

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 customer 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.

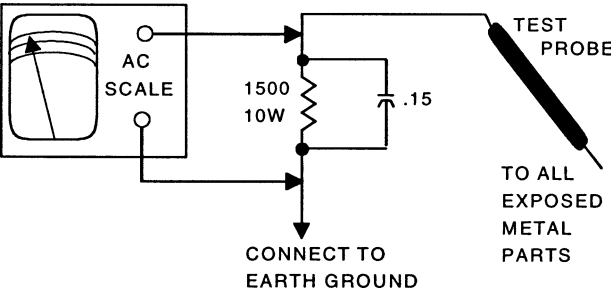
SAFETY CHECKS — FIRE AND SHOCK HAZARD

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.



PHOTOFACT<sup>®</sup> Technical Service Data  
SILVER

SET 4692

MODEL36A41 (CHASSIS TAC0102)

TOSHIBA

INDEX

GridTrace Location  
    CRT Board ..... 3  
    Comb Filter ..... 3  
    Main Board ..... 3  
High Voltage Shutdown Test ..... 1  
IC Functions ..... 4  
Important Parts Information ..... 4  
Miscellaneous Adjustments ..... 1  
Parts List ..... 4  
Placement Chart ..... 1  
*Safety Precautions* ..... 1  
Schematic Component Location ..... 1  
Schematic Notes ..... 2  
Schematics  
    Audio ..... 3  
    Comb Filter ..... 2  
    CRT ..... 2  
    Power Supply ..... 2  
    System Control ..... 3  
    Television ..... 2  
Test Equipment ..... 4  
Tuner Information ..... 1

TOSHIBA  
Model 36A41 (Chassis TAC0102)



Essential coverage  
for servicing a television receiver...

- Schematics
- Component locations
- Parts list



FEBRUARY 2003 SET 4692

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

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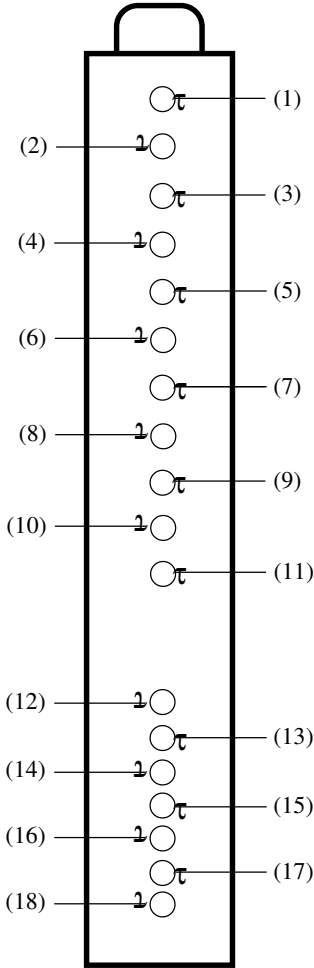
TUNER INFORMATION

MAIN TUNER VOLTAGE CHART

Pin	VHF Low Band	VHF High Band	UHF Band
1 (RF AGC)	1.6V	1.7V	1.7V
2 (Vr)	1.3V	4.2V	6.1V
3 (ADS)	5.2V	5.2V	5.2V
4 (SCL)	4.8V	4.8V	4.8V
5 (SDA)	4.8V	4.8V	4.8V
6 (NC)	-	-	-
7 (+5V)	5.2V	5.2V	5.2V
8 (NC)	-	-	-
9 (+32V)	32.5V	32.5V	32.5V
10 (NC)	-	-	-
11 (NC)	-	-	-
12 (NC)	0V	0V	0V
13 (9V)	9.0V	9.0V	9.0V
14 (MPX)	3.1V	3.1V	3.1V
15 (GND)	0V	0V	0V
16 (AFT)	5.0V	2.9V	2.9V
17 (RF AGC)	1.6V	1.7V	1.7V
18 (VOUT)	2.5V	2.5V	2.5V

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



SCHEMATIC COMPONENT LOCATION GUIDE

C106	B1	C806	B19	CM55	D34	D830	E23	Q203	C11	R261	B12	R663	A45	RA38	A37	RV61	A5
C107	D24	C808	C21	CM58	D35	D840	C19	Q204	E37	R262	B12	R664	A45	RA40	C35	RV62	A6
C201	D1	C810	A19	CR01	B13	D845	B18	Q205	E38	R263	B12	R667	B45	RA41	D35	RV63	A6
C204	C11	C811	A19	CR02	B13	D881	B19	Q301	D7	R264	B12	R668	A45	RA051	D41	RW02	C13
C205	E38	C812	A19	CR03	B13	D883	A22	Q360	E3	R265	B13	R669	B46	RA61	B37	RW03	A14
C216	C13	C813	A19	CS70	D46	D885	B22	Q361	C12	R266	B12	R676	A47	RA62	B37	RZ01	A25
C221	B11	C815	C20	CS71	C46	D899	A17	Q370	D20	R271	C11	R677	B47	RA67	A37	RZ02	B25
C222	C13	C816	C21	CV01	A2	D901	D29	Q402	E8	R272	C11	R808	A18	RA68	A37	RZ03	A25
C223	B11	C817	B21	CV03	A3	D902	D14	Q403	C24	R301	D7	R810	A19	RA70	B35	RZ04	D26
C224	B11	C818	B21	CV05	A3	D903	D14	Q404	E9	R303	D8	R814	B21	RA71	B33	RZ05	D25
C225	B13	C821	C21	CV07	C3	D904	A30	Q421	D22	R304	D9	R815	B19	RA72	B33	RZ06	B26
C226	C13	C822	B20	CV09	C3	D905	C30	Q460	E5	R305	E9	R818	B21	RA73	B34	RZ08	D26
C245	C13	C823	B21	CV11	B5	D906	B30	Q461	E4	R306	D9	R820	B21	RB01	B37	RZ09	E25
C261	B12	C829	B21	CV13	B8	D911	D30	Q471	E14	R307	D9	R821	B22	RB03	B38	RZ10	E26
C262	B12	C832	E24	CV29	B7	DA42	A35	Q472	E14	R308	E11	R823	B21	RB09	A33	RZ12	E27
C263	B13	C840	C19	CV31	B7	DB03	C38	Q480	B23	R310	E8	R829	B21	RB11	B37	RZ13	E26
C305	D9	C842	C24	CV36	B4	DB30	C22	Q481	E21	R311	E8	R830	E23	RB24	C3	RZ14	D27
C306	E9	C843	D22	CV38	C7	DB45	D37	Q482	E20	R313	D9	R831	E23	RB25	C2	RZ15	E27
C307	D9	C884	A24	CV39	C8	DE50	B37	Q483	E20	R314	D3	R835	B21	RB30	C17	RZ17	E25
C308	D8	C885	B22	CV41	B2	DG02	E19	Q501	B11	R315	E3	R861	B20	RB40	C36	RZ18	E26
C309	D7	C889	C23	CV60	A6	DV01	A3	Q501	D2	R317	D6	R883	B19	RB41	E41	RZ19	D27
C310	D19	C891	B20	CV61	A6	DV03	A3	Q503	B9	R327	D19	R884	B19	RB42	C36	RZ20	D25
C311	D7	C893	A22	CZ03	A25	DV05	A3	Q610	A46	R328	E3	R885	B19	RB43	D36	RZ22	D26
C313	D8	C898	C22	CZ05	B26	DV07	C3	Q611	A46	R336	D9	R888	B23	RB44	D36	RZ29	A27
C314	D7	C902	D31	CZ07	E24	DV09	C3	Q612	D39	R360	D3	R891	C20	RB45	D37	RZ30	B5
C317	D19	C904	B15	CZ09	B25	DV13	B7	Q613	B46	R361	E3	R898	A17	RB46	D36	RZ30A	A26
C319	D6	C905	C15	CZ10	B25	F470	A23	Q801	A20	R363	E2	R901	A31	RB60	C33	SA01	B34
C320	D21	C907	C15	CZ11	B25	F801	A17	Q830	E23	R364	E3	R902	C31	RB61	C33	SA02	B33
C323	D4	C909	D21	CZ12	B26	F802	A20	Q840	C22	R368	C12	R903	B31	RB62	C34	SA03	B33
C325	D5	C910	D29	CZ13	C27	G217	E13	Q843	B17	R369	C12	R904	D30	RB63	C34	SA04	B33
C326	D3	C911	D14	CZ14	C27	G317	C12	Q862	B19	R370	D21	R905	C30	RB64	C34	SA05	B33
C327	D5	C912	D29	CZ17	B27	G500	E23	Q883	C19	R371	D21	R911	D30	RB65	C35	SA06	B33
C337	D5	C913	E24	CZ19	B26	G501	B5	Q901	A30	R372	D21	R914	A15	RB66	B2	SA07	B34
C360	C12	C914	E24	CZ20	B26	G816	B21	Q902	A15	R373	D20	R915	B15	RB67	C2	SR81	A18
C370	D21	C920	D31	CZ21	B26	G890	B23	Q903	C30	R374	D20	R917	B15	RF IN	A1	SR81	B18
C371	D20	C921	D15	CZ22	C27	G891	C22	Q904	C15	R401	D4	R918	B15	RG05	B44	T401	E9
C403	D2	C922	D15	CZ23	C27	G908	E23	Q905	B30	R403	D2	R920	B31	RG08	B44	T461	D11
C404	D2	CA13	C35	CZ24	C27	GR01	B38	Q906	B15	R405	E1	R921	C15	RG09	C44	T461	D17
C407	D2	CA33	C36	CZ25	C27	GR02	B38	Q907	D15	R406	D2	R922	C15	RG14	D44	T801	A17
C410	C23	CA37	A36	CZ26	B27	GR03	B38	Q908	D29	R407	D1	R924	C15	RG15	D44	T840	C18
C413	E8	CA38	A36	CZ28	B26	H001	B2	Q910	D14	R408	C23	R925	C15	RG16	D44	T862	A22
C415	D2	CA42	A35	CZ29	B26	KB01	A33	Q911	D15	R410	E6	R928	B15	RG17	E45	V901	C32
C416	E9	CA43	A34	CZ30	B27	L101	B1	Q912	D16	R411	E6	R929	B15	RG22	A42	W661	A48
C417	E8	CA44	C24	CZ31	E23	L301	D8	Q913	D16	R415	E8	R930	C15	RG23	B42	W662	B48
C419	D6	CA68	B38	CZ32	D26	L400	C24	Q914	D16	R416	E9	R932	D14	RG36	C43	X	E13
C421	D24	CA69	B39	CZ33	D26	L441	D10	QA01	A36	R418	C23	R934	D14	RG37	C43	X401	D4
C430	C24	CB01	A33	CZ34	E26	L442	D10	QA02	B38	R424	D22	R935	D14	RG41	C45	X501	C12
C431	C24	CB60	C33	CZ35	E26	L461	E5	QB01	B37	R425	D22	R936	D29	RG43	A42	XA01	E35
C439	D10	CB61	C33	CZ37	E24	L462	D10	QB03	C37	R430	E12	R937	B15	RG44	A42		
C440	E11	CB62	C34	CZ38	D26	L463	E10	QB23	C2	R431	E14	R939	D15	RG45	E18		
C442	D10	CB63	C34	CZ41	A26	L501	C12	QB30	B17	R432	E14	R942	A31	RG46	E18		
C444	E10	CB64	E24	CZ42	A27	L502	D23	QB40	D37	R441	D10	R943	C31	RG71	D42		
C445	E12	CB65	E24	CZ45	B25	L805	A19	QB60	C34	R448	D18	R944	B31	RG72	D42		
C446	D20	CG02	E45	CZ46	B5	L806	A19	QB61	C34	R456	E1	R960	B31	RG73	C41		
C448	A24	CG03	B44	D101	B1	L815	A21	QB62	B2	R457	D4	R961	C31	RG74	C41		
C449	D24	CG05	B44	D201	C13	L883	A22	QG01	A44	R460	E5	R962	B31	RG75	C42		
C457	E4	CG06	B44	D221	C13	L885	A23	QG05	E19	R461	E5	R977	B15	RG76	C42		
C463	E9	CG07	A42	D222	D13	L886	B22	QG70	C42	R462	E4	R980	D14	RG77	D42		
C464	E5	CG08	B44	D225	B13	L901	A18	QG71	D42	R463	E5	R981	D15	RG78	C42		
C466	E4	CG09	C44	D226	C13	L902	A31	QM53	D34	R464	E4	R982	D15	RG79	C42		
C467	E10	CG10	C44	D301	D8	L903	C31	QS60	D46	R465	E6	R983	D15	RG80	C42		
C471	E13	CG12	C44	D302	D19	L904	B31	QS61	C46	R466	E5	R984	D16	RG81	C42		
C474	E14	CG13	C44	D310	E7	L910	D15	QS62	D46	R467	D2	R985	D16	RG82	D42		
C477	D3	CG14	D44	D313	D3	LA01	A34	QS63	D46	R472	E13	R986	D16	RG84	E23		
C480	B23	CG16	D44	D314	E3	LB01	E34	QS64	D47	R473	D3	R987	D16	RM02	D34		
C481	A23	CG17	E45	D315	E3	LV01	C7	QV01	B3	R474	D2	R988	D15	RM50	B35		
C482	E21	CG18	E45	D316	C12	LV98	A13	QV01	B7	R475	E13	R989	D16	RM56	D35		
C499	E6	CG19	D44	D370	D20	LV99	C13	QV60	A6	R476	E13	R990	D16	RR93	B11		
C501	B10	CG20	D45	D371	D20	LZ01	A25	QZ01	A26	R477	E13	R991	D15	RS21	E42		
C504	C12	CG25	A45	D406	D19	LZ02	C27	QZ02	D26	R478	E13	RA03	C37	RS24	E42		
C505	C12	CG26	A45	D408	D18	LZ03	B27	QZ03	D27	R481	E14	RA04	D38	RS60	D45		
C510	D24	CG27	D45	D409	C24	LZ04	C27	QZ04	E26	R482	E13	RA05	D41	RS61	D46		
C511	D24	CG28	D45	D411	D6	LZ05	C27	QZ05	D25	R485	A23	RA07	C36	RS62	C45		
C512	C12	CG29	D45	D421	D22	LZ08	B26	QZ06	E27	R486	A22	RA08	B36	RS63	C46		
C582	C12	CG30	C45	D422	E22	LZ11	D26	QZ07	A25	R487	A23	RA09	E36	RS64	D46		
C583	C13	CG31	C45	D430	C24	LZ11A	B5	QZ08	E25	R488	B23	RA10	E36	RS65	C46		
C612	D39	CG32	B45	D441	E1	LZ12	E26	QZ11	B5	R489	B23	RA13	C35	RS66	D46		
C661	A45	CG33	B45	D461	E10	P801	A17	R	E13	R490	C23	RA15	B35	RS68	D46		
C662	A45	CG36	C43	D464	E4	PV02	A1	R101	B1	R493	E20	RA16	C35	RS69	D47		
C663	B45	CG37	C43	D466	E4	PV02	C3	R201	C9	R494	E20	RA17	B34	RS70	D47		
C671	B46	CG38	E42	D467	E5	PV02	C41	R202	C9	R495	E20	RA18	B35	RS71	D47		
C672	B46	CG39	E42	D471	E13	PV02	D41	R203	C11	R501	C12	RA21	B35	RV01	A2		
C673	A46	CG42	B45	D472	E14	PV02	E41	R207									

## MISCELLANEOUS ADJUSTMENTS continued

### 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 31kV to 33kV.

### 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 receiver. 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 crosshatch, 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. 23000818 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	Green display is normal. Cyan display is no check. Red display is NG. UV is TV mode, V1 is Video 1 mode, and V2 is Video 2 mode.

### 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.

### 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 atSL02 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 1M ohm resistor between ground and pin 12 of QG01. Adjust reference value to obtain a reading of 78.67kHz. Remove the short jumper and 1M ohm resistor.

### DESIGN MODE ADJUSTING ITEMS CHART

Item	Adjustment Name	Direct Button	Reference Value
OPT0	Option 0	-	A2H
OPT1	Option 1	-	84H

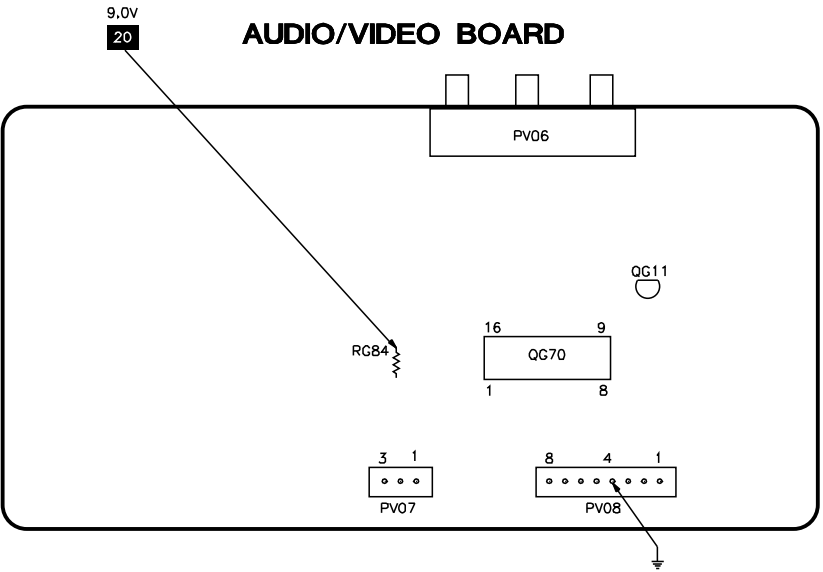
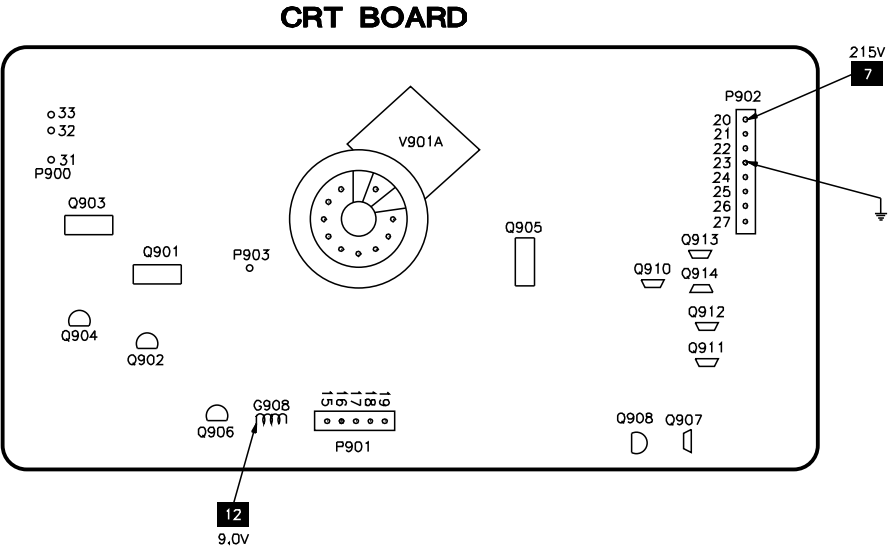
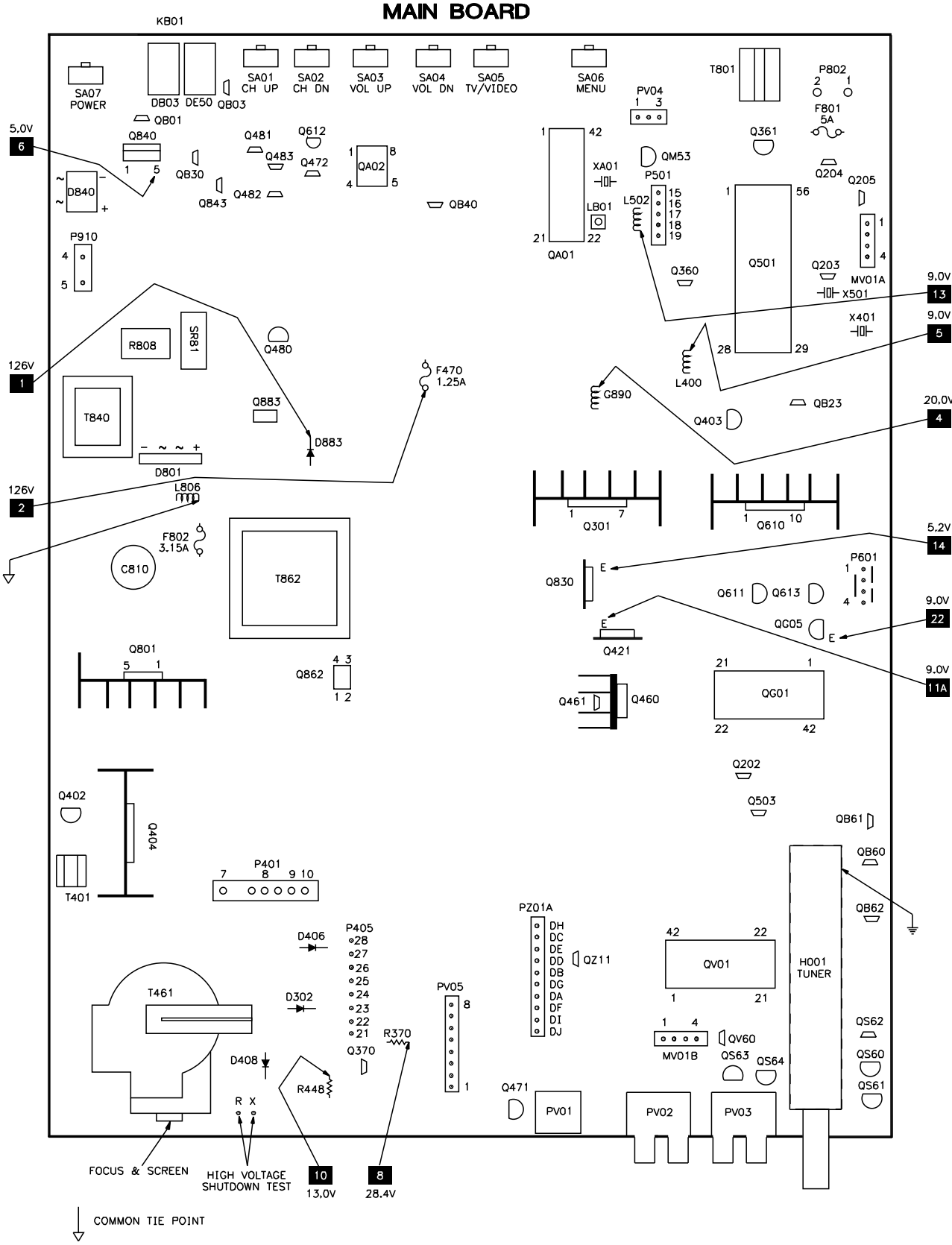
Option items may need adjustment when replacing QA02.

### SERVICE MODE ADJUSTMENT CHART

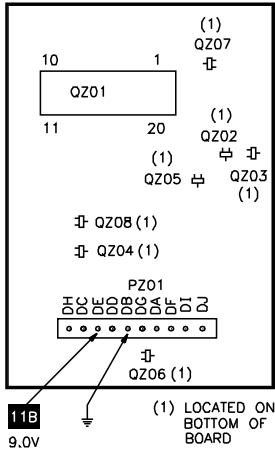
Item	Adjustment Name	Reference Value	On Set Value
RCUT (1)	Red Cutoff	40H	40H
GCUT (1)	Green Cutoff	40H	7FH
BCUT (1)	Blue Cutoff	40H	5CH
GDRV (1)	Green Drive	40H	3AH
BDRV (1)	Blue Drive	40H	45H
SCNT	Sub Contrast	08H	09H
BRTC (1)	Sub Brightness	40H	42H
COLC (1)	Sub Color	40H	39H
TNTC (1)	Sub Tint	40H	43H
HPOS (1)	Horizontal Position	16H	16H
VPOS (1)	Vertical Position	03H	03H
HIT (1)	Height	26H	1EH
LIN	Vertical Linearity	06H	08H
VSC	V-S Correction	02H	03H
VPS	Vertical Shift	1BH	1BH
VCP	Vert Compensation	03H	03H
WID (1)	Width	35H	2DH
DPC (1)	E-W Parabola	17H	15H
CNR	E-W Corner	07H	07H
TRAP	Trapezium	08H	06H
HCP	Horiz Compensation	00H	00H
VFC	V-F Correction	0FH	0FH
DAC	DAC	03H	03H
ATT (1)	Attenuator	20H	13H
STVC (1)	Stereo VCO	20H	21H
STRF (1)	Stereo Filter	20H	2BH
WBAN (1)	Stereo Separation	20H	20H
SPEC (1)	Spectral	20H	0EH
SAVC (1)	SAP VCO	20H	25H
PCOL	PIP Color	91H	91H
PHUE	PIP Tint	09H	09H
PBRT	-	0DH	0DH

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

PLACEMENT CHART



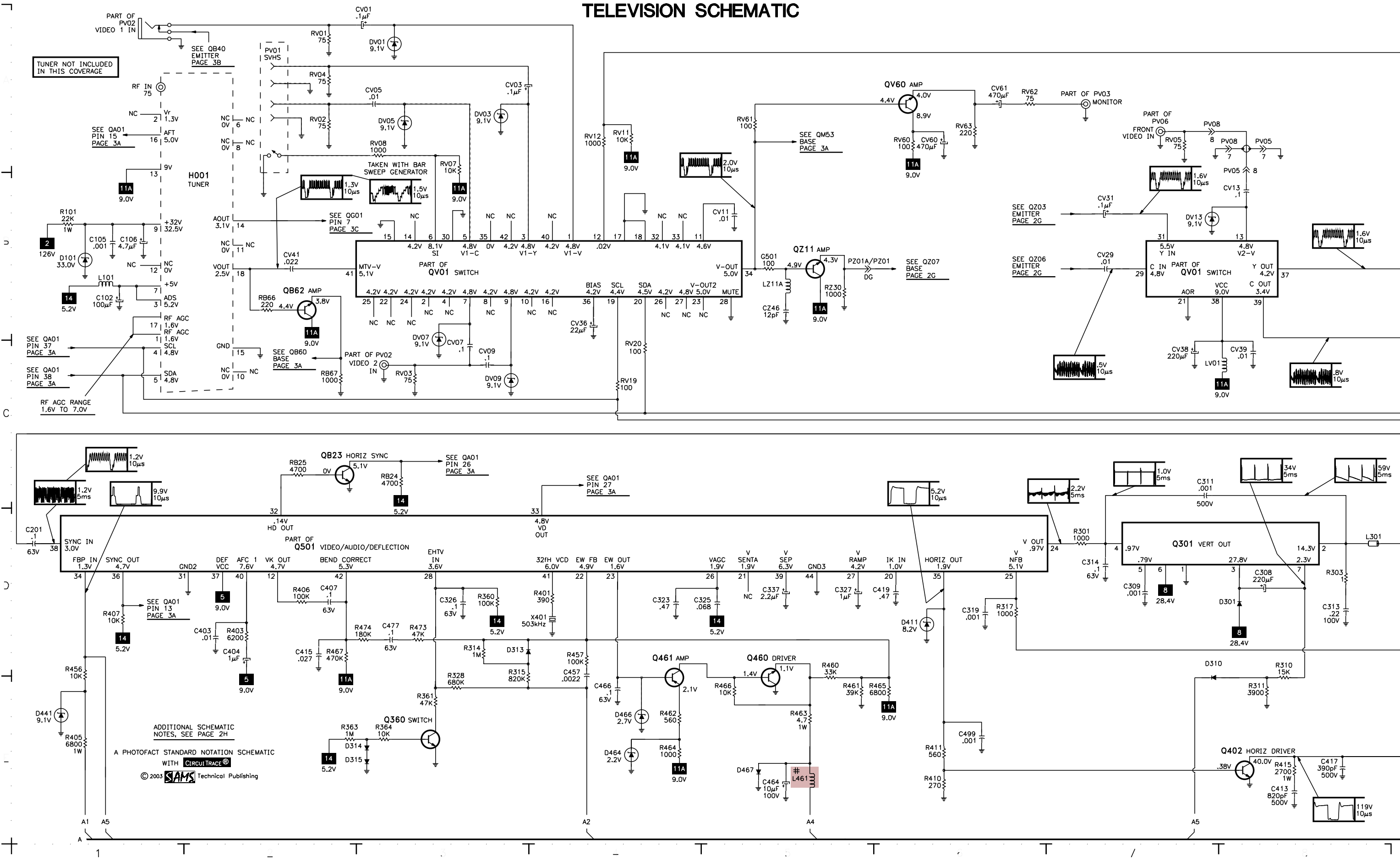
**COMB FILTER BOARD**



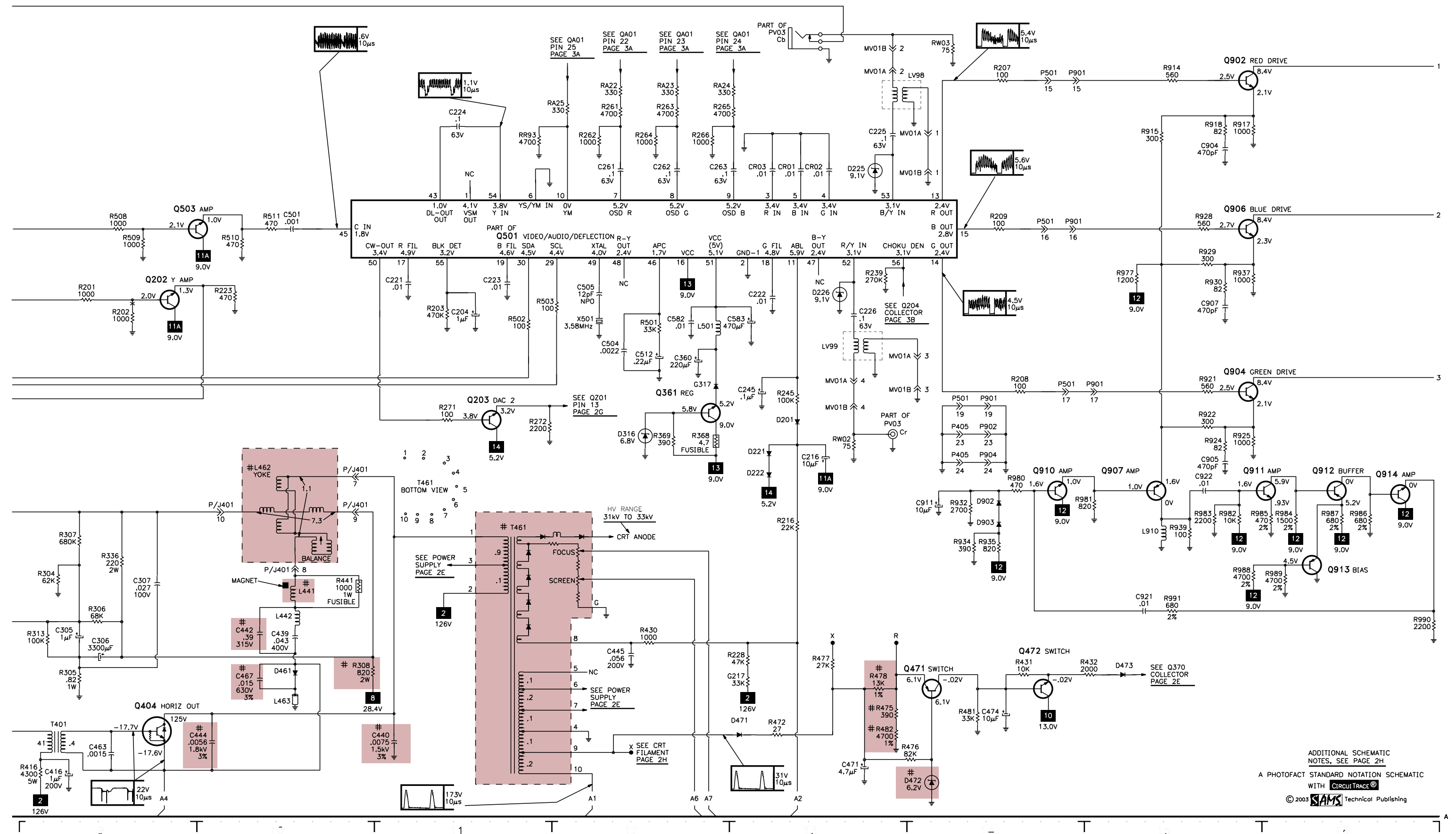
A

B

TELEVISION SCHEMATIC



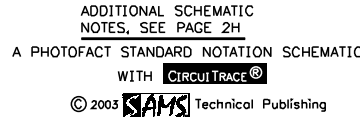




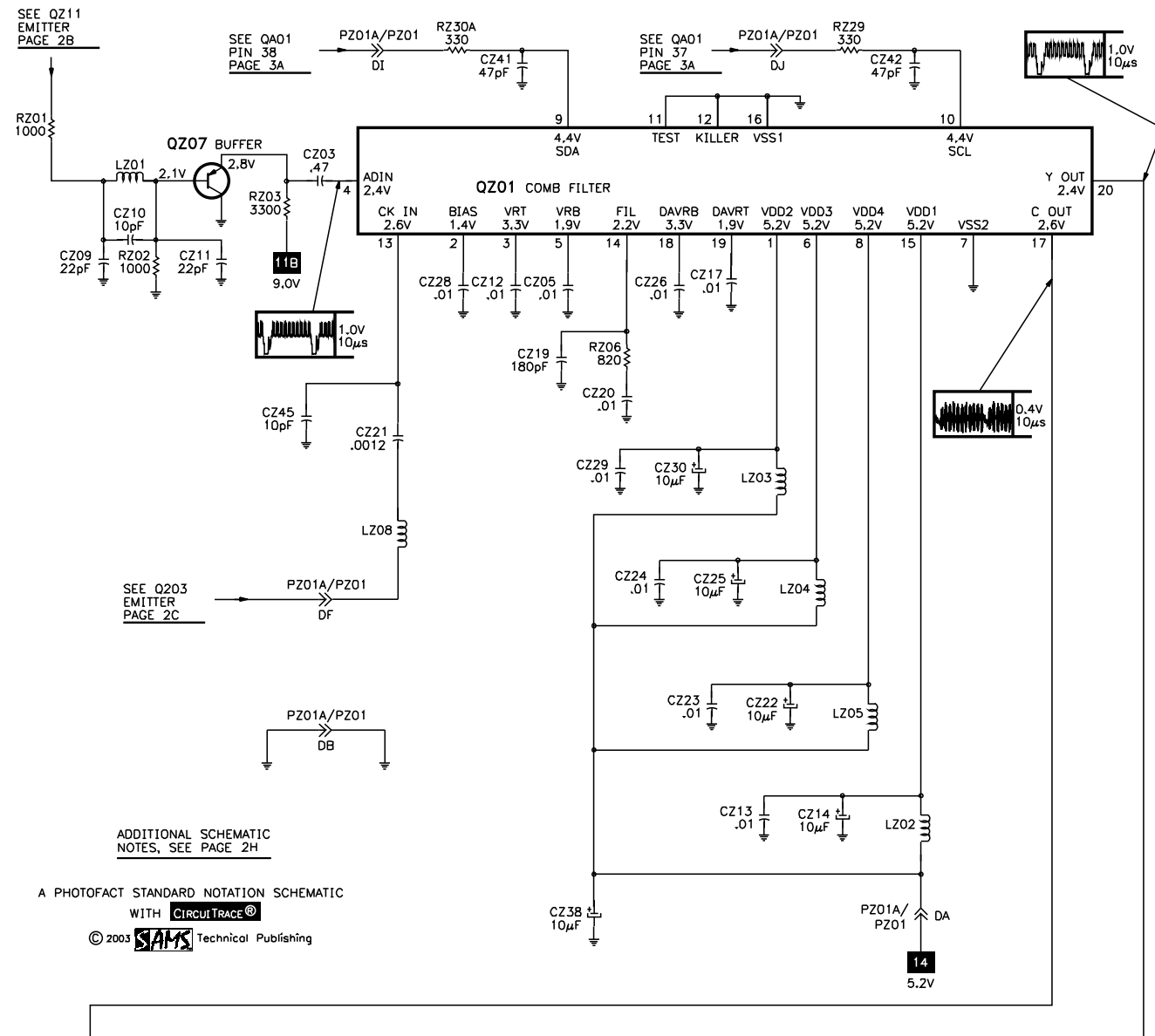
ADDITIONAL SCHEMATIC  
NOTES, SEE PAGE 2H

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**F**

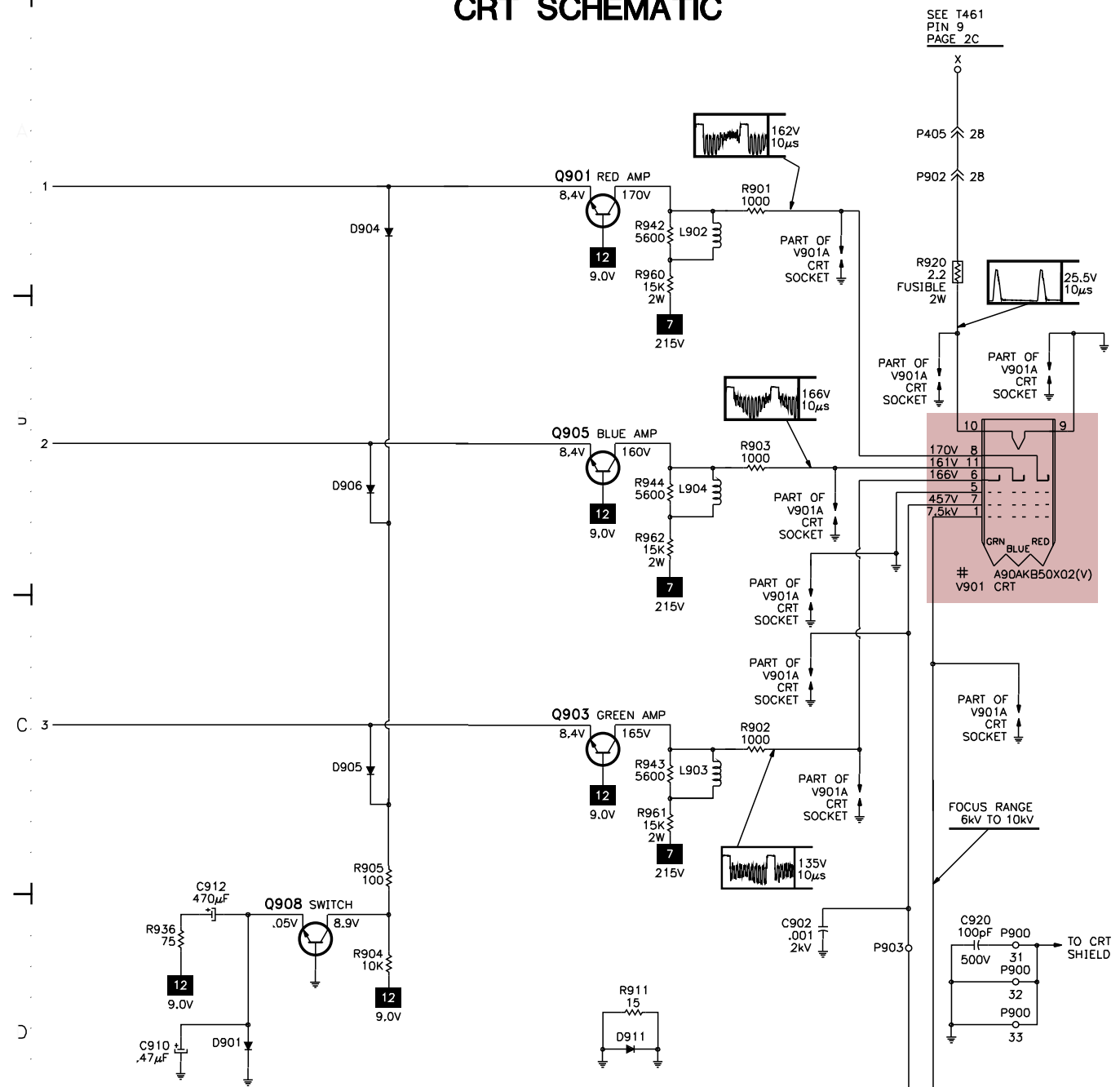
# COMB FILTER SCHEMATIC



ADDITIONAL SCHEMATIC  
NOTES, SEE PAGE 2H

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# CRT SCHEMATIC



## SCHEMATIC NOTES

- # For SAFETY use only equivalent replacement part, see parts list.
- Circuitry not used in some versions.
- Circuitry used in some versions.
- ⬇ Ground
- ⬆ Chassis ground
- ⬇ Common tie point
- ⬆ Taken from common tie point
- 3 Schematic **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 1/2W or less, 5% or greater unless noted.  
Value in ( ) used in some versions.  
Measurements with switching as shown unless noted.  
Rated voltage shown on zener diodes.

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WITH **CIRCUITRACE**  
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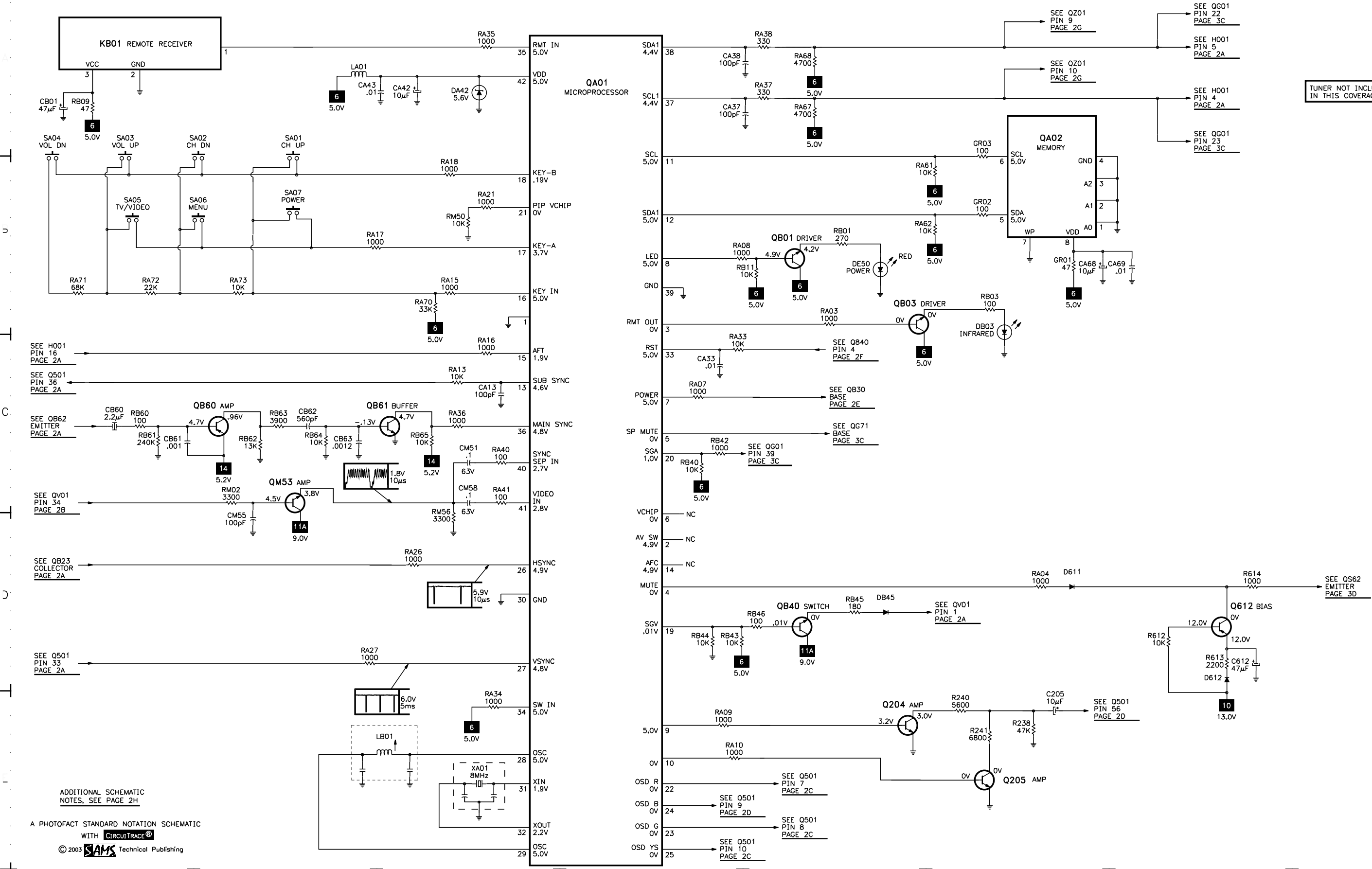
TOSHIBA  
MODEL 36A41 (CHASSIS TAC0102)



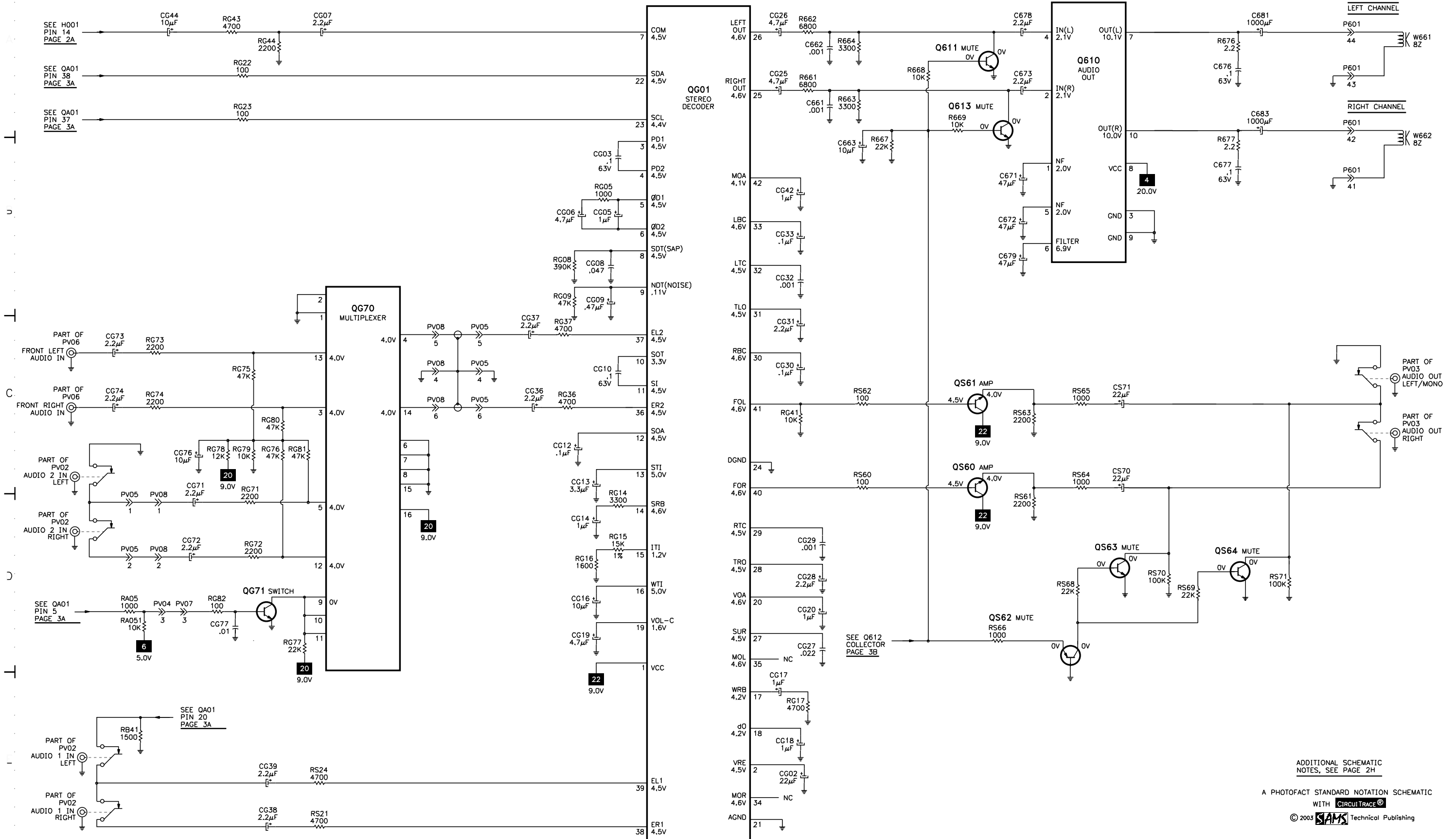
A

SYSTEM CONTROL SCHEMATIC

B



## AUDIO SCHEMATIC

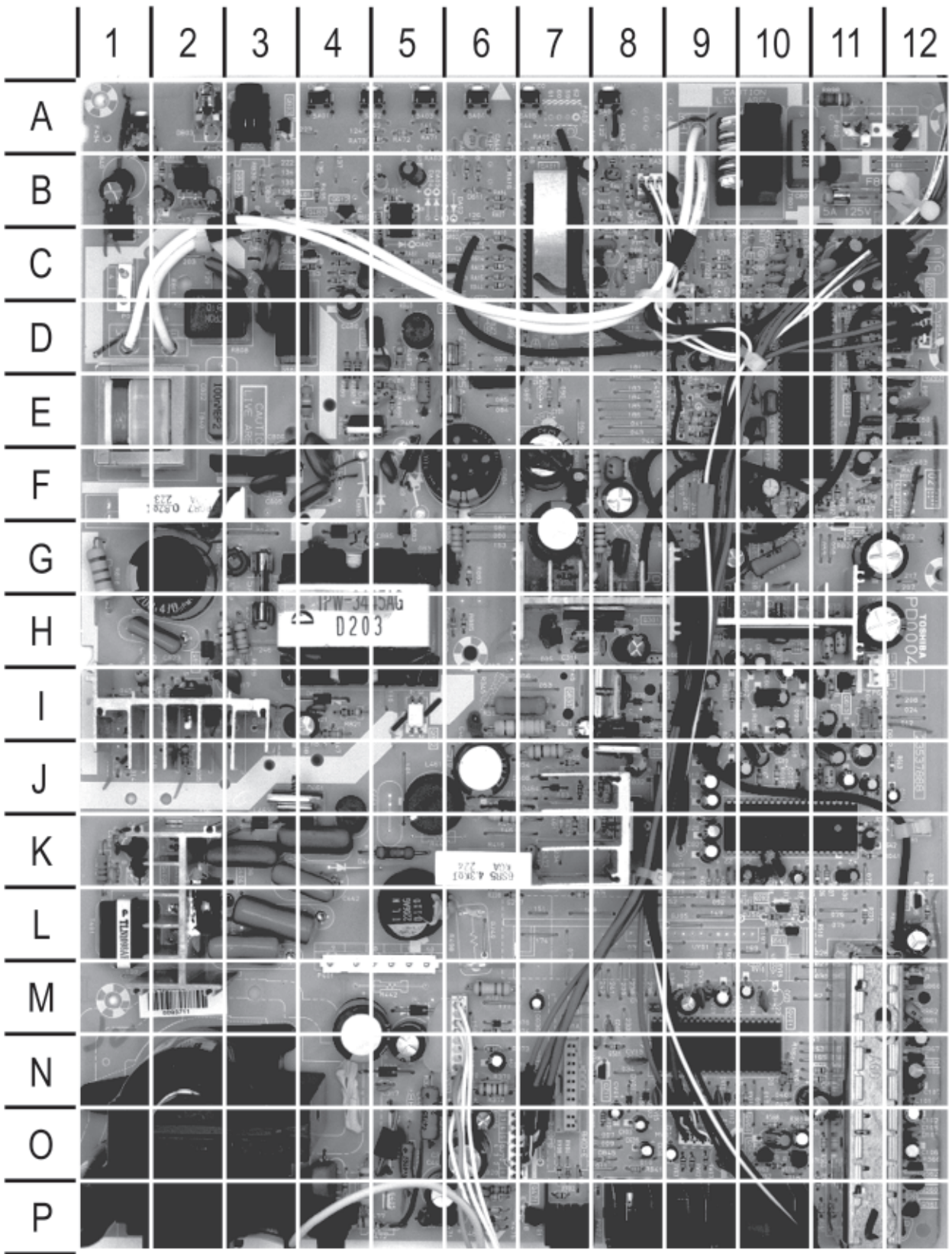


ADDITIONAL SCHEMATIC  
NOTES, SEE PAGE 2H

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MAIN BOARD



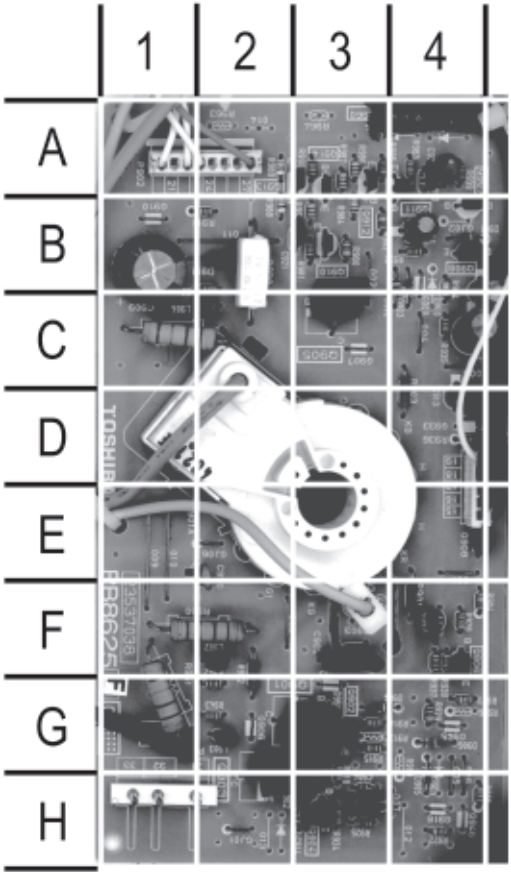
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MAIN BOARD, GRIDTRACE LOCATION GUIDE

C102	O12	C679	I11	CV03	O8	L101	N12	QZ11	N8	R482	P6	RB24	G11
C105	O12	C681	G11	CV05	N8	L301	H7	R	P4	R485	E5	RB25	F11
C106	O12	C682	G9	CV07	N9	L400	F9	R101	M6	R486	E5	RB30	B3
C107	N12	C683	H12	CV09	O9	L441	L5	R201	L10	R487	D5	RB40	C5
C201	E12	C801	A10	CV11	N9	L442	J4	R202	K9	R488	D4	RB41	O8
C204	C11	C802	E2	CV13	N8	L461	J5	R203	D11	R489	D4	RB42	D7
C205	C11	C805	F3	CV29	M10	L463	K3	R207	D10	R490	C4	RB43	C5
C216	C9	C806	F3	CV31	M10	L501	C11	R208	D10	R493	C4	RB44	C6
C221	D9	C808	I4	CV36	M9	L502	D9	R209	D10	R494	B3	RB45	E7
C222	E10	C810	G2	CV38	M9	L805	G2	R216	C8	R495	B4	RB46	C5
C223	E10	C811	D3	CV39	M9	L806	G3	R223	L11	R501	E11	RB60	M12
C224	E11	C812	C2	CV41	M8	L815	H2	R228	K6	R502	F11	RB61	M12
C225	D11	C813	C3	CV60	N11	L883	G5	R238	C12	R503	F11	RB62	M12
C226	D11	C815	F4	CV61	O9	L885	D5	R239	C12	R508	L10	RB63	M12
C245	D10	C816	F4	CZ46	M8	L886	G4	R240	C12	R509	L10	RB64	L12
C261	D9	C817	I3	D101	O12	LA01	B8	R241	C12	R510	L10	RB65	L12
C262	D10	C818	H2	D201	C9	LB01	C8	R245	D10	R511	F12	RB66	N12
C263	D10	C821	I4	D221	C9	LV01	M9	R261	C9	R612	C4	RB67	N12
C305	F7	C822	I1	D222	C10	LV98	D12	R262	C10	R613	B4	RG05	J11
C306	G7	C823	H2	D225	D11	LV99	D12	R263	C9	R614	C6	RG08	J11
C307	G7	C829	J1	D226	D11	LZ11	N8	R264	C10	R661	I9	RG09	J10
C308	F8	C832	J8	D301	H8	MV01A	D12	R265	C9	R662	I10	RG14	J10
C309	H8	C840	B1	D302	N5	MV01B	O9	R266	C10	R663	H9	RG15	J10
C310	O6	C842	B2	D310	F10	P401	M4	R271	D11	R664	I10	RG16	J10
C311	H7	C843	B2	D313	E9	P405	N6	R272	D11	R667	I10	RG17	J9
C313	G8	C884	F6	D314	E9	P501	C9	R301	G8	R668	I11	RG22	K9
C314	H7	C885	G4	D315	E9	P601	I11	R303	G8	R669	I11	RG23	K9
C317	N5	C889	F7	D316	C10	P802	A12	R304	G7	R676	H10	RG36	K11
C319	F9	C891	E5	D370	M6	P902	A1	R305	F8	R677	H11	RG37	K11
C320	H8	C893	F5	D371	E6	P910	C1	R306	G7	R808	D2	RG41	K11
C323	E10	C898	F7	D406	M5	PV01	P7	R307	G7	R810	F2	RG43	J12
C325	E9	CA13	C6	D408	O5	PV02	P8	R308	I7	R814	J1	RG44	J11
C326	D9	CA33	C8	D409	G11	PV03	P10	R310	G10	R815	I4	RG45	I11
C327	E10	CA37	B7	D411	F11	PV04	B8	R311	G10	R818	G1	RG46	I11
C337	E11	CA38	B8	D421	I8	PV05	O6	R313	G7	R820	H3	RM02	C8
C360	C11	CA42	B7	D422	J8	PZ01	O7	R314	E9	R821	I4	RM50	D6
C370	O6	CA43	B8	D430	F9	Q202	L10	R315	E9	R823	I1	RM56	B9
C371	N6	CA44	A6	D441	P5	Q203	D12	R317	F9	R829	H3	RR93	D8
C403	F12	CA68	B5	D461	J3	Q204	C12	R327	O5	R830	J7	RS21	K11
C404	F11	CA69	B5	D464	J7	Q205	C12	R328	E9	R831	I8	RS24	K11
C407	C10	CB01	A1	D466	J7	Q301	H7	R336	I7	R835	J2	RS60	P12
C410	F10	CB60	N12	D467	J6	Q360	E9	R360	E9	R861	E4	RS61	P11
C413	K1	CB61	M12	D471	P4	Q361	C11	R361	E9	R883	G6	RS62	P12
C415	E11	CB62	M12	D472	P6	Q370	O6	R363	E9	R884	E4	RS63	O11
C416	K1	CB63	L12	D473	C4	Q402	K1	R364	E9	R885	H6	RS64	P11
C417	K1	CB64	L12	D480	C4	Q403	F10	R368	C11	R888	G6	RS65	O11
C419	E10	CB65	M12	D611	B6	Q404	L2	R369	C11	R891	E5	RS66	O12
C421	I7	CG02	J11	D612	C4	Q421	I8	R370	N6	R898	A11	RS68	O10
C430	F10	CG03	J11	D801	F3	Q460	K8	R371	N5	RA03	A5	RS69	O10
C431	F10	CG05	J11	D805	I2	Q461	K8	R372	N6	RA04	B6	RS70	O10
C439	K4	CG06	I11	D806	I4	Q471	P7	R373	N6	RA05	A7	RS71	O10
C440	L3	CG07	J11	D807	I1	Q472	C4	R374	M6	RA07	B6	RV01	O8
C442	K4	CG08	J10	D810	I3	Q480	D5	R401	E11	RA08	B6	RV02	P7
C444	L3	CG09	I10	D815	I1	Q481	B3	R403	F12	RA09	B6	RV03	O9
C445	P4	CG10	J10	D830	I8	Q482	C4	R405	P4	RA051	A7	RV04	O7
C446	N5	CG12	I10	D840	B1	Q483	B4	R406	C10	RA10	C6	RV07	N8
C448	N4	CG13	I9	D845	C3	Q501	D10	R407	F11	RA13	C6	RV08	O7
C449	P5	CG14	J10	D881	H6	Q503	L10	R408	G10	RA15	C6	RV11	N10
C457	E9	CG16	I9	D883	F5	Q610	H10	R410	K2	RA16	A6	RV12	N10
C463	L2	CG17	J10	D885	F5	Q611	I11	R411	K2	RA17	A7	RV19	N11
C464	J6	CG18	I9	D899	B4	Q612	B4	R415	K1	RA18	A7	RV20	N11
C466	H8	CG19	J9	DA42	B7	Q613	I11	R416	K6	RA21	D6	RV60	N10
C467	K3	CG20	J9	DB03	A2	Q801	I2	R418	G10	RA22	D7	RV61	N10
C471	P6	CG25	K9	DB30	D3	Q830	I8	R424	J9	RA23	D7	RV62	O10
C474	C4	CG26	K9	DB45	O8	Q840	B2	R425	I8	RA24	D7	RV63	O10
C477	K7	CG27	K9	DE50	A3	Q843	B3	R430	P4	RA25	D8	RW02	O9
C480	D4	CG28	K10	DG02	J12	Q862	I5	R431	C4	RA26	D8	RW03	O9
C481	D5	CG29	K9	DV01	N8	Q883	E4	R432	C4	RA27	C8	RZ30	N8
C482	C4	CG30	K11	DV03	N8	QA01	B7	R441	K5	RA33	C8	SA01	A4
C499	F11	CG31	K10	DV05	N9	QA02	B5	R448	O5	RA34	B8	SA02	A5
C501	E12	CG32	K10	DV07	N9	QB01	B2	R456	F10	RA35	B8	SA03	A5
C504	E12	CG33	K10	DV09	N9	QB03	A3	R457	E9	RA36	B8	SA04	A6
C505	D11	CG36	M7	DV13	N9	QB23	G11	R460	J8	RA37	C8	SA05	A7
C510	D9	CG37	N7	F470	E6	QB30	B3	R461	K7	RA38	C8	SA06	A8
C511	D8	CG38	O9	F801	B11	QB40	C6	R462	J7	RA40	B8	SA07	A1
C512	E12	CG39	O8	F802	G3	QB60	M12	R463	K6	RA41	B8	SR81	D3
C582	C11	CG42	K11	G217	L6	QB61	L12	R464	J8	RA61	C5	T401	L1
C583	C11	CG44	J12	G317	C11	QB62	N12	R465	J7	RA62	C5	T461	O2
C612	B5	CG46	J11	G500	C9	QG01	K11	R466	K8	RA67	C8	T801	A10
C661	H9	CM51	B8	G501	N8	QG05	I11	R467	K7	RA68	C8	T840	E1
C662	H10	CM55	C9	G816	I2	QM53	B8	R472	P4	RA70	A6	T862	H4
C663	I10	CM58	B8	G890	F8	QS60	P12	R473	K7	RA71	A5	X	P4
C671	I9	CR01	C10	G891	G9	QS61	P12	R474	L7	RA72	A5	X401	E12
C672	I10	CR02	C10	GR01	B5	QS62	O12	R475	P7	RA73	A5	X501	E12
C673	H10	CR03	C10	GR02	C5	QS63	O10	R476	P6	RB01	A2	XA01	C8
C676	H11	CS70	O10	GR03	C5	QS64	O10	R477	P4	RB03	A3		
C677	H11	CS71	O10	H001	P11	QV01	N9	R478	P6	RB09	B2		
C678	H10	CV01	O8	KB01	A2	QV60	O9	R481	P6	RB11	B2		



CRT BOARD

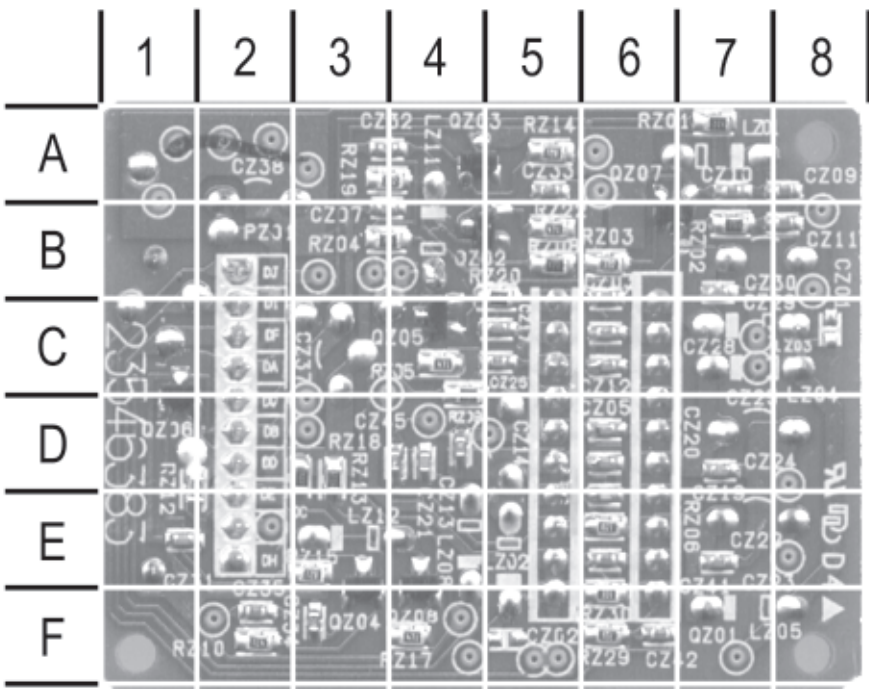


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CRT BOARD, GRIDTRACE LOCATION GUIDE

C902	F3	D905	H4	Q908	B4	R921	G3	R961	G1
C904	H3	D906	G4	Q910	B3	R922	H4	R962	C1
C905	H3	D911	B2	Q911	A4	R924	H3	R977	G4
C907	F4	G908	E4	Q912	A3	R925	H3	R980	B3
C909	B1	L902	F2	Q913	A3	R928	F4	R981	B3
C910	C4	L903	G2	Q914	A3	R929	G4	R982	B3
C911	B4	L904	C2	R901	F4	R930	F4	R983	A4
C912	C4	L910	A4	R902	F2	R932	B4	R984	B3
C913	D4	P900	H1	R903	D4	R934	B4	R985	A3
C914	H3	P903	F3	R904	F4	R935	C4	R986	A3
C920	E2	Q901	G3	R905	H4	R936	D4	R987	A3
C921	B3	Q902	G3	R911	B2	R937	F4	R988	B2
C922	A4	Q903	H2	R914	G3	R939	A4	R989	A2
D901	B4	Q904	H3	R915	G3	R942	G2	R990	A3
D902	B4	Q905	C3	R917	G3	R943	G2	R991	B3
D903	B4	Q906	F4	R918	G3	R944	B2	V901A	D2
D904	G3	Q907	B4	R920	B2	R960	F2		

COMB FILTER BOARD

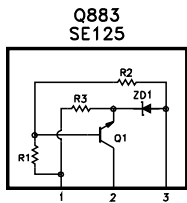
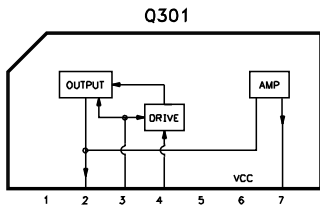
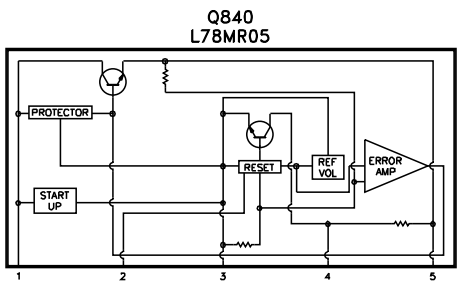


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COMB FILTER BOARD, GRIDTRACE LOCATION GUIDE

CZ03	B6	CZ24	D7	CZ45	D4	QZ06	D1	RZ15	E3
CZ05	D6	CZ25*	D7	LZ01*	A7	QZ07	B6	RZ17	F4
CZ07	B3	CZ26	C5	LZ02*	E5	QZ08	F4	RZ18	D3
CZ09	A8	CZ28	C6	LZ03*	C7	RZ01	A7	RZ19	A3
CZ10	A7	CZ29	B7	LZ04*	C7	RZ02	B7	RZ20	B5
CZ11	B8	CZ30*	B7	LZ05*	F7	RZ03	B6	RZ22	B5
CZ12	C6	CZ31	E1	LZ08*	E4	RZ04	B3	RZ29	F6
CZ13	D4	CZ32	A3	LZ11A*	B4	RZ05	C4	RZ30A	F6
CZ14*	D5	CZ33	A5	LZ12*	E3	RZ06	E6		
CZ17	C5	CZ34	F3	PZ01*	B2	RZ08	B5	* Located on top of board.	
CZ19	E6	CZ35	F2	QZ01*	C6	RZ09	C4		
CZ20	D6	CZ37*	C3	QZ02	B4	RZ10	F2		
CZ21	D4	CZ38*	A2	QZ03	A4	RZ12	D1		
CZ22*	E7	CZ41	E6	QZ04	F3	RZ13	D3		
CZ23	E7	CZ42	F6	QZ05	C4	RZ14	A5		

IC FUNCTIONS



Important Parts Information

- ▾ The parts listed here are those not usually available from a well-stocked supply cabinet or bin.
- ▾ Where items may be replaced with equivalent parts, several alternates are shown from participating vendors.
- ▾ On the parts lists, safety items are marked with a # to remind you that only exact replacements are recommended for these items.
- ▾ When ordering parts, state the model number, part number, and description.

Obtaining Parts

Many of these parts are available from your local Sams authorized distributor or the manufacturer of the equipment. Call Sams for the name of your nearest distributor:

800-428-7267

Or consult the Sams *Annual Index* for the address of the original equipment manufacturer.

Participating Vendors

Information on test equipment and replacement parts is listed in these pages for the following participating vendors. Consult the Sams *Annual Index* for their current address.

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

TEST EQUIPMENT

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

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



PARTS LIST

Item No.	Type No.	Mfr. Part No.	NTE Part No.
D101	MTZJ33C	23316755	-
D201, 21, 22	1SS133	23118859	NTE519
D225, 26	MTZJ9.1A	23316686	-
D301	ERB44-06	23118095	NTE552
D302	EU2A	23118094	NTE552
D310, 13, 14, 15	1SS133	23118859	NTE519
D316	MTZJ6.8C	23316679	-
D370	MTZJ5.6B	23316672	NTE5011T1
D371	1SS133	23118859	NTE519
D406	EU2A	23118094	NTE552
D408	3JH41	A7580658	-
D409	MTZJ10B	23316690	-
D411	MTZJ8.2B	23316684	-
D421	MTZJ4.7A	23316665	-
D422	MTZJ5.1B	23316669	NTE5010T1
D430	MTZJ12C	23316720	NTE5021T1
D441	MTZJ9.1B	23316687	-
D461	ERC20-06	23316582	NTE598
D464	MTZJ2.2A	23316648	-
D466	MTZJ2.7B	23316653	-
D467, 71	ERB44-06	23118095	NTE552
# D472	RD6.2E(4)	23115774	NTE5013A
D473	1SS133	23118859	NTE519
D480	MTZJ16A	23316727	-
D611, 12	1SS133	23118859	NTE519
D801	D3SB60	23316391	NTE5310
D805	1SS133	23118859	NTE519
D806	EU2A	23118094	NTE552
D807	1SS133	23118859	NTE519
D810	AK04	23316269	NTE585
D815	MTZJ27B	23316746	-
D830	MTZJ5.6C	23316673	-
D840	S1WBA20	23316962	NTE5332
D845, 81	1SS133	23118859	NTE519
D883	RU3AM	23357344	NTE580
D885	EU2A	23118094	NTE552
D901 Thru			
D906	1SS133	23118859	NTE519
D911	ERB44-06	23118095	NTE552
DA42	MTZJ5.6B	23316672	NTE5011T1
DB03	SIR-56SB3F	23358522	-
DB30, 45	1SS133	23118859	NTE519
DE50	SCL003URC5F	23358501	-
DG02	MTZJ10B	23316690	-
DV01, 03, 05	MTZJ9.1A	23316686	-
DV07, 09, 13	MTZJ9.1A	23316686	-
G317	-	-	-
Q202, 03	2SC1740S-Q	23114528	NTE85
Q204, 05	RN1204	A6002040	NTE2359
Q301	LA7833S	23319787	-
Q360	2SC1740S-Q	23114528	NTE85
Q361	2SC4721P	23314444	-
Q370	2SA933S-Q	23114530	NTE290A
Q402	2SC2482FA-1	A6330069	NTE399
Q403	2SC4721P	23314444	-
Q404	2SD2553	A6873777	-
Q421	2SC3852	23314141	NTE56%
Q460	2SD2493(P)	23314938	-
Q461	2SA933S-Q	23114530	NTE290A

Item No.	Type No.	Mfr. Part No.	NTE Part No.
Q471	2SA1015-O	A6534020	NTE290A
Q472	2SC1740S-Q	23114528	NTE85
Q480	2SA949-Y(C)	A6532853	NTE383
Q481, 82	2SC1740S-Q	23114528	NTE85
Q483	RN2201	A6012010	NTE2368
Q501	TA1310N	B01A0007	-
Q503	2SC1740S-Q	23114528	NTE85
Q610	TA8265K	B01A0068	-
Q611	2SC2878-A	A6342200	NTE85
Q612	KTA1266Y	23314962	NTE290A
Q613	2SC2878-A	A6342200	NTE85
Q801	STR-G6624	23135012	-
Q830	2SD1944	23314707	NTE56
Q840	L78MR05	23318299	-
Q843	RN1205	A6002050	-
Q862	TLP621(GRL-L)	A8643112	NTE3098
# Q883	SE125N	23000352	-
Q901	2SC4544	A6368700	NTE376%
Q902	2SC1815-Y	A6317440	NTE85
Q903	2SC4544	A6368700	NTE376%
Q904	2SC1815-Y	A6317440	NTE85
Q905	2SC4544	A6368700	NTE376%
Q906	2SC1815-Y	A6317440	NTE85
Q907	2SA933S-Q	23114530	NTE290A
Q908	2SC2120-Y	A6321240	NTE289A
Q910, 11	2SC1740S-Q	23114528	NTE85
Q912, 13	2SA933S-Q	23114530	NTE290A
Q914	2SC1740S-Q	23114528	NTE85
QA01	TMPA8700CPN-3C33	23000773	-
QA02	AT24C08-10PC	70129486	-
QB01	2SC1740S-Q	23114528	NTE85
QB03	RN1205	A6002050	-
QB23, 30, 40	2SC1740S-Q	23114528	NTE85
QB60	2SA933S-Q	23114530	NTE290A
QB61, 62	2SC1740S-Q	23114528	NTE85
QG01	UPC1851BCU	23906499	-
QG05	2SC2655-Y(C)	A6333346	NTE2363
QG70	TC4053BP(N)	23000043	-
QG71	KTC3198Y	23314965	NTE199
QM53	DTC143TN	23314360	-
QS60, 61	KTC3198Y	23314965	NTE199
QS62	RN2204	A6012040	NTE2360
QS63, 64	2SC2878-A	A6342200	NTE85
QV01	MM1313BD	23906364	-
QV60	2SC1740S-Q	23114528	NTE85
QZ01	TC90A49P	B0410895	-
QZ02, 03, 04	2SA1162-Y	A6541130	NTE2409
QZ05	2SC2712-Y	A6335470	NTE2408
QZ06, 07	2SA1162-Y	A6541130	NTE2409
QZ08	2SC2712-Y	A6335470	NTE2408
QZ11	2SC1740S-Q	23114528	NTE85
Item No.	Function/Rating	Mfr. Part No.	Notes
# C440	.0075 3% 1.5kV	24082957	-
# C442	.39 5% 315V	24082920	-
# C444	.0056 3% 1.8kV	24082837	-
# C467	.015 3% 630V	24095883	-
C505	12pF NPO	24353120	-

PARTS LIST continued

Item No.	Function/Rating	Mfr. Part No.	Notes
C801	.22 20% 275VAC	24503002	-
C802	.1 275VAC	24503001	-
C805, 06	.01+80% -20% 250VAC	24092623	-
C811, 12, 13	.0047 20% 250VAC	24092597	-
C815, 16	.0047 20% 250VAC	24092597	-
C817	330pF 10% 2kV	24092339	-
C818	.0022 3% 1.25kV	24082402	-
C893	330pF 10% 2kV	24092339	-
C902	.001 10% 2kV	24092345	-
CB60	2.2µF 20% 50V NP	24085944	-
CG13	3.3µF 16V Tantalum	-	-
CG16	10µF 20% 16V Tantalum	24704106	-
D899	Varistor	24019485	-
F470	Fuse	23144785	1.25Amp, 125V
F470A	Fuse Holder	23165433	For F470 (2 Used)
F801	Fuse	23144888	5Amp, 125V, Slow Blow
F801A	Fuse Holder	23165433	For F801 (2 Used)
F802	Fuse	23144733	3.15Amp, 125V
F802A	Fuse Holder	23165433	For F802 (2 Used)
G500	-	23289840	-
G816	Ferrite Bead	23103880	-
G890, 91	-	23280016	-
G908	Ferrite Bead	23289100	-
H001	Tuner	23321404	EL961L
KB01	Receiver	23906805	Remote, PIC-TB17
L101	-	23289842	-
L301	Ferrite Bead	23103880	-
L400	-	23238714	-
# L441	Horizontal Linearity	23233979	-
L442	-	23248122	-
# L461	-	23248179	-
# L462 (1)	Yoke	-	Horiz 1.37mH, Vert 11.8mH
L463	Ferrite Bead	23103880	-
L501	-	23289101	-
L502	-	23289844	-
L805, 06	-	23248227	-
L815, 83	Ferrite Bead	23103880	-
L885	-	23248073	-
L886	Ferrite Bead	23103880	-
L901	Degaussing	23200335	-
L902, 03, 04	-	23289221	-
L910	-	23237991	-
LA01	-	23289100	-
LB01	Oscillator	23262280	-
LV01	-	23289840	-
LV98, 99	-	23103852	-
LZ01	-	23238710	-
LZ02 Thru			
LZ05	-	23238714	-
LZ08	-	23238707	-
LZ11	-	23238710	-
LZ11A	-	23289836	-
LZ12	-	23238710	-
P801	Line Cord	23372115	AC, Polarized
PV01	Jack	23365818	SVHS
PV02	Jack	23365990	Assembly
PV03	Jack	23365991	Assembly
PV06	Jack	-	Assembly
# R308	820 2W	24383821	-

Item No.	Function/Rating	Mfr. Part No.	Notes
R368	4.7 5% 1/4W Fusible	24545479	-
R416	4300 5% 5W Wirewound	24510432	-
R424	2.7 5% 1/2W Fusible	24546279	-
R441	1000 5% 1W Fusible	24532102	-
# R475	390 5% 1/6W	24366391	-
# R478	13K 1% 1/4W	24327133	-
# R482	4700 1% 1/4W	24327472	-
R488, 89	18K 1% 1/4W	24327183	-
R808	7 Cold PTC/233 Cold	24019483	-
R810	.82 10% 7W Wirewound	24568828	-
R920	2.2 5% 2W Fusible	24000961	-
R984	1500 2% 1/6W	24367152	-
R985	470 2% 1/6W	24367471	-
R986, 87	680 2% 1/6W	24367681	-
R988, 89	4700 2% 1/6W	24367472	-
R991	680 2% 1/6W	24367681	-
RG15	15K 1% 1/4W	24327153	-
RG45	4.7 5% 1/4W Fusible	24545479	-
SA01	Switch	23145227	Channel Up
SA02	Switch	23145227	Channel Down
SA03	Switch	23145227	Volume Up
SA04	Switch	23145227	Volume Down
SA05	Switch	23145227	TV/Video
SA06	Switch	23145227	Menu
SA07	Switch	23145227	Power
SR81	Relay	23146564	Power
T401	Horizontal Drive	23224367	-
# T461 (2)	Horizontal Output	23236540	-
T801	Line Filter	23211739	-
T840	Power	23213513	-
T862	Converter	23217460	-
# V901	CRT	23312923	A90AKB50X02(V)
V901A	Socket	23902068	CRT
W661, 62	Speaker	23351088	60 X 120MM, 8 Ohms, 5W
X401	Crystal	23153721	503kHz
X501	Crystal	23153961	3.58MHz
XA01	Crystal	23153504	8MHz
	PC Board	23784601	Comb Filter, PB9398
	PC Board	-	CRT, PB8625F
	PC Board	23783079	CRT, PB8625D
	PC Board	23785952	Front, PD0005
	PC Board	-	Main, PD0004B
	Transmitter	23306359	Remote, CT-90037

# For SAFETY use only equivalent replacement part.

% Use insulating hardware supplied with replacement.

(1) Bonded part of CRT.

(2) Screen and focus controls are part of T461.