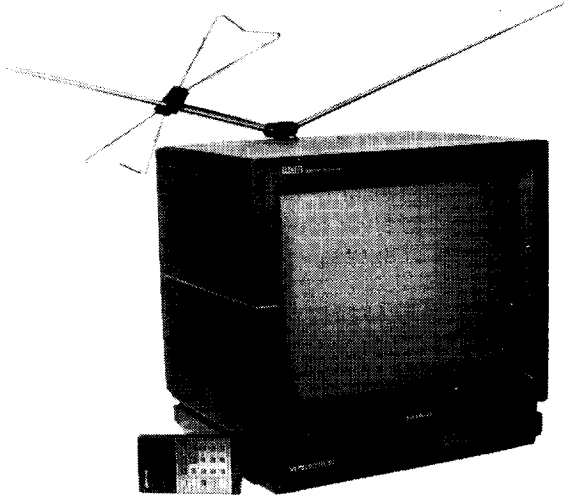


SHARP SERVICE MANUAL

S56V114LV76//



COLOR TELEVISION SIGMA 9100 CHASSIS

Chassis No. 14L1

MODEL 14LV76

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

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SHARP ELECTRONICS CORPORATION

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IMPORTANT SERVICE SAFETY PRECAUTION

- Service work should be performed only by qualified service technicians who are thoroughly familiar with all safety checks and servicing guidelines which follow:

WARNING

1. For continued safety, no modification of any circuit should be attempted.
2. Disconnect AC power before servicing.
3. Semiconductor heat sinks are potential shock hazards when the receiver is operating.
4. The chassis in this receiver has two ground systems which are separated by insulation material. The non-isolated (hot) ground system is for the +B voltage regulator circuit and the horizontal output circuit. The isolated ground system is for the low +B DC voltages and the secondary circuit of the high voltage transformer. To prevent electrical shock use an isolation transformer between the line cord and power receptacle, when servicing this chassis.

SERVICING OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove the static charge by connecting a 10 k ohm resistor in series with an insulated wire (such as a test probe) between the picture tube ground and the anode lead. (AC cord should be disconnected from AC outlet.)

1. Note that the picture tube in this receiver employs integral implosion protection.
2. Replace with tube of the same type number for continued safety.
3. Do not lift picture tube by the neck.
4. Handle the picture tube only when wearing shatter-proof goggles and after discharging the high voltage anode completely.

X-RADIATION AND HIGH VOLTAGE LIMITS

1. All service personnel should be aware of the procedures and instructions covering X-radiation. The only potential source of X-ray in current solid state TV receivers is the picture tube. However, the picture tube does not emit measurable X-Ray radiation if the high voltage is as specified in the "High Voltage Check" instructions. It is only when high voltage is excessive that X-radiation is capable of penetrating the picture tube shell which includes lead in glass material. The important precaution is to keep high voltage below the maximum level specified.
2. It is essential that servicemen have available at all times an accurate high voltage meter. The calibration of this meter should be checked periodically.
3. High voltage should always be kept at the rated value — no higher. Operation at higher voltages may cause a failure of the picture tube or high voltage circuitry and, under certain conditions, may produce radiation in excess of desirable levels.

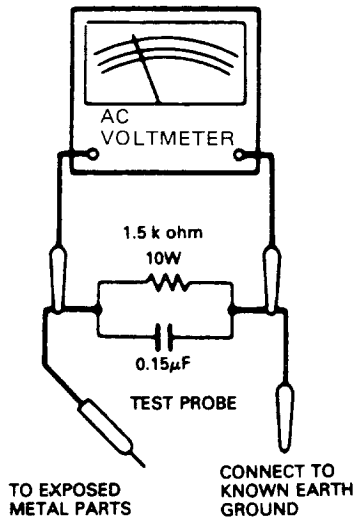
4. When the high voltage regulator is operating properly there is no possibility of an X-radiation problem. Every time a color chassis is serviced, the brightness should be tested while monitoring high voltage with a meter to be certain that it does not exceed the specified value and is regulated correctly.
5. Do not use a picture tube other than that specified, and do not make unrecommended circuit modifications to the high voltage circuitry.
6. When trouble shooting and taking test measurements on a receiver with excessively high voltage, avoid being unnecessarily close to the receiver. Do not operate the receiver longer than is necessary to locate the cause of excessive voltage.

FIRE AND SHOCK HAZARD CHECKS

Before returning the receiver to the user, perform the following safety checks:

1. Inspect all lead dress to make certain that leads are not pinched, and check that hardware is not lodged between the chassis and other metal parts in the receiver.
 2. Inspect all protective devices such as non-metallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators, etc.
 3. To be sure that no shock hazard exists, check for current leakage in the following manner:
 - Plug the AC cord directly into a 120-volt AC outlet, (Do not use an isolation transformer for this test).
 - Using two clip leads, connect a 1.5 k ohm, 10 watt resistor paralleled by a 0.15 μ F capacitor in series with all exposed metal cabinet parts and a known earth ground, such as an electrical conduit or electrical ground connected to an earth ground.
 - Use a AC voltmeter having with 5000 ohm per volt, or higher, sensitivity to measure the AC voltage drop across the resistor.
 - Make contact with the test probe on all exposed metal parts having a return path to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor.
- All checks must be repeated with the AC cord plug connection reversed (if necessary, a non-polarized adapter plug may be used only for the purpose of completing these checks).
- Any current measured must not exceed 0.5 milliamps.
- Any measurements not within the limits outlined above are indicative of potential shock hazard and corrective action must be taken before returning the set to the customer.

IMPORTANT SERVICE SAFETY PRECAUTION (Continued)



SAFETY NOTICE

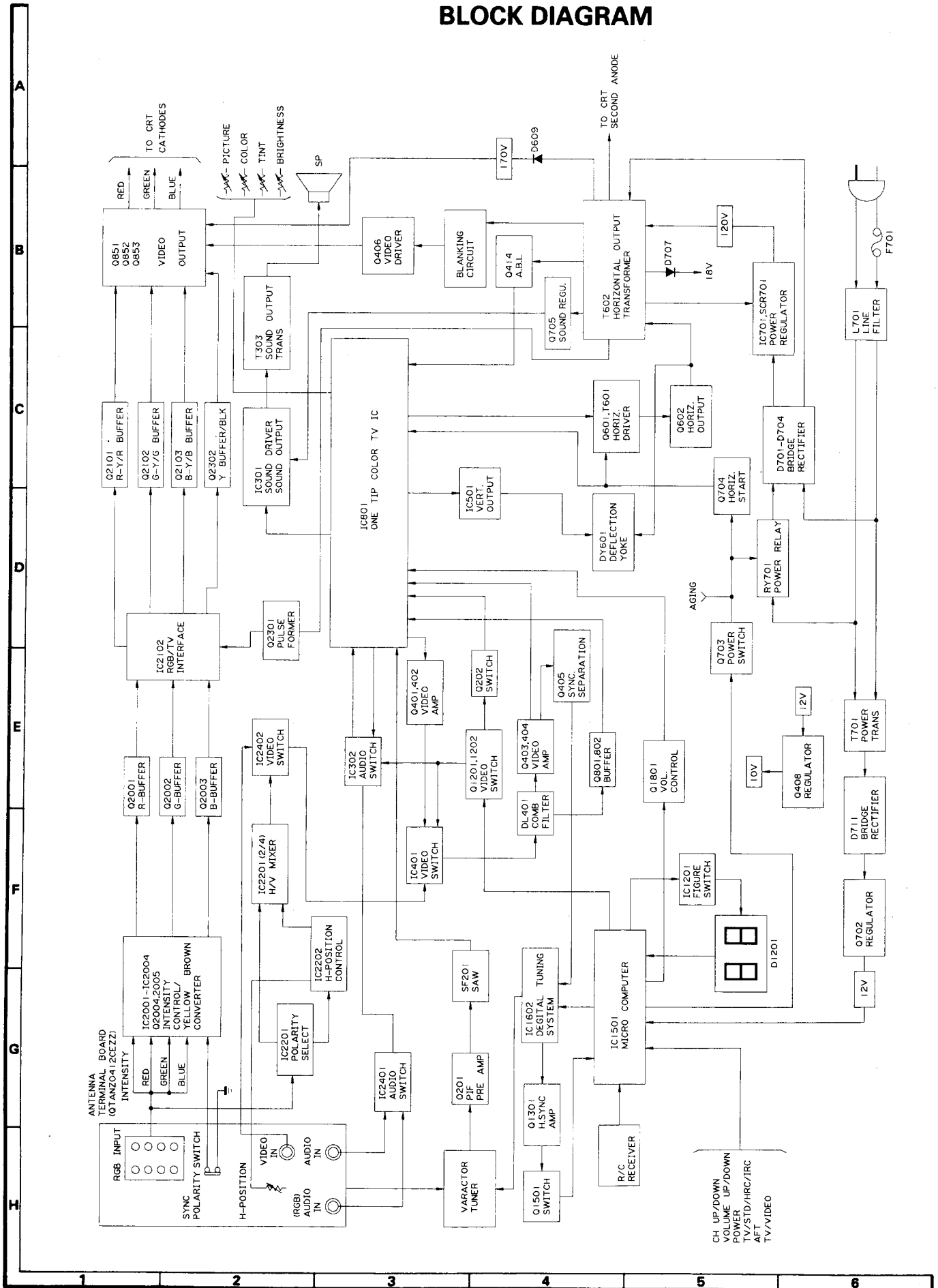
Many electrical and mechanical parts in television receivers have special safety-related characteristics. These characteristics are often not evident from visual inspection, nor can protection afforded by them be necessarily increased by using replacement components rated for higher voltage, wattage, etc.

Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by "Δ" and shaded areas in the Replacement Parts Lists and Schematic Diagrams. For continued protection, replacement parts must be identical to those used in the original circuit. The use of a substitute replacement parts which do not have the same safety characteristics as the factory recommended replacement parts shown in this service manual, may create shock, fire, X-radiation or other hazards.

ELECTRICAL SPECIFICATIONS

VHF ANTENNA INPUT IMPEDANCE	75 ohm unbalanced
UHF ANTENNA INPUT IMPEDANCE	300 ohm balanced
CONVERGENCE	Magnetic
FOCUS	Hi-Bi-Potential Electrostatic
AUDIO POWER OUTPUT RATING	0.85 Watt (at 10 % distortion)
INTERMEDIATE FREQUENCIES	
Picture IF Carrier Frequency	45.75 MHz
Sound IF Carrier Frequency	41.25 MHz
Color Sub-Carrier Frequency	42.17 MHz (Nominal)
PICTURE SIZE	94 sq. in.
POWER INPUT	120 volts AC 60Hz
POWER RATING	80 watts
SPEAKER SIZE	3" PM 0.34 oz. Magnet
VOICE COIL IMPEDANCE	16 ohm at 400 Hz
SWEEP DEFLECTION	Magnetic
TUNING RANGES	VHF-Channels 2 thru 13
	UHF-Channels 14 thru 83
	CATV Channels 2 thru 36,
	95 thru 99
	(EIA, Channel Plan)

BLOCK DIAGRAM



INSTALLATION AND SERVICE INSTRUCTIONS

- Note: (1) When performing any adjustments to resistor controls and transformers use non-metallic screwdriver or TV alignment tools.
 (2) Before performing adjustment, TV set must be on at least 15 minutes.

CIRCUIT PROTECTION

The entire receiver is protected by a 4.0A fuse (F701), mounted on PWB-A, wired into one side of the AC line input.

+120V DC REGULATOR ADJUSTMENT

The +120V DC Adj. control (R711) is adjusted at the factory. However, should readjustment be required, proceed as follows:

1. Set the Brightness control (a Part of R462) and Picture control (a Part of R462) to maximum (CW) ends of their rotations.
2. Connect positive lead of Voltmeter to TP701 on PWB-A; negative lead to chassis ground.
3. Adjust R711 to obtain a +120V DC reading.

CAUTION: To insure proper operation and circuit reliability, do not exceed +120V DC.

X-RADIATION PROTECTOR CIRCUIT TEST

After service has been performed on the horizontal deflection system, high voltage system, or +B system, the X-Radiation protection circuit must be tested for proper operation as follows:

1. Apply 120V AC using a variac transformer for accurate input voltage.
2. Allow for warm up and adjust all customer controls for normal picture and sound.
3. Check the voltage of test points TP601 and TP603. (The voltage of these points should be about 17.7V DC and 18.3V DC respectively.)
4. Connect the cathode of diode D502 with TP601 through a short clip lead. When these points are connected, the operation of horizontal oscillator stops.
5. To start operation, remove the above short clip lead and touch the TP602 to chassis ground (TP604) with a short clip lead. (Remove short clip lead as soon as the set operates again with a normal picture.) Connect TP603 to cathode of diode D502, and see that the operation of horizontal oscillator then stops.
6. If the operation of the horizontal osc. does not stop in steps 4 and 5, the circuit must be repaired before the set is returned to the customer.

HIGH VOLTAGE CHECK

High voltage is not adjustable but must be checked to verify that the receiver is operating within safe and efficient design limitations as specified checks should be as follows:

1. Connect an accurate high voltage meter to CRT anode.
2. Operate receiver for at least 15 minutes at 120V AC line voltage, with strong air signal or properly tuned in test signal.
3. Set SW2301 on PWB-C to "off" position.
Note that a loss of luminescence will occur.
4. Rotate Screen control (on T602) to maximum (CCW) end of its rotation.
5. The reading should be approximately 23.5kV (at zero beam)

If a correct reading cannot be obtained, check circuitry for malfunctioning components. Upon completion of voltage check, readjust Screen control for proper operation and set SW2301 to "on" position.

Field Adjustment

RF. AGC. Adjustment

- (1) Select a local channel.
- (2) Place AFT switch in "off" position.
- (3) Turn RF AGC control (R214) fully clockwise until snow and/or noise appear in picture, then slowly turn control counter clockwise until snow and/or noise disappear.
- (4) Check all other channels.

Sound

- (1) Select a local channel.
- (2) Place AFT switch in "off" position.
- (3) Adjust volume control to mid-position.
- (4) Adjust sound det. coil (L303) to obtain good clear sound.

Horizontal Position Adjustment

- (1) Select a local channel.
- (2) Adjust horizontal position switch (SW601) to stabilize picture.
- (3) Check all channels for a stabilized picture.

Sub-Brightness Control

- (1) Select a local channel.
- (2) Turn picture control and set brightness control to the center position.
- (3) Turn sub-brightness control (a part of R462) to obtain normal brightness of the picture.

INSTALLATION AND SERVICE INSTRUCTIONS (Continued)

R/G/B Cut-off Adjustment

- (1) Place the unit in video mode using TV/Video switch (SW1105).
- (2) Place the unit in RGB mode using Video/RGB switch (SW1109).
- (3) Turn picture control (a part of R462) to the minimum (CCW) end of this rotation.
- (4) Set R2135, R2136 and R2129 at the minimum (CCW) position, and turn R2129 until the green is slightly illuminated.
- (5) Turn R2135 and R2136 to obtain white raster.
- (6) Turn R2129 until picture is cut off.

Vertical Size Adjustment

- (1) Select a local channel.
- (2) Check brightness and picture controls for a normal picture.
- (3) Adjust vertical size control (R514) for approximately one-half inch over scan at top and bottom of picture screen.

Focus Adjustment

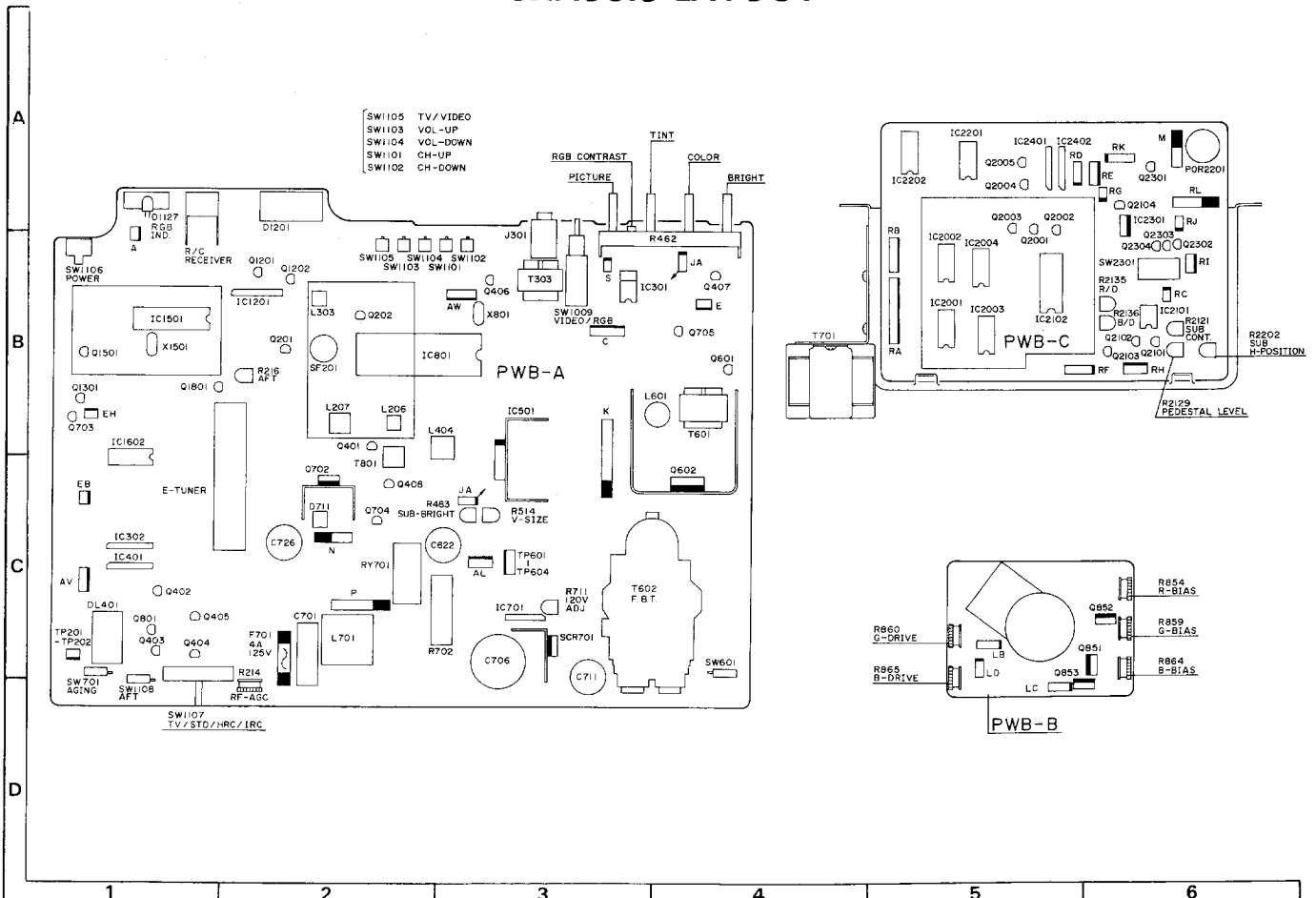
- (1) Select a local channel.
- (2) Set brightness and picture control at a normal viewing level.
- (3) Adjust focus control (part of T602) for sharp scanning lines and/or sharp picture.

NOTE 1: All field adjustments mentioned can be performed without test equipment.

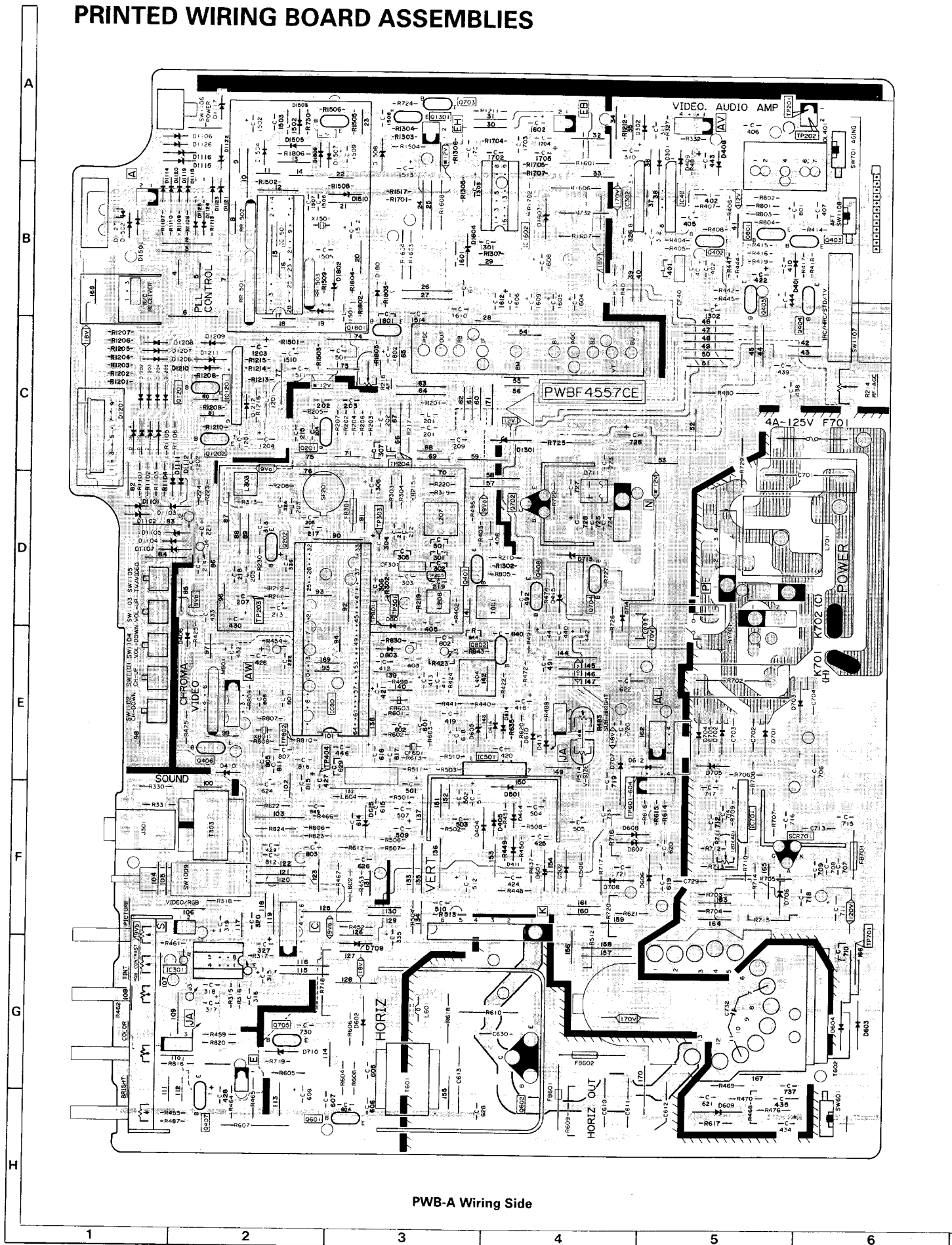
NOTE 2: The AFT switch is employed for the following purpose. When connecting a VCR or video game equipment to the antenna terminals of this TV and when the RF output frequency of these video equipments deviates from the normal TV channel frequency, this frequency deviation can be corrected by setting the AFT switch to the "ON" position. Usually the AFT switch should be set the "ON" position.

NOTE 3: After servicing the set, check that the aging SW701 is set at "off" position. This aging switch is to be used only for the factory inspection: at "on" position, it won't allow the set to be turned off.

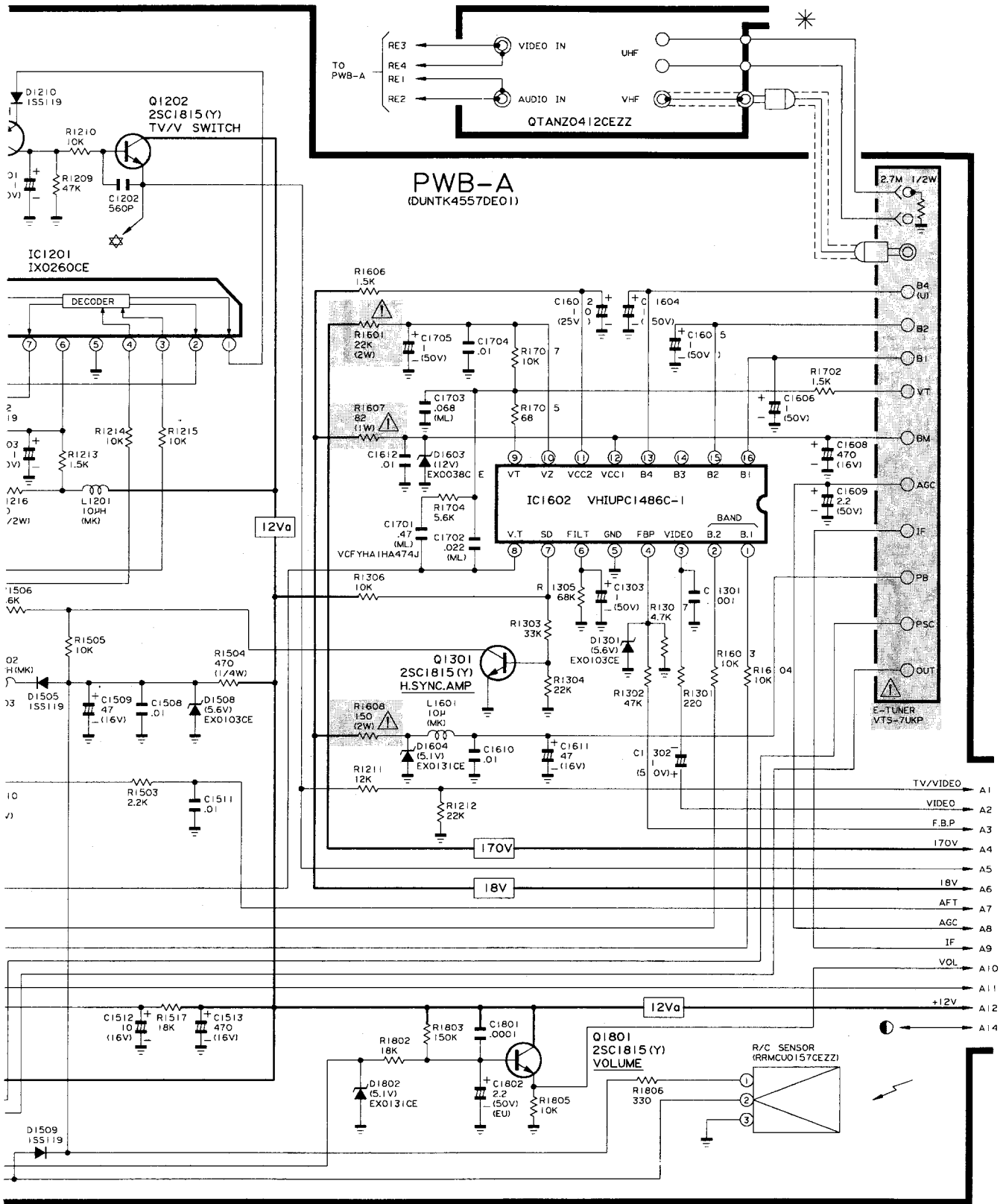
CHASSIS LAYOUT



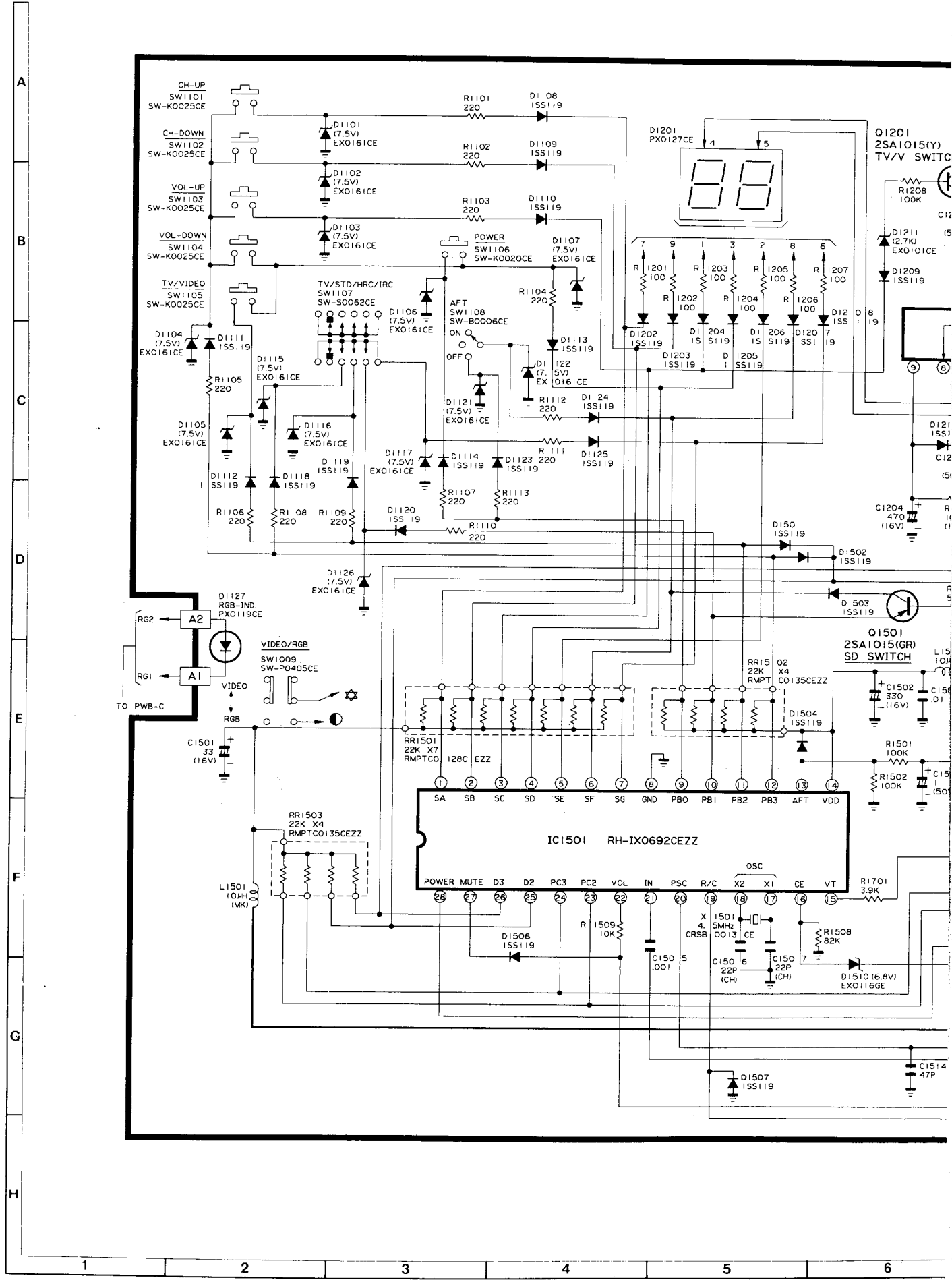
PRINTED WIRING BOARD ASSEMBLIES

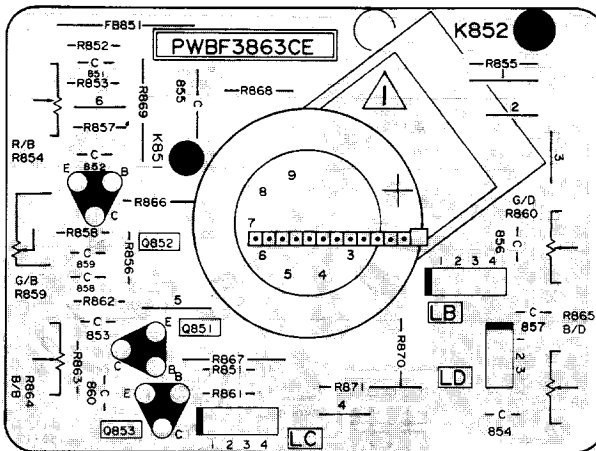


PWB-A Wiring Side

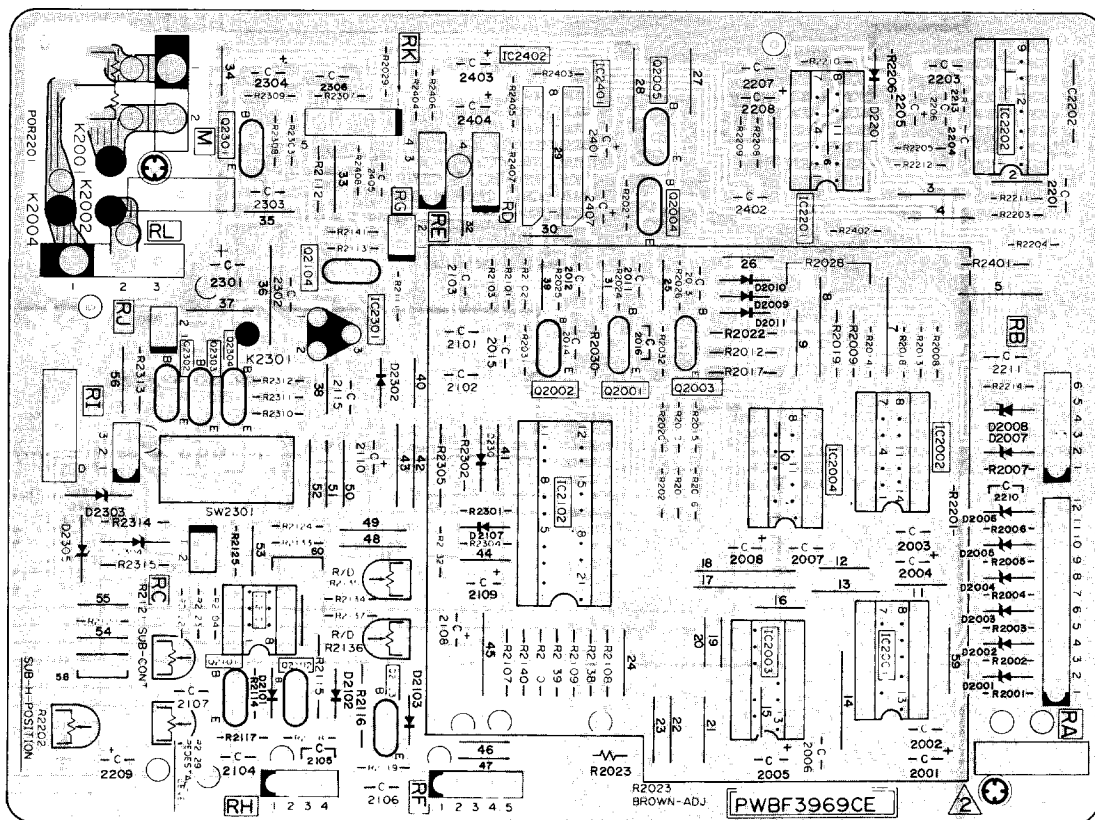


7	8	9	10	11	12
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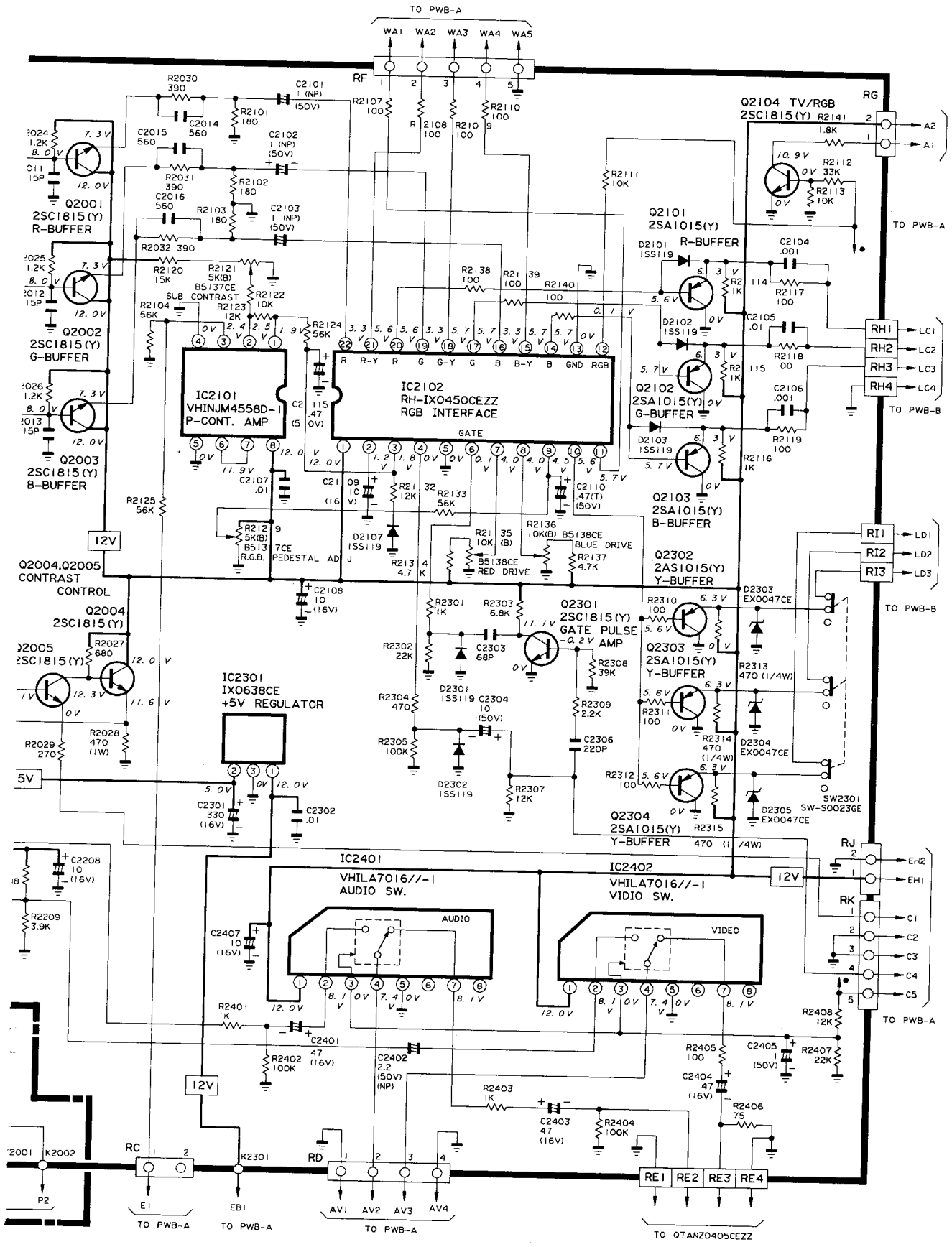


PWB-B Wiring Side

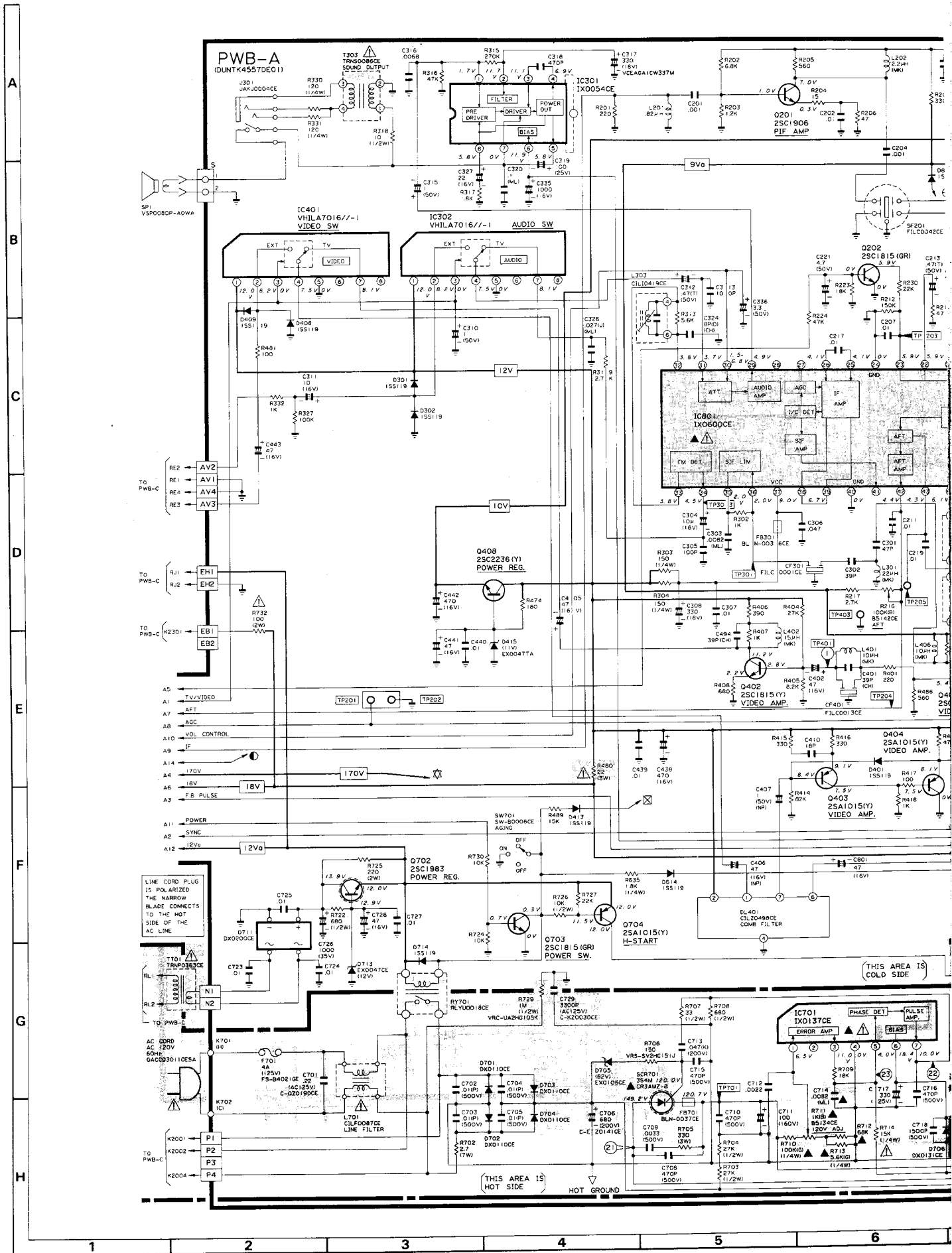


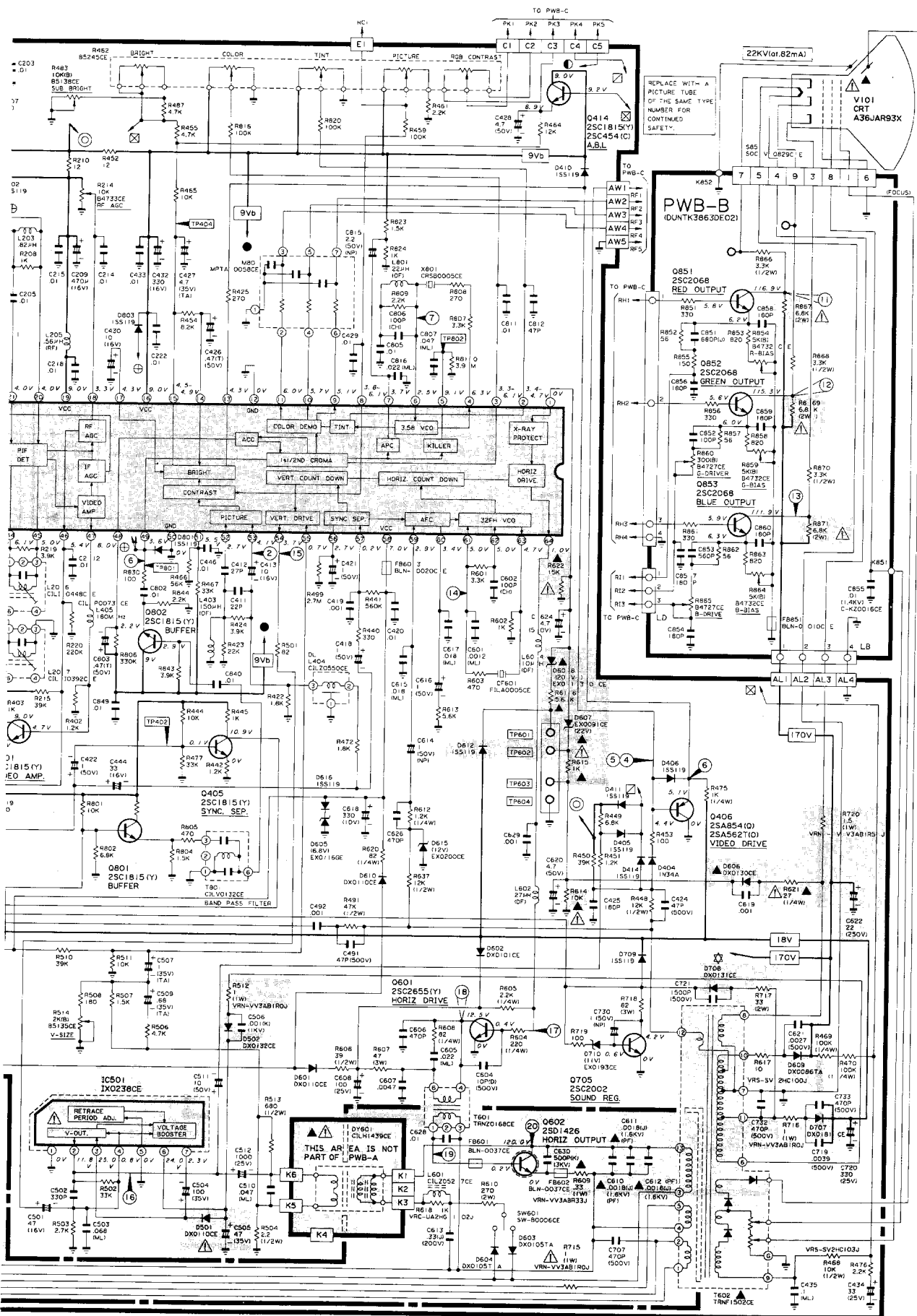
PWB-C Wiring Side

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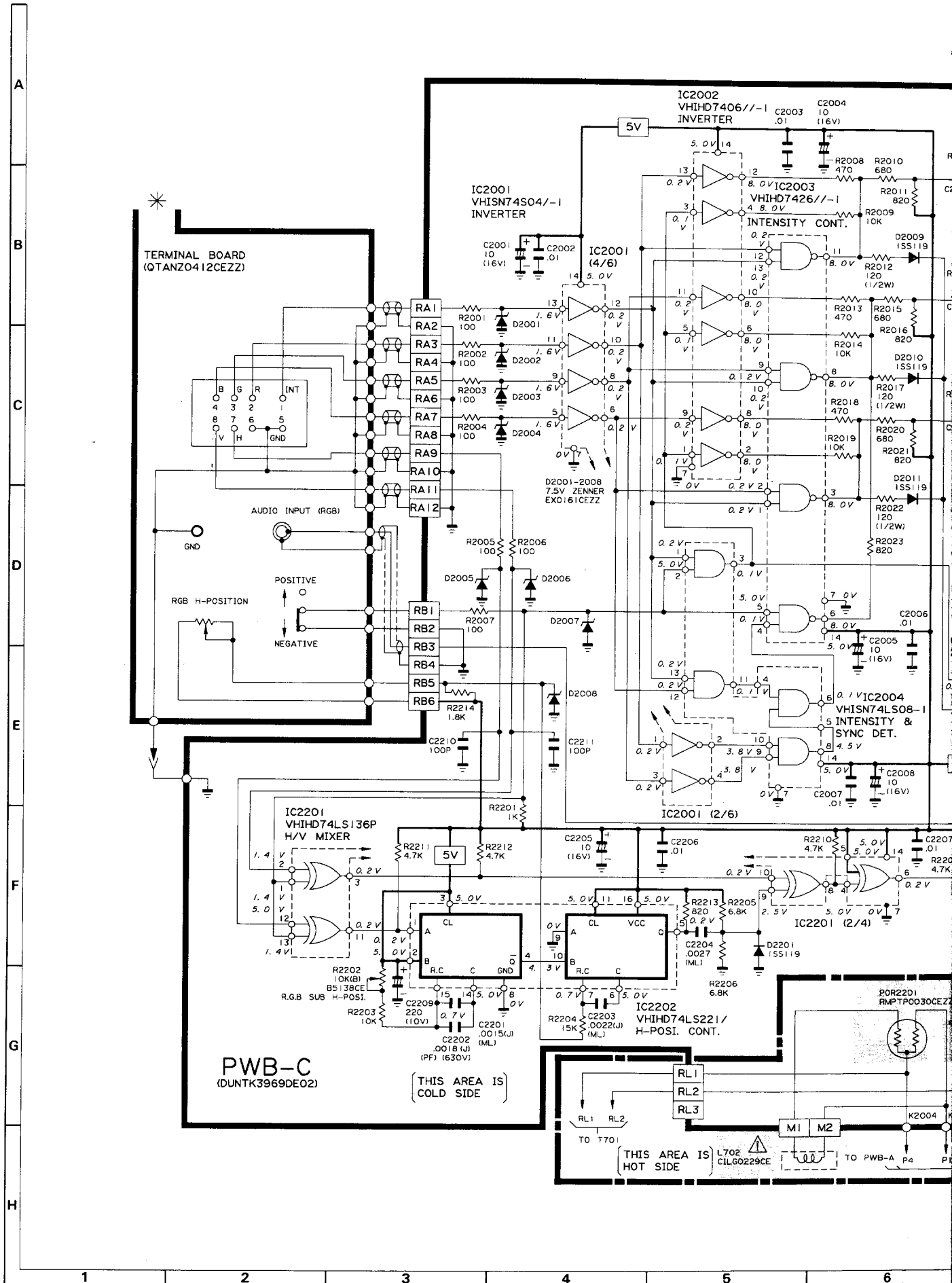


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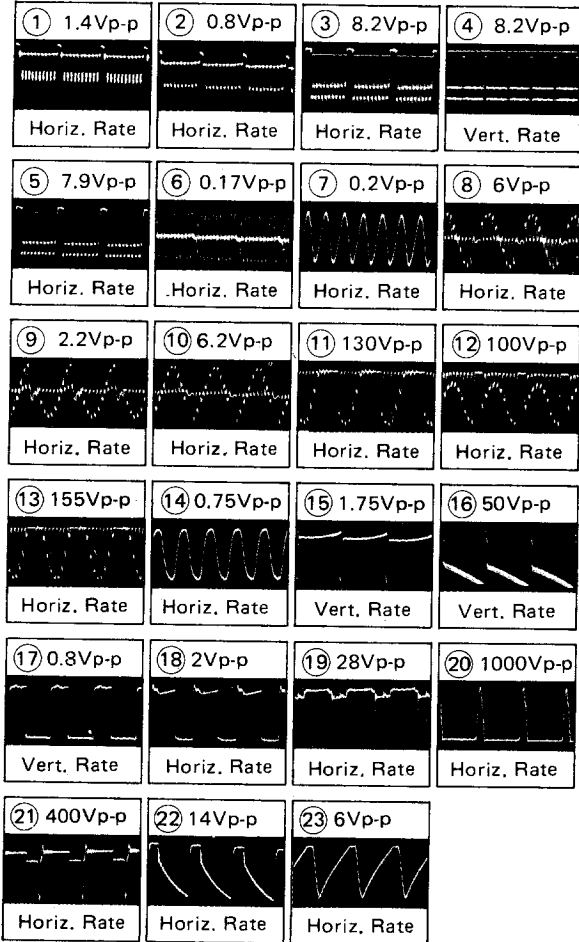
7	8	9	10	11	12
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WAVEFORMS

WAVEFORM MEASUREMENT CONDITIONS:

1. Photographs taken on a standard gated rainbow color bar signal, the tint setting adjusted for proper color. The wave shapes at the red, green and blue cathodes of the picture tube depend on the tint, color level and picture control.
2. indicates wave form check points (See chart, waveforms are measured from point indicated to chassis ground.)



NOTE:

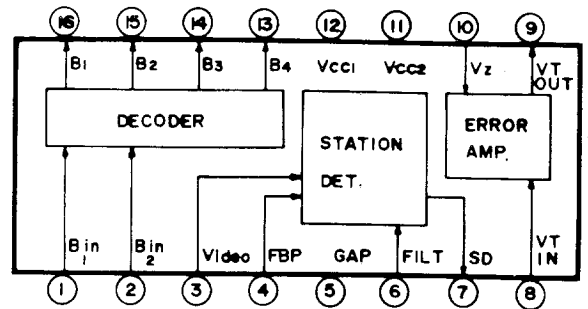
1. The unit of resistance "ohm" is omitted (K: 1000 ohms, M:1 Meg ohm).
2. All resistors are 1/8 watt, unless otherwise noted.
3. All capacitors are μF , unless otherwise noted P: $\mu\mu F$.
4. (G) indicates $\pm 2\%$ tolerance may be used.
5. \perp indicates line isolated ground.
6. \downarrow indicates hot ground.

VOLTAGE MEASUREMENT CCNDITIONS:

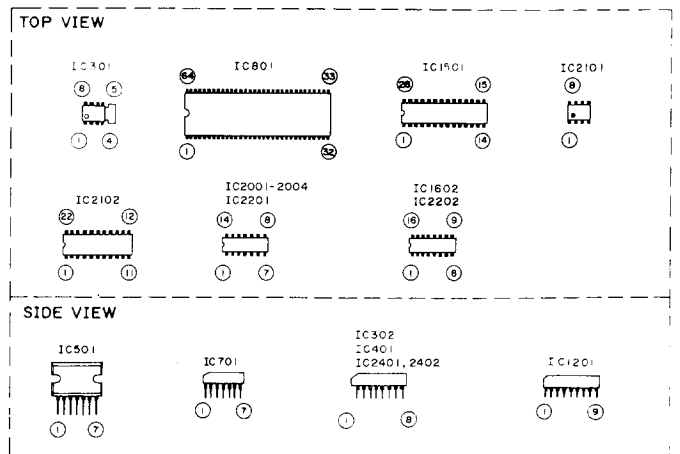
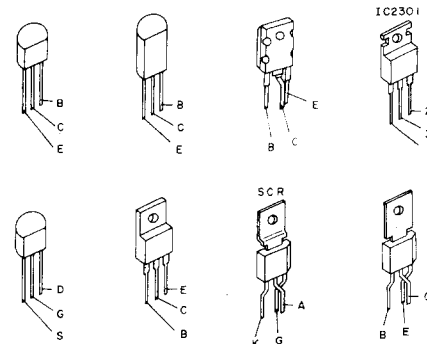
1. All DC voltages are measured with AC voltmeter connected between points indicated and chassis ground, line voltage set at 120V AC and all controls set for normal picture unless otherwise indicated.
2. All voltages measured with 1000 μV B & W or Color signal.

▲ AND SHADED COMPONENTS = SAFETY RELATED PARTS. ▲ MARK = X-RAY RELATED PARTS.

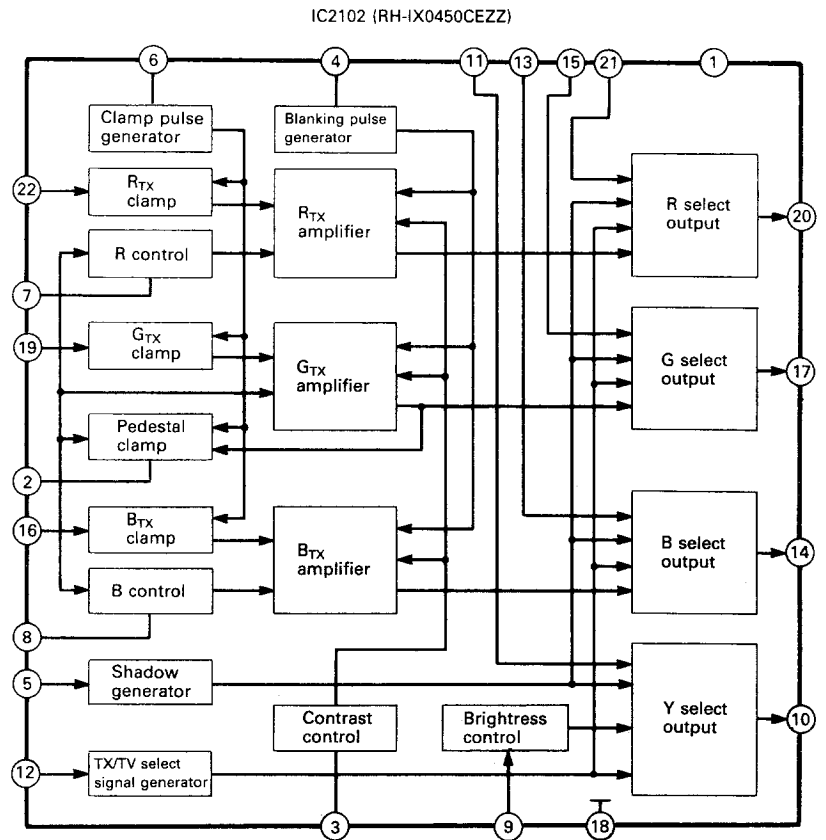
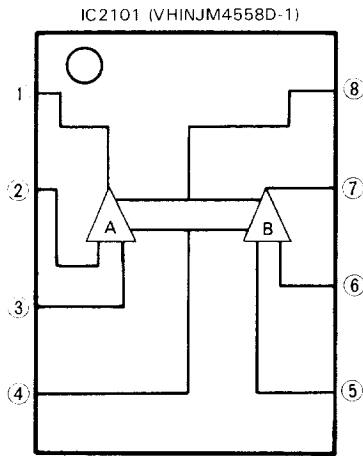
BLOCK DIAGRAM OF IC1401



SOLID STATE DEVICE BASE DIAGRAM



This circuit diagram is a standard one, printed circuits may be subject to change for product improvement without prior notice.



• INDICATION OF VOLTAGE AT SWITCHING TV/VIDEO

REF No.	TV/VIDEO	E (V)	C (V)	B (V)
Q1201	TV	3.4	0	3.5
	VIDEO	5.5	8.9	8.4
Q1202	TV	0	12.3	0
	VIDEO	8.3	12.3	8.9

REF No.	TV/VIDEO	⊕ Pin
IC302	TV	0
	VIDEO	5.2
IC401	TV	0
	VIDEO	5.2

REF NO		IC2001													
COLOR	PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14
INTEN WHITE		1.1	2.9	1.1	2.9	3.0	1.0	0	1.1	3.1	1.1	3.1	1.1	3.1	5.0
R		1.0	2.9	3.6	0.1	0.3	3.6	0	3.6	0.3	1.0	3.0	3.6	0.3	5.0
G		3.6	0.2	1.0	2.9	0.3	3.6	0	1.0	3.0	3.6	0.3	3.6	0.3	5.0
B		3.6	0.2	3.6	0.2	3.0	1.0	0	3.6	0.3	3.6	0.3	3.6	0.3	5.0
BROWN		1.0	2.9	1.0	2.9	0.3	3.6	0	1.0	3.0	1.0	3.0	3.6	0.3	5.0
BLACK		3.6	3.6	3.6	0.2	0.3	3.6	0	3.6	0.3	3.6	0.3	3.6	0.3	5.0

REF NO		IC2002													
COLOR	PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14
INTEN WHITE		0	-	0	-	0	-	0	6.1	1.0	6.1	1.1	6.1	1.1	5.0
R		4.3	-	4.3	-	4.3	-	0	0.1	3.6	0.1	3.6	4.3	1.0	5.0
G		4.3	-	4.3	-	4.3	-	0	0.1	3.6	0.1	1.0	0.1	3.6	5.0
B		4.3	-	4.3	-	4.3	-	0	4.3	1.0	4.3	3.6	0.1	3.6	5.0
BROWN		4.3	-	4.3	-	4.3	-	0	0.1	3.6	0.1	1.0	0.1	1.0	5.0
BLACK		4.3	-	4.3	-	4.3	-	0	0.1	3.6	0.1	3.6	4.3	3.6	5.0

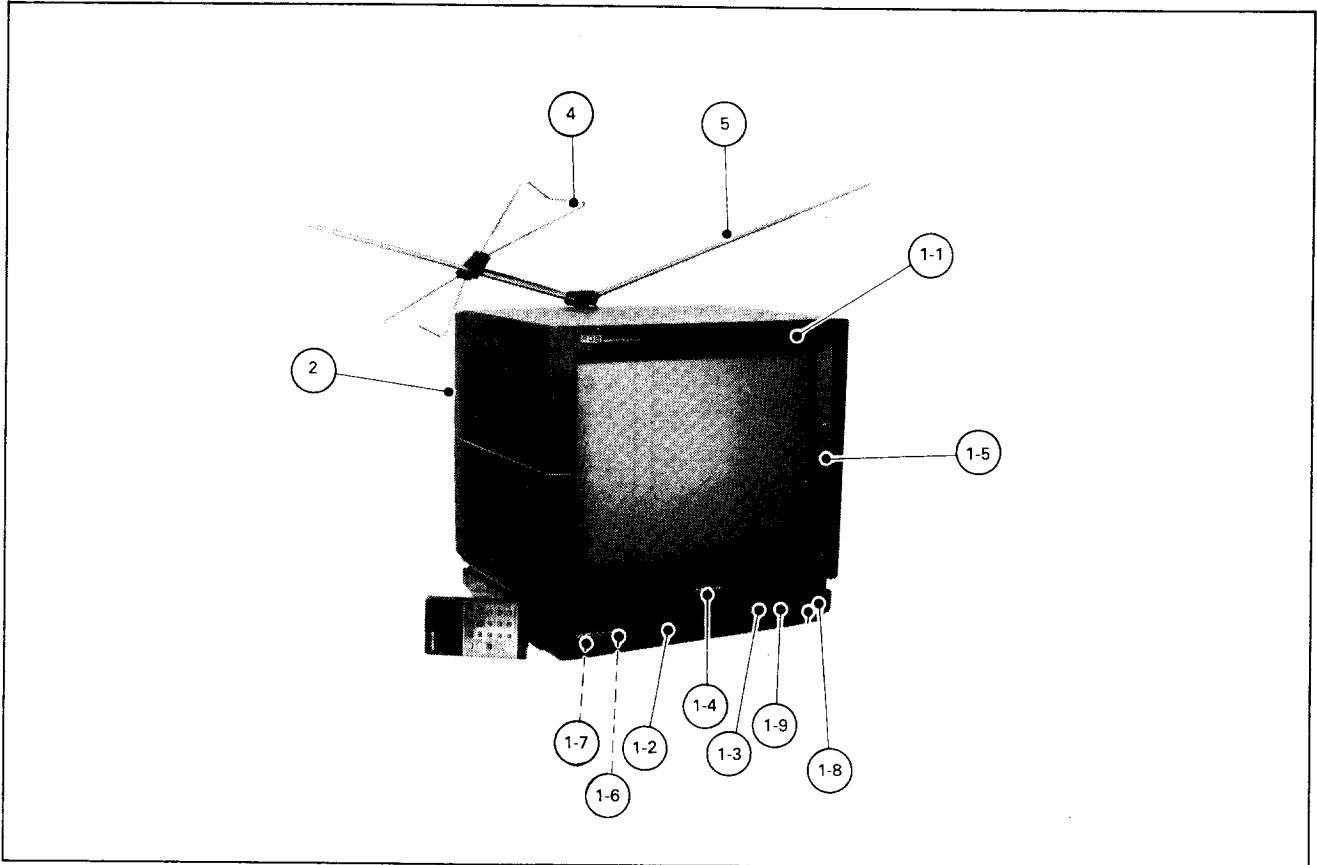
REF NO		IC2003													
COLOR	PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14
INTEN WHITE		1.0	1.1	6.1	0.1	5.0	6.1	0	6.1	1.1	1.1	6.1	1.1	1.1	5.0
R		3.6	3.6	0.1	0.1	5.0	0.1	0	0.1	3.6	3.6	4.3	1.0	3.6	5.0
G		3.6	3.6	0.1	0.1	5.0	4.3	0	4.3	1.0	3.6	0.1	3.6	3.6	5.0
B		1.0	3.6	4.3	0.1	5.0	0.1	0	0.1	3.6	3.6	0.1	3.6	3.6	5.0
BROWN		3.6	3.6	0.1	3.4	5.0	0.1	0	2.5	1.0	3.6	4.3	1.0	3.6	5.0
BLACK		3.6	3.6	0	0.1	5.0	0.1	0	0.1	3.6	3.6	0.1	3.6	3.6	5.0

REF NO		IC2004													
COLOR	PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14
INTEN WHITE		1.1	5.0	0	0	3.4	0.1	0	3.4	2.9	2.9	0	1.0	1.1	5.0
R		3.6	5.0	4.3	0	0.1	0.1	0	0.1	0.1	2.9	0	3.6	3.6	5.0
G		3.6	5.0	4.3	0	0.1	0.1	0	0.1	2.9	0.2	0	3.6	3.6	5.0
B		3.6	5.0	4.3	4.3	0.1	0.1	0	0.1	0.2	0.2	4.3	1.0	3.6	5.0
BROWN		3.6	5.0	4.3	0	3.4	3.4	0	3.4	2.9	2.9	0	3.6	3.6	5.0
BLACK		3.6	5.0	4.3	0	0.1	0.1	0	0.1	0.2	3.6	0	3.6	3.6	5.0

Ref. No.	Part No.	*	Description			Ref. No.	Part No.	*	Description		
▲▲ C610, ▲▲ 611, ▲▲ 612 C613	VCFPPC3CA182J	J	0.0018	1.6kV	Metalized Polypro	▲ R1601	VRS- VV3DB223J	J	22k	2W	Oxide Film
▲ C621	VCKYPA2HB272K	J	0.0027	500V	Ceramic	▲ R1607	VRS- VV3AB820J	J	82	1W	Oxide Film
▲ C622	VCEAAH2EW226M	J	22	250V	Ceramic	▲ R1608	VRS- VV3DB151J	J	150	2W	Oxide Film
▲▲ C630	VCQYPU3SB501K	J	500p	3kV	Ceramic	RR1501	RMPTC0128CEZZ	J	22k x 7 pcs. Resistor Arrey		
▲ C701	RC- QZ019DCEZZ	J	0.22	AC125V	Mylar	RR1502, 1503	RMPTC0135CEZZ	J	22k x 4 pcs. Resistor Arrey		
C702	VCKYPB2HE103P	J	0.01	500V	Ceramic	RELAY					
705						▲ RY701	RRLYU0018CEZZ	J	Power Relay		
▲ C706	RC- EZ0141CEZZ	J	680	200V	Electrolytic	SWITCHES					
C707, 708, 710, 715, 716, 732, 733	VCKYPA2HB471K	J	470p	500V	Ceramic	SW601, 701	QSW- B0006CEZZ	J	H-Position Aging		
C709	VCKYPA2HB332K	J	0.0033	500V	Ceramic	SW1101, 1102, 1103, 1104, 1105	QSW- K0025CEZZ	J	CH. Up CH. Down Volume Up Volume Down TV/Video		
▲ C711	VCEAAH2CW107M	J	100	500V	Electrolytic	SW1106	QSW- K0020CEZZ	J	Power		
C713	VCQPSB2DA473K	J	0.047	200V	Polypro Film	SW1107	QSW- S0062CEZZ	J	TV/STD/HRC/IRC		
▲▲ C714	VCQYSH1HM822K	J	0.0082	50V	Mylar	SW1108	QSW- B0006CEZZ	J	AFT		
C717, 720, 1502	VCEAAA1CW337M	J	330	16V	Electrolytic	SW1109	QSW- P0405CEZZ	J	RGB		
C718, 721	VCKYPA2HB152K	J	0.0015	500V	Ceramic	JACK					
C719	VCKYPA2HB392K	J	0.0039	500V	Ceramic	J301	QJAKJ0004CEZZ	J	Earphone		
C726	VCEAAH1VW108M	J	1000	35V	Electrolytic	MISCELLANEOUS					
▲ C729	RC- KZ0030CEZZ	J	3300p	AC125V	Ceramic	▲ F701	QFS- B4021GEZZ	J	Fuse 4A AC 125V		
C815	VCE9AA1HW225M	J	2.2	50V	Electrolytic (NP)	FB301	QFSDH1002CEZZ	J	Holder, F701 (2 Used)		
RESISTORS						FB601, 602, 701	RBLN- 0036CEZZ	J	Bead Ferrite		
▲ R468	VRS- SV2HC103J	J	10k	1/2W	Oxide Film	FB603	RBLN- 0020CEZZ	J	Bead Ferrite		
▲ R480	VRS- VV3LB220J	J	22	3W	Oxide Film	RRMCU0157CEZZ	J	R/C Reciever			
▲ R512, 715, 716	VRN- VV3AB1R0J	J	1	1W	Metal Film	PWB-B DUNTK3863DE02					
R607	VRS- VV3LB470J	J	47	3W	Oxide Film	TRANSISTORS					
▲ R609	VRN- VV3ABR33J	J	0.33	1W	Metal Film	Q851	VS2SC2068LB1E	J	2SC2068		
▲ R610	VRS- VV3DB271J	J	270	2W	Oxide Film	853					
▲▲ R614	VRD- RA2BE103J	J	10k	2W	Carbon	CONTROLS					
▲▲ R615	VRD- RA2BE102J	J	1k	1/8W	Carbon	R854, 859, 864, 865	RVR- B4732CEZZ	J	5k(B)	Red Bias Green Bias Blue Bias	
▲▲ R616	VRD- RA2BE562J	J	5.6k	1/8W	Carbon	R860, 865	RVR- B4727CEZZ	J	300(B)	Green Drive Blue Drive	
▲▲ R617	VRS- SV2HC100J	J	10	1/2W	Oxide Film	CAPACITOR					
▲▲ R621	VRD- RA2EE270J	J	27	1/4W	Carbon	C855	RC- KZ0016CEZZ	J	0.01	1.4kV	Ceramic
▲▲ R622	VRD- RA2BE153J	J	15k	1/8W	Carbon						
▲ R702	VRW- KV3NC2R7K	J	2.7	7W	Cement						
▲ R705	VRS- VV3LB331J	J	330	3W	Oxide Film						
▲ R706	VRS- SV2HC151J	J	150	1/2W	FR Oxide Film						
▲▲ R710	VRD- RA2EE104G	J	100k	1/4W	Carbon						
▲▲ R712	VRD- RA2BE683J	J	68k	1/4W	Carbon						
▲▲ R713	VRD- RA2EE562G	J	5.6k	1/4W	Carbon						
▲ R717	VRS- VV3DB330J	J	33	2W	Oxide Film						
R718	VRS- VV3LB820J	J	82	3W	Oxide Film						
▲ R720	VRN- VV3AB1R5J	J	1.5	1W	Metal Film						
R725	VRS- VV3DB221J	J	220	2W	Oxide Film						
▲ R729	VRC- UA2HG105K	J	1M	1/2W	Solid						
R732	VRS- VV3DB101J	J	100	2W	Oxide Film						

Ref. No.	Part No.	*	Description	Ref. No.	Part No.	*	Description
RESISTORS				CONTROLS			
△ R867, △ 869, △ 871	VRS- VV3DB682J	J	6.8k 2W Oxide Film	R2121, 2129 R2202, 2135, 2136	RVR- B5137CEZZ RVR- B5138CEZZ	J J	5k(B) Sub Contrast R.G.B. Pedestal Adj. 10k(B) R.G.B. Sub Horiz. Position Blue Bias Adj. Red Bias Adj.
MISCELLANEOUS				CAPACITORS			
S851 FB851	QS6CV0829CEZZ RBLN- 0010CEZZ	J J	Socket—CRT Bead Ferrite	C2101, 2102, 2103 C2202	VCE9AA1HW105M VCQPPB2JB182J	J J	1 50 Electrolytic (NP) 0.0018 630V Polypro Film
PWB-C DUNTK3969DE02				C2209 C2301 C2402	VCEAAA1AW227M VCEAAA1CW337M VCE9AA1HW225M	J J J	220 10 Electrolytic 330 16V Electrolytic 2.2 50V Electrolytic (NP)
INTEGRATED CIRCUITS				RESISTOR			
IC2001 IC2002 IC2003 IC2004 IC2101 IC2102 IC2201 IC2202 IC2301 IC2401, 2402	VHi SN74S04/ - 1 VHi HD7406/ / - 1 VHi HD7426/ / - 1 VHi SN74LS08- 1 VHi NJM4558D- 1 RH- i X0450CEZZ VHi HD74LS136P VHi HD74LS221/ RH- i X0638CEZZ VHi LA7016/ / - 1	J J J J J J J J J J		R2028	VRS- VV3AB471J	J	470 1W Oxide Film
TRANSISTORS				SWITCH			
Q2001, 2002, 2003, 2004, 2005, 2104, 2301 Q2101, 2102, 2103, 2302, 2303, 2304	VS2SC1815YW- 1 VS2SA1015Y/ 1E	J J	2SC1815(Y) 2SA1015(Y)	SW2301	QSW- S0023GEZZ	J	Switch
DIODES				MISCELLANEOUS			
D2001 2008 D2009, 2010, 2011, 2101, 2102, 2103, 2107, 2201, 2301, 2302 D2303, 2304, 2305	RH- EX0161CEZZ RH- EX0047CEZZ	J J	Zener Diode Zener Diode	△POR2201	RMP TP0030CEZZ	J	Positive Coefficient Thermistor
REMOTE CONTROL TRANSMITTER PARTS RRMCG0390CESA				MISCELLANEOUS PARTS			
D3001 D3002, 3003 Q3001 CF3001	VHD1SS119/ / 1E RH- PX0109PAZZ VHD1S1555/ / 1A VS2SC2120Y/ - A RFi LF0010PAZZ	J J J J J	1SS119 1S1555 2SC2120Y Ceramic Osc. (KBR455BTL)	△ SP1	QACCD3011CESA VSP0080P- A0WA PSPAG0031CEZZ QTANZ0412CEZZ RRMCG0390CESA RUNK0076CEZZ	J J J J J J J J	AC Line Cord Speaker 16 ohm Wedge (Gum), Yoke Positioning (3 Used) Antenna Terminal Board (Complete Assembly) R/C Transmitter Antenna Adapter Cabinet, Top Cabinet, Bottom Indication Plate Battery Cover Osc. Filter Rubber Key IC LED 1S1555 2SC2120Y Ceramic Osc. (KBR455BTL)

Ref. No.	Part No.	*	Description	Ref. No.	Part No.	*	Description
CABINET PARTS							
1	CCABA1543CEK1	J	Cabinet Complete, Front	1-6	Hi NDM2437CESA	J	Indication Metal, In Door
1-1	Not Available	J	Cabinet, Front	1-7	Hi NDP2209CEKA	J	Indication Metal
1-2	GD6RF1455CEKA	J	Door	1-8	JB TN- 1304CEKB	J	Button, Power
1-3	GMADT0214CEKA	J	Window A	1-9	GMADT0210CEKA	J	Window B
1-4	HBDGB1001GES A	J	Badge, "SHARP"	2	GCABB1559CEKA	J	Cabinet, Rear
1-5	HDECQ0249CESA	J	Decoration Plate, Front	4	QANTL0038CEZZ	J	Antenna, UHF
				5	QANTR0057CEZZ	J	Antenna, Rod



Ref. No.	Part No.	*	Description	Ref. No.	Part No.	*	Description
D602	RH-DX0101CEZZ	J	RF1	L406,	VP-MK100K0000	J	10 μ H
D603,	RH-DX0105TAZZ	J	TVR1J(TP)	1201,			
604				1501,			
D605,	RH-EX0116GEZZ	J	Zener Diode	1502,			
1510				1601			
▲▲ D606	RH-DX0130CEZZ	J	EU-Z	L601	RCi LZ0527CEZZ	J	Linearity Coil
▲▲ D607	RH-EX0091CEZZ	J	Zener Diode (HZ22-01T2)	L602	VP-DF270K0000	J	27 μ H
▲▲ D608	RH-EX0130CEZZ	J	Zener Diode (HZ22-3T2)	L604	VP-DF100K0000	J	10 μ H
▲ D609	RH-DX0086TAZZ	J	RH1S	▲ L701	RCi LF0087CEZZ	J	Line Filter
D615	RH-EX0200CEZZ	J	Zener Diode (RD12E-T2)	L801	VP-δF220J0000	J	22 μ H
▲ D705	RH-EX0106CEZZ	J	Zener Diode (05Z82)	DL401	RCi LZ0498CEZZ	J	Comb Filter
▲ D706,	RH-DX0131CEZZ	J	EU-1	TRANSFORMERS			
▲ 708				▲ T303	RTRNS0086CEZZ	J	Sound Output
▲ D707	RH-DX0181CEZZ	J		▲ T601	RTRNZ0168CEZZ	J	Horizontal Driver
D710	RH-EX0193CEZZ	J	Zener Diode (RD11EB3)	▲▲ T602	RTRNF1502CEZZ	J	Horizontal Output (W/Focus and Screen)
D711	RH-DX0200CEZZ	J	1D4B42	▲ T701	RTRNP0363CEZZ	J	Power Transformer
D713	RH-EX0047CEZZ	J	Zener Diode (RD12E)	T801	RCi LV0132CEZZ	J	Band Pass Filter
D1101	RH-EX0161CEZZ	J		CONTROLS			
				R214	RVR-B4733CEZZ	J	10k RF AGC
1107,				R216	RVR-B5142CEZZ	J	100k AFT
1115,				R462	RVR-B5245CEZZ	J	Controls Unit, Bright/Color/Tint/ Picture
1116,				R483	RVR-B5138CEZZ	J	10k Sub Bright
1117,				R514	RVR-B5135CEZZ	J	2k Vertical-Size
1121,				▲▲ R711	RVR-B5134CEZZ	J	1k 120V Adj.
1122,				CAPACITORS			
1126				C209,	VCEAAA1CW477M	J	470 16V Electrolytic
D1127	RH-PX0119CEZZ	J	RGB Indicator	438,			
D1201	RH-PX0127CEZZ	J	LED	442,			
D1211	RH-EX0101CEZZ	J	Zener Diode (RD2.7EL1)	1204,			
D1301,	RH-EX0103CEZZ	J	Zener Diode (RD5.6EB3)	1513,			
1508				1608			
D1603	RH-EX0038CEZZ	J	Zener Diode (RD12F)	C308,	VCEAAA1AW337M	J	330 10V Electrolytic
D1604,	RH-EX0131CEZZ	J	Zener Diode (RD5.1E)	618			
1802				C317,	VCEAGA1CW337M	J	330 16V Electrolytic
▲▲ SCR701	VHR3S4M/ / LB1E or VHSCR3AMZ8LB1	J	Silicon Controlled Rectifier	432			
PACKAGE CIRCUITS				C319,	VCEAAA1EW107M	J	100 25V Electrolytic
CF301	RFi LC0001CEZZ	J	Ceramic Filter, Sound Take Off	608			
CF401	RFi LC0013CEZZ	J	Ceramic Filter, 4.5MHz Trap	C335	VCEAGA1CW108M	J	1000 16V Electrolytic
CF601	RFi LA0005CEZZ	J	Ceramic Filter, 503kHz	C406	VCE9AA1CW476M	J	47 16V Electrolytic (NP)
SF201	RFi LC0042CEZZ	J	SAW Filter, PIF	C407,	VCE9AA1HW105M	J	1 50V Electrolytic (NP)
X801	RCRSB0005CEZZ	J	Crystal, 3.58MHz Osc.	614,			
X1501	RCRSB0013CEZZ	J	Crystal, 4.5MHz Osc.	730			
M801	RMPTA0058CEZZ	J	Compositeness Parts	C424,	VCCSPA2HL470J	J	47p 500V Ceramic
COILS AND TRANSFORMERS				491			
L201,	VP-RFR82K0000	J	0.82 μ H	C427	VCSATA1VE475K	J	4.7 35V Tantalum
203				C504	VCEAAA1VW107M	J	100 35V Electrolytic
L202	VP-MK2R2K0000	J	2.2 μ H	▲ C505	VCEAAA1VW476M	J	47 35V Electrolytic
L205	VP-RFR56K0000	J	0.56 μ H	C506	VCKYPB3AB102K	J	0.001 1kV Ceramic
L206	RCi Li 0448CEZZ	J	PIF Detector	C507	VCSATA1VE105K	J	1 35V Tantalum
L207	RCi Li 0392CEZZ	J	AFT	C509	VCSATA1VE684K	J	0.68 35V Tantalum
L301	VP-MK220K0000	J	22 μ H	C512	VCEAAH1EW108M	J	1000 25V Electrolytic
L303	RCi Li 0419CEZZ	J	Sound Detector	C604	VCCSPA2HL100D	J	10p 500V Ceramic
L401	VP-MK100K0000	J	10 μ H				
L402	VP-MK150K0000	J	15 μ H				
L403	VP-δF151K0000	J	150 μ H				
L404	RCi LZ0550CEZZ	J	Delay Line				
L405	RCi LP0073CEZZ	J	180MHz, Filter				

REPLACEMENT PARTS LIST

SAFETY NOTE — Components marked with a (△) have special characteristics important to safety. Before replacing any of these components, read carefully the SAFETY NOTICE on page 3 of the Service Manual. Components marked with an (▲) are related to X-Ray Protection circuit.

HOW TO ORDER REPLACEMENT PARTS — To have your order filled promptly and correctly, please furnish the following information:
 1. MODEL NO. 2. PART NO. 3. DESCRIPTION

Contact your nearest SHARP Parts Distributor to order.

For location of SHARP Parts Distributor, Please call Toll-Free; 800-447-4700 (In Hawaii and Alaska, please contact local SHARP dealer).

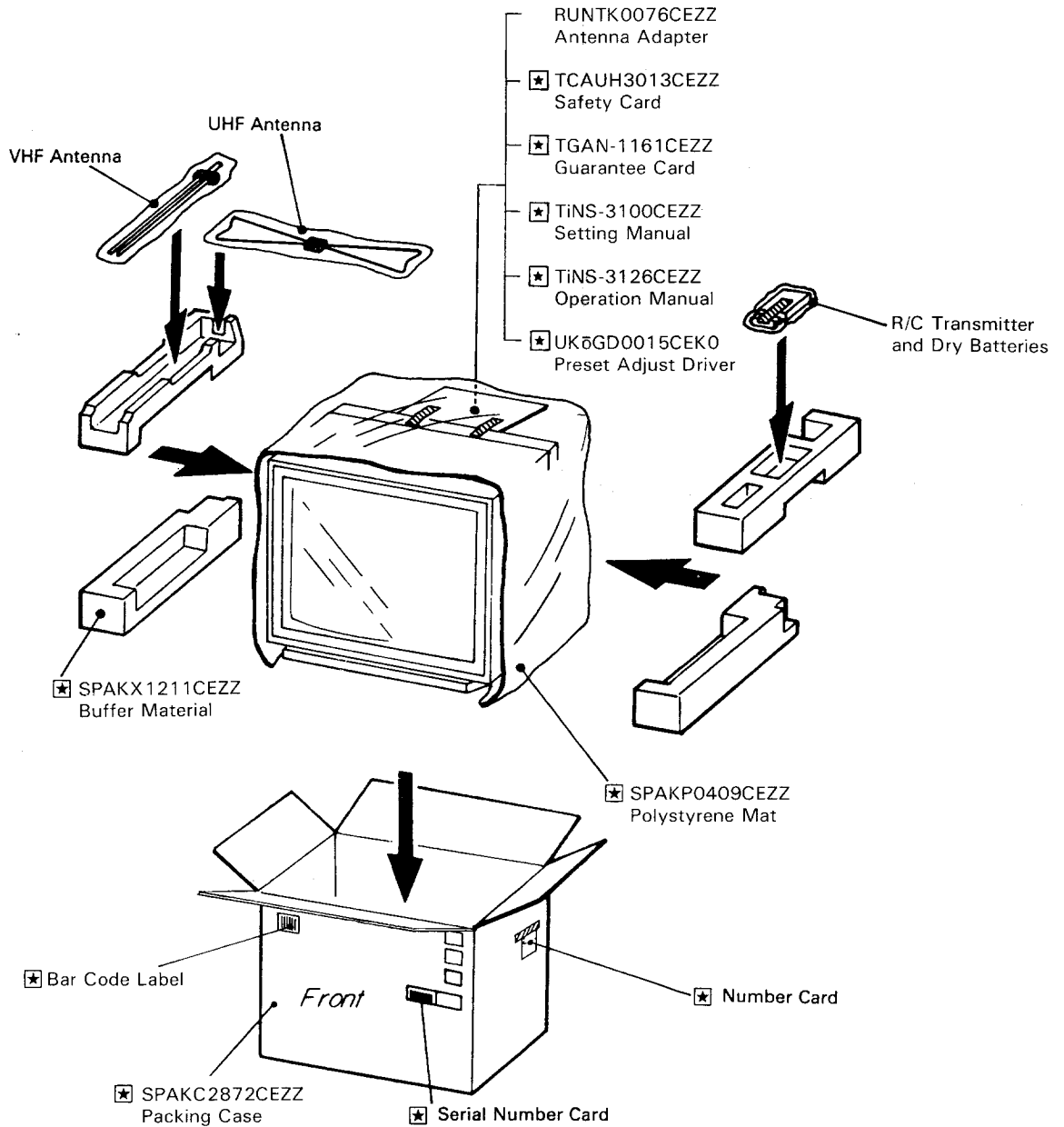
★ MARK: SPARE PARTS-DELIVERY SECTION

Ref. No.	Part No.	*	Description	Ref. No.	Part No.	*	Description
PICTURE TUBE							
▲△ V101	VBA63JAR93X- 1	J	CRT	Q408	VS2SC2236Y/- 1	J	2SC2236(Y)
▲△ DY601	RCi L H1349CEZZ	J	Deflection Yoke	Q414	VS2SC1815YW- 1	J	2SC1815(Y)
△ L702	RCi L G0229CEZZ	J	Degaussing Coil		or		
	PMAGF 3006CEZZ	J	Magnet Ass'y—Purity & Static Convergence	Q601	VS2SC454- C/ 1E	J	2SC454(C)
				Q702	VS2SC2655Y/- 1	J	2SC2655(Y)
				△ Q602	VS2SD1426// 1E	J	2SD1426
				Q702	VS2SC1983// - 2	J	2SC1983
				Q705	VS2SC2002- K1A	J	2SC2002
				Q1501	VS2SA1015G/ 1E	J	2SA1015(GR)
PRINTED WIRING BOARD ASSEMBLIES (NOT REPLACEMENT ITEM)				DIODES			
PWB-A	DUNTK4557DE01	—	Mother Unit	D301,	VHD1SS119// 1E	J	1SS119
PWB-B	DUNTK3863DE02	—	CRT Unit	302,			
PWB-C	DUNTK3969DE02	—	R.G.B. Unit	401,			
				405,			
				406,			
				408,			
				409,			
				410,			
				411,			
				413,			
				414,			
				▲△ 612,			
				614,			
				616,			
				709,			
				714,			
				801,			
				802,			
				803,			
				1108			
				1114,			
				1118,			
				1119,			
				1120,			
				1123,			
				1124,			
				1125,			
				1202			
				1210,			
				1212,			
				1501			
				1507,			
				1509			
				D404	VHD1N34A/// - 1	J	1N34A
				D415	RH- EX0047TAZZ	J	Zener Diode
				△ D501,	RH- DX0110CEZZ	J	S5277G
				601,			
				610,			
				△ 701			
				△ 704			
				△ D502	RH- DX0132CEZZ	J	EU-1A

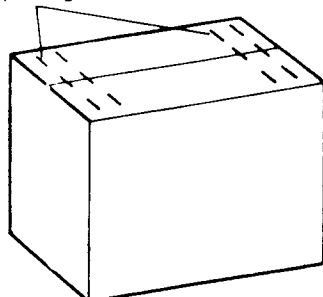
PACKING OF THE SET

• **Setting positions of the knobs**

Brightness control	5/10	TV/CATV switch	TV
Tint control	5/10	RGB/VIDEO	VIDEO
Color control	5/10	RGB contrast control	10/10
Picture control	10/10	Sync polarity switch	POS
AFT switch	ON	H-position control	5/10



Use 12 staples to fix the packing case.



★ : Not replacement items.