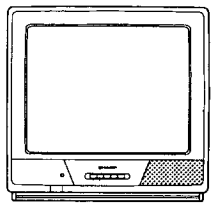
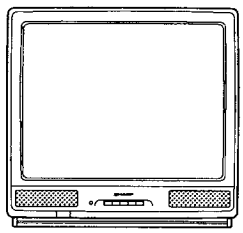
SHARP

SERVICE MANUAL
维修手册

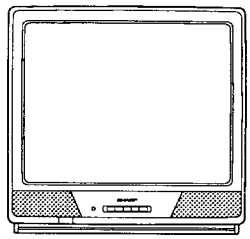
S35L814HSC///



14H-SC



20H-SC



21H-SC

COLOUR TELEVISION
彩色电视机
Chassis No. H

MODELS 型号

14H-SC
20H-SC
21H-SC

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.

为了用户安全起见(根据一些国家的安全规程的需要)，应将电视机保持于最初的状态，而且只能使用与指定物相同的部件。

FEATURE

- Reminder/ON-OFF Timer
- English/Arabic/Chinese Three Language OSD
- High Sensitivity Tuner
- Wide Range Chopper Regulator System
- AV Input/Output Terminal
- Blue Back
- PAL/SECAM Dual System
- NTSC 4.43/3.58MHz (AV only)
- Direct Access Remote Control

主要功能

- ■提醒功能/定时自动开机－关机功能
- ■在屏英文/阿拉伯文/中文三种语言表示功能
- ■高灵敏度调谐器
- ■宽频带削波调整系统
- ■声象信号输入/输出插孔
- ■蓝色背景功能
- ■PAL/SECAM制式兼容
- ■NTSC4.43/3.58MHz(只限于声象信号输入)
- ■遥控器直接存取功能

WARNING

The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptacle, when servicing this chassis.
To prevent electric shock, do not remove cover. No user — serviceable parts inside. Refer servicing to qualified service personnel.

警　告

该电视机底盘的有些部分通电。当维修本机底盘时，请在电源线插头和电源插座之间使用隔离变压器。
为了防止电击的危险，不要去拆下机盖。在里面的部件，不是使用者所能维修的，必须委托够格的维修人员来进行维修。

SHARP CORPORATION

CONTENTS

目　录

SPECIFICATIONS

Convergence	Self Converging System
Focus	Quadra-Potential Electrostatic
Sweep Deflection	Magnetic
Intermediate Frequencies	
Picture IF Frequency	38.9 MHz
Sound IF Carrier Frequency	
6.5 MHz	32.4 MHz
6.0 MHz	32.9 MHz
5.5 MHz	33.4 MHz
Colour Sub-Carrier Frequency	34.47 MHz
Power Input	110—240V AC 50/60 Hz
Power Consumption	
14H-SC	59W
20H-SC	87W
21H-SC	88W
Audio Power Output Rating	3.0W (at Max.)
Speaker	
Size	5 cm × 9 cm × 2 pcs
Voice Coil Impedance	16 ohms at 400Hz
Aerial Input Impedance	
VHF/UHF	75 ohm Unbalanced
Receiving System	CCiR SECAM/PAL B, G, D, K, I NTSC 3.58/4.43 MHz (AV Input Only)
Tuning Ranges	
• VHF- Channels	E2 (48.25 MHz) thru E12 (224.25 MHz) C1 (49.75 MHz) thru C12 (216.25 MHz) S1 (105.25 MHz) thru S20 (299.25 MHz)
• UHF- Channels	E21 (471.25 MHz) thru E69 (855.25 MHz) C13 (471.25 MHz) thru C57 (863.25 MHz)

Dimensions

14H-SC	Width:	361 mm
	Height:	348 mm
	Depth:	365 mm
	Weight (approx.)	10 kg
20H-SC	Width:	496 mm
	Height:	464 mm
	Depth:	481 mm
	Weight (approx.)	19 kg
21H-SC	Width:	496 mm
	Height:	463 mm
	Depth:	471 mm
	Weight (approx.)	21 kg
Cabinet Material		All Plastics

Specifications are subject to change without prior notice.

E-3

规 格

聚焦	自聚焦系统
焦点	平方电位静电焦点
扫描偏转	磁致偏转
中频	
图象中频载波频率	38.9MHz
声音中频载波频率	
6.5MHz	32.4MHz
6.0MHz	32.9MHz
5.5MHz	33.4MHz
色彩副载波频率	34.47MHz
电源	交流110～240V, 50/60Hz
功率消耗	98W
型号14H-SC	59W
型号20H-SC	87W
型号21H-SC	88W
音响额定输出功率	3.0W(最大)
扬声器	
尺寸	5cm × 9cm × 2只
音圈阻抗	16Ω(400Hz时)
天线输入阻抗	
甚高频(VHF)/超高频(UHF)	75Ω非平衡式
接收制式	CCIR, SECAM, PAL B, G, D, K, I NTSC3.58/4.43MHz(只限于声象信号输入)
调谐范围	
●甚高频(VHF)频道	E2(48.25MHz)至E12(224.25MHz) C1(49.75MHz)至C12(216.25MHz) S1(105.25MHz)至S20(299.25MHz)
●超高频(UHF)频道	E21(471.25MHz)至E69(855.25MHz) C13(471.25MHz)至C57(863.25MHz)

尺寸

	型号14H-SC	型号20H-SC	型号21H-SC
宽	361mm	496mm	496mm
高	348mm	464mm	463mm
深	365mm	481mm	471mm
重量（大约）	10kg	19kg	21kg
机壳	均由塑料而成		

上述规格变更之场合，恕不另行通知。

C-3

IMPORTANT SERVICE NOTES

Maintenance and repair of this receiver should be done by qualified service personnel only.

SERVICING OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove static charge from it by connecting a 10 k ohm Resistor in series with an insulated wire (such as a test probe) between picture tube dag and 2nd anode lead. (AC line cord should be disconnected from AC outlet.)

1. 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 shatterproof goggles and after discharging the high voltage completely.

X-RAY

This receiver is designed so that any X-Ray radiation is kept to an absolute minimum. Since certain malfunctions or servicing may produce potentially hazardous radiation with prolonged exposure at close range, the following precautions should be observed:

1. 14H-SC: When repairing the circuit, be sure not to increase the high voltage to more than 23.5 kV, (at beam 0 μA) for the set.
   20H-SC, 21H-SC: When repairing the circuit, be sure not to increase the high voltage to more than 29.0 kV, (at beam 0 μA) for the set.
2. 14H-SC: To keep the set in a normal operation, be sure to make it function on 22.0 kV ± 1.5 kV (at beam 800 μA) in the case of the set. The set has been factory — Adjusted to the above-mentioned high voltage.
   20H-SC, 21H-SC: To keep the set in a normal operation, be sure to make it function on 24.8 kV ± 1.5 kV (at beam 1100 μA) in the case of the set. The set has been factory — Adjusted to the above-mentioned high voltage.
   ∴ If there is a possibility that the high voltage fluctuates as a result of the repairs, never forget to check for such high voltage after the work.
3. Do not substitute a picture tube with unauthorized types and/or brands which may cause excess X-ray radiation.

BEFORE RETURNING THE RECEIVER

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 or 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 fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacity networks, mechanical insulators etc.

保养维修重要注意事项

本电视机的保养只得由专门技术人员进行。

关于高压系统和显象管的保养维修

对高压系统进行保养维修时，先于显象管管座金属部分与第二阳极引线间用绝缘线（诸如测试探针等）串接一只10KΩ的电阻器，以除去残留于高压系统中的静电。（之前，应从电源插座中拔出本机的电源引线插头。）

1. 本电视机显象管为整体内爆防护设计。
2. 为保证本电视机持久使用的安全，显象管的更换必须使用同型号者 。
3. 搬移显象管时，不得倒持其颈部上提。
4. 拆装搬移显象管，必须先用布物等包护荧屏防碎玻璃，并且作完全放电处理后才能进行。

关于X射线

本电视机为无辐射射设计。因此，任何X射线均设计控制于最小绝对极限。然而，在发生故障或保养维修时，过长时间地暴露机芯内部加以放置之场合，便有可能在其近旁产生有害的X射线辐射影响。为此，务请遵循下述预防措施：

1. 型号14H-SC 维修调整本电视机内部电路时，切勿让其高压超过25.3kV（电子束电流为0μA时）。
   型号20H-SC和21H-SC 维修调整本电视机内部电路时，切勿让其高压超过29.0kV（电子束电流为0μA时）。
2. 型号14H-SC 为保证本电视机的正常工作，务必保证其高压为22.0kV ± 1.5kV（电子束电流为800μA时）的工作条件。该工作条件值在本电视机出厂前已经调试验收。
   型号20H-SC和21H-SC 为保证本电视机的正常工作，务必保证其高压为24.8kV ± 1.5kV（电子束电流为1100μA时）的工作条件。该工作条件值在本电视机出厂前已经调试验收。

※本电视机一旦经维修调整，可能导致上述工作高压规定值发生偏动。因此，维修调整完毕，务请重新对其高压值进行确认检查。

3. 更换显象管时，不得使用非经认可的、不同厂家、不同型号的显象管，以免产生超过规定标准的X射线辐射的危险。

维修后归还之前

在把维修后的电视机归还给用户之前，务请进行下列的安全检查。

1. 检查电视机中的所有导线的绝缘包皮有无扭折破损之处，于机芯底板和其它金属部件之间有无他物夹杂。
2. 检查电视机中的所有非金属质的控制旋钮、绝缘鱼鳞纸，机壳后盖、调节器和仪器隔室盖罩或屏蔽，电阻—电容隔离网以及机械部件隔离器等保护绝缘装置、器材。

SERVICE ADJUSTMENT

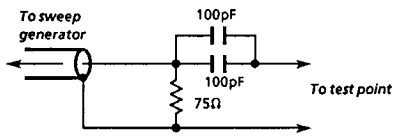
PIF/AFT/AGC ADJUSTMENT

Adjusting Conditions	Adjusting Procedures

1. Tuner IFT Coils

The tuner has been factory preset (no adjustment is needed).

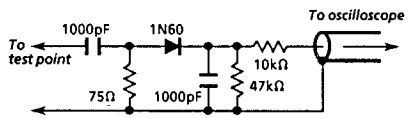
1. Receive VHF high channel (channel-E10) (When such signal is not available, set V_T voltage at 5V in V_H band.)
2. Connect sweep generator's output to the test point of tuner, by using a 75Ω DC cut probe.



Connection Diagram of 75Ω DC Cut Probe.

Note: The sweep generator's probe should be grounded closely to the tuner test point.

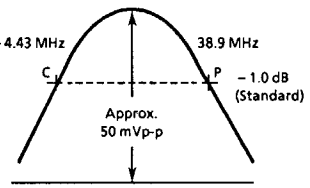
3. Output level of sweep generator: 85 dB
4. Connect response lead (low impedance probe with detector) to TP201 (collector of Q201).



Connection Diagram of Low Impedance Probe (with Detector).

5. PIF AGC:
   Apply DC 4V to TP202 (pin (48) of IC801).
6. RF AGC:
   Apply DC 4V to the tuner AGC terminal.

1. Adjust the tuner IF coils to obtain the waveform as shown figure below.



Adjust so that "P"and "C" are at the same level.

保养调试

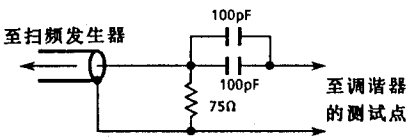
PIF/AFT/AGC的调试

调试条件	调试方法

1. 调谐器IFT线圈

该调谐器出厂前已作预调(无重新调试之必要)

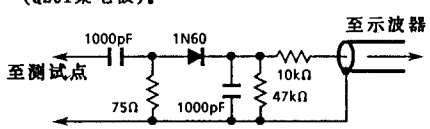
1. 接收VHF高频（频道E10）信号(电视机在无信号接收状态时，设V_T电压于V_H频带的5V)。
2. 用75Ω直流截断探针电路，将扫频发生器输出端连接于调谐器的测试点。



75Ω直流截断探针电路连接图

注意：扫频发生器的接地线必须接地于测试点附近。

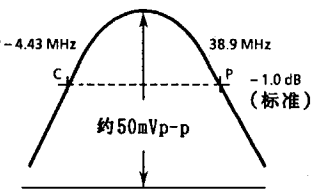
3. 扫频输出电平：85dB。
4. 连接响应引线(检波器的低抗阻探针)于TP201(Q201集电极)。



低抗阻探针（带检波器）电路连接图

5. PIF AGC电压设定：
   加4V直流电压于TP202（IC801的销(48)）。
6. RF AGC电压设定：
   加4V直流电压于调谐器AGC连接端。

1. 调节调谐器IF线圈，以获得下图所示输出波形。



检查“P”及“C”两点是否于相同的电平线上

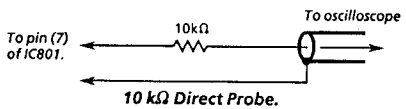
PIF/AFT/AGC ADJUSTMENT (Continued)

Adjusting Conditions	Adjusting Procedures

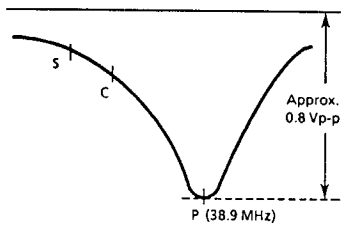
2. P-Detector Adjustment

Adjusting Point
☐ T205: P-Detector coil

1. Connect sweep generator's output to TP203 (pin (46) of IC801).
   - Probe in use: 75Ω DC cut probe
   - Sweep output level: 90 dB
2. PIF AGC:
   Apply 4V DC to TP202 (pin (48) of IC801).
3. Have AFT muted (by pressing the preset key to bring in the SEARCH mode).
4. Connect response lead to pin (7) of IC801.
   The response lead in use should be a direct probe with a resistor of 10 kΩ included.



1. Adjust T205 so that 38.9 MHz signal is at maximum (± 50 kHz).



* Adjust PIF AGC voltage so that the output waveform is of approx. 0.8 Vp-p.

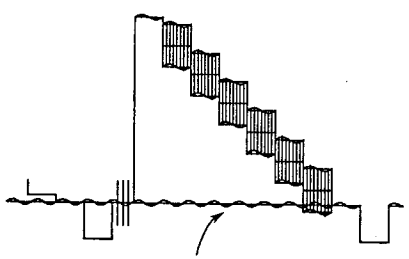
3. AFT Adjustment

Fine Adjustment

Adjusting Point
☐ T205: AFT coil

1. Receive VHF high channel (channel-E12).
   - Signal strength: Over 55dB, Below 80dB
2. Connect the Regulated DC Power Supply to the tuner's V_T (approx. 6V to be applied) to receive channel-E12.
3. Connect oscilloscope to TP401.
   - Oscilloscope range: 0.5 V/div.
   - Sweep time: 20 μsec/div.
   - Synchronization: Horizontal sync.
4. Connect the output of SSG (Standard Signal Generator) to the tuner IF output terminal across a capacitor of 1pF.
   - SSG output: 38.9 MHz ± 5 kHz (non modulated)
   - SSG output level: approx. 85 dB
   * When the preset button is at PRESET position, AFT is turned off.
   * When the preset button is set at NORMAL position, AFT is turned on.

1. Press the preset key to adjust the voltage of the Regulated DC Power Supply until there is no beating in the oscilloscope's waveform.
2. Set the preset button at NORMAL position.
3. Adjust T205 so that no beating is caused at the output waveform.



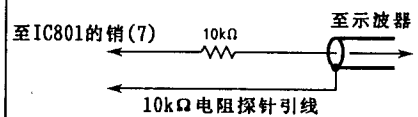
PIF/AFT/AGC的调试(接上页)

调试条件	调试方法

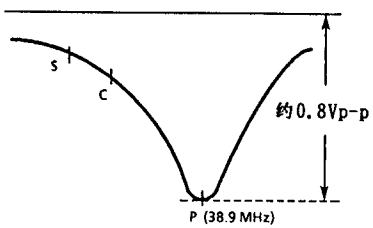
2. P-检波器的调试

调试点
□T205:P-检波器线圈

1. 连接扫频发生器输出端于TP203(IC801的销(46))。
   - ●使用探针：75Ω直流截断探针
   - ●扫频发生器输出端电平：90dB
2. PIF AGC电压设定：
   加4V直流电压于TP202 (IC801的销(48))。
3. 置AFT于静噪状态(触按预设键,使电视机处搜索寻台状态即可)。
4. 连接响应引线于IC801的销(7)。
   该响应引线应为具有10kΩ电阻的探针。



1. 调节T205，使其信号最大值为38.9MHz (± 50kHz)



*调节PIF AGC电压使其输出电平约达0.8Vp-p。

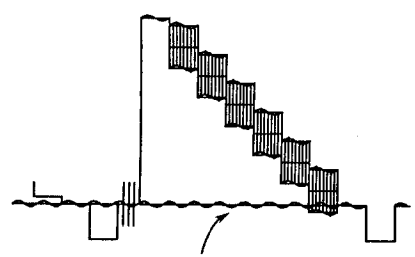
3. AFT调试

微调

调试点
□T205:AFT线圈

1. 接收VHF高频（频道E12）信号。
   - ●信号强度：大于55dB，小于80dB
2. 接直流电源于调谐器V_T端(约加直流电压6V)，以接收频道E12的信号。
3. 将示波器和TP401相接。
   - ●示波器测试范围：0.5伏/段
   - ●扫频时间：20微秒/段
   - ●同步动作：水平同步
4. 通过1pF电容器，并连接标准信号发生器(SSG)的输出端与调谐器的IF输出端。
   - ●SSG输出频率：38.9MHz ± 5kHz(无调制)
   - ●SSG输出电平：约85dB
   *设预设键于PRESET位置时，AFT关断。
   *设预设键于NORMAL位置时，AFT接通。

1. 触按预设键，调节直流电源电压，直至示波器上的输出波形表面无差拍出现。
2. 设预设键于NORMAL位置处。
3. 调节T205，使示波器上的输出波形无差拍出现为止。



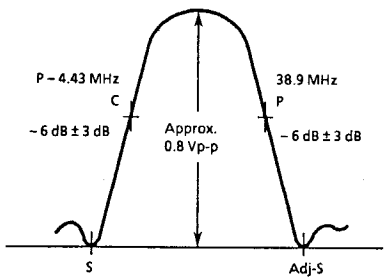
PIF/AFT/AGC ADJUSTMENT (Continued)

Adjusting Conditions	Adjusting Procedures

4. PIF Overall Adjustment

1. Receive VHF high channel (channel-E10). If channel-E10 signal is not available, set V_T voltage at 5V in V_H band.
2. Connect sweep generator's output to the test point of tuner.
   - Probe in use: 75Ω DC cut probe
   - Sweep output level: 90 dB
3. Connect response lead to pin (7) of IC801. The response lead in use should be a direct probe with a resistor of 10kΩ included.
4. RF-AGC: Apply approx. 4V DC to the tuner AGC terminal.
5. PIF AGC: Apply approx. 4V DC to TP202.
6. Connect a 120Ω damping resistor in parallel to R215, short C244.
7. Turn off AFT.

1. Adjust IF AGC voltage so that the output waveform is of approx. 0.8Vp-p.
2. Check that the overall waveform is as shown in Figure below.

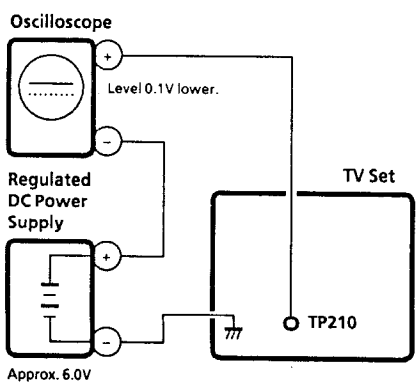


5. RF-AGC Cut-In Adjustment

Adjusting Point
☐ **R248: RF-AGC control**

1. Keep the AGC Cut-in control near the center position.
2. Receive VHF high channel (channel-E12).
   - Signal strength: 54dB ± 1 dB (with 50Ω open)
3. Connect the oscilloscope to the tuner's AGC terminal (TP210).
   - Range: DC range
   - Voltage: 100 mV/div.
   - Sweep: 10 msec./div.
   - * Set the Regulated DC Power Supply to approx. 6.0V and turn up the oscilloscope range to 10mV (DC).

1. Turn R248 to obtain the highest voltage.
2. Turn R248 slowly in the opposite direction until the voltage drops 0.1V lower than the highest level.
3. Change the antenna input signal to 65dB ± 2dB and make sure there is no noise. Turn up the input signal to 90 — 95dB to be sure that there is no cros-modulation beat.



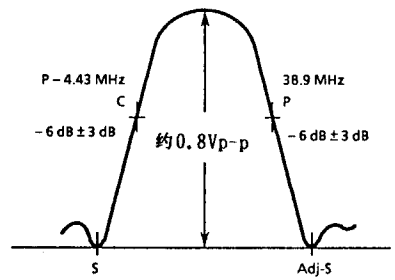
PIF/AFT/AGC的调试(接上页)

调试条件	调试方法

4. PIF全波形的调试

1. 接收VHF高频（频道E10）信号。电视机在无该信号接收状态时，设V_T电压于V_H频带的5V。
2. 将扫频发生器输出端与调谐器测试点连接。
   - ●使用探针：75Ω直流截断探针
   - ●扫频发生器输出电平：90dB
3. 连接响应引线于IC801的销(7)。该响应引线应为具有10kΩ电阻的探针。
4. RF AGC电压设定：加约4V直流电压于调谐器的AGC连接端。
5. PIF AGC电压设定：加约4V直流电压于TP202。
6. 用120Ω的阻尼电阻与R215并连相接，然后将C244短路。
7. 关闭AFT。

1. 调节IF AGC电压，使其输出电平达至0.8Vp-p左右。
2. 确认所得全波形轮廓如下图所示。

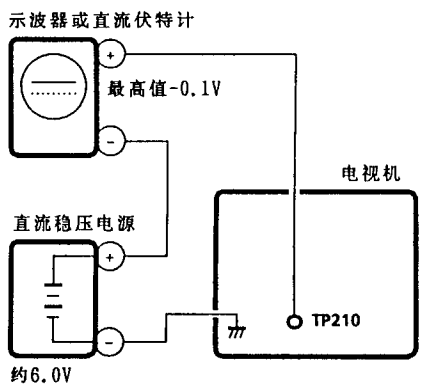


5. RF-AGC接通的调试

调试点
□R248:RF-AGC控制

1. 设AGC接通控制于其中央近旁之位置处。
2. 接收VHF高频（频道E10）信号。
   - ●信号强度：54dB±1dB（端接50Ω电阻）。
3. 连接示波器于调谐器AGC连线端(TP210)。
   - ●测定电压：直流范围
   - ●电压范围：1V/段
   - ●扫频时间：10毫秒/段
   - ＊设直流稳压电源电压于6.0V左右，调示波器测示范围至0.1V/段。

1. 旋转R248，使伏特计读数达至最高。
2. 反方向缓慢旋转R248，让伏特计读数为最高值-0.1V。
3. 将天线输入信号电平调至65dB±2dB，并确认其信号输出不带噪声。然后将输入信号电平调至90～95dB，并确认其信号输出波形不带交叉调制拍频。



115V LINE ADJUSTMENT

Adjusting Conditions	Adjusting Procedures
Adjusting Point ☐ R711: 115V Adjustment Control 1. Set the R711 to 5/10 before supplying power. 2. Receive "MONOSCOPE PATTERN (channel-E5)" signal. 3. Set Contrast and Brightness controls at MAX position. 4. Connect DC milliammeter to TP602⊖ and TP603⊕. 5. 14H-SC: Using the DC milliammeter, check to see that the beam current is between 600 and 800μA. 20H-SC, 21H-SC: Using the DC milliammeter, check to see that the beam current is between 900 and 1100μA. Note: In other cases than the above, adjust the R420 Sub-Contrast control. 6. Connect Digital voltmeter to TP701.	1. Adjust the R711 until the TP701's voltage becomes 115 ± 0.5V.

VIDEO/CHROMA ADJUSTMENT

Adjusting Conditions	Adjusting Procedures

1. CRT Cut-off Adjustment

Adjusting Point ☐ **R853: Red Bias control** ☐ **R859: Green Bias control** ☐ **R865: Blue Bias control** ☐ **T602: Screen control (a part of T602)** ☐ **R857: Green Drive control** ☐ **R863: Blue Drive control** ***Note: Prior to this adjustment, warm up the unit with the beam current of more than 500μA (14H-SC), 700μA (20H-SC, 21H-SC) for more than 30 minutes.*** 1. Receive "MONOSCOPE PATTERN (channel-E5)" signal. 2. Make the picture normal. Set Brightness control at 5/10 position and Contrast control at 10/10 position. 3. Set Red bias control at MIN position. Set Green bias control at MIN position. Set Blue bias control at MIN position. Set Green drive control at CENTER position. Set Blue drive control at CENTER position. 4. Set the Screen control at MIN position. 5. Using the remote controller, callthe AV mode (no signal). 6. Short TP501.	1. Slowly turn the Screen control clockwise until the horizontal raster appears slightly, and stop it. 2. Here, one of the three colours (red, blue, green) appears first as the Screen control is turned. So, touching off the Bias control belonging to the first colour, use and move the other two controls so that the horizontal raster becomes white. 3. Turn the Screen control counterclockwise until the horizontal raster disappears, and stop it.

115V线路调试

调试条件	调试方法
调试点 ☐R711:115V线路调试控制 1.输入电源前，先设R711于其中央(5/10)位置。 2.接收"单象管图案（频道E5）"信号。 3.设对比度控制和亮度控制于其最大(MAX)位置。 4.接直流毫安安培计于TP602⊖和TP603⊕。 （测示范围：3mA） 5.型号14H-SC： 用直流毫安计检查电流束是否于600～800μA之间。 型号20H-SC和21H-SC： 用直流毫安计检查电流束是否于900～1100μA之间。 注： 上述之外之场合，调试副对比度控制(R420)。 6.接数值伏特计于TP701。	1.调节R711，使TP701的电压达至115V ± 0.5V。

视频/色度信号电路的调试

调试条件	调试条件

1. CRT截止的调试

调试点 ☐R853：红色偏转控制 ☐R859：绿色偏转控制 ☐R865：蓝色偏转控制 ☐T602：画面控制(T602的一部分) ☐R857：绿色激励控制 ☐R863：蓝色激励控制 注意：作此项调试前，先用500μA以上(型号14H-SC)或700μA以上(型号20H-SC和21H-SC)的电子束电流为电视机预热30分钟以上。 1.接收"单象管图案（频道E5)"信号。 2.设电视机画面于标准画面状态。 设亮度控制于5/10位置，设对比度控制于10/10位置。 3.设红色偏转控制于最小(MIN)位置。 设绿色偏转控制于最小(MIN)位置。 设蓝色偏转控制于最小(MIN)位置。 设绿色激励控制于中心(CENTER)位置。 设蓝色激励控制于中心(CENTER)位置。 4.设画面控制于最小(MIN)位置。 5.用遥控器呼出AV方式（无信号）。 6.短接TP501。	1.顺时针方向缓慢地旋转画面控制旋钮，直至荧屏上微弱地出现水平光栅为止。 2.画面控制的调节，最初出现的水平光栅泛显红、绿、蓝三色之一。这时，对最初出现的色彩控制不作调节，而对另外两色彩的控制作顺时针方向的调节，荧屏上的水平光栅会变为白色。 3.反时针方向旋转画面控制旋钮，直至荧屏上的水平光栅完全消失为止。

VIDEO/CHROMA ADJUSTMENT (Continued)

Adjusting Conditions	Adjusting Procedures

2. White Balance and Back Ground Adjustment

Adjusting Point
- ☐ R857: Green Drive control
- ☐ R863: Blue Drive control
- ☐ R420: Sub-Contrast control

Note: Prior to this adjustment, warm up the unit with the beam current of more than 500μA (14H-SC), 700μA (20H-SC, 21H-SC) for more than 30 minutes.

1. Receive "MONOSCOPE PATTERN (channel-E5)" signal.
2. Set the Contrast and Brightness controls at MAX position.
3. Connect DC milliammeter to TP602⊖ and TP603⊕.

1. Adjust Sub-Contrast control so that the beam current becomes 800 μA (14H-SC) / 1.1mA (20H-SC, 21H-SC) (rough adjustment)
2. Adjust Green Drive control and Blue Drive control so that the colour temperature is at 10900°K. (High beam: 800 μA (14H-SC) / 1.1mA (20H-SC, 21H-SC)).
3. Adjust the Contrast control and Brightness control so that the beam current is approx. 200μA, and check that the colour temperature is at 10900°K. If the temperature is not at 10900°K, go back to **"CRT CUT-OFF ADJUSTMENT"** and repeat the adjustment.

3. Sub-Contrast Adjustment

Adjusting Point
- ☐ R420: Sub-Contrast control

Note: Prior to this adjustment, warm up the unit with the beam current of more than 500μA (14H-SC), 700μA (20H-SC, 21H-SC) for more than 30 minutes.

1. Receive "MONOSCOPE PATTERN (channel-E5)" signal.
2. Set the Contrast and Brightness controls at MAX position.
3. Connect DC milliammeter to TP602⊖ and TP603⊕.
   (Full scale: 3 mA)

1. Adjust Sub-Contrast control so that the beam current becomes 800 μA (14H-SC) / 1.1mA (20H-SC, 21H-SC).

DEFLECTION LOOP ADJUSTMENT

Adjusting Conditions	Adjusting Procedures

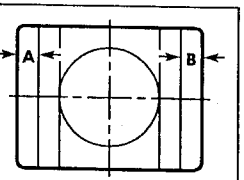
1. Horizontal Centering Adjustment

Adjusting Point
- ☐ R613: Horizontal Centering control

Note: This adjustment should be performed after the purity and convergence adjustments.

1. Receive "MONOSCOPE PATTERN (channel-E5)" signal.

1. Adjust R613 so that the horizontal center of picture is at the position which gives the relation of A = B.



视频/色度信号电路的调试(接上页)

调试条件	调试条件

2. 白色平衡及底色的调试

调试点
- ☐R857：绿色激励控制
- ☐R863：蓝色激励控制
- ☐R420：副对比度控制

注意：作此项调试前，先用500μA以上(型号14H-SC)或700μA以上(型号20H-SC和21H-SC)的电子束电流为电视机预热30分钟以上。

1. 接收"单象管图案（频道E5)"信号。
2. 设对比度控制和亮度控制于其最大(MAX)位置。
3. 连接电子束安培计(测示范围：3mA)于TP602⊖和TP603⊕。

1. 调节副对比度控制，使电子束电流达至800μA(型号14H-SC)或1100μA(型号20H-SC和21H-SC)(粗调)。
2. 调节绿色激励控制和蓝色激励控制，使色温达至10900° K。
   (高电子束：800μA(型号14H-SC)或1100μA(型号20H-SC和21H-SC))。
3. 调节对比度控制和亮度控制，使电子束电流达至200μA左右。然后，检查色温是否为10900°K，如果这时的色温并非10900° K，则必须回到"CRT切断调试"，并重复此项调试。

3. 副对比度的调试

调试点
- ☐R420：副对比度控制

注意：作此项调试前，先用500μA以上(型号14H-SC)或700μA以上(型号20H-SC和21H-SC)的电子束电流为电视机预热30分钟以上。

1. 接收"单象管图案（频道E5)"信号。
2. 设对比度控制和亮度控制于其最大(MAX)位置。
3. 连接电子束安培计(测示范围：3mA)于TP602⊖和TP603⊕。

1. 调节副对比度控制，使电子束电流达至800μA(型号14H-SC)或1100μA(型号20H-SC和21H-SC)。

检波回路的调试

调试条件	调试方法

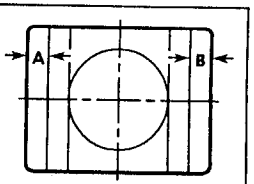
1. 水平对中调试

调试点
- ☐R613:水平对中调节

注：此项调试应在色彩纯度和画面聚焦度调试之后进行。

1. 接收"单象管图案(频道E5)"信号。

1. 调节R613，使荧屏图象水平中心位置达至如图所示的A=B之程度。



DEFLECTION LOOP ADJUSTMENT (Continued)

Adjusting Conditions	Adjusting Procedures

2. Vertical Size Adjustment

Adjusting Point ☐ **R509: Vertical Size control** 1. Receive "MONOSCOPE PATTERN (channel-E5)" signal. 2. Set the Brightness and Contrast controls at MAX position.	1. Adjust R509 so that the vertical size of picture is at the best point. • Vertical size: 8% TYP (Max. 10%, Min. 6%)

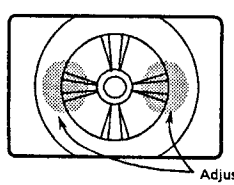
3. Vertical Linearity Adjustment (Only for models 20H-SC and 21H-SC)

Adjusting Point ☐ **R514: Vertical Size control** 1. Receive "MONOSCOPE PATTERN (channel-E5)" signal.	1. Adjust R514 so that the vertical linearity of picture is at the best point.

4. Vertical Center Adjustment (Only for models 20H-SC and 21H-SC)

Adjusting Point ☐ **R501: Vertical Center Adjust switch** ***Note: This adjustment should be performed after the purity and convergence adjustments.*** 1. Receive "MONOSCOPE PATTERN (channel-E5)" signal.	1. Adjust R501 so that the vertical center of picture is at the best point.

FOCUS ADJUSTMENT

Adjusting Conditions	Adjusting Procedures
Adjusting Point ☐ **T602: Focus control (a part of T602)** 1. Receive "MONOSCOPE PATTERN (channel-E5)" signal. 2. Set Contrast control at NORMAL position. 3. Set Brightness control at MAX position. (Instead of monoscope pattern signal, it is allowed to use white pattern signal of 88% modulation.)	1. Adjust Focus control to have best focus at the central area of CRT. 

检波回路的调试(接上页)

调试条件	调试方法

2. 垂直尺寸的调试

调试点 □R509：垂直尺寸调节 1. 接收“单象管图案（频道E5)”信号。 2. 设亮度控制和对比度控制于其最大(MAX)位置。	1. 调节R509，以获得荧屏图象的最佳垂直尺寸。 ● 垂直尺寸：8%TYP(最大10%，最小6%)

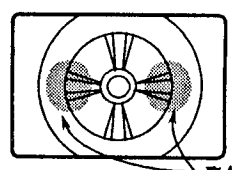
3. 垂直线性度调试(只限于型号20H-SC和21H-SC)

调试点 □R514：垂直尺寸控制 1. 接收“单象管图案(频道E5)”信号。	1. 调节R514，使画面的垂直线性度达至最佳状态。

4. 垂直中心调试(只限于型号20H-SC和21H-SC)

调试点 □S501：垂直中心控制开关 注意：此项调试应在色彩纯度和画面聚焦度调试之后进行。 1. 接收“单象管图案(频道E5)”信号。	1. 调节S501，使画面的垂直中心位置达到最佳状态。

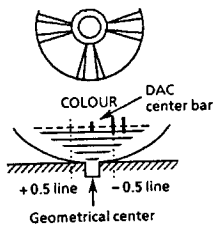
聚焦的调试

调试条件	调试方法
调试点 □T602:聚焦控制（T602的一部分） 1. 接收“单象管图案（频道E5)”信号。 2. 设对比度控制于标准(NORMAL) 位置。 3. 设亮度控制于其最大(MAX)位置（电子束电流（无单象管图案信号时，可用88%调制的白色图案信号代替之）	1. 调节聚焦控制，使荧屏中心位置达至最佳聚焦效果。 

CRT DISPLAY ADJUSTMENT

Adjusting Conditions	Adjusting Procedures

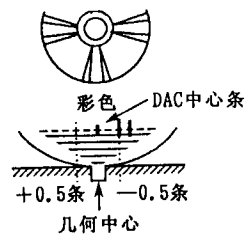
1. Sign Position Adjustment

Adjusting Point ☐ T1001: Sign Position check (T1001 preset) ※ Make this adjustment after the H-CENT adjustment. 1. Receive "MONOSCOPE PATTERN (channel-E5)" signal. 2. Press the P-MODE key on the remote controller to make the DAC center bar appear on the screen. (COLOUR, BRIGHT, TINT)	1. Make sure that the DAC center bar is at the geometrical center of the monoscope pattern. If 0.5 line or more away from the geometrical center, readjust T1001. 

CRT显示的调试

调试条件	调试方法

1. 文字信号表示位置的调试

调试点 □T1001：文字信号显示位置控制(T1001预调) ※此项调试应在水平中心调试之后进行。 1. 接收“单象管图案（频道E5)”信号。 2. 触按遥控器上的P-MODE键，使DAC中心条显示在画面上。（彩色、亮度、色调）	1. 检查单象管图案的几何中心处有无DAC中心条。如果与几何中心偏离0.5条，就用T1001来进行重调。 

PURITY ADJUSTMENT

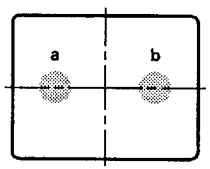
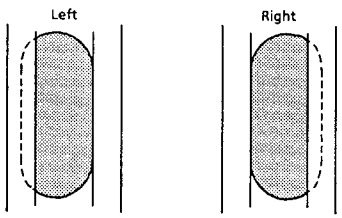
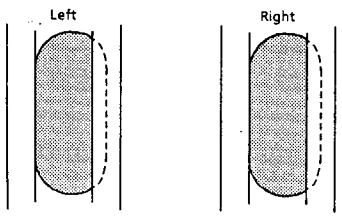


Figure A.



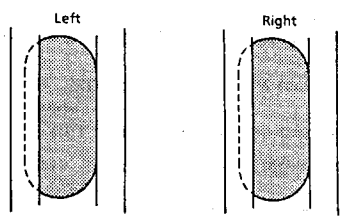
The beam landing is shifted outwards.

Figure B.



The beam landing is shifted to right.

Figure C.



The beam landing is shifted to left.

Figure D.

Adjusting Conditions

1. Prior to the purity adjustment, warm up the unit with beam current of more than 500μA (14H-SC) / 700 μA (20H-SC, 21H-SC), for more than 30 minutes.
2. Receive the green signal alone and adjust the beam current to approx. 500μA (14H-SC) / 700 μA (20H-SC, 21H-SC).
3. Fully degauss the CRT with the degaussing coil.
4. Before the purity adjustment, it is needed to roughly adjust the static convergence.
5. Set the purity magnet at the position which gives

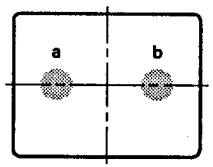
Adjusting Procedures

Adjustment:

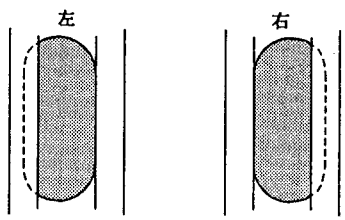
During the adjustment, keep the unit facing the east.

1. Observe the green spots ("a" and "b") with a microscope as shown in ***Fig. A***, and adjust the purity magnet so that they are at the specified landing position.
2. If the right and left green spots are both deviated outwards from their landing positions as shown in ***Fig. B***, push the deflection yoke forwards until their positions are corrected.
3. If the beam landing is shifted to right or left as shown in ***Figs. C*** and ***D***, adjust the opening degree of the purity magnet so that the beam landing is correctly positioned.
4. Adjust the purity magnet so that the beam landing is correct at either of the central part, right and left parts of screen, then check that the green beams at four corners of screen are all correctly positioned.
   Finally, check that the beam landing at any pat of screen is satisfactory with the Rank "B" specifications.
5. If the green beam is positioned to mix with the other colour, pull the deflection yoke backward.
   - Outside of the specified landing:
     To front of the deflection yoke.
   - Inside of the specified landing:
     To back of the deflection yoke.
6. Set the raster rotation at "0" position (with the unit facing the east).
7. Tighten the screws of the deflection coil.
   Tightening torque: 11 kg ± 2 kg.

色彩纯度调试

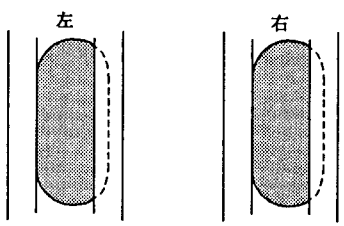


图A



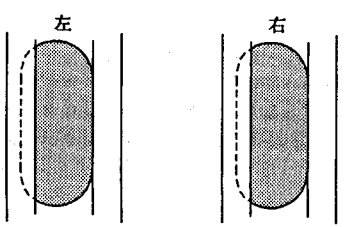
电子束射击点位置向外偏移

图B



电子束射击点位置向右偏移

图C



电子束射击点位置向左偏移

图D

调试条件

1. 作此项调试之前，请用大于500μA(型号14H-SC)或700μA(型号20H-SC和21H-SC)的电子束电流预热CRT装置30分钟。
2. 接收绿色单色信号，并调节其电子束电流于500μA(型号14H-SC)或700μA(型号20H-SC和21H-SC)左右。
3. 通过消磁线圈对CRT作完全消磁处理。
4. 在作色彩纯度调试时，必须先对静聚焦进行粗调。
5. 调节色彩纯度磁铁，使其磁场磁势为0。

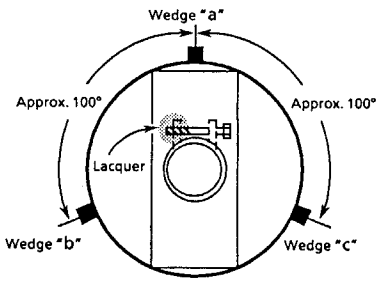
调试方法

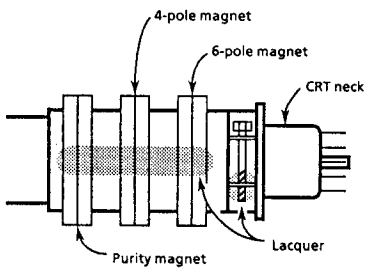
调试：

调试中，必须保持CRT面向东方。

1. 用显示镜（放大镜）观察图A所示的两绿色色点（"a"和"b"），调节色彩纯度磁铁，使两色点位置符合规定要求为止。
2. 如果两色色点位置如图B所示各自发生左右偏差，可向前按压偏转线圈将其校正。
3. 如果两色色点位置如图C或图D所示均发生向右或向左偏移现象，可通过调节色彩纯度磁铁的开启程度，校正电子束射击点位置。
4. 调节色彩纯度磁铁，校正绿色电子束在屏幕中心的射击点位置以及屏幕左右两边的射击点位置。然后，检验在屏幕四角的射击点位置正确与否。最后，按规范B级要求精确检查屏幕上任意点的着色位置是否满足要求。
5. 如果绿色电子束在屏幕的着色点掺杂有其它色彩，可向后轻拉偏转线圈消除其它杂色。
   - ●着色点位置向外偏移：
     前推偏转线圈加以调节。
   - ●着色点位置向内偏移：
     后拉偏转线圈加以调节。
6. 将光栅偏转角调节至0(CRT座南朝东)。
7. 紧固偏转线圈。
   紧固扭矩：11kg ± 2kg

CONVERGENCE ADJUSTMENT





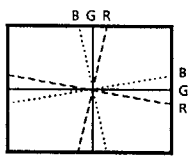


Figure a.

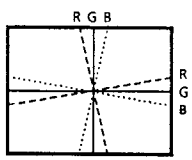


Figure b.

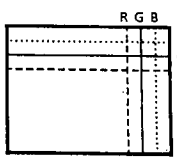


Figure c.

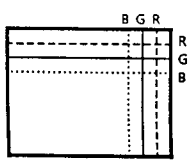


Figure d.

Adjusting Conditions

This adjustment should be performed after the purity magnet adjustment.

1. Receive "CROSSHATCH PATTERN (channel-E2)" signal.
2. Set the Brightness control and Contrast control at MAX position.

Adjusting Procedures

STATIC CONVERGENCE

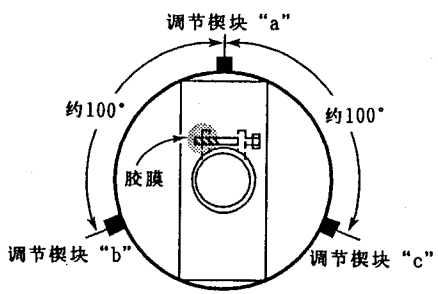
1. Adjust the opening degree of the 4-pole magnet and rotate the magnet to converge red and blue lines.
2. Adjust the opening degree of the 6-pole magnet and rotate the magnet to converge red, blue and green lines.

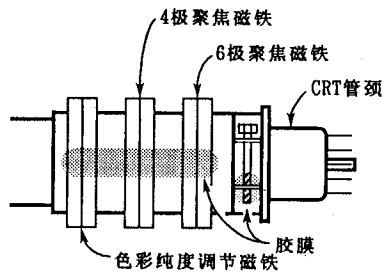
DYNAMIC CONVERGENCE

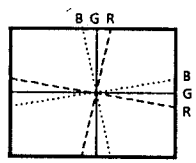
3. Dynamic convergence (convergence of the three colour fields) at the edges of CRT screen is accomplished in the following manner.
   - **Convergence in *Fig. a* :**
     Insert wedge"a" between the deflection yoke and CRT, and tilt the deflection yoke upward until the mis-convergence shown in ***Fig. a*** is corrected.
   - **Convergence in *Fig. b* :**
     Insert wedges "b" and "c" between the deflection yoke and CRT, and tilt the deflection yoke until the mis-convergence shown in ***Fig. b*** is corrected.
   - **Convergence in *Fig. c* :**
     Insert wedge "c" deeply between the deflection yoke and CRT, and tilt the deflection yoke to right until the mis-convergence shown in ***Fig. c*** is corrected.
   - **Convergence in *Fig. d* :**
     Insert wedge "b" deeply between the deflection yoke and CRT, and tilt the deflection yoke to left until the mis-convergence shown in ***Fig. d*** is corrected.
4. Stick the three wedges onto the CRT, and apply glass tapes thereon.
5. Apply lacquer to the deflection yoke screw, magnet unit (made of purity, 4-pole and 6-pole magnets) and magnet unit screw.

After the adjustment, receive either the Red or the Blue signal and check that there is no mixture with the other colour signal.

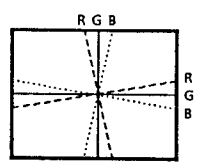
聚焦度的调试



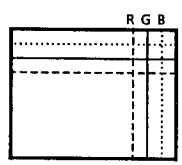




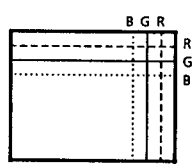
图a.



图b.



图c.



图d.

调试条件

此项调试必须于色彩纯度调试之后进行。

1. 接收"棋盘格测试图（频道E2）信号。
2. 设亮度调节和对比度调节于最大位置。

调试方法

静聚焦度的调试

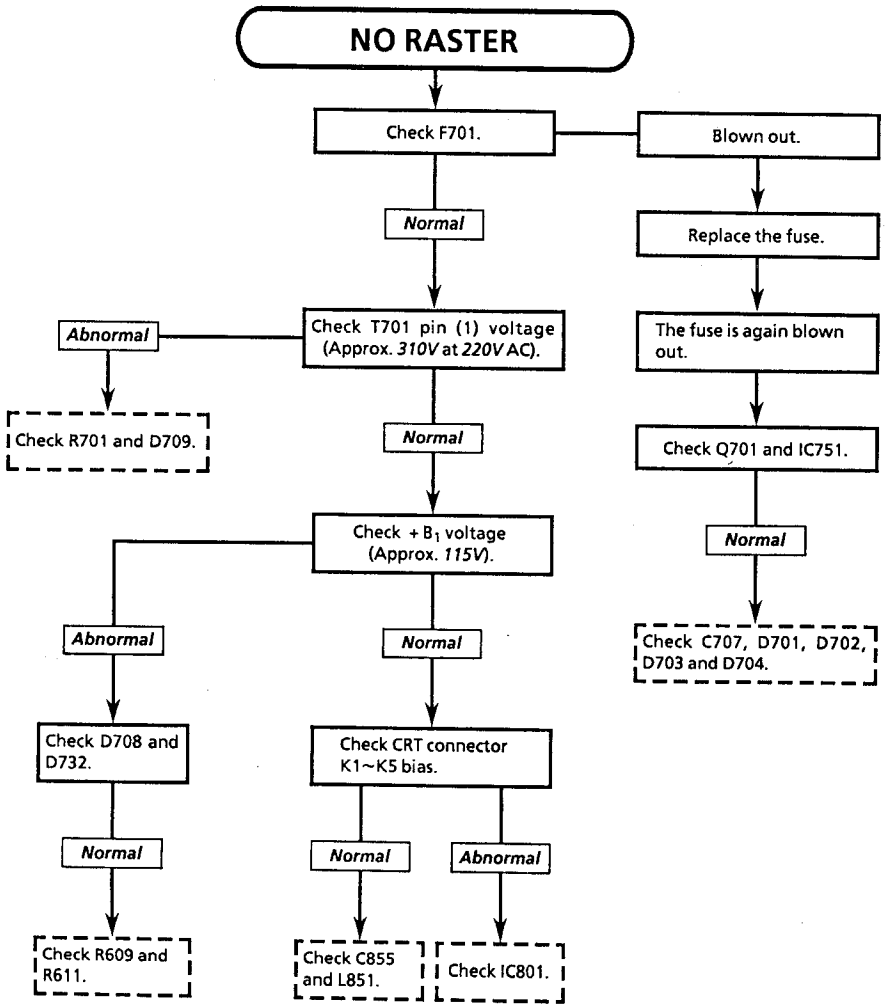
1. 调节4极聚焦磁铁的张开程度以及其转角，以会聚红色线条和蓝色线条。
2. 调节6极聚焦磁铁的张开程度以及其转角，以会聚红色线条，蓝色线条和绿色线条。

动聚焦度的调试

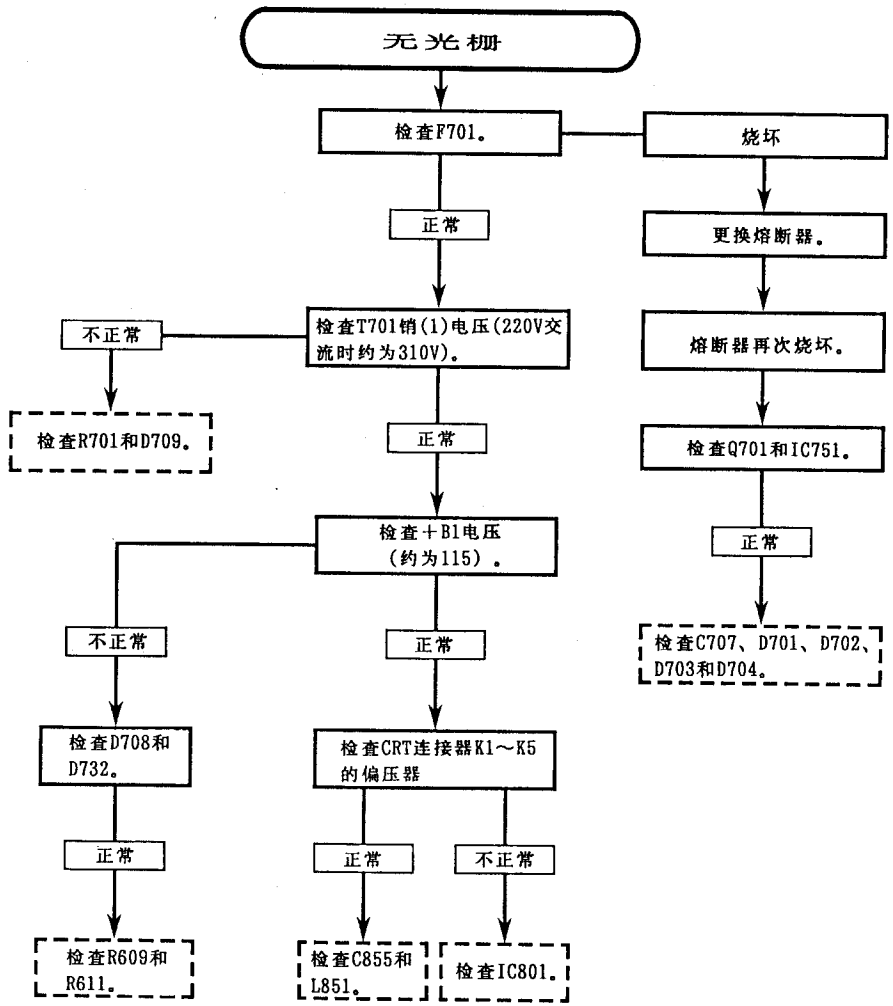
3. CRT荧屏边缘的动聚焦度（三彩色色场的会聚）的调试按下述要求进行。
   - ●按图a.要求的会聚调试：
     插入调节楔块"a"于偏转线圈和CRT之间，并向上倾斜调节偏转线圈，以按图a.所示要求矫正不良会聚。
   - ●按图b.要求的会聚调试：
     插入调节楔块"b"和"c"于偏转线圈和CRT之间，并倾斜调节偏转线圈，以按图b.所示要求矫正不良会聚。
   - ●按图c.要求的会聚调试：
     深插调节楔块"c"于偏转线圈和CRT之间，并向右倾斜调节偏转线圈，以按图c.所示要求矫正不良会聚。
   - ●按图d.要求的会聚调试：
     深插调节楔块"b"于偏转线圈和CRT之间，并向左倾斜调节偏转线圈，以按图d.所示要求矫正不良会聚。
4. 完成以上调试后，用透明胶带粘固三只调节楔块于CRT。
5. 然后用胶膜封固偏转线圈调节螺丝，调节磁铁装置（由纯度调节磁铁，4极聚焦磁铁和6极聚焦磁铁构成）以及调节磁铁装置固定螺丝。

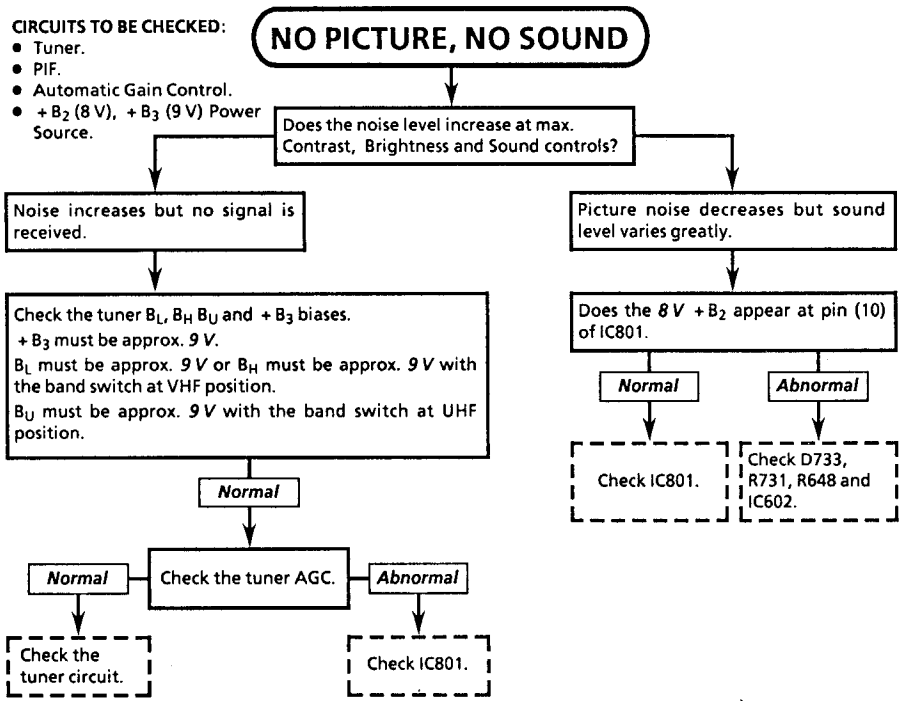
该项调试完成后，让电视机接收红色或蓝色信号，并检查接收的单色信号是否掺杂有其他色彩信号。

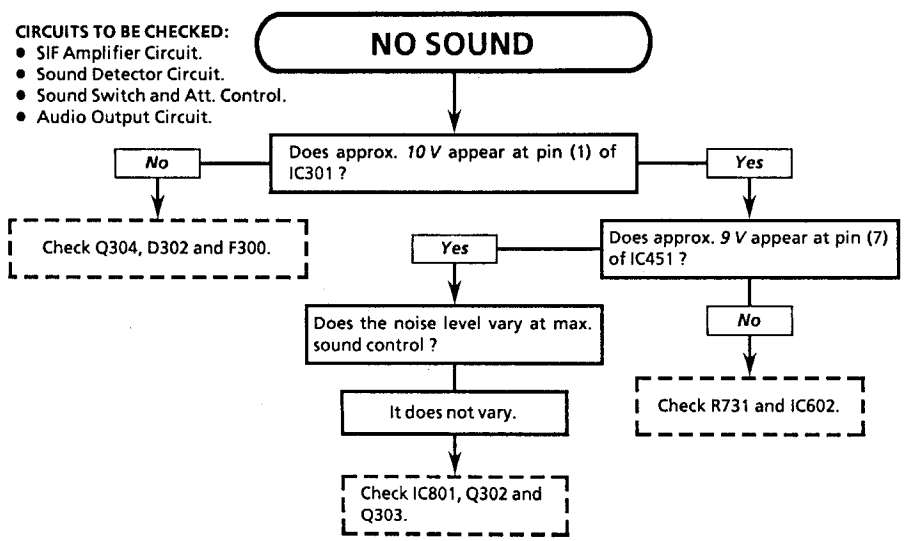
TROUBLE SHOOTING TABLE



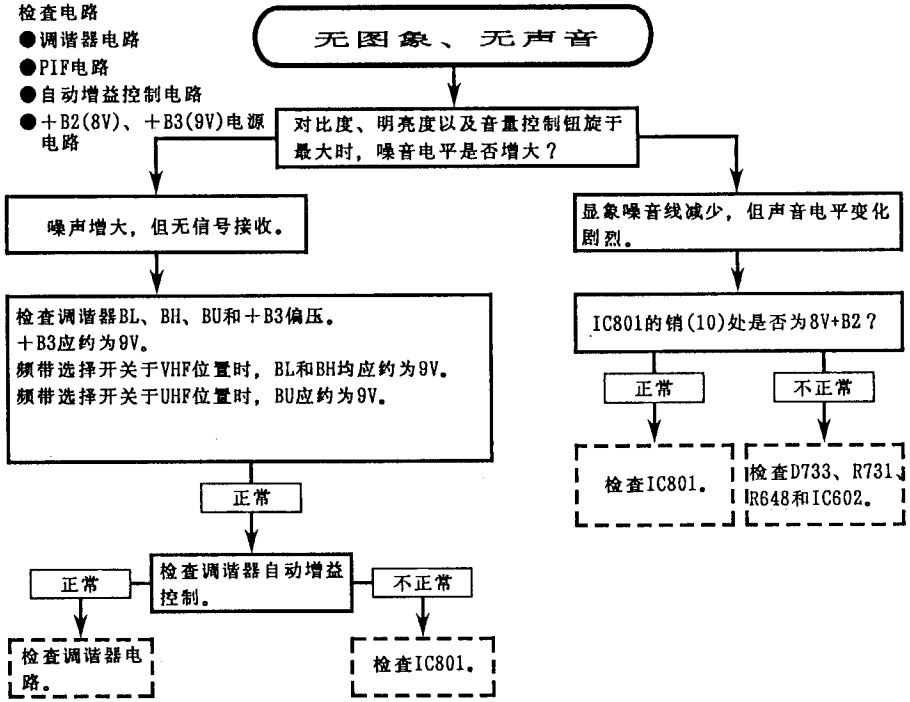
故障检修表

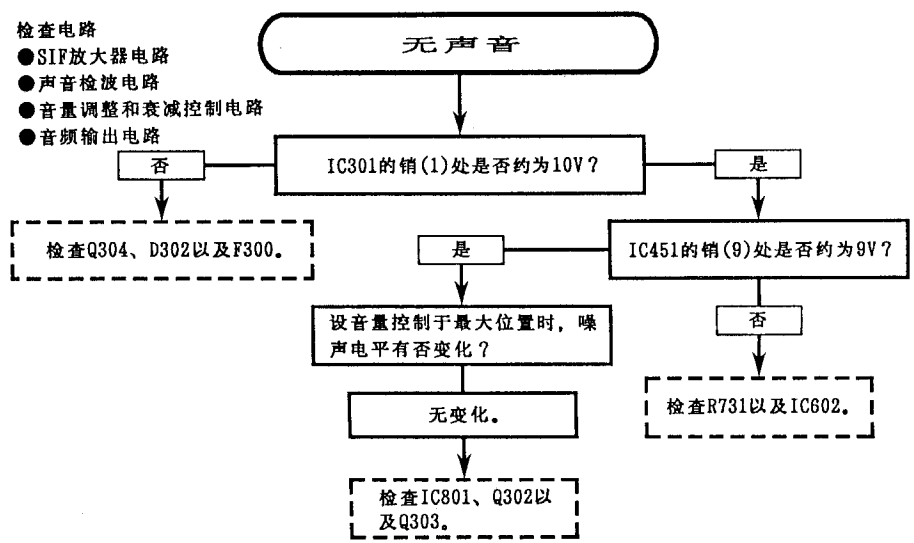



CIRCUITS TO BE CHECKED:
• Tuner.
• PIF.
• Automatic Gain Control.
• +B2 (8 V), +B3 (9 V) Power Source.
NO PICTURE, NO SOUND
Does the noise level increase at max. Contrast, Brightness and Sound controls?
Noise increases but no signal is received.
Picture noise decreases but sound level varies greatly.
Check the tuner BL, BH BU and +B3 biases.
+B3 must be approx. 9 V.
BL must be approx. 9 V or BH must be approx. 9 V with the band switch at VHF position.
BU must be approx. 9 V with the band switch at UHF position.
Does the 8 V +B2 appear at pin (10) of IC801.
Normal
Abnormal
Check IC801.
Check D733, R731, R648 and IC602.
Normal
Check the tuner AGC.
Abnormal
Normal
Check the tuner circuit.
Check IC801.


CIRCUITS TO BE CHECKED:
• SIF Amplifier Circuit.
• Sound Detector Circuit.
• Sound Switch and Att. Control.
• Audio Output Circuit.
NO SOUND
No
Does approx. 10 V appear at pin (1) of IC301 ?
Yes
Check Q304, D302 and F300.
Yes
Does approx. 9 V appear at pin (7) of IC451 ?
Does the noise level vary at max. sound control ?
No
It does not vary.
Check R731 and IC602.
Check IC801, Q302 and Q303.

E-15


检查电路
●调谐器电路
●PIF电路
●自动增益控制电路
●+B2(8V)、+B3(9V)电源电路
无图象、无声音
对比度、明亮度以及音量控制钮旋于最大时，噪音电平是否增大？
噪声增大，但无信号接收。
显象噪音线减少，但声音电平变化剧烈。
检查调谐器BL、BH、BU和+B3偏压。
+B3应约为9V。
频带选择开关于VHF位置时，BL和BH均应约为9V。
频带选择开关于UHF位置时，BU应约为9V。
IC801的销(10)处是否为8V+B2？
正常
不正常
检查IC801。
检查D733、R731、R648和IC602。
正常
正常
检查调谐器自动增益控制。
不正常
检查调谐器电路。
检查IC801。


检查电路
●SIF放大器电路
●声音检波电路
●音量调整和衰减控制电路
●音频输出电路
无声音
否
IC301的销(1)处是否约为10V？
是
检查Q304、D302以及F300。
是
IC451的销(9)处是否约为9V？
设音量控制于最大位置时，噪声电平有否变化？
否
检查R731以及IC602。
无变化。
检查IC801、Q302以及Q303。

C-15

NEITHER VERTICAL NOR HORIZONTAL SYNCHRONIZATION

CIRCUIT TO BE CHECKED:
- Sync. Separator Circuit.

Check IC801.

DEFECTIVE VERTICAL AMP. AND VERTICAL LINEARITY

Readjust vertical size.

- Vertical size is abnormal. → Check R510, R511, C514 and R509.
- Vertical linearity is abnormal. → Check C508, R519, R508 and R505.

NO VERTICAL SCAN

Check IC501 bias.

- *Normal* → Check C506.
- *Abnormal* → Check IC501.

E-16

无垂直同步信号和水平同步信号

检查电路：
- ●同步分离电路

检查IC801。

垂直放大及垂直线性度异常

重调垂直尺寸。

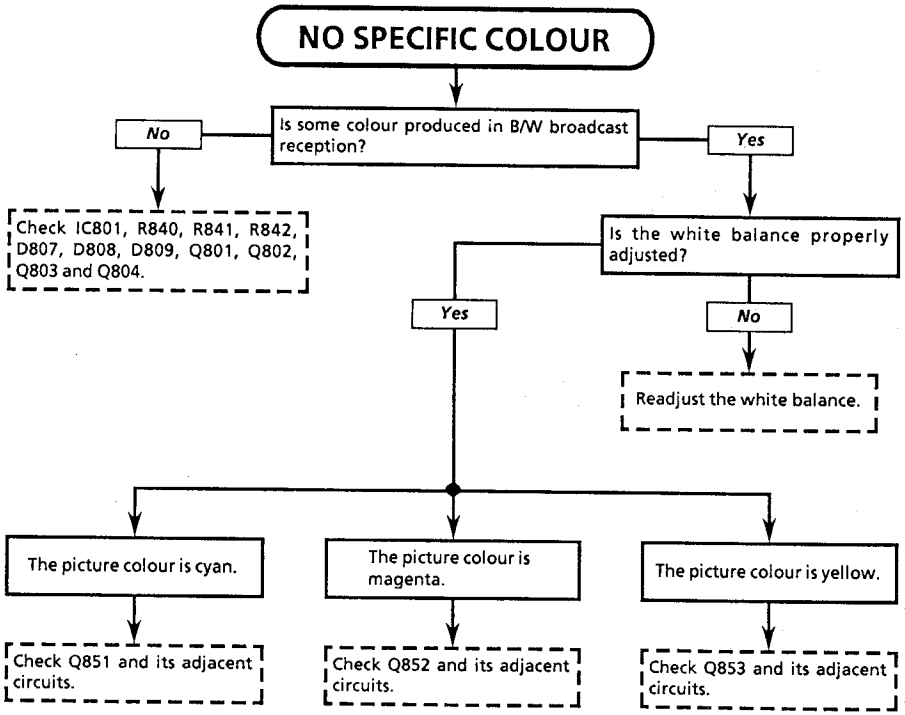
- 垂直尺寸不符要求。 → 检查R510、R511、C514和R509。
- 垂直线性度不符要求。 → 检查C508、R519、R508和R505。

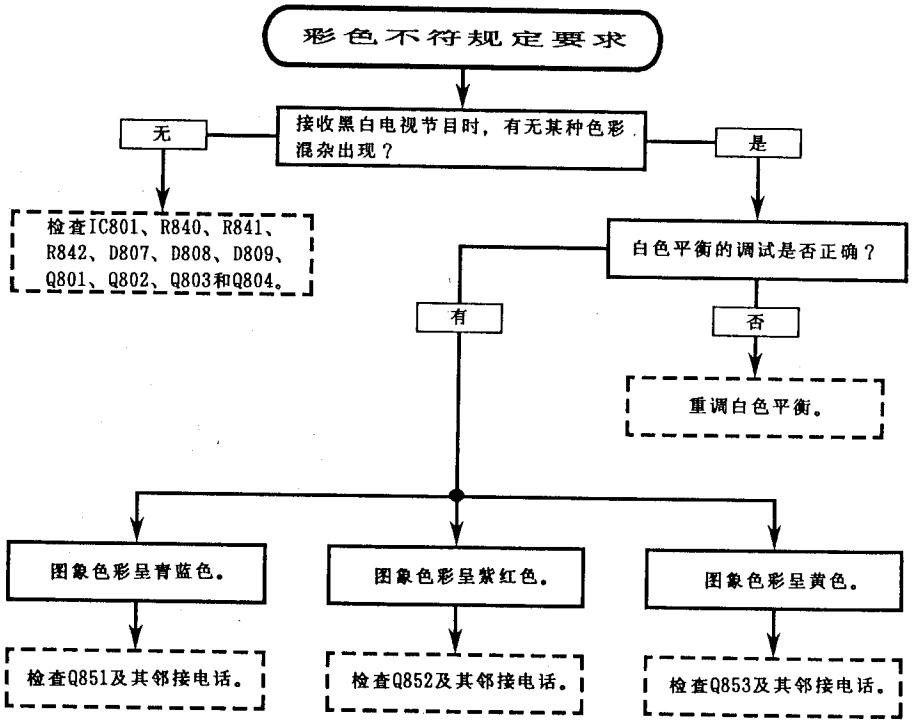
无垂直扫描

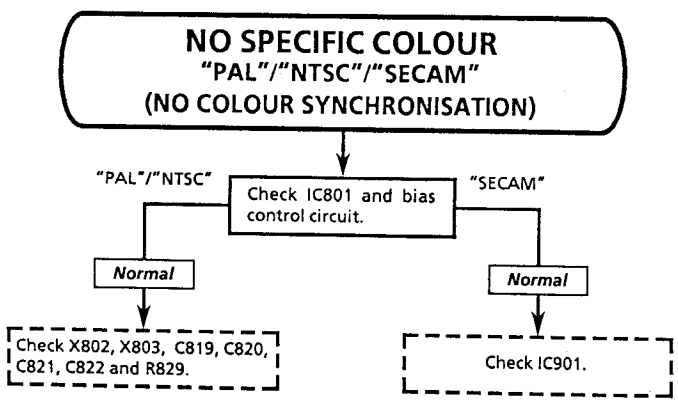
检查IC501偏压器。

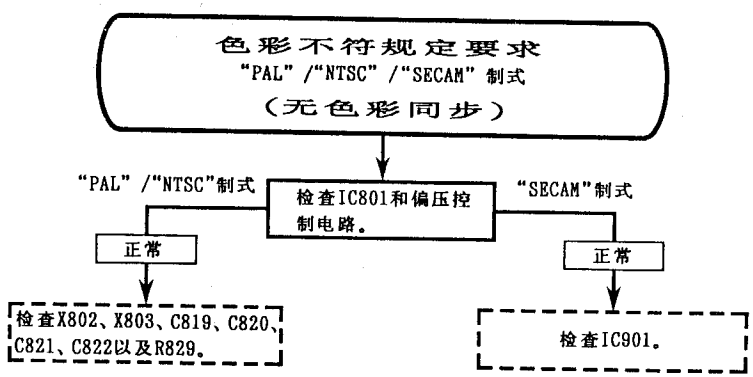
- 正常 → 检查C506。
- 不正常 → 检查IC501。

C-16

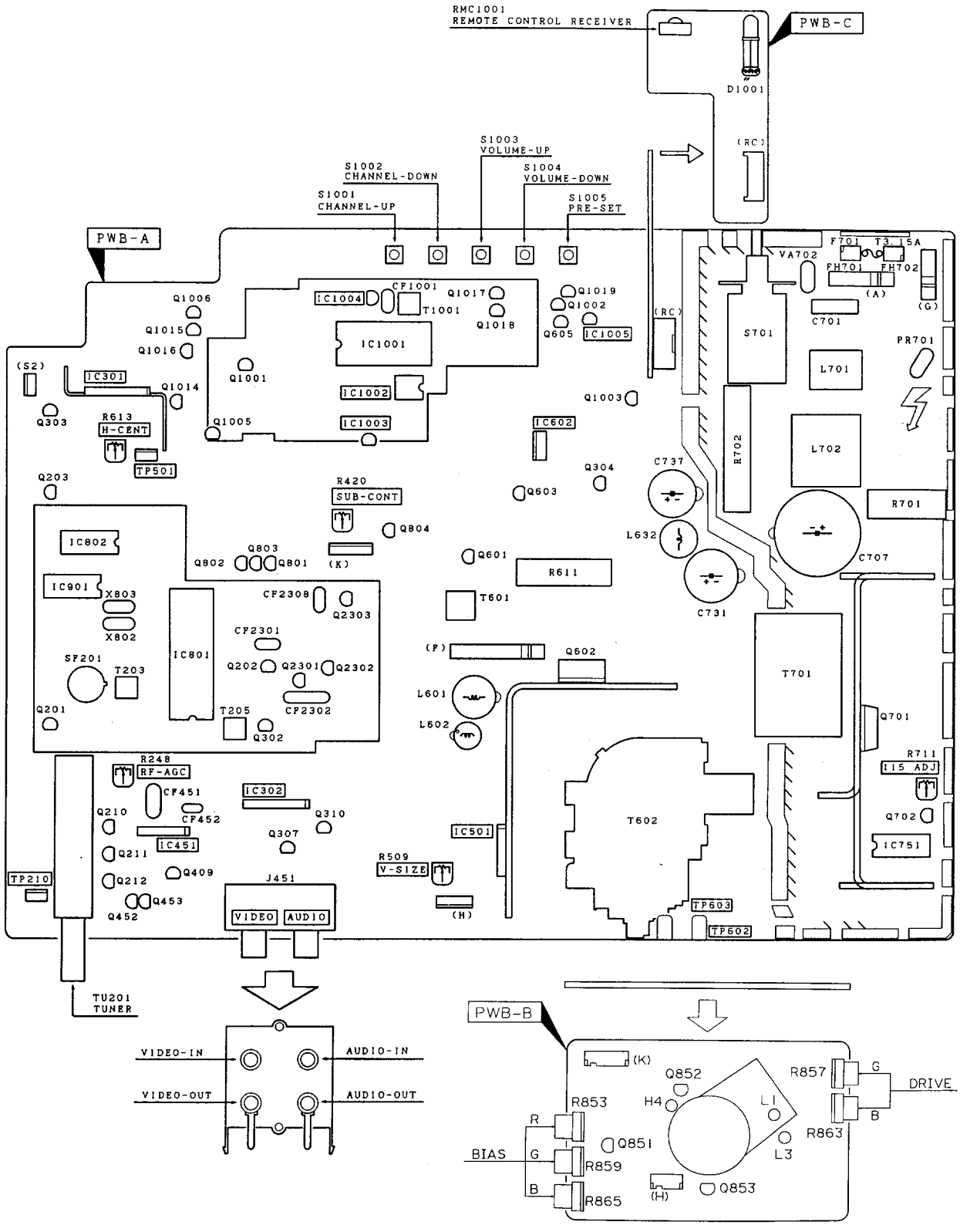

NO SPECIFIC COLOUR
Is some colour produced in B/W broadcast reception?
No
Yes
Check IC801, R840, R841, R842, D807, D808, D809, Q801, Q802, Q803 and Q804.
Is the white balance properly adjusted?
Yes
No
Readjust the white balance.
The picture colour is cyan.
The picture colour is magenta.
The picture colour is yellow.
Check Q851 and its adjacent circuits.
Check Q852 and its adjacent circuits.
Check Q853 and its adjacent circuits.


彩色不符规定要求
接收黑白电视节目时，有无某种色彩混杂出现？
无
是
检查IC801、R840、R841、R842、D807、D808、D809、Q801、Q802、Q803和Q804。
白色平衡的调试是否正确？
有
否
重调白色平衡。
图象色彩呈青蓝色。
图象色彩呈紫红色。
图象色彩呈黄色。
检查Q851及其邻接电话。
检查Q852及其邻接电话。
检查Q853及其邻接电话。

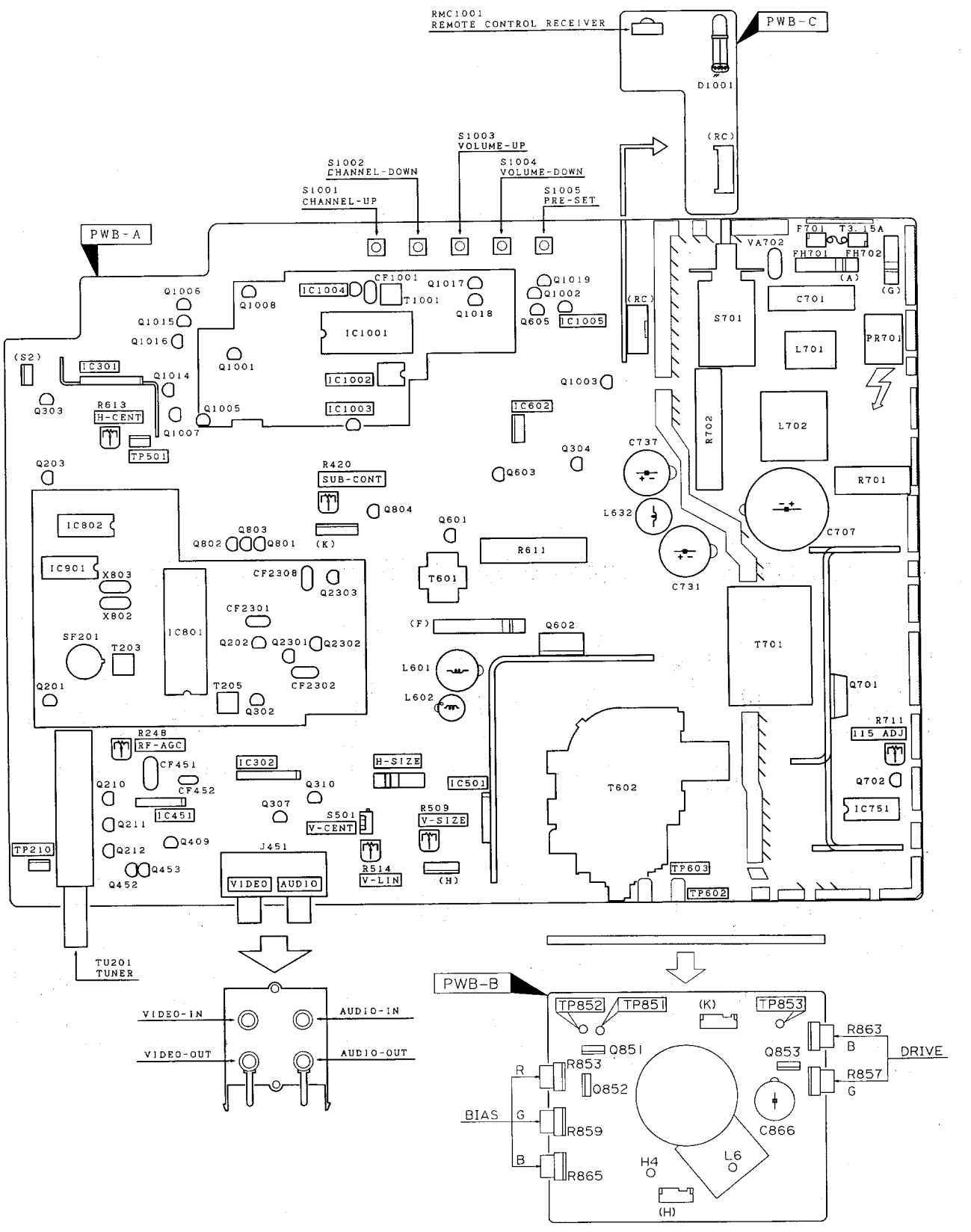

NO SPECIFIC COLOUR
"PAL"/"NTSC"/"SECAM"
(NO COLOUR SYNCHRONISATION)
"PAL"/"NTSC"
Check IC801 and bias control circuit.
"SECAM"
Normal
Normal
Check X802, X803, C819, C820, C821, C822 and R829.
Check IC901.


色彩不符规定要求
"PAL" /"NTSC" /"SECAM" 制式
(无色彩同步)
"PAL" /"NTSC"制式
检查IC801和偏压控制电路。
"SECAM"制式
正常
正常
检查X802、X803、C819、C820、C821、C822以及R829。
检查IC901。

MODEL 14H-SC CHASSIS LAYOUT
型号14H-SC机芯底盘电路布置

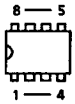


MODELS 20H-SC and 21H-SC CHASSIS LAYOUT
型号20H-SC与21H-SC机芯底盘电路布置

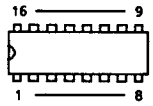


SOLID STATE DEVICE BASE DIAGRAM
固体器件基座图

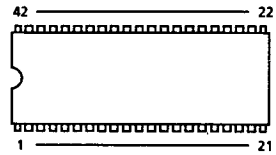
TOP VIEW 俯视图



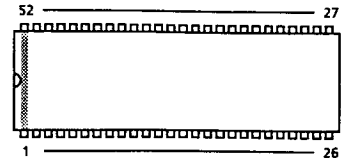
iX2467CE



iX1779CE

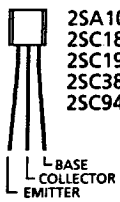


iX2590CE

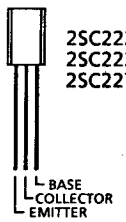


TDA8362

SIDE VIEW 侧视图



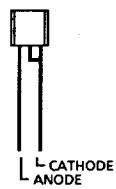
2SA1015
2SC1815
2SC1906
2SC383
2SC945



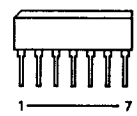
2SC2229
2SC2236
2SC2271

KiA7045P

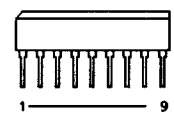
UPC78L05



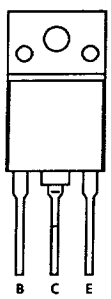
iX0037CE



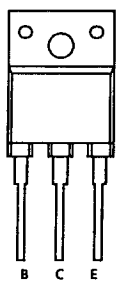
TA7347P



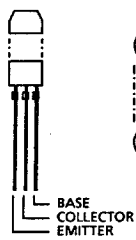
TA7348P



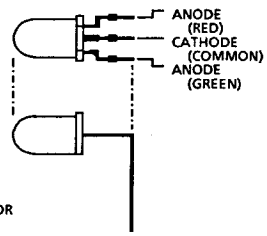
2SD1554
2SD1877
2SD2095



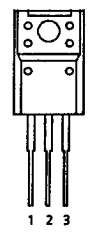
2SD1884



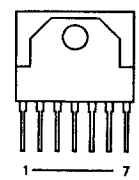
KRA102M
KRC102M



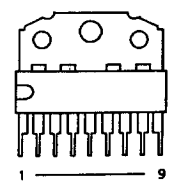
PX0291CE



KA7809

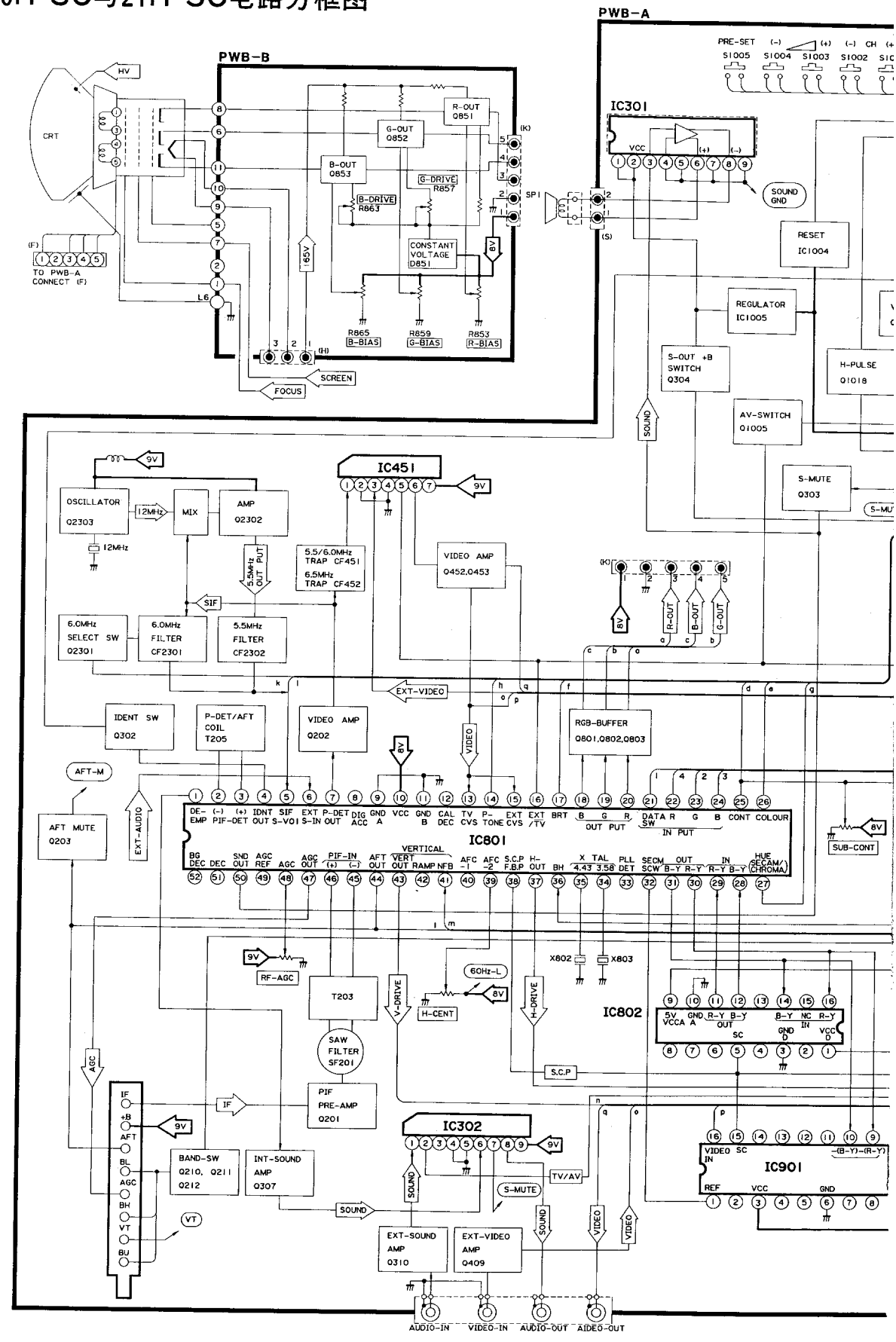


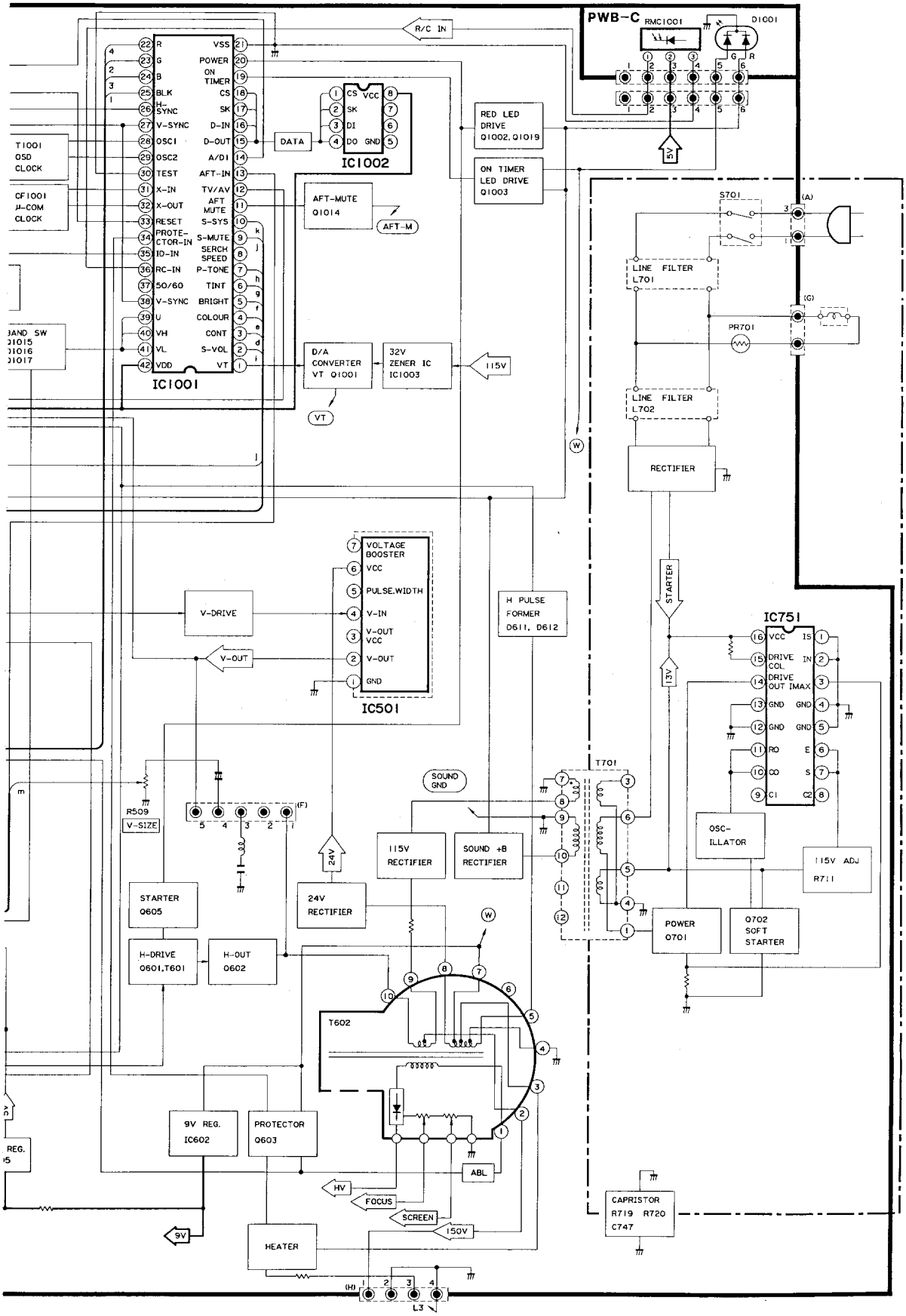
iX0640CE



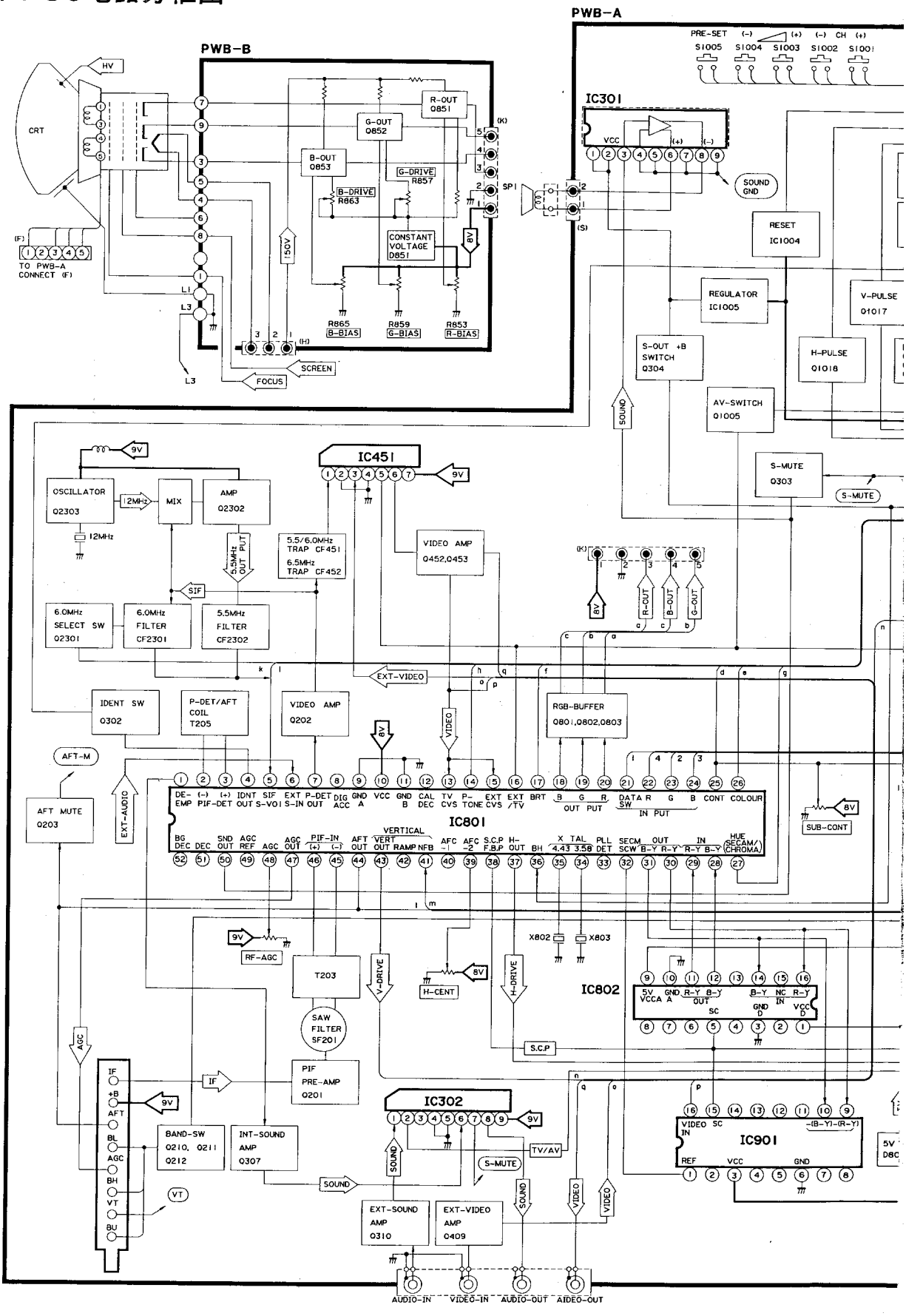
TDA7056

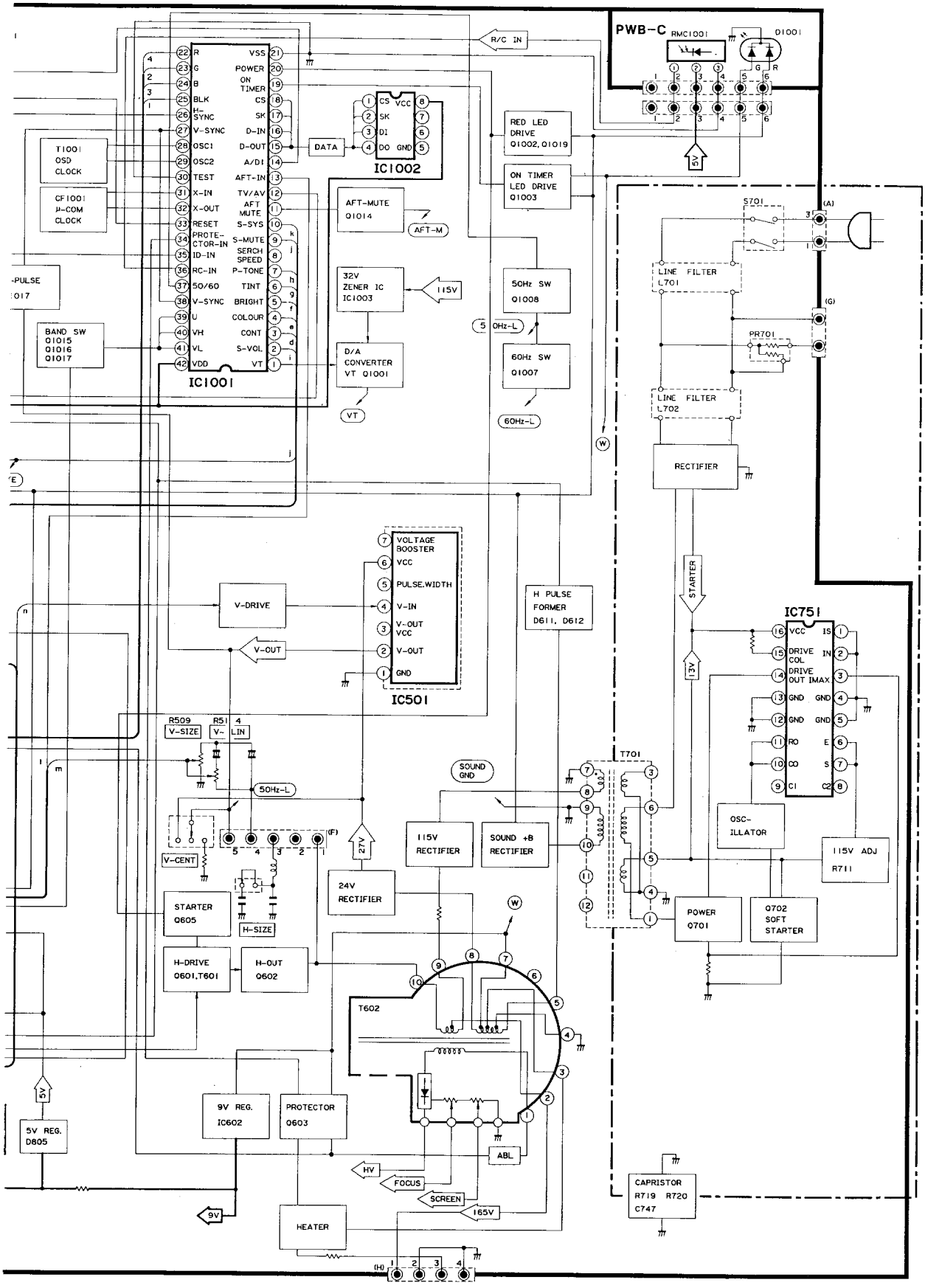
MODELS 20H-SC and 21H-SC BLOCK DIAGRAM
型号20H-SC与21H-SC电路方框图




PWB-C
RMC1001
D1001
R/C IN
IC1001
IC1002
DATA
RED LED DRIVE Q1002, Q1019
ON TIMER LED DRIVE Q1003
AFT-MUTE Q1014
AFT-M
D/A CONVERTER VT Q1001
32V ZENER IC IC1003
115V
VT
S701
LINE FILTER L701
LINE FILTER L702
PR701
RECTIFIER
STARTER
IC751
IC501
VOLTAGE BOOSTER
PULSE.WIDTH
V-DRIVE
V-OUT
H PULSE FORMER D611, D612
T701
SOUND GND
R509
V-SIZE
115V RECTIFIER
SOUND +B RECTIFIER
24V RECTIFIER
OSC-ILLATOR
115V ADJ R711
POWER Q701
Q702 SOFT STARTER
STARTER Q605
H-DRIVE Q601,T601
H-OUT Q602
T602
9V REG. IC602
PROTECTOR Q603
ABL
HV
FOCUS
SCREEN
150V
HEATER
CAPRISTOR R719 R720 C747
9V
13V
24V
5V
L3

MODEL 14H-SC BLOCK DIAGRAM
型号14H-SC电路方框图



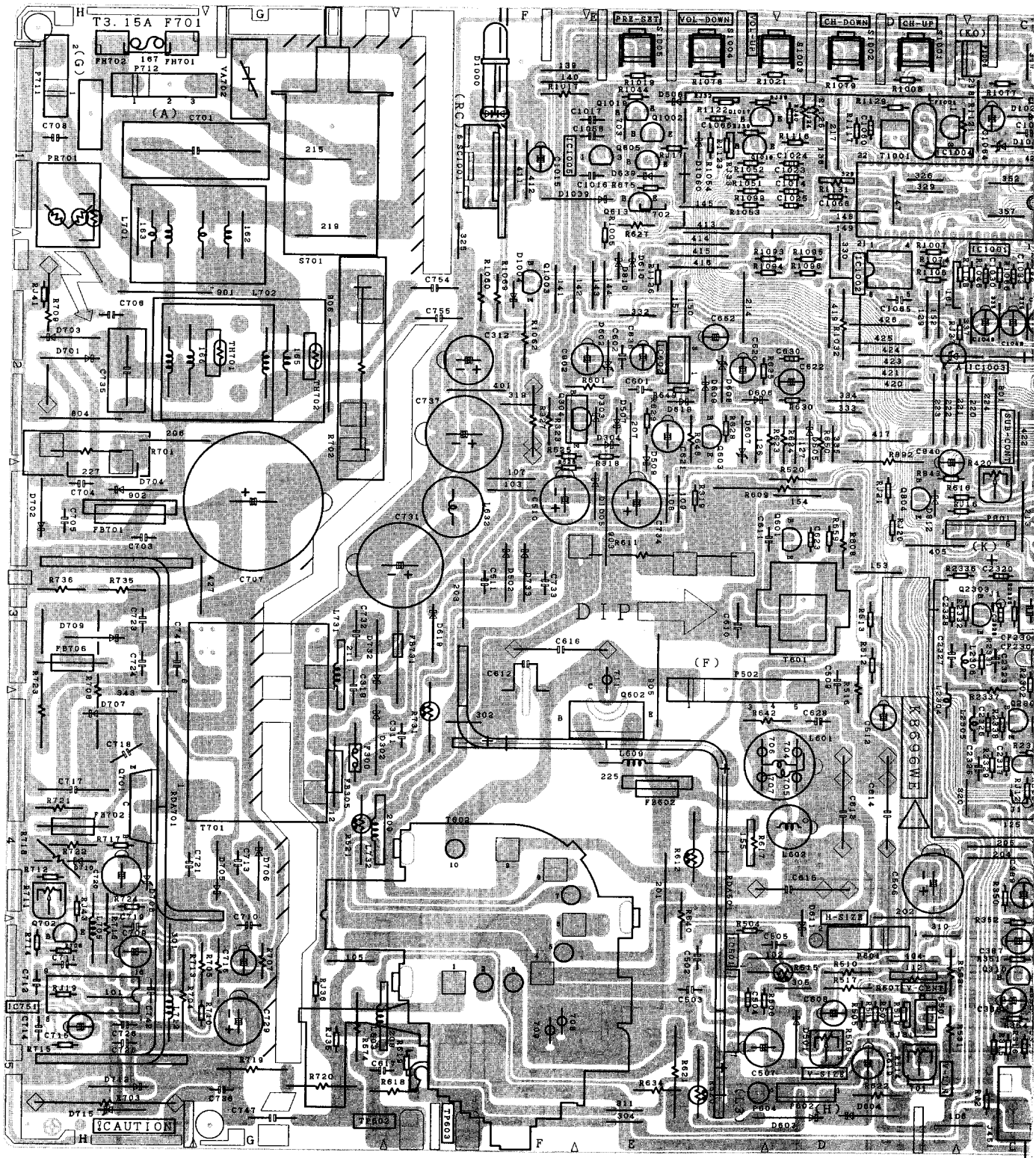

PWB-C
RMC1001
D1001
R/C IN
IC1001
IC1002
DATA
T1001 OSD CLOCK
CF1001 μ-COM CLOCK
BAND SW Q1015 Q1016 Q1017
AFT-MUTE Q1014
AFT-M
32V ZENER IC IC1003
115V
D/A CONVERTER VT Q1001
VT
RED LED DRIVE Q1002, Q1019
ON TIMER LED DRIVE Q1003
50Hz SW Q1008
60Hz SW Q1007
50Hz-L
60Hz-L
S701
LINE FILTER L701
LINE FILTER L702
PR701
RECTIFIER
STARTER
IC751
IC501
VOLTAGE BOOSTER
VCC
PULSE.WIDTH
V-IN
V-OUT VCC
V-OUT
GND
V-DRIVE
V-OUT
H PULSE FORMER D611, D612
R509 V-SIZE
R514 V- LIN
V-CENT
H-SIZE
SOUND GND
115V RECTIFIER
SOUND +B RECTIFIER
24V RECTIFIER
T701
OSC-ILLATOR
115V ADJ R711
POWER Q701
Q702 SOFT STARTER
STARTER Q605
H-DRIVE Q601, T601
H-OUT Q602
T602
9V REG. IC602
PROTECTOR Q603
5V REG. D805
ABL
HV
FOCUS
SCREEN
165V
HEATER
CAPRISTOR R719 R720 C747

PRINTED WIRING BOARD ASSEMBLIES

(All the PWBs here are shown as viewed from their wiring sides.)

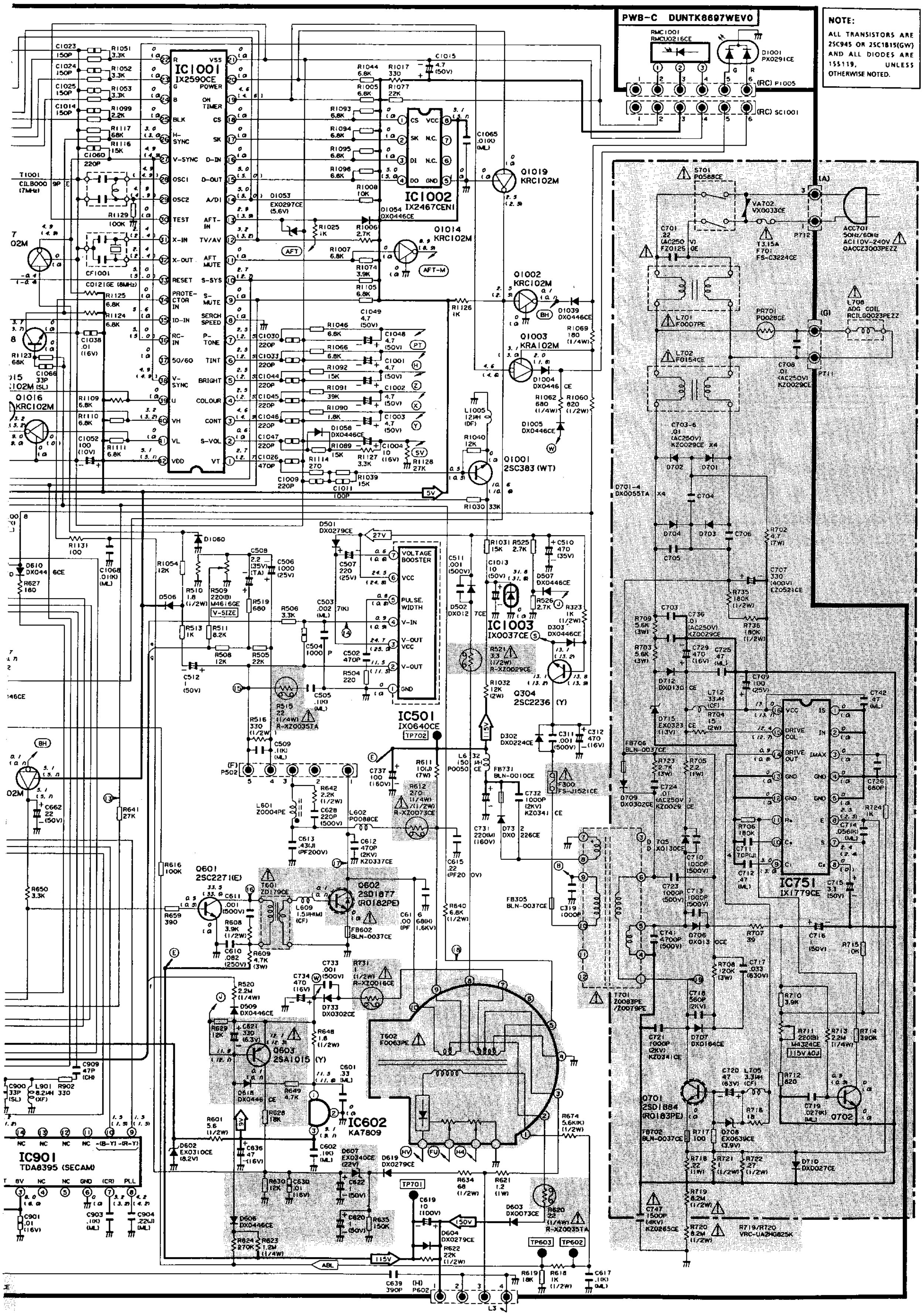
印刷电路板的组装件

（这里所有印刷电路都是从线路贴置侧显示出来的。）



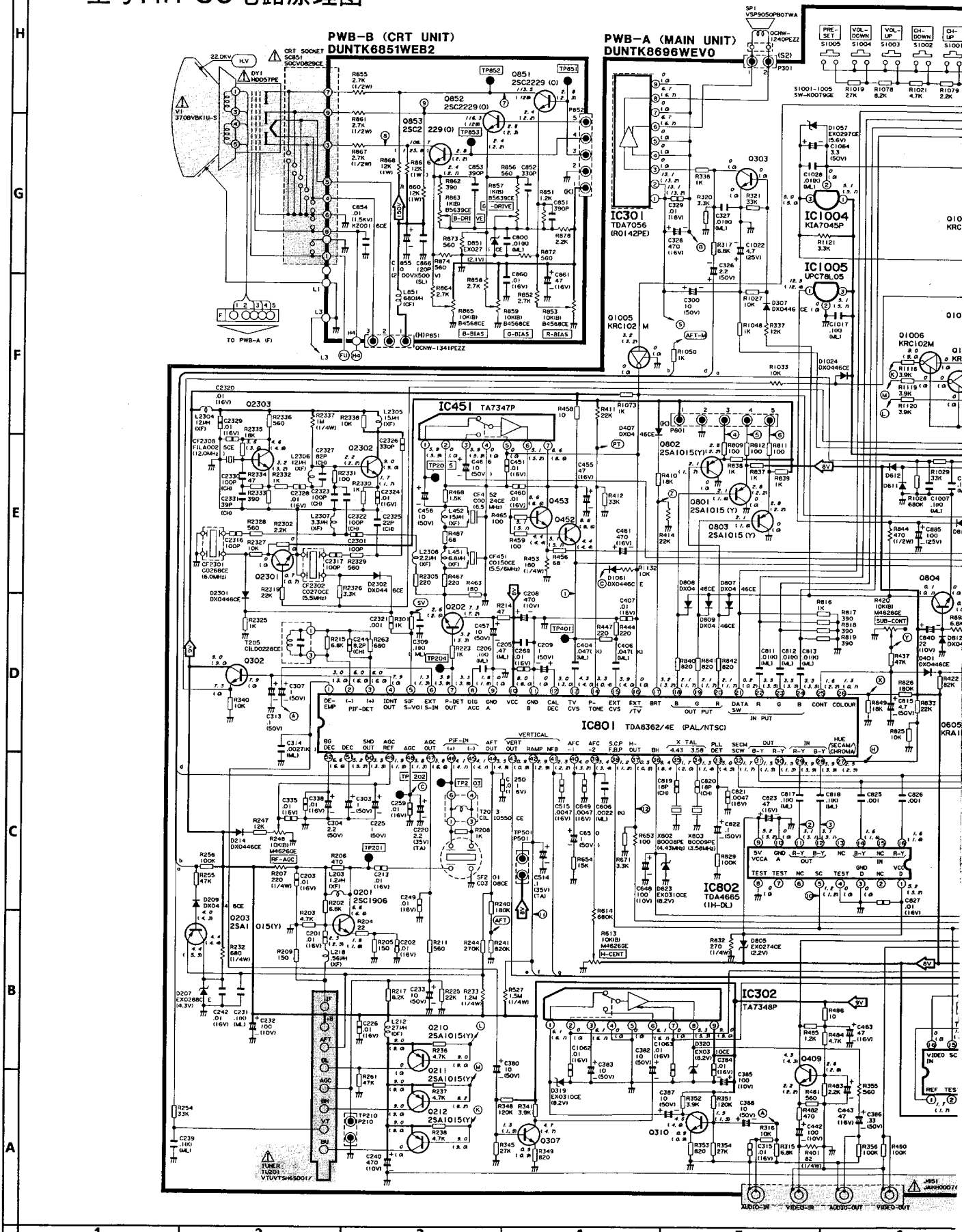
PWB-A: Main Unit

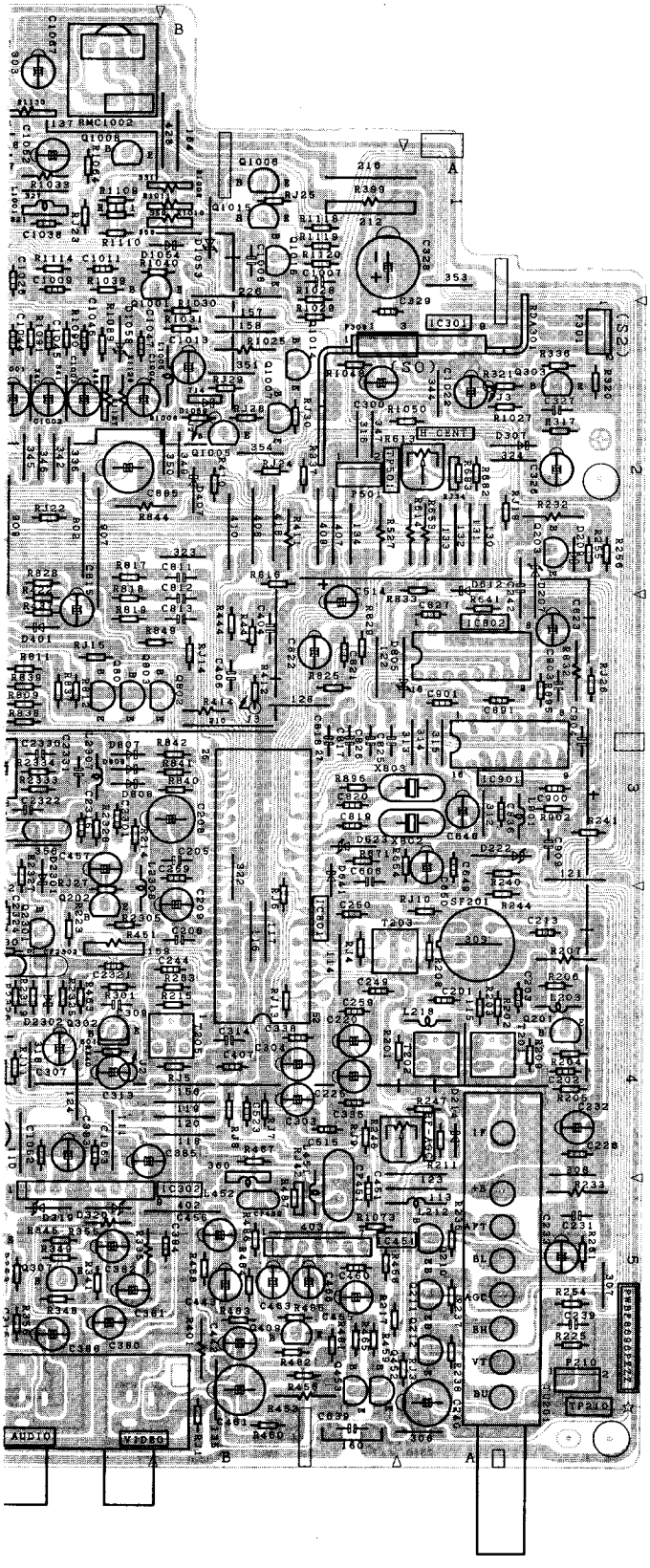
主电路装置

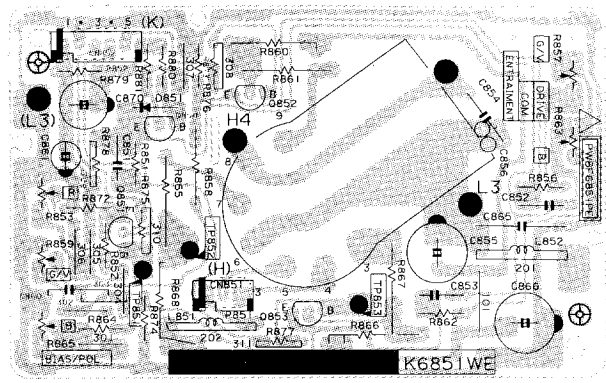

PWB-C DUNTK8697WEV0
NOTE:
ALL TRANSISTORS ARE 2SC945 OR 2SC1815(GW) AND ALL DIODES ARE 1SS119, UNLESS OTHERWISE NOTED.
IC1001 IX2590CE
IC1002 IX2467CEN1
IC1003 IX0037CE
IC501 IX0640CE
IC751 IX1779CE
IC602 KA7809
IC901 TDA8395 (SECAM)

7	8	9	10	11	12

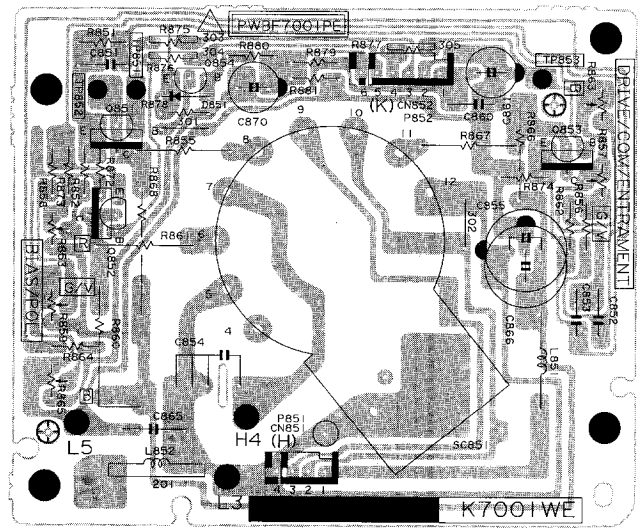
MODEL 14H-SC SCHEMATIC DIAGRAM
型号14H-SC电路原理图



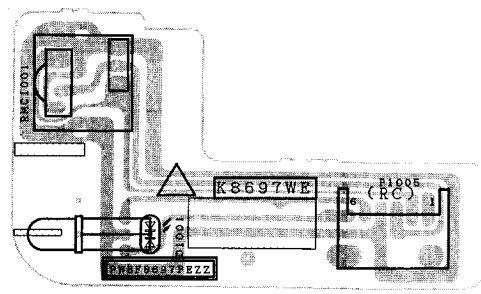




PWB-B: CRT Socket Unit
CRT管座装置印刷电路板
(14H-SC)

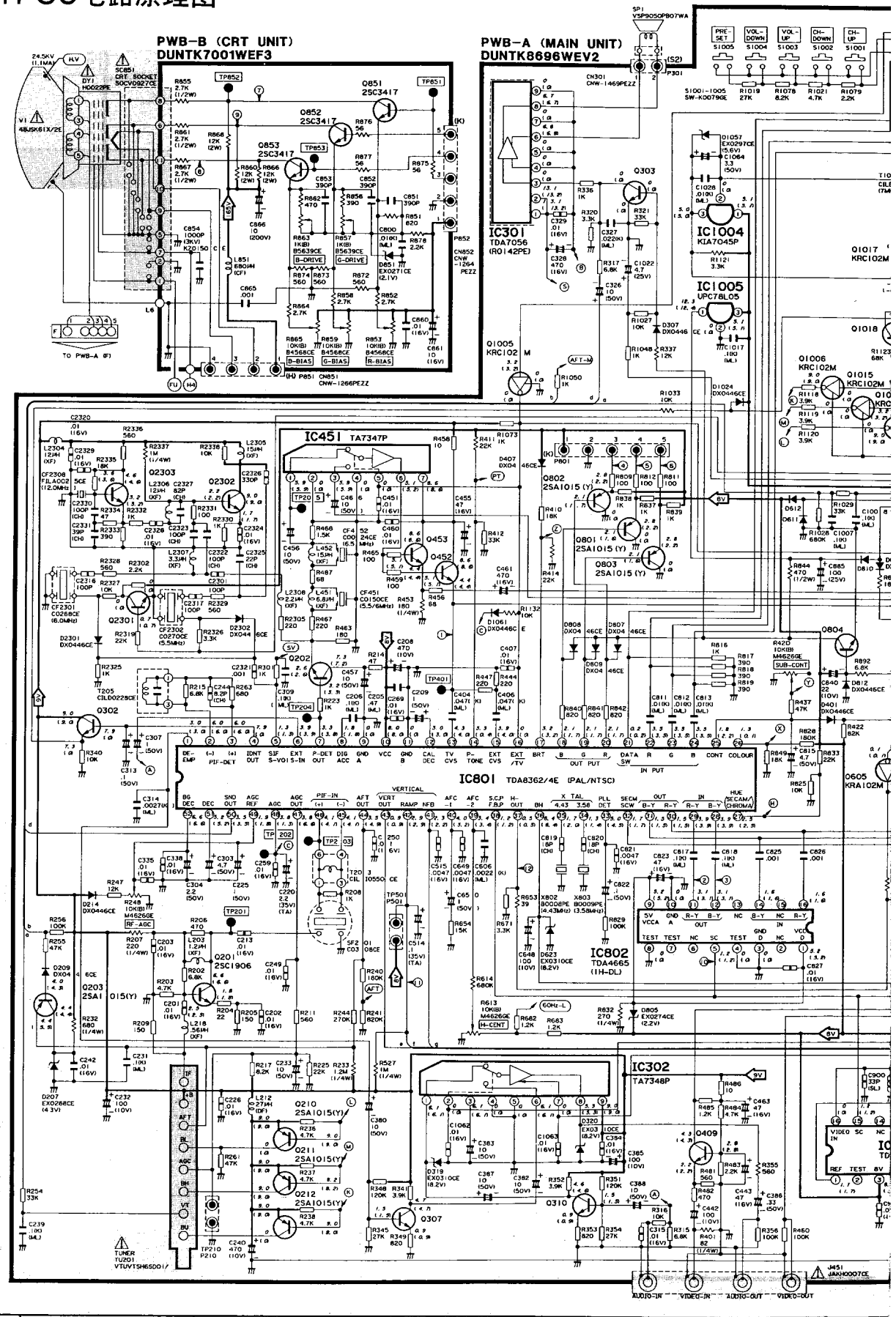


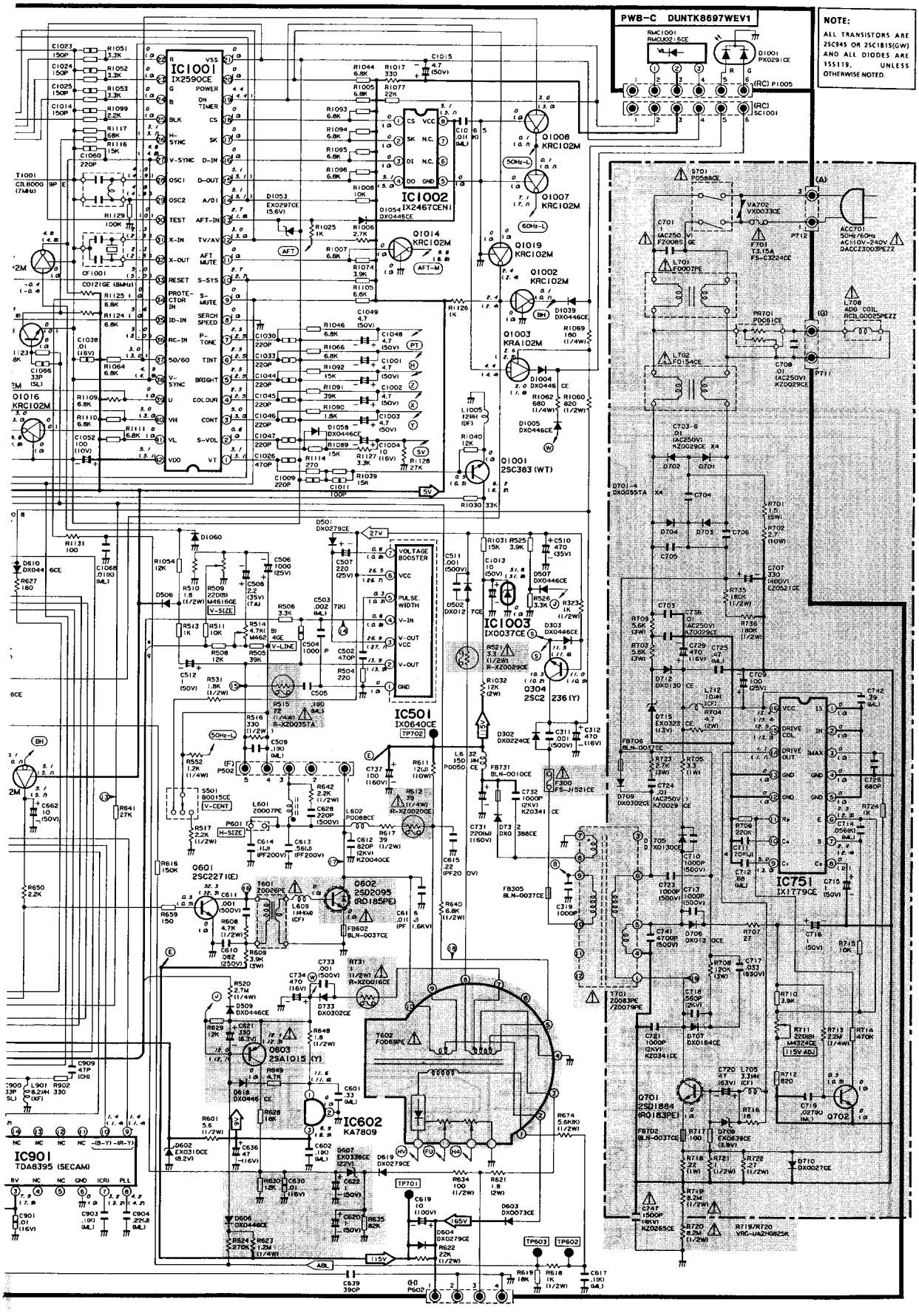
PWB-B: CRT Socket Unit
CRT管座装置印刷电路板
(20H-SC, 21H-SC)



PWB-C: LED, R/C Receiver Unit
LED装置与遥控信号接收器印刷电路板

MODEL 20H-SC SCHEMATIC DIAGRAM
型号20H-SC电路原理图




PWB-C DUNTK8697WEV1
NOTE:
ALL TRANSISTORS ARE 2SC945 OR 2SC1815(GW) AND ALL DIODES ARE 1SS119, UNLESS OTHERWISE NOTED.
IC1001 IX2590CE
IC1002 IX2467CEN1
IC1003 IX0037CE
IC501 IX0640CE
IC751 IX1779CE
IC901 TDA8395 (SECAM)
IC602 KA7809
Q1001 2SC383 (WT)
Q1002 KRC102M
Q1003 KRA102M
Q1004 KRC102M
Q1005 KRC102M
Q1006 KRC102M
Q1007 KRC102M
Q1008 KRC102M
Q1009 KRC102M
Q1010 KRC102M
Q1011 KRC102M
Q1012 KRC102M
Q1013 KRC102M
Q1014 KRC102M
Q1015 KRC102M
Q1016 KRC102M
Q0301 2SC2236 (Y)
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Q0303 2SA1015 (Y)
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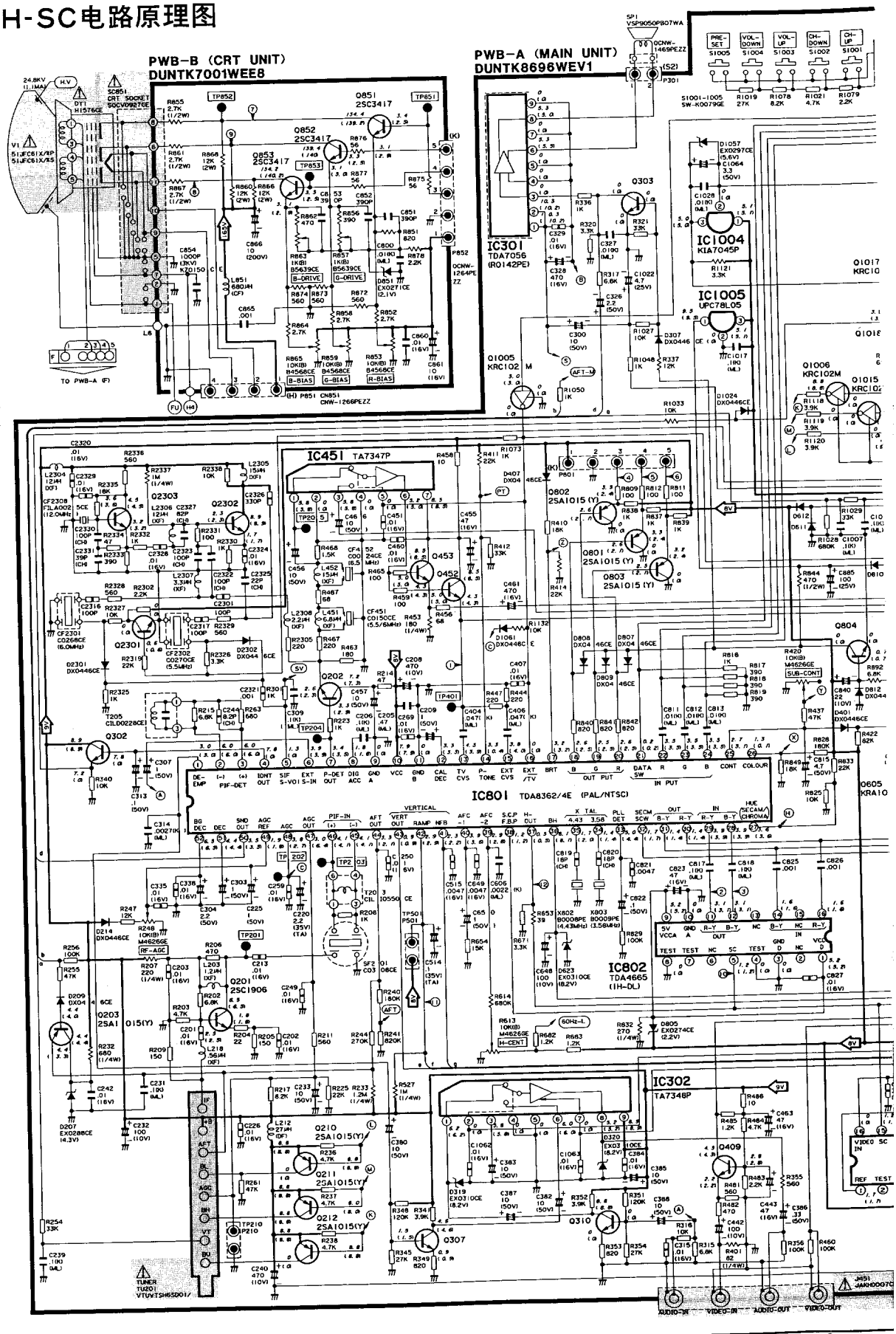
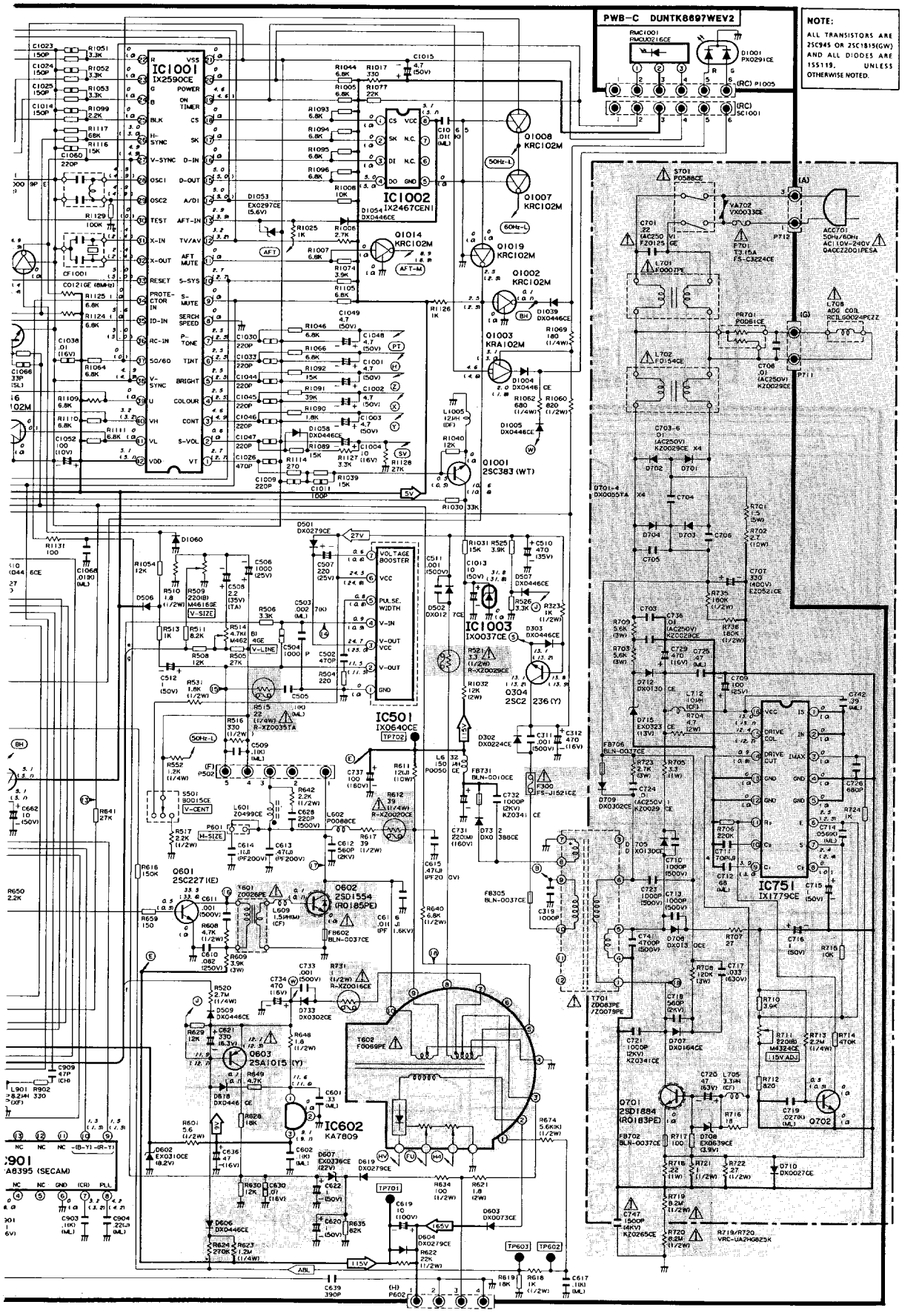
MODEL 21H-SC SCHEMATIC DIAGRAM
型号21H-SC电路原理图




PWB–C DUNTK8697WEV2
NOTE:
ALL TRANSISTORS ARE 2SC945 OR 2SC1815(GW) AND ALL DIODES ARE 1SS119. UNLESS OTHERWISE NOTED.
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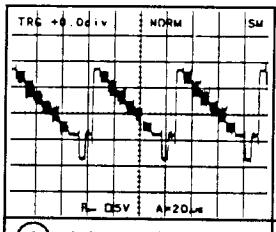
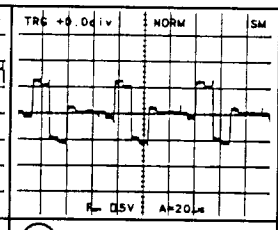
IX2590CE
IC1002
IX2467CEN1
IC1003
IX0037CE
IC501
IX0640CE
IC751
IX1779CE
IC602
KA7809
Q1001
2SC383 (WT)
Q1002
KRC102M
Q1003
KRA102M
Q1007
KRC102M
Q1008
KRC102M
Q1014
KRC102M
Q1019
KRC102M
Q0304
2SC2236 (Y)
Q0601
2SC2271 (E)
Q0602
2SD1554
Q0603
2SA1015 (Y)
Q0701
2SD1884
Q0702
IC901
A8395 (SECAM)

7	8	9	10	11	12

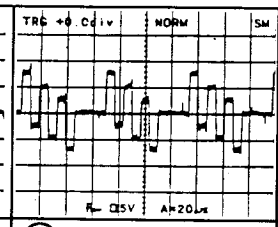
WAVEFORMS
波形图



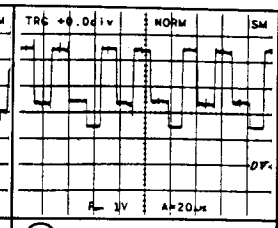
① 2.0 Vp-p (H)



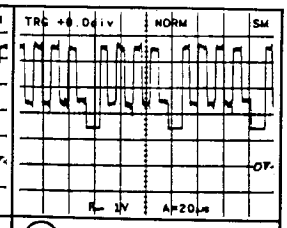
② 1.3 Vp-p (H)



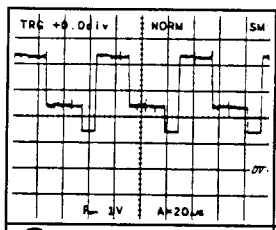
③ 1.5 Vp-p (H)



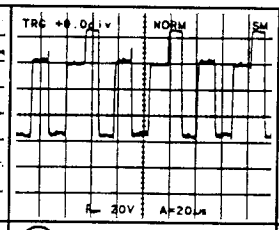
④ 3.0 Vp-p (H)



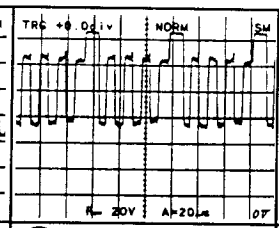
⑤ 3.0 Vp-p (H)



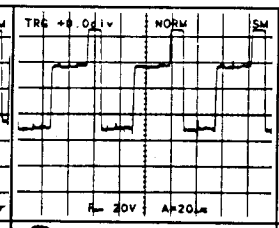
⑥ 3.0 Vp-p (H)



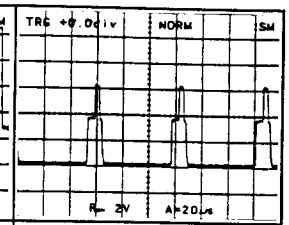
⑦ 58 Vp-p (H)
(14H-SC)
80 Vp-p (H)
(20H-SC, 21H-SC)



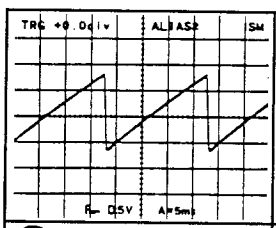
⑧ 70 Vp-p (H)
(14H-SC)
80 Vp-p (H)
(20H-SC, 21H-SC)



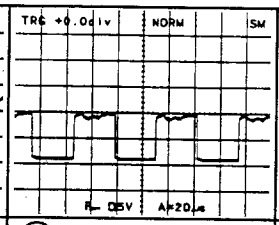
⑨ 54 Vp-p (H)
(14H-SC)
80 Vp-p (H)
(20H-SC, 21H-SC)



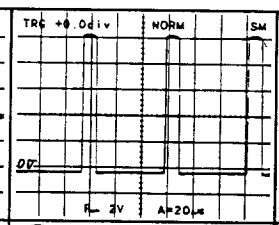
⑩ 5.7 Vp-p (H)



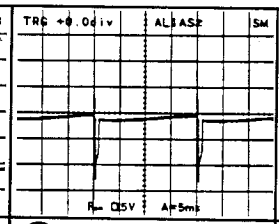
⑪ 1.8 Vp-p (V)



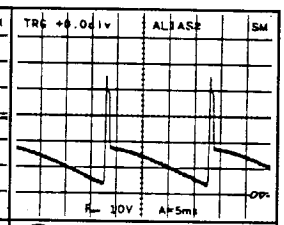
⑫ 0.8 Vp-p (H)



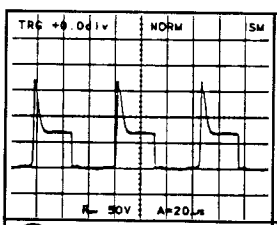
⑬ 9.2 Vp-p (H)



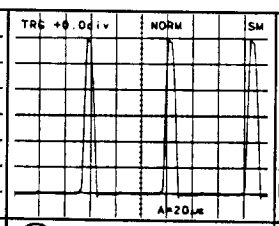
⑭ 1.4 Vp-p (V)
(14H-SC)
1.8 Vp-p (V)
(20H-SC, 21H-SC)



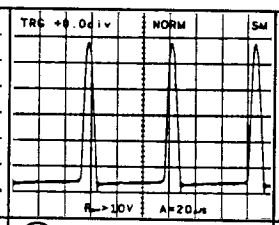
⑮ 50 Vp-p (V)
(14H-SC)
55 Vp-p (V)
(20H-SC, 21H-SC)



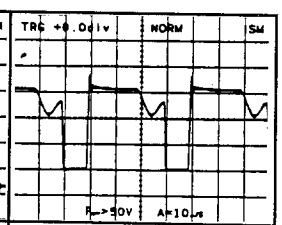
⑯ 140 Vp-p (H)
(14H-SC)
145 Vp-p (H)
(20H-SC, 21H-SC)



⑰ 950 Vp-p (H)
(14H-SC)
1000 Vp-p (H)
(20H-SC, 21H-SC)



⑱ 150 Vp-p (H)

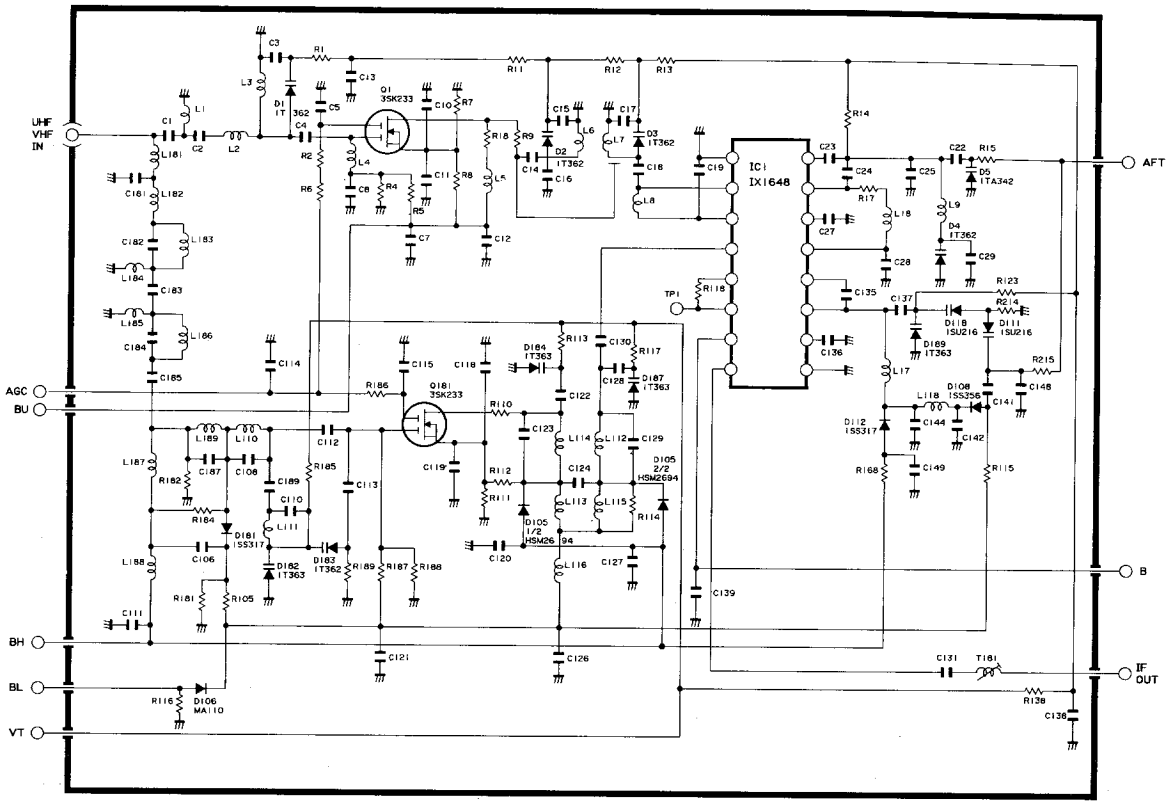


⑲ 520 Vp-p (H)

■ Tuner 调谐器

NOTE: The parts here shown are supplied as an assembly but not independently.
注意：在更换零件订货时，请以一套为最小单位，切勿以单件订货。

⚠ VTUVTSH6SD01/

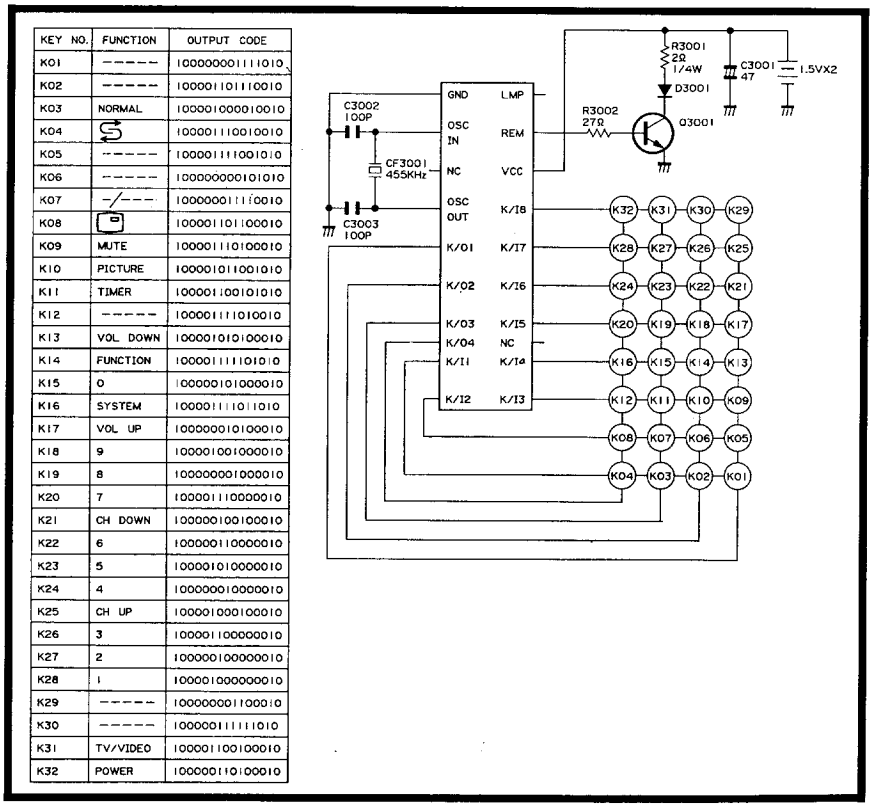


■ Infrared Remote Control Unit 红外线遥控器

NOTE: The parts here shown are supplied as an assembly but not independently.
注意：在更换零件订货时，请以一套为最小单位，切勿以单件订货。

RRMCG1133PESA

KEY NO.	FUNCTION	OUTPUT CODE
K01	------	1000000011111010
K02	------	1000011011110010
K03	NORMAL	1000010000010010
K04	↺	1000011100100010
K05	------	1000011110010010
K06	------	1000000001010010
K07	-/---	1000000111100010
K08	▭	1000011011000010
K09	MUTE	1000011110100010
K10	PICTURE	1000010111001010
K11	TIMER	1000011000101010
K12	------	1000011110100010
K13	VOL DOWN	1000010101000010
K14	FUNCTION	1000011111010010
K15	0	1000001010000010
K16	SYSTEM	1000011111011010
K17	VOL UP	1000000101000010
K18	9	1000010010000010
K19	8	1000000010000010
K20	7	1000011110000010
K21	CH DOWN	1000001001000010
K22	6	1000001110000010
K23	5	1000010100000010
K24	4	1000000100000010
K25	CH UP	1000010001000010
K26	3	1000011000000010
K27	2	1000001000000010
K28	1	1000010000000010
K29	------	1000000011000010
K30	------	1000001111111010
K31	TV/VIDEO	1000011001000010
K32	POWER	1000000110100010



DESCRIPTION OF SCHEMATIC DIAGRAM

SAFETY NOTE:

1. DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACEING PARTS.
2. SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.

IMPORTANT SAFETY NOTICE:

PARTS MARKED WITH "⚠" (▒▒▒▒▒▒) ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

SERVICE PRECAUTION:

THE AREA ENCLOSED BY THIS LINE (▬ ▪ ▬) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE.
WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER
BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

NOTE:

1. The unit of resistance "ohm" is omitted (K = 1000 ohms, M = Megaohm).
2. All resistors are 1/8 watt, unless otherwise noted.
3. All capacitors are μF, unless otherwise noted (P = $\mu\mu$F).

VOLTAGE MEASUREMENT CONDITIONS:

1. Voltages in parenthesis measured with no Signal.
2. Voltages without parenthesis measured with 3mV B & W or Colour-Signal.
3. All the voltages in each point are measured with VTVM.

WAVEFORM MEASUREMENT CONDITIONS:

1. Colour bar generator signal of 1.5 V peak to peak applied at Base of Video Buffer Amp. Q202.
2. Approximately 4.0 V AGC bias.

电路原理图的说明

安全使用注意事项：

1. 在进行部件更换之前，务请拔出电源插头。
2. 本装置工作时，机芯底盘的半导体散热片有触电之虑，务请注意。

安全使用注意要点：

标有"⚠"(▒▒▒▒▒▒)的部件对于电视机安全的维护有至关重要的意义。为了维护本机的安全和使本机能正常工作，必须使用指定品来更换这些部件。

维修注意：

被(▬ - ▬)线围起的地方直接和交流电源电压相连接。当对该处进行维修时，为了排除遭受电击的危险性，要在电视接收机和交流电源之间连接隔离变压器。

电路单位说明：

1. 电阻欧姆(Ω)单位予以略记(K = 千欧姆，M = 兆欧姆)。
2. 除特别说明者外，图中电阻功率均为1/8瓦特。
3. 除特别说明者(P = 微微法拉)外，图中电容单位均为μF (微法拉)。

电压测定条件：

1. 括号中的电压值为无信号状态下所测。
2. 括号外的电压值为3mV黑白或彩色信号状态下所测。
3. 所有测点的电压值均为电子管电压计VTVM所测。

波形测定条件：

1. 施加1.5Vp-p的彩条发生器信号于视频缓冲放大器Q202的基极。
2. 约4.0V自动增益控制偏压。

PARTS LIST

PARTS REPLACEMENT

Replacement parts which have these special safety characteristics identified in this manual: electrical components having such features are identified by "⚠" in the Replacement Parts Lists.
The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION
5. CODE
6. QUANTITY

MARK ★: SPARE PARTS-DELIVERY SECTION.

更换零件表

更换零件

本维修说明书对具有特别安全要求的零件均用标记加以识别：在此更换零件表中，具有特别安全要求的电路元件均用⚠标记以便注意识别。更换零件时，为了用户的安全以及电视机原有的工作性能，务请使用夏普规定零件。否则，可能有导致触电、火灾或其他不测事故发生的可能。

更换零件的订货方法

为了能迅速而确实地接受订货、以及正确无误地按时交货，在订货时请将下列各项明确告知。

1. 型号
2. 参考编号
3. 零件编号
4. 零件名称
5. 代号
6. 数量

附★记号为备用部件的交货部门

Ref. No.	Part No.	★	Description	Code

PICTURE TUBE

MODEL 14H-SC

⚠ V1	VB370BVBK1U-S	R	CRT, 37 cm (14 inch)	BX
⚠ DY1	RCiLH0057PEZZ	R	Deflection Yoke	BB
⚠ L708	RCiLG0023PEZZ	R	Degaussing (ADG) Coil	AN
	PMAGF3006CEZZ	J	Purity Magnet	AK
	PSPAG0004PEZZ	R	Wedge, Rubber, ×3	AB
	LHLDW0003PEKZ	R	ADG Coil Holder, ×4	AB
	MSPRT0001PEFJ	R	CRT Spring	AC

MODEL 20H-SC

⚠ V1	VB48JSK61X/2E	R	CRT, 48 cm (20 inch)	CE
⚠ DY1	RCiLH0022PEZZ	R	Deflection Yoke	BH
⚠ L708	RCiLG0024PEZZ	R	Degaussing (ADG) Coil	AW
	PMAGF3003CEZZ	J	Purity Magnet	AK
	PSPAG0003PEZZ	R	Wedge, Rubber, ×3	AD
	LHLDC0001PEZZ	R	ADG Coil Holder, ×4	AC
	MSPRT0001PEFJ	R	CRT Spring	AC

MODEL 21H-SC

⚠ V1	VB51JFC61X/*P	R	CRT, 51 cm (21 inch)	CK
⚠ DY1	RCiLH1576CEZZ	J	Deflection Yoke	BD
⚠ L708	RCiLG0025PEZZ	R	Degaussing (ADG) Coil	AW
	PMAGF3003CEZZ	J	Purity Magnet	AK
	PSPAG0003PEZZ	R	Wedge, Rubber, ×3	AD
	LHLDW0003PEKZ	R	ADG Coil Holder, ×4	AB
	MSPRT0001PEFJ	R	CRT Spring	AC

—— End of PICTURE TUBE ——

Ref. No.	Part No.	★	Description	Code

PRINTED WIRING BOARD ASSEMBLIES
(*NOT REPLACEMENT ITEM*)

MODEL 14H-SC

PWB-A	DUNTK8696WEV0	–	Main Unit	—
PWB-B	DUNTK6851WEB2	–	CRT Socket Unit	—
PWB-C	DUNTK8697WEV0	–	LED, R/C Receiver Unit	—

MODEL 20H-SC

PWB-A	DUNTK8696WEV2	–	Main Unit	—
PWB-B	DUNTK7001WEF3	–	CRT Socket Unit	—
PWB-C	DUNTK8697WEV2	–	LED, R/C Receiver Unit	—

MODEL 21H-SC

PWB-A	DUNTK8696WEV1	–	Main Unit	—
PWB-B	DUNTK7001WEE8	–	CRT Socket Unit	—
PWB-C	DUNTK8697WEV1	–	LED, R/C Receiver Unit	—

—— End of P. W. B. ASSEMBLIES ——

PWB-A DUNTK8696WEV0/V2/V1
MAIN UNIT

TUNER

NOTE: THE PARTS HERE SHOWN ARE SUPPLIED AS AN ASSEMBLY BUT NOT INDEPENDENTLY.

Ref. No.	Part No.	★	Description	Code
⚠ TU201	VTUVTSH6SD01/	J	Tuner, VHF/UHF	BD

INTEGRATED CIRCUITS

Ref. No.	Part No.	★	Description	Code
IC301	VHiTDA7056/-1	J	Sound Output	AP
IC302	VHiTA7348P/-1	J		AK
IC451	VHiTA7347P/-1	J		AG
IC501	RH-iX0640CEZZ	J	LA7830, Vertical Output	AK
IC602	VHiKA7809Pi-1	J	9V Regulator	AE
⚠ IC751	RH-iX1779CEZZ	J	TEA2261, Power Reg.	AR
IC801	VHiTDA8362/4E	J	Video/Chroma/Jungle IC, PAL/NTSC	BA
IC802	VHITDA4665/-1	J	1H-DL	AR
IC901	VHiTDA8395/-1	J	SECAM	AY
IC1001	RH-iX2590CEZZ	J	TMP87CH36N3112, Micriprocessor	AY
IC1002	RH-iX2467CEN1	J	ST93C46CB1, Memory	AK
IC1003	RH-iX0037CEZZ	J	Zener IC, UPC574J	AF
IC1004	VHiKiA7045P-1	J	Reset IC	AD
IC1005	VHiUPC78L05-4	J	5V Regulator	AD

TRANSISTORS

Ref. No.	Part No.	★	Description	Code
Q201	VS2SC1906//1E	J	2SC1906	AC
Q202	VS2SC945AP/-1	J	2SC945	AB
Q203	VS2SA1015Y/1E	J	2SA1015(Y)	AC
Q210	VS2SA1015Y/1E	J	2SA1015(Y)	AC
Q211	VS2SA1015Y/1E	J	2SA1015(Y)	AC
Q212	VS2SA1015Y/1E	J	2SA1015(Y)	AC
Q302	VS2SC945AP/-1	J	2SC945	AB
Q303	VS2SC945AP/-1	J	2SC945	AB
Q304	VS2SC2236Y/-1	J	2SC2236(Y)	AD
Q307	VS2SC945AP/-1	J	2SC945	AB
Q310	VS2SC945AP/-1	J	2SC945	AB
Q409	VS2SC945AP/-1	J	2SC945	AB
Q452	VS2SC945AP/-1	J	2SC945	AB
Q453	VS2SC945AP/-1	J	2SC945	AB
Q601	VS2SC2271E/-1	J	2SC2271(E)	AD
⚠ Q602	VS2SD1877//1E	J	2SD1877 (14H-SC)	AL
⚠ Q602	VS2SD1554//1E	J	2SD1554 (20H-SC)	AL
⚠ Q602	VS2SD2095//1E	J	2SD2095 (21H-SC)	AN
⚠ Q603	VS2SA1015Y/1E	J	2SA1015(Y)	AC
Q605	VSKRA102M//-1	J	KRA102M	AA
⚠ Q701	VS2SD1884//-1	J	2SD1884	AN
⚠ Q702	VS2SC945AP/-1	J	2SC945	AB
Q801	VS2SA1015Y/1E	J	2SA1015(Y)	AC
Q802	VS2SA1015Y/1E	J	2SA1015(Y)	AC
Q803	VS2SA1015Y/1E	J	2SA1015(Y)	AC
Q804	VS2SC1815GW-1	J	2SC1815(GW)	AB

TRANSISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
Q1001	VS2SC383-WT-1	J	2SC383(WT)	AE
Q1002	VSKRC102M//-1	J	KRC102M	AA
Q1003	VSKRA102M//-1	J	KRA102M	AA
Q1005	VSKRC102M//-1	J	KRC102M	AA
Q1006	VSKRC102M//-1	J	KRC102M	AA
Q1007	VSKRC102M//-1	J	KRC102M (20H-SC, 21H-SC)	AA
Q1008	VSKRC102M//-1	J	KRC102M (20H-SC, 21H-SC)	AA
Q1014	VSKRC102M//-1	J	KRC102M	AA
Q1015	VSKRC102M//-1	J	KRC102M	AA
Q1016	VSKRC102M//-1	J	KRC102M	AA
Q1017	VSKRC102M//-1	J	KRC102M	AA
Q1018	VS2SC1815GW-1	J	2SC1815(GW)	AB
Q1019	VSKRC102M//-1	J	KRC102M	AA
Q2301	VS2SC945AP/-1	J	2SC945	AB
Q2302	VS2SC1815GW-1	J	2SC1815(GW)	AB
Q2303	VS2SC1815GW-1	J	2SC1815(GW)	AB

DIODES

Ref. No.	Part No.	★	Description	Code
D207	RH-EX0288CEZZ	J	Zener Diode, 4.3V	AA
D209	RH-DX0446CEZZ	J		AB
D214	RH-DX0446CEZZ	J		AB
D302	RH-DX0224CEZZ	J		AB
D303	RH-DX0446CEZZ	J		AB
D307	RH-DX0446CEZZ	J		AB
D319	RH-EX0310CEZZ	J	Zener Diode, 8.2V	AA
D320	RH-EX0310CEZZ	J	Zener Diode, 8.2V	AA
D401	RH-DX0446CEZZ	J		AB
D407	RH-DX0446CEZZ	J		AB
D501	RH-DX0279CEZZ	J		AB
D502	RH-DX0127CEZZ	J		AC
D506	VHD1SS119//1E	J	1SS119	AA
D507	RH-DX0446CEZZ	J		AB
D509	RH-DX0446CEZZ	J		AB
D602	RH-EX0310CEZZ	J	Zener Diode, 8.2V	AA
D603	RH-DX0073CEZZ	J		AD
D604	RH-DX0279CEZZ	J		AB
⚠ D606	RH-DX0446CEZZ	J		AB
⚠ D607	RH-EX0340CEZZ	J	Zener Diode, 22V (14H-SC)	AB
⚠ D607	RH-EX0336CEZZ	J	Zener Diode, 22V (20H-SC, 21H-SC)	AA
D610	RH-DX0446CEZZ	J		AB
D611	VHD1SS119//1E	J	1SS119	AA
D612	VHD1SS119//1E	J	1SS119	AA
⚠ D618	RH-DX0446CEZZ	J		AB
D619	RH-DX0279CEZZ	J		AB
D623	RH-EX0310CEZZ	J	Zener Diode, 8.2V	AA
⚠ D701	RH-DX0055TAZZ	J		AD
⚠ D702	RH-DX0055TAZZ	J		AD
⚠ D703	RH-DX0055TAZZ	J		AD
⚠ D704	RH-DX0055TAZZ	J		AD

PWB-A DUNTK8696WEV0/V2/V1
MAIN UNIT (Continued)

DIODES (Continued)

Ref. No.	Part No.	★	Description	Code
⚠ D705	RH-DX0130CEZZ	J		AE
⚠ D706	RH-DX0130CEZZ	J		AE
⚠ D707	RH-DX0164CEZZ	J		AC
⚠ D708	RH-EX0639CEZZ	J	Zener Diode, 3.9V	AB
⚠ D709	RH-DX0302CEZZ	J		AC
⚠ D710	RH-DX0027CEZZ	J		AE
⚠ D712	RH-DX0130CEZZ	J		AE
⚠ D715	RH-EX0323CEZZ	J	Zener Diode, 13V	AB
D732	RH-DX0226CEZZ	J	(14H-SC)	AC
D732	RH-DX0388CEZZ	J	(20H-SC, 21H-SC)	AE
D733	RH-DX0302CEZZ	J		AC
D805	RH-EX0274CEZZ	J	Zener Diode, 2.2V	AA
D807	RH-DX0446CEZZ	J		AB
D808	RH-DX0446CEZZ	J		AB
D809	RH-DX0446CEZZ	J		AB
D810	VHD1SS119//1E	J	1SS119	AA
D812	RH-DX0446CEZZ	J		AB
D1004	RH-DX0446CEZZ	J		AB
D1005	RH-DX0446CEZZ	J		AB
D1024	RH-DX0446CEZZ	J		AB
D1039	RH-DX0446CEZZ	J		AB
D1053	RH-EX0297CEZZ	J	Zener Diode, 5.6V	AA
D1054	RH-DX0446CEZZ	J		AB
D1057	RH-EX0297CEZZ	J	Zener Diode, 5.6V	AA
D1058	RH-DX0446CEZZ	J		AB
D1060	VHD1SS119//1E	J	1SS119	AA
D1061	RH-DX0446CEZZ	J		AB
D2301	RH-DX0446CEZZ	J		AB
D2302	RH-DX0446CEZZ	J		AB
⚠ VA702	RH-VX0033CEZZ	J	Varistor	AD

PACKAGED CIRCUITS

⚠ PR701	RMPTP0028CEZZ	J	Positive Coefficient Thermistor (14H-SC)	AG
⚠ PR701	RMPTP0061CEZZ	J	Positive Coefficient Thermistor (20H-SC, 21H-SC)	AV
X802	RCRSB0008PEZZ	R	Crystal, 4.43 MHz	AH
X803	RCRSB0009PEZZ	R	Crystal, 3.58 MHz	AL

COIL AND TRANSFORMERS

CF451	RFiLC0150CEZZ	J	Ceramic Filter, 5.5/6.0 MHz Trap	AF
CF452	RFiLC0024CEZZ	J	Ceramic Filter, 6.5 MHz Trap	AE
CF1001	RFiLC0121GEZZ	J	Ceramic Filter, 8 MHz	AD
CF2301	RFiLC0268CEZZ	J	Ceramic Filter, 6.0 MHz	AD
CF2302	RFiLC0270CEZZ	J	Ceramic Filter, 5.5 MHz	AD
CF2308	RFiLA0025CEZZ	J	Ceramic Filter, 12 MHz	AF

COIL AND TRANSFORMERS (Continued)

L203	VP-XF1R2K0000	J	Coil, 1.2μH	AB
L212	VP-DF270K0000	J	Coil, 27μH	AB
L218	VP-XFR56K0000	J	Coil, 0.56μH	AB
L451	VP-XF6R8K0000	J	Coil, 6.8μH	AB
L452	VP-XF150K0000	J	Coil, 15μH	AB
L601	RCiLZ0004PEZZ	R	Coil (14H-SC)	AN
L601	RCiLZ0499CEZZ	J	Coil (20H-SC)	AH
L601	RCiLZ0007PEZZ	R	Coil (21H-SC)	AK
L602	RCiLP0088CEZZ	J	Coil	AG
L609	VP-CF1R5M0000	J	Coil, 1.5μH (14H-SC, 20H-SC)	AB
L609	VP-CF1R0M0000	J	Coil, 1μH (21H-SC)	AB
L632	RCiLP0050CEZZ	J	Coil	AE
⚠ L701	RCiLF0073CEZZ	J	Line Filter (14H-SC)	AG
⚠ L701	RCiLF0007PEZZ	R	Line Filter (20H-SC, 21H-SC)	AL
⚠ L702	RCiLF0087CEZZ	J	Line Filter (14H-SC)	AL
⚠ L702	RCiLF0154CEZZ	J	Line Filter (20H-SC, 21H-SC)	AQ
⚠ L705	VP-CF3R3K0000	J	Coil, 3.3μH	AB
⚠ L712	VP-CF330K0000	J	Coil, 10μH (14H-SC)	AB
⚠ L712	VP-CF100K0000	J	Coil, 10μH (20H-SC, 21H-SC)	AB
L901	VP-XF8R2K0000	J	Coil, 8.2μH	AB
L1005	VP-DF120K0000	J	Coil, 12μH	AB
L2304	VP-XF120K0000	J	Coil, 12μH	AB
L2305	VP-XF150K0000	J	Coil, 15μH	AB
L2306	VP-XF120K0000	J	Coil, 12μH	AB
L2307	VP-XF3R3K0000	J	Coil, 3.3μH	AB
L2308	VP-XF2R2K0000	J	Coil, 2.2μH	AB
SF201	RFiLC0308CEZZ	J	Surface Acoustic Wave Filter	AM
T203	RCiLi0550CEZZ	J	PIF Coil	AD
T205	RCiLD0228CEZZ	J	P-DET/AFT Coil	AE
⚠ T601	RTRNZ0179CEZZ	J	Horizontal Drive Trans. (14H-SC)	AE
⚠ T601	RTRNZ0026PEZZ	R	Horizontal Drive Trans. (20H-SC, 21H-SC)	AH
⚠ T602	RTRNF0063PEZZ	R	Flyback Trans. (FBT) (14H-SC)	BE
⚠ T602	RTRNF0069PEZZ	R	Flyback Trans. (FBT) (20H-SC, 21H-SC)	BF
⚠ T701	RTRNZ0083PEZZ	R	Power Regulator Trans.	AU
T1001	RCiLB0009PEZZ	R	Oscillation Coil, Sign Position Adjust	AF

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MAIN UNIT (Continued)

CONTROLS

Ref. No.	Part No.	★	Description	Code
R248	RVR-M4626GEZZ	J	10k(B) RF-AGC	AB
R420	RVR-M4626GEZZ	J	10k(B) Sub-Contrast	AB
R509	RVR-M4616GEZZ	J	220(B) Vertical Size	AB
R514	RVR-M4624GEZZ	J	4.7k(B) Vertical Linearity (20H-SC, 21H-SC)	AB
R613	RVR-M4626GEZZ	J	10k(B) Horiz. Center	AB
⚠ R711	RVR-M4324CEZZ	J	220(B) 115V Adjust	AC

CAPACITORS

Ref. No.	Part No.	★	Description	Code
C201	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C202	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C203	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C205	VCFYFA1HA474J	J	0.47 50V M. Polyester	AC
C206	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C208	VCEAGA1AW477M	J	470 10V Electrolytic	AC
C209	VCEAGA1HW105M	J	1 50V Electrolytic	AC
C213	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C220	VCSATA1VE225K	J	2.2 35V Tantalum	AC
C225	VCEAGA1HW105M	J	1 50V Electrolytic	AC
C226	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C231	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C232	VCEAGA1AW107M	J	100 10V Electrolytic	AB
C233	VCEAGA1HW106M	J	10 50V Electrolytic	AC
C239	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C240	VCEAGA1AW477M	J	470 10V Electrolytic	AC
C242	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C244	VCCCMN1HH8R2K	J	8.2p 50V Ceramic	AA
C249	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C250	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C259	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C269	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C300	VCEAGA1HW106M	J	10 50V Electrolytic	AC
C303	VCEAGA1HW105M	J	1 50V Electrolytic (14H-SC, 21H-SC)	AC
C303	VCEAGA1HW475M	J	4.7 50V Electrolytic (20H-SC)	AB
C304	VCEAGA1HW225M	J	2.2 50V Electrolytic	AB
C307	VCEAGA1HW105M	J	1 50V Electrolytic	AC
C309	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C311	VCKYPA2HB102K	J	1000p 500V Ceramic	AA
C312	VCEAGA1CW477M	J	470 16V Electrolytic	AC
C313	VCEAGA1HW104M	J	0.1 50V Electrolytic	AA
C314	VCQYTA1HM272K	J	2700p 50V Mylar	AA
C315	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C319	VCKYD41HB102K	J	1000p 50V Ceramic	AA
C326	VCEAGA1HW225M	J	2.2 50V Electrolytic (14H-SC, 21H-SC)	AB
C326	VCEAGA1HW106M	J	10 50V Electrolytic (20H-SC)	AC
C327	VCQYTA1HM103K	J	0.01 50V Mylar (14H-SC, 21H-SC)	AB
C327	VCQYTA1HM223K	J	0.022 50V Mylar (20H-SC)	AB
C328	VCEAGA1CW477M	J	470 16V Electrolytic	AC
C329	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C335	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C338	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C380	VCEAGA1HW106M	J	10 50V Electrolytic	AC
C382	VCEAGA1HW106M	J	10 50V Electrolytic	AC
C383	VCEAGA1HW106M	J	10 50V Electrolytic	AC
C384	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C385	VCEAGA1AW107M	J	100 10V Electrolytic (14H-SC, 20H-SC))	AB
C385	VCEAGA1HW106M	J	10 50V Electrolytic (21H-SC)	AC
C386	VCEAGA1HW334M	J	0.33 50V Electrolytic	AA
C387	VCEAGA1HW106M	J	10 50V Electrolytic	AC
C388	VCEAGA1HW106M	J	10 50V Electrolytic	AC
C404	VCQYTA1HM473K	J	0.047 50V Mylar	AB
C406	VCQYTA1HM473K	J	0.047 50V Mylar	AB
C407	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C442	VCEAGA1AW107M	J	100 10V Electrolytic	AB
C443	VCEAGA1CW476M	J	47 16V Electrolytic	AB
C451	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C455	VCEAGA1CW476M	J	47 16V Electrolytic	AB
C456	VCEAGA1HW106M	J	10 50V Electrolytic	AC
C457	VCEAGA1HW106M	J	10 50V Electrolytic	AC
C460	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C461	VCEAGA1CW477M	J	470 16V Electrolytic	AC
C463	VCEAGA1CW476M	J	47 16V Electrolytic	AB
C466	VCEAGA1HW106M	J	10 50V Electrolytic	AC
C502	VCKYPA1HB471K	J	470p 50V Ceramic	AA
C503	VCQYTA1HM272K	J	2700p 50V Mylar	AA
C504	VCKYMN1HB102K	J	1000p 50V Ceramic	AA
C505	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C506	VCEAGA1EW108M	J	1000 25V Electrolytic	AD
C507	VCEAGA1EW227M	J	220 25V Electrolytic	AC
C508	VCSATA1VE225K	J	2.2 35V Tantalum	AC
C509	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C510	VCEAGA1VW477M	J	470 35V Electrolytic	AD
C511	VCKYPA2HB102K	J	1000p 500V Ceramic	AA
C512	VCEAGA1HW105M	J	1 50V Electrolytic	AC
C514	VCSATA1VE104K	J	0.1 35V Tantalum	AC
C515	VCKYMN1CX472M	J	4700p 16V Ceramic	AA
C601	VCFYFA1HA334J	J	0.33 50V M. Polyester	AB
C602	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C606	VCQYTA1HM222K	J	2200p 50V Mylar	AA
C610	VCFYSB2EB823J	J	0.082 250V M. Polyester	AD
C611	VCKYPA2HB102K	J	1000p 500V Ceramic	AA
C612	RC-KZ0337CEZZ	J	470p 2kV Ceramic (14H-SC)	AD
C612	VCKYPH3DB561K	J	560p 2kV Ceramic (20H-SC)	AC
C612	RC-KZ0040CEZZ	J	820p 2kV Ceramic (21H-SC)	AD

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MAIN UNIT (Continued)

CAPACITORS (Continued)

Ref. No.	Part No.	★	Description	Code
C613	VCFPPD2DB434J	J	0.43 200V M. Polyester (14H-SC)	AF
C613	VCFPPD2DB474J	J	0.47 200V M. Polyester (20H-SC)	AE
C613	VCFPPD2DB564J	J	0.56 200V M. Polyester (21H-SC)	AF
C614	VCQPSC2DA104J	J	0.1 200V Polypro Film (20H-SC, 21H-SC)	AC
C615	VCQPSD2DA224J	J	0.22 200V Polypro Film (14H-SC, 21H-SC)	AD
C615	VCFPPD2DB474J	J	0.47 200V M. Polyester (20H-SC)	AE
C616	VCFPPD3CA682H	J	6800p 1.6kV M. Polyester (14H-SC)	AE
C616	VCFPPD3CA103J	J	0.01 1.6kV M. Polyester (20H-SC, 21H-SC)	AF
C617	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C619	VCEAGA2AW106M	J	10 100V ELectrolytic	AC
⚠ C620	VCEAGA1HW105M	J	1 50V Electrolytic	AC
⚠ C621	VCEAGA0JW337M	J	330 6.3V Electrolytic	AB
⚠ C622	VCEAGA1HW105M	J	1 50V Electrolytic	AC
C628	VCKYPA2HB221K	J	220p 500V Ceramic	AA
⚠ C630	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C636	VCEAGA1CW476M	J	47 16V Electrolytic	AB
C639	VCKYD41HB391K	J	390p 50V Ceramic	AA
C648	VCEAGA1AW107M	J	100 10V Electrolytic	AB
C649	VCKYMN1CX472M	J	4700p 16V Ceramic	AA
C650	VCEAGA1HW105M	J	1 50V Electrolytic	AC
C662	VCEAGA1HW226M	J	22 50V Electrolytic (14H-SC)	AB
C662	VCEAGA1HW106M	J	10 50V Electrolytic (20H-SC, 21H-SC)	AC
⚠ C701	RC-FZ016SGEZZ	J	0.47 AC250V Special (14H-SC)	AK
⚠ C701	RC-FZ008SGEZZ	J	0.47 AC250V Special (20H-SC, 21H-SC)	AD
⚠ C703	RC-KZ0029CEZZ	J	0.01 AC250V Ceramic	AC
⚠ C704	RC-KZ0029CEZZ	J	0.01 AC250V Ceramic	AC
⚠ C705	RC-KZ0029CEZZ	J	0.01 AC250V Ceramic	AC
⚠ C706	RC-KZ0029CEZZ	J	0.01 AC250V Ceramic	AC
⚠ C707	RC-EZ0521CEZZ	J	330 400V Electrolytic	AV
⚠ C708	RC-KZ0029CEZZ	J	0.01 AC250V Ceramic	AC
⚠ C709	VCEAGA1EW107M	J	100 25V Electrolytic	AD
⚠ C710	VCKYPA2HB102K	J	1000p 500V Ceramic	AA
⚠ C711	RC-QZA471TAYJ	J	470p Mylar	AB
⚠ C712	VCFYHA1HA474J	J	0.47 50V M. Polyester (14H-SC)	AC
⚠ C712	VCFYHA1HA684J	J	0.68 50V M. Polyester (20H-SC, 21H-SC)	AD
⚠ C713	VCKYPA2HB102K	J	1000p 500V Ceramic	AA
⚠ C714	VCQYTA1HM563K	J	0.056 50V Mylar	AB
⚠ C715	VCEAGA1HW335M	J	3.3 50V Electrolytic (14H-SC)	AB
⚠ C715	VCEAGA1HW105M	J	1 50V Electrolytic (20H-SC, 21H-SC)	AC
⚠ C716	VCEAGA1HW105M	J	1 50V Electrolytic	AC
⚠ C717	VCQPSC2JA333K	J	0.033 630V Polypro Film	AB
⚠ C718	VCKYPH3DB561K	J	560p 2kV Ceramic	AC
⚠ C719	VCQYTA1HM273K	J	0.027 50V Mylar	AB
⚠ C720	VCEAGA1JW476M	J	47 63V Electrolytic	AB
⚠ C721	RC-KZ0341CEZZ	J	1000p 2kV Ceramic	AD
⚠ C723	VCKYPA2HB102K	J	1000p 500V Ceramic	AA
⚠ C724	RC-KZ0029CEZZ	J	0.01 AC250V Ceramic	AC
⚠ C725	VCFYFA1HA474J	J	0.47 50V M. Polyester	AC
⚠ C726	VCKYPA1HB681K	J	680p 50V Ceramic	AA
⚠ C729	VCEAGA1CW477M	J	470 16V Electrolytic	AC
C731	VCEAGW2CW227M	J	220 160V Electrolytic	AK
C732	RC-KZ0341CEZZ	J	1000p 2kV Ceramic	AD
C733	VCKYPA2HB102K	J	1000p 500V Ceramic	AA
C734	VCEAGA1CW477M	J	470 16V Electrolytic	AC
⚠ C736	RC-KZ0029CEZZ	J	0.01 AC250V Ceramic	AC
C737	VCEAGH2CW107M	J	100 160V Electrolytic	AE
⚠ C741	VCKYPA2HB472K	J	4700p 500V Ceramic	AB
⚠ C742	VCFYFA1HA474J	J	0.47 50V M. Polyester (14H-SC)	AC
⚠ C742	VCFYFA1HA394J	J	0.39 50V M. Polyester (20H-SC, 21H-SC)	AC
⚠ C747	RC-KZ0265CEZZ	J	1500p 4kV Ceramic	AE
C811	VCQYTA1HM103K	J	0.01 50V Mylar	AB
C812	VCQYTA1HM103K	J	0.01 50V Mylar	AB
C813	VCQYTA1HM103K	J	0.01 50V Mylar	AB
C815	VCEAGA1HW475M	J	4.7 50V Electrolytic	AB
C817	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C818	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C819	VCCCMN1HH180J	J	18p 50V Ceramic	AA
C820	VCCCMN1HH180J	J	18p 50V Ceramic	AA
C821	VCKYMN1CX472M	J	4700p 16V Ceramic	AA
C822	VCEAGA1HW104M	J	0.1 50V Electrolytic	AA
C823	VCEAGA1CW476M	J	47 16V Electrolytic	AB
C825	VCKYPA1HB102K	J	1000p 50V Ceramic	AA
C826	VCKYPA1HB102K	J	1000p 50V Ceramic	AA
C827	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C840	VCEAGA1AW226M	J	22 10V Electrolytic	AA
C885	VCEAGA1EW107M	J	100 25V Electrolytic	AD
C900	VCCSMN1HL330J	J	33p 50V Ceramic	AA
C901	VCKYMN1CY103N	J	0.01 16V Ceramic	AA
C903	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C904	VCFYFA1HA224J	J	0.22 50V M. Polyester	AB
C909	VCCCPA1HH470J	J	47p 50V Ceramic	AA
C1001	VCEAGA1HW475M	J	4.7 50V Electrolytic	AB
C1002	VCEAGA1HW475M	J	4.7 50V Electrolytic	AB
C1003	VCEAGA1HW475M	J	4.7 50V Electrolytic	AB
C1004	VCEAGA1CW106M	J	10 16V Electrolytic	AA
C1007	VCQYTA1HM104K	J	0.1 50V Mylar	AC
C1008	VCQYTA1HM104K	J	0.1 50V Mylar	AC

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MAIN UNIT (Continued)

CAPACITORS (Continued)

Ref. No.	Part No.	★	Description			Code
C1009	VCKYMN1HB221K	J	220p	50V	Ceramic	AA
C1011	VCKYMN1HB101K	J	100p	50V	Ceramic	AA
C1013	VCEAGA1HW106M	J	10	50V	Electrolytic	AC
C1014	VCKYMN1HB151K	J	150p	50V	Ceramic	AA
C1015	VCEAGA1HW475M	J	4.7	50V	Electrolytic	AB
C1017	VCQYTA1HM104K	J	0.1	50V	Mylar	AC
C1022	VCEAGA1EW475M	J	4.7	25V	Electrolytic	AA
C1023	VCKYMN1HB151K	J	150p	50V	Ceramic	AA
C1024	VCKYMN1HB151K	J	150p	50V	Ceramic	AA
C1025	VCKYMN1HB151K	J	150p	50V	Ceramic	AA
C1026	VCKYMN1HB471K	J	470p	50V	Ceramic	AA
C1028	VCQYTA1HM103K	J	0.01	50V	Mylar	AB
C1030	VCKYMN1HB221K	J	220p	50V	Ceramic	AA
C1033	VCKYMN1HB221K	J	220p	50V	Ceramic	AA
C1038	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C1044	VCKYMN1HB221K	J	220p	50V	Ceramic	AA
C1045	VCKYMN1HB221K	J	220p	50V	Ceramic	AA
C1046	VCKYMN1HB221K	J	220p	50V	Ceramic	AA
C1047	VCKYMN1HB221K	J	220p	50V	Ceramic	AA
C1048	VCEAGA1HW475M	J	4.7	50V	Electrolytic	AB
C1049	VCEAGA1HW475M	J	4.7	50V	Electrolytic	AB
C1052	VCEAGA1AW107M	J	100	10V	Electrolytic	AB
C1060	VCKYMN1HB221K	J	220p	50V	Ceramic	AA
C1062	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C1063	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C1064	VCEAGA1HW335M	J	3.3	50V	Electrolytic	AB
C1065	VCQYTA1HM103K	J	0.01	50V	Mylar	AB
C1066	VCCSMN1HL330J	J	33p	50V	Ceramic	AA
C1068	VCQYTA1HM103K	J	0.01	50V	Mylar	AB
C2301	VCKYMN1HB101K	J	100p	50V	Ceramic	AA
C2316	VCKYMN1HB101K	J	100p	50V	Ceramic	AA
C2317	VCKYMN1HB101K	J	100p	50V	Ceramic	AA
C2320	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C2321	VCKYMN1HB102K	J	1000p	50V	Ceramic	AA
C2322	VCCCPA1HH101J	J	100p	50V	Ceramic	AA
C2323	VCCCPA1HH101J	J	100p	50V	Ceramic	AA
C2324	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C2325	VCCCPA1HH220J	J	22p	50V	Ceramic	AA
C2326	VCKYMN1HB331K	J	330p	50V	Ceramic	AA
C2327	VCCCPA1HH820J	J	82p	50V	Ceramic	AA
C2328	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C2329	VCKYMN1CY103N	J	0.01	16V	Ceramic	AA
C2330	VCCCPA1HH101J	J	100p	50V	Ceramic	AA
C2331	VCCCPA1HH390J	J	39p	50V	Ceramic	AA

RESISTORS

Ref. No.	Part No.	★	Description			Code
R202	VRD-MN2BE682J	J	6.8k	1/8W	Carbon	AA
R203	VRD-MN2BE472J	J	4.7k	1/8W	Carbon	AA
R204	VRD-MN2BE220J	J	22	1/8W	Carbon	AA
R205	VRD-MN2BE151J	J	150	1/8W	Carbon	AA
R206	VRD-MN2BE471J	J	470	1/8W	Carbon	AA
R207	VRD-RA2EE221J	J	220	1/4W	Carbon	AA
R208	VRD-MN2BE102J	J	1k	1/8W	Carbon	AA
R209	VRD-MN2BE151J	J	150	1/8W	Carbon	AA
R211	VRD-MN2BE561J	J	560	1/8W	Carbon	AA
R214	VRD-MN2BE470J	J	47	1/8W	Carbon	AA
R215	VRD-MN2BE682J	J	6.8k	1/8W	Carbon	AA
R217	VRD-MN2BE822J	J	8.2k	1/8W	Carbon	AA
R223	VRD-MN2BE102J	J	1k	1/8W	Carbon	AA
R225	VRD-MN2BE223J	J	22k	1/8W	Carbon	AA
R232	VRD-RA2EE681J	J	680	1/4W	Carbon	AA
R233	VRD-RA2EE125J	J	1.2M	1/4W	Carbon	AA
R236	VRD-MN2BE472J	J	4.7k	1/8W	Carbon	AA
R237	VRD-MN2BE472J	J	4.7k	1/8W	Carbon	AA
R238	VRD-MN2BE472J	J	4.7k	1/8W	Carbon	AA
R240	VRD-MN2BE184J	J	180k	1/8W	Carbon	AA
R241	VRD-MN2BE824J	J	820k	1/8W	Carbon	AA
R244	VRD-MN2BE274J	J	270k	1/8W	Carbon	AA
R247	VRD-MN2BE123J	J	12k	1/8W	Carbon	AA
R248	*See Controls*					
R254	VRD-MN2BE333J	J	33k	1/8W	Carbon	AA
R255	VRD-MN2BE473J	J	47k	1/8W	Carbon	AA
R256	VRD-MN2BE104J	J	100k	1/8W	Carbon	AA
R261	VRD-MN2BE473J	J	47k	1/8W	Carbon	AA
R263	VRD-MN2BE681J	J	680	1/8W	Carbon	AA
R301	VRD-MN2BE102J	J	1k	1/8W	Carbon	AA
R315	VRD-MN2BE682J	J	6.8k	1/8W	Carbon	AA
R316	VRD-MN2BE103J	J	10k	1/8W	Carbon	AA
R317	VRD-MN2BE682J	J	6.8k	1/8W	Carbon	AA
R320	VRD-MN2BE332J	J	3.3k	1/8W	Carbon	AA
R321	VRD-MN2BE333J	J	33k	1/8W	Carbon	AA
R323	VRD-RM2HD102J	J	1k	1/2W	Carbon	AA
R336	VRD-MN2BE102J	J	1k	1/8W	Carbon	AA
R337	VRD-RA2BE123J	J	12k	1/8W	Carbon	AA
R340	VRD-MN2BE103J	J	10k	1/8W	Carbon	AA
R341	VRD-MN2BE392J	J	3.9k	1/8W	Carbon	AA
R345	VRD-MN2BE273J	J	27k	1/8W	Carbon	AA
R348	VRD-MN2BE124J	J	120k	1/8W	Carbon	AA
R349	VRD-MN2BE821J	J	820	1/8W	Carbon	AA
R351	VRD-MN2BE124J	J	120k	1/8W	Carbon	AA
R352	VRD-MN2BE392J	J	3.9k	1/8W	Carbon	AA
R353	VRD-MN2BE821J	J	820	1/8W	Carbon	AA
R354	VRD-MN2BE273J	J	27k	1/8W	Carbon	AA
R355	VRD-RA2BE561J	J	560	1/8W	Carbon	AA
R356	VRD-MN2BE104J	J	100k	1/8W	Carbon	AA
R401	VRD-RA2EE820J	J	82	1/4W	Carbon	AA
R410	VRD-MN2BE183J	J	18k	1/8W	Carbon	AA
R411	VRD-RA2BE223J	J	22k	1/8W	Carbon	AA
R412	VRD-MN2BE333J	J	33k	1/8W	Carbon	AA
R414	VRD-RA2BE223J	J	22k	1/8W	Carbon	AA

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MAIN UNIT (Continued)

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
R420	*See Controls*			
R422	VRD-MN2BE823J	J	82k 1/8W Carbon	AA
R437	VRD-MN2BE473J	J	47k 1/8W Carbon	AA
R444	VRD-MN2BE221J	J	220 1/8W Carbon	AA
R447	VRD-MN2BE221J	J	220 1/8W Carbon	AA
R453	VRD-RA2EE181J	J	180 1/4W Carbon	AA
R456	VRD-MN2BE680J	J	68 1/8W Carbon	AA
R458	VRD-MN2BE100J	J	10 1/8W Carbon	AA
R459	VRD-MN2BE101J	J	100 1/8W Carbon	AA
R460	VRD-MN2BE104J	J	100k 1/8W Carbon	AA
R463	VRD-MN2BE181J	J	180 1/8W Carbon	AA
R465	VRD-MN2BE101J	J	100 1/8W Carbon	AA
R467	VRD-MN2BE221J	J	220 1/8W Carbon	AA
R468	VRD-MN2BE152J	J	1.5k 1/8W Carbon	AA
R481	VRD-MN2BE561J	J	560 1/8W Carbon	AA
R482	VRD-MN2BE471J	J	470 1/8W Carbon	AA
R483	VRD-MN2BE222J	J	2.2k 1/8W Carbon	AA
R484	VRD-MN2BE472J	J	4.7k 1/8W Carbon	AA
R485	VRD-MN2BE122J	J	1.2k 1/8W Carbon	AA
R486	VRD-MN2BE100J	J	10 1/8W Carbon	AA
R487	VRD-MN2BE680J	J	68 1/8W Carbon	AA
R504	VRD-MN2BE221J	J	220 1/8W Carbon	AA
R505	VRD-MN2BE223J	J	22k 1/8W Carbon (14H-SC)	AA
R505	VRD-MN2BE273J	J	27k 1/8W Carbon (20H-SC)	AA
R505	VRD-MN2BE393J	J	39k 1/8W Carbon (21H-SC)	AA
R506	VRD-MN2BE332J	J	3.3k 1/8W Carbon	AA
R508	VRD-MN2BE123J	J	12k 1/8W Carbon	AA
R509	*See Controls*			
R510	VRD-RM2HD1R8J	J	1.8 1/2W Carbon	AA
R511	VRD-MN2BE822J	J	8.2k 1/8W Carbon (14H-SC, 20H-SC)	AA
R511	VRD-MN2BE103J	J	10k 1/8W Carbon (21H-SC)	AA
R513	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R514	*See Controls*			
⚠ R515	RR-XZ0035TAZZ	J	22 1/4W Fuse Resistor	AB
R516	VRD-RM2HD331J	J	330 1/2W Carbon	AA
R517	VRD-RM2HD222J	J	2.2k 1/2W Carbon (20H-SC, 21H-SC)	AA
R519	VRD-MN2BE681J	J	680 1/8W Carbon (14H-SC)	AA
R520	VRD-RA2EE225J	J	2.2M 1/4W Carbon (14H-SC)	AA
R520	VRD-RA2EE275J	J	2.7M 1/4W Carbon (20H-SC, 21H-SC)	AA
⚠ R521	RR-XZ0029CEZZ	J	3.3 1/2W Fuse Resistor	AB
R525	VRD-MN2BE272J	J	2.7k 1/8W Carbon (14H-SC)	AA
R525	VRD-MN2BE392J	J	3.9k 1/8W Carbon (20H-SC, 21H-SC)	AA
R526	VRD-MN2BE272J	J	2.7k 1/8W Carbon (14H-SC)	AA
R526	VRD-MN2BE332J	J	3.3k 1/8W Carbon (20H-SC, 21H-SC)	AA
R527	VRD-RA2EE155J	J	1.5M 1/4W Carbon (14H-SC)	AA
R527	VRD-RA2EE105J	J	1M 1/4W Carbon (20H-SC, 21H-SC)	AA
R531	VRD-RM2HD182J	J	1.8k 1/2W Carbon (20H-SC, 21H-SC)	AA
R552	VRD-RA2EE122J	J	1.2k 1/4W Carbon (20H-SC, 21H-SC)	AA
R601	VRD-RM2HD5R6J	J	5.6 1/2W Carbon	AA
R608	VRD-RM2HD392J	J	3.9k 1/2W Carbon (14H-SC)	AA
R608	VRD-RM2HD472J	J	4.7k 1/2W Carbon (20H-SC, 21H-SC)	AA
R609	VRS-SV3LB472J	J	4.7k 3W Metal Oxide (14H-SC)	AC
R609	VRS-SV3LB392J	J	3.9k 3W Metal Oxide (20H-SC, 21H-SC)	AC
R611	VRW-KQ3NC100J	J	10 7W Cement (14H-SC)	AE
R611	VRW-KQ4AC120J	J	12 10W Cement (20H-SC, 21H-SC)	AE
⚠ R612	RR-XZ0073CEZZ	J	270 1/4W Fuse Resistor (14H-SC)	AB
⚠ R612	RR-XZ0020CEZZ	J	39 1/4W Fuse Resistor (20H-SC, 21H-SC)	AB
R613	*See Controls*			
R614	VRD-RA2BE684J	J	680k 1/8W Carbon	AA
R616	VRD-MN2BE104J	J	100k 1/8W Carbon (14H-SC)	AA
R616	VRD-MN2BE154J	J	150k 1/8W Carbon (20H-SC, 21H-SC)	AA
R617	VRD-RM2HD390J	J	39 1/2W Carbon (20H-SC, 21H-SC)	AA
R618	VRD-RM2HD102J	J	1k 1/2W Carbon	AA
R619	VRD-MN2BE183J	J	18k 1/8W Carbon	AA
⚠ R620	RR-XZ0035TAZZ	J	22 1/4W Fuse Resistor (14H-SC)	AB
⚠ R620	RR-XZ0084CEZZ	J	1 1/4W Fuse Resistor (20H-SC)	AB
R621	VRN-RV3AB1R2J	J	1.2 1W Metal Film (14H-SC)	AB
R621	VRN-RV3DB1R8J	J	1.8 2W Metal Film (20H-SC, 21H-SC)	AB
R622	VRD-RM2HD223J	J	22k 1/2W Carbon	AA
⚠ R623	VRD-RA2EE125J	J	1.2M 1/4W Carbon	AA
⚠ R624	VRD-RA2BE274J	J	270k 1/8W Carbon	AA
R627	VRD-RA2BE181J	J	180 1/8W Carbon	AA
⚠ R628	VRD-MN2BE183J	J	18k 1/8W Carbon	AA

PWB-A DUNTK8696WEV0/V2/V1
MAIN UNIT (Continued)

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
⚠ R629	VRD-MN2BE123J	J	12k 1/8W Carbon	AA
⚠ R630	VRD-MN2BE123J	J	12k 1/8W Carbon	AA
R634	VRD-RM2HD680J	J	68 1/2W Carbon (14H-SC)	AA
R634	VRD-RM2HD101J	J	100 1/2W Carbon (20H-SC, 21H-SC)	AA
⚠ R635	VRD-MN2BE154J	J	150k 1/8W Carbon (14H-SC)	AA
⚠ R635	VRD-MN2BE823J	J	82k 1/8W Carbon (20H-SC, 21H-SC)	AA
R640	VRD-RM2HD682J	J	6.8k 1/2W Carbon	AA
R641	VRD-MN2BE273J	J	27k 1/8W Carbon	AA
R642	VRD-RM2HD222J	J	2.2k 1/2W Carbon	AA
R648	VRD-RM2HD1R8J	J	1.8 1/2W Carbon	AA
⚠ R649	VRD-MN2BE472J	J	4.7k 1/8W Carbon	AA
R650	VRD-RA2BE332J	J	3.3k 1/8W Carbon (14H-SC)	AA
R650	VRD-RA2BE222J	J	2.2k 1/8W Carbon (20H-SC, 21H-SC)	AA
R653	VRD-RA2BE101J	J	100 1/8W Carbon (14H-SC)	AA
R653	VRD-RA2BE390J	J	39 1/8W Carbon (20H-SC, 21H-SC)	AA
R654	VRD-MN2BE153J	J	15k 1/8W Carbon	AA
R659	VRD-MN2BE391J	J	390 1/8W Carbon (14H-SC)	AA
R659	VRD-MN2BE151J	J	150 1/8W Carbon (20H-SC, 21H-SC)	AA
R671	VRD-MN2BE332J	J	3.3k 1/8W Carbon	AA
R674	VRC-MA2HG562K	J	5.6k 1/2W Solid	AA
R682	VRD-MN2BE122J	J	1.2k 1/8W Carbon (20H-SC, 21H-SC)	AA
R683	VRD-MN2BE122J	J	1.2k 1/8W Carbon (20H-SC, 21H-SC)	AA
⚠ R701	VRW-KQ3HC1R5J	J	1.5 5W Cement	AE
⚠ R702	VRW-KQ4AC2R7K	J	2.7 10W Cement	AE
⚠ R703	VRS-SV3LB562J	J	5.6k 3W Metal Oxide	AB
⚠ R704	VRS-SV3DB150J	J	15 2W Metal Oxide (14H-SC)	AA
⚠ R704	VRN-RV3DB4R7J	J	4.7 2W Metal Film (20H-SC, 21H-SC)	AB
⚠ R705	VRN-VV3AB2R2J	J	2.2 1W Metal Film (14H-SC)	AA
⚠ R705	VRN-VV3AB3R3J	J	3.3 1W Metal Film (20H-SC, 21H-SC)	AA
⚠ R706	VRD-MN2BE184J	J	180k 1/8W Carbon (14H-SC)	AA
⚠ R706	VRD-MN2BE224J	J	220k 1/8W Carbon (20H-SC, 21H-SC)	AA
⚠ R707	VRD-RA2BE390J	J	39 1/8W Carbon (14H-SC)	AA
⚠ R707	VRD-RA2BE270J	J	27 1/8W Carbon (20H-SC, 21H-SC)	AA
⚠ R708	VRS-SV3LB124J	J	120k 3W Metal Oxide	AC
⚠ R709	VRS-SV3LB562J	J	5.6k 3W Metal Oxide	AB
⚠ R710	VRD-MN2BE392J	J	3.9k 1/8W Carbon	AA
⚠ R711	*See Controls*			
⚠ R712	VRD-MN2BE821J	J	820 1/8W Carbon	AA
⚠ R713	VRD-RA2EE225J	J	2.2M 1/4W Carbon	AA
⚠ R714	VRD-MN2BE394J	J	390k 1/8W Carbon (14H-SC)	AA
⚠ R714	VRD-MN2BE474J	J	470k 1/8W Carbon (20H-SC, 21H-SC)	AA
⚠ R715	VRD-MN2BE103J	J	10k 1/8W Carbon	AA
⚠ R716	VRD-RA2BE180J	J	18 1/8W Carbon	AA
⚠ R717	VRD-MN2BE101J	J	100 1/8W Carbon	AA
⚠ R718	VRN-VV3ABR22J	J	0.22 1W Metal Film	AA
⚠ R719	VRC-UA2HG825K	J	8.2M 1/2W Solid	AA
⚠ R720	VRC-UA2HG825K	J	8.2M 1/2W Solid	AA
⚠ R721	VRD-RM2HD1R0J	J	1 1/2W Carbon	AA
⚠ R722	VRN-SV2HBR27J	J	0.27 1/2W Metal Film	AA
⚠ R723	VRS-SV3LB272J	J	2.7k 3W Metal Oxide	AD
⚠ R724	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
⚠ R731	RR-XZ0016CEZZ	J	1 1/2W Fuse Resistor	AB
⚠ R735	VRD-RM2HD184J	J	180k 1/2W Carbon	AA
⚠ R736	VRD-RM2HD184J	J	180k 1/2W Carbon	AA
R809	VRD-MN2BE101J	J	100 1/8W Carbon	AA
R811	VRD-MN2BE101J	J	100 1/8W Carbon	AA
R812	VRD-MN2BE101J	J	100 1/8W Carbon	AA
R816	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R817	VRD-MN2BE391J	J	390 1/8W Carbon	AA
R818	VRD-MN2BE391J	J	390 1/8W Carbon	AA
R819	VRD-MN2BE391J	J	390 1/8W Carbon	AA
R825	VRD-MN2BE103J	J	10k 1/8W Carbon	AA
R828	VRD-MN2BE184J	J	180k 1/8W Carbon	AA
R829	VRD-MN2BE104J	J	100k 1/8W Carbon	AA
R832	VRD-RA2EE271J	J	270 1/4W Carbon	AA
R833	VRD-MN2BE223J	J	22k 1/8W Carbon	AA
R837	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R838	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R839	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R840	VRD-MN2BE821J	J	820 1/8W Carbon	AA
R841	VRD-MN2BE821J	J	820 1/8W Carbon	AA
R842	VRD-MN2BE821J	J	820 1/8W Carbon	AA
R844	VRD-RM2HD471J	J	470 1/2W Carbon	AA
R849	VRD-MN2BE183J	J	18k 1/8W Carbon	AA
R892	VRD-RA2BE682J	J	6.8k 1/8W Carbon	AA
R902	VRD-MN2BE331J	J	330 1/8W Carbon	AA
R1005	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1006	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA
R1007	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1008	VRD-MN2BE103J	J	10k 1/8W Carbon	AA
R1017	VRD-RA2BE331J	J	330 1/8W Carbon	AA
R1019	VRD-MN2BE273J	J	27k 1/8W Carbon	AA
R1021	VRD-MN2BE472J	J	4.7k 1/8W Carbon	AA

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MAIN UNIT (Continued)

RESISTORS (Continued)

Ref. No.	Part No.	★	Description	Code
R1025	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R1027	VRD-MN2BE103J	J	10k 1/8W Carbon	AA
R1028	VRD-MN2BE684J	J	680k 1/8W Carbon	AA
R1029	VRD-MN2BE333J	J	33k 1/8W Carbon	AA
R1030	VRD-MN2BE333J	J	33k 1/8W Carbon	AA
R1031	VRD-MN2BE153J	J	15k 1/8W Carbon	AA
R1032	VRS-VV3DB123J	J	12k 2W Metal Oxide	AA
R1033	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R1039	VRD-MN2BE153J	J	15k 1/8W Carbon	AA
R1040	VRD-MN2BE123J	J	12k 1/8W Carbon	AA
R1044	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1046	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1048	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R1050	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R1051	VRD-MN2BE332J	J	3.3k 1/8W Carbon	AA
R1052	VRD-MN2BE332J	J	3.3k 1/8W Carbon	AA
R1053	VRD-MN2BE332J	J	3.3k 1/8W Carbon	AA
R1054	VRD-MN2BE123J	J	12k 1/8W Carbon	AA
R1060	VRD-RM2HD821J	J	820 1/2W Carbon	AA
R1062	VRD-RA2EE681J	J	680 1/4W Carbon	AA
R1064	VRD-MN2BE682J	J	6.8k 1/8W Carbon (20H-SC, 21H-SC)	AA
R1066	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1069	VRD-RA2EE181J	J	180 1/4W Carbon	AA
R1073	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R1074	VRD-MN2BE392J	J	3.9k 1/8W Carbon	AA
R1077	VRD-MN2BE223J	J	22k 1/8W Carbon	AA
R1078	VRD-MN2BE822J	J	8.2k 1/8W Carbon	AA
R1079	VRD-MN2BE222J	J	2.2k 1/8W Carbon	AA
R1089	VRD-MN2BE153J	J	15k 1/8W Carbon	AA
R1090	VRD-MN2BE182J	J	1.8k 1/8W Carbon	AA
R1091	VRD-MN2BE393J	J	39k 1/8W Carbon	AA
R1092	VRD-MN2BE153J	J	15k 1/8W Carbon	AA
R1093	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1094	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1095	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1096	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1099	VRD-MN2BE222J	J	2.2k 1/8W Carbon	AA
R1105	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1109	VRD-RA2BE682J	J	6.8k 1/8W Carbon	AA
R1110	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1111	VRD-MN2BE682J	J	6.8k 1/8W Carbon	AA
R1114	VRD-MN2BE271J	J	270 1/8W Carbon	AA
R1116	VRD-MN2BE153J	J	15k 1/8W Carbon	AA
R1117	VRD-MN2BE683J	J	68k 1/8W Carbon	AA
R1118	VRD-MN2BE392J	J	3.9k 1/8W Carbon	AA
R1119	VRD-MN2BE392J	J	3.9k 1/8W Carbon	AA
R1120	VRD-MN2BE392J	J	3.9k 1/8W Carbon	AA
R1121	VRD-RA2BE332J	J	3.3k 1/8W Carbon	AA
R1123	VRD-MN2BE683J	J	68k 1/8W Carbon	AA
R1124	VRD-RA2BE682J	J	6.8k 1/8W Carbon	AA
R1125	VRD-RA2BE682J	J	6.8k 1/8W Carbon	AA
R1126	VRD-RA2BE102J	J	1k 1/8W Carbon	AA
R1127	VRD-RA2BE332J	J	3.3k 1/8W Carbon	AA
R1128	VRD-RA2BE273J	J	27k 1/8W Carbon	AA
R1129	VRD-MN2BE104J	J	100k 1/8W Carbon	AA
R1131	VRD-RA2BE101J	J	100 1/8W Carbon	AA
R1132	VRD-RA2BE103J	J	10k 1/8W Carbon	AA
R2302	VRD-MN2BE222J	J	2.2k 1/8W Carbon	AA
R2305	VRD-MN2BE221J	J	220 1/8W Carbon	AA
R2319	VRD-MN2BE223J	J	22k 1/8W Carbon	AA
R2325	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R2326	VRD-MN2BE332J	J	3.3k 1/8W Carbon	AA
R2327	VRD-MN2BE103J	J	10k 1/8W Carbon	AA
R2328	VRD-MN2BE561J	J	560 1/8W Carbon	AA
R2329	VRD-MN2BE561J	J	560 1/8W Carbon	AA
R2330	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R2331	VRD-MN2BE101J	J	100 1/8W Carbon	AA
R2332	VRD-MN2BE102J	J	1k 1/8W Carbon	AA
R2333	VRD-MN2BE391J	J	390 1/8W Carbon	AA
R2334	VRD-MN2BE470J	J	47 1/8W Carbon	AA
R2335	VRD-MN2BE183J	J	18k 1/8W Carbon	AA
R2336	VRD-MN2BE561J	J	560 1/8W Carbon	AA
R2337	VRD-RA2EE105J	J	1M 1/4W Carbon	AA
R2338	VRD-MN2BE103J	J	10k 1/8W Carbon	AA

SWITCHES

Ref. No.	Part No.	★	Description	Code
S501	QSW-B0015CEZZ	J	Vertical Center Adjust (20H-SC, 21H-SC)	AC
⚠ S701	QSW-P0588CEZZ	J	Main's Power	AP
S1001	QSW-K0079GEZZ	J	Channel Up	AB
S1002	QSW-K0079GEZZ	J	Channel Down	AB
S1003	QSW-K0079GEZZ	J	Volume Up	AB
S1004	QSW-K0079GEZZ	J	Volume Down	AB
S1005	QSW-K0079GEZZ	J	Preset	AB

MISCELLANEOUS PARTS

Ref. No.	Part No.	★	Description	Code
CN601	QCNW-0430PEZZ	R	Connecting Wire (20H-SC, 21H-SC)	AC
⚠ F300	QFS-J1521CEZZ	J	IC Protector	AF
⚠ F701	QFS-C3224CEZZ	J	Fuse, T3.15A	AD
FB305	RBLN-0037CEZZ	J	Ferrite Bead	AB
FB602	RBLN-0037CEZZ	J	Ferrite Bead	AB
⚠ FB702	RBLN-0037CEZZ	J	Ferrite Bead	AB
⚠ FB706	RBLN-0037CEZZ	J	Ferrite Bead	AB
FB731	RBLN-0010CEZZ	J	Ferrite Bead	AC
FH701	QFSHD1013CEZZ	J	Fuse Holder, for F701	AC
FH702	QFSHD1014CEZZ	J	Fuse Holder, for F701	AC
⚠ J451	QJAKH0007CEZZ	J	Jack, AV Input/Output	AL
P210	QPLGN0241CE04	J	Plug 2-pin, TP210	AA
P301	QPLGN0241CEZZ	J	Plug 2-pin, (S2)	AA
P501	QPLGN0241CE04	J	Plug 2-pin, TP501	AA
P502	QPLGN0505CEZZ	J	Plug 5-pin, (F)	AB

Ref. No.	Part No.	★	Description	Code

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MAIN UNIT (Continued)

MISCELLANEOUS PARTS (Continued)

P601	QPLGN0207CEZZ	J	Plug 2-pin, H-Size Adj. (20H-SC, 21H-SC)	AA
P602	QPLGN0441CEZZ	J	Plug 4-pin, (H)	AB
⚠ P711	QPLGN0207CEZZ	J	Plug 2-pin, (G)	AA
⚠ P712	QPLGN0304CEZZ	J	Plug 3-pin, (A)	AB
P801	QPLGN0541CEZZ	J	Plug 5-pin, (K)	AB
SC1001	QSOCN0685CEZZ	J	Socket 6-pin, (RC)	AC

—— End of PWB-A ——

PWB-B DUNTK6851WEB2
CRT SOCKET UNIT (14H-SC)

TRANSISTORS

Q851	VS2SC2229O/1E	J	2SC2229(O)	AD
Q852	VS2SC2229O/1E	J	2SC2229(O)	AD
Q853	VS2SC2229O/1E	J	2SC2229(O)	AD

DIODE

D851	RH-EX0271CEZZ	J	Zener Diode, 2.1V	AA

COIL

L851	VP-CF681K0000	J	Coil, 680μH	AB

CONTROLS

R853	RVR-B4568CEZZ	J	10k(B)	Red Bias	AC
R857	RVR-B5639CEZZ	J	1k(B)	Green Drive	AB
R859	RVR-B4568CEZZ	J	10k(B)	Green Bias	AC
R863	RVR-B5639CEZZ	J	1k(B)	Blue Drive	AB
R865	RVR-B4568CEZZ	J	10k(B)	Blue Bias	AC

Ref. No.	Part No.	★	Description	Code

CAPACITORS

C800	VCQYTA1HM103K	J	0.01	50V	Mylar	AB
C851	VCKYPA1HB391K	J	390p	50V	Ceramic	AA
C852	VCKYPA1HB331K	J	330p	50V	Ceramic	AA
C853	VCKYPA1HB391K	J	390p	50V	Ceramic	AA
C854	RC-KZ0016CEZZ	J	0.01	1.5kV	Ceramic	AC
C855	VCEAGA2DW106M	J	10	200V	Electrolytic	AC
C860	VCKYD41CY103N	J	0.01	16V	Ceramic	AA
C861	VCEAGA1CW476M	J	47	16V	Electrolytic	AB
C866	VCCSPA2HL121J	J	120p	500V	Ceramic	AC

RESISTORS

R851	VRD-RA2BE122J	J	1.2k	1/8W	Carbon	AA
R852	VRD-RA2BE272J	J	2.7k	1/8W	Carbon	AA
R855	VRD-RM2HD272J	J	2.7k	1/2W	Carbon	AA
R856	VRD-RA2BE561J	J	560	1/8W	Carbon	AA
R858	VRD-RA2BE272J	J	2.7k	1/8W	Carbon	AA
R860	VRS-VV3AB123J	J	12k	1W	Metal Oxide	AA
R861	VRD-RM2HD272J	J	2.7k	1/2W	Carbon	AA
R862	VRD-RA2BE391J	J	390	1/8W	Carbon	AA
R864	VRD-RA2BE272J	J	2.7k	1/8W	Carbon	AA
R866	VRS-VV3AB123J	J	12k	1W	Metal Oxide	AA
R867	VRD-RM2HD272J	J	2.7k	1/2W	Carbon	AA
R868	VRS-VV3AB123J	J	12k	1W	Metal Oxide	AA
R872	VRD-RA2BE561J	J	560	1/8W	Carbon	AA
R873	VRD-RA2BE561J	J	560	1/8W	Carbon	AA
R874	VRD-RA2BE561J	J	560	1/8W	Carbon	AA
R878	VRD-RA2BE222J	J	2.2k	1/8W	Carbon	AA

MISCELLANEOUS PARTS

P851	QPLGN0361CEZZ	J	Plug 3-pin, (H)	AB
P852	QPLGN0561CEZZ	J	Plug 5-pin, (K)	AB
⚠ SC851	QSOCV0829CEZZ	J	CRT Socket	AK
	QCNW-1239PEZZ	R	Connecting Wire, (K)	AG
	QCNW-1341PEZZ	R	Connecting Wire, (H)	AF

—— End of PWB-B ——

PWB-B DUNTK7001WEF3/E8
CRT SOCKET UNIT (20H-SC, 21H-SC)

Ref. No.	Part No.	★	Description	Code
	TRANSISTORS			
Q851	VS2SC3417//1E	J	2SC3417	AC
Q852	VS2SC3417//1E	J	2SC3417	AC
Q853	VS2SC3417//1E	J	2SC3417	AC
	DIODE			
D851	RH-EX0271CEZZ	J	Zener Diode, 2.1V	AA
	COIL			
L851	VP-CF681K0000	J	Coil, 680μH	AB
	CONTROLS			
R853	RVR-B4568CEZZ	J	10k(B) Red Bias	AC
R857	RVR-B5639CEZZ	J	1k(B) Green Drive	AB
R859	RVR-B4568CEZZ	J	10k(B) Green Bias	AC
R863	RVR-B5639CEZZ	J	1k(B) Blue Drive	AB
R865	RVR-B4568CEZZ	J	10k(B) Blue Bias	AC
	CAPACITORS			
C800	VCQYTA1HM103K	J	0.01 50V Mylar	AB
C851	VCKYPA1HB391K	J	390p 50V Ceramic	AA
C852	VCKYPA1HB391K	J	390p 50V Ceramic	AA
C853	VCKYPA1HB391K	J	390p 50V Ceramic	AA
C854	RC-KZ0150CEZZ	J	1000p 3kV Ceramic	AB
C860	VCKYD41CY103N	J	0.01 16V Ceramic	AA
C861	VCEAGA1CW106M	J	10 16V Electrolytic	AA
C865	VCKYPA1HB102K	J	1000p 50V Ceramic	AA
C866	VCEAGA2DW106M	J	10 200V Electrolytic	AC
	RESISTORS			
R851	VRD-RA2BE821J	J	820 1/8W Carbon	AA
R852	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA
R855	VRD-RM2HD272J	J	2.7k 1/2W Carbon	AA
R856	VRD-RA2BE391J	J	390 1/8W Carbon	AA
R858	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA
R860	VRS-VV3DB123J	J	12k 2W Metal Oxide	AA
R861	VRD-RM2HD272J	J	2.7k 1/2W Carbon	AA
R862	VRD-RA2BE471J	J	470 1/8W Carbon	AA
R864	VRD-RA2BE272J	J	2.7k 1/8W Carbon	AA
R866	VRS-VV3DB123J	J	12k 2W Metal Oxide	AA
R867	VRD-RM2HD272J	J	2.7k 1/2W Carbon	AA
R868	VRS-VV3DB123J	J	12k 2W Metal Oxide	AA
R872	VRD-RA2BE561J	J	560 1/8W Carbon	AA
R873	VRD-RA2BE561J	J	560 1/8W Carbon	AA
R874	VRD-RA2BE561J	J	560 1/8W Carbon	AA
R875	VRD-RA2BE560J	J	56 1/8W Carbon	AA
R876	VRD-RA2BE560J	J	56 1/8W Carbon	AA

Ref. No.	Part No.	★	Description	Code
	RESISTORS (Continued)			
R877	VRD-RA2BE560J	J	56 1/8W Carbon	AA
R878	VRD-RA2BE222J	J	2.2k 1/8W Carbon	AA
	MISCELLANEOUS PARTS			
P851	QPLGN0461CEZZ	J	Plug 4-pin, (H)	AB
P852	QPLGN0561CEZZ	J	Plug 5-pin, (K)	AB
⚠ SC851	QSOCV0927CEZZ	J	CRT Socket	AL
CN851	QCNW-1266PEZZ	R	Connecting Wire, (H)	AF
CN852	QCNW-1264PEZZ	R	Connecting Wire, (K)	AG

—— End of PWB-B ——

Ref. No.	Part No.	★	Description	Code

PWB-C DUNTK8697WEV0/V2/V1
LED, R/C RECEIVER UNIT

DIODE

D1001	RH-PX0291CEZZ	J	LED, Red/Green	AC

MISCELLANEOUS PARTS

P1005	QPLGN0685CEZZ	J	Plug 6-pin, (RC)	AA
RMC1001	RRMCU0216CEZZ	J	R/C Receiver	AK
	LHLDP1042PE00	R	LED Holder	AG

—— End of PWB-C ——

MISCELLANEOUS PARTS

CN301	QCNW-1240PEZZ	R	Connecting Wire, (S2) (14H-SC)	AE
CN301	QCNW-1469PEZZ	R	Connecting Wire, (S2) (20H-SC, 21H-SC)	AG
SP1	VSP9050PB07WA	R	Speaker	
⚠ ACC701	QACCZ3003PEZZ	R	AC Cord (14H-SC, 21H-SC)	AQ
⚠ ACC701	QACCZ2001PESA	R	AC Cord (20H-SC)	AN
	LHLDK0005PE00	R	AC Cord Holder	AC

—— End of MISCELLANEOUS PARTS ——

Ref. No.	Part No.	★	Description	Code

SUPPLIED ACCESSORIES

ACCESSORIES

	QPLGA0011CEZZ	J	AC Plug Adaptor (14H-SC, 21H-SC)	AF
	QANTR0018PEZZ	R	Rod Antenna (20H-SC)	AQ
	QPLGJ0113CEZZ	J	AC Plug Adaptor (20H-SC)	AG
	RRMCG1133PESA	R	Remote Control Unit	AX
	TINS-5570PEZZ	R	Operation Manual	AG

ACCESSORIES (*Not Replacement Item*)

	TCADS3004PEZZ	–	SS List (14H-SC, 21H-SC)	—
	TMAPC3936PEZZ	–	Service Map (14H-SC)	—
	TMAPC3938PEZZ	–	Service Map (20H-SC)	—
	TMAPC3937PEZZ	–	Service Map (21H-SC)	—
	UBATU0001MEZZ	–	Dry Batteries	—

—— End of SUPPLIED ACCESSORIES ——

PACKING PARTS
(*NOT REPLACEMENT ITEM*)

MODEL 14H-SC

SPAKC5955PEZZ	–	Packing Case	—
SPAKP0056PEZZ	–	Polystyrene Cover	—
SPAKX2528PEZZ	–	Buffer Material	—

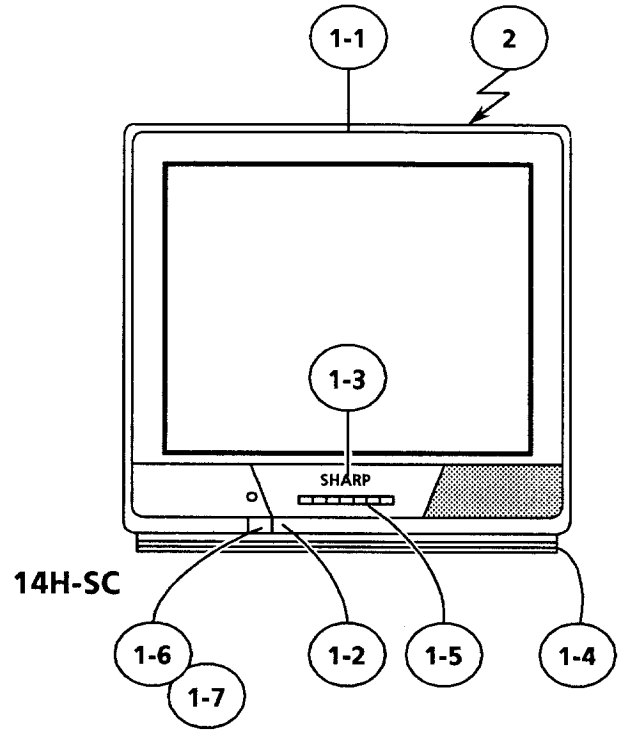
MODEL 20H-SC

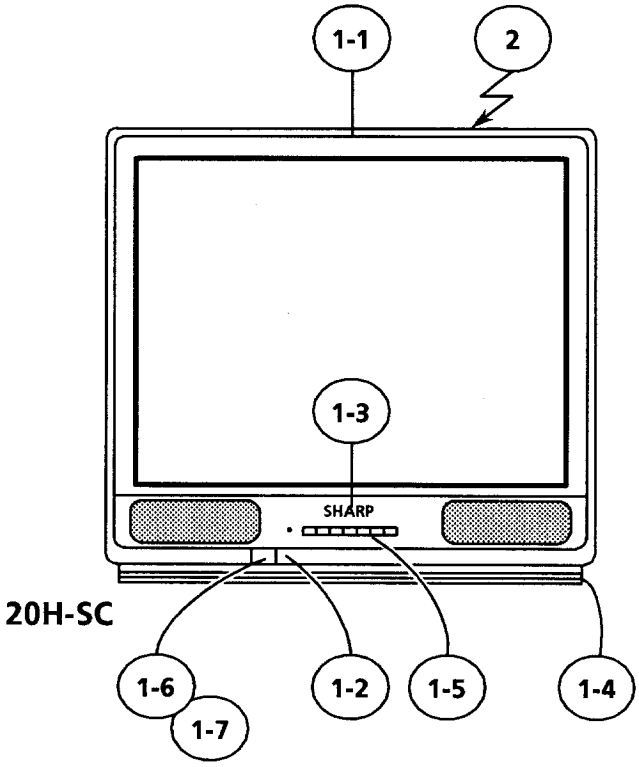
SPAKC5988PEZZ	–	Packing Case	—
SPAKP0055PEZZ	–	Polystyrene Cover	—
SPAKX2533PEZZ	–	Buffer Material	—

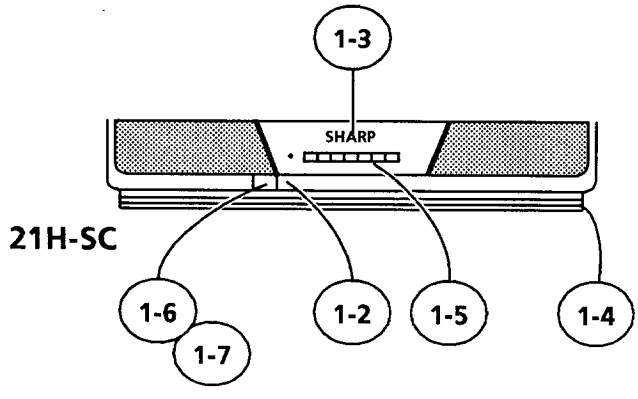
MODEL 21H-SC

SPAKC5984PEZZ	–	Packing Case	—
SPAKP0055PEZZ	–	Polystyrene Cover	—
SPAKX2531PEZZ	–	Buffer Material	—

—— End of PACKING PARTS ——







CABINET PARTS

MODEL 14H-SC

Ref. No.	Part No.	★	Description	Code
1	CCABA2269WEV0	R	Cabinet Ass'y, Front	BC
1-1	*Not Available*	–	Cabinet, Front	—
1-2	GCOVA0054PESA	R	LED Cover	AF
1-3	HBDGB0018PESA	R	Badge, "SHARP"	AE
1-4	HDECP0009PESA	R	Decoration Sheet	AE
1-5	JBTN-0172PESA	R	Button, Up/Down	AG
1-6	JBTN-0171PESA	R	Button, Power	AE
1-7	MSPRC0068CEFW	J	Spring, Power Button	AA
2	GCABB2228PEKA	R	Cabinet, Rear	AY

MODEL 20H-SC

Ref. No.	Part No.	★	Description	Code
1	CCABA2284WEV0	R	Cabinet Ass'y, Front	BG
1-1	*Not Available*	–	Cabinet, Front	—
1-2	GCOVA0054PESA	R	LED Cover	AF
1-3	HBDGB0019PESA	R	Badge, "SHARP"	AD
1-4	HDECP0010PESA	R	Decoration Sheet	AF
1-5	JBTN-0172PESB	R	Button, Up/Down	AG
1-6	JBTN-0177PESA	R	Button, Power	AG
1-7	MSPRC0068CEFW	J	Spring, Power Button	AA
2	CCABB2239WEV0	R	Cabinet Ass'y, Rear	BD

MODEL 21H-SC

Ref. No.	Part No.	★	Description	Code
1	CCABA2279WEV0	R	Cabinet Ass'y, Front	BG
1-1	*Not Available*	–	Cabinet, Front	—
1-2	GCOVA0054PESA	R	LED Cover	AF
1-3	HBDGB0019PESA	R	Badge, "SHARP"	AD
1-4	HDECP0010PESA	R	Decoration Sheet	AF
1-5	JBTN-0172PESA	R	Button, Up/Down	AG
1-6	JBTN-0173PESA	R	Button, Power	AG
1-7	MSPRC0068CEFW	J	Spring, Power Button	AA
2	CCABB2239WEV0	R	Cabinet Ass'y, Rear	BD

—— End of CABINET PARTS ——

Memo

14H-SC, 20H-SC
21H-SC

SHARP

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