

SAFETY PRECAUTIONS

SERVICE WARNING

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

SERVICING THE HIGH VOLTAGE AND CRT

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

X-RAY RADIATION AND HIGH VOLTAGE LIMITS

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

GENERAL GUIDELINES

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

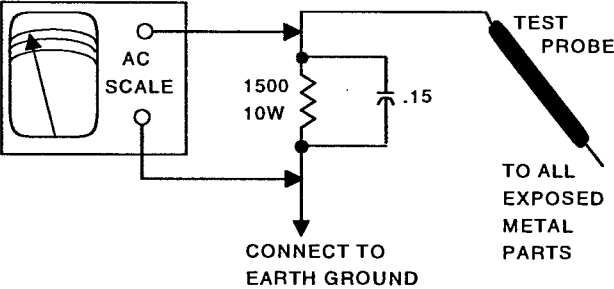
SAFETY CHECKS — FIRE AND SHOCK HAZARD

Cold Leakage Checks for Receivers with Isolated Ground

Unplug the AC cord, connect a jumper across the plug prongs, and turn the power switch on (if applicable). Use an ohmmeter to measure the resistance between the jumped AC plug and any exposed metal cabinet parts such as antenna screw heads, control shafts, or handle brackets. Exposed metal parts with a return path should measure between 1M ohms and 5.2M ohms. Parts without a return path must measure infinity.

Hot Leakage Current Check

Plug the AC cord directly into an AC outlet. DO NOT use an isolation transformer. Use a 1500 ohms, 10W resistor in parallel with a .15µF capacitor to connect between any exposed metal parts on the receiver and a good earth ground. (See figure below.) Use an AC voltmeter with at least 5000 ohms per volt sensitivity to measure the voltage across the resistor. Check all exposed metal parts and measure voltage at each point. Voltage measurements should not exceed .75VAC, 500µA. Any value exceeding this limit constitutes a potential shock hazard and must be corrected. If the AC plug is not polarized, reverse the AC plug and repeat exposed metal part voltage measurement at each point.



HIGH VOLTAGE SHUTDOWN TEST

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.

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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UPC
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PHOTOFACT[®] Technical Service Data
SILVER

SET 4896

MODEL 32A33 (CHASSIS TAC0303)

TOSHIBA

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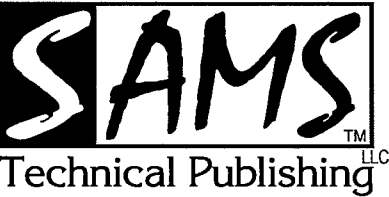
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Tuner Information 1

Essential coverage
for servicing a television receiver...

- Schematics
- Component locations
- Parts list

Coverage includes this additional model and chassis:

Model	Chassis
32A43	TAC0301



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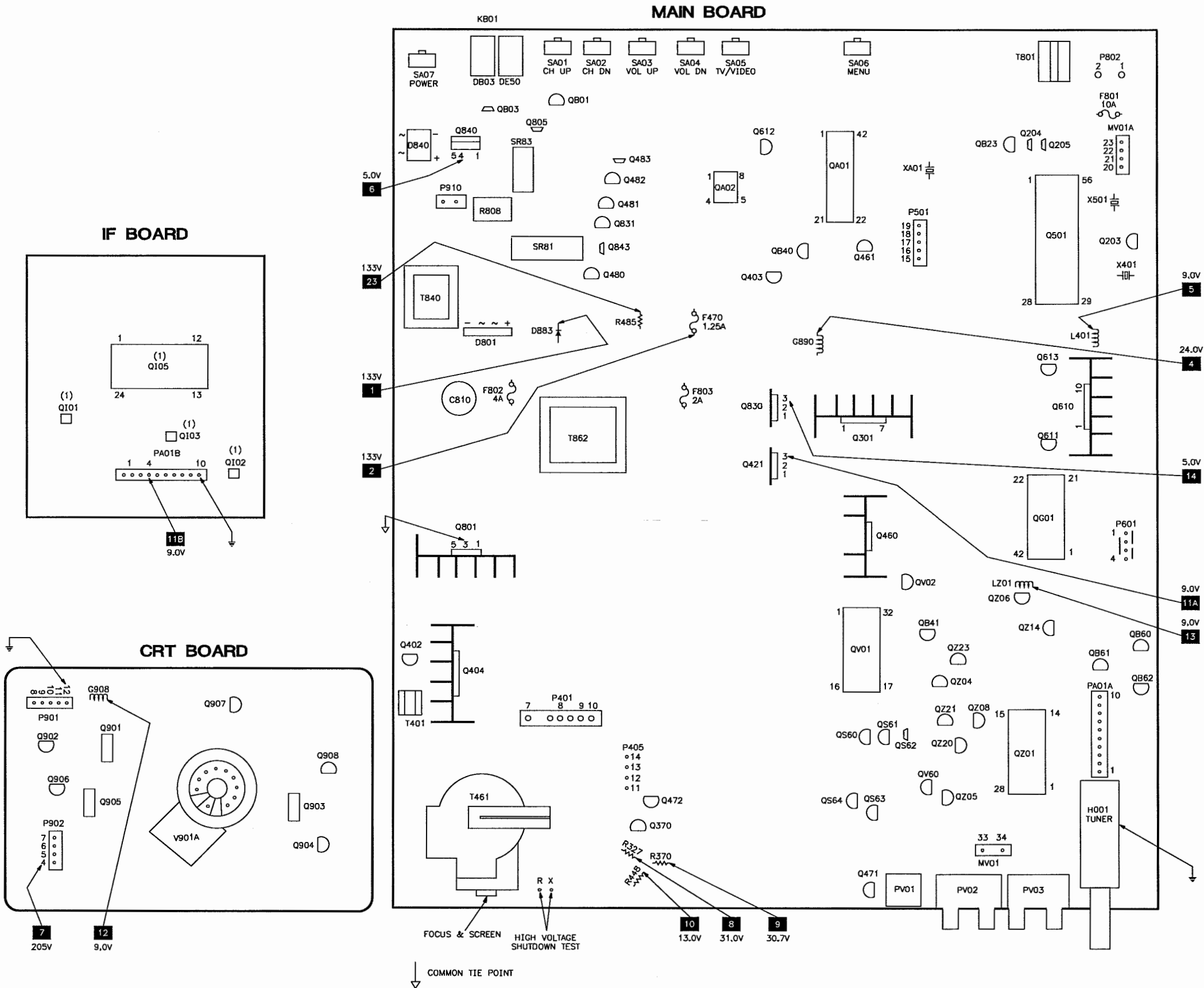
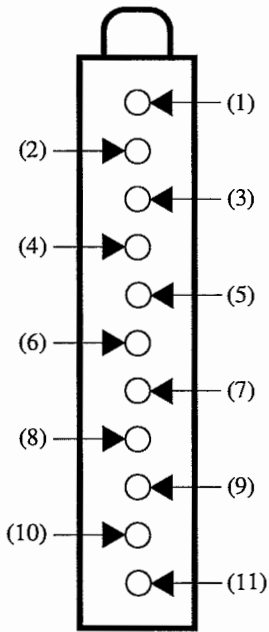
TUNER INFORMATION

TUNER VOLTAGE CHART

Pin	VHF Low Band	VHF High Band	UHF Band
(1) AGC	1.9V	1.9V	2.2V
(2) VT	1.0V	4.6V	4.6V
(3) ADR	4.8V	4.8V	4.8V
(4) SCL	4.6V	4.6V	4.6V
(5) SDA	4.7V	4.7V	4.7V
(6) NC	0V	0V	0V
(7) 5V	4.8V	4.8V	4.8V
(8) NC	0V	0V	0V
(9) 32V	32.9V	32.9V	32.9V
(10) NC	0V	0V	0V
(11) IF	0V	0V	0V

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

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 28kV to 32kV.

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. 23009196 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 : MAIN	Green display is normal. Cyan display is no check. Red display is NG.
SET ID : 05 ESP VER : 04 OPT0 : 20H OPT1 : 04H OPT2 : 00H	

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 Adjustment Chart

Item	Adjustment Name	Direct Button	Reference Value
OSD	On Screen Display	-	30H
OPT0	Option 0	-	20H
OPT1	Option 1	-	04H
OPT2	Option 2	-	00H

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	44H
GCUT (1)	Green Cutoff	40H	73H
BCUT (1)	Blue Cutoff	40H	3DH
GDRV (1)	Green Drive	40H	3AH
BDRV (1)	Blue Drive	40H	4CH
SCNT	Sub Contrast	0AH	09H
BRTC (1)	Sub Brightness	40H	47H
COLC (1)	Sub Color	3DH	40H
TNTC (1)	Sub Tint	48H	48H
RGBB	RGB Bright	0BH	0BH
HPOS (1)	Horizontal Position	19H	1BH
VPOS (1)	Vertical Position	03H	03H
HIT (1)	Height	1CH	1FH
LIN	Vertical Linearity	07H	08H
VSC	V-S Correction	03H	03H
VPS	Vertical Shift	01H	01H
VCP	Vert Compensation	03H	03H
WID (1)	Width	25H	21H
DPC (1)	E-W Parabola	13H	15H
CNR	E-W Corner	03H	03H
TRAP	Trapezium	07H	07H
HCP	Horiz Compensation	00H	00H
VFC	V-F Correction	0FH	0FH
GMPS	-	3FH	3FH
CPAR	-	44H	44H
SAVC (1)	SAP VCO	25H	1EH
ATT (1)	Attenuator	0FH	0AH
STVC (1)	Stereo VCO	21H	1FH
STRF (1)	Stereo Filter	21H	1AH
SPEC (1)	Spectral	1DH	10H
WBAN (1)	Stereo Separation	16H	23H

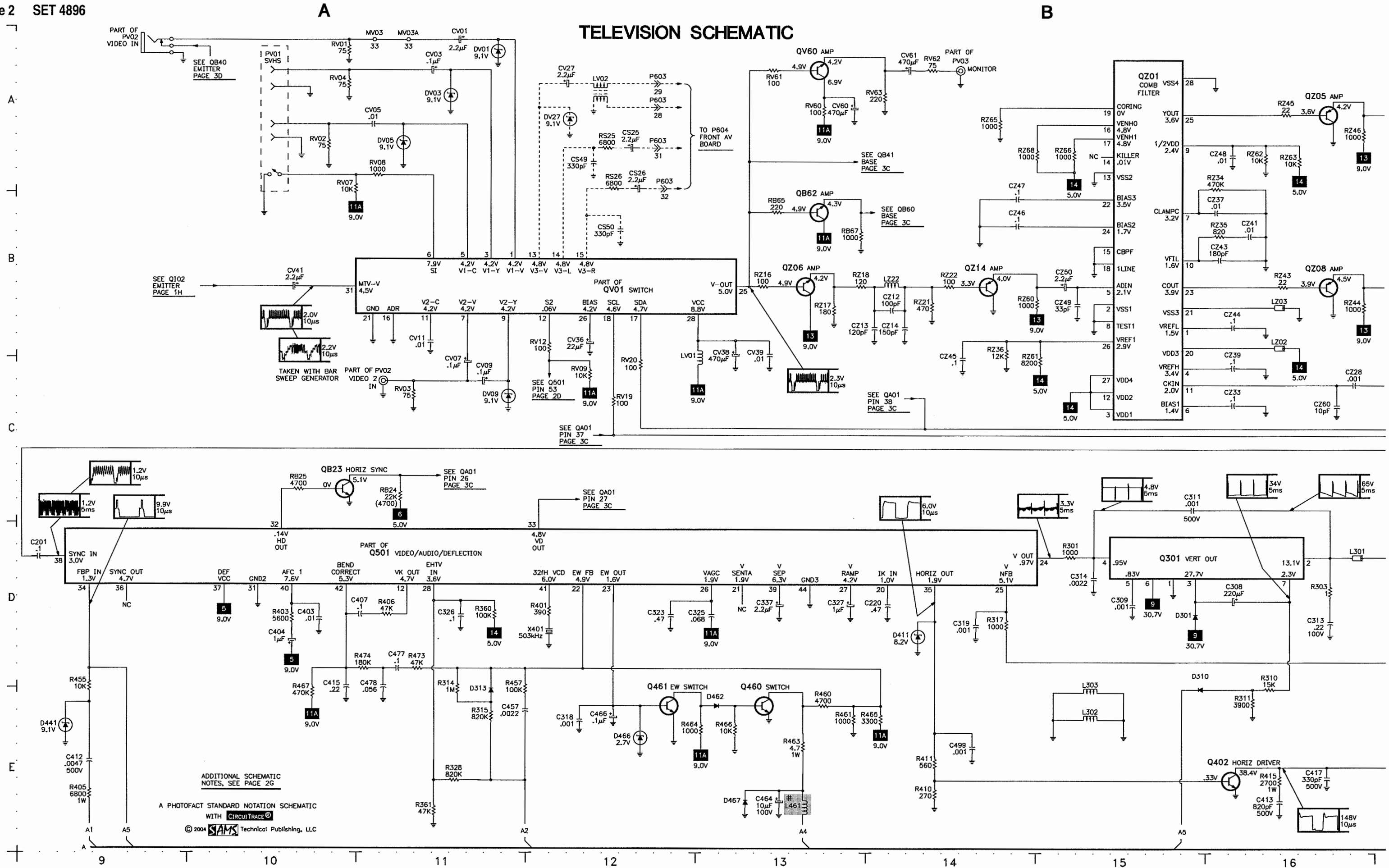
(1) May need adjustment when replacing QA02 or Q501.

H



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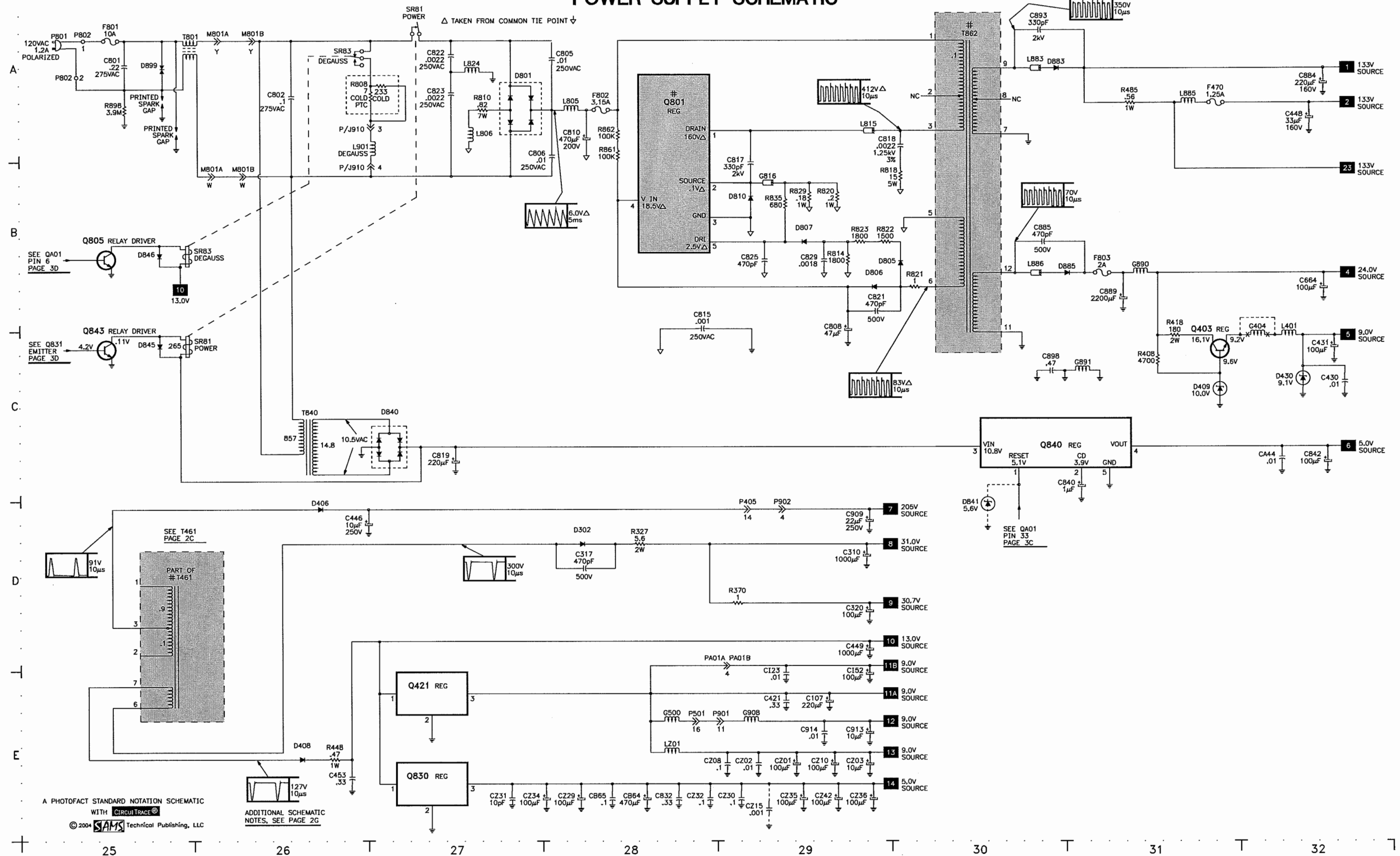
TELEVISION SCHEMATIC



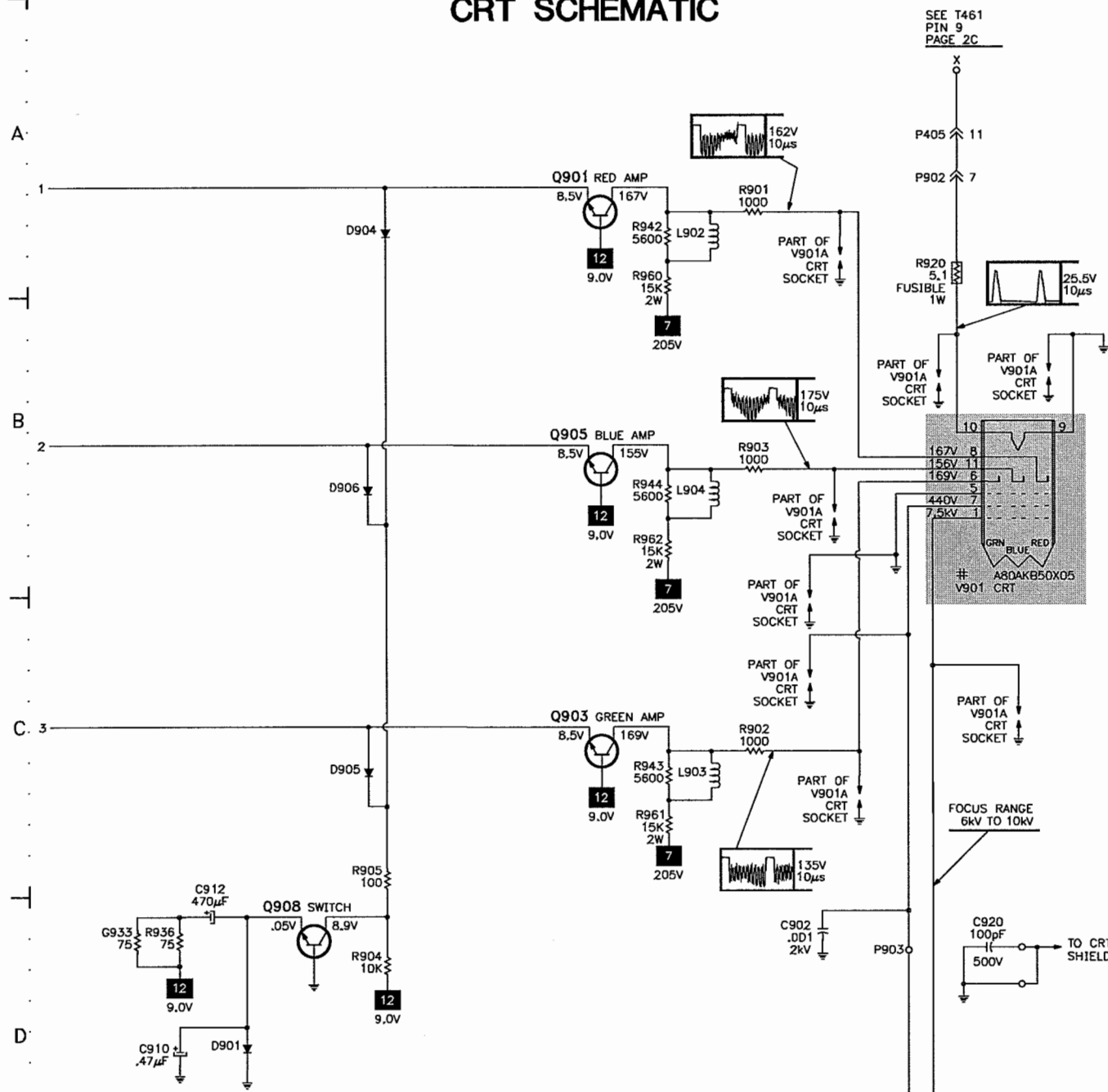
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POWER SUPPLY SCHEMATIC

F



G 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 **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.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

WITH **CIRCUITTRACE**

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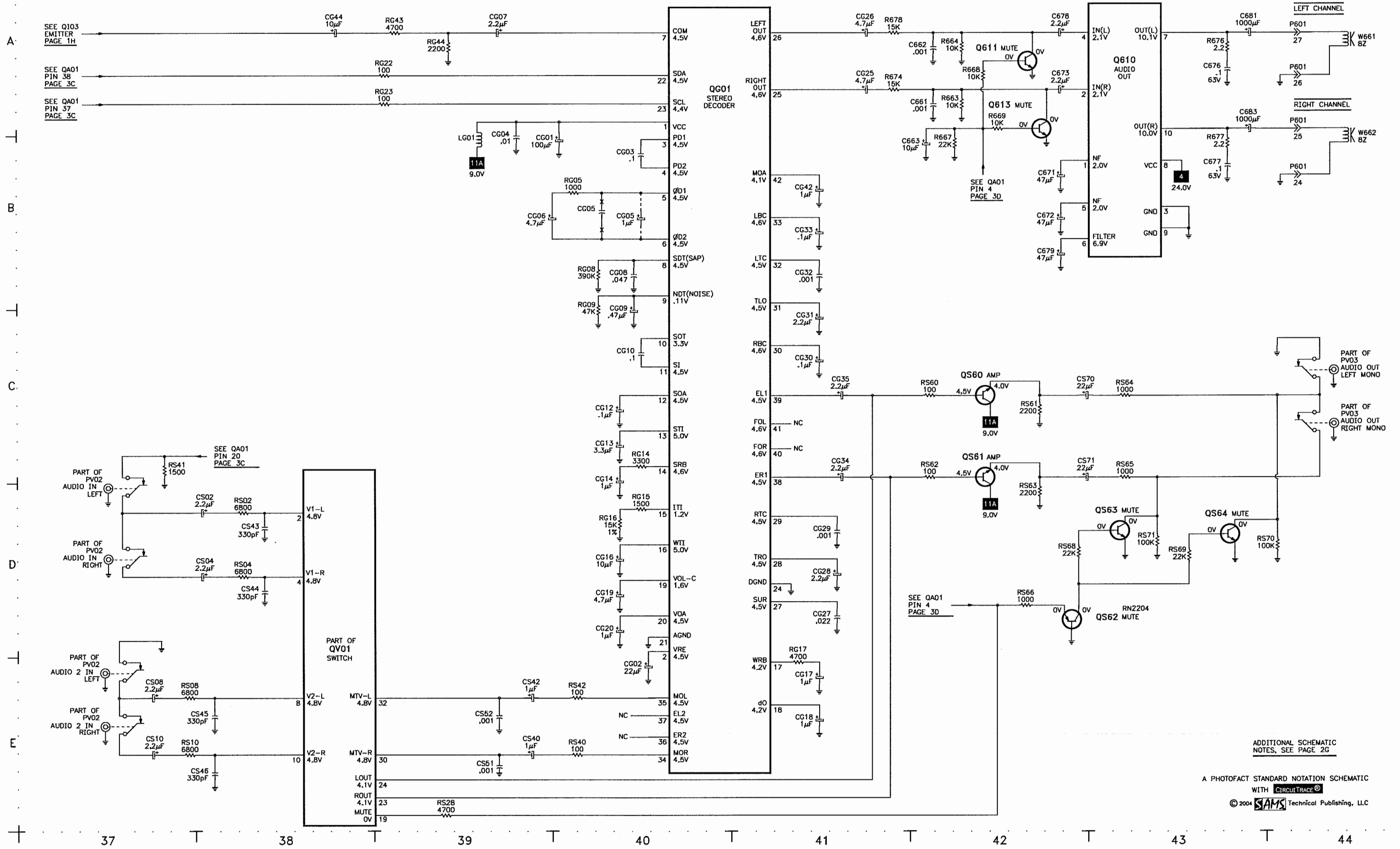
SCHEMATIC COMPONENT LOCATION GUIDE

C102	D1	C677	B43	C108	B4	CZ60	C16	L824	A27	Q103	A7	R473	D11	RA25	A20	RS61	C42
C105	A1	C678	A42	C109	B7	CZ96	B17	L883	A30	Q105	A6	R474	D10	RA26	D47	RS62	D42
C106	A1	C679	B42	C110	B7	D101	A2	L885	A31	Q105	B4	R475	E21	RA27	D46	RS63	D42
C107	E29	C681	A43	C111	B6	D201	C22	L886	B30	Q105	B7	R476	E21	RA33	C48	RS64	C43
C201	D9	C683	B43	C112	C5	D221	C22	L901	B26	Q860	C42	R477	D21	RA35	A47	RS65	D43
C204	C20	C801	A25	C113	C4	D222	D22	L902	A35	Q861	D42	R478	E21	RA36	C47	RS66	D42
C205	E50	C802	A26	C114	A5	D225	C22	L903	C35	Q862	D42	R481	E22	RA37	A49	RS68	D42
C216	C22	C805	A28	C115	A5	D226	B22	L904	B35	Q863	D43	R482	E21	RA38	A49	RS69	D43
C220	D14	C806	B28	C116	A6	D301	D15	LA01	A46	Q864	D43	R485	A31	RA40	C47	RS70	D43
C221	B20	C808	C29	C117	B6	D302	D28	LG01	B39	QV01	A18	R486	D49	RA41	D47	RS71	D43
C222	C22	C810	A28	C118	A7	D310	E15	LI01	B2	QV01	B12	R487	C49	RA61	B49	RV01	A10
C223	B20	C815	C28	C121	A4	D313	E11	LI02	B4	QV01	E38	R488	C49	RA62	B49	RV02	A10
C224	B20	C817	B29	C123	E29	D370	E24	LI51	B2	QV02	A19	R489	C50	RA67	A49	RV03	C11
C225	B22	C818	B29	C125	C5	D371	E24	LI52	B6	QV60	A13	R490	C50	RA68	A49	RV04	A10
C226	C22	C819	C27	C151	B4	D406	D26	LI53	A5	QZ01	A15	R493	C51	RA71	B45	RV07	B10
C245	C22	C821	C29	C152	E29	D408	E26	LI54	C5	QZ04	B18	R494	C51	RA72	B45	RV08	B11
C261	B21	C822	A27	C153	C1	D409	C31	LI55	B3	QZ05	A16	R495	D50	RA73	B46	RV09	C12
C262	B21	C823	A27	CM51	C47	D411	D14	LI56	B7	QZ06	B13	R501	C21	RA74	B47	RV12	C12
C263	B21	C825	B29	CM52	D47	D430	C32	LI57	B1	QZ08	B16	R502	C20	RB01	B49	RV14	A19
C271	C20	C829	B29	CM58	D47	D441	E9	LV01	C12	QZ14	B14	R503	C20	RB03	B50	RV15	A19
C305	D17	C832	E28	CR01	B22	D444	E18	LV02	A12	QZ20	A17	R511	B19	RB09	A45	RV16	A19
C306	E17	C840	C31	CR02	B22	D461	E18	LV98	A22	QZ21	A18	R512	B19	RB11	B49	RV19	C12
C307	D17	C842	C32	CR03	B22	D462	E13	LV99	C22	QZ23	B17	R612	D51	RB24	C11	RV20	C12
C308	D16	C884	A32	CS02	D38	D466	E12	LZ01	E28	R	D21	R613	D51	RB25	C10	RV60	A13
C309	D15	C885	B30	CS04	D38	D467	E13	LZ02	C16	R101	A2	R614	D51	RB40	C48	RV61	A13
C310	D29	C889	B31	CS08	E37	D471	E21	LZ03	B16	R203	C20	R663	A42	RB42	C48	RV62	A14
C311	D15	C893	A30	CS10	E37	D472	E22	LZ10	C18	R207	A23	R664	A42	RB43	D48	RV63	A14
C313	D16	C898	C30	CS25	A12	D473	D23	LZ20	A17	R208	C23	R667	B42	RB44	D48	RV02	C22
C314	D15	C902	D35	CS26	B12	D480	C50	LZ21	B17	R209	B23	R668	A42	RB45	D49	RV03	A23
C317	D28	C904	B24	CS40	E39	D611	D50	LZ22	B14	R216	D21	R669	B42	RB46	D48	RZ05	A17
C318	E12	C905	C24	CS42	E39	D612	D51	LZ96	B17	R228	D21	R674	A41	RB47	D46	RZ06	A18
C319	D14	C906	C24	CS43	D38	D801	A27	P801	A25	R238	E50	R676	A43	RB49	D46	RZ07	B17
C320	D29	C909	D29	CS44	D38	D805	B29	PV02	A9	R239	B22	R677	B43	RB60	C45	RZ08	A17
C323	D12	C910	D33	CS45	E38	D806	B29	PV02	C11	R240	E50	R678	A41	RB61	C45	RZ10	B18
C325	D13	C911	D23	CS46	E38	D807	B29	PV02	D37	R241	E50	R808	A26	RB62	C46	RZ11	B17
C326	D11	C912	D33	CS49	A12	D810	B29	PV02	D37	R245	C22	R810	A27	RB63	C46	RZ12	B18
C327	D13	C913	E29	CS50	B12	D830	C49	PV02	E37	R261	B21	R814	B29	RB64	C46	RZ13	C17
C337	D13	C914	E29	CS51	E39	D840	C27	PV02	E37	R262	B21	R818	B29	RB65	B13	RZ14	C17
C370	E23	C920	D36	CS52	E39	D841	D30	PV03	A14	R263	B21	R820	B29	RB66	C47	RZ15	B17
C371	E24	CA32	C48	CS70	C42	D845	C25	PV03	A22	R264	B21	R821	B30	RB67	B13	RZ16	B13
CA03	D10	CA37	A48	CS71	D42	D846	B25	PV03	C22	R265	B21	R822	B29	RG05	B40	RZ17	B13
CA04	D10	CA38	A48	CV01	A11	D883	A30	PV03	C44	R266	B21	R823	B29	RG08	B40	RZ18	B13
CA07	D10	CA42	A47	CV03	A11	D885	B30	PV03	C44	R271	B20	R829	B29	RG09	C40	RZ21	B14
CA12	E9	CA43	A46	CV05	A11	D899	A25	Q203	C19	R272	C19	R831	C50	RG14	C40	RZ22	B14
CA13	E16	CA44	C32	CV07	C11	D901	D33	Q204	E49	R301	D15	R835	B29	RG15	D40	RZ28	B17
CA15	E10	CA68	B51	CV09	C11	D902	D23	Q205	E50	R303	D16	R861	B28	RG16	D40	RZ34	B15
CA16	E17	CA69	B50	CV10	B18	D904	A34	Q301	D15	R304	D17	R862	A28	RG17	E41	RZ35	B15
CA17	E16	CB01	A45	CV11	B11	D905	C34	Q370	E23	R305	E17	R898	A25	RG22	A38	RZ36	C14
CA21	E29	CB48	D46	CV12	A18	D906	B34	Q402	E16	R306	D17	R901	A35	RG23	A38	RZ43	B16
CA30	C32	CB60	C45	CV27	A12	D911	D21	Q403	C31	R307	D17	R902	C35	RG43	A39	RZ44	B16
CA31	C32	CB61	C45	CV36	B12	DA42	A47	Q404	E17	R308	E18	R903	B35	RG44	A39	RZ45	A16
CA38	D18	CB62	C46	CV38	C13	DB03	C50	Q421	E27	R310	E16	R904	D34	RI01	B2	RZ46	A16
CA39	E18	CB63	C46	CV39	C13	DB45	D49	Q460	E13	R311	E16	R905	C34	RI03	B2	RZ49	B17
CA42	E18	CB64	E28	CV41	B10	DE50	B49	Q461	E12	R313	D17	R914	A24	RI04	B2	RZ60	B14
CA43	E18	CB65	E28	CV60	A13	DV01	A11	Q471	E22	R314	E11	R915	B24	RI05	B3	RZ61	C14
CA44	E18	CG01	B39	CV61	A14	DV03	A11	Q472	E22	R315	E11	R916	B24	RI06	B3	RZ62	A16
CA45	E20	CG02	E40	CZ01	E29	DV05	A11	Q480	C49	R317	D14	R917	B24	RI07	B3	RZ63	A16
CA46	D26	CG03	B40	CZ02	E29	DV09	C11	Q481	C51	R327	D28	R918	C24	RI08	B3	RZ65	A14
CA48	A32	CG04	B39	CZ03	E29	DV27	A12	Q482	C51	R328	E11	R920	B35	RI09	C4	RZ66	A15
CA49	D29	CG05	B40	CZ04	B17	F470	A31	Q483	C51	R336	D17	R921	C24	RI11	C1	RZ68	A14
CA53	E26	CG05	B40	CZ05	B17	F801	A25	Q501	B20	R360	D11	R922	C24	RI13	B7	RZ71	A17
CA57	E11	CG06	B39	CZ06	A17	F802	A28	Q501	D11	R361	E11	R924	C24	RI14	B7	RZ75	C17
CA63	E17	CG07	A39	CZ08	E29	F803	B31	Q610	A43	R370	D29	R927	B24	RI15	B7	SA01	B46
CA64	E13	CG08	B40	CZ09	B17	G217	D21	Q611	A42	R371	E23	R928	B24	RI16	B8	SA02	B45
CA66	E12	CG09	C40	CZ10	E29	G402	E17	Q612	D51	R372	E22	R929	B24	RI17	B8	SA03	B45
CA67	E18	CG10	C40	CZ12	B14	G403	E18	Q613	B42	R373	E23	R930	C24	RI18	B6	SA04	B45
CA71	E21	CG12	C40	CZ13	B13	G404	C31	Q801	A28	R374	E24	R932	D23	RI19	B6	SA05	B45
CA74	E22	CG13	C40	CZ14	B14	G500	E28	Q805	B25	R401	D12	R934	D23	RI20	B6	SA06	B45
CA77	D11	CG14	D40	CZ15	E29	G816	B29	Q830	E27	R403	D10	R935	D23	RI21	C5	SA07	B46
CA78	E11	CG16	D40	CZ16	C17	G890	B31	Q831	C51	R405	E9	R936	D33	RI22	B4	SR81	A27
CA80	C50	CG17	E41	CZ28	C16	G891	C30	Q840	C30	R406	D11	R942	A35	RI23	A5	SR81	C25
CA81	C49	CG18	E41	CZ29	E28	G908	E29	Q843	C25	R408	C31	R943	C35	RI27	B5	SR83	A26
CA82	C51	CG19	D40	CZ30	E29	G933	D33	Q901	A34	R410	E14	R944	B35	RI28	C5	SR83	B25
CA83	C50	CG20	D40	CZ31	E27	GR01	B50	Q902	A24	R411	E14	R960	B35	R130	A7	T401	E17
CA99	E14	CG25	A41	CZ32	E28	GR02	B50	Q903	C34	R415	E16	R961	C35	R132	A7	T461	D19
CA01	B19	CG26	A41	CZ33	C16	GR03	B50	Q904	C24	R416	E17	R962	B35	R133	A4	T461	D25
CA04	C21	CG27	D41	CZ34	E27	KB01	A45	Q905	B34	R418	C31	R968	D21	R135	A4	T801	A25
CA05	C21	CG28	D41	CZ35	E29	L101	D1	Q906	B24	R429	E20	R977	B24	R136	A3	T840	C26
CA10	C20	CG29	D41	CZ36	E29	L201	C20	Q907	D24	R430	E20	RA03	C49	R151	C5	T862	A30
CA11	C20	CG30	C41	CZ37	B15	L301	D16	Q908	D33	R431	D22	RA04	D50	R152	B1	V901	C36
CA12	C21	CG31	C41	CZ39	C16	L302	E15	QA01	A48	R432	D22	RA06	E48	RR07	B47	W661	A44
CA18	C21	CG32	B41	CZ41	B16	L303	E15	QA02	B50	R441	D18	RA07	C48	RR93	B20	W662	B44
CA19	C22	CG33	B41	CZ42	E29	L401	C32	QB01	B49	R448	E26	RA08	B48	RS02	D38	X	D21
CA12	D51	CG34	D41	CZ43	B15	L441	D18	QB03	C49	R455	E9	RA09	E48	RS04	D38	X401	D12
CA13	D51	CG35	C41	CZ44	B16	L442	E18	QB23	C10	R457							

A

AUDIO SCHEMATIC

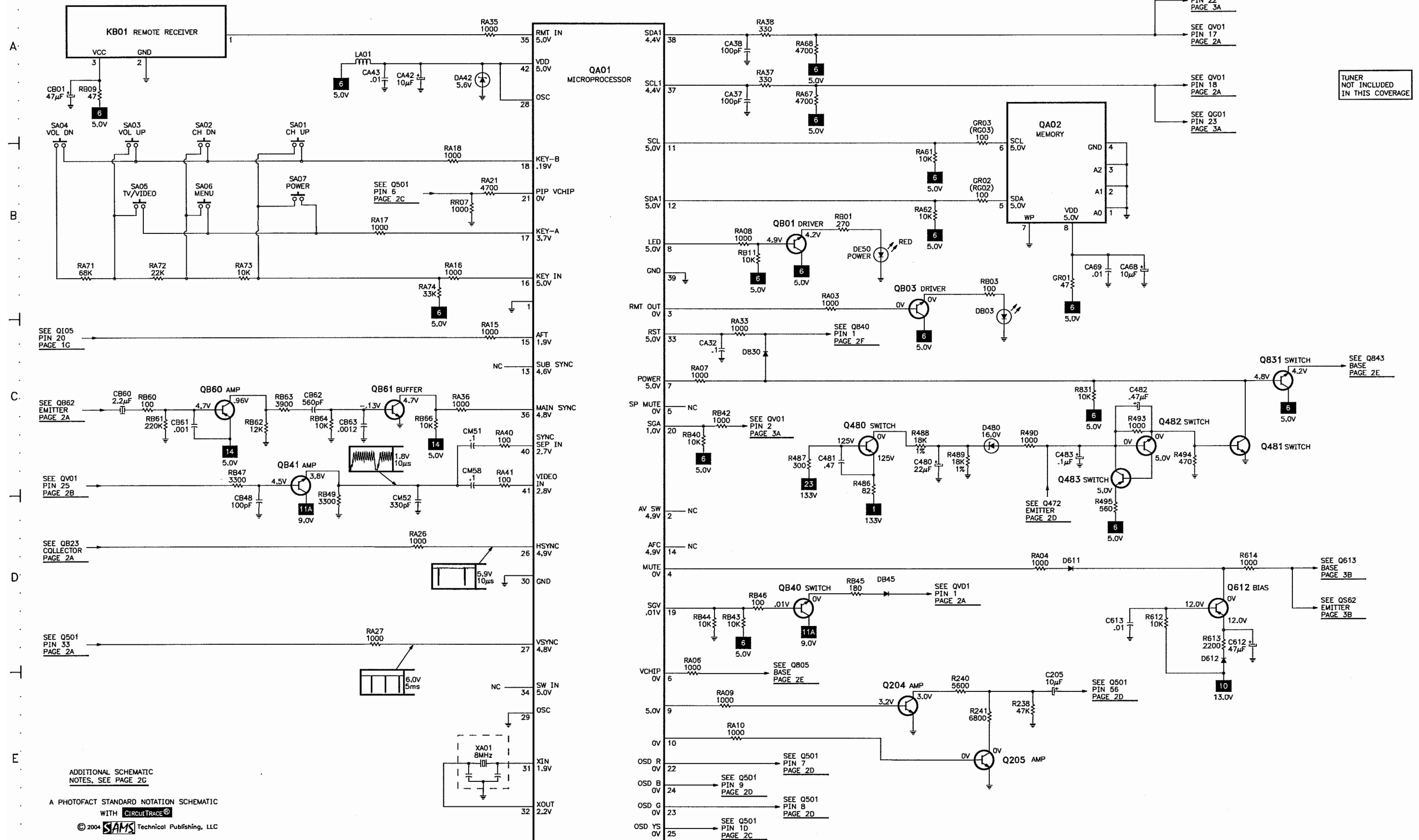
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SYSTEM CONTROL SCHEMATIC

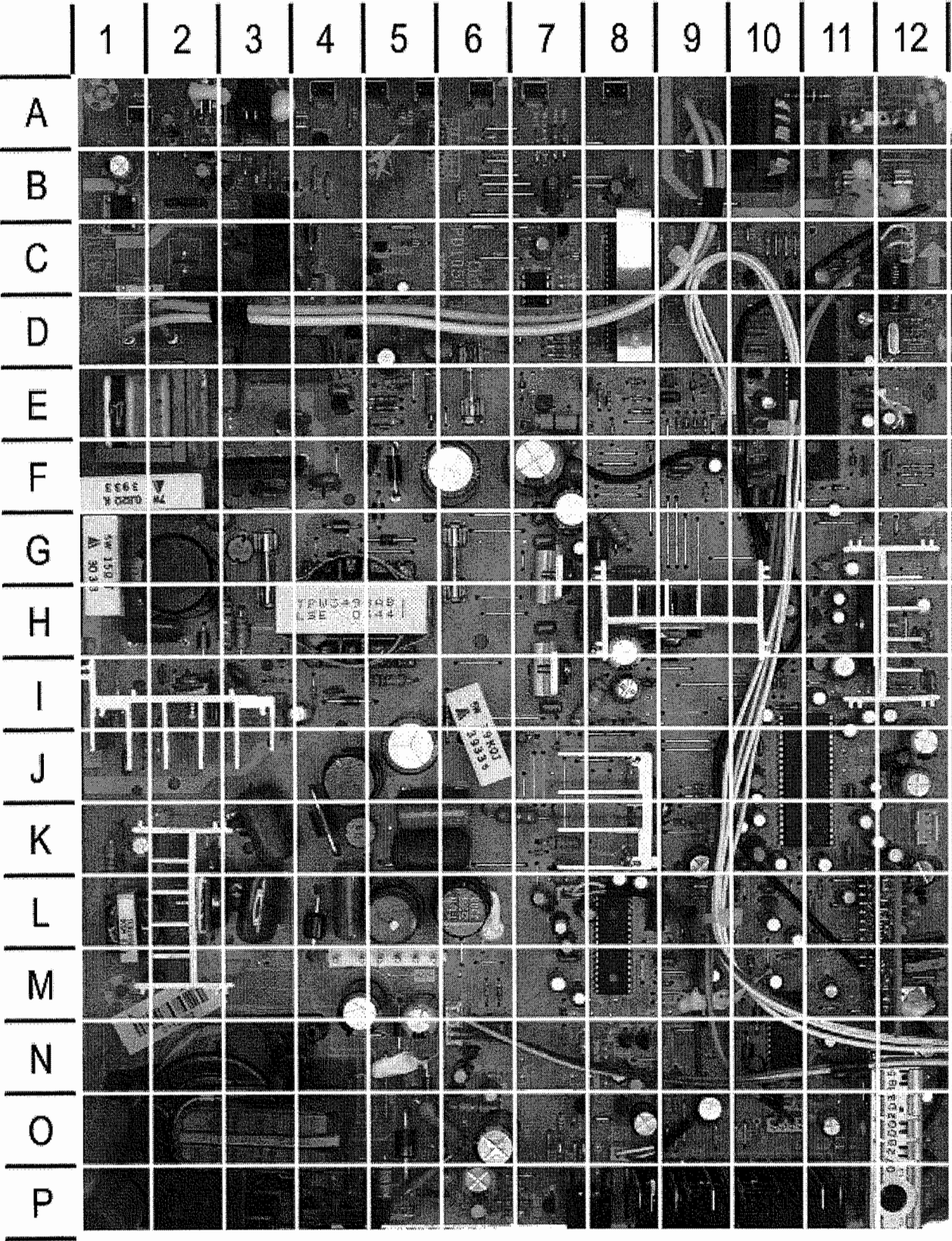
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D



TUNER NOT INCLUDED IN THIS COVERAGE

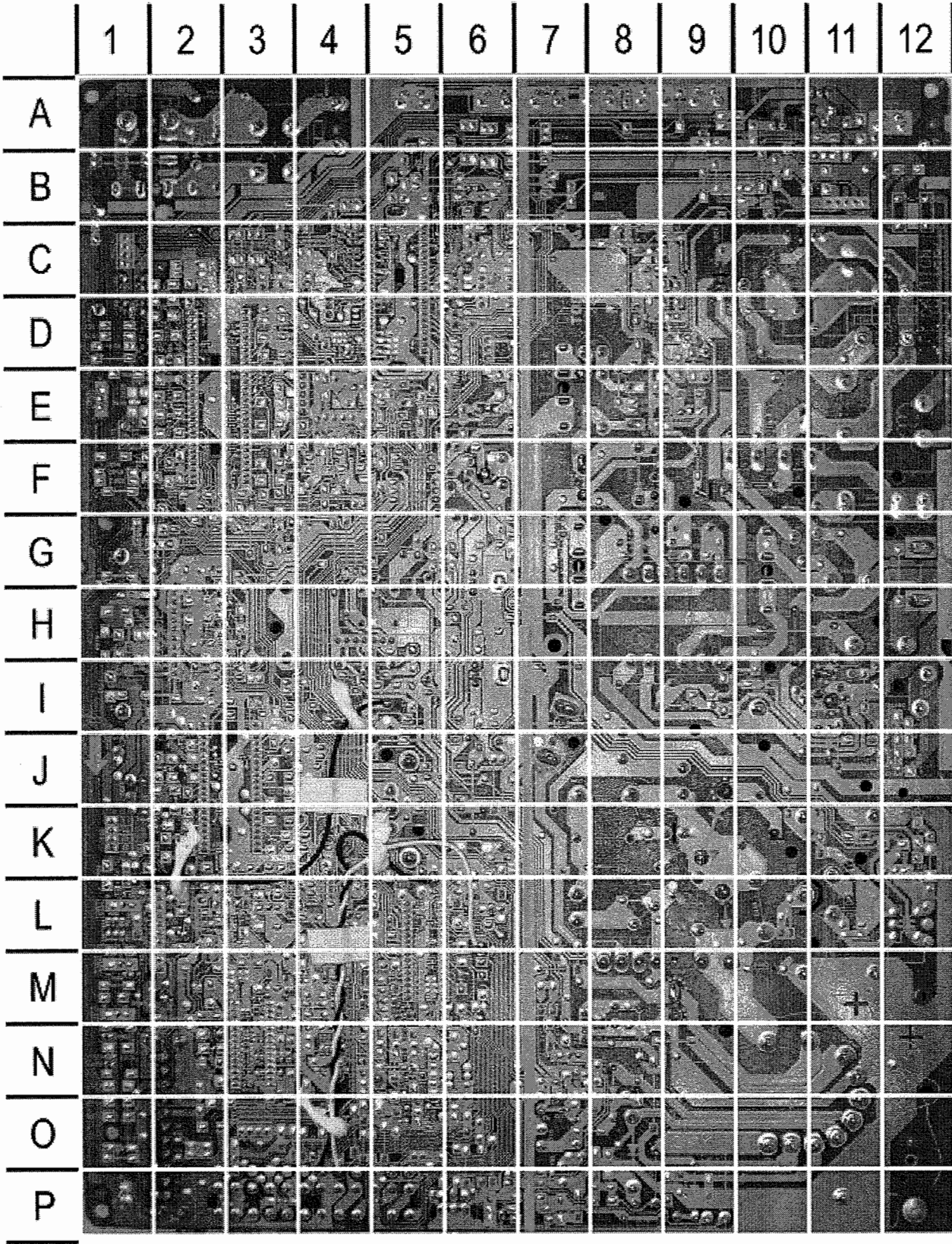
MAIN BOARD - TOP VIEW



MAIN BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE

C102	O1	C499	F11	CG31	J10	D801	F3	LZ22	L11	QZ21	N9	RA09	A7
C105	O12	C504	D11	CG32	J10	D805	I3	MV01	O10	QZ23	M9	RA10	A7
C106	O12	C511	E10	CG33	J10	D806	I4	MV01A	C12	R	P4	RA15	A7
C107	N12	C512	D11	CG34	K10	D807	I1	MV03	O8	R101	J6	RA16	D7
C201	F12	C583	D11	CG35	K10	D810	I3	MV03A	L7	R228	K7	RA17	D7
C204	C11	C612	B7	CG42	K10	D830	C5	P401	M5	R245	E9	RA18	D7
C205	C11	C661	H11	CG44	K12	D840	B1	P405	N6	R271	D12	RA21	E9
C216	F9	C662	H11	CM51	B9	D841	B3	P501	E9	R303	G8	RA26	C9
C220	F10	C663	H10	CM58	B9	D845	D4	P601	K12	R305	G8	RA27	C9
C224	D11	C664	I11	CS02	L7	D846	B3	PV01	P8	R306	H7	RA35	C9
C225	C11	C671	G11	CS04	L7	D883	F5	PV02	P9	R308	I8	RA62	D7
C226	D11	C672	I11	CS08	M7	D885	G5	PV03	P10	R327	O5	RA73	A5
C245	E10	C673	H11	CS10	M7	D899	A11	Q203	E12	R336	I8	RA74	D7
C261	D10	C676	H12	CS40	L8	DA42	B8	Q204	C10	R370	O6	RB01	A3
C262	D10	C677	I12	CS42	L8	DB03	A2	Q205	C10	R374	N6	RB03	A2
C263	D10	C678	H11	CS70	N8	DB45	E8	Q301	H9	R405	P5	RB09	A2
C305	G7	C679	H12	CS71	N8	DE50	A3	Q370	N6	R406	F10	RB24	C10
C306	F7	C681	J12	CV01	L8	DV01	L7	Q402	K1	R411	K2	RB42	E8
C307	G8	C683	J12	CV03	L7	DV03	L8	Q403	E7	R415	K1	RB45	E8
C308	H8	C801	A11	CV07	L7	DV05	L8	Q404	L2	R416	I6	RB65	L10
C310	O6	C802	E3	CV09	M7	DV09	M7	Q421	I7	R418	E7	RG16	I10
C311	H8	C805	E3	CV12	M9	F470	E6	Q460	K8	R429	P4	RG22	I10
C313	H7	C806	F3	CV36	L9	F801	B12	Q461	E9	R430	P5	RG23	I10
C314	I8	C808	I4	CV38	K9	F802	G3	Q471	P7	R431	N6	RS28	M9
C317	N5	C810	G2	CV41	K8	F803	G6	Q472	N6	R441	K5	RS40	J9
C320	I8	C815	F4	CV60	O8	G217	K7	Q480	E4	R448	P5	RS42	J9
C323	F10	C817	I3	CV61	O9	G402	L2	Q481	D5	R460	E8	RV07	O7
C325	F10	C818	H2	CZ01	M9	G403	K2	Q482	C5	R463	K7	RV08	O7
C326	F11	C819	B1	CZ03	L10	G404	E7	Q483	C5	R464	E8	RV09	O7
C327	F10	C821	I4	CZ10	L10	G500	F10	Q501	D11	R466	K8	RV12	O7
C337	E12	C822	C4	CZ28	N11	G816	I2	Q610	H11	R472	P5	RV15	L9
C370	N6	C823	C3	CZ29	M10	G890	F7	Q611	H11	R473	E9	RV16	K9
C371	O6	C825	I2	CZ34	M11	G891	F7	Q612	C7	R474	F9	RV60	O9
C403	E11	C829	J1	CZ35	N10	GR01	C7	Q613	G11	R476	P6	RV62	O10
C404	E11	C832	G7	CZ36	L11	H001	O12	Q801	I2	R478	P6	RV63	O9
C407	F10	C840	B2	CZ42	N11	KB01	A2	Q805	B3	R482	P6	RZ05	M9
C412	P5	C842	B3	CZ50	N11	L101	O11	Q830	G7	R485	E5	RZ06	M9
C413	K1	C884	F6	D101	O12	L201	D12	Q831	D4	R486	E5	RZ07	M9
C415	E11	C885	G4	D201	E9	L301	H9	Q840	B2	R487	E5	RZ16	L9
C416	K1	C889	F7	D221	E9	L302	H8	Q843	D4	R488	E5	RZ17	L11
C417	K1	C893	F5	D222	E9	L303	F7	QA01	C8	R489	E5	RZ45	O9
C421	H7	C898	G7	D225	C11	L401	F11	QA02	C7	R493	C5	RZ60	M10
C431	G11	CA42	B8	D226	C11	L441	L6	QB01	A4	R494	C4	RZ75	N12
C438	K5	CA68	C7	D301	I9	L442	K4	QB03	B2	R495	C4	SA01	A4
C439	K5	CB01	A2	D302	N5	L447	L5	QB23	C10	R502	F12	SA02	A5
C442	K5	CB60	M12	D310	G10	L461	J4	QB40	E8	R503	F12	SA03	A5
C443	L4	CB61	M12	D313	F8	L501	D12	QB41	L9	R511	E12	SA04	A6
C444	L3	CB64	K12	D370	M6	L502	E9	QB60	M12	R614	C7	SA05	A7
C445	P5	CG01	K10	D371	M6	L805	G3	QB61	L12	R668	H10	SA06	A8
C446	M5	CG02	K11	D406	N5	L806	G2	QB62	M12	R676	H12	SA07	A1
C448	M4	CG03	K11	D408	O5	L815	H2	QG01	K10	R677	I12	SR81	D3
C449	P6	CG06	K12	D409	E7	L824	C4	QS60	N8	R808	C2	SR83	C3
C453	I7	CG07	K11	D411	F11	L883	F5	QS61	N8	R810	F1	T401	L1
C457	F9	CG09	J11	D430	F11	L885	D5	QS62	N8	R814	J1	T461	O2
C463	L2	CG10	J11	D441	P5	L886	G4	QS63	O8	R818	G1	T801	A10
C464	J5	CG12	J12	D444	L4	LA01	B8	QS64	O7	R820	H3	T840	E1
C466	E9	CG14	J12	D461	K4	LG01	K10	QV01	L8	R821	I5	T862	H4
C467	K3	CG17	I11	D462	E9	LV01	L10	QV02	K9	R822	J2	X	P4
C471	P6	CG18	J11	D466	E9	LV98	C12	QV60	N9	R823	I1	X401	E12
C474	N6	CG19	I11	D467	I6	LV99	D12	QZ01	N10	R829	H3	X501	D12
C477	F9	CG20	I11	D471	P4	LZ01	L10	QZ04	M9	R835	J2	XA01	D9
C478	F9	CG25	I10	D472	P7	LZ02	N10	QZ05	N9	R861	I4		
C480	D5	CG26	J10	D473	N6	LZ03	M10	QZ06	L10	R862	I3		
C481	E4	CG28	J10	D480	D5	LZ10	N12	QZ08	M9	R898	A11		
C482	C5	CG29	J10	D611	C7	LZ20	N9	QZ14	L11	RA03	A6		
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MAIN BOARD - BOTTOM VIEW



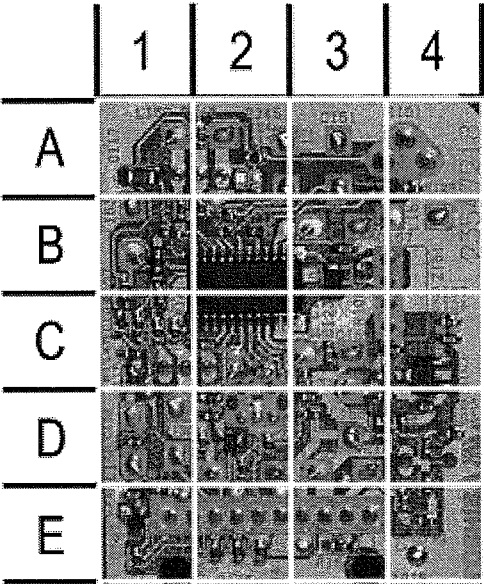
MAIN BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE

C221	E3	CR03	D3	CZ47	N3	R317	F3	RA04	C5	RB67	N1	RV19	M5
C222	E3	CS43	L6	CZ48	N3	R328	F4	RA06	B5	RG05	K2	RV20	M5
C223	E3	CS44	L5	CZ49	N3	R360	F4	RA07	B5	RG08	K2	RV61	N4
C271	D1	CS45	L5	CZ57	M3	R361	F3	RA22	D4	RG09	J2	RW02	P3
C309	I4	CS46	M5	CZ58	M4	R371	O7	RA23	D4	RG14	J2	RW03	O4
C318	F3	CS51	L5	CZ60	N2	R372	O7	RA24	D4	RG15	J2	RZ08	N4
C319	F3	CS52	L5	GR02	D6	R373	N7	RA25	D5	RG17	J2	RZ10	M4
C430	F2	CV05	M6	GR03	C6	R401	E2	RA33	C4	RG43	K2	RZ11	M4
C501	E2	CV10	M5	R203	D2	R403	E2	RA36	C3	RG44	K2	RZ12	M4
C505	D2	CV11	M5	R207	E3	R408	E6	RA37	C4	RR07	D3	RZ13	M4
C510	E3	CV39	L5	R208	E3	R410	K12	RA38	C4	RR93	E3	RZ14	M4
C582	D2	CZ02	M4	R209	E3	R432	N7	RA40	C4	RS02	L6	RZ15	M3
C613	C6	CZ04	N4	R216	F4	R455	G4	RA41	C4	RS04	L6	RZ18	L3
CA32	C4	CZ05	N4	R238	C2	R457	F4	RA61	C6	RS08	M6	RZ21	L2
CA37	C5	CZ06	N4	R239	D2	R461	F3	RA67	C4	RS10	M6	RZ22	L3
CA38	C5	CZ08	M4	R240	C3	R465	F5	RA68	C4	RS41	P5	RZ28	N4
CA43	C5	CZ09	M3	R241	C3	R467	F4	RA71	A7	RS60	M5	RZ34	N3
CA44	B5	CZ12	L3	R261	D4	R475	P6	RA72	A8	RS61	N5	RZ35	N3
CA69	C6	CZ13	L3	R262	D3	R477	P9	RB11	A9	RS62	M5	RZ36	N3
CB48	L4	CZ14	L2	R263	D4	R481	P7	RB25	C3	RS63	N5	RZ43	N3
CB62	L1	CZ16	N1	R264	D3	R490	D8	RB40	E6	RS64	O5	RZ44	M3
CB63	L1	CZ30	N3	R265	D3	R501	D2	RB43	D6	RS65	O5	RZ46	N4
CB65	L1	CZ31	M3	R266	D4	R512	E1	RB44	D5	RS66	M4	RZ49	M3
CG04	K2	CZ32	O3	R272	N1	R612	B6	RB46	E6	RS68	O5	RZ61	N3
CG05	K2	CZ33	N3	R301	H4	R613	B6	RB47	M4	RS69	O5	RZ62	N3
CG08	K2	CZ37	N3	R304	F3	R663	H2	RB49	K4	RS70	P3	RZ63	N3
CG13	J2	CZ39	N3	R307	G6	R664	H2	RB60	M1	RS71	P3	RZ65	N3
CG16	J2	CZ41	M3	R310	G3	R667	H3	RB61	L1	RV01	P5	RZ66	M3
CG27	J3	CZ43	N3	R311	G3	R669	H3	RB62	L1	RV02	P6	RZ68	M3
CM52	B4	CZ44	N3	R313	G6	R674	H2	RB63	L1	RV03	O4	RZ71	N4
CR01	D3	CZ45	N3	R314	F5	R678	H2	RB64	L1	RV04	P5		
CR02	D3	CZ46	N3	R315	F5	R831	D9	RB66	L1	RV14	L5		

TOSHIBA

MODEL 32A33 (CHASSIS TAC0303)

IF BOARD - BOTTOM VIEW



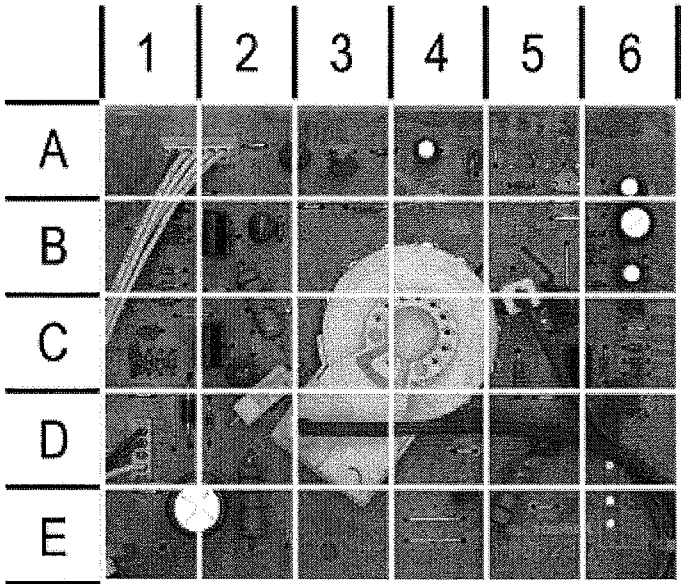
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IF BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE

CI15	B1	CI23	C3	RI02	D3	RI22	B2
CI14	B1	CI25	C2	RI03	D4	RI23	B1
CI13	A2	LI01	D4	RI04	D4	RI27	B1
CI12	A2*	LI02	B3	RI05	D3	RI28	A4
CI11	A3	QI01	C4	RI06	C3	RI30	D2
CI10	E1	QI02	E1	RI07	C4	RI32	D2*
CI09	D1	QI03	D2	RI08	B3	RI33	D3
CI01	E4	CI51	A3*	RI09	C1	RI35	D2
CI08	B3*	CI52	C3*	RI11	E2	RI36	E2
CI07	B3	CI53	D1*	RI13	C1	RI51	A4*
CI05	C4	LI51	B4*	RI14	C1	RI52	E3
CI04	C4	LI52	A2*	RI15	C1	ZI51	B4*
CI03	D4	LI53	B1*	RI16	E1	ZI52	A2*
CI02	D4	LI54	D2*	RI17	E1	ZI53	C1*
CI16	C2	LI55	D3*	RI18	B2	ZI55	D4*
CI17	A1	LI56	D1*	RI19	B1		
CI18	D2	LI57	D3*	RI20	B2		
CI21	B2	RI01	E4	RI21	B2		

* Located on top of board.

CRT BOARD



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CRT BOARD, GRIDTRACE LOCATION GUIDE

C902	C5	D911	D1	R901	B3	R929	C1
C904	B1	G908	A2	R902	C5	R930	C1
C905	D6	G933	B6	R903	C2	R932	A6
C906	C1	L902	B2	R904	B3	R934	A5
C909	E1	L903	D5	R905	B3	R935	A5
C910	B6	L904	C2	R914	A1	R936	B6
C911	A6	P901	A1	R915	B1	R942	B2
C912	B6	P902	D1	R916	B1	R943	D5
C913	A4	Q901	B2	R917	C1	R944	D2
C914	A3	Q902	B1	R918	C6	R960	C2
C920	E4	Q903	C5	R920	D2	R961	E5
D901	B6	Q904	B6	R921	D6	R962	E2
D902	A6	Q905	C2	R922	C6	R968	D2
D904	B1	Q906	C1	R924	C6	R977	A3
D905	C6	Q907	A4	R927	C1		
D906	B1	Q908	C6	R928	C1		

PARTS LIST

Item No.	Type No.	Mfr. Part No.	NTE Part No.
D101	MTZJ33C	23316755	-
D201, 21, 22	1SS133	23118859	NTE519
D225, 26	DZ9.1BSA	23357281	-
D301, 02	EU2A	23357366	NTE552
D310, 13	1SS133	23118859	NTE519
D370	DZ5.6BSB	23357267	-
D371	1SS133	23118859	NTE519
D406	EU2A	23357366	NTE552
D408	3JH41	23316414	-
D409	RD10ESB2	23118622	NTE5019A
D411	DZ8.2BSB	23357279	-
D430	DZ9.1BSC	23357283	-
D441	DZ9.1BSB	23357282	-
D444	ERC06-15	23316254	NTE506
D461	RU4AM	23118338	NTE580
D462	1SS133	23118859	NTE519
D466	DZ2.7BSB	23357248	-
D467, 71	EU2A	23357366	NTE552
# D472	RD6.2E(FA-1)	23115774	NTE5013A
D473	1SS133	23118859	NTE519
D480	DZ16BSA	23357299	-
D611, 12	1SS133	23118859	NTE519
D801	D3SB60	23316391	NTE5310
D805	1SS133	23118859	NTE519
D806	EU2	23357366	NTE552
D807	1SS133	23118859	NTE519
D810	AK04	23316269	NTE585
D830	1SS133	23118859	NTE519
D840	SIWBA20	23316962	NTE5332
D841	DZ5.6BSB	23357267	-
D845, 46	1SS133	23118859	NTE519
D883	RU3AM	23357344	NTE580
D885	EU2A	23118094	NTE552
D899	TNR10V431K	24019485	-
D901 Thru			
D906	1SS133	23118859	NTE519
D911	ERB44-06	23118095	NTE552
DA42	DZ5.6BSB	23357267	-
DB03	SIR-56SB3F	23358522	-
DB45	1SS133	23118859	NTE519
DE50	BT-H254N-31	23358571	-
DV01, 03, 05	DZ9.1BSA	23357281	-
DV09, 27	DZ9.1BSA	23357281	-
Q203	KTC3198Y	23314965	NTE199
Q204, 05	RN1204	A6002040	NTE2359
Q301	LA7833S	23319787	-
Q370	KTA1266Y	23314962	NTE290A
Q402	2SC2482FA-1	23114755	NTE399

Item No.	Type No.	Mfr. Part No.	NTE Part No.
Q403	2SC4721P	23314444	-
Q404	2SD2553(FA)	23314955	-
Q421	KIA7809API	23009187	-
Q460	2SD2493(P)	23314938	-
Q461	KTA1266Y	23314962	NTE290A
Q471	KTA1266-0	23314961	NTE290A
Q472	KTC3198Y	23314965	NTE199
Q480	2SA949-Y	23114759	-
Q481, 82	KTC3198Y	23314965	NTE199
Q483	RN2201	23114469	NTE2368
Q501	TA1310N	23906843	-
Q610	TA8265K	23000249	-
Q611	2SC2878-A(TEM)	23114623	NTE85
Q612	KTA1266Y	23314962	NTE290A
Q613	2SC2878-A(TEM)	23114623	NTE85
# Q801	STR-G5624A	23135032	-
Q805	RN1205	23114459	-
Q830	KIA7805API	23009188	-
Q831	KTC3198Y	23314965	NTE199
Q840	MM1437AS	23000140	-
Q843	RN1205	23114459	-
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	KTC3198Y	23314965	NTE199
QA01	88CP38AN3PV2	23009196	-
QA02	AT24C04-10PC	70129486	-
QB01	KTC3198Y	23314965	NTE199
QB03	RN1205	23114459	-
QB23, 40, 41	KTC3198Y	23314965	NTE199
QB60	KTA1266Y	23314962	NTE290A
QB61, 62	KTC3198Y	23314965	NTE199
QG01	UPC1851BCU	23906499	-
QI01	2SC3357	23114611	-
QI02	2SA1576A106	23314994	-
QI03	2SC4081Q	23314993	-
QI05	TA1274F(FA03A5,EL)	23009240	-
QS60, 61	KTC3198Y	23314965	NTE199
QS62	RN2204	23114466	NTE2360
QS63, 64	2SC2878-A(TEM)	23114623	NTE85
QV01	MM1311BD	23000686	-
QV02, 60	KTC3198Y	23314965	NTE199
QZ01	TC90A53N	23009176	-
QZ04	KTC3198Y	23314965	NTE199

PARTS LIST continued

Item No.	Type No.	Mfr. Part No.	NTE Part No.
QZ05	KTA1266Y	23314962	NTE290A
QZ06	KTC3198Y	23314965	NTE199
QZ08, 14	KTA1266Y	23314962	NTE290A
QZ20	KTC3198Y	23314965	NTE199
QZ21, 23	KTA1266Y	23314962	NTE290A

Item No.	Function/Rating	Mfr. Part No.	Notes
C438	820pF 10% 2kV	24092344	-
# C439	.075 5% 400V	24503125	-
# C442	.56 5% 315V	24503304	-
# C443	.0091 20% 1.5kV	24503279	-
# C444	.01 20% 1.5kV	24503194	-
# C467	.043 5% 630V	24503160	-
C505	13pF 5% 50V NPO	24105130	-
C801	.22 20% 275VAC	24503002	-
C802	.1 20% 275VAC	24503001	-
C805, 06	.01 250VAC	24092623	-
C815	.001 20% 250VAC	24092581	-
C817	330pF 10% 2kV	24092339	-
C818	.0022 3% 1250V	24082402	-
C822, 23	.0022 20% 250VAC	24092583	-
C893	330pF 10% 2kV	24092339	-
C902	.001 10% 2kV	24092345	-
CB60	2.2µF 20% 50V NP	24085944	-
CG13	3.3µF 20% 16V Tantalum	24088907	-
CG16	10µF 20% 16V Tantalum	24088098	-
F470	Fuse	23144906	1.25Amp, 125V
F801	Fuse	23144518	10Amp, 125V
F802	Fuse	23144893	3.15Amp
F803	Fuse	23144897	2Amp
G402, 03	Ferrite Bead	23103145	-
G404	-	23238714	-
G500	-	23280016	-
G816	Ferrite Bead	23103145	-
G890, 91	-	23280016	-
G908	-	23280016	-
G933	-	24366750	-
# H001	Tuner	23321456	ELA51LX7
KB01	Receiver	23906805	Remote
L101	-	23289846	-
L201	-	23238703	-
L301, 02	Ferrite Bead	23103145	-
L303	Ferrite Bead	23103775	-
L401	-	23280016	-
# L441	Horizontal Linearity	23233092	-
L442	-	23248121	-
# L447	-	23248318	-

Item No.	Function/Rating	Mfr. Part No.	Notes
# L461	-	23248173	-
# L462 (1)	Yoke	-	Horiz .8mH, Vert 11.4mH
L501	-	23238711	-
L502	-	23289844	-
L805, 06	-	23248213	-
L815, 24, 83	Ferrite Bead	23103145	-
L885	-	23248073	-
L886	Ferrite Bead	23103145	-
L901	Degaussing	23200478	-
L902, 03, 04	-	23280024	-
LA01	-	23289840	-
LG01	-	23289220	-
LI01	-	23246051	-
LI02	-	23246196	-
LI51	-	23289470	-
LI52	-	23289120	-
LI53	-	23289180	-
LI54	VCO	23232050	-
LI55	-	23289129	-
LI56	-	23289180	-
LI57	-	23289228	-
LV01	-	23289840	-
LV02	-	23103159	-
LV98, 99	-	23103159	-
LZ01	-	23289840	-
LZ02, 03	Ferrite Bead	23103145	-
LZ10	-	-	-
LZ20	-	23238718	-
LZ21	-	23238711	-
LZ22	-	23238506	-
LZ96	-	23238715	-
P801	Line Cord	23372115	AC, Polarized
PV01	Jack	23365575	SVHS
PV02	Jack	23365990	Assembly
PV03	Jack	23365991	Assembly
R416	3900 5% 5W	24510392	-
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	7/233 Cold PTC	24019474	-
R810	.82 10% 7W	24568828	-
R818	15 5% 5W	24510150	-
R920	5.1 5% 1W Fusible	24000880	-
RI51	20K RF AGC Delay	24066046	-
SA01	Switch	23344443	Channel Up
SA02	Switch	23344443	Channel Down

PARTS LIST continued

Item No.	Function/Rating	Mfr. Part No.	Notes
SA03	Switch	23344443	Volume Up
SA04	Switch	23344443	Volume Down
SA05	Switch	23344443	TV/Video
SA06	Switch	23344443	Menu
SA07	Switch	23344443	Power
SR81	Relay	23146564	Power
SR83	Relay	23146564	Degaussing
T401	Horizontal Drive	23224367	-
# T461 (2)	Horizontal Output	23236733	-
T801	Line Filter	23211739	-
T840	Power	23217572	-
# T862	Converter	23217558	-
# V901	CRT	23312973	A80AKB50X05
V901A	Socket	23903147	CRT
W661, 62	Speaker	23351191	2 1/4" X 5", 8 Ohms, 5W
X401	Crystal	23153721	503kHz
X501	Crystal	23153961	3.58MHz
XA01	Crystal	23153504	8MHz
ZI51	Filter	23303197	SAW
ZI52	Trap	23303271	-
ZI53	Filter	23303289	-
ZI55	Trap	23303244	-
	Fuse Holder	23165433	For F470, 801, 802, 803
	PC Board (4)	23787442	CRT, PD0629A
	PC Board (3)	23788425	CRT, PD0629D
	PC Board (4)	23787728	Front AV, PD0715B
	PC Board	23788269	IF, PD1022A
	PC Board (3)	23788424	Main, PD1050C
	PC Board (4)	23788332	Main, PD1050A
	Transmitter	23306495	Remote, CT-90157

For SAFETY use only equivalent replacement part.

% Lead configuration may vary from original.

(1) Bonded part of CRT.

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

(3) Used in model 32A33.

(4) Used in model 32A43.

- 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.

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