

SAFETY PRECAUTIONS

SERVICE WARNING

Only qualified service technicians who are familiar with safety checks and guidelines should perform service work. Before replacing parts, disconnect power source to protect electrostatically sensitive parts. Do not attempt to modify any circuit unless so recommended by the manufacturer. When servicing the receiver, use an isolation transformer between the line cord and power receptacle.

SERVICING THE HIGH VOLTAGE AND CRT

Use EXTREME CAUTION when servicing the high voltage circuits. To discharge static high voltage, connect a 10K ohms resistor in series with a test lead between the receiver ground and CRT anode lead. DO NOT lift the CRT by the neck. Always wear shatterproof goggles when handling the CRT to protect eyes in case of implosion.

X-RAY RADIATION AND HIGH VOLTAGE LIMITS

Be aware of the instructions and procedures covering X-ray radiation. In solid-state receivers and monitors, the CRT is the only potential source of X-rays. Keep an accurate high voltage meter available at all times. Check meter calibration periodically. Whenever servicing a receiver, check the high voltage at various brightness levels to be sure it is regulating properly. Keep high voltage at rated value, NO HIGHER. Excessive high voltage may cause X-ray radiation or failure of associated components. DO NOT depend on protection circuits to keep voltage at rated value. When troubleshooting a receiver with excessive high voltage, avoid close contact with the CRT. DO NOT operate the receiver longer than necessary. To locate the cause of excessive high voltage, use a variable AC transformer to regulate voltage. In present receivers, many electrical and mechanical components have safety related characteristics which are not detectable by visual inspection. Such components are identified by a # on both the schematic and the parts list. For SAFETY, use only equivalent replacement parts when replacing these components.

GENERAL GUIDELINES

Perform a final SAFETY CHECK before returning receiver to customer. Check repaired area for poorly soldered connections, and check entire circuit board for solder splashes. Check board wiring for pinched wires or wires contacting any high wattage resistors. Check that all control knobs, shields, covers, grounds, and mounting hardware have been replaced. Be sure to replace all insulators and restore proper lead dress.

HIGH VOLTAGE SHUTDOWN TEST

Apply 120VAC and turn receiver on. Set all digital controls for normal operation. Momentarily short test point X to test point R. Receiver should lose raster and sound. If the receiver does not lose raster and sound, the shutdown circuit should be repaired. To resume normal operation remove AC power and wait 30 seconds. After restoring AC power the receiver should power up automatically.

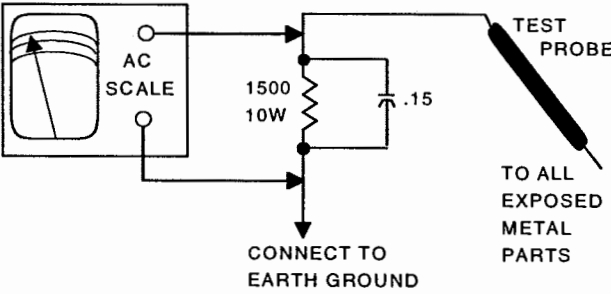
SAFETY CHECKS — FIRE AND SHOCK HAZARD

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.



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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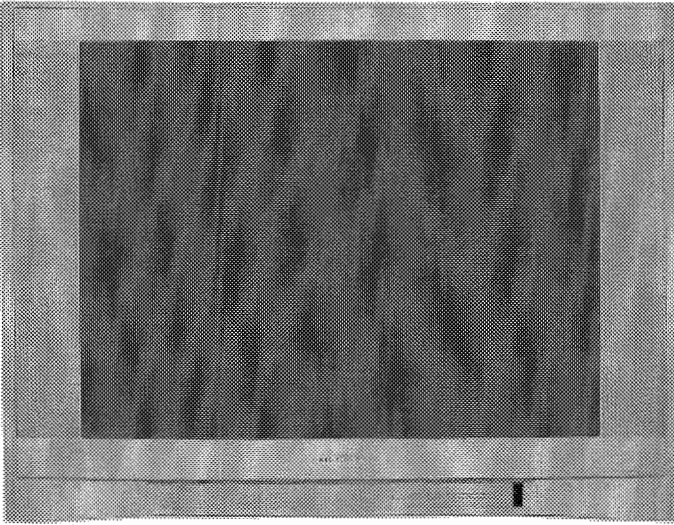
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SILVER

TOSHIBA  
Model 32AF62 (Chassis TAC0210)



Essential coverage  
for servicing a television receiver...

- Schematics
- Component locations
- Parts list

Coverage includes these additional models and chassis:

Models	Chassis
32AF13	TAC0308
32AF42	TAC0211
36AF42	TAC0213
36AF62	TAC0212



NOVEMBER 2003 SET 4804

For a Complete List of Manuals,  
Visit [www.samswebsite.com](http://www.samswebsite.com)

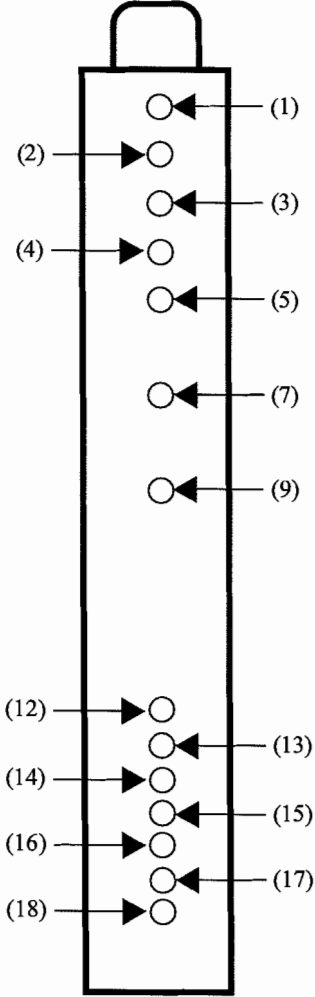
TUNER INFORMATION

MAIN TUNER VOLTAGE CHART

Pin	VHF Low Band	VHF High Band	UHF Band
(1) AGC	1.6V	1.7V	1.8V
(2) Vr	1.2V	4.2V	6.4V
(3) ADS	5.0V	5.0V	5.0V
(4) SCL	4.5V	4.5V	4.5V
(5) SDA	4.5V	4.5V	4.5V
(7) +5V	5.0V	5.0V	5.0V
(9) +32V	33.0V	33.0V	33.0V
(12) NC	0V	0V	0V
(13) +9V	9.0V	9.0V	9.0V
(14) MPX	3.0V	3.0V	3.0V
(15) GND	0V	0V	0V
(16) AFT	2.1V	2.1V	2.1V
(17) AGC	1.6V	1.7V	1.8V
(18) VOUT	2.3V	2.3V	2.3V

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

MAIN TUNER TERMINAL GUIDE

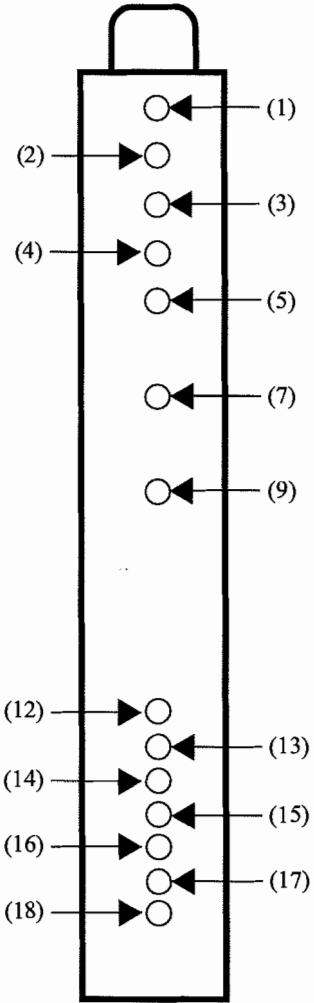


SUB TUNER VOLTAGE CHART

Pin	VHF Low Band	VHF High Band	UHF Band
(1) AGC	1.6V	1.7V	1.8V
(2) Vr	1.3V	3.7V	6.0V
(3) ADS	0V	0V	0V
(4) SCL	4.5V	4.5V	4.5V
(5) SDA	4.5V	4.5V	4.5V
(7) +5V	5.0V	5.0V	5.0V
(9) +32V	33.0V	33.0V	33.0V
(12) NC	0V	0V	0V
(13) +9V	9.0V	9.0V	9.0V
(14) MPX	3.0V	3.0V	3.0V
(15) GND	0V	0V	0V
(16) AFT	1.7V	1.9V	2.0V
(17) AGC	1.6V	1.7V	1.8V
(18) VOUT	2.3V	2.3V	2.3V

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

SUB TUNER TERMINAL GUIDE



## MISCELLANEOUS ADJUSTMENTS

### HIGH VOLTAGE CHECK

Tune in a picture. Set brightness, contrast, and color to minimum. Connect a high voltage probe to the CRT anode. High voltage should read 27kV to 29kV.

### ENTERING THE SERVICE AND DESIGN MODES

To enter the service mode, press the mute button on the remote. Press the mute button again and keep pressing while simultaneously pressing the menu button on the receiver. The letter S will appear on the screen indicating that the receiver is in the service mode.

To enter the design mode, enter the service mode and press and hold the recall button while simultaneously pressing the menu button on the rcceiver. The letter D will appear on the screen indicating that the receiver is in the design mode.

When in the service mode or design mode, press the menu button on the receiver to display the adjustment menu. To select the item to be adjusted, press the channel up or down button. To adjust the reference value, press the volume up or down button. To exit from the service mode or the design mode, press the power button to turn off the receiver.

### TEST SIGNAL SELECTION

Enter the service mode. Press the menu button on the receiver to display the adjustment menu. Press the TV/video button on the remote to display the built-in test patterns in the following order:

Normal picture, Red raster, Green raster, Blue raster, Black screen, White screen, Black screen with white window, Black cross bar, White cross bar, Black cross-hatch, White crosshatch, Black crossdot, White crossdot, and back to Normal picture.

NOTE: If a video cable is connected to the video input jack, the built-in test patterns will not be displayed on the screen.

### SELF DIAGNOSTIC FUNCTION

Enter the service mode. Press the 9 button on the remote to check for proper execution of IC interfacing. The following is an explanation of what is displayed on screen:

Display	Explanation
[SELF CHECK] No. 23009183 POWER : 000	Self diagnostic function. Part number of QA01. Operation number of protecting circuit. 000 display is normal.
BUS LINE : OK	Bus line check. OK is normal. NG indicates a short to ground of the SCL or SDA signal or a short between SCL and SDA.
BUS CONT : OK	Bus line acknowledge check. OK is normal. A location number is NG. NG QA02 indicates QA02 is bad.
BLOCK : UV V1 V2 QV01 QV01S H001 HY01	Green display is normal. Cyan display is no check. Red display is NG. UV is TV mode, V1 is Video 1 mode, V2 is Video 2 mode, H001 is the main tuner, and HY01 is the PIP tuner.

### ITEM BUTTONS

The following is a list of the buttons on the remote that will go to an item or perform a different function of the service mode:

1	RCUT	5	COLC
2	GCUT	6	TNTC
3	BCUT	8	Toggles audio test signal on and off.
4	SCNT	9	Self diagnostics

### SUB COLOR (COLC) & SUB TINT (TNTC)

Tune in a color bar pattern. Set contrast to maximum and brightness to midrange. Connect an oscilloscope to the red cathode. Enter the service mode. Select item COLC and adjust reference value to obtain 150Vp-p. Tune in an active channel. Select item TNTC and adjust reference value for proper flesh tones.

### SUB BRIGHTNESS (BRTC)

Tune in a picture. Set contrast to MINIMUM. Enter the service mode. Select item BRTC, adjust reference value until vertical retrace line just disappears. Adjust contrast for normal picture. Perform Height (HIT) adjustment.

### HORIZONTAL POSITION (HPOS) & VERTICAL POSITION (VPOS)

Enter the service mode. Press the TV/video button on remote until a crossbar pattern is displayed. Select item HPOS or VPOS and adjust reference value for the horizontal and vertical position alternately until the pattern is centered on the screen. Check the position of the picture with off-air signal.

### HEIGHT (HIT)

Enter the service mode. Press the TV/video button on remote until a crosshatch pattern is displayed. Select item HIT and adjust reference value for slight underscan. Advance the data value by 8 steps and check the vertical position of the picture.

### WIDTH (WID)

Enter the service mode. Press the TV/video button on remote until a crosshatch pattern is displayed. Select item WID, adjust reference value for slight underscan. Advance the reference value by 7 steps. Check for proper horizontal position of the picture.

### E-W PARABOLA (DPC)

Enter the service mode. Press the TV/video button on remote until a crosshatch pattern is displayed. Select item DPC, adjust reference value for straight vertical lines on both sides of the pattern.

### WHITE BALANCE (RCUT, GCUT, BCUT, GDRV, BDRV)

Turn receiver on. Allow a 10 to 30 minute warm up time. Adjust contrast to center and brightness to maximum. Enter the service mode. Press the TV/video button on remote until the white screen pattern is displayed. Select items RCUT, GCUT, BCUT, GDRV, and BDRV and set the reference value for each to 40H. Press the video button on the remote to obtain a single horizontal line. Advance the screen control until a faint line of one predominant color appears on the screen. Adjust the other two cutoff items to obtain a dim white line. Press the video button on the remote to get full deflection. Select items GDRV and BDRV and adjust reference value of each for the best black and white picture on screen.

### INITIALIZATION OF QA02

NOTE: QA02 must be initialized after replacement.

Enter the service mode. Press and hold the recall button on the remote while simultaneously pressing the channel up button on the receiver. The initialization of QA02 is complete. Program channels into memory.

### COLOR PURITY / CONVERGENCE

The yoke is bonded to the CRT. Color purity and convergence adjustments are not recommended.

### FOCUS ADJUSTMENT

Tune in a crosshatch pattern. Adjust the focus controls to obtain the sharpest picture. Adjust the top focus control VF1 for minimum width of the horizontal lines on the corners. Adjust the second focus control VF2 for minimum width of vertical lines on the corners.

### STEREO ADJUSTMENTS

Enter the service mode.

#### Attenuator (ATT)

Select item ATT. Input a 1kHz, 30% modulated signal. Connect a RMS meter to pin 34 of QG01. Adjust reference value to obtain a reading of 137mVrms.

#### Stereo VCO (STVC)

Select item STVC. Connect a frequency counter to pin 34 of QG01 and connect a jumper wire across RG44. Adjust reference value to obtain a reading of 15.73kHz.

#### Stereo Filter (STRF)

Select item STRF. Remove the solder block at SL02 by pin 10 of H001. Input 15.734kHz, 30mVrms to junction of RG43 and RG44. Connect an oscilloscope to pin 34 of QG01. Adjust reference value for the minimum amplitude of waveform on the oscilloscope. Resolder SL02 by pin 10 of H001.

#### Stereo Separation (WBAN) & Spectral (SPEC)

Select item WBAN. Input 300Hz, right channel signal. Select stereo mode on receiver. Connect an oscilloscope to pin 35 of QG01. Adjust reference value for minimum amplitude of waveform. Select item SPEC. Input 3kHz, right channel signal. Adjust reference value for minimum amplitude of waveform.

#### SAP VCO (SAVC)

Select item SAVC. Connect a frequency counter to pin 34 of QG01 and connect a jumper wire across RG44. Connect a 1M ohm resistor between ground and pin 12 of QG01. Adjust reference value to obtain a reading of 78.67kHz. Remove the jumper and 1M ohm resistor.

### DESIGN MODE ADJUSTING ITEMS CHART

Item	Adjustment Name	Reference Value	On Set Value
OPT0	Option 0	36H	20H
OPT1	Option 1	84H	04H
OPT2	Option 2	01H	01H

Option items may need adjustment when replacing QA02.

### SERVICE MODE ADJUSTMENT CHART

Item	Adjustment Name	Reference Value	On Set Value
RCUT (1)	Red Cutoff	40H	54H
GCUT (1)	Green Cutoff	40H	49H
BCUT (1)	Blue Cutoff	40H	28H
GDRV (1)	Green Drive	40H	44H
BDRV (1)	Blue Drive	40H	56H
SCNT	Sub Contrast	0AH	0DH
BRTC (1)	Sub Brightness	40H	44H
COLC (1)	Sub Color	3AH	3DH
TNTC (1)	Sub Tint	44H	44H
RGBB	RGB Bright	0BH	0DH
HPOS (1)	Horizontal Position	16H	18H
VPOS (1)	Vertical Position	03H	03H
HIT (1)	Height	20H	30H
LIN	Vertical Linearity	08H	08H
VSC	V-S Correction	04H	05H
VPS	Vertical Shift	01H	01H
VCP	Vert Compensation	03H	03H
WID (1)	Width	17H	2BH
DPC (1)	E-W Parabola	0CH	10H
CNR	E-W Corner	02H	02H
TRAP	Trapezium	06H	06H
HCP	Horiz Compensation	00H	00H
VFC	V-F Correction	0FH	0FH
GMPS	-	3FH	3FH
CPAR	-	24H	44H
SAVC (1)	SAP VCO	20H	23H
ATT (1)	Attenuator	20H	15H
STVC (1)	Stereo VCO	20H	21H
STRF (1)	Stereo Filter	20H	1DH
SPEC (1)	Spectral	20H	19H
WBAN (1)	Stereo Separation	20H	1CH
PCOL	PIP Color	0FH	0FH
PHUE	PIP Tint	11H	11H
PGOF	PIP G Offset	36H	36H
PROF	PIP R Offset	17H	17H
PBOF	PIP B Offset	17H	17H

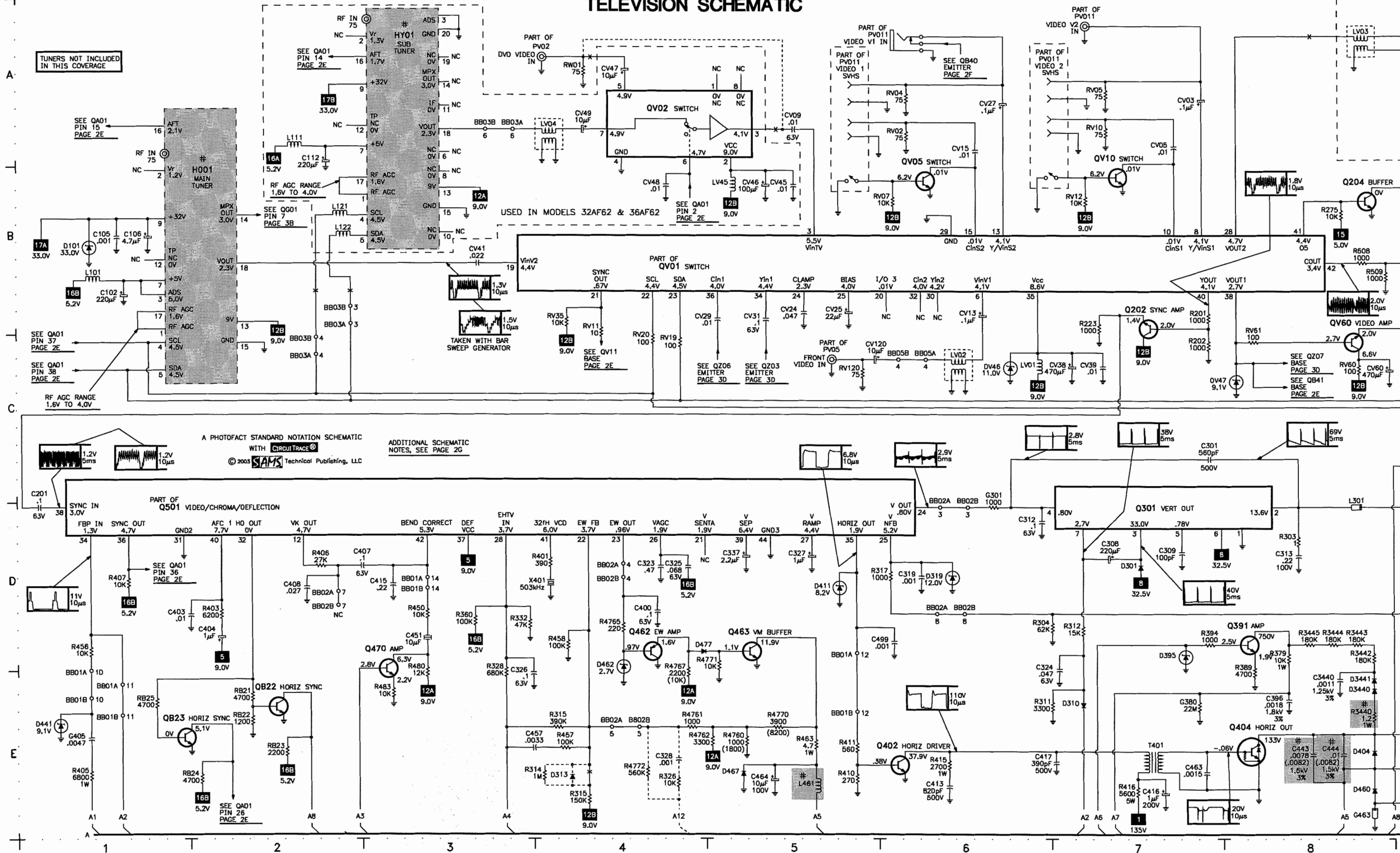
(1) May need adjustment when replacing QA02 or Q501.

SCHEMATIC COMPONENT LOCATION GUIDE

C102	B1	C408	D2	C704	E26	CA38	A20	CS25	C34	CZ23	C47	D801	A51	L441	D10	PV011	C33	Q914	D29	R208	C14	R411	E5	R714	C59	R925	C28	R4461	C16	RB13	A17	RS02	C34	RZ09	E45
C105	B1	C409	D59	C705	E27	CA42	C20	CS26	C34	CZ24	C47	D805	B53	L442	D10	PV011	D33	Q920	C25	R209	B15	R415	E6	R715	E26	R926	B30	R4462	D16	RB21	E2	RS04	D34	RZ10	E46
C106	B1	C410	C55	C707	C60	CA43	C20	CS40	D36	CZ25	C47	D806	B53	L461	E5	Q151	C22	Q921	C26	R216	D13	R416	E7	R716	E27	R928	B28	R4463	D15	RB22	E2	RS08	D34	RZ12	E47
C107	D60	C413	E6	C713	E31	CA44	D56	CS42	D36	CZ26	B47	D807	B53	L462	C10	Q152	C21	Q922	C26	R223	C7	R418	C55	R717	E27	R929	B27	R4465	A15	RB23	E2	RS10	E34	RZ13	E46
C112	B2	C415	D3	C714	E29	CA68	B23	CS43	C34	CZ28	B46	D810	B53	L491	E9	Q201	D14	Q923	B27	R228	D13	R430	D12	R718	E26	R930	B28	R4466	C15	RB24	E2	RS14	D34	RZ14	D47
C115	B56	C416	E7	C715	E29	CA69	B24	CS44	D34	CZ29	B46	D830	E57	L500	D58	Q202	C7	Q924	C27	R238	B9	R431	D14	R719	D28	R932	D26	R4467	B15	RB25	E1	RS16	D34	RZ15	E47
C117	D60	C417	E6	C716	E29	CB01	A17	CS45	D34	CZ30	B47	D840	C51	L501	E59	Q203	C11	Q925	C27	R239	B9	R432	D15	R720	E28	R933	C29	R4468	C15	RB30	B49	RS25	C34	RZ17	E45
C150	C21	C430	C56	C717	E29	CB41	D60	CS46	E34	CZ31	E60	D845	B50	L502	D58	Q204	B8	Q4460	C16	R240	B9	R433	A10	R722	E27	R934	D26	R4760	E5	RB43	D20	RS26	C34	RZ18	E46
C201	D1	C431	C56	C718	E31	CB48	D18	CS47	D34	CZ32	D46	D850	C59	L702	E30	Q301	D7	Q4461	D16	R245	C13	R441	D10	R723	E27	R935	D26	R4761	E4	RB44	D20	RS40	D36	RZ19	D47
C204	C11	C439	D10	C719	E31	CD80	C41	CS48	D34	CZ33	D46	D855	C49	L704	E30	Q361	E59	Q4462	C15	R261	B12	R443	D10	R724	E27	R936	C29	R4762	E4	RB45	D21	RS42	D36	RZ20	D45
C205	B9	C440	E9	C720	E31	CG02	D37	CS49	C34	CZ34	E46	D883	A54	L705	E30	Q370	D52	QA01	A20	R262	B12	R445	E10	R725	E27	R937	B28	R4765	D4	RB46	D20	RS43	C35	RZ22	D46
C207	A16	C441	D10	C721	E30	CG03	B36	CS50	C34	CZ35	E46	D885	B54	L805	A51	Q390	D15	QA02	B23	R263	B12	R448	D50	R730	E29	R939	D27	R4767	E4	RB47	D17	RS44	E35	RZ29	A47
C208	C16	C442	D10	C726	E28	CG05	B36	CS51	D36	CZ37	E60	D899	A49	L806	A51	Q390	E15	QB03	B22	R264	B12	R450	D3	R731	D31	R940	C27	R4770	E5	RB48	D18	RS60	C43	RZ30	A46
C209	B16	C443	E8	C801	A49	CG06	B36	CS52	D36	CZ38	E60	D901	C28	L815	A53	Q391	D8	QB11	B21	R265	B13	R456	D1	R732	E29	R942	A31	R4771	D5	RD89	D19	RS61	C43	SA01	B18
C213	C13	C444	E8	C802	A50	CG07	A34	CS70	C43	CZ41	A46	D903	D26	L816	B53	Q402	E6	QB22	E2	R266	B12	R457	E4	R733	E30	R943	C31	R4772	E4	RD80	C41	RS62	D43	SA02	B17
C216	C13	C445	D12	C805	A51	CG08	B36	CS71	D43	CZ42	A47	D904	A30	L883	A54	Q403	C55	QB23	E1	R271	C11	R458	D4	R734	E29	R944	B31	RA02	E21	RD81	C41	RS63	D43	SA03	B17
C220	B12	C446	D52	C806	B51	CG09	C36	CS115	C39	CZ45	B45	D905	C30	L885	A54	Q404	E8	QB30	B49	R272	C11	R463	E5	R735	E30	R945	B27	RA03	B20	RD82	C41	RS64	C43	SA04	B17
C221	B10	C447	D50	C808	B53	CG10	C36	CS116	D39	D101	B1	D906	B30	L886	B54	Q462	D4	QB40	D21	R275	B8	R472	E13	R736	D30	R946	C27	RA04	D22	RD83	C41	RS65	D43	SA05	B18
C222	B12	C448	A56	C810	A51	CG12	C37	CS118	D39	D201	C13	D907	A30	L901	B50	Q463	D5	QB41	D18	R303	D8	R475	E13	R737	D30	R947	B25	RA05	C20	RD85	C41	RS66	E43	SA06	B17
C223	B11	C449	C59	C811	A51	CG13	C36	CS120	D59	D221	C13	D908	C30	L902	A31	Q470	E3	QD80	C41	R304	D6	R476	E13	R738	E30	R948	C25	RA06	D20	RF IN	A2	RS68	E43	SA07	B17
C224	C10	C450	E10	C812	A51	CG14	C36	CS625	C40	D222	D13	D909	B30	L903	C31	Q471	D14	QG01	A37	R305	E9	R477	D13	R739	E30	R949	B25	RA07	C20	RF IN	B1	RS69	D43	SA08	B17
C225	B14	C451	D3	C813	C52	CG16	C36	CS626	D40	D223	B10	D910	D26	L904	B31	Q472	D14	QG60	B39	R306	D9	R478	D13	R740	E30	R950	C26	RA08	B20	RG02	B23	RS70	E44	SJ01	D31
C226	B13	C457	E3	C817	B53	CG17	D37	CS627	E41	D224	A10	D3440	E8	L905	A31	Q480	B55	QG60	B40	R307	D9	R480	E3	R741	E30	R951	C26	RA09	D20	RG03	B23	RS71	D44	SR81	A50
C245	C13	C461	E9	C818	B53	CG18	D38	CS628	E41	D252	B13	D3441	E8	L906	C31	Q481	E53	QG61	B41	R311	E6	R481	E14	R742	E30	R952	C25	RA10	E20	RG05	B36	RS101	D39	SR81	B50
C261	B12	C463	E7	C821	C53	CG19	D36	CS630	D59	D253	B14	DA42	C21	L907	B31	Q482	E53	QJ02	D30	R312	D7	R482	E13	R743	E31	R955	C26	RA13	C19	RG08	B36	RS102	D39	SR83	A50
C262	B12	C464	E5	C823	B53	CG20	D37	CV03	A7	D301	D7	DB01	B22	L908	D59	Q483	E53	QJ03	D30	R313	D9	R483	E3	R744	D30	R957	C25	RA14	D19	RG09	C36	RS105	D39	SR83	C49
C263	B13	C467	E9	C829	B53	CG27	C38	CV05	A7	D302	D51	DB03	B23	L910	D27	Q501	B10	QJ04	D22	R314	E4	R485	A55	R745	E30	R960	A31	RA15	B19	RG14	C36	RS107	C39	T400	E10
C271	C11	C469	E9	C830	C59	CG28	D38	CV09	A5	D310	E7	DB05	A18	LA01	C21	Q501	D1	QS60	C43	R315	E4	R486	A54	R808	A50	R961	C31	RA16	B19	RG15	C36	RS108	D39	T401	E7
C301	C7	C471	E13	C831	D59	CG29	C38	CV13	B6	D313	E4	DB30	C53	LB01	E19	Q503	B9	QS61	D43	R315	E4	R487	A55	R810	A51	R962	B31	RA17	B19	RG16	C36	RS109	D40	T461	D11
C304	D9	C473	E14	C832	E60	CG30	C37	CV15	B6	D316	E59	DB45	D21	LJ901	D31	Q610	A43	QS62	E43	R317	D6	R488	B55	R814	B53	R963	A31	RA18	B19	RG17	D38	RS113	D40	T461	D49
C305	D9	C474	E14	C840	C51	CG31	B37	CV24	B5	D319	D6	DJ01	D30	LV01	C6	Q611	A42	QS63	E43	R326	E4	R489	B55	R818	B53	R964	C31	RA20	C20	RG22	A34	RS611	C40	T801	A49
C306	D9	C480	B55	C842	C56	CG32	B37	CV25	B5	D370	D52	DJ02	D30	LV02	C6	Q612	D23	QS64	D43	R327	D51	R490	C54	R820	B53	R965	B31	RA21	C20	RG23	B34	RS612	D40	T840	C50
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C312	D6	C501	B9	C885	B54	CG42	B37	CV38	C7	D404	E8	F470	A55	LV99	B14	Q709	E29	QV01	B4	R345	E9	R498	A56	R830	E57	R978	C28	RA25	A12	RG60	B39	RV04	A6	W661	A44
C313	D8	C504	C14	C889	B54	CG44	A33	CV39	C7	D406	D51	F801	A49	LZ01	A45	Q710	E29	QV01	C35	R360	D3	R501	C14	R831	E57	R979	B28	RA26	D19	RG61	B39	RV05	A7	W662	B44
C317	D51	C505	C12	C893	A54	CG46	D59	CV41	B3	D408	D50	F802	A52	LZ02	C47	Q711	E30	QV02	A4	R368	E58	R502	C10	R835	B53	R980	D26	RA27	D18	RG62	B39	RV07	B6	X	D13
C319	D6	C510	D60	C898	C54	CG60	B38	CV45	B5	D409	C55	F803	B54	LZ03	B47	Q712	E30	QV05	B6	R369	E58	R503	C11	R850	C59	R981	D27	RA33	E19	RG63	B39	RV10	A7	X401	D4
C320	D53	C511	D60	C902	D31	CG61	B38	CV46	B5	D411	D5	G060	B23	LZ04	C47	Q719	E28	QV10	B7	R370	D53	R508	B8	R861	A52	R983	D28	RA35	A19	RG66	B39	RV11	C4	X501	C12
C323	D4	C512	C14	C904	B28	CG62	B39	CV47	A4	D430	C56	G217	E13	LZ05	C47	Q720	E27	QV11	C18	R371	D53	R509	B8	R862	B52	R984	D28	RA36	C19	RG67	B40	RV12	B7	XA01	A19
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C327	D5	C613	D22	C910	C29	CG68	B41	CV61	C9	D462	E4	G403	D12	P801	A49	Q835	D58	QZ03	D47	R379	D8	R613	D23	R902	C31	R987	D29	RA40	C19	RG71	B40	RV36	C19		
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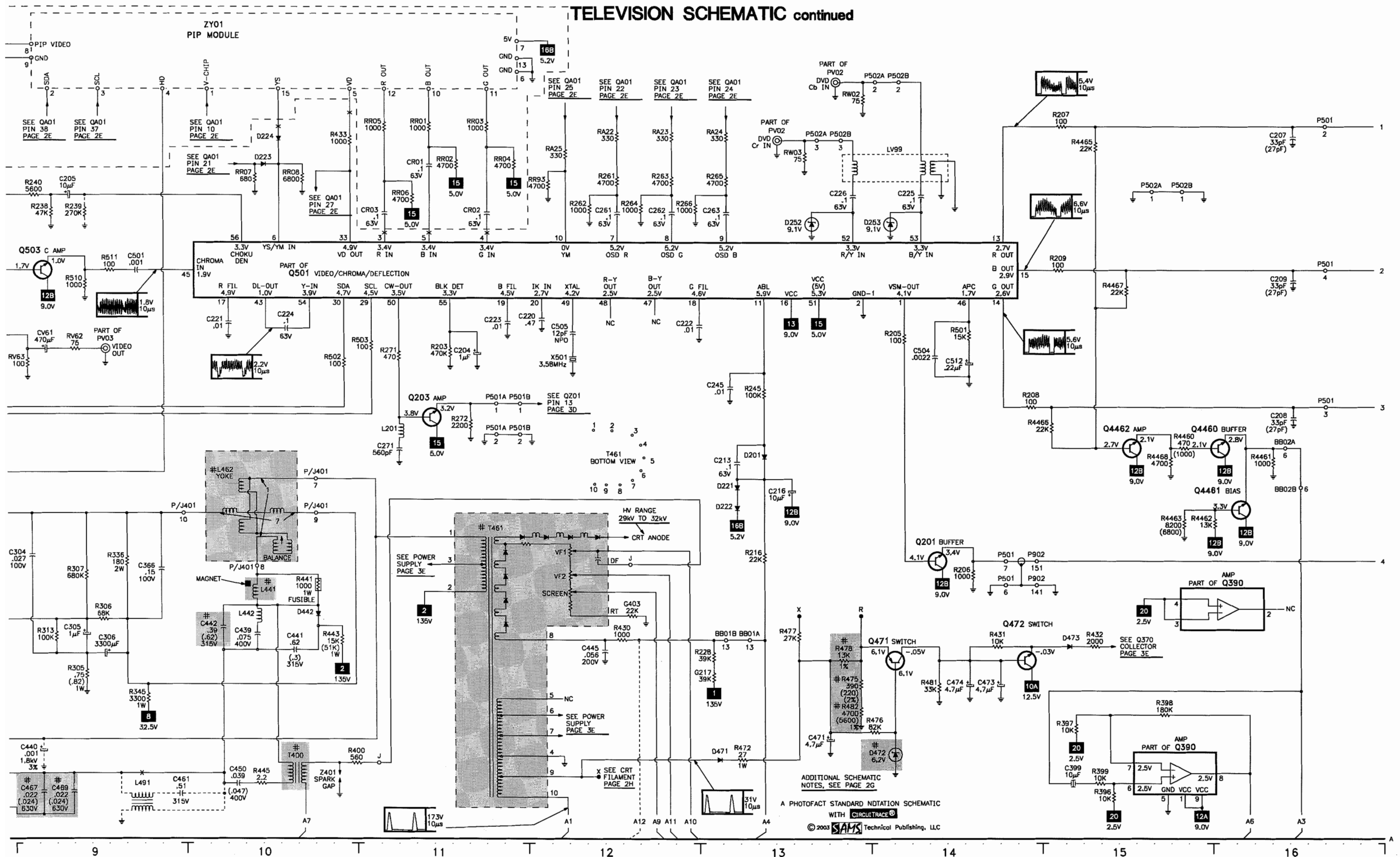
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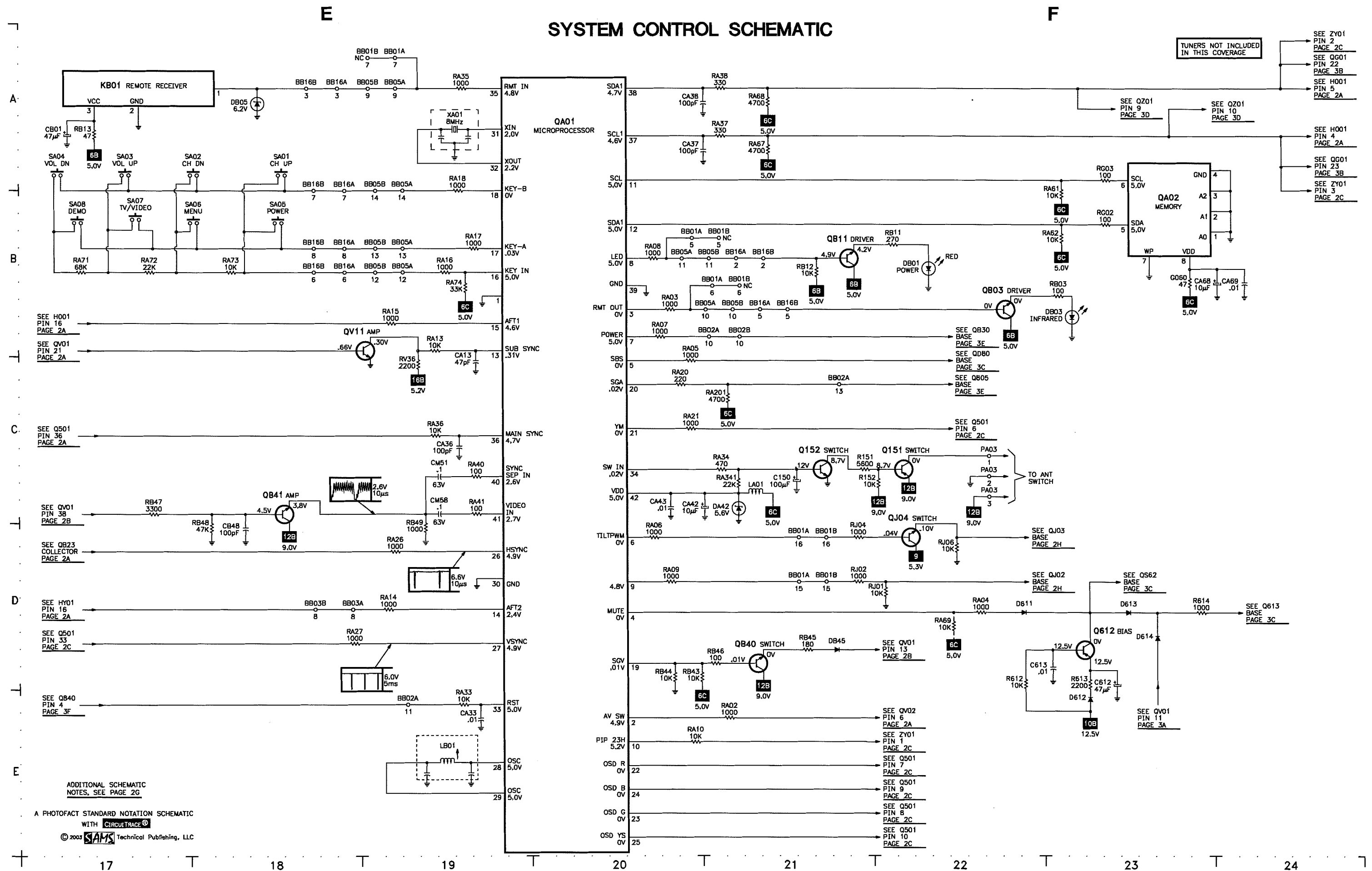
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D

TELEVISION SCHEMATIC continued



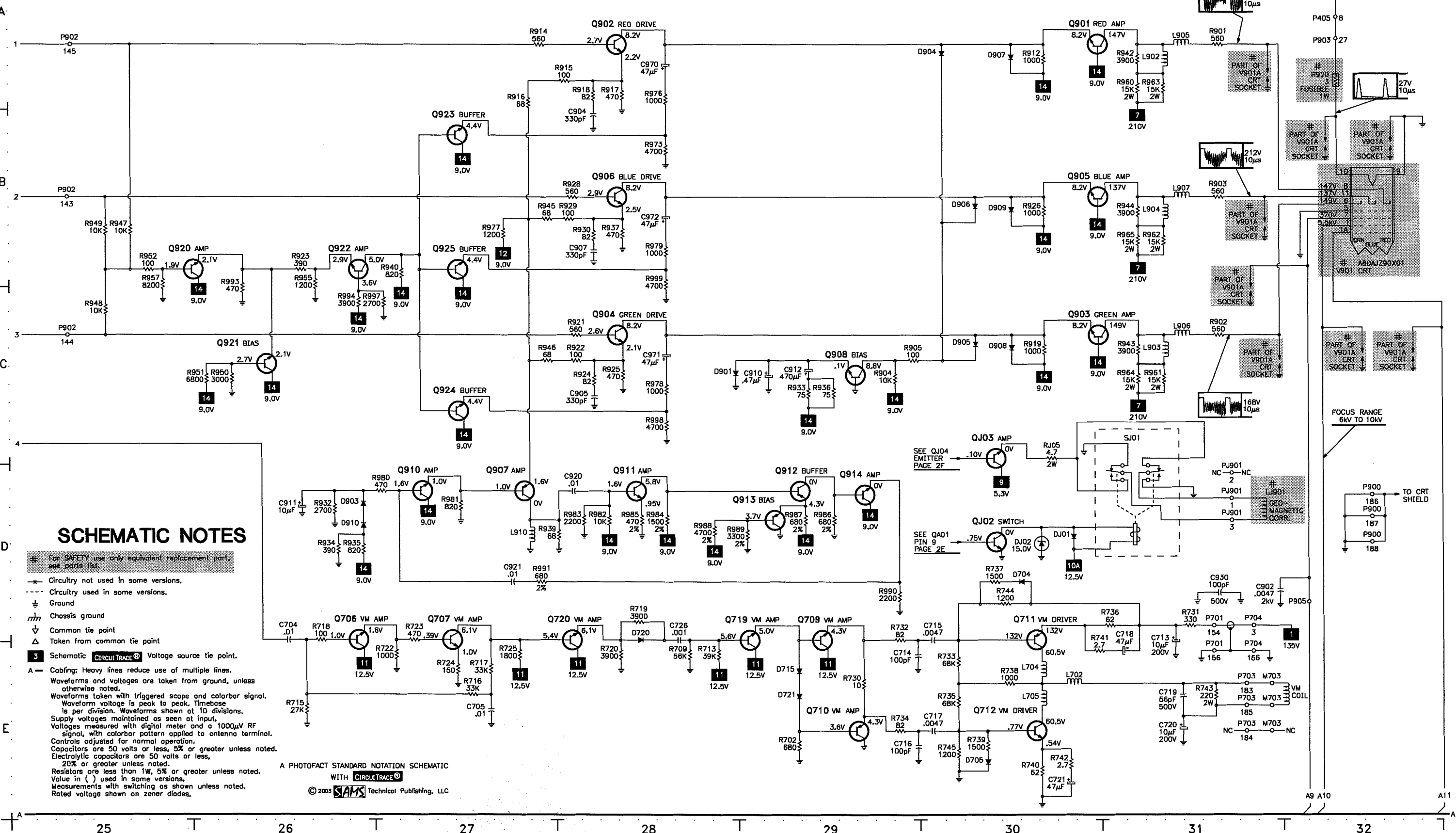
# SYSTEM CONTROL SCHEMATIC



G

## CRT SCHEMATIC

H

SEE T461  
PIN 9  
PAGE 2C

## SCHEMATIC NOTES

# For SAFETY use only equivalent replacement part, see parts list.

--- Circuitry not used in some versions.

--- Circuitry used in some versions.

⊥ Ground

--- Chassis ground

▽ Common tie point

△ Taken from common tie point

3 Schematic CIRCUITRACE® Voltage source tie point.

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

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

Waveforms taken with triggered scope and colorbar signal.

Waveform voltage is peak to peak. Timebase

is per division. Waveforms shown at 10 divisions.

Supply voltages maintained as seen at input.

Voltages measured with digital meter and a 1000μV RF

signal, with colorbar pattern applied to antenna terminal.

Controls adjusted for normal operation.

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

Electrolytic capacitors are 50 volts or less,

20% or greater unless noted.

Resistors are 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.

A PHOTOFACT STANDARD NOTATION SCHEMATIC.

WITH CIRCUITRACE®

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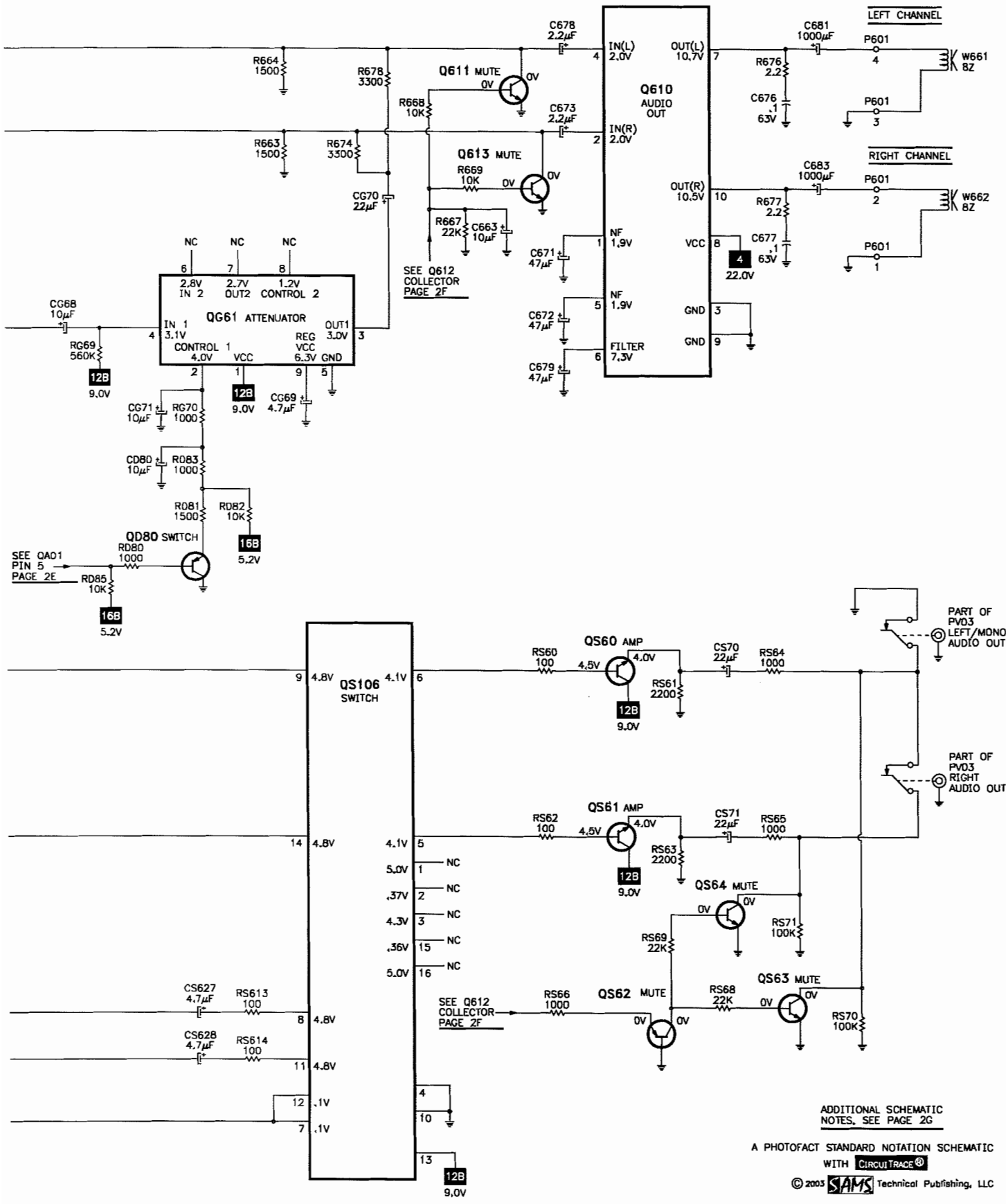
TOSHIBA

MODEL 32AF62 (CHASSIS TAC0210)



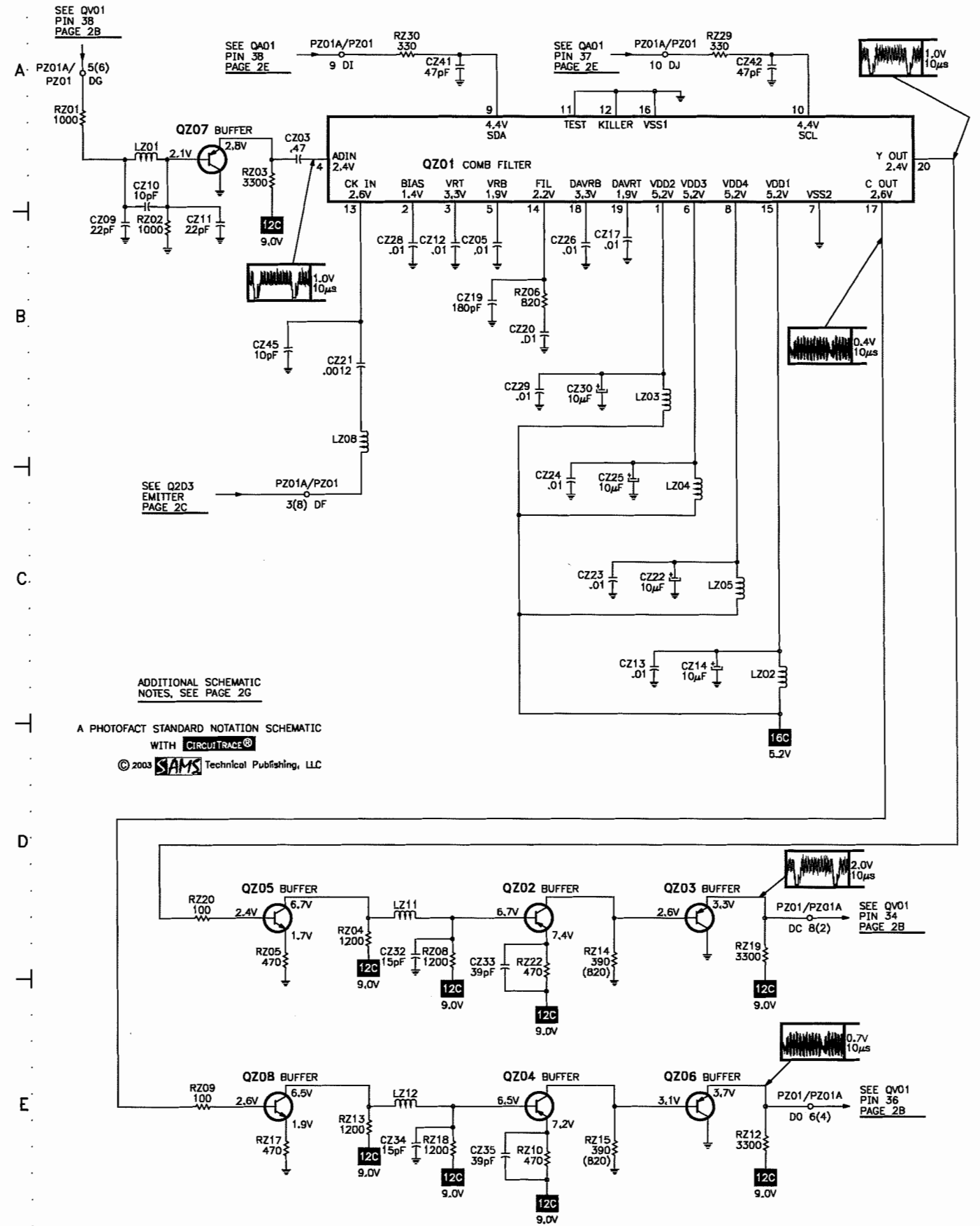
**B**

C  
AUDIO SCHEMATIC continued



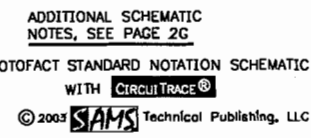
ADDITIONAL SCHEMATIC NOTES, SEE PAGE 2G  
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D  
COMB FILTER SCHEMATIC

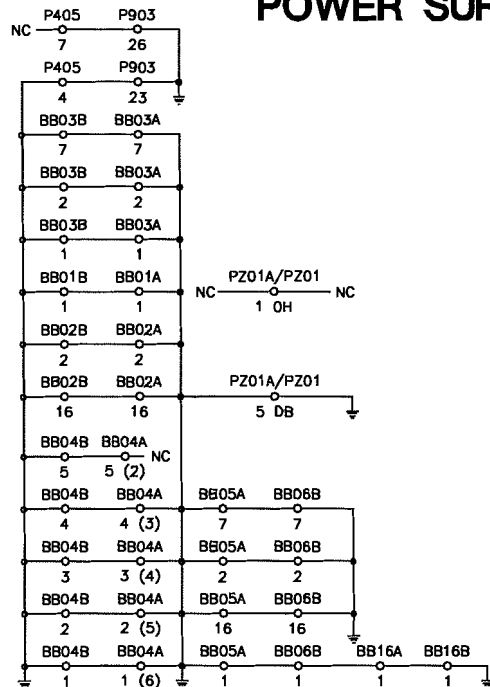


ADDITIONAL SCHEMATIC NOTES, SEE PAGE 2G  
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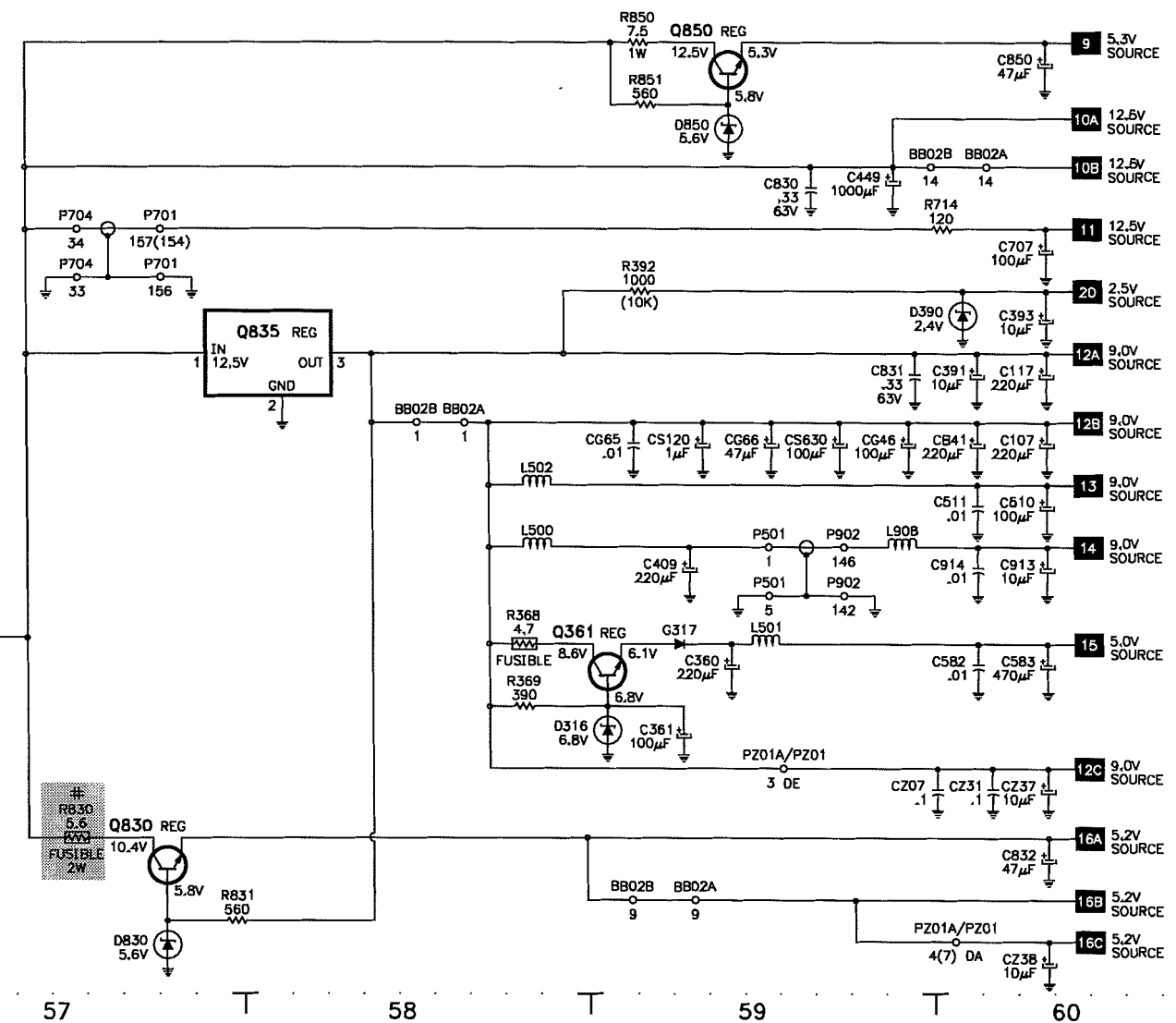
## F



G  
POWER SUPPLY SCHEMATIC continued



ADDITIONAL SCHEMATIC  
NOTES, SEE PAGE 2G  
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WITH CIRCUITTRACE<sup>®</sup>  
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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

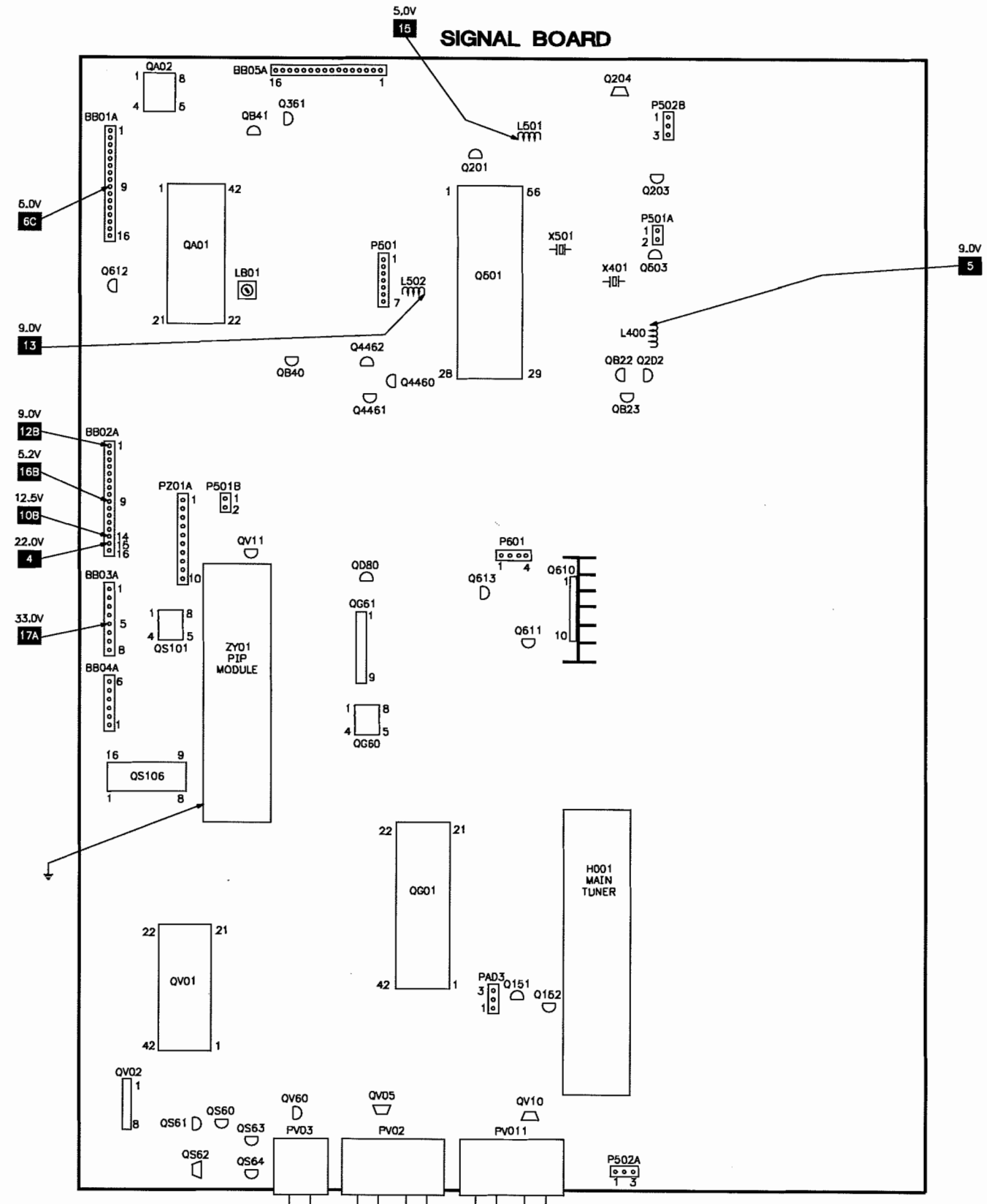
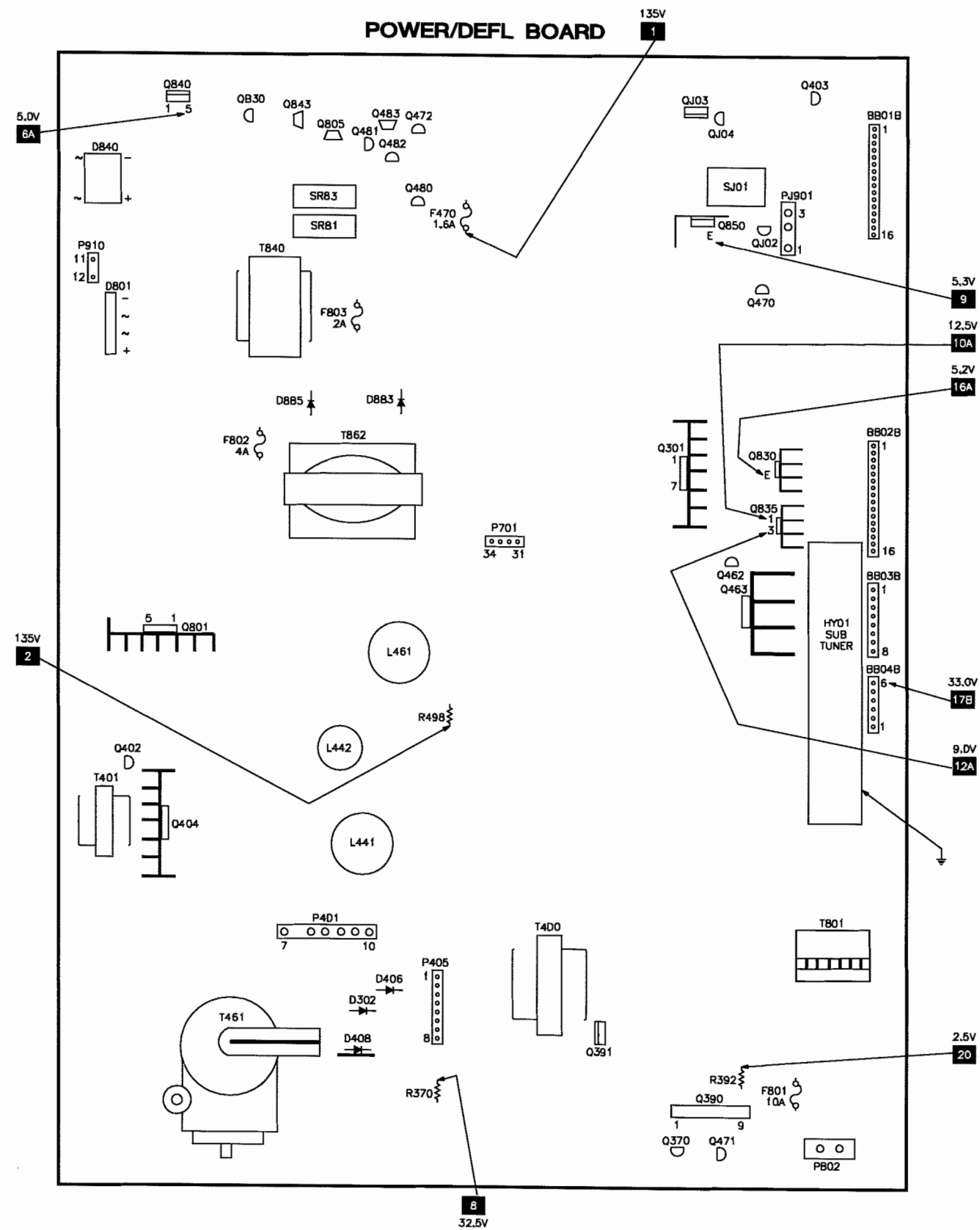
Participating Vendors

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

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

TOSHIBA  
MODEL 32AF62 (CHASSIS TAC0210)

## PLACEMENT CHART

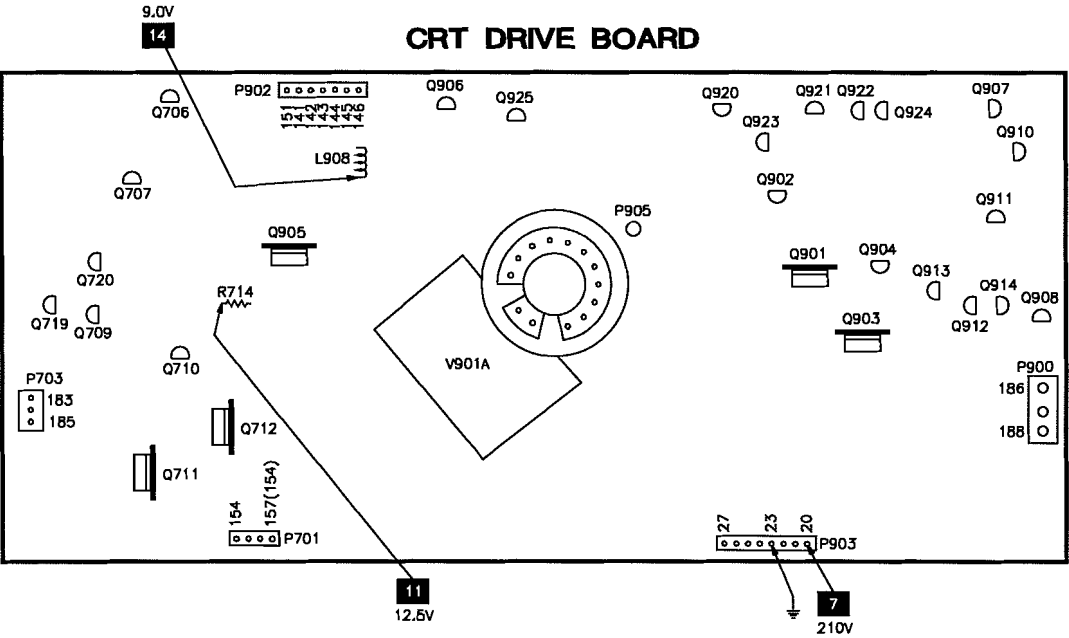




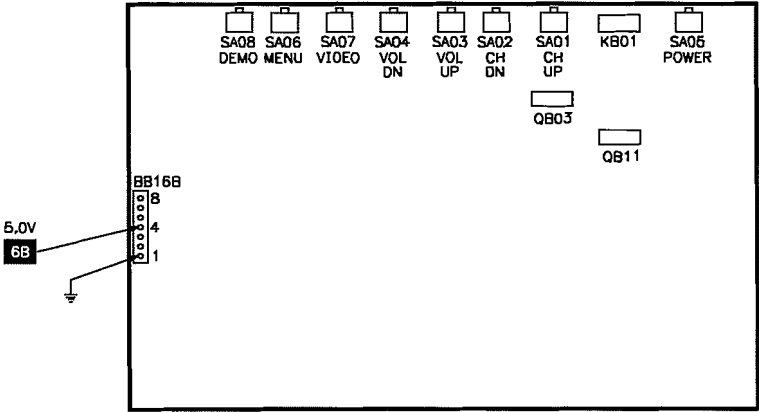
PLACEMENT CHART continued

IC FUNCTIONS

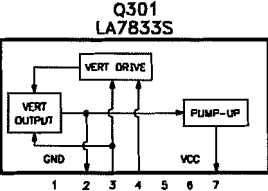
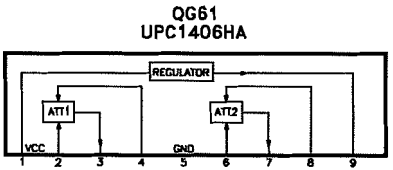
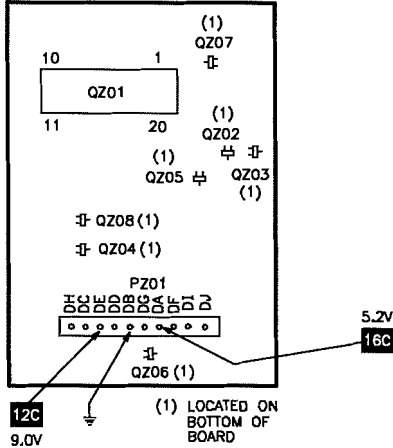
CRT DRIVE BOARD



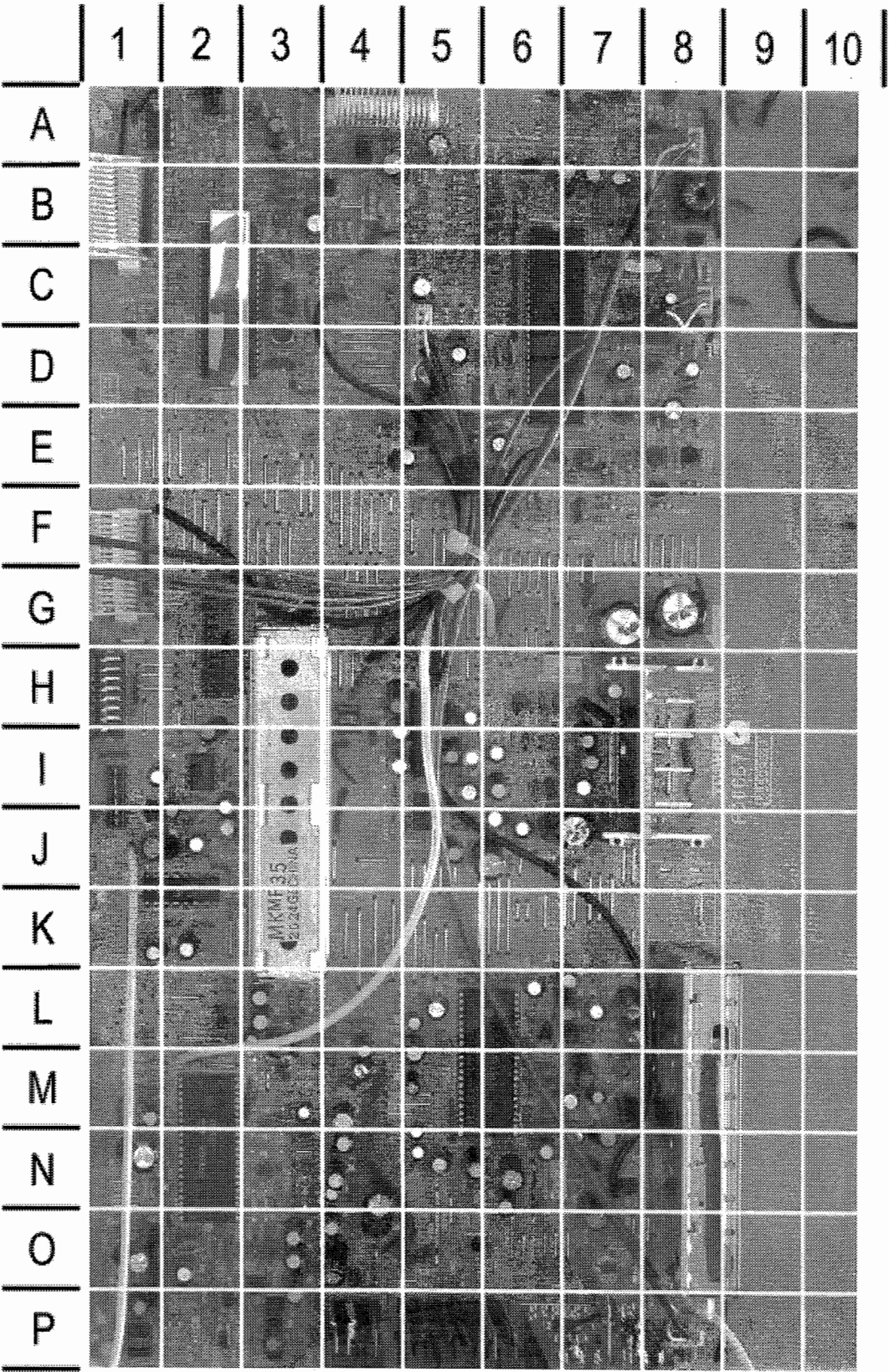
CONTROL BOARD



COMB FILTER BOARD



SIGNAL BOARD

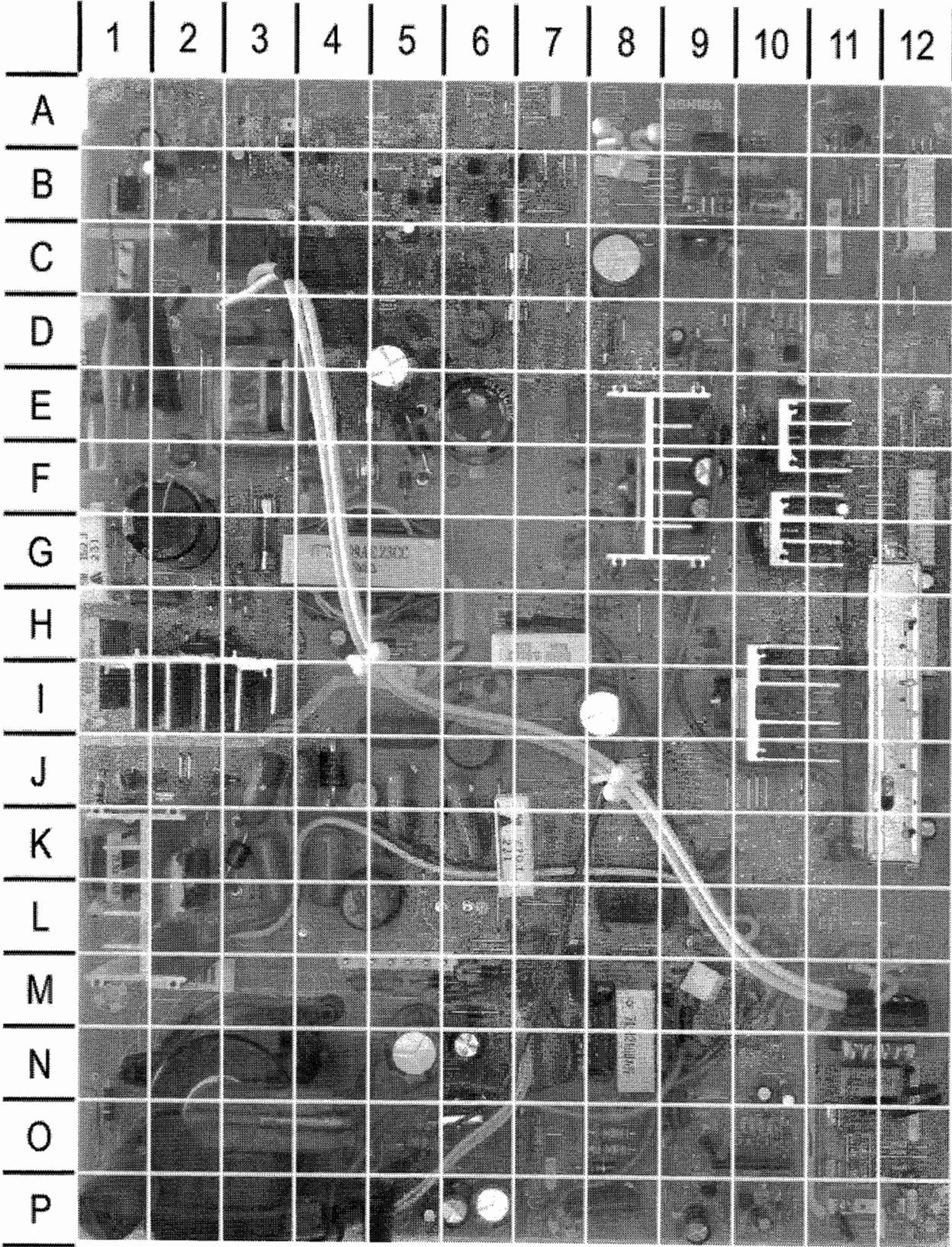


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SIGNAL BOARD, GRIDTRACE LOCATION GUIDE

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BB02A	F1	C681	G7	CS42	M4	L500	C4	R208	C6	RA10	C2	RG70	H4
BB03A	H1	C682	J7	CS43	N3	L501	A7	R209	C6	RA13	D1	RG71	I4
BB04A	I1	C683	G8	CS44	N3	L502	E5	R216	E4	RA14	D2	RG80	J5
BB05A	A5	CA13	D1	CS45	O2	LA01	A3	R223	E8	RA15	D2	RR01	B5
C102	M7	CA33	C3	CS46	O3	LB01	D3	R238	A8	RA16	B2	RR02	B6
C105	L7	CA36	C3	CS47	L2	LV01	N2	R240	A7	RA17	B2	RR03	B5
C106	L7	CA37	C3	CS48	L2	LV02	L3	R245	C5	RA18	A2	RR04	B6
C107	L7	CA38	C3	CS49	M3	LV03	H4	R261	B5	RA20	E2	RR05	B5
C150	O7	CA42	A3	CS50	M3	LV04	P1	R262	C5	RA21	E2	RR06	B5
C201	D7	CA43	B3	CS51	L4	LV45	O1	R263	B5	RA22	E3	RR07	B5
C204	A7	CA44	A3	CS52	M4	LV99	B8	R264	C5	RA23	D3	RR08	B5
C205	B7	CA68	A2	CS70	P3	P501	C5	R265	C5	RA24	D3	RR93	C4
C207	C5	CA69	A2	CS71	P3	P501A	C8	R266	C5	RA25	D3	RS02	N3
C208	C5	CB41	B3	CS115	J2	P501B	G3	R271	C8	RA26	E3	RS04	N3
C209	C5	CB48	A4	CS116	I1	P502A	P8	R272	C8	RA27	E3	RS08	O3
C213	C5	CD80	H3	CS118	J2	P502B	A8	R275	A8	RA33	D3	RS10	O3
C216	E5	CG02	N6	CS120	I2	P601	H6	R315	F6	RA34	C3	RS14	L2
C220	D5	CG03	M6	CS625	K2	PA03	N6	R316	G5	RA35	E3	RS16	L2
C221	D6	CG05	N7	CS626	J2	PV02	P5	R317	F6	RA36	C3	RS25	N3
C222	D6	CG06	N7	CS627	K1	PV03	P4	R328	E6	RA37	C3	RS26	M3
C223	D6	CG07	N5	CS628	J2	PV011	P7	R332	E6	RA38	B3	RS40	L4
C224	B8	CG08	M6	CS630	J1	PZ01A	G2	R360	E6	RA40	B3	RS42	M4
C225	B8	CG09	M7	CV03	N4	Q151	N7	R368	B4	RA41	B3	RS43	L1
C226	B8	CG10	M6	CV05	N4	Q152	N7	R369	B4	RA61	B2	RS44	L1
C245	C6	CG12	M7	CV09	O2	Q201	A6	R401	D7	RA62	B2	RS60	P2
C261	B6	CG13	L6	CV13	L3	Q202	E8	R403	D8	RA67	B4	RS61	O3
C262	C6	CG14	M7	CV15	M4	Q203	B8	R406	E7	RA68	B4	RS62	P2
C263	C6	CG16	L7	CV24	M1	Q204	A8	R407	F7	RA74	B2	RS63	P2
C271	C8	CG17	L7	CV25	M1	Q361	A4	R433	F7	RA201	F1	RS64	P3
C319	D6	CG18	L7	CV27	M3	Q501	C6	R456	F7	RA341	C4	RS65	P3
C323	E5	CG19	L7	CV29	M1	Q503	C8	R457	F6	RB21	E7	RS66	P2
C325	E5	CG20	L6	CV31	M1	Q610	H7	R458	F6	RB22	E8	RS68	P3
C326	E6	CG27	L5	CV38	N1	Q611	I6	R501	C7	RB23	E7	RS69	P3
C327	E6	CG28	L5	CV39	N2	Q612	D1	R502	E7	RB24	F8	RS70	P3
C337	D7	CG29	L6	CV41	L4	Q613	H6	R503	E7	RB25	E7	RS71	P3
C360	A5	CG30	L5	CV45	O1	Q4460	E5	R508	D8	RB43	E2	RS101	I2
C361	A4	CG31	M5	CV46	O1	Q4461	E5	R509	D8	RB44	E2	RS102	I2
C403	D8	CG32	M5	CV47	O2	Q4462	E5	R510	D8	RB45	E4	RS105	J2
C404	D8	CG33	M5	CV48	P2	QA01	B2	R511	C8	RB46	E3	RS107	I2
C407	F7	CG37	N5	CV49	P1	QA02	A1	R612	D1	RB47	A4	RS108	J2
C408	E7	CG38	N5	CV60	N4	QB22	E8	R613	D1	RB48	B4	RS109	I3
C409	C5	CG42	N5	CV61	O4	QB23	E8	R614	H5	RB49	B4	RS113	I2
C415	D7	CG44	N6	D101	M7	QB40	E3	R661	I6	RD80	H5	RS611	K2
C430	D8	CG46	N6	D201	C5	QB41	B4	R662	I6	RD81	H5	RS612	J1
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C457	F6	CG61	I6	D222	E4	QG01	M6	R664	I7	RD83	H4	RS614	J2
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C505	B7	CG66	I5	D253	B7	QS61	P2	R674	H6	RG05	M6	RV07	O5
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C583	B7	CG72	J6	D611	C1	QS106	K1	R4461	F5	RG16	L7	RV20	M1
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POWER BOARD



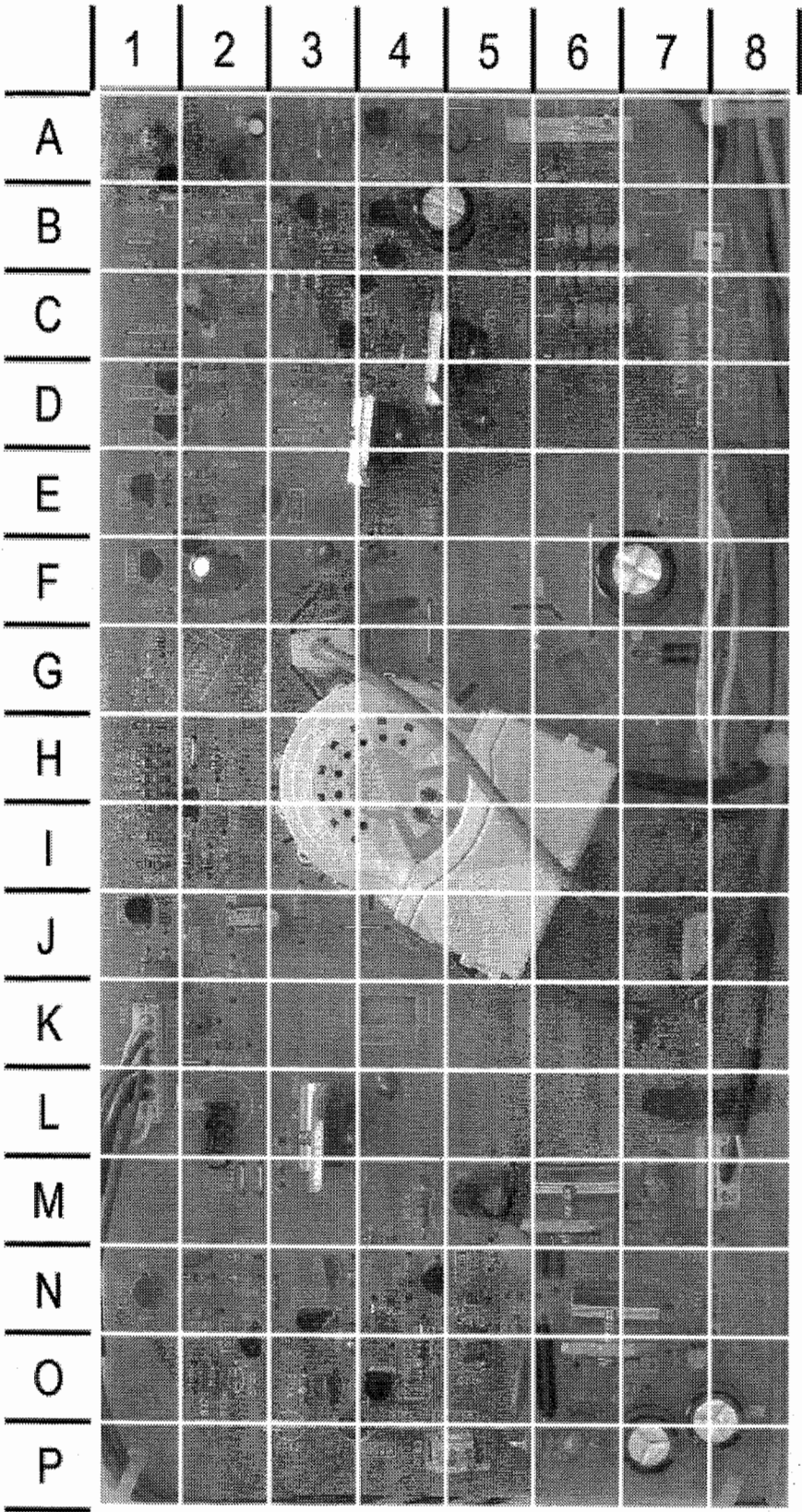
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C309	E9	C801	N11	D462	H9	L122	H11	Q850	C9	R432	B6	R898	O12
C310	P6	C802	D3	D467	H8	L301	F8	QB30	B3	R441	K5	R3440	M5
C312	E9	C805	E1	D471	O5	L441	L4	QJ02	C10	R443	K6	R3442	N7
C313	E9	C806	E1	D472	P10	L442	J4	QJ03	A9	R445	L8	R3443	O8
C317	N5	C808	H4	D473	B6	L461	J6	QJ04	A10	R448	O6	R3444	O8
C320	F9	C810	G2	D477	H9	L805	F2	R101	H8	R450	E10	R3445	O8
C324	H9	C811	B3	D480	C5	L806	F1	R228	H8	R463	J7	R4760	I10
C366	G7	C812	C2	D801	D2	L815	H2	R303	E9	R472	O5	R4761	H10
C370	P9	C813	F4	D805	I2	L816	I2	R304	E8	R475	P10	R4762	I10
C371	B6	C817	H3	D806	H5	L883	F5	R305	D9	R476	P9	R4765	H10
C391	O9	C818	H2	D807	I2	L885	D6	R306	E8	R477	N5	R4767	I10
C393	N10	C821	H5	D810	I2	L886	F4	R307	E8	R478	P9	R4770	I10
C396	P8	C823	H2	D830	E11	P401	M4	R311	H9	R480	D10	R4771	I9
C399	N10	C829	I1	D840	B1	P405	M7	R312	G9	R481	P10	RB30	B4
C400	K11	C830	F10	D845	D5	P802	P11	R313	D9	R482	P10	RJ01	C10
C410	A11	C831	F10	D850	B9	P803	M11	R327	O7	R483	D10	RJ02	C10
C413	J1	C832	F11	D855	C5	P804	D3	R336	E7	R485	C6	RJ04	A10
C416	K1	C840	A1	D883	E5	P910	C1	R345	D8	R486	D6	RJ05	B10
C417	K1	C842	B3	D885	E4	PJ901	B11	R370	O7	R487	C6	RJ06	B10
C439	I5	C843	B1	D899	O11	Q301	F8	R371	P9	R488	C5	SJ01	B10
C441	K6	C850	C9	D3440	M5	Q370	P9	R372	P9	R489	C5	SR81	D4
C442	J5	C884	E6	D3441	M6	Q390	O9	R373	B6	R490	B6	SR83	C4
C443	K3	C885	F4	DB30	B4	Q391	O9	R374	B6	R493	B5	T400	M8
C444	K4	C889	D5	DJ01	B10	Q402	J1	R379	O9	R494	B5	T401	K1
C445	P5	C893	E5	DJ02	B9	Q403	A11	R389	O9	R495	B5	T461	O2
C446	N6	C898	D5	F470	C7	Q404	K2	R392	O10	R498	K7	T801	M11
C447	N6	C3440	M7	F801	O11	Q462	H9	R394	O10	R808	C3	T840	E3
C448	N5	D301	F9	F802	G3	Q463	I9	R396	O10	R810	E1	T862	G4
C449	P6	D302	N5	F803	E4	Q470	D10	R397	O10	R814	I1	Z401	M9

TOSHIBA

MODEL 32AF62 (CHASSIS TAC0210)

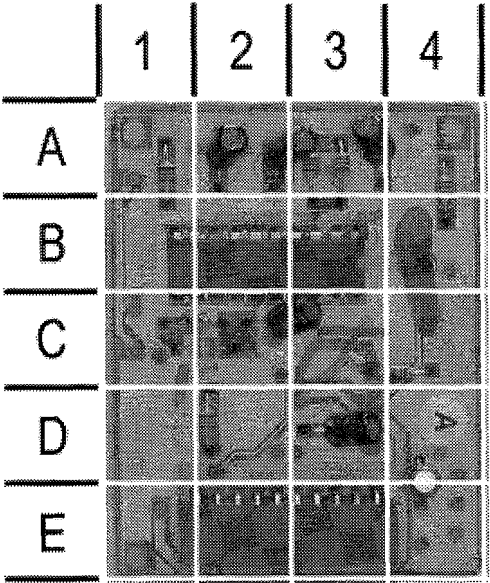


CRT BOARD



CRT BOARD, GRIDTRACE LOCATION GUIDE													
C704	N2	C971	C2	P701	L8	Q920	F1	R737	N7	R926	K2	R962	H7
C705	N3	C972	J2	P703	P4	Q921	E1	R738	N5	R928	I1	R963	C6
C707	M5	D704	N7	P900	A6	Q922	D1	R739	M5	R929	J1	R964	B6
C713	O8	D705	M5	P902	K1	Q923	F2	R740	M7	R930	J1	R965	H7
C714	O5	D715	N4	P903	E8	Q924	D1	R741	N8	R932	A3	R973	F2
C715	O5	D720	N4	P905	G3	Q925	H2	R742	M7	R933	C4	R976	F2
C716	N5	D721	N4	Q706	N1	R702	M4	R743	P6	R934	A4	R977	B1
C717	N5	D901	A4	Q707	O2	R709	O4	R744	O7	R935	C4	R978	D1
C718	O7	D903	A3	Q709	O4	R713	O3	R745	M5	R936	C4	R979	I2
C719	O6	D904	H1	Q710	N4	R714	M4	R901	G2	R937	J1	R980	A3
C720	P7	D905	C1	Q711	N6	R715	N2	R902	E4	R939	A2	R981	B2
C721	M7	D906	J2	Q712	M6	R716	N2	R903	J3	R940	H2	R982	B3
C726	O3	D907	D4	Q719	P4	R717	N3	R904	A3	R942	E4	R983	B3
C902	F4	D908	C4	Q720	N3	R718	N2	R905	A2	R943	B5	R984	B3
C904	D2	D909	M3	Q901	D4	R719	O3	R912	I2	R944	K7	R985	B3
C905	B2	D910	B4	Q902	E3	R720	N3	R914	I1	R945	I2	R986	B4
C907	J2	L702	O6	Q903	C5	R722	O2	R915	D3	R946	B1	R987	C3
C909	F7	L704	N6	Q904	C3	R723	N2	R916	C1	R947	H1	R988	C3
C910	A4	L705	N6	Q905	L3	R724	O2	R917	C3	R948	H1	R989	C3
C911	A2	L902	F4	Q906	J1	R725	O3	R918	D2	R949	H1	R990	B4
C912	B4	L903	B5	Q907	A1	R730	O4	R919	C2	R950	E2	R991	A3
C913	L2	L904	K7	Q908	A4	R731	M7	R920	J7	R951	E1	R993	E2
C914	C4	L905	F3	Q910	A2	R732	O5	R921	H1	R952	G1	R994	D1
C920	B3	L906	D5	Q911	B3	R733	N5	R922	C2	R955	D2	R997	E1
C921	A2	L907	L4	Q912	C4	R734	N5	R923	E2	R957	F1	R998	D2
C930	A6	L908	K2	Q913	C4	R735	N5	R924	B2	R960	C6	R999	I1
C970	F2	L910	A1	Q914	B4	R736	O7	R925	B2	R961	B6	V901A	H4

COMB FILTER BOARD - TOP VIEW

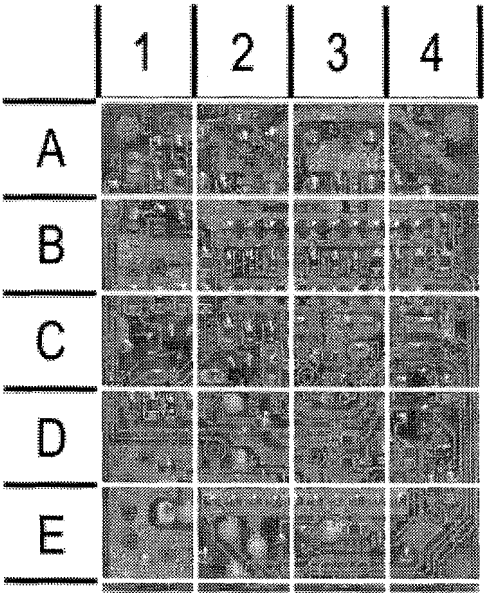


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COMB FILTER BOARD - TOP VIEW,  
GRIDTRACE LOCATION GUIDE

CZ14	C3	LZ01	A4	LZ11	C4
CZ22	A2	LZ02	C1	LZ12	D2
CZ25	A3	LZ03	A3	PZ01	E2
CZ30	A3	LZ04	A3	QZ01	B3
CZ37	D3	LZ05	A1		
CZ38	E4	LZ08	C2		

COMB FILTER BOARD - BOTTOM VIEW



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COMB FILTER BOARD - BOTTOM VIEW,  
GRIDTRACE LOCATION GUIDE

CZ03	B2	CZ32	D1	RZ05	C2
CZ05	B3	CZ33	C1	RZ06	B3
CZ07	D1	CZ34	D4	RZ08	C2
CZ09	A1	CZ35	E4	RZ09	C3
CZ10	A1	CZ41	B4	RZ10	E4
CZ11	A1	CZ42	B4	RZ12	E3
CZ12	B2	CZ45	D3	RZ13	D3
CZ13	C3	QZ02	C1	RZ14	C1
CZ17	C2	QZ03	C1	RZ15	D4
CZ19	B3	QZ04	D4	RZ17	C4
CZ20	B3	QZ05	C2	RZ18	D3
CZ21	C3	QZ06	E3	RZ19	D1
CZ23	A4	QZ07	B1	RZ20	C2
CZ24	A3	QZ08	C4	RZ22	C1
CZ26	C2	RZ01	A1	RZ29	B4
CZ28	B2	RZ02	A1	RZ30	B4
CZ29	A2	RZ03	B2		
CZ31	E3	RZ04	D1		

TOSHIBA

MODEL 32AF62 (CHASSIS TAC0210)



PARTS LIST

Item No.	Type No.	Mfr. Part No.	NTE Part No.
D101	MTZJ33C	23316755	-
D201	ISS120-7	23316817	-
D221 Thru			
D224	ISS120-7	23316817	-
D252, 53	RD9.1ES	23118518	NTE5018A
D301, 02	EU2A	23118094	NTE552
D310	ISS133	23118859	NTE519
D313 (3)(4)	ISS133	23118859	NTE519
D316	MTZJ6.8C	23316679	-
D319	MTZJ12B	23316719	NTE5021T1
D370	MTZJ5.6B	23316672	NTE5011T1
D371	ISS133	23118859	NTE519
D390	MTZJ2.4B	23316651	-
D395	MTZJ15B	23316725	NTE5023A
D404	ERC06-15	23316254	NTE506
D406	EU2A	23118094	NTE552
D408 (1)(3)	FML-G22S	23357353	NTE599
D408 (2)(4)	RU4ZLF-L1	23118052	NTE580
D409	MTZJ10B	23316690	-
D411	RD8.2ESB2	23118520	NTE5016A
D430	RD12ES	23118510	NTE5021A
D441	MTZJ9.1B	23316687	-
D442	EU2A	23118094	NTE552
D460	ERD29-06	23316969	NTE580
D462	MTZJ2.7B	23316653	-
D467, 71	EU2A	23118094	NTE552
# D472	RD6.2E (FA-1)	23115774	NTE5013A
D473, 77	ISS133	23118859	NTE519
D480	MTZJ16A	23316727	-
D611 Thru			
D614	ISS133	23118859	NTE519
D704, 05	ISS133	23118859	NTE519
D715, 20, 21	ISS133	23118859	NTE519
# D801	LN6SB60-F05	23357041	-
D805	ISS133	23118859	NTE519
D806	EU2A	23118094	NTE552
D807	ISS133	23118859	NTE519
D810	AK04	23316269	NTE585
D830	MTZJ5.6C	23316673	-
D840	S1WBA20	23316962	NTE5332
D845	ISS133	23118859	NTE519
D850	MTZJ5.6C	23316673	-
D855	ISS133	23118859	NTE519
D883	RU4AMLF-K2	23118338	NTE580
D885	EU2A	23118094	NTE552
D901	ISS133	23118859	NTE519
D903 Thru			
D910	ISS133	23118859	NTE519
D911	IS1834	23115337	NTE552
D3440, 41	IS1832	23115999	NTE506
DA42	RD5.6ESB2	23118529	NTE5011A
DB01	SLR-56VC3FPQ	23358564	-
DB03	SIR-56SB3F	23358522	-
DB05	MTZJ6.2B	23316675	NTE5013T1
DB30	ISS133	23118859	NTE519
DB45	ISS120-7	23316817	-
DJ01	ISS120-7	23316817	-
DJ02	RD15ESB3	23118504	-
DS106	MTZJ5.6B	23316672	NTE5011T1
DV46	MTZJ11B	23316716	-
DV47	MTZJ9.1A	23316686	-
G317	ISS133	23118859	NTE519
Q151 (1)(3)	KTA1266Y	23314962	NTE290A
Q152 (1)(3)	KTC3198Y	23314965	NTE199
Q201, 02, 03	KTC3198Y	23314965	NTE199
Q204	RN1204	23114460	NTE2359
Q301	LA7833S	23319787	-

Item No.	Type No.	Mfr. Part No.	NTE Part No.
Q361	2SC4721,Q	23314445	-
Q370	KTA1266Y	23314962	NTE290A
Q390	TA75558S	23318187	NTE1529
Q391	2SC4686A	23205079	-
Q402	2SC2482FA-1	23114755	NTE399
Q403	2SC4721P	23314444	-
Q404	2SD2553(FA)	23314955	-
Q462	KTA1266Y	23314962	NTE290A
Q463	2SD2493(P)	23314938	-
Q470	KTC3198Y	23314965	NTE199
Q471	2SA1015-O(TEM)	23114426	NTE290A
Q472	KTC3198Y	23314965	NTE199
Q480	2SA949-Y	23114759	-
Q481, 82	KTC3198Y	23314965	NTE199
Q483	RN2201	23114469	NTE2368
Q501	TA1310N	23906843	-
Q503	KTC3198Y	23314965	NTE199
Q610	TA8265K	23000249	-
Q611	2SC2878-A(TEM)	23114623	NTE85
Q612	KTA1266Y	23314962	NTE290A
Q613	2SC2878-A(TEM)	23114623	NTE85
Q706, 07, 09	KTC3198Y	23314965	NTE199
Q710	KTA1266Y	23314962	NTE290A
Q711	2SA1837	23314909	-
Q712	2SC4793	23314912	-
Q719, 20	KTC3198Y	23314965	NTE199
# Q801	STR-G8626	23135033	-
Q805	RN1205	23114459	-
Q830	-	23205160	-
Q835	MC7809CT	23319202	NTE1910
Q840	L78MR05-FA	23318299	-
Q843	RN1205	23114459	-
Q850	-	23205160	-
Q901	2SC4544	23314780	NTE376%
Q902	KTC3198Y	23314965	NTE199
Q903	2SC4544	23314780	NTE376%
Q904	KTC3198Y	23314965	NTE199
Q905	2SC4544	23314780	NTE376%
Q906	KTC3198Y	23314965	NTE199
Q907	KTA1266Y	23314962	NTE290A
Q908	2SC2120-Y(TE)	23114429	NTE289A
Q910, 11	KTC3198Y	23314965	NTE199
Q912, 13	KTA1266Y	23314962	NTE290A
Q914	KTC3198Y	23314965	NTE199
Q920 Thru			
Q925	KTC3198Y	23314965	NTE199
Q4460, 61, 62	KTC3198Y	23314965	NTE199
QA01	TMP88CS38BN-3PH5	23009183	-
QA02	AT24C08-10PC	23905665	-
QB03	RN1205	23114459	-
QB11	2SC1740S	23114528	NTE85
QB22	2SC752GTM-Y	23114437	NTE85
QB23	2SC1815-Y	23114433	NTE85
QB30	KTC3198Y	23314965	NTE199
QB40, 41	2SC1815-Y	23114433	NTE85
QD80	KTA1266Y	23314962	NTE290A
QG01	UPC1851BCU	23906499	-
QG60	BA4558	23906596	NTE778A
QG61	UPC1406HA	23119228	NTE1792
QJ02	KTC3198Y	23314965	NTE199
QJ03	2SC4793	23314912	-
QJ04	KTC3198Y	23314965	NTE199
Q560, 61	KTC3198Y	23314965	NTE199
QS62	RN2204	23114466	NTE2360
QS63, 64	2SC2878-A(TEM)	23114623	NTE85
QS101	BA4558	23906596	NTE778A
QS106	MM1231XD	23000529	-

Item No.	Type No.	Mfr. Part No.	NTE Part No.
QV01	MM1495XD	23000369	-
QV02 (1)(3)	MM1111XS	23904943	-
QV05, 10	RN1203	23114461	NTE2357
QV11	2SC752(G)TM-Y	23114437	NTE85
QV60	KTC3198Y	23314965	NTE199
QZ01	TC90A49P	23906904	-
QZ02, 03, 04	2SA1162-Y	23314163	NTE2409
QZ05	2SC2712-Y	23314475	NTE2408
QZ06, 07	2SA1162-Y	23314163	NTE2409
QZ08	2SC2712-Y	23314475	NTE2408
Item No.	Function/Rating	Mfr. Part No.	Notes
C396	.0018 3% 1.8kV	24082825	-
C399	10µF 20% 16V NP	24085981	-
C440	.001 3% 1.8kV	24082592	-
# C442	.39 5% 315V	24082920	-
	.62 5% 315V	24082925	-
# C443	.0078 3% 1.5kV	24082958	-
	.0082 3% 1.5kV	24082961	-
# C444	.01 3% 1.5kV	24082964	-
	.0082 3% 1.5kV	24082961	-
C451	10µF 20% 16V NP	24085981	-
# C467, 69	.022 630V	24095879	-
	.024 630V	24820243	-
C505	12pF 5% 50V NPO	24353120	-
# C801	.22 20% 275VAC	24503002	-
# C802	.1 275VAC	24503001	-
# C811, 12	.0022 20% 250VAC	24092583	-
# C813	.001 20% 250VAC	24092581	-
C817	330pF 10% 2kV	24092339	-
C818	.0022 3% 1.25kV	24082402	-
C893	330pF 10% 2kV	24092339	-
C902	.0047 10% 2kV	24092353	-
C3440	.0011 3% 1.25kV	2402395	-
CG13	3.3µF 20% 16V Tantalum	24704335	-
CG16	10µF 20% 16V Tantalum	24704106	-
# D899	Varistor	24019485	-
# F470	Fuse	23144854	1.6Amp, 125V
# F801	Fuse	23144518	10Amp, 125V
# F802	Fuse	23144681	4Amp, 125V
# F803	Fuse	23144678	2Amp, 125V
G463	Ferrite Bead	23103859	-
G845	Ferrite Bead	23103859	-
G890	-	23280016	-
G891	-	23280016	-
G980	-	-	-
# H001	Main Tuner	23321436	EL969L1
# HY01 (1)(3)	Sub Tuner	23321437	EL975L
KB01	Receiver	23906805	Remote, PIC-TB17
L101	-	23289845	-
L111 (1)(3)	-	23289844	-
L121, 22 (1)(3)	-	23238562	-
L201	-	23238703	-
L301	-	23103880	-
L400	-	23238714	-
# L441 (1)(2)	Horizontal Linearity	23233092	-
# L441 (3)(4)	Horizontal Linearity	23233045	-
L442	-	23248121	-
# L461	-	23248173	-
# L462 (5)	Yoke	-	Horiz .9mH, Vert 14mH
L491 (3)(4)	-	23228785	-
L500	-	23289840	-
L501, 02	-	23289844	-
L702	Ferrite Bead	23261974	-
L704, 05	-	23103859	-
L805, 06	-	23248213	-

PARTS LIST continued

Item No.	Function/Rating	Mfr. Part No.	Notes
L815, 16	Ferrite Bead	23103859	-
L883	Ferrite Bead	23103859	-
L885	-	23248073	-
L886	Ferrite Bead	23103859	-
# L901 (1)(2)	Degaussing	23200455	-
# L901 (3)(4)	Degaussing	23200447	-
L902, 03, 04	-	23289101	-
L905, 06, 07	-	23289390	-
L908	-	23289100	-
L910	-	23237991	-
LA01	-	23289100	-
LB01	IF	23262302	-
# LJ901	Geomagnetic Correction	23200465	-
LV01	-	23289840	-
LV02	-	23103852	-
LV03, 04 (1)(3)	-	23103852	-
LV45 (1)(3)	-	23289840	-
LV99	-	23103845	-
LZ01	-	23238710	-
LZ02 Thru			
LZ05	-	23238714	-
LZ08	-	23238707	-
LZ11, 12	-	23238710	-
# P801	Line Cord	23372112	AC, Polarized
PV02	Jack	23365949	Assembly
PV03	Jack	23365821	Assembly
PV05	Jack	23365763	Assembly
PV011	Jack	23365863	Assembly
# R327	1.5 5% 2W	24339159	-
	4.7 5% 2W	24339479	-
R368	4.7 5% 1/4W Fusible	24545479	-
# R370	1 5% 1/2W	24321109	-
R416	5600 5% 5W	24510562	-
R441	1000 5% 1W Fusible	24532102	-
# R448	.22 5% 1W	24338228	-
# R475	220 2% 1/6W	24367221	-
	390 5% 1/6W	24366391	-
# R478	13K 1% 1/4W	24327133	-
# R482	5600 1% 1/4W	24327562	-
	4700 1% 1/4W	24327472	-
# R485	.56 5% 1W	24338568	-
R488, 89	18K 1% 1/4W	24327183	-
R498	2.7 5% 5W	24510279	-
# R808	7 Cold PTC 223 Cold	24019493	-
# R810	.82 10% 10W	24569828	-
R818	15 5% 5W	24510150	-
# R830	5.6 5% 2W Fusible	24548569	-
# R898	3.9M 5% 1/2W	24010001	-
# R920	3 5% 1W Fusible	24000884	-
R984	1500 2% 1/6W	24367152	-
R985	470 2% 1/6W	24367471	-
R986, 87	680 2% 1/6W	24367681	-
R988	4700 2% 1/6W	24367472	-
R989	3300 2% 1/6W	24367332	-
R991	680 2% 1/6W	24367681	-
# R3440	1.2 5% 1W	24338129	-
SA01	Switch	23145227	Channel Up
SA02	Switch	23145227	Channel Down
SA03	Switch	23145227	Volume Up
SA04	Switch	23145227	Volume Down
SA05	Switch	23145227	Power
SA06	Switch	23145227	Menu
SA07	Switch	23145227	TV/Video
SA08	Switch	23145227	Demo
SJ01	Relay	23146958	Geomagnetic Correction
# SR81	Relay	23146564	Power
SR83	Relay	23146564	Degaussing

Item No.	Function/Rating	Mfr. Part No.	Notes
# T400	Focus	23224364	-
T401	Horizontal Drive	23224367	-
# T461 (6)	Horizontal Output	23236672	-
	Horizontal Output	23236683	-
# T801	Line Filter	23211739	-
# T840	Power	23217572	-
# T862	Converter	23217584	-
# V901 (1)(2)	CRT	23312986	A80AJZ90X01
# V901 (3)(4)	CRT	23312953	-
# V901A	Socket	23903027	CRT
VM	Coil	-	-
W661, 62	Speaker	23351088	60mm X 120mm, 8 Ohms, 5W
			503kHz
X401	Crystal	23153721	3.58MHz
X501	Crystal	23153961	8MHz
XA01	Crystal	23153504	3.0kV
Z401	Spark Gap	23140203	-
	Antenna Switch	23124086	-
	Fuse Holder	23165433	For F470, F801, F802, and F803 (8 Used)
	PC Board	23786166	Comb Filter
	PC Board	23787518	Control-1, PD0658A
	PC Board	23787519	Control-2, PD0659A
	PC Board	23787522	CRT, PB9973I
	PC Board	23787831	CRT, PB9973J
	PC Board (1)	23787591	Power, PD0653D
	PC Board (2)	23787597	Power, PD0653E
	PC Board (3)	23787572	Power, PD0653G
	PC Board (4)	23787573	Power, PD0653F
	PC Board (1)	23787590	Signal, PD0657A
	PC Board (2)	23787596	Signal, PD0657B
	PC Board (3)	23787571	Signal, PD0657D
	PC Board (4)	23787570	Signal, PD0657C
#	Transmitter (1)(3)	23306263	Remote, CT-9946
#	Transmitter (2)(4)	23306359	Remote, CT-90037

# For SAFETY use only equivalent replacement part.  
% Used insulating hardware supplied with replacement.  
(1) Used in model 32AF62.  
(2) Used in model 32AF42.  
(3) Used in model 36AF62.  
(4) Used in model 36AF42.  
(5) Bonded part of CRT.  
(6) Screen and focus controls are part of T461.

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