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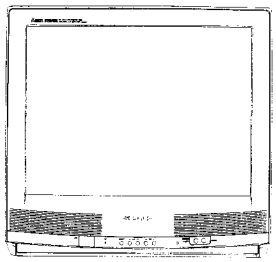
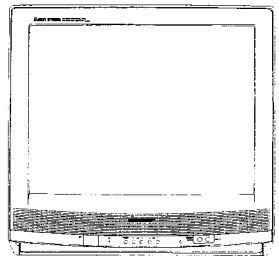
SHARP

SERVICE MANUAL
维修手册

S77B921R-SC//



21R-SC
21R-M8
21R-M10



CV-21RU

COLOUR TELEVISION
彩色电视机
Chassis No. SP-70

MODELS 型号
21R-SC, 21R-M8
21R-M10, CV-21RU

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。

The component parts of this model are partially different depending on their suffix symbols. Before servicing the units, be sure to check the suffix symbol on the model label that is applied on the back of the unit.

本型号的有些结构零件根据尾标而有差异。在保养维修时，必须确认贴在本机后面型号标签的尾标。

Example of suffix symbol:
尾标的表示例：

suffix symbol
尾标

SHARP MODEL 21R-SC
SOLID STATE COLOUR TELEVISION RECEIVER
RATING 110-240V (AUTO.) ~50/60Hz 88W
SERIAL NO. GXXXXXXXXX □
SHARP CORPORATION

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。

FEATURE

- Reminder/ON-Off Timer
- English/Arabic/Chinese/French/Russian/Malay six Language OSD (21R-SC/M8/M10)
- English/Russian Two Language OSD (CV-21RU)
- Hyper Band PLL Tuner
- Wide Range Chopper Regulator System
- Front A/V Input Reare A/V Input/Output Terminal
- Blue Back Noise Mute
- PAL/SECAM Dual System
- NTSC 4.43/3.58 MHz (AV only)
- Direct Access Remote Control
- NTSC Colour-Comb Filter
- Black Strech Circuit

CONTENTS

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/法文/俄文/马来西亚文六种语言表示功能（型号21R-SC/M8/M10）
- ■在屏英文/俄文二种语言表示功能（型号CV-21RU）
- ■超高频道PLL调谐器
- ■宽频带削波调整系统
- ■前面声象信号输入插孔，背面声象信号输入/输出插孔
- ■蓝色背景噪声抑制系统
- ■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
- ■NTSC制式彩色－－梳形滤波器
- ■黑色脉冲展宽电路

目　　录

SPECIFICATIONS

Convergence	Self Converging System
Focus	Quadra-Potential Electrostatic
Sweep Deflection	Magnetic
Intermediate Frequencies	
Picture IF Carrier	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	88 W
Audio Power Output Rating	3.0 W (at Max.)
Speaker	
Size	5 cm × 9 cm 1 pc
Voice Coil Impedance	16 ohms at 400 Hz
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)
Tuner 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 S41 (463.25 MHz)
• UHF-Channels	E21 (471.25 MHz) thru E69 (855.25 MHz) C13 (471.25MHz) thru C57 (863.25 MHz)
Dimensions	Width: 501 mm Height: 474 mm Depth: 476 mm Weight (approx.): 20 kg
Cabinet Material	All Plastics

Specifications are subject to change without prior notice.

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	88W
音响额定输出功率	3.0W(最大)
扬声器	
尺寸	5cm × 9cm × 1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S41(463.25MHz)
●超高频(UHF)频道	E21(471.25MHz)至E69(855.25MHz) C13(471.25MHz)至C57(863.25MHz)
尺寸	宽 501mm 高 474mm 深 476mm 重量（大约）20kg
机壳	均由塑料而成

上述规格变更之场合，恕不另行通知。

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 10k 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. 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. 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. 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. 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。

ADJUSTMENT PRECAUTIONS

This model's settings are adjusted in two different ways: through the I²C bus control and in the conventional analog manner. The adjustment via the I²C bus control includes preset-only items and variable data.

1. Calling the service mode by the microprocessor

① Set the switch S1006 to the service mode position, and the microprocessor is put in the service mode (adjustment through the I²C bus control).
② Press the CH UP/DOWN keys on the remote controller to select the modes one by one.
③ Press the CH UP/DOWN keys on the remote controller to select the modes in the order opposite to the above step ②.
④ Using the VOLUME UP/DOWN keys on the remote controller, the data can be modified.
⑤ Set the switch S1006 to the normal mode (OFF) position, and the microprocessor is put out of the service mode.

2. Factory presettings

① Set the switch S1006 to the service mode position and turn on the main power switch. Initial values are automatically preset only when a new E²PROM is used (judgment with the first 4 bytes).
② The initial data are preset as listed on pages 8, 9 and 10.
③ Keep in mind that some settings should be modified, and the others should remain as preset.
Once the chassis has been put together, be sure to set the switch S1006 to the service mode position first and then turn on the main power switch (see the step 2.-① above). Turning on the power without initializing the E²PROM may cause a flow of excess beam current.

3. The accompanying memory map (23-page document for the RH-iX2938CE) is for your reference.

调整时注意事项

本型号电视机由I²C总线控制与一般的模拟调节综合进行。I²C总线控制包括初始设定(预设)以及下述的变量数据项目的调整设定。

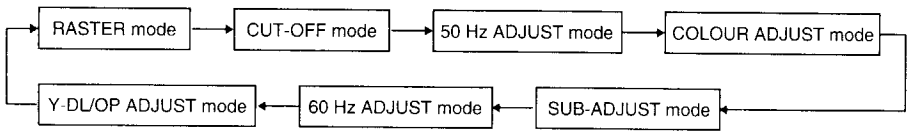
1)微处理机的保养调整状态的设定
①变S1006开关于保养调整状态位置，微处理机即处于保养调整状态(I²C总线控制调整状态)。
②触按遥控器上的CH-UP/DOWN键以顺序选择各种保养调整状态。
③触按遥控器上的CH-UP/DOWN键，可按与步骤②相反顺序选择各种保养调整状态。
④触按遥控器上的VOLUME UP/DOWN键，可变换调整数据。
⑤取消保养调整状态时，变S1006开关(关闭侧)于正常状态位置即可。

2)初始值(预设值)的设定
①变S1006开关于保养调整状态位置，打开主电源开关，即自动地设定初始值。
(仅限于EEPROM为新品时)
(根据最前头的4位字节而判断)
②初始值设定数据详见保养调整状态之项所列。
③有些项目需要改变设定数据，而有些项目则需要保持初始设定状态，故请加以注意。
组装电视机底盘后，必须先变S1006开关于保养调整状态位置，然后再打开主电源开关。(见2-①之项所述)。
对EEPROM不加以初始处理而打开电源开关之场合，会引起电子束电源过大发生流动。

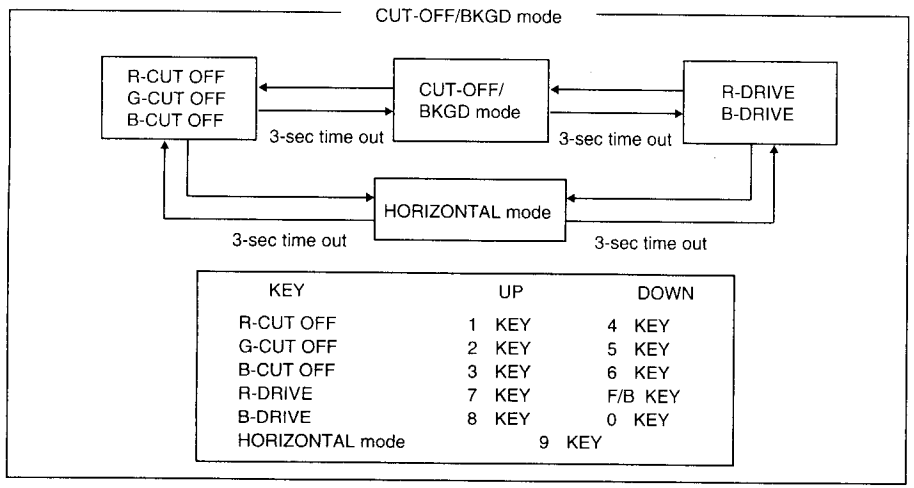
3)作为参考提供存储变换表。(IX2938CE为23页)

■ SERVICE MODE

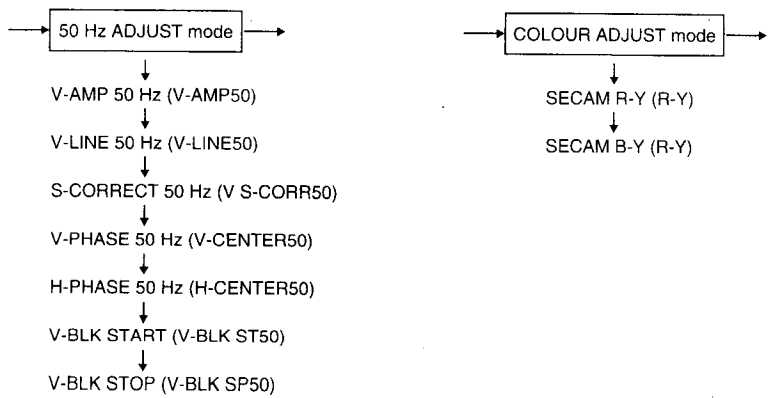
(1) Press the specific keys to change the modes as follows.



In the direction of arrow : CH DOWN key
In the opposite direction : CH UP key



KEY	UP	DOWN
R-CUT OFF	1 KEY	4 KEY
G-CUT OFF	2 KEY	5 KEY
B-CUT OFF	3 KEY	6 KEY
R-DRIVE	7 KEY	F/B KEY
B-DRIVE	8 KEY	0 KEY
HORIZONTAL mode	9 KEY	



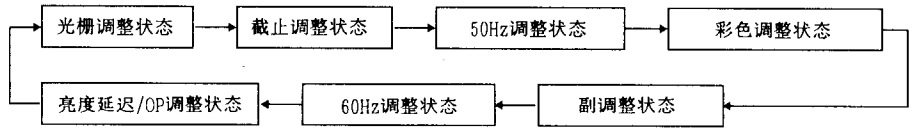
In the direction of arrow : CH DOWN key
In the opposite direction : CH UP key

In the direction of arrow : CH DOWN key
In the opposite direction : CH UP key

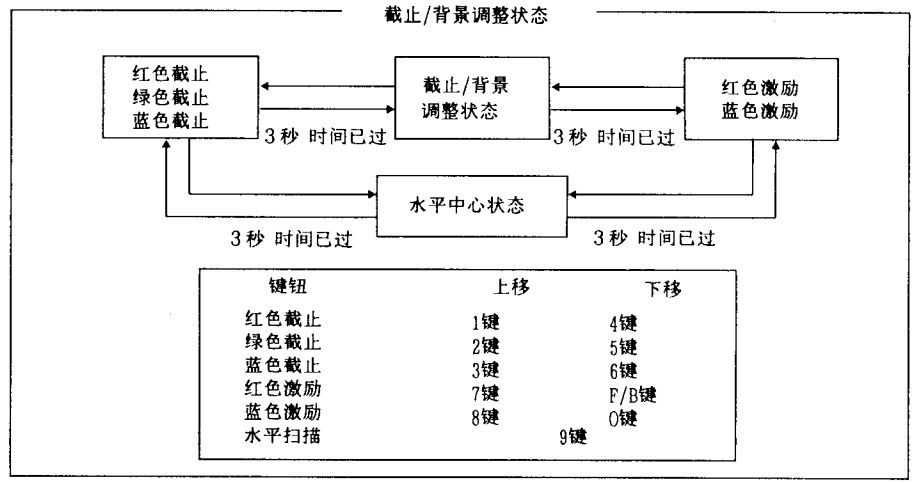
* The characters in parentheses appear on the on-screen display.

■ 保养调整状态

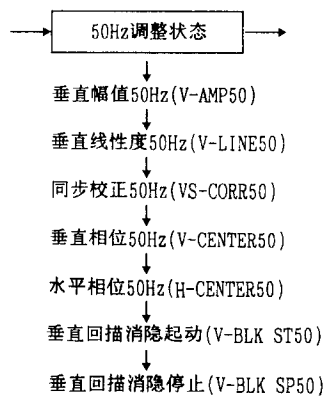
(1)按下记顺序触按规定键而变为各种保养调整状态。



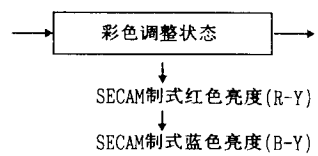
箭头方向：CH-DOWN键
相反方向：CH-UP键



键钮	上移	下移
红色截止	1键	4键
绿色截止	2键	5键
蓝色截止	3键	6键
红色激励	7键	F/B键
蓝色激励	8键	0键
水平扫描	9键	



箭头方向：CH-DOWN键
相反方向：CH-UP键



箭头方向：CH-DOWN键
相反方向：CH-UP键

＊在荧屏上表示括号内的显示。

SUB-ADJUST mode

↓

SUB CONTRAST (SUB CON)

↓

SUB BRIGHT (SUB BRI)

↓

SUB COLOUR (SUB COL)

↓

SUB SUBTINT (SUB TIN)

↓

SUB SHARPNESS (SUB SHARP)

↓

Y-SUB CONTRAST (Y SUB CON)

In the direction of arrow : CH DOWN key
In the opposite direction : CH UP key

60Hz ADJUST mode

↓

V-AMP 60 Hz (V-AMP60)

↓

V-LINE 60 Hz (V-LINE60)

↓

VS-CORRECT 60 Hz

↓

V-PHASE 60 Hz (V-CENTER60)

↓

H-PHASE 60 Hz (H-CENTER60)

↓

V-BLK START 60 Hz (V-BLK ST60)

↓

V-BLK STOP 60 Hz (V-BLK SP60)

In the direction of arrow : CH DOWN key
In the opposite direction : CH UP key

Y-DL/OPTION mode

↓

Y DELAY PAL (DT PAL TV/AV)

↓

Y DELAY SECAM (DT SECAM TV/AV)

↓

Y DELAY NTSC (DT NTSC TV/AV)

↓

Y DELAY B/W (DT BW TV/AV)

↓

VIDEO MUTE ON/OFF (V-MUTE)

↓

VIDEO 2 ON/OFF (AV2)
(DELAY A/V effective in A/V mode)

* The characters in parentheses appear on the on-screen display.

副调整状态

↓

副对比度(SUB CON)

↓

副亮度(SUB BRI)

↓

副彩色(SUB COL)

↓

副色调(SUB TIN)

↓

副鲜明度(SUB SHARP)

↓

亮度－副对比度(Y SUB CON)

箭头方向：CH-DOWN键
相反方向：CH-UP键

60Hz调整状态

↓

垂直幅值60Hz(V-AMP60)

↓

垂直线性度60Hz(V-LINE60)

↓

垂直同步校正60Hz

↓

垂直相位60Hz(V-CENTER60)

↓

水平相位60Hz(H-CENTER60)

↓

垂直回描消隐起动(V-BLK ST60)

↓

垂直回描消隐停止(V-BLK SP60)

箭头方向：CH-DOWN键
相反方向：CH-UP键

亮度延迟/OP调整状态

↓

亮度延迟 PAL制式(DT PAL TV/AV)

↓

亮度延迟 SECAM制式(DT SECAM TV/AV)

↓

亮度延迟 NTSC制式(DT NTSC TV/AV)

↓

亮度延迟 B/W制式(DT BW TV/AV)

↓

视频信号静噪开/关(V-MUTE)

↓

视频信号2开/关(声象信号2)
(延迟声象信号只在声象状态时为有效。)

＊在荧屏上表示括号内的显示。

* When the modes are switched, the last service mode data are stored into the E²PROM.
* In the service mode, the user data are preset as follows.

	User data
CONTRAST	MAX (64/64)
COLOUR	CENT (32/64)
BRIGHTNESS	CENT (32/64)
TINT	CENT (32/64)
SHARPNESS	CENT (32/64)
S-VOLUME	MIN (1/64)
BLUE BACK	OFF
C SYSTEM	AUTO
S SYSTEM	*1

*1 : Settings of each channel before switching to the service mode.

* The following keys are used to go directly to their respective modes.

Mode	Key input
H-CENTER 50	PICTURE
V-CENTER 50	TEXT
V-AMP 50	INDEX
V S CORR 50	RED
V-LINE 50	GREEN
SUB CONT	CANCEL
Y SUB CONT	REVEAL
SUB COLOUR	TIMED PAGE
SUB BRIGHT	SIZE
SUB TINT	HOLD
SUB SHARP	RESET
R-Y	YELLOW
B-Y	CYAN
A/V2 ON/OFF	SKIP
VIDEO MUTE	BLUE BACK

E7

●改变保养调整状态时，最后被设定的保养调整数据存储于EEPROM之中。
●在保养调整状态下，用户数据的预设位置如下：

	用户数据
对比度位置	最大(64/64)
彩色位置	中央(32/64)
亮度位置	中央(32/64)
色调位置	中央(32/64)
鲜明度位置	中央(32/64)
音量位置	最小(1/64)
蓝色背景位置	关
彩色制式位置	自动
声音制式位置	*1

＊1 在改变保养调整状态之前的各频道设定系统。

●触按以下键钮，即可直接呼出与其相应的保养调整状态。

调整状态	键钮输入
水平中心50	PICTURE(图象)
垂直中心50	TEXT(本文)
垂直幅值50	INDEX(索引)
垂直同步校正50	RED(红色)
垂直线性度50	GREEN(绿色)
副对比度	CANCEL(取消)
亮度副对比度	REVEAL(揭示)
副彩色	TIMED PAGE
副亮度	SIZE(尺寸)
副色调	HOLD(保持)
副鲜明度	RESET(复位)
红色亮度	YELLOW(黄色)
蓝色亮度	CYAN(青蓝色)
声象2 开/关	SKIP(跳跃)
视频静噪	BLUE BACK(蓝色背景)

C7

* To go to the service mode, the data at the E²PROM's addresses 00H thru 03H are read. If the data are not as given below, the E²PROM is initialized according to the table below.

Address : Data
00H : 22H 02H : 13H
01H : 29H 03H : 48H

E²PROM item	Data adjustable range	Data initial value	Remarks
(00H)	————	22H	
(01H)	————	29H	
(02H)	————	13H	
(03H)	————	48H	
R CUT OFF	0 ~ 255	0	
G CUT OFF	0 ~ 255	0	
B CUT OFF	0 ~ 255	0	
G DRIVE	0 ~ 255	127	
B DRIVE	0 ~ 255	127	
50Hz V-AMP	0 ~ 127	58	+1 *1
50Hz V-LINEARITY	0 ~ 31	16	–2 *1
50Hz S-CORRECTION	0 ~ 127	67	+7 *1 *2
50Hz V-PHASE	0 ~ 7	5	–3 *1
50Hz H-PHASE	0 ~ 31	7	+5 *1
V-BLK ST 50	0 ~ 63	58→63 (50Hz)	
V-BLK SP 50	0 ~ 127	25	
60Hz V-AMP	0 ~ 127		
60Hz V-LINEARITY	0 ~ 31		
60Hz S-CORRECTION	0 ~ 127		*2
60Hz V-PHASE	0 ~ 7		*3
60Hz H-PHASE	0 ~ 31		
60Hz V BLK ST	0 ~ 63	60→63 (60Hz)	
60Hz V BLK SP	0 ~ 127	20	
SECAM R-Y	0 ~ 15	10	
SECAM B-Y	0 ~ 15	6	
SUB-CONTRAST	0 ~ 255	255	*2
SUB-BRIGHT	0 ~ 255	127	
SUB-COLOUR	0 ~ 255	110	
SUB-TINT	0 ~ 127	70	
SUB-SHARPNESS	0 ~ 63	28	
Y SUB-CONTRAST	0 ~ 31	18	*2
DT PAL TV/AV	0 ~ 7	2/2	*2
DT SECAM TV/AV	0 ~ 7	4/4	*2
DT NTSC TV/AV	0 ~ 7	2/2	*2
DT B/W TV/AV	0 ~ 7	2/2	*2
V-MUTE	ON/OFF	OFF	
A/V 2	ON/OFF	ON	
AFT/SKIP	0 ~ 1	OFF/ON	
C-SYSTEM	0 ~ 1	AUTO	
S-SYSTEM	————	B/G	
NVM	**With all the adjustments complete, do not change the data of addresses 00H thru 03H. Otherwise the E²PROM will be initialized when the AC power is turned on.**		

*1 : These data are additionally adjusted for 60Hz based on the 50Hz settings.
*2 : Unless otherwise specified, these data are fixed and need no adjustment.
*3 : Only 0 through 5 must be used in changing the data.

* 进入保养调整状态时，EEPROM地址代码00H至03H的数据存储于记忆装置中。如果该数据不符合下记规定要求，即按下表所示要求进行EEPROM的初始值的处理。

地址代码 : 数据
00H : 22H 02H : 13H
01H : 29H 03H : 48H

EEPROM项目	数据可变范围	数据初始值	备 注
(00H)	————	22H	
(01H)	————	29H	
(02H)	————	13H	
(03H)	————	48H	
红色截止	0 ~ 255	0	
绿色截止	0 ~ 255	0	
蓝色截止	0 ~ 255	0	
绿色激励	0 ~ 255	127	
蓝色激励	0 ~ 255	127	
50Hz垂直幅值	0 ~ 127	58	+1 *1
50Hz垂直线性度	0 ~ 31	16	–2 *1
50Hz同步校正	0 ~ 127	67	+7 *1 *2
50Hz垂直相位	0 ~ 7	5	–3 *1
50Hz水平相位	0 ~ 31	7	+5 *1
垂直回描消隐起动50	0 ~ 63	58→63 (50Hz)	
垂直回描消隐停止50	0 ~ 127	25	
60Hz垂直幅值	0 ~ 127		
60Hz垂直线性度	0 ~ 31		
60Hz同步校正	0 ~ 127		*2
60Hz垂直相位	0 ~ 7		*3
60Hz水平相位	0 ~ 31		
60Hz垂直回描消隐起动	0 ~ 63	60→63 (60Hz)	
60Hz垂直回描消隐停止	0 ~ 127	20	
SECAM制式红色亮度	0 ~ 15	10	
SECAM制式蓝色亮度	0 ~ 15	6	
副对比度	0 ~ 255	255	*2
副亮度	0 ~ 255	127	
副彩色	0 ~ 255	110	
副色调	0 ~ 127	70	
副鲜明度	0 ~ 63	28	
亮度副对比度	0 ~ 31	18	*2
DT PAL制式电视/声象	0 ~ 7	2/2	*2
DT SECAM制式电视/声象	0 ~ 7	4/4	*2
DT NTSC制式电视/声象	0 ~ 7	2/2	*2
DT B/W制式电视/声象	0 ~ 7	2/2	*2
垂直静噪	ON/OFF	OFF	
声/象2	ON/OFF	ON	
AFT/跳跃	0 ~ 1	OFF/ON	
彩色制式	0 ~ 1	AUTO	
声音制式	————	B/G	
NVM	**保养调整结束后，地址代码00H至03H的数据设定于上记以外之范围而打开交流电源时，即自动地进行初始值的处理，故请加以注意。**		

＊1 50Hz数据设定后，调节其50Hz数据而进行60Hz数据的设定。
＊2 仅限于固定数据且未有特别指定时不需要设定处理。
＊3 改变数据时，只可使用0～5的数值。

INITIAL SETTINGS OF CHANNEL SELECTION DATA

(1) Make an entry of MCL1 in the service mode in order to set the following channel selection data to the E²PROM. And select the POS1 channel. (An MCL2, -3 or -4 input makes different settings.)

POS	CH NO	Receiving frequency (MHz)	S-System
1	E-2	48.25	B/G
2	E-3	55.25	B/G
3	E-4	62.25	B/G
4	OI-3	77.25	D/K
5	E-5	175.25	B/G
6	OI-7	183.25	D/K
7	OI-8	196.25	D/K
8	E-10	210.25	B/G
9	E-12	224.25	B/G
10	I-23	487.25	I
11	E-25	503.25	B/G
12	E-34	575.25	B/G
13	E-37	599.25	B/G
14	OI-42	639.25	D/K
15	I-54	735.25	I
16	E-58	767.25	B/G
17	E-64	815.25	B/G
18	I-69	855.25	I
19	J-6	183.25	
20	J-8	193.25	
21	J14	477.25	
22	J-38	621.25	
23	J-50	693.25	
24	S-2	112.25	B/G
25	S-10	168.25	B/G
26	SKIP OFF	FREE	
27	S-20	294.25	B/G
28	S-41	463.25	B/G
29	SKIP OFF	FREE	
30			
31			
32			

选台数据的初始值设定

1)在保养调整状态下进行输入，并按下表所示要求用MCL1来将选台数据设定于EEPROM之中。执行后，选择POS1。(用MCL2至4分别设定)

POS	频道号	接收频率(MHz)	声音制式
1	E-2	48.25	B/G
2	E-3	55.25	B/G
3	E-4	62.25	B/G
4	OI-3	77.25	D/K
5	E-5	175.25	B/G
6	OI-7	183.25	D/K
7	OI-8	196.25	D/K
8	E-10	210.25	B/G
9	E-12	224.25	B/G
10	I-23	487.25	I
11	E-25	503.25	B/G
12	E-34	575.25	B/G
13	E-37	599.25	B/G
14	OI-42	639.25	D/K
15	I-54	735.25	I
16	E-58	767.25	B/G
17	E-64	815.25	B/G
18	I-69	855.25	I
19	J-6	183.25	
20	J-8	193.25	
21	J14	477.25	
22	J-38	621.25	
23	J-50	693.25	
24	S-2	112.25	B/G
25	S-10	168.25	B/G
26	跳跃 关	自由	
27	S-20	294.25	B/G
28	S-41	463.25	B/G
29	跳跃 关	自由	
30			
31			
32			

FACTORY SETTING

(1) The following key-in data have been factory-set for the E²PROM.

Item	Setting
SKIP	OFF
AFT	ON
C-SYSTEM	AUTO
S-SYSTEM	*1
LAST POWER	ON
LAST TV/AV	TV
DIGIT	1DIG
LANGUAGE	*1
BLUE BACK	ON
LAST POS	1
LAST FB POS	1
VOLUME	MIN
CONTRAST	MAX
COLOUR	CENT
BRIGHTNESS	CENT
TINT	CENT
SHARPNESS	CENT

*1 : For settings, refer to the Job Instruction Sheet.
The factory setting of S-SYSTEM item will be 1, 2 or 3 for all the channels.

1 : B/G 2 : I 3 : D/K

出厂时的初始值设定

1)按下表所示要求触按键钮将各初始值设定于EEPROM之中.

项目	设定数据
跳跃设定位置	关
自动微调设定位置	开
彩色制式设定位置	自动
声音制式设定位置	*1
最后电源开关设定位置	开
最后电视/声象设定位置	TV
数字设定位置	1位
语言设定位置	*1
蓝色背景设定位置	开
最后POS设定位置	1
最后FB POS设定位置	1
音量设定位置	最小
对比度设定位置	最大
彩色设定位置	中央
亮度设定位置	中央
色调设定位置	中央
鲜明度设定位置	中央

*1：应符合工作指导表所述的内容。
声音制式设定为出厂时的初始值1、2或3时，可将所有频道设定于下记内容。
1：B/G 2：I 3：D/K

FACTORY SETTINGS BY MODELS
(reference: geomagnetism adjustment)

Suffix at model number	Geomagnetism (H,V)nT	Background	Lang.	S-SYS
A	30,000 20,000	12300K	Chinese	D/K
C (Singapore)	−10,000 40,000	12300K	English	B/G
E/F/G	30,000 20,000	12300K	Arabic	B/G
G (Africa)	−10,000 40,000	12300K	English	B/G
CV-**RU	45,000 20,000	7500K	Russian	D/K

各型号的出厂时的设定值与调整磁场(参考)

型号尾标	磁场(H,V)nT	背景	语言	声音制式
A	30,000 20,000	12300K	中文	D/K
C (新加坡)	−10,000 40,000	12300K	英文	B/G
E/F/G	30,000 20,000	12300K	阿拉伯文	B/G
G (非洲)	−10,000 40,000	12300K	英文	B/G
CV-**RU	45,000 20,000	7500K	俄文	D/K

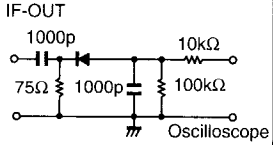
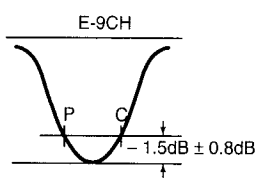
115V ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**115V adjustment: R711**	1. Receive the E-5CH (monoscope pattern) signal. 2. Using the remote controller, call the P-NORM mode. 3. Connect a beam ammeter between TP602 and TP603. • Ammeter's full-scale : 3 mA range • Ammeter's positive (+) lead : TP603 • Ammeter's negative (-) lead : TP602 4. Take the beam ammeter reading to make sure that the beam current is between 900 µA and 1100 µA. * If not, readjust the FBT screen control to obtain the beam current of 900-1100 µA. 5. Connect a digital voltmeter to TP701. 6. Adjust R711 so that the digital voltmeter should read 115 ±0.5 V.	

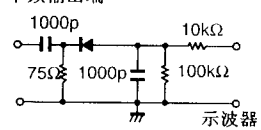
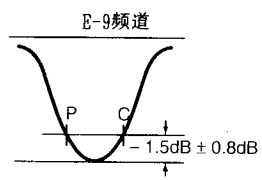
115V的调整

编号	调整点	调整步骤及其条件	波形及其它
1	115V调整 ：R711	1.接收E-5频道(单象管图案)信号。 2.通过遥控器呼出标准图象状态。 3.接电子束电流计于TP602与TP603之间。 电流计的测试范围：3mA 接电流计的＋侧于TP603。 接电流计的－侧于TP602。 4.通过电子束电流计确认电子束电流在900～1100µA之间存在。 ＊不存在时，调节FBT的荧屏VR，使电子束电流达至900～1100µA之间的规定要求。 5.接数值式电压计于TP701。 6.调节R711，使数值式电压计的电压值达至115±0.5V的规定要求。	

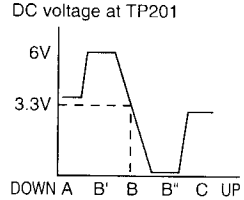
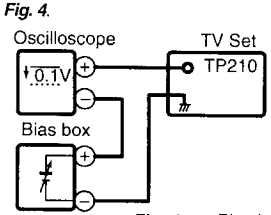
PIF CHECKING

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**Tuner IFT (preset): TU201**	1. Get the tuner ready to receive the E-9CH signal. but with no signal input. Adjust the PLL data. 2. Connect the sweep generator's output cable to the tuner antenna. (RF sweep) 3. Adjust the sweep generator's output level to 80 dBµV. 4. Connect the response lead (use a low-impedance probe with wave detector; see ***Fig. 1***) to the tuner's IF output terminal. (This terminal must have the probe alone connected.) 5. Set the RF AGC voltage to 0-6 V with no contact with the waveform. 6. Adjust the tuner IF coil to obtain the waveform as shown in ***Fig. 2***. **Note: Be sure to keep the tuner cover in position during this adjustment.**	IF-OUT  ***Fig. 1***  ***Fig. 2***

PIF的调整

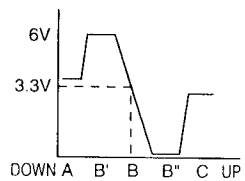
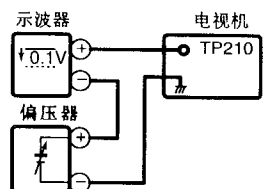
编号	调整点	调整步骤及其条件	波形及其它
1	调谐器IFT (预设)： TU201	1.在无信号输入的接收状态下，使调谐器处于接收E-9频道信号之状态。调节PLL数据。 2.接扫描振荡器输出线圈于调谐器天线接线端(射频扫描)。 3.调扫描振荡器输出电平为80dBµV。 4.接响应引线(带有检波器的低阻抗探针；见图1)于调谐器中频输出端。(只接探针于调谐器中频输出端)。 5.设射频自动增益控制RF AGC的电压值于0至6V间的与波形不接触之位置。 6.再将调谐器中频线圈所得波形调至图2 所示的规定要求。 注意：作此项调整时，必须盖上调谐器盒盖而进行。	中频输出端  图1  图2

PIF/AFT/AGC ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**VCO adjustment: T203**	1. Disconnect the antenna from the tuner antenna terminal. 2. Apply DC voltage to pin (4)(IF AGC) of IC201. • DC voltage: 6.0 V (allowable +0.1 V) 3. Using a digital voltmeter, measure the DC voltage at pin (20)(PLL FIL) of IC201. * The digital voltmeter must be able to take readings down to the third decimal place. 4. Relieve pin (4) of IC201 of the DC voltage. 5. Reconnect the antenna in position and receive the E-12CH signal. (With the AFT off, adjust the receiving frequency to 224.25 MHz.) 6. Connect the DC digital voltmeter to pin (20) of IC201. Adjust T203 so that the voltmeter should read the same voltage as in Step 3. Allowable error : 0.015 V (20 kHz)	* Warm up the unit for longer than 10 minutes in advance. * 10 kHz at about 0.007 V. * Position the T203 core in the range in which the E-12CH signal can be received.
2	**AFT adjustment: T204**	1. Receive the E-12CH (PAL colour bar) signal. If this signal is not available, any signal above the E-5CH band is acceptable. • Field strength : 55-80 dBμV Make sure the frequency is almost the same as that of the received channel (±30 kHz). 2. Using the channel setting control, make a frequency of 224.25 MHz appear on the screen (the AFT turns off). If any other channel than E-12CH is received, make its frequency on the screen. (The AFT turns off when the on-screen display turns yellow.) 3. Turn T204 clockwise to have a 6-V point, and counterclockwise to have a 0.2-V point. Position the coil at the center of these two points. 4. Adjust T204 so that the DC voltage at pin (1) (AFT OUT terminal) of IC201 be 3.3 ±0.1 V. (See ***Fig. 3***)	DC voltage at TP201  ***Fig. 3*** * Turn the core counterclockwise for the UP direction, and clockwise for the DOWN direction. Adjust the T201 core to point B (between B' and B"). (Points A and C are rejectable.)
3	**RF AGC cut-in adjustment: R216**	1. Receive the E-12CH (PAL colour bar) signal. • Field strength : 57 ±1 dBμV (75 ohms open) 2. Connect the oscilloscope to TP210, as shown in ***Fig. 4***.  ***Fig. 4*** • Bias box: About 6.5 V 3. Turn R216 to have the highest voltage. 4. Turn R216 slowly in the opposite direction until the voltage goes down 0.1 V below the highest level. 5. Adjust the signal level to 63-67 dBμV and make sure there is no noise. 6. Now adjust the signal level to 90-95 dBμV and make sure there is no chrominance modulation beat.	**Note: If a 50ohm field strength meter is used without a 50/75 impedance converter, set the field strength to 55 ±1 dBμV. Pay attention to a loss that would be caused with the converter.**

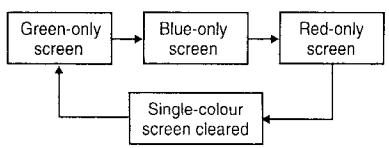
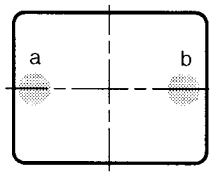
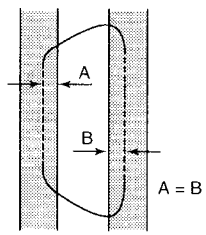
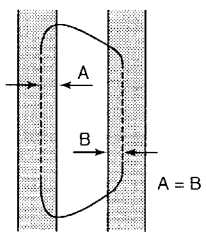
E12

PIF/AFT/AGC的调整

编号	调整点	调整步骤及其条件	波形及其它
1	压控振荡器VCO自激的调整：T203	1.从天线接线端拔出天线。 2.对IC201的引脚(4)(IF AGC)施加直流电压。 6.0V （容许范围±0.1V） 3.用数值式电压计测量IC201引脚(20)(PLL FIL)的直流电压值。 *必须使用可读取小数点3位数的数值式电压计。 4.除去施加于IC201引脚(4)的直流电压。 5.插入天线，接收E-12频道信号。 (AFT处于关闭状态时，将接收频道设定于224.25MHz) 6.接数值式直流电压计于IC201的引脚(20)。调节T203，使电压值达至第3.项所测量出的数值。 容许范围：0.015V(20kHz)	*所需预热时间为10分钟以上。 *电压约为0.007V时，频率为10kHz。 *只在可接收E-12频道信号的位置处进行T203控制旋钮位置的调整。
2	自动微调AFT的调整：T204	1.接收E-12频道(PAL制式彩条)信号。无E-12频道信号输入时，可用E-5频道以上的频道信号代替。 ●场强度：55～80dBμV 必须正确地调节接收频道的频率(±30kHz) 2.通过频道设定开关，调荧屏上表示出的频率数值为224.25MHz。(AFT处于关闭状态)。接收除了E-12频道以外的频道信号时，必须采用与其相应的频率。 (在屏表示文字的颜色变为黄色时，ATF亦变为关闭状态)。 3.以顺时针方向旋转T204时的电压为6V，逆时针方向旋转时的电压为0.2V为前提，调节T204，使线圈中央位置的电压值达至下记要求。 4.调节T204，使IC201引脚(1)(AFT输出端)的直流电压值达至3.3V±0.1V的规定要求。(见图3)	TP201处的直流电压  图3 *逆时针方向旋转控制旋钮：上移(UP) 顺时针方向旋转控制旋钮：下移(DOWN) T201的旋钮位置必须调至B′与B″之间的B点。 (A、C点为NG)
3	射频自动增益控制RF-AGC插入的调整：R216	1.接收E-12频道(PAL制式彩条)信号。 场强度：57±1dBμV(端接75Ω电阻) 2.按图4 所示要求接示波器于TP210。  图4 • 偏压器：约6.5V 3.旋转R216，使所测电压读数达至最大。 4.按与步骤③相反方向逐渐旋转R216，将电压读数调至最大值-0.1V之程度 5.调信号强度为63～67dBμV，确认无噪声出现。 6.再调信号强度为90～95dBμV，确认无色度信号调制差拍出现。	注意：如果使用不带50/75阻抗转换器的50Ω系统场强度计，该场强度必须定为55±1dBμV。另外，使用转换器时，应考虑由转换器带来的阻抗损失。

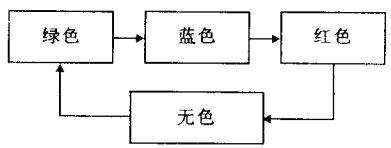
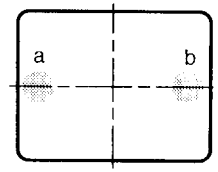
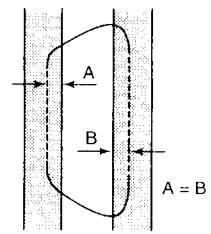
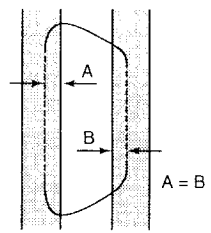
C12

PURITY ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**Purity adjustment**	1. Using the remote controller, make the screen colour green-only. Adjust the contrast control to have a beam current of 700 µA. 2. Degauss the cathode ray tube enough with the degaussing coil. **Note: Follow the Job Instruction Sheet to adjust the magnetic field.** **Vertical Bv : +0.030 mT (0.30 gauss)** **Horizontal Bh : +0.020 mT (0.20 gauss)** **See page 10.** 3. Keep the purity magnet in the zero magnetic field in advance. Roughly adjust the convergence. 4. Observe the points "a" and "b", as shown in ***Fig. 5-1***, through a microscope. Adjust the landing to the rank "A" requirements. 5. Adjust the raster rotation to "0" eastward. 6. Tighten up the deflection coil screws. • Tightening torque: 108 ±20 N (11 ±2 kgf) 7. While observing the cathode ray tube corners. apply the magnet sheet to have the landing at rank "A". **Note: Before starting this adjustment, warm up the unit for 30 minutes or longer at a beam current of over 700 µA.** **Note: Set the service switch S1001 to call the service mode and press the single-colour key on the process remote controller to get the green-only screen.** * Each time the single-colour key is pressed, the screen colour changes as follows. 	 ***Fig. 5-1***  ***Fig. 5-2*** Rank "A" (on the right of the CRT)  ***Fig. 5-3*** Rank "A" (on the left of the CRT) * Whether in the service mode or not, hold down the single-colour key for 1 second or longer and the service mode is called. The TEXT key or the R.G.Cy key may be used instead to provide the single-colour screens.

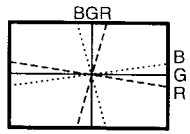
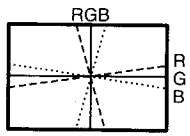
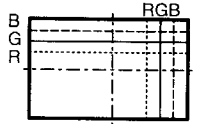
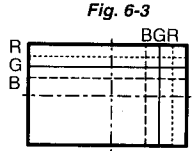
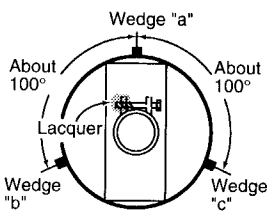
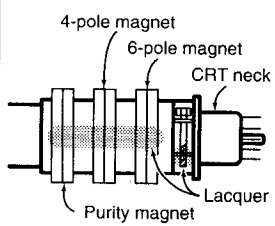
E13

色彩纯度的调整

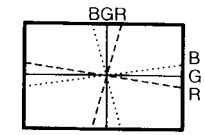
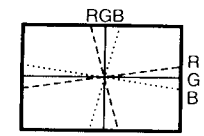
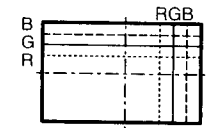
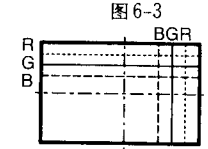
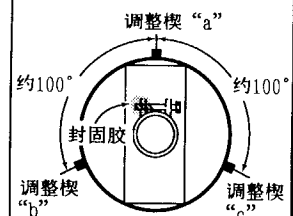
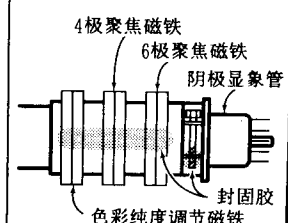
编号	调整点	调整步骤及其条件	波形及其它
1	色彩纯度的调整	1.通过遥控器接收绿色单色信号，接着通过对比度控制调电子束电流于700µA。 2.通过消磁线圈对阴极显象管CRT作完全消磁处理。 注意：应按生产指导说明书的内容调整磁场磁势。 ●垂直Bv：+0.030mT(0.030高斯) ●水平Bh：+0.020mT(0.020高斯) 3.调整前，先调整色彩纯度控制磁铁，使其磁场势为0。然后，再对色彩纯度进行粗调。 4.用放大显示镜观察图5-1所示两色点(a点和b点)。调节纯度磁铁，使其着屏点位置达到"A"级的规定要求。 5.保持荧屏面朝东方，调其光栅转角为0。 6.旋转偏转线圈的紧固螺丝。 紧固力：108N±20N(11kgf±2kgf) 7.检查阴极显象管CRT角部。用一磁铁片加以校正，使其着屏点达至"A"级的规定要求。 注意：作此项调整前，先用大于700µA的电子束电流预热阴极显象管CRT30分钟。 注意：用保养调整状态设定开关(S1001)设本电视机于保养调整状态。然后，触按遥控器上的单色键，让荧屏显示单色(绿色)色彩。 *连续触按遥控器上的单色键时，荧屏单色显示如下依次循环变化： 	 图5-1  图5-2 CRT右侧"A"极着屏  图5-3 CRT左侧"A"极着屏 *连续触按单色键1秒以上，即使未设定于保养状态也自动地变为单色设定状态。 可通过TEXT键和"R、G、Cy"键的触按直接转换为各单色显示的荧屏。

C13

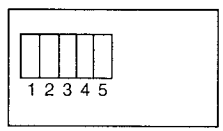
CONVERGENCE ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**Convergence adjustment (to be done after the purity adjustment)**	1. Receive the E-2CH (crosshatch pattern) signal. 2. Using the remote controller, call the Normal mode. **STATIC CONVERGENCE** 1. Turn the 4-pole magnet to a proper opening angle in order to superimpose the blue and red colours. 2. Turn the 6-pole magnet to a proper opening angle in order to superimpose the green colour over the blue and red colours. **DYNAMIC CONVERGENCE** 1. Adjust the convergence on the fringes of the screen in the following steps. **a) *Fig. 6-1*: Drive the wedge at point "a" and swing the deflection coil upward.** **b) *Fig. 6-2*: Drive the wedges at points "b" and "c" and swing the deflection coil downward.** **c) *Fig. 6-3*: Drive the "c" wedge deeper and swing the deflection coil rightward.** **d) *Fig. 6-4*: Drive the "b" wedge deeper and swing the deflection coil leftward.** 2. Fix all the wedges on the cathode ray tube and apply glass tape over them. 3. Apply lacquer to the deflection yoke lock screw, magnet unit (purity, 4-pole and 6-pole magnets), and magnet unit lock screw. Finally receive the red-only and blue-only signals and make sure there is no other colour mixed on the screen.	 *Fig. 6-1*  *Fig. 6-2*  *Fig. 6-3*  *Fig. 6-4*  *Fig. 6-5*  *Fig. 6-6*

画面聚焦度的调整

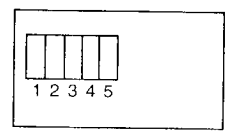
编号	调整点	调整步骤及其条件	波形及其它
1	画面聚焦度的调整(于色彩纯度调整之后进行)	1.接收E-2频道“棋盘格测试图案”信号。 2.通过遥控器呼出标准图象状态。 静聚焦度的调整： 1.调节4极聚焦磁铁的开角与转角，使蓝色线条与红色线条重叠。 2.调节6极聚焦磁铁的开角与转角，使绿色线条再与蓝、红色重叠线条重叠。 动聚焦度的调整： 1.按下述要求调节荧屏周边的聚焦度。 a)图6-1.所示的聚焦调节 通过插入调整楔“a”以及向上摆动偏转线圈进行调节。 b)图6-2.所示的聚焦调节 通过插入调整楔“b”和“c”以及向下摆动偏转线圈进行调节。 c)图6-3.所示的聚焦调节 通过深插调整楔“c”以及向右摆动偏转线圈加以调节。 d)图6-4.所示的聚焦调节 通过深插调整楔“b”以及向左摆动偏转线圈加以调节。 2.保持CRT之上三支调整楔的调节完了后的位置，用玻璃胶带固定之。 3.加封固胶于偏转线圈的固定螺丝、磁铁装置(由色彩纯度调节磁铁、4极聚焦磁铁以及6极聚焦磁铁构成)以及磁铁装置的固定螺丝，封固之。 上记调整结束后，接收单色(红色/蓝色)信号，以检查在荧屏上有无呈现其它颜色。	 图6-1  图6-2  图6-3  图6-4  图6-5  图6-6

CRT CUT-OFF, BACKGROUND AND SUB-CONTRAST ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**CRT cut-off service mode: I²C bus data adjustment**	1. Receive the E-5CH (monoscope pattern) signal. 2. Using the remote controller, call up the P-NORM mode. 3. Turn on the service switch and select the cut-off/background mode. 4. Set the screen control to 0/10 position. 5. Press the "9" key on the remote controller to reach the horizontal centering mode. 6. Turn the screen control clockwise until the horizontal raster of the first glimmering colour becomes slightly visible. 7. Adjust the cut-off data of the other two colours until the horizontal raster becomes whitish. 8. Turn the screen control counterclockwise until the horizontal raster disappears. **Note: Before starting this adjustment, warm up the unit for 30 minutes or longer at a beam current of over 700 μA.** 9. Press the "9" key on the remote controller to call the NORMAL mode. 10. Using the remote controller, call the sub-brightness setting mode. (Receive the E-2CH signal.) 11. Set the sub-brightness data so that the third black portion (1st to 5th counted from the left of the screen) of the window pattern looks sinking. **Note: The service mode adjustment in the above steps 10. and 11. should be carried out after the white balance and background adjustments.**	* First of all, make sure that the R/G/B cut-off and B/G drive data are all initial values. **Note:** **R CUT OFF UP "1" KEY** **DOWN "4" KEY** **G CUT OFF UP "2" KEY** **DOWN "5" KEY** **B CUT OFF UP "3" KEY** **DOWN "6" KEY** **The data can be turned up and down with the above keys.**  Make sure all the 1st, 2nd and 3rd black portions are at the same black level.

E15

CRT截止、蓝色背景以及副对比度的调整

编号	调整点	调整步骤及其条件	波形及其它
1	CRT截止的保养调整状态：I²C总线数据的调整	1.接收E-5频道(单象管图案)信号。 2.通过遥控器设电视机于标准图象状态。 3.打开保养调整开关以选择截止/蓝色背景状态。 4.设荧屏控制于最小位置(0/10)。 5.触按遥控器上的"9"键钮以选择水平中心状态。 6.顺时针方向旋转荧屏控制旋钮，直至荧屏上微弱地出现水平光栅为止。 7.调节其它两色的截止数据，使荧屏上的水平光栅变为白色。 8.逆时针方向旋转荧屏控制旋钮，直至荧屏上的水平光栅完全消失为止。 注意：作此项调整之前，先用大于700μA的电子束电流预热CRT30分钟。 9.触按遥控器上的"9"键钮以选择NORMAL(标准)状态。 10.通过遥控器设电视机于副亮度设定状态(接收E-2频道信号)。 11.设副亮度数据于窗孔图案的第3黑色位置(从左方来看，1→5)会下沉之处。 注意：10.与11.项的保养调整必须于白色平衡及蓝色背景的调整完毕后进行。	*先检查R/G/B(红/绿/蓝)截止与B/G(蓝/绿)激励数据均是否显示出初始值，然后再进行此项调整。 注意 ： 红色截止的上移："1"键钮 红色截止的下移："4"键钮 绿色截止的上移："2"键钮 绿色截止的下移："5"键钮 蓝色截止的上移："3"键钮 蓝色截止的下移："6"键钮 用上记数字键钮可进行数据的上移或下移工作。  1、2及3均为相同的黑色电平。

C15

CRT CUT-OFF, BACKGROUND AND SUB-CONTRAST ADJUSTMENT
(Continued)

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
2	**White balance and background service mode: I²C bus data adjustment**	1. Receive the E-5CH (monoscope pattern) signal. 2. Using the remote controller, call up the Video Normal mode. 3. Connect the beam ammeter between TP601 and TP602. 4. Make sure the beam current is about 1,100 µA. 5. Adjust the G-drive and B-drive data to have a colour temperature of 12,300°K or 7,500°K (white). 6. Adjust the contrast and brightness controls to have the beam current of 200 µA. Now check the background colour. If the colour temperature is not as specified, go back to No. 1 on the preceding page. **Note: Before starting this adjustment, warm up the unit for 30 minutes or longer at a beam current of over 700 µA.**	See page 10. * 7500°K X : 0.300 Y : 0.310 * 12300°K X : 0.273 Y : 0.276 (with colour temperature meter CA-100 (MINOLTA).) **Note:** **G-DRIVE UP "7" KEY** **DOWN "-/--" KEY** **B-DRIVE UP "8" KEY** **DOWN "0" KEY** **The data can be turned up and down with the above keys.**
3	**Maximum beam current (check item)**	1. Receive the E-5CH (monoscope pattern) signal. 2. Using the remote controller, call up the Video Normal mode. 3. Connect the beam ammeter between TP602 and TP603. • Ammeter's full-scale : 3 mA range • Ammeter's positive (+) lead : TP603 • Ammeter's negative (-) lead : TP602 4. Make sure the beam current is 1,100 ±100 µA. **Note: Before starting this adjustment, warm up the unit for 30 minutes or longer at a beam current of over 700 µA.**	

CRT截止、蓝色背景以及副对比度的调整

（接上页）

编号	调整点	调整步骤及其条件	波形及其它
2	白色平衡、蓝色背景的保养调整状态：I²C总线数据的调整	1.接收E-5频道(单象管图案)信号。 2.通过遥控器设电视机于标准图象状态。 3.接电子束电流计于TP601与TP602之间。 4.检查电子束电流是否约为1100µA。 5.调节绿、蓝两色激励数据，以获得色温为12300° K或7500° K的白色。(注1) 6.调节对比度及亮度控制，使电子束电流达至200µA，检查背景的色彩显示。此时，如果色温并非为规定值，则必须返回至前项的第1项重新进行调整。 注意：作此项调整之前，必须先用大于700µA的电子束电流预热CRT30分钟以上。	参见第10页 *7500° K X : 0.300 Y : 0.310 *12300° K X : 0.273 Y : 0.276 (美能达色温计CA-100所测) 注1) 绿色激励的上移："7"键钮 绿色激励的下移："-/--"键钮 蓝色激励的上移："8"键钮 蓝色激励的下移："0"键钮 用上记数字键钮可进行数据的上移或下移工作。
3	最大电子束电流的调整(检查项目)	1.接收E-5频道(单象管图案)信号。 2.通过遥控器设电视机于标准图象状态。 3.接电子束电流计于TP602与TP603之间。 测试范围：3mA 接电流计正(+)侧于TP603 接电流计负(-)侧于TP602 4.将电子束电流调至1100±100µA。 注意：作此项调整之前，必须先用大于700µA的电子束电流预热CRT30分钟以上。	

HORIZONTAL AND VERTICAL CIRCUIT ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**V-AMP 50** **V-LINEARITY - 50 Hz** **V-S CORRECTION - 50 Hz** **V-SHIFT 50 (V-CENTER)** **H-SHIFT (50) (H-CENTER)**	1. Adjust the overscan to 9.5% (E-5). 1. Adjust to get the best linearity. 1. Preset (readjust if the linearity is poor). 1. Align the screen center with the cathode ray tube's geometrical center (E-5). 1. Align the screen center with the cathode ray tube's geometrical center (E-5). **Note: For the V-HEIGHT 60, V-LINEARITY 60, V-S CORRECTION 60, V-SHIFT 60 and H-SHIFT 60 adjustments, their corrected data are automatically entered when the corresponding 50 Hz mode adjustments are made.**	The selected channels in parentheses have the following signals. (E-2): crosshatch pattern (50 Hz) signal (E-5): monoscope pattern (50 Hz) signal
2	**Focus adjustment**	1. Receive the E-5CH (monoscope pattern) signal. 2. Using the remote controller, call the Video Normal mode. 3. Adjust the focus control so that the screen be in good focus.	

E17

水平同步电路及垂直同步电路的调整

编号	调整点	调整步骤及其条件	波形及其它
1	垂直幅值50 垂直线性度 -50Hz 垂直同步校正 -50Hz 垂直偏移50 (垂直中心) 水平偏移50 (水平中心)	1. 进行调整，使过扫描达至9.5%。(E-5) 1. 进行调整，使垂直线性度达至最佳状态。 1. 预设(线性度不良时，重新调整之) 1. 通过CRT的几何中心与荧屏中心对齐进行调整。(E-5) 1. 通过CRT的几何中心与荧屏中心对齐进行调整。(E-5) 注意： 关于垂直高度60、垂直线性度60、垂直同步校正60、垂直偏移60以及水平偏移60之项目，只作50Hz的调整，便可自动地输入已校正好的数据。	括号内的接收信号 (E-2): 为棋盘格测试图案信号 (50Hz)。 (E-5): 为单象管图案信号 (50Hz)。
2	焦点的调整	1. 接收E-5频道(单象管图案)信号。 2. 通过遥控器设电视机于标准图象状态。 3. 调节焦点控制旋钮，使荧屏中央部的字符表示达至最清晰之程度。	

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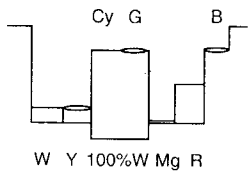
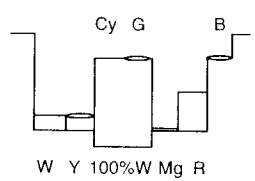
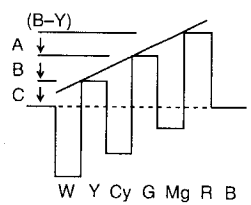
PAL CHROMA ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**Sub-colour adjustment: I²C bus adjustment**	1. Receive the E-12CH (PAL colour bar) signal. 2. Using the remote controller, call the Video Normal mode. 3. Connect the oscilloscope to TP852 (RED cathode). (Use a 10 : 1 probe.) • Range : 2 V/div. • Sweep time : 20 µsec/div. 4. Using the remote controller, call the sub-colour adjustment mode. Adjust the sub-colour data so that the 75% white and red portions of the PAL colour bar be at the same level. See ***Fig. 7***. 5. Clear the adjustment mode. (Now the 100% white and red portions will be at the same level. The sub-colour data is up 20.) * Pin (3)(K) may be used instead of TP852 (RED cathode) for this adjustment. In such case, keep in mind that the polarity of the waveform is inverted.	 ***Fig. 7***

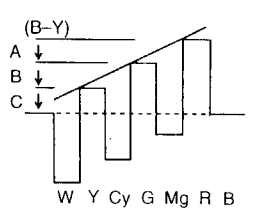
PAL制式色度信号电路的调整

编号	调整点	调整步骤及其条件	波形及其它
1	副彩色的调整：I²C总线控制	1.接收E-12频道(PAL制式彩条)信号。 2.通过遥控器设电视机于标准图象状态。 3.接示波器于TP852(红色阴极)。 (使用10：1的探针) • 测试范围：2V/段 • 扫频时间：20微秒/段 4.通过遥控器选择副彩色调整状态，然后，调节副彩色数据，使PAL制式彩条信号中的75%白色信号电平与红色信号电平一致。 见图 7 。 5.取消此项调整状态的设定。(由此，100%白色信号电平与红色信号电平成为相同程度。副数据提高20)。 *用引脚(K)3来调节时，波形信号的极性会变为相反。	 图 7

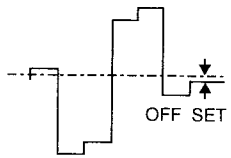
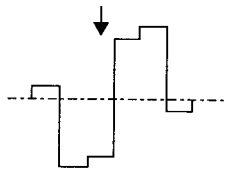
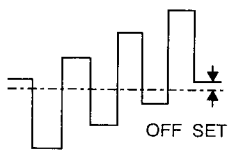
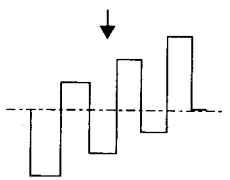
NTSC CHROMA ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**Sub-tint adjustment: I²C bus adjustment**	1. Call the sub-tint adjustment mode. Receive the NTSC 3.58 colour bar signal in the A/V mode. 2. Connect the oscilloscope to pin (36)(B-Y) of IC801. • Range : 20 mV/div. (AC) • Sweep time : 20 µsec/div. (Use a 10 : 1 probe.) 3. Adjust the sub-tint data to obtain the waveform as shown in ***Fig. 8***. 4. Clear the adjustment mode.	 ***Fig. 8*** A=B=C

NTSC制式色度信号电路的调整

编号	调整点	调整步骤及其条件	波形及其它
1	副色调的调整：I²C总线控制	1.选择副色调调整状态，然后，接收“NTSC制式3.58彩条”信号。 2.接示波器于IC801的引脚(36)(蓝色亮度)。 • 测试范围：20mV/段(交流电) • 扫描时间：20微秒/段(使用10：1的探针) 3.调节副色调数据，以获得图 8 所示的梯形波形。 4.取消此项调整状态的设定。	 图 8 A=B=C

SECAM CHROMA ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	**SECAM black level (R-Y/B-Y) adjustment: I²C bus adjustment**	1. Receive the Oi-5CH (SECAM colour bar) signal. 2. Call the SECAM black level adjustment R-Y mode. 3. Connect the oscilloscope to pin (34)(R-Y OUT, TP802) of IC801. • Range : 10 mV/div. • Sweep time : 20 µsec/div. (Use a 10 : 1 probe.) 4. Adjust the R-Y data so that the offset between the no-signal line and the signal line be minimum. See ***Fig. 9-1(b)***. 5. Call the SECAM black level adjustment B-Y mode. 6. Reconnect the oscilloscope to pin (33)(B-Y OUT, TP801) of IC801. The conditions are just the same as in Step 3. 7. Adjust the B-Y data so that the offset between the no-signal line and the signal line be minimum. See ***Fig. 9-2(b)***.	 *Fig. 9-1 (a)*  *Fig. 9-1 (b)*  *Fig. 9-2 (a)*  *Fig. 9-2 (b)*

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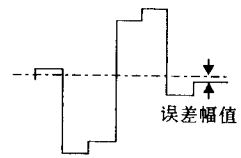
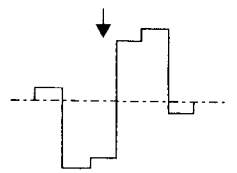
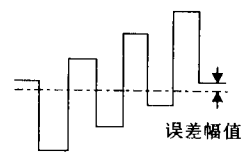
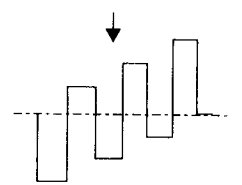
SECAM制式色度信号电路的调整

编号	调整点	调整步骤及其条件	波形及其它
1	SECAM制式黑色信号电平(R-Y/B-Y)的调整： I²C总线控制	1.接收01-5频道(SECAM制式彩条)信号。 2.选择SECAM制式黑色信号电平调整R-Y状态。 3.接示波器于IC801的引脚(34)(R-Y输出端，TP802)。 • 测试范围：10mV/段 • 扫描时间：20微秒/段(使用10：1的探针) 4.调节R-Y数据，使无信号线条与信号波形间的误差幅值达至最小。见图9-1(b)。 5.选择SECAM制式黑色信号电平调整B-Y状态。 6.重新接示波器于IC801的引脚(33)(B-Y输出端，TP801)。按与3.项相同的条件进行。 7.调节B-Y数据，使无信号线条与信号波形间的误差幅值达至最小。见图9-2(b)。	 图9-1(a)  图9-1(b)  图9-2(a)  图9-2(b)

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PROTECTOR PERFORMANCE CHECK

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	Beam protector	1. Receive the E-5CH (monoscope pattern) signal. 2. Set the contrast control to maximum. 3. Set the brightness control to maximum. 4. Make a short-circuit between the collector and emitter of Q851, Q852 or Q853 and make sure that the protector is activated and the stand-by mode is called.	* Short-circuit any of the Q851, Q852 and Q853.
2	High-voltage protector	1. Receive the E-5CH (monoscope pattern) signal. 2. Connect the bias box to the cathode (R635 side) of D607. 3. Adjust the bias box voltage to 18 V and make sure that the protector is not activated. 4. Adjust the bias box voltage to 27 V and make sure that the protector is not activated.	
3	Other protectors	1. In checking the performance of other protectors — for example, the one against shorting of smoothing electrolytic capacitor of +B line —, pay attention not to damage or deteriorate any related element.	

保护电路性能的检查

编号	调整点	调整步骤及其条件	波形及其它
1	电子束保护电路	1.接收E-5频道(单象管图案)信号。 2.设对比度控制于最大位置。 3.设亮度控制于最大位置。 4.短接Q851/2/3的集电极和发射机。检查这时的电子束保护电路是否被激励动作，电视机是否被置于标准状态。	*短接Q851/2/3中之一。
2	高压保护电路	1.接收E-5频道(单象管图案)信号。 2.接偏压器于D607的阴极端(R635侧)。 3.将偏压器的电压调至18V，确认这时的高压保护电路不会被激励动作。 4.再将偏压器的电压调至27V，确认这时的高压保护电路会被激励动作。	
3	其它保护电路	1.在通过短接+B线路等的平流电解电容器进行保护电路的检查时，注意切勿损伤、损坏电路元件。	

A/V INPUT AND OUTPUT CHECK

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	Video and audio output check	1. Receive the E-12CH colour bar (100% white colour bar, 400 Hz, 100% modulation audio) signal. 2. Terminate the video output with a 75 ohm impedance. Make sure the output is as specified (1.0 Vp-p ±3 dB). 3. Terminate the audio output with a 10k ohm impedance. Make sure the output is as specified (1.76 Vp-p ±3 dB).	
2	Video and audio input check	1. Using the TV/AV key on the remote controller, make sure that the modes change in the order of TV, AV1, AV2 and TV again and that the video and audio outputs are according to the input and output terminals for each mode.	

音频/视频信号输入、输出的检查

编号	调整点	调整步骤及其条件	波形及其它
1	视频信号输出的检查 音频信号输出的检查	1.接收E—12频道彩条信号(100%白色彩条，声音：400Hz、100%调制)。 2.检查视频信号输出端的电阻为75Ω时的信号强度是否符合1.0Vp-p ± 3dB的规定要求。 3.检查音频信号输出端的电阻为10kΩ时的信号强度是否符合1.76Vp-p ± 3dB的规定要求。	
2	视频信号输入的检查 音频信号输入的检查	1.触按遥控器上的电视/录象切换(TV/AV)键，检查电视机信号输入频道是否按电视频道(TV)、录象1频道(AV1)、录象2频道(AV2)以及电视频道(TV)的顺序循环切换。并且，检查每设定时的荧屏图象以及声音输出是否正常地与设定输入频道对应。	

FUNCTION CHECK (VIDEO AND AUDIO)

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
1	CONTRAST key	1. Receive the E-5CH signal. 2. Select the contrast on the P-MODE screen. 3. The contrast must be changeable with the UP/DOWN key.	
2	COLOUR key	1. Receive the E-12CH signal. 2. Select the colour on the P-MODE screen. 3. The colour must be changeable with the UP/DOWN key.	
3	BRIGHTNESS key	1. Receive the E-5CH signal. 2. Select the brightness on the P-MODE screen. 3. The black level must be changeable with the UP/DOWN key.	
4	TINT key	1. Receive the NTSC colour bar signal. (A/V) 2. Select the tint on the P-MODE screen. 3. The tint must be changeable toward green with the UP key and toward red with the DOWN key.	
5	PIC-NOR. key	1. Press the NOR. key on the P-MODE screen to make sure all the displayed items are at normal settings. See below for the normal settings. • Contrast : MAX • Colour : CENTER • Brightness : CENTER • Tint : CENTER • Sharpness : CENTER	* The contrast, colour, brightness, tint and sharpness settings are all normal when these items do not appear on the screen.
6	SHARPNESS key	1. Receive the E-5CH signal. 2. Select the sharpness on the P-MODE screen. 3. The sharpness must be changeable with the UP/DOWN key.	
7	Channel sign display colour	1. The display colour of all the channel (0-99) signs must be green. Keep the AFT on.	

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各控制功能的检查（图象及声音）

编号	调整点	调整步骤及其条件	波形及其它
1	对比度控制键	1.接收E-5频道信号。 2.设荧屏于P-MODE(图象表示状态)以选择对比度调整状态。 3.触按上移/下移键，检查荧屏上的对比度是否发生变化。	
2	彩色控制键	1.接收E-12频道信号。 2.设荧屏于P-MODE(图象表示状态)以选择彩色调整状态。 3.触按上移/下移键，检查荧屏上的彩色是否发生变化。	
3	亮度控制键	1.接收E-5频道信号。 2.设荧屏于P-MODE(图象表示状态)以选择亮度调整状态。 3.触按上移/下移键，检查黑色电平是否发生变化。	
4	色调控制键	1.接收NTSC制式彩条信号。(声象信号) 2.设荧屏于P-MODE(图象表示状态)以选择色调调整状态。 3.触按上移/下移键，检查荧屏上的色调是否发生变化。触按上移键，荧屏上的色调变绿，反之，其 色调变红。	
5	标准图象设定键	1.设荧屏于P-MODE(图象表示状态)而触按标准(NOR.)键时，只把表示中的内容为标准状态。 (各状态的标准设定如下所示) • 对比度：最大 • 彩色 ：中央 • 亮度 ：中央 • 色调 ：中央 • 鲜明度：中央	*在荧屏上未显示出P-MODE(图象表示状态)的文字时，对比度、彩色、亮度、色调以及鲜明度均为标准设定状态。
6	鲜明度控制键	1.接收E-5频道信号。 2.设荧屏于P-MODE(图象表示状态)以选择鲜明度调整状态。 3.触按上移/下移键，检查荧屏上的画质是否发生变化。	
7	频道代号表示色	1.所有频道(0～99)代号的表示色均为绿色。 (AFT ON之状态时)	

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FUNCTION CHECK (VIDEO AND AUDIO) (Continued)

No.	Adjusting point	Adjusting procedure/conditions	Waveform and others
8	COLOUR SYSTEM key	1. Receive the E-12CH PAL colour bar signal. Using the COLOUR SYSTEM key, select a mode other than PAL and make sure the colour system does not work properly. 2. Receive the E-10CH SECAM colour bar signal. Using the COLOUR SYSTEM key, select a mode other than SECAM and make sure the colour system does not work properly. 3. Receive the E-37CH NTSC 4.43 colour bar signal. Using the COLOUR SYSTEM key, select a mode other than N4.43 and make sure the colour system does not work properly. 4. Receive the NTSC 3.58 colour bar (A/V) signal. Using the COLOUR SYSTEM key, select a mode other than N3.58 and make sure the colour system does not work properly.	
9	SOUND SYSTEM key	1. Receive the OI-9CH PAL colour bar signal. Using the SOUND SYSTEM key, select B/G and I modes and make sure the sound system does not work properly. 2. Receive the E-23CH monoscope pattern signal. Using the SOUND SYSTEM key, select B/G and D/K modes and make sure the sound system does not work properly. 3. Receive the E-12CH colour bar signal. Using the SOUND SYSTEM key, select I and D/K modes and make sure the sound system does not work properly.	
10	Noise mute check	1. Receive the E-12CH (PAL colour bar) signal. 2. Turn up the sound volume to maximum and make sure the sound is heard normally from the speakers. Then cut off the signal. 3. Make sure the sound muting functions. 4. Finally turn down the sound volume to minimum.	

各控制功能的检查（图象/声音）（接上页）

编号	调整点	调整步骤及其条件	波形及其它
8	彩色制式选择键	1.接收E-12频道“PAL制式彩条”信号。连续触按彩色制式选择键数次以选择非PAL制式。确认这时的彩色表示功能不应正常工作。 2.接收E-10频道“SECAM制式彩条”信号。连续触按彩色制式选择键数次以选择非SECAM制式。确认这时的彩色表示功能不应正常工作。 3.接收E-37频道“NTSC4.43制式彩条”信号。连续触按彩色制式选择键数次以选择非NTSC 4.43制式。确认这时的彩色表示功能不应正常工作。 4.接收NTSC3.58制式彩条信号(声象信号)。连续触按彩色制式选择键数次以选择非NTSC 3.58制式。确认这时的彩色表示功能不应正常工作。	
9	声音制式选择键	1.接收OI-9频道“PAL制式彩条”信号。触按声音制式选择键以选择B/G，I制式。确认这时的声音不应正常地发出。 2.接收E-23频道“单象管图案”信号。触按声音制式选择键以选择B/G，D/K制式。确认这时的声音不应正常地发出。 3.接收E-12频道“彩条”信号。触按声音制式选择键以选择I，D/K制式。确认这时的声音不应正常地发出。	
10	噪声抑制功能的检查	1.接收E-12频道“PAL制式彩条”信号。 2.设音量旋钮于最大位置以检查扬声器是否发出声音。然后设定于无信号接收状态。 3.这时，确认噪声抑制功能应动作。 4.确认该动作后，进行调节，使音量达至最小程度。	

MEMORY MAP (RH-iX2938)

SUB ADDRESS	DATA 7	6	5	4	3	2	1	0	REMARKS	CRITERIA	FACTORY SETTING
000	Initialization judgment data "22"									Other than $22	$22
001	Initialization judgment data "29"									Other than $29	$29
002	Initialization judgment data "13"									Other than $13	$13
003	Initialization judgment data "48"									Other than $48	$48
004	PLL data (upper)								CH0		
005	PLL data (lower)										
006	PLL data (upper)								CH1		
007	PLL data (lower)										
008	PLL data (upper)								CH2		
009	PLL data (lower)										
00A	PLL data (upper)								CH3		
00B	PLL data (lower)										
00C	PLL data (upper)								CH4		
00D	PLL data (lower)										
00E	PLL data (upper)								CH5		
00F	PLL data (lower)										
010	PLL data (upper)								CH6		
011	PLL data (lower)										
012	PLL data (upper)								CH7		
013	PLL data (lower)										
014	PLL data (upper)								CH8		
015	PLL data (lower)										
016	PLL data (upper)								CH9		
017	PLL data (lower)										
018	PLL data (upper)								CH10		
019	PLL data (lower)										
01A	PLL data (upper)								CH11		
01B	PLL data (lower)										
01C	PLL data (upper)								CH12		
01D	PLL data (lower)										
01E	PLL data (upper)								CH13		
01F	PLL data (lower)										
020	PLL data (upper)								CH14		
021	PLL data (lower)										
022	PLL data (upper)								CH15		
023	PLL data (lower)										
024	PLL data (upper)								CH16		
025	PLL data (lower)										
026	PLL data (upper)								CH17		
027	PLL data (lower)										
028	PLL data (upper)								CH18		
029	PLL data (lower)										
02A	PLL data (upper)								CH19		
02B	PLL data (lower)										
02C	PLL data (upper)								CH20		
02D	PLL data (lower)										
02E	PLL data (upper)								CH21		
02F	PLL data (lower)										

E23

存储变换表(RH-IX2938)

副地址	数据 7	6	5	4	3	2	1	0	备考	范围外的判定	出厂时的初始值
000	初始化判定数据 "22"									$22以外	$22
001	初始化判定数据 "29"									$29以外	$29
002	初始化判定数据 "13"									$13以外	$13
003	初始化判定数据 "48"									$48以外	$48
004	PLL数据(高数位)								CH0		
005	PLL数据(低数位)										
006	PLL数据(高数位)								CH1		
007	PLL数据(低数位)										
008	PLL数据(高数位)								CH2		
009	PLL数据(低数位)										
00A	PLL数据(高数位)								CH3		
00B	PLL数据(低数位)										
00C	PLL数据(高数位)								CH4		
00D	PLL数据(低数位)										
00E	PLL数据(高数位)								CH5		
00F	PLL数据(低数位)										
010	PLL数据(高数位)								CH6		
011	PLL数据(低数位)										
012	PLL数据(高数位)								CH7		
013	PLL数据(低数位)										
014	PLL数据(高数位)								CH8		
015	PLL数据(低数位)										
016	PLL数据(高数位)								CH9		
017	PLL数据(低数位)										
018	PLL数据(高数位)								CH10		
019	PLL数据(低数位)										
01A	PLL数据(高数位)								CH11		
01B	PLL数据(低数位)										
01C	PLL数据(高数位)								CH12		
01D	PLL数据(低数位)										
01E	PLL数据(高数位)								CH13		
01F	PLL数据(低数位)										
020	PLL数据(高数位)								CH14		
021	PLL数据(低数位)										
022	PLL数据(高数位)								CH15		
023	PLL数据(低数位)										
024	PLL数据(高数位)								CH16		
025	PLL数据(低数位)										
026	PLL数据(高数位)								CH17		
027	PLL数据(低数位)										
028	PLL数据(高数位)								CH18		
029	PLL数据(低数位)										
02A	PLL数据(高数位)								CH19		
02B	PLL数据(低数位)										
02C	PLL数据(高数位)								CH20		
02D	PLL数据(低数位)										
02E	PLL数据(高数位)								CH21		
02F	PLL数据(低数位)										

C23

SUB ADDRESS	DATA 7	6	5	4	3	2	1	0	REMARKS	CRITERIA	FACTORY SETTING
030	PLL data (upper)								CH22		
031	PLL data (lower)										
032	PLL data (upper)								CH23		
033	PLL data (lower)										
034	PLL data (upper)								CH24		
035	PLL data (lower)										
036	PLL data (upper)								CH25		
037	PLL data (lower)										
038	PLL data (upper)								CH26		
039	PLL data (lower)										
03A	PLL data (upper)								CH27		
03B	PLL data (lower)										
03C	PLL data (upper)								CH28		
03D	PLL data (lower)										
03E	PLL data (upper)								CH29		
03F	PLL data (lower)										
040	PLL data (upper)								CH30		
041	PLL data (lower)										
042	PLL data (upper)								CH31		
043	PLL data (lower)										
044	PLL data (upper)								CH32		
045	PLL data (lower)										
046	PLL data (upper)								CH33		
047	PLL data (lower)										
048	PLL data (upper)								CH34		
049	PLL data (lower)										
04A	PLL data (upper)								CH35		
04B	PLL data (lower)										
04C	PLL data (upper)								CH36		
04D	PLL data (lower)										
04E	PLL data (upper)								CH37		
04F	PLL data (lower)										
050	PLL data (upper)								CH38		
051	PLL data (lower)										
052	PLL data (upper)								CH39		
053	PLL data (lower)										
054	PLL data (upper)								CH40		
055	PLL data (lower)										
056	PLL data (upper)								CH41		
057	PLL data (lower)										
058	PLL data (upper)								CH42		
059	PLL data (lower)										
05A	PLL data (upper)								CH43		
05B	PLL data (lower)										
05C	PLL data (upper)								CH44		
05D	PLL data (lower)										
05E	PLL data (upper)								CH45		
05F	PLL data (lower)										

E24

副地址	数据 7	6	5	4	3	2	1	0	备考	范围外的判定	出厂时的初始值
030	PLL数据(高数位)								CH22		
031	PLL数据(低数位)										
032	PLL数据(高数位)								CH23		
033	PLL数据(低数位)										
034	PLL数据(高数位)								CH24		
035	PLL数据(低数位)										
036	PLL数据(高数位)								CH25		
037	PLL数据(低数位)										
038	PLL数据(高数位)								CH26		
039	PLL数据(低数位)										
03A	PLL数据(高数位)								CH27		
03B	PLL数据(低数位)										
03C	PLL数据(高数位)								CH28		
03D	PLL数据(低数位)										
03E	PLL数据(高数位)								CH29		
03F	PLL数据(低数位)										
040	PLL数据(高数位)								CH30		
041	PLL数据(低数位)										
042	PLL数据(高数位)								CH31		
043	PLL数据(低数位)										
044	PLL数据(高数位)								CH32		
045	PLL数据(低数位)										
046	PLL数据(高数位)								CH33		
047	PLL数据(低数位)										
048	PLL数据(高数位)								CH34		
049	PLL数据(低数位)										
04A	PLL数据(高数位)								CH35		
04B	PLL数据(低数位)										
04C	PLL数据(高数位)								CH36		
04D	PLL数据(低数位)										
04E	PLL数据(高数位)								CH37		
04F	PLL数据(低数位)										
050	PLL数据(高数位)								CH38		
051	PLL数据(低数位)										
052	PLL数据(高数位)								CH39		
053	PLL数据(低数位)										
054	PLL数据(高数位)								CH40		
055	PLL数据(低数位)										
056	PLL数据(高数位)								CH41		
057	PLL数据(低数位)										
058	PLL数据(高数位)								CH42		
059	PLL数据(低数位)										
05A	PLL数据(高数位)								CH43		
05B	PLL数据(低数位)										
05C	PLL数据(高数位)								CH44		
05D	PLL数据(低数位)										
05E	PLL数据(高数位)								CH45		
05F	PLL数据(低数位)										

C24

SUB ADDRESS	DATA 7	6	5	4	3	2	1	0	REMARKS	CRITERIA	FACTORY SETTING
060	PLL data (upper)								CH46		
061	PLL data (lower)										
062	PLL data (upper)								CH47		
063	PLL data (lower)										
064	PLL data (upper)								CH48		
065	PLL data (lower)										
066	PLL data (upper)								CH49		
067	PLL data (lower)										
068	PLL data (upper)								CH50		
069	PLL data (lower)										
06A	PLL data (upper)								CH51		
06B	PLL data (lower)										
06C	PLL data (upper)								CH52		
06D	PLL data (lower)										
06E	PLL data (upper)								CH53		
06F	PLL data (lower)										
070	PLL data (upper)								CH54		
071	PLL data (lower)										
072	PLL data (upper)								CH55		
073	PLL data (lower)										
074	PLL data (upper)								CH56		
075	PLL data (lower)										
076	PLL data (upper)								CH57		
077	PLL data (lower)										
078	PLL data (upper)								CH58		
079	PLL data (lower)										
07A	PLL data (upper)								CH59		
07B	PLL data (lower)										
07C	PLL data (upper)								CH60		
07D	PLL data (lower)										
07E	PLL data (upper)								CH61		
07F	PLL data (lower)										
080	PLL data (upper)								CH62		
081	PLL data (lower)										
082	PLL data (upper)								CH63		
083	PLL data (lower)										
084	PLL data (upper)								CH64		
085	PLL data (lower)										
086	PLL data (upper)								CH65		
087	PLL data (lower)										
088	PLL data (upper)								CH66		
089	PLL data (lower)										
08A	PLL data (upper)								CH67		
08B	PLL data (lower)										
08C	PLL data (upper)								CH68		
08D	PLL data (lower)										
08E	PLL data (upper)								CH69		
08F	PLL data (lower)										

E25

副地址	数据 7	6	5	4	3	2	1	0	备考	范围外的判定	出厂时的初始值
060	PLL数据(高数位)								CH46		
061	PLL数据(低数位)										
062	PLL数据(高数位)								CH47		
063	PLL数据(低数位)										
064	PLL数据(高数位)								CH48		
065	PLL数据(低数位)										
066	PLL数据(高数位)								CH49		
067	PLL数据(低数位)										
068	PLL数据(高数位)								CH50		
069	PLL数据(低数位)										
06A	PLL数据(高数位)								CH51		
06B	PLL数据(低数位)										
06C	PLL数据(高数位)								CH52		
06D	PLL数据(低数位)										
06E	PLL数据(高数位)								CH53		
06F	PLL数据(低数位)										
070	PLL数据(高数位)								CH54		
071	PLL数据(低数位)										
072	PLL数据(高数位)								CH55		
073	PLL数据(低数位)										
074	PLL数据(高数位)								CH56		
075	PLL数据(低数位)										
076	PLL数据(高数位)								CH57		
077	PLL数据(低数位)										
078	PLL数据(高数位)								CH58		
079	PLL数据(低数位)										
07A	PLL数据(高数位)								CH59		
07B	PLL数据(低数位)										
07C	PLL数据(高数位)								CH60		
07D	PLL数据(低数位)										
07E	PLL数据(高数位)								CH61		
07F	PLL数据(低数位)										
080	PLL数据(高数位)								CH62		
081	PLL数据(低数位)										
082	PLL数据(高数位)								CH63		
083	PLL数据(低数位)										
084	PLL数据(高数位)								CH64		
085	PLL数据(低数位)										
086	PLL数据(高数位)								CH65		
087	PLL数据(低数位)										
088	PLL数据(高数位)								CH66		
089	PLL数据(低数位)										
08A	PLL数据(高数位)								CH67		
08B	PLL数据(低数位)										
08C	PLL数据(高数位)								CH68		
08D	PLL数据(低数位)										
08E	PLL数据(高数位)								CH69		
08F	PLL数据(低数位)										

C25

SUB ADDRESS	DATA 7	6	5	4	3	2	1	0	REMARKS	CRITERIA	FACTORY SETTING
090	PLL data (upper)								CH70		
091	PLL data (lower)										
092	PLL data (upper)								CH71		
093	PLL data (lower)										
094	PLL data (upper)								CH72		
095	PLL data (lower)										
096	PLL data (upper)								CH73		
097	PLL data (lower)										
098	PLL data (upper)								CH74		
099	PLL data (lower)										
09A	PLL data (upper)								CH75		
09B	PLL data (lower)										
09C	PLL data (upper)								CH76		
09D	PLL data (lower)										
09E	PLL data (upper)								CH77		
09F	PLL data (lower)										
0A0	PLL data (upper)								CH78		
0A1	PLL data (lower)										
0A2	PLL data (upper)								CH79		
0A3	PLL data (lower)										
0A4	PLL data (upper)								CH80		
0A5	PLL data (lower)										
0A6	PLL data (upper)								CH81		
0A7	PLL data (lower)										
0A8	PLL data (upper)								CH82		
0A9	PLL data (lower)										
0AA	PLL data (upper)								CH83		
0AB	PLL data (lower)										
0AC	PLL data (upper)								CH84		
0AD	PLL data (lower)										
0AE	PLL data (upper)								CH85		
0AF	PLL data (lower)										
0B0	PLL data (upper)								CH86		
0B1	PLL data (lower)										
0B2	PLL data (upper)								CH87		
0B3	PLL data (lower)										
0B4	PLL data (upper)								CH88		
0B5	PLL data (lower)										
0B6	PLL data (upper)								CH89		
0B7	PLL data (lower)										
0B8	PLL data (upper)								CH90		
0B9	PLL data (lower)										
0BA	PLL data (upper)								CH91		
0BB	PLL data (lower)										
0BC	PLL data (upper)								CH92		
0BD	PLL data (lower)										
0BE	PLL data (upper)								CH93		
0BF	PLL data (lower)										

E26

副地址	数据 7	6	5	4	3	2	1	0	备考	范围外的判定	出厂时的初始值
090	PLL数据(高数位)								CH70		
091	PLL数据(低数位)										
092	PLL数据(高数位)								CH71		
093	PLL数据(低数位)										
094	PLL数据(高数位)								CH72		
095	PLL数据(低数位)										
096	PLL数据(高数位)								CH73		
097	PLL数据(低数位)										
098	PLL数据(高数位)								CH74		
099	PLL数据(低数位)										
09A	PLL数据(高数位)								CH75		
09B	PLL数据(低数位)										
09C	PLL数据(高数位)								CH76		
09D	PLL数据(低数位)										
09E	PLL数据(高数位)								CH77		
09F	PLL数据(低数位)										
0A0	PLL数据(高数位)								CH78		
0A1	PLL数据(低数位)										
0A2	PLL数据(高数位)								CH79		
0A3	PLL数据(低数位)										
0A4	PLL数据(高数位)								CH80		
0A5	PLL数据(低数位)										
0A6	PLL数据(高数位)								CH81		
0A7	PLL数据(低数位)										
0A8	PLL数据(高数位)								CH82		
0A9	PLL数据(低数位)										
0AA	PLL数据(高数位)								CH83		
0AB	PLL数据(低数位)										
0AC	PLL数据(高数位)								CH84		
0AD	PLL数据(低数位)										
0AE	PLL数据(高数位)								CH85		
0AF	PLL数据(低数位)										
0B0	PLL数据(高数位)								CH86		
0B1	PLL数据(低数位)										
0B2	PLL数据(高数位)								CH87		
0B3	PLL数据(低数位)										
0B4	PLL数据(高数位)								CH88		
0B5	PLL数据(低数位)										
0B6	PLL数据(高数位)								CH89		
0B7	PLL数据(低数位)										
0B8	PLL数据(高数位)								CH90		
0B9	PLL数据(低数位)										
0BA	PLL数据(高数位)								CH91		
0BB	PLL数据(低数位)										
0BC	PLL数据(高数位)								CH92		
0BD	PLL数据(低数位)										
0BE	PLL数据(高数位)								CH93		
0BF	PLL数据(低数位)										

C26

SUB ADDRESS	DATA 7	6	5	4	3	2	1	0	REMARKS	CRITERIA	FACTORY SETTING
0C0	PLL data (upper)								CH94		
0C1	PLL data (lower)										
0C2	PLL data (upper)								CH95		
0C3	PLL data (lower)										
0C4	PLL data (upper)								CH96		
0C5	PLL data (lower)										
0C6	PLL data (upper)								CH97		
0C7	PLL data (lower)										
0C8	PLL data (upper)								CH98		
0C9	PLL data (lower)										
0CA	PLL data (upper)								CH99		
0CB	PLL data (lower)										
0CC	POWER	TV/AV									80
0CD	BLUE BACKGROUND				One-digit/two-digit				OFF/·	Factory-set at ON	55
0CE	LANGUAGE										00
0CF	LAST POSITION										01
0D0	LAST CONTRAST										3F
0D1	LAST COLOUR										1F
0D2	LAST BRIGHTNESS										1F
0D3	LAST TINT										1F
0D4	LAST SHARPNESS										1F
0D5	LAST VOLUME										00
0D6	LAST SERVICE MODE										00
0D7											
0D8											
0D9											
0DA											
0DB											
0DC											
0DD											
0DE											
0DF											
0E0	CH7	CH5	CH5	CH4	CH3	CH2	CH1	CH0	AFT 0 : OFF 1 : ON	AFT OFF	FF
0E1	CH15	CH14	CH13	CH12	CH11	CH10	CH9	CH8			
0E2	CH23	CH22	CH21	CH20	CH19	CH18	CH17	CH16			
0E3	CH31	CH30	CH29	CH28	CH27	CH26	CH25	CH24			
0E4	CH39	CH38	CH37	CH36	CH35	CH34	CH33	CH32			
0E5	CH47	CH46	CH45	CH44	CH43	CH42	CH41	CH40			
0E6	CH55	CH54	CH53	CH52	CH51	CH50	CH49	CH48			
0E7	CH63	CH62	CH61	CH60	CH59	CH58	CH57	CH56			
0E8	CH71	CH70	CH69	CH68	CH67	CH66	CH65	CH64			
0E9	CH79	CH78	CH77	CH76	CH75	CH74	CH73	CH72			
0EA	CH87	CH86	CH85	CH84	CH83	CH82	CH81	CH80			
0EB	CH95	CH94	CH93	CH92	CH91	CH90	CH89	CH88			
0EC					CH99	CH98	CH97	CH96			
0ED											
0EE											
0EF											

E27

副地址	数据 7	6	5	4	3	2	1	0	备考	范围外的判定	出厂时的初始值
0C0	PLL数据(高数位)								CH94		
0C1	PLL数据(低数位)										
0C2	PLL数据(高数位)								CH95		
0C3	PLL数据(低数位)										
0C4	PLL数据(高数位)								CH96		
0C5	PLL数据(低数位)										
0C6	PLL数据(高数位)								CH97		
0C7	PLL数据(低数位)										
0C8	PLL数据(高数位)								CH98		
0C9	PLL数据(低数位)										
0CA	PLL数据(高数位)								CH99		
0CB	PLL数据(低数位)										
0CC	电源	电视/录象									80
0CD	蓝色背景				1位/2位				关 /·	出厂时的设定位置为ON	55
0CE	语言										00
0CF	最后设定位置										01
0D0	对比度控制键的最后设定位置										3F
0D1	彩色控制键的最后设定位置										1F
0D2	亮度控制键的最后设定位置										1F
0D3	色调控制键的最后设定位置										1F
0D4	鲜明度控制键的最后设定位置										1F
0D5	音量旋钮的最后设定位置										00
0D6	保养调整开关的最后设定位置										00
0D7											
0D8											
0D9											
0DA											
0DB											
0DC											
0DD											
0DE											
0DF											
0E0	CH7	CH5	CH5	CH4	CH3	CH2	CH1	CH0	自动微调 0：关 1：开	自动微调 关	FF
0E1	CH15	CH14	CH13	CH12	CH11	CH10	CH9	CH8			
0E2	CH23	CH22	CH21	CH20	CH19	CH18	CH17	CH16			
0E3	CH31	CH30	CH29	CH28	CH27	CH26	CH25	CH24			
0E4	CH39	CH38	CH37	CH36	CH35	CH34	CH33	CH32			
0E5	CH47	CH46	CH45	CH44	CH43	CH42	CH41	CH40			
0E6	CH55	CH54	CH53	CH52	CH51	CH50	CH49	CH48			
0E7	CH63	CH62	CH61	CH60	CH59	CH58	CH57	CH56			
0E8	CH71	CH70	CH69	CH68	CH67	CH66	CH65	CH64			
0E9	CH79	CH78	CH77	CH76	CH75	CH74	CH73	CH72			
0EA	CH87	CH86	CH85	CH84	CH83	CH82	CH81	CH80			
0EB	CH95	CH94	CH93	CH92	CH91	CH90	CH89	CH88			
0EC					CH99	CH98	CH97	CH96			
0ED											
0EE											
0EF											

C27

SUB ADDRESS	DATA								REMARKS	CRITERIA	FACTORY SETTING
	7	6	5	4	3	2	1	0			
0F0	CH7	CH5	CH5	CH4	CH3	CH2	CH1	CH0	SKIP 0 : OFF 1 : ON	SKIP ON	00
0F1	CH15	CH5	CH5	CH4	CH3	CH2	CH1	CH0			
0F2	CH23	CH22	CH21	CH20	CH19	CH18	CH17	CH16			
0F3	CH31	CH30	CH29	CH28	CH27	CH26	CH25	CH24			
0F4	CH39	CH38	CH37	CH36	CH35	CH34	CH33	CH32			
0F5	CH47	CH46	CH45	CH44	CH43	CH42	CH41	CH40			
0F6	CH55	CH54	CH53	CH52	CH51	CH50	CH49	CH48			
0F7	CH63	CH62	CH61	CH60	CH59	CH58	CH57	CH56			
0F8	CH71	CH70	CH69	CH68	CH67	CH66	CH65	CH64			
0F9	CH79	CH78	CH77	CH76	CH75	CH74	CH73	CH72			
0FA	CH87	CH86	CH85	CH84	CH83	CH82	CH81	CH80			
0FB	CH95	CH94	CH93	CH92	CH91	CH90	CH89	CH88			
0FC					CH99	CH98	CH97	CH96			
0FD											
0FE											
0FF											

副地址	数据								备考	范围外的判定	出厂时的初始值
	7	6	5	4	3	2	1	0			
0F0	CH7	CH5	CH5	CH4	CH3	CH2	CH1	CH0	跳跃 0：关 1：开	跳跃　开	00
0F1	CH15	CH5	CH5	CH4	CH3	CH2	CH1	CH0			
0F2	CH23	CH22	CH21	CH20	CH19	CH18	CH17	CH16			
0F3	CH31	CH30	CH29	CH28	CH27	CH26	CH25	CH24			
0F4	CH39	CH38	CH37	CH36	CH35	CH34	CH33	CH32			
0F5	CH47	CH46	CH45	CH44	CH43	CH42	CH41	CH40			
0F6	CH55	CH54	CH53	CH52	CH51	CH50	CH49	CH48			
0F7	CH63	CH62	CH61	CH60	CH59	CH58	CH57	CH56			
0F8	CH71	CH70	CH69	CH68	CH67	CH66	CH65	CH64			
0F9	CH79	CH78	CH77	CH76	CH75	CH74	CH73	CH72			
0FA	CH87	CH86	CH85	CH84	CH83	CH82	CH81	CH80			
0FB	CH95	CH94	CH93	CH92	CH91	CH90	CH89	CH88			
0FC					CH99	CH98	CH97	CH96			
0FD											
0FE											
0FF											

SUB ADDRESS	DATA								REMARKS	CRITERIA	FACTORY SETTING
	7	6	5	4	3	2	1	0			
100	AUDIO SYSTEM				VIDEO SYSTEM				CH0		
101	AUDIO SYSTEM				VIDEO SYSTEM				CH1		
102	AUDIO SYSTEM				VIDEO SYSTEM				CH2		
103	AUDIO SYSTEM				VIDEO SYSTEM				CH3		
104	AUDIO SYSTEM				VIDEO SYSTEM				CH4		
105	AUDIO SYSTEM				VIDEO SYSTEM				CH5		
106	AUDIO SYSTEM				VIDEO SYSTEM				CH6		
107	AUDIO SYSTEM				VIDEO SYSTEM				CH7		
108	AUDIO SYSTEM				VIDEO SYSTEM				CH8		
109	AUDIO SYSTEM				VIDEO SYSTEM				CH9		
10A	AUDIO SYSTEM				VIDEO SYSTEM				CH10		
10B	AUDIO SYSTEM				VIDEO SYSTEM				CH11		
10C	AUDIO SYSTEM				VIDEO SYSTEM				CH12		
10D	AUDIO SYSTEM				VIDEO SYSTEM				CH13		
10E	AUDIO SYSTEM				VIDEO SYSTEM				CH14		
10F	AUDIO SYSTEM				VIDEO SYSTEM				CH15		
110	AUDIO SYSTEM				VIDEO SYSTEM				CH16		
111	AUDIO SYSTEM				VIDEO SYSTEM				CH17		
112	AUDIO SYSTEM				VIDEO SYSTEM				CH18		
113	AUDIO SYSTEM				VIDEO SYSTEM				CH19		
114	AUDIO SYSTEM				VIDEO SYSTEM				CH20		
115	AUDIO SYSTEM				VIDEO SYSTEM				CH21		
116	AUDIO SYSTEM				VIDEO SYSTEM				CH22		
117	AUDIO SYSTEM				VIDEO SYSTEM				CH23		
118	AUDIO SYSTEM				VIDEO SYSTEM				CH24		
119	AUDIO SYSTEM				VIDEO SYSTEM				CH25		
11A	AUDIO SYSTEM				VIDEO SYSTEM				CH26		
11B	AUDIO SYSTEM				VIDEO SYSTEM				CH27		
11C	AUDIO SYSTEM				VIDEO SYSTEM				CH28		
11D	AUDIO SYSTEM				VIDEO SYSTEM				CH29		
11E	AUDIO SYSTEM				VIDEO SYSTEM				CH30		
11F	AUDIO SYSTEM				VIDEO SYSTEM				CH31		
120	AUDIO SYSTEM				VIDEO SYSTEM				CH32		
121	AUDIO SYSTEM				VIDEO SYSTEM				CH33		
122	AUDIO SYSTEM				VIDEO SYSTEM				CH34		
123	AUDIO SYSTEM				VIDEO SYSTEM				CH35		
124	AUDIO SYSTEM				VIDEO SYSTEM				CH36		
125	AUDIO SYSTEM				VIDEO SYSTEM				CH37		
126	AUDIO SYSTEM				VIDEO SYSTEM				CH38		
127	AUDIO SYSTEM				VIDEO SYSTEM				CH39		
128	AUDIO SYSTEM				VIDEO SYSTEM				CH40		
129	AUDIO SYSTEM				VIDEO SYSTEM				CH41		
12A	AUDIO SYSTEM				VIDEO SYSTEM				CH42		
12B	AUDIO SYSTEM				VIDEO SYSTEM				CH43		
12C	AUDIO SYSTEM				VIDEO SYSTEM				CH44		
12D	AUDIO SYSTEM				VIDEO SYSTEM				CH45		
12E	AUDIO SYSTEM				VIDEO SYSTEM				CH46		
12F	AUDIO SYSTEM				VIDEO SYSTEM				CH47		

E29

副地址	数据								备考	范围外的判定	出厂时的初始值
	7	6	5	4	3	2	1	0			
100	声音制式				图象制式				CH0		
101	声音制式				图象制式				CH1		
102	声音制式				图象制式				CH2		
103	声音制式				图象制式				CH3		
104	声音制式				图象制式				CH4		
105	声音制式				图象制式				CH5		
106	声音制式				图象制式				CH6		
107	声音制式				图象制式				CH7		
108	声音制式				图象制式				CH8		
109	声音制式				图象制式				CH9		
10A	声音制式				图象制式				CH10		
10B	声音制式				图象制式				CH11		
10C	声音制式				图象制式				CH12		
10D	声音制式				图象制式				CH13		
10E	声音制式				图象制式				CH14		
10F	声音制式				图象制式				CH15		
110	声音制式				图象制式				CH16		
111	声音制式				图象制式				CH17		
112	声音制式				图象制式				CH18		
113	声音制式				图象制式				CH19		
114	声音制式				图象制式				CH20		
115	声音制式				图象制式				CH21		
116	声音制式				图象制式				CH22		
117	声音制式				图象制式				CH23		
118	声音制式				图象制式				CH24		
119	声音制式				图象制式				CH25		
11A	声音制式				图象制式				CH26		
11B	声音制式				图象制式				CH27		
11C	声音制式				图象制式				CH28		
11D	声音制式				图象制式				CH29		
11E	声音制式				图象制式				CH30		
11F	声音制式				图象制式				CH31		
120	声音制式				图象制式				CH32		
121	声音制式				图象制式				CH33		
122	声音制式				图象制式				CH34		
123	声音制式				图象制式				CH35		
124	声音制式				图象制式				CH36		
125	声音制式				图象制式				CH37		
126	声音制式				图象制式				CH38		
127	声音制式				图象制式				CH39		
128	声音制式				图象制式				CH40		
129	声音制式				图象制式				CH41		
12A	声音制式				图象制式				CH42		
12B	声音制式				图象制式				CH43		
12C	声音制式				图象制式				CH44		
12D	声音制式				图象制式				CH45		
12E	声音制式				图象制式				CH46		
12F	声音制式				图象制式				CH47		

C29

SUB ADDRESS	DATA 7	6	5	4	3	2	1	0	REMARKS	CRITERIA	FACTORY SETTING
130	AUDIO SYSTEM				VIDEO SYSTEM				CH48		
131	AUDIO SYSTEM				VIDEO SYSTEM				CH49		
132	AUDIO SYSTEM				VIDEO SYSTEM				CH50		
133	AUDIO SYSTEM				VIDEO SYSTEM				CH51		
134	AUDIO SYSTEM				VIDEO SYSTEM				CH52		
135	AUDIO SYSTEM				VIDEO SYSTEM				CH53		
136	AUDIO SYSTEM				VIDEO SYSTEM				CH54		
137	AUDIO SYSTEM				VIDEO SYSTEM				CH55		
138	AUDIO SYSTEM				VIDEO SYSTEM				CH56		
139	AUDIO SYSTEM				VIDEO SYSTEM				CH57		
13A	AUDIO SYSTEM				VIDEO SYSTEM				CH58		
13B	AUDIO SYSTEM				VIDEO SYSTEM				CH59		
13C	AUDIO SYSTEM				VIDEO SYSTEM				CH60		
13D	AUDIO SYSTEM				VIDEO SYSTEM				CH61		
13E	AUDIO SYSTEM				VIDEO SYSTEM				CH62		
13F	AUDIO SYSTEM				VIDEO SYSTEM				CH63		
140	AUDIO SYSTEM				VIDEO SYSTEM				CH64		
141	AUDIO SYSTEM				VIDEO SYSTEM				CH65		
142	AUDIO SYSTEM				VIDEO SYSTEM				CH66		
143	AUDIO SYSTEM				VIDEO SYSTEM				CH67		
144	AUDIO SYSTEM				VIDEO SYSTEM				CH68		
145	AUDIO SYSTEM				VIDEO SYSTEM				CH69		
146	AUDIO SYSTEM				VIDEO SYSTEM				CH70		
147	AUDIO SYSTEM				VIDEO SYSTEM				CH71		
148	AUDIO SYSTEM				VIDEO SYSTEM				CH72		
149	AUDIO SYSTEM				VIDEO SYSTEM				CH73		
14A	AUDIO SYSTEM				VIDEO SYSTEM				CH74		
14B	AUDIO SYSTEM				VIDEO SYSTEM				CH75		
14C	AUDIO SYSTEM				VIDEO SYSTEM				CH76		
14D	AUDIO SYSTEM				VIDEO SYSTEM				CH77		
14E	AUDIO SYSTEM				VIDEO SYSTEM				CH78		
14F	AUDIO SYSTEM				VIDEO SYSTEM				CH79		
150	AUDIO SYSTEM				VIDEO SYSTEM				CH80		
151	AUDIO SYSTEM				VIDEO SYSTEM				CH81		
152	AUDIO SYSTEM				VIDEO SYSTEM				CH82		
153	AUDIO SYSTEM				VIDEO SYSTEM				CH83		
154	AUDIO SYSTEM				VIDEO SYSTEM				CH84		
155	AUDIO SYSTEM				VIDEO SYSTEM				CH85		
156	AUDIO SYSTEM				VIDEO SYSTEM				CH86		
157	AUDIO SYSTEM				VIDEO SYSTEM				CH87		
158	AUDIO SYSTEM				VIDEO SYSTEM				CH88		
159	AUDIO SYSTEM				VIDEO SYSTEM				CH89		
15A	AUDIO SYSTEM				VIDEO SYSTEM				CH90		
15B	AUDIO SYSTEM				VIDEO SYSTEM				CH91		
15C	AUDIO SYSTEM				VIDEO SYSTEM				CH92		
15D	AUDIO SYSTEM				VIDEO SYSTEM				CH93		
15E	AUDIO SYSTEM				VIDEO SYSTEM				CH94		
15F	AUDIO SYSTEM				VIDEO SYSTEM				CH95		

E30

副地址	数据 7	6	5	4	3	2	1	0	备考	范围外的判定	出厂时的初始值
130	声音制式				图象制式				CH48		
131	声音制式				图象制式				CH49		
132	声音制式				图象制式				CH50		
133	声音制式				图象制式				CH51		
134	声音制式				图象制式				CH52		
135	声音制式				图象制式				CH53		
136	声音制式				图象制式				CH54		
137	声音制式				图象制式				CH55		
138	声音制式				图象制式				CH56		
139	声音制式				图象制式				CH57		
13A	声音制式				图象制式				CH58		
13B	声音制式				图象制式				CH59		
13C	声音制式				图象制式				CH60		
13D	声音制式				图象制式				CH61		
13E	声音制式				图象制式				CH62		
13F	声音制式				图象制式				CH63		
140	声音制式				图象制式				CH64		
141	声音制式				图象制式				CH65		
142	声音制式				图象制式				CH66		
143	声音制式				图象制式				CH67		
144	声音制式				图象制式				CH68		
145	声音制式				图象制式				CH69		
146	声音制式				图象制式				CH70		
147	声音制式				图象制式				CH71		
148	声音制式				图象制式				CH72		
149	声音制式				图象制式				CH73		
14A	声音制式				图象制式				CH74		
14B	声音制式				图象制式				CH75		
14C	声音制式				图象制式				CH76		
14D	声音制式				图象制式				CH77		
14E	声音制式				图象制式				CH78		
14F	声音制式				图象制式				CH79		
150	声音制式				图象制式				CH80		
151	声音制式				图象制式				CH81		
152	声音制式				图象制式				CH82		
153	声音制式				图象制式				CH83		
154	声音制式				图象制式				CH84		
155	声音制式				图象制式				CH85		
156	声音制式				图象制式				CH86		
157	声音制式				图象制式				CH87		
158	声音制式				图象制式				CH88		
159	声音制式				图象制式				CH89		
15A	声音制式				图象制式				CH90		
15B	声音制式				图象制式				CH91		
15C	声音制式				图象制式				CH92		
15D	声音制式				图象制式				CH93		
15E	声音制式				图象制式				CH94		
15F	声音制式				图象制式				CH95		

C30

SUB ADDRESS	DATA 7	6	5	4	3	2	1	0	REMARKS	CRITERIA	FACTORY SETTING
160	AUDIO SYSTEM				VIDEO SYSTEM				CH96		
161	AUDIO SYSTEM				VIDEO SYSTEM				CH97		
162	AUDIO SYSTEM				VIDEO SYSTEM				CH98		
163	AUDIO SYSTEM				VIDEO SYSTEM				CH99		
164	AUDIO SYSTEM				VIDEO SYSTEM				A/V MODE		
165											
166											
167											
168											
169											
16A											
16B											
16C											
16D											
16E											
16F											
170	CUT OFF (R)								0		00
171	CUT OFF (G)								0		00
172	CUT OFF (B)								0		00
173	DRIVE (G)								127		7F
174	DRIVE (R)								127		7F
175				TV H-CENTER (50Hz)					7		07
176				TV H-CENTER (60Hz)					12		0C
177	H BLK PHASE					V-CENTER 50			0,5		05
178	V-AMPLITUDE 50								58		74
179	V S-CORRECTION 50								67		86
17A	V-LINEALITY 50								16		80
17B	Y SUB CONTRAST								18		12
17C	SUB COLOUR								110		6E
17D	SUB BRIGHT								127		7F
17E	SUB TINT								70		46
17F	SUB SHARPNESS								28		1C
180	DELAY PAL (AV)				DELAY PAL (TV)				2,2		22
181	DELAY SECAM (AV)				DELAY SECAM (TV)				4,4		44
182	DELAY NTSC (AV)				DELAY NTSC (TV)				2,2		22
183	DELAY B/W (AV)				DELAY B/W (TV)				2,2		22
184	R-Y BLACK OFFSET				B-Y BLACK OFFSET				10,6		A6
185					Y-MUTE	AV2			OFF/ON		04
186						V-CENTER 60			2		02
187	V-AMPLITUDE 60								59		76
188	V S-CORRECTION 60								74		E8
189	V-LINEARITY 60								14		70
18A			WIDE V-BLK START PHASE 50						58		3A
18B			WIDE V-BLK START PHASE 60						60		3C
18C			WIDE V-BLK STOP PHASE 50						25		19
18D			WIDE V-BLK STOP PHASE 60						20		14
18E	SUB CONTRAST								255		FF
18F											

E31

副地址	数据 7	6	5	4	3	2	1	0	备考	范围外的判定	出厂时的初始值
160	声音制式				图象制式				CH96		
161	声音制式				图象制式				CH97		
162	声音制式				图象制式				CH98		
163	声音制式				图象制式				CH99		
164	声音制式				图象制式				声象状态		
165											
166											
167											
168											
169											
16A											
16B											
16C											
16D											
16E											
16F											
170	红色截止								0		00
171	绿色截止								0		00
172	蓝色截止								0		00
173	绿色激励								127		7F
174	红色激励								127		7F
175				电视 水平中心(50Hz)					7		07
176				电视 水平中心(60Hz)					12		0C
177	水平消隐相位					垂直中心50			0,5		05
178	垂直幅值50								58		74
179	垂直同步校正50								67		86
17A	垂直线性度50								16		80
17B	亮度副对比度								18		12
17C	副彩色								110		6E
17D	副亮度								127		7F
17E	副色调								70		46
17F	副鲜明度								28		1C
180	延迟PAL(录象)				延迟PAL(电视)				2,2		22
181	延迟SECAM(录象)				延迟SECAM(电视)				4,4		44
182	延迟NTSC(录象)				延迟NTSC(电视)				2,2		22
183	延迟B/W(录象)				延迟B/W(电视)				2,2		22
184	红色亮度黑色信号电平误差幅值				蓝色亮度黑色信号电平误差幅值				10,6		A6
185					Y-静噪	声象2			关/开		04
186						垂直中心60			2		02
187	垂直幅值60								59		76
188	垂直同步校正60								74		E8
189	垂直线性度60								14		70
18A			宽屏垂直消隐起动相位50						58		3A
18B			宽屏垂直消隐起动相位60						60		3C
18C			宽屏垂直消隐停止相位50						25		19
18D			宽屏垂直消隐停止相位60						20		14
18E	副对比度								255		FF
18F											

C31

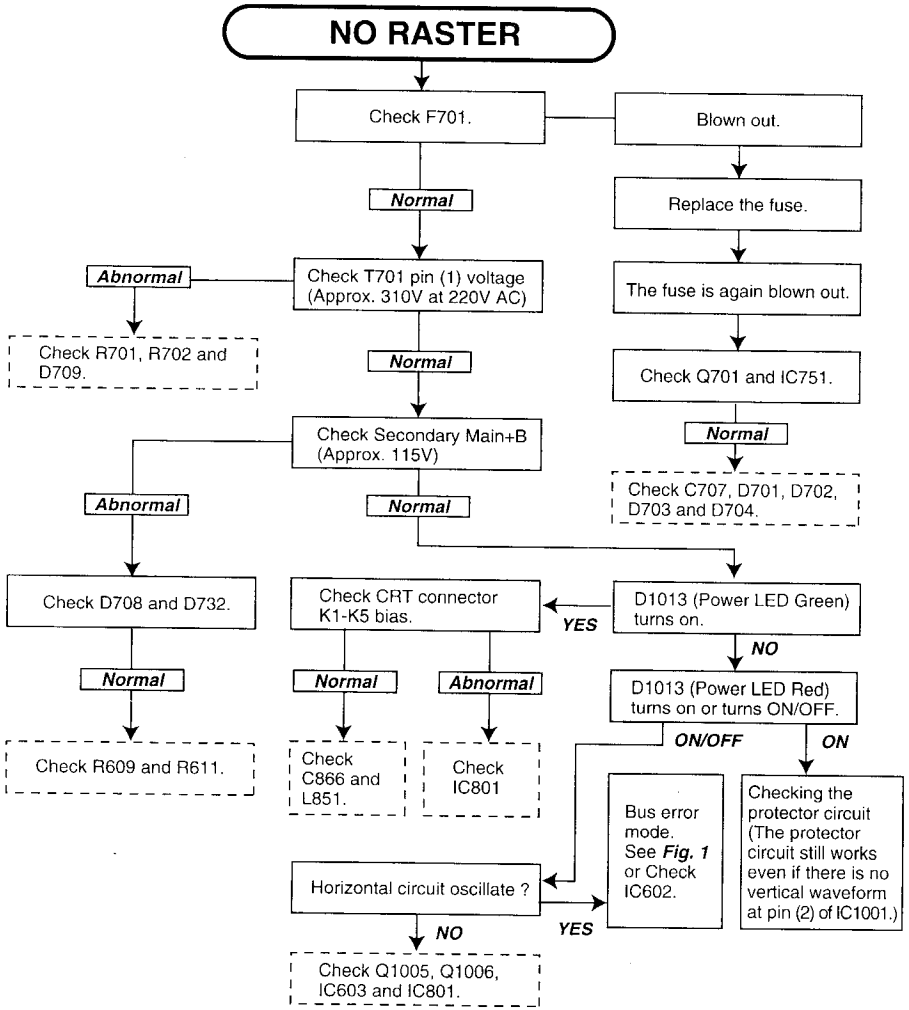
SUB ADDRESS	DATA								REMARKS	CRITERIA	FACTORY SETTING
	7	6	5	4	3	2	1	0			
190	P/N KIL	NOISE DET							0		00
191	RGB CONTRAST								255		FF
192	Yγ	WPL SW							0,0		00
193						AFC MODE			1		02
194	B.S OFF				P/N GP	CL-L SW			0,0,1		00
195	CLL LEVEL		PN CD ATT						2,2		A0
196	BLACK STRETCH OFFSET		DC TRAN RATE				APA-CON F0		7,2,2		EA
197	ABL POINT				ABL GAIN				0,1		04
198							COINCIDENT		0		01*
199	NOISE DET LEVEL								0		00
19A	N COMB								1		80
19B	S-FIELD	SCD ATT	DEMP F0	S GP	V-ID SW	S KIL	BELL F0				21
19C											
19D											
19E											
19F											
1A0	TOF Q (AV)		TOF F0 (AV)		TOF Q (TV)		TOF F0 (TV)		PAL		8B
1A1	TOF Q (AV)		TOF F0 (AV)		TOF Q (TV)		TOF F0 (TV)		SECAM		8B
1A2	TOF Q (AV)		TOF F0 (AV)		TOF Q (TV)		TOF F0 (TV)		N443		8B
1A3	TOF Q (AV)		TOF F0 (AV)		TOF Q (TV)		TOF F0 (TV)		N358		8B
1A4	C-TRAP Q (AV)		C-TRAP F0 (AV)		C-TRAP Q (TV)		C-TRAP F0 (TV)		PAL		66
1A5	C-TRAP Q (AV)		C-TRAP F0 (AV)		C-TRAP Q (TV)		C-TRAP F0 (TV)		SECAM		66
1A6	C-TRAP Q (AV)		C-TRAP F0 (AV)		C-TRAP Q (TV)		C-TRAP F0 (TV)		N443		66
1A7	C-TRAP Q (AV)		C-TRAP F0 (AV)		C-TRAP Q (TV)		C-TRAP F0 (TV)		N358		66
1A8	N358 SHARPNESS								10		0A
1A9	N358 TR								ON		00
1AA											
1AB											
1AC											
1AD											
1AE											
1AF											
1B0											
1B1											
1B2											
1B3											
1B4											
1B5											
1B6											
1B7											
1B8											
1B9											
1BA											
1BB											
1BC											
1BD											
1BE											
1BF											

* : The initial setting of the RH-iX2938CEZZ/N1 must be changed from 00 to 01. With the RH-iX2938CEN2, there is no need to change the initial setting.

副地址	数据								备考	范围外的判定	出厂时的初始值
	7	6	5	4	3	2	1	0			
190	P/N抑制器	噪声检测							0		00
191	红绿蓝三色对比度								255		FF
192	Yγ	WPL开关							0,0		00
193						AFC方式			1		02
194	B.S关闭				P/N GP	CL-L开关			0,0,1		00
195	CLL电平		PN CD ATT						2,2		A0
196	黑色脉冲电平误差幅值		直流传输速率				APA控制F0		7,2,2		EA
197	ABL点				ABL增益				0,1		04
198							重合		0		01*
199	噪声检测电平								0		00
19A	N梳形滤波器								1		80
19B	S场	SCD ATT	DEMP F0	S GP	V-ID开关	S抑制器	贝尔 F0				21
19C											
19D											
19E											
19F											
1A0	TQF Q(录象)		TOF F0(录象)		TOF Q(电视)		TOF F0(电视)		PAL		8B
1A1	TQF Q(录象)		TOF F0(录象)		TOF Q(电视)		TOF F0(电视)		SECAM		8B
1A2	TQF Q(录象)		TOF F0(录象)		TOF Q(电视)		TOF F0(电视)		N443		8B
1A3	TQF Q(录象)		TOF F0(录象)		TOF Q(电视)		TOF F0(电视)		N358		8B
1A4	C-陷波 Q(录象)		C-陷波 F0(录象)		C-陷波 Q(电视)		C-陷波 F0(电视)		PAL		66
1A5	C-陷波 Q(录象)		C-陷波 F0(录象)		C-陷波 Q(电视)		C-陷波 F0(电视)		SECAM		66
1A6	C-陷波 Q(录象)		C-陷波 F0(录象)		C-陷波 Q(电视)		C-陷波 F0(电视)		N443		66
1A7	C-陷波 Q(录象)		C-陷波 F0(录象)		C-陷波 Q(电视)		C-陷波 F0(电视)		N358		66
1A8	N358 鲜明度								10		0A
1A9	N358 TR								开		00
1AA											
1AB											
1AC											
1AD											
1AE											
1AF											
1B0											
1B1											
1B2											
1B3											
1B4											
1B5											
1B6											
1B7											
1B8											
1B9											
1BA											
1BB											
1BC											
1BD											
1BE											
1BF											

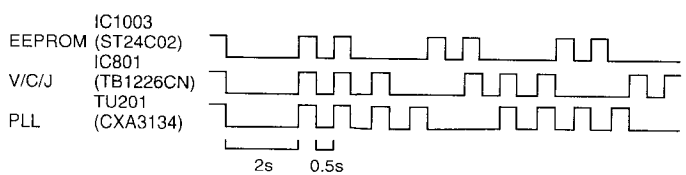
*：RH-iX2938CEZZ/N1的初始值必须改变00为01。但是，关于RH-iX2938CEN2不需改变。

TROUBLE SHOOTING TABLE



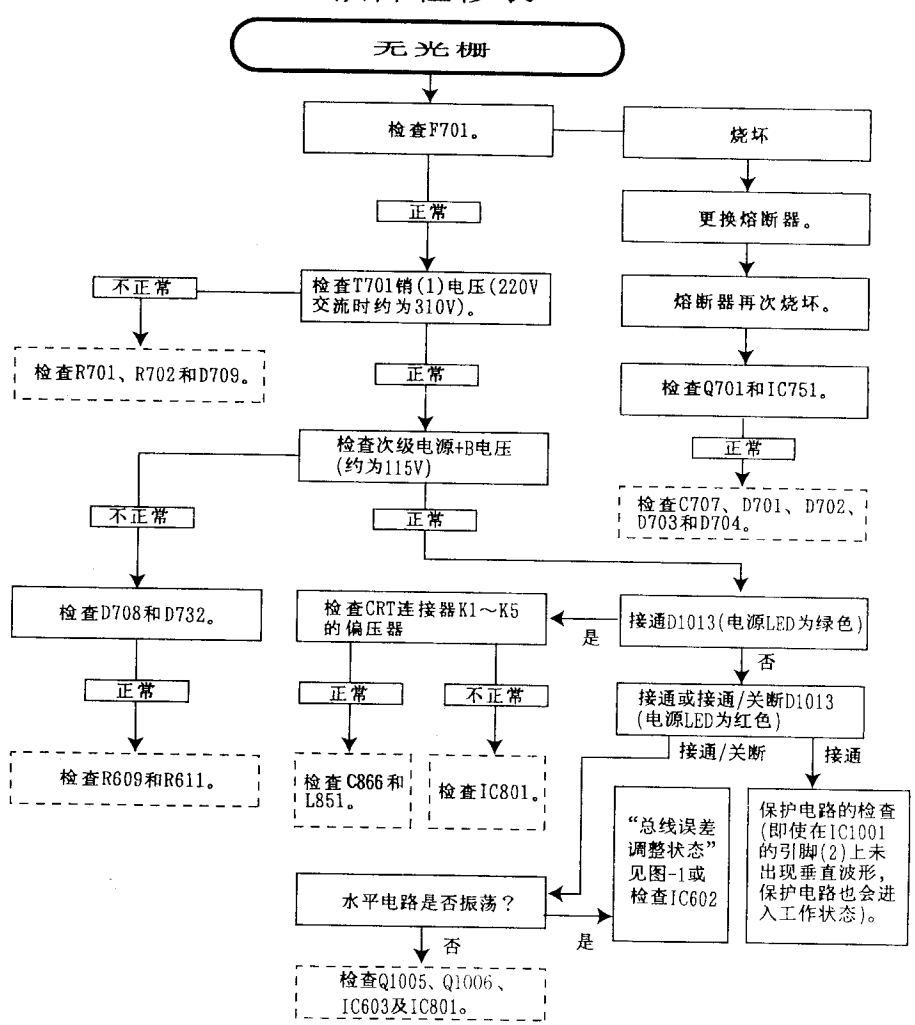
If a bus error happens, the LED RED (pin 3) indicator starts flashing and the power is turned off. The power key is still effective.

Fig. 1



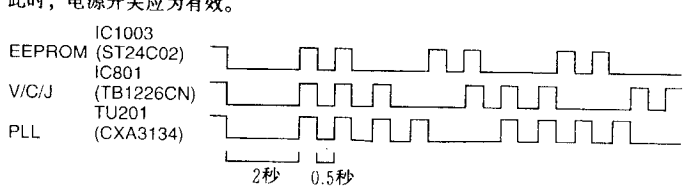
E33

故障检修表



在总线误差调整状态下，按下记顺序将红色发光二极管(引脚3)闪动，与其同时，关闭电源开关。此时，电源开关应为有效。

图-1

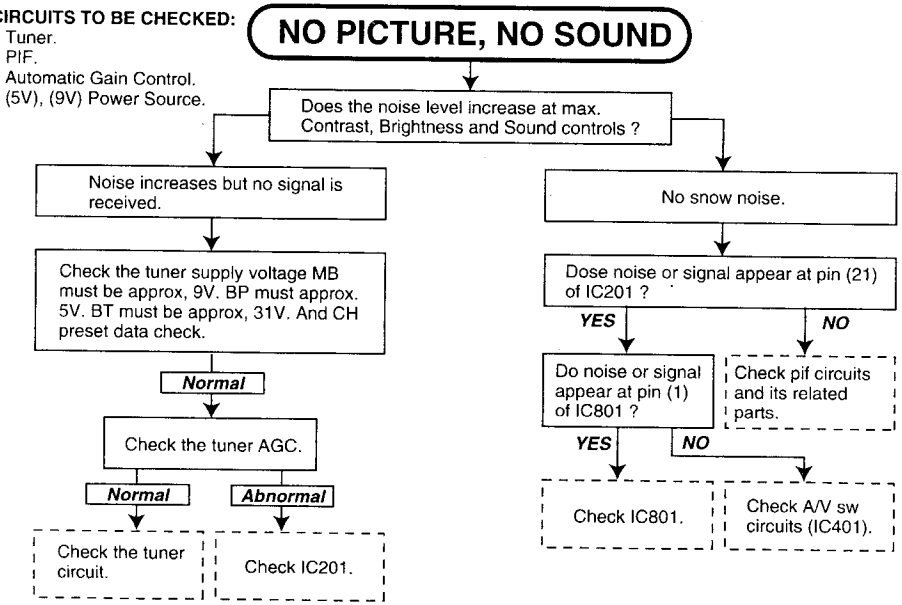


C33

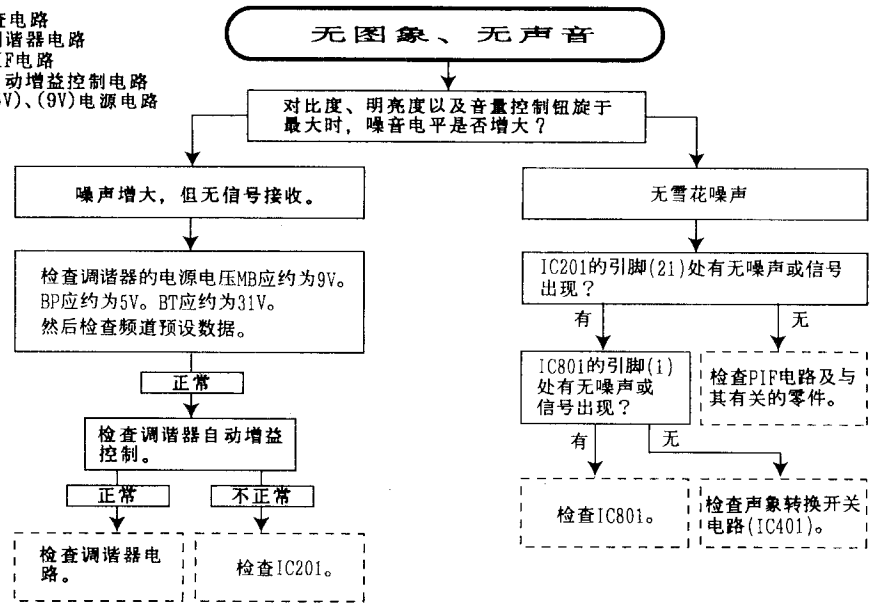
TROUBLE SHOOTING TABLE (Continued)

故障检修表(接上页)

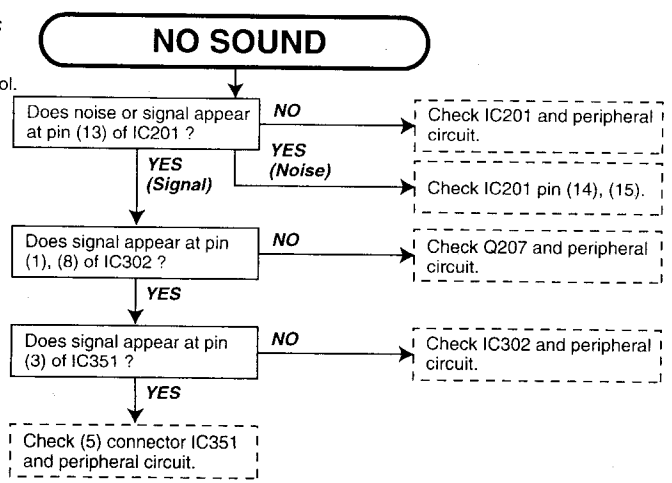
CIRCUITS TO BE CHECKED:
- Tuner.
- PIF.
- Automatic Gain Control.
- (5V), (9V) Power Source.



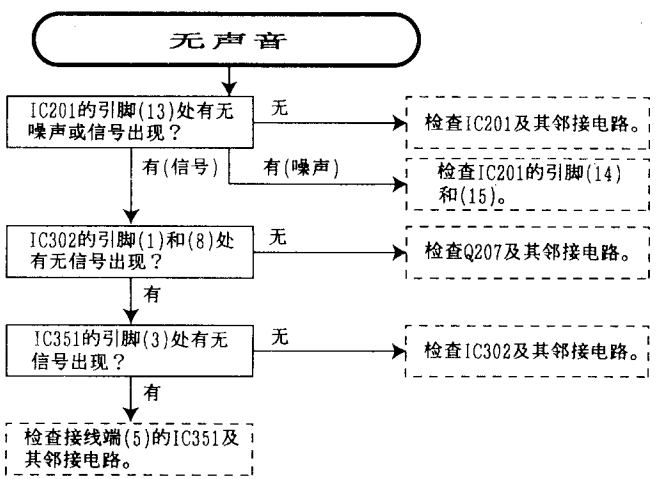
检查电路
- 调谐器电路
- PIF电路
- 自动增益控制电路
- (5V)、(9V)电源电路



CIRCUITS TO BE CHECKED:
- SIF Amplifier Circuit.
- Sound Detector Circuit.
- Sound Switch and Att. Control.
- Audio Output Circuit.



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



TROUBLE SHOOTING TABLE (Continued)

NEITHER VERTICAL NOR HORIZONTAL SYNCHRONIZATION

CIRCUIT TO BE CHECKED:
- Sync. Separator Circuit.

→ Check IC801 and Q401.

DEFECTIVE VERTICAL AMP. AND VERTICAL LINEARITY

→ Readjust vertical size. (Bas Data)

- Vertical size is abnormal. → Check R510, C513, C514 and C501.
- Vertical linearity is abnormal. → Check C515, C519, R511, R513 and R514.

NO VERTICAL SCAN

→ Check IC501 bias.

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

E35

故障检修表（接上页）

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和Q401。

垂直放大及垂直线性度异常

→ 重调垂直尺寸（总线控制数据）。

- 垂直尺寸不符要求。 → 检查R510、C513、C514和C501。
- 垂直线性度不符要求。 → 检查C515、C519、R511、R513和R514。

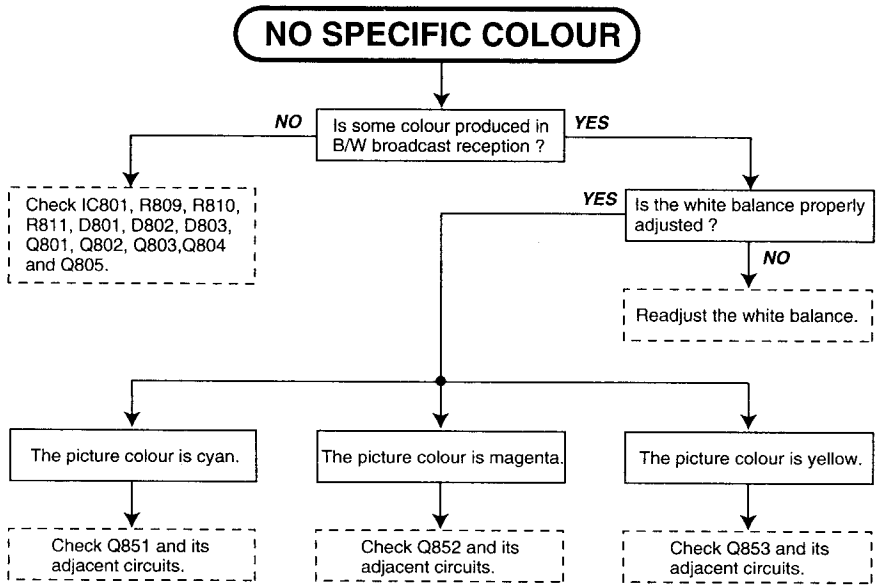
无垂直扫描

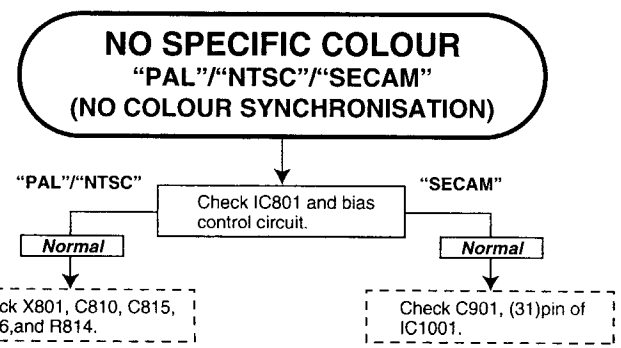
→ 检查IC501偏压器。

- 正常 → 检查C506。
- 不正常 → 检查IC501。

C35

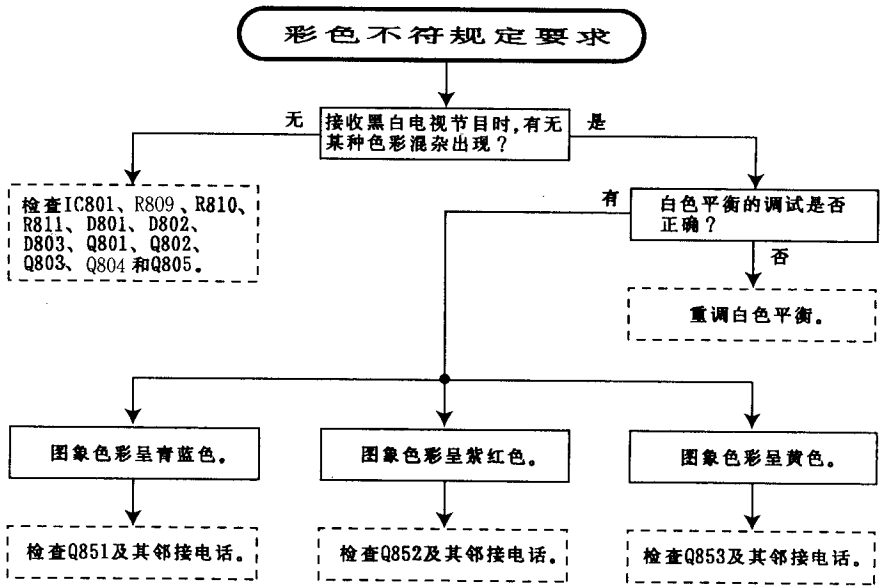
TROUBLE SHOOTING TABLE (Continued)

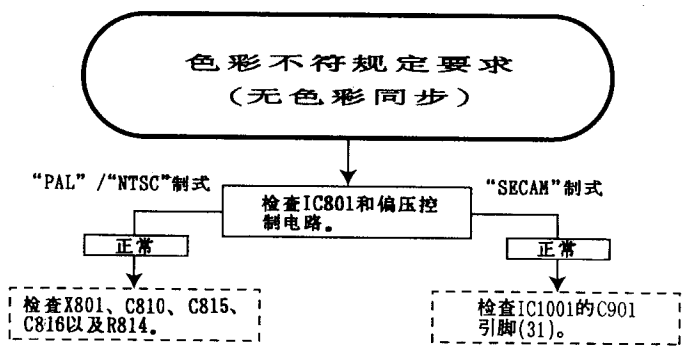




E36

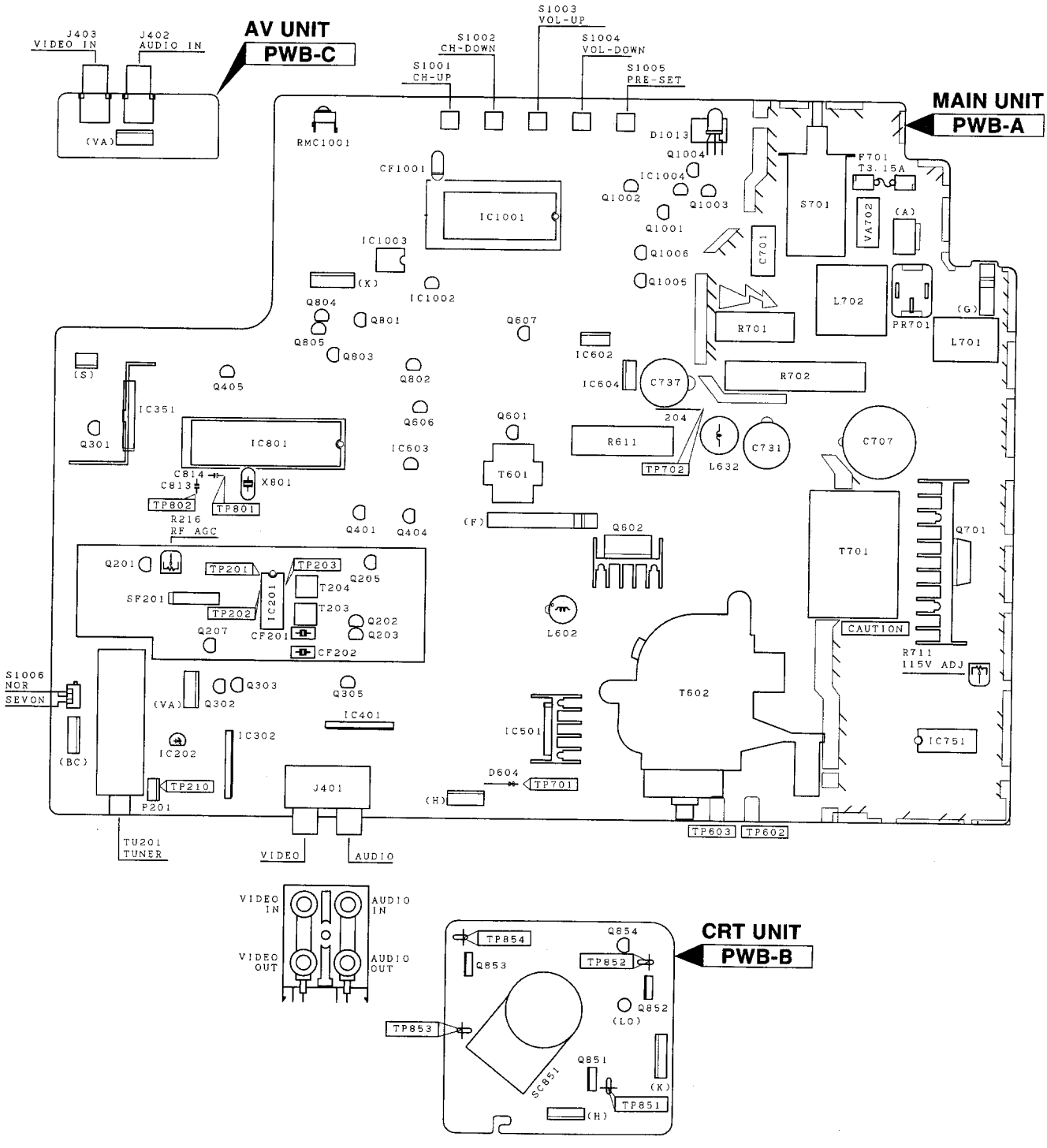
故障检修表（接上页）



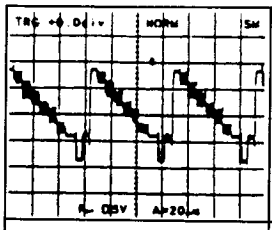


C36

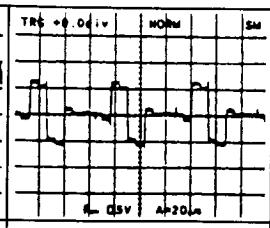
CHASSIS LAYOUT 机芯底盘电路布置



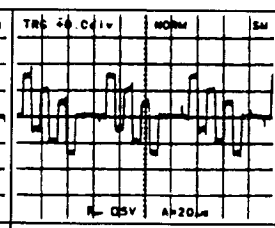
WAVEFORMS
波形图



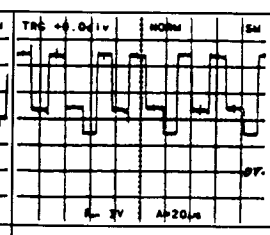
① 2.0 Vp-p (H)



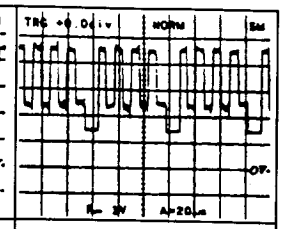
② 1.3 Vp-p (H)



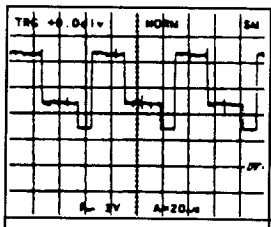
③ 1.5 Vp-p (H)



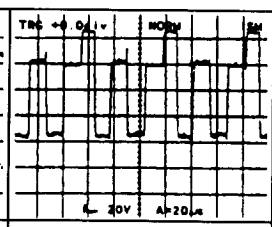
④ 3.0 Vp-p (H)



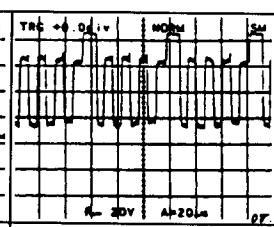
⑤ 3.0 Vp-p (H)



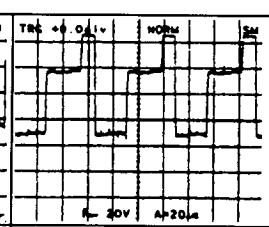
⑥ 3.0 Vp-p (H)



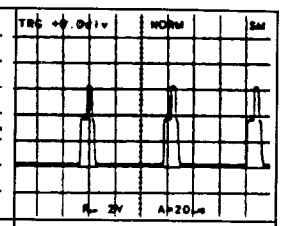
⑦ 80 Vp-p (H)



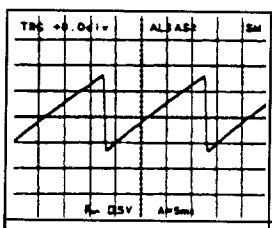
⑧ 80 Vp-p (H)



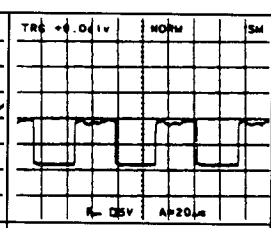
⑨ 80 Vp-p (H)



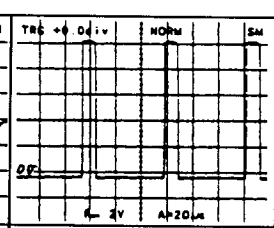
⑩ 5.7 Vp-p (H)



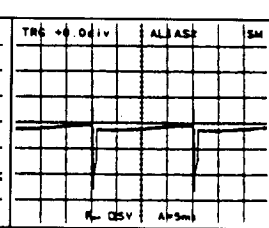
⑪ 1.8 Vp-p (H)



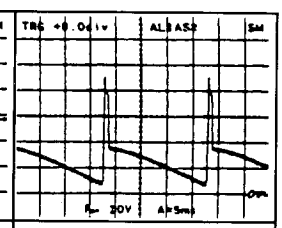
⑫ 0.8 Vp-p (H)



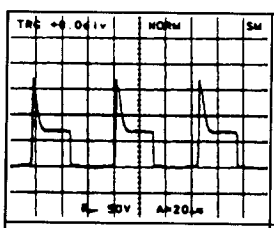
⑬ 9.2 Vp-p (H)



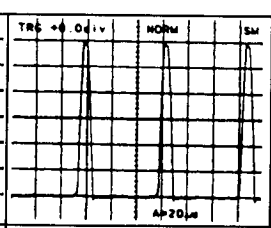
⑭ 1.8 Vp-p (H)



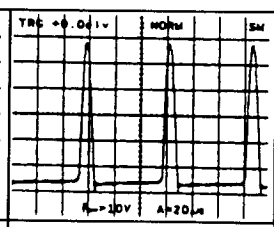
⑮ 55 Vp-p (H)



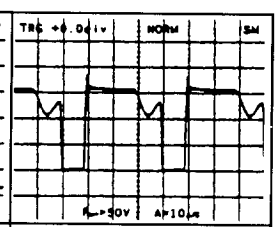
⑯ 145 Vp-p (H)



⑰ 1000 Vp-p (H)



⑱ 150 Vp-p (H)

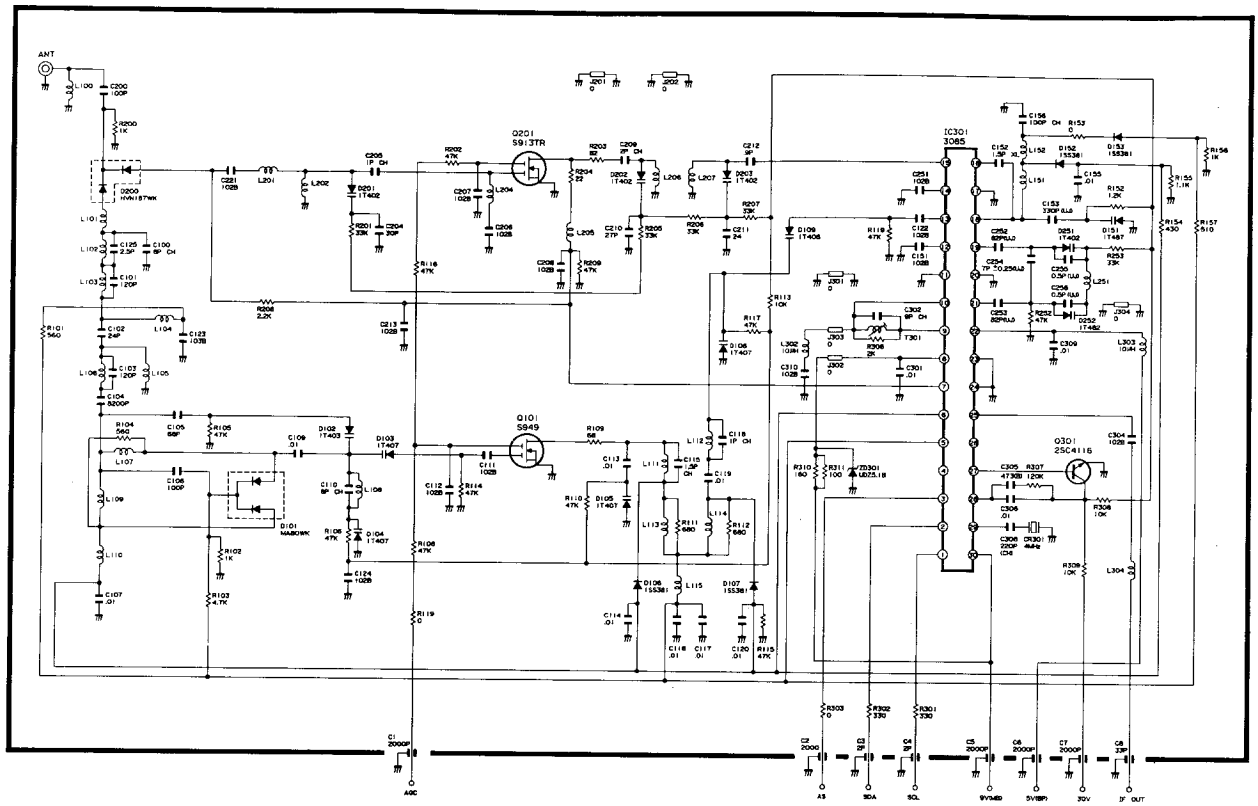


⑲ 520 Vp-p (H)

■ Tuner 调谐器

⚠VTUVTST6HD64/

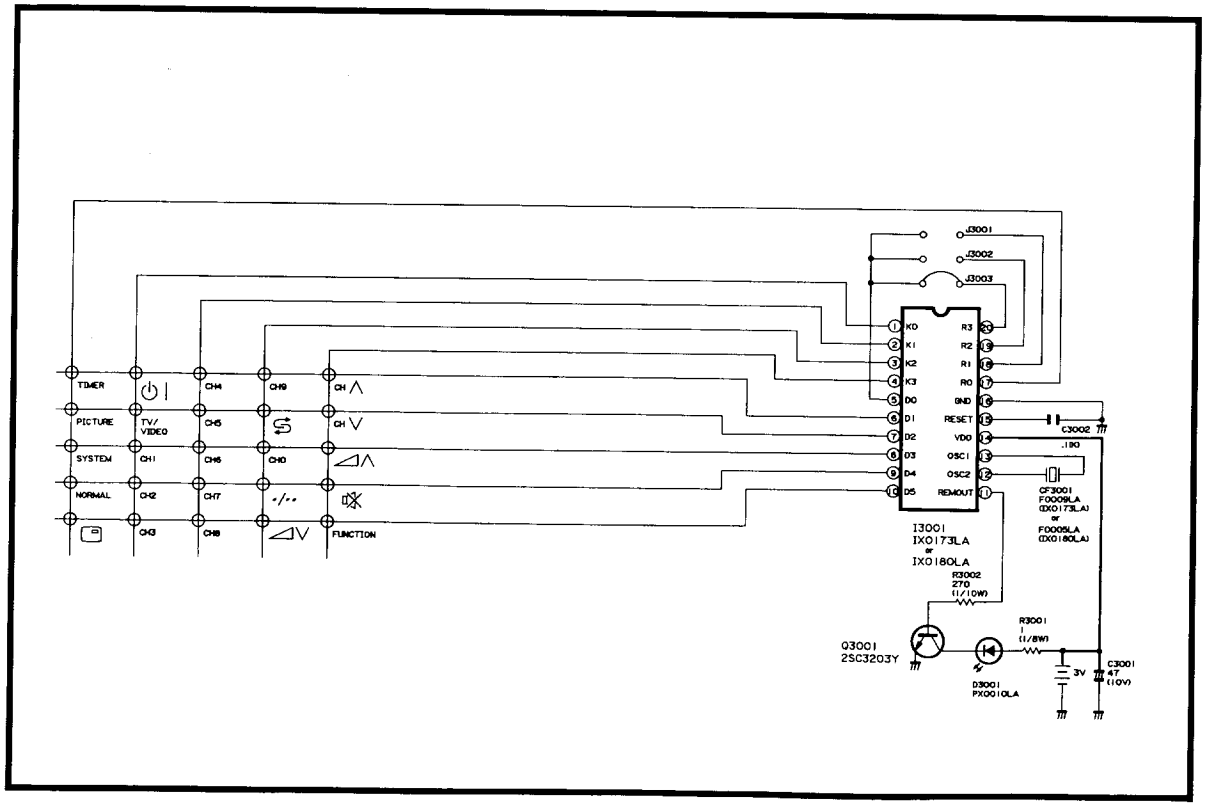
NOTE: The parts here shown are supplied as an assembly but not independently.
注意：在更换零件订货时，请以一套为最小单位，切勿以单件订货。

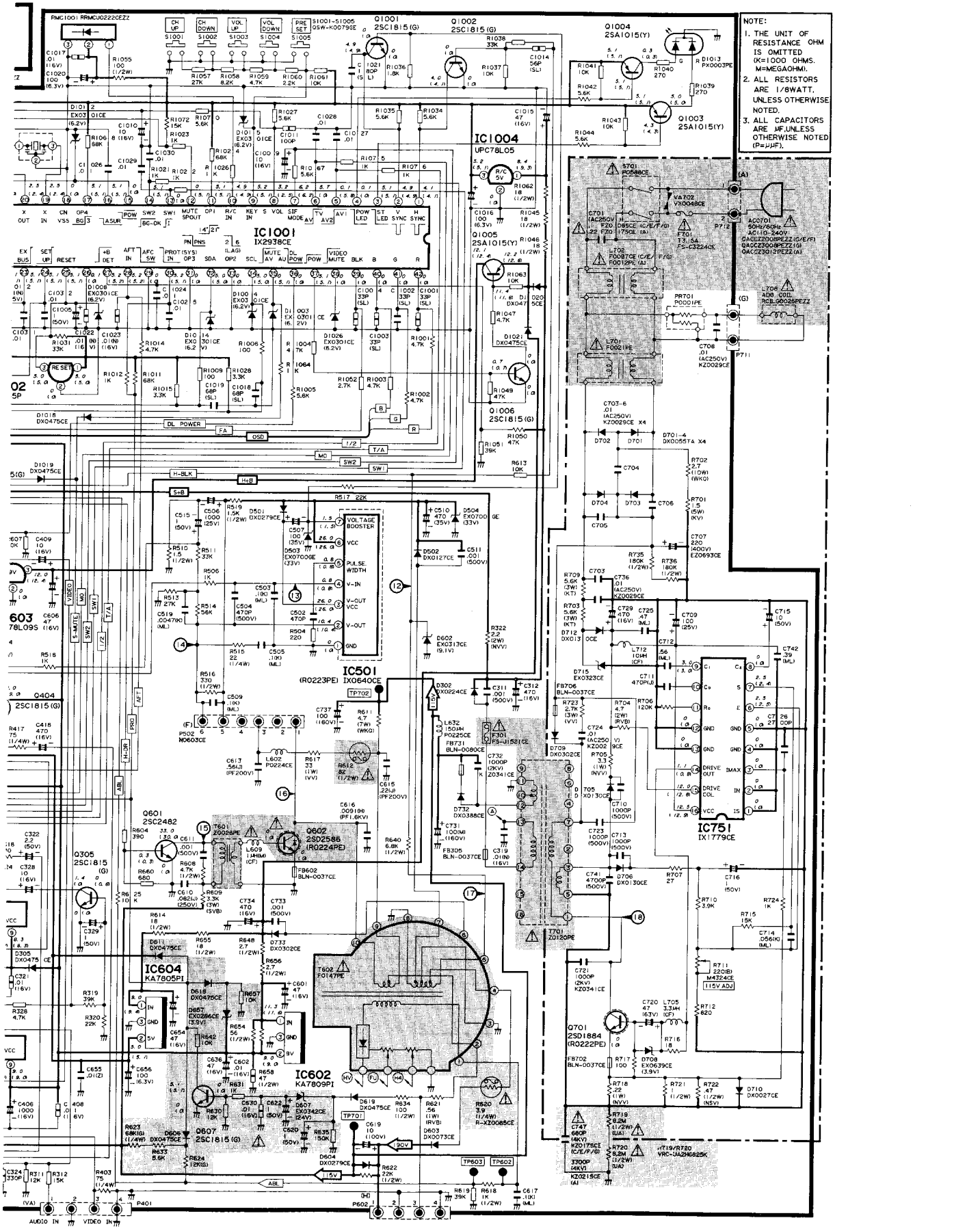


■ Infrared Remote Control Unit 红外线遥控器

RRMCG1342PESA

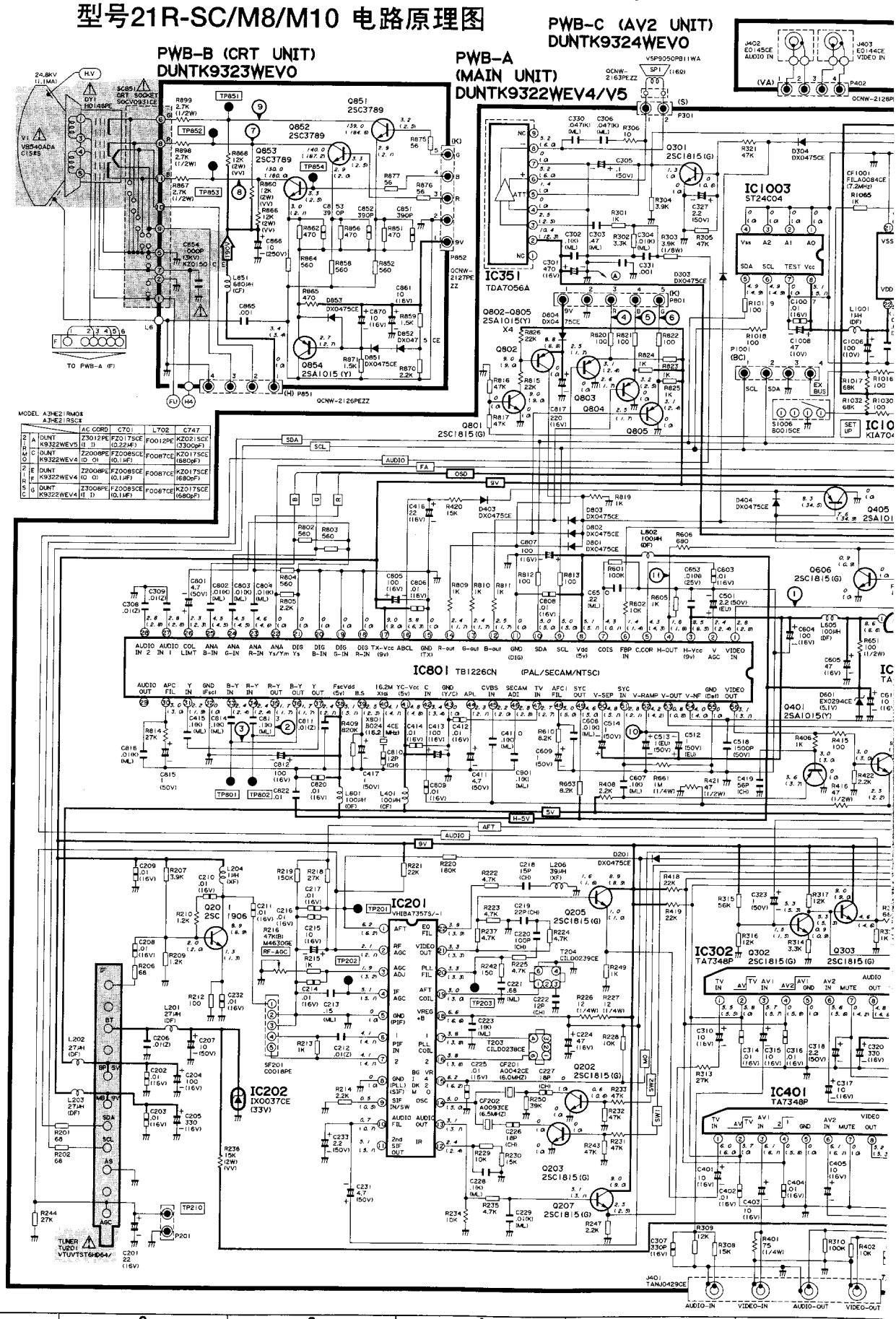
NOTE: The parts here shown are supplied as an assembly but not independently.
注意：在更换零件订货时，请以一套为最小单位，切勿以单件订货。




NOTE:
1. THE UNIT OF RESISTANCE OHM IS OMITTED (K=1000 OHMS, M=MEGAOHM).
2. ALL RESISTORS ARE 1/8WATT, UNLESS OTHERWISE NOTED.
3. ALL CAPACITORS ARE μF,UNLESS OTHERWISE NOTED (P=μμF).
IC1001 IX2938CE
IC1004 UPC78L05
IC501 (R0223PE) IX0640CE
IC751 IX1779CE
IC604 KA7805PI
IC602 KA7809PI
Q1001 2SC1815(G)
Q1002 2SC1815(G)
Q1003 2SA1015(Y)
Q1004 2SA1015(Y)
Q1005 2SA1015(Y)
Q1006 2SC1815(G)
Q701 2SD1884 (R0222PE)
Q602 2SD2586 (R0224PE)
Q0601 2SC2482
Q0305 2SC1815 (G)
Q0404 2SC1815(G)
Q0607 2SC1815 (G)
AUDIO IN
VIDEO IN

MODELS 21R-SC/M8/M10 SCHEMATIC DIAGRAM

型号21R-SC/M8/M10 电路原理图



DESCRIPTION OF SCHEMATIC DIAGRAM

SAFETY NOTES:

1. *DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING 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.

NOTES:

1. *The unit of resistance "ohm" is omitted. (K = 1000 ohms, M = Meg ohm).*
2. *All resistors are 1/8 watt, unless otherwise noted.*
3. *All capacitors are μF, unless therwise noted. (P = μμF).*

VOLTAGE MEASUREMENT CONDITIONS:

1. *Voltage 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 1.5V 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

安全注意事项：

1. 更换电路元件时，必须先拔出电源插头，切断电源。
2. 机芯底盘电路处工作状态时，应注意电路中半导体元件散热片高电位可能导致的电击危险。

安全使用注意要点：

标有“⚠”（▒▒▒▒）的元件为对保证本机长久的安全使用起重要的元件。更换这些元件时，必须使用规定的纯正正牌元件，以保证本机的使用安全以及使用寿命。

维修注意事项：

电路中由点划线（▬ ▪ ▬）所围部分为与交流电源直接相接线路。对这些部分的线路进行维修时，应于本机与交流电源之间用隔离变压器相接，以防止不意的电击之危险。

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）。

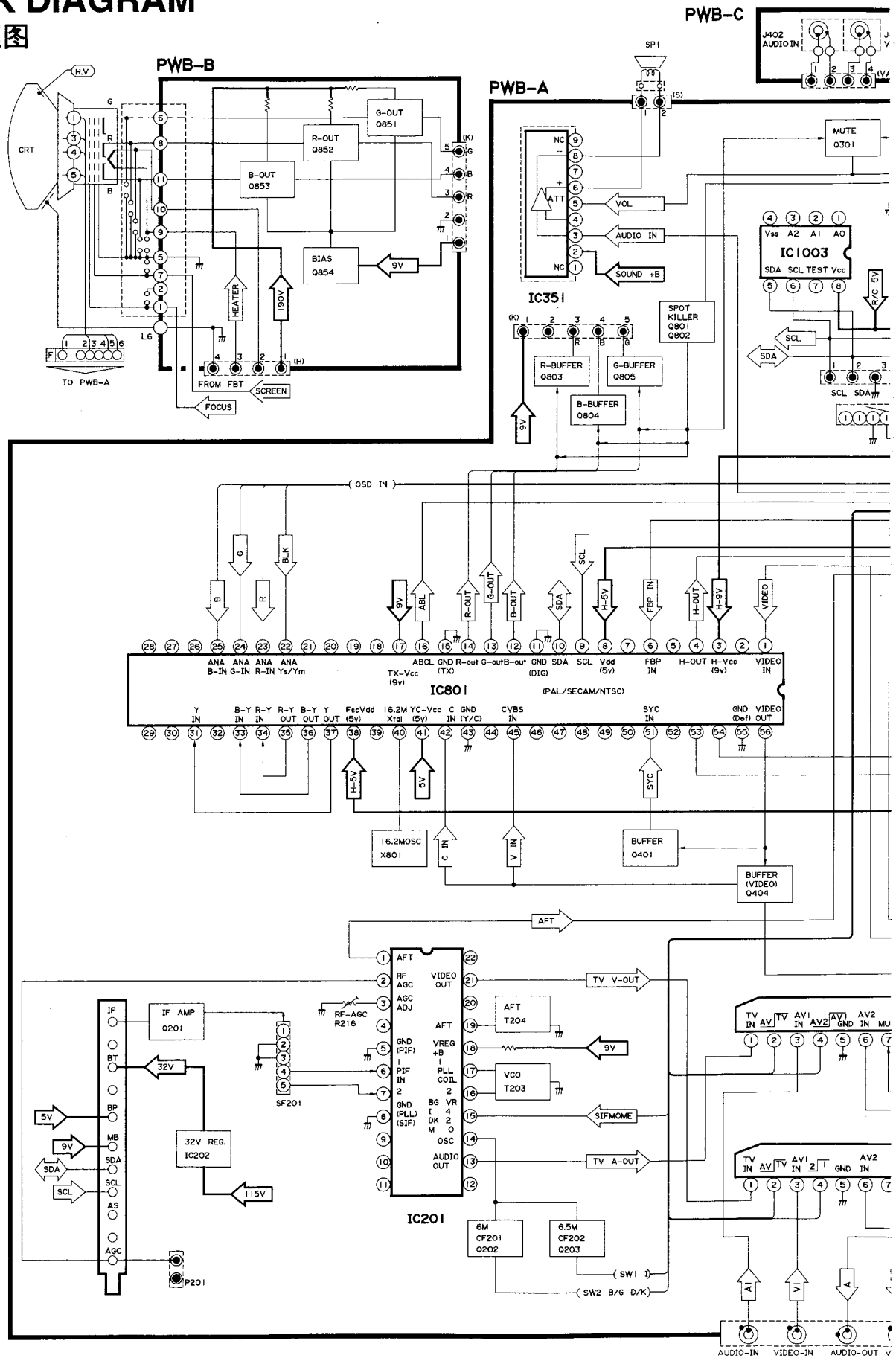
电压测定条件：

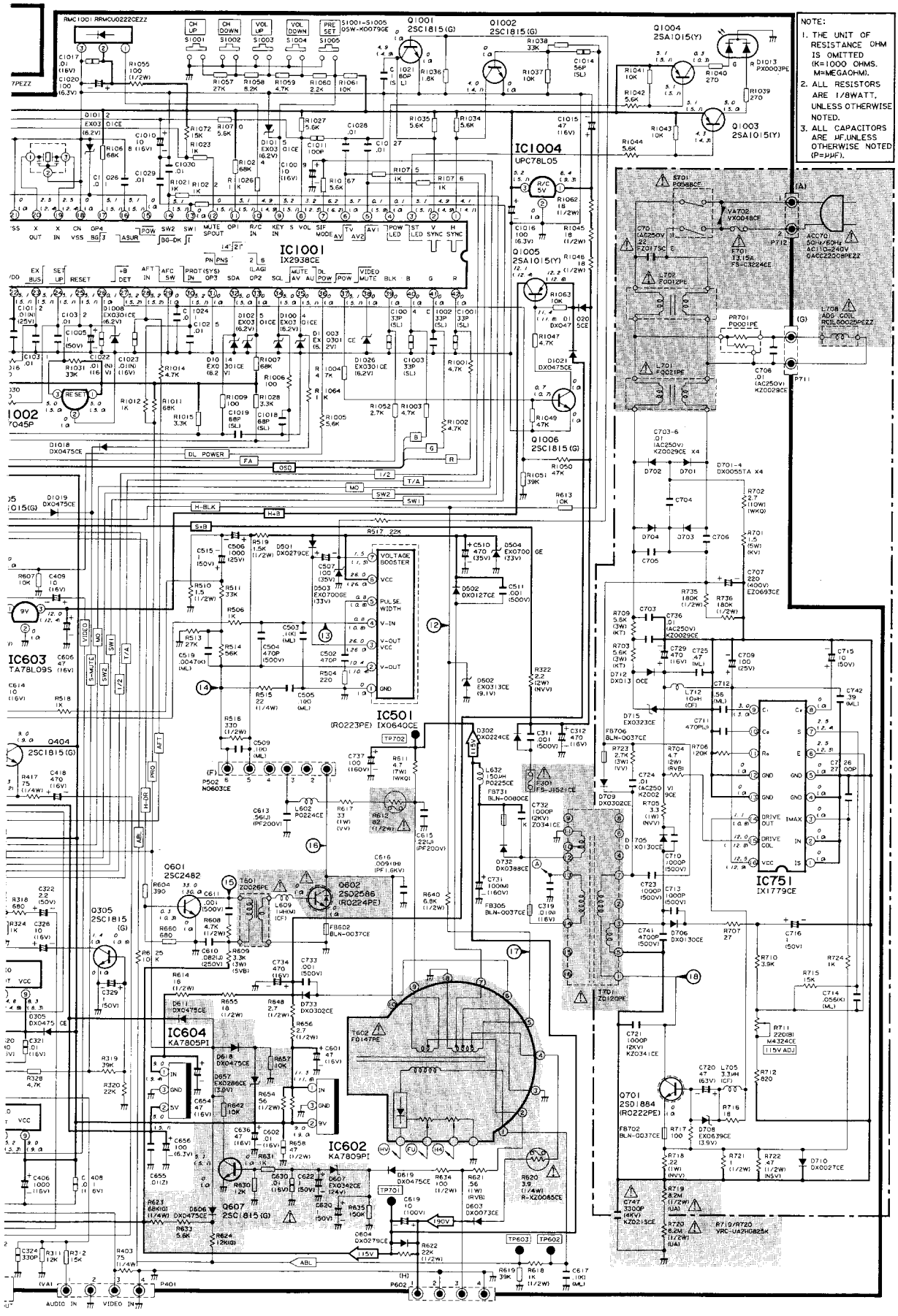
1. 括号中的电压值为无信号状态下所测。
2. 括号外的电压值为3mV黑白或彩色信号状态下所测。
3. 所有测点的电压值均为电子管电压计VTVM所测。

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。

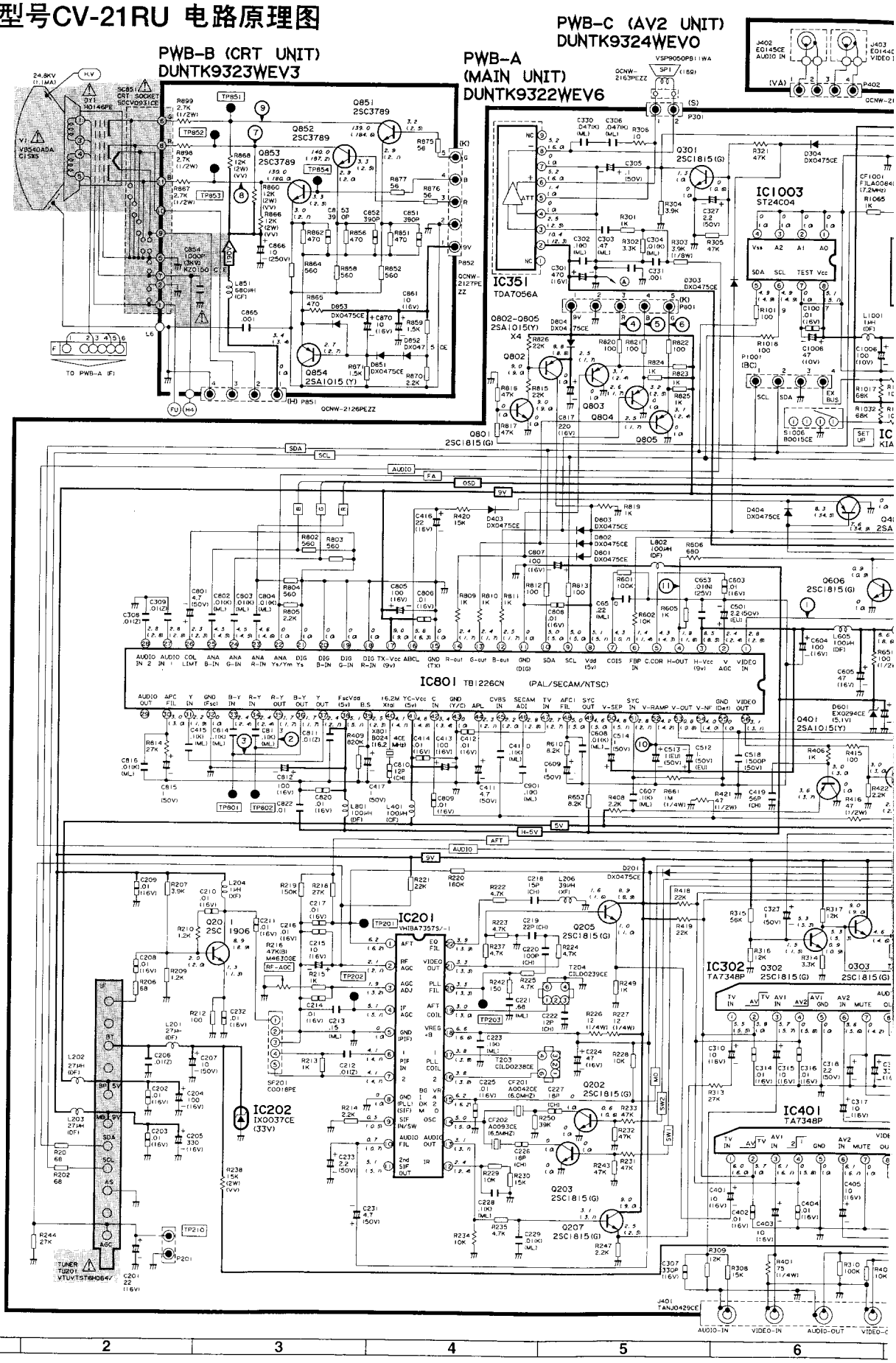
BLOCK DIAGRAM
电路方框图

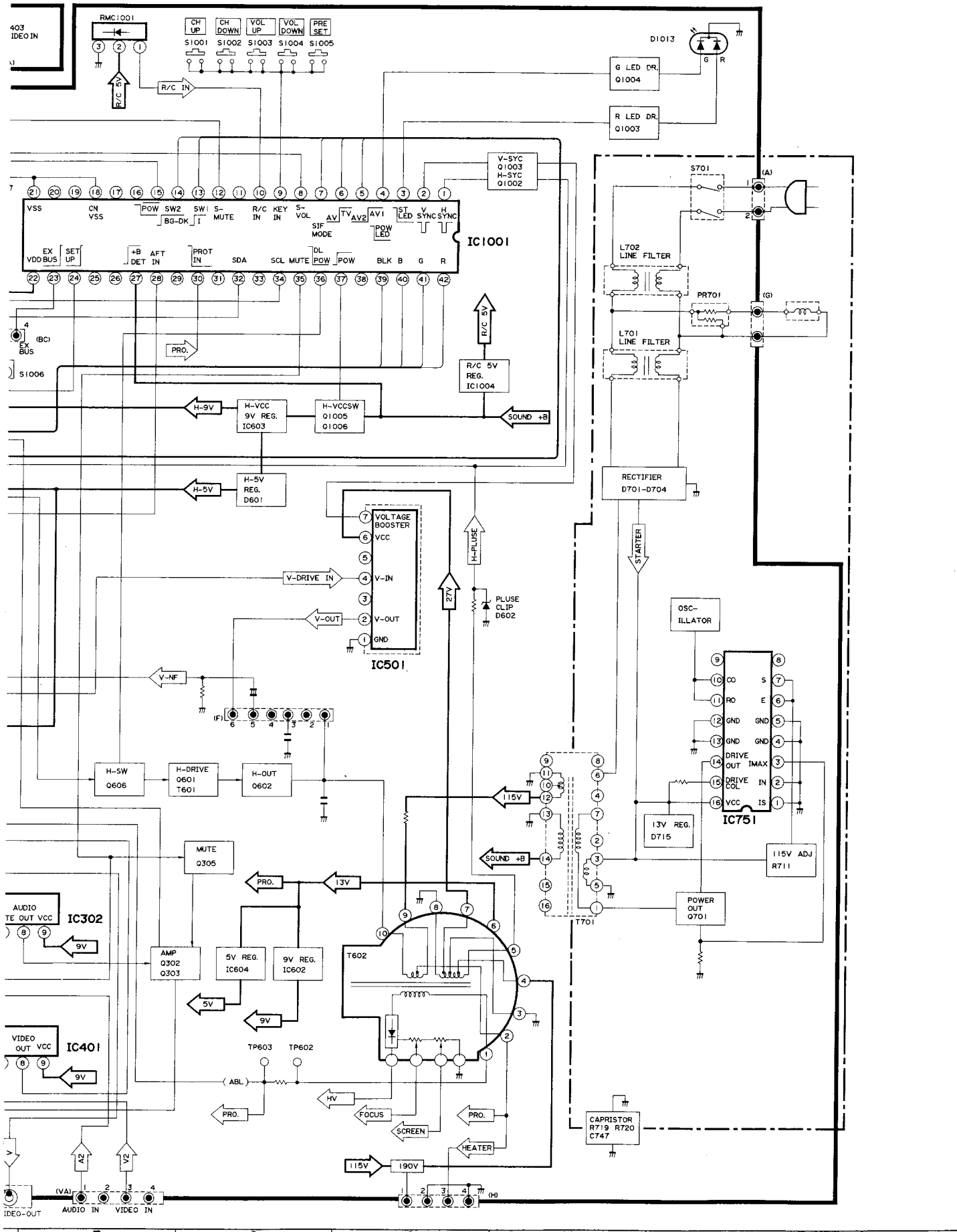



NOTE:
1. THE UNIT OF RESISTANCE OHM IS OMITTED (K=1000 OHMS. M=MEGAOHM).
2. ALL RESISTORS ARE 1/8WATT, UNLESS OTHERWISE NOTED.
3. ALL CAPACITORS ARE μF,UNLESS OTHERWISE NOTED (P=pμF).
IC1004 UPC78L05
IC1001 IX2938CE
IC603 TA78L09S
IC501 (RO223PE) IX0640CE
IC751 IX1779CE
IC604 KA7805PI
IC602 KA7809PI
Q1001 2SC1815(G)
Q1002 2SC1815(G)
Q1004 2SA1015(Y)
Q1003 2SA1015(Y)
Q1005 2SA1015(Y)
Q1006 2SC1815(G)
Q0404 2SC1815(G)
Q0601 2SC2482
Q0602 2SD2586 (RO224PE)
Q0305 2SC1815 (G)
Q0701 2SD1884 (RO222PE)
Q607 2SC1815(G)
VOLTAGE BOOSTER
PULSE WIDTH
V-IN
V-OUT
VCC
GND
DRIVE OUT
DRIVE COL
IMAX
115V ADJ
AUDIO IN
VIDEO IN

MODEL CV-21RU SCHEMATIC DIAGRAM

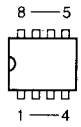
型号CV-21RU 电路原理图




RMC1001
CH UP
CH DOWN
VOL UP
VOL DOWN
PRE SET
S1001
S1002
S1003
S1004
S1005
R/C IN
R/C 5V
D1013
G LED DR. Q1004
R LED DR. Q1003
V-SYC Q1003
H-SYC Q1002
IC1001
VSS
CN VSS
POW
SW2
BG-DK
SW1
S-MUTE
R/C IN
KEY IN
S-VOL
SIF MODE
AV
TV
AV2
AV1
POW LED
ST LED
V SYNC
H SYNC
EX VDD
BUS
SET UP
+B DET
AFT IN
PROT IN
SDA
SCL
MUTE
DL POW
POW
BLK
B
G
R
EX BUS (BC)
S1006
PRO.
R/C 5V REG. IC1004
H-9V
H-VCC 9V REG. IC603
H-VCCSW Q1005 Q1006
SOUND +B
H-5V
H-5V REG. D601
VOLTAGE BOOSTER
VCC
V-IN
V-OUT
GND
V-DRIVE IN
V-OUT
IC501
H-PLUSE
27V
PLUSE CLIP D602
V-NF
(F)
H-SW Q606
H-DRIVE Q601 T601
H-OUT Q602
S701
(A)
(G)
L702 LINE FILTER
PR701
L701 LINE FILTER
RECTIFIER D701-D704
STARTER
OSC-ILLATOR
CO
RO
GND
GND
DRIVE OUT
IMAX
DRIVE COL
IN
VCC
IS
IC751
13V REG. D715
115V ADJ R711
115V
SOUND +B
T701
POWER OUT Q701
MUTE Q305
PRO.
13V
AUDIO TE OUT VCC
IC302
9V
AMP Q302 Q303
5V REG. IC604
9V REG. IC602
5V
9V
T602
VIDEO OUT VCC
IC401
9V
TP603
TP602
ABL
PRO.
HV
FOCUS
SCREEN
PRO.
HEATER
115V
190V
CAPRISTOR R719 R720 C747
A2
V2
(VA)
AUDIO IN
VIDEO IN
VIDEO-OUT
(H)

SOLID STATE DEVICE BASE DIAGRAM
固体器件基座图

TOP VIEW 俯视图



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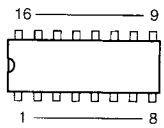

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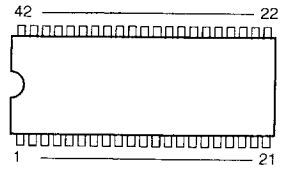

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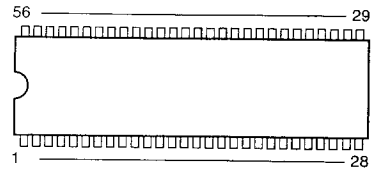

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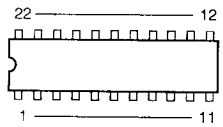
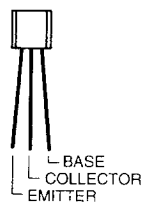


BA7357S

SIDE VIEW 侧视图



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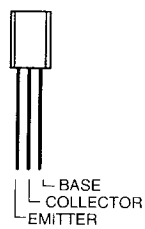
2SC1906



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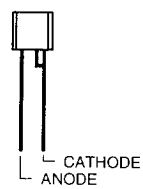
2SC2482

KiA7045P
TA78L09

UPC78L05



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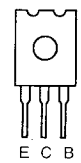

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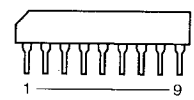
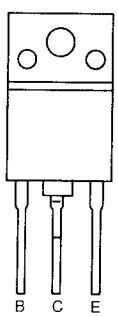


TA7348P



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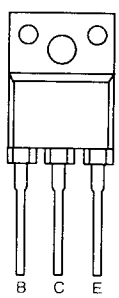
2SD1877



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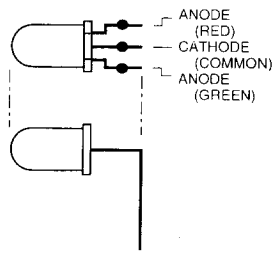

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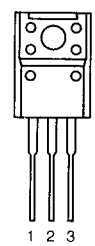
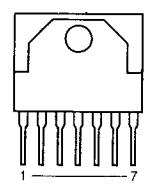


KA7809
KA7805



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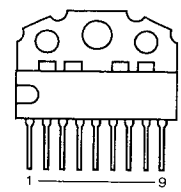

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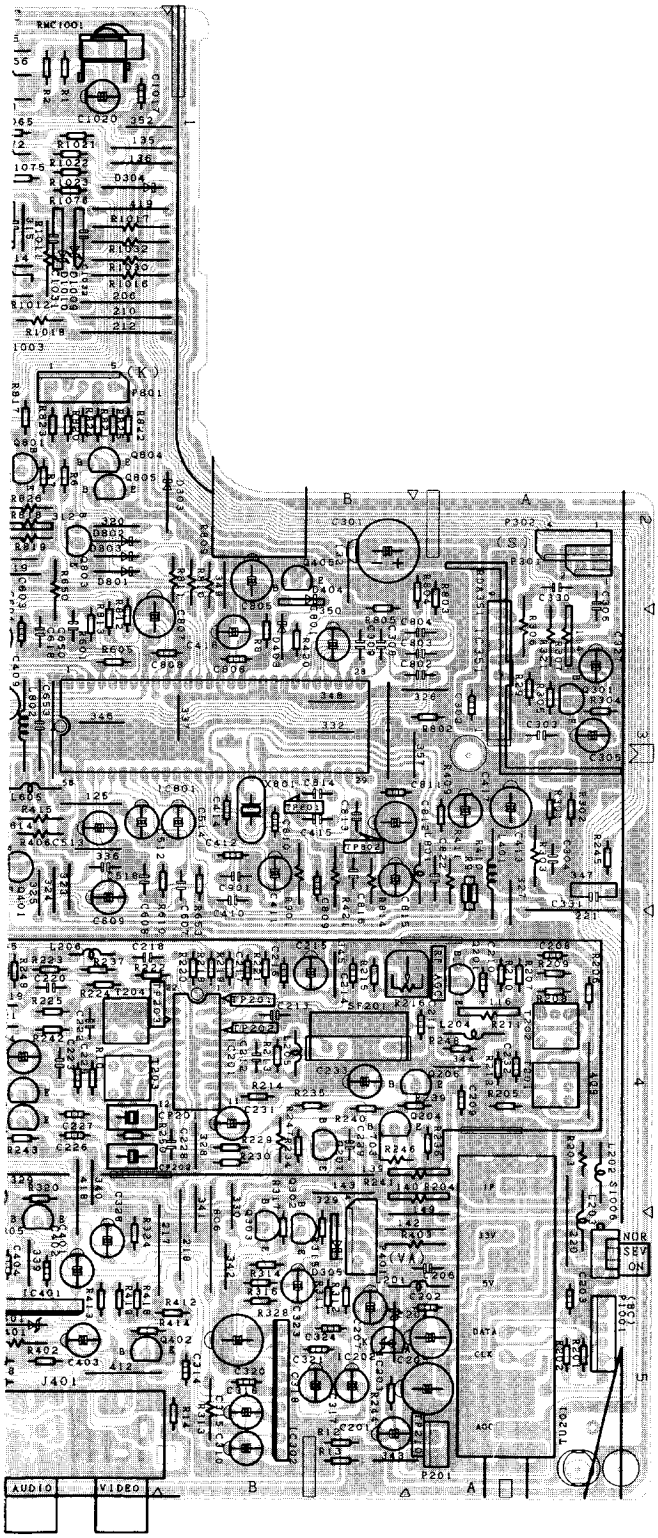
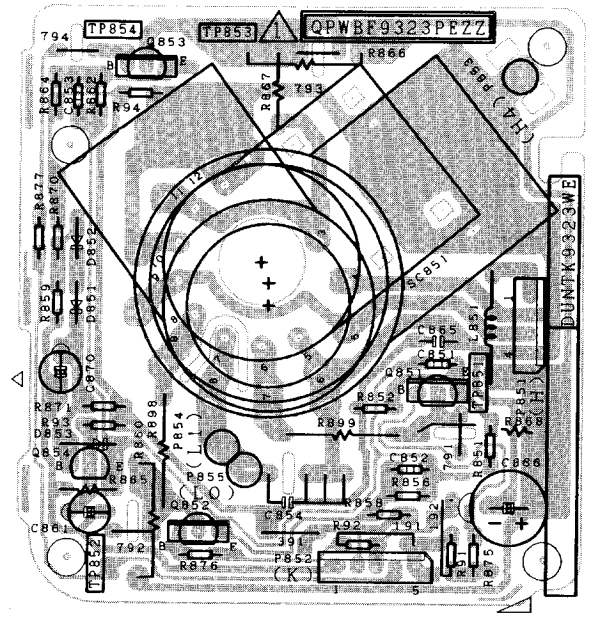
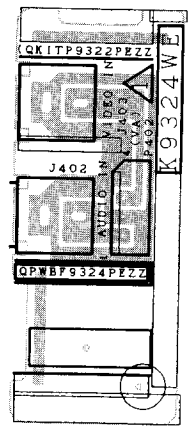




PWB-B: CRT Socket Unit
CRT管座电路装置



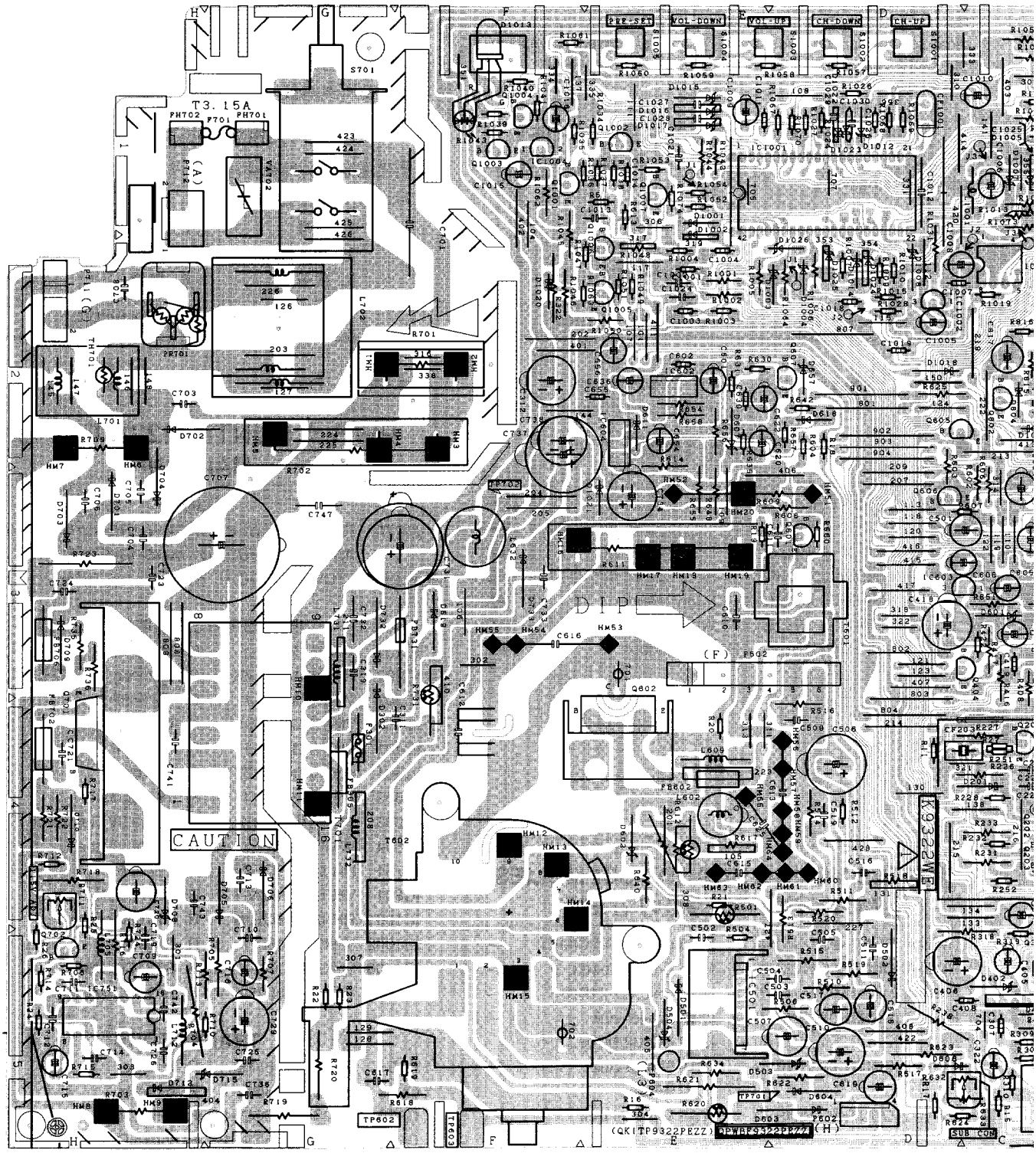
PWB-C: AV-2 Terminal Unit
录象 2 频道终端装置印刷电路板

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

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

⚠V1	VB540ADAC1S*S	R	CRT 54 cm (21")	CG
⚠L708	RCiLG0025PEZZ	R	Degaussing (ADG) Coil	AW
⚠DY1	RCiLH0146PEZZ	R	Deflection Yoke	BF
	LHLDW0003PEKZ	R	ADG Coil Holder, x4	AB
	PMAGF3003CEZZ	R	Purity Magnet	AK
	PSPAG0003PEZZ	R	Wedge (Gum), x3	AD
	MSPRT0001PEFJ	R	CRT Spring	AC

PRINTED WIRING BOARD ASSEMBLIES
(NOT REPLECEMENT ITEM)

PWB-A	DUNTK9322WEV4	–	Main Unit (21R-SC/M10)	—
PWB-A	DUNTK9322WEV5	–	Main Unit (21R-M8)	—
PWB-A	DUNTK9322WEV6	–	Main Unit (CV-21RU)	—
PWB-B	DUNTK9323WEV0	–	CRT Socket Unit (21R-SC/M8/M10)	—
PWB-B	DUNTK9323WEV3	–	CRT Socket Unit (CV-21RU)	—
PWB-C	DUNTK9324WEV0	–	AV-2 Terminal Unit	—

PWB-A DUNTK9322WEV4/V5/V6
MAIN UNIT

TUNER

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

⚠TU201	VTUVTST6HD64/	R	VHF/UHF Tuner	BF

INTEGRATED CIRCUITS

IC201	VHiBA7357S/-1	R	BA7357S	AR
IC202	RH-iX0037CEZZ	R	32V Reg. UPC574J	AF
IC302	VHiTA7348P/-1	R	TA7348P	AK
IC351	VHiTDA7056A-1	R	TDA7056A	AP
IC401	VHiTA7348P/-1	R	TA7348P	AK
IC501	RH-iX0640CEZZ	R	LA7830	AK
IC602	VHiKA7809Pi-1	R	9V Regulator	AE
IC603	VHiTA78L09S-1	R	H-Vcc 9V Regulator	AC
IC604	VHiKA7805Pi-1	R	5V Regulator	AE
IC751	RH-iX1779CEZZ	R	TEA2261	AR
IC801	VHiTB1226CN-1	R	TB1226CN	BC
IC1001	RH-iX2938CEN2	R	Microprocessor	AW
IC1002	VHiKiA7045P-1	R	Reset IC	AD
IC1003	VHiST24C04/-1	R	ST24C04CB6	AQ
IC1004	VHiUPC78L05-4	R	R/C 5V Regulator	AD

TRANSISTORS

Q201	VS2SC1906//1E	R	IF Amp.	AC
Q202	VS2SC1815GW-1	R	6.0MHz	AB
Q203	VS2SC1815GW-1	R	6.5MHz	AB
Q205	VS2SC1815GW-1	R	Video Output	AB
Q207	VS2SC1815GW-1	R	Audio Output	AB
Q301	VS2SC1815GW-1	R	Mute	AB
Q302	VS2SC1815GW-1	R	Amplifier	AB
Q303	VS2SC1815GW-1	R	Amplifier	AB

PWB-A DUNTK9322WEV4/V5/V6
MAIN UNIT (Continued)

Ref. No.	Part No.	★	Description	Code
Q305	VS2SC1815GW-1	R	Mute	AB
Q401	VS2SA1015Y/1E	R	Buffer	AC
Q404	VS2SC1815GW-1	R	Video Buffer	AB
Q405	VS2SA1015G/1E	R		AC
Q601	VS2SC2482//-1	R	Horizontal Drive	AD
⚠Q602	VS2SD2586//1E	R	Horizontal Output	AM
Q606	VS2SC1815GW-1	R	Horizontal Sw.	AB
⚠Q607	VS2SC1815GW-1	R		AB
Q701	VS2SD1884//-1	R	Power Output	AN
Q801	VS2SC1815GW-1	R	Spot Killer	AB
Q802	VS2SA1015Y/1E	R	Spot Killer	AC
Q803	VS2SA1015Y/1E	R	R-Buffer	AC
Q804	VS2SA1015Y/1E	R	B-Buffer	AC
Q805	VS2SA1015Y/1E	R	B-Buffer	AC
Q1001	VS2SC1815GW-1	R	Vertical Sync.	AB
Q1002	VS2SC1815GW-1	R	Horizontal Sync.	AB
Q1003	VS2SA1015Y/1E	R	Red LED Driver	AC
Q1004	VS2SA1015Y/1E	R	Green LED Driver	AC
Q1005	VS2SA1015Y/1E	R	H-Vcc Sw.	AC
Q1006	VS2SC1815GW-1	R	H-Vcc Sw.	AB

DIODES

D201	RH-DX0475CEZZ	R	Diode	AB
D302	RH-DX0224CEZZ	R	Diode	AB
D303	RH-DX0475CEZZ	R	Diode	AB
D304	RH-DX0475CEZZ	R	Diode	AB
D305	RH-DX0475CEZZ	R	Diode	AB
D403	RH-DX0475CEZZ	R	Diode	AB
D404	RH-DX0475CEZZ	R	Diode	AB
D501	RH-DX0279CEZZ	R	Diode	AB
D502	RH-DX0127CEZZ	R	Diode	AC
D503	RH-EX0700GEZZ	R	Zener Diode 33V	AA
D504	RH-EX0700GEZZ	R	Zener Diode 33V	AA
D601	RH-EX0294CEZZ	R	Zener Diode 5.1V	AA
D602	RH-EX0313CEZZ	R	Zener Diode 9.1V	AA
D603	RH-DX0073CEZZ	R	Diode	AD
D604	RH-DX0279CEZZ	R	Diode	AB
⚠D606	RH-DX0475CEZZ	R	Diode	AB
⚠D607	RH-EX0342CEZZ	R	Zener Diode 24V	AB
⚠D611	RH-DX0475CEZZ	R	Diode	AB
⚠D618	RH-DX0475CEZZ	R	Diode	AB
D619	RH-DX0475CEZZ	R	Diode	AB
⚠D657	RH-EX0286CEZZ	R	Zener Diode 3.9V	AA
D701	RH-DX0055TAZZ	R	Diode	AD
D702	RH-DX0055TAZZ	R	Diode	AD
D703	RH-DX0055TAZZ	R	Diode	AD
D704	RH-DX0055TAZZ	R	Diode	AD
D705	RH-DX0130CEZZ	R	Diode	AE
D706	RH-DX0130CEZZ	R	Diode	AE
D708	RH-EX0639CEZZ	R	Zener Diode 3.9V	AB
D709	RH-DX0302CEZZ	R	Diode	AC
D710	RH-DX0027CEZZ	R	Diode	AE
D712	RH-DX0130CEZZ	R	Diode	AE
D715	RH-EX0323CEZZ	R	Zener Diode	AB
D732	RH-DX0388CEZZ	R	Diode	AE
D733	RH-DX0302CEZZ	R	Diode	AC
D801	RH-DX0475CEZZ	R	Diode	AB
D802	RH-DX0475CEZZ	R	Diode	AB
D803	RH-DX0475CEZZ	R	Diode	AB
D804	RH-DX0475CEZZ	R	Diode	AB
D1003	RH-EX0301CEZZ	R	Zener Diode 6.2V	AA
D1004	RH-EX0301CEZZ	R	Zener Diode 6.2V	AA
D1008	RH-EX0301CEZZ	R	Zener Diode 6.2V	AA
D1012	RH-EX0301CEZZ	R	Zener Diode 6.2V	AA
D1013	RH-PX0003PEZZ	R	LED Red/Green	AF
D1014	RH-EX0301CEZZ	R	Zener Diode 6.2V	AA
D1015	RH-EX0301CEZZ	R	Zener Diode 6.2V	AA
D1018	RH-DX0475CEZZ	R	Diode	AB
D1019	RH-DX0475CEZZ	R	Diode	AB
D1020	RH-DX0475CEZZ	R	Diode	AB
D1021	RH-DX0475CEZZ	R	Diode	AB
D1025	RH-EX0301CEZZ	J	Zener Diode 6.2V (CV-21RU)	AA
D1026	RH-EX0301CEZZ	R	Zener Diode 6.2V	AA
⚠VA702	RH-VX0048CEZZ	R	Varistor	AE

PACKAGED CIRCUITS

PR701	RMPTP0001PEZZ	R	Positive Coefficient Thermistor	AN
X801	RCRSB0244CEZZ	R	Crystal 16.2 MHz Osc.	AH

COIL AND TRANSFORMERS

CF201	RFiLA0042CEZZ	R	Ceramic Filter 6.0 MHz	AD
CF202	RFiLA0093CEZZ	R	Ceramic Filter 6.5 MHz	AC
CF1001	RFiLA0084CEZZ	R	Ceramic Filter 7.2 MHz	AE
L201	VP-DF270K0000	R	Peaking Coil 27µH	AB
L202	VP-DF270K0000	R	Peaking Coil 27µH	AB
L203	VP-DF270K0000	R	Peaking Coil 27µH	AB
L204	VP-XF1R0K0000	R	Peaking Coil 1µH	AB
L206	VP-XF390K0000	R	Peaking Coil 39µH	AB
L401	VP-CF101K0000	R	Peaking Coil 100µH	AB
L602	RCiLP0224CEZZ	R	Coil	AE
L605	VP-DF101K0000	R	Peaking Coil 100µH	AB
L609	VP-CF1R0M0000	R	Peaking Coil 1µH	AB
L632	RCiLP0225CEZZ	R	Coil	AF
⚠L701	RCiLF0021PEZZ	R	Line Filter	AK
⚠L702	RCiLF0087CEZZ	R	Line Filter (21R-SC/M10)	AL
⚠L702	RCiLF0012PEZZ	R	Line Filter (21R-M8, CV-21RU)	AN
L705	VP-CF3R3K0000	R	Peaking Coil 3.3µH	AB
L712	VP-CF100K0000	R	Peaking Coil 10µH	AB
L801	VP-DF101K0000	R	Peaking Coil 100µH	AB
L802	VP-DF101K0000	R	Peaking Coil 100µH	AB
L1001	VP-DF1R0K0000	R	Peaking Coil 1µH	AB
SF201	RFiLC0018PEZZ	R	Surface Acoustic Wave Filter	AL
T203	RCiLD0238CEZZ	R	VCO Coil	AE
T204	RCiLD0239CEZZ	R	AFT Coil	AE
⚠T601	RTRNZ0026PEZZ	R	Horizontal Drive Trans.	AH
⚠T602	RTRNF0147PEZZ	R	Flyback Trans. (FBT)	BC
⚠T701	RTRNZ0120PEZZ	R	Power Regulator	BB

PWB-A DUNTK9322WEV4/V5/V6
MAIN UNIT (Continued)

CONTROLS

Ref. No.	Part No.	★	Description	Code
R216	RVR-M4630GEZZ	R	47k(B) RF-AGC	AB
R711	RVR-M4324CEZZ	R	220(B) 115V Adj.	AC

CAPACITORS

Ref. No.	Part No.	★				Code
C201	VCEAGA1CW226M	R	22	16V	Electrolytic	AB
C202	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C203	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C204	VCEAGA1CW107M	R	100	16V	Electrolytic	AB
C205	VCEAGA1CW337M	R	330	16V	Electrolytic	AC
C206	VCKYPA1HF103Z	R	0.01	50V	Ceramic	AA
C207	VCEAGA1HW106M	R	10	50V	Electrolytic	AC
C208	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C209	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C210	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C211	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C212	VCKYPA1HF103Z	R	0.01	50V	Ceramic	AA
C213	VCFYFA1HA154J	R	0.15	50V	Mylar	AC
C214	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C215	VCEAGA1CW106M	R	10	16V	Electrolytic	AA
C216	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C217	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C218	VCCCPA1HH150J	R	15p	50V	Ceramic	AA
C219	VCCCPA1HH220J	R	22p	50V	Ceramic	AA
C220	VCCCPA1HH101J	R	100p	50V	Ceramic	AA
C221	VCFYHA1HA684J	R	0.68	50V	Mylar	AD
C222	VCCCPA1HH120J	R	12p	50V	Ceramic	AA
C223	VCQYTA1HM104K	R	0.1	50V	Mylar	AC
C224	VCEAGA1CW476M	R	47	16V	Electrolytic	AB
C225	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C226	VCCCMN1HH180J	R	18p	50V	Ceramic	AA
C227	VCCCMN1HH180J	R	18p	50V	Ceramic	AA
C228	VCQYTA1HM104K	R	0.1	50V	Mylar	AC
C229	VCQYTA1HM103K	R	0.01	50V	Mylar	AB
C231	VCEAGA1HW475M	R	4.7	50V	Electrolytic	AB
C232	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C233	VCEAGA1HW225M	R	2.2	50V	Electrolytic	AB
C301	VCEAGA1CW477M	R	470	16V	Electrolytic	AC
C302	VCQYTA1HM104K	R	0.1	50V	Mylar	AC
C303	VCFYFA1HA474J	R	0.47	50V	Mylar	AC
C304	VCQYTA1HM103K	R	0.01	50V	Mylar	AB
C305	VCEAGA1HW104M	R	0.1	50V	Electrolytic	AA
C306	VCQYTA1HM473K	R	0.047	50V	Mylar	AB
C307	VCKYMN1HB331K	R	330p	50V	Ceramic	AA
C308	VCKYPA1HF103Z	R	0.01	50V	Ceramic	AA
C309	VCKYPA1HF103Z	R	0.01	50V	Ceramic	AA
C310	VCEAGA1CW106M	R	10	16V	Electrolytic	AA
C311	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C312	VCEAGA1CW477M	R	470	16V	Electrolytic	AC
C314	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C315	VCEAGA1CW106M	R	10	16V	Electrolytic	AA
C316	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C317	VCEAGA1CW106M	R	10	16V	Electrolytic	AA
C318	VCEAGA1HW225M	R	2.2	50V	Electrolytic	AB
C319	VCKYD41CY103N	R	0.01	16V	Ceramic	
C320	VCEAGA1CW337M	R	330	16V	Electrolytic	AC
C321	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C322	VCEAGA1HW225M	R	2.2	50V	Electrolytic	AB
C323	VCEAGA1HW105M	R	1	50V	Electrolytic	AC
C324	VCKYMN1HB331K	R	330p	50V	Ceramic	AA
C327	VCEAGA1HW225M	R	2.2	50V	Electrolytic	AB
C328	VCEAGA1CW106M	R	10	16V	Electrolytic	AA
C329	VCEAGA1HW105M	R	1	50V	Electrolytic	AC
C330	VCQYTA1HM473K	R	0.047	50V	Mylar	AB
C331	VCKYD41HB102K	R	1000p	50V	Ceramic	AA
C401	VCEAGA1CW106M	R	10	16V	Electrolytic	AA
C402	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C403	VCEAGA1CW106M	R	10	16V	Electrolytic	AA
C404	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C405	VCEAGA1CW106M	R	10	16V	Electrolytic	AA
C406	VCEAGA1CW108M	R	1000	16V	Electrolytic	AD
C408	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C409	VCEAGA1CW106M	R	10	16V	Electrolytic	AA
C410	VCQYTA1HM104K	R	0.1	50V	Mylar	AC
C411	VCEAGA1HW475M	R	4.7	50V	Electrolytic	AB
C412	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C413	VCEAGA1CW107M	R	100	16V	Electrolytic	AB
C414	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C415	VCQYTA1HM104K	R	0.1	50V	Mylar	AC
C416	VCEAGA1CW226M	R	22	16V	Electrolytic	AB
C417	VCEAGA1HW105M	R	1	50V	Electrolytic	AC
C418	VCEAGA1CW477M	R	470	16V	Electrolytic	AC
C419	VCCCPA1HH560J	R	56p	50V	Ceramic	AA
C501	VCEACA1HC225M	R	2.2	50V	Electrolytic	AC
C502	VCKYPA1HB471K	R	470p	50V	Ceramic	AA
C503	VCQYTA1HM104K	R	0.1	50V	Mylar	AC
C504	VCCSPA2HL471K	R	470p	500V	Ceramic	AB
C505	VCQYTA1HM104K	R	0.1	50V	Mylar	AC
C506	VCEAGA1EW108M	R	1000	25V	Electrolytic	AD
C507	VCEAGA1VW107M	R	100	35V	Electrolytic	AC
C509	VCQYTA1HM104K	R	0.1	50V	Mylar	AC
C510	VCEAGA1VW477M	R	470	35V	Electrolytic	AD
C511	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C512	VCEACA1HC105M	R	1	50V	Electrolytic	AC
C513	VCEACA1HC105M	R	1	50V	Electrolytic	AC
C514	VCEAGA1HW105M	R	1	50V	Electrolytic	AC
C515	VCEACA1HC105M	R	1	50V	Electrolytic	AC
C518	VCKYPA1HB152K	R	1500p	50V	Ceramic	AA
C519	VCQYTA1HM472K	R	4700p	50V	Mylar	AB
C601	VCEAGA1CW476M	R	47	16V	Electrolytic	AB
C602	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C603	VCKYMN1CY103N	R	0.01	16V	Ceramic	AA
C604	VCEAGA1CW107M	R	100	16V	Electrolytic	AB
C605	VCEAGA1CW476M	R	47	16V	Electrolytic	AB
C606	VCEAGA1CW476M	R	47	16V	Electrolytic	AB
C607	VCQYTA1HM104K	R	0.1	50V	Mylar	AC
C608	VCQYTA1HM103K	R	0.01	50V	Mylar	AB
C609	VCEAGA1HW105M	R	1	50V	Electrolytic	AC
C610	VCFYSB2EB823J	R	0.082	250V	Mylar	AD

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Ref. No.	Part No.	★	Description	Code
C611	VCKYPA2HB102K	R	1000p 500V Ceramic	AA
C613	VCFPPD2DB564J	R	0.57 200V M. Polypro Film	AF
C614	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C615	VCQPSD2DA224J	R	0.22 200V	AD
C616	VCFPPD3CA912H	R	9100p 1.6kV M. Polypro Film	AE
C617	VCQYTA1HM104K	R	0.1 50V Mylar	AC
C619	VCEAGA2AW106M	R	10 100V Electrolytic	AC
⚠C620	VCEAGA1HW105M	R	1 50V Electrolytic	AC
⚠C622	VCEAGA1HW105M	R	1 50V Electrolytic	AC
⚠C630	VCKYMN1CY103N	R	0.01 16V Ceramic	AA
C636	VCEAGA1CW476M	R	47 16V Electrolytic	AB
C650	VCFYFA1HA224J	R	0.22 50V Mylar	AB
C653	VCKYAT1EX103N	R	0.01 25V Ceramic	AA
C654	VCEAGA1CW476M	R	47 16V Electrolytic	AB
C655	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C656	VCEAGA0JW107M	R	100 6.3V Electrolytic	AB
⚠C701	RC-FZ008SCEZZ	R	0.1 AC250V Special (21R-SC/M10)	AE
⚠C701	RC-FZ017SCEZZ	R	0.22 AC250V Special (21R-M8, CV-21RU)	AE
C703	RC-KZ0029CEZZ	R	0.01 AC250V Ceramic	AC
C704	RC-KZ0029CEZZ	R	0.01 AC250V Ceramic	AC
C705	RC-KZ0029CEZZ	R	0.01 AC250V Ceramic	AC
C706	RC-KZ0029CEZZ	R	0.01 AC250V Ceramic	AC
C707	RC-EZ0693CEZZ	R	220 400V Electrolytic	AS
C708	RC-KZ0029CEZZ	R	0.01 AC250V Ceramic	AC
C709	VCEAGA1EW107M	R	100 25V Electrolytic	AD
C710	VCKYPA2HB102K	R	1000p 500V Ceramic	AA
C711	RC-QZA471TAYJ	R	470p 50V Mylar	AB
C712	VCFYHA1HA564J	R	0.56 50V Mylar	AD
C713	VCKYPA2HB102K	R	1000p 500V Ceramic	AA
C714	VCQYTA1HM563K	R	0.056 50V Mylar	AB
C715	VCEAGA1HW106M	R	10 50V Electrolytic	AC
C716	VCEAGA1HW105M	R	1 50V Electrolytic	AC
C720	VCEAGA1JW476M	R	47 63V Electrolytic	AB
C721	RC-KZ0341CEZZ	R	1000p 2kV Ceramic	AD
C723	VCKYPA2HB102K	R	1000p 500V Ceramic	AA
C724	RC-KZ0029CEZZ	R	0.01 AC250V Ceramic	AC
C725	VCFYFA1HA474J	R	0.47 50V Mylar	AC
C726	VCKYPA1HB272K	R	2700p 50V Ceramic	AA
C729	VCEAGA1CW477M	R	470 16V Electrolytic	AC
C731	VCEAGH2CW107M	R	100 160V Electrolytic	AE
C732	RC-KZ0341CEZZ	R	1000p 2kV Ceramic	AD
C733	VCKYPA2HB102K	R	1000p 500V Ceramic	AA
C734	VCEAGA1CW477M	R	470 16V Electrolytic	AC
C736	RC-KZ0029CEZZ	R	0.01 AC250V Ceramic	AC
C737	VCEAGH2CW107M	R	100 160V Electrolytic	AE
C741	VCKYPA2HB472K	R	4700p 500V Ceramic	AB
C742	VCFYFA1HA394J	R	0.39 50V Mylar	AC
⚠C747	RC-KZ017SCEZZ	R	680p 4kV Ceramic (21R-SC/M10)	AD
⚠C747	RC-KZ021SCEZZ	R	3300p 4kV Ceramic (21R-M8, CV-21RU)	AE
C801	VCEAGA1HW475M	R	4.7 50V Electrolytic	AB
C802	VCQYTA1HM103K	R	0.01 50V Mylar	AB
C803	VCQYTA1HM103K	R	0.01 50V Mylar	AB
C804	VCQYTA1HM103K	R	0.01 50V Mylar	AB
C805	VCEAGA1CW107M	R	100 16V Electrolytic	AB
C806	VCKYMN1CY103N	R	0.01 16V Ceramic	AA
C807	VCEAGA1CW107M	R	100 16V Electrolytic	AB
C808	VCKYMN1CY103N	R	0.01 16V Ceramic	AA
C809	VCKYMN1CY103N	R	0.01 16V Ceramic	AA
C810	VCCCMN1HH120J	R	12p 50V Ceramic	AA
C811	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C812	VCEAGA1CW107M	R	100 16V Electrolytic	AB
C813	VCQYTA1HM104K	R	0.1 50V Mylar	AC
C814	VCQYTA1HM104K	R	0.1 50V Mylar	AC
C815	VCEAGA1HW105M	R	1 50V Electrolytic	AC
C816	VCQYTA1HM103K	R	0.01 50V Mylar	AB
C817	VCEAGA1CW227M	R	220 16V Electrolytic	AC
C820	VCKYMN1CY103N	R	0.01 16V Ceramic	AA
C822	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C901	VCQYTA1HM104K	R	0.1 50V Mylar	AC
C1001	VCCSMN1HL330J	R	33p 50V Ceramic	AA
C1002	VCCSPA1HL330J	R	33p 50V Ceramic	AA
C1003	VCCSMN1HL330J	R	33p 50V Ceramic	AA
C1004	VCCSMN1HL330J	R	33p 50V Ceramic	AA
C1005	VCEAGA1HW105M	R	1 50V Electrolytic	AC
C1006	VCEAGA1AW107M	R	100 10V Electrolytic	AB
C1007	VCKYMN1CY103N	R	0.01 16V Ceramic	AA
C1008	VCEAGA1AW476M	R	47 10V Electrolytic	AA
C1009	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C1010	VCEAGA1CW106M	R	10 16V Electrolytic	AA
C1011	VCKYMN1HB101K	R	100p 50V Ceramic	AA
C1012	VCKYAT1EX103N	R	0.01 25V Ceramic	AA
C1014	VCCSMN1HL560J	R	56p 50V Ceramic	AA
C1015	VCEAGA1CW476M	R	47 16V Electrolytic	AB
C1016	VCEAGA0JW107M	R	100 6.3V Electrolytic	AB
C1017	VCKYMN1CY103N	R	0.01 16V Ceramic	AA
C1018	VCCSPA1HL680J	R	68p 50V Ceramic	AA
C1019	VCCSPA1HL680J	R	68p 50V Ceramic	AA
C1020	VCEAGA0JW107M	R	100 6.3V Electrolytic	AB
C1021	VCCSPA1HL181J	R	180p 50V Ceramic	AA
C1022	VCKYMN1CY103N	R	0.01 16V Ceramic	AA
C1023	VCKYMN1CY103N	R	0.01 16V Ceramic	AA
C1024	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C1025	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C1026	VCKYMN1CY103N	R	0.01 16V Ceramic	AA
C1027	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C1028	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C1029	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C1030	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C1031	VCKYD41CY103N	R	0.01 16V Ceramic	AA
C1032	VCKYD41CY103N	R	0.01 16V Ceramic	AA

RESISTORS

R201	VRD-MN2BE680J	R	68	1/8W	Carbon	AA

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MAIN UNIT (Continued)

Ref. No.	Part No.	★	Description	Code
R202	VRD-MN2BE680J	R 68 1/8W Carbon		AA
R206	VRD-MN2BE680J	R 68 1/8W Carbon		AA
R207	VRD-MN2BE392J	R 3.9k 1/8W Carbon		AA
R209	VRD-MN2BE122J	R 1.2k 1/8W Carbon		AA
R210	VRD-MN2BE122J	R 1.2k 1/8W Carbon		AA
R212	VRD-MN2BE101J	R 100 1/8W Carbon		AA
R213	VRD-MN2BE102J	R 1k 1/8W Carbon		AA
R214	VRD-MN2BE222J	R 2.2k 1/8W Carbon		AA
R215	VRD-MN2BE102J	R 1k 1/8W Carbon		AA
R216	*See Control*			
R218	VRD-MN2BE273J	R 27k 1/8W Carbon		AA
R219	VRD-MN2BE154J	R 150k 1/8W Carbon		AA
R220	VRD-MN2BE184J	R 180k 1/8W Carbon		AA
R221	VRD-MN2BE223J	R 22k 1/8W Carbon		AA
R222	VRD-MN2BE472J	R 4.7k 1/8W Carbon		AA
R223	VRD-MN2BE472J	R 4.7k 1/8W Carbon		AA
R224	VRD-MN2BE472J	R 4.7k 1/8W Carbon		AA
R225	VRD-MN2BE472J	R 4.7k 1/8W Carbon		AA
R226	VRD-RA2EE120J	R 12 1/4W Carbon		AA
R227	VRD-RA2EE120J	R 12 1/4W Carbon		AA
R228	VRD-MN2BE103J	R 10k 1/8W Carbon		AA
R229	VRD-MN2BE103J	R 10k 1/8W Carbon		AA
R230	VRD-MN2BE153J	R 15k 1/8W Carbon		AA
R231	VRD-RA2BE473J	R 47k 1/8W Carbon		AA
R232	VRD-MN2BE473J	R 47k 1/8W Carbon		AA
R233	VRD-RA2BE473J	R 47k 1/8W Carbon		AA
R234	VRD-RA2BE103J	R 10k 1/8W Carbon		AA
R235	VRD-MN2BE472J	R 4.7k 1/8W Carbon		AA
R237	VRD-MN2BE472J	R 4.7k 1/8W Carbon		AA
R238	VRS-VV3DB153J	R 15k 2W Metal Oxide		AA
R242	VRD-MN2BE151J	R 150 1/8W Carbon		AA
R243	VRD-MN2BE473J	R 47k 1/8W Carbon		AA
R244	VRD-MN2BE273J	R 27k 1/8W Carbon		AA
R247	VRD-MN2BE222J	R 2.2k 1/8W Carbon		AA
R249	VRD-MN2BE102J	R 1k 1/8W Carbon		AA
R250	VRD-MN2BE393J	R 39k 1/8W Carbon		AA
R301	VRD-MN2BE102J	R 1k 1/8W Carbon		AA
R302	VRD-MN2BE332J	R 3.3k 1/8W Carbon		AA
R303	VRD-RA2BE392J	R 3.9k 1/8W Carbon		AA
R304	VRD-MN2BE392J	R 3.9k 1/8W Carbon		AA
R305	VRD-MN2BE473J	R 47k 1/8W Carbon		AA
R306	VRD-RA2BE100J	R 10 1/8W Carbon		AA
R308	VRD-MN2BE153J	R 15k 1/8W Carbon		AA
R309	VRD-MN2BE123J	R 12k 1/8W Carbon		AA
R310	VRD-MN2BE104J	R 100k 1/8W Carbon		AA
R311	VRD-MN2BE123J	R 12k 1/8W Carbon		AA
R312	VRD-MN2BE153J	R 15k 1/8W Carbon		AA
R313	VRD-RA2BE273J	R 27k 1/8W Carbon		AA
R314	VRD-MN2BE332J	R 3.3k 1/8W Carbon		AA
R315	VRD-MN2BE563J	R 56k 1/8W Carbon		AA
R316	VRD-MN2BE123J	R 12k 1/8W Carbon		AA
R317	VRD-MN2BE123J	R 12k 1/8W Carbon		AA
R318	VRD-RA2BE681J	R 680 1/8W Carbon		AA
R319	VRD-MN2BE393J	R 39k 1/8W Carbon		AA
R320	VRD-MN2BE223J	R 22k 1/8W Carbon		AA
R321	VRD-RA2BE473J	R 47k 1/8W Carbon		AA
R322	VRN-VV3DB2R2J	R 2.2 2W Metal Film		AB
R324	VRD-MN2BE102J	R 1k 1/8W Carbon		AA
R328	VRD-MN2BE472J	R 4.7k 1/8W Carbon		AA
R401	VRD-RA2EE750J	R 75 1/4W Carbon		AA
R402	VRD-MN2BE103J	R 10k 1/8W Carbon		AA
R403	VRD-RA2EE750J	R 75 1/4W Carbon		AA
R406	VRD-RA2BE102J	R 1k 1/8W Carbon		AA
R408	VRD-RA2BE222J	R 2.2k 1/8W Carbon		AA
R409	VRD-MN2BE824J	R 820k 1/8W Carbon		AA
R415	VRD-RA2BE101J	R 100 1/8W Carbon		AA
R416	VRD-RM2HD470J	R 47 1/2W Carbon		AA
R417	VRD-RA2EE750J	R 75 1/4W Carbon		AA
R418	VRD-MN2BE223J	R 22k 1/8W Carbon		AA
R419	VRD-MN2BE223J	R 22k 1/8W Carbon		AA
R420	VRD-RA2BE153J	R 15k 1/8W Carbon		AA
R421	VRD-RM2HD470J	R 47 1/2W Carbon		AA
R422	VRD-MN2BE222J	R 2.2k 1/8W Carbon		AA
R504	VRD-MN2BE221J	R 220 1/8W Carbon		AA
R506	VRD-RA2BE102J	R 1k 1/8W Carbon		AA
R510	VRD-RM2HD1R5J	R 1.5 1/2W Carbon		AA
R511	VRD-RA2BE333J	R 33k 1/8W Carbon		AA
R513	VRD-RA2BE273J	R 27k 1/8W Carbon		AA
R514	VRD-RA2BE563J	R 56k 1/8W Carbon		AA
R515	VRD-RA2EE220J	R 22 1/4W Carbon		AA
R516	VRD-RM2HD331J	R 330 1/2W Carbon		AA
R517	VRD-RA2BE223J	R 22k 1/8W Carbon		AA
R518	VRD-RA2BE102J	R 1k 1/8W Carbon		AA
R519	VRD-RM2HD152J	R 1.5k 1/2W Carbon		AA
R601	VRD-MN2BE104J	R 100k 1/8W Carbon		AA
R602	VRD-RA2BE103J	R 10k 1/8W Carbon		AA
R604	VRD-MN2BE391J	R 390 1/8W Carbon		AA
R605	VRD-MN2BE102J	R 1k 1/8W Carbon		AA
R606	VRD-RA2BE681J	R 680 1/8W Carbon		AA
R607	VRD-MN2BE103J	R 10k 1/8W Carbon		AA
R608	VRD-RM2HD472J	R 4.7k 1/2W Carbon		AA
R609	VRS-SV3LB332J	R 3.3k 3W Metal Oxide		AB
R610	VRD-MN2BE822J	R 8.2k 1/8W Carbon		AA
R611	VRW-KQ3NC4R7K	R 4.7 7W Cement		AE
⚠ R612	VRG-PD2HD820J	R 82 1/2W Fuse Resistor		AC
R613	VRD-MN2BE103J	R 10k 1/8W Carbon		AA
R614	VRD-RM2HD180J	R 18 1/2W Carbon		AA
R617	VRS-VV3AB330J	R 33 1W Metal Oxide		AA
R618	VRD-RM2HD102J	R 1k 1/2W Carbon		AA
R619	VRD-MN2BE393J	R 39k 1/8W Carbon		AA
⚠ R620	RR-XZ0085CEZZ	R 3.9 1/4W Fuse Resistor		AC
R621	VRN-RV3ABR56J	R 0.56 1W Metal Film		AB
R622	VRD-RM2HD223J	R 22k 1/2W Carbon		AA
⚠ R623	VRD-RA2EE683G	R 68k 1/4W Carbon		AB
⚠ R624	VRD-RA2BE123G	R 12k 1/8W Carbon		AA
R625	VRD-RA2BE103J	R 10k 1/8W Carbon		AA
⚠ R630	VRD-MN2BE123J	R 12k 1/8W Carbon		AA
⚠ R631	VRD-MN2BE102J	R 1k 1/8W Carbon		AA
⚠ R633	VRD-RA2BE562J	R 5.6k 1/8W Carbon		AA

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MAIN UNIT (Continued)

Ref. No.	Part No.	★	Description			Code
R634	VRD-RM2HD101J	R	100	1/2W	Carbon	AA
⚠R635	VRD-MN2BE154J	R	150k	1/8W	Carbon	AA
R640	VRD-RM2HD682J	R	6.8k	1/2W	Carbon	AA
⚠R642	VRD-MN2BE103J	R	10k	1/8W	Carbon	AA
R648	VRD-RM2HD2R7J	R	2.7	1/2W	Carbon	AA
R651	VRD-RM2HD101J	R	100	1/2W	Carbon	AA
R653	VRD-MN2BE822J	R	8.2k	1/8W	Carbon	AA
R654	VRD-RM2HD560J	R	56	1/2W	Carbon	AA
R655	VRD-RM2HD180J	R	18	1/2W	Carbon	AA
R656	VRD-RM2HD2R7J	R	2.7	1/2W	Carbon	AA
⚠R657	VRD-MN2BE103J	R	10k	1/8W	Carbon	AA
R658	VRD-RM2HD470J	R	47	1/2W	Carbon	AA
R660	VRD-MN2BE681J	R	680	1/8W	Carbon	AA
R661	VRD-RA2EE105J	R	1M	1/4W	Carbon	AA
R701	VRW-KV3HC1R5K	R	1.5	5W	Carbon	AE
R702	VRW-KQ4AC2R7K	R	2.7	10W	Cement	AE
R703	VRS-KT3LB562J	R	5.6k	3W	Metal Oxide	AC
R704	VRN-RV3DB4R7J	R	4.7	2W	Metal Film	AB
R705	VRN-VV3AB3R3J	R	3.3	1W	Metal Film	AA
R706	VRD-RA2BE124J	R	120k	1/8W	Carbon	AA
R707	VRD-RA2BE270J	R	27	1/8W	Carbon	AA
R709	VRS-KT3LB562J	R	5.6k	3W	Metal Oxide	AC
R710	VRD-RA2BE392J	R	3.9k	1/8W	Carbon	AA
R711	*See Controls*					
R712	VRD-RA2BE821J	R	820	1/8W	Carbon	AA
R715	VRD-RA2BE153J	R	15k	1/8W	Carbon	AA
R716	VRD-RA2BE180J	R	18	1/8W	Carbon	AA
R717	VRD-RA2BE101J	R	100	1/8W	Carbon	AA
R718	VRN-VV3ABR22J	R	0.22	1W	Metal Film	AA
⚠R719	VRC-UA2HG825K	R	8.2M	1/2W	Solid	AA
⚠R720	VRC-UA2HG825K	R	8.2M	1/2W	Solid	AA
R721	VRD-RM2HD1R0J	R	1	1/2W	Carbon	AA
R722	VRN-SV2HBR47J	R	0.47	1/2W	Metal Film	AB
R723	VRS-VV3LB272J	R	2.7k	3W	Metal Oxide	AB
R724	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R735	VRD-RM2HD184J	R	180k	1/2W	Carbon	AA
R736	VRD-RM2HD184J	R	180k	1/2W	Carbon	AA
R802	VRD-MN2BE561J	R	560	1/8W	Carbon	AA
R803	VRD-MN2BE561J	R	560	1/8W	Carbon	AA
R804	VRD-MN2BE561J	R	560	1/8W	Carbon	AA
R805	VRD-MN2BE222J	R	2.2k	1/8W	Carbon	AA
R809	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R810	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R811	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R812	VRD-MN2BE101J	R	100	1/8W	Carbon	AA
R813	VRD-MN2BE101J	R	100	1/8W	Carbon	AA
R814	VRD-RA2BE273J	R	27k	1/8W	Carbon	AA
R815	VRD-RA2BE223J	R	22k	1/8W	Carbon	AA
R816	VRD-MN2BE473J	R	47k	1/8W	Carbon	AA
R817	VRD-MN2BE473J	R	47k	1/8W	Carbon	AA
R819	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R820	VRD-MN2BE101J	R	100	1/8W	Carbon	AA
R821	VRD-MN2BE101J	R	100	1/8W	Carbon	AA
R822	VRD-MN2BE101J	R	100	1/8W	Carbon	AA
R823	VRD-MN2BE102J	R	1k	1/8W	Carbon	AA
R824	VRD-MN2BE102J	R	1k	1/8W	Carbon	AA
R825	VRD-MN2BE102J	R	1k	1/8W	Carbon	AA
R826	VRD-RA2BE223J	R	22k	1/8W	Carbon	AA
R1001	VRD-RA2BE472J	R	4.7k	1/8W	Carbon	AA
R1002	VRD-RA2BE472J	R	4.7k	1/8W	Carbon	AA
R1003	VRD-MN2BE472J	R	4.7k	1/8W	Carbon	AA
R1004	VRD-MN2BE473J	R	47k	1/8W	Carbon	AA
R1005	VRD-RA2BE562J	R	5.6k	1/8W	Carbon	AA
R1006	VRD-RA2BE101J	R	100	1/8W	Carbon	AA
R1007	VRD-MN2BE683J	R	68k	1/8W	Carbon	AA
			(CV-21RU)			
R1009	VRD-MN2BE101J	R	100	1/8W	Carbon	AA
R1011	VRD-RA2BE683J	R	68k	1/8W	Carbon	AA
R1012	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R1014	VRD-RA2BE472J	R	4.7k	1/8W	Carbon	AA
R1015	VRD-MN2BE332J	R	3.3k	1/8W	Carbon	AA
R1016	VRD-RA2BE101J	R	100	1/8W	Carbon	AA
R1017	VRD-RA2BE683J	R	68k	1/8W	Carbon	AA
R1018	VRD-RA2BE101J	R	100	1/8W	Carbon	AA
R1019	VRD-MN2BE101J	R	100	1/8W	Carbon	AA
R1021	VRD-MN2BE102J	R	1k	1/8W	Carbon	AA
R1022	VRD-MN2BE102J	R	1k	1/8W	Carbon	AA
R1023	VRD-MN2BE102J	R	1k	1/8W	Carbon	AA
R1024	VRD-MN2BE683J	R	68k	1/8W	Carbon	AA
R1026	VRD-MN2BE102J	R	1k	1/8W	Carbon	AA
R1027	VRD-MN2BE562J	R	5.6k	1/8W	Carbon	AA
R1028	VRD-MN2BE332J	R	3.3k	1/8W	Carbon	AA
R1030	VRD-RA2BE101J	R	100	1/8W	Carbon	AA
R1031	VRD-RA2BE333J	R	33k	1/8W	Carbon	AA
R1032	VRD-RA2BE683J	R	68k	1/8W	Carbon	AA
R1034	VRD-MN2BE562J	R	5.6k	1/8W	Carbon	AA
R1035	VRD-MN2BE562J	R	5.6k	1/8W	Carbon	AA
R1036	VRD-MN2BE182J	R	1.8k	1/8W	Carbon	AA
R1037	VRD-MN2BE103J	R	10k	1/8W	Carbon	AA
R1038	VRD-MN2BE333J	R	33k	1/8W	Carbon	AA
R1039	VRD-MN2BE271J	R	270	1/8W	Carbon	AA
R1040	VRD-MN2BE271J	R	270	1/8W	Carbon	AA
R1041	VRD-MN2BE103J	R	10k	1/8W	Carbon	AA
R1042	VRD-RA2BE562J	R	5.6k	1/8W	Carbon	AA
R1043	VRD-MN2BE103J	R	10k	1/8W	Carbon	AA
R1044	VRD-RA2BE562J	R	5.6k	1/8W	Carbon	AA
R1045	VRD-RM2HD180J	R	18	1/2W	Carbon	AA
R1046	VRD-RM2HD180J	R	18	1/2W	Carbon	AA
R1047	VRD-MN2BE472J	R	4.7k	1/8W	Carbon	AA
R1049	VRD-MN2BE473J	R	47k	1/8W	Carbon	AA
R1050	VRD-RA2BE473J	R	47k	1/8W	Carbon	AA
R1051	VRD-MN2BE393J	R	39k	1/8W	Carbon	AA
R1052	VRD-MN2BE272J	R	2.7k	1/8W	Carbon	AA
R1055	VRD-RM2HD101J	R	100	1/2W	Carbon	AA
R1057	VRD-MN2BE273J	R	27k	1/8W	Carbon	AA
R1058	VRD-MN2BE822J	R	8.2k	1/8W	Carbon	AA
R1059	VRD-MN2BE472J	R	4.7k	1/8W	Carbon	AA
R1060	VRD-MN2BE222J	R	2.2k	1/8W	Carbon	AA
R1061	VRD-MN2BE103J	R	10k	1/8W	Carbon	AA

Ref. No.	Part No.	★	Description	Code

PWB-A DUNTK9322WEV4/V5/V6

MAIN UNIT (Continued)

R1062	VRD-RM2HD180J	R	18	1/2W	Carbon	AA
R1063	VRD-MN2BE103J	R	10k	1/8W	Carbon	AA
R1064	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R1065	VRD-MN2BE102J	R	1k	1/8W	Carbon	AA
R1067	VRD-MN2BE562J	R	5.6k	1/8W	Carbon	AA
R1068	VRD-MN2BE683J	R	68k	1/8W	Carbon	AA
R1070	VRD-MN2BE562J	R	5.6k	1/8W	Carbon	AA
R1072	VRD-RA2BE153J	R	15k	1/8W	Carbon	AA
R1075	VRD-MN2BE102J	R	1k	1/8W	Carbon	AA
R1076	VRD-MN2BE102J	R	1k	1/8W	Carbon	AA

SWITCHES

⚠S701	QSW-P0588CEZZ	R	Main Power	AP
S1001	QSW-K0079GEZZ	R	Channel Up	AB
S1002	QSW-K0079GEZZ	R	Channel Down	AB
S1003	QSW-K0079GEZZ	R	Volume Up	AB
S1004	QSW-K0079GEZZ	R	Volume Down	AB
S1005	QSW-K0079GEZZ	R	Preset	AB
S1006	QSW-B0015CEZZ	R	Set-up	AC

MISCELLANEOUS PARTS

⚠F301	QFS-J1521CEZZ	R	IC Protector	AF
⚠F701	QFS-C3224CEZZ	R	Fuse T3.15A	AD
FH701	QFSHD1017CEZZ	R	Fuse Holder	AC
FH702	QFSHD1018CEZZ	R	Fuse Holder	AC
FB305	RBLN-0037CEZZ	R	Ferrite Bead	AB
FB602	RBLN-0037CEZZ	R	Ferrite Bead	AB
FB702	RBLN-0037CEZZ	R	Ferrite Bead	AB
FB706	RBLN-0037CEZZ	R	Ferrite Bead	AB
FB731	RBLN-0080CEZZ	R	Ferrite Bead	AD
J401	QTANJ0429CEZZ	R	AV Input/Output Terminal	AH
P201	QPLGN0241CEZZ	R	Plug 2-pin TP210	AA
P301	QPLGN0241CEZZ	R	Plug 2-pin (S)	AB
P401	QPLGN0441CEZZ	R	Plug 4-pin (VA)	AB
P502	QPLGN0603CEZZ	R	Plug 6-pin (F)	AB
P602	QPLGN0441CEZZ	R	Plug 4-pin (H)	AB
P711	QPLGN0207CEZZ	R	Plug 2-pin (G)	AA
⚠P712	QPLGN0269GEZZ	R	Plug 2-pin (A)	AB
P801	QPLGN0541CEZZ	R	Plug 5-pin (K)	AB
P1001	QPLGN0441CEZZ	R	Plug 4-pin (BC)	AB
RDA351	PRDAR0142PEFW	R	Heat Sink, for IC351	AD
RDA501	PRDAR0223PEFW	R	Heat Sink, for IC501	AF
RDA602	PRDAR0224PEFW	R	Heat Sink, for Q602	AF
RDA701	PRDAR0222PEFW	R	Heat Sink, for Q701	AH
RMC1001	RRMCU0222CEZZ	R	Infrared R/C Receiver	AL
SLD201	PSLDM0232PEFW	R	PIF Shield	AD
SLD1001	PSLDM0233PEFW	R	Shield, for IC1001	AC
	LHLDP1042PE00	R	LED Holder	AG
	LX-BZ3100CEFD	R	Screw, x4	AA
	LX-TZ3004CEFD	R	Screw, x2	AA

Ref. No.	Part No.	★	Description	Code

PWB-B DUNTK9323WEV0/V3

CRT SOCKET UNIT

TRANSISTORS

Q851	VS2SC3789//1E	R	2SC3789	AE
Q852	VS2SC3789//1E	R	2SC3789	AE
Q853	VS2SC3789//1E	R	2SC3789	AE
Q854	VS2SA1015Y/1E	R	2SA1015Y (Y)	AC

DIODES

D851	RH-DX0475CEZZ	R	Diode	AB
D852	RH-DX0475CEZZ	R	Diode	AB
D853	RH-DX0475CEZZ	R	Diode	AB

COIL

L851	VP-CF681K0000	R	Peaking Coil 680µH	AB

CAPACITORS

C851	VCCSPA1HL391J	R	390p	50V	Ceramic	AA
C852	VCCSPA1HL391J	R	390p	50V	Ceramic	AA
C853	VCCSPA1HL391J	R	390p	50V	Ceramic	AA
⚠C854	RC-KZ0150CEZZ	R	1000p	3kV	Ceramic	AB
C861	VCEAGA1CW106M	R	10	16V	Electrolytic	AA
C865	VCKYPA1HB102K	R	1000p	50V	Ceramic	AA
C866	VCEAGA2EW106M	R	10	250V	Electrolytic	AC
C870	VCEAGA1CW106M	R	10	16V	Electrolytic	AA

RESISTORS

R851	VRD-MN2BE471J	R	470	1/8W	Carbon	AA
R852	VRD-MN2BE561J	R	560	1/8W	Carbon	AA
R856	VRD-MN2BE471J	R	470	1/8W	Carbon	AA
R858	VRD-MN2BE561J	R	560	1/8W	Carbon	AA
R859	VRD-MN2BE152J	R	1.5k	1/8W	Carbon	AA
R860	VRS-VV3DB123J	R	12k	2W	Metal Oxide	AA
R862	VRD-MN2BE471J	R	470	1/8W	Carbon	AA
R864	VRD-MN2BE561J	R	560	1/8W	Carbon	AA
R865	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R866	VRS-VV3DB123J	R	12k	2W	Metal Oxide	AA
R867	VRD-RM2HD272J	R	2.7k	1/2W	Carbon	AA
R868	VRS-VV3DB123J	R	12k	2W	Metal Oxide	AA
R870	VRD-MN2BE222J	R	2.2k	1/8W	Carbon	AA
R871	VRD-MN2BE152J	R	1.5k	1/8W	Carbon	AA
R875	VRD-MN2BE560J	R	56	1/8W	Carbon	AA
R876	VRD-MN2BE560J	R	56	1/8W	Carbon	AA
R877	VRD-MN2BE560J	R	56	1/8W	Carbon	AA
R898	VRD-RM2HD272J	R	2.7k	1/2W	Carbon	AA
R899	VRD-RM2HD272J	R	2.7k	1/2W	Carbon	AA

MISCELLANEOUS PARTS

P851	QPLGN0441CEZZ	R	Plug 4-pin (H)	AB
P852	QPLGN0541CEZZ	R	Plug 5-pin (K)	AB
⚠SC851	QSOCV0931CEZZ	R	CRT Socket	AK
	QCNW-2126PEZZ	R	Connecting Wire (H)	AG
	QCNW-2127PEZZ	R	Connecting Wire (K)	AG

Ref. No.	Part No.	★	Description	Code

PWB-C DUNTK9324WEV0
AV-2 TERMINAL UNIT

MISCELLANEOUS PARTS

J402	QJAKE0145CEZZ	R	Jack, Audio In	AF
J403	QJAKE0144CEZZ	R	Jack, Video In	AF
P402	QPLGN0441CEZZ	R	Plug 4-pin (VA)	AB

MISCELLANEOUS PARTS

SP1	VSP9050PB11WA	R	Speaker	AP
⚠	QACCZ2008PEZZ	R	AC Cord (21R-SCE/F/M10, CV-21RU)	AM
⚠	QACCZ3008PEZZ	R	AC Cord (21R-SCG)	AN
⚠	QACCZ3012PEZZ	R	AC Cord (21R-M8)	AN
	QPLGA0011CEZZ	R	AC Plug Adaptor (21R-SCG)	AF
	LHLDK0005PE00	R	AC Cord Holder	AC
	QCNW-2126PEZZ	R	Connecting Wire (H)	AG
	QCNW-2127PEZZ	R	Connecting Wire (K)	AG
	QCNW-2128PEZZ	R	Connecting Wire (VA)	AK
	QCNW-2163PEZZ	R	Connecting Wire (S)	AL

Ref. No.	Part No.	★	Description	Code

SUPPLIED ACCESSORIES

ACCESSORIES

	RRMCG1342PESA	R	Infrared R/C Unit	AU
	TiNS-6192PEZZ	R	Operation Manual (21R-SCF/G)	AL
	TiNS-6195PEZZ	R	Operation Manual (21R-SCE)	AL
	TiNS-6196PEZZ	R	Operation Manual (21R-M10)	AG
	TiNS-6202PEZZ	R	Operation Manual (CV-21RU)	AL
	TiNS-6247PEZZ	R	Operation Manual (21R-M8)	AH

ACCESSORIES (NOT REPLACEMENT ITEM)

TMAPC3982PEZZ	–	Service Map (21R-SCE/F/G)	—
UBATU0002AJZZ	–	Dry Batteries	—

PACKING PARTS
(NOT REPLACEMENT ITEM)

MODELS 21R-SC/M10/M8

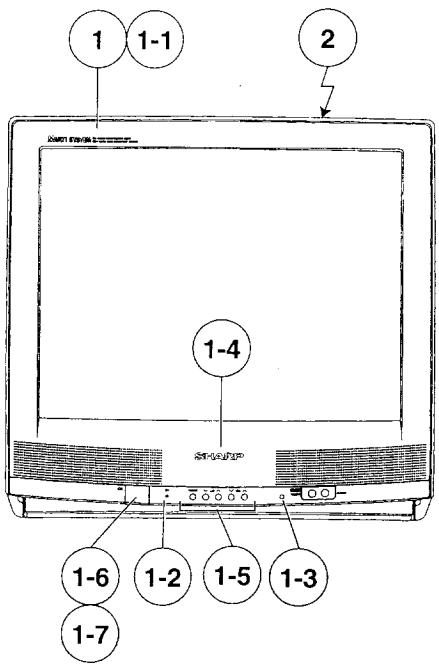
SPAKC6267PEZZ	–	Packing Case (21R-M8)	—
SPAKC6312PEZZ	–	Packing Case (21R-M10)	—
SPAKC6269PEZZ	–	Packing Case (21R-SC)	—
SSAKH0016PEZZ	–	Polystyrene Cover	—
SPAKX2655PEZZ	–	Buffer Material	—

MODEL CV-21RU

SPAKC6273PEZZ	–	Packing Case	—
SSAKH0016PEZZ	–	Polystyrene Cover	—
SPAKX2655PEZZ	–	Buffer Material	—

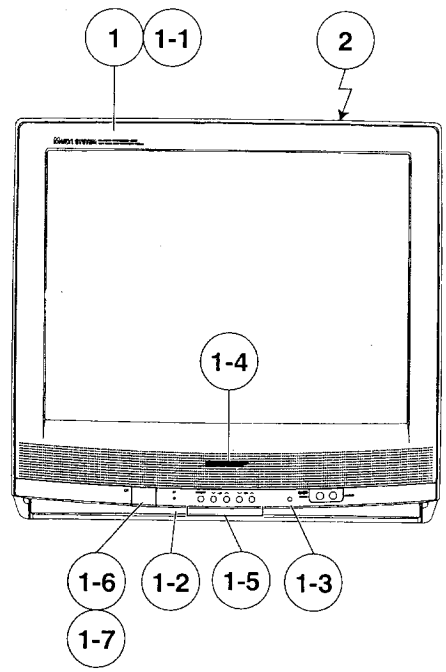
CABINET PARTS
(MODELS 21R-SC/M10/M8)

Ref. No.	Part No.	★	Description	Code
1	CCABA2422WEV0	R	Front Cabinet Ass'y	BG
1-1	*Not Available*	–	Front Cabinet	—
1-2	GCOVA0079PESA	J	LED Cover	AC
1-3	GCOVA0080PESA	J	R/C Cover	AD
1-4	HBDGB0019PESA	J	SHARP Badge	AD
1-5	JBTN-0273PESA	J	Control Button	AF
1-6	JBTN-0274PESA	J	Power Button	AG
1-7	MSPRC0068CEFW	R	Spring for Power Button	AA
2	CCABB2335WEV0	J	Rear Cabinet Ass'y	BD



CABINET PARTS
(MODEL CV-21RU)

Ref. No.	Part No.	★	Description	Code
1	CCABA2429WEV0	R	Front Cabinet Ass'y	BG
1-1	*Not Available*	–	Front Cabinet	—
1-2	GCOVA0079PESA	J	LED Cover	AC
1-3	GCOVA0080PESA	J	R/C Cover	AD
1-4	HBDGB0019PESA	J	SHARP Badge	AD
1-5	JBTN-0273PESA	J	Control Button	AF
1-6	JBTN-0274PESA	J	Power Button	AG
1-7	MSPRC0068CEFW	R	Spring for Power Button	AA
2	CCABB2335WEV0	J	Rear Cabinet Ass'y	BD



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