAMETERS

Parameter No.	Parameter Name	On Set Value	Value Range	Comment
0	Pass number for service adjustment parameters.	-	Must set to 76	May not advance until value is set to 76.
1	Error Code 1	0	0 - 255	Displays the first error detected. Set to 0 before exiting. See Error Codes Chart.
2	Error Code 2	0	0 - 255	Displays the second error detected. Set to 0 before exiting. See Error Codes Chart.
3	Error Code 3	0	0 - 255	Displays the last error detected. Set to 0 before exiting. See Error Codes Chart.
4	Horizontal Phase	8	0 - 15	Set value to 8.
5	EW DC (Width)	12	0 - 31	Adjust for slight horizontal overscan.
6	EW Amplitude	8	0 - 15	Set value to 8.
7	EW Tilt	8	0 - 15	Set value to 8.
8	Top Corner Pin Correction	2	0 - 7	Set value to 2.
9	Bottom Corner Pin Correction	2	0 - 7	Set value to 2.
10	Vertical DC	33	0 - 63	Adjust to center vertically.
11	Vertical Size	73	0 - 127	Adjust for slight vertical overscan.
12	Vertical Countdown Mode	0	0 - 3	Set value to 0. (0 = Standard, 1 = Non-Standard, 2 = 50Hz, 3 = 48Hz)
13	Red Bias	25	0 - 127	Press menu button on the TV set for setup line.
14	Green Bias	5	0 - 127	Press menu button on the TV set for setup line.
15	Blue Bias	23	0 - 127	Press menu button on the TV set for setup line.
16	Red Drive	43	0 - 63	Press menu button on the TV set for setup line.
17	Green Drive	32	0 - 63	Press menu button on the TV set for setup line.
18	Blue Drive	31	0 - 63	Press menu button on the TV set for setup line.
19	Gemstar Horizontal OSD Position	21	0 - 255	Set value to 21.
20	Gemstar Vertical OSD Position	33	0 - 255	Set value to 33.
21	Gemstar PIP Horizontal Position	40	0 - 255	Set value to 40.
22	Gemstar PIP Vertical Position	43	0 - 255	Set value to 43.
23	Gemstar PIP Window Vertical Size	3	0 - 13	Set value to 3.

COLOR TEMPERATURE

NOTE: See Service Adjustment Parameters to change drive and bias values.

Press menu button for collapsed raster service line. Disconnect the antenna. Preset the red, green, and blue drive values to 32. Adjust screen control for a service line that is just visible. Adjust red, green, and blue drives to obtain a white raster. Check the low light to high light gray scale tracking. Repeat the procedure, if necessary, to obtain the best performance.

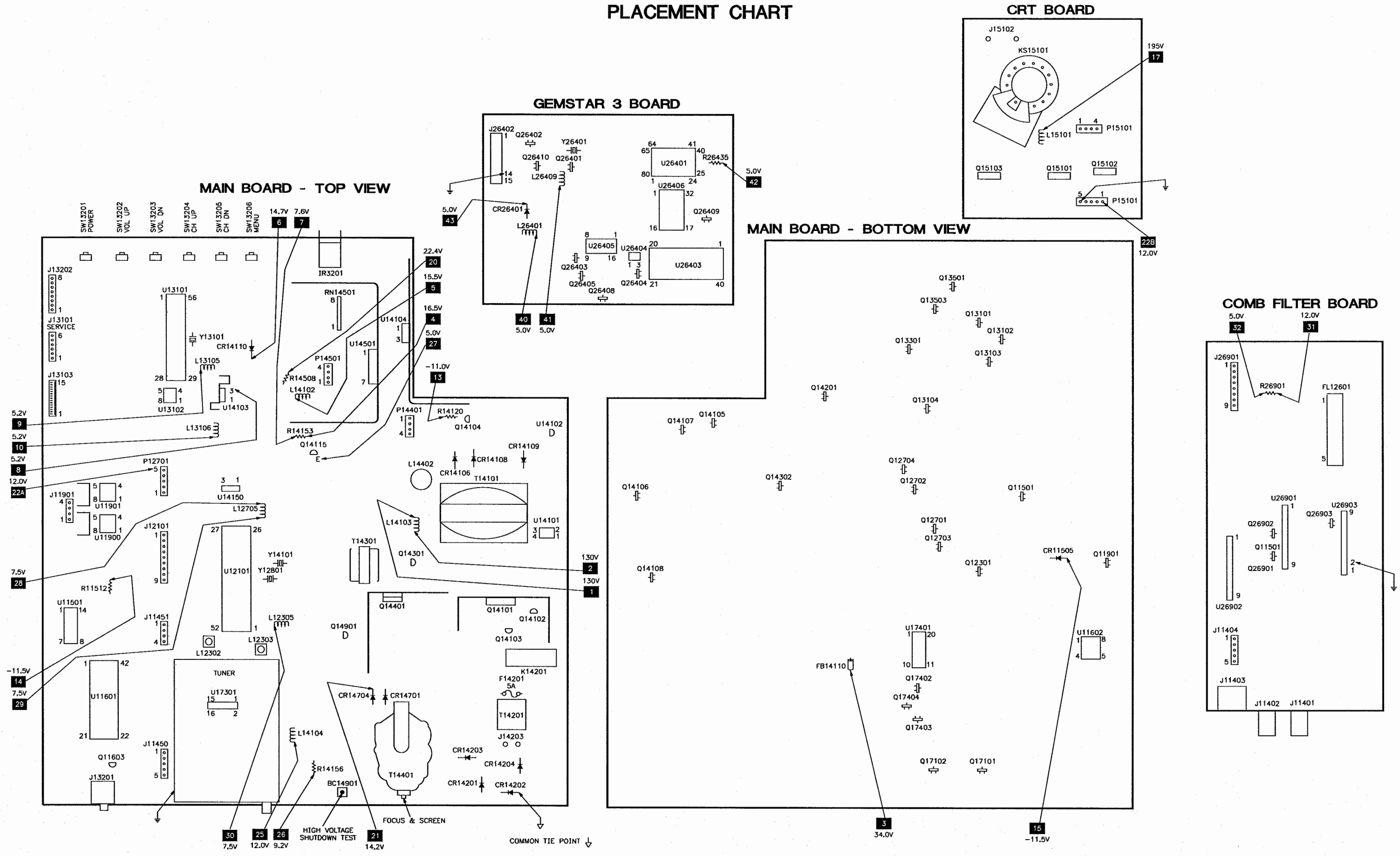
ERROR CODES CHART

Error Code DEC	HEX	Error Location	Condition Indicated
0	00	No error code	-
1	01	Detected by U13101	16.0V STBY source is failing.
3	03	Detected by U13101	12.0V source is failing.
8	08	U12101	X-ray protection caused high voltage shutdown.
9	09	U12101	Power supply problem at reset/U12101.
10	0A	PIP module error	Power supply problem at reset/PIP.
11	0B	Stereo decoder	Power supply problem at reset/Stereo decoder.
16	10	Detected by U13101	U13101 run IIC clock or data held low.
18	12	Detected by U13101	U13101 standby IIC clock or data held low.
34	22	Gemstar Board	Gemstar fails to acknowledge.
44	2C	U18100	F2PIP fails to acknowledge.
102	66	Octal DAC	Octal DAC fails to acknowledge.
128	80	Stereo decoder	Stereo decoder fails to acknowledge.
160	A0	Main or PIP tuner EEPROM	Main or PIP tuner EEPROM fails to acknowledge.
186	BA	U12101	U12101 fails to acknowledge.
196	C4	Main tuner PLL/DAC	Main tuner PLL IC fails to acknowledge.
198	C6	Main tuner PLL/DAC	Main tuner DAC IC fails to acknowledge.

ERROR CODES

If certain failures occur, the matching error codes will be stored in the EEPROM. These error codes will be displayed in parameters 1, 2, and 3. The first failure error code will be stored at parameter 1 and the second failure error code will be stored at parameter 2. Parameter 3 will be updated to display the most recent failure occurred in the chassis. If a failure of a bus IC occurred, the normal acknowledgment checking of that bus will be disabled in the service mode and the address of that IC which failed will be stored in one of the error code parameters. After every repair is done to the chassis it is recommended to check the error code parameters, and reset them back to value 0.

PLACEMENT CHART

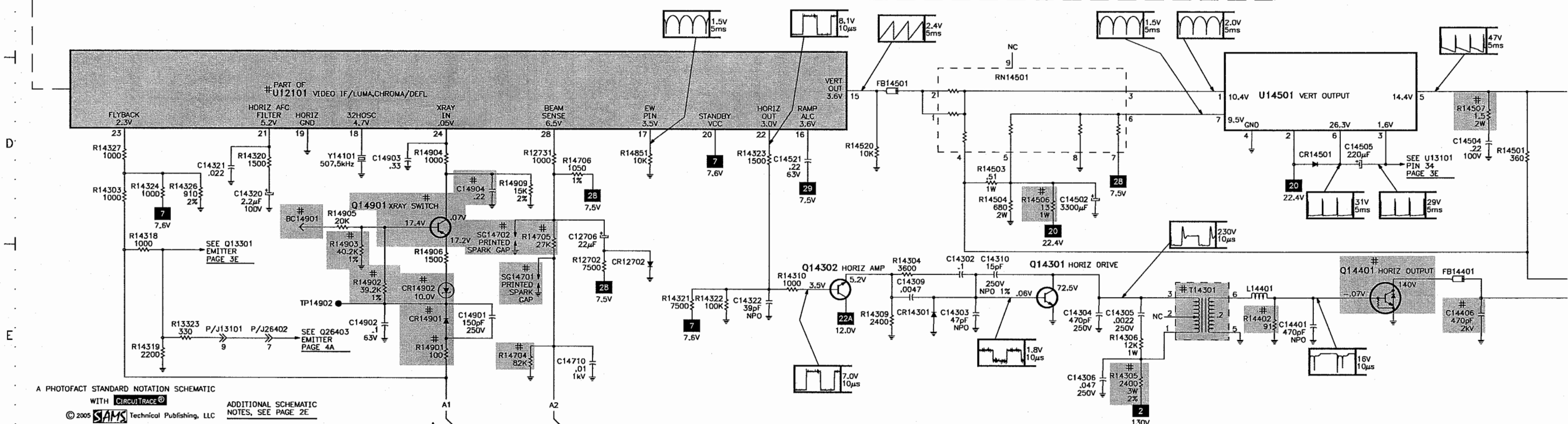
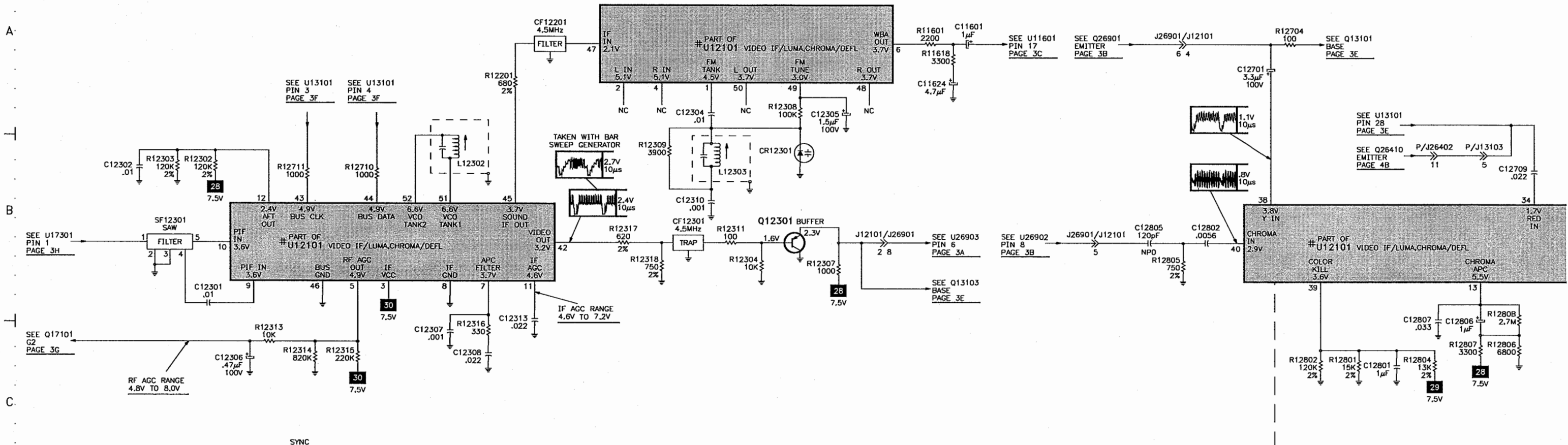


RCA MODEL F25424TX51 (CHASSIS CTC203AC9)

A

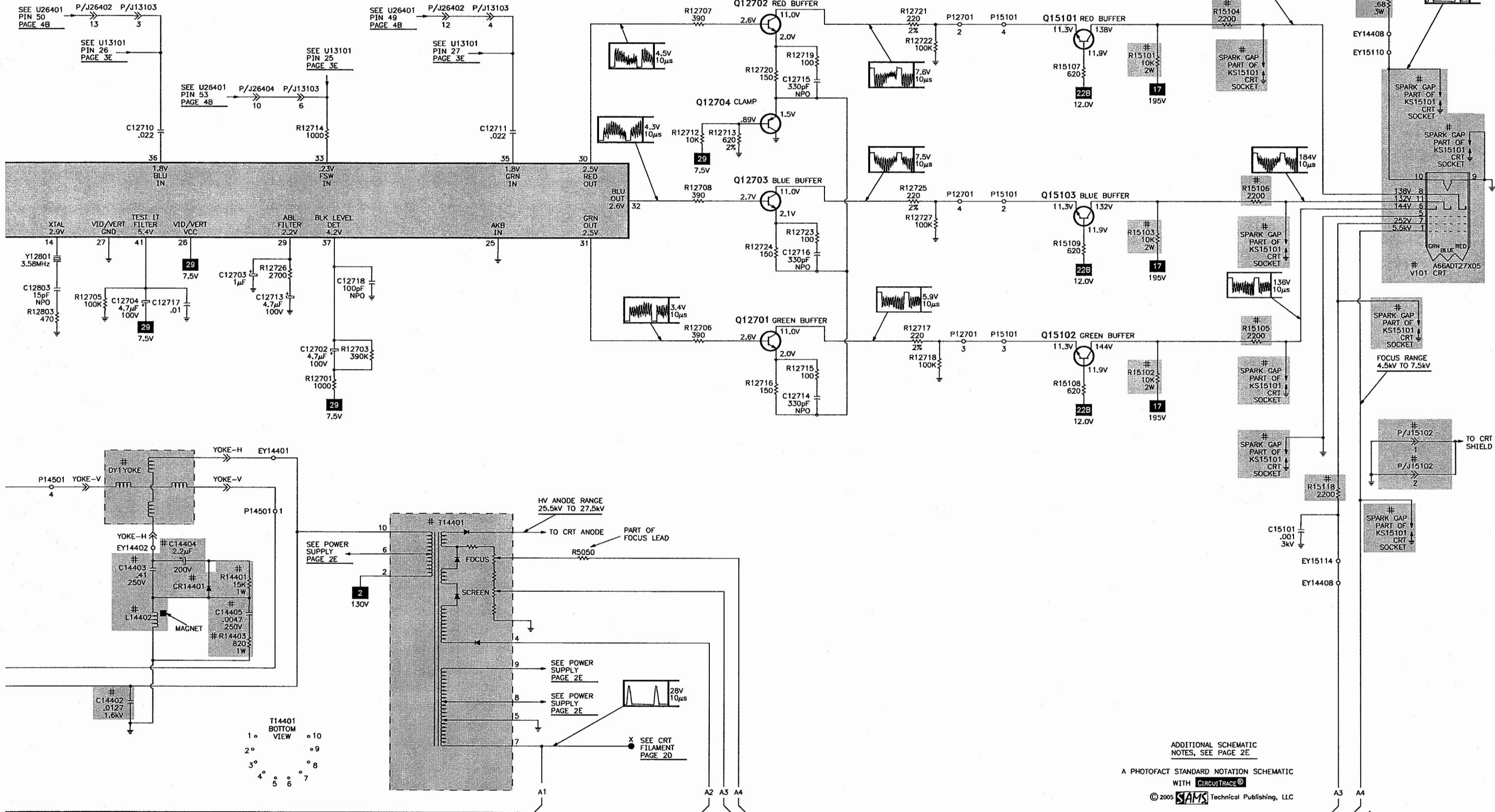
TELEVISION SCHEMATIC

B



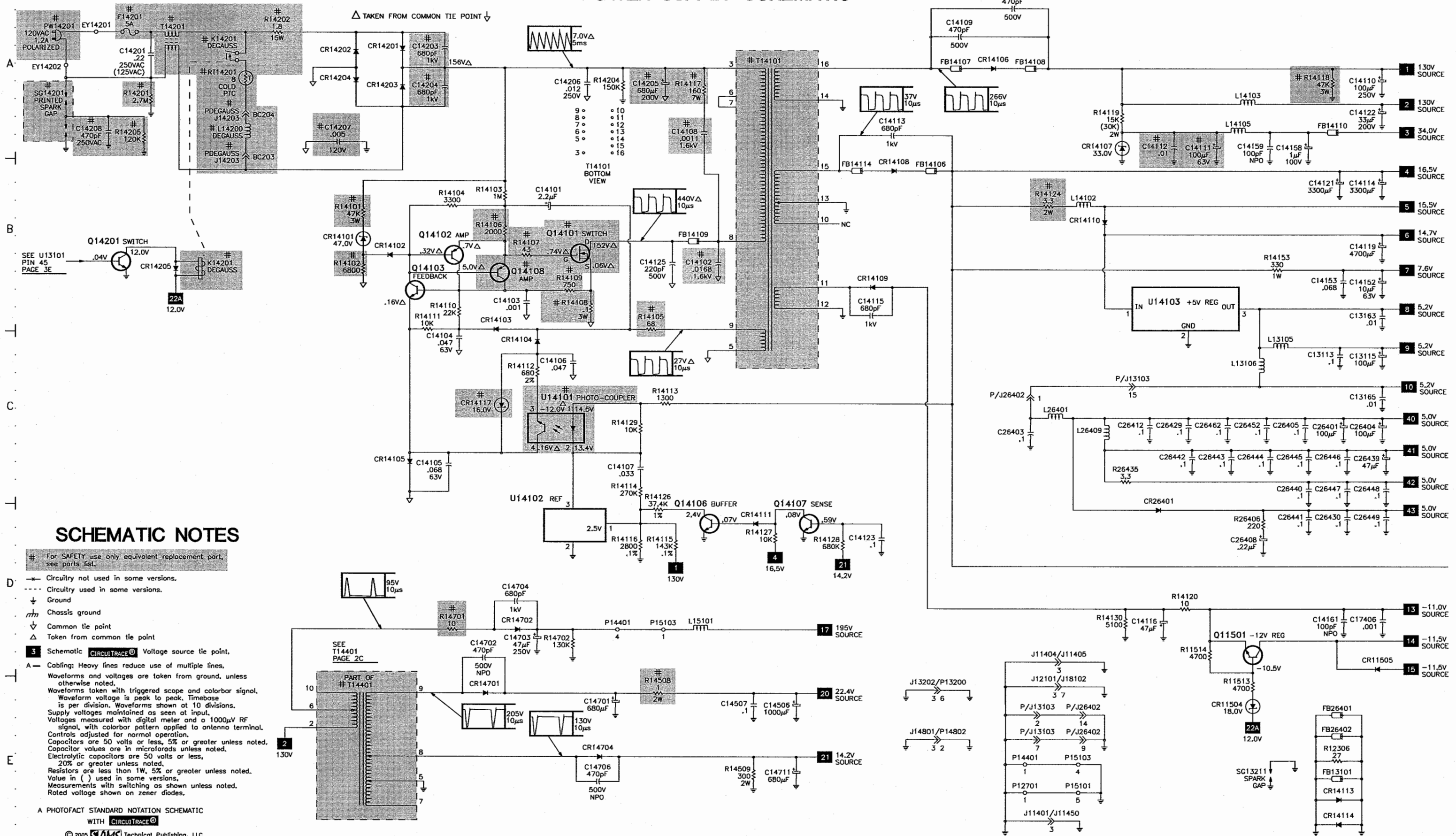
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 ADDITIONAL SCHEMATIC NOTES, SEE PAGE 2E

TELEVISION SCHEMATIC continued



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POWER SUPPLY SCHEMATIC

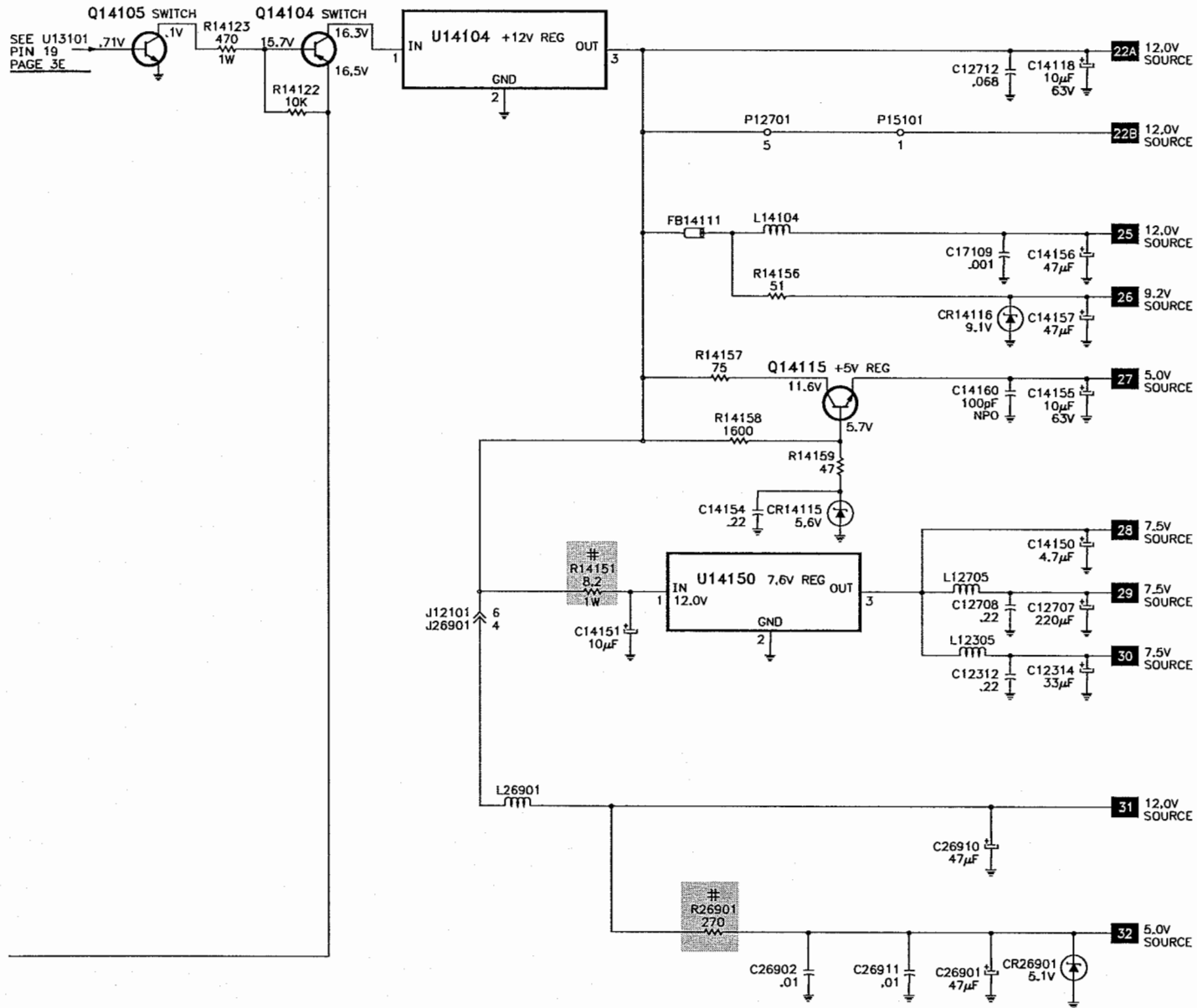


SCHEMATIC NOTES

- # 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 CIRCUITTRACE® 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. Copolymer capacitors are in microfarads unless noted. Electrolytic capacitors are 50 volts or less, 20% or greater unless noted. Resistors are less than 1W, 5% or greater unless noted. Value in () used in some versions. Measurements with switching as shown unless noted. Rotated voltage shown on zener diodes.

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G POWER SUPPLY SCHEMATIC continued



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

ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 2E

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RCA

MODEL F25424TX51 (CHASSIS CTC203AC9)

COMB FILTER SCHEMATIC

A

B

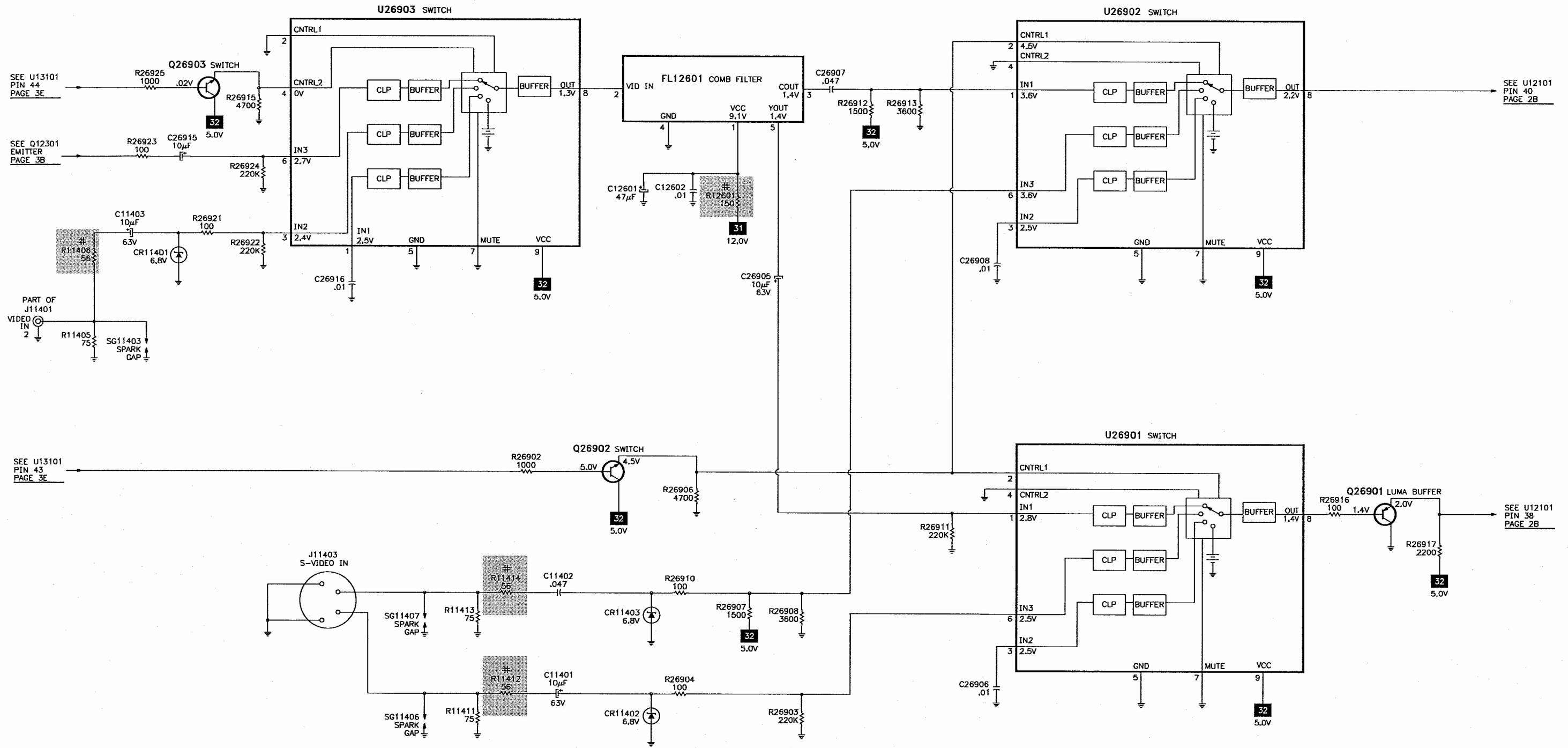
A

B

C

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E



ADDITIONAL SCHEMATIC NOTES, SEE PAGE 2E

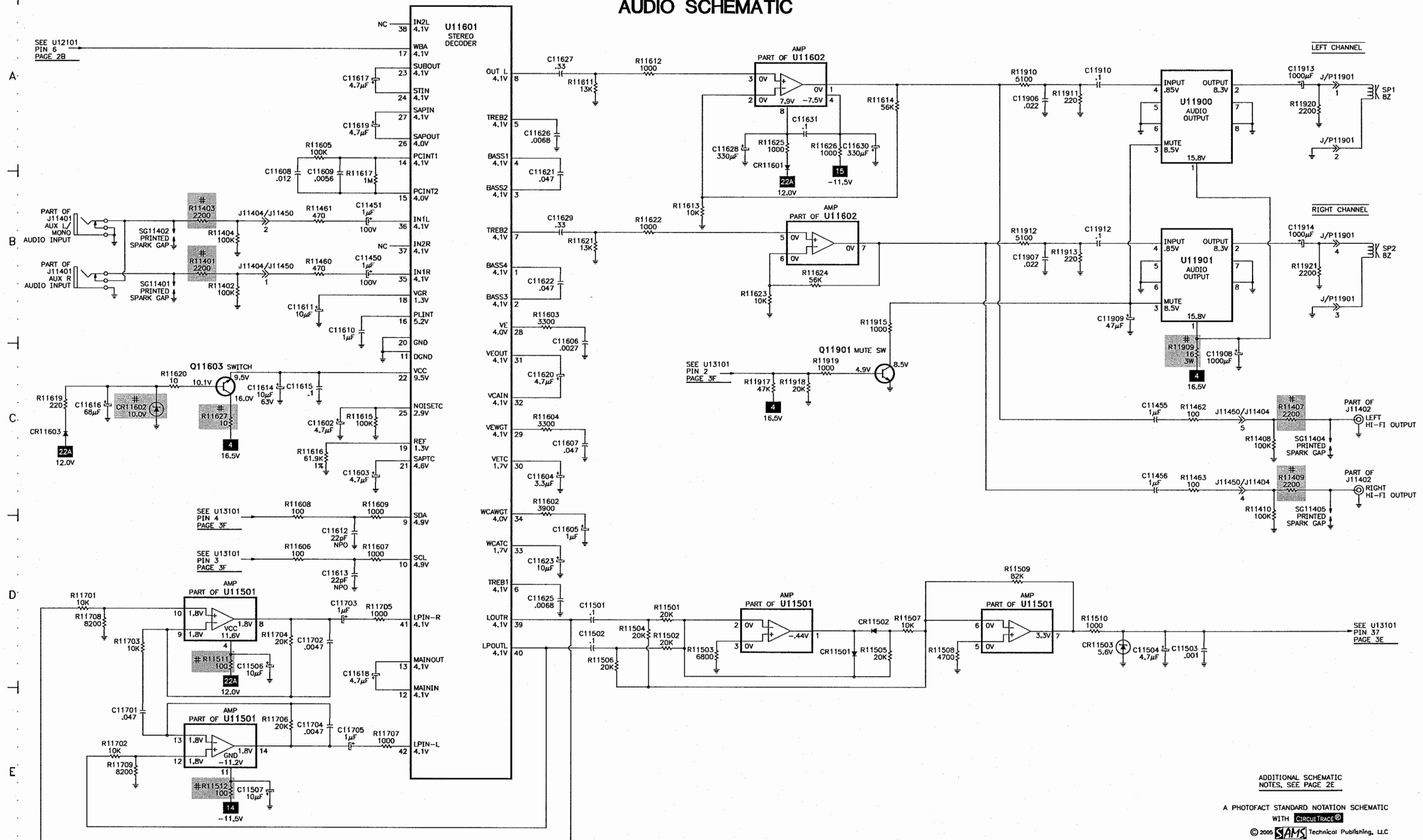
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AUDIO SCHEMATIC

C

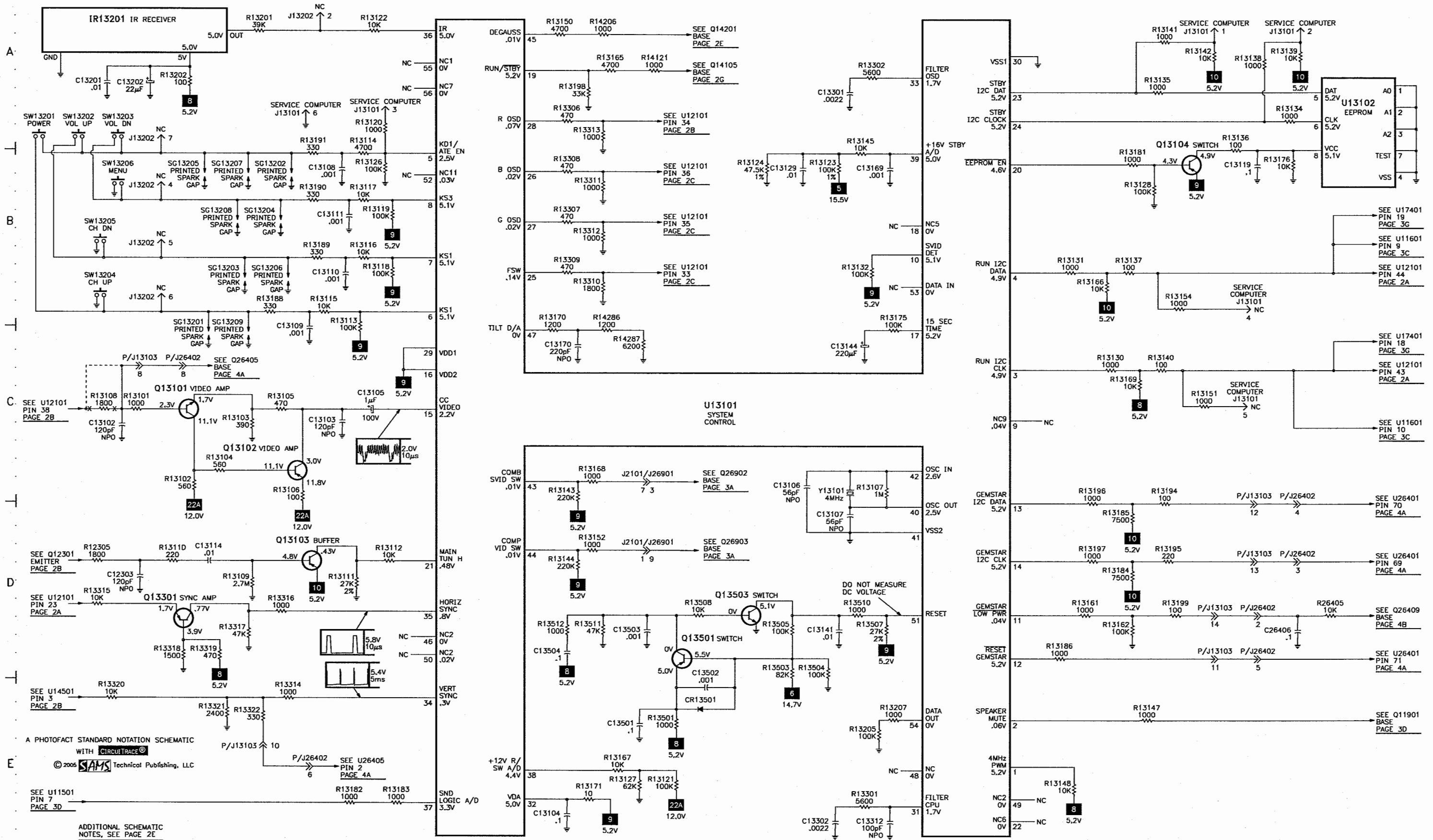
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SYSTEM CONTROL SCHEMATIC



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G

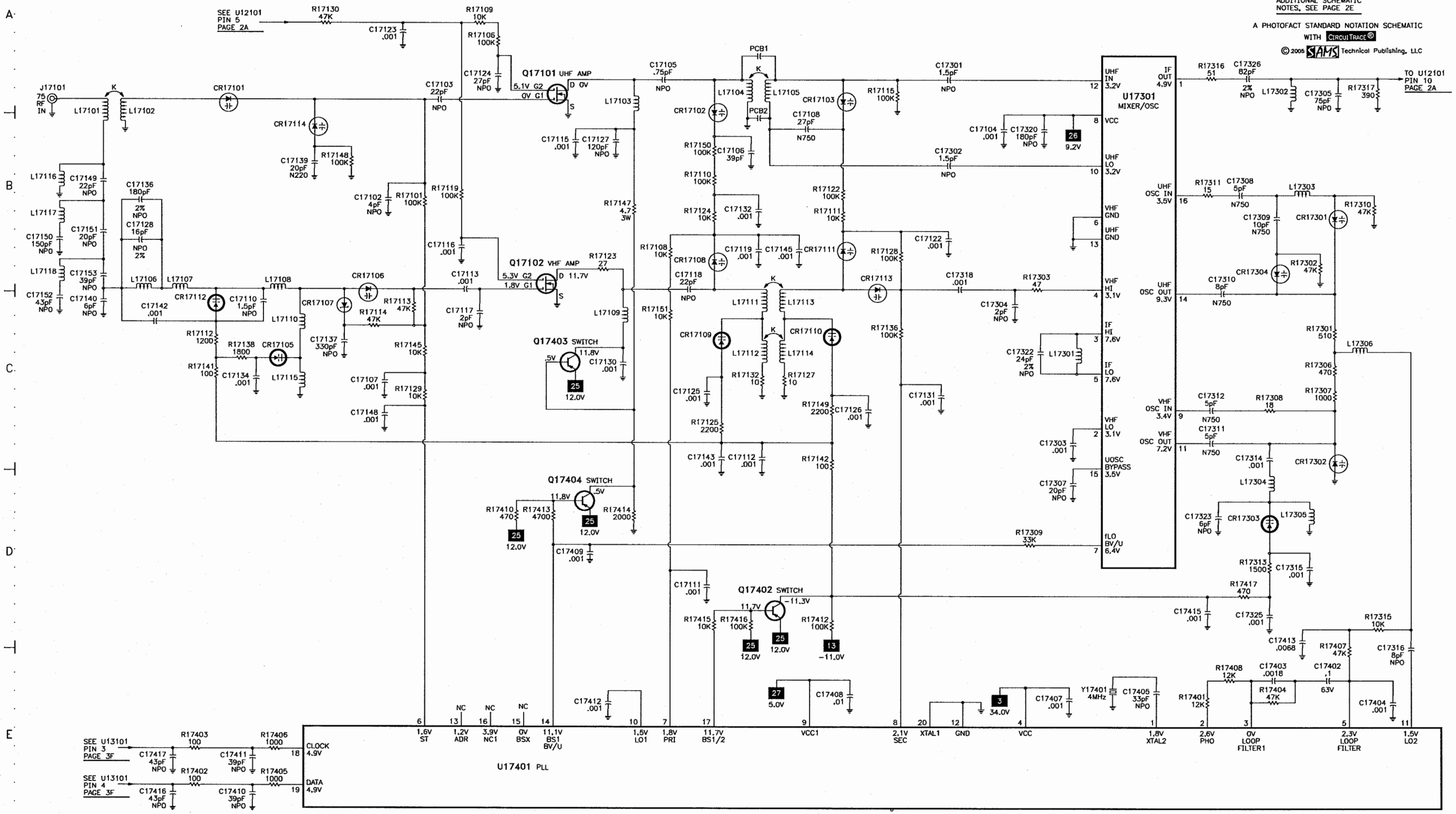
TUNER SCHEMATIC

H

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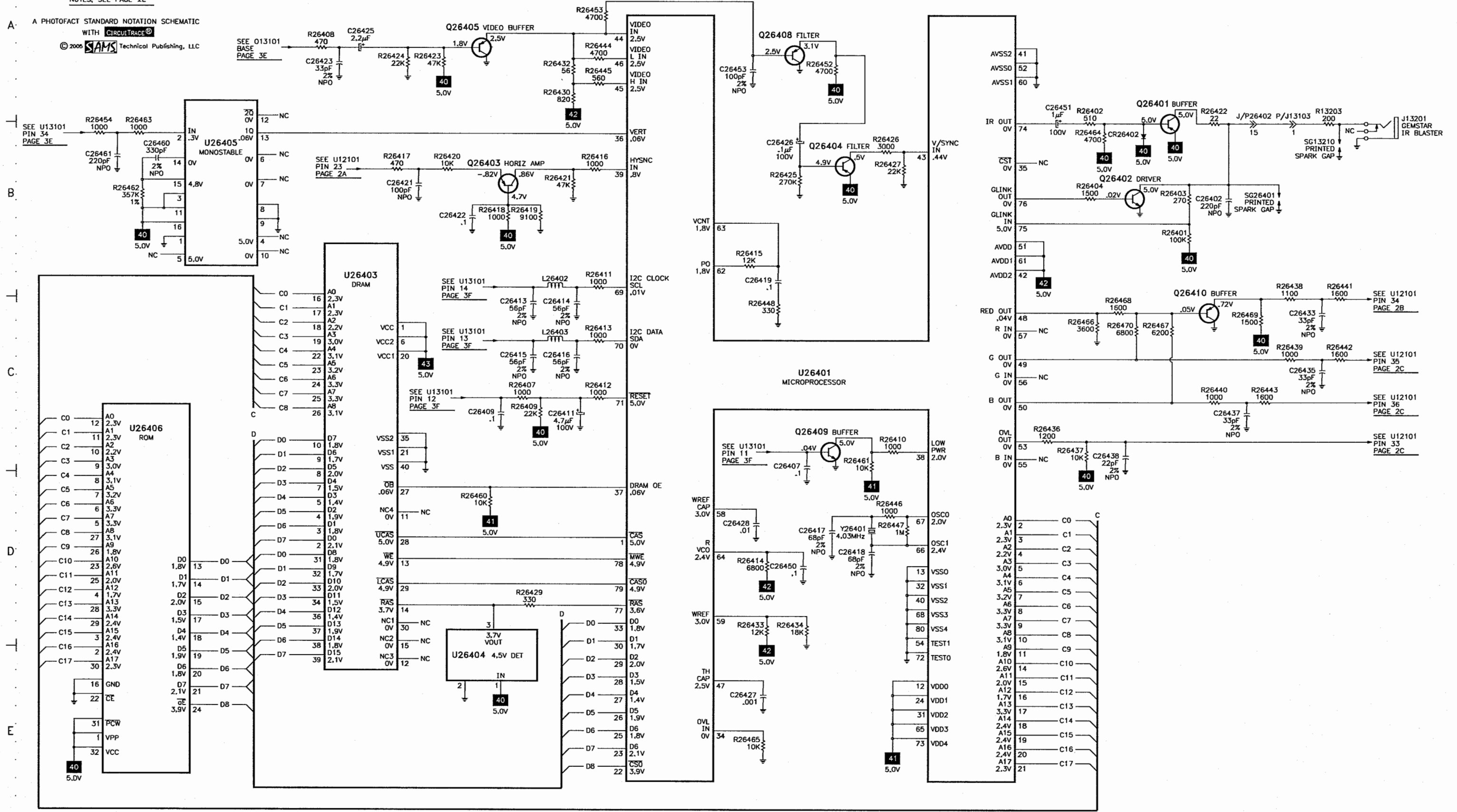
RCA MODEL F25421TX51 (CHASSIS CTC203AC9)

53 T 54 T 55 T 56 T 57 T 58 T 59 T 60

GEMSTAR 3 SCHEMATIC

ADDITIONAL SCHEMATIC NOTES, SEE PAGE 2E

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SCHEMATIC COMPONENT LOCATION GUIDE

C11401	E31	C12602	B32	C14118	A28	C17112	C57	C26405	C24	CR13501	E48	J11402	C44	Q14106	D20	R11612	A40	R12719	A13	R13167	E48	R14114	C20	R15102	C15	R26404	B66	R26917	D36
C11402	D31	C12701	A7	C14119	B24	C17113	C55	C26406	D51	CR14101	B18	J11403	D30	Q14107	D21	R11613	B40	R12720	A13	R13168	C48	R14115	D20	R15103	B15	R26405	D52	R26921	B30
C11403	B29	C12702	C10	C14121	B24	C17115	B56	C26407	D65	CR14102	B19	J13201	B68	Q14108	B19	R11614	A41	R12721	A13	R13169	C51	R14116	D20	R15104	A15	R26406	D23	R26922	B30
C11450	B38	C12703	C10	C14122	A24	C17116	B55	C26408	D23	CR14103	C19	J17101	B53	Q14115	B27	R11615	C38	R12722	A13	R13170	C47	R14117	A20	R15105	C15	R26407	C63	R26923	B29
C11451	B38	C12704	C9	C14123	D21	C17117	C55	C26409	C63	CR14104	C19	K14201	A18	Q14201	B17	R11616	C38	R12723	B13	R13171	E48	R14118	A24	R15106	B15	R26408	A62	R26924	B30
C11455	C43	C12706	D4	C14124	A22	C17118	C56	C26411	C64	CR14105	C19	K14201	B17	Q14301	E6	R11617	B38	R12724	B13	R13175	C49	R14119	A23	R15107	A14	R26409	C63	R26925	B29
C11456	C43	C12707	C28	C14125	B20	C17119	B57	C26412	C23	CR14106	A22	L12302	B3	Q14302	E5	R11618	A5	R12725	B13	R13176	B51	R14120	D23	R15108	C14	R26410	C65	R5050	D12
C11501	D40	C12708	C28	C14150	C28	C17122	B58	C26413	C63	CR14107	B23	L12303	B4	Q14401	E7	R11619	C37	R12726	C10	R13181	B51	R14121	A48	R15109	B14	R26411	C64	RN14501	D5
C11502	D40	C12709	B8	C14151	C26	C17123	A55	C26414	C64	CR14108	B21	L12305	C27	Q14901	D3	R11620	C37	R12727	B13	R13182	E46	R14122	A25	R15118	D16	R26412	C64	RT14201	A18
C11503	D43	C12710	B9	C14152	B24	C17124	A55	C26415	C63	CR14109	B21	L12705	C27	Q15101	A14	R11621	B40	R12731	D3	R13183	E47	R14123	A25	R17101	B55	R26413	C64	SF12301	B1
C11504	D43	C12711	B11	C14153	B24	C17125	C56	C26416	C64	CR14110	B23	L13105	C24	Q15102	C14	R11622	B40	R12801	C7	R13184	D51	R14124	B22	R17106	A55	R26414	D65	SP1	A44
C11506	D38	C12712	A28	C14154	B27	C17126	C57	C26417	D65	CR14111	D21	L13106	C23	Q15103	B14	R11623	B41	R12802	C7	R13185	D51	R14126	D20	R17108	B56	R26415	B64	SP2	B44
C11507	E38	C12713	C10	C14155	B28	C17127	B56	C26418	D65	CR14113	E24	L14102	B22	Q17101	B55	R11624	B41	R12803	C9	R13186	D50	R14127	D21	R17109	A55	R26416	B64	SW13201	B45
C11601	A5	C12714	C13	C14156	B28	C17128	B53	C26419	B65	CR14114	E24	L14103	A23	Q17102	C55	R11625	A41	R12804	C8	R13188	C46	R14128	D21	R17110	B56	R26417	B63	SW13202	B45
C11602	C38	C12715	B13	C14157	B28	C17130	C56	C26421	B63	CR14115	C27	L14104	B27	Q17402	D57	R11626	A41	R12805	B7	R13189	B46	R14129	C20	R17111	B57	R26418	B63	SW13203	B45
C11603	C38	C12716	B13	C14158	B24	C17131	C57	C26422	B63	CR14116	B28	L14105	A23	Q17403	C55	R11627	C38	R12806	C8	R13190	B46	R14130	D23	R17112	C54	R26419	B63	SW13204	B45
C11604	C40	C12717	C9	C14159	B23	C17132	B57	C26423	A62	CR14117	C19	L14200	A18	Q17404	D56	R11701	D37	R12807	C8	R13191	B46	R14151	C26	R17113	C55	R26420	B63	SW13205	B45
C11605	D40	C12718	C10	C14160	B28	C17134	C54	C26425	A62	CR14201	A19	L14401	E7	Q26401	B67	R11702	E37	R12808	C8	R13194	D51	R14153	B23	R17114	C54	R26421	B64	SW13206	B45
C11606	C40	C12801	C8	C14161	D24	C17136	B53	C26426	B65	CR14202	A18	L14402	D9	Q26402	B67	R11703	D37	R13101	C45	R13195	D51	R14156	B27	R17115	B57	R26422	B67	T14101	A21
C11607	C40	C12802	B7	C14201	A17	C17137	C54	C26427	E65	CR14203	A19	L15101	D20	Q26403	B63	R11704	D38	R13102	C45	R13196	D50	R14157	B27	R17119	B55	R26423	A63	T14201	A17
C11608	B38	C12803	C9	C14203	A19	C17139	B54	C26428	D65	CR14204	A18	L17101	B53	Q26404	B65	R11705	D38	R13103	C46	R13197	D50	R14158	B27	R17122	B57	R26424	A63	T14301	E7
C11609	B38	C12805	B6	C14204	A19	C17140	C53	C26429	C23	CR14205	B17	L17102	B53	Q26405	A63	R11706	E38	R13104	C46	R13198	A48	R14159	B27	R17123	B56	R26425	B65	T14401	D11
C11610	C38	C12806	C8	C14205	A20	C17142	C53	C26430	D24	CR14301	E5	L17103	B56	Q26408	A65	R11707	E39	R13105	C46	R13199	D51	R14201	A17	R17124	B56	R26426	B65	T14401	E18
C11611	B38	C12807	C8	C14206	A20	C17143	C56	C26433	C68	CR14401	D10	L17104	A56	Q26409	C65	R11708	D37	R13106	D46	R13201	A46	R14202	A18	R17125	C56	R26427	B65	U11501	D37
C11612	D38	C13102	C45	C14207	B18	C17145	B57	C26435	C68	CR14501	D7	L17105	A57	Q26410	C67	R11709	E37	R13107	C49	R13202	A45	R14204	A20	R17127	C57	R26429	D63	U11501	D41
C11613	D38	C13103	C46	C14208	A17	C17148	C54	C26437	C67	CR14701	E19	L17106	C53	Q26901	D35	R11909	C43	R13108	C45	R13203	B68	R14205	A17	R17128	B57	R26430	A64	U11501	D42
C11614	C38	C13104	E47	C14302	E5	C17149	B53	C26438	C67	CR14702	D19	L17107	C53	Q26902	D31	R11910	A42	R13109	D46	R13205	E49	R14206	A48	R17129	C55	R26432	A64	U11501	E37
C11615	C38	C13105	C46	C14303	E5	C17150	B53	C26439	C24	CR14704	E20	L17108	C54	Q26903	B30	R11911	A42	R13110	D45	R13207	E49	R14286	C48	R17130	A54	R26433	D65	U11601	A39
C11616	C37	C13106	C49	C14304	E6	C17151	B53	C26440	C24	CR14901	E3	L17109	C56	R11401	B37	R11912	B42	R13111	D46	R13301	E49	R14287	C48	R17132	C57	R26434	D65	U11602	A41
C11617	A38	C13107	D49	C14305	E6	C17152	C53	C26441	D24	CR14902	E3	L17110	C54	R11402	B38	R11913	B42	R13112	D46	R13302	A49	R14303	D1	R17136	C57	R26435	C23	U11602	B41
C11618	D38	C13108	B46	C14306	E6	C17153	B53	C26442	C23	CR17101	B54	L17111	C57	R11403	B37	R11915	B41	R13113	C46	R13306	A47	R14304	E5	R17138	C54	R26436	C66	U11900	A43
C11619	A38	C13109	C46	C14309	E5	C17301	A57	C26443	C23	CR17102	B56	L17112	C57	R11404	B38	R11917	C41	R13114	B46	R13307	B47	R14305	E6	R17141	C54	R26437	C66	U11901	B43
C11620	C40	C13110	B46	C14310	E5	C17302	B57	C26444	C23	CR17103	B57	L17113	C57	R11405	C29	R11918	C41	R13115	C46	R13308	B47	R14306	E6	R17142	D57	R26438	C67	U12101	A4
C11621	B40	C13111	B46	C14320	D2	C17303	C58	C26445	C24	CR17105	C54	L17114	C57	R11406	B29	R11919	C41	R13116	B46	R13309	B47	R14309	E5	R17145	C55	R26439	C67	U12101	B2
C11622	B40	C13113	C24	C14321	D2	C17304	C58	C26446	C24	CR17106	C54	L17115	C54	R11407	C44	R11920	A44	R13117	B46	R13310	B48	R14310	E4	R17147	B56	R26440	C67	U12101	B7
C11623	D40	C13114	D46	C14322	E4	C17305	A60	C26447	C24	CR17107	C54	L17116	B53	R11408	C44	R11921	B44	R13118	B47	R13311	B48	R14318	E1	R17148	B54	R26441	C68	U12101	D2
C11624	A5	C13115	C24	C14401	E7	C17307	D58	C26448	C24	CR17108	B56	L17117	B53	R11409	C44	R12201	A3	R13119	B47	R13312	B48	R14319	E1	R17149	C57	R26442	C68	U13101	C48
C11625	D40	C13119	B51	C14402	E9	C17308	B59	C26449	D24	CR17109	C56	L17118	B53	R11410	D44	R12302	B2	R13120	A47	R13313	B48	R14320	D2	R17150	B56	R26443	C67	U13102	A52
C11626	A39	C13129	B49	C14403	D9	C17309	B59	C26450	D65	CR17110	C57	L17301	C58	R11411	E31	R12303	B1	R13121	E48	R13314	E46	R14321	E4	R17151	C56	R26444	A64	U14101	C19
C11627	A39	C13141	D49	C14404	D9	C17310	C59	C26451	B66	CR17111	B57	L17302	A59	R11412	E31	R12304	B4	R13122	A46	R13315	D45	R14322	E4	R17301	C60	R26445	A64	U14102	D19
C11628	A41	C13144	C49	C14405	D10	C17311	C59	C26452	C23	CR17112	C54	L17303	B59	R11413	D31	R12305	D45	R13123	B49	R13316	D46	R14323	D4	R17302	B60	R26446	D65	U14103	B23
C11629	B39	C13163	B24	C14406	E8	C17312	C59	C26453	A65	CR17113	C57	L17304	D59	R11414	D31	R12306	E24	R13124	B49	R13317	D46	R14324	D1	R17303	C58	R26447	D65	U14104	A26
C11630	A41	C13165	C24	C14502	D6	C17314	C59	C26460	B61	CR17114	B54	L17305	D59	R11460	B38	R12307	B5	R13126	B47	R13318	D45	R14326	D1	R17306	C60	R26448	C65	U14150	C27
C11631	A41	C13169	B49	C14504	D8	C17315	D59	C26461	B61	CR17301	B60	L17306	C60	R11461	B38	R12308	A5	R13127	E48	R13319	D46	R14327	D1	R17307	C60	R26452	A65	U14501	D7
C11701	E37	C13170	C48	C14505	D7	C17316	E60	C26462	C23	CR17302	D60	L26401	C22	R11462	C43	R12309	B4	R13128	B51	R13320	E45	R14401	D10	R17308	C59	R26453	A64	U17301	B59
C11702	D38	C13201	A45	C14506	E21	C17318	C58	C26901	D28	CR17303	D59	L26402	C63	R11463	C43	R12311	B4	R13130	C50	R13321	E46	R14402	E7	R17309	D58	R26454	B61	U17401	E55
C11703	D38	C13202	A45	C14507	E21	C17320	B58	C26902	D27	CR17304	C59	L26403	C63	R11501	D40	R12313	C2	R13131	B50	R13322	E46	R14403	E10	R17310	B60	R26460	D63	U26401	C65
C11704	E38																												

PARTS LIST

Item No.	Type No.	Mfr. Part No.	NTE Part No.	Item No.	Type No.	Mfr. Part No.	NTE Part No.
CR11401, 02, 03	-	220638	NTE5014A	CR17301	-	215492	-
CR11501, 02	-	232709	-	CR17302	-	215494	-
CR11503	-	215488	NTE136A	CR17303	-	215493	-
CR11504	-	226463	-	CR17304	-	215492	-
CR11505	-	232709	-	CR26401	-	223651	-
CR11601	-	232709	-	CR26402	-	232709	-
# CR11602	-	159429	NTE5019T1	CR26901	-	198602	-
CR11603	-	232709	-	Q11501	-	215495	-
CR12301	-	227051	-	Q11603	-	177788	NTE31
CR12702	-	198589	NTE519	Q11901	-	215495	-
CR13501	-	164874	NTE177	Q12301	-	215496	-
CR14101	-	232221	-	Q12701, 02, 03	-	215495	-
CR14102	-	198589	NTE519	Q12704	-	215496	-
CR14103, 04	-	139706	NTE177	Q13101	-	215495	-
CR14105	-	198589	NTE519	Q13102, 03, 04	-	215496	-
CR14106	-	243636	-	Q13301	-	215496	-
CR14107	-	217306	-	Q13501	-	215496	-
CR14108	-	243636	-	Q13503	-	215495	-
CR14109	-	176296	NTE552	# Q14101	-	244223	-
CR14110	-	155276	NTE116	Q14102	-	147665	NTE159
CR14111	-	198589	NTE519	Q14103	-	232218	-
CR14113, 14	-	232709	-	Q14104	-	243955	-
CR14115	-	215488	NTE136A	Q14105, 06, 07	-	215495	-
CR14116	-	227362	-	# Q14108	-	215496	-
# CR14117	-	244224	-	Q14115	-	229220	-
CR14201 Thru	-	-	-	Q14201	-	219412	-
CR14204	-	147015	NTE125	Q14301	-	146851	NTE287
CR14205	-	198589	NTE519	Q14302	-	215495	-
CR14301	-	176296	NTE552	# Q14401	-	242224	-
# CR14401	-	140971	NTE558	# Q14901	-	147665	NTE159
CR14501	-	155276	NTE116	Q15101, 02, 03	-	215497	NTE2501
CR14701	-	241304	-	Q17101, 02	-	226973	-
CR14702	-	176296	NTE552	Q17402	-	215496	-
CR14704	-	207878	NTE519	Q17403	-	231534	-
# CR14901	-	157301	NTE177	Q17404	-	215496	-
# CR14902	-	159429	NTE5019T1	Q26401	-	215496	-
CR17101, 02, 03	-	215492	-	Q26402	-	215495	-
CR17105	-	215493	-	Q26403, 04, 05	-	215496	-
CR17106	-	233085	-	Q26408	-	215496	-
CR17107, 08	-	215494	-	Q26409	-	215495	-
CR17109, 10	-	215493	-	Q26410	-	215496	-
CR17111	-	215494	-	Q26901	-	215496	-
CR17112	-	215493	-	Q26902, 03	-	215495	-
CR17113	-	233085	-	U11501	MC3403N	241785	NTE987
CR17114	-	215492	-	U11601	CXA2074S	237930	-

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Item No.	Type No.	Mfr. Part No.	NTE Part No.
U11602	-	237474	-
U11900, 01	TDA7267	244225	-
# U12101	LA7612N	241266	-
	LA7612A	252842	-
U13101	ST9296N9B1/JBT	244226	-
U13102	24C08	244878	-
# U14101	-	223653	-
U14102	-	231525	-
U14103	L7852CV	241752	-
U14104	KA7812	162394	NTE966
U14150	L78S75CV	231526	-
U14501	TDA8172	232109	NTE1788
U17301	-	231528	-
U17401	-	231529	-
U26401	GS301A	241781	-
U26403	KM416C2560J-L6	241783	-
U26404	-	237669	-
U26405	HC123A	239151	-
U26406	-	244258	-
U26901, 02, 03	LA7221	227354	-

Item No.	Function/Rating	Mfr. Part No.	Notes
C11612, 13	22pF 5% 50V NPO	194903	-
C12303	120pF 5% 50V NPO	194902	-
C12714, 15, 16	330pF 5% 50V NPO	205227	-
C12718	100pF 5% 50V NPO	193340	-
C12803	15pF 5% 50V NPO	200538	-
C12805	120pF 5% 50V NPO	194902	-
C13102, 03	120pF 5% 50V NPO	194902	-
C13106, 07	56pF 5% 50V NPO	214741	-
C13170	220pF 5% 50V NPO	205551	-
C13312	100pF 5% 50V NPO	193340	-
# C14102	.0168 1.6kV	237355	-
# C14108	.0011 1.6kV	244208	-
# C14111	100µF 20% 63V	237425	-
# C14112	.01 10% 50V	240934	-
C14113, 15	680pF 10% 1kV	190538	-
C14159, 60	100pF 5% 50V NPO	193340	-
C14161	100pF 5% 50V NPO	174412	-
C14201	.22 250VAC	-	-
	.22 20% 125VAC	231451	-
# C14203, 04	680pF 10% 1kV	190538	-
# C14205	680µF 20% 200V	190560	-
# C14207	.005 20% 120V	195697	-
# C14208	470pF 10% 250VAC	250102	-

Item No.	Function/Rating	Mfr. Part No.	Notes
C14303	47pF 5% 50V NPO	214732	-
C14310	15pF 1% 250V NPO	223899	-
C14322	39pF 5% 50V NPO	202905	-
C14401	470pF 5% 50V NPO	195918	-
# C14402	.0127 1.6kV	246497	-
# C14403	.41 5% 250V	214752	-
# C14404	2.2µF 20% 200V	247673	-
# C14405	.0047 10% 250V	142765	-
# C14406	470pF 5% 2kV	227068	-
C14702	470pF 10% 500V NPO	227050	-
C14704	680pF 10% 1kV	190538	-
C14706	470pF 10% 500V NPO	227050	-
C14710	.01 20% 1kV	137583	-
# C14904	.22 +80% -20% 25V	217298	-
C15101	.001 10% 3kV	120696	-
C17102	4pF ±.25pF 50V NPO	244210	-
C17103	22pF 5% 50V NPO	194903	-
C17105	.75pF ±.25 50V NPO	214758	-
C17108	27pF 5% 50V N750	214760	-
C17110	1.5pF ±.1pF 50V NPO	223146	-
C17117	2pF ±.25pF 50V NPO	194905	-
C17118	22pF 5% 50V NPO	194903	-
C17124	27pF 5% 50V NPO	197604	-
C17127	120pF 5% 50V NPO	194902	-
C17128	16pF 2% 50V NPO	214736	-
C17136	180pF 2% 50V NPO	241265	-
C17137	330pF 5% 50V NPO	205227	-
C17139	20pF 5% 50V N220	244211	-
C17140	6pF ±.25pF 50V NPO	227250	-
C17149	22pF 5% 50V NPO	194903	-
C17150	150pF 5% 50V NPO	214032	-
C17151	20pF 5% 50V NPO	220150	-
C17152	43pF 5% 50V NPO	214029	-
C17153	39pF 5% 50V NPO	202905	-
C17301, 02	1.5pF ±.1pF 50V NPO	223146	-
C17304	2pF ±.25pF 50V NPO	194905	-
C17305	75pF 5% 50V NPO	192061	-
C17307	20pF 5% 50V NPO	220150	-
C17308	5pF ±.25pF 50V N750	231457	-
C17309	10pF ±.5pF 50V N750	244212	-
C17310	8pF ±.5pF 50V N750	214766	-
C17311, 12	5pF ±.25pF 50V N750	231457	-
C17316	8pF ±.5pF 50V NPO	194909	-
C17320	180pF 2% 50V NPO	241265	-
C17322	24pF 2% 50V NPO	231459	-

PARTS LIST continued

Item No.	Function/Rating	Mfr. Part No.	Notes	Item No.	Function/Rating	Mfr. Part No.	Notes
C17323	6pF ±.25pF 50V NPO	227250	-	# L14200	Degaussing	218764	-
C17326	82pF 2%	231460	-	L14401	6.8µH	191141	-
C17405	33pF 5% 50V NPO	194911	-	# L14402	Horizontal Linearity	192844	-
C17410, 11	39pF 5% 50V NPO	202905	-	L15101	100µH	160186	-
C17416, 17	43pF 5% 50V NPO	214029	-	L17101	-	215507	-
C26402	220pF 5% 50V NPO	205551	-	L17102	-	236641	-
C26413 Thru				L17103	-	223929	-
C26416	56pF 2% 50V NPO	239136	-	L17104, 05	-	223917	-
C26417, 18	68pF 2% 50V NPO	214762	-	L17106	-	237456	-
C26421	100pF 5% 50V NPO	193340	-	L17107	-	233057	-
C26423	33pF 2% 50V NPO	239138	-	L17108	-	233074	-
C26433, 35, 37	33pF 2% 50V NPO	239138	-	L17109	-	200559	-
C26438	22pF 2% 50V NPO	223698	-	L17110	-	233075	-
C26453	100pF 2% 50V NPO	227089	-	L17111	-	233076	-
C26460	330pF 2% 50V NPO	241779	-	L17112	-	231441	-
C26461	220pF 5% 50V NPO	205551	-	L17113	-	233077	-
CF12201	Filter	195702	4.5MHz	L17114	-	231441	-
CF12301	Trap	238296	4.5MHz	L17115	-	233078	-
# DY1 (1)	Yoke	-	-	L17116	-	237461	-
# F14201	Fuse	175425	5Amp, 125V	L17117	-	237460	-
FB13101	Ferrite Bead	226467	-	L17118	-	237461	-
FB14106, 07, 08	Ferrite Bead	237504	-	L17301	-	231443	-
FB14109	Ferrite Bead	226467	-	L17302	-	231444	-
FB14110, 11	Ferrite Bead	215546	-	L17303	-	233079	-
FB14114	Ferrite Bead	237504	-	L17304	-	233080	-
FB14401	Ferrite Bead	161237	-	L17305	-	236643	-
FB14501	Ferrite Bead	215547	-	L17306	-	231448	-
FB26401, 02	Ferrite Bead	226467	-	L26401	2.2µH	197616	-
FL12601	Filter	225701	Comb	L26402, 03	2.2µH	239143	-
IR13201	Receiver	244227	IR	L26409	2.2µH	197616	-
J11401	Jack	239389	Assembly	L26901	-	244249	-
J11402	Jack	245283	Assembly	# PW14201	Line Cord	241251	AC, Polarized
J11403	Jack	195705	S-Video Input	# R11401, 03	2200 20% 1/4W	237429	-
J13201	Socket	214609	Gemstar IR Blaster	# R11406	56 20% 1/4W	237448	-
J17101	Jack	215543	75 RF Input	# R11407, 09	2200 20% 1/4W	237429	-
# K14201	Relay	190490	Degaussing	# R11412, 14	56 20% 1/4W	237448	-
# KS15101	Socket	233120	CRT	# R11511, 12	100 5% 1/4W Nonflammable	198667	-
L12302	VCO	215502	-	R11616	61.9K 1%	225705	-
L12303	FM	233056	-	# R11627	10 5% 1/4W Nonflammable	241259	-
L12305	10µH	175409	-	# R11909	16 5% 3W Nonflammable	244213	-
L12705	10µH	175409	-	R12201	680 2% 1/10W	195939	-
L13105, 06	4.7µH	237451	-	R12302, 03	120K 2% 1/10W	207834	-
L14102	-	190017	-	R12317	620 2% 1/8W	181493	-
L14103	22µH	215504	-	R12318	750 2% 1/10W	202914	-
L14104, 05	-	244222	-	# R12601	150 5% 1/4W	176645	-

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Item No.	Function/Rating	Mfr. Part No.	Notes	Item No.	Function/Rating	Mfr. Part No.	Notes
R12713	620 2% 1/10W	205339	-	# R15101, 02, 03	10K 5% 2W Nonflammable	176656	-
R12717, 21, 25	220 2% 1/4W	175324	-	# R15104, 05, 06	2200 5% 1/2W	247669	-
R12801	15K 2% 1/10W	205354	-	# R15118	2200 5% 1/2W	247669	-
R12802	120K 2% 1/10W	207834	-	R17147	4.7 5% 3W	205411	-
R12804	13K 2% 1/8W	178285	-	R26462	357K 1% 1/10W	241780	-
R12805	750 2% 1/10W	202914	-	# R26901	270 5% 1/2W	192410	-
R13111	27K 2% 1/10W	205245	-	RN14501	Resistor Network	215499	-
R13123	100K 1% 1/10W	215221	-	# RT14201	8 Cold PTC	207768	-
R13124	47.5K 1% 1/10W	237430	-	SF12301	Filter	217318	SAW
R13507	27K 2% 1/10W	205245	-	SP1, 2	Speaker	243893	60 X 90mm, 8 Ohms
# R14101	47K 5% 3W	232213	-	SW13201	Switch	215500	Power
# R14102	6800 5% 1/2W	179248	-	SW13202	Switch	215500	Volume Up
# R14105	68 5% 1/4W	175039	-	SW13203	Switch	215500	Volume Down
# R14106	2000 5% 1/4W	175321	-	SW13204	Switch	215500	Channel Up
# R14107	43	244214	-	SW13205	Switch	215500	Channel Down
# R14108	.1 5% 3W	244215	-	SW13206	Switch	215500	Menu
# R14109	750 5% 1/4W	179317	-	# T14101	SMT	244228	-
R14112	680 2% 1/10W	195939	-	# T14201	Line Filter	190507	-
R14115	143K .1%	244216	-	# T14301	Horizontal Drive	215541	-
R14116	2800 .1% 1/4W	244217	-	# T14401 (2)	Horizontal Output	244229	-
# R14117	160 5% 7W	227958	-	# V101	CRT	HA66ADT275	A66ADT27X05
# R14118	47K 5% 3W	232213	-	Y12801	Crystal	161235	3.58MHz
# R14124	3.3 5% 2W Nonflammable	223680	-	Y13101	Crystal	230708	4MHz
R14126	37.4K 1%	215215	-	Y14101	Resonator	227064	507.5kHz
# R14151	8.2 5% 1W	235378	-	Y17401	Crystal	230708	4MHz
# R14201	2.7M 10% 1/2W	217662	-	Y26401	Filter	241784	4.03MHz
# R14202	1.8 10% 15W	200444	-		PC Board	243874	Analog Comb Filter
# R14205	120K 20% 1/2W	238903	-		PC Board	243874	Comb Filter
# R14305	2400 2% 3W	235380	-		PC Board	244468	CRT
R14326	910 2% 1/10W	197627	-		PC Board	244160	Gemstar 3
# R14401	15K 5% 1W	190557	-		Transmitter	242524	Remote, CRK76TE1
# R14402	91 5% 1/2W	227249	-				
# R14403	820 5% 1W	175349	-				
# R14506	13 5% 1W	231508	-				
# R14507	1.5 5% 2W	237441	-				
# R14508	1 5% 2W	215577	-				
# R14701	10 20% 1/2W	241261	-				
# R14703	.68 5% 3W	244221	-				
# R14704	82K 10% 1/2W	239116	-				
# R14705	27K 10% 1/2W	238958	-				
R14706	1050 1% 1/4W	231511	-				
# R14901	100 5% 1/4W Nonflammable	198667	-				
# R14902	39.2K 1% 1/4W	190469	-				
# R14903	40.2K 1% 1/4W	219026	-				
R14909	15K 2% 1/10W	205354	-				

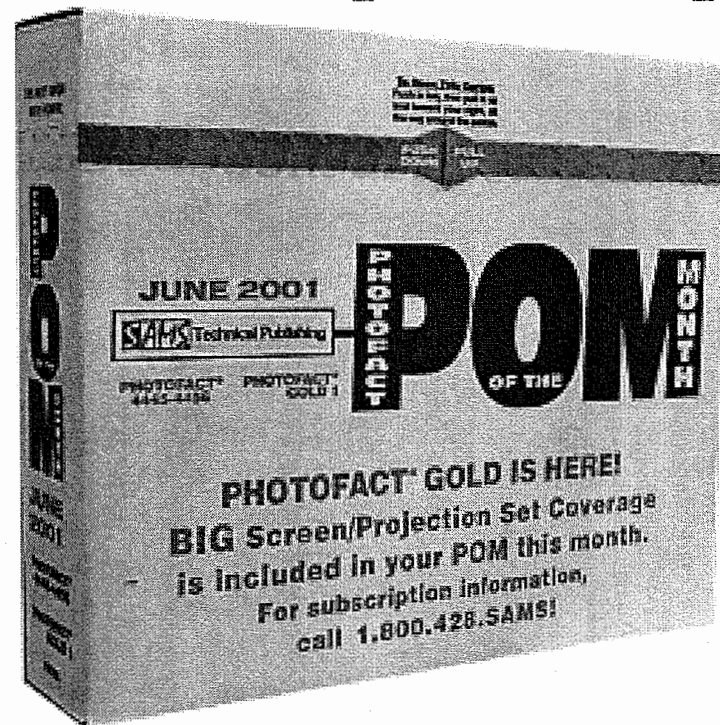
For SAFETY use only equivalent replacement part.

(1) Bonded part of CRT.

(2) Screen and focus controls are part of T14401.

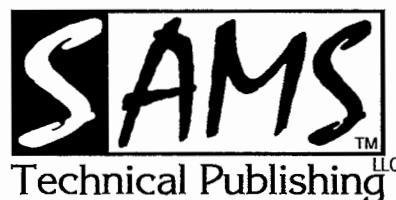
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