

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.

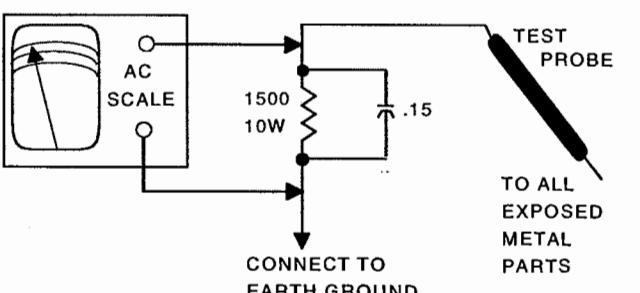
SAFETY CHECKS — FIRE AND SHOCK HAZARD

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.



SET 4818

MODEL KV-32FS200 (CHASSIS SCC-S65G-A)

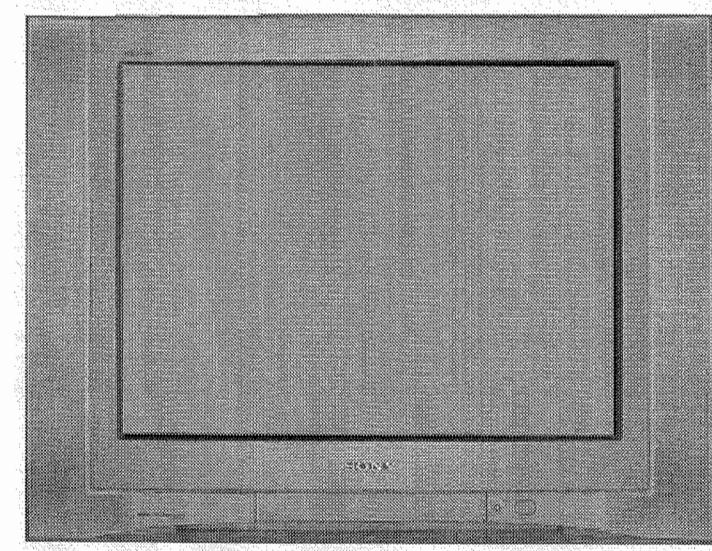
SONY

PHOTOFAC[®] SILVER

Technical Service Data

SONY

Model KV-32FS200 (Chassis SCC-S65G-A)



Representative Model

**Essential coverage
for servicing a television receiver...**

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

Coverage includes these additional models and chassis:

Models	Chassis
KV-32FS100	SCC-S64E-A
KV-32FS100	SCC-S65F-A

Technical Publishing^{LLC}

DECEMBER 2003 SET 4818

The listing of any available replacement part herein in no case constitutes a recommendation, warranty, or guarantee by SAMS Technical Publishing, LLC 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, LLC by the manufacturers of the specific type of replacement part listed.

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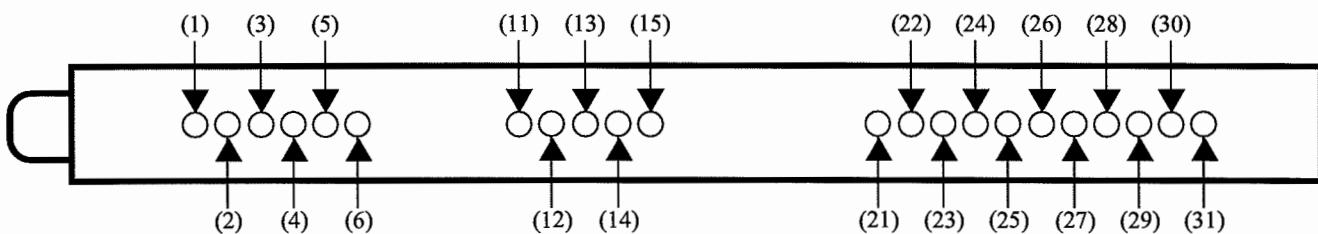
TUNER INFORMATION

TU001 MAIN TUNER VOLTAGE CHART

Pin	Pin Name	Voltage	Pin	Pin Name	Voltage	Pin	Pin Name	Voltage
(1)	VCC 9V	8.8V	(13)	VCC 9V	8.8V	(25)	MODE	0V
(2)	30V	30.0V	(14)	AFT OUT	3.9V	(26)	F MONO	0V
(3)	VCC 5V	4.9V	(15)	GND	0V	(27)	NC	0V
(4)	SCL	4.4V	(21)	DET OUT2	4.7V	(28)	MUTE	0V
(5)	SDA	4.5V	(22)	DET OUT1	4.4V	(29)	NC	0V
(6)	AS	0V	(23)	ST IND	4.9V	(30)	R OUT	4.1V
(11)	RF AGC	4.5V	(24)	SAP IND	0V	(31)	L OUT	4.1V
(12)	VIF	2.1V						

NOTE: Voltages do not change on different bands.

TU001 MAIN TUNER TERMINAL GUIDE

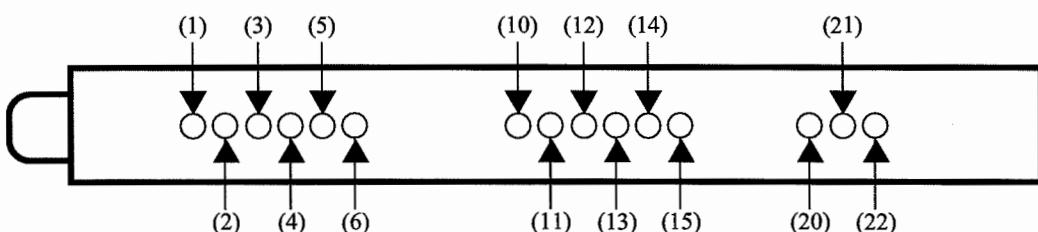


TU150 SUB TUNER VOLTAGE CHART

Pin	Pin Name	Voltage	Pin	Pin Name	Voltage	Pin	Pin Name	Voltage
(1)	VCC 9V	9.0V	(10)	GND	0V	(20)	OUT DE-EM	.9V
(2)	VCC 30V	30.0V	(11)	RF AGC	4.2V	(21)	MUTE	.3V
(3)	VCC 5V	5.0V	(12)	VIF	0V	(22)	DET OUT	2.8V
(4)	SCL	4.5V	(13)	9V	9.0V			
(5)	SDA	4.5V	(14)	AFT OUT	3.5V			
(6)	AS	5.0V	(15)	GND	0V			

NOTE: Voltages do not change on different bands.

TU150 SUB TUNER TERMINAL GUIDE



MISCELLANEOUS ADJUSTMENTS

B+ CHECK

Connect a digital DC voltmeter to the cathode of D643. Set brightness and picture to minimum. With AC line voltage set to 130VAC, B+ should read 135V \pm 1.0V.

HIGH VOLTAGE CHECK

Tune in a picture. Set brightness, picture, and screen control to minimum. Connect a high voltage probe to CRT anode. High voltage should measure 29kV to 32kV.

DIGITAL ADJUSTMENT PROCEDURES

Enter/Exit Service Adjustment Mode

Tune in a picture and turn receiver off. Press the display button, the 5 button, the vol + button, and the power button in sequence. Press each button within a second. Turn receiver off and then back on to exit service adjustment mode.

Making Adjustments

Enter Service Adjustment Mode. Select an item adjustment by pressing the 1 and 4 buttons. Select a group device item adjustment by pressing the 2 and 5 buttons. Make changes on selected adjustment by pressing the 3 and 6 buttons. To recover the latest values press the 0 then enter buttons.

Saving Adjustments to Memory

Adjustments must be saved to memory. To save adjustment, press the mute button and then the enter button. If changing ID-0 thru ID-4 or IC003, press the 8 and enter buttons to initialize changes prior to saving.

Memory Write Confirmation

Disconnect AC plug from outlet. Plug receiver in and enter Service Adjustment Mode. Select adjustment and confirm that setting was saved to memory.

IF AGC

Tune in an active channel. Adjust AGC control, located on top of TU101, counterclockwise until snow appears, and then clockwise until snow just disappears.

HORIZONTAL FREQUENCY (AFC)

Tune in a crosshatch pattern. Enter the Service Adjustment Mode. Select AFC and set to 3 (free run). Connect a frequency counter to the base of Q501. Check for 15735Hz \pm 200Hz. Set AFC to level 0.

HORIZONTAL SIZE (HSIZ)

Tune in a crosshatch pattern. Enter the Service Adjustment Mode. Select HSIZ and adjust for slight horizontal overscan. Save adjustment to memory.

HORIZONTAL POSITION (HPOS)

Tune in a crosshatch pattern. Enter the Service Adjustment Mode. Select HPOS and adjust for best horizontal centering. Save adjustment to memory.

PINCUSHION (PAMP, UPIN, LPIN, VBOW, VANG)

Tune in a crosshatch pattern. Enter the Service Adjustment Mode. Select PAMP and adjust for straight vertical lines at left and right of screen. Select UPIN and adjust for straight vertical lines at top of screen, and select LPIN and adjust for straight vertical lines at bottom of screen. Select VANG and adjust so that vertical lines are perpendicular at corners. Select VBOW and adjust so that vertical lines are parallel at both sides. Save adjustment to memory.

VERTICAL SIZE (VSIZ)

Tune in a crosshatch pattern. Enter the Service Adjustment Mode. Select VSIZ and adjust for slight vertical overscan. Save adjustment to memory.

VERTICAL POSITION (VPOS)

Tune in a crosshatch pattern. Enter the Service Adjustment Mode. Select VPOS and adjust to center picture vertically. Save adjustment to memory.

VERTICAL LINEARITY (VLIN)

Tune in a crosshatch pattern. Enter the Service Adjustment Mode. Select VLIN and adjust for equal vertical spacing of pattern. Save adjustment to memory.

VERTICAL CORRECTION (SCOR)

Enter the Service Adjustment Mode. Select SCOR and adjust for best picture. Save adjustment to memory.

OSD POSITION (DISP)

Tune in a color bar pattern. Enter the service adjustment mode. Select DISP and adjust to center the OSD. Save adjustment to memory.

SUB BRIGHTNESS (SBRT)

Tune in a crosshatch pattern. Set picture to minimum and brightness to reset. Enter the Service Adjustment Mode. Select SBRT and adjust for visible highlights. Save adjustment to memory.

SUB CONTRAST

Connect an oscilloscope to pin 3 of IC702. Tune in a colorbar pattern. Set picture to maximum, color to minimum, and brightness to center. Enter the Service Adjustment Mode. Select RON and set to 1. Select GON and set to 0. Select BON and set to 0. Select RDRV and adjust so that signal portion of the waveform would measure $1.9V \pm .1Vp-p$. Set brightness to center. Select GON and BON and set each to 1. Select DCOL and set to 1. Save adjustment to memory.

SUB HUE (SHUE) AND SUB COLOR (SCOL)

Tune in a colorbar pattern. Connect an oscilloscope to pin 2 of IC702. Enter the service adjustment mode. Select and adjust SHUE and SCOL so that the levels of the left and right portions of the waveform are balanced, and the level of the center portion is balanced. Save adjustment to memory.

SUB BALANCE (SBAL)

Input a stereo signal. Enter the Service Adjustment Mode. Select SBAL and adjust for the best sound balance. Save adjustment to memory.

COLOR PURITY

The manufacturer advises not to use a degaussing coil to demagnetize the CRT and mounting brackets. Tune in a green raster signal. Loosen the clamp screw and slide yoke backward to obtain a vertical green band. Adjust purity magnets to center the vertical green band. Slide the deflection yoke forward until a uniform green screen is obtained. Tune in a blue and red raster signal and check blue and red purity. Tighten the clamp screw.

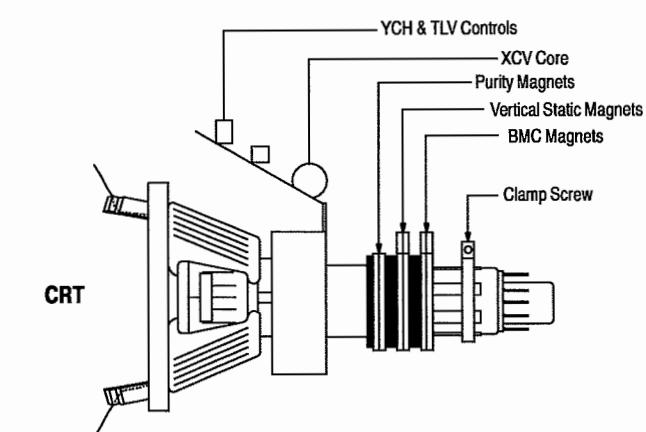
COLOR TEMPERATURE (RCUT, GCUT, BCUT, RDRV, GDRV, BDRV)

Tune in a crosshatch pattern. Adjust screen control so the retrace lines just disappear. Enter Service Adjustment Mode. Set picture to minimum. Select SBRT and adjust for minimum. Select RCUT, GCUT, and BCUT and adjust for best white balance. Set picture to maximum. Select RDRV, GDRV, and BDRV and adjust for best white balance. Save adjustment to memory. Perform sub brightness adjustment.

CONVERGENCE

Adjust V.Stat control to converge red, green, and blue in the center of the screen. Slide BMC magnets in and out to correct for insufficient horizontal static convergence and rotate the vertical static magnets to correct for insufficient vertical static convergence. Tune in a crosshatch pattern and loosen deflection yoke screw. Remove rubber wedges between deflection yoke and CRT. Tilt deflection yoke up or down to converge the vertical lines at top and bottom of screen, and adjust TLV control, and converge the horizontal lines at the right and left sides of screen. Tilt deflection yoke right or left to converge vertical lines at the right and left sides of screen and horizontal lines at top and bottom of screen. Adjust XCV core to balance X axis, and adjust YCH control to balance Y axis. Repeat convergence procedure if necessary to obtain best overall convergence. Apply adhesive to wedges and carefully replace on CRT. Apply a permalloy correction strip, part number 4-062-047-01, corresponding to the misconverged corner areas.

CRT NECK ASSEMBLY



DIGITAL SERVICE ADJUSTMENT CHART

NOTES:

Codes: F = Fixed, do not adjust; A = Variable, to be adjusted. Before making any changes to the On-Set Value, make a record of the On-Set Values. After making any repair or changes to the On-Set Values, press the 8 and Enter buttons on the remote to save the changes.

No.	Display	Item	Data	Range	Initial	On-Set	Code	No.	Display	Item	Data	Range	Initial	On-Set	Code	No.	Display	Item	Data	Range	Initial	On-Set	Code				
			COL-TMP								3D-COMB continued																
0	HSIZ	Horizontal Size	0 - 63	39	39	A	0	GDOF	G DRIVE Offset	0 - 31	4	4	F	44	SHT	SHT	0 - 3	0	0	F	7	BBSL	Simulated - BBE Low	0 - 15	0	0	F
1	HPOS	Horizontal Position	0 - 63	39	39	A	1	BDOF	B DRIVE Offset	0 - 31	15	15	F	45	VCT	VCT	0, 1	0	0	F	8	BBMH	Surround BBE High	0 - 15	0	0	F
2	VBOW	Vertical L INE Bow	0 - 15	8	8	A	2	GCOF	G CUT Offset	0 - 31	7	7	F	46	CGAT	CLKGAT	0, 1	0	0	F	9	BBML	Surround BBE Low	0 - 15	0	0	F
3	VANG	Vertical L INE Bow Angle	0 - 15	6	6	A	3	BCOF	B CUT Offset	0 - 31	14	14	F	47	CG2D	CLK2D	0, 1	1	1	F	10	BBGH	WOW - BBE High	0 - 15	6	6	F
4	VTRP	Trapezium	0 - 31	20	20	A	4	DCOL	Dynamic Color	0, 1	1	1	F	48	CGGT	CLKGGT	0, 1	0	0	F	11	BBGL	WOW - BBE Low	0 - 15	9	9	F
5	HTRP	Horiz Trapezoid Adj	0 - 15	15	15	A	5	PIC-IMP						49	CGEB	CLKGEBF	0, 1	0	0	F	12	BBTH	True surround BBE High	0 - 15	7	7	F
6	TROT	Tilt Correction	0 - 63	32	32	A	6	VMGA	VM	0 - 3	0	0	F	50	CGT	CLKGT	0, 1	0	0	F	13	BBTL	True surround BBE Low	0 - 15	8	8	F
7	PAMP	Horizontal Pin Compensation	0 - 63	23	23	A	7	GCUR	Controls Curve of Gamma C	0, 1	1	1	F	51	HPLL	HPLLFS	0, 1	1	1	F	14	VFIX	Audio output fix data	0 - 255	240	240	F
8	UPIN	Upper Pin Distortion Adj	0 - 63	34	34	A	8	BLKC	Black Compensation	0, 1	1	1	F	52	BPLL	BPLLFS	0, 1	0	0	F	15	AGCL	AGC Level	0 - 3	2	2	F
9	LPIN	Lower Pin Distortion Adj	0 - 63	32	32	A	9	TEST	Test Bit	0 - 3	3	3	F	53	FSCF	FSCFG	0, 1	0	0	F							
10	VSIZ	Vertical Size	0 - 63	17	17	A	10	RS	Gain of DL APACON at 8MHz	0 - 7	0	0	F	54	PLLF	PLLF	0, 1	1	1	F							
11	VPOS	Vertical Position	0 - 63	31	31	A	11	RTC	Compensation Ratio	0 - 7	2	2	F	55	KILR	Killer Reference	0 - 15	3	3	F							
12	VLIN	Vertical Linearity	0 - 15	6	6	A	12	APAC	APAC	0, 1	0	0	F	56	HSSL	HSSL	0 - 15	12	12	F							
13	SCOR	Vertical Correction	0 - 15	8	8	A	13	SRTH	Compensation Ratio	0, 1	1	1	F	57	VSSL	VSSL	0 - 15	8	8	F	0	DUM0	For Testing only	-	-	0	F
14	VZOM	16:9 CRT Z Mode	0, 1	0	0	F	14	SRTL	Compensation Ratio	0, 1	1	1	F	58	BGPS	BGP Start Position	0 - 15	4	4	F	1	VOSD	For Testing only	-	-	0	F
15	EHT	Vertical Hi-Volt Correction	0 - 15	7	7	F	15	SRTO	Compensation Ratio	0, 1	0	0	F	59	BGPW	BGP Width	0 - 15	10	10	F							
16	ASP	Aspect Ratio Control 4:3 mode	0 - 63	47	47	F	16	SHPH	Sharpness level for Dynablack = High	0 - 127	54	54	F	60	ADCL	AD Clock Delay	0 - 3	3	3	F							
17	ASPI	Aspect Ratio Control 16:9 mode	0 - 63	47	47	F	17	SHPL	Sharpness level for Dynablack = Low	0 - 127	43	43	F	61	NSDW	NSDSW	0, 1	1	1	F							
18	SCR1	16:9 CRT Z Mode Tran Scrl	0 - 63	31	31	F	18	SHPO	Sharpness level for Dynablack = Off	0 - 127	0	0	F	62	HIZE	HIZEN	0, 1	0	0	F	0	DISP	OSD Position	0 - 127	28	28	F
19	HBLK	Horiz Blanking On/Off	0, 1	1	1	F	20	3L-COMB					63	HCNT	HCNTFSYN	0, 1	0	0	F	1	RAMW	-	0, 1	0	0	F	
21	RBLK	Right Screen HBLK Control	0 - 15	5	5	F	21	PIP					64			0 - 31	4	4	F	2	ICMP	Comparison data to determine Non-interlace signal for OSD	-	-	-		
22	HDW	Horizontal Drive Pulse Width	0, 1	1	1	F	22	3L-COMB					65			0: Even, 1: Odd, Other: do not change	0 - 3	1	1	F	3	IPOR	0: Even, 1: Odd, Other: do not change	0 - 3	1	1	F
23	EWDC	Parabola EW/DC Adjust	0, 1	0	0	F	23	YCSM	Function for NTSC	0 - 3	3	3	F	66	PRVS	HD/VD input sync select	0, 1	0	0	F	4	FAWD	1: Auto wide mode, 0: Normal	0, 1	0	0	F
24	LVLN	Bottom Vert Linearity	0 - 15	0	0	F	24	CNRK	Y/C Sep Mode	0 - 3	0	0	F	67	PCON	PIP sub contrast	0 - 127	97	97	F	5	HCLW	Horiz Count Lower Limit	0 - 255	67	67	F
25	UVLN	Top Vert Linearity	0 - 15	0	0	F	25	CNRL	CNR Lim	0 - 3	1	1	F	68	PUCO	PIP U level control	0 - 127	5	5	F	6	HCHG	Horiz Count High Limit	0 - 255	254	254	F
26	INTL	INTERLACE	0 - 3	0	0	F	26	CLPF	C-LPF	0, 1	1	1	F	69	PVCO	PIP V level control	0 - 127	17	17	F	7	9VTM	Delay fo 9V check subsystem	0 - 255	55	55	F
27	HOSC	Horizontal VCO Osc. Freq.	0 - 15	7	7	F	27	SLPF	Sel C-LPF	0, 1	0	0	F	70	PHUE	PIP sub hue	0 - 63	12	12	F	8	ZDET	Zero detect relay delay	0 - 255	123	123	F
28	VSS	Vertical Sync Slice Level	0 - 3	0	0	F	28	MODE	Mode	0, 1	0	0	F	71	PKIL	PIP color killer	0, 1	0	0	F							
29	HSS	Horizontal Sync Slice Lev1	0, 1	0	0	F	29	YPG	Y - Peaking Gain	0 - 3	3	3	F	72	PSEB	EXT SC SEL	0 - 3	1	1	F							
30	HMSK	-	0, 1	0	0	F	30	YCSM	Function for PAL-N, PAL-M	0 - 3	3	3	F	73	PDCN	Sub picture sync sep Threshold	0 - 3	3	3	F	0	ID-0 (1)	Model Id	0 - 255	89	89	F
31	VTMS	Select Signal VTIM Pin	0 - 3	0	0	F	31	CPP	EXCSS	0 - 3	0	0	F	74	PGBS	PIP BG start setting	0 - 63	15	15	F	1	ID-1 (1)	Model Id	0 - 255	31	31	F
32	TCMD	Vertical Countdown	0 - 3	1	1	F	32	CPP	CPP	0, 1	0	0	F	75	PDL0	Y/C delay adjust for Video	0 - 15	11	11	F	2	ID-2 (1)	Model Id	0 - 255	73	73	F
33	VCMD	Vertical Countdown	0 - 3	3	3	F	33	CDL	C Delay	0 - 7	6	6	F	76	PDL1	Y/C delay adjust for YUV	0 - 15	13	13	F	3	ID-3 (1) (2) (4)	Model Id	0 - 255	98	98	F
34	AFC	AFC Loop Gain	0 - 3	0	0	F	34	DYCO	DYCOR	0 - 15	2	2	F	77	PBRT	PIP Y bright control	0 - 31	25	25	F	4	ID-3 (1) (3)	Model Id	0 - 255	82	82	F
35	FIFR	Field Frequency	0 - 3</td																								

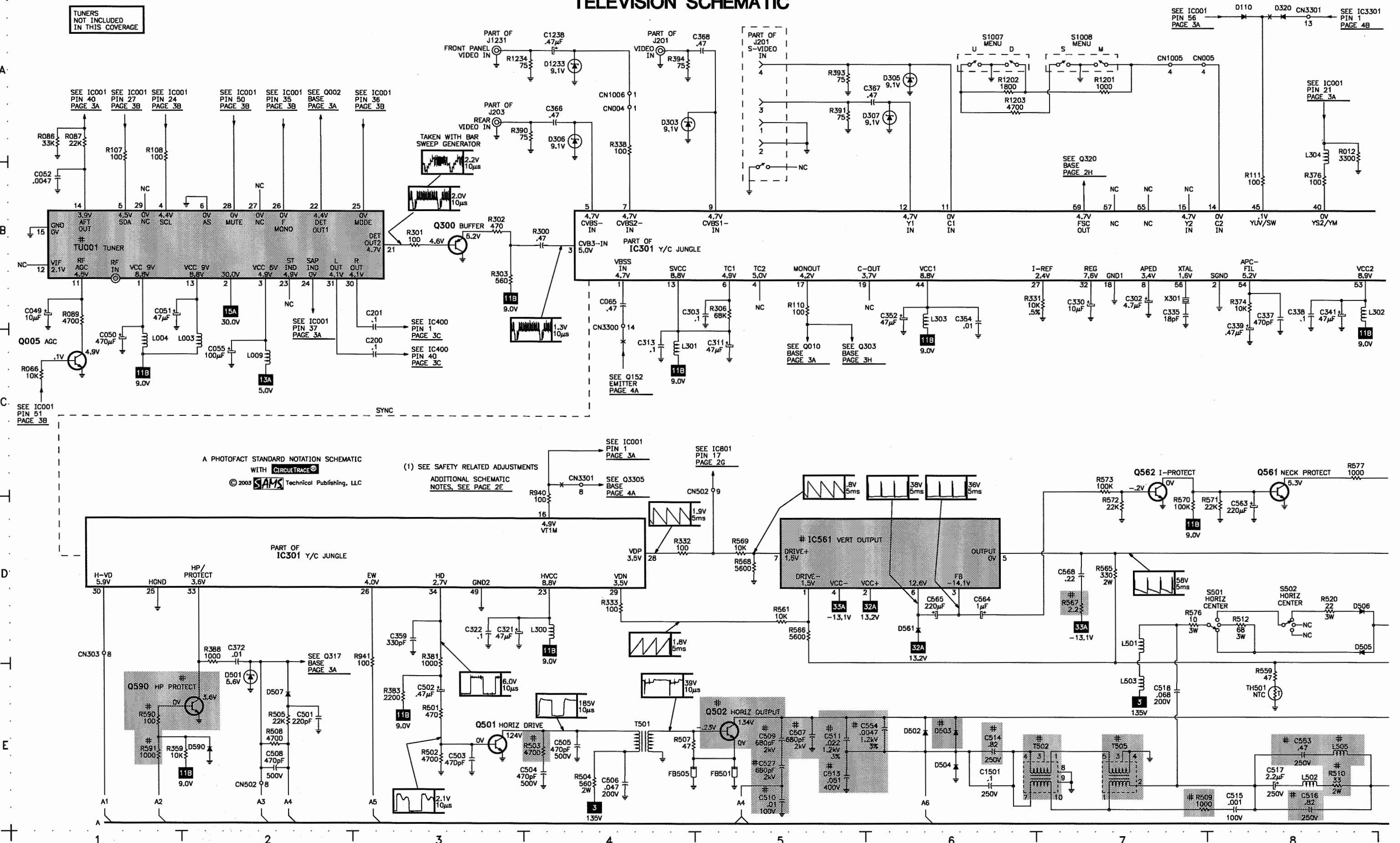
SCHEMATIC COMPONENT LOCATION GUIDE

SONY MODEL KV-32FS200 (CHASSIS SCC-S65G-A)																																			
C001	C35	C201	C3	C381	D62	C532	E19	C690	D52	C3313	C70	D320	A8	D813	E27	J205	B41	Q300	B3	R003	D35	R101	E38	R319	A62	R506	D23	R592	A56	R719	C24	R918A	C28	R3330	C71
C002	C35	C202	C41	C382	D63	C534	E21	C701	E60	C3316	E69	D410	D38	D901	C29	J205	B41	Q301	A64	R004	D35	R101A	C66	R321	A61	R507	E4	R593	A56	R720	C22	R919	E62	R3331	C71
C003	D34	C203	D42	C383	D63	C535	A55	C702	C24	C3317	E69	D412	E46	D902	C29	J206	C10	Q302	A62	R005	A36	R102	E38	R322	D34	R508	E2	R594	B56	R721	C22	R919A	C28	R3335	C59
C004	D35	C206	B41	C384	E62	C537	E59	C703	E60	C3318	C69	D413	E45	D903	C26	J206	C11	Q303	A61	R006	A35	R103	D36	R323	A62	R509	E7	R595	B56	R722	A29	R920	C28	R3336	C59
C005	D35	C207	C42	C385	C62	C539	E60	C704	C31	C3319	C69	D415	D38	D1001	A34	J206	C11	Q304	C9	R007	D34	R103A	B66	R325	B13	R510	E8	R596	A55	R723	B28	R921	D63	R3343	E68
C006	C35	C208	B41	C387	D63	C541	D58	C706	D60	C3320	E69	D501	E2	D1002	E37	J207	D47	Q305	C15	R010	B36	R104	B66	R328	C9	R512	D8	R598	A55	R724	B28	R921A	C28	R3346	E67
C007	A36	C209	B42	C388	D63	C542	D12	C707	D31	C3322	D70	D502	E6	D1235	D42	J1231	A3	Q307	B15	R011	D36	R105	A66	R329	C10	R515	D18	R599	A54	R725	D24	R922	C63	R3347	E66
C008	A36	C212	D46	C389	D63	C544	D13	C708	C23	C3323	D70	D503	E6	D1236	D42	J1231	D41	Q308	C15	R013	E36	R107	B1	R331	B6	R517	E21	R604	D50	R727	E24	R923	D64	R3351	B70
C009	D36	C213	D46	C390	D63	C544	D13	C708	C23	C3323	D70	D503	E6	D1236	D42	J1231	D41	Q308	C15	R013	E36	R107	B1	R331	B6	R517	E21	R604	D50	R727	E24	R923A	C25	R3354	D70
C014	A37	C302	B7	C393	B12	C545	D12	C709	D23	C3324	E69	D504	E6	D1401	C45	J1231	D41	Q309	A15	R015	D38	R107A	A67	R332	D4	R518	D21	R606	E52	R809	D26	R923A	C25	R3354	D70
C015	A37	C303	B5	C394	B62	C546	E11	C710	D23	C3327	C70	D505	D8	D3301	D69	L001	B36	Q313	B63	R016	E38	R108	B1	R333	D4	R519	D21	R607	E52	R811	E29	R924	C62	R3362	E68
C016	B37	C304	B14	C396	D63	C547	D11	C711	C32	C3328	E70	D506	D8	D3304	C60	L002	D34	Q317	C33	R017	E38	R108A	A67	R334	B9	R520	D8	R608	E52	R814	E29	R932	C10	R3363	D69
C017	B36	C309	C12	C401	C44	C550	D12	C713	D24	C3329	C70	D507	E2	DY	D9	L003	C2	Q319	C34	R018	D38	R110	B5	R335	C10	R523	D19	R609	C54	R815	E29	R933	C11	R3364	C68
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C020	D36	C313	C4	C403	B43	C552	D12	C802	D26	C3331	E70	D510	D12	FB301	E63	L009	C2	Q321	C63	R020	B9	R112	B66	R337	C15	R525	E20	R611	E53	R818	D28	R940	D4	R3368	D70
C026	B38	C317	A63	C404	C43	C553	E8	C803	E30	C3332	E70	D511	D12	FB302	E63	L010	B36	Q402	D46	R021	A38	R113	E38	R338	B4	R526	E23	R613	E53	R819	D26	R941	E3	R3390	C58
C027	C38	C318	D56	C405	C44	C554	E6	C804	E30	C3334	D69	D512	D13	FB501	E5	L150	B67	Q403	D46	R022	B9	R113A	B67	R339	B14	R528	D20	R614	D49	R820	D26	R942	C15	R6001	C36
C028	A35	C319	B10	C406	A43	C561	E58	C805	D29	C3335	C68	D513	D13	FB502	E22	L300	D4	Q407	E46	R023	B38	R114	A38	R340	A14	R529	E18	R615	A52	R821	D26	R943	C64	R6002	C36
C029	D35	C320	B12	C407	C44	C563	D8	C808	E26	C3336	D69	D515	E22	FB503	E22	L301	C4	Q501	E3	R024	B10	R114A	B67	R341	B14	R530	E18	R616	D51	R822	D27	R944	C63	R6003	C37
C030	D34	C321	D3	C408	B43	C564	D6	C809	D26	C3337	D68	D516	E20	FB504	D13	L302	B8	Q502	E5	R025	B38	R115	B67	R342	A14	R531	E19	R617	C51	R824	E27	R946	D62	R6004	C36
C031	E34	C322	D3	C409	C44	C565	D6	C810	D27	C3338	D68	D518	E20	FB505	E4	L303	C6	Q507	D13	R027	C38	R116	B68	R343	A14	R532	E19	R619	C53	R825	E27	R1004	E37	RV701	C32
C032	D33	C325	A14	C410	B44	C568	D7	C811	D30	C3339	D69	D519	E18	FB602	A54	L304	B8	Q509	B49	R029	D35	R117	A38	R344	A15	R533	E19	R620	E53	R826	E28	R1007	B34	RV702	D23
C033	B35	C326	B14	C411	B44	C571	E60	C812	D28	C3340	E69	D520	E19	FB604	A54	L305	D63	Q511	D21	R030	D33	R117A	B68	R345	C16	R534	B49	R625	C51	R827	D26	R1008	A33	RY501	B50
C034	D36	C330	B7	C412	B44	C572	E60	C813	D56	C3341	E69	D521	E19	FB605	D54	L306	D63	Q512	D22	R031	B34	R118	A39	R346	A15	R535	B49	R626	C51	R828	D27	R1009	A33	RY501	B50
C035	C38	C332	C63	C413	B44	C573	D13	C821	C28	C3343	C60	D522	E19	FB606	B53	L307	D63	Q530	B55	R032	A35	R120	C36	R347	B16	R535A	D18	R627	B51	R829	D27	R1010	A34	RY600	A51
C036	C38	C333	B12	C414	B44	C590	B56	C823	E27	C3390	C59	D523	E21	FB607	B53	L310	E63	Q531	A55	R033	B35	R131	C38	R348	C16	R536	E57	R629							

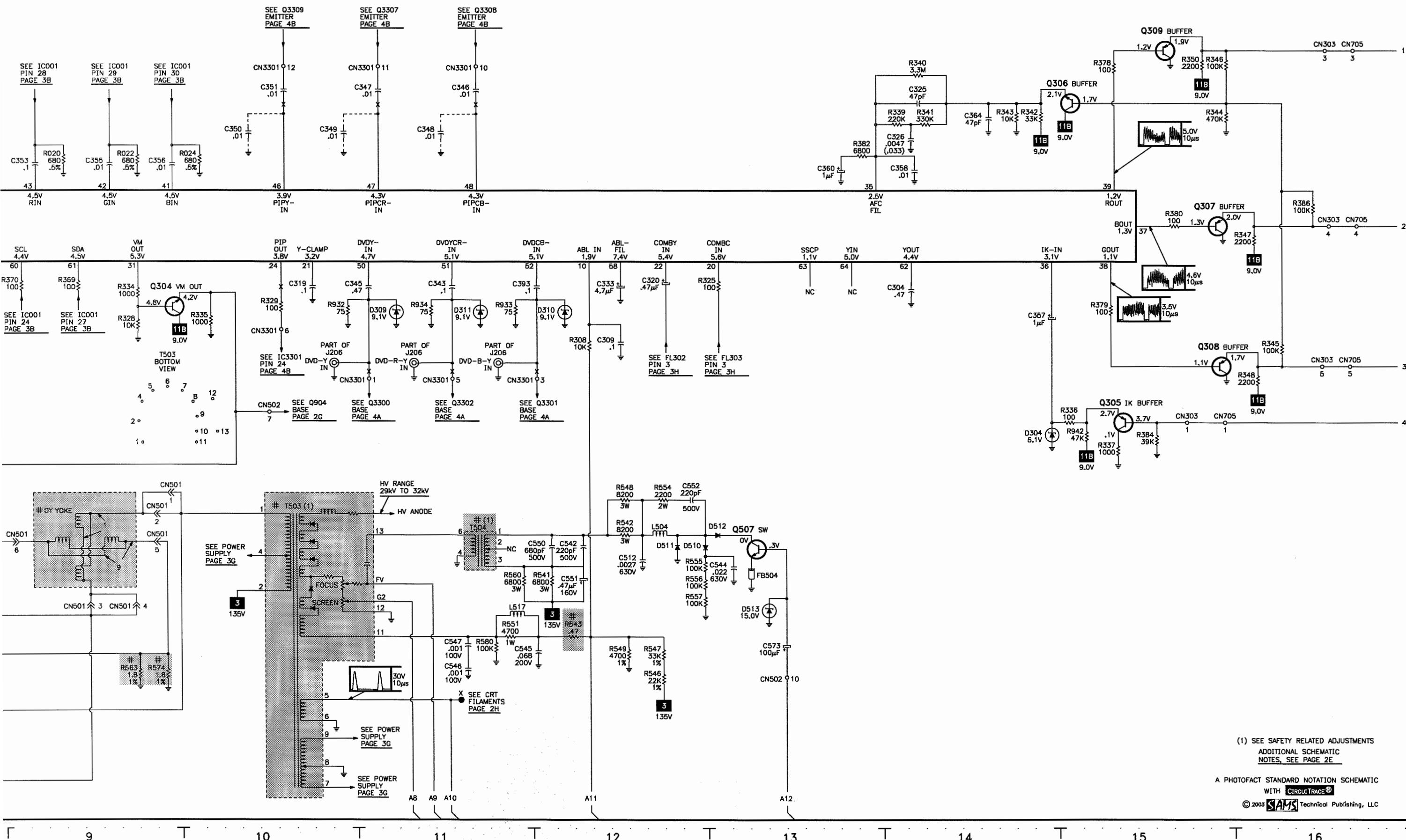
A

TELEVISION SCHEMATIC

B



TELEVISION SCHEMATIC continued



E

PINCUSHION SCHEMATIC

F

A

B

C

D

E

D

E

SCHEMATIC NOTES

For SAFETY use any equivalent replacement part, see parts list.

-x- Circuitry not used in some versions.

--- Circuitry used in some versions.

△ Ground

■ Chassis ground

▽ Common tie point

△ Taken from common tie point

■ Schematic CIRCUITTRACE® Voltage source tie point.

A — Cobling: 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.

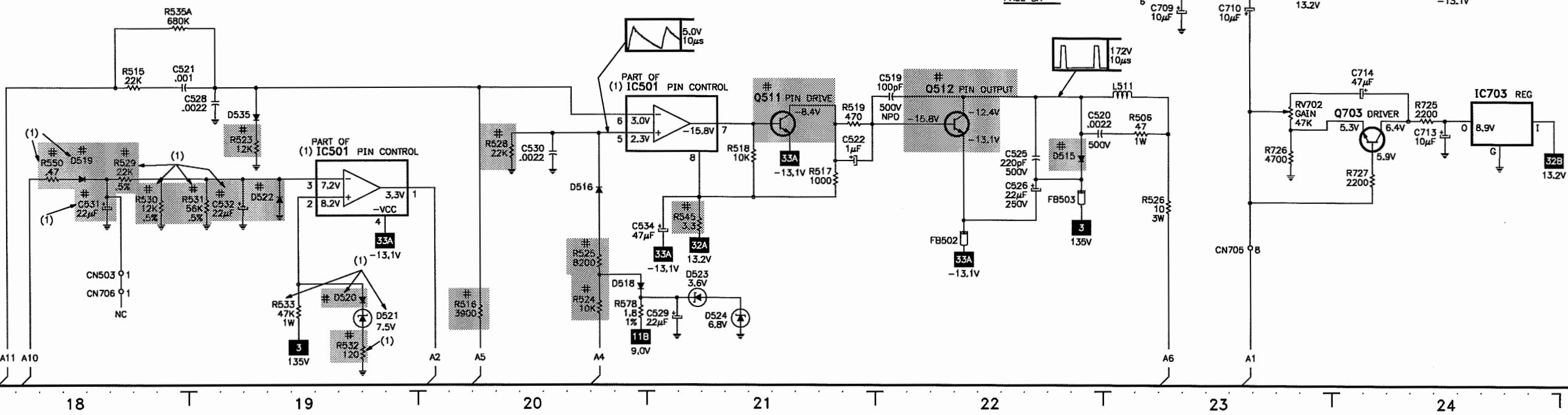
Electrolytic capacitors are 50 volts or less, 20% or greater unless noted.

Resistors are 1/2W or less, 5% or greater unless noted.

Value in () used in some versions.

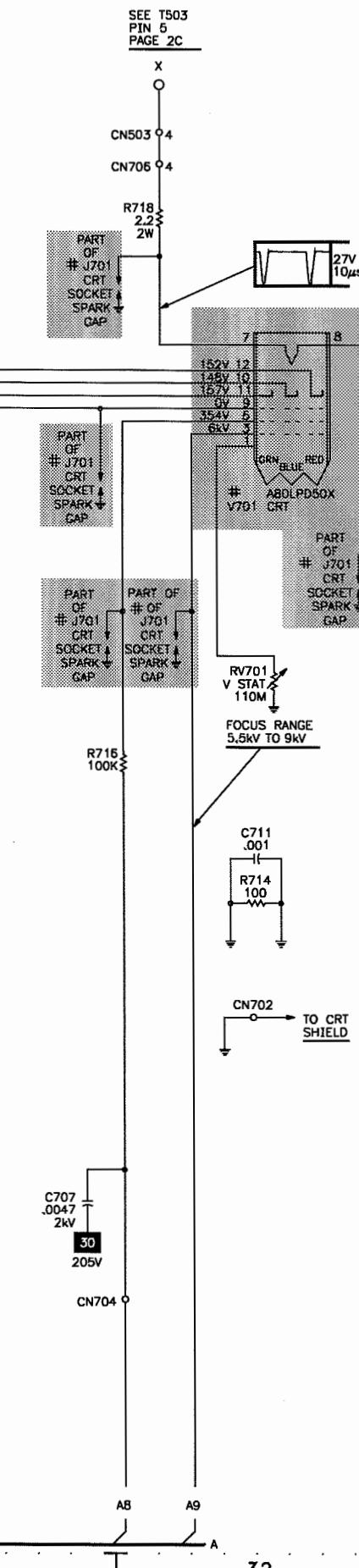
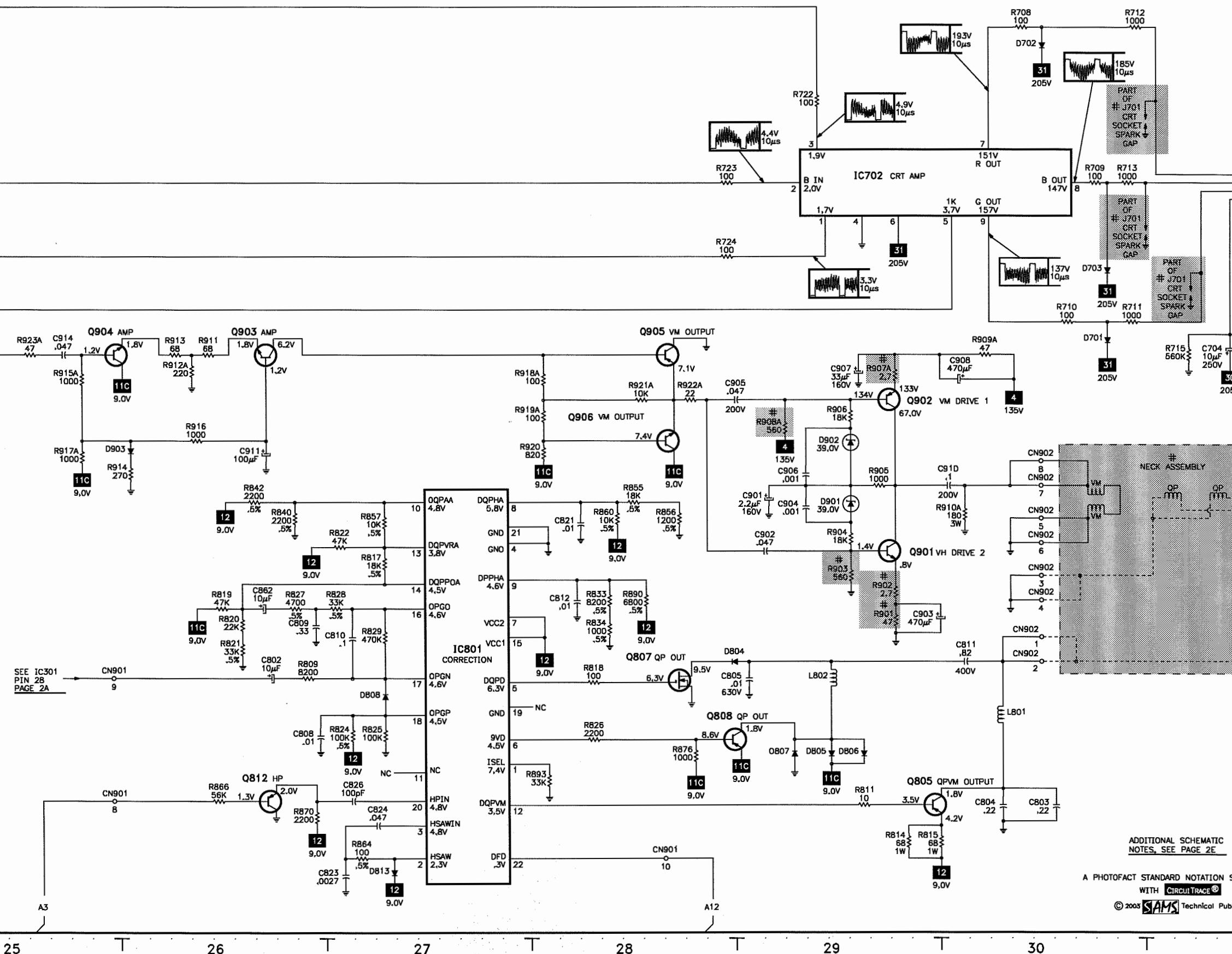
Measurements with switching as shown unless noted.

Rated voltage shown on zener diodes.



CRT SCHEMATIC

G

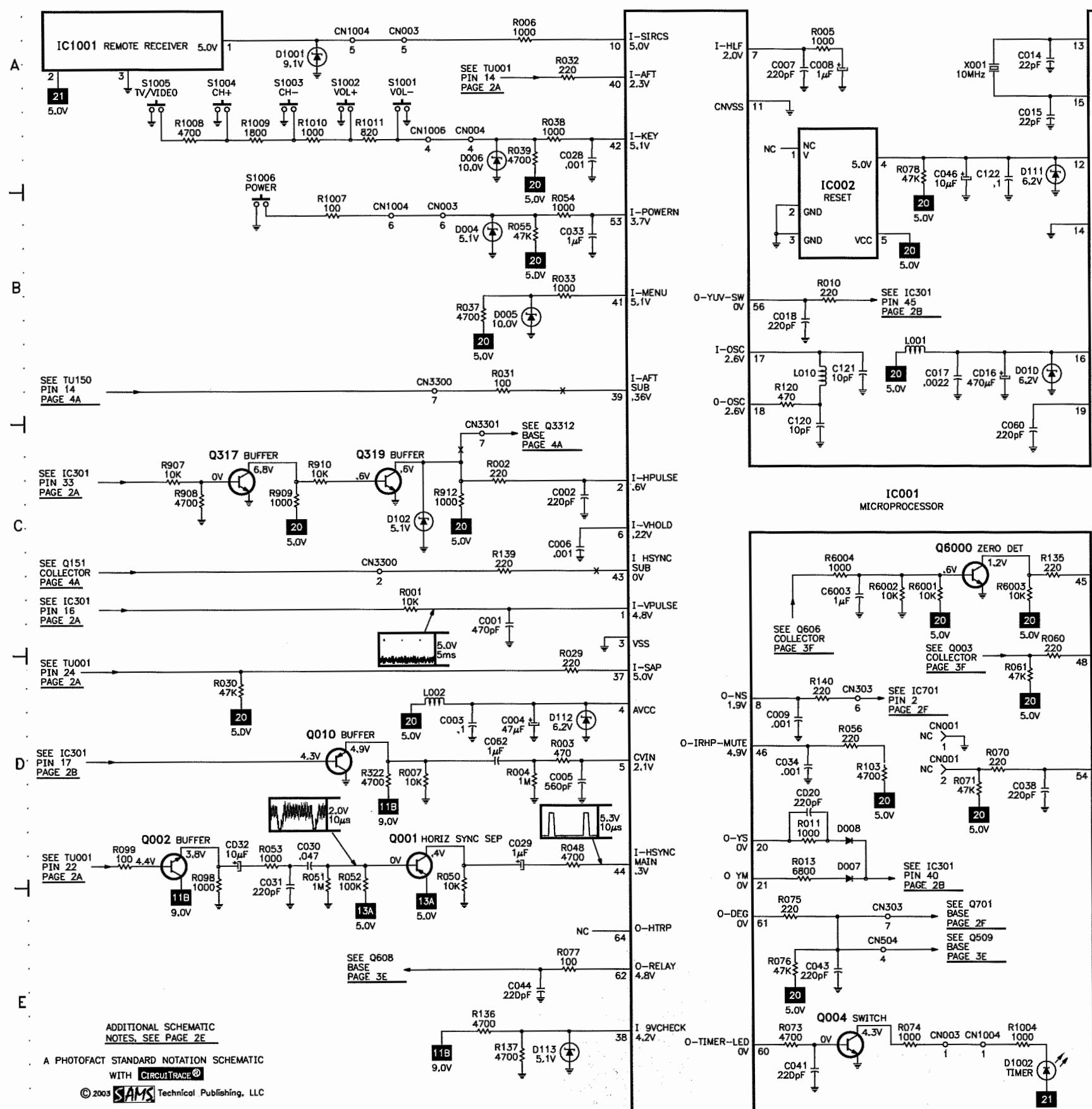


XIV

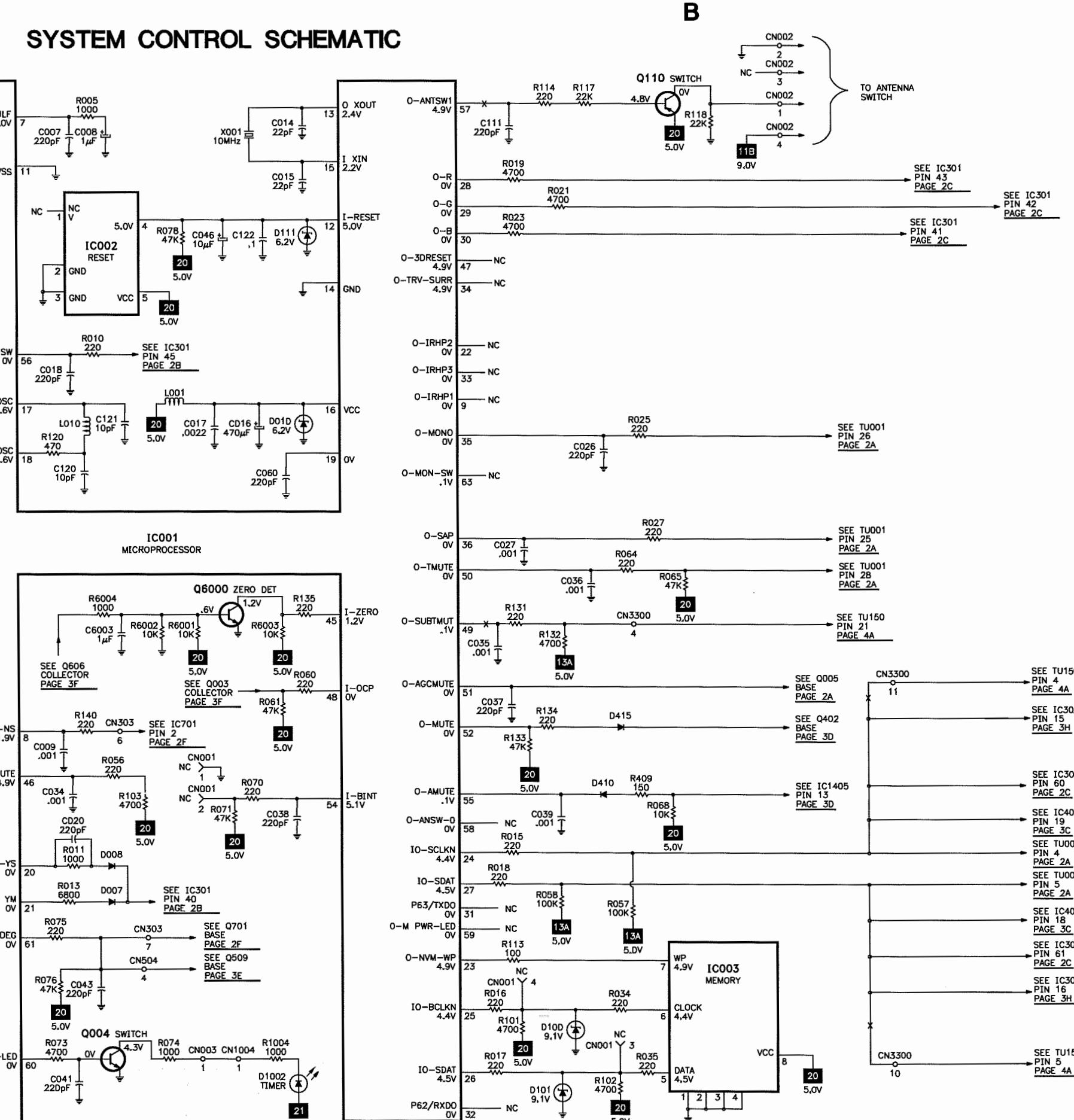
MODEL KV-32FS200 (CHASSIS SCC-S65G-A)

A

SYSTEM CONTROL SCHEMATIC



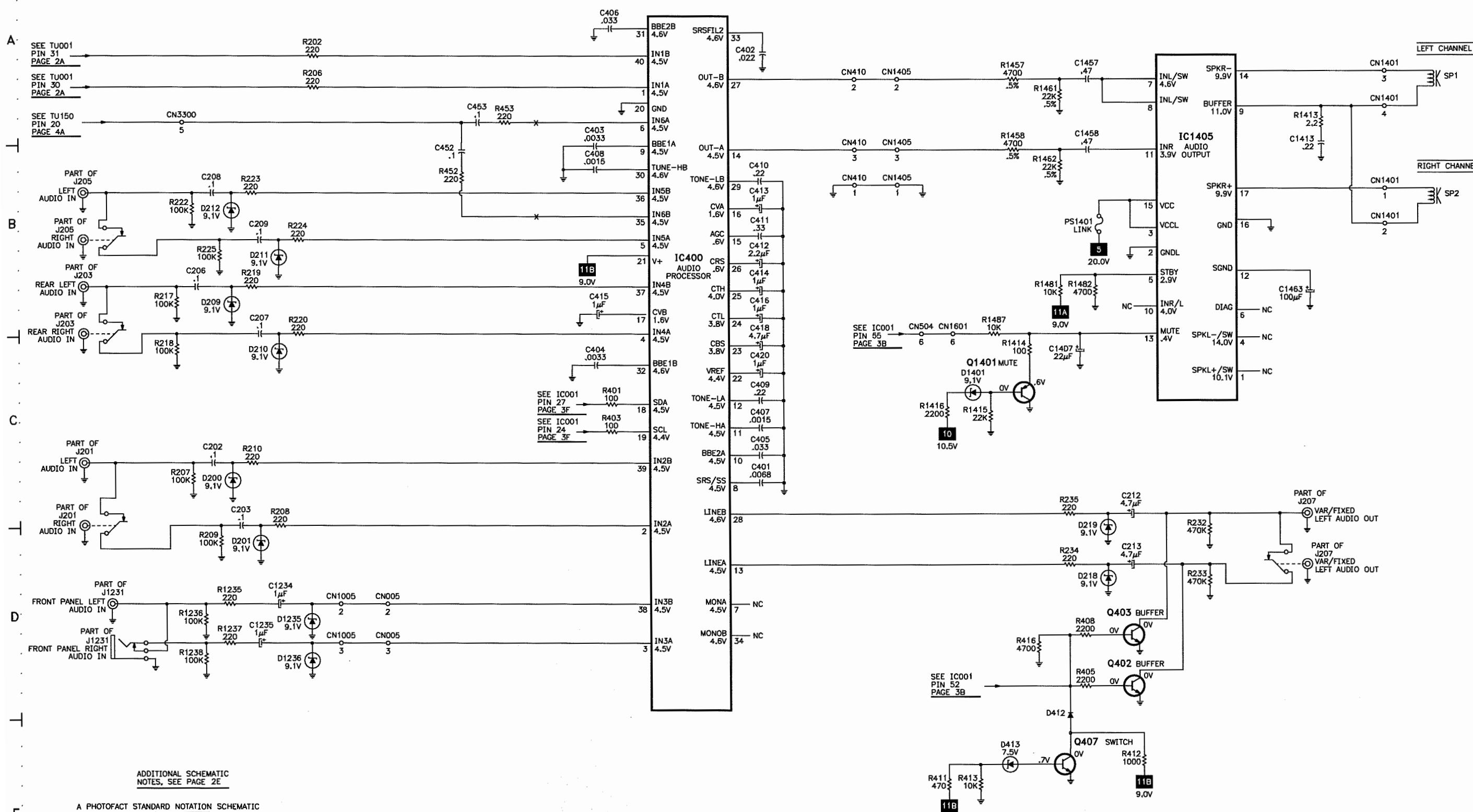
B



C

AUDIO SCHEMATIC

D



ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 2E

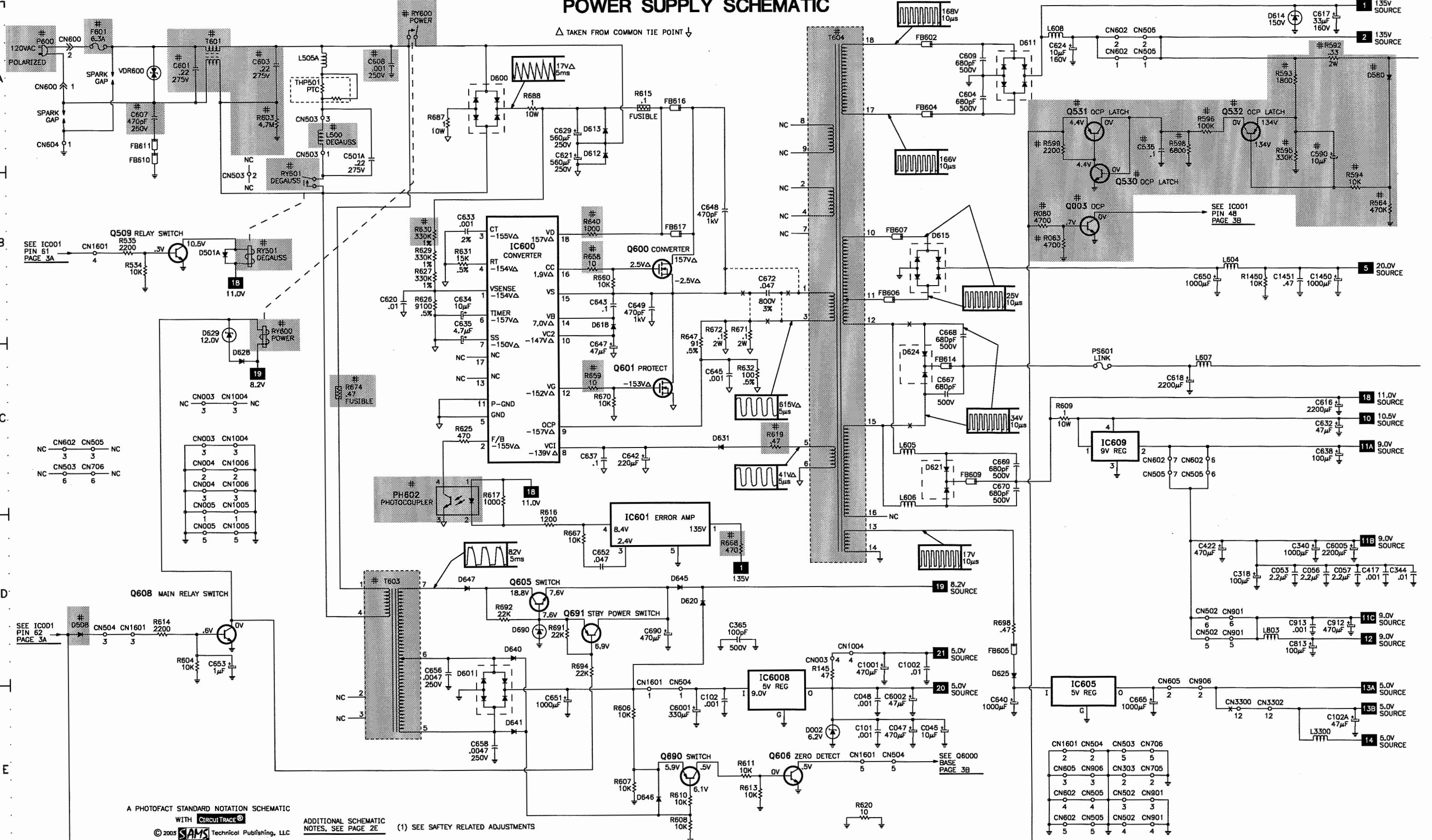
A PHOTOFAC STANDARD NOTATION SCHEMATIC
WITH CIRCUITTRACE®

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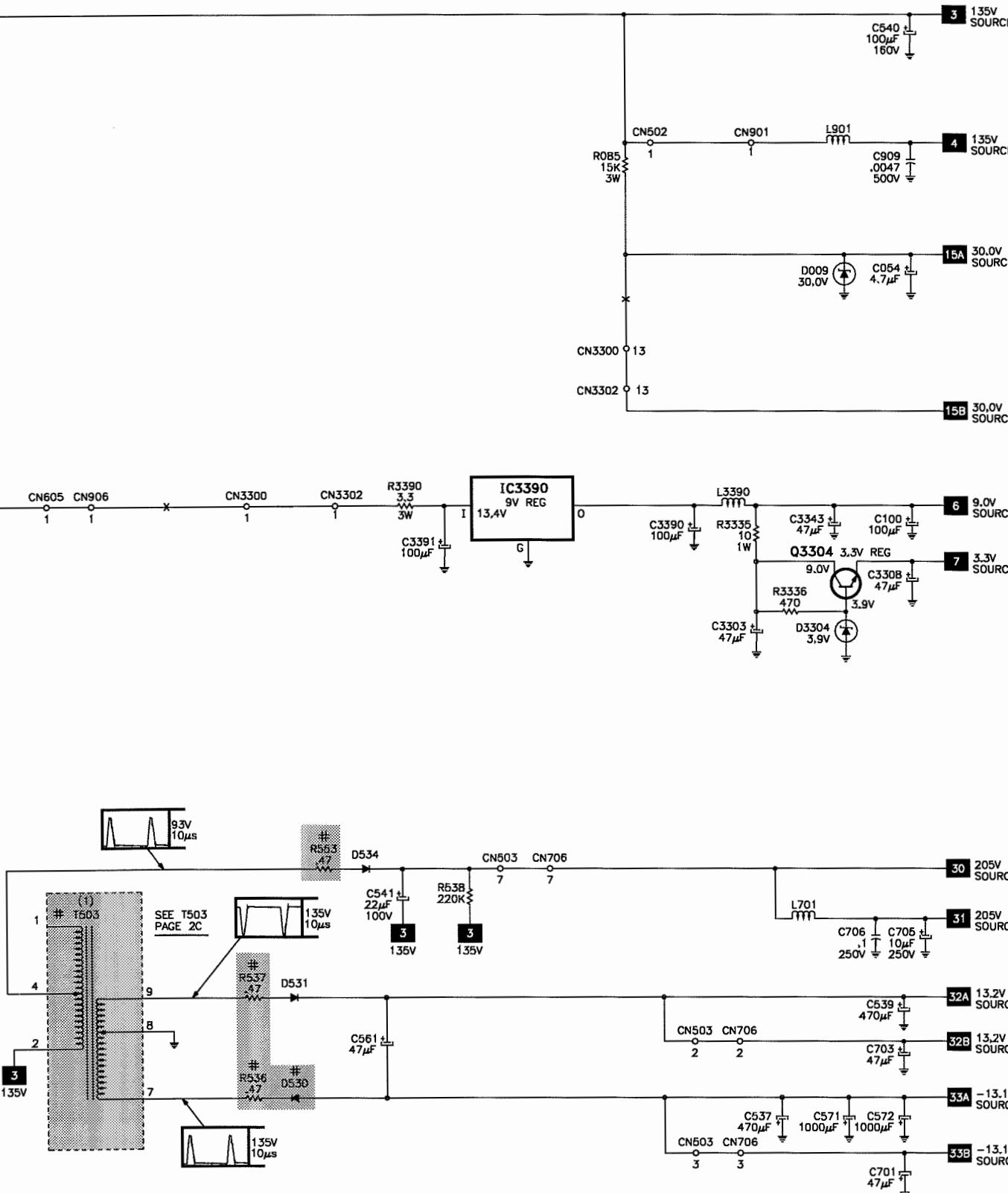
POWER SUPPLY SCHEMATIC

1

1



G POWER SUPPLY SCHEMATIC continued



(1) SEE SAFETY RELATED ADJUSTMENTS

A PHOTOFAC STANDARD NOTATION SCHEMATIC

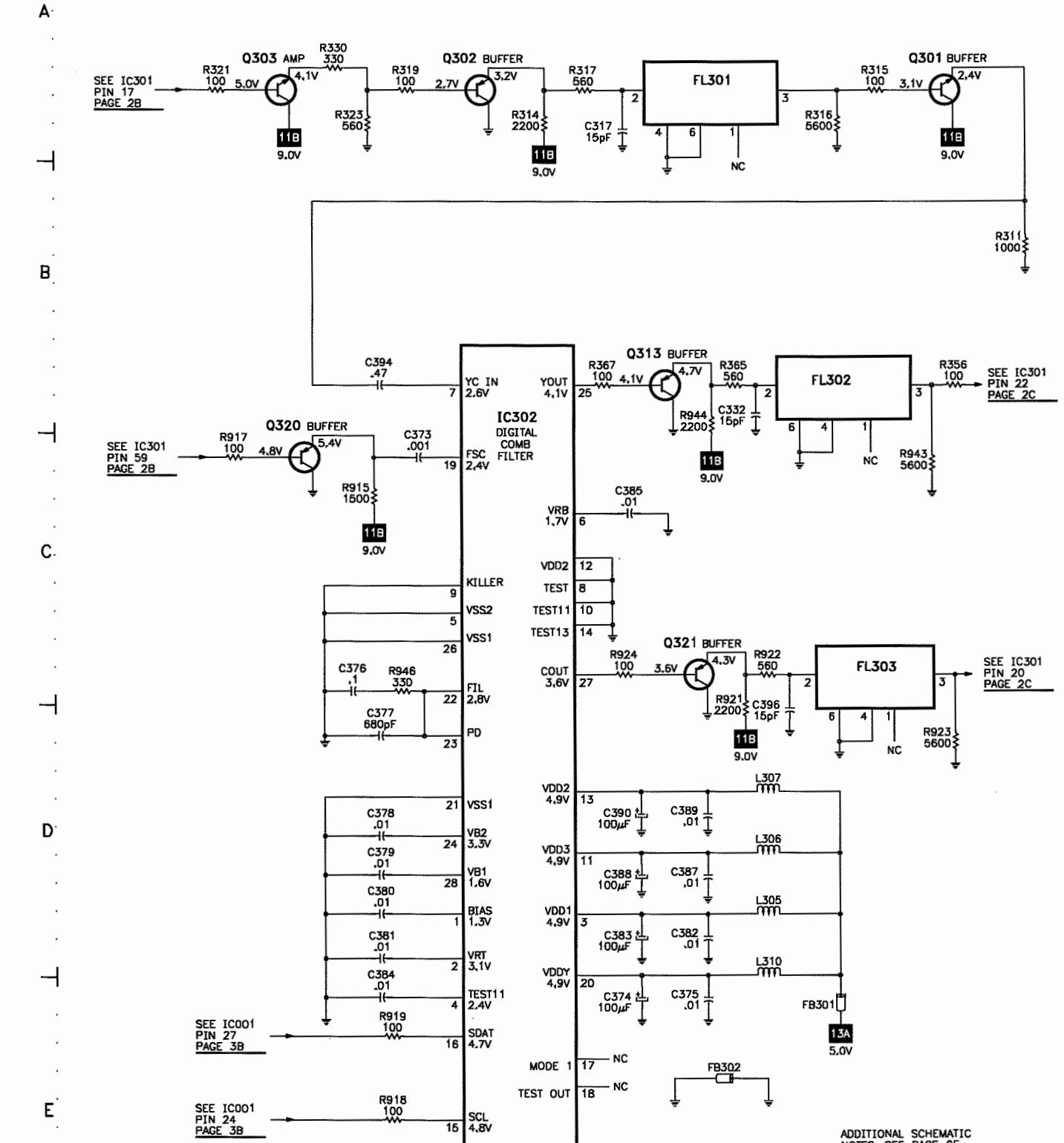
WITH CIRCUITTRACE®

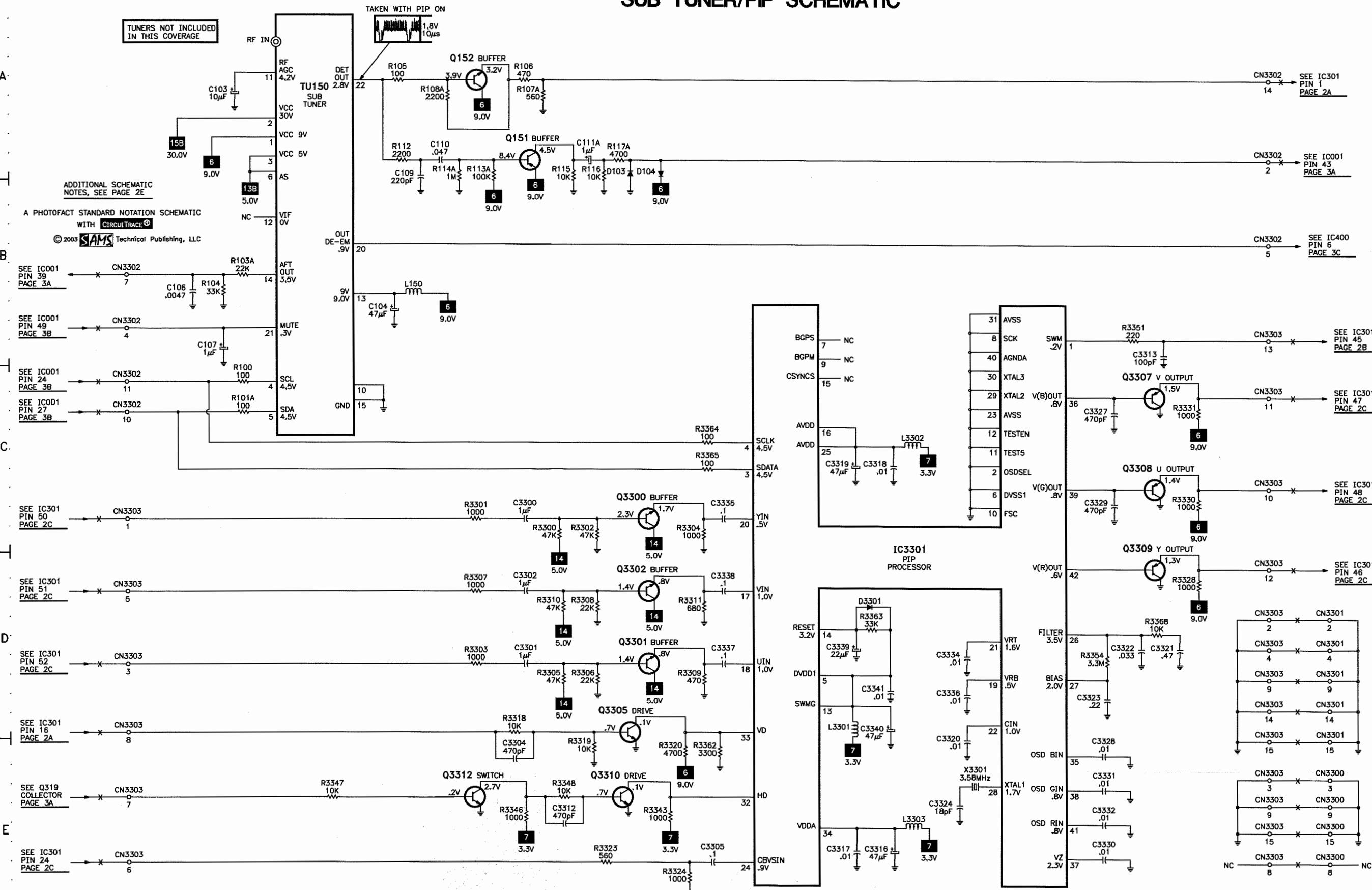
ADDITIONAL SCHEMATIC

NOTES, SEE PAGE 2E

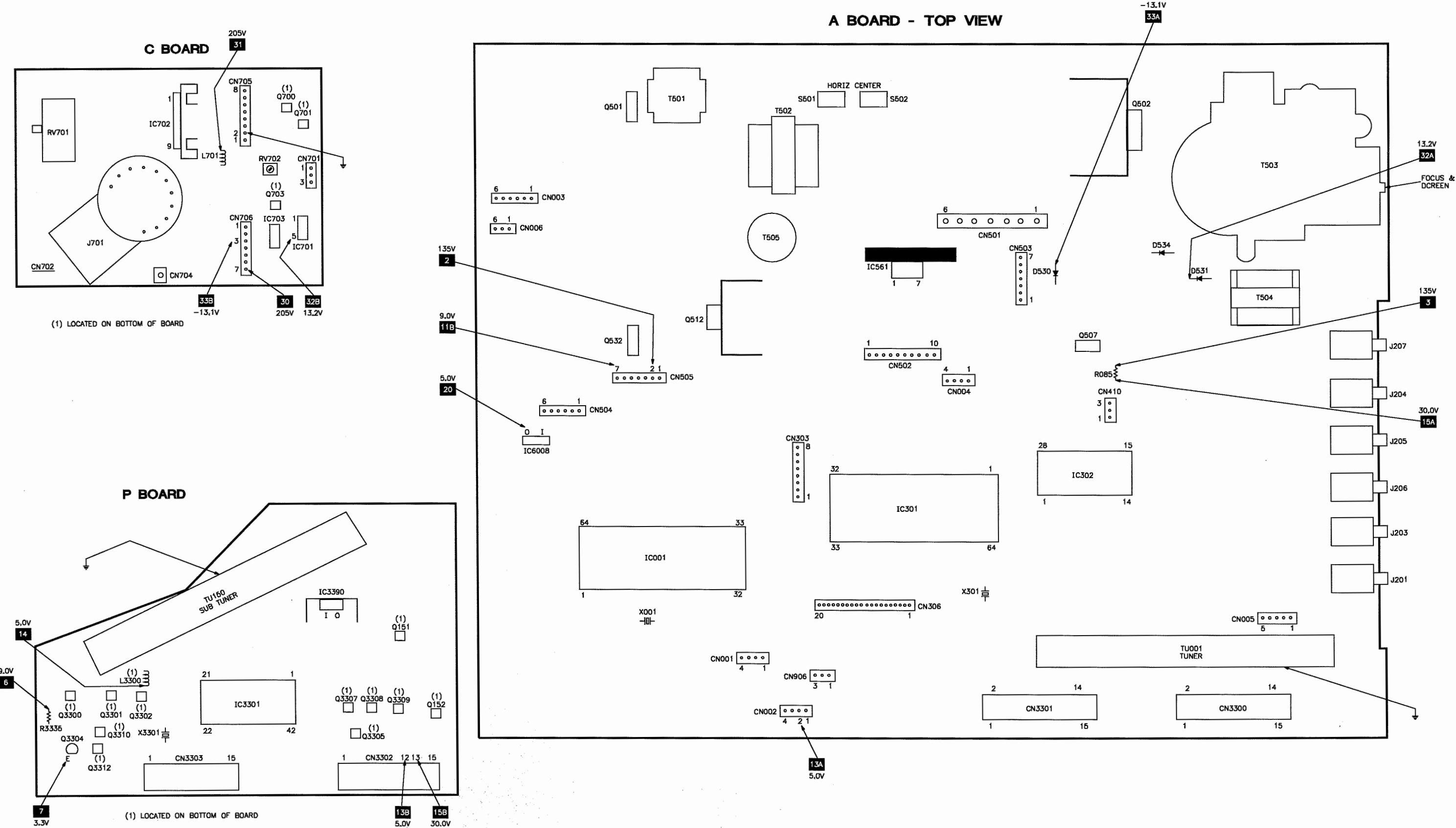
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H COMB FILTER SCHEMATIC



A**SUB TUNER/PIP SCHEMATIC****B**

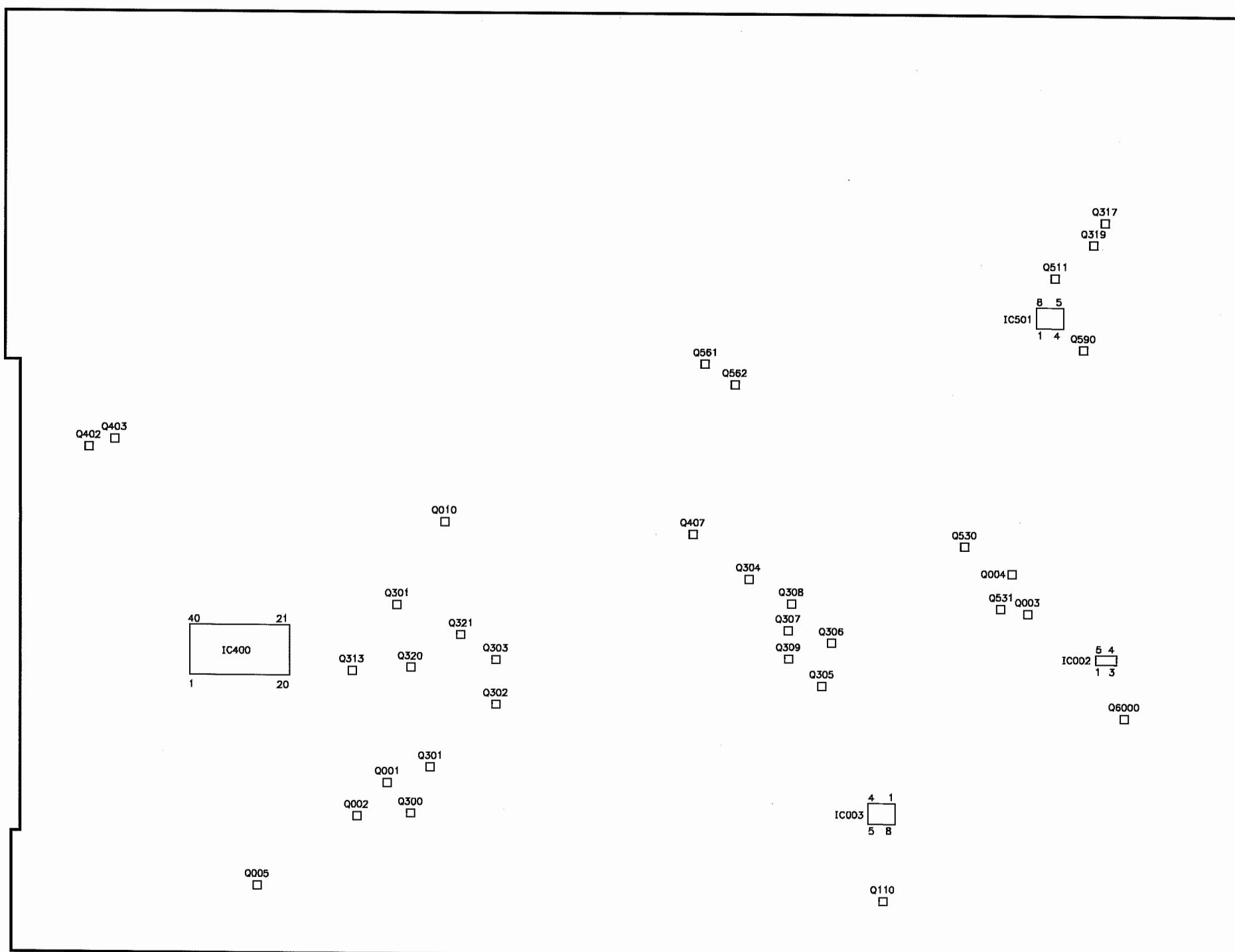
PLACEMENT CHART



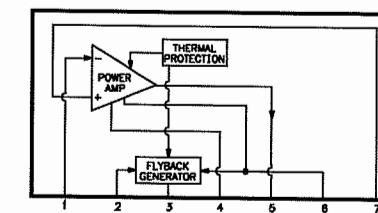
PLACEMENT CHART continued

IC FUNCTION

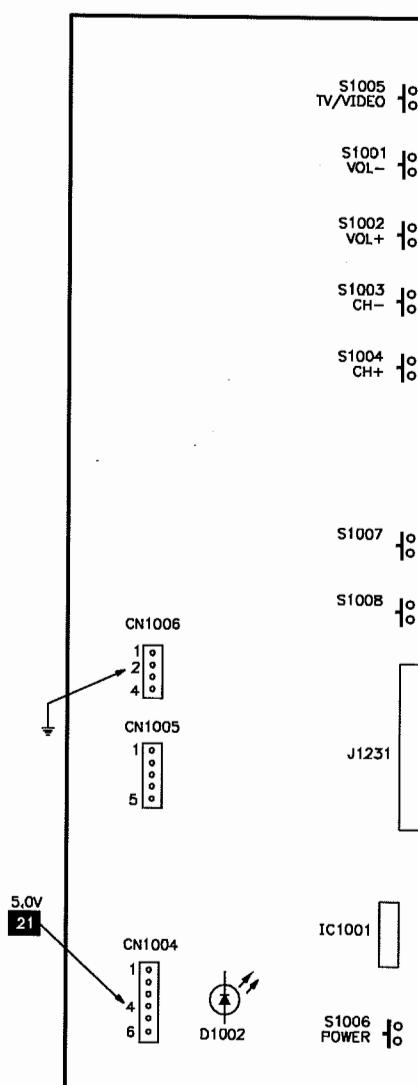
A BOARD - BOTTOM VIEW



IC561



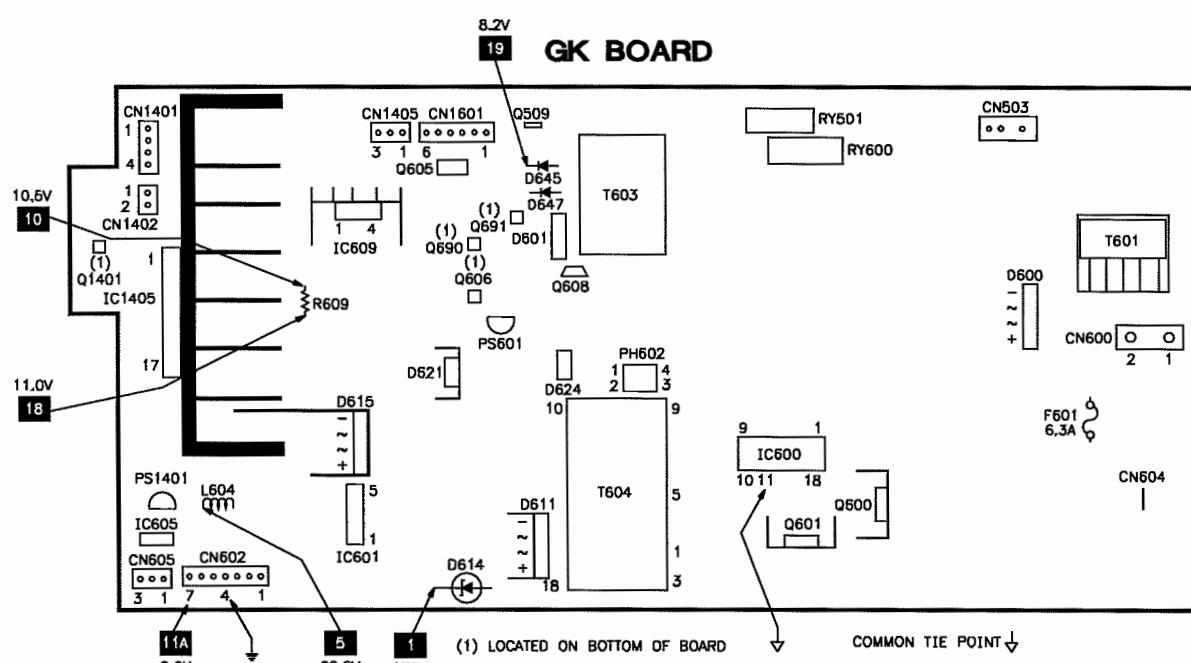
HS BOARD



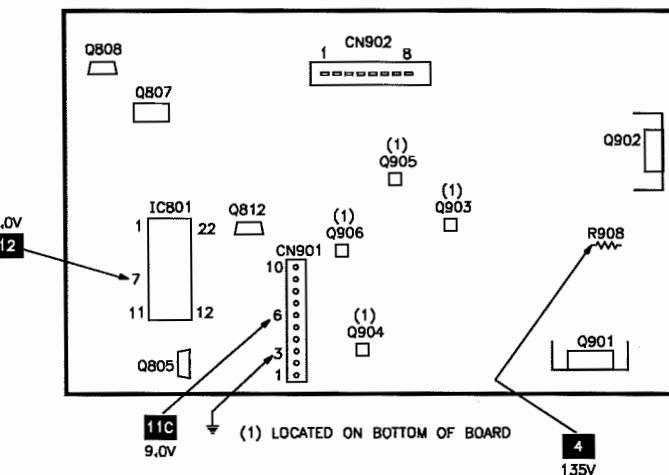
PLACEMENT CHART continued

SAFETY RELATED ADJUSTMENTS

SERVICE INFORMATION



V BOARD



R530, R531 CONFIRMATION METHOD (HV HOLD-DOWN CONFIRMATION) AND READJUST- MENTS

The following adjustments should always be performed when replacing the following components: IC501, D519, D520, D521, C531, C532, R550, R529 thru R533, CRT, DY, T503, and T504.

Hold-down Operation Confirmation

NOTE: Turn power off immediately when hold-down circuit begins to operate (picture blanks out).

1. Turn the power on, receive a white signal, set picture and brightness settings to maximum.
 2. Confirm that the voltage at TP85 is more than 23.0V.
 3. Disconnect power and remove solder from pin 11 of T505.
 4. Connect a current meter between pin 11 of T505 and the printed circuit where pin 11 would be attached. Turn receiver on and tune in a dot signal. Set picture and brightness settings to minimum. The current meter should read $100\mu\text{A} \pm 100\mu\text{A}$.
 5. Confirm that the voltage at TP91 is $135\text{V} \pm 1.5\text{V}$.
 6. Connect a voltmeter and a variable DC power supply to TP85 thru a 1SS119 diode. Increase the voltage supplied to TP85 gradually until the picture just blanks out.
 7. Check DC voltage at TP503, it should measure less than 24.78V after picture has blanked out. Remove power to receiver immediately after confirming voltage.
 8. Input a white signal. Adjust ABL current to $2175\mu\text{A} \pm 100\mu\text{A}$ with picture and brightness settings to maximum.
 9. Repeat steps 6 and 7.
 10. DC voltage should measure less than $27.24\text{V}+0\text{V}/-0.1\text{V}$ after picture has blanked out. Remove power to receiver immediately after confirming voltage.

Hold-down Readjustment

If steps 6 or 8 of the Hold-down Operation Confirmation procedure cannot be satisfied, readjustment should be performed by altering the resistance value of R530 and R531.

B+ VOLTAGE CONFIRMATION AND ADJUSTMENT

The following adjustment should always be performed when replacing IC600 or PH602.

1. Supply 130VAC $\pm 2.0\text{V}$ with variable AC transformer.
 2. Receive a dot signal.
 3. Set picture and brightness settings to minimum position.
 4. Confirm that the voltage at TP23 is less than 136.5V.
 5. If step 4 cannot be satisfied, replace R530 and R531 on A board, and repeat the above steps until results are satisfactory.
 6. Write into memory by pressing mute button, then press enter button.

SELF DIAGNOSTIC FUNCTION

This receiver contains a self diagnostic function that will display error codes when problems are detected in certain circuits. The standby indicator on the receiver front will flash to indicate an error has been detected. The way the indicator flashes can be used to determine the location of the error. The error code will be a series of flashes that repeat after 3 seconds. Any errors can also be displayed using the on screen function of the self diagnostics. The following list explains the error codes.

Number of Flashes	Description of Code	Possible Malfunction
0	Power does not turn on.	Loss of AC supply or F601 is open.
2	High voltage hold down is activated (OCP).	Q502 or IC702 shorted.
3	B+ overvoltage (OVP).	IC501 is faulty, check pin2 of IC501.
4	No vertical deflection.	Failure of IC502 or loss of 12.0V supply.
5	White balance failure.	Failure of IC561 or IC702. Screen control needs adjustment.
9	Power does not turn on.	No zero cross pulses on pin 45 of IC1001.
10	Power does not turn on.	Relay RY600 failed, check 9V supply.

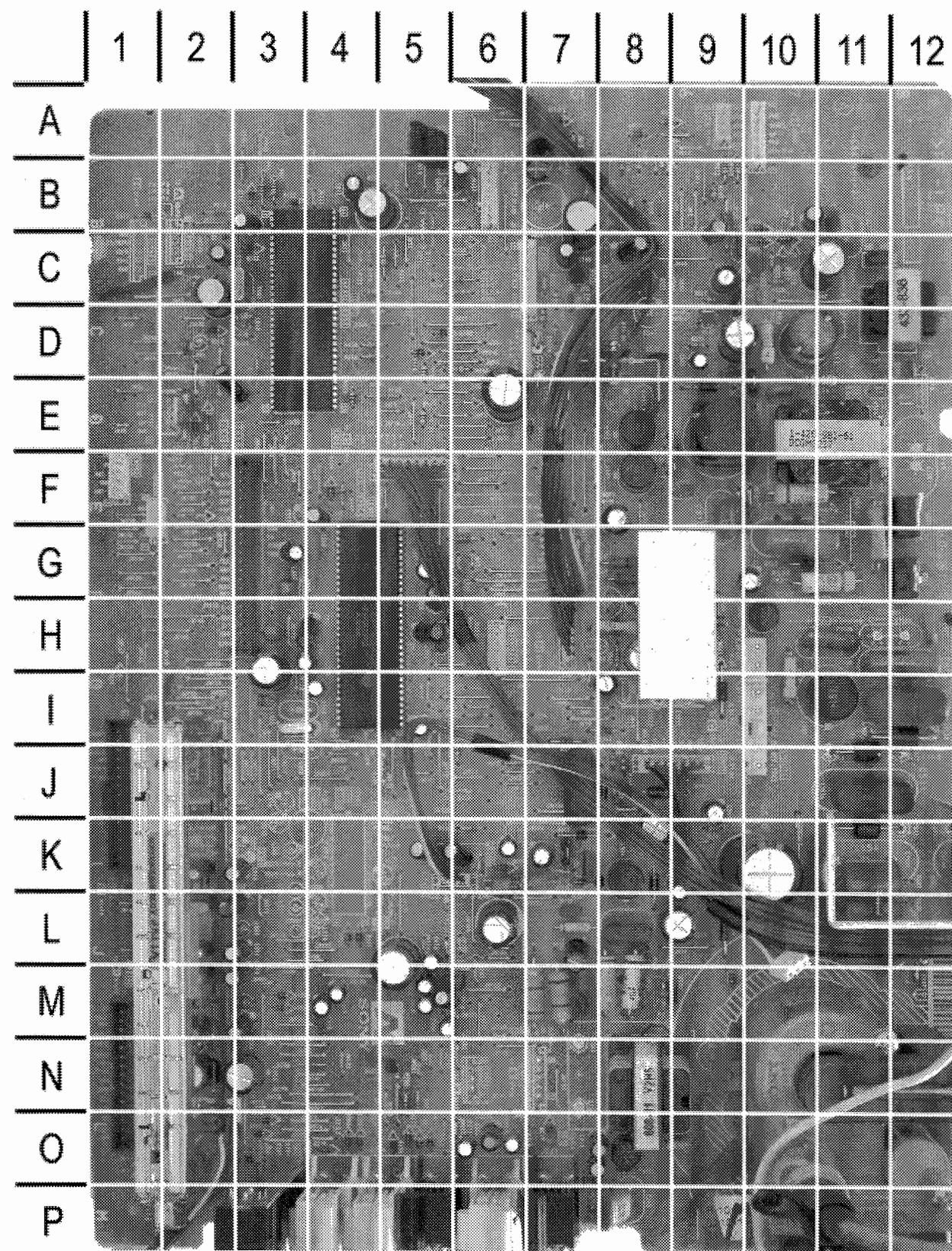
DIAGNOSTIC FUNCTION ON SCREEN DISPLAY

The on screen display of the self diagnostic function shows a list of the past failures detected. The 2, 4, and 5 rows correspond to the error code flashes described in the above chart. To enter the on screen display, tune in a picture, turn receiver off, and press display, 5, volume -, and power without allowing time between buttons. The on screen display will be shown as in the drawing below. After errors have been corrected clear the on screen display information by pressing 8 and enter. To exit the on screen display, press the power button. 0 indicates no fault has been detected. 1 indicates a fault has been detected.

SELF DIAGNOSTIC

2:	+B OCP	000
3:	+B OVP	000
4:	VSTOP	000
5:	AKB	000
9:	XCD	000
0:	9V	000
01:	WDT	000

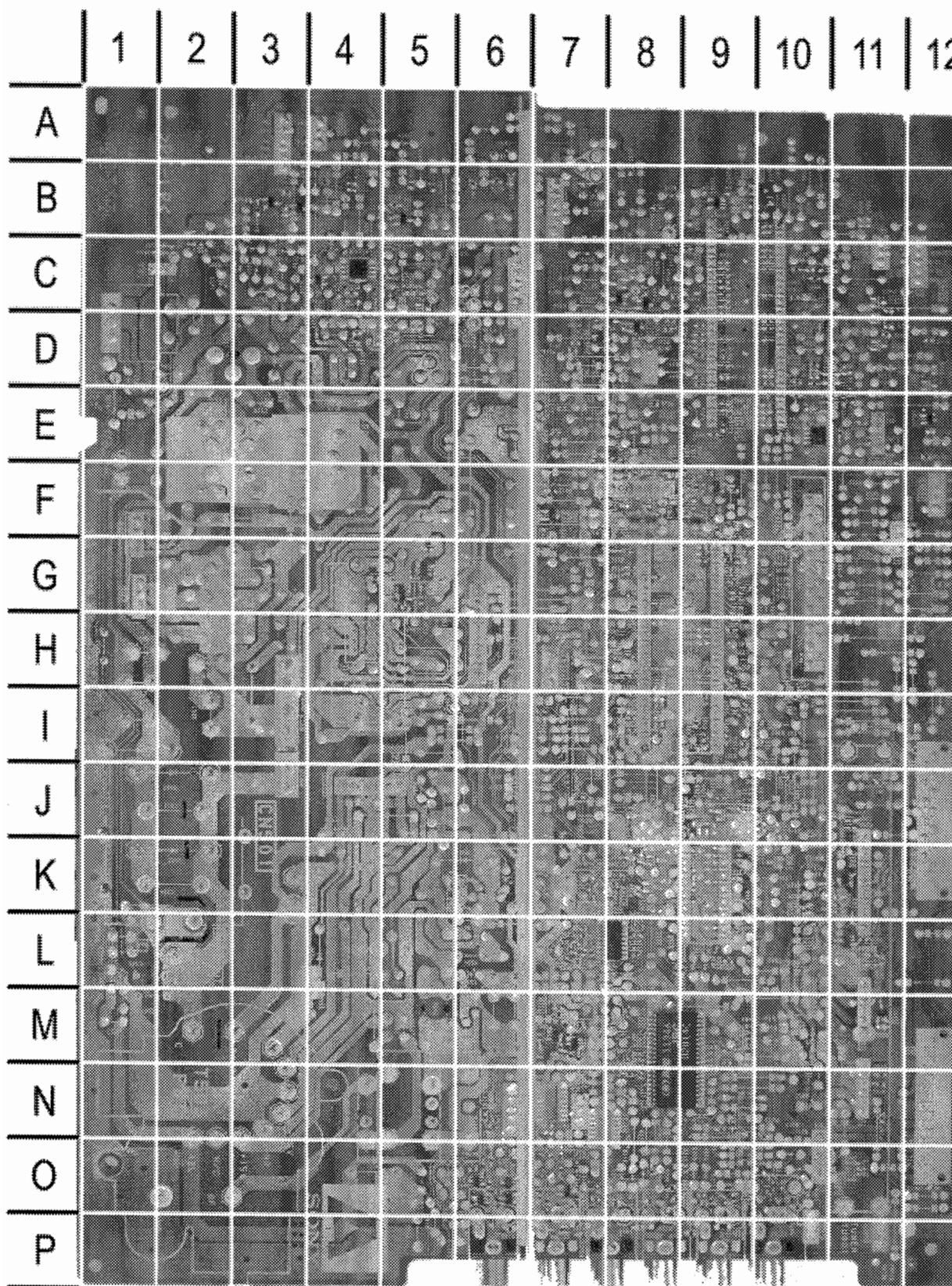
A BOARD - TOP VIEW



A BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE

C004	B3	C507	M12	C1501	H12	D307	L4	IC561	G9	R073	C4	R546	I8
C008	C2	C508	C10	C6001	B7	D309	M3	IC6008	A5	R074	C6	R547	I7
C016	C2	C509	L12	C6002	B6	D310	O2	J201	P3	R085	K6	R548	M8
C029	K2	C510	E11	C6005	E6	D311	M3	J203	P4	R103	E5	R549	P8
C032	L2	C511	J11	CN001	E2	D320	I1	J204	P6	R110	K5	R550	L8
C045	D2	C512	L8	CN002	F1	D413	E7	J205	P5	R113	D3	R551	O9
C046	B4	C513	I12	CN003	A10	D415	E6	J206	P4	R114	C5	R553	M9
C047	B4	C514	H12	CN004	H6	D501	C10	J207	P7	R120	D3	R554	L7
C049	M2	C515	F9	CN005	O2	D502	K11	L001	D2	R136	D5	R555	J8
C050	N3	C516	G10	CN006	A9	D503	J11	L002	C2	R140	C2	R556	J8
C051	L2	C517	G10	CN303	F5	D504	I12	L003	L3	R145	B8	R557	J8
C054	K6	C518	F9	CN306	H3	D505	G10	L004	N3	R202	J3	R560	M7
C055	M3	C519	D9	CN410	K5	D506	G10	L009	M3	R206	J3	R561	H8
C212	07	C520	E10	CN501	J10	D507	C10	L010	D3	R208	N4	R563	G8
C213	07	C522	D9	CN502	G7	D508	C6	L300	G5	R224	N5	R564	C7
C302	I5	C525	D9	CN503	J8	D510	J8	L301	H5	R308	J6	R565	H8
C311	H5	C526	D9	CN504	B6	D511	K7	L302	I3	R321	J4	R567	I8
C318	K3	C527	H12	CN505	C7	D512	K8	L303	H3	R325	J6	R569	H9
C320	G5	C529	B10	CN906	F1	D513	K7	L304	G3	R337	F4	R574	G8
C321	G5	C530	C9	CN3300	M1	D515	E9	L305	K4	R356	J5	R576	F10
C330	F5	C531	K9	CN3301	I1	D516	C10	L306	L4	R383	B9	R578	B9
C333	I4	C532	C8	D002	B3	D518	C10	L307	L4	R409	C4	R580	M12
C340	H3	C534	C9	D004	A8	D519	L9	L310	L4	R452	N4	R591	B9
C341	H3	C537	K8	D005	B4	D520	C8	L501	E8	R503	D11	R592	D7
C352	H3	C539	L9	D006	A8	D521	B8	L502	H10	R504	D10	R593	C7
C357	G3	C540	K10	D009	K6	D522	C8	L503	F8	R505	C10	R594	D7
C360	F4	C541	J9	D010	D2	D523	C10	L504	K8	R506	D11	R595	C7
C365	P7	C542	M7	D100	E2	D524	B10	L505	I11	R507	K12	R596	C7
C373	M5	C544	J7	D101	E2	D530	J8	L511	D10	R508	C10	R906	I6
C374	K5	C545	P8	D102	A7	D531	M9	L517	O8	R509	E9	R909	B9
C383	L4	C546	M12	D110	F2	D534	L9	Q501	C11	R510	I10	R912	B9
C388	K4	C547	M12	D111	B3	D561	I9	Q502	L11	R512	G11	R918	L5
C390	L4	C550	M7	D112	C3	D580	D7	Q507	K7	R517	C9	R919	L5
C412	M5	C551	L7	D113	D5	D590	B8	Q512	D8	R519	D9	R940	I6
C413	M4	C552	L7	D200	O5	FB301	L3	Q532	C7	R520	G11	R941	G6
C414	M5	C553	H11	D201	O3	FB501	L12	R001	B3	R524	C10	S501	F12
C415	M4	C554	H11	D209	O4	FB502	C9	R002	B3	R525	C10	S502	G12
C416	M5	C561	I9	D210	O4	FB503	E10	R006	B3	R526	E11	T501	C12
C418	L5	C563	F8	D211	O5	FB504	K7	R010	B2	R533	D7	T502	E11
C420	M5	C564	H8	D212	O5	FB505	L12	R029	E4	R536	K9	T503	N11
C422	M5	C565	H8	D218	O7	FL301	J4	R033	D4	R537	M8	T504	N8
C501	B11	C568	H8	D219	O7	FL302	J5	R038	D4	R538	K9	T505	E9
C502	B9	C571	C11	D303	P2	FL303	J5	R054	C5	R541	M7	TH501	G9
C504	D11	C572	B7	D304	F4	IC001	C3	R060	D5	R542	M8	TU001	O2
C505	D12	C573	K7	D305	L4	IC301	I4	R061	D6	R543	O8	X001	C3
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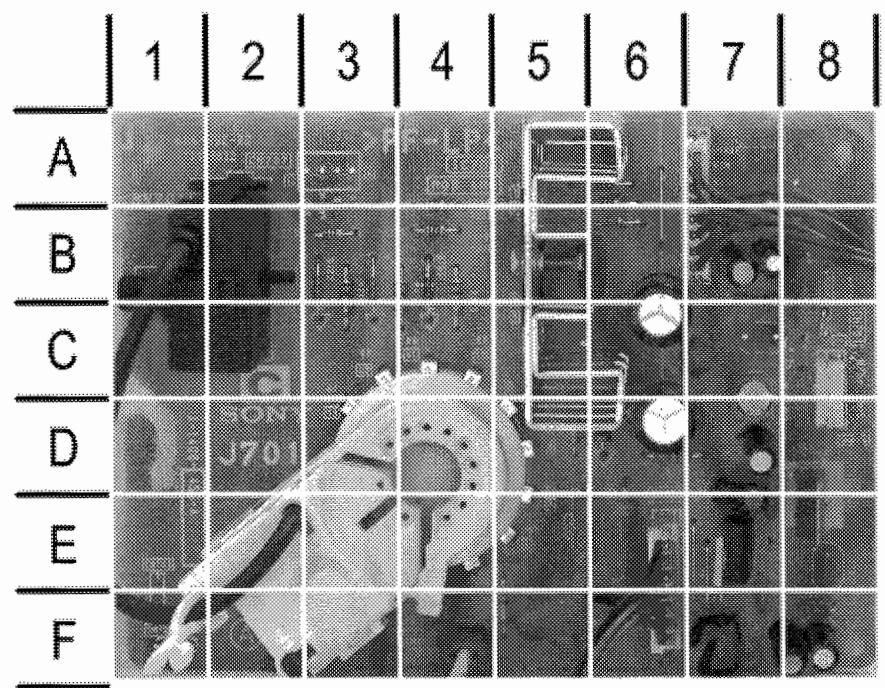
A BOARD - BOTTOM VIEW



A BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE

C001	B10	C304	I9	C406	M8	Q530	D8	R078	B9	R329	J8	R515	C4
C002	B10	C309	H8	C407	M9	Q531	D8	R080	D8	R330	J9	R516	B4
C003	C10	C313	H8	C408	M8	Q561	G5	R086	L11	R331	G8	R518	C4
C005	C10	C317	H8	C409	M9	Q562	G5	R087	L11	R332	G8	R523	C4
C006	C10	C319	G8	C410	M8	Q590	B5	R089	M11	R333	G8	R528	C4
C007	C10	C322	G8	C411	M9	Q6000	B10	R098	L10	R334	G8	R529	C5
C009	C10	C325	G9	C417	L8	R003	C10	R099	L11	R335	F7	R530	C5
C014	C10	C326	G9	C452	N9	R004	C10	R101	D11	R336	F9	R531	C5
C015	C10	C332	K8	C453	N9	R005	C10	R102	E11	R338	I7	R532	B5
C017	C10	C335	I10	C503	C2	R007	C11	R104	C9	R339	G9	R535	C4
C018	C9	C337	I9	C521	C4	R011	D10	R107	N11	R340	G9	R559	G4
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C028	D9	C344	I10	D007	D11	R016	D10	R118	F12	R344	F9	R571	G5
C030	K11	C345	I9	D008	D11	R017	D10	R131	D9	R345	F8	R572	G5
C031	L10	C346	I10	D410	C8	R018	E10	R132	G11	R346	F9	R573	G5
C033	C9	C347	H10	D412	F7	R019	D10	R133	E8	R347	F8	R577	G5
C034	D9	C351	H10	D535	C4	R020	D10	R134	C8	R348	F8	R590	B5
C035	D9	C353	G9	FB302	K9	R021	E10	R135	D9	R350	F8	R598	C8
C036	C9	C354	H9	IC002	B9	R022	E10	R137	E9	R359	B5	R599	D8
C037	C9	C355	G9	IC003	E10	R023	E10	R139	D9	R365	K8	R901	M7
C038	C9	C356	G9	IC400	N8	R024	E10	R207	P9	R367	K8	R902	M7
C039	C9	C358	G9	IC501	C4	R025	E9	R209	O10	R369	J10	R903	M7
C041	C8	C359	G9	Q001	K10	R027	E9	R210	O8	R370	J10	R904	M7
C043	B6	C364	F9	Q002	L11	R030	F11	R217	P9	R374	19	R905	M7
C044	B9	C366	O9	Q003	C8	R031	D9	R218	O9	R376	G9	R907	B3
C048	B9	C367	O10	Q004	C8	R032	D9	R219	O9	R378	G9	R908	B3
C052	L11	C368	O9	Q005	M11	R034	D10	R220	N9	R379	G9	R910	B3
C053	L10	C372	E7	Q010	J7	R035	E11	R222	P7	R380	G9	R915	L8
C056	L10	C375	K9	Q110	E12	R037	B8	R223	O7	R381	G9	R916	K8
C057	L11	C376	K9	Q300	K11	R039	B5	R225	O8	R382	G9	R917	K8
C060	C10	C377	K8	Q301	K10	R048	D9	R232	P6	R384	F9	R921	J9
C062	C10	C378	K9	Q302	J9	R050	K11	R233	P6	R386	E9	R922	J9
C065	I9	C379	K9	Q303	J9	R051	K11	R234	N6	R388	E7	R923	K8
C101	B9	C380	J9	Q304	G7	R052	K10	R235	N6	R390	O9	R924	J8
C102	B7	C381	L9	Q305	F9	R053	L10	R300	I8	R391	O10	R932	O8
C111	C9	C382	L9	Q306	F8	R055	B5	R301	L11	R393	O10	R933	H9
C120	C10	C384	L9	Q307	F8	R056	D9	R302	J11	R394	O9	R934	O8
C121	C10	C385	L9	Q308	F8	R057	G12	R303	K11	R401	L8	R942	F9
C122	C10	C387	K9	Q309	F9	R058	G12	R306	I8	R403	L9	R943	J8
C200	J11	C389	L9	Q313	K8	R063	C8	R311	K10	R405	O6	R944	J8
C201	J11	C393	H9	Q317	B3	R064	C8	R314	J9	R408	O6	R946	K9
C202	O10	C394	L9	Q319	B3	R065	E8	R315	J10	R411	E6	R6001	B10
C203	O10	C396	J9	Q320	K8	R068	D7	R316	J10	R412	F7	R6002	B9
C206	O9	C401	N9	Q321	J10	R070	D8	R317	J10	R413	E6	R6003	B10
C207	O9	C402	N8	Q402	O6	R071	E11	R319	J9	R416	O6	R6004	B8
C208	O7	C403	M9	Q403	O6	R075	B9	R322	K7	R453	M9		
C209	O7	C404	N8	Q407	F7	R076	B6	R323	J8	R501	C2		
C303	I8	C405	M9	Q511	C4	R077	B9	R328	G8	R502	C2		

C BOARD - TOP VIEW

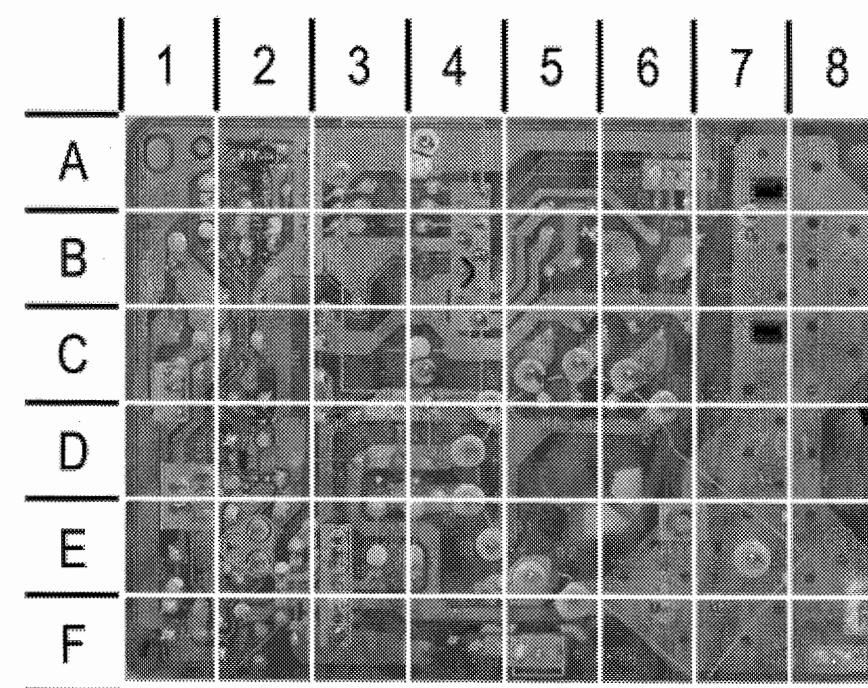


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C BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE

C701	F8	CN701	C8	L701	C7	R715	D6
C702	E8	CN702	F1	R700	B7	R716	F5
C703	F8	CN704	F4	R704	C8	R718	E5
C704	D6	CN705	B7	R705	B7	R719	B8
C705	C6	CN706	E6	R706	B7	R722	B6
C706	B6	D701	B3	R707	F8	R723	A6
C707	F5	D702	B3	R708	B3	R724	A6
C708	E7	D703	B4	R709	B4	R907A	C8
C709	B7	D704	D6	R710	B4	RV701	B1
C710	B7	IC701	E8	R711	B4	RV702	D7
C711	F7	IC702	B5	R712	B3		
C713	E7	IC703	E7	R713	B4		
C714	D7	J701	D4	R714	D6		

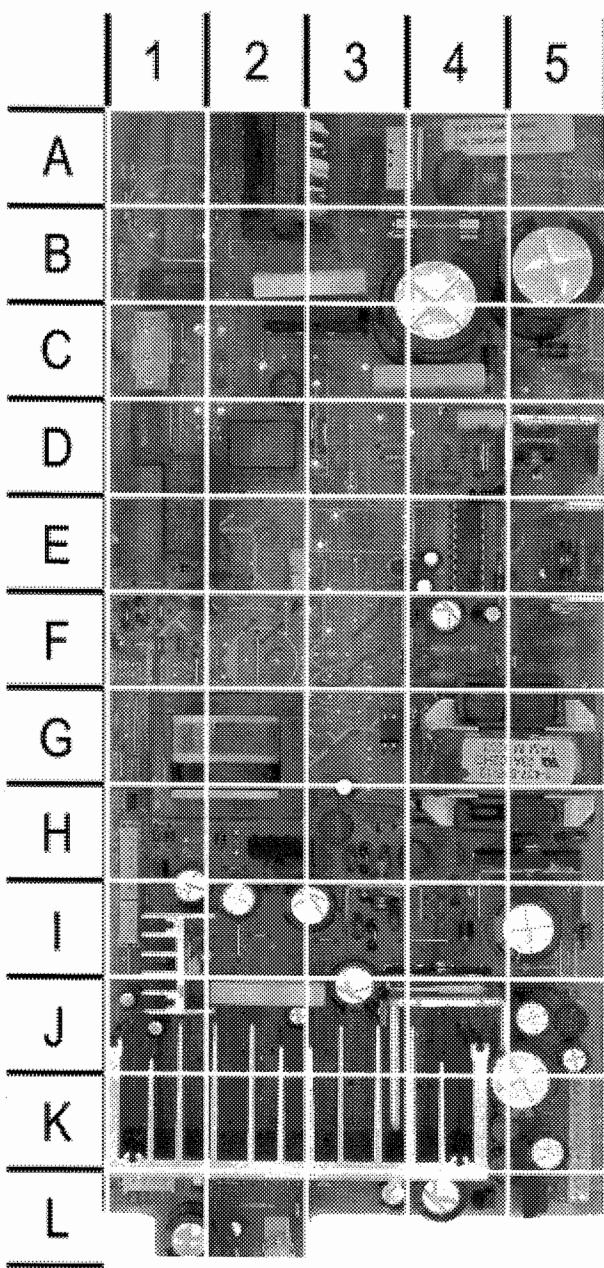
C BOARD - BOTTOM VIEW



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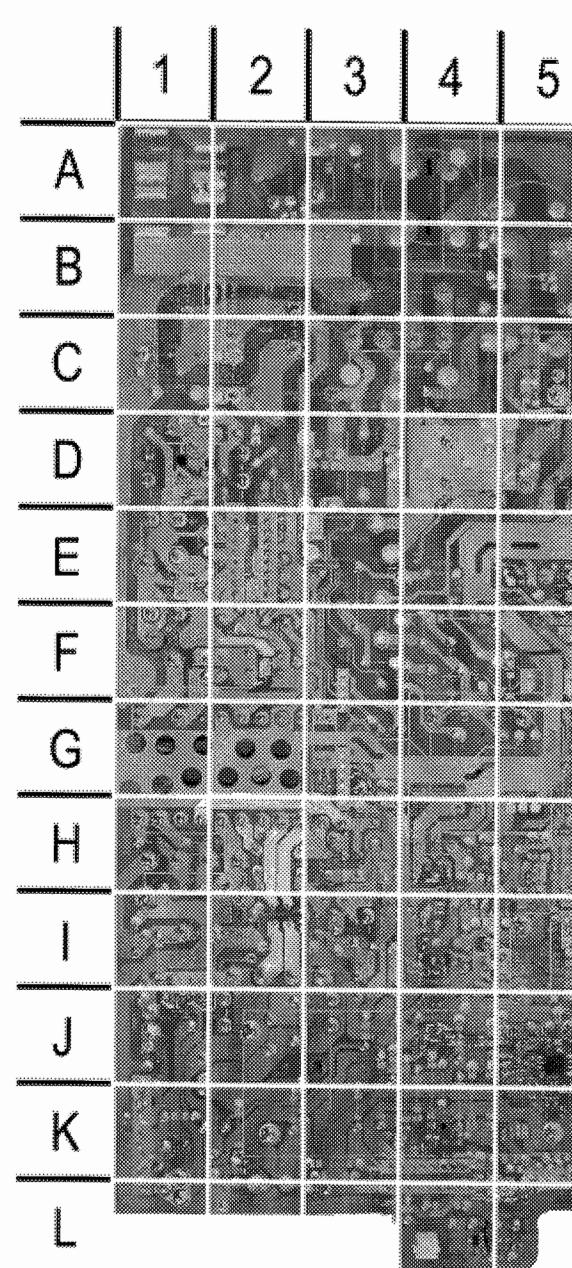
C BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE

Q700	A2	R701	E2	R720	A2	R726	D2
Q701	A2	R702	D2	R721	A2	R727	C2
Q703	D2	R703	B2	R725	D2		

GK BOARD - TOP VIEW**GK BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE**

C501A	D1	CN503	C1	IC605	L5
C601	A3	CN600	A3	IC609	I1
C603	B1	CN602	K5	IC1405	L2
C604	H5	CN604	A5	L505A	C2
C607	E2	CN605	K5	L604	K5
C608	F1	CN1401	L1	L605	H4
C609	H5	CN1402	L2	L606	H3
C616	J3	CN1405	I1	L607	K5
C617	I5	CN1601	H1	L608	J5
C618	I3	D600	C3	PH602	G3
C621	B5	D601	H2	PS601	H3
C624	J5	D611	H5	PS1401	L4
C629	B4	D612	C5	Q509	H1
C632	J1	D613	C4	Q600	D5
C633	D4	D614	I5	Q601	E5
C634	E4	D615	I4	Q605	H1
C635	E4	D618	E4	Q608	H3
C637	E3	D621	I3	R603	F1
C638	J2	D624	H3	R609	J2
C640	J5	D625	I4	R615	D4
C642	F4	D629	E1	R619	F4
C643	E5	D631	F4	R620	J4
C647	F4	D645	H1	R627	D4
C648	D5	D647	H2	R629	D4
C649	E5	D690	H1	R630	D4
C650	K5	D1401	L1	R640	D4
C651	I2	F601	B4	R659	E5
C653	G3	FB602	H5	R668	J5
C656	H2	FB604	H5	R671	F4
C658	H2	FB605	I4	R672	F4
C665	K5	FB606	I4	R674	F4
C667	H3	FB607	I4	R687	B2
C668	H3	FB609	I3	R688	C4
C669	I3	FB610	F1	R698	H4
C670	I3	FB611	F1	R1450	L4
C672	F5	FB614	H3	RY501	E1
C690	I1	FB616	D5	RY600	E1
C1407	L2	FB617	D4	T601	A2
C1450	L4	IC600	E4	T603	G2
C1463	L3	IC601	J5	T604	G4

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GK BOARD - BOTTOM VIEW**GK BOARD - BOTTOM VIEW, GRIDTRACE LOCATION**

C620	D2	R614	G3
C645	F2	R616	G3
C652	J1	R617	G3
C1413	J5	R625	E3
C1451	K2	R626	D2
C1457	K4	R631	E2
C1458	J4	R632	F2
D501A	E5	R647	F2
D620	H2	R658	E5
D628	E5	R660	D1
D640	H4	R667	J1
D641	H4	R670	E1
D646	J4	R691	I4
Q606	I4	R692	H5
Q690	I4	R694	H4
Q691	I1	R1413	K5
Q1401	L4	R1414	L5
R534	H5	R1415	L5
R535A	H5	R1416	L5
R604	G3	R1457	J5
R606	I4	R1458	J5
R607	I4	R1461	J4
R608	I4	R1462	J4
R610	I4	R1481	K4
R611	I4	R1482	K4
R613	I4		

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.

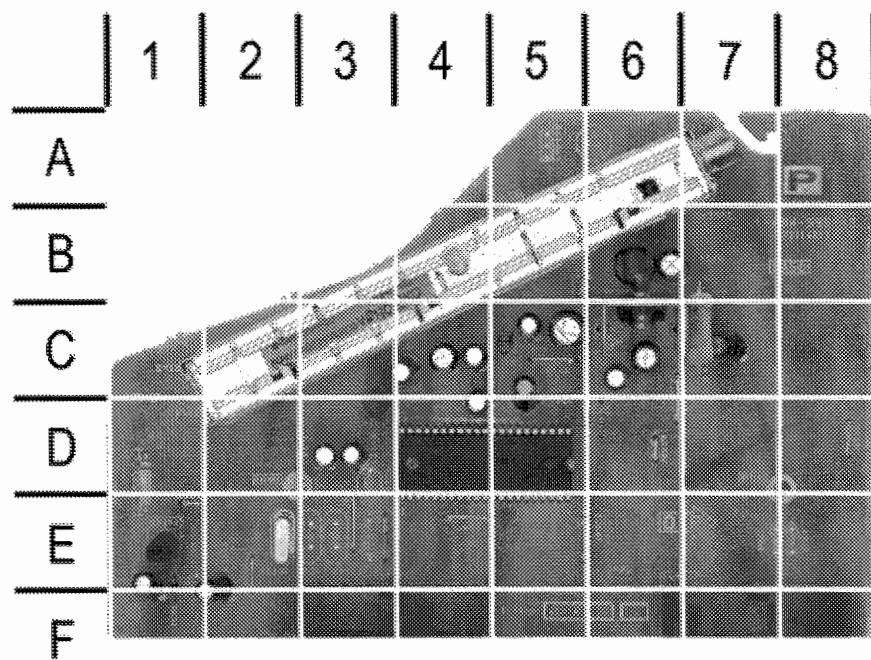
- NTE Electronics, Inc. (NTE)
- Sencore, Inc.

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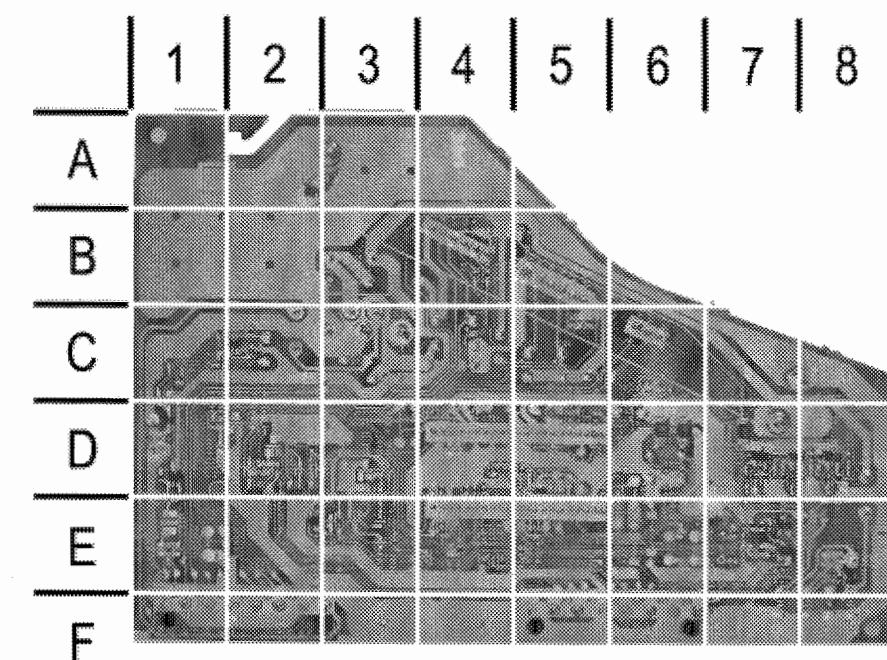
TEST EQUIPMENT

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

P BOARD - TOP VIEW

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P BOARD - BOTTOM VIEW

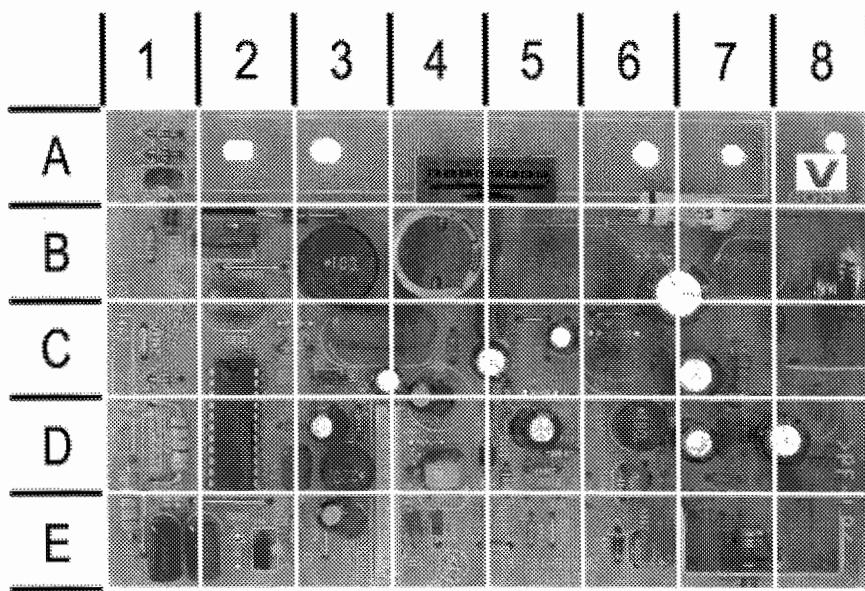
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P BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE

C100	C5	C3316	D3	CN3303	F3	R3323	E3
C102A	C5	C3319	D3	D3304	F1	R3335	D1
C103	C4	C3339	D4	IC3301	D5	R3364	D6
C104	C4	C3340	C5	IC3390	C6	R3365	D6
C107	C4	C3343	C6	L150	C5	R3390	C7
C111A	C7	C3390	B6	L3301	D9	TU150	B5
C3303	E1	C3391	C6	L3390	B6	X3301	E2
C3308	E2	CN3302	F7	Q3304	E1		

P BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE

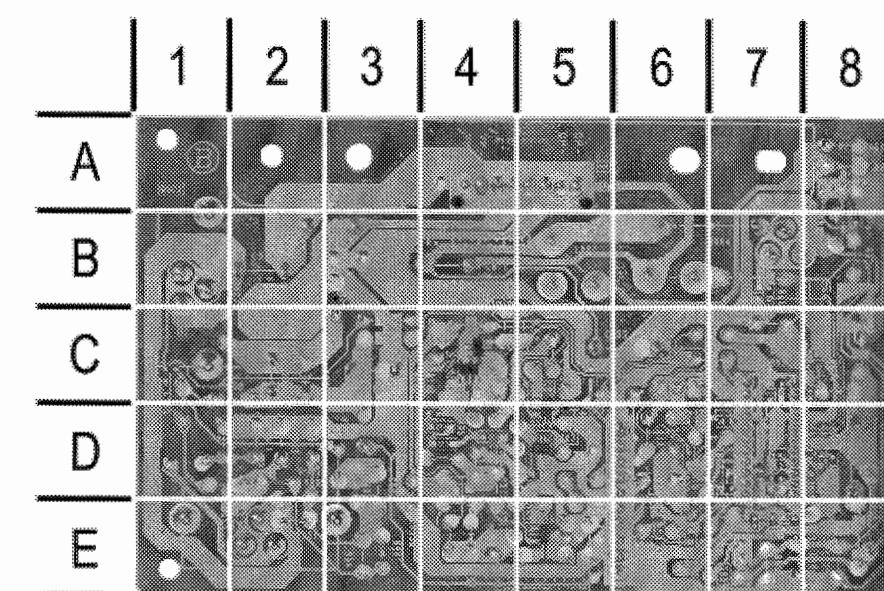
C106	C5	C3332	D4	Q3310	E7	R3307	D7
C109	C1	C3334	D5	Q3312	E12	R3308	D7
C110	C1	C3335	D5	R100	B4	R3309	D7
C3300	D8	C3336	D5	R101A	B4	R3310	D7
C3301	D7	C3337	D5	R103A	C5	R3311	D7
C3302	D7	C3338	D5	R105	D1	R3318	E4
C3304	E4	C3341	D4	R106	E1	R3319	E4
C3305	E5	D103	C1	R107A	E1	R3320	D3
C3312	E7	D104	D1	R108A	D1	R3324	D6
C3313	E2	D3301	D5	R112	C1	R3328	D2
C3317	D6	L3300	D7	R113A	C2	R3330	D2
C3318	D6	L3302	D6	R114A	C1	R3331	D2
C3320	D5	L3303	D6	R115	C2	R3336	E8
C3321	D4	Q151	C2	R116	C1	R3343	E7
C3322	D4	Q152	D1	R117A	D1	R3346	E7
C3323	D5	Q3300	D8	R3300	D8	R3347	E7
C3324	E7	Q3301	D7	R3301	D8	R3348	E7
C3327	E4	Q3302	D7	R3302	D8	R3351	D1
C3328	D4	Q3305	E2	R3303	D7	R3354	D5
C3329	E4	Q3307	D2	R3304	D8	R3362	E3
C3330	D4	Q3308	D2	R3305	D7	R3363	D5
C3331	D4	Q3309	D2	R3306	D7	R3368	D4

V BOARD - TOP VIEW

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V BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE

C802	C3	C905	D8	D805	A1	Q805	E2	R910A	B7
C803	E1	C906	D6	D806	A1	Q807	B2	R911A	D5
C804	E1	C907	B7	D807	B1	Q808	A1	R912A	D5
C805	C3	C908	C7	D808	D2	Q812	C3	R913	D5
C810	D3	C909	C6	D813	C1	Q901	E7	R914	E5
C811	B5	C910	B7	D901	E6	Q902	B8	R915A	E5
C813	D3	C911	C5	D902	D6	R811	E2	R917A	E5
C823	C2	C912	D4	D903	E5	R814	E1	R918A	C5
C862	E3	C913	E4	IC801	C2	R815	D1	R919A	C5
C901	D7	C914	D4	L801	B3	R826	B1	R920	D4
C902	D8	CN901	E3	L802	B4	R866	D3	R921A	C4
C903	D8	CN902	A4	L803	D3	R908A	D8	R922A	C5
C904	E6	D804	B3	L901	D6	R909A	C7	R923A	D4

V BOARD - BOTTOM VIEW

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V BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE

C808	D6	Q906	D5	R825	D6	R856	D8
C809	D6	R809	D6	R827	E6	R857	D7
C812	E7	R817	D7	R828	E6	R860	D8
C821	D7	R818	B7	R829	D7	R864	C8
C824	C8	R819	D7	R833	D8	R870	D7
C826	D7	R820	E6	R834	D8	R876	D8
Q903	C4	R821	E6	R840	D7	R890	E7
Q904	E5	R822	D7	R842	E7	R893	C7
Q905	C4	R824	D7	R855	D8		

PARTS LIST

Item No.	Type No.	Mfr. Part No.	NTE Part No.	Item No.	Type No.	Mfr. Part No.	NTE Part No.	Item No.	Type No.	Mfr. Part No.	NTE Part No.
D002	MTZJ-T-77-6.2C	8-719-109-93	NTE5013A	D640, 41	MA111-TX	8-719-404-50		# Q512	2SC4159-E	8-729-809-29	NTE54
D004	MTZJ-T-77-5.1C	8-719-921-44		D645	D1NL20U-TA2	8-719-063-70		# Q530	2SD601A-QRS-TX	8-729-422-27	NTE2408
D005, 06	MTZJ-T-77-10B	8-719-110-17	NTE5019A	D646	MA111-TX	8-719-404-50		# Q531	2SB709A-QRS-TX	8-729-424-02	NTE2409
D007, 08	MA111-TX	8-719-404-50		D647	D1NL20U-TA2	8-719-063-70		# Q532	2SA1091O-TPE2	8-729-200-17	NTE288
D009	MTZJ-T-77-30D	8-719-982-22		D690	MTZJ-T-77-27	8-719-982-13		Q561	2SD601A-QRS-TX	8-729-422-27	NTE2408
D010	MTZJ-T-77-6.2C	8-719-109-93	NTE5013A	D701, 02, 03	ISS83TD	8-719-901-83	NTE177	Q562	2SC2412K-T-146-QR	8-729-120-28	NTE2408
D100, 01	MTZJ-T-77-9.1B	8-719-929-15		D704	RGP10GPKG3	8-719-302-43	NTE552	# Q590	2SD601A-QRS-TX	8-729-422-27	NTE2408
D1002	MTZJ-T-77-5.1B	8-719-109-85		D804	RGP10GPKG3	8-719-302-43	NTE552	Q600, 01	IRFIB7N50A-LF31	8-729-052-32	
D103, 04	MA111-TX	8-719-404-50		D805, 06	ISS133T-77	8-719-991-33	NTE519	Q605	2SD774-T-34	8-729-140-96	NTE382
D110	ISS133T-77	8-719-991-33	NTE519	D807	ERA82-004TP5	8-719-210-21		Q606	2SD601A-QRS-TX	8-729-422-27	NTE2408
D111, 12	MTZJ-T-77-6.2B	8-719-109-93	NTE5013T1	D808, 13	ISS133T-77	8-719-991-33	NTE519	Q608	2SD2144S-TP-UVW	8-729-922-37	
D113	MTZJ-T-77-5.1C	8-719-921-44		D901, 02	MTZJ-T-77-39	8-719-110-86		Q690, 91	2SB709A-QRS-TX	8-729-424-02	NTE2409
D200, 01	MTZJ-T-77-9.1B	8-719-929-15		D903	ISS133T-77	8-719-991-33	NTE519	Q700, 01, 03	2SD601A-QRS-TX	8-729-422-27	NTE2408
D209 Thru				D1001	MTZJ-T-77-9.1B	8-719-929-15		Q805	KTB764	6-550-106-01	
D212	MTZJ-T-77-9.1B	8-719-929-15		D1002	LNK0120022G	8-719-070-80		Q807	IRF614	8-729-931-45	
D218, 19	MTZJ-T-77-9.1B	8-719-929-15		D1233, 35, 36	MTZJ-T-77-9.1B	8-719-929-15		Q808	KTB764	6-550-106-01	
D303 Thru				D1401	MTZJ-T-77-9.1B	8-719-929-15		Q812	2SA933AS-QRT	8-729-026-39	
D307	MTZJ-T-77-9.1B	8-719-929-15		D3301	MA111-TX	8-719-404-50		Q901	2SC5511	8-729-045-04	
D309, 10, 11	MTZJ-T-77-9.1B	8-719-929-15		D3304	MTZJ-T-77-3.9B	8-719-109-72	NTE5007A	Q902	2SA2005	8-729-045-05	
D320	ISS133T-77	8-719-991-33	NTE519	IC001	M306V5ME-109SP	6-801-165-01		Q903, 04	2SD601A-QRS-TX	8-729-422-27	NTE2408
D410, 12	MA111-TX	8-719-404-50		IC002	BD4743G-TR	6-701-929-01		Q905	2SB709A-QRS-TX	8-729-424-02	NTE2409
D413	MTZJ-T-77-7.5B	8-719-921-63		IC003	BR24C16F-E2	8-759-641-86		Q906	2SC2412K-T-146-QR	8-729-120-28	NTE2408
D415	ISS133T-77	8-719-991-33	NTE519	IC301	CXA2154AS	8-752-100-49		Q1401	2SB709A-QRS-TX	8-729-424-02	NTE2409
D501	MTZJ-T-77-5.6C	8-719-109-89	NTE5011A	IC302	TC90A69N	60701-597-01		Q3300, 01, 02	2SD601A-QRS-TX	8-729-422-27	NTE2408
D501A	MA111-TX	8-719-404-50		IC400	NJW1135GK1-TE2	6-701-753-01		Q3304	2SD1292	8-729-926-14	NTE31
D502	ERC06-15S	8-719-945-80	NTE525	IC501	NJM2903M-TE2	8-759-700-07		Q3305	2SD601A-QRS-TX	8-729-422-27	NTE2408
# D503	ERC06-15S	8-719-945-80		# IC561	STV9379	8-759-696-71		Q3307, 08	2SB709A-QRS-TX	8-729-424-02	NTE2409
D504	RU4AM-T3	8-719-312-10	NTE580	IC600	MCZ3001D	8-759-670-30		Q3309	2SB709A-QRS-TX	8-729-424-02	NTE2409
D505, 06	GP08DPKG23	8-719-908-03	NTE116	IC601	DM-58	8-749-012-13		Q3310, 12	2SD601A-QRS-TX	8-729-422-27	NTE2408
D507	ISS133T-77	8-719-991-33	NTE519	IC605	BA05T	8-759-450-47		Q6000	2SD601A-QRS-TX	8-729-422-27	NTE2408
# D508	ISS133T-77	8-719-991-33	NTE519	IC609	PQ09RD21	8-759-653-07					
D510	1N4937/23	8-719-081-93		IC701	LA6500-FA	8-759-803-42					
D511, 12	ERA38-06TP1	8-719-970-87		IC702	TDA6108JF/N1B	8-759-562-43					
D513	MTZJ-T-77-15B	8-719-110-41		IC703	NJM78M09FA	8-759-701-59	NTE1966				
# D515	PR1004GT	8-719-075-41		IC801	UPC5023CS-184	6-701-598-01		# C507, 09	680pF 10% 2kV	1-162-116-00	
D516, 18	ISS133T-77	8-719-991-33	NTE519	IC1405	TDA8580Q/N1	8-759-573-40		# C510	.01 10% 100V	1-137-150-11	
# D519	EL12Z-V1	8-719-302-43	NTE587	IC3301	M65665ASP	6-701-754-01		# C511	.022 3% 1.2kV	1-117-652-11	
# D520	ISS133T-77	8-719-991-33	NTE519	IC3390	NJM78M09FA	8-759-701-59	NTE1966	# C513	.051 5% 400V	1-130-118-91	
D521	MTZJ-T-77-7.5X	8-719-921-63		IC6008	NJM2903F05	6-701-752-01		# C514, 16	.82 5% 250V	1-115-521-11	
# D522	ISS133T-77	8-719-991-33	NTE519	# PH602	0N3171-R	8-749-924-35		C519	100pF 5% 500V NPO	1-107-612-11	
D523	MTZJ-T-77-3.6B	8-719-109-69		Q001	2SB709A-QRS-TX	8-729-424-02	NTE2409	# C527	680pF 10% 2kV	1-162-116-00	
D524	MTZJ-T-77-6.8B	8-719-109-97	NTE5014A	Q002	2SD601A-QRS-TX	8-729-422-27	NTE2408	# C531, 32	22μF 20% 50V	1-126-965-91	
# D530	RGP15GPKG23	8-719-979-85	NTE580	# Q003	2SD601A-QRS-TX	8-729-422-27	NTE2408	# C535	.1 16V	1-164-360-11	
D531	RGP15GPKG23	8-719-979-85	NTE580	Q004, 05	2SD601A-QRS-TX	8-729-422-27	NTE2408	# C553	.47 5% 250V	1-117-667-11	
D534	RGP10GPKG23	8-719-302-43	NTE552	Q010	2SB709A-QRS-TX	8-729-424-02	NTE2409	# C554	.0047 3% 1.2kV	1-117-635-11	
D535	MA111-TX	8-719-404-50		Q110, 51	2SB709A-QRS-TX	8-729-424-02	NTE2409	# C590	10μF 20% 50V	1-126-964-11	
D561	1N4003GA	8-719-075-33	NTE116	Q152	2SD601A-QRS-TX	8-729-422-27	NTE2408	# C601, 03	.22 10% 275V	1-165-529-11	
# D580	ISS133T-77	8-719-991-33	NTE519	Q300	2SB709A-QRS-TX	8-729-424-02	NTE2409	# C607	470pF 10% 250V	1-119-911-51	
D590	ISS133T-77	8-719-991-33	NTE519	Q301	2SD601A-QRS-TX	8-729-422-27	NTE2408	# C608	.001 20% 250V	1-119-912-51	
D600	D4SB60L-F	8-719-510-53	NTE5319	Q302	2SB709A-QRS-TX	8-729-424-02	NTE2408	C633	.001 2% 50V	1-136-479-11	
D601	S1VB20	8-719-511-40	NTE167	Q303, 04	2SD601A-QRS-TX	8-729-422-27	NTE2408	C648, 49	470pF 10% 1kV	1-104-390-91	

PARTS LIST continued

Item No.	Function/Rating	Mfr. Part No.	Notes	Item No.	Function/Rating	Mfr. Part No.	Notes	Item No.	Function/Rating	Mfr. Part No.	Notes
IC1001	Receiver	8-742-212-20	Remote, SBX3081-71	# R536, 37	.47 5% 1/2W	1-260-288-11	-	R3390	3.3 5% 3W	1-216-395-00	-
J201	Jack	1-794-119-11	Assembly	R541	6800 5% 3W	1-215-922-11	-	RV701	110M Vertical Static	1-241-656-11	-
J203	Jack	1-794-118-11	Assembly	R542	8200 5% 3W	1-216-486-00	-	RV702	47K Gain	1-238-019-11	-
J205	Jack	1-794-116-11	Assembly	# R543	.47 5% 1/4W	1-249-377-11	-	# RY501	Relay	1-755-198-11	Degaussing
J206	Jack	1-794-117-11	Assembly	# R545	3.3 5% 1/4W	1-249-387-11	-	# RY600	Relay	1-755-395-11	Power
J207	Jack	1-794-116-11	Assembly	R546	22K 1% 1/4W	1-215-453-00	-	S501, 02	Switch	1-572-707-11	Horizontal Centering
# J701	Socket	-	CRT	R547	33K 1% 1/4W	1-215-457-00	-	S1001	Switch	1-692-431-21	Volume -
	Jack	1-794-048-11	Assembly	R548	8200 5% 3W	1-216-486-00	-	S1002	Switch	1-692-431-21	Volume +
L001, 02	100µH	1-410-482-31	-	R549	4700 1% 1/4W	1-215-437-00	-	S1003	Switch	1-692-431-21	Channel -
L003	10µH	1-412-029-11	-	# R550, 53	.47 5% 1/4W	1-249-377-11	-	S1004	Switch	1-692-431-21	Channel +
L004, 09	100µH	1-410-482-31	-	R560	6800 5% 3W	1-215-922-11	-	S1005	Switch	1-692-431-21	TV/Video
L010	6.8µH	1-414-182-11	-	# R563	1.8 1% 1/2W	1-214-798-21	-	S1006	Switch	1-692-431-21	Power
L150	100µH	1-414-857-11	-	# R564	470K 5% 1/4W	1-247-895-91	-	S1007	Switch	1-762-816-11	Menu (U/D)
L300, 01	100µH	1-410-482-31	-	# R567	2.2 5% 1/4W	1-249-385-11	-	S1008	Switch	1-762-816-11	Menu (S/M)
L302	10µH	1-412-029-11	-	# R574	1.8 1% 1/2W	1-214-798-21	-	SP1, 2	Speaker	1-825-206-11	-
L303	47µH	1-410-478-11	-	R576	10 5% 3W	1-215-905-11	-	T501	Horizontal Drive	1-433-836-11	-
L304 Thru				R578	1.8 1% 1/2W	1-214-798-21	-	# T502	PMT	1-426-981-11	-
L307	10µH	1-410-470-11	-	# R590	100 5% 1/10W	1-216-809-11	-	# T503 (1)	Horizontal Output	1-453-338-11	-
L310	10µH	1-410-470-11	-	# R591	1000 5% 1/4W	1-249-417-11	-	# T504	Dynamic Focus	1-424-584-11	-
# L500	Degaussing	1-428-988-11	-	# R592	.33 5% 2W	1-216-363-00	-	# T505	Horizontal Linearity	1-435-098-11	-
L501	10mH	1-406-677-11	-	# R593	1800 5% 1/4W	1-249-420-11	-	# T601	Line Filter	1-435-617-11	-
L502	2.2mH	1-412-552-11	-	# R594	10K 5% 1/4W	1-249-429-11	-	# T603	Standby	1-437-783-11	-
L503, 04	10mH	1-406-677-11	-	# R595	330K 5% 1/4W	1-247-891-00	-	# T604	Power	1-437-607-11	-
# L505	68µH	1-406-976-11	-	# R596	100K 5% 1/4W	1-249-441-11	-	TH501	NTC	1-800-193-00	-
L505A	22µH	1-412-529-11	-	# R598	6800 5% 1/10W	1-218-867-11	-	THP501	PTC	1-804-313-11	-
L511	8mH	1-409-955-11	-	# R599	2200 5% 1/10W	1-216-825-11	-	# TU001	Tuner	8-598-593-40	BTF-WA421
L517	2.2mH	1-412-552-11	-	# R603	4.7M 5% 1/2W	1-219-513-11	-	# TU150	Tuner	8-598-594-00	BTF-FA421
L604	10µH	1-412-525-31	-	R609	1.5% 10W	1-205-998-11	-	# V701	CRT	8-735-066-05	A80LPD50X
L605, 06	3.3µH	1-412-519-11	-	R615	.1 10% 1/2W Fusible	1-202-933-61	-	VDR600	VDR	1-803-585-11	-
L607	10µH	1-412-525-31	-	# R619	.47 5% 1/4W	1-249-377-11	-	X001	Crystal	1-781-931-11	10MHz
L608	22µH	1-412-529-11	-	R626	9100 .5% 1/16W	1-218-715-11	-	X301	Crystal	1-567-505-11	-
# L700	Rotation	1-452-896-11	-	R627, 29	330K 1% 1/4W	1-215-481-00	-	X3301	Crystal	1-781-377-21	3.58MHz
L701	68µH	1-408-613-31	-	# R630	330K 1% 1/4W	1-215-481-00	-		Antenna Switch	1-771-787-13	RF
L801	10mH	1-406-989-21	-	R631	15K .5% 1/16W	1-218-720-11	-		Fuse Holder	1-533-223-11	For F601 (2 Used)
L802	10mH	1-459-111-00	-	R632	100 .5% 1/16W	1-218-668-11	-		Magnet	4-083-414-01	Convergence Correction
L803	22µH	1-412-529-81	-	# R640	1000 5% 1/4W	1-249-417-11	-		Magnet	1-452-032-00	Disc
L901	18µH	1-412-528-11	-	R647	91 .5% 1/16W	1-218-667-11	-		Magnet	1-452-885-11	Landing
L3300	10µH	1-412-058-11	-	# R658, 59	10 5% 1/4W	1-249-393-11	-		Neck Assembly	8-453-007-41	-
L3301	470µH	1-410-682-31	-	# R668	470 5% 1/4W	1-249-413-11	-		PC Board (2)	A-1300-633-A	A
L3302, 03	10µH	1-412-058-11	-	# R674	.47 10% 1/2W Fusible	1-220-926-11	-		PC Board (3)	A-1300-634-A	A
L3390	10µH	1-412-525-31	-	R687, 88	1 5% 10W	1-205-998-11	-		PC Board	A-1400-455-A	C
# P600	Line Cord	1-791-935-12	AC, Polarized	# R707	1.5 5% 1/4W	1-249-383-11	-		PC Board (2)	A-1401-097-A	GK
PS601	Link	1-576-337-21	IC	R817	18K .5% 1/16W	1-218-722-11	-		PC Board (3)	A-1401-102-A	GK
PS1401	Link	1-576-337-21	IC	R821	33K .5% 1/16W	1-218-728-11	-		PC Board	A-1401-099-A	HS
# R020, 22, 24	680 .5% 1/16W	1-218-688-11	-	R824	100K .5% 1/16W	1-218-740-11	-		PC Board (3)	A-1400-456-A	P
	4700 5% 1/10W	1-216-829-11	-	R827	4700 .5% 1/16W	1-218-708-11	-		PC Board	A-1401-223-A	V
R085	15K 5% 3W	1-215-924-00	-	R828	33K .5% 1/16W	1-218-728-11	-		Transmitter (2)	1-476-680-21	Remote, RM-Y180
R331	10K .5% 1/16W	1-218-716-11	-	R833	8200 .5% 1/16W	1-218-714-11	-		Transmitter (3)	1-476-681-11	Remote, RM-Y181
# R503	4700 5% 1/4W	1-249-425-11	-	R834	1000 .5% 1/16W	1-218-692-11	-		Wedges	4-053-005-01	Yoke Positioning (3 Used)
	1000 5% 1/2W	1-260-328-11	-	R840, 42	2200 .5% 1/16W	1-218-700-11	-				
# R510	33 5% 2W	1-215-883-11	-	R855	18K .5% 1/16W	1-218-722-11	-				
	68 5% 3W	1-215-910-00	-	R856	1200 .5% 1/16W	1-218-694-11	-				
# R516	3900 5% 1/10W	1-216-828-11	-	R857, 60	10K .5% 1/16W	1-218-716-11	-				
	22 5% 3W	1-215-907-11	-	R864	100 .5% 1/16W	1-218-668-11	-				
# R523	12 5% 1/10W	1-216-834-11	-	R890	6800 .5% 1/16W	1-218-712-11	-				
	10K 5% 1/4W	1-249-429-11	-	# R901	.47 5% 1/4W	1-249-401-11	-				
# R524	8200 5% 1/4W	1-249-428									