

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

Momentarily place a 18.84K ohms 1% 1/4W resistor across pins 1 and 3 of plug X. The receiver should lose raster and sound and remain in that state. If the receiver does not lose raster and sound, the high voltage shutdown circuit requires repair. To resume normal operation, remove AC power and wait 15 seconds. Apply AC power and test the receiver for normal operation.

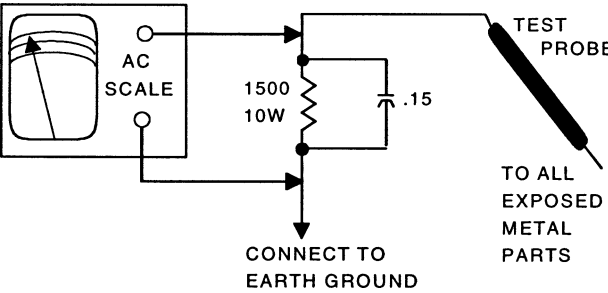
SAFETY CHECKS — FIRE AND SHOCK HAZARD

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 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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PHOTOFACT® Technical Service Data

SET 4611

MODEL AV-27120 SUFFIX X

JVC

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JVC

Model AV-27120 Suffix X



Representative Model

Essential coverage
for servicing a television receiver...

- Schematics
- Component locations
- Parts list

Coverage includes these additional models:

Models
AV-27115 Suffix AX
AV-27115 Suffix X
AV-27120 Suffix AX



JULY 2002 SET 4611

For Supplier Address,
See PHOTOFACT Annual Index

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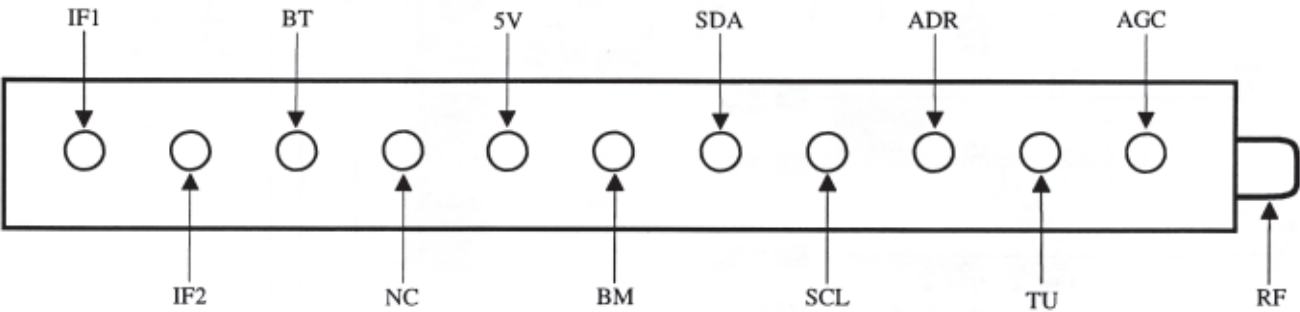
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TUNER INFORMATION

TUNER VOLTAGE CHART			
Pin	VHF Low Band	VHF High Band	UHF Band
AGC	3.9V	4.7V	4.1V
TU	1.2V	4.4V	4.9V
ADR	0V	0V	0V
SCL	2.5V	2.5V	2.5V
SDA	2.1V	2.1V	2.1V
BM	5.0V	5.0V	5.0V
5V	5.0V	5.0V	5.0V
NC	0V	0V	0V
BT	32.0V	32.0V	32.0V
IF2	0V	0V	0V
IF1	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



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

SCHEMATIC COMPONENT LOCATION GUIDE

C001	C1	C374	C15	C685	B26	D602	E29	Q201	A10	R243	C35	R507	D2	R716	D17
C003	B24	C375	A15	C686	B26	D651	B26	Q202	A10	R244	C35	R511	B12	R717	D17
C004	A24	C376	B15	C687	B25	D652	B26	Q203	D11	R248	B35	R522	E4	R719	D21
C005	A24	C377	C14	C688	B25	D659	A26	Q261	C34	R249	B34	R523	E4	R723	E22
C006	D14	C391	C14	C701	D21	D660	B26	Q262	B35	R251	B33	R524	E4	R724	C23
C011	D14	C392	E16	C703	C22	D704	C23	Q263	E38	R254	D33	R525	E5	R725	E23
C012	B24	C401	D3	C704	A2	D705	D18	Q264	E39	R256	D33	R526	E6	R726	D23
C013	D13	C402	E3	C705	A22	D706	C19	Q271	A9	R257	B35	R530	D6	R727	D23
C101	D13	C403	D3	C706	A22	D707	D19	Q273	B36	R259	B37	R541	D13	R728	D23
C102	B1	C421	D4	C707	E22	D711	D21	Q274	B37	R260	B35	R542	E18	R729	C23
C103	B1	C424	D4	C708	E22	D717	D23	Q276	B37	R261	B34	R543	D12	R730	E23
C104	B2	C425	D14	C709	D22	D718	D23	Q278	B38	R262	B34	R544	E9	R732	C23
C105	C3	C426	D5	C710	D21	D751	E24	Q279	B35	R264	C34	R546	D12	R733	B22
C106	B3	C427	E5	C711	D21	D804	A14	Q280	B35	R265	B38	R561	E2	R734	B23
C108	B2	C428	D5	C712	D22	D805	A14	Q282	B38	R266	C35	R562	E2	R735	B23
C131	B3	C429	D4	C714	D17	D911	A19	Q301	C12	R267	C34	R563	E2	R736	C23
C132	B3	C501	E19	C716	D18	D941	D17	Q351	D38	R268	B37	R564	E1	R737	B23
C133	B3	C502	E3	C717	D18	D942	D18	Q361	B9	R269	B35	R566	D1	R738	B23
C134	C2	C503	D2	C718	D21	D943	E17	Q371	C15	R270	B36	R567	D1	R739	B23
C135	A2	C505	D1	C719	D19	D944	E18	Q372	A15	R271	A39	R568	D1	R740	B23
C138	E14	C511	B12	C720	D19	D951	B18	Q373	B15	R271	B38	R571	A16	R741	B23
C161	E14	C521	E4	C721	D22	D953	D18	Q521	E4	R272	A39	R581	C13	R742	B23
C162	E14	C522	E4	C722	E22	D957	E18	Q522	E5	R272	B38	R582	A23	R745	D23
C163	A4	C523	E5	C723	E22	D958	B17	Q561	E1	R273	B38	R583	D10	R746	D23
C164	A4	C524	E6	C724	D20	F901	A17	Q562	D1	R274	E38	R584	D10	R751	B22
C166	B4	C525	B20	C725	D19	F902	A20	Q602	E30	R275	E39	R585	D10	R752	B21
C167	A6	C526	D6	C726	B23	FR720	D18	Q651	D29	R276	D39	R586	E2	R753	B21
C169	B5	C527	D6	C735	C21	IC001	D13	Q652	D30	R277	D39	R615	A29	R754	B21
C170	A6	C543	D14	C751	D19	IC201	A5	Q653	D29	R278	A9	R616	B29	R755	B21
C205	A10	C545	D12	C801	A12	IC201	B11	Q654	D30	R279	B37	R617	A30	R756	B21
C207	A11	C546	E10	C802	A12	IC201	B3	Q655	D29	R285	B37	R618	B30	R757	E24
C208	D10	C548	D14	C803	A12	IC201	D2	Q701	D21	R287	B37	R619	C30	R758	E23
C209	C11	C561	E2	C901	A17	IC251	B33	Q702	C21	R289	B37	R620	C31	R767	D19
C210	B11	C562	D2	C902	A18	IC252	B36	Q703	C23	R290	B9	R621	A31	R768	C23
C212	B10	C563	D1	C911	B19	IC253	D13	Q704	C23	R291	B9	R622	B31	R769	C23
C214	B10	C581	C14	C912	A20	IC271	A39	Q951	B17	R293	C37	R625	E30	R804	A13
C215	B11	C582	D10	C913	A20	IC421	D4	Q952	D19	R305	B10	R627	E30	R805	B13
C217	D10	C583	D10	C914	A20	IC541	E18	Q953	E18	R306	B13	R651	D27	R806	B14
C252	D33	C584	E2	C921	C19	IC602	A30	R101	B1	R307	C12	R652	A25	R901	A19
C253	D34	C614	E10	C922	C20	IC651	A26	R102	B1	R309	C12	R653	A26	R921	B18
C254	B33	C616	A30	C951	E18	IC652	C28	R103	B1	R311	C12	R654	E27	R923	C19
C255	B6	C617	C30	C953	E18	IC652	D28	R104	B2	R312	C13	R655	E27	R924	C18
C257	C37	C618	A31	C954	D19	IC701	B22	R105	B2	R351	B38	R656	E27	R925	C18
C258	E13	C619	A31	C956	E20	IC702	E23	R106	B2	R352	C38	R658	E27	R926	B19
C259	D14	C620	A31	C958	B18	IC703	C18	R131	B3	R353	D38	R660	E27	R927	B19
C260	D14	C622	B30	C959	E18	IC751	A21	R133	B4	R361	D35	R661	D28	R952	B17
C261	C36	C623	C31	C981	B17	IC921	B19	R134	B5	R365	B10	R662	C28	R953	B17
C263	C37	C624	B31	C982	B17	IC951	E19	R135	B5	R366	B10	R663	D28	R954	E19
C264	E14	C625	B31	CF001	B1	J003	B25	R136	B5	R367	B9	R664	D27	R955	E18
C265	E14	C626	B31	CF131	B5	J003	B25	R137	B6	R371	C14	R665	E28	R956	B18
C266	B34	C627	E31	CF161	A4	J003	B33	R138	B6	R372	A14	R666	D27	R957	E18
C267	B35	C651	D14	CF501	D2	J004	C30	R142	E13	R373	B14	R667	E28	R958	E18
C268	B35	C652	D14	CF701	E22	J004	D30	R145	C2	R374	C14	R668	E28	R981	A17
C269	B35	C653	E27	CF702	E22	K251	E14	R146	C1	R375	B15	R669	D29	RY901	A18
C272	B38	C654	D27	CN10PW	A17	K252	C36	R161	B4	R376	B14	R670	C29	RY901	B18
C274	A9	C655	D27	CRT	B16	K253	E15	R162	A4	R377	C15	R671	B25	S751	B22
C276	D34	C656	D27	D001	A24	K701	C18	R163	A4	R378	B15	R672	B25	S752	B21
C277	C36	C657	A26	D003	D24	L003	A24	R164	A7	R379	B15	R673	D30	S753	B21
C278	B36	C658	C27	D004	D24	L01	A19	R203	B10	R380	C15	R674	D30	S754	B21
C279	B37	C659	C27	D201	D10	L102	B2	R204	A10	R381	A15	R675	D30	S755	B21
C280	B36	C660	C27	D202	C11	L104	C3	R205	A11	R382	B15	R676	C30	S756	B22
C281	B38	C661	C27	D203	C11	L131	B5	R208	D11	R383	C15	R678	D29	SF101	B2
C283	B36	C662	E26	D252	D33	L161	E13	R209	D11	R384	A15	R679	D30	SK371	A16
C284	C36	C663	E27	D253	D33	L162	A4	R210	C11	R385	B15	R680	D29	SP01	A32
C285	B36	C664	E26	D254	B33	L201	A10	R211	C11	R386	C14	R681	E30	SP02	B32
C286	B34	C665	E27	D421	D4	L251	E14	R212	B11	R387	A14	R682	C27	T131	A3
C287	B36	C666	E26	D422	D5	L252	B35	R213	A10	R388	B14	R683	A25	T161	A5
C288	B36	C667	E26	D423	C21	L253	C36	R215	B11	R421	D4	R684	A25	T521	E5
C289	C36	C668	E26	D501	E19	L255	E14	R216	B11	R422	D6	R691	E29	T522	C7
C290	E14	C669	C27	D511	B12	L256	B38	R218	D10	R423	E5	R701	D21	T901	D17
C291	E14	C670	C28	D541	D13	L271	B37	R219	D10	R424	E7	R702	D21	TH901	A19
C303	B10	C671	D26	D542	E18	L351	C39	R220	A10	R425	D5	R703	D21	V01	B16
C304	D14	C672	C26	D543	D12	L391	C14	R222	A10	R427	D4	R704	D22	VA901	A17
C305	C12	C673	D26	D544	E9	L521	D6	R234	B37	R428	D4	R705	C21	X301	B12
C306	B13	C674	D26	D561	E2	L701	D22	R235	B37	R429	E3	R706	C21		
C307	B13	C675	D26	D562	E2	L709	A22	R237	B36	R433	E5	R708	C22		
C308	C12	C676	D26	D563	E1	LF901	A17	R238	B35	R441	D3	R709	C21		
C309	B12	C679	D27	D581	C13	Q101	B2	R239	B36	R501	D2	R710	A2		
C352	C38	C680	E27	D582	D9	Q131	B5	R240	C35	R502	D3	R713	E22		
C353	C39	C682	D29	D583	D2	Q132	B6	R241	B35	R505	D2	R714	D21		
C356	B39	C683	C29	D601	E29	Q161	A6	R242	B35	R506	D2	R715	D21		

MISCELLANEOUS ADJUSTMENTS

NOTE: This receiver employs digital customer controls. Unless otherwise indicated all adjustments were performed with the customer controls at center.

B+ CHECK

Tune in a picture. Connect a digital DC voltmeter to pin 4 of IC921. With AC line set to 120VAC, voltage should read 134V* +2.0V* -2.5V*.

* Taken from common tie point.

HIGH VOLTAGE CHECK

Tune in a picture. Connect a high voltage probe to the CRT anode, low side to ground. High voltage should read 25kV to 27kV.

PURITY & CONVERGENCE

Purity and convergence are factory set, the yoke is bonded to CRT.

SERVICE MENU

To enter the service menu, press sleep timer button then press and hold the display and video status buttons simultaneously on the remote transmitter. The service menu is displayed as shown on the service menu chart. While in the service menu, use the menu up and down buttons to select and use the menu left and right buttons to adjust. To exit the service menu, press the exit button on the remote transmitter.

Service Menu Chart

SERVICE MENU	
PICTURE	SOUND
GAME	
LOW LIGHT	HIGH LIGHT
RF AFC CHK	
VCO (CW)	

PICTURE MODE

Select Picture Mode from the service menu.

RF AGC

Tune in a picture. Decrease the value of RF AGC (19) until snow appears in the picture. Increase the value of RF AGC (19) until snow disappears from the picture. Check all channels for proper picture and readjust if necessary.

Vertical Size / Vertical Center

Tune in a picture. Adjust V Size (13) for a slightly underscanned picture. Adjust V Center (14) to center the picture. Adjust V Size (13) for a slightly overscanned picture.

Horizontal Position

Tune in a crosshatch pattern. Adjust H Pos (15) to center the picture.

Sub Bright / Sub Picture / Sub Color / Sub Tint

Tune in a picture. Adjust Bright (1) for best brightness. Adjust Picture (2) for best contrast. Adjust Color (6) for best color. Adjust Tint (5) for best tint.

OSD Position

Adjust OSD VP (17) to vertically center the display. Adjust OSD HP (16) for the best horizontal display position.

Picture Mode Menu Chart

Number	Adjustment	Range	Initial Value	On-set Value
1	BRIGHT	000 ~ 127	064	061
2	PICTURE	000 ~ 127	077	098
3	TV DTL (1)	000 ~ 063	026	026
4	TV BPF (1)	000, 001	000	000
5	TINT	000 ~ 127	066	065
6	COLOR	000 ~ 127	050	048
7	EXT BRI (1)	±025	-002	±000
8	EXT PIC (1)	±025	±000	±000
9	EXT DTL (1)	000 ~ 063	026	026
10	EXT BPF (1)	000, 001	000	000
11	EXT TINT (1)	±025	±000	+001
12	EXT COL (1)	±025	+001	+003
13	V SIZE	000 ~ 063	038	046
14	V CENT	000 ~ 007	000	001
15	H POS	000 ~ 031	018	018
16	OSD HP	000 ~ 031	023	026
17	OSD VP	000 ~ 031	014	014
18	H AFC (1)	000, 001	000	000
19	RF AFC	000 ~ 063	040	040

(1) Do not adjust.

SOUND MODE

Select Sound Mode from the service menu.

Sound Mode Menu Chart

Number	Adjustment	Range	Initial Value	On-set Value
1	IN LEVEL	0 ~ 63	29	29
2	FH MON	0, 1	0	0
3	ST VCO	0 ~ 63	20	36
4	PILOT (1)	0, 1	0	0
5	FILTER	0 ~ 63	25	35
6	LOW SEP	0 ~ 63	32	22
7	HI SEP	0 ~ 63	16	16
8	5FH MON	0, 1	0	0
9	SAP VCO	0 ~ 63	14	33
10	FIL. OFF. (1)	± 10	0	0

(1) Do not adjust.

MTS Level Input / MTS Filter

Insure that In Level (1) and Filter (5) are set to initial value.

MTS Stereo VCO

Tune in a RF signal. Set FH MON (2) to 1. Connect a frequency counter to pin 2 of connector MPX. Adjust ST VCO (3) for 15.73kHz ±.1kHz. Set FH MON (2) to 0.

MTS SAP VCO

Tune in a RF signal. Connect a 1M ohms resistor between pins 3 and 4 of connector MPX. Set 5FH MON (8) to 1. Connect a frequency counter to pin 2 of connector MPX. Adjust SAP VCO (9) for 78.67kHz ±.5kHz. Set 5FH MON (8) to 0.

MTS Separation

Input a 300Hz audio frequency, L modulation signal. Connect an oscilloscope to pin 1 of connector MPX. Set oscilloscope to display one cycle of 300Hz signal. Connect oscilloscope to pin 2 of connector MPX. Adjust Low Sep (6) for minimum amplitude of waveform. Increase audio frequency to 3kHz and adjust Hi Sep (7) for minimum amplitude of waveform.

LOW LIGHT MODE

Select Low Light from service menu.

NOTE: While in the Low Light Mode, adjustments are performed using the

Low Light Mode Menu Chart

Adjustment	Range	Initial Value	On-set Value
BRIGHT	000 ~ 127	064	061
R CUTOFF	000 ~ 255	020	020
G CUTOFF	000 ~ 255	020	023
B CUTOFF	000 ~ 255	020	050

following buttons on the remote transmitter:

- 1 - Display horizontal Line.
- 2 - Restores full picture.
- 3 - Exit
- 4 - Increase red cutoff.
- 5 - Increase green cutoff.
- 6 - Increase blue cutoff.
- 7 - Decrease red cutoff.
- 8 - Decrease green cutoff.
- 9 - Decrease blue cutoff.

White Balance (Low Light Mode Adjustment)

Tune in a monoscope signal and set Bright, R Cutoff, G Cutoff, and B Cutoff to initial value. Set screen to minimum and display horizontal line. Increase screen until line of one color becomes visible. Adjust the other two cutoffs for a white line. Restore full picture.

HIGH LIGHT MODE

Select High Light from service menu.

High Light Menu Chart

Adjustment	Range	Initial Value	On-set Value
G DRIVE	000 ~ 255	128	068
B DRIVE	000 ~ 255	128	073

NOTE: While in the High Light Mode, adjustments are performed using the following buttons on the remote transmitter:

- 1 - Display horizontal Line.
- 2 - Restores full picture.
- 3 - Exit
- 5 - Increase green drive.
- 6 - Increase blue drive.
- 8 - Decrease green drive.
- 9 - Decrease blue drive.

White Balance (High Light Mode Adjustment)

Tune in a monoscope signal. Set G Drive and B Drive to initial value. Adjust G Drive and B Drive for best white screen.

RF AFC CHK MODE

RF AFC Check Mode Menu Chart

Adjustment	Range	Initial Value	On-set Value
RF AFC (1)	On / Off	On	On
Fine (1)	-77 ~ +77	+00	±00

(1) Do not adjust.

VCO (CW) MODE

Select VCO (CW) from service menu.

VCO (CW) Mode Menu Chart

Too High Above Reference Below Reference Too Low	←—————Yellow
SYNC : YES	

Tune in a NTSC signal without offset frequency. Adjust T131 and confirm that Too High and Too Low turns yellow. Adjust T131 until Below Reference turns yellow and SYNC: YES appears on screen.

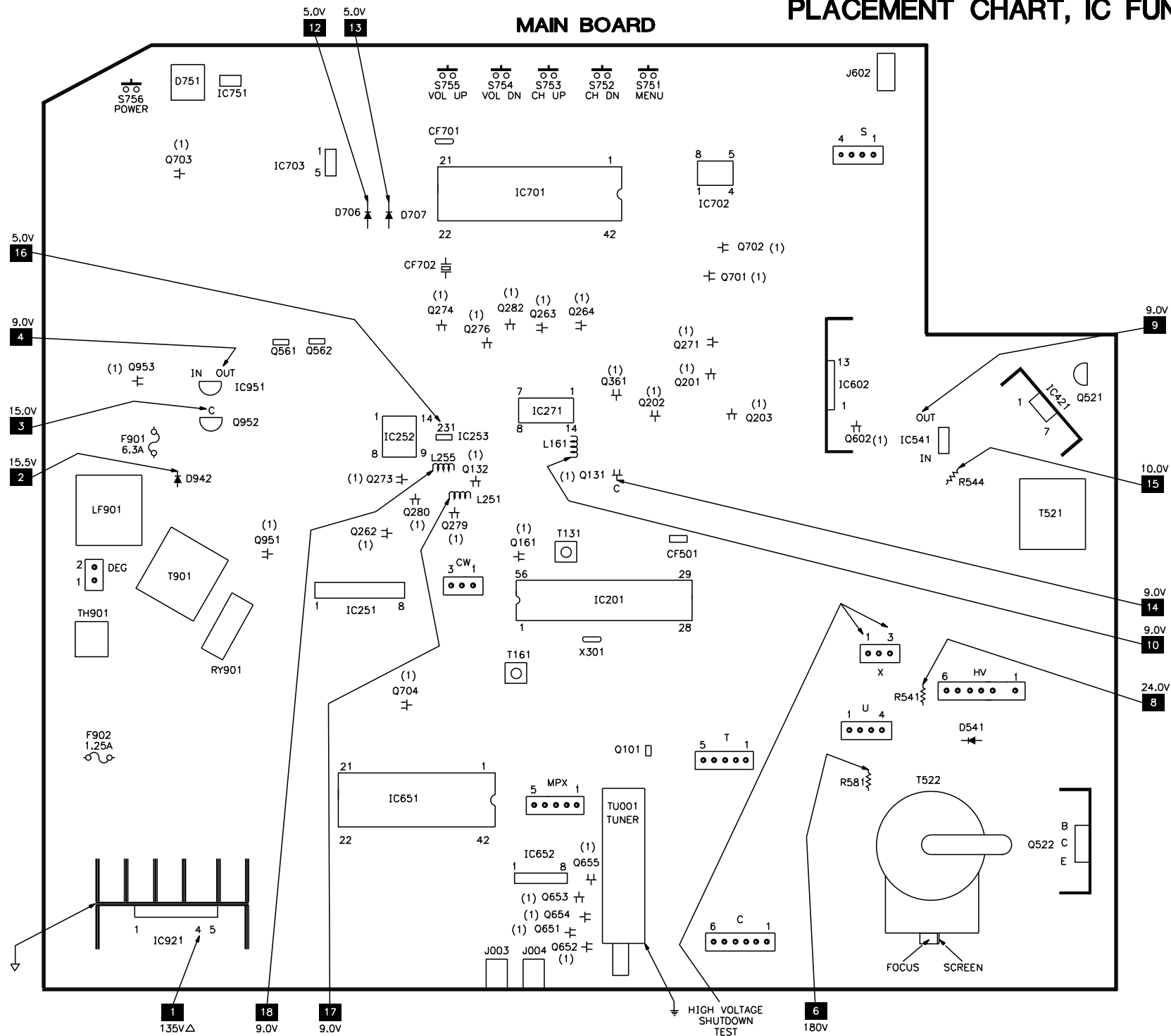
GAME MODE

Select Game from service menu.

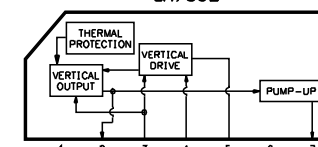
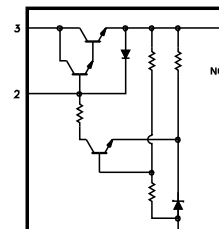
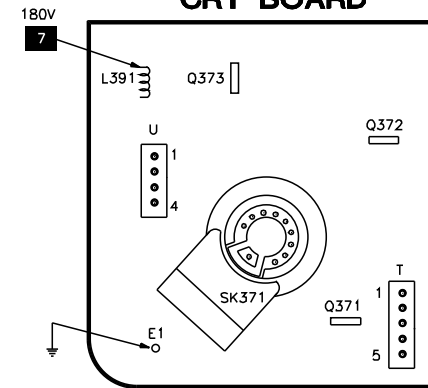
Game Mode Menu Chart

Adjustment	Range	Initial Value
Tint	± 20	±0
Color	± 20	±0
Picture	± 20	-10
Bright	± 20	-5
Detail	± 15	+5

PLACEMENT CHART, IC FUNCTIONS



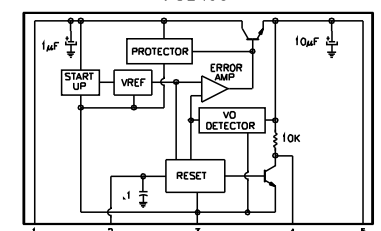
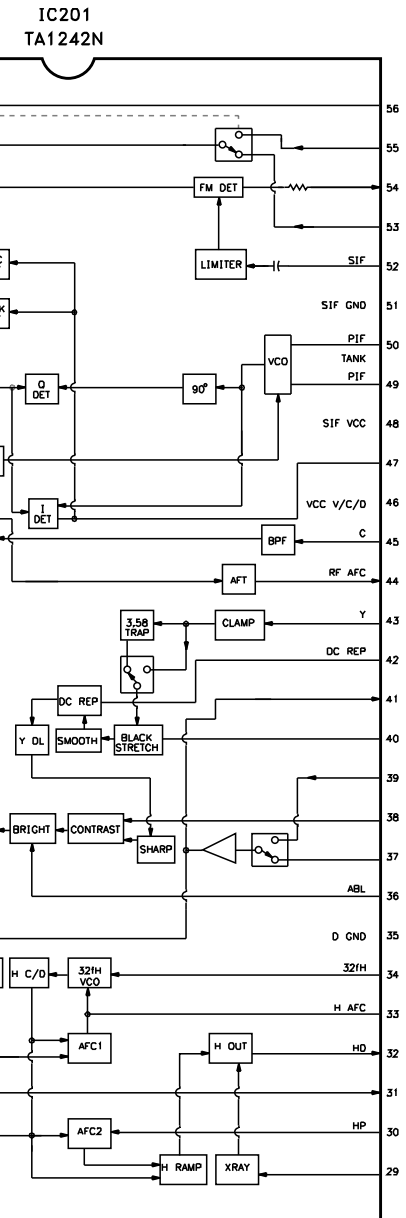
CRT BOARD



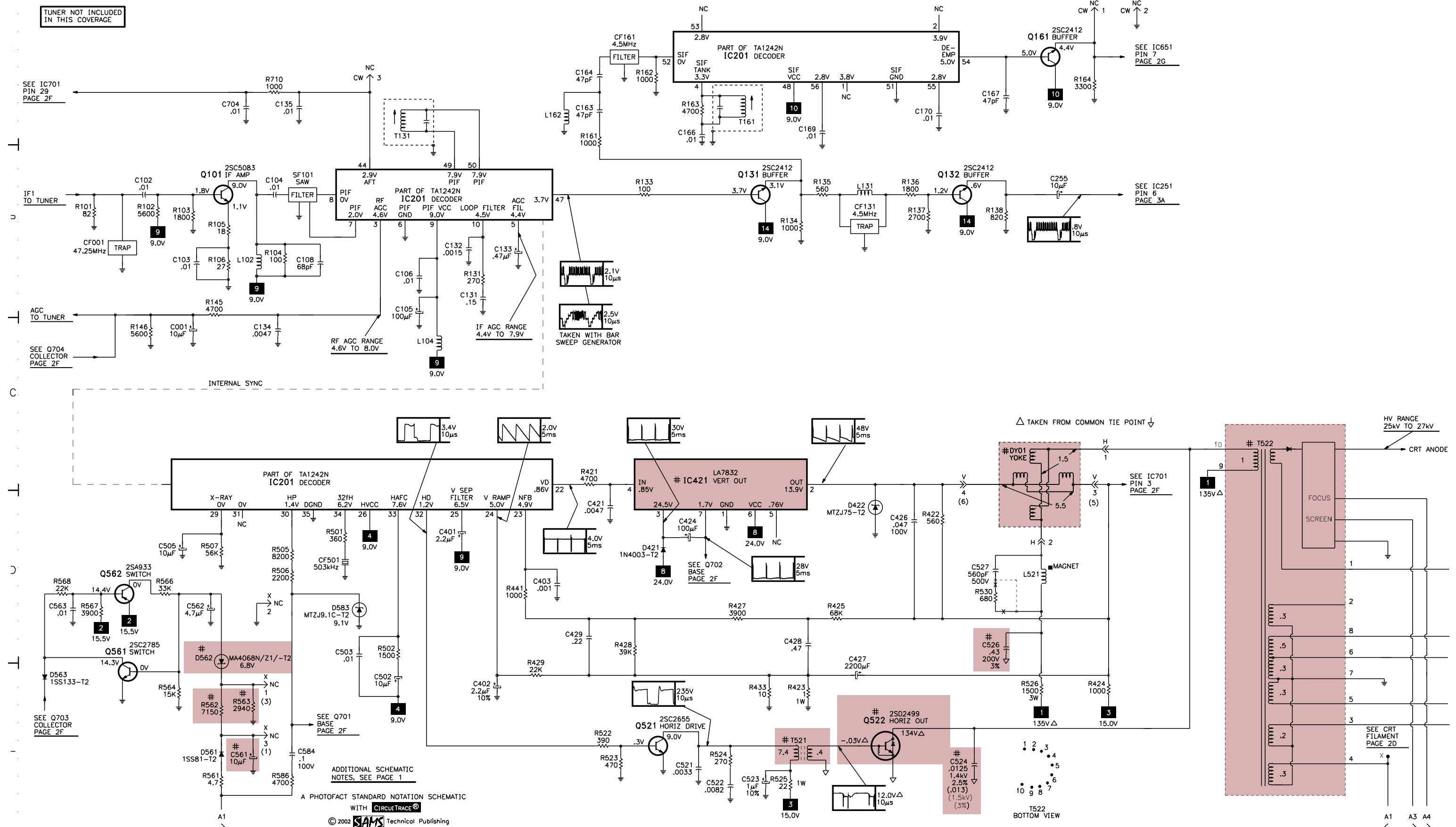
SCHEMATIC NOTES

- # For SAFETY use only equivalent replacement part, see parts list.
- X— Circuitry not used in some versions.
- Circuitry used in some versions.
- ⊕ Ground
- mm* Chassis ground
- ▽ Common tie point
- △ Taken from common tie point
- 3** Schematic **CIRCUIT TRACE®** 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 100QV 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.



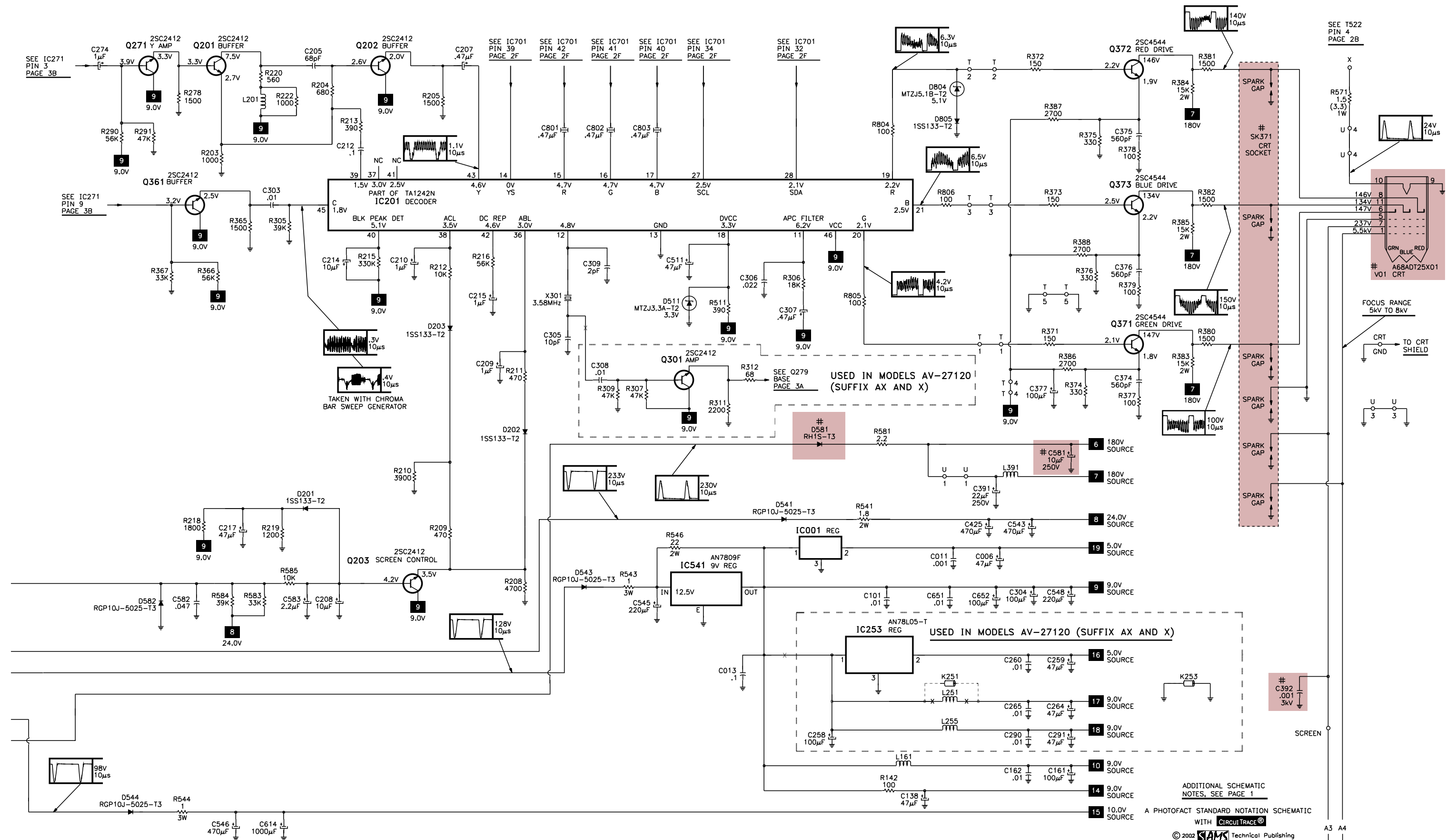
TUNER NOT INCLUDED
IN THIS COVERAGE



ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 1

OTOFACT STANDARD NOTATION SCHEMATIC
WITH **CIRCUITTRACE®**

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TELEVISION SCHEMATIC continued

H



SET 4611 Page 2

A

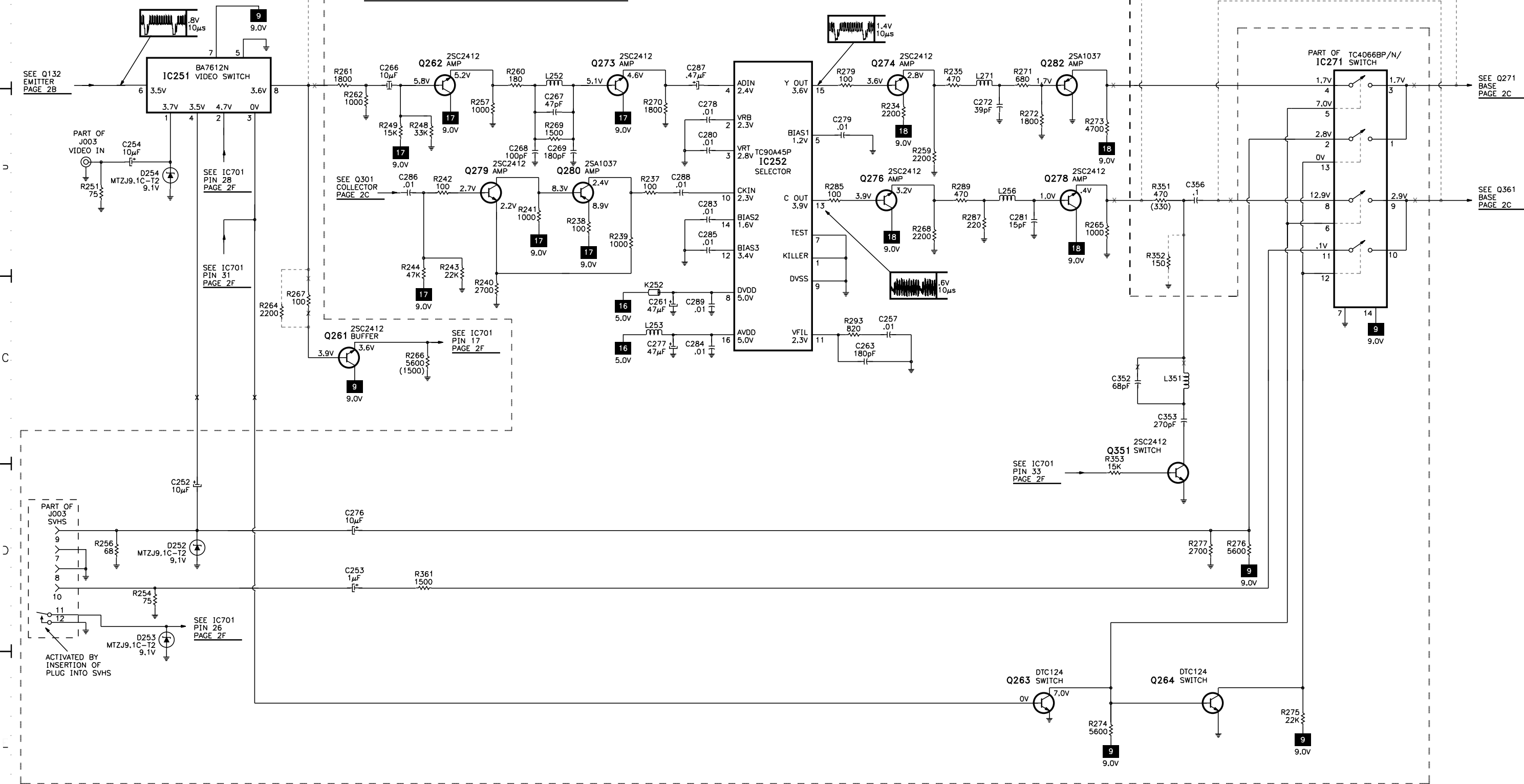
B

VIDEO SWITCHING SCHEMATIC

ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 1

A PHOTOFAC STANDARD NOTATION SCHEMATIC
WITH **CIRCUITTRACE**
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USED IN MODELS AV-27120 (SUFFIX AX AND X)



PARTS LIST

SEMICONDUCTORS

Item No.	Type No.	Mfr. Part No.	NTE Part No.
D001	-	MTZJ33B-T2	-
D003, 04	-	MTZJ9.1C-T2	-
D201, 02, 03	-	1SS133-T2	NTE177
D252, 53, 54	-	MTZJ9.1C-T2	-
D421	-	1N4003-T2	NTE116
D422	-	MTZJ75-T2	-
D423	-	1SS133-T2	NTE177
D501	-	MTZJ9.1C-T2	-
D511	-	MTZJ3.3A-T2	-
D541	-	RGP10J-5025-T3	-
D542	-	1SR35-400A-T2	-
D543, 44	-	RGP10J-5025-T3	-
D561	-	1SS81-T2	NTE177
# D562	-	MA4068N/Z1/-T2	-
D563	-	1SS133-T2	NTE177
# D581	-	RH1S-T3	NTE552
D582	-	RGP10J-5025-T3	-
D583	-	MTZJ9.1C-T2	-
D601, 02	-	1SS133-T2	NTE177
D651, 52, 59, 60	-	MTZJ9.1C-T2	-
D704 Thru	-	-	-
D707	-	1SS133-T2	NTE177
D711	-	1SS133-T2	NTE177
D717, 18	-	MTZJ9.1C-T2	-
D751	-	SLR-342VR3F	-
D804	-	MTZJ5.1B-T2	-
D805	-	1SS133-T2	NTE177
# D911	-	D3SB60	NTE5310
D941 Thru	-	-	-
D944	-	1SR35-400A-T2	-
D951	-	MTZJ12C-T2	-
D953	-	1SR35-400A-T2	-
D957, 58	-	1SS133-T2	NTE177
IC001	-	AN7805F	NTE1960
IC201	-	TA1242N	-
IC251	-	BA7612N	-
IC252	-	TC90A45P	-
IC253	-	AN78L05-T	-
IC271	-	TC4066BP/N/	-
# IC421	-	LA7832	-
IC541	-	AN7809F	NTE1966
# IC602	-	LA4446	-
IC651	-	UPC1851BCU	-
IC652	-	BA15218N	NTE778S
IC701	-	M37272MA-053SP	-
IC702	24C02PC	AT24C02-C20110	-
IC703	78LR05	L78LR05E-MA	NTE977
# IC921	-	STR30134	NTE1778
IC951	TA78L009AP	TA78L009AP-T	NTE1902

For SAFETY use only equivalent replacement part.

SEMICONDUCTORS continued

Item No.	Type No.	Mfr. Part No.	NTE Part No.
Q101	2SC5083	2SC5083/L-P/-T	-
Q131, 32, 61	2SC2412	2SC2412K/QR/-X	NTE2408
Q201, 02, 03	2SC2412	2SC2412K/QR/-X	NTE2408
Q261, 62	2SC2412	2SC2412K/QR/-X	NTE2408
Q263, 64	-	DTC124EKA-X	NTE2357
Q271, 73, 74, 76	2SC2412	2SC2412K/QR/-X	NTE2408
Q278, 79	2SC2412	2SC2412K/QR/-X	NTE2408
Q280, 82	2SA1037	2SA1037AK/QR/-X	NTE2409
Q301, 51, 61	2SC2412	2SC2412K/QR/-X	NTE2408
Q371, 72, 73	2SC4544	2SC4544-LB	NTE376%
Q521	2SC2655	2SC2655/Y/-T	NTE2363
# Q522	2SD2499	2SD2499-LB	-
Q561	2SC2785	2SC2785/JH/-T	NTE2361
Q562	2SA933	2SA933AS/QR/-T	NTE290A
Q602	DTC323	DTC323TK-X	-
Q651 Thru	-	-	-
Q654	2SC2412	2SC2412K/QR/-X	NTE2408
Q655	2SA1037	2SA1037AK/QR/-X	NTE2409
Q701, 02, 03	2SC2412	2SC2412K/QR/-X	NTE2408
Q704	DTC323	DTC323TK-X	-
Q951	2SC2412	2SC2412K/QR/-X	NTE2408
Q952	2SA966	2SA966/OY/-T	NTE294
Q953	2SC2412	2SC2412K/QR/-X	NTE2408

For SAFETY use only equivalent replacement part.

% Use insulating hardware supplied with replacement.

PARTS LIST continued

CAPACITORS & ELECTROLYTICS		
Item No.	Rating	Mfr. Part No.
C266	10µF 20% 25V NP	QENC1EM-106Z
# C392	.001 +80% -20% 3kV	QCZ0121-102
C402	2.2µF 10% 16V Tantalum	QBHC1CK-225Z
C523	1µF 10% 50V	QEM61HK-105Z
# C524	.0125 2.5% 1.4kV	QFZ0117-1252
	.013 3% 1.5kV	QFZ0198-133
# C525	100µF 20% 160V	QEZO203-107
# C526	.43 3% 200V	QFZ0119-434
# C561	10µF 20% 50V	QETN1HM-106Z
# C581	10µF 20% 250V	QETC2EM-106Z
C616, 22	.47µF 20% 50V NP	QENC1HM-474Z
C655	4.7µF 20% 50V NP	QENC1HM-475Z
C656	1µF 20% 50V NP	QENC1HM-105Z
C662	3.3µF 10% 16V Tantalum	QBTC1CK-335Z
C664	10µF 10% 16V Tantalum	QBTC1CK-106Z
C669, 70	1µF 20% 50V NP	QENC1HM-105Z
C801, 02, 03	.47µF 20% 50V NP	QENC1HM-474Z
# C901	.1 20% 275VAC	QFZ9040-104
# C902	.047 20% 275VAC	QFZ9040-473
# C911, 12, 13	.0047 20% 125VAC	QCZ9074-472
# C914	470µF 20% 200V	QEZO429-477
# C981, 82	.01 20% 250VAC	-
	.01 20% 125VAC	QCZ9074-103
# For SAFETY use only equivalent replacement part.		

CONTROLS & RESISTORS		
Item No.	Function/Rating	Mfr. Part No.
# FR720	82 5% 1/4W Fusible	QRZ9017-820
R526	1500 5% 3W	QRL039J-152
R543, 44	1 5% 3W	QRT039J-1R0
# R562	7150 5% 1/10W	NRZ0032-7151X
# R563	2940 5% 1/10W	NRZ0032-2941X
R656	1500 .5% 1/10W	NRVA02D-152X
R658	15K .5% 1/10W	NRVA02D-153X
# R901	1.2 10% 7W Wirewound	QRF074K-1R2
# R921	2.7 5% 2W	QRX029J-2R7
# R926, 27	270 5% 15W Wirewound	QRF154J-271
# R981	2.7M 10% 1/2W	QRZ9041-275
# TH901	5.1 Cold PTC	CEKP007-002
# VA901	Varistor	ERZV10V361CS
# For SAFETY use only equivalent replacement part.		

COILS & TRANSFORMERS		
Item No.	Function/Rating	Mfr. Part No.
# DY01 (1)	Yoke Horiz 1.3mH Vert 18.3mH	-
K251	Ferrite Bead	CE41433-001Z
K252	Ferrite Bead	QQR0582-001Z
K253	Ferrite Bead	CE41433-001Z
K701	Ferrite Bead	QQR0582-001Z
L003	5.6µH	QQL03BJ-5R6Z
# L01	Degaussing	CE41329-00DJB
L102	-	QQLZ014-R22
L104	68µH	QQL03BJ-680Z
L131	22µH	QQL03BJ-220Z
L161	68µH	QQL03BJ-680Z
L162	39µH	QQL03BJ-390Z
L201	33µH	QQL03BJ-330Z
L251, 52, 53	4.7µH	QQL29BJ-4R7Z
L255	6.8µH	QQL29BJ-6R8Z
L256	15µH	QQL29BJ-150Z
L271	15µH	QQL29BJ-150Z
L351	15µH	QQL29BJ-150Z
L391	39µH	QQL03BJ-390Z
L521	Horizontal Linearity	CELL004-001
L701	4.7µH	QQL03BJ-4R7Z
L709	10µH	QQL03BJ-100Z
# LF901	Line Filter	QQR0864-002
T131	PIF	QQR0907-001
T161	SIF	CELT003-109J3
# T521	Horizontal Drive	CE41106-00CJ1
# T522 (2)	Horizontal Output	QQH0028-001
# T901	Power	QQT0198-001
# For SAFETY use only equivalent replacement part.		
(1) Bonded part of CRT.		
(2) Screen and focus controls are part of T522.		

PARTS LIST continued

MISCELLANEOUS			
Item No.	Description	Mfr. Part No.	Notes
CF001	Trap	QAX0349-001	47.25MHz
CF131	Trap	CE41505-001	4.5MHz
CF161	Filter	SFSH4.5MCB	4.5MHz
CF501	Resonator	CSB503F30-T2	503kHz
CF701	Resonator	CST8.00MTW	8MHz
CF702	Resonator	QAX0428-001	-
# CN10PW	Line Cord	QMPD200-200-JC	AC, Polarized
# F901	Fuse	QMF0007-6R3J1	6.3Amp, 125V, Fast Acting
# F902	Fuse	QMF0007-1R25J1	1.25Amp, 125V Slow Blow
FC901, 02	Fuse Holder	CEMG002-001Z	For F901, 02 (4 Used)
IC751	Receiver	GPIU281Q	Remote
J003 (6)	Jack	QNZ0117-001	Assembly
J003 (7)	Jack	QNN0182-001	Assembly
J004	Jack	QNN0181-001	Assembly
# RY901	Relay	QSK0083-001	Power
S751	Switch	QSW0619-003Z	Menu
S752	Switch	QSW0619-003Z	Channel Down
S753	Switch	QSW0619-003Z	Channel Up
S754	Switch	QSW0619-003Z	Volume Down
S755	Switch	QSW0619-003Z	Volume Up
# S756	Switch	QSW0619-003Z	Power
SF101	Filter	CE42589-201	SAW
SK371	Socket	CE42535-001J1	CRT
# SP01, 02	Speaker	CEBSS09D-03KJ2	2" X 3 1/2", 8 Ohms, 5W
# TU001	Tuner	QAU0199-001	-
# V01 (7)	CRT	A68QND891X001	-
# V01 (8)	CRT	A68ADT25X01	-
X301	Crystal	QAX0310-001Z	3.58MHz
	PC Board (1)	SFV-1050A-M2	Main
	PC Board (2)	SFV-1049A-M2	Main
	PC Board (3)	SFV-1048A-M2	Main
	PC Board (4)	SFV-1047A-M2	Main
	Transmitter (5)	RM-C205-1C	Remote
	Transmitter (6)	RM-C381-1A	Remote

For SAFETY use only equivalent replacement part.

(1) Used in model AV-27115 Suffix AX.

(2) Used in model AV-27115 Suffix X.

(3) Used in model AV-27120 Suffix AX.

(4) Used in model AV-27120 Suffix X.

(5) Used in models AV-27115 Suffix AX and AV-27115 Suffix X.

(6) Used in models AV-27120 Suffix AX and AV-27120 Suffix X.

(7) Used in models AV-27115 Suffix AX and AV-27120 Suffix AX.

(8) Used in models AV-27115 Suffix X and AV-27120 Suffix X.

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.

JVC
MODEL AV-27120 SUFFIX X