

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.

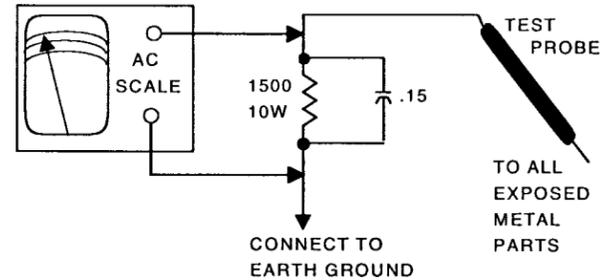
SAFETY CHECKS — FIRE AND SHOCK HAZARD

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

Place a jumper between pins 3 and 4 of IC803. Apply 9.0V to the cathode of D001. Connect a high voltage probe to the CRT anode. Set the AC supply to 45VAC. Turn the receiver on and slowly increase the AC supply. Confirm the high voltage does not exceed 37.1kV when the horizontal just begins to pull out of sync. If the high voltage should exceed 37.1kV or the receiver fails to lose horizontal sync, the horizontal oscillator disable circuit should be repaired. Remove jumper and the 9.0V DC supply.

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

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9850 East 30th Street
Indianapolis, IN 46229

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

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PHOTOFACT[®] Technical Service Data

SILVER

4742

PANASONIC

Model CT-3207DF (Chassis QP341)



Representative Model

Essential coverage for servicing a television receiver...

- Schematics
- Component locations
- Parts list

Coverage includes these additional models and chassis:

Models	Chassis
CT-32D32F	GP341
CT-32D32UF	GP341
CT-3207DUF	QP341



JUNE 2003 SET 4742

SET 4742

MODEL CT-3207DF (CHASSIS QP341)

PANASONIC

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For Supplier Address,
See PHOTOFACT Annual Index

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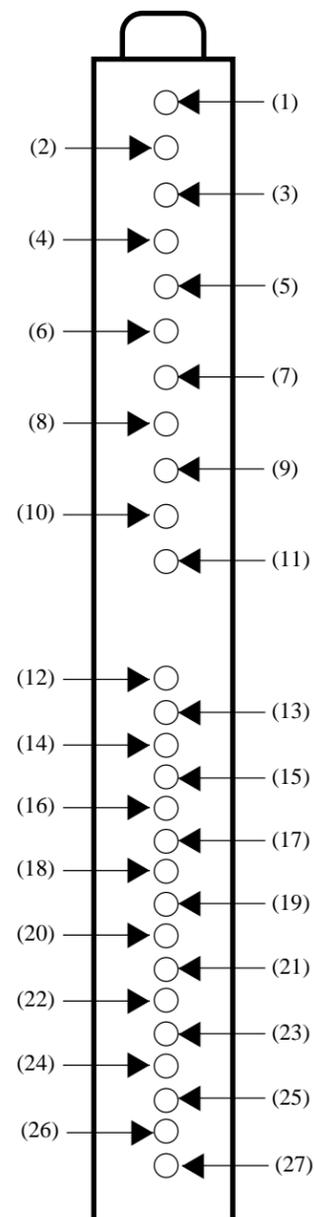
TUNER INFORMATION

MAIN TUNER VOLTAGE CHART

Pin	VHF Low Band	VHF High Band	UHF Band
(1) AGC	2.0V	2.1V	1.6V
(2) TU	1.1V	4.4V	5.4V
(3) ADRS	0V	0V	0V
(4) SCL	3.6V	3.6V	3.6V
(5) SDA	3.6V	3.6V	3.6V
(6) NC	0V	0V	0V
(7) 5V	4.5V	4.5V	4.5V
(8) NC	0V	0V	0V
(9) BTL	4.2V	7.5V	8.5V
(10) NC	0V	0V	0V
(11) IF1	0V	0V	0V
(12) TP	0V	0V	0V
(13) BV	9.0V	9.0V	9.0V
(14) AUDIO	.37V	.37V	.37V
(15) GND	3.6V	3.6V	3.6V
(16) AFT	1.9V	1.9V	1.9V
(17) AGC OUT	2.0V	2.1V	1.6V
(18) VIDEO	2.1V	2.1V	2.1V
(19) NC	0V	0V	0V
(20) GND	0V	0V	0V
(21) NC	0V	0V	0V
(22) NC	0V	0V	0V
(23) NC	0V	0V	0V
(24) NC	0V	0V	0V
(25) NC	0V	0V	0V
(26) NC	0V	0V	0V
(27) NC	0V	0V	0V

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

MAIN 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.

TEST EQUIPMENT

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

Equipment	Sencore No.	Equipment	Sencore No.
Oscilloscope	SC3100	Isolation Transformer	PR570
Generators		Capacitance Analyzer	LC102
RGB	CM2125	CRT Analyzer	CR7000
Multiburst Signal	VG91	AC Leakage Tester	PR570
Color Bar	VG91	Inductance Analyzer	LC102
TV Stereo	VG91	Flyback Yoke Tester	TVA92
Digital VOM	SC3100	Field Strength Meter	SL753
Frequency Meter	SC3100	Transistor Tester	TF46
Hi-Voltage Probe	HP200	Horizontal Analyzer	HA-2500
Accessory Probes	TP212	Video Analyzer	VG91, TVA92

MISCELLANEOUS ADJUSTMENTS

NOTE: This receiver employs digital customer controls. All adjustments are at normalized position unless otherwise indicated.

B+ CHECK

Connect a digital DC voltmeter to pin 16 (P2) of T801 and the common tie point. Set brightness and picture to minimum. With AC line voltage set to 120VAC, B+ should read 130V.

HIGH VOLTAGE CHECK

Tune in a picture. Set brightness and picture for a black raster. Connect a high voltage probe to CRT anode. High voltage should read 31kV to 33kV.

PURITY CHECK

Press recall button on remote transmitter to enter purity check mode.

NOTE: Receiver must be in serviceman mode for purity colors to display on screen. Press recall button to cycle through white, red, green, blue, and normal screens.

PURITY

Enter serviceman mode. See Purity Check to display a green raster. Loosen deflection yoke and move it back as far as possible. Loosen locking ring and move the purity tabs to center the vertical green band. Slowly slide the deflection yoke forward until a uniform green screen is obtained.

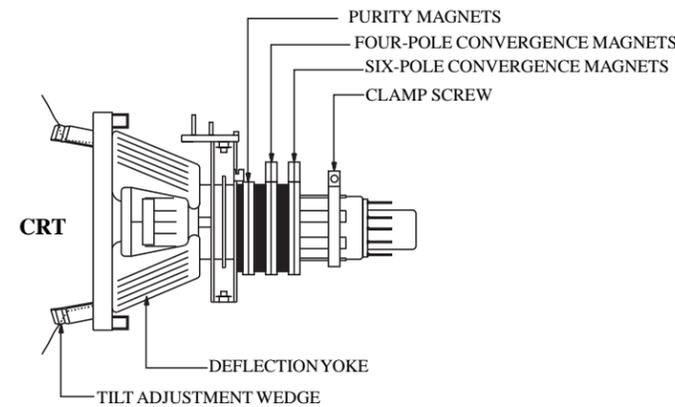
CONVERGENCE

Connect a signal generator to antenna terminal and tune in a dot pattern. Adjust the 4-pole magnets to converge the red and blue dots at the center of the screen. Adjust the 6-pole magnets to converge the red/blue dots over the green dots at the center of the screen.

NOTE: Spread the two tabs of each set of magnets equally and opposite to converge vertically, and rotate both tabs in the same direction to converge horizontally. Since the four and six pole magnets interact, repeat the adjustment until center convergence is correct.

Tune in a crosshatch pattern. Remove rubber wedges between the deflection yoke and CRT. Tilt deflection yoke up or down to converge the vertical lines at the top and bottom of the screen and the horizontal lines at the left and right sides of the screen. Tilt the deflection yoke left or right to converge the horizontal lines at the top and bottom of the screen and the vertical lines at the left and right sides of the screen. Repeat convergence procedure if necessary to obtain the best overall convergence. Replace rubber wedges.

CRT NECK ASSEMBLY



ENTERING SERVICEMAN MODE

Turn the receiver on and momentarily short pins 3 and 8 of connector TP. In the upper left side of the picture, CHK is displayed in yellow. Press the action and volume up buttons on the receiver. The CHK display turns red. The serviceman mode is indicated by CHK displayed in red at the upper left side of the picture. Press the power button on the remote or the action and volume down buttons on the receiver repeatedly to select one of seven service modes.

B = Sub Adjustments
D = Pin Cushion Adjustments
P = PIP Adjustments
X = Comb Filter Adjustments
CHK = Normal operation of channel and volume buttons.

C = Cut-Off Adjustments
M = Stereo Adjustments
S = Options Adjustments

EXIT SERVICEMAN MODE

NOTE: Always exit serviceman mode when finished making adjustments. Press Action and Power buttons on receiver control panel simultaneously for approximately 2 seconds to exit serviceman mode. The receiver will display a self check menu with audio on channel 3.

SUB ADJUSTMENTS

NOTE: Write down original On-Set values in detail before making any adjustments in case a misadjustment occurs. Press Channel Up or Down buttons on remote to select any of adjustment addresses. Press Volume Up or Down buttons on remote to change level of adjustment.

Sub Adjustment Range and Default Levels

Adjustment	Range	Default Level	On-Set Value
Sub Color (B0)	0-63	31	25
Sub Tint (B1)	0-63	31	47
Sub Brightness (B2)	0-63	31	44
Sub Contrast (B3)	0-31	16	26
Sub Tint Video (B4)	0-31	16	15
Sub Color Video (B5)	0-31	16	16
Sub Tint Component (B6)	0-127	63	58
Sub Color Component (B7)	0-63	31	41
Sub Sharp TV/Video (B8)	0-31	10	13
Sub Sharp Component (B9)	0-31	31	31
Sub Contrast Fixed (Ba)	0-31	15	31

SUB COLOR (B0)

Tune in a color bar signal. Connect oscilloscope to pin 1 of connector C1 on the C board. Connect TPD2 to ground. Enter serviceman mode and select Sub adjustment. Select sub color (B0). Adjust waveform for .9Vp-p ±.05Vp-p. Remove jumper.

SUB TINT (B1)

Tune in a color bar signal. Connect oscilloscope to pin 1 of connector C1 on the C board. Connect TPD2 to ground. Enter serviceman mode and select Sub adjustment. Select sub tint (B1). Adjust waveform so the 1st and 4th peaks are of equal amplitude. Remove jumper.

SUB BRIGHTNESS (B2)

This adjustment must be made after Sub picture and Color temperature adjustments are made. Do not adjust Screen after sub brightness is set. Connect a color bar signal with pure white and pure black to the antenna input. Set color to minimum. Enter serviceman mode and select Sub adjustment. Select sub brightness (B2). Adjust until the black bars start to turn gray, then decrease adjustment until bars turn black.

SUB Contrast (B3)

This adjustment is factory set, DO not adjust unless CRT or C board is replaced.

Connect a color bar signal to the antenna input. Connect oscilloscope to pin 2 of connector C1 on C board. Connect TPD2 to ground. Enter serviceman mode and select Sub adjustment. Select sub contrast (B3). Adjust for 2.8Vp-p ± .1Vp-p from white to black level. Do not include sync tip in measurement. Remove jumper.

CUT-OFF ADJUSTMENTS

Follow same procedure used for Sub adjustments. Select Cut-Off adjustment.

Cut-Off Adjustment Range and Default Levels

Adjustment	Range	Default Level	On-Set Value
Red Cutoff (C0)	0-255	128	62
Green Cutoff (C1)	0-255	128	79
Blue Cutoff (C2)	0-255	128	79
User Brightness (C3)	0-63	31	31
Green Drive (C4)	0-127	64	57
Blue Drive (C5)	0-127	64	56
Drive C Temp (C6)	0-127	8	8
Contrast C Temp (C7)	0-127	5	5

COLOR TEMPERATURE (C0, C1, C2, C4, C5)

Observe low and high brightness areas of a B/W picture for proper tracking.

Enter serviceman mode and select Cut-Off adjustments. Set the red cutoff (C0), green cutoff (C1), and blue cutoff (C2) for a gray picture. Set the green drive (C4), and the blue drive (C5) for correct white areas.

OPTIONS ADJUSTMENTS

Follow same procedure used for Sub adjustments. Select Options adjustment.

Options Adjustment Range and Default Levels

Adjustment	Range	Default Level	On-Set Value
ABL Gain (S0)	0-3	3	3
ABL Point (S1)	0-3	3	3
RGB Brightness (S2)	0-15	5	5
RGB Gamma (S3)	0, 1	1	1
Color Gamma (S4)	0, 1	1	1
VSM-G (S5)	0, 1	0	0
BS Point (S6)	0-7	6	6
Clock Adjust (S7)	0-255	128	109
Loud Comp (S8)	0-31	31	31
Caption Dig Filter SW (S9)	0, 1	0	0
Caption Scroll (Sa)	0 - 2	1	1
RGB Matrix (Sb)	0-7	6	6
RGB Matrix Comp (Sc)	0-7	5	5

Clock Adjustment (S7)

Connect a frequency counter to pin 13 of IC001. Turn receiver off. Record the frequency. Turn the receiver on and enter the serviceman mode and select options adjustments. Select clock adjustment (S7). Adjust (S7) based on the following formulas:

$$(S7) = 128 + 968 X (873.90625 - \text{Freq at pin 13}) \text{ (In Turn On Codition)}$$

$$(S7) = 128 + 3873 X (218.47656 - \text{Freq at pin 13}) \text{ (In Stand by Codition)}$$

STEREO ADJUSTMENTS

All adjustments were made using a MTS TV / stereo generator connected to the antenna terminal. Set the customer controls to normal listening levels and select stereo mode.

Stereo Adjustment Range and Default Levels

Adjustment	Range	Default Level	On-Set Value
Input Level (M0)	0-63	33	33
Low - Level Separation (M1)	0-16	6	7
High - Level Separation (M2)	0-63	25	28

Input Level (M0)

On generator select pilot, 1kHz audio frequency, and L+R modulating signal. Connect an oscilloscope to pin 22 of IC2201. Enter serviceman mode and select stereo adjustments. Select input level (M0). Adjust the data value for 1Vp-p.

Low Level Separation (M1) and High Level Separation (M2)

On generator select pilot, 300H z audio frequency, and left modulating signal. Connect an oscilloscope to pin 22 of IC 2201. Enter serviceman mode and select stereo adjustments. Select low level separation (M1). Adjust the data value for minimum amplitude of waveform. On generator select 8kHz audio frequency. Select high level separation (M2). Adjust the data value for minimum amplitude of the waveform. Repeat until no further decrease in amplitude can be obtained.

COMB FILTER ADJUSTMENTS

NOTE: Write down original values in detail before making any adjustments in case a misadjustment occurs.

Comb Filter Adjustment Range and Default Levels

Adjustment	Range	Default Level	On Set Value
Comb Gain (X0)	0 - 255	156	156
Comb Switch (X1)	0 - 63	12	12
Comb Limit (X2)	0 - 63	24	24
Comb Core (X3)	0 - 127	41	41
Comb RF Delay (X4)	0 - 127	18	18
Comb Video Delay (X5)	0 - 127	18	18
Comb VMLM (X6)	0 - 127	90	90
Comb VM SW (X7)	0 - 63	24	24
Comb Sharp (X8)	0 - 255	67	30
Comb VM Level (X9)	0 - 255	255	255
Comb VMPKF (Xa)	0, 1	1	1
Comb H Lock Mode (Xb)	0, 1	1	1
Comb H Lock (Xc)	0 - 511	60	60
Comb H Sep 1 (Xd)	0 - 511	313	313
Comb H Sep 2 (Xe)	0 - 511	266	266
Comb Sub H Lock Mode (Xf)	0, 1	0	0
Comb Sub H Lock (X10)	0 - 511	70	70
Comb Sub H Sep 1 (X11)	0 - 511	313	313
Comb Sub H Sep 2 (X12)	0 - 511	266	266

PIN CUSHION ADJUSTMENTS

NOTE: Write down original On-Set values in detail before making any adjustments in case a misadjustment occurs. Press Channel Up or Down buttons on remote to select any of adjustment addresses. Press Volume Up or Down buttons on remote to change level of adjustment.

Pin Cushion Adjustment Range and Default Levels

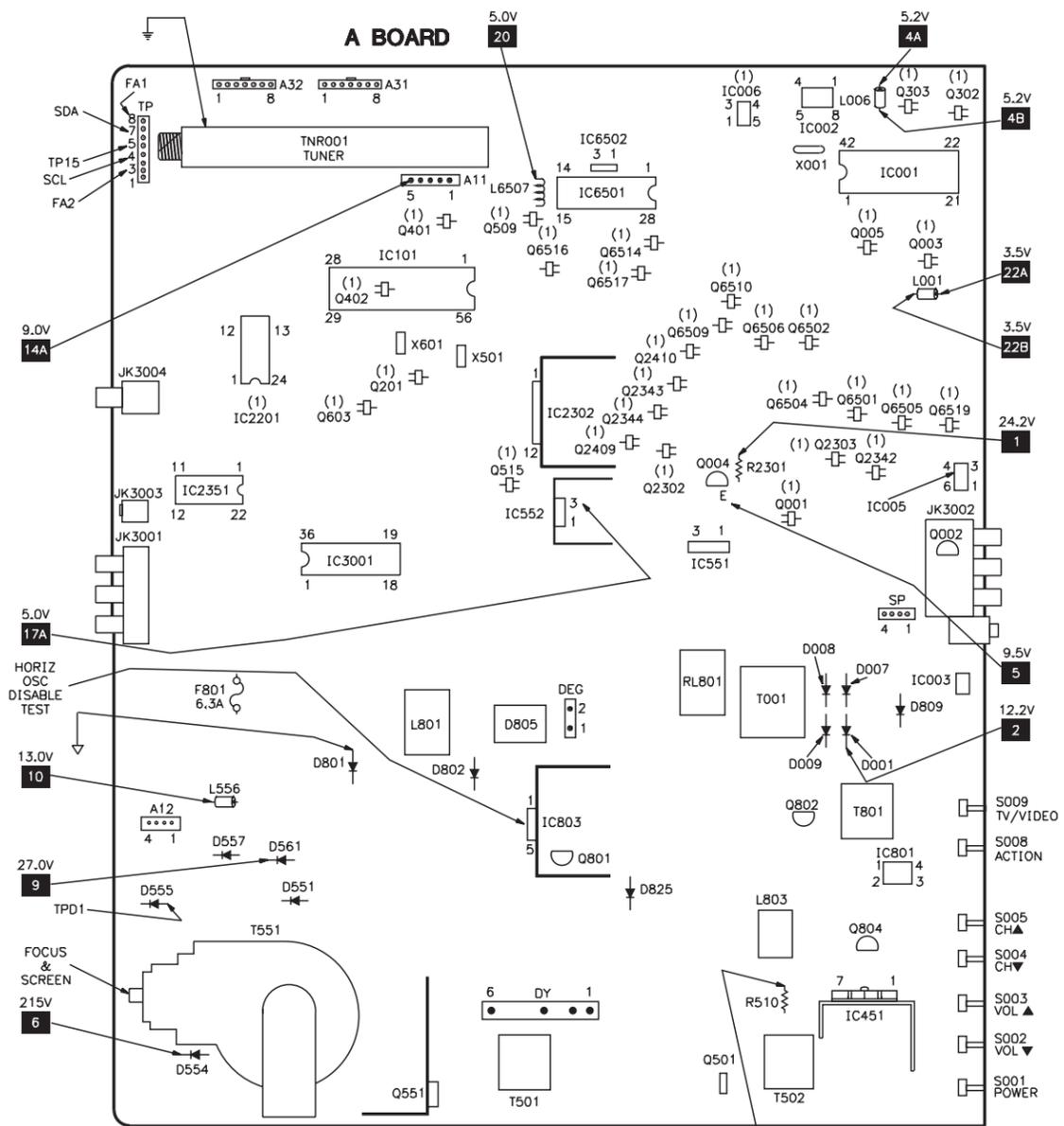
Adjustment	Range	Default Level	On Set Value
H Position (D0)	0 - 31	12	13
V Size (D1)	0 - 63	31	30
V S Correction (D2)	0 - 7	4	4
V Lin Correction (D3)	0 - 15	14	15
E/W Trapezium (D4)	0 - 15	8	8
V AGC (D5)	0, 1	1	1
V Position (D6)	0 - 7	0	0
V Centering (D7)	0 - 127	63	63
V Centering DAC SW (D8)	0, 1	0	0
V BLK Start Phase (D9)	0 - 31	7	7
V BLK Stop Phase (Da)	0 - 31	14	14

Horizontal Centering (D0)

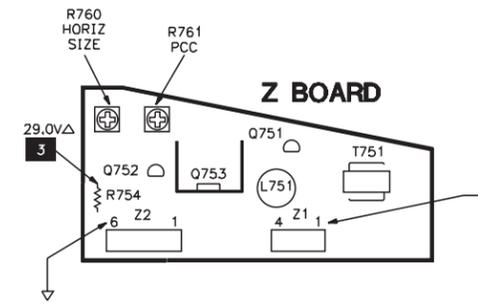
Tune in a crosshatch pattern. Enter serviceman mode and select Pin Cushion adjustments. Select horizontal position (D0) adjustment and adjust crosshatch pattern for correct horizontal centering.

Vertical Size (D1)

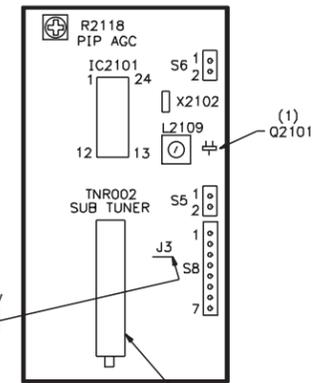
Tune in a crosshatch pattern. Enter serviceman mode and select Pin Cushion adjustments. Select vertical size (D1) adjustment and adjust crosshatch pattern for little over scan at the top and the bottom of the screen.



PLACEMENT CHART

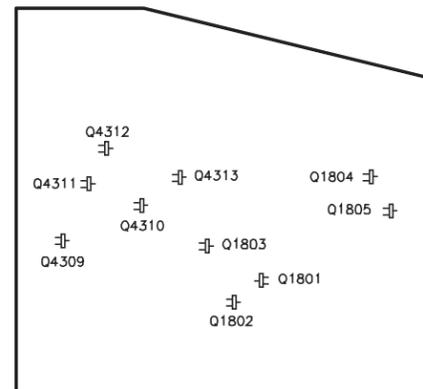


S BOARD

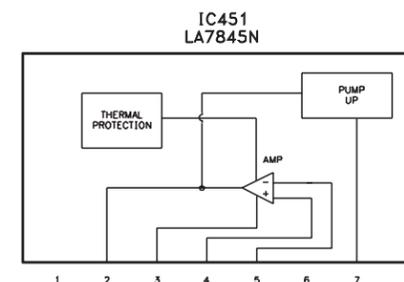


(1) LOCATED ON BOTTOM OF BOARD

Y BOARD - BOTTOM VIEW

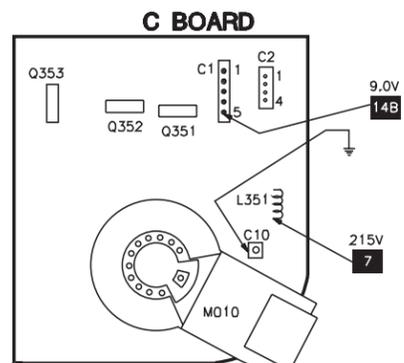
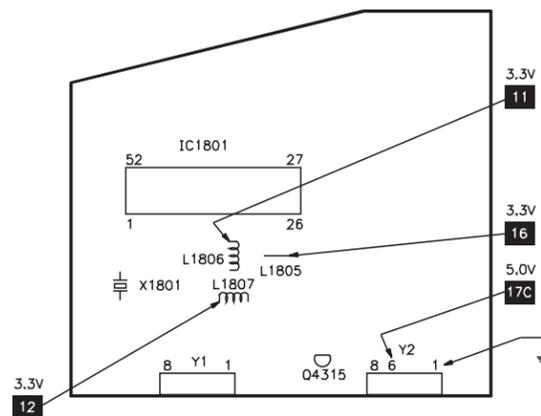


IC FUNCTIONS



(1) LOCATED ON BOTTOM OF BOARD Δ TAKEN FROM COMMON TIE POINT ↓

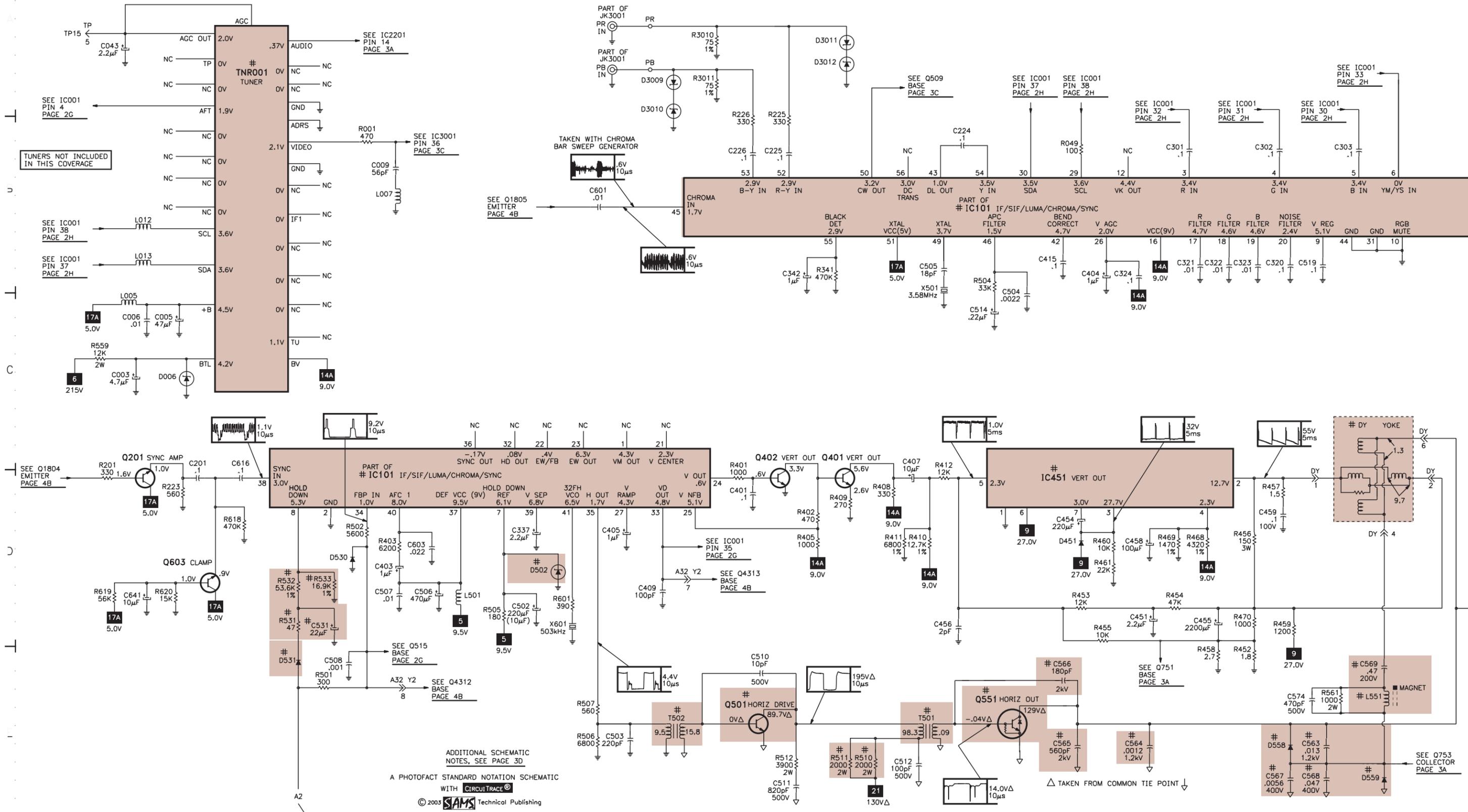
Y BOARD - TOP VIEW



PANASONIC

MODEL CT-3207DF (CHASSIS QP341)

TELEVISION SCHEMATIC



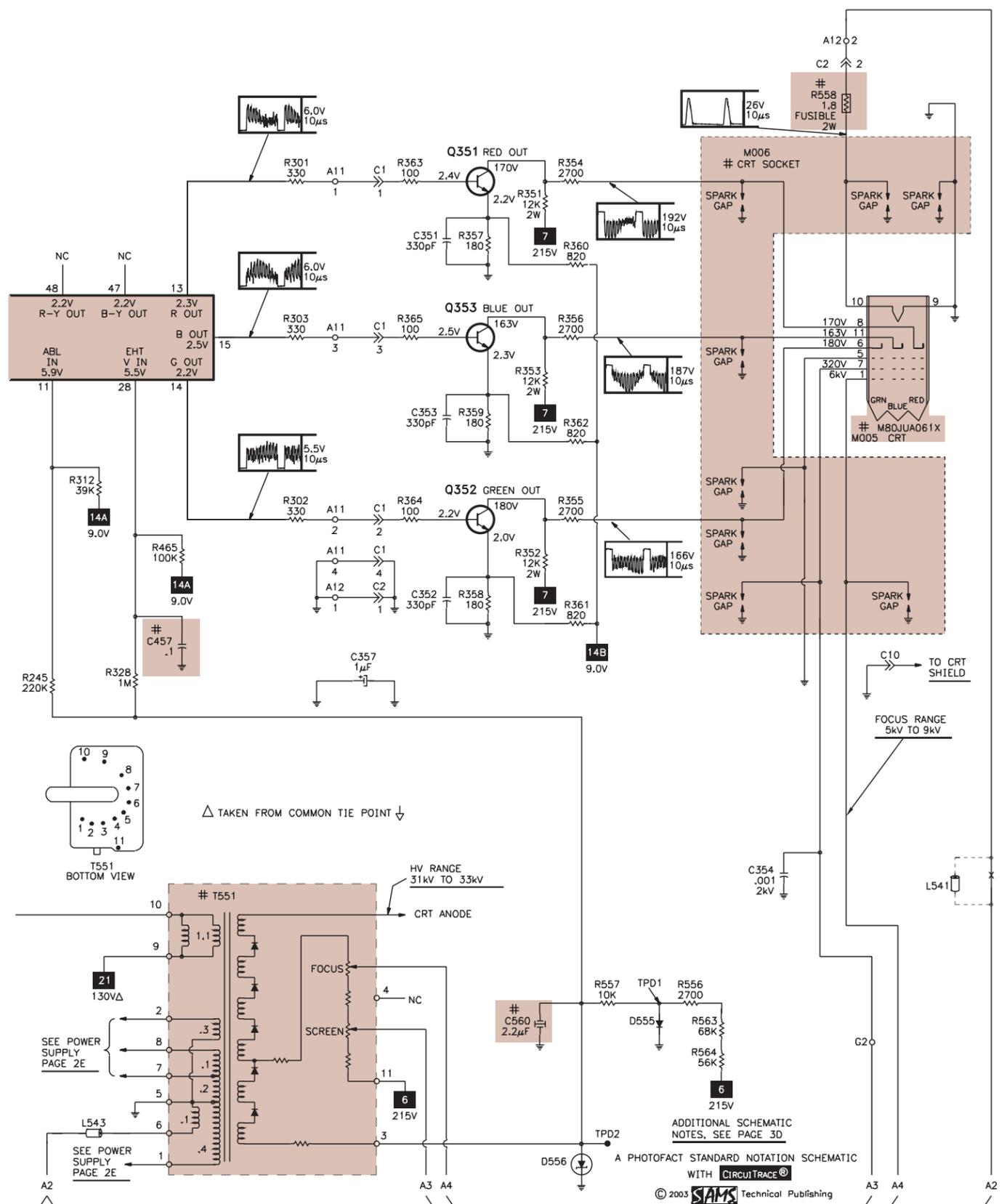
TUNERS NOT INCLUDED IN THIS COVERAGE

TAKEN WITH CHROMA BAR SWEEP GENERATOR

△ TAKEN FROM COMMON TIE POINT ↓

SEE Q753 COLLECTOR PAGE 3A

C TELEVISION SCHEMATIC continued



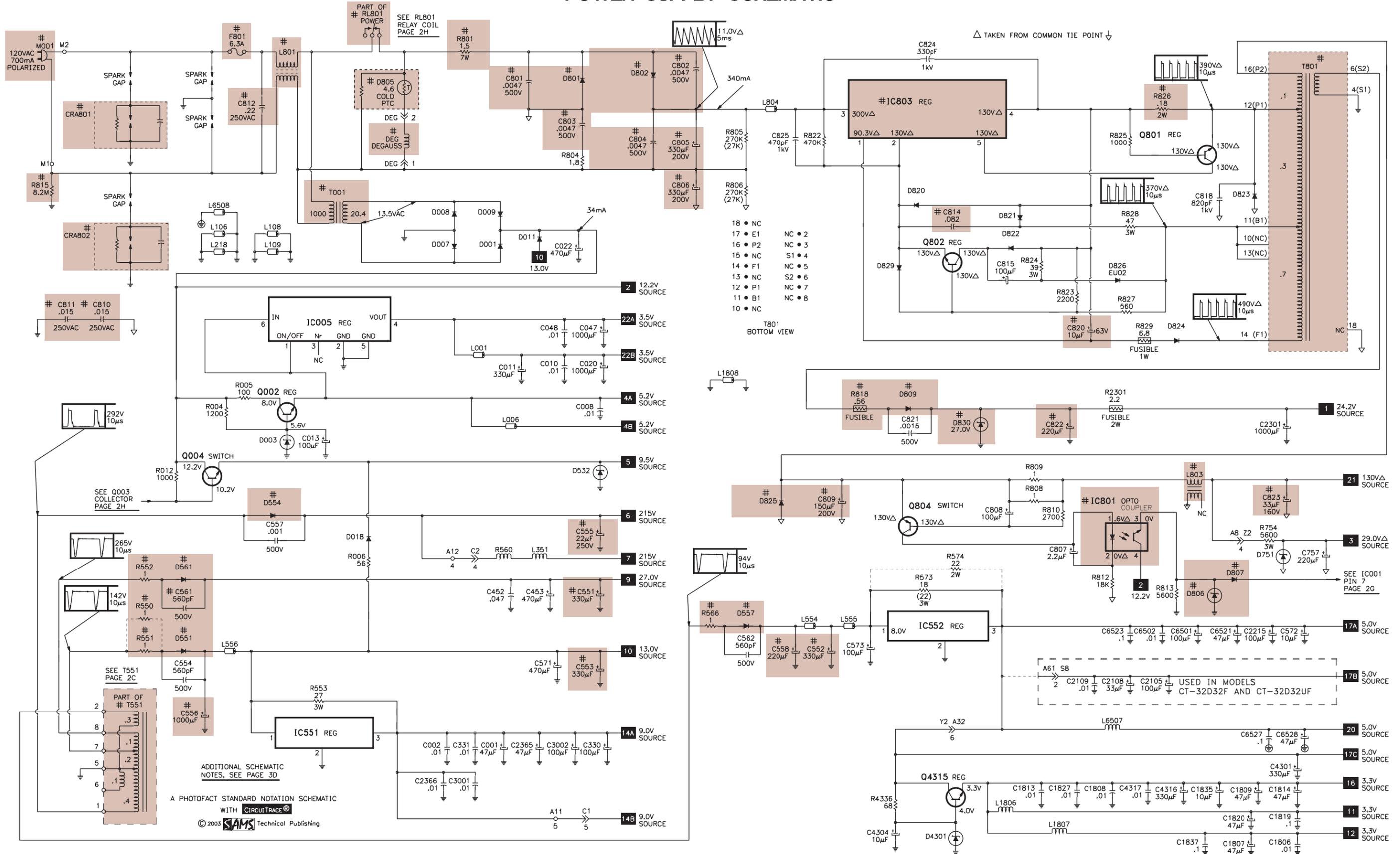
SCHEMATIC COMPONENT LOCATION GUIDE

C001	E15	C555	D16	C2109	E19	C4313	A49	D3005	C31	L1803	E49	R021	D26	R465	C9	R1809	D49	R3017	B38
C002	E15	C556	E14	C2111	C48	C4314	B49	D3006	C31	L1804	D51	R022	D26	R468	D7	R1810	C50	R3018	C31
C003	C1	C557	D14	C2114	D45	C4315	B49	D3007	A38	L1806	E18	R023	C22	R469	D7	R1811	D50	R3019	C31
C005	C1	C558	D17	C2115	D45	C4316	E19	D3008	B38	L1807	E18	R024	D22	R470	D7	R1812	B51	R3020	B38
C006	C1	C560	E10	C2116	D46	C4317	E19	D3009	A4	L1808	C17	R025	C22	R501	E2	R1813	B51	R3021	B39
C008	C16	C561	D13	C2118	D48	C4319	B50	D3010	B4	L2103	D47	R026	B23	R502	D2	R1814	D52	R4310	A48
C009	B3	C562	D17	C2119	D47	C4320	B49	D3011	A5	L2106	D48	R027	B24	R504	C6	R1815	E51	R4311	A47
C010	C16	C563	E8	C2120	D46	C6501	D19	D3012	A5	L2109	D47	R028	C23	R505	D3	R1818	D49	R4326	A48
C011	C15	C564	E7	C2121	D46	C6502	D19	D3017	A38	L2310	E25	R029	D23	R506	E4	R1819	C49	R4327	A48
C013	C14	C565	E6	C2123	D47	C6504	D39	D3018	A38	L4301	A49	R030	C23	R507	E4	R1822	C50	R4328	A48
C016	E25	C566	E6	C2124	C45	C6507	D39	D3019	D31	L6502	D39	R032	B22	R508	B40	R1823	C49	R4329	A49
C017	A24	C567	E7	C2125	C48	C6510	B41	D3020	D31	L6505	B41	R033	B21	R509	B41	R1825	A51	R4330	A50
C018	A23	C568	E8	C2126	C45	C6511	D39	D3021	D31	L6507	E19	R034	B21	R510	E5	R1827	A51	R4331	B48
C020	C16	C569	E8	C2202	C30	C6512	D41	D3022	D31	L6508	B14	R035	B21	R511	E5	R1828	B51	R4332	B49
C021	A21	C571	D16	C2203	C30	C6513	B41	D4301	E18	M001	A13	R036	B21	R512	E5	R1830	B52	R4333	B49
C022	B16	C572	D20	C2204	C30	C6516	C42	DEG	A15	M005	B12	R037	C21	R513	B41	R1856	E51	R4334	B50
C024	E24	C573	D17	C2205	C29	C6517	B42	DY	D8	M006	A11	R038	C21	R514	B42	R2106	D46	R4336	E17
C025	E24	C574	E8	C2206	C30	C6518	C42	F801	A14	Q001	E26	R039	E23	R515	B23	R2109	D46	R4338	B50
C026	E24	C601	B4	C2207	C30	C6520	C43	IC001	A24	Q002	C16	R040	B26	R516	B23	R2110	D47	R4339	B50
C032	A21	C603	D3	C2208	C30	C6521	D19	IC002	C28	Q003	A25	R041	B26	R517	B23	R2111	E47	R4340	C49
C033	D26	C616	D2	C2209	D30	C6522	C44	IC003	A21	Q004	C14	R042	E23	R531	D2	R2112	D46	R4341	C49
C034	D26	C641	D1	C2210	C39	C6523	D19	IC005	C14	Q005	A22	R043	D24	R532	D2	R2113	D46	R4342	B49
C043	A1	C754	D30	C2211	A29	C6524	B43	IC006	E22	Q201	D1	R044	C24	R533	D2	R2114	D48	R4344	A49
C044	E24	C755	D30	C2212	C29	C6525	B42	IC101	B6	Q302	D23	R045	A22	R550	D13	R2116	D48	R4345	B49
C047	C16	C756	E30	C2215	D20	C6526	B41	IC101	D3	Q303	D23	R046	B24	R551	D13	R2117	D46	R6501	D38
C048	C16	C757	D20	C2218	C29	C6527	E20	IC451	D6	Q351	B10	R047	A23	R552	D13	R2118	D46	R6502	D38
C201	D1	C759	E32	C2301	C20	C6528	E20	IC551	E14	Q352	C10	R049	B6	R553	E14	R2119	D46	R6503	D39
C224	B6	C760	D29	C2302	C32	C6529	B40	IC552	D18	Q353	B10	R060	E24	R556	E11	R2121	D48	R6505	D39
C225	B5	C801	A15	C2305	C32	C6531	A44	IC801	D19	Q401	D5	R066	C25	R557	E11	R2122	C46	R6509	B40
C226	B5	C802	A16	C2306	C33	C6532	D40	IC803	A18	Q402	D5	R067	C25	R558	A12	R2123	C46	R6510	B41
C301	B7	C803	A16	C2307	C35	D001	B15	IC1801	B51	Q501	E5	R068	B25	R559	C1	R2124	D48	R6511	D39
C302	B7	C804	A16	C2309	C35	D002	E27	IC2101	D47	Q509	B40	R072	B25	R560	D15	R2127	C48	R6512	B41
C303	B8	C805	B16	C2311	E27	D003	C14	IC2201	A29	Q515	B23	R073	C25	R561	E8	R2203	A29	R6513	D39
C309	D23	C806	B16	C2313	C34	D006	C1	IC2302	C33	Q551	E6	R074	C25	R563	E11	R2206	A30	R6515	D40
C310	D23	C807	D18	C2314	D35	D007	B15	IC2351	A33	Q603	D2	R075	B26	R564	E11	R2207	B30	R6516	D39
C314	D24	C808	D18	C2315	D34	D008	B15	IC3001	A32	Q751	E30	R076	C26	R566	D16	R2221	D29	R6518	D41
C315	D24	C809	C17	C2321	C35	D009	B15	IC3001	B38	Q752	E31	R077	C26	R569	E46	R2301	C19	R6519	D41
C320	B7	C810	C13	C2324	D34	D011	B15	IC6501	A43	Q753	E31	R078	B26	R573	D18	R2305	C35	R6520	D40
C321	B7	C811	C13	C2325	C35	D014	C25	IC6502	B42	Q801	B19	R079	B26	R574	D18	R2306	C35	R6522	D40
C322	B7	C812	A14	C2326	C34	D015	C26	JK3001	A37	Q802	B18	R201	D1	R601	D4	R2307	C33	R6523	B41
C323	B7	C814	B18	C2327	D34	D018	D15	JK3001	A37	Q804	D18	R223	D1	R618	D2	R2308	D34	R6524	D40
C324	B7	C815	B18	C2328	C35	D451	D6	JK3001	A4	Q1801	D49	R225	B5	R619	D1	R2311	E25	R6526	B42
C330	E16	C818	B19	C2329	C35	D502	D3	JK3001	A4	Q1802	D49	R226	B5	R620	D1	R2312	E26	R6535	D40
C331	E15	C820	C19	C2331	E35	D530	D2	JK3001	B31	Q1803	C49	R245	C9	R752	E30	R2313	E26	R6537	A43
C337	D3	C821	C18	C2333	D35	D531	E2	JK3001	B31	Q1804	A51	R301	B10	R753	E29	R2318	D35	R6538	A43
C342	B5	C822	C18	C2339	E33	D532	C16	JK3001	B37	Q1805	B51	R302	C10	R754	D20	R2319	D35	R6540	D42
C351	B10	C823	C20	C2340	D33	D533	B26	JK3001	C31	Q2101	D48	R303	B10	R755	E30	R2321	C35	R6542	C43
C352	C10	C824	A18	C2342	E34	D551	D13	JK3001	C31	Q2302	D34	R305	D23	R756	E30	R2322	C35	R6543	B43
C353	B10	C825	A17	C2350	B32	D554	D14	JK3002	A37	Q2303	D35	R306	D23	R757	E30	R2323	D34	R6544	D41
C354	D11	C1801	E49	C2351	B33	D555	E11	JK3002	C36	Q2342	E34	R309	D24	R758	E30	R2325	E33	R6545	B43
C357	C10	C1802	E49	C2352	B34	D556	E11	JK3002	D31	Q2343	D34	R310	D24	R759	E30	R2329	C35	R6548	D42
C401	D5	C1803	E50	C2353	B34	D557	D17	JK3002	D31	Q2344	D34	R312	C9	R760	E30	R2330	C34	R6549	C43
C403	D3	C1804	E50	C2354	B34	D558	E7	JK3004	D36	Q2409	E34	R328	C9	R761	E30	R2332	C34	R6553	A42
C404	B6	C1805	E50	C2355	B34	D559	E8	JK3004	E36	Q2410	E33	R341	B5	R762	E30	R2333	C35	R6554	B43
C405	D4	C1806	E20	C2356	B35	D561	D13	L001	C15	Q4309	A48	R351	B11	R763	E30	R2334	D35	R6555	B40
C407	D5	C1807	E19	C2357	B34	D751	D20	L002	A21	Q4310	A49	R352	C11	R764	E30	R2336	E35	R6556	B40
C409	D4	C1808	E19	C2358	A32	D801	A16	L003	D25	Q4311	B49	R353	B11	R765	E31	R2337	C32	R6557	C43
C415	B6	C1809	E19	C2359	B36	D802	A16	L004	D25	Q4312	C49	R354	B11	R766	E31	R2338	E33	R6558	B41
C451	D7	C1810	D50	C2360	B35	D805	A15	L005	C1	Q4313	B50	R355	C11	R767	E31	R2339	E33	R6559	B42
C452	D15	C1811	B51	C2361	B35	D806	D19	L006	C15	Q4315	E18	R356	B11	R768	E31	R2340	C34	R6560	C42
C453	D16	C1812	B51	C2362	A33	D807	D19	L007	B3	Q6501	D39	R357	B10	R801	A15	R2341	C34	R6565	D40
C454	D6	C1813	E18	C2363	B35	D809	C18	L008	A21	Q6502	D38	R358	C10	R804	B16	R2342	C35	R6566	D40
C455	D7	C1814	E20	C2364	B35	D820	B18	L010	B25	Q6504	B40	R359	B10	R805	A17	R2343	C35	R6567	D40
C456	D6	C1815	A50	C2365	E15	D821	B18	L011	B25	Q6505	D40	R360	B11	R806	B17	R2344	D34	R6568	D41
C457	C9	C1816	C51	C2366	E15	D822	B18	L012	B1	Q6506	D39	R361	C11	R808	D18	R2345	E34	RL801	A15
C458	D7	C1817	C51	C3001	E15	D823	B19	L013	B1	Q6509	B41	R362	C11	R809	C18	R2346	D34	RL801	E27
C459	D7	C1818	C51	C3002	E16	D824	C19	L106	B14	Q6510	D40	R363	B10	R810	D18	R2350	B32	S001	B21
C502	D3	C1819	E20	C3003	B38	D825	D17	L108	B14	Q6514	D41	R364	C10	R812	D19	R2351	B34	S002	B21
C503	E4	C1820	E19	C3004	B31	D826	B19	L109	B14	Q6516	B42	R365	B10	R813	D19	R2352	B34	S003	B21
C504	C6	C1821	E50	C3006	B31	D829	B17	L110	C23	Q6517	C42	R401	D4	R815	B13	R2353	B33	S004	B21
C505	B6	C1822	E49	C3007	B38	D830	C18	L218	B14	Q6519	D40	R402	D5	R818	C17	R2355	A32	S005	B21
C506	D3	C1823	E51	C3008	B38	D2101	E45	L319	B23	R001	B2	R403	D3	R820	E22	R2418	E34	S008	E22
C507	D3	C1826	C51	C3009	C31	D2301	E26	L351	D15	R002	B22	R405	D5	R821	E22	R2419	E33	S009	C21
C508	E2	C1827	E18	C3010	C38	D2305	B31	L430	D31	R003	E25	R408	D5	R822	A17	R3001	A39	SP1	C36
C510	E5	C1828	C51	C3011	C31	D2306	C31	L501											

E

POWER SUPPLY SCHEMATIC

F

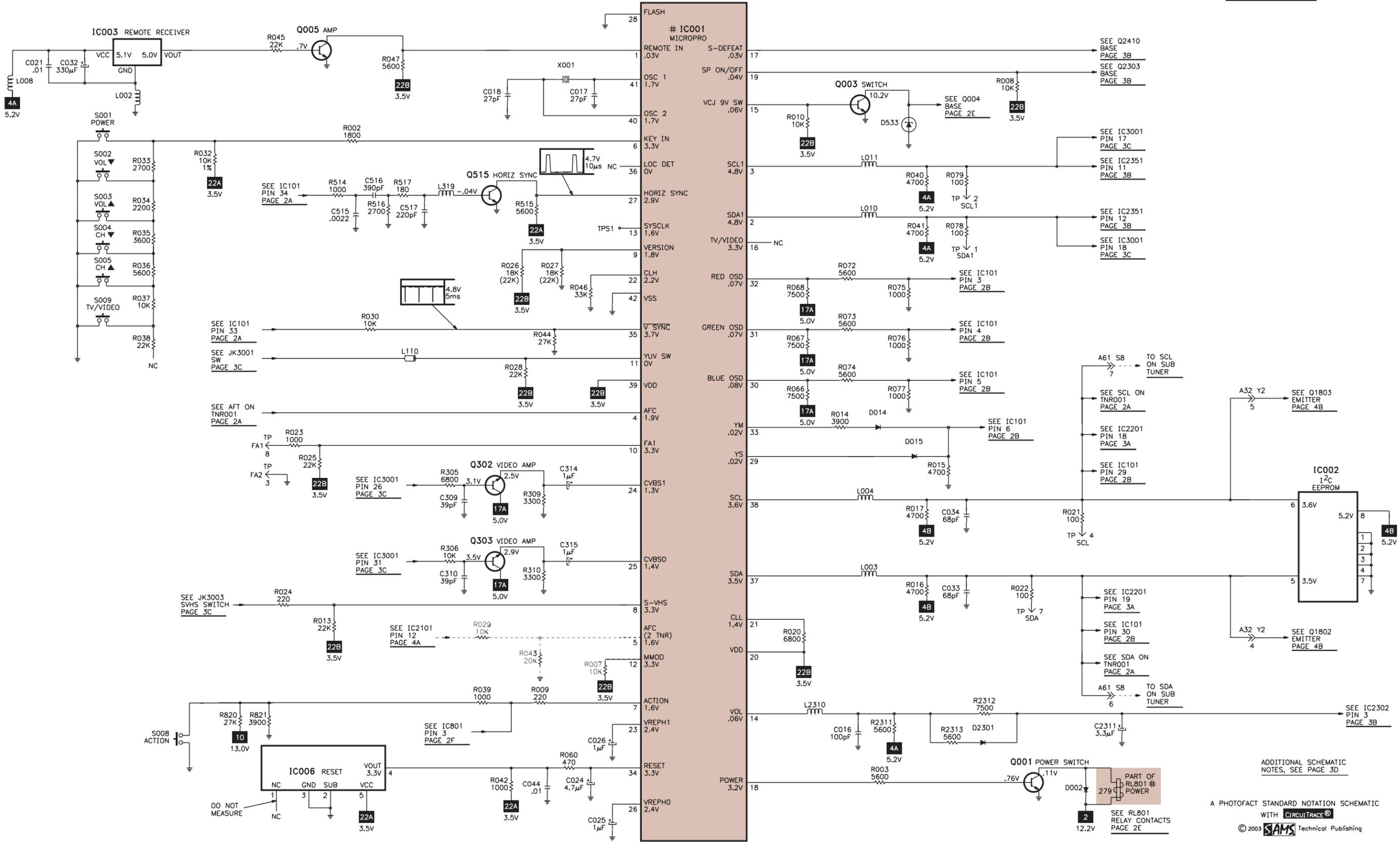


G

SYSTEM CONTROL SCHEMATIC

H

TUNERS NOT INCLUDED
IN THIS COVERAGE

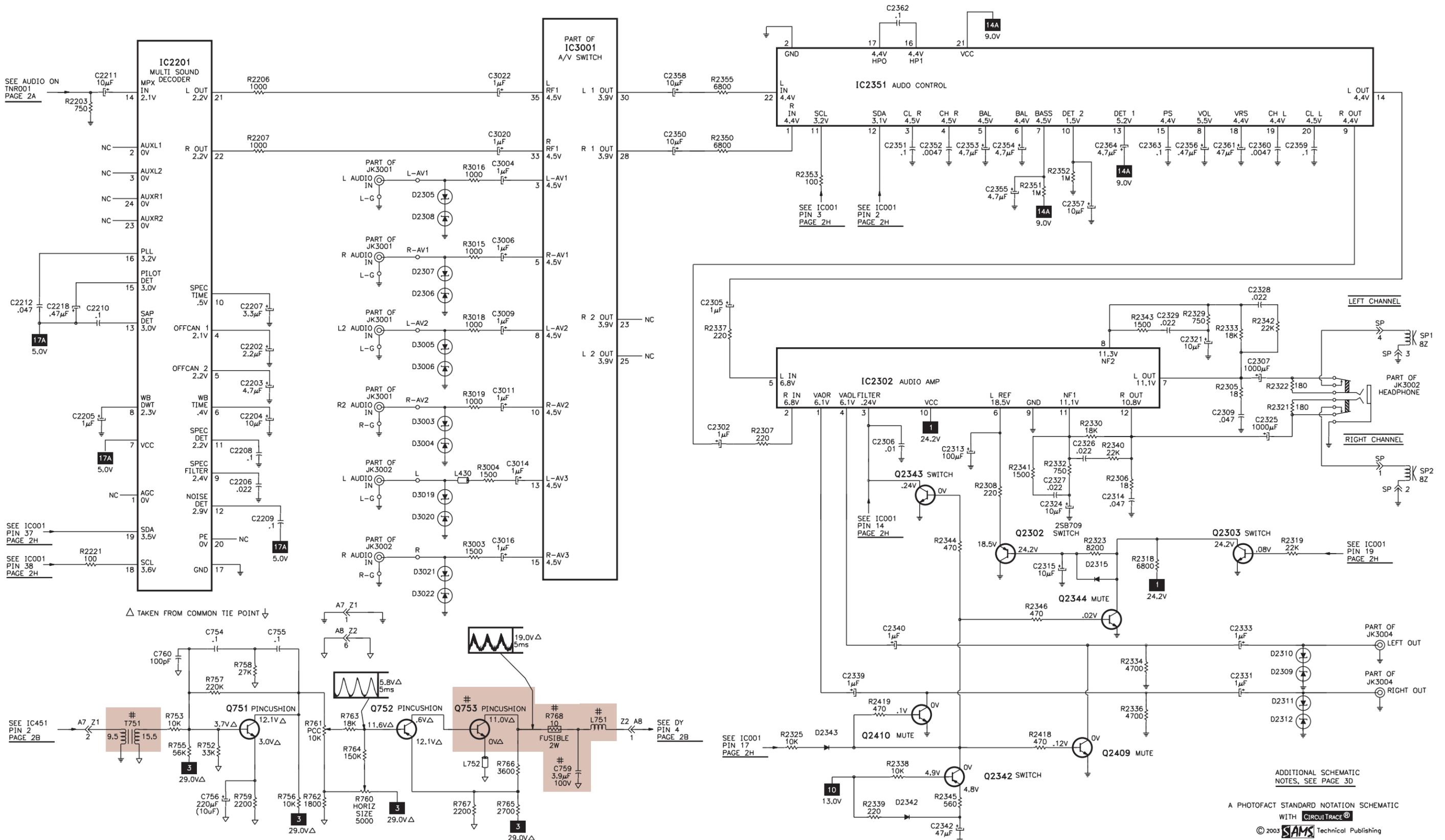


PANASONIC
MODEL CT-3207DF (CHASSIS QP341)

ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 3D

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AUDIO SCHEMATIC

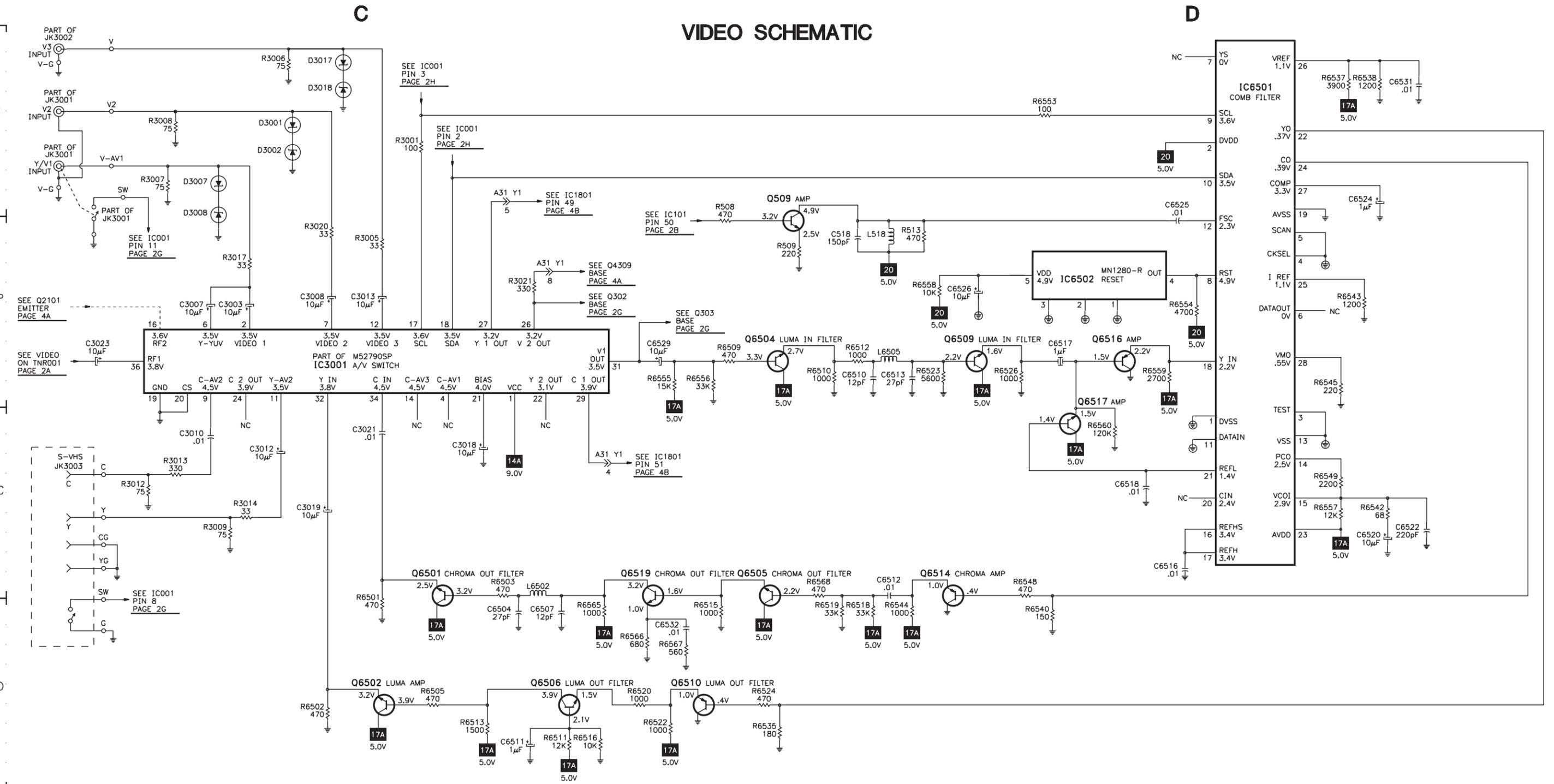


ADDITIONAL SCHEMATIC NOTES, SEE PAGE 3D

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VIDEO SCHEMATIC



PANASONIC
MODEL CT-3207DF (CHASSIS OP341)

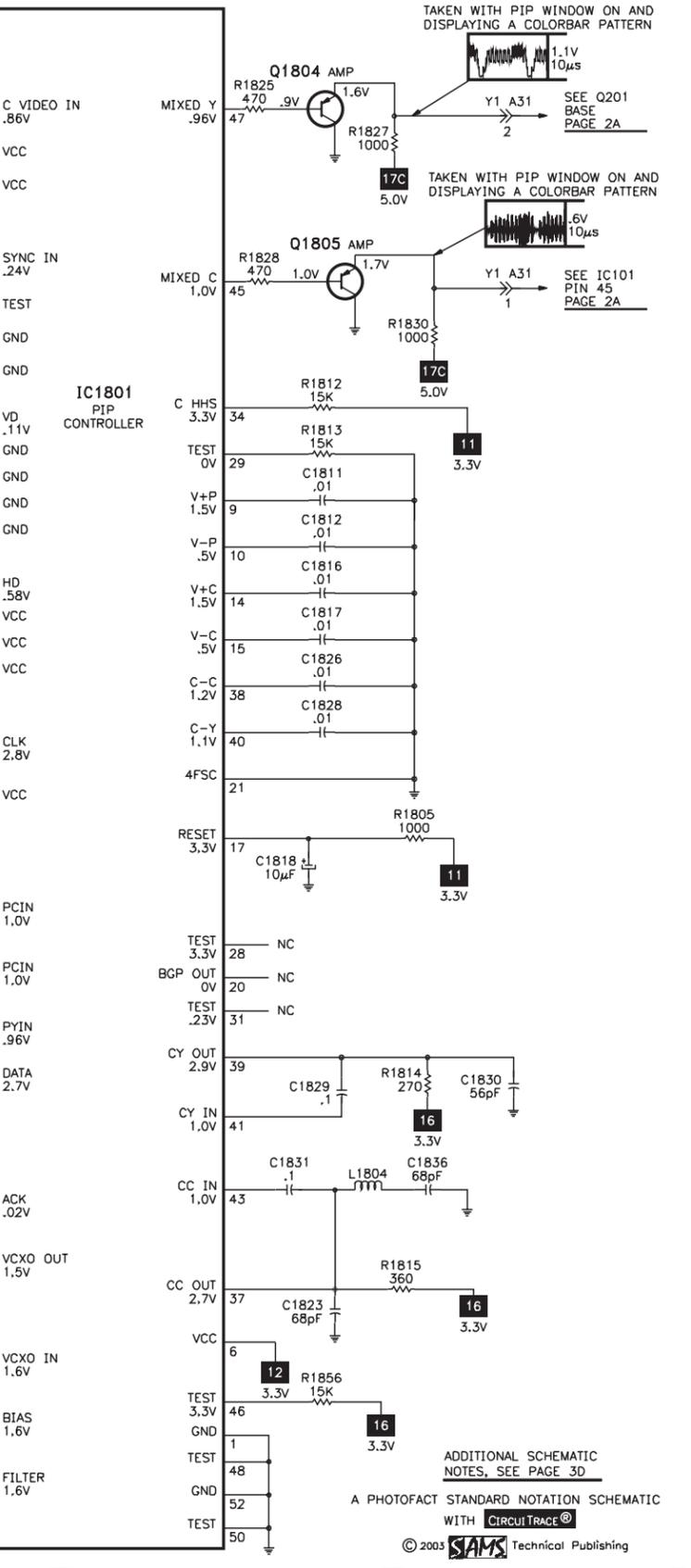
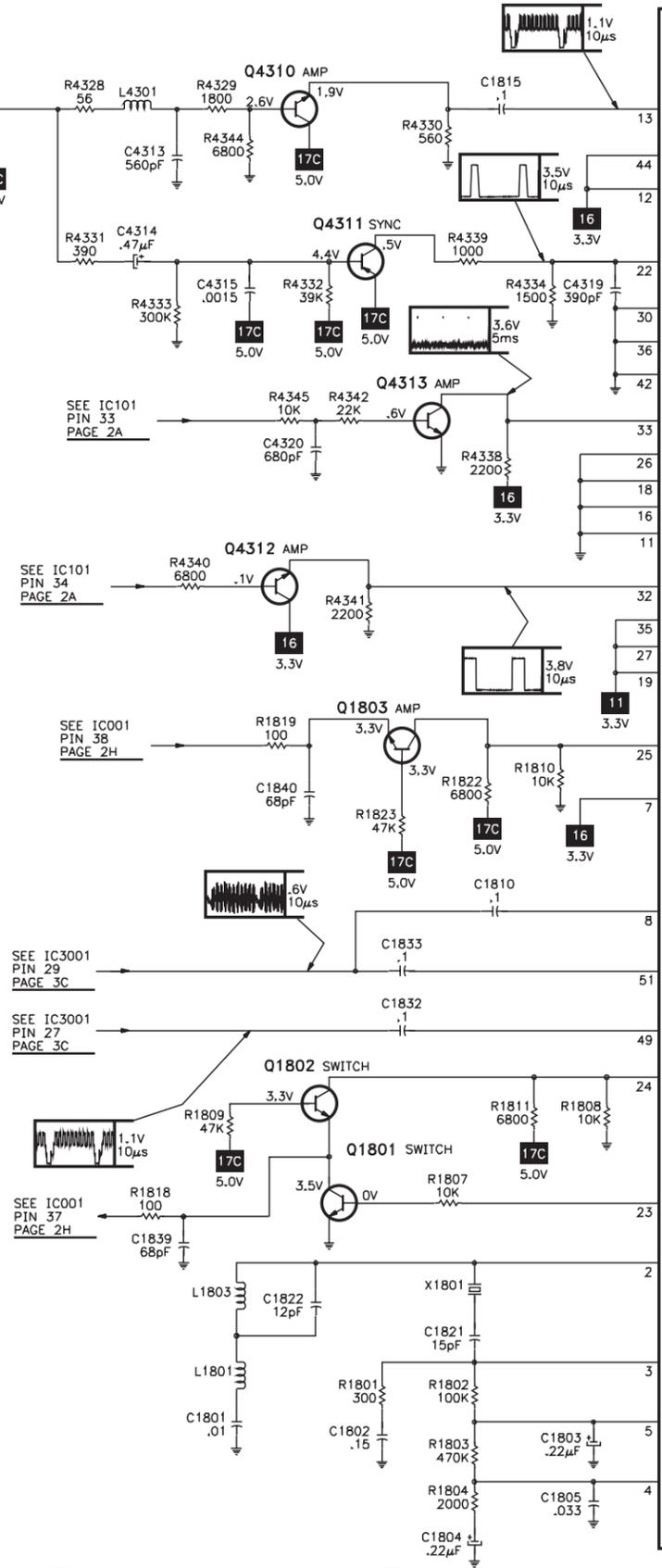
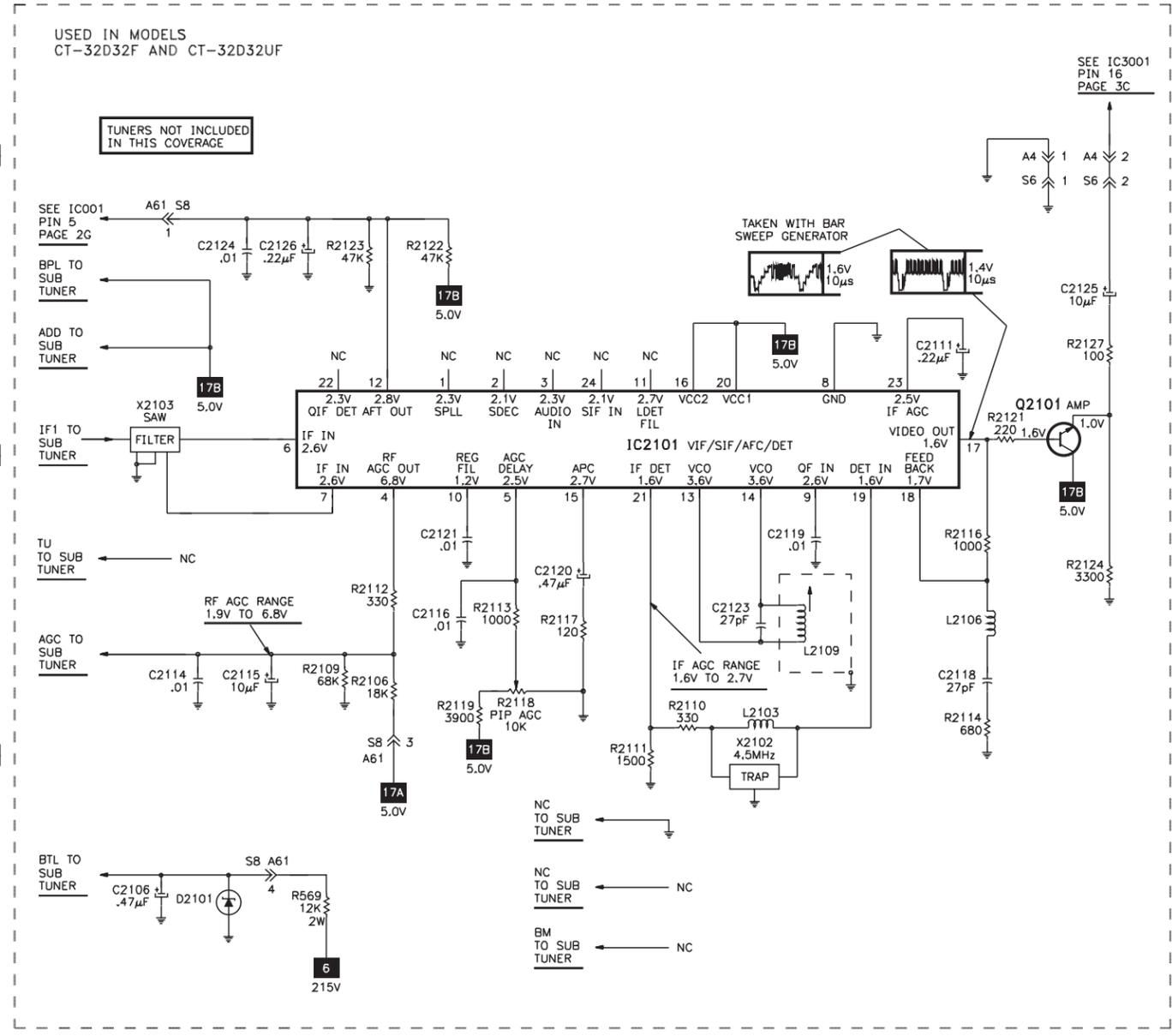
SCHEMATIC NOTES

- # 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 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.

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PIP SCHEMATIC



PARTS LIST

Item No.	Type No.	Mfr. Part No.	NTE Part No.	Item No.	Type No.	Mfr. Part No.	NTE Part No.	Item No.	Function/Rating	Mfr. Part No.	Notes
D001	-	ERA15-01V3	NTE116	Q2343, 44	2SD601A	2SD601ARTX	NTE2408	L1808	Ferrite Bead	EXCELDR25V	-
D002	-	MA165TA5VT	NTE519	Q2409, 10	2SD601A	2SD601ARTX	NTE2408	L2103	15µH	ELESN150KA	-
D003	-	MA4056MTA	-	Q4309	2SB709A	2SB709ARTX	NTE2409	L2106	56µH	ELESN560KA	-
D006	-	MA4330HTA	-	Q4310	2SD601A	2SD601ARTX	NTE2408	L2109	VCO	EIV7EN053B	-
D007, 08, 09	-	ERA15-01V3	NTE116	Q4311	2SB709A	2SB709ARTX	NTE2409	L2310	2.2µH	TLTABT2R2K	-
D011, 14	-	MA165TA5VT	NTE519	Q4312, 13	2SD601A	2SD601ARTX	NTE2408	L4301	3.9µH	ELESN3R9KA	-
D015	-	MA700ATA	-	Q4315	2SC1384Q	2SC1384QR	NTE293	L6502, 05	33µH	ELESN330JA	-
D018	-	MA165TA5VT	NTE519	Q6501, 02	2SD601A	2SD601ARTX	NTE2408	L6507	15µH	ELESN150KA	-
D451	-	ERA15-01V3	NTE116	Q6504, 05	2SD601A	2SD601ARTX	NTE2408	L6508	Ferrite Bead	EXCELSA26T	-
# D502	-	MA4062LTVTA	NTE5012A	Q6506, 09	2SD601A	2SD601ARTX	NTE2408	# M001	Line Cord	TSX2AA0111-1	AC, Polarized
D530	-	MA4082LTA	-	Q6510, 14, 16	2SB709A	2SB709ARTX	NTE2409	# M005	CRT	M80JUA061X	-
# D531	-	AS01V0	NTE552	Q6517, 19	2SD601A	2SD601ARTX	NTE2408	# M006	Socket	TJSC00300	CRT
D532	-	MA4091LTA	-					R032	10K 1% 1/10W	ERJ6ENF1002V	-
D533	-	MA4091MTA	-					R410	12.7K 1% 1/10W	ERJ6ENF1272V	-
# D551	RU2N	TVSRU2NV1	NTE552					R411	6800 1% 1/10W	ERJ6ENF6801V	-
# D554	-	BYD33G-163	-					R456	150 5% 3W	ERG3FJ151H	-
D555	-	MA165TA5VT	NTE519	# C354	.001 10% 2kV	ECKW3D102KBN	-	R468	4320 1% 1/4W	ER0S2THF4321	-
D556	-	MA4360HTA	-	# C531	22µF 25V	ECA1EM220B	-	R469	1470 1% 1/4W	ER0S2THF1471	-
# D557	-	TVSRU2NV1	NTE552	# C551, 52, 53	330µF 16V	ECA1CM331B	-	# R510, 11	2000 5% 3W	ERG3FJ202H	-
# D558	-	RS3FS	NTE506	# C555	22µF 250V	ECA2EM220E	-	# R531	47 5% 1/4W	ERD25FJ470P	-
# D559	-	BYD33G-113	-	# C556	1000µF 16V	ECA1CM102B	-	# R532	53.6K 1% 1/10W	ERJ6ENF5362V	-
# D561	-	BYD33G-163	-	# C558	220µF 16V	ECA1CM221B	-	# R533	16.9K 1% 1/10W	ERJ6ENF1692V	-
D751	-	MA2270B	-	# C560	2.2µF 50V NP	ECEA1HN2R2UB	-	# R550, 51, 52	1.5% 1/2W	ERDS1FJ1R0P	-
# D801, 02	-	GP15KL-042	-	# C561	560pF 10% 500V	ECKR2H561KB5	-	R553	27 5% 3W	ERG3FJ270H	-
# D806	-	MA4047MTA	NTE5009A	# C563	.013 5% 1.2kV	ECWH12H133JS	-	# R558	1.8 5% 2W Fusible	ERQ2CJP1R8S	-
# D807	-	MA165TA5VT	NTE519	# C564	.0012 5% 1.2kV	ECWH12H122JS	-	R560	-	TLTABT101K	-
# D809	-	RU3YX-MV1	NTE588	# C565	560pF 5% 2kV	ECKW3D561JBR	-	# R566	1.5% 1/2W	ERDS1FJ1R0P	-
D820, 21, 22	EU02	EU02V1	NTE552	# C566	180pF 5% 2kV	ECKW3D181JBP	-	R573	18 5% 3W	ERG3FJ180H	-
D823	-	RL30A	-	# C567	.0056 5% 400V	ECQM4562JZW	-	R754	22 5% 3W	ERG3FJ220H	-
D824	EU02	EU02V1	NTE552	# C568	.047 5% 400V	ECQM4473JZW	-	R760	5600 5% 3W	ERG3FJ562	-
# D825	SR2KL	TVSSR2KLV1	-	# C569	.47 5% 200V	TACFV2E474J	-	R761	5000 Horizontal Size	EVND8AA03B53	-
D826	EU02	EU02V1	NTE552	# C759	3.9µF 10% 100V	EQCEI395KNB	-	# R768	10K PCC	EVND8AA03B14	-
D829	-	MA165TA5VT	NTE519	# C801 Thru	-	-	-	# R768	10 5% 2W Fusible	ERQ2CJP100S	-
# D830	-	MA4270MTA	-	# C804	.0047 500V	ECKWAE472ZED	-	# R801	1.5 10% 7W	ERF7ZK1R5	-
D2101	-	MA3330MTX	-	# C805, 06	330µF 200V	EC0S2DA331BB	-	# R815	8.2M 20% 1/2W	ERC12ZGM825D	-
D2301	-	MA165TA5VT	NTE519	# C809	150µF 200V	EC0S2DG151DG	-	# R818	.56 5% 1/2W Fusible	ERQ12HJR56P	-
D2305 Thru	-	-	-	# C810, 11	.015 20% 250VAC	ECQU2A153MVA	-	R824	39 5% 3W	ERG3FJ390H	-
D2312	-	MA4110MTA	-	# C812	.22 20% 250VAC	ECQU2A224MVA	-	# R826	.18 10% 2W	ERF2AKR18P	-
D2315, 42, 43	-	MA165TA5VT	NTE519	# C814	.082 5% 50V	ECQB1H823JF3	-	R828	47 5% 3W	ERG3FJ470	-
D3001 Thru	-	-	-	C818	820pF 10% 1kV	ECKW3A821KBP	-	R829	6.8 5% 1W Fusible	ERQ14AJ6R8P	-
D3012	-	MA4110MTA	-	# C820	10µF 63V	ECA1JHG100B	-	R2118	10K PIP AGC	EVND8AA03B14	-
D3017 Thru	-	-	-	# C822	220µF 25V	ECA1EM221B	-	R2301	2.2 5% 2W Fusible	ERQ2CJP2R2S	-
D3022	-	MA4110MTA	-	# C823	33µF 160V	ECA160V33UE	-	R3010, 11	75 1% 1/10W	ERJ6ENF75R0V	-
D4301	-	MA3036HTX	-	C824	330pF 10% 1kV	ECKW3A331KBP	-	# RL801	TSEH8007	-	Power
# IC001	-	MN101C46FTH	-	C825	470pF 10% 1kV	ECKW3A471KBP	-	S001	Switch	TSE2AD001	Power
IC002	-	TVR2AJ126	-	C2204	10µH 16V Tantalum	AP106K016CAE	-	S002	Switch	TSE2AD001	Volume Down
IC005	-	PQ1R33	-	C2207	3.3µF 16V Tantalum	AP335K016CAE	-	S003	Switch	TSE2AD001	Volume Up
IC006	-	PST9128NR	-	C4307	10µF 16V NP	ECEA1CKN100B	-	S004	Switch	TSE2AD001	Channel Down
# IC101	-	TA1310BN	-	C6517	1µF 50V NP	ECEA1HN010UB	-	S005	Switch	TSE2AD001	Channel Up
# IC451	-	LA7845N	-	# CRA801, 02	Capristor	TP00842-51	-	S008	Switch	TSE2AD001	Action
IC551	-	AN78M09LB	NTE1902	# D805	4.6 PTC Cold	TAP111M003	-	S009	Switch	TSE2AD001	TV/Video
IC552	-	AN7805LB	NTE960	# DEG	Degaussing	TXANV02ESER	-	SPI, 2	Speaker	TAS2AA0016	2 1/4" X 5", 8 Ohms, 5W
# IC801	PC817	PC817X2	NTE3098	# DY	Yoke	TLY2AA008	Horiz 1mH, Vert 22.5mH	# T001	Power	TLP16297	-
# IC803	STR58041	STR58041A	NTE7078	# F801	Fuse	XBA2A00101	6.3Amp, 125V	# T501	Horizontal Driver	TLH15452	-
IC1801	-	M65617SP	-	IC003	Receiver	PIC-37042SR	Remote	# T502	Horizontal Coupling	ETE19Z30DY	-
IC2101	-	AN5170K	-	JK3001	Jack	TJB2AA0221	Assembly	# T551 (1)	Horizontal Output	TLF2AA003	-
IC2201	-	AN5849S-E1V	-	JK3002	Jack	TJB2AA0046	Assembly	# T751	-	ETE19Z30EY	-
IC2302	-	AN5272	-	JK3003	Jack	TJB2AA0171	S-VHS	# T801	Power	ETS29AK3L5NC	-
IC2351	-	CXA2021S	-	JK3004	Jack	TJB2AA0211-1	Assembly	# TNR001 (2)	Tuner	ENG36604GR	-
IC3001	-	M52790SP	-	L001	Ferrite Bead	EXCELSA26T	-	# TNR001 (3)	Tuner	ENG6101G	-
IC6501	-	MN82840	-	L002, 03, 04	2.2µH	TLTABT2R2K	-	# TNR002 (3)	Tuner	ENV56D61G3	-
IC6502	-	PST9142NR	-	L005	33µH	ELESN330KA	-	X001	Crystal	TSSA092	-
Q001	2SD601A	2SD601ARTX	NTE2408	L006	Ferrite Bead	EXCELSA24T	-	X501	Crystal	TSS2AA001	3.58MHz
Q002	2SC1685	2SC1685QRSTA	NTE85	L007	18µH	ELESN180JA	-	X601	Crystal	TAFCSB503F30	503kHz
Q003	2SD601A	2SD601ARTX	NTE2408	L008	47µH	TLTABT470K	-	X1801	Crystal	TSSA092	-
Q004	2SC1685	2SC1685QRSTA	NTE85	L010 Thru	-	-	-	X2102	Filter	EFCS4R5MW5BA	4.5MHz
Q005	2SD601A	2SD601ARTX	NTE2408	L013	2.2µH	TLTABT2R2K	-	X2103	Filter	M1972M	SAW
Q201	2SD601A	2SD601ARTX	NTE2408	L106, 08, 09	Ferrite Bead	EXCELSA26T	-		Magnet	JH291U-009	Convergence
Q302, 03	2SD601A	2SD601ARTX	NTE2408	L110	Ferrite Bead	EXCELSA39V	-		Magnet	0FMK014ZZ	Convergence Corrector
Q351, 52, 53	-	2SD3063RL	NTE157	L218	Ferrite Bead	EXCELSA26T	-		PC Board (2)	TNP2AH017BH	A
Q401, 02	2SD601A	2SD601ARTX	NTE2408	L319, 51	-	TLTABT101K	-		PC Board (3)	TNP2AH017BK	A
# Q501	2SD4212	2SD4212HLB	NTE2501	L430	Ferrite Bead	EXCELSA39V	-		PC Board	TNP2AA047AN	C
Q509, 15	2SD601A	2SD601ARTX	NTE2408	L501	3.3µH	ELESN3R3KA	-		PC Board (3)	TNPA0190AL	S
# Q551	-	2SD5339LBMA1	-	L518	12µH	ELESN120JA	-		PC Board	TNP2A159BD	Y
Q603	2SD601	2SD601ARTX	NTE2408	L541	Ferrite Bead	EXCELDLR35V	-		PC Board	TNP2AA010AE	Z
Q751	-	2SC1685QRSTA	NTE85	L543	Ferrite Bead	EXCELSA26T	-		Transmitter (2)	EUR511501	Remote
Q752	-	2SA564AQRSTA	NTE290A	# L551	Horizontal Linearity	ELH5L7115	-		Transmitter (3)	EUR7613Z30	Remote
# Q753	-	2SD1266PLB	NTE377	L554, 55, 56	Ferrite Bead	EXCELSA24T	-		Wedge	TMM2A30702	Yoke Positioning (3 Used)
Q801	2SC1685RS	2SC1685RSTA	NTE85	# L751	-	ELC18B301L	-				
Q802	2SC1384	2SC1384RS	NTE293	L752	Ferrite Bead	EXCELDLR35V	-				
Q804	2SA1767Q	-	-	# L801	2µH	ELF20N020A	-				
Q1801, 02, 03	2SD601A	2SD601ARTX	NTE2408	# L803	Line Filter	ELF17N007A	-				
Q1804, 05	2SB709A	2SB709ARTX	NTE2409	L804	Ferrite Bead	EXCELSA39V	-				
Q2101	2SD601A	2SD601ARTX	NTE2408	L1801	1.5µH	ELESN1R5KA	-				
Q2302	2SB709A	2SB709ARTX	NTE2409	L1803	2.2µH	ELESN2R2KA	-				
Q2303	2SD601A	2SD601ARTX	NTE2408	L1804	15µH	ELESN150JA	-				
Q2342	2SB709A	2SB709ARTX	NTE2409	L1806, 07	1µH	ELESN1R0KA	-				

For SAFETY use only equivalent replacement part.
 (1) Screen and focus controls are part of T551.
 (2) Used in models CT-3207DF and CT-3207DUF.
 (3) Used in models CT-32D32F and CT-32D32UF.

PANASONIC MODEL CT-3207DF (CHASSIS OP341)