HITACHI

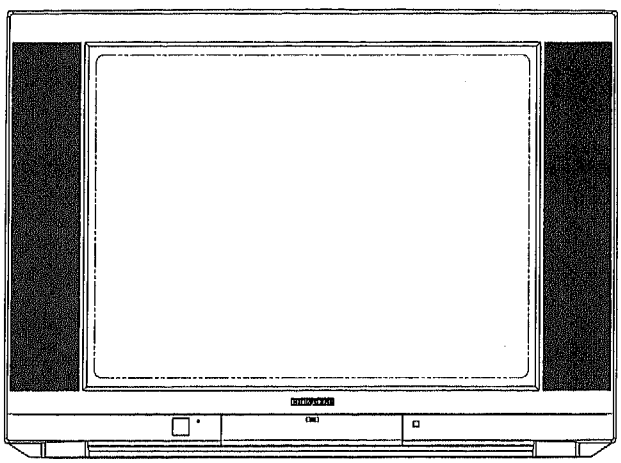
YS | No. 0107C-E

SERVICE MANUAL

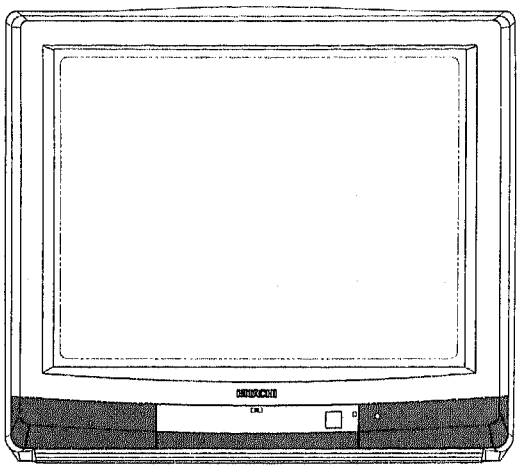
C29-R30SP – 041, 051, 751, 081, 082, 121, 98*, 19*, 433, 941, 061, 071
C29-R20AV

PAL/SECAM/NTSC

V3AL2/3 Chassis



C29-R30SP



C29-R20AV

注　　意: 开始检修电视机机芯以前，检修人员必须阅读这本检修手册中“有关安全上的预防事项”及“制品安全上的注意”两节。

CAUTION: Before servicing this chassis, it is important that the service technician reads the "Safety Precaution" and "Product Safety Notices" in this Service Manual.

目　录

CONTENTS

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

COLOR TELEVISION

July 2001　　Hitachi Consumer Products (S)

TECHNICAL CAUTIONS

SAFETY PRECAUTIONS

WARNING: Since the chassis of this receiver is connected to one side of the Mains Supply during operation, service should not be attempted by anyone unfamiliar with the precautions necessary when working on this type of equipment. The following precautions should be observed.

1. Do not install, remove, or handle the picture tube in any manner unless shatter-proof goggles are worn. People not so equipped should be kept away while picture tubes are handled. Keep picture tube away from the body while handing.
2. When replacing chassis in the cabinet, all the protective devices are put back in place, such as; barriers, non-metallic knobs, adjustment and compartment cover or shields, isolation resistors-capacitors, etc.
3. When service is required, observe the original lead dress. Extra care should be taken to assure correct lead dress in the high voltage circuitry area.
4. Always use the manufacturer's replacement component. Especially critical components as indicated on the circuit diagram should not be replaced by other makes. Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
5. Before returning a serviced receiver to the customer, the service technician must thoroughtly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the instrument by the manufacturer has became defective, or inadvertenly defeated during servicing. Therefore, the following checks are recommended for the continued protection of the customers and service technicians.

INSULATION

Insulation resistance between the mains poles and any accessible metal parts should not be less than 7MΩ at 500V DC. Also, no flashover or breakdown should occur during the dielectric strength test, to apply 4KV AC for one minute between the mains poles and any accessible metal parts.

X-RADIATION

TUBES: The primary source of X radiation in this receiver is the picture tube. The tube utilized in this chassis is specially constructed to limit X radiation.
For continued X radiation protection, the replacement tube must be the same type as the original, HITACHI approved type.

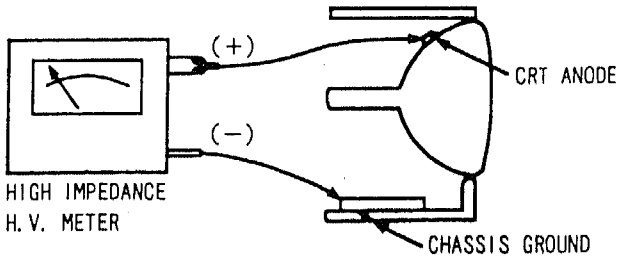
High Voltage

This receiver is provided with a hold down circuit for clearly indicating that voltage has increased in excess of a predetermined value. Comply with all notes described in this Service Manual regarding this hold down circuit when servicing, so that this hold down circuit is operated correctly.

Serviceman Warning

With minimum Black Level and Picture, the operating high voltage in this receiver is lower than 33.0kV. In case any component having influence on the high voltage is replaced, confirm that high voltage with minimum Brightness and contrast is lower than 35.0kV. To measure H. V. use a high impedance H. V. meter. Connect (-) to chassis earth and (+) to the CRT anode button. (See the following connection diagram).

NOTE: Turn the power switch off without fail before the connection to the Anode button is made.



PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in HITACHI television receiver have special safety related characteristics. These characteristics are often not evident from visual inspection nor can be protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.
Electrical components having such features are identified by marking with a ⚠ mark in the schematics and on the replacement parts list in this Service Manual. The use of a substitute replacement component which does not have the same safety characteristics as the HITACHI recommended replacement one shown in the parts list in this Service Manual, may create electrical shock, fire, X radiation, or other hazards.
Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current HITACHI Service Manual. A subscription to, or additional copies of, HITACHI Service Manual may be obtained at a nominal charge from your HITACHI sales offices.

TECHNICAL CAUTIONS

High voltage limiter circuit operation check

1. Connect the high voltage voltmeter between the CPT anode (anode cap) and GND (CPT grounding lead).
2. Receive the broadcast signal and set the brightness and contrast VRs to max. Set the beam current to 1.5mA ± 10%.

   (After cut-off adjustment)
3. Set the AC input voltage to 220±3V.
4. Check that the constant high voltage is 29.5±1.0kV at this time.
5. Turn the switch of the set to off and connect the jig shown in Fig.3 at R952, R953 as shown in Fig 1.
6. With the brightness and contrast VRs left as set in item. 2 and with the AC input voltage stabilized at 220V. turn the picture disappears with a high voltage of 34.5kV or less.
7. Turn the switch of the set to off immediately after the check is completed.
8. Remove the adjust jigs and high voltage voltmeter.

NOTE: When connecting disconnecting the high voltage voltmeter to from the anode cap, be sure to turn the switch of the set off and do it after the residual high voltage is discharged to the chassis because the high voltage may remain at the anode cap.

MAIN PWB

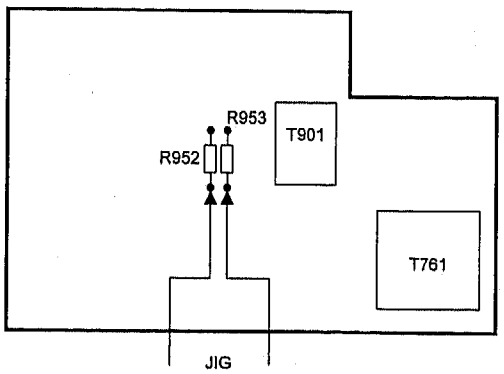


Fig . 1.

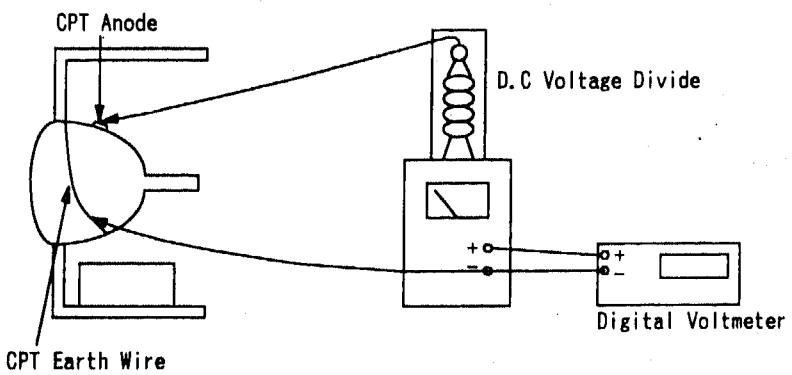


Fig. 2

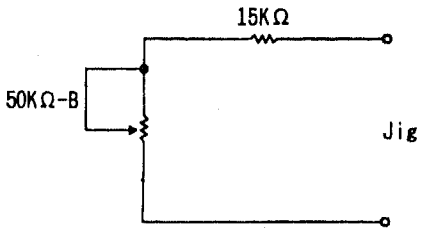


Fig. 3

有关安全上的预防事项

警告: 因为在动作期间，这电视机的底盘与电源的一端互相连接，所以对检修这类型号的机器所必须的预防措施为下熟悉的人，不应该企图修机器。要检修必须遵守下列预防事项。

1. 要装人，取出或外理显象管时，必须带上防碎玻璃做的护目镜。外理显象管时，不带这护目镜的人不可接近。显象管应放在离开人体的地方。
2. 将底盘装人机箱里面时，所有的保护装置，如隔板，非金属的调整钮，小室盖子或小室屏蔽，隔离用电阻，电容器等，也应该装回去。
3. 开始检修之前，应该注意原来的引线包层。尤其是在高压电路部分需要特别小心，必须认清正确的引线包层。
4. 要检修，请一定要使用制造厂所指定的替换用机件。尤其在电路上注明几个特别重要的机件，要替换这些机件绝不可使用其他厂家的制品。当电路发生短路时，凡是有过热痕迹的机件都需要全部交换。
5. 将修好的电视机送回顾客以前，检修人员应该彻底检验机器以保证它完全安全，绝没有电击的危险，并确实检查机器内部的各种保护装置，以保证这些部分没有因检修而失灵。

由于上面理由，检修人员最好实行以下各项检查，以保证顾客和自己的安全。

绝缘

电源电极与任何可触及的金属部分之间的绝缘电阻不可小于7兆欧姆（加上直流500伏电压时）。而且，在电源电极与任何可触及的金属部分之间加上4千伏的交流电压（1分钟）而试验其绝缘强度时，不可发生闪络或绝缘击穿等现象。

X射线

显象管: 这部电视机所产生的X射线，其主要的来源是显象管。所以这部电视机所使用的显象管有特别的构造设计，使X射线尽量减少。为了能继续防止X射线起见，要交换显象管时，请一定要使用相同型号的日立显象管。

高压

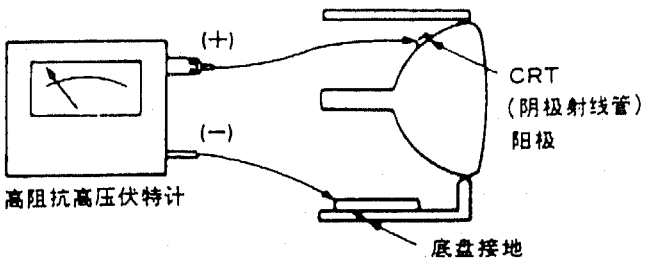
这电视机装有一个高压限制电路，可清楚地表示电压升高已超过额定值。进行维修服务时，请根据本维修说明书有关此高压限制电路的所有注解说明去做，则高压限制电路便可以正确地操作。

维修人员须注意

这电视机在最小黑色电平和图象电流时的高电压是在33.0kV以下的。若更换了会影响高压的部件时，一定请确认在最小亮度和对比度状况下的高电压是否低于35.0kV.

请使用高阻抗高压伏特计，令其（－）连接底盘接地线，令（＋）连接CRT（阴极射线管）阳极电钮，去测量高电压（H.V.）。（参考下面的连接图）。

注: 当要连接到阳极电钮以前，一定要先把电源开关关掉。



有关制品安全上的注意事项

日立电视机所使用的许多机件具有有关安全的特别性能。这种特别性能在表面上往往看不出来，而且即使使用额定电压或功率更大的其他替换用机件，也不一定可得到这些日立机件所保证的保护性能。在这本检修手册里面有指定

这些具有特别安全特性的替换用机间。在这本检修手册的简图和替换用机件表上附带⚠记号的机件，就表示具备这种特别的安全特性。

如果不使用这本检修手册机件表上HITACHI所推荐的替换用机件而使用没有同样安全特性的其他替换用机件的话，就可能会发生电击，失火，X射线等事故。

HITACHI对制品安全不断努力改进，经常发出新的技术指令。如需要新的技术情报就请参看最新的HITACHI检修手册。可向HITACHI销售公司预订或订阅“日立检修手册”，只收取极少费用。

技术上须注意事项

高压限压器电路操作检查

1. 把高压伏特计连接在CPT阳极（阳极罩）和GND（CPT的接地线）之间。

2. 试接收一个电台的广播信号，且把亮度和对比度的VRs（可变电阻器）调到最大。把射束电流调为 1.5mA±10%（切断调整之后）

3. 把AC电的输入电压调为220±3V。

4. 此时，检查恒定高压是否呈 29.5±1.0kV。

5. 把设定开关关掉，然后把图3所示的夹具接在图1所示的R952, R953处。

6. 以第2项所设定的亮度和对比度VRs，AC电流输入电压并保持稳定的220V状况下调节50kΩ可变电阻器以使影像消失掉，高压不可超过34.5kV。

7. 检查完毕后，请立即关掉设定开关。

8. 卸下调整夹具和高压伏特计。

注：当把高压伏特计连接到阳极罩拆下时，必须先关掉设定开关,并且等残留高压电流都往底盘放电完毕之后，才进行接拆工作。因为阳极罩上在关掉设定开关后，还可能残留有高压电流。

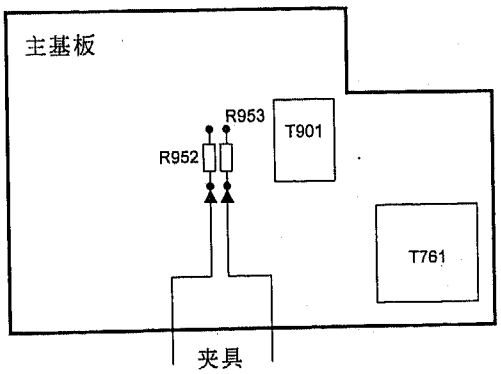


图 1

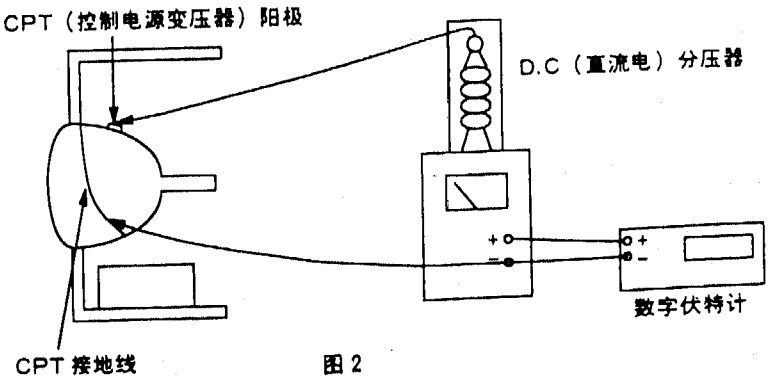


图 2

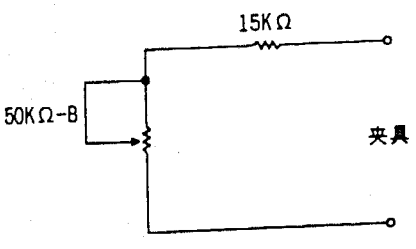


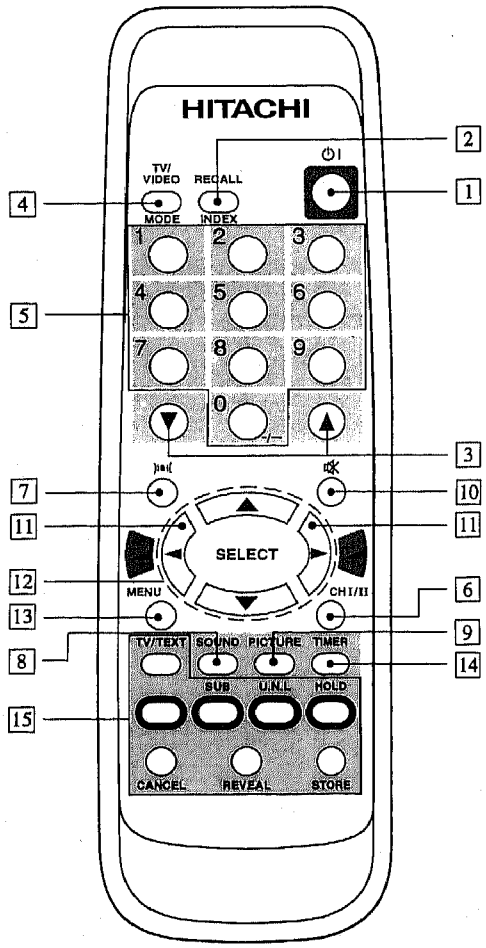
图 3

SPECIFICATIONS (技术参数)

Reception system	625-LINES B.G/I/D.K/H PAL B.G/D.K/K1 SECAM NTSC50 525-LINES M/NTSC NTSC3.58-5.5/6.0/6.5 NTSC4.43-5.5/6.0/6.5 PAL 60, SECAM 60	Antenna input	75 Ω COAXIAL IEC TYPE
		Colour picture tube	A68QBC230X
		Speaker (cm)	6 x 12 (x2)
		Sound output	7W x 2
(Channel coverage Frequencey range 44MHz-863MHz)	CCIR : E2~12, E21~69, S01~3, S1~41 Australia : AU0~12, AU28~69 OIRT : R1~12, R21~69 JAPAN : J1~12, J13~62 U.S.A. : US2~13, J~W, US14~69 Hong Kong, U.K. : UK21~69 China : C1~12, C13~57, Z1~38	Power supply	751 : AC 240V 50Hz 191A : AC 127V 50Hz/60Hz 071, 98*, 192 121, 195 : AC 110V-240V 50Hz/60Hz 941, 08*, 051 433 : AC 200V-240V 50Hz/60Hz
		Power consumption	138W
		Weight (kg)	39.0kg (C29-R30SP), 37.1kg (C29-R20AV)
		Dimensions W x H x D (mm)	768 x 561 x 516 (C29-R30SP) 696x 613 x 487 (C29-R20AV)

※ Specifications are subject to change wihout notice to improve performance.

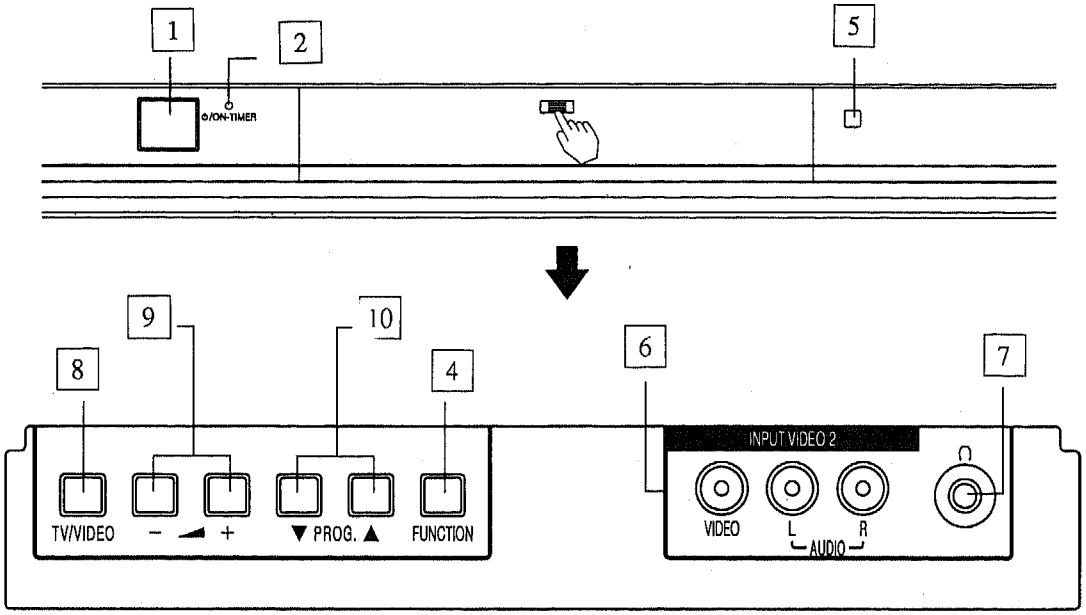
REMOTE CONTROL UNIT (遥控发射器上之控制机件)

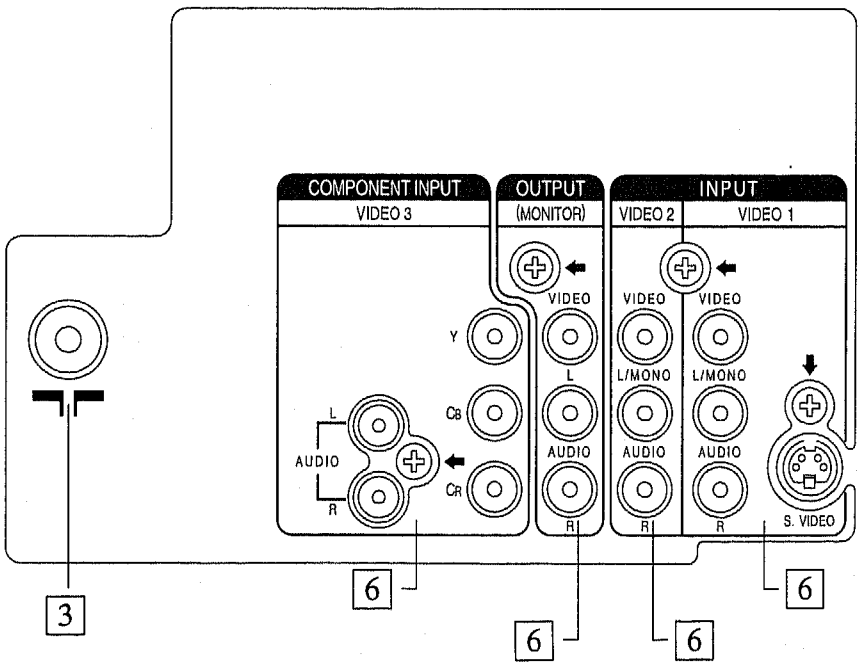


1	POWER ON/OFF SWITCH 电源开关
2	RECALL 召回
3	PROGRAMME UP/DOWN 节目升 / 降
4	INPUT SELECTION 输入选择
5	PROGRAMME SELECTOR 节目选择
6	CH I/CH II (051/751/081/982 only) CH I/CH II (051/751/081/982 适用)
7	SURROUND 环绕声
8	SOUND (Sub - - for T/TEXT) 声音 (Sub - - for T/TEXT 时)
9	PICTURE (U.N.L. - - for T/TEXT) 图像 (U.N.L. - - for T/TEXT 时)
10	MUTE 静噪
11	VOLUME UP/DOWN 音量升/降
12	CURSOR 光标
13	MENU 菜单
14	Timer [Hold - - for T/TEXT) 定时 (HOLD - - T/TEXT 时)
15	TELETEXT OPERATING KEYS (081/982 only) 图文电视 (081/982 适用)

CONTROLS
（各种调整控制机件）
MODEL: C29-R30SP

Front Panel
电视机的前面板



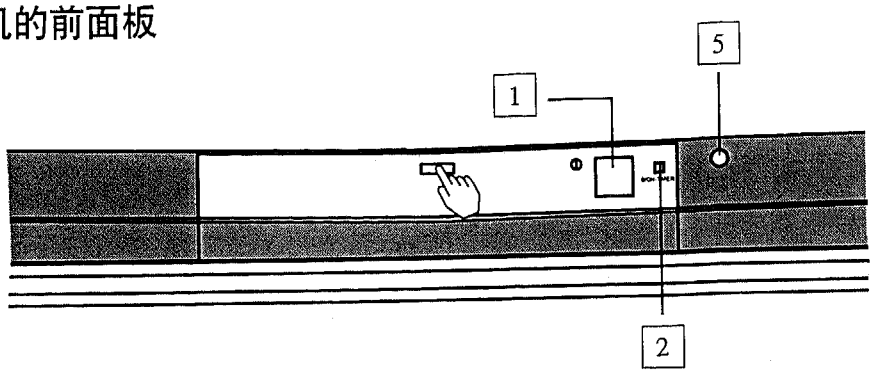


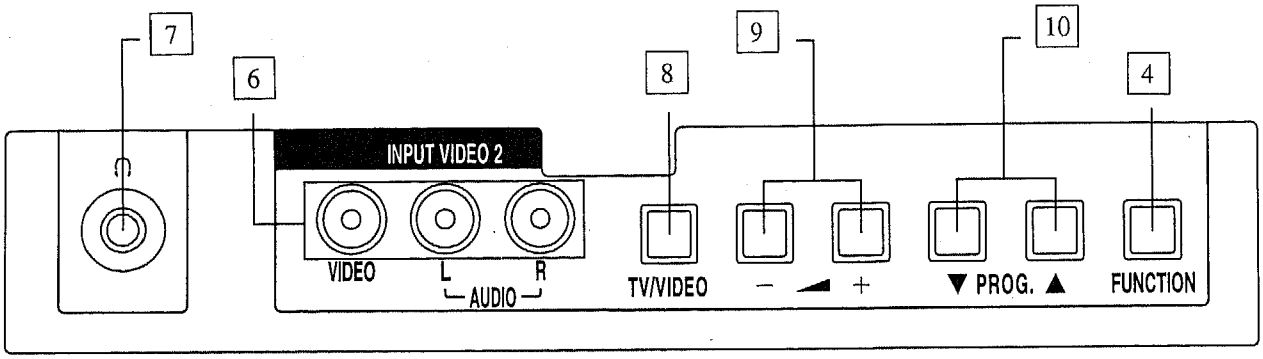
Rear Panel
电视机的后面板

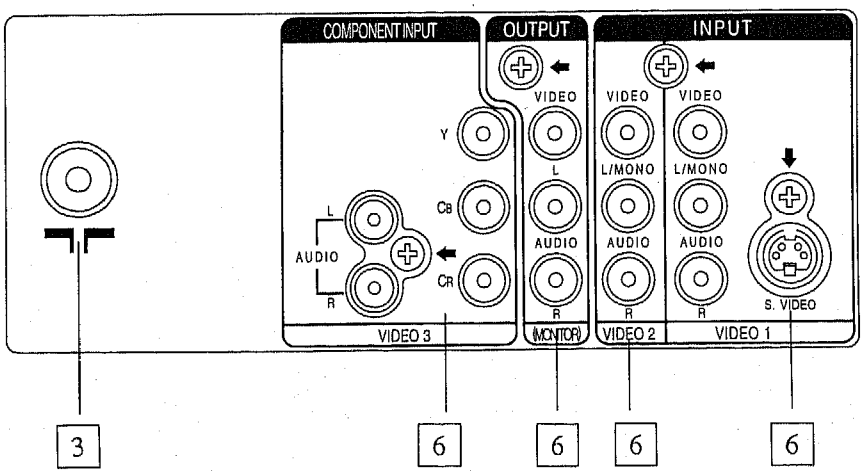
1	POWER ON/OFF SWITCH 电源开关
2	STANDBY/TIMER INDICATOR 等待／定时指标示灯指示灯
3	AERIAL TERMINAL 天线端子
4	FUNCTION 功能键
5	REMOTE CONTROL RECEIVER 遥控接收部
6	AV IN/OUT TERMINALS AV 输入/输出端子
7	HEADPHONE JACK 耳机插座
8	INPUT SELECT 输入选择
9	VOLUME UP/DOWN 音量升/降
10	PROGRAMME UP/DOWN 节目升/降

CONTROLS
（各种调整控制机件）
MODEL: C29-R20AV

Front Panel
电视机的前面板





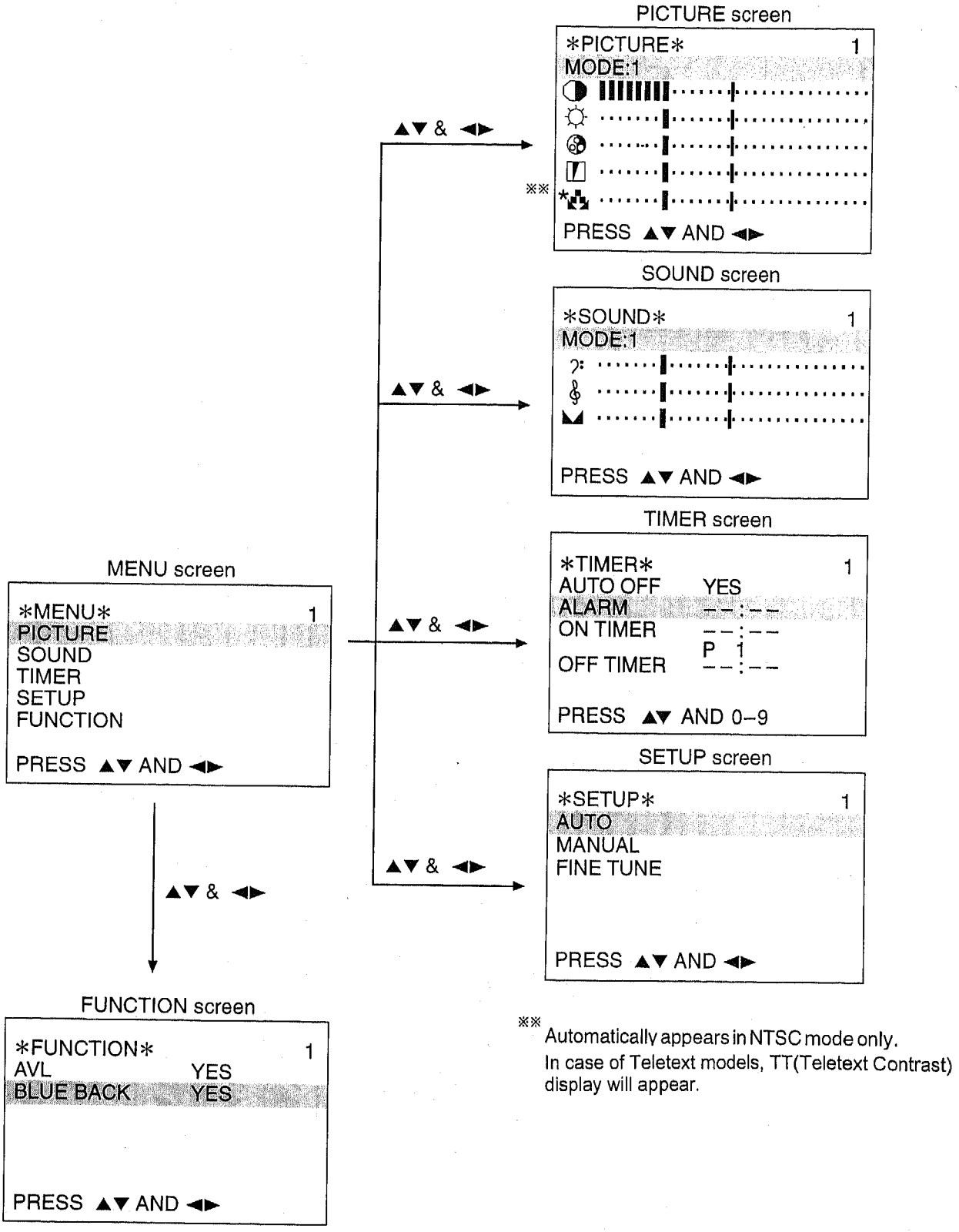


Rear Panel
电视机的后面板

1	POWER ON/OFF SWITCH 电源开关
2	STANDBY/TIMER INDICATOR 等待 / 定时指标示灯指示灯
3	AERIAL TERMINAL 天线端子
4	FUNCTION 功能键
5	REMOTE CONTROL RECEIVER 遥控接收部
6	AV IN/OUT TERMINALS AV 输入/输出端子
7	HEADPHONE JACK 耳机插座
8	INPUT SELECT 输入选择
9	VOLUME UP/DOWN 音量升/降
10	PROGRAMME UP/DOWN 节目升/降

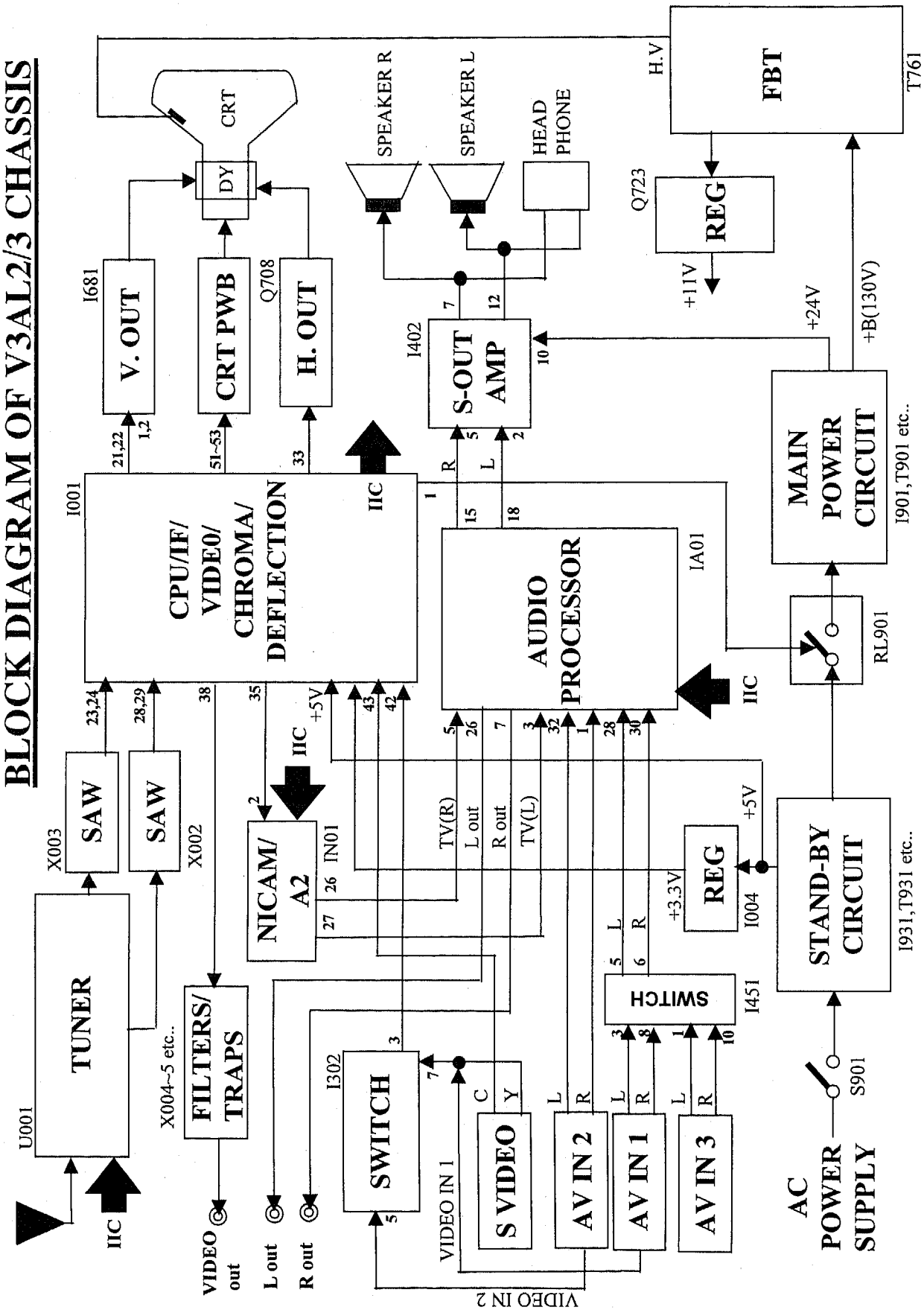
GENERAL OPERATIONS GUIDE

With this TV set, all adjustments/settings are performed by selecting from menu screens.
Different menu screens and details of adjustments/settings are shown below. To access the menu screen, press the MENU button, then select the item by pressing the up/down cursor buttons and setting it by pressing the left/ right cursor buttons.



※※ Automatically appears in NTSC mode only.
In case of Teletext models, TT(Teletext Contrast) display will appear.

BLOCK DIAGRAM OF V3AL2/3 CHASSIS



CIRCUIT DESCRIPTION

Selection and CPU circuitry

IC type, TDA93**84/86/65**, performs functions like IIC controls, channel selection, on-screen displays, search tuning, systems selection amongst others. The pin's functions of TDA93**84/86/65** are presented in the table shown below.

Pin number	Signal name	I/O	Configuration mode		Function
1	Power	Output	P.P.	3.3V	0=Stand-by, 1=On
2	SCL	I/O	O.D.	5V	Clock of main I^2C-bus
3	SDA	I/O	O.D.	5V	Data of main I^2C-bus
4	Alarm	Output	O.D.	5V	PWM output for Beep sound
5	SAW Sw	Output	O.D.	3.3V	1=M, 0=Others
6	AV S-DET	Input	H.I.	5V	Detect for S-VHS (not mono chassis)
	SW FE/AV	Output	O.D.	5V	FE/AV switch (mono chassis)
7	Key-In	Input	H.I.	3.3V	Local analogue keyboard
8	V2/V1	Output	O.D.	3.3V	1=Video:2, 0=Video:1
9	VSSC/P	-	-		Digital ground for µ-controller core and periphery
10	Led	Output	O.D.	3.3V	LED Drive
11	ON/OFF Mute	Output	O.D.	3.3V	1=Mute on, 0=Mute off (Under Standby)
12	VSSA	-	-		Analog ground of Teletext decoder and digital ground of TV-processor
13	SECPLL	-	-		SECAM PLL decoupling
14	VP2	-	-		2^{nd} supply voltage TV-processor (+8V)
15	DECDIG	-	-		Decoupling digital supply of TV-processor
16	PH2LF	-	-		Phase-2 filter
17	PH1LF	-	-		Phase-1 filter
18	TV	-	-		Ground 3 for TV-processor
19	DECBG	-	-		Bandgap decoupling
20	AVL/EWD	Output	-		East-West drive output
21	VDRB	Output	-		Vertical drive B output
22	VDRA	Output	-		Vertical drive A output
23	IFIN1	Input	-		IF input 1
24	IFIN2	Input	-		IF input 2

Pin number	Signal name	I/O	Configuration mode	Function
25	IREF	Input	-	Reference current input
26	VSC	-	-	Vertical sawtooth capacitor
27	AGCOUT	Output	-	Tuner AGC output
28	AUDEEM	Output	-	Audio deemphasis
29	DECSDEM	-	-	Decoupling sound demodulator
30	GND2	-	-	Ground 2 for TV processor
31	SNDPLL	-	-	Narrow band PLL filter
32	REFO	Output	-	Subcarrier reference output
33	HOUT	Output	-	Horizontal output
34	FBISO	Input	-	Flyback input
35	AUDEXT	Input	-	External audio input
36	EHTO	Input	-	EHT/overvoltage protection input
37	PLLIF	-	-	IF-PLL loop filter
38	IFOut	Output	-	IF video output / selected CVBS output
39	+8v	-	-	Main supply voltage TV-processor (+8V)
40	CVBSINT	Input	-	Internal CVBS input
41	GND1	-	-	Ground 1 for TV-processor
42	CVBS/Yin	Input	-	External CVBS/Y input
43	Cin	Input	-	Chrominance input (SVHS)
44	AUDOUT	Output	-	Audio output
45	INSSW2	-	-	No connection
46	R2/VIN	-	-	No connection
47	G2/YIN	-	-	No connection
48	B2/UIN	-	-	No connection
49	BCLIN	Input	-	Beam current limiter input/V-guard input
50	BLKIN	Input	-	Black current input
51	RO	Output	-	Red OSD output
52	GO	Output	-	Green OSD output
53	BO	Output	-	Blue OSD output
54	VDDA	-	-	Analog supply of Teletext decoder and digital supply of TV-processor (3.3 V)
55	VPE	-	-	OTP Programming Voltage

Pin number	Signal name	I/O	Configuration mode	Function
56	VDDC	-	-	Digital supply to core (3.3 V)
57	OSDGND	-	-	Oscillator ground supply
58	XTA/IN	Input	-	Crystal oscillator input
59	XTA/OUT	Output	-	Crystal oscillator output
60	RESET	Input	-	Reset
61	VDDP	-	-	Digital supply to periphery (+3.3 V)
62	SCL(EEP)	I/O	O.D. 3.3V	Clock of secondary I^2C-bus for EEPROM
63	SDA(EEP)	I/O	O.D. 3.3V	Data of secondary I^2C-bus for EEPROM
64	RC-In	Input	H.I. 3.3V	Input for Remote control decoding

Note 1: Abbreviation of pin configuration mode:

O.D.	Open Drain
Q.B.	Quasi-Bidirectional
H.I.	High-Impedance
P.P	Push-Pull

Note 2: During reset all pins are in Quasi-Bidirectional mode.

POWER SUPPLY CIRCUIT

1. Stand-by mode :

Commutating voltage from AC input is rectified by D931~D934 and produces approximately 300V. This high voltage DC is applied to the primary winding of T931 in series with the integrated high voltage MOSFET inside the I931(TNY254). The diode D935, capacitor C936 and resistor R930 comprise the clamp circuit that limits the turn-off voltage spike on the drain pin 5 of I931 to a safe value. The secondary winding of T931 is rectified and filtered by D971, C971, L971 and C973 to provide the 5V output. Additional filtering are provided by L972 and C972. The output voltage is determined by the sum of the opto-coupling I932 forward drop (about 1V) and zener diode D972 voltage.

2. Turn-on mode :

When TV set turn-on, the on/off signal from MICON become high, so RL901 turns on, commutating voltage from AC input is rectified by D901A and produces approximately 300V to pin 3 of I901. Current flowing through R903, R904, R918, R919 causes I901 pin 4 to initially turn on.

Secondary voltage are then induced winding B1-B2 in T901, I901 supply voltage is obtained via R910, D906, C909, C909A and applied to pin 4 of I901, thereby maintaining I902 switching operation. Secondary voltage in S1 – S3 winding is rectified by D951 to produce +B = 130V which is smoothed by C953. And voltage in S2 – S4 winding is rectified by D952 to produce 24V which is smoothed by C956.
Error amplifier Q951 is set to a pre-determined level by resistor network R950~R953, and reference voltage D953. Should the +B voltage rise, base voltage of transistor Q951 will become more positive, and this difference is amplified by the error amplifier Q951. An output is applied to I901 feedback pin 1 through opto-coupling I902 and controls ON time of I901 internal circuit. In this way, +B voltage is regulated and maintained at a constant level. D959 and D957 offer protection that it should the voltage level rise excessively.
When standby mode is selected, RL901 turn off. Only +5V still live.

TUNER AND IF

The Tuner (U001) used on V3AL chassis is powered up by the 5V & 33V supply. It is IIC bus controlled and covers VHF, UHF, CATV Band (Mid, super and hyper).
The IF output from Tuner (pin 11 of U001) is applied to the amplifier Q201.
For multi-systems model with M-NTSC, switchable saw filter is used. Q001 at pin 2 of X003 serves to select the IF signal between M/N mode to other modes (e.g. B/G, D/K) before demodulation is carried out at I001.
i.e. at M mode: Base of Q001 → High

I001 (TDA9365/9384/9386) besides being the microcontroller, incorporates video / chroma / deflections / teletext features and video/audio switching. It performs auto color identification of PAL/SECAM/NTSC, sync separation, AFC, HV oscillator and output RGB signals.

IF signal is sent to I001 pin 23 and 24 for demodulation. The composite video signals after demodulation are sent to a series of bandpass filters (X004 ~ X006) through pin 38 of I001. The system selection is as follows:

		Signal output to pin 40 of I001	
Q003	Buffers	Q004	Q005
	Low	Cut Off	M
	High	B/G, I, D/K	Cut Off

The RF video signal after system selection is sent to output AV terminal and returns to pin 40 of I001 for video selection. The external video signal (input AV 1, 2, 3 and S-terminal at pin 42) also goes through pin 38 output AV terminal. This is done by use of internal switch control in I001 (video selection).

VIDEO/CHROMA

The chroma input at S-terminal and the YUV input signals at Video 3 terminal are sent to pin 43, 47, 48 and 46 of I001 respectively for video selection and processing.

I302 selects Video 1 / S-terminal (Yin), Video 2 or Video 3 (Y input) signals and sent to pin 42 of I001. The video input signals (RF at pin 40 and external video at pin 42) is selected again using internal AV switch in I001 controlled by IIC bus. The selected video signals are processed with teletext. After color identification and decoding, the color difference signals are matrixed with the luminance signal to obtain the RGB signals. The RGB can be controlled by contrast and brightness and output at pin 51 ~ 53 to CRT PWB, in sequence with the OSD RGB.

Internal sync separator and H/V oscillator of I001 produce H and V drive signals which are applied to deflection circuits for horizontal and vertical scanning.

AUDIO MODE SWITCHING

For **NICAM/A2** sound models, the IF signal is input to pin 1 of X002 (saw filter) and output at pin 4 and 5 to pin 28 and 29 of I001. After demodulation, the audio signal output at pin 35 to NICAM PWB (pin 2 of EN01) for NICAM processing. The NICAM audio output at pin L (pin 10) and R (pin 11) of EN01 goes to pin 3 and 5 of audio processor (IA01) respectively. Audio selection and sound processing are carried out.

For **AV STEREO** sound models, the mono audio signal after demodulation is output at pin 44 of I001. It goes to pin 3 and 5 of IA01 for audio selection and sound processing.

I451 selects L and R audio input between Video 1 and Video 3 terminals and sent to pin 28 and 30 of IA01 respectively. The L and R audio input at Video 2 terminal is also sent to pin 32 and 1 of IA01 respectively.

Audio switching, volume control, treble and bass are processed at IA01 (TDA9859). The L (pin 26) and R (pin 7) output at IA01 goes to output AV terminal. The L (pin 18) and R (pin 15) at IA01 goes to I402 for amplification before sending to the speakers.

FAILURE DETECTING FUNCTION OF MAIN DEVICES

In V3AL, failure of Main devices can detect by the blinking indication of LED at front panel.
(Example: LED blinking time is 2 in cycle ⟶ I002 is out of order.)
If an IIC error occurred, the LED, D001 blinks at 1Hz, 50% duty cycle.
The blinking times are as below.

Failure Device	CCT. No.	Bus Error LED Blinking Time
EEPROM, AT24C04	I002	2
UOC, TDA935x/6x/8x	I001	3
Audio Processor, TDA9859	IA01	4
PLL Tuner, TUHIF4EG-772F2	U001	5
NICAM, MSP3415D / MSP3417D	IN01	6

Table 3.Error LED blinking times

EEPROM
CCT. No. I002
[AT24C04]

V/C/J TV Processor
CCT. No. I001
[TDA935x/6x/8x]

HiFi Audio Processor
CCT. No. IA01
[TDA9859]

PLL Tuner
CCT. No. U001
[TUHIF4EG-772F2]

SOUND DECODER / DEMODULATOR
CCT. No. IN01
[MSP3415 / MSP3417]

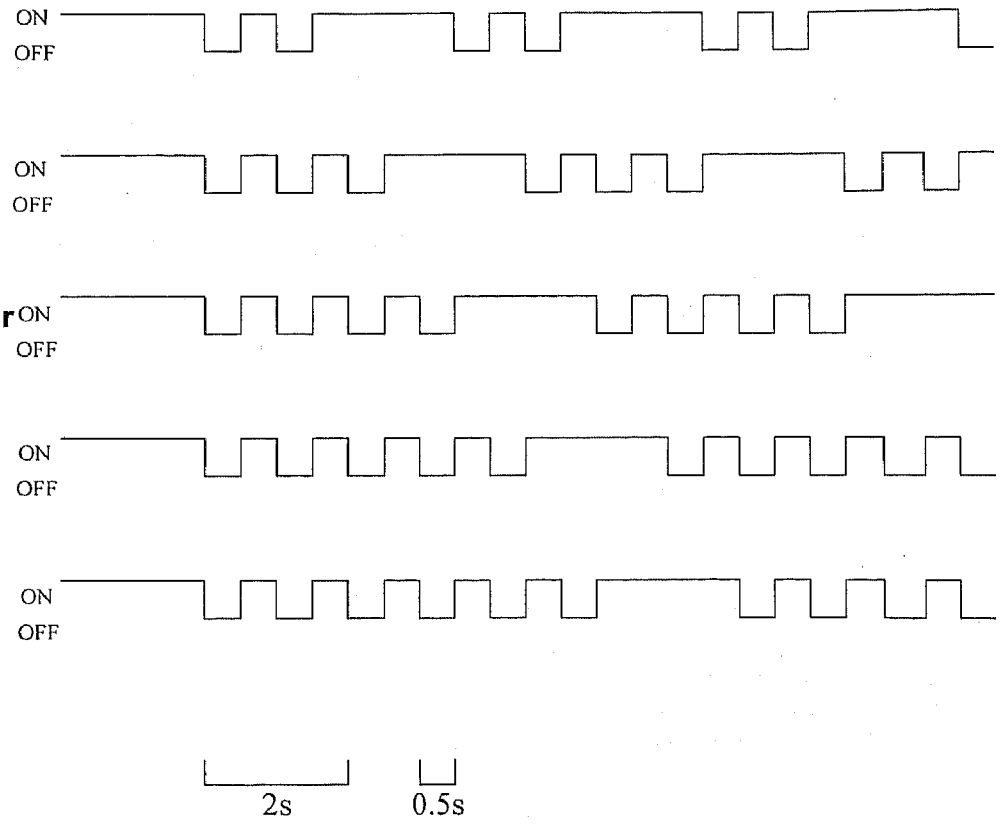


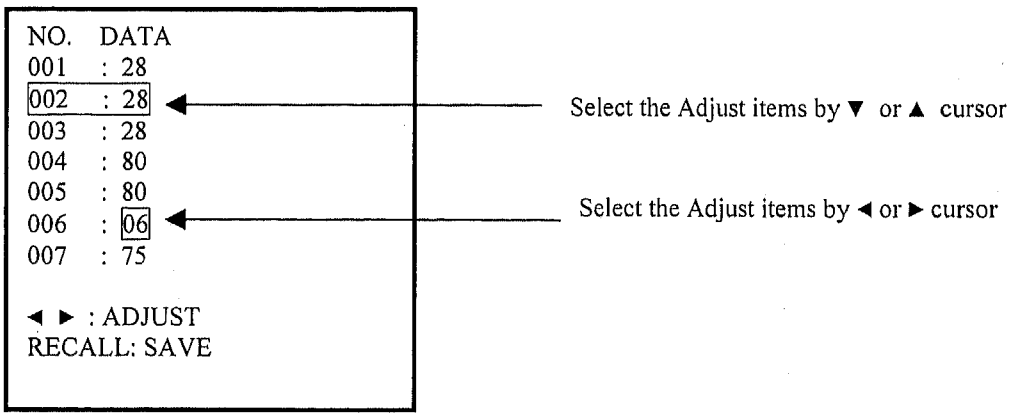
Figure 1. Error LED blinking times

ADJUSTMENT INSTRUCTIONS

A. IIC ADJUSTMENTS

Most of the adjustment items in the V3AL chassis are controlled by IIC. Adjustment items include video chroma IC (I001, UOC) control, sound multiplex ICs, horizontal & vertical deflection and others.

To start the IIC adjustment, first turn off the AC power switch. Press and hold down the TV/Video local key and then press the power switch. Release both buttons after the following display appears on screen.



To select the adjustment items(e.g. RGB level, sub-brightness level etc...), press the ▲ or ▼ cursor button on Remote control handset. To adjust the data of selected item, press the ◄ or ► cursor button on Remote control handset.

After completing the adjustments, press the RECALL button on Remote control handset to memorize the data. Press MENU button or turn off the TV set to end the IIC adjustment.

The following are the IIC Bus control and adjustment data for your reference.

Table 1: IIC-Bus Control and Adjustment

ADJ NO.	NAME OF ADJUSTMENT	DATA RANGE	INITIAL DATA (hex)	ITEMS AFFECTED DURING CHANGE		
				MEMORY I002	CPT	TDA9384/86/65 I001
1	WHITE POINT R	00-3F	00	O	O	O
2	WHITE POINT G	00-3F	00	O	O	O
3	WHITE POINT B	00-3F	00	O	O	O
6	HORIZONTAL POSITION	00-3F	16	O	O	O
*7	SUB-COLOUR	00-3F	1E	O	X	O
*8	SUB-TINT	00-3F	1E	O	X	O
*9	SUB-BRIGHT	00-3F	1E	O	X	O
*10	SUB-CONTRAST	00-3F	08	O	X	O
11	SUB-SHARPNESS	00-3F	1E	O	X	O
13	PHASE 1 TIME CONSTANT	00-03	00	O	X	O
14	VIDEO IDENT MODE	00-01	01	O	X	O
15	FIELD FREQ.	00-03	02	O	X	O
16	INTERLACE	00-01	01	O	X	O
17	ENABLE FAST BLANKING	00-01	00	O	X	O
18	SYNCHRONIZATION	00-01	00	O	X	O
19	COLOR DECODER MODE	00-0F	08	O	X	O
20	RGB BLANKING	00-01	00	O	X	O
21	BLACK CURRENT STABILISATION	00-01	01	O	X	O
22	BLACK LEVEL OFF SET R	00-0F	00	O	X	O
23	BLACK LEVEL OFF SET G	00-0F	00	O	X	O
24	VERTICAL DIVIDER MODE	00-01	00	O	X	O
25	SEARCH TUNING MODE	00-01	00	O	X	O
26	VIDEO IDENT MODE	00-01	01	O	X	O
27	FORCED SLICING LEVEL FOR V.SY	00-01	01	O	X	O
29	ENABLE VERTICAL GUARD	00-01	00	O	X	O

*In Video 3 mode, IIC data of adj. Number 7, 8, 9, & 10 must be set separately from RF, Video 1 & Video 2 mode.

ADJ NO.	NAME OF ADJUSTMENT	DATA RANGE	INITIAL DATA (hex)	ITEMS AFFECTED DURING CHANGE		
				MEMORY I002	CPT	TDA9384/86/65 I001
30	SERVICE BLANKING	00-01	00	X	X	O
31	MATRIX NTSC	00-01	01	O	X	O
32	PAL,SECAM/NTSC	00-01	01	O	X	O
33	BYPASS OF CHROMA BASE BAND DL	00-01	00	O	X	O
34	AVL/SUBCARRIER	00-03	00	O	X	O
35	SYNCHRONIZATION OF OSD/TEXT	00-01	01	O	X	O
36	AFC WINDOW	00-01	01	O	X	O
37	IF SENSITIVITY	00-01	00	O	X	O
39	VIDEO MUTE	00-01	00	O	X	O
40	AGC TAKE OVER	00-3F	20	O	X	O
47	PLL DEMODULATOR FREQ.	00-05	02	O	X	O
48	VERTICAL ZOOM	00-3F	19	O	X	O
50	SW-OFF V-OVERSCAN	00-01	00	O	X	O
51	CHROMA BANDPASS C-FREQ.	00-01	00	O	X	O
54	VERTICAL SHIFT(V POSITION)	00-3F	28	O	O	O
55	VERTICAL AMPLITUDE(V SIZE)	00-3F	1B	O	O	O
57	S-CORRECTION	00-3F	20	O	O	O
58	BLACK STRETCH	00-01	01	O	X	O
59	VERTICAL SLOPE	00-3F	1B	O	O	O
60	HORIZONTAL PARALLELOGRAM	00-3F	1B	O	O	O
61	HORIZONTAL BOW	00-3F	1B	O	O	O
63	AUTO COLOR LIMITTING	00-01	01	O	X	O
64	IF AGC SPEED	00-03	01	O	X	O
66	CATHODE DRIVE LEVEL	00-0F	0F	O	X	O
69	FAST FILTER IF-PLL	00-01	00	O	X	O
71	FORCED COLOR-ON	00-01	00	O	X	O
72	GAIN FM DEMODURATOR	00-01	00	O	X	O
73	SOUND MUTE	00-03	03	O	X	O

ADJ NO.	NAME OF ADJUSTMENT	DATA RANGE	INITIAL DATA (hex)	ITEMS AFFECTED DURING CHANGE		
				MEMORY I002	CPT	TDA9384/86/65 I001
74	WINDOW SELECTION SOUND PLL	00-01	00	O	X	O
75	QSS OUT OR AM OUT	00-01	00	O	X	O
76	EHT TRACKING MODE	00-01	00	O	X	O
77	RGB/YUB SWITCH	00-01	00	O	X	O
78	RGB BLANKING MODE	00-01	00	O	X	O
80	V-SCAN DISABLED	00-01	00	X	X	O
106	EW WIDTH	00 -3F	1F	O	O	O
107	EW PARABOLA/WIDTH	00 -3F	1F	O	O	O
108	EW UPPER CORNER PARABOLA	00 -3F	1F	O	O	O
109	EW LOWER CORNER PARABOLA	00 -3F	1F	O	O	O
110	EW TAPEZIUM	00 -3F	1F	O	O	O
111	Y DELAY	00 -0F	06	O	X	O
112	Y DELAY	00 -0F	0A	O	X	O
113	DISABLE FLASH PROTECTION	00 -01	00	O	X	O
114	X-RAY PROTECTION	00-01	00	O	X	O
115	BRIGHTNESS OF OSD	00-0F	0F	O	X	X
116	BRIGHTNESS OF TEXT	00-0F	0F	O	X	X
139	A2 STEREO JUDGE > X	00-7F	0F	O	X	X
140	A2 BILINGALJUDGE > X	80-FF	F2	O	X	X
141	FM-AM SWITCHING	000-3FF	380	O	X	X
142	OUTPUT LEVEL OF NICAM	00 -7F	7A	O	X	X
143	OUTPUT LEVEL OF A2	00 -7F	74	O	X	X
144	OUTPUT LEVEL OF FM	00 -7F	75	O	X	X

Shipping Data of IIC service mode

(apply only when the memory IC, I002, change.)

1. Select the adjustment item, 323(Initialization of memory IC, I002) by pressing the ▲ or ▼ cursor button on Remote control handset.
2. Set data of adjustment item, 323 to "01" by pressing the ◀ or ▶ cursor button on Remote control handset.
3. Press the RECALL button on Remote control handset to memorise the data.

The data of adjustment item, 323 is changed to "00" after all memory IC's data are initialised.

4. Press AC power switch to turn off the TV set.
5. Press AC power switch to turn on the TV set.

Result : The memory IC, I002 is initialized.

6. After initialisation, set the shipping data as shown in Table 2.
7. Go to previous page and adjust the IIC data in Table 1(Pg. 18)

Table 2: Shipping Data

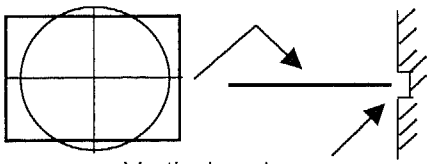
ADJ. NO.	INITIALIZED DATA	C29-R30SP/C29-R20AV											SINGER
		081	051	191A	192	751	982	433	061	981	082	071	
300	01	01	02	01	01	01	01	03	01	01	01	01	01
302	00	01	00	00	00	00	01	00	00	00	00	00	01
303	00	03	03	00	00	03	03	00	00	00	00	00	03
304	06	06	06	06	06	06	06	06	06	06	06	06	06
305	01	01	01	01	01	01	01	01	01	01	01	01	01
306	00	01	01	01	01	01	01	01	01	01	01	01	01
307	00	01	01	01	01	01	01	01	01	01	01	01	01
308	00	00	00	00	00	00	00	00	00	00	00	00	00
310	01	00	00	00	00	00	00	00	00	00	00	00	00
311	00	01	01	01	01	01	01	01	01	01	01	01	03
313	01	00	00	00	00	00	00	00	00	00	00	00	00
314	00	00	00	00	00	00	00	00	01	00	00	00	00
316	00	00	01	00	00	00	00	03	00	00	00	04	00
317	00	00	00	00	00	00	00	00	00	00	00	00	00
318	00	00	00	00	00	00	00	00	00	00	00	00	00
319	00	00	00	00	00	00	00	00	00	00	00	00	00
320	00	00	00	00	00	00	00	00	00	00	00	00	00
321	00	00	00	00	00	00	00	00	00	00	00	00	00
322	00	00	00	00	00	00	00	00	00	00	00	00	00
323	00	00	00	00	00	00	00	00	00	00	00	00	00
324	00	01	01	01	01	01	01	01	01	01	01	01	01
325	00	00	00	00	00	00	00	00	00	00	00	00	00
340	03	03	03	03	03	03	03	03	03	03	03	03	03
341	00	01	01	01	01	01	01	01	01	01	01	01	01
342	00	00	00	00	00	00	00	00	00	00	00	00	00

Note: Shipping data in ☐ boxes need to be adjusted.

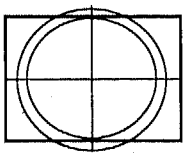
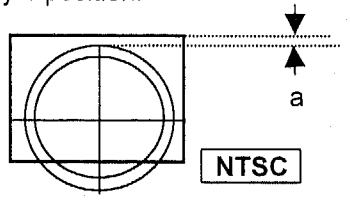
+B ADJUSTMENT

PREPARATION		PROCEDURES	
1.	AC input voltage 230+-5V(50Hz).	1.	Adjust R954 to obtain +B voltage as below **130V +- 0.5V** **Measuring Points** +B voltage : C953 + side GND : C953 - side
2.	Turns on the set and set the brightness and contrast to Max. (Signal : Philips Pattern)		
3.	After 30 sec heat-run, check & adjust the +B voltage.		

VERTICAL CENTER ADJUSTMENT

PREPARATION		PROCEDURES	
1.	Turns on the TV set & heat run about 5 min.	1.	Select the IIC control address No 54.
2.	Receive the circular pattern signal.	2.	Set the horizontal center line to vertical center marker of CRT by adjustment of IIC. i.e.  Vertical center marker of CRT
3.	AC 230 +- 5V.		

VERTICAL SIZE ADJUSTMENT

PREPARATION		PROCEDURES	
1.	Turns on the TV set & heat run about 5 min.	1.	Select the IIC control address No 55.
2.	Receive the circular pattern signal.	2.	Adjust IIC data to obtain the following conditions. I.e.  **PAL** Picture Top : Inner circle reach the edge of TV raster. Picture Bottom : Inner circle reach the edge of TV raster.
3.	Set all picture settings as below. i.e. Contrast : Max Brightness : Center	3.	Receive the NTSC circular signal, and check the picture size after the above V-size adjustment.
3.	AC 230 +- 1V.	4.	If a>0mm, go back to IIC control No 54(V-center adjustment) and increase the IIC data by 1 position.  a **NTSC**

PRODUCT SAFETY NOTE : Components marke
replacing any of these components, read carefull
safety of the receiver through improper servicing.

V3AL3 BASIC CIRCUIT DIAGRAM
C29-R20AV

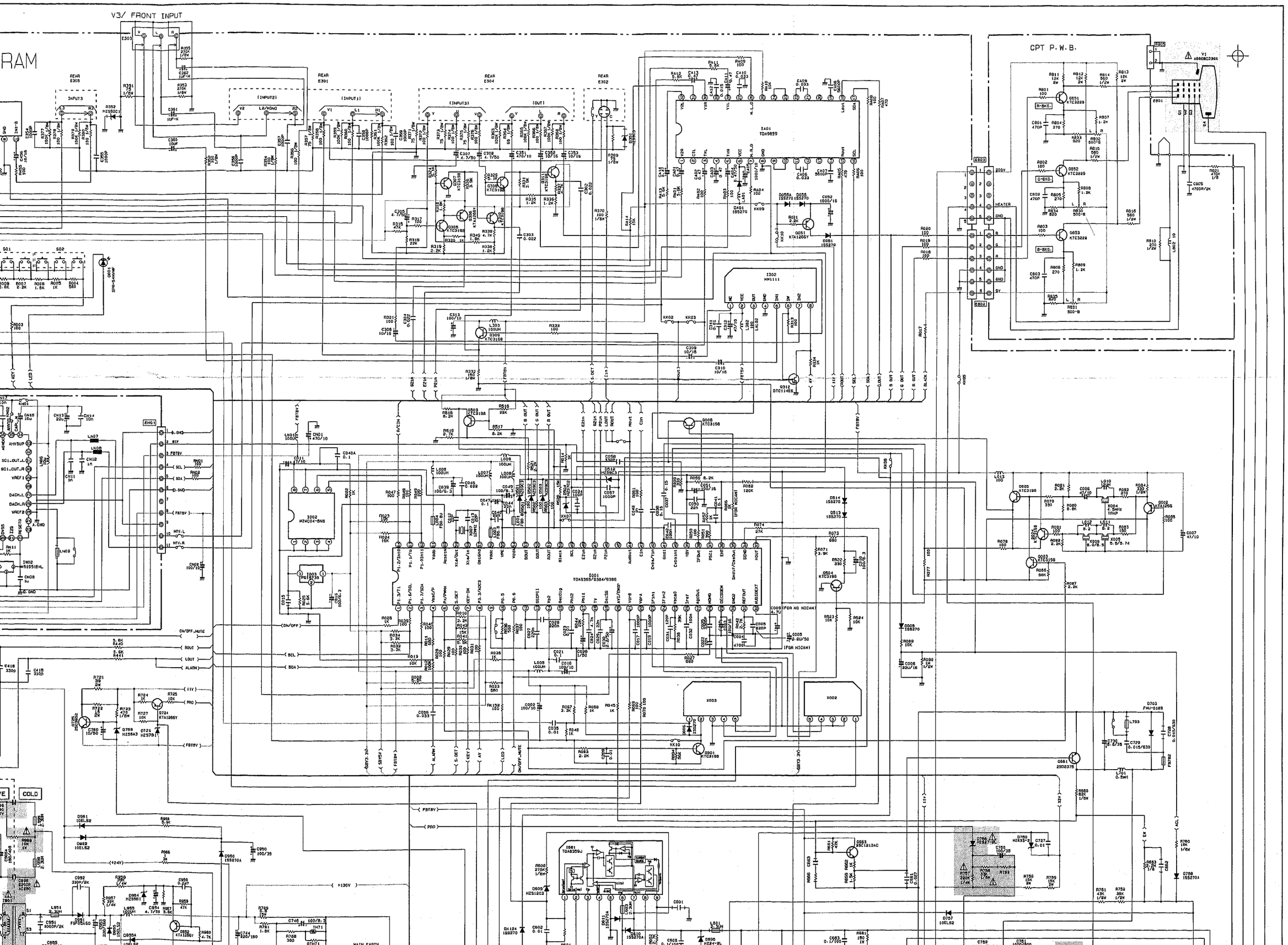
V3/ FRONT INPUT

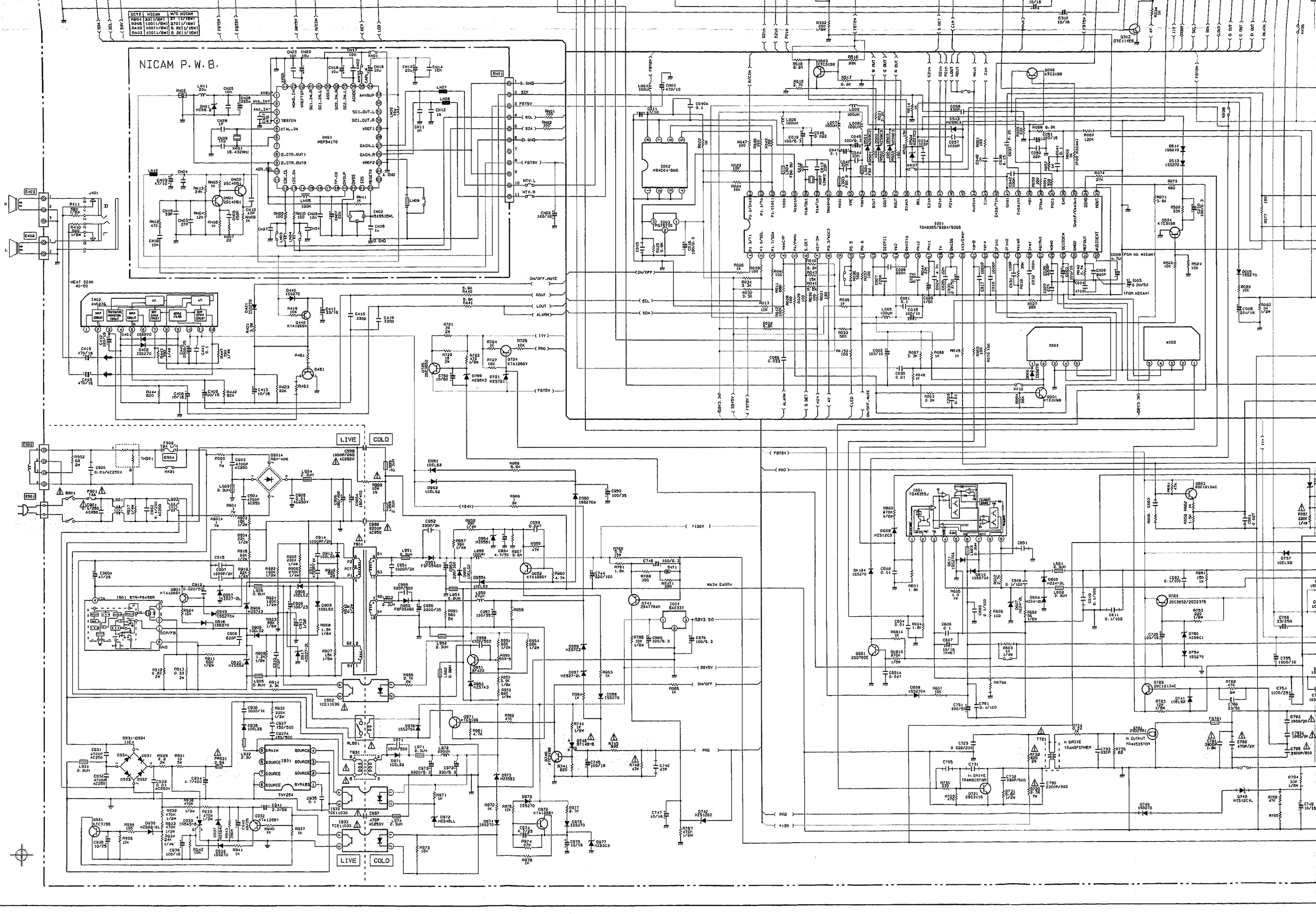
NICAM P.W.B.

HEAT SINK 40-80

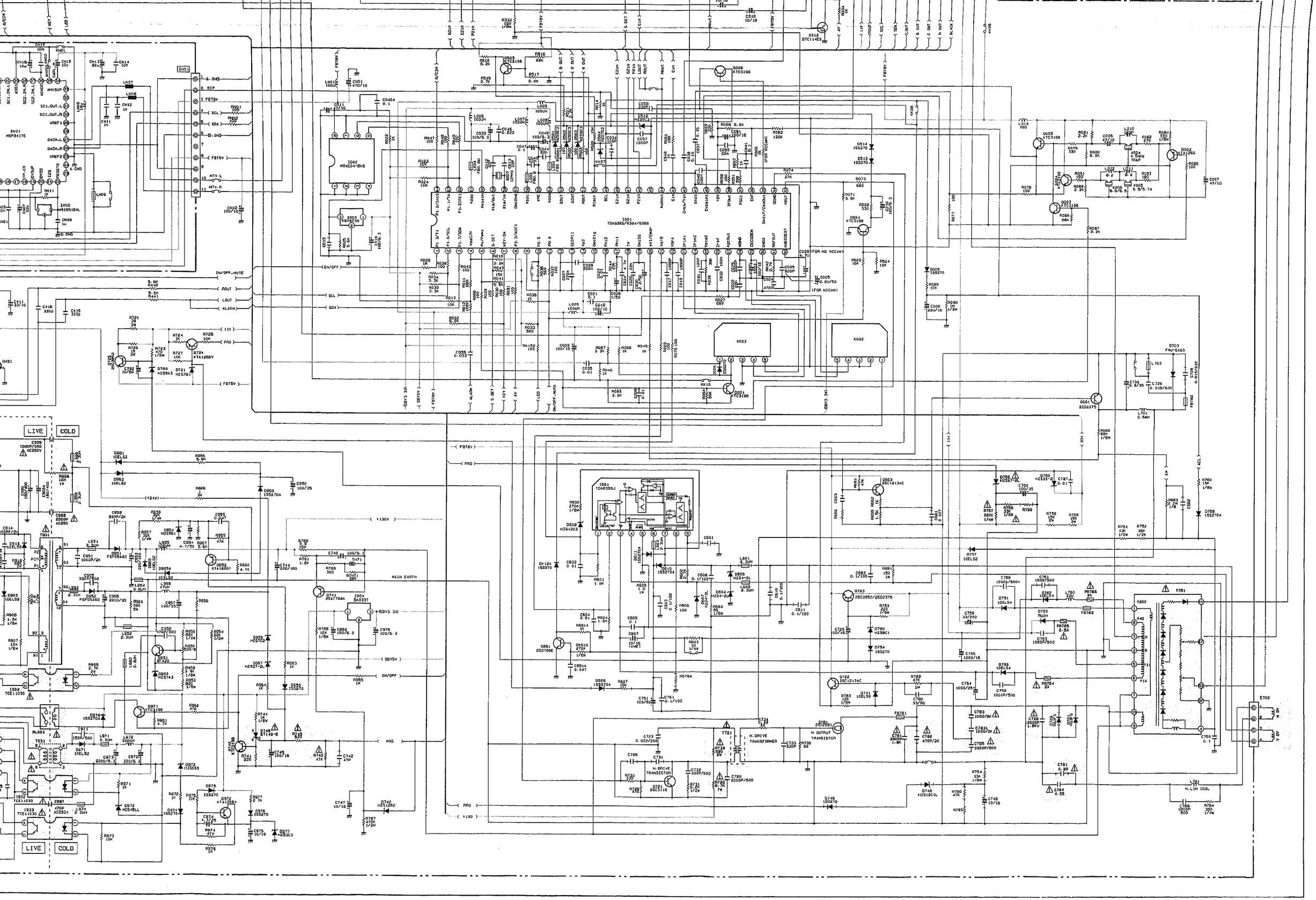
CCTF	NICAM	W/O NICAM
R204	33(1/8W)	27 (1/16W)
R205	100(1/8W)	270(1/16W)
R202	100(1/8W)	6.2K(1/16W)
R203	100(1/8W)	6.2K(1/16W)

PRODUCT SAFETY NOTE : Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.





- Since this
- All DC vol
Voltage ta



- Since this is basic circuit diagram, the value of the parts is subject to be altered for improvement
- All DC voltage to be measured with a teser (100kΩ/V).
  Voltage taken on a complex color bar signal including a standard color bar signal.

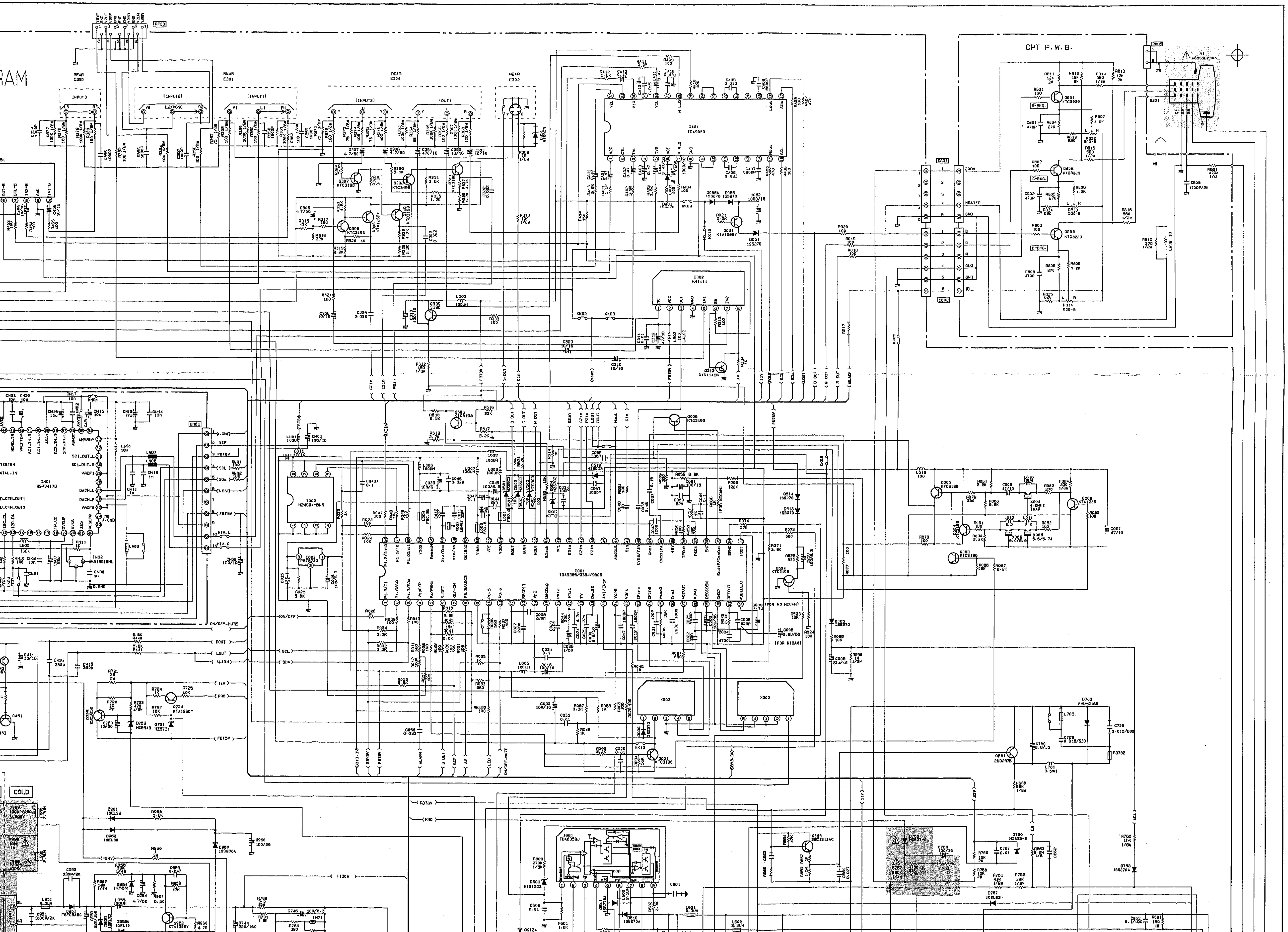
V3AL2 BASIC CIRCUIT DIAGRAM
C29-R30SP

NICAM P.W.B.

FROM CONTROL P.W.B. E901

CCT#	NICAM	W/O NICAM
R204	33 (1/8W)	27 (1/8W)
R205	100 (1/8W)	270 (1/8W)
R402	3.9K	8.2K
R403	3.9K	8.2K

PRODUCT SAFETY NOTE : Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

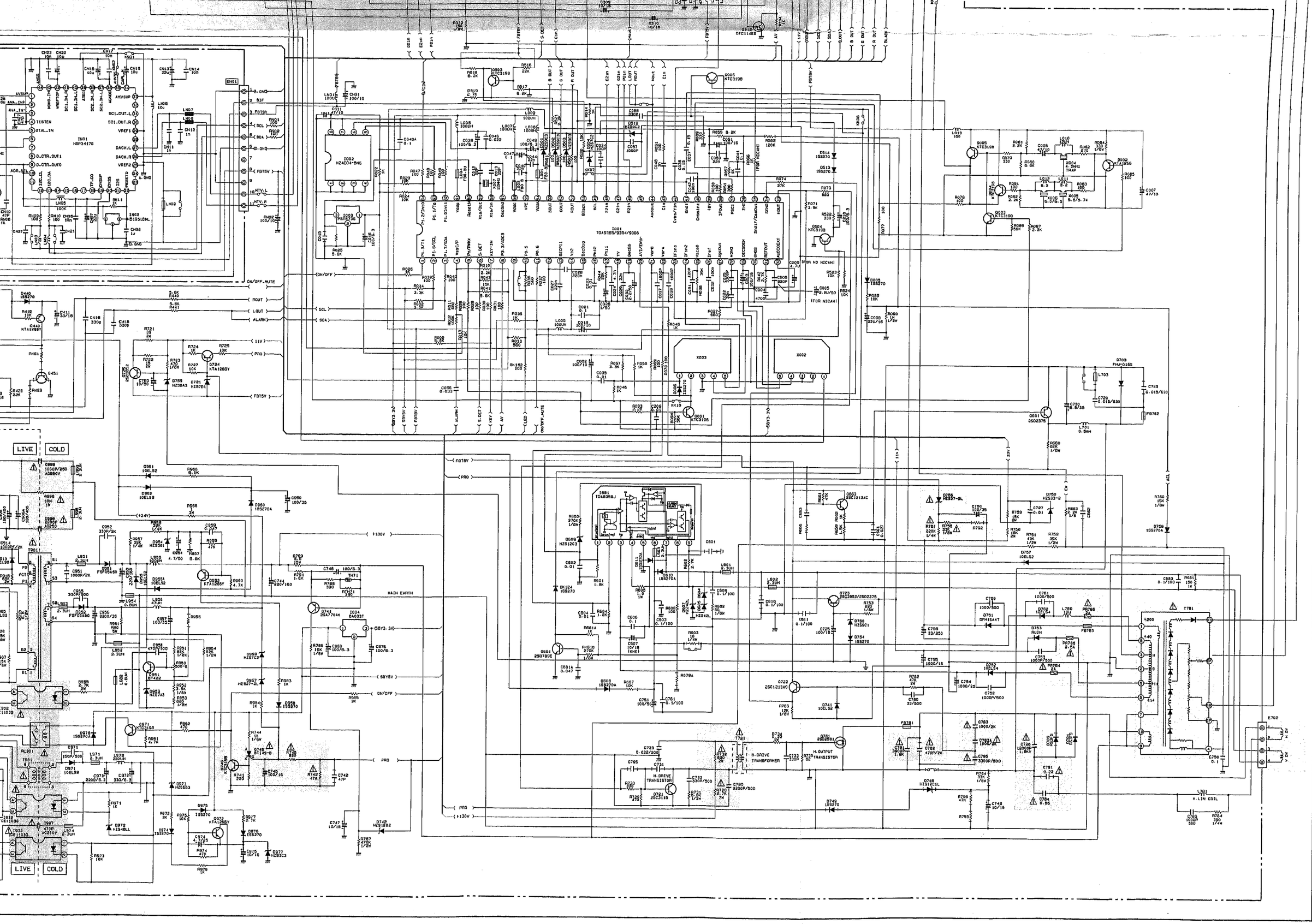


CCT #	NICAM	M/D NICAM
R204	331/8W	271/16W
R205	100/1/8W	270/1/16W
RA02	3.9K	8.2K
RA03	3.9K	8.2K

NICAM P.W.B.

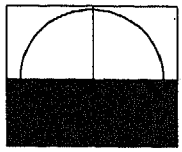
FROM CONTROL P.W.B. 'E901'

- Since this
- All DC volt
Voltage ta



- Since this is basic circuit diagram, the value of the parts is subject to be altered for improvement
- All DC voltage to be measured with a teser (100k Ω/V).
  Voltage taken on a complex color bar signal including a standard color bar signal.

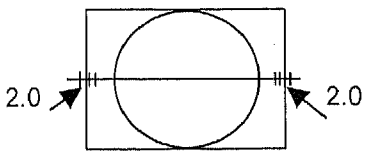
VERTICAL SLOPE ADJUSTMENT(Must be done before V. Center and V. Size Adjustments)

PREPARATION		PROCEDURES	
1.	Turns on the TV set and heat run about 5 min.	1.	Select the IIC Control address No 30.
2.	Receive circular pattern signal(PAL).	2.	Press◀ or ▶key on remote con. handset so that the bottom half of the picture is blanked. i.e.  Bottom half of picture blanked.
3.	Set all picture settings as below. i.e. Contrast : Max Brightness : Center	3.	Select the IIC Control address No 59.
4.	AC 230 +-1V.	4.	Adjust the vertical slope until the horizontal center line is just at the position where the blanking starts.
		5.	Select the IIC Control address No 30.
		6.	Press◀ or ▶key on remote con. handset so that picture appears again.

HORIZONTAL PHASE ADJUSTMENT

PREPARATION		PROCEDURES	
1.	Receive the circular pattern signal.	1.	Select the IIC control address No. 06.
		2.	Adjust the picture center to meet the CRT geometrical centre.

HORIZONTAL SIZE ADJUSTMENT(Perform this adjustment after H. Phase Adjustment)

PREPARATION		PROCEDURES	
1.	Receive the HITACHI Circular pattern signal(PAL).	1.	Select the IIC control address No. 106.
2.	Set the Contrast at Max, and others at Center.	2.	Adjust the picture size so that the average reading of right and left is 2.0+-0.5. 

SIDE PIN DISTORTION ADJUSTMENT(Perform this adjustment after H. Phase, H. Size, Vertical Size & V. position Adjustments).

PREPARATION		PROCEDURES	
1.	Receive the Cross Hatch signal pattern.	1.	Select the IIC control address No. 107.
2.	Set the Contrast at Max, and others at Center.	2.	Adjust the vertical lines are straight except the 1st outer vertical lines(R/L).

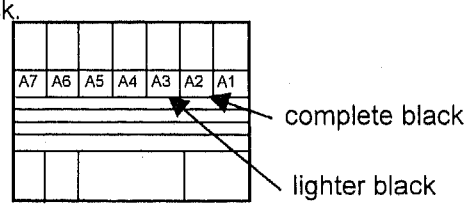
WHITE BALANCE ADJUSTMENT

PREPARATION	PROCEDURES
1. Switch on the TV set for at least 20mins. 2. Adjust this adjustment after the Purity adjustment. 3. Ensure the vertical incident illumination on CRT surface to be 20 lux or less. 4. Receive the white balance raster. 5. Turns the low bright adjustment VRs R830, R831 & R832 fully counterclockwise. 6. Select the IIC Control address No 01 (White point red), No 02(White point green) and No 03(White point bule) and set all datas to 1FH. 7. Turns the screen VR of FBT fully counter-clockwise. 8. Select the IIC Control address No 10(Sub-contrast) and set the data to 1FH. 9. Select the IIC Control address No 9(Sub-brightness) and set the data to 26H.	1. Set black stretch(IIC service no. 58) to "0". 2. Set to lateral line mode(IIC service no. 80) from "0" to "1". 3. Turns the Screen VR of FBT clockwise and set it to the position where the bright color line starts to appear. 4. Takes the first appeared color as the reference, adjust R830(Green), R831(Blue) & R832(Red) till all appear to the same level as the reference color. Note : Don't turn the VR of the reference color. 5. Adjusts the Screen VR of FBT until the white raster line is just slightly seen. 6. Release the lateral line mode by changing IIC service no. 80 from "1" to "0". 7. Set black stretch(IIC service no. 58) to "1". 8. Set the White Balance meter probe at the center of the screen. 9. Adjusts the following keys of IIC and R830/ R831/R832 to the desired W/B color temperature. IIC Adress No R Drive 01 B Drive 03 **Notes :** a. Fix the G Drive at 1FH(IIC Adress No. 02), do not adjust. b. To obtain the low brightness and high brightness conditions, adjust the brightness control of remote control handset.

SUB-TINT ADJUSTMENT

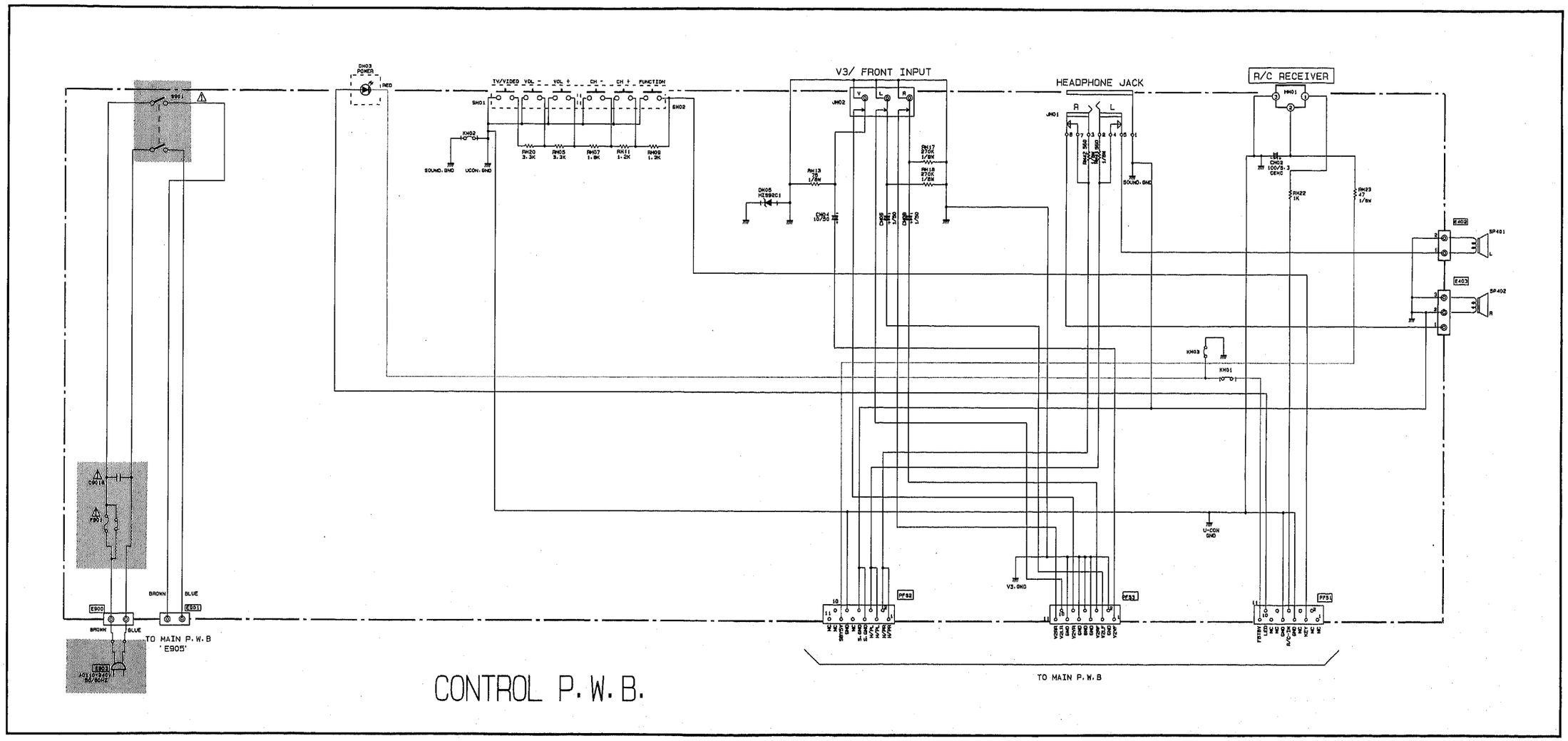
PREPARATION	PROCEDURES
1. Receive the color bar signal(NTSC). 2. Set the user control to Contrast: Max, Others: Center.	1. Select the IIC address No. 08. 2. Set IIC address No. 08 to 1E.

SUB-BRIGHTNESS ADJUSTMENT

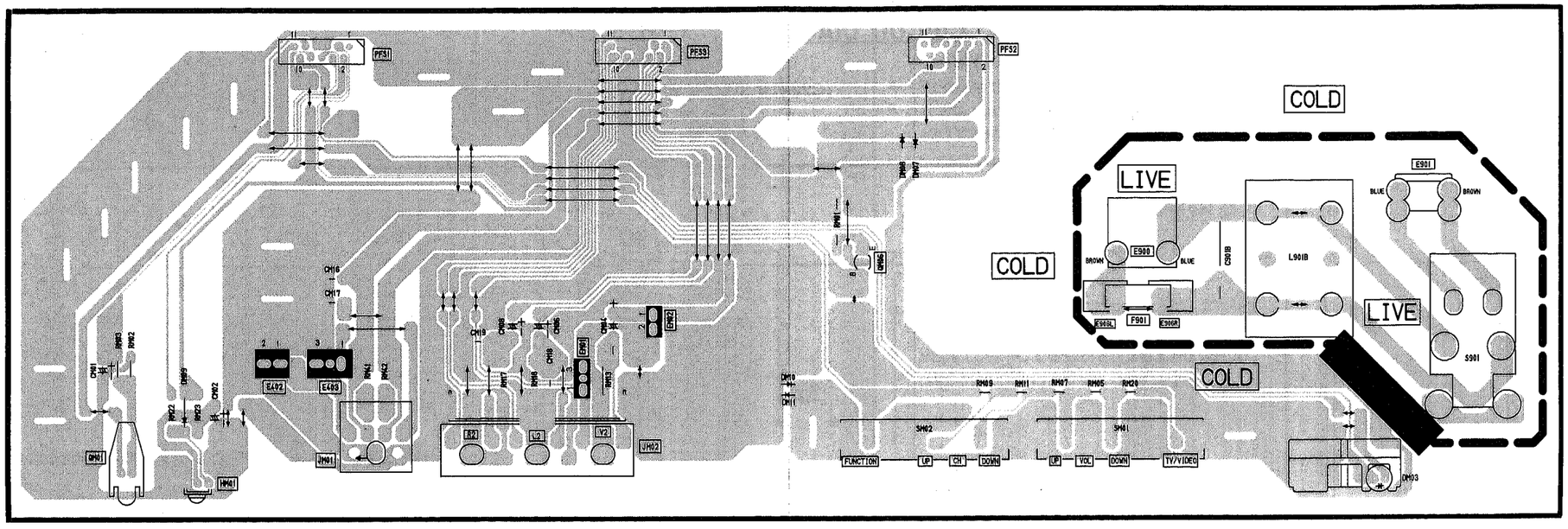
PREPARATION	PROCEDURES
1. Switch on the TV set for at least 20 min. 2. Ensure the vertical incident illumination on CRT surface to be 20 lux or less. 3. Receive the Color Bar pattern. 4. Set the following settings by remote control handset. Contrast : min. Color : min Brightness : Center	1. Select the IIC control address No 09. 2. Adjust the data until A2 portion becomes black and A3 portion becomes lighter black. 

CIRCUIT DIAGRAMS : CONTROL PWB

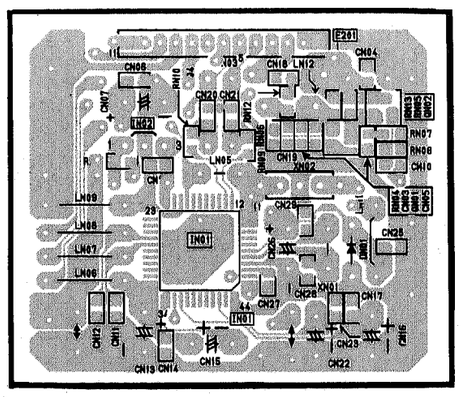
(C29-R30SP ONLY)

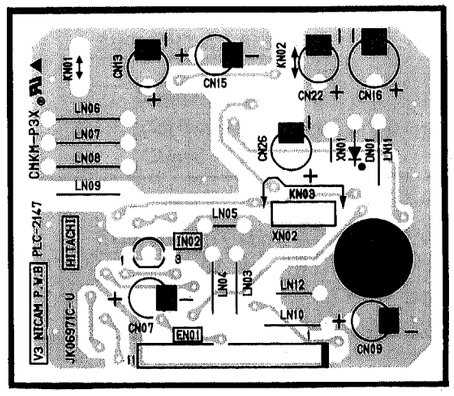


CONTROL PWB (C29-R30SP ONLY)

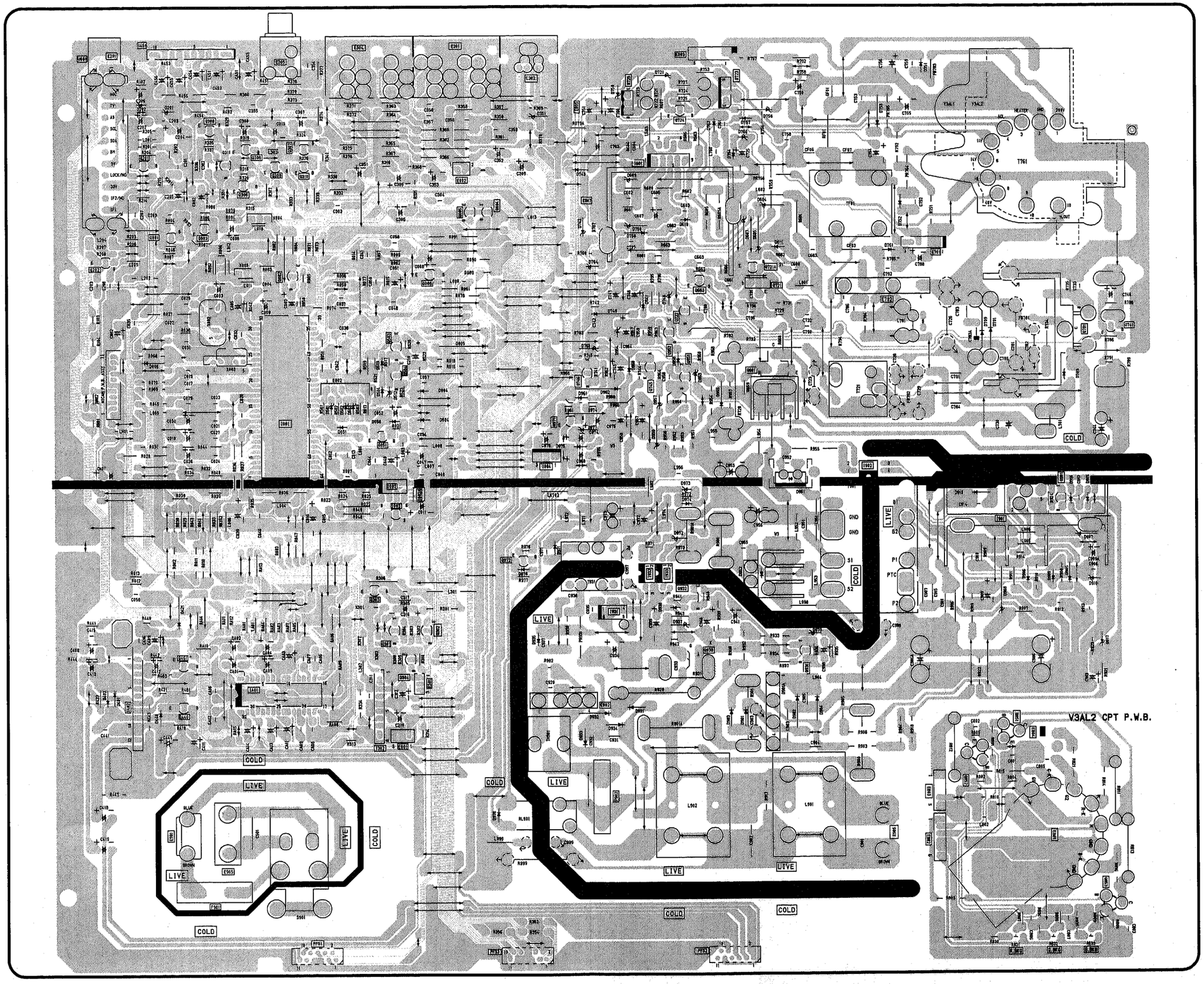


NICAM PWB

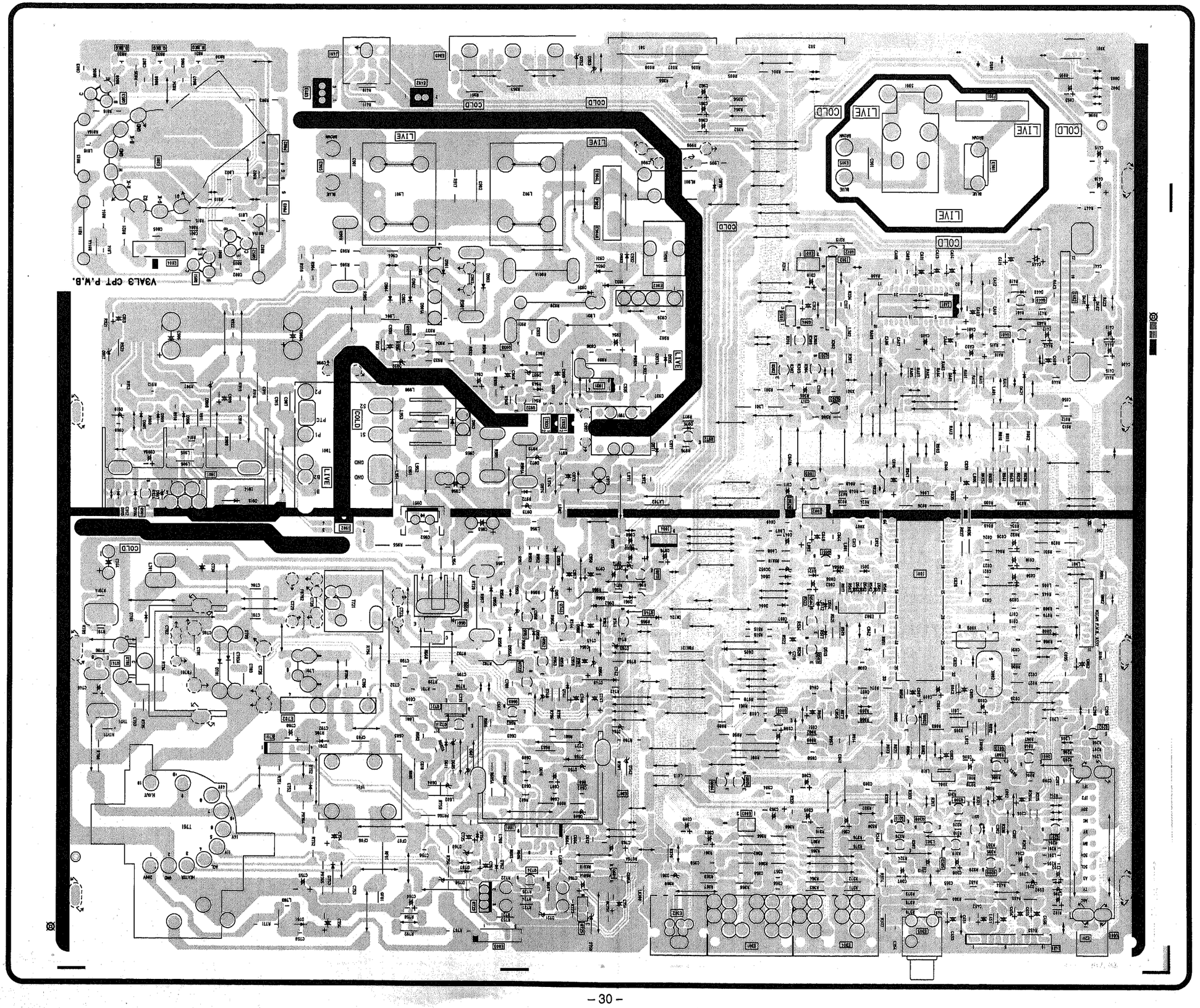




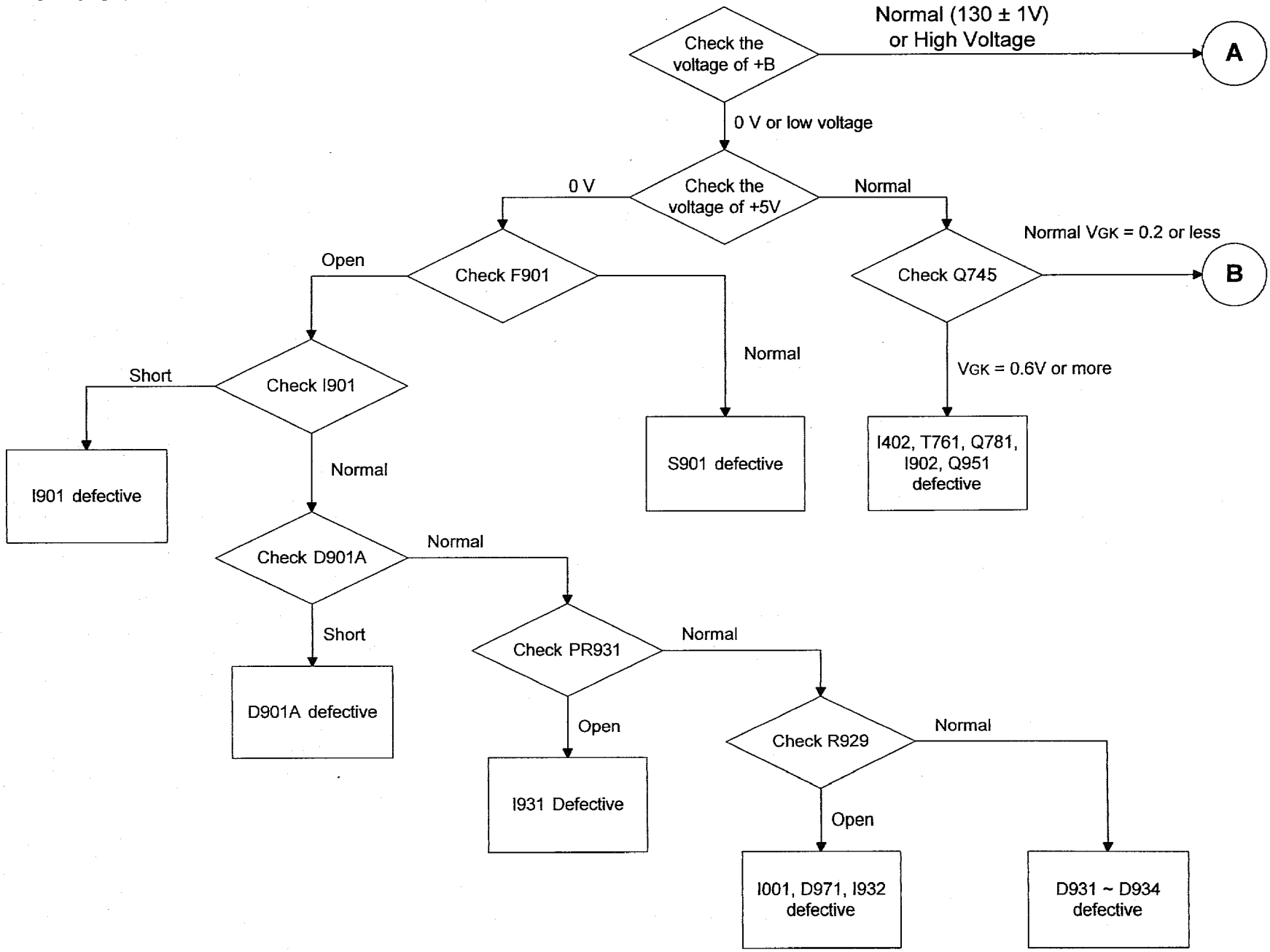
MAIN P.W.B（主印刷电路板）– C29-R30SP ONLY



MAIN P.W.B（主印刷电路板）– C29-R20AV ONLY

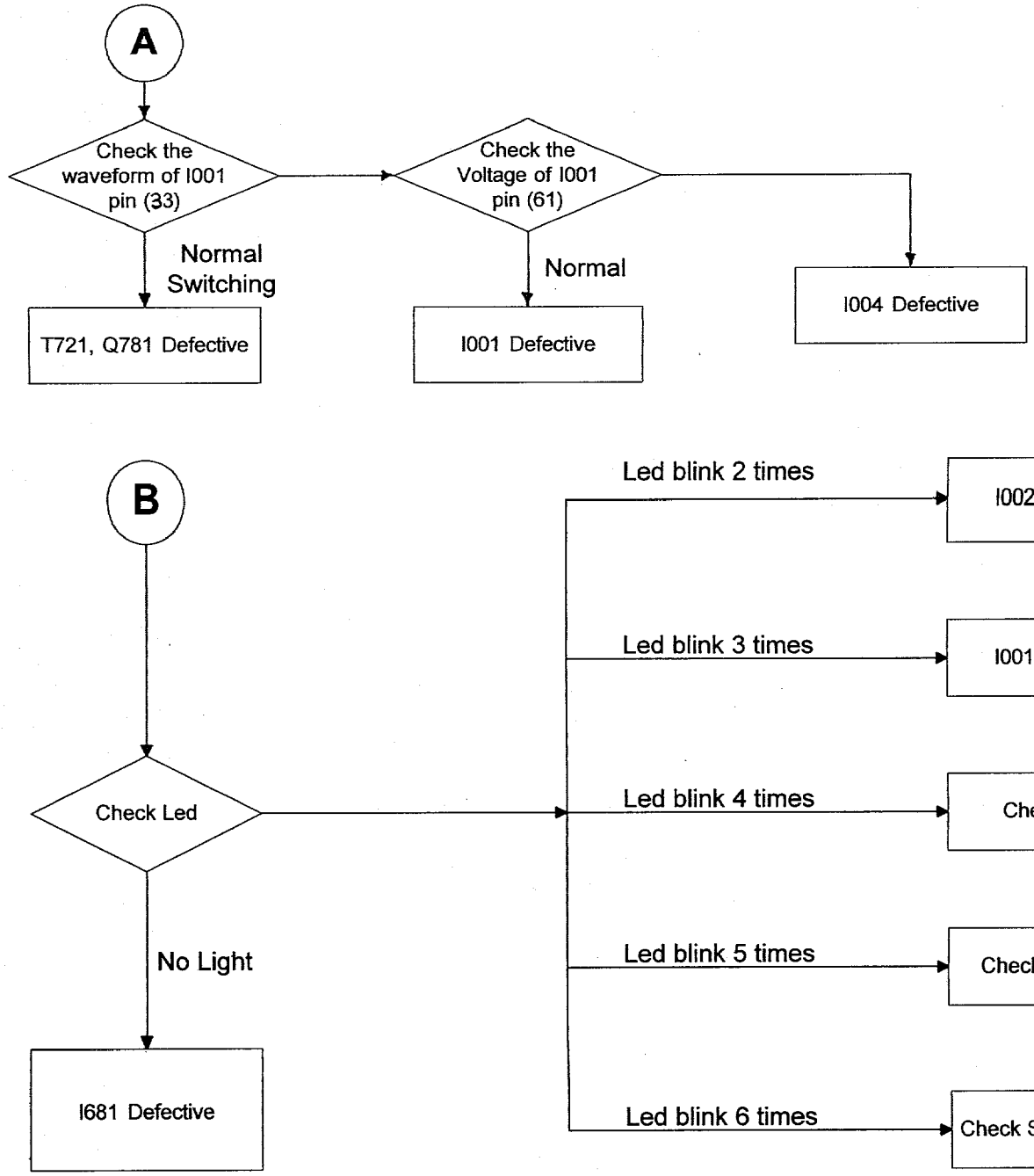


① NO RASTER NO SOUND

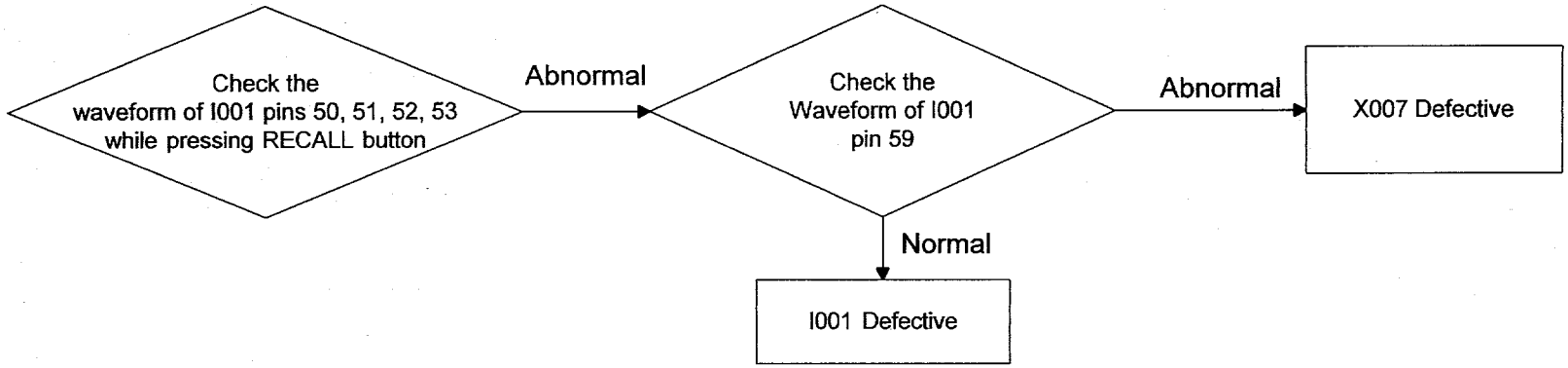


① NO RASTER NO SOUND
-- CONTINUE --

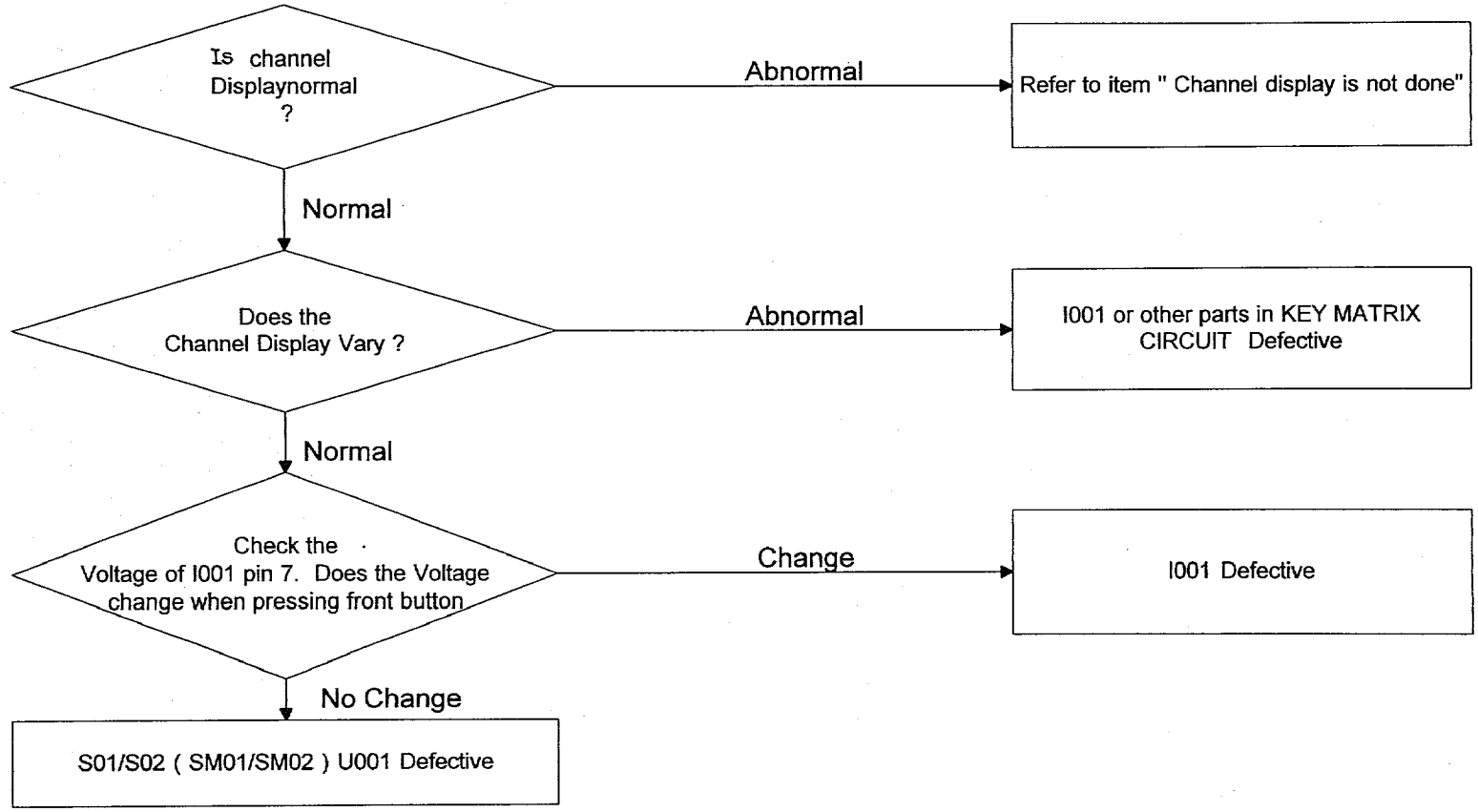
TROUBLESHOOTING (故障索引)



② CHANNEL DISPLAY IS NOT DONE

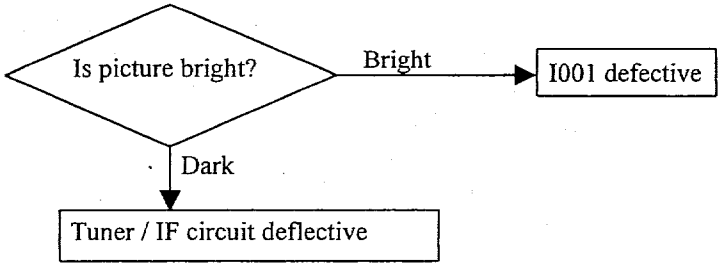


③ CHANNEL SELECTION IS NOT DONE

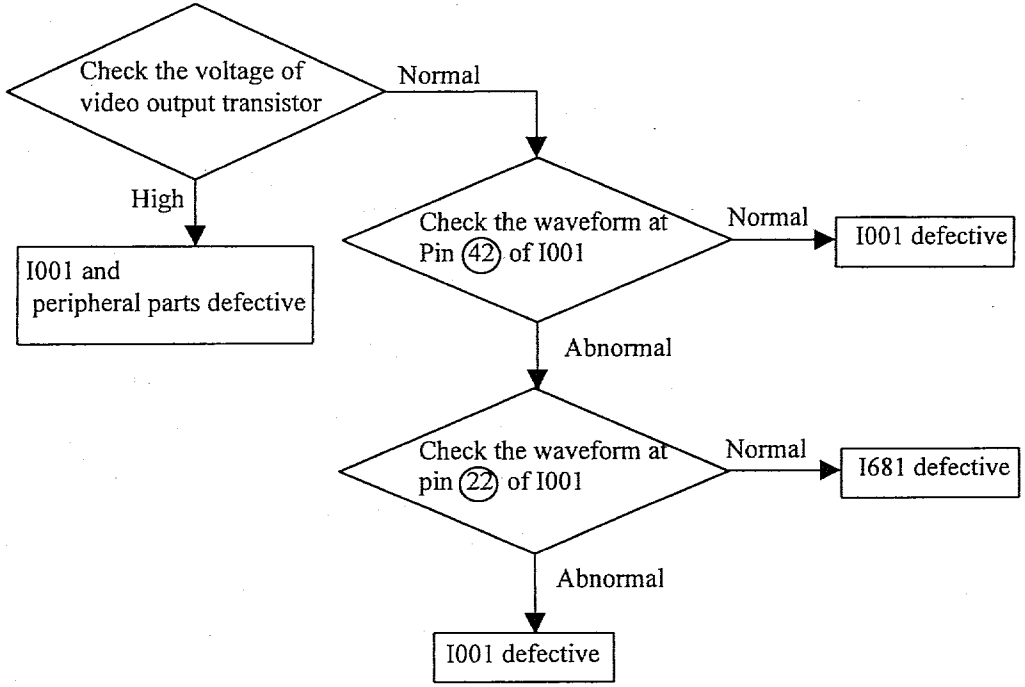


TROUBLESHOOTING (故障索引)

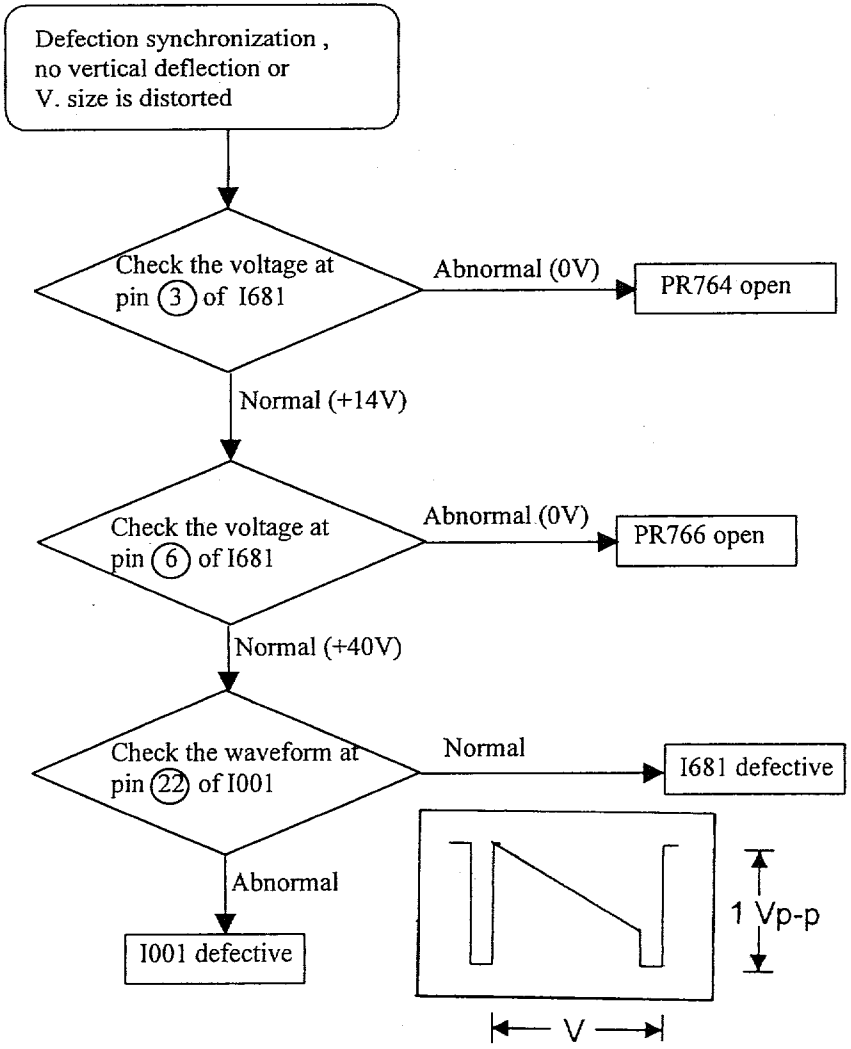
(4) NO SYNC.



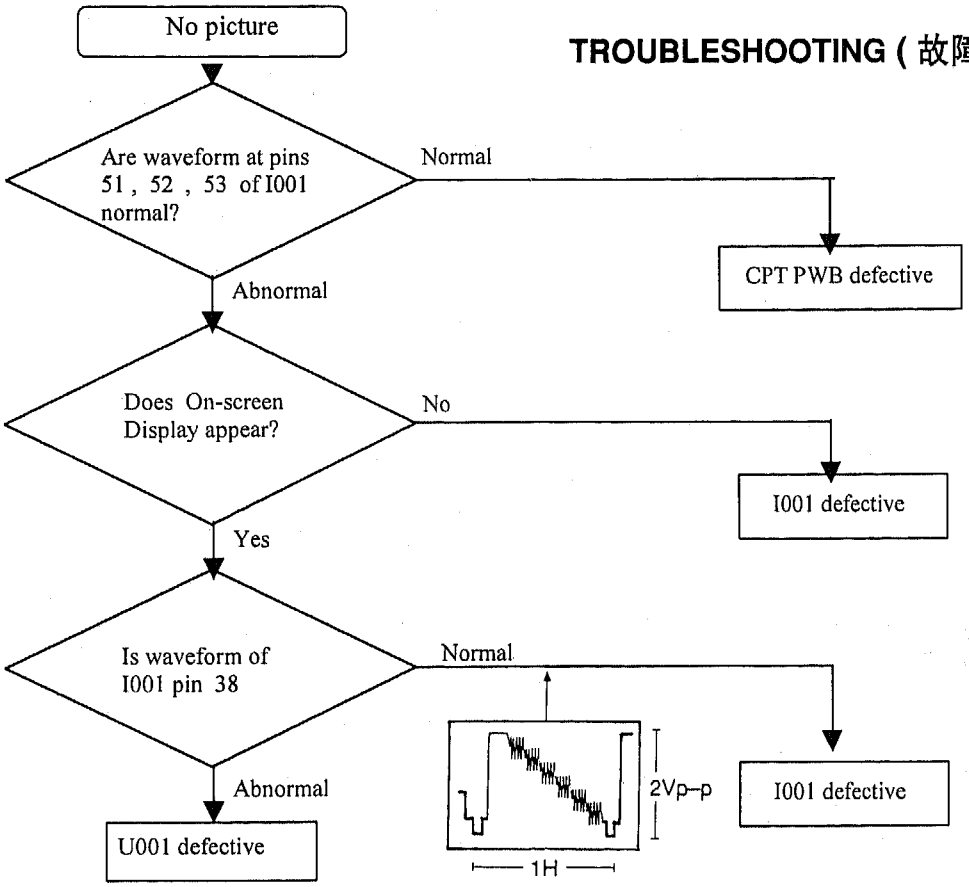
(5) ONLY RASTER OR FLYBACK TRACE APPARENT ON PICTURE



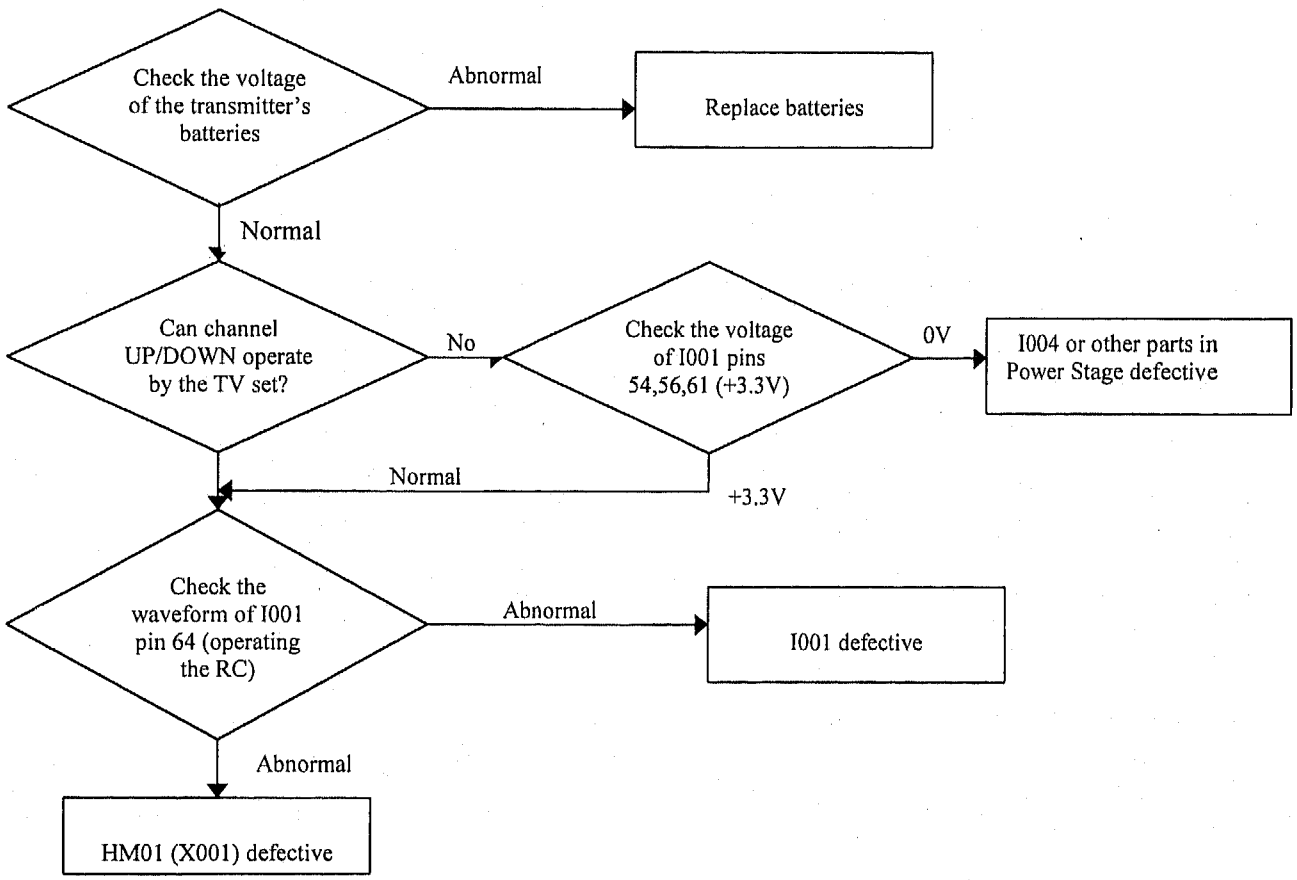
(6) DEFECTIVE SYNCHRONIZATION , NO VERTICAL OR V . SIZE DISTORTED



⑦ NO PICTURE , NO COLOUR



⑧ DOES NOT OPERATE BY REMOTE CONTROL



REPLACEMENT PARTS LIST

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

ABBREVIATIONS Capacitors.....CD: Ceramic Disk, PF: Polyester Film, EL: Electrolytic, PP: Polypropylene, PR: Paper, TA: Tantalum, TM: Trimer.
Resistors.....CF: Carbon film, WW: Wire Wound, FR: Fuse Resistor, MG: Metal Glazed, VR: Variable Resistor, CC: Carbon Composition, MF: Metal Oxide Film.
Semiconductors....TR: Transistor, DI: Diode, ZD: Zener Diode, VA: Varistor, TH: Thermistor.

SYMBOL No.	PART No.	DESCRIPTIONS	SYMBOL No.	PART No.	DESCRIPTIONS
⚠ B001	JK07781C	V3AL3 MAIN PWB (V3AL3 only)	C040	0880012R	PF 0.022MF +-10% 50V
⚠ B	JK07771C	V3AL CONTROL PWB(V3AL2 only)	C040A	0880194R	PF 0.1MF +-10% 50V
⚠ B001	JK07761A	V3AL1/2 MAIN PWB (V3AL2 only)	C041	0244139R	CD 1000PF +-10% 50V(B)
⚠ *BN01	JK06971C	V3A NICAM PCB	C042	0880016R	PF 0.1MF +-10% 50V
C002	0800325R	EL 100MF 10V SMG	C044	0880012R	PF 0.022MF +-10% 50V
C003	0800291R	EL 10MF 16V SMG	C046	0880012R	PF 0.022MF +-10% 50V
		(Not for NICAM models)	C047	0800324R	EL 100MF 6.3V SMG
C004	0880039R	PF 0.0047MF +-10% 50V	C048	0244139R	CD 1000PF +-10% 50V(B)
		(Not for NICAM models)	C049	0800324R	EL 100MF 6.3V SMG
*C005	0800282R	EL 2.2MF 50V SMG	C050	0880012R	PF 0.022MF +-10% 50V
C005	0244120R	CD 820PF +-10% 50V(B)	C051	0800326R	EL 100MF 16V SMG
C006	0800288R	EL 4.7MF 50V SMG	C052	0800352R	EL 470MF 10V SMG
C007	0800316R	EL 47MF 10V SMG	C053	0800315R	EL 33MF 6.3V SMG(V3AL3)
C008	0800023R	EL 22MF 16V SME	C056	0880051R	PF 0.033MF +-10% 50V
C009	0800288R	EL 4.7MF 50V SMG	C057	0880044R	PF 0.01MF +-10% 50V
		(Not for NICAM models)	*C058	0244113R	CD 330PF +-10% 50V(B)
C011	0800316R	EL 47MF 10V SMG	C201	0880016R	PF 0.1MF +-10% 50V
C012	0890115R	CD 12PF +-5% 50V CH	C202	0800325R	EL 100MF 10V SMG
C013	0890115R	CD 12PF +-5% 50V CH	*C203	0880044R	PF 0.01MF +-10% 50V
C016	0800324R	EL 100MF 6.3V SMG	C204	0800358R	EL 1000MF 6.3V SMG
C017	0244139R	CD 1000PF +-10% 50V(B)	C205	0800003R	EL 1MF 50V SME
C018	0800325R	EL 100MF 10V SMG	C206	0800041R	EL 47MF 16V SME
C019	0244139R	CD 1000PF +-10% 50V(B)	*C207	0880044R	PF 0.01MF +-10% 50V
C021	0880048R	PF 0.022MF +-10% 50V	*C208	0880044R	PF 0.01MF +-10% 50V
C022	0880044R	PF 0.01MF +-10% 50V	C209	0880044R	PF 0.01MF +-10% 50V
C023	0880044R	PF 0.01MF +-10% 50V	C210	0800324R	EL 100MF 6.3V SMG
C024	0880039R	PF 0.0047MF +-10% 50V	C302	0880048R	PF 0.022MF +-10% 50V
C025	0880037R	PF 0.0033MF +-10% 50V	C303	0880048R	PF 0.022MF +-10% 50V
		(Not for NICAM models)	C304	0880048R	PF 0.022MF +-10% 50V
C026	0800279R	EL 1MF 50V SMG	C305	0800288R	EL 4.7MF 50V SMG
C027	0880198R	PF 0.22MF +-5% 50V	C306	0800291R	EL 10MF 16V SMG
C028	0880198R	PF 0.22MF +-5% 50V	C307	0800288R	EL 4.7MF 50V SMG
C029	0880048R	PF 0.022MF +-10% 50V	C308	0800288R	EL 4.7MF 50V SMG
C030	0800282R	EL 2.2MF 50V SMG	C309	0800291R	EL 10MF 16V SMG
C031	0248686R	CD 120PF +-5% 50V(SL)	C310	0800291R	EL 10MF 16V SMG
C032	0880016R	PF 0.1MF +-10% 50V	C311	0880044R	PF 0.01MF +-10% 50V
C035	0880044R	PF 0.01MF +-10% 50V	C312	0800316R	EL 47MF 10V SMG
C037	0880016R	PF 0.1MF +-10% 50V	C313	0800325R	EL 100MF 10V SMG
C038	0880014R	PF 0.047MF +-10% 50V	C351	0800352R	EL 470MF 10V SMG
C039	0800324R	EL 100MF 6.3V SMG	C352	0800291R	EL 10MF 16V SMG

***For NICAM/A2 models only**

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL No.	PART No.	DESCRIPTIONS	SYMBOL No.	PART No.	DESCRIPTIONS
C353	0800291R	EL 10MF 16V SMG	C745	0800326R	EL 100MF 16V SMG
C354	0244139R	CD 1000PF +-10% 50V(B)	C746	0800324R	EL 100MF 6.3V SMG
C355	0244139R	CD 1000PF +-10% 50V(B)	C747	0800291R	EL 10MF 16V SMG
C356	0244139R	CD 1000PF +-10% 50V(B)	C750	0800328R	EL 100MF 35V SMG
C357	0244139R	CD 1000PF +-10% 50V(B)	C751	0800321R	EL 47MF 50V SMG
C358	0244139R	CD 1000PF +-10% 50V(B)	C752	0244501R	CD 1000PF +-10% 500V(B)
C359	0244139R	CD 1000PF +-10% 50V(B)	C753	0244501R	CD 1000PF +-10% 500V(B)
C360	0800294R	EL 10MF 50V SMG(V3AL3)	C754	0800362F	EL 1000MF 25V SMG
C361	0800279R	EL 1MF 50V SMG(V3AL3)	C755	0800361F	EL 1000MF 16V SMG
C362	0800279R	EL 1MF 50V SMG(V3AL3)	C756	0253974F	EL 33MF 250V(SME)
C408	0800291R	EL 10MF 16V SMG	C758	0880057R	PF 0.1MF +-10% 50V
C409	0800291R	EL 10MF 16V SMG	C759	0244501R	CD 1000PF +-10% 500V(B)
C411	0800308R	EL 33MF 16V SMG	C760	0800291R	EL 10MF 16V SMG
C412	0800326R	EL 100MF 16V SMG	C761	0800021R	EL 10MF 100V SMG
C413	0800291R	EL 10MF 16V SMG	C763	0800326R	EL 100MF 16V SMG
C415	0890081R	CD 330PF +-10% 50V B	C780	0247842R	CD 33PF +-5% 500V(SL)
C416	0890081R	CD 330PF +-10% 50V B	⚠ C781	0262416F	PF 0.0039MF +-5% 1.8KV
C418	0800361F	EL 1000MF 16V SMG	⚠ C783	AJ00134	CK 1000PF 2KV
C419	0800361F	EL 1000MF 16V SMG	⚠ C783A	AJ00134	CK 1000PF 2KV
C441	0880057R	PF 0.1MF +-10% 50V	⚠ C784	AN01181F	PF 0.56MF +-5% 250V
C445	0800368F	EL 2200MF 25V SMG	⚠ C785	0244507R	CD 3300PF +-10% 500V(B)
C451	0880044R	PF 0.01MF +-10% 50V	C786	0244501R	CD 1000PF +-10% 500V(B)
C452	0800039R	EL 47MF 16V SME	C790	0244505R	CD 2200PF +-10% 500V(B)
C453	0800291R	EL 10MF 16V SMG	C801	0244115R	CD 560PF +-10% 500V(B)
C454	0800291R	EL 10MF 16V SMG	C802	0244115R	CD 560PF +-10% 500V(B)
C455	0800291R	EL 10MF 16V SMG	C803	0244115R	CD 560PF +-10% 500V(B)
C456	0800291R	EL 10MF 16V SMG	C805	AJ00559	PF 2200PF 2KV
C602	0880044R	PF 0.01MF +-10% 50V	⚠ C901	AN01443S	PF 0.1MF +-20% 250V
C603	0279693R	PF 0.1MF +-10% 100V	C902	AN01443S	PF 0.1MF +-20% 250V
C604	0880044R	PF 0.01MF +-10% 50V	C903	0248593F	CD 4700PF +80%-20% 250V(F)
C606	0880057R	PF 0.1MF +-10% 50V	C904	0248593F	CD 4700PF +80%-20% 250V(F)
C607	0254501R	EL 10MF 16V(KME)	C905	0248594F	CD 10000PF +80%-20% 250V(F)
C608	0279693R	PF 0.1MF +-10% 100V	C906	AL02033	EL 180MF 400V KMH
C609	0880044R	PF 0.01MF +-10% 50V	C906A	AL02033	EL 180MF 400V KMH
C610	0880194R	PF 01MF +-10% 50V	C907	0244212	CD 1200PF 2KV
C612	0880194R	PF 01MF +-10% 50V	C908	0244120R	CD 820PF +-10% 50V(B)
C681A	0880053R	PF 0.047MF +-10% 50V	C909	0800327R	EL 100MF 25V SMG
C723	0299918F	PF 0.022MF +-10% 200V	C909A	0800318R	EL 47MF 25V SMG
C725	0800326R	EL 100MF 16V SMG	C910	0890079R	CD 270PF +-10% 50V B
⚠ C726	AN01069F	PF 0.012MF 2KV	C911	AJ00542F	CD 4700PF +-10% 1KV B
C727	0880044R	PF 0.01MF +-10% 50V	C912	0880048R	PF 0.022MF +-10% 50V
C728	0299720F	PF 0.015MF +-5% 630V	C913	0800279R	EL 1MF 50V SMG
C729	0299720F	PF 0.015MF +-5% 630V	C914	AJ00454F	CD 1000PF 1KV
C730	0259471R	EL 6.8MF 50V(BP)	C931	0248593F	CD 4700PF +80%-20% 250V(F)
C732	0243507R	CD 330PF +-10% 500V(B)	C932	0248593F	CD 4700PF +80%-20% 250V(F)
C733	0890081R	CD 330PF +-10% 50V B	C933	0248594F	CD 10000PF +80%-20% 250V(F)
C744	AL00911	EL 220MF 160V KMF	C934	AL01811	EL 4.7MF 400V

***For NICAM/A2 models only**

制品安全上的注意: 在下表附带⚠标记的机件具备特别的安全特性。要替换这些机件以前请详细阅读这检修手册中“制品安全上的注意: 一书，以避免因检修不当而降低电视机的安全性。

SYMBOL No.	PART No.	DESCRIPTIONS	SYMBOL No.	PART No.	DESCRIPTIONS
C935	0880057R	PF 0.1MF +-10% 50V	*CN05	0893128R	CHIP CAP 150PF +-5% 50V CH
C936	AJ00454F	CD 1000PF 1KV	*CN06	0893193R	CHIP CAP 0.01MF 25V
C937	0243503R	CD 150PF +-10% 500V(B)	*CN07	0800298R	EL 22MF 10V SMG
C937A	0243503R	CD 150PF +-10% 500V(B)	*CN08	0893232R	CHIP CAP 0.1MF 25V
C938	0800292R	EL 10MF 25V SMG	*CN09	0800316R	EL 47MF 10V SMG
C939	0800326R	EL 100MF 16V SMG	*CN10	0893122R	CHIP CAP 47PF +-5% 50V CH
C940	0800292R	EL 10MF 25V SMG	*CN11	0893175R	CHIP CAP 1000PF +-5% 50V SL
C941	0800282R	EL 2.2MF 50V SMG	*CN12	0893175R	CHIP CAP 1000PF +-5% 50V SL
C950	0800328R	EL 100MF 35V SMG	*CN13	0800298R	EL 22MF 10V SMG
C952	0244718	CD 330PF +-10% 2KV(B)	*CN14	0893193R	CHIP CAP 0.01MF 25V
C953	AL00911	EL 220MF 160V KMF	*CN15	0800291R	EL 10MF 16V SMG
C954	0800288R	EL 4.7MF 50V SMG	*CN16	0800284R	EL 3.3MF 50V SMG
C955	0243507	CD 330PF +-10% 500V(B)	*CN17	0893232R	CHIP CAP 0.1MF 25V
C956	0253934F	EL 2200MF 35V(SME)	*CN18	0893193R	CHIP CAP 0.01MF 25V
C957	0800328R	EL 100MF 35V SMG	*CN19	0893119R	CHIP CAP 33PF +-5% 50V
C958	0243509R	CD 470PF +-10% 500V(B)	*CN22	0800291R	EL 10MF 16V SMG
C959	0880053R	PF 0.047MF +-10% 50V	*CN23	0893232R	CHIP CAP 0.1MF 25V
C960	0800324R	EL 100MF 6.3V SMG	*CN25	0893193R	CHIP CAP 0.01MF 25V
C971	0243503R	CD 150PF +-10% 500V(B)	*CN26	0800334R	EL 220MF 10V YK
C972	0800342R	EL 330MF 6.3V SMG	*CN28	0893113R	CHIP CAP 10PF +-5% 50V CH
C973	0800365F	EL 2200MF 6.3V SMG	*CN29	0893102R	CHIP CAP 1PF 50V
C974	0800326R	EL 100MF 16V SMG	CQ03	0800279R	EL 1MF 50V SMG
C975	0800291R	EL 10MF 16V SMG	D001	CH02081	LED SLR37VC3F(V3AL3)
C976	0800324R	EL 100MF 6.3V SMG	D005	2338321M	DI 1SS270
⚠ C997	AJ00595	PF 470PF 250V	D006	2338321M	DI 1SS270
⚠ C998	AJ00603	PF 2200PF 250V	D051	2338321M	DI 1SS270
⚠ C999	AJ00601	PF 1000PF 250V	D056	2338321M	DI 1SS270
CA01	0800277R	EL 0.47MF 50V SMG	D202	2339972M	ZD HZS33-2
CA02	0800277R	EL 0.47MF 50V SMG	*D351	2339869M	ZD HZS9C3(Not for T/TEXT)
CA03	0800277R	EL 0.47MF 50V SMG	D401	2338321M	DI 1SS270
CA04	0800277R	EL 0.47MF 50V SMG	D402	2338321M	DI 1SS270
CA05	0800359R	EL 1000MF 10V SMG	D421	2338321M	DI 1SS270
CA06	0880013R	PF 0.033MF +-10% 50V	D440	2338321M	DI 1SS270
CA07	AN01025R	PF 0.0056MF +-10% 50V	D501	2339869M	ZD HZS9C3
CA08	AN01025R	PF 0.0056MF +-10% 50V	D502	2339869M	ZD HZS9C3
CA09	0880013R	PF 0.033MF +-10% 50V	D503	2339869M	ZD HZS9C3
CA10	0880013R	PF 0.033MF +-10% 50V	D504	2339858M	ZD HZS7C2
CA11	0800277R	EL 0.47MF 50V SMG	D512	2339869M	ZD HZS9C3
CA12	0880011R	PF 0.015MF +-10% 50V	D513	2338321M	DI 1SS270
CA13	0800277R	EL 0.47MF 50V SMG	D514	2338321M	DI 1SS270
CA14	0800277R	EL 0.47MF 50V SMG	D604	2335461M	ZD HZ24-2L
CM02	0800324R	EL 100MF 6.3V SMG(V3AL2 only)	D605	2335461M	ZD HZ24-2L
CM04	0800294R	EL 10MF 50V SMG(V3AL2 only)	D607	2335461M	ZD HZ24-2L
CM06	0800279R	EL 1MF 50V SMG(V3AL2 only)	D609	2339889M	ZD HZS12C3
CM08	0800279R	EL 1MF 50V SMG(V3AL2 only)	D610	2337341M	DI 1SS270A
*CN01	0800352R	EL 470MF 10V SMG	D611	2337341M	DI 1SS270A
*CN02	0800325R	EL 100MF 10V SMG	D701	2348511	DI RS3FS
*CN04	0893193R	CHIP CAP 0.01MF 25V	D703	2349861	DI FMU-G16S

***For NICAM/A2 models only**

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL No.	PART No.	DESCRIPTIONS	SYMBOL No.	PART No.	DESCRIPTIONS
D721	2339854M	ZD HZS7B1	D974	2338321M	DI 1SS270
D741	CH00711M	DIODE 10ELS2-TA2B5	D975	2338321M	DI 1SS270
D742	2339885M	ZD HZS12B2	D976	2338321M	DI 1SS270
D750	2339972M	ZD HZS33-2	D977	2339819M	ZD HZS3C3
D751	2338902M	DI DFM1SA4T	D978	2337341M	DI 1SS270A
D752	CH00712M	DIODE 10ELS4-TA2B5	DA01	2338321M	DI 1SS270
D753	2333001M	DI RU2M	DC052	2339867M	ZD HZS9C1
D754	2338321M	DI 1SS270	DK124	2338321M	DI 1SS270
⚠ D756	2339222M	ZD HZS27-2L	DM03	CH02081	LED SLR37VC3F(V3AL2 only)
D757	CH00711M	DIODE 10ELS2-TA2B5	*DN01	2348152M	DI MTZJT-728.2B
D758	2337341M	DI 1SS270A	E201	2774731R	FERRITE BEAD CORE W/LEAD
D759	2339843M	ZD HZS6A3	E301	2693884	6P PIN JACK
D760	2339862M	ZD HZS9A2	E302	2693853	3P PIN JACK
D762	CH00712M	DIODE 10ELS4-TA2B5	E303	EQ00214	3P PIN JACK W/SWITCH
D901A	2338314	DI RBV-406M(LF-A)			(V3AL3 only)
D905	CH00711M	DIODE 10ELS2-TA2B5	E304	EU01211	6P PIN JACK
D906	CH00711M	DIODE 10ELS2-TA2B5	E305	EU01041	TERMINAL 2P PIN JACK
D907	2339222M	ZD HZS27-2L	E402	2723101J	2P PLUG PIN W/BASE
D908	2339853M	ZD HZS7A3	E403	2723102J	3P PLUG PIN W/BASE
D909	CH00711M	DIODE 10ELS2-TA2B5	E702	ED03659	TV50P-06-T3
D910	2339835M	ZD HZS5B2	E801	2698673	CRT SOCKET
D913	CH00713M	DIODE 10ELS6	E802	1EF2035	6P CON. W/WIRES
D915	2337341M	DI 1SS270A	E803	1EF2033	5P BOARD-IN CON. W/WIRES
D916	2338321M	DI 1SS270	E804	2903542	TV-50P-02-V2 PLUG PIN
D917	2339222M	ZD HZS27-2L	E900	ED02802	2P PLUG PIN W/BASE(V3AL2 only)
D931	CH02431M	DIODE 11E4	E901	ED02801	2P PLUG PIN W/BASE(V3AL3 only)
D932	CH02431M	DIODE 11E4	E901	EF09472	2P CONN WITH BASE(V3AL2 only)
D933	CH02431M	DIODE 11E4	E902	ED03174	TV-50P-04-V3 PLUG PIN
D934	CH02431M	DIODE 11E4	⚠ E903	EV01141	CEE POWER CORD
D935	CH00713M	DIODE 10ELS6			(081, 082, 433, 121, 061 only)
D937	2339842M	ZD HZS6A2	⚠ E903	EV01151	BS POWER CORD(051 only)
D938	2338321M	DI 1SS270	⚠ E903	EV01161	POWER CORD(751 only)
D939	2339022M	ZD HZS6B2L	⚠ E903	EV01171A	POWER CORD(19*, 98* only)
D951	CH01982	DIODE FSF05A60	E905	2995275A	2J PROCESSED WIRE W/PIN
D952	CH01982	DIODE FSF05A60			(V3AL3 only)
D953	2339853M	ZD HZS7A3	E905	ED02801	2P PLUG PIN W/BASE(V3AL2 only)
D954	2339834M	ZD HZS5B1	E906L	2729252BR	FUSE HOLDER
D955	CH00711M	DIODE 10ELS2-TA2B5	E906R	2729252BR	FUSE HOLDER
D955A	CH00711M	DIODE 10ELS2-TA2B5	EB	2776242A	CF MAGNET
D957	2339222M	ZD HZS27-2L	*EN01	ED03451	11 PIN CONNECTOR
D958	2338321M	DI 1SS270	⚠ F901	FN00357	FUSE T4AL250V
D959	2339858M	ZD HZS7C2	FB781	BH01162M	FERRITE BEAD W/CORE 2.3MH
D960	2337341M	DI 1SS270A	FB782	BH01162M	FERRITE BEAD W/CORE 2.3MH
D961	CH00711M	DIODE 10ELS2-TA2B5	FBK121	BH01162M	FERRITE BEAD W/CORE 2.3MH
D962	CH00711M	DIODE 10ELS2-TA2B5	HM01	CZ00641	IC GP1U281Q (V3AL2 only)
D971	CH00711M	DIODE 10ELS2-TA2B5	I001	CP07452U	IC TDA9365(T/TEXT, NICAM/A2))
D972	2339622M	ZD HZS4BLL	I001	CP07471U	IC TDA9384 (48K)
D973	2339846M	ZD HZS6B3	I001	CP07491U	IC TDA9386 (48K)(NICAM/A2)

***For NICAM/A2 models only**

制品安全上的注意: 在下表附带⚠标记的机件具备特别的安全特性。要替换这些机件以前请详细阅读这检修手册中 "制品安全上的注意: 一书, 以避免因检修不当而降低电视机的安全性:

SYMBOL No.	PART No.	DESCRIPTIONS
I002	CK35891R	CAT24WC04JI
		NOTE : Serviceman is required to set the shipping data after the change of I002(Memory IC). For detail information, please refer to Adjustment instructions of this Service Manual(Pg 21).
I003	CP06491R	IC PST573G
I004	CP04232	IC BA033T (AVR-1600)
I302	2004693	IC MM1113XS
I402	CP05751	IC AN5276
I451	2003981	IC BA7604N
I681	CP07812	IC TDA8359J
I901	CZ01062	IC STR-F6456R
⚠ I902	CP06201	IC TCET1103G
⚠ I931	CZ01021U	IC TNY254
⚠ I932	CP06201	IC TCET1103G
⚠ I933	CP06201	IC TCET1103G
IA01	CP05801U	IC TDA9859/V2
*IN01	CK35031R	IC MSP3417G-B8
*IN02	CP02871R	IC KIA7042P
J401	2672041	3.5 MINI PHONE JACK(V3AL3 only)
JM01	2672041	3.5 MINI PHONE JACK(V3AL2 only)
JM02	EQ00214	3P PIN JACK W/SWITCH (V3AL2 only)
L001	2123468M	FERRITE CORE 0.8MH
L003	2123468M	FERRITE CORE 0.8MH
L004	2123468M	FERRITE CORE 0.8MH
L005	2123103M	LAL AXIAL COIL 10MH
L006	2123103M	LAL AXIAL COIL 10MH
L007	2123103M	LAL AXIAL COIL 10MH
L008	2123103M	LAL AXIAL COIL 10MH
L009	2123103M	LAL AXIAL COIL 10MH
L010	2123104M	LAL AXIAL COIL 12MH
L011	2123102M	LAL AXIAL COIL 8.2MH
L012	2123098M	LAL AXIAL COIL 4.7MH
L013	2122253M	LAL AXIAL COIL 100MH
L201	2123103M	LAL AXIAL COIL 10MH
L202	2122253M	LAL AXIAL COIL 100MH
L203	2122253M	LAL AXIAL COIL 100MH
*L204	2123413M	LAL AXIAL COIL 1.5MH
*L205	2123116M	LAL AXIAL COIL 100MH
L302	2123116M	LAL AXIAL COIL 100MH
L303	2123116M	LAL AXIAL COIL 100MH
L451	2123103M	LAL AXIAL COIL 10MH
L601	BH01162M	FERRITE BEAD W/CORE 2.3MH
L602	BH01162M	FERRITE BEAD W/CORE 2.3MH
L603	BH01162M	FERRITE BEAD W/CORE 2.3MH
L682	BH01161M	FERRITE BEAD W/CORE 0.8MH
L701	2124183	CHOKE COIL
L760	2125797N	FILTER COIL 10MH
L781	2165404	LINEARITY COIL
L783	2125811N	CHOKE COIL 100MH
L802	BH00721R	CHOKE COIL 10MH
L814	2123763R	AXIAL COIL 100MH
L815	2123763R	AXIAL COIL 100MH
L816	2123763R	AXIAL COIL 100MH
L901	BZ02122	LINE FILTER 15MH
L902	BZ02121	LINE FILTER 22MH(433, 751 only)
L903	BH01162M	FERRITE BEAD W/CORE 2.3MH
L904	BH01162M	FERRITE BEAD W/CORE 2.3MH
⚠ L905	2276068	DEGAUSSING COIL
L905	BH01161M	FERRITE BEAD W/CORE 0.8MH
L906	BH01161M	FERRITE BEAD W/CORE 0.8MH
L931	BH01161M	FERRITE BEAD W/CORE 0.8MH
L932	BH01162M	FERRITE BEAD W/CORE 2.3MH
L951	BH01162M	FERRITE BEAD W/CORE 2.3MH
L952	BH01162M	FERRITE BEAD W/CORE 2.3MH
L953	BH01162M	FERRITE BEAD W/CORE 2.3MH
L954	BH01161M	FERRITE BEAD W/CORE 0.8MH
L955	BH00734R	CHOKE COIL 100MH
L956	BH00729R	CHOKE COIL 47MH
L971	BH01162M	FERRITE BEAD W/CORE 2.3MH
L972	2220595AR	PEAKING COIL 220MH
L974	BH01162M	FERRITE BEAD W/CORE 2.3MH
L998	BH01162M	FERRITE BEAD W/CORE 2.3MH
L999	BH01162M	FERRITE BEAD W/CORE 2.3MH
LA01	2123103M	LAL AXIAL COIL 10MH
LK100	BH01162M	FERRITE BEAD W/CORE 2.3MH
LK616	BH01162M	FERRITE BEAD W/CORE 2.3MH
LK702	BH01161M	FERRITE BEAD W/CORE 0.8MH
*LN01	2122956M	LAL AXIAL COIL 100MH
*LN03	2123103M	LAL AXIAL COIL 10MH
*LN04	2123103M	LAL AXIAL COIL 10MH
*LN05	2123781R	FILTER COIL 100KHZ
*LN06	2122956M	LAL AXIAL COIL 100MH
*LN07	BH01161M	FERRITE BEAD W/CORE 0.8MH
*LN08	BH01161M	FERRITE BEAD W/CORE 0.8MH
*LN10	2122956M	LAL AXIAL COIL 100MH
*LN11	2122947M	LAL AXIAL COIL 22MH
P802	2902265	6P PIN POST
P803	2902264	5P PIN POST
PFS1	ED01472	11P PLUG PIN(V3AL2 only)
PFS1	ED01492	11P PLUG PIN(V3AL2 only)
PFS2	ED01472	11P PLUG PIN(V3AL2 only)
PFS2	ED01492	11P PLUG PIN(V3AL2 only)

***For NICAM/A2 models only**

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL No.	PART No.	DESCRIPTIONS	SYMBOL No.	PART No.	DESCRIPTIONS
PFS3	ED01472	11P PLUG PIN(V3AL2 only)	Q972	CF01431R	TRS. KTA1266Y
PFS3	ED01492	11P PLUG PIN(V3AL2 only)	*QN01	2325691R	TRS. CHIP 2SC2412KT146R
⚠ PR764	AZ00104M	PROTECTOR 2A	*QN02	2325691R	TRS. CHIP 2SC2412KT146R
⚠ PR765	AZ00105M	PROTECTOR 2.5A	R002	0700052M	CF 6.8K OHM +-5% 1/16W
⚠ PR766	AZ00104M	PROTECTOR 2A	R003	0700039M	CF 820 OHM +-5% 1/16W
⚠ PR931	AZ00101M	PROTECTOR 500mA	R004	0700042M	CF 1.2K OHM +-5% 1/16W
Q001	CF01421R	TRS. KTC3198GR			(V3AL3 only)
Q002	CF01431R	TRS. KTA1266Y	R005	0700042M	CF 1.2K OHM +-5% 1/16W
Q003	CF01421R	TRS. KTC3198GR			(V3AL3 only)
Q004	CF01421R	TRS. KTC3198GR	R006	0700044M	CF 1.8K OHM +-5% 1/16W
Q005	CF01421R	TRS. KTC3198GR			(V3AL3 only)
*Q006	CF01421R	TRS. KTC3198GR	R007	0700047M	CF 3.3K OHM +-5% 1/16WT
Q051	CF01431R	TRS. KTA1266Y			(V3AL3 only)
Q201	CF01011R	TRS KTC3197	R008	0700047M	CF 3.3K OHM +-5% 1/16WT
*Q202	CF01011R	TRS KTC3197			(V3AL3 only)
Q305	CF01421R	TRS. KTC3198GR	*R009	0700034M	CF 330 OHM +-5% 1/16W
Q306	CF01431R	TRS. KTA1266Y	R010	0700045M	CF 2.2K OHM +-5% 1/16W
Q307	CF01421R	TRS. KTC3198GR	R011	0700038M	CF 680 OHM +-5% 1/16W
Q308	CF01421R	TRS. KTC3198GR	R012	0700056M	CF 15K OHM +-5% 1/16W
Q309	CF01421R	TRS. KTC3198GR	R013	0700054M	CF 10K OHM +-5% 1/16W
Q310	CF01421R	TRS. KTC3198GR	*R014	0700041M	CF 1K OHM +-5% 1/16W
Q311	CF01421R	TRS. KTC3198GR	R020	0700051M	CF 5.6K OHM +-5% 1/16W
Q312	2326872R	TRS DTC114ES	R021	0700045M	CF 2.2K OHM +-5% 1/16W
Q440	CF01431R	TRS. KTA1266Y	R022	0700041M	CF 1K OHM +-5% 1/16W
Q503	CF01421R	TRS. KTC3198GR	R023	0700054M	CF 10K OHM +-5% 1/16W
Q504	CF01421R	TRS. KTC3198GR	R024	0700054M	CF 10K OHM +-5% 1/16W
Q661	2312174	TRS 2SD2375-P	R025	0700051M	CF 5.6K OHM +-5% 1/16W
Q663	2320663M	TRS 2SC1213APC RR	R026	0700041M	CF 1K OHM +-5% 1/16W
Q681	2323522M	TRS 2SD789ETZ-Q	R027	0700038M	CF 680 OHM +-5% 1/16W
Q721	2326216	TRS 2SC3116 S/T	R028	0700027M	CF 100 OHM +-5% 1/16W
Q722	2320663M	TRS 2SC1213APC RR	R029	0700027M	CF 100 OHM +-5% 1/16W
Q723	2312174	TRS 2SD2375-P	R030	0700027M	CF 100 OHM +-5% 1/16W
Q724	CF01431R	TRS. KTA1266Y	R031	0700027M	CF 100 OHM +-5% 1/16W
Q725	2312174	TRS 2SD2375-P	R032	0700047M	CF 3.3K OHM +-5% 1/16W
Q741	2321112M	TRS 2SA778AK02 TZ	R033	0700037M	CF 560 OHM +-5% 1/16W
⚠ Q745	CJ00161R	TRS. BT149-B	R034	0700047M	CF 3.3K OHM +-5% 1/16W
Q746	CF01421R	TRS. KTC3198GR	R035	0700041M	CF 1K OHM +-5% 1/16W
Q781	CF02521	TRS 2SD2581	R037	0700027M	CF 100 OHM +-5% 1/16W
Q851	CF00951	TRS KTC3229	R038	0700062M	CF 39K OHM +-5% 1/16W
Q852	CF00951	TRS KTC3229	R039	0700027M	CF 100 OHM +-5% 1/16W
Q853	CF00951	TRS KTC3229	R040	0700027M	CF 100 OHM +-5% 1/16W
Q901	CF01431R	TRS. KTA1266Y	R041	0700056M	CF 15K OHM +-5% 1/16W
Q931	CF01421R	TRS. KTC3198GR	R042	0700046M	CF 2.7K OHM +-5% 1/16W
Q932	CF01431R	TRS. KTA1266Y			(Not for NICAM/A2 models)
Q933	2326631	THYRISTOR CR5AS-8	R043	0700056M	CF 15K OHM +-5% 1/16W
Q951	CF02631R	TRS BF422	R044	0700056M	CF 15K OHM +-5% 1/16W
Q952	CF01431R	TRS. KTA1266Y	R045	0700041M	CF 1K OHM +-5% 1/16W
Q971	CF01421R	TRS. KTC3198GR	R046	0700041M	CF 1K OHM +-5% 1/16W

***For NICAM/A2 models only**

制品安全上的注意: 在下表附带⚠标记的机件具备特别的安全特性。要替换这些机件以前请详细阅读这检修手册中“制品安全上的注意: 一书，以避免因检修不当而降低电视机的安全性。

SYMBOL No.	PART No.	DESCRIPTIONS	SYMBOL No.	PART No.	DESCRIPTIONS
R047	0700027M	CF 100 OHM +-5% 1/16W	*R208	0700024M	CF 56 OHM +-5% 1/16W
R048	0700027M	CF 100 OHM +-5% 1/16W	R214	0700061M	CF 33K OHM +-5% 1/16W
R049	0700027M	CF 100 OHM +-5% 1/16W			(For HITACHI Tuner only)
R050	0700027M	CF 100 OHM +-5% 1/16W	R214	0700058M	CF 22K OHM +-5% 1/16W
R051	0700035M	CF 390 OHM +-5% 1/16W			(For Murata Tuner only)
R057	0700059M	CF 27K OHM +-5% 1/16W	R215	0700026M	CF 82 OHM +-5% 1/16W
R059	0700067M	CF 100K OHM +-5% 1/16W	R313	0700027M	CF 100 OHM +-5% 1/16W
R061	0700027M	CF 100 OHM +-5% 1/16W	R315	0700063M	CF 47K OHM +-5% 1/16W
*R066	0700041M	CF 1K OHM +-5% 1/16W	R316	0700058M	CF 22K OHM +-5% 1/16W
R067	0700047M	CF 3.3K OHM +-5% 1/16W	R317	0700027M	CF 100 OHM +-5% 1/16W
R068	0700041M	CF 1K OHM +-5% 1/16W	R318	0700044M	CF 1.8K OHM +-5% 1/16W
R069	0700027M	CF 100 OHM +-5% 1/16W	R319	0700045M	CF 2.2K OHM +-5% 1/16W
R070	0700027M	CF 100 OHM +-5% 1/16W	R320	0700041M	CF 1K OHM +-5% 1/16W
R071	0700041M	CF 1K OHM +-5% 1/16W	R321	0700027M	CF 100 OHM +-5% 1/16W
R074	0700059M	CF 27K OHM +-5% 1/16W	R324	0187082M	CF 5.1K OHM +-5% 1/16W
R077	0700027M	CF 100 OHM +-5% 1/16W	R326	0700048M	CF 3.9K OHM +-5% 1/16W
R078	0700027M	CF 100 OHM +-5% 1/16W	R329	0187082M	CF 5.1K OHM +-5% 1/16W
R079	0700034M	CF 330 OHM +-5% 1/16W	R331	0700048M	CF 3.9K OHM +-5% 1/16W
R080	0700065M	CF 68K OHM +-5% 1/16W	R332	0100045M	CF 150 OHM +-5% 1/8W
R081	0700058M	CF 22K OHM +-5% 1/16W	R333	0700027M	CF 100 OHM +-5% 1/16W
R082	0700033M	CF 270 OHM +-5% 1/16W	R334	0700041M	CF 1K OHM +-5% 1/16W
R083	0700031M	CF 180 OHM +-5% 1/16W	R335	0700042M	CF 1.2K OHM +-5% 1/16W
R084	0700034M	CF 330 OHM +-5% 1/16W	R336	0700042M	CF 1.2K OHM +-5% 1/16W
R085	0700027M	CF 100 OHM +-5% 1/16W	R337	0700049M	CF 4.7K OHM +-5% 1/16W
R086	0700064M	CF 56K OHM +-5% 1/16W	R338	0700042M	CF 1.2K OHM +-5% 1/16W
R087	0700045M	CF 2.2K OHM +-5% 1/16W	R339	0700049M	CF 4.7K OHM +-5% 1/16W
R089	0700054M	CF 10K OHM +-5% 1/16W	R340	0700044M	CF 1.8K OHM +-5% 1/16W
R090	0188171M	CF 1M OHM +-5% 1/2W	R351	0100038M	CF 75 OHM +-5% 1/8W(V3AL3 only)
R091	0700027M	CF 100 OHM +-5% 1/16W	R352	0100041M	CF 100 OHM +-5% 1/8W
R093	0700045M	CF 2.2K OHM +-5% 1/16W	R353	0100123M	CF 270K OHM +-5% 1/8W
R094	0700064M	CF 56K OHM +-5% 1/16W			(V3AL3 only)
R095	0100035M	CF 56 OHM +-5% 1/8W(V3AL3 only)	R354	0100041M	CF 100 OHM +-5% 1/8W
R096	0700027M	CF 100 OHM +-5% 1/16W	R355	0100123M	CF 270K OHM +-5% 1/8W
		(V3AL3 only)			(V3AL3 only)
R102	0700058M	CF 22K OHM +-5% 1/16W	R356	0100041M	CF 100 OHM +-5% 1/8W
		(For Murata Tuner only)	R357	0100038M	CF 75 OHM +-5% 1/8W
R103	0700027M	CF 100 OHM +-5% 1/16W	R358	0100041M	CF 100 OHM +-5% 1/8W
R104	0700027M	CF 100 OHM +-5% 1/16W	R359	0100113M	CF 100K OHM +-5% 1/8W
R201	0700052M	CF 6.8K OHM +-5% 1/16W	R360	0100041M	CF 100 OHM +-5% 1/8W
R201A	0700027M	CF 100 OHM +-5% 1/16W	R361	0100113M	CF 100K OHM +-5% 1/8W
R202	0700042M	CF 1.2K OHM +-5% 1/16W	R362	0100041M	CF 100 OHM +-5% 1/8W
*R203	0700041M	CF 1K OHM +-5% 1/16W	R363	0100113M	CF 100K OHM +-5% 1/8W
*R204	0100029M	CF 33 OHM +-5% 1/8W	R364	0100038M	CF 75 OHM +-5% 1/8W
R204	0700019M	CF 27 OHM +-5% 1/16W	R365	0100113M	CF 100K OHM +-5% 1/8W
*R205	0100041M	CF 100 OHM +-5% 1/8W	R366	0100041M	CF 100 OHM +-5% 1/8W
R205	0700033M	CF 270 OHM +-5% 1/16W	R367	0100113M	CF 100K OHM +-5% 1/8W
*R206	0700051M	CF 5.6K OHM +-5% 1/16W	R368	0100041M	CF 100 OHM +-5% 1/8W
*R207	0700035M	CF 390 OHM +-5% 1/16W	R369	0100038M	CF 75 OHM +-5% 1/8W

***For NICAM/A2 models only**

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL No.	PART No.	DESCRIPTIONS	SYMBOL No.	PART No.	DESCRIPTIONS
R370	0100041M	CF 100 OHM +-5% 1/8W	R660	0100111M	CF 82K OHM +-5% 1/8W
R371	0100038M	CF 75 OHM +-5% 1/8W	R661	0700063M	CF 47K OHM +-5% 1/16W
R372	0100041M	CF 100 OHM +-5% 1/8W	R662	0700041M	CF 1K OHM +-5% 1/16W
R373	0100038M	CF 75 OHM +-5% 1/8W	R663	0179561M	MG 2.2M OHM +-5%
R374	0100041M	CF 100 OHM +-5% 1/8W	R681	0110125S	MF 150 OHM +-5% 1W
R375	0100038M	CF 75 OHM +-5% 1/8W	R681A	0700041M	CF 1K OHM +-5% 1/16W
R376	0100041M	CF 100 OHM +-5% 1/8W	R682	0119722M	FR 1 OHM +-5% 1W
R377	0100113M	CF 100K OHM +-5% 1/8W	R682A	0119695M	FR 0.47 OHM +-5% 1W
R378	0100041M	CF 100 OHM +-5% 1/8W	⚠ R720	0145051S	WW 2.7K OHM +-5% 7W
R379	0100113M	CF 100K OHM +-5% 1/8W	R721	0110211S	MF 39 OHM +-5% 2W
R380	0100041M	CF 100 OHM +-5% 1/8W	R722	0110201S	MF 15 OHM +-5% 2W
R410	0100059M	CF 560 OHM +-5% 1/8W (V3AL3 only)	R723	0100057M	CF 470 OHM +-5% 1/8W
			R724	0700041M	CF 1K OHM +-5% 1/16W
R411	0100059M	CF 560 OHM +-5% 1/8W(V3AL3 only)	R725	0700054M	CF 10K OHM +-5% 1/16W
R419	0700054M	CF 10K OHM +-5% 1/16W	R727	0700054M	CF 10K OHM +-5% 1/16W
R421	0700048M	CF 3.9K OHM +-5% 1/16W	R729	0700036M	CF 470 OHM +-5% 1/16W
R423	0700058M	CF 22K OHM +-5% 1/16W	R730	0700034M	CF 330 OHM +-5% 1/16W
R440	0700051M	CF 5.6K OHM +-5% 1/16W	R731	0188142M	CF 6.8K OHM +-5% 1/2W
R441	0700051M	CF 5.6K OHM +-5% 1/16W	⚠ R732	0110243S	MF 820 OHM +-5% 2W
R442	0700039M	CF 820 OHM +-5% 1/16W	R734	0119688M	FR 0.22 OHM +-5% 1W
R443	0114145M	CF 390 OHM +-5% 1/4W	R735	0700026M	CF 82 OHM +-5% 1/16W
R444	0700039M	CF 820 OHM +-5% 1/16W	R741	0700032M	CF 220 OHM +-5% 1/16W
R447	0114145M	CF 390 OHM +-5% 1/4W	⚠ R742	0700063M	CF 47K OHM +-5% 1/16W
R451	0700027M	CF 100 OHM +-5% 1/16W	R744	0100065M	CF 1K OHM +-5% 1/8W
R452	0700027M	CF 100 OHM +-5% 1/16W	⚠ R745	0700039M	CF 820 OHM +-5% 1/16W
R453	0700027M	CF 100 OHM +-5% 1/16W	R751	0113790M	CF 43K OHM +-5% 1/2W
R454	0700027M	CF 100 OHM +-5% 1/16W	R752	0113789M	CF 39K OHM +-5% 1/2W
R455	0700027M	CF 100 OHM +-5% 1/16W	R753	0100049M	CF 220 OHM +-5% 1/8W
R501	0700027M	CF 100 OHM +-5% 1/16W	R756	0110273S	MF 15K OHM +-5% 2W
R502	0700027M	CF 100 OHM +-5% 1/16W	⚠ R757	0118969M	MF 220K OHM +-1% 1/4W
R503	0700027M	CF 100 OHM +-5% 1/16W	⚠ R758	0119643M	MF 33K OHM +-1% 1/8W
R516	0700058M	CF 22K OHM +-5% 1/16W	R759	0110273S	MF 15K OHM +-5% 2W
R517	0700053M	CF 8.2K OHM +-5% 1/16W	R760	0100093M	CF 15K OHM +-5% 1/8W
R518	0700053M	CF 8.2K OHM +-5% 1/16W	R771	0114165M	CF 1.5K OHM +-5% 1/4W
R519	0700046M	CF 2.7K OHM +-5% 1/16W	R782	0110285S	MF 47K OHM +-5% 2W
R520	0700056M	CF 15K OHM +-5% 1/16W	R783	0100091M	CF 12K OHM +-5% 1/8W
R521	0700045M	CF 2.2K OHM +-5% 1/16W	R784	0114145M	CF 390 OHM +-5% 1/4W
R522	0700034M	CF 330 OHM +-5% 1/16W	R786	0100089M	CF 10K OHM +-5% 1/8W
R523	0700054M	CF 10K OHM +-5% 1/16W	R787	0188166M	CF 470K OHM +-5% 1/2W
R524	0700054M	CF 10K OHM +-5% 1/16W	R788	0700035M	CF 390 OHM +-5% 1/16W
R600	0100123M	CF 270K OHM +-5% 1/8W	R789	0147825	WW 5.6K OHM +-5% 15W
R601	0700044M	CF 1.8K OHM +-5% 1/16W	R791	0700048M	CF 3.9K OHM +-5% 1/16W
R602	0700046M	CF 2.7K OHM +-5% 1/16W	R791A	0700033M	CF 270 OHM +-5% 1/16W
R604	0700044M	CF 1.8K OHM +-5% 1/16W	⚠ R792	0700043M	CF 1.5K OHM +-5% 1/16W
R605	0119722M	FR 1 OHM +-5% 1W	R801	0700027M	CF 100 OHM +-5% 1/16W
R606	0700027M	CF 100 OHM +-5% 1/16W	R802	0700027M	CF 100 OHM +-5% 1/16W
R607	0113701M	CF 10 OHM +-5% 1/2W	R803	0700027M	CF 100 OHM +-5% 1/16W
R659	0700043M	CF 1.5K OHM +-5% 1/16W	R804	0700031M	CF 180 OHM +-5% 1/16W

***For NICAM/A2 models only**

制品安全上的注意: 在下表附带⚠标记的机件具备特别的安全特性。要替换这些机件以前请详细阅读这检修手册中“制品安全上的注意: 一书，以避免因检修不当而降低电视机的安全性。

SYMBOL No.	PART No.	DESCRIPTIONS	SYMBOL No.	PART No.	DESCRIPTIONS
R805	0700031M	CF 180 OHM +-5% 1/16W	R931	0147540	WW 10 OHM +-5% 5W
R806	0700031M	CF 180 OHM +-5% 1/16W	R932	0113815M	CF 470K OHM +-5% 1/2W
R807	0700042M	CF 1.2K OHM +-5% 1/16W	R933	0113815M	CF 470K OHM +-5% 1/2W
R808	0700042M	CF 1.2K OHM +-5% 1/16W	R934	0114210M	CF 24K OHM +-5% 1/4W
R809	0700042M	CF 1.2K OHM +-5% 1/16W	R935	0700027M	CF 100 OHM +-5% 1/16W
R810	0100047M	CF 180 OHM +-5% 1/8W	R936	0700054M	CF 10K OHM +-5% 1/16W
R811	AT00383S	MF 8.2K OHM +-5% 3W	R937	0700041M	CF 1K OHM +-5% 1/16W
R812	AT00383S	MF 8.2K OHM +-5% 3W	R938	0113815M	CF 470K OHM +-5% 1/2W
R813	AT00383S	MF 8.2K OHM +-5% 3W	R939	0113815M	CF 470K OHM +-5% 1/2W
R814	0113744M	CF 560 OHM +-5% 1/2W	R940	0700041M	CF 1K OHM +-5% 1/16W
R814A	0100095M	CF 18K OHM +-5% 1/8W	R941	0700041M	CF 1K OHM +-5% 1/16W
R815	0113744M	CF 560 OHM +-5% 1/2W	R942	0700054M	CF 10K OHM +-5% 1/16W
R815A	0100095M	CF 18K OHM +-5% 1/8W	R943	0100127M	CF 390K OHM +-5% 1/8W
R816	0113744M	CF 560 OHM +-5% 1/2W	R950	AW00101	VR 500 OHM B
R816A	0100095M	CF 18K OHM +-5% 1/8W	R951	0113797M	CF 82K OHM +-5% 1/2W
R821	0113815M	CF 470K OHM +-5% 1/2W	R952	0100079M	CF 3.9K OHM +-5% 1/8W
R830	0700039M	CF 820 OHM +-5% 1/16W	R953	0100063M	CF 820 OHM +-5% 1/8W
R831	AW00073	VR 500 OHM B	R954	0113797M	CF 82K OHM +-5% 1/2W
R832	AW00073	VR 500 OHM B	R955	0110255S	MF 2.7K OHM +-5% 2W
R833	AW00073	VR 500 OHM B	R957	0114215M	CF 39K OHM +-5% 1/4W
R834	0700039M	CF 820 OHM +-5% 1/16W	R958	0114215M	CF 39K OHM +-5% 1/4W
R835	0700039M	CF 820 OHM +-5% 1/16W	R959	0700063M	CF 47K OHM +-5% 1/16W
R900	0147610	WW 1.0 OHM +-5% 7W	R960	0700049M	CF 4.7K OHM +-5% 1/16W
R901	0147610	WW 1.0 OHM +-5% 7W	R961	0700049M	CF 4.7K OHM +-5% 1/16W
R901A	0147610	WW 1.0 OHM +-5% 7W	R962	0700036M	CF 470 OHM +-5% 1/16W
R902	0144155A	WW 68 OHM +-5% 2W	R963	0700041M	CF 1K OHM +-5% 1/16W
R903	0113781M	CF 18K OHM +-5% 1/2W	R964	0700041M	CF 1K OHM +-5% 1/16W
R904	0188148M	CF 22K OHM +-5% 1/2W	R965	0700041M	CF 1K OHM +-5% 1/16W
R905	0114289M	CF 220K OHM +-5% 1/4W	R966	0147118	WW 1 OHM +-5% 3W
R906	0188163M	CF 270K OHM +-5% 1/2W	R967	0700051M	CF 5.6K OHM +-5% 1/16W
R907	0100093M	CF 15K OHM +-5% 1/8W	R968	0700051M	CF 5.6K OHM +-5% 1/16W
R908	0100069M	CF 1.5K OHM +-5% 1/8W	R971	0700041M	CF 1K OHM +-5% 1/16W
R909	0100067M	CF 1.2K OHM +-5% 1/8W	R972	0700041M	CF 1K OHM +-5% 1/16W
R910	0188102M	CF 6.8 OHM +-5% 1/2W	R973	0700054M	CF 10K OHM +-5% 1/16W
R911	0100061M	CF 680 OHM +-5% 1/8W	R974	0700063M	CF 47K OHM +-5% 1/16W
R912	0148016	WW 0.22 OHM +-5% 2W	R975	0700054M	CF 10K OHM +-5% 1/16W
R913	0148018	WW 0.33 OHM +-5% 2W	R976	0700041M	CF 1K OHM +-5% 1/16W
R914	0700047M	CF 3.3K OHM +-5% 1/16W	R977	0700046M	CF 2.7K OHM +-5% 1/16W
R916	AT03477S	MF 68K OHM 2W	R981	0147582	WW 560 OHM +-5% 5W
R917	0179538M	MG 4.7M OHM +-5%	⚠ R999	0174704	MF 10M OHM +-5%
R918	0113783M	CF 22K OHM +-5% 1/2W	RA01	0700051M	CF 5.6K OHM +-5% 1/16W
R919	0113783M	CF 22K OHM +-5% 1/2W	*RA02	0700048M	CF 3.9K OHM +-5% 1/16W
R921	0188158M	CF 120K OHM +-5% 1/2W	RA02	0700053M	CF 8.2K OHM +-5% 1/16W
R922	0188158M	CF 120K OHM +-5% 1/2W	*RA03	0700048M	CF 3.9K OHM +-5% 1/16W
R923	0100107M	CF 56K OHM +-5% 1/8W	RA03	0700053M	CF 8.2K OHM +-5% 1/16W
R924	0700054M	CF 10K OHM +-5% 1/16W	RA04	0700027M	CF 100 OHM +-5% 1/16W
R929	0147126BF	WW 2.2 OHM +-5% 3W	RA05	0700036M	CF 470 OHM +-5% 1/16W
R930	0113807M	CF 220K OHM +-5% 1/2W	RA06	0700027M	CF 100 OHM +-5% 1/16W

***For NICAM/A2 models only**

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL No.	PART No.	DESCRIPTIONS
RA07	0700036M	CF 470 OHM +-5% 1/16W
RA08	0700027M	CF 100 OHM +-5% 1/16W
RA09	0700027M	CF 100 OHM +-5% 1/16W
RA10	0700054M	CF 10K OHM +-5% 1/16W
RA11	0700051M	CF 5.6K OHM +-5% 1/16W
RA12	0700051M	CF 5.6K OHM +-5% 1/16W
RA13	0700051M	CF 5.6K OHM +-5% 1/16W
RA14	0700056M	CF 15K OHM +-5% 1/16W
RC751	0113776M	CF 12K OHM +-5% 1/2W
RK152	0700027M	CF 100 OHM +-5% 1/16W
RK610	0100123M	CF 270K OHM +-5% 1/8W
RKK10	0114161M	CF 1K OHM +-5% 1/4W
⚠ RL901	FJ00142	5V RELAY
RM05	0700047M	CF 3.3K OHM +-5% 1/16W (V3AL2 only)
RM07	0700044M	CF 1.8K OHM +-5% 1/16W (V3AL2 only)
RM09	0700042M	CF 1.2K OHM +-5% 1/16W (V3AL2 only)
RM11	0700042M	CF 1.2K OHM +-5% 1/16W (V3AL2 only)
RM13	0100038M	CF 75 OHM +-5% 1/8W(V3AL2 only)
RM17	0100123M	CF 270K OHM +-5% 1/8W (V3AL2 only)
RM18	0100123M	CF 270K OHM +-5% 1/8W (V3AL2 only)
RM20	0700047M	CF 3.3K OHM +-5% 1/16W (V3AL2 only)
RM22	0700041M	CF 1K OHM +-5% 1/16W (V3AL2 only)
RM23	0100033M	CF 47 OHM +-5% 1/8W(V3AL2 only)
RM41	0100059M	CF 560 OHM +-5% 1/8W (V3AL2 only)
RM42	0100059M	CF 560 OHM +-5% 1/8W(V3AL2 only)
*RN01	0700027M	CF 100 OHM +-5% 1/16W
*RN02	0700027M	CF 100 OHM +-5% 1/16W
*RN04	0790052R	CHIP RES RNC 1/16W 12K OHM +-5%
*RN05	0790037R	CHIP RES RNC 1/16W 1K OHM +-5%
*RN06	0790037R	CHIP RES RNC 1/16W 1K OHM +-5%
*RN07	0790015R	CHIP RES RNC 1/16W 22 OHM +-5%
*RN08	0790037R	CHIP RES RNC 1/16W 1K OHM +-5%
*RN09	0790024R	CHIP RES RNC 1/16W 100 OHM +-5%
*RN10	0790024R	CHIP RES RNC 1/16W 100 OHM +-5%
*RN11	0790037R	CHIP RES RNC 1/16W 1K OHM +-5%
*RN12	0790033R	CHIP RES RNC 1/16W 470 OHM +-5%
*RN13	0790055R	CHIP RES RNC 1/16W 22K OHM +-5%
RTH71	0700035M	CF 390 OHM +-5% 1/16W
S01	FE00282	3 KEY TACT SWITCH(V3AL3 only)
S02	FE00282	3 KEY TACT SWITCH(V3AL3 only)
⚠ S901	2634732	MAIN SWITCH SDDFC3
SM01	FE00282	3 KEY TACT SWITCH(V3AL2 only)
SM02	FE00282	3 KEY TACT SWITCH(V3AL2 only)
SP401	GK00511	SPEAKER(V3AL3 only)
SP401	GK00552	SPEAKER(V3AL2 only)
SP402	GK00511	SPEAKER(V3AL3 only)
SP402	GK00552	SPEAKER(V3AL2 only)
⚠ T721	BS00011	DRIVE TRANSFORMER
⚠ T761	BW02383	FBT MIG98
⚠ T901	BT01931	SWITCH MODE TRANSFORMER
⚠ T901	BT01932	SWITCH MODE TRANSFORMER (T901 : P#1 & P#2 are compatible in V3AL2/V3AL3)
⚠ T931	BT01571	SWITCHING TRANSFORMER
TH71	2340371	THERMISTOR
TH901	2341325	PTC THERMISTOR
U001	HJ00481	TUNER ET-55SC(HITACHI)
U001	HJ00471	TUNER TUHAF4AG-772F2 (MURATA)
U1101	HL01332	REMOCON TRANSMITTER CLE-947
⚠ V1	DE01632	CPT A68QBC230X W/DY
⚠ V1	DE01635	CPT A68QBC230X W/DY(S) (For 751 only)
⚠	DY01171	DEFLECTION YOKE
X001	CZ00641	R/C RECIEVER(V3AL3 only)
*X002	BG01581	SAW FILTER TSB 5305
X003	BG01561	SAW FILTER K7252
X004	2123451	CER.TRAP 4.5MHz
X005	BN00171	CER.TRAP 5.5MHz/5.74MHz
X006	BN00172	CER.TRAP 6MHz/6.5MHz
X007	BP01221	CRYSTAL 12MHZ
*XN01	BP01161	X'TAL 18.432MHZ

***For NICAM/A2 models only**

HITACHI

C29-R30SP, C29-R20AV
[041, 051, 751, 081, 98*, 121, 071,
19*, 941, 433, 061, 082]

Hitachi Consumer Products (S)

Printed in Singapore