

## 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.

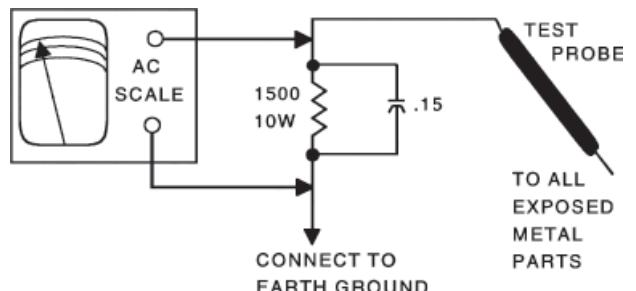
### SAFETY CHECKS — FIRE AND SHOCK HAZARD

#### 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.



# PHOTOFAC<sup>®</sup> SILVER

PHILIPS

Model 25PT5016/56 (Chassis TC7.1UCU)



SET 5362

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MODEL 25PT5016/56 (CHASSIS TC7.1UCU)

5362

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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Essential coverage  
for servicing a television receiver...

- Schematics
- Component locations
- Parts list

Coverage includes this additional model and chassis:

Model	Chassis
25PT5016/69	TC7.1UCU
25PT5016/71	TC7.1UCU
25PT5016/94	TC7.1UCU

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Technical Publishing<sup>LLC</sup>

APRIL 2008 SET 5362

5362

## MISCELLANEOUS ADJUSTMENTS

### FACTORY MODE (SERVICE MENU, SERVICE MODE)

Press the volume down button on the set to decrease the volume to minimum and while holding the volume down on the set, press the 0 key on the remote three times. To navigate press up and down arrow to select, press left and right arrow to adjust the selection, press control buttons 0~9 clear, mute, cc, sleep, and picture buttons on the remote control to access factory menu, all changes made to the data will saved in EEPROM automatically.

**To Exit Press the “Ana/Dig” Button.**

### VERTICAL STOP MODE

The vertical stop mode is used to confirm the screen voltage, press the GO BACK key in the factory mode and press the GO BACK key to exit.

### WHITE BALANCE ALIGNMENT MODE

Press the OK key on the factory remote control to cutoff the I2C control on the CPU and to other Ics this is only valid during automatic adjustment of the white balance.

### EEPROM INITIALIZATION

While in the factory mode press the clear button, the screen will display “ROM INIT” press the right arrow button to initialize the EEPROM when the screen displays “ROM INIT OK” the Initialization is complete.

### EEPROM INITIALIZATION FACTORY MODE

While in the factory mode press the mute button to initialize the “Factory Out” status:

V-CHIP:	Off
Picture presets:	Sports
Sound presets:	Theatre
Volume:	30
Source type:	Cable
CC select:	CC1
CC Display:	Off
Video mode:	DTV
Language:	English
Format:	Normal 4:3
Time zone:	Eastern
Off Time:	Off
On Time:	Off
AVL:	Off
Virgin Mode:	On

### ENTERING THE INITIAL SCREEN

To view the initial screen, press the volume down button on the set to decrease the volume.

To a minimum and while holding the volume down on the set, press the 0 key on the remote three times. Press 0 once again to enter the service mode.

The (example) screen below will be displayed.

UOC300C 2.1.3.2.1 07.03.28 TE1.40  
App Code:A1.1A Boot Code:01.01  
FPGA Code:FF:FF

ADRO 0111000	01010000	ADR1	SCL	32
ADR2 0001111	11100111	ADR3	WBR	7
AFC	00000000		WBF	7
RG	01000000		BSWBR	8
GG	11000000		BSWBF	7
BG	01000000		PRESS #3 key	
DELF	11001111(varying)	DISC 128(varying)	<b>UOC300C</b>	<b>2.1.3.2.1 07.03.28 TE1.40</b>
LAST	NV: 6626		HSH	45
ERR:	00000000		PAR	37
REV:	402114		BOW	31

### ENTERING FACTORY MODE

To enter the factory mode from power on, press the volume down button on the set to decrease the volume to a minimum and while holding the volume down on the set, press The 0 key on the remote three times to enter the factory mode. Use the up down arrows to navigate up and down and the left right arrows to change the values.

Select number pad on the remote control 0~9 clear, mute, cc, sleep, picture. To navigate to different menu within the menu use the up down arrows on the remote control. With parameter selected use the left right arrows on the remote control to change the values. Press the antenna button on the remote control to save the settings and exit the factory mode.

Press 0 key

**UOC300C 2.1.3.2.1 07.03.28 TE1.40**

DEC LVL	0	
MONO LVL	0	
NIC LVL	0	
SAP LVL	0	
ADC LVL	0	
DCXO CAP 57	57	DISC: 91 TO 255 (Varying)
NICLPINV	Inverted	
PSCALE	0.375	DCXO: 64
PLIM	96	
PCENTER	0	
LOUDNESS	6	

Press #1 key

**UOC300C 2.0.3.2.1 06.08.18 VR4.1D**

WPR	42	
RED	36	WPG 35
GRN	33	WPB 42

Press #2 key

**UOC300C 2.1.3.2.1 07.03.28 TE1.40**

VPOS	41	
VAM	18	
VSL	32	
VL	31	
VSC	31	

DISC 128(varying)		<b>UOC300C</b>	<b>2.1.3.2.1 07.03.28 TE1.40</b>
HSH	45		PRESS #8 key
PAR	37		<b>UOC300C</b>
BOW	31		<b>2.1.3.2.1 07.03.28 TE1.40</b>
EWV	47		
EWP	26		
VCR	40		
LCR	41		
EWT	26		

**UOC300C 2.1.3.2.1 07.03.28 TE1.40**

RF	AGC	24	INACTIVE
CEPK PAL	32		
CFPEK PAL	3.5+143		
CFPEK NTS	3.1+160		
CFPEK YUV	4.0+125		
IFPL	32		
BBTC	32		
PGR	64		
PGG	64		
PGB	64		
VG2BRI	10		
HDOL	1		

PRESS #5 key

**UOC300C 2.1.3.2.1 07.03.28 TE1.40**

CNTX	50	
CNTN	8	
BRTX	40	
BRTN	15	
COLX	13	
COLN	2	
TNTX	20	
TNTN	20	

PRESS #6 key

**UOC300C 2.1.3.2.1 07.03.28 TE1.40**

CNTC	YUV	26	
BRTC	YUV	28	
COLC	YUV	35	
TNTCT	YUV	28	
TNTCA	YUV	30	
COLP	YUV	0	
COLS	YUV	0	
BRTS	YUV	0	
BUSSTAT		2	
RECOVER		6	

PRESS #7 key

**UOC300C 2.1.3.2.1 07.03.28 TE1.40**

SHPAV4		31
SHPX		31
SHPN		31
OSD	BRI	9
CC	BRI	10
CCDH		10
CCDV		30
OSD	H	13
OSD	V	30
MENU	V	30
MENU	H	7

**UOC300C 2.1.3.2.1 07.03.28 TE1.40**

00P1	00001010
0P02	10000001
0P03	00010011
0P04	00100000
0P05	00100100
0P06	00001010
0P07	01000000
0P08	00000101
0P09	10000000
0P10	00000001

**UOC300C 2.1.3.2.1 07.03.28 TE1.40**

MODE	1	01110111


<tbl\_r cells="3

## MISCELLANEOUS ADJUSTMENTS Continued

### VOC300C 2.1.3.2.1 07.03.28 TE1.40

BASS	STD	28
TRE	STD	26
100Hz	STD	6
300Hz	STD	9
1Khz	STD	8
3Khz	STD	6
8Khz	STD	7

PRESS Picture key 3 times

### VOC300C 2.1.3.2.1 07.03.28 TE1.40

BASS	M	6
TREBLE	M	10
100Hz	M	7
300Hz	M	9
1Khz	M	6
3Khz	M	8
8Khz	M	10

PRESS Preset key 4 times

### VOC300C 2.1.3.2.1 07.03.28 TE1.40

BASS	S	22
TREBLE	S	13
100Hz	S	6
300Hz	S	9
1Khz	S	9
3Khz	S	9
8Khz	S	6

PRESS Sleep key

### VOC300C 2.1.3.2.1 07.03.28 TE1.40

Warm	R	18
Warm	G	12
Warm	B	0
Cool	R	9
Cool	G	8
Cool	B	0
exc	R	32
exc	G	38
exc	WR	32
exc	WG	32
exc	WB	32

PRESS CC key

### VOC300C 2.1.3.2.1 07.03.28 TE1.40

Vol	01	85
Vol	20	142
Vol	90	177
Vol	100	178
YD	AV	15

PRESS CLEAR key

### VOC300C 2.1.3.2.1 07.03.28 TE1.40

ROM Init

PRESS CC key

### VOC300C 2.1.3.2.1 07.03.28 TE1.40

ROM CIni

Several factor alignments appear in the menus but only the ones listed should be changed in some cases the value (hex number) can be changed but the actual value the set is using cannot be changed except at the factory using factory equipment.

To Exit Press the "Ana/Dig" Button.

### B+ ADJUSTMENT

1. Tune the set to receive a crosshatch signal.
2. Set the picture in the Personal mode, brightness contrast and color in middle position.
3. Check for 130VDC +/- 2.0V at C823.

### RF AGC ADJUSTMENT

Input RF AGC 187.25MHz input 60db grey scale signal at 100% modulation through the tuner from the RF-IF output of a video generator, enter the service mode and press 4 on the remote control to select the RF AGC adjustment. Press the INFO key on the remote control to auto adjust the RF AGC. The status will change to 'active' when the adjustment is complete. The value can be changed by using the left and right navigation arrows on the remote control.

### SCREEN ADJUSTMENT

Tune the set to receive a crosshatch signal, set the picture color temperature to normal, set picture brightness and contrast controls to midrange. Enter the service mode and press the go back button on the remote control, this will collapse the vertical to a horizontal line. Adjust the screen control to produce a dim horizontal line, then press the GO Back button on the remote control to restore the picture.

### FOCUS ADJUSTMENT

Tune the set to receive a crosshatch signal adjust the focus control, the upper control on the Horizontal output transformer for the best over all focus.

### WHITE BALANCE ADJUSTMENT

Perform the screen adjustment, set the picture color temperature to normal, set picture brightness and contrast controls to midrange color temperature to Off. Press the 1 key on the remote control to enter the white balance adjustment' adjust WPR, WPG and WPB to obtain balance between both dark and bright picture.

Picture Mode	Color Temp
Normal	9300K
Cool	12000K
Warm	6500K

Only adjust the NORMAL status the COOL/WARM are default settings.

### SUB BRIGHTNESS ADJUSTMENT

Tune the set to receive a gray scale stair-step test pattern using the A/V inputs set the picture temperature to 'normal' using the customer menu, set picture brightness and contrast controls to midrange. Enter the service mode press 6 with the remote control. Adjust the value of RTC Sub-brightness to just lighten the second bar making sure the first bar remains black.

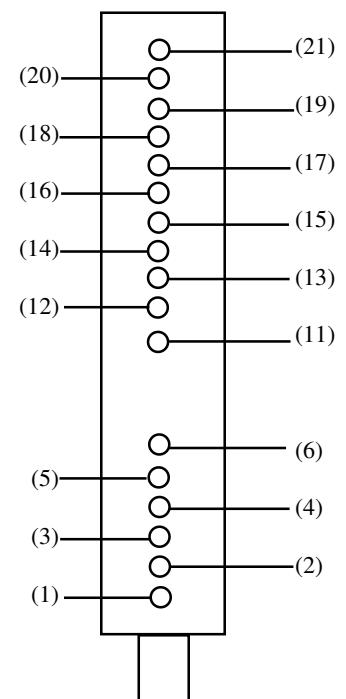
### GEOMETRIC ADJUSTMENT

#### Vertical geometric adjustment

Input a NTSC cross hatch pattern from a signal generator press the 2 key on the remote control to enter the vertical geometric adjustment. Using the remote adjust one by one watch the figure until center or the corner grid is the same side.

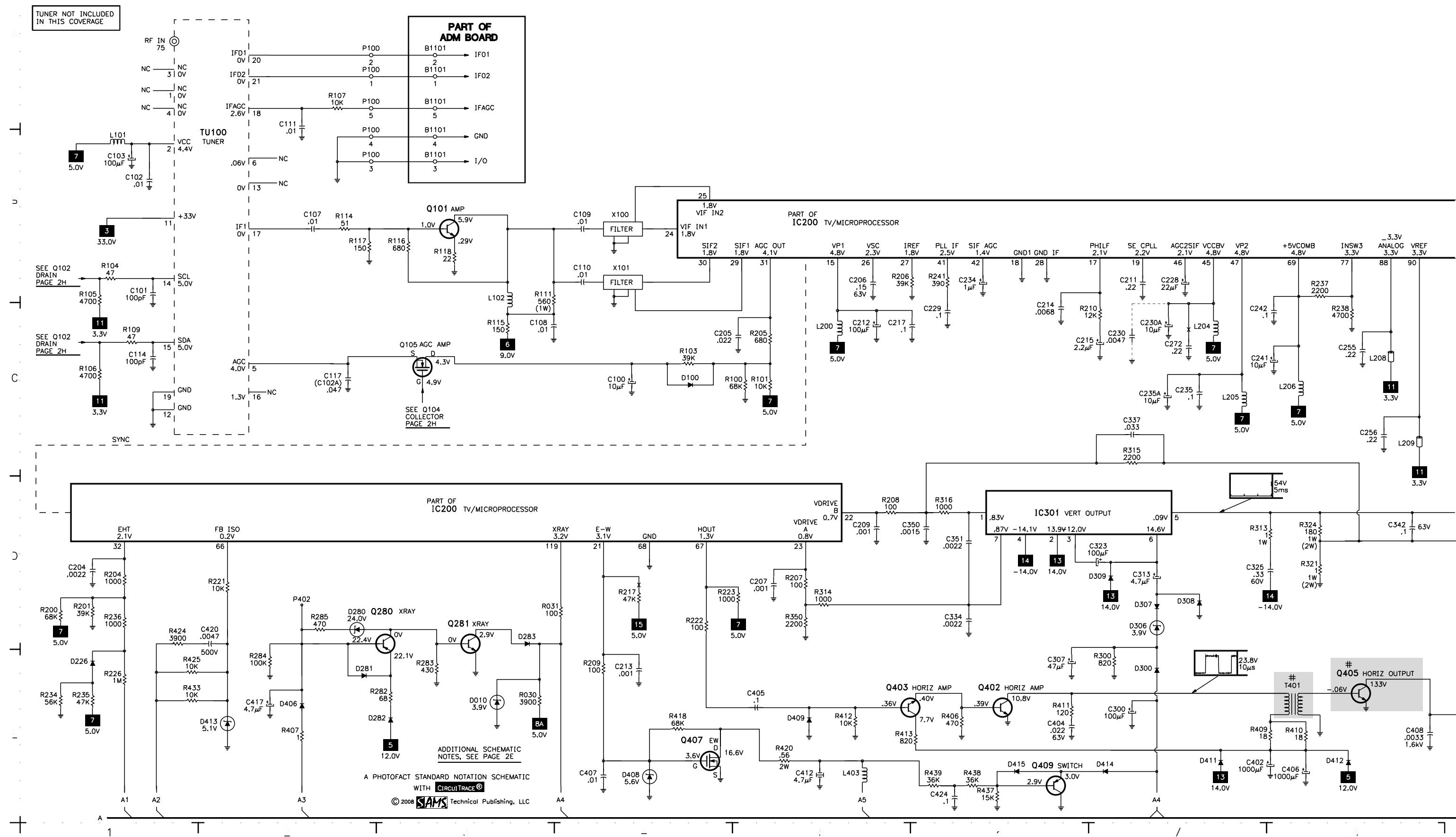
Input a NTSC cross hatch pattern from a signal generator, press the 3 key on the remote control to enter the horizontal geometric adjustment. Using the remote adjust one by one watch the figure until center line at left and right become straight.

### TUNER INFORMATION



SCHEMATIC COMPONENT LOCATION GUIDE																											PHILIPS		MODEL 25PT5016/56 (Chassis TC7.1UCU)	
C003	D30	C209	D5	C264	C9	C503	A27	C820	A21	D001	A12	D624	D38	IC202	D23	P902	C33	Q605	E38	R090	B23	R231	C11	R419	D10	R540	C16	R914	B33	
C004	D30	C210	D37	C265	B36	C504	A28	C823	A21	D002	C12	D625	D38	IC301	D6	P904	C33	Q820	B22	R008B	A29	R232	B11	R420	E5	R541	C16	R915	C33	
C005	D31	C211	B7	C266	B36	C505	D15	C824	A21	D003	C35	D626	E38	IC601	D39	P904	C33	Q821	D21	R009B	E31	R234	E1	R421	A16	R542	C16	R916	B33	
C01	E31	C212	C5	C267	B36	C511	B13	C825	C17	D004	B12	D810	C19	IC801	B19	P904	D33	Q822	C18	R100	C5	R235	E1	R422	A16	R600	D37	R917	B33	
C02	E31	C213	E4	C268	C12	C512	A14	C826	C17	D006	C29	D811	C19	IC802	B18	P961	D33	Q823	C17	R101	C5	R236	D1	R424	E1	R601	D38	R919	B33	
C017	E36	C214	C6	C270	C12	C521	C13	C828	C18	D008	C38	D812	C19	IC803	B17	P1101	D33	Q824	B22	R103	C4	R237	C8	R425	E1	R602	E40	R921	C33	
C018	B30	C215	C7	C271	E35	C522	C14	C829	A23	D01	E32	D813	C18	IR001	A29	P1102	E33	Q825	D21	R104	B1	R238	C8	R426	C26	R603	D37	R922	D33	
C019	E36	C216	C9	C272	C7	C531	C13	C830	C21	D02	E31	D814	B20	J008	D22	P1103	E33	Q900	A38	R105	C1	R023A	B29	R427	D25	R604	D38	R923	C33	
C021	C35	C217	C5	C281	B30	C532	B14	C831	C22	D010	E3	D815	C18	J225	C31	Q001	C35	Q901	A38	R106	C1	R240	C10	R428	E14	R605	D40	R924	D33	
C022	A37	C219	D24	C282	B24	C540	C15	C832	D22	D080	B23	D820	A21	J401	D11	Q01	E31	Q902	B37	R107	B2	R241	B6	R429	E13	R606	D37	R925	D33	
C023	A37	C222	D35	C283	E31	C600	D37	C833	D22	D081	B23	D821	C18	J804	A20	Q080	B23	Q903	B37	R109	C1	R244	C9	R433	E1	R607	E37	R926	C33	
C026	B30	C223	D35	C284	A30	C601	D38	C834	C22	D082	B23	D822	C18	J805	B20	Q081	B23	R009	C31	R010B	C29	R245	C9	R435	A27	R608	D37	R927	C33	
C027	A31	C224	D35	C300	E7	C602	D39	C835	D21	D001B	E31	D823	B22	K801	A18	Q101	B3	R01	E31	R111	C3	R024A	B29	R437	E6	R609	D38	R928	D33	
C029	C37	C225	D35	C307	E6	C603	E40	C837	E21	D100	C4	D830	C21	K802	E32	Q102	A31	R02	E31	R112	A31	R250	B36	R438	E6	R610	D38	R929	D33	
C083	B24	C227	E36	C308	C27	C604	D37	C840	D21	D102	A23	D831	C22	L001	E36	Q102	B31	R03	E31	R114	B2	R251	B36	R439	E6	R611	E38	R932	D33	
C084	B24	C228	B7	C313	D7	C605	D38	C842	E22	D204	C12	D832	D22	L002	A37	Q103	A31	R010	D31	R115	C3	R252	B36	R440	E14	R613	D38	R960	E33	
C085	B24	C229	C6	C323	D6	C606	D39	C850	C21	D226	E1	D840	D21	L101	B1	Q103	B31	R011	C31	R116	B3	R253	B36	R442	E14	R801	A17	R961	E33	
C086	B23	C230	C7	C324	D27	C607	E40	C851	C22	D280	D2	D850	C21	L102	C3	Q104	B31	R012	D22	R117	B2	R255	A12	R443	E14	R810	B19	R962	E33	
C090	D24	C231	D34	C325	D7	C608	E39	C852	C22	D281	E2	D851	B22	L200	C5	Q105	C3	R014	C35	R118	B3	R256	C12	R501	D14	R811	B18	R963	E33	
C091	D24	C232	D34	C334	D6	C609	D38	C853	B21	D282	E3	D852	B22	L201	D36	Q204	C10	R015	C35	R120	A31	R257	B12	R505	A27	R812	C18	R611A	E39	
C092	D23	C234	B6	C337	C7	C610	E39	C902	B38	D283	E3	D901	B33	L202	D36	Q205	C38	R016	C35	R121	B31	R025A	B29	R511	A13	R813	C20	R816A	C20	
C093	D22	C235	C7	C342	D8	C611	E39	C903	B38	D284	C9	D903	C33	L203	E35	Q206	A12	R017	C34	R122	B31	R026A	C29	R512	A13	R814	C19	R824A	C17	
C001B	A29	C236	E34	C350	D6	C612	E39	C904	B37	D285	C9	D904	D33	L204	C7	Q207	C12	R018	E37	R123	C30	R270	C11	R513	A13	R815	C19	R826A	A22	
C100	C4	C237	E34	C351	D6	C613	D40	C905	B37	D300	E7	D905	C33	L205	C7	Q208	B12	R022	C37	R124	B30	R271	C11	R514	A13	R817	B20	R829A	C17	
C101	C1	C238	D37	C360	C28	C614	C40	C912	B34	D305	E15	D906	D33	L206	C8	Q280	E2	R023	C37	R130	A32	R027A	C29	R515	B14	R818	D19	R840A	B19	
C102	B1	C239	D37	C400	A26	C615	D40	C914	C34	D306	D7	D907	D33	L207	C10	Q281	E3	R024	B30	R131	B32	R282	E3	R516	A14	R820	A22	RF IN	A1	
C103	B1	C241	C7	C401	B26	C616	D40	C915	B34	D307	D7	D911	C33	L208	C8	Q282	C9	R025	A30	R200	D1	R283	E3	R517	A14	R821	B22	RT801	A18	
C105	A24	C242	C7	C402	E7	C617	D40	C917	C34	D308	D7	D912	C33	L209	C8	Q402	E6	R026	B30	R201	D1	R284	E2	R518	B14	R822	D18	RT802	B18	
C106	A23	C243	B36	C404	E6	C618	D40	C918	B34	D309	D7	D913	B33	L210	C11	Q403	E5	R027	A30	R202	B37	R285	C10	R519	A14	R823	C17	S008	C29	
C107	B2	C244	A36	C405	E5	C619	D38	C919	B34	D400	A26	D914	C33	L211	D30	Q404	E15	R029	B30	R203	B37	R285	D2	R521	C13	R824	C17	S001A	B29	
C108	C3	C245	A36	C406	E8	C621	D39	C922	D33	D401	E9	D919	E33	L212	D23	Q405	E8	R030	E3	R204	D1	R300	E7	R522	C13	R825	C17	S002A	B29	
C109	B4	C246	D34	C407	E4	C622	D39	C923	C33	D402	E9	D920	E33	L400</																

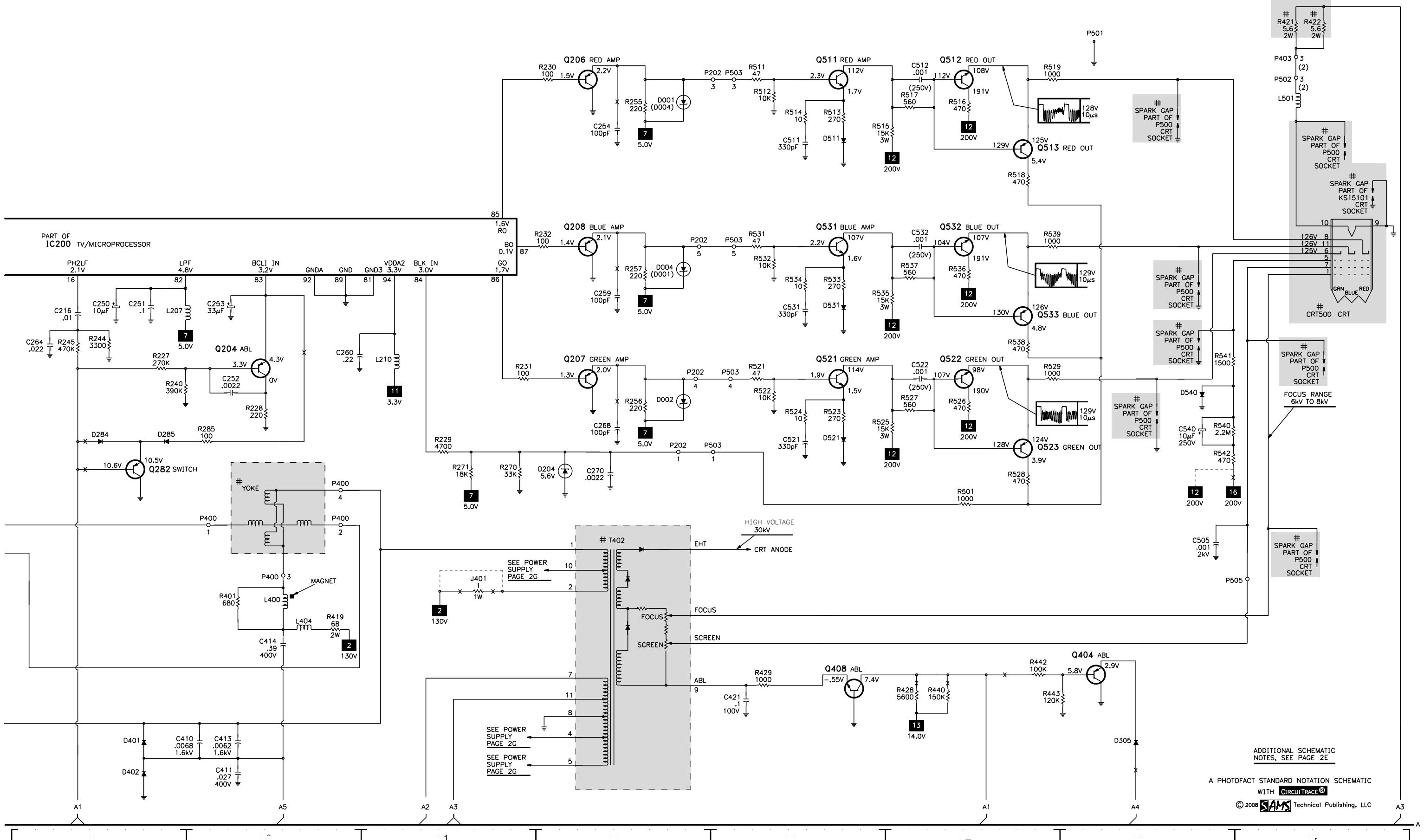
## **TELEVISION SCHEMATIC**



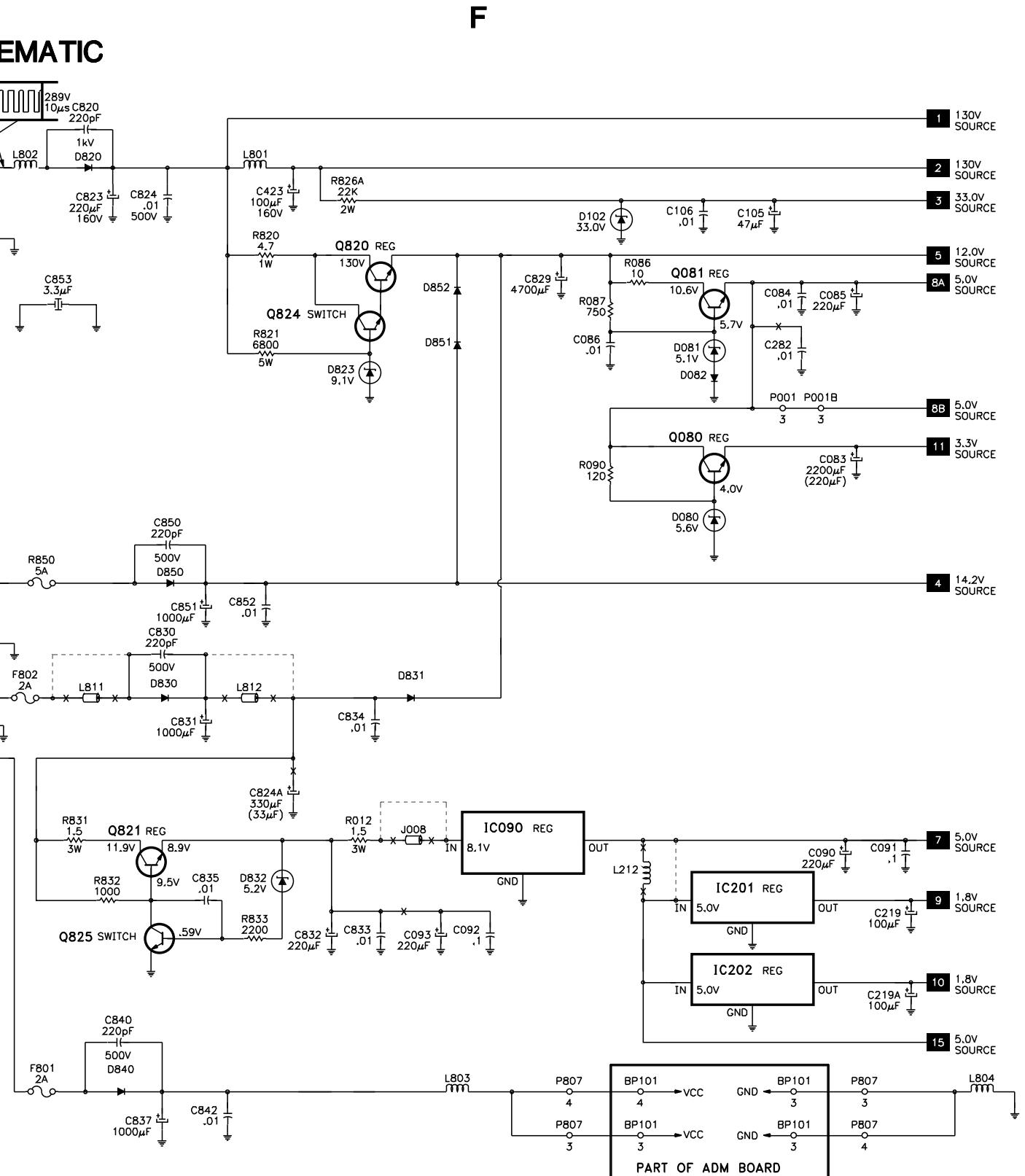
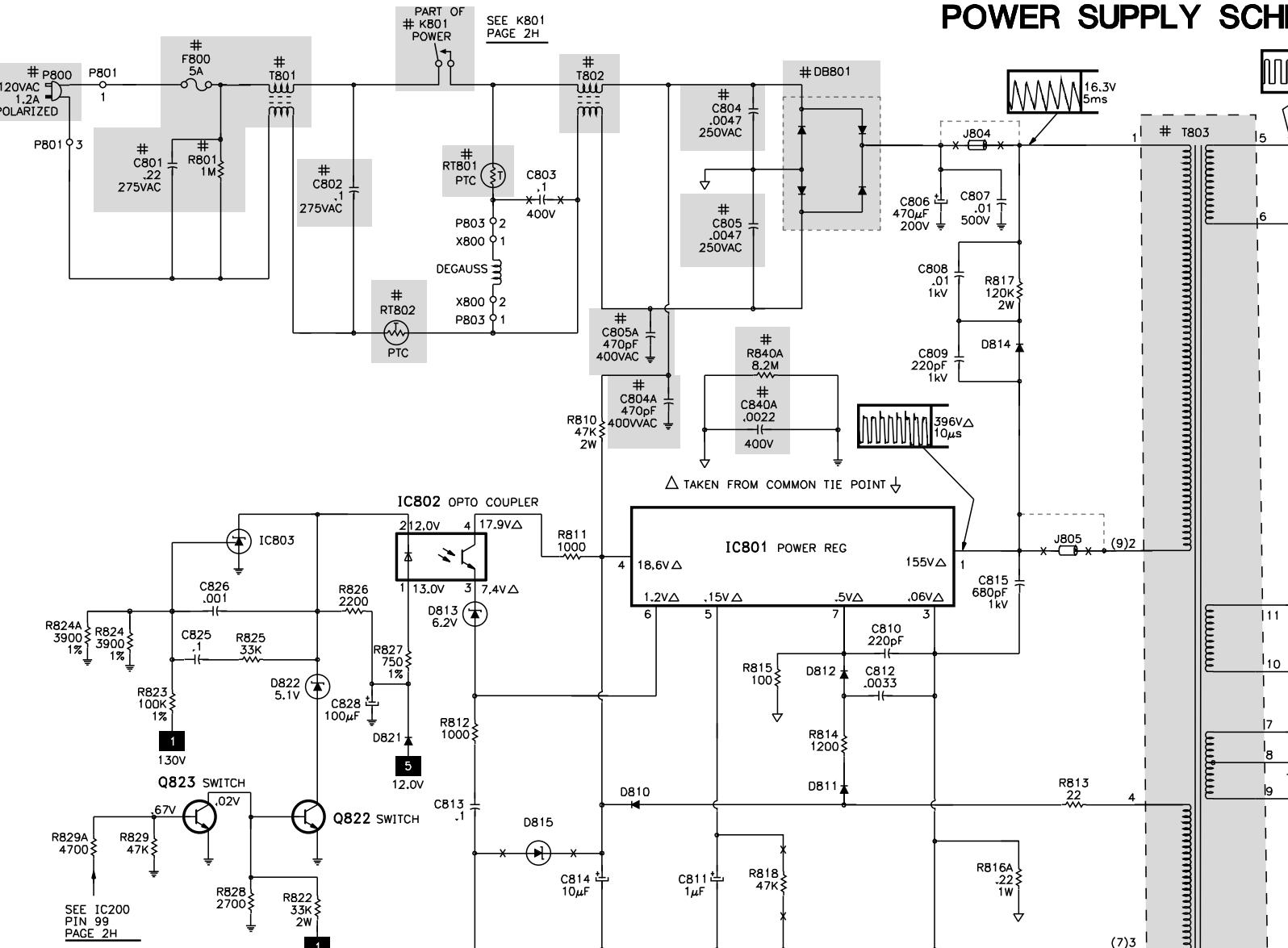
C

D

## TELEVISION SCHEMATIC continued



# POWER SUPPLY SCHEMATIC



A PHOTFACT STANDARD NOTATION SCHEMATIC

WITH CIRCUITTRACE®  
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## SCHEMATIC NOTES

# For SAFETY use only 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

3 Schematic CIRCUITTRACE® Voltage source tie point.

A Cabling: Heavy lines reduce use of multiple lines.

Waveforms and voltages are taken from ground, unless otherwise noted.

Waveforms taken with triggered scope and colorbar signal.

Waveform voltage is peak to peak. Timebase is per division. Waveforms shown at 10 divisions.

Supply voltages maintained as seen at input.

Voltages measured with digital meter and a 1000μV RF signal, with colorbar pattern applied to antenna terminal.

Controls adjusted for normal operation.

Capacitors are 50 volts or less, 5% or greater unless noted.

Capacitor values are in microfarads unless noted.

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

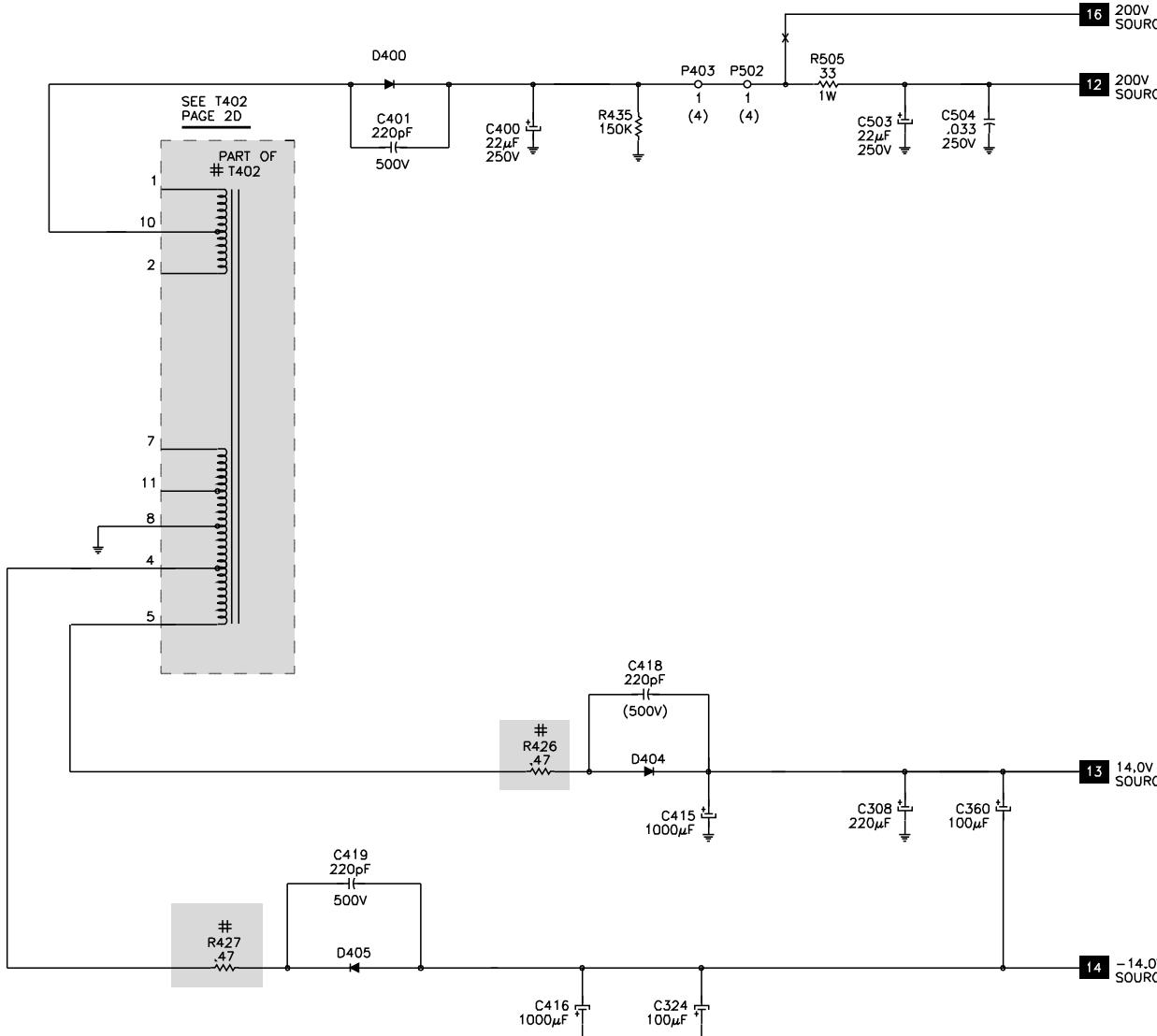
Resistors are less than 1W, 5% or greater unless noted.

Value in ( ) used in some versions.

Measurements with switching as shown unless noted.

Rated voltage shown on zener diodes.

**G**  
**POWER SUPPLY SCHEMATIC** *continued*

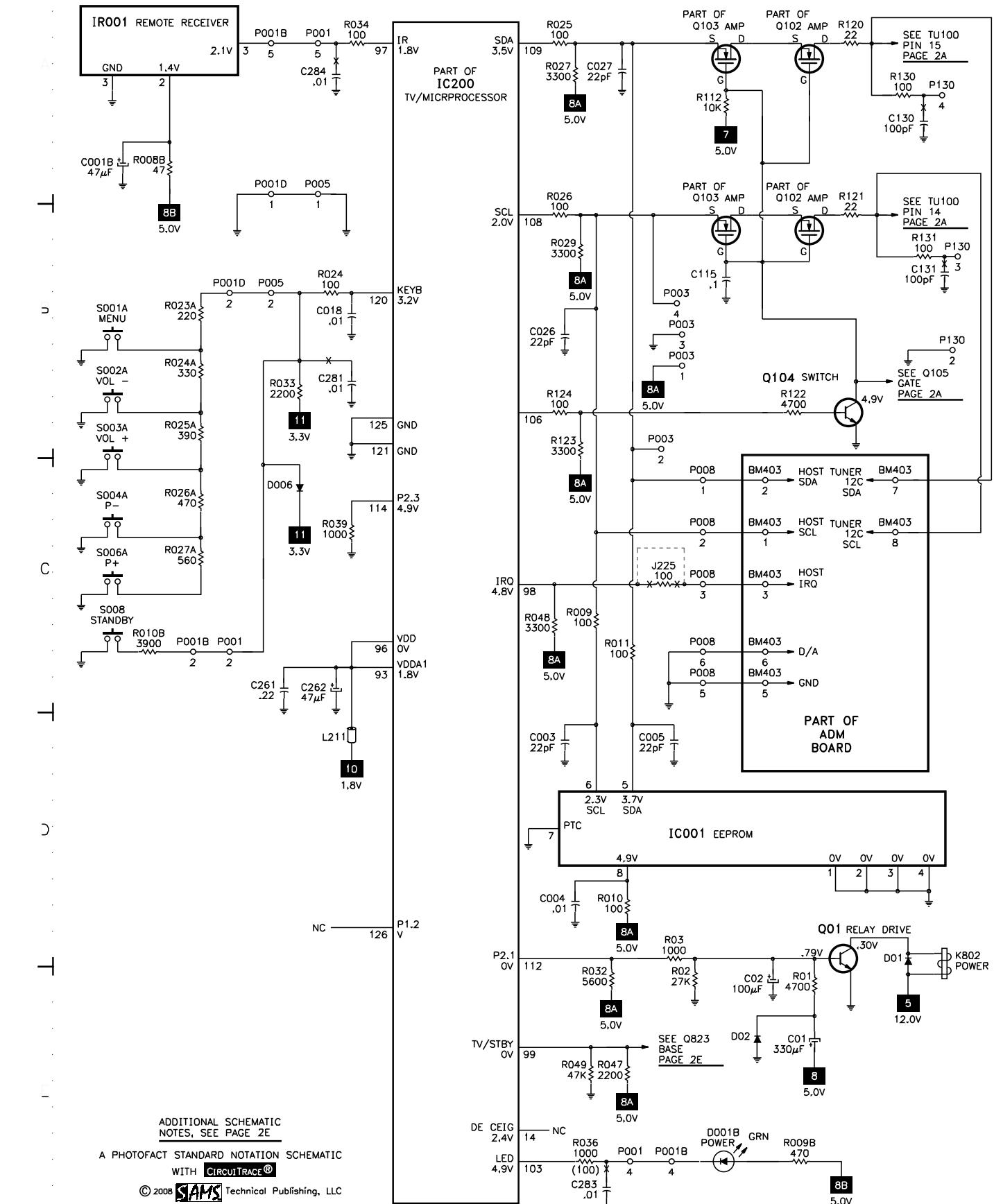


ADDITIONAL SCHEMATIC  
NOTES, SEE PAGE 2E

A PHOTOFAC STANDARD NOTATION SCHEMATIC  
WITH CIRCUITTRACE®  
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# H SYSTEM CONTROL SCHEMATIC

**TUNER NOT INCLUDED  
IN THIS COVERAGE**



ADDITIONAL SCHEMAS  
NOTES, SEE PAGE 2

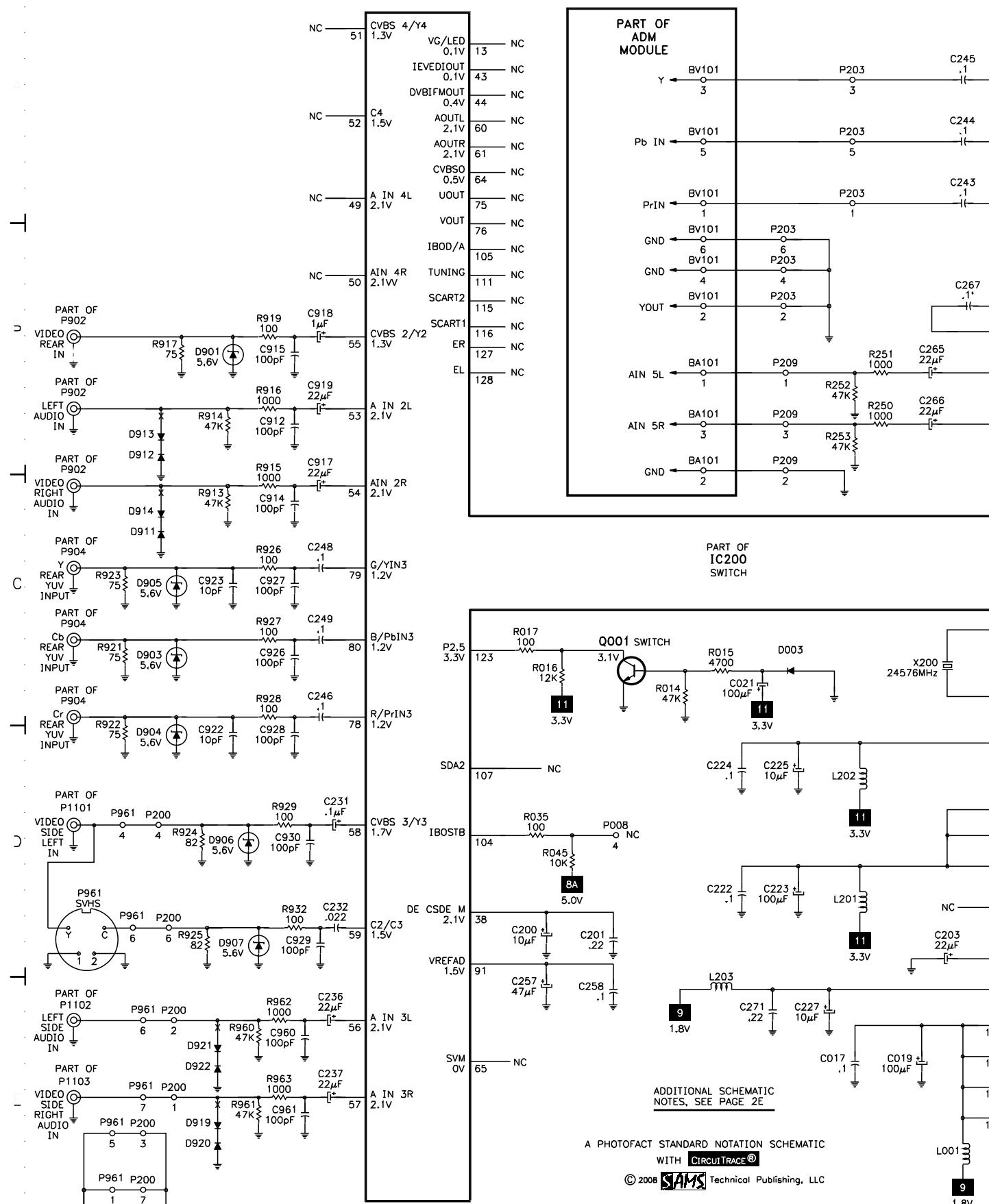
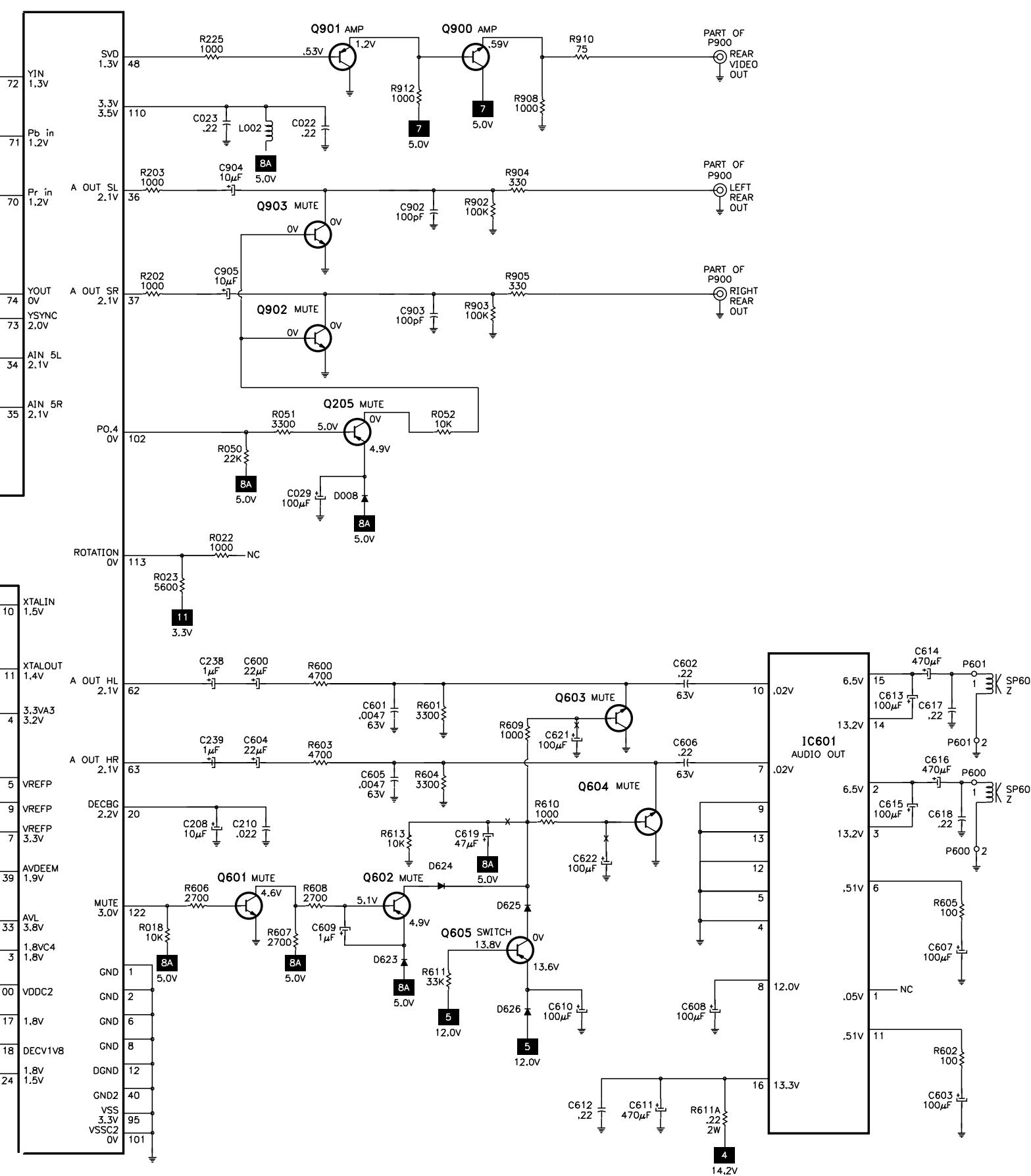
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## A PHOTOFAC T STANDARD NOTATION SCHEMA

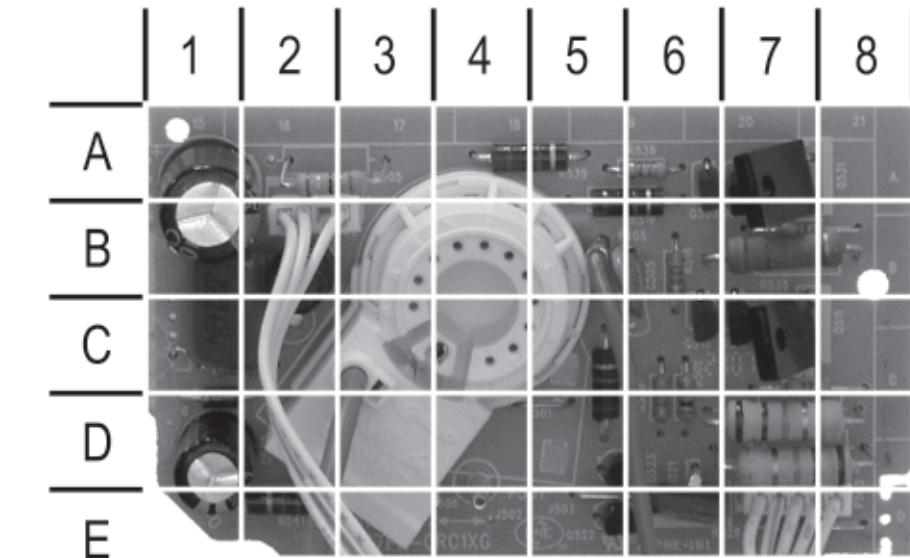
WITH CIRCUIT TRACE®

**A**

## AUDIO/VIDEO SELECTOR SCHEMATIC

**B**

## CRT BOARD



A SAMS Technical Publishing, LLC GRIDTRACE™ PHOTO



## CRT BOARD, GRIDTRACE LOCATION GUIDE

C505	B5	L501	B2	Q533	A6	R521*	E7	R534*	B8
C511*	C8	P500	B4	R501	D6	R522*	E7	R535	B7
C512*	C7	P501	E4	R505	A2	R523*	E5	R536	B7
C521*	E5	P502	B2	R511*	B8	R524*	E5	R537*	B7
C522*	D5	Q511	C7	R512*	C8	R525	D7	R538	A6
C531*	A8	Q512	C7	R513*	C8	R526	E7	R539	A4
C532*	B7	Q513	C6	R514*	C8	R527*	D6	R540	C1
C540	D1	Q521	E6	R515	D7	R528	D6	R541	E2
D511*	D8	Q522	E5	R516	D7	R529	C5	R542	B2
D521*	E5	Q523	D5	R517*	C7	R531*	A8	* Located on other side of board.	
D531*	B8	Q531	A7	R518	B6	R532*	A8		
D540	D1	Q532	A7	R519	B6	R533*	B8		

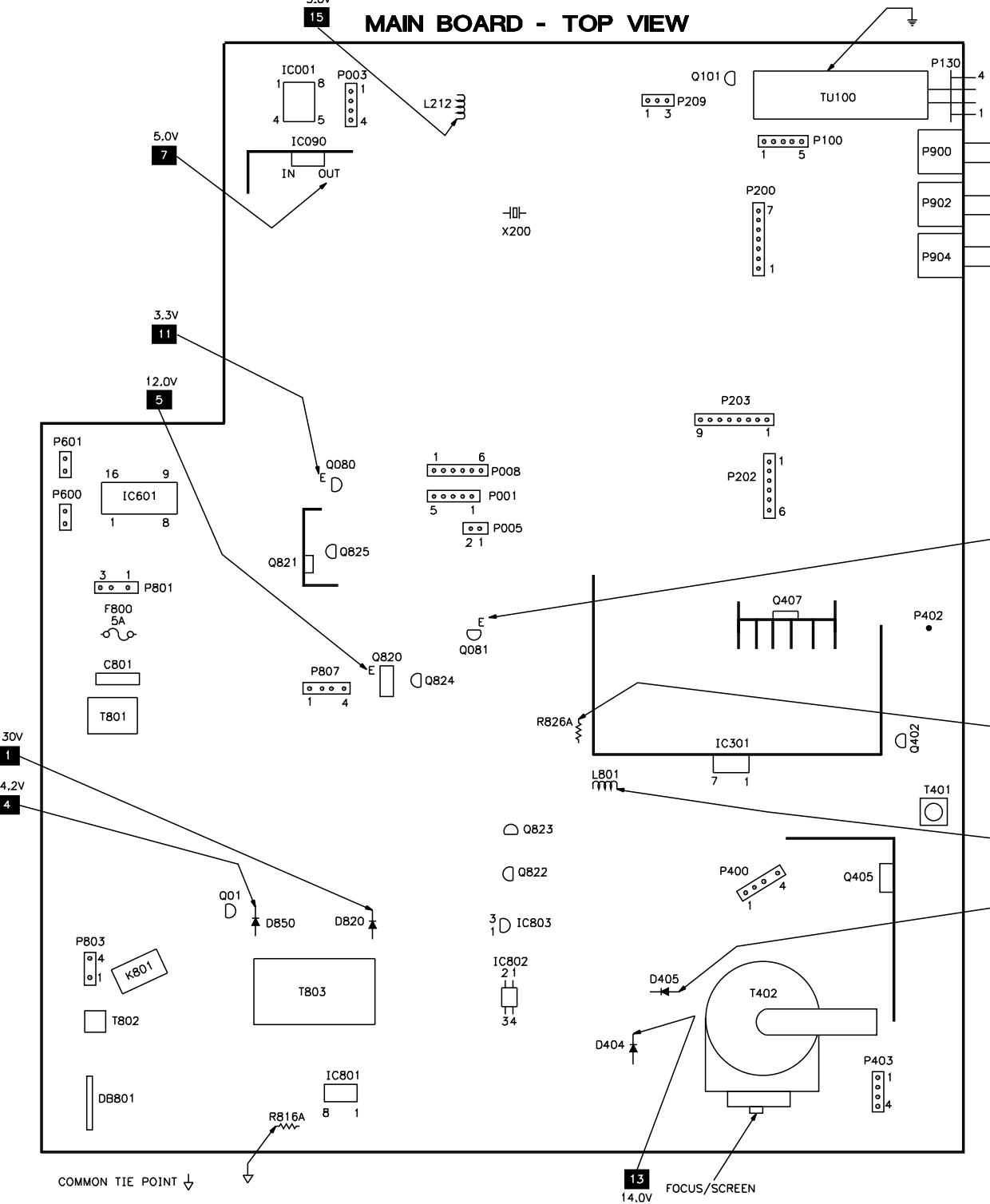
INDY-TECH  
PUBLISHING

from

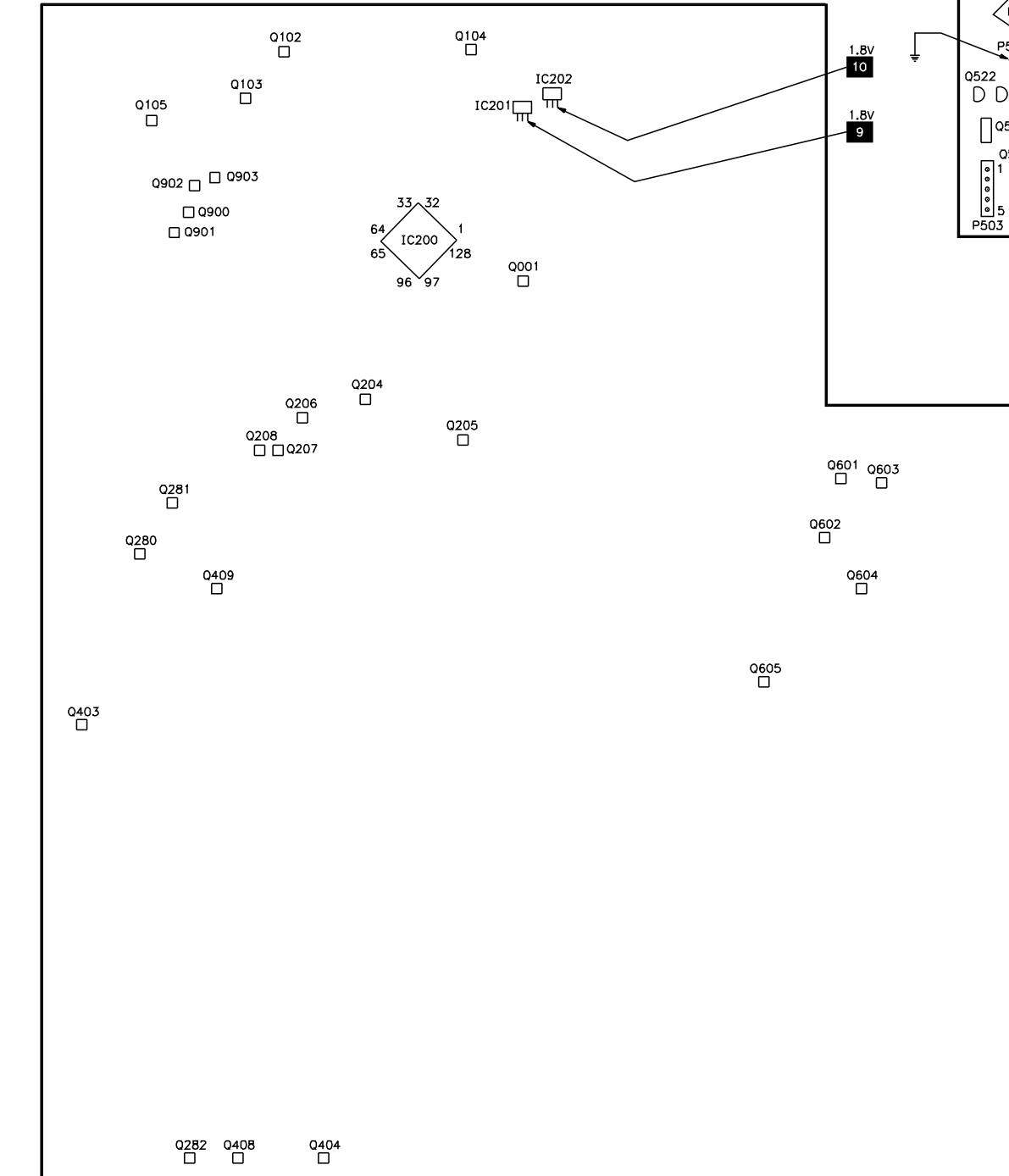
SAMS  
Technical Publishing

Available at your local bookseller or online retailer.

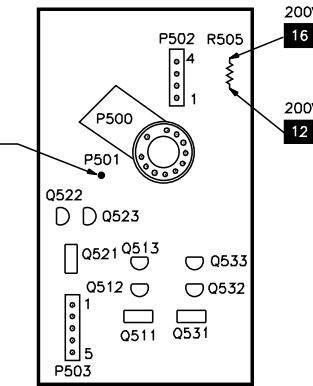
## **PLACEMENT CHART**



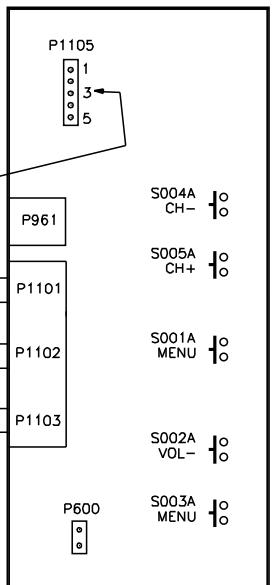
MAIN BOARD - BOTTOM VIEW



## CRT BOARD



## **CONTROL BOARD**



## TEST EQUIPMENT

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

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

### 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.

# Your Source for Repair Manuals

Since 1946 Sams has been providing repair documentation to the consumer electronics industry. Covering everything from TVs to Antique Radios, our database of 225,000 consumer electronics devices is a valuable resource when you are troubleshooting that difficult component.



Our database dates back almost 60 years, with coverage including:

Televisions	Radios	CBs
Microwaves	Audio Components	Car Stereos
Tape Players	VCRs	and more!

Search our online database at [www.samswebsite.com](http://www.samswebsite.com) to see if we have the manual you are searching for!

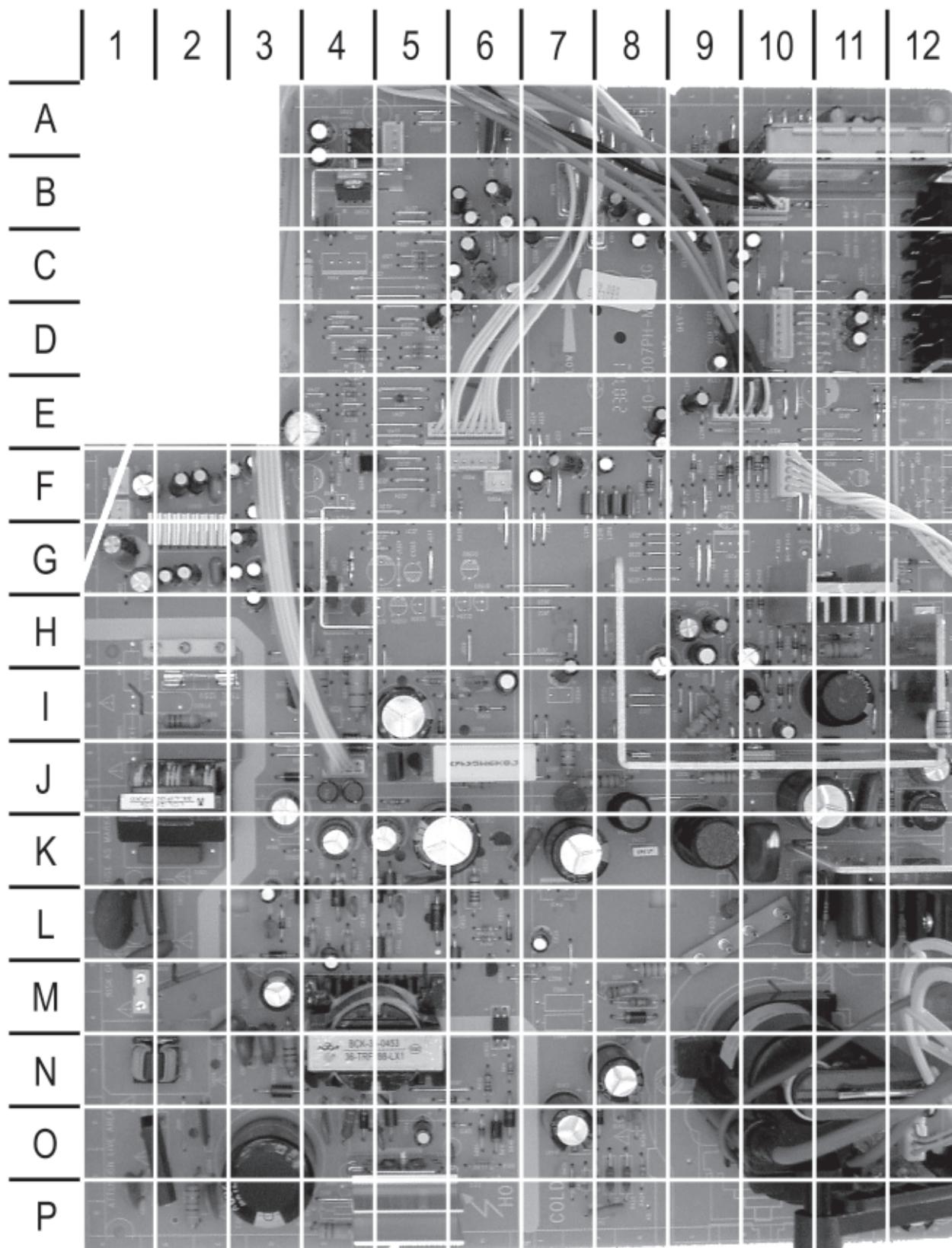
All manuals are available in printed format, with many available electronically as well.

A screenshot of the SAMS website's repair schematic search interface. The top navigation bar includes links for "Photoview Repair Manuals", "Sams TV Repair", "Multi-View Publishing", "Custom Publishing", "Trade-Show Publications", "Copy Services", "App. Agreements", and "Logout". Below the navigation is a search bar with fields for "Model, Keyword, Subject, etc.", a "Search" button, and a "Repair Manual Search" section. A "PHOTOFACT® Repair Schematic Search" form follows, with fields for "Exact Match", "Find Anywhere In Model / Chassis", "Model / Chassis Number", and a "Search" button. To the right is a "Featured Bookshelf" section showing book covers for "Peyton Manning" and "Colts Fanboy". The main content area displays a table of repair manuals for model CTC177AA, listing brands like SAMS, GENERAL ELECTRIC, RCA, and SEARS, along with their prices (\$20.00), availability, and download links.

Repair manuals from Sams Technical Publishing can be ordered by contacting Sams directly at 1-800-428-SAMS or by visiting our website at [www.samswebsite.com](http://www.samswebsite.com).

[www.samswebsite.com](http://www.samswebsite.com)

## MAIN BOARD TOP



A SAMS Technical Publishing, LLC GRIDTRACE™ PHOTO

## MAIN BOARD TOP, GRIDTRACE LOCATION GUIDE

C01	M3	C334	I9	C805	P1	D082	I6	D850	L3	L801	J7	R032	E4	R818	P5
C02	L3	C342	K8	C805A	M2	D100	A12	D851	J4	L802	L6	R033	D4	R820	J6
C019	C6	C360	H10	C806	P3	D102	A10	D852	J3	L803	J4	R086	I5	R821	J6
C021	D5	C400	P12	C807	O2	D204	F10	D901	D11	L804	J4	R087	I5	R822	K7
C029	F7	C401	N12	C808	O4	D226	A8	D903	D11	L811	L5	R090	F4	R823	L6
C083	E3	C402	J12	C809	O5	D280	G12	D904	E11	L812	K5	R111	A9	R824	L6
C085	I6	C404	I12	C810	P5	D281	G12	D905	E11	P001	F6	R115	A8	R824A	L6
C090	A4	C406	I12	C811	P5	D282	G12	D906	D10	P003	A5	R237	E9	R826	M7
C093	A4	C408	L11	C812	P6	D283	H10	D907	E10	P005	F6	R255	F9	R826A	J7
C100	A11	C410	L11	C813	O6	D300	H10	DB801	O2	P100	B10	R256	F10	R827	M7
C103	A11	C411	J11	C814	P5	D305	H9	F800	I2	P200	D10	R257	F10	R831	I4
C105	A11	C412	J11	C815	P5	D306	H10	F801	L4	P202	F10	R271	F9	R832	H4
C200	C9	C413	L10	C820	L6	D307	I10	F802	L5	P203	E10	R282	G12	R840A	N3
C203	B8	C414	K10	C823	K5	D308	I10	IC001	A4	P209	B8	R313	J9	R850	L4
C206	C7	C415	O7	C824	K5	D309	H10	IC090	B4	P400	L9	R315	J9	R915	D11
C208	B7	C416	N8	C824A	H7	D400	O12	IC301	J10	P402	H12	R321	I9	R916	D11
C212	B6	C417	O12	C828	L7	D401	L11	IC601	G2	P403	O12	R324	M8	RT801	L1
C215	B6	C418	O8	C829	I5	D402	K11	IC801	P5	P503	E7	R401	L9	RT802	L1
C218	B6	C419	N8	C830	L5	D404	O8	IC802	M6	P600	F1	R407	O12	T401	J12
C219	B6	C420	P8	C831	K5	D405	M8	IC803	M6	P601	F1	R409	J11	T402	N11
C223	C6	C421	P11	C832	G3	D406	P12	J008	B4	P801	H2	R410	J12	T801	J2
C225	C6	C423	K7	C834	J5	D408	H10	J225	E6	P803	M1	R411	I12	T802	N1
C227	C6	C503	B1	C837	K4	D409	H12	J401	M8	P807	J4	R413	H12	T803	N4
C228	C9	C504	C1	C840	L4	D411	I11	J804	N3	P900	B12	R419	J8	TU100	A11
C230A	C10	C600	F3	C840A	N3	D412	H1	J805	O5	P902	C12	R420	H11	X200	C7
C231	D9	C602	F2	C842	K4	D413	P7	K801	M2	P904	D12	R421	O11		
C234	C9	C603	F2	C850	L4	D414	H11	L001	D6	Q01	L3	R422	O11		
C235A	C10	C604	H3	C851	J3	D415	H10	L002	E5	Q080	F4	R424	O8		
C236	C9	C606	G2	C852	K3	D623	F3	L101	B10	Q081	I6	R425	P8		
C237	D9	C607	G2	C853	M4	D624	G3	L102	A9	Q101	A9	R426	O8		
C238	D10	C608	G3	C904	B9	D625	G3	L200	A6	Q402	I12	R427	M8		
C239	D10	C609	G3	C905	C9	D626	H3	L201	C5	Q405	L12	R428	E7		
C241	E9	C610	I3	C917	D11	D810	O6	L202	C5	Q407	G11	R429	P11		
C250	E8	C611	G1	C918	C11	D811	O6	L203	C6	Q820	J5	R433	P8		
C253	E8	C613	F2	C919	D11	D812	P5	L204	C9	Q821	G4	R435	O12		
C257	F8	C614	F1	D01	L3	D813	N6	L205	C9	Q822	L6	R440	P7		
C262	F7	C615	G2	D02	L3	D814	O4	L206	E9	Q823	K6	R611A	I4		
C265	B8	C616	G1	D001	F9	D815	O6	L207	F8	Q824	J5	R801	I2		
C266	C8	C619	F3	D002	F10	D820	L5	L208	F8	Q825	H4	R810	P2		
C300	H9	C621	F3	D003	C5	D821	I7	L209	F8	R009	B4	R811	N6		
C307	H9	C622	G3	D004	F10	D822	L6	L210	F8	R012	C4	R812	O6		
C308	H8	C801	J2	D006	D4	D823	I5	L211	F7	R022	E4	R813	N6		
C313	I10	C802	K2	D008	F7	D830	L5	L212	A6	R023	E4	R814	O6		
C323	I10	C803	L1	D010	F6	D831	I4	L400	K9	R024	D5	R815	P5		
C324	H9	C804	P2	D080	F4	D832	G4	L403	I11	R030	F6	R816A	P4		
C325	J10	C804A	N3	D081	I6	D840	L4	L404	J8	R031	D5	R817	O4		

## MAIN BOARD BOTTOM



MAIN BOARD BOTTOM, GRIDTRACE LOCATION GUIDE									
C003	A8	C260	C4	Q102	A3	R106	A7	R300	H3
C004	A8	C261	E5	Q103	A3	R107	B3	R314	I4
C005	A8	C264	C7	Q104	A6	R109	A2	R316	I4
C017	D7	C267	D4	Q105	A2	R112	A4	R350	I4
C018	D6	C268	F3	Q204	F4	R114	B4	R406	I1
C022	D6	C270	F5	Q205	F6	R116	B4	R412	H1
C023	D6	C271	C7	Q206	F4	R117	B4	R418	G3
C026	E7	C272	C4	Q207	F4	R118	B4	R437	H2
C027	E8	C281	E7	Q208	F3	R120	A3	R438	H2
C084	I7	C282	E7	Q280	G1	R121	A3	R439	H2
C086	H8	C283	F7	Q281	G2	R122	A6	R442	P4
C091	B9	C284	F7	Q282	P3	R123	E7	R443	P4
C092	B9	C337	I4	Q403	I1	R124	E6	R600	E11
C101	B2	C350	I4	Q404	P3	R130	A2	R601	E11
C102	B2	C351	I4	Q408	P3	R131	A1	R602	F11
C106	B3	C405	H1	Q409	H2	R200	B5	R603	G11
C107	B3	C407	G3	Q601	F10	R201	B5	R604	G11
C108	A4	C424	H2	Q602	F10	R202	B4	R605	G11
C109	B6	C601	E11	Q603	F10	R203	B4	R606	F10
C110	B6	C605	G11	Q604	G10	R204	B5	R607	F10
C111	B3	C612	F12	Q605	H9	R205	B5	R608	F10
C114	B2	C617	F12	Q900	C2	R206	C5	R609	F10
C115	A3	C618	F12	Q901	C2	R207	B6	R610	G10
C117	B2	C825	L7	Q902	B2	R208	B6	R611	H9
C130	A1	C826	L7	Q903	B3	R209	B6	R613	G10
C131	A1	C833	G9	R01	L10	R210	C6	R825	L7
C201	C5	C835	G9	R02	K10	R217	B6	R828	K7
C204	B5	C902	B1	R03	K10	R221	D4	R829	J7
C205	B5	C903	C3	R010	A8	R222	D4	R829A	J7
C207	B6	C912	D2	R011	A8	R223	D4	R833	G9
C209	B6	C914	C2	R014	D7	R225	C3	R902	B1
C210	C6	C915	C2	R015	D7	R226	A7	R903	C3
C211	C6	C922	D1	R016	D7	R227	F4	R904	B1
C213	B6	C923	D1	R017	D7	R228	F4	R905	C2
C214	C6	C926	E2	R018	D8	R229	E5	R908	C2
C216	C7	C927	E2	R025	E7	R230	F4	R910	C2
C217	C6	C928	E2	R026	E7	R231	F5	R912	C2
C222	C7	C929	D3	R027	E7	R232	F5	R913	C1
C224	C6	C930	D4	R029	E7	R234	A5	R914	C1
C229	C4	C960	D3	R034	E6	R235	A5	R917	C1
C232	C4	C961	D4	R035	E6	R236	B5	R919	C2
C235	C4	D284	P3	R036	E6	R238	E3	R921	D1
C242	D4	D285	P3	R039	D7	R240	F4	R922	D1
C243	D4	D911	C2	R045	E6	R241	C4	R923	D1
C244	D4	D912	C2	R047	E6	R244	C7	R924	D3
C245	D4	D913	C2	R048	E6	R245	B7	R925	D3
C246	D4	D914	C2	R049	E6	R250	B5	R926	E2
C248	D4	D919	C3	R050	E6	R251	B5	R927	E2
C249	E4	D920	C3	R051	E6	R252	B5	R928	E2
C251	D5	D921	D3	R052	G5	R253	B5	R929	D3
C252	F4	D922	D3	R100	A2	R270	F5	R932	D3
C255	F5	IC200	C6	R101	B3	R283	G2	R960	D3
C256	F5	IC201	B7	R103	A2	R284	H1	R961	C3
C258	F5	IC202	B7	R104	A2	R285	G1	R962	D3
C259	F3	Q001	D7	R105	A7	R287	P2	R963	C4

## PARTS LIST

Item No.	Type No.	Mfr. Part No.	Notes	Item No.	Type No.	Mfr. Part No.	Notes
D001B	BT-102D-31	9965 000 34464	-	D911 Thru			
D001, 02	5V2	9965 000 15651	-	D914	-	9965 000 44680	-
D003	1N4148	4822 130 30621	-	D919 Thru			
D004	5V2	9965 000 15651	-	D922	-	9965 000 44680	-
D006, 08	1N4148	4822 130 30621	-	# DB801	D3SB60	9965 000 22884	-
D01	1N4001G	4822 130 31438	-	IC001	M24C64-WBN6P	9965 000 44687	-
D02	1N4148	4822 130 30621	-	IC090	L7805CV	4822 209 80817	-
D010	3V9	9965 000 15817	-	IC200	TDA12000H/N1F00	9965 000 44688	-
D080	3V9	9965 000 15817	-	IC201, 02	LD1117S18TR	9965 000 44686	-
D081	5V2	9965 000 15651	-	IC301	STV8172	9965 000 30670	-
D082	1N4148	4822 130 30621	-	IC601	TEA2025B2X2W	9965 000 44401	-
D100	1N4148	4822 130 30621	-	IC801	STR-W6735	9965 000 34524	-
D102	33V	9965 000 15716	-	IC802	PS2561L1-1-V	9965 000 27867	-
D204	BZX79-B5V6	4822 130 83206	-	IC803	TL431CLPST	4822 209 81397	-
D226	1N4148	4822 130 30621	-	Q001	BC847A	4822 130 63693	-
D280	BZX79-B24	4822 130 34398	-	Q01	2SC2236-Y	9965 000 34540	-
D281, 82, 83	1N4148	4822 130 30621	-	Q080, 81	2SD667A-C	9965 000 44683	-
D284, 85	LL4148	4822 130 83338	-	Q101	2SC3779D	9965 000 14974	-
D300	1N4148	4822 130 30621	-	Q102, 03	UM6K1N	9965 000 44403	-
D305	1N4148	4822 130 30621	-	Q104	BC847A	4822 130 63693	-
D306	3V9	9965 000 15817	-	Q105	BSH103	9965 000 31753	-
D307, 08	1N4148	4822 130 30621	-	Q204 Thru			
D309	1N4001G	4822 130 31438	-	Q208	BC857A	9965 000 44395	-
D400	FR104-BOR	9965 000 13880	-	Q280	BC857A	9965 000 44395	-
D401	BY228	4822 130 41275	-	Q281	BC847A	4822 130 63693	-
D402	FR104-BOR	9965 000 13880	-	Q282	BC857A	9965 000 44395	-
D404	FR105	9965 000 44682	-	Q402	BC639	4822 130 41053	-
D405, 06	FR104-BOR	9965 000 13880	-	Q403	BC846B	9965 000 44685	-
D408	BZX79-B5V6	4822 130 83206	-	Q404	BC857A	9965 000 44395	-
D409	1N4148	4822 130 30621	-	# Q405	2SD2638	9965 000 44684	-
D411, 12	1N4001G	4822 130 31438	-	Q407	IRF630MFP	9965 000 22890	-
D413	BZX79-B5V1	4822 130 34233	-	Q408	BC847A	4822 130 63693	-
D414, 15	1N4148	4822 130 30621	-	Q409	BC857A	9965 000 44395	-
D511, 21, 31	LL4148	4822 130 83338	-	Q511	2SC4544	9965 000 15587	-
D540	1N4004G	5322 130 34574	-	Q512	BF422	4822 130 41782	-
D623 Thru				Q513	BF423	9965 000 27851	-
D626	1N4148	4822 130 30621	-	Q521	2SC4544	9965 000 15587	-
D810, 11	FR104-BOR	9965 000 13880	-	Q522	BF422	4822 130 41782	-
D812	1N4148	4822 130 30621	-	Q523	BF423	9965 000 27851	-
D813	BZX79-B6V2	4822 130 34167	-	Q531	2SC4544	9965 000 15587	-
D814	1H8	9965 000 20421	-	Q532	BF422	4822 130 41782	-
D815	33V	9965 000 15716	-	Q533	BF423	9965 000 27851	-
D820	RU3A	9965 000 44366	-	Q601	BC847A	4822 130 63693	-
D821	1N4148	4822 130 39621	-	Q602	BC857A	9965 000 44395	-
D822	5V2	9965 000 15651	-	Q603, 04	BC847A	4822 130 63693	-
D823	9V1	9965 000 44715	-	Q605	BC857A	9965 000 44395	-
D830	RU3YX	9965 000 44714	-	Q820	2SC2688L	9965 000 17893	-
D831	1N4001G	4822 130 31438	-	Q821	2SD882-P	9965 000 44722	-
D832	8V1	9965 000 15652	-	Q822, 23	2SC1815Y	4822 130 41947	-
D840, 50	RU3YX	9965 000 44714	-	Q824	BF422	4822 130 41782	-
D851, 52	1N4001G	4822 130 31438	-	Q825	2SC1815Y	4822 130 41947	-
D901	BZX79-B5V6	4822 130 83206	-	Q900	BC847A	4822 130 63693	-
D903 Thru				Q901	BC857A	9965 000 44395	-
D907	BZX79-B5V6	4822 130 83206	-	Q902, 03	BC847A	4822 130 63693	-

## PARTS LIST continued

Item No.	Function/Rating	Mfr. Part No.	Notes	Item No.	Function/Rating	Mfr. Part No.	Notes
C408	.0033 5% 1.6kV	9965 000 44704	-	# R421, 22	5.6 5% 2W Fusible	9965 000 44692	-
C410	.0068 5% 1.6kV	9965 000 44706	-	# R426, 27	.47 5% 1/2W Fusible	9965 000 44691	-
C412	4.7μF 50V NP	9965 000 15682	-	R515, 25, 35	15K 5% 3W	9965 000 22919	-
C413	.0062 5% 1.6kV	9965 000 44705	-	# R801	1M 5% 1/2W	9965 000 17901	-
C420	.0047 +80% -20% 250VAC	9965 000 15188	-	R820	4.7 5% 1W Fusible	9965 000 22998	-
C505	.001 10% 2kV	9965 000 44382	-	R821	6800 5% 5W	9965 000 44724	-
# C801	.33 20% 275VAC	9965 000 44731	-	R823	100K 1% 1/2W	9965 000 44717	-
# C802	.1 20% 275VAC	9965 000 44730	-	R824	3900 1% 1/6W	9965 000 44690	-
# C804, 05	.0047 +80% -20% 250VAC	9965 000 15188	-	R824A	3900 1% 1/6W	9965 000 44690	-
C808	.01 20% 1kV	9965 000 44728	-	R827	750 1% 1/6W	9965 000 44716	-
C809	220pF 10% 1kV	9965 000 44727	-	R831	1.5 3W	9965 000 44725	-
C815	680pF 10% 1kV	9965 000 29743	-	# R840A	8.2M 5% 1W	9965 000 17902	-
C820	220pF 10% 1kV	9945 000 44729	-	R850	Fuse	9965 000 34537	5A
# C804A, 05A	470pF 10% 400VAC	9965 000 17914	-	# RT801	5.0 Cold PTC	9965 000 27862	-
# C840A	.0022 20% 400VAC	9965 000 22936	-	# RT802	2.5 Cold NTC	9965 000 44720	-
C853	3.3μF 20% 35V NP	9965 000 27299	-	S001A	Switch	9965 000 44886	Menu
# CRT500 (2)	CRT	9965 000 36783	A59QDF891X002(A)	S002A	Switch	9965 000 44886	Volume -
# DEGAUSS		9965 000 30263	-	S003A	Switch	9965 000 44886	Volume +
# F800	Fuse	9965 000 44736	5A	S004A	Switch	9965 000 44886	Channel -
F801, 02	Fuse	9965 000 44421	2A	S005A	Switch	9965 000 44886	Channel +
IR001	Receiver	9965 000 44885	Remote, HRM557BB5100	S008	Switch	9965 000 44886	Power
J008	Ferrite Bead	9965 000 13966	-	SP601, 02	Speaker	9965 000 36789	8 Ohm, 5W
J804, 05	Ferrite Bead	9965 000 13966	-	SP601, 02	Speaker	9965 000 36802	8 Ohm, 5W
# K801	Relay	9965 000 23783	Power	# T401	Horizontal Drive	9965 000 44709	-
L001, 02	10μH	9965 000 14082	-	# T402 (1)	Horizontal Output	9965 000 44726	-
L101	10μH	9965 000 14082	-	# T801	Line Filter	9965 000 44734	-
L102	1μH	9965 000 15121	-	# T802	Line Filter	9965 000 44735	-
L200	10μH	9965 000 14082	-	# T803	Power	9965 000 44737	-
L201, 02	1μH	9965 000 15121	-	TU100	Tuner	9965 000 44681	TDQU2-007A
L203 Thru				X100	Filter	9965 000 44712	SAW
L207	10μH	9965 000 14082	-	X101	Filter	9965 000 44713	SAW
L208 Thru				X200	Crystal	9965 000 32482	24.567MHz
L211	Ferrite Bead	9965 000 13966	-		Fuse Holder	9965 000 15202	For F800 (2 Used)
L212	.6μH	9965 000 15122	-		Magnet	9965 000 44881	Purity/Convergence
L400	Horizontal Linearity	9965 000 44710	-		PC Board	-	CRT
L403	600μH	9965 000 15705	-		PC Board	-	Main
L404	Horizontal Width	9965 000 44711	-		Socket	-	CRT
L501	22μH	9965 000 15591	-		Transmitter (3)	3139 228 86482	Remote, RC19042001/01
L801	10μH	9965 000 44732	-		Transmitter (5)	9965 000 32141	Remote, RC19035003/01
L802	Ferrite Bead	9965 000 13966	-				
L803, 04	-	9965 000 32509	-				
L811, 12	Ferrite Bead	9965 000 13966	-				
# P800	Line Cord (3)	9965 000 34229	AC, Polarized				
	Line Cord (4)	9965 000 34261	AC, Polarized				
P900	Jack	-	Assembly				
P902	Jack	-	Assembly				
P904	Jack	-	Assembly				
P961	Jack	9965 000 22958	SVHS				
P1101	Jack	-	Assembly				
P1102	Jack	-	Assembly				
P1103	Jack	-	Assembly				
R012	1.5 3W	9965 000 44725	-				
R226	1M 5% 1/10W	9965 000 27259	-				
R407	1 5% 1/2W Fusible	9965 000 17499	-				

# For SAFETY use only equivalent replacement part.

(1) Screen and focus controls are part of T402.

(2) Yoke part of CRT.

(3) Models 25PT5016/56, 25PT5016/69, 25PT5016/94.

(4) Model 25PT5016/71.

(5) Model 25PT5016/94.