

Load Dressing

1.4.2 Lead dressing

Leads must be dressed as shown in table 1 .4B and the diagram (fig. 1.4C) below. The leads are routed or clamped so that they do not come close to any heat generating or high-tension parts. The anode lead wire is routed such that no tension is applied to the anode cap. If the mounting angle of the anode cap and the route of the anode lead wires are changed, return them to the initial angle and route.

CLAMP No	WIRES CLAMPED
1	KB, KK
2	DA, DM
3	DM
4	DA, DD, DE, DF (3+4)
5	DD
6	DA (looped), KD
7	DY (Loop the lead twice)
8	LB, BA (Loop the lead twice)
9	KD, SC, GA (Loop the lead)
10	LB (Loop the lead twice), SB, Focus
11	Anode lead
12	BA, DF(1+2)

table 1.4B Lead-dressing table.

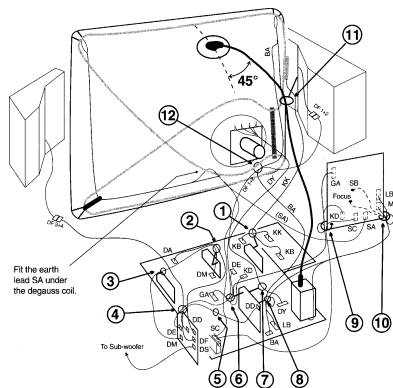
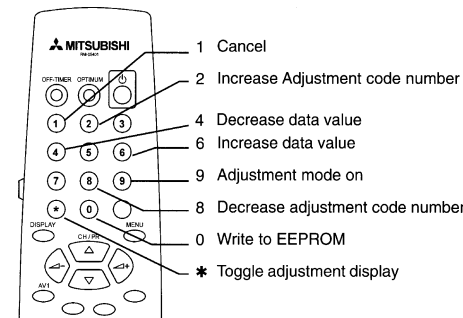


table 1.4C Lead-dressing diagram.

Adjustments

2.1 introduction

Most service adjustments to these models are made using the remote control (figure 2.1A) with the TV in service mode. The adjustment data is stored in an EEPROM.



**NOTE:** The software in the microcontroller IC701 may be either of 2 versions -EE3 or EE3W. EE3 software is used in IC701 part no. 274P755010, EE3W software is used in IC701 part no. 274P755040. The actual software in use is shown on the Options adjustment display - see the next section.

2.1.1 Basic adjustment procedure

- Turn the power on and enter service mode - either (EE3) press the Service switch (S701, next to the aerial socket) and then button “9” within 5 seconds (EE3W) press the MENU button to display the MAIN MENU then immediately key-in 2-3-5-7.
- Press the “\*” button to toggle between the VCJ or OPTION adjustment display (figs. 2.1 B, C, D and E).

EE3 software:

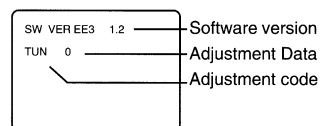


fig. 2.1B Options adjustment display

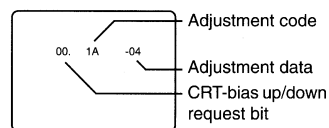


fig. 2.1C VCJ adjustment display

EE3W software:

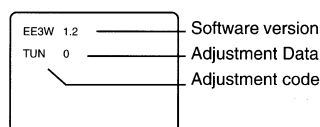


fig. 2.1D Options adjustment display

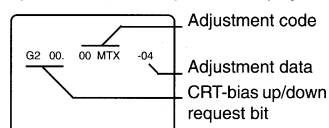


fig. 2.1E VCJ adjustment display

- Press buttons “2” or “8” to increase or decrease the adjustment code number.
- Press buttons “6” or “4” to increase or decrease the data value.
- After making adjustments, press button “0”, to write the adjustment data to the EEPROM. To cancel a change, press button “1”, and all data adjusted since the last EEPROM write will be reset.

2.2 INITIALISING THE EEPROM

If you have replaced the EEPROM (IC702) or if for any reason the adjustment data has become corrupted it will be necessary to initialise the EEPROM.

2.2.1 Initialising the EEPROM

- If necessary, switch off by the Main switch.
- (EE3) Hold in the service switch (S701, next to the aerial socket) or (EE3W) connect pin 55 of IC701 to ground via a 1000 resistor while switching on by the Main switch.
- (EE3) Release the service switch after 3 seconds or (EE3W) remove the shorting resistor.
- Switch off by the Main switch. The EEPROM data values have now all been reset to their initial default values.
- Switch on by the Main switch. (EE3) Press the Service switch and then button 9 on the remote control within 5 seconds to enter service mode (EE3W) press MENU then key in 2-3-5-7.
- Press the “\*” button to select the OPTIONS adjustment display.
- Press buttons 2 or 8 to select the adjustment code.
- Adjust the data value for each code as shown in table 2.2A below using buttons 2 or 4: (other codes may be displayed but are not used) EE3 software:

CODE:	SETTING:
TUN	1
SAT	0
AUD	0
ATS	1
STD	1
SYS	2
AVI	2
SPK	0
ABG	12
AI	08
AL	06

CODE:	SETTING:
ADK	08
MNP	70
FFT	1
VOL	74
HYP	1
SCP	20
FMP	23

EE3W software:

CODE:	SETTING:
TUN	1
SAT	0
AUD	0
ATS	-
STD	1
SYS	2
AVI	2
AUD	-
SPK	1
MNP	70
FFT	-
VOL	74
HYP	1
SCP	20
FMP	23
DBY	1
WID	0

table 2.2A Data values for the OPTIONS adjustments.

- Press the 0 button to write the changes to the EEPROM.
- Press the \* button to select the VCJ adjustment display.
- Press buttons 2 or 8 to select the adjustment code.
- Adjust the data value of each code using buttons 2 or 4 according to table 2.2B below:

EE3 software

CODE:	11	19	1B
VALUE:	001	-1	-13

EE3W software

CODE:	SHA	HPT	HPX
VALUE:	001	-1	-13

table 2.2B Data values for the VCJ adjustments.

- Press the “0,” button to write the changes to the EEPROM.

2.2.2 OPTION and VCJ code descriptions. VCJ

CODE (EE3)	FUNCTION (EE3W)	CODE
00	V-AMP-50	0 VH5
01	V-B-CORRECTION	1 VBC
02	P-AMP-50	2 PA5
03	P-TILT	3 PT5
04	V-LIN	4 LIN
05	C-CORRECTION-50	5 CC5
06	H-AMP	6 HW5
07	16x9-SW.RGB-MATRIX	0 MTX
08	V-SHIFT- 50	7 VS5
09	H-PHASE-50	13 HP5
0A	BLUE DRIVE	1 BDR
0B	GREEN DRIVE	2 GDR
0C	RED DRIVE	3 RDR
0D	CONTRAST	4 CON
0E	BRIGHT	5 BRI
0F	COLOUR SATURATION	6 COL
10	NTSC TINT	8 TNT
11	SHARPNESS	7 SH
12	PAL-LUMA-DELAY	12 PCD
13	SECAM-LUMA-DELAY	11 SCD
14	V-AMP-60	8 VH6
15	P-AMP-60	9 PA6

16	H-AMP-60	12 HW6
17	V-SHIFT-60	13 VS6
18	H-PHASE-60	14 HP6
19	H-PHASE-TEXT	15 HPT
1A	H-PHASE-SECAM	16 HPS
1B	H-PHASE-RGB	17 HPX
1C	P-AMP-16: 9	18 PA9
1D	358 NTSC-LUMA-DELAY	-
1E	443 NTSC-LUMA-DELAY	-
-	NTSC (358 & 443) CHROMA DELAY	10 NTD
-	BG CHROMA DELAY OFFSET	9 BGD
-	P-AMP-60	9 PA6
-	P-TILT-60	10 PT6
-	C-CORRECTION-60	11 CC6
-	TOP-BLANKING-50	14 TB5
-	BOTTOM-BLANKING-50	15 BB5
-	H-BLANKING-WIDTH-50	16 BW5
-	H-BLANKING-PHASE-50	17 BP5
-	TOP-BLANKING-60	18 TB6
-	BOTTOM-BLANKING-60	19 BB6
-	H-BLANKING-WIDTH-60	20 BW6
-	H-BLANKING-PHASE-60	21 BP6

OPTIONS

CODE (EE3)	FUNCTION	CODE (EE3W)
TUN	TUNER TYPE	TUN
SAT	SATELLITE ENABLE	SAT
AUD	AUDIO SYSTEM	AUD
ATS	AUTOTUNING SORT	ATS
STD	RECEPTION STANDARD	STD
SYS	COLOUR SYSTEM	SYS
AVI	NO. OF AV INPUTS	AVI
AVD	AV DUBBING	AVD
EEX	CHASSIS TYPE	-
SPK	SPEAKER SW ENABLED	SPK
EEX	EEPROM SIZE	-
ABG	AGC GAIN – BG	-
AI	AGC GAIN-I	-
AL	AGC GAIN-L	-
ADK	AGC GAIN-DK	-
MNP	NICAM PRESCALE	MNP
TXT	TELETEXT TYPE	-
FFT	FAST/TOP TEXT	FFT
VOL	VOLUME PRESCALE	VOL
HYP	HYPERSOUND	HYP
SCP	SCART PRESCALE	SCP
FMP	FM PRESCALE	FMP
-	DOLBY	DBY
-	WIDE SCREEN	WID

2.3 VIF CIRCUITS

2.3.1RF AGC

VR101 (adjacent to the tuner)

- Connect an RE signal such as an off-air broadcast.
- Check the AFT is on for the current channel.
- Adjust VR101 so that the picture and sound exhibit no noise, beat or intermodulation distortion.

2.3.2 SIF OFFSET

VR 102 (near IC101)

- Connect an RE Crosshatch pattern signal with NO sound modulation
- Set the Volume control to about 3/4 of maximum.
- Adjust VR102 to obtain minimum noise.

2.4 DEFLECTION CIRCUITS

2.4.1Important notes

Before making any adjustments, if you have changed the CRT, FLYBACK TRANSFORMER or made any changes in the deflection circuits; adjust the CRT bias as described in 2.6.1 steps 1 ~ 4.

Check the VERTICAL BREATHING CORRECTION as follows:

- Select the VCJ adjustment display.
- Set the adjustment code to 01 (1 VBC) with buttons “2” or “8” on the remote control.
- If necessary, adjust the data value to “-31” using buttons “4” or “6” on the remote control.

2.4.2 Horizontal centre

Code: 09 (13 HP5) [H-PHASE-50]

- Connect a VCR and play a PAL-Monoscope alignment tape.
- Select the VCJ adjustment display.
- Set the adjustment code to 09 (13 HP5) with buttons “2” or “8” on the remote control.
- Adjust the horizontal position with buttons “4” or “6” on the remote control.

2.4.3 Horizontal width

Code: 06 (6 HW5) [H-AMP]

- Connect a VCR and play a PAL-Monoscope alignment tape.
- Select the VCJ adjustment display.
- Set the adjustment code to 06 (6 HW5) with buttons “2” or “8” on the remote control.
- Adjust horizontal width with the buttons “4” or “6” on the remote control.

2.4.4 East-West PCC

Code: 05 (5 CC5) [CORNER CORRECTION-50]  
Code: 03 (3 PT5) [PARABOLA TILT]  
Code: 02 (2 PA5) [PARABOLA AMP-50]

- Connect an RF PAL Crosshatch signal.
- Select the VCJ adjustment display.
- Set the adjustment code to 05 (5 CC5) with buttons “2” or “8” on the remote control.
- Adjust the data value to “-25” with buttons “4” or “6” on the remote control.
- Set the adjustment code to 03 (3 PT5) with buttons “2” or “8” on the remote control.
- Watching the second vertical line in from both sides of the screen (figure 2.4A), make any upper and lower distortion symmetrical using buttons “4” or “6” on the remote control.

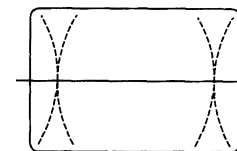


fig. 2.4A

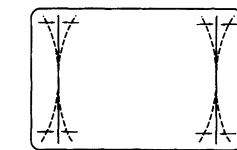


fig. 2.4B

- Set the adjustment code to 02 (2 PA5) with buttons “2” or “8” on the remote control.
- Adjust the straightness of both vertical lines (figure 2.4B) using buttons “4” or “6” on the remote control.
- Repeat steps 1 to 8 above if necessary.
- Connect a VCR and play a PAL-Monoscope alignment tape.
- Make sure the horizontal width and horizontal centre are correct. If necessary readjust Horizontal Centre 09 (13 HP5) and Horizontal Width 06 (6 HW5) again.

## Adjustments Cont'd

### 2.4.5 Height and linearity

Code: 00 (0 VH5) [V-AMP]  
Code: 04 (4 LIN) [V-LIN]

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment code to 00 (0 VH5) with buttons "2" or "8" on the remote control.
4. Adjust the circle to a true circle with buttons "4" or "6" on the remote control.
5. Set the adjustment code to 04 (4 LIN) with buttons "2" or "8" on the remote control.
6. Adjust the linearity to be the same for the top and bottom halves of the circle using buttons "4" or "6" on the remote control.
7. Set the adjustment code to 00 (0 VH5) with buttons "2" or "8" on the remote control.
8. Readjust V-AMP with buttons "4" or "6".
9. Repeat the steps above, if necessary.

### 2.4.6 Vertical centre

Code: 08 (7 VS5) [V-SHIFT-50]

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment code to 08 (7 VS5) with buttons "2" or "8" on the remote control.
4. Adjust the centre line of picture to be within +/- 3mm from the vertical centre on the screen using buttons "4" or "6" on the remote control.

### 2.4.7 60Hz Deflection circuit offsets

Code: 14 (8 VH6) [V-AMP-60]  
Code: 15 (9 PA6) [P-AMP 60]  
Code: 16 (12 HW6) [H-AMP 60]  
Code: 17 (13 VS6) [V-SHIFT 60]  
Code: 18 (14 HP6) [H-PHASE 60]

1. Connect an RE 60Hz Crosshatch signal.
2. Select the VCJ adjustment display.
3. Select each adjustment code in turn with buttons "2" or "8" on the remote control and adjust each item to the figures shown in table 2.4C below using buttons "4" or "6" on the remote control.

### CODE:

<EE3software	<EE3Wsoftware	VALUE:
14	8 VH6	+7
15	9 PA6	+2
16	12HW6	- 2
17	13VS6	+8
18	14HP6	-5

table 2.4C 60Hz adjustment offsets

## 2.5 CRT CIRCUITS

### 2.5.1 White balance

Code: 0A (1 BDR) [B-DRIVE]  
Code: 0B (2 GDR) [G-DRIVE]  
Code: 0C (3 RDR) [R-DRIVE]

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment codes to 0A (1 BDR), 0B (2 GDR) and 0C (3 RDR) in turn and pre-adjust each to "+10".
4. Adjust codes 0A (1 BDR) and 0C (3 RDR) to adjust the white balance.

### 2.5.2 Focus

FOCUS control on the Flyback Transformer

1. Connect an RF signal such as an off-air broadcast.
2. Adjust the FOCUS control for the best overall focus.

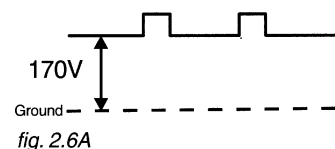
## 2.5 VIDEO CIRCUITS

Perform the following adjustments after adjusting the Deflection circuits. Allow the TV to warm up for 20 minutes before proceeding

### 2.6.1 Brightness and Contrast

SCREEN control on the Flyback Transformer  
Code: 0F (6 COL) [COLOUR SATURATION]  
Code: 0E (S BRI) [BRIGHTNESS]  
Code: 0D (4 CON) [CONTRAST]  
BEAM CURRENT (using connector TP adjacent to the Flyback Transformer)

1. Connect a Black raster signal to the RE or AV input.
2. Select the VCJ adjustment display.
3. Connect an oscilloscope to the junction of R673 and wire link W603.
4. Adjust the SCREEN control on the Flyback Transformer to give a voltage of 170V as shown in fig. 2.6A.



5. Change the external signal to a G-Card.
6. Set the adjustment code to 0F (6 COL) with buttons "2" or "8" on the remote control.
7. Adjust the data value to "32" with buttons "4" or "6" on the remote control.
8. Set the adjustment code to 0E (5 BRI) with buttons "2" or "8" on the remote control.
9. Adjust using buttons "4" or "6" so that a slight difference in brightness can be seen between blue and black areas.
10. Connect a DC ammeter's "+" lead to connector TP pin 1 on the MAIN-PCB and the "-" lead to connector TP pin 2.
11. Adjust the beam current using buttons "4" or "6" on the remote control to 1300±20µA.
12. Check, and if necessary, readjust the BRIGHTNESS, code 0E (5 BRI).
13. Check that the Screen Up/Down Request Bit is "00". If not, repeat steps 1 to 4 above.
14. Now proceed to the Colour Output adjustment.

### 2.6.2 Colour output

Make this adjustment only after adjusting the White Balance, Brightness and Contrast.

Code: 0F (6 COL) [COLOUR SATURATION]

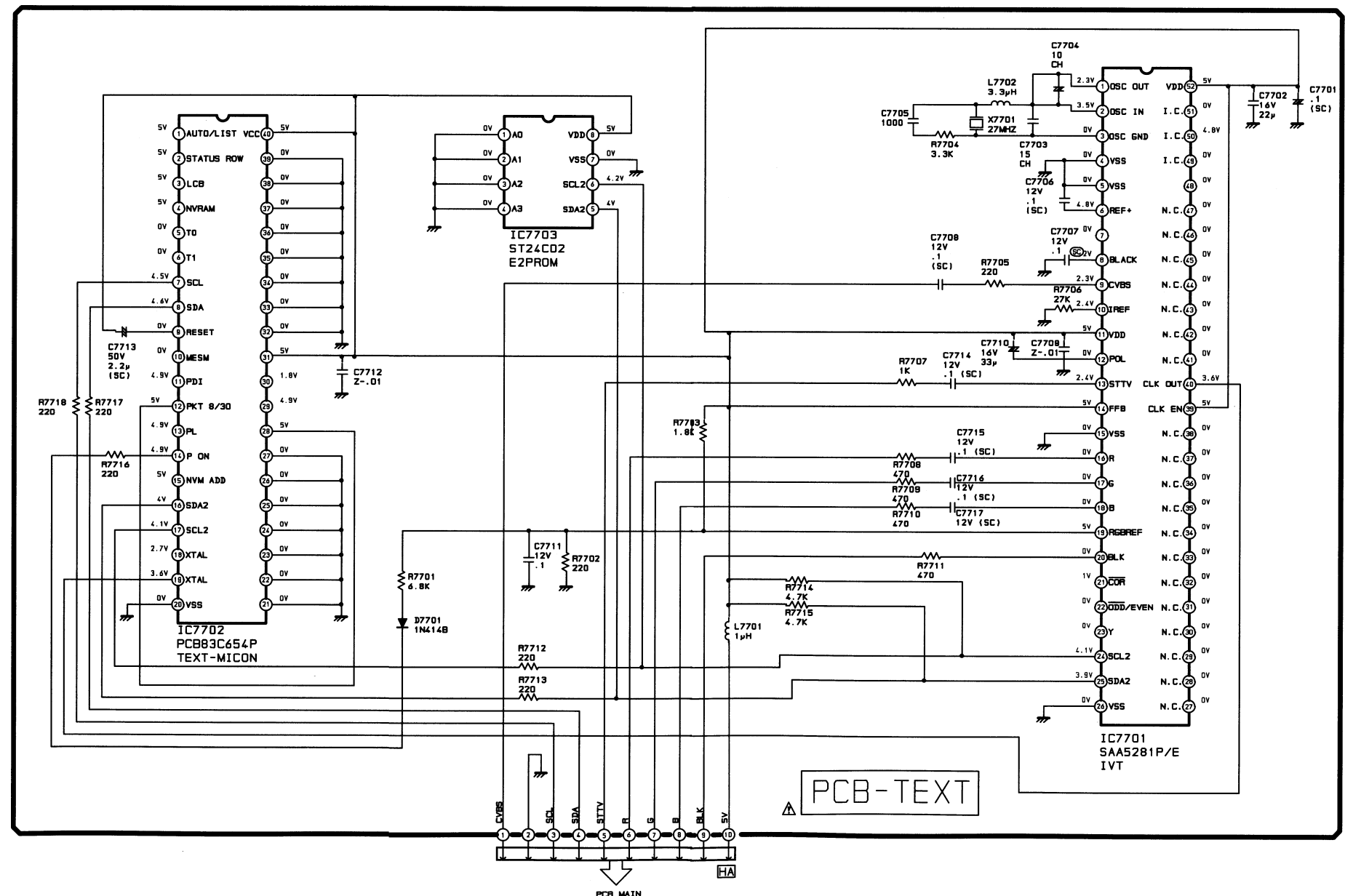
1. Connect an RE Colour-bar signal.
2. Select the VCJ adjustment display.
3. Set the adjustment code to 0F (6 COL) with buttons "2" or "8" on the remote control.
4. Connect an oscilloscope to the junction of R673 and IC660 Pin 9 (BLUE-OUT) on the CRT PCB).
5. Make adjustments using buttons "4" or "6" on the remote control until the waveform is as shown in figure 2.6A.

## 2.7 POWER CIRCUIT

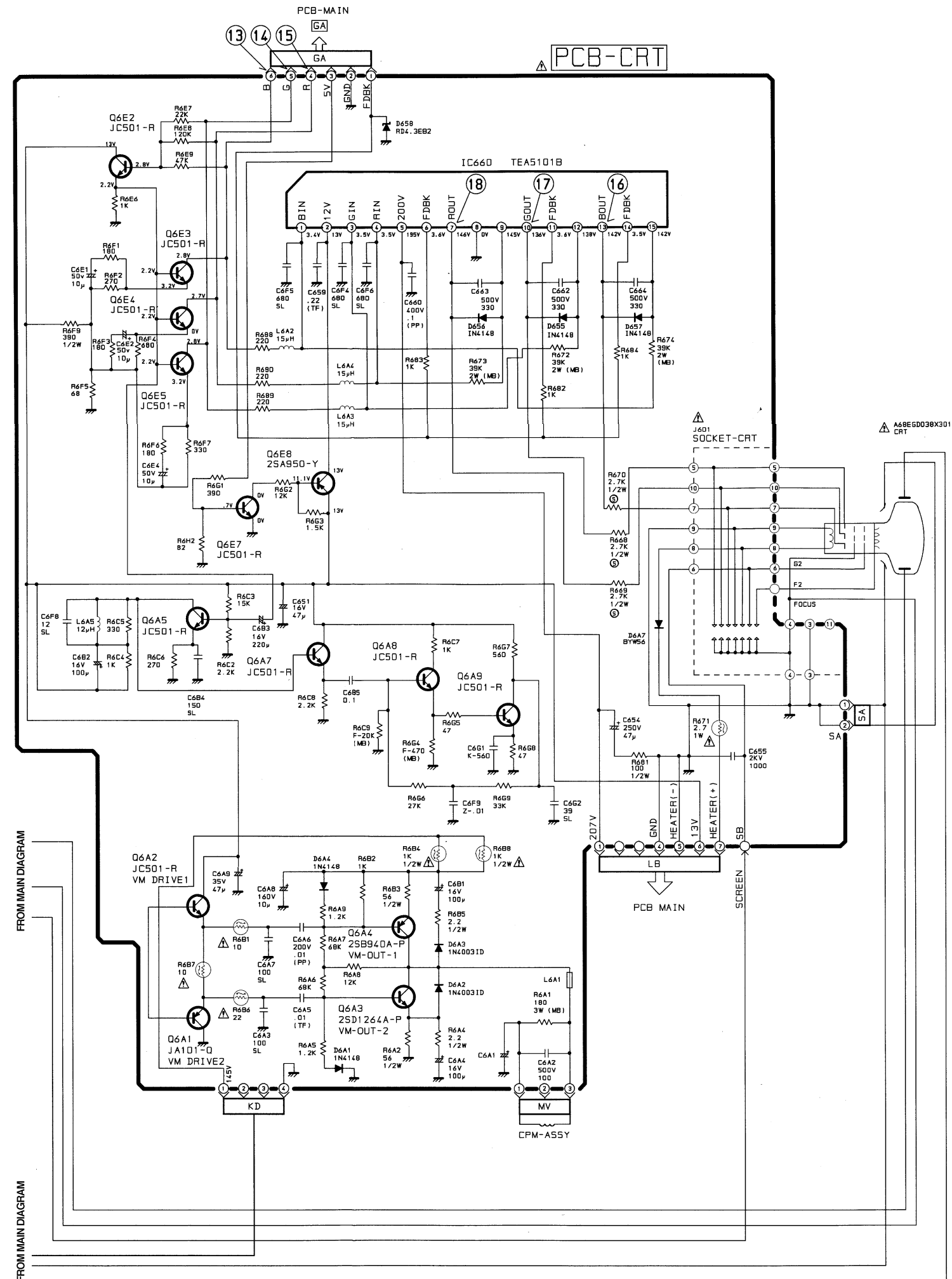
### 2.7.1 B4 Voltage VR951 (on main PCB next to the SMT)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Push the OPTIMUM button on the remote control.
3. Connect a DC voltmeter's "+" lead to TP91 on the MAIN PCB and the "-" lead to GROUND.
4. Adjust VR951 so that the voltage is 145±2V.

## Text PCB Diagram

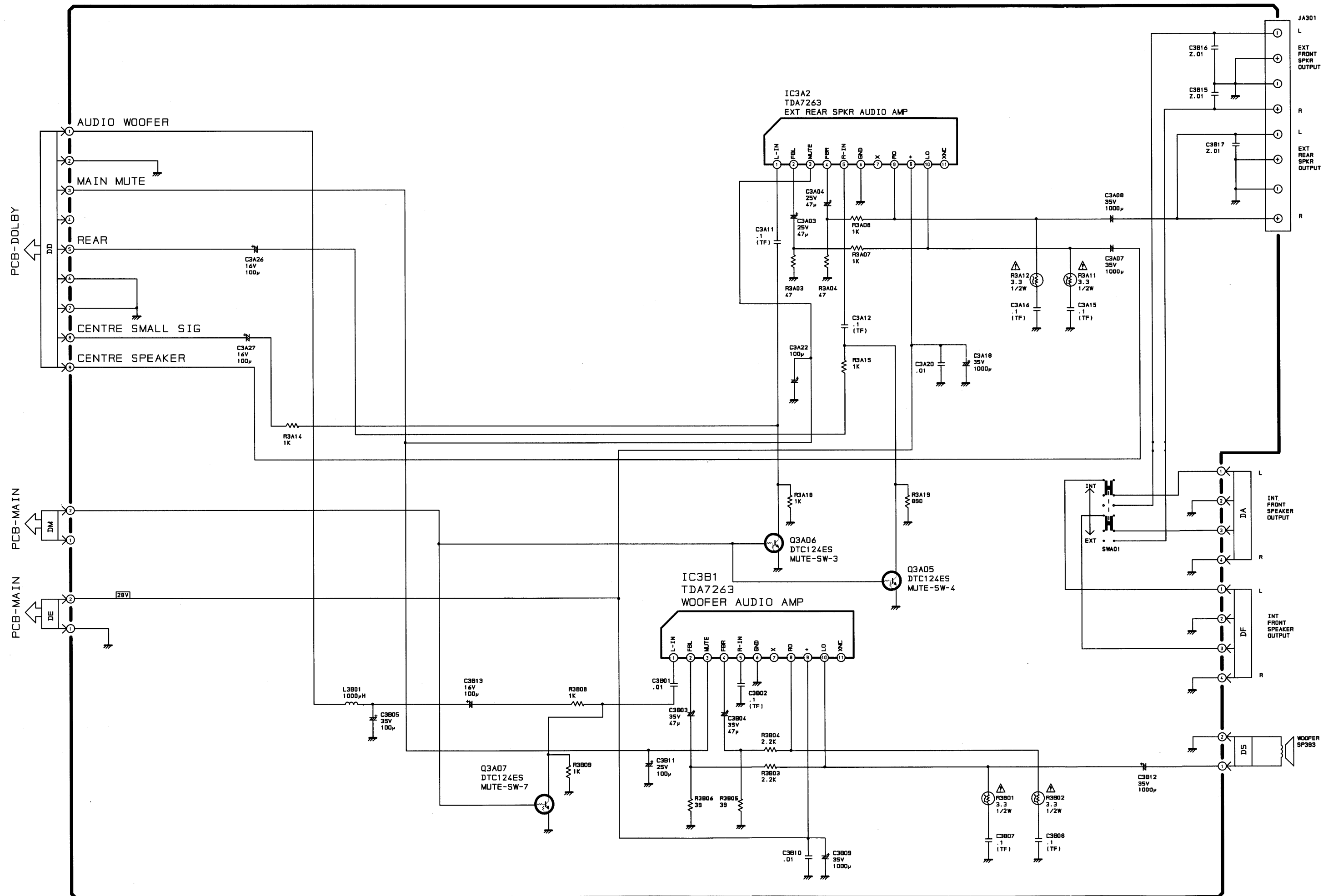


## CRT Diagram



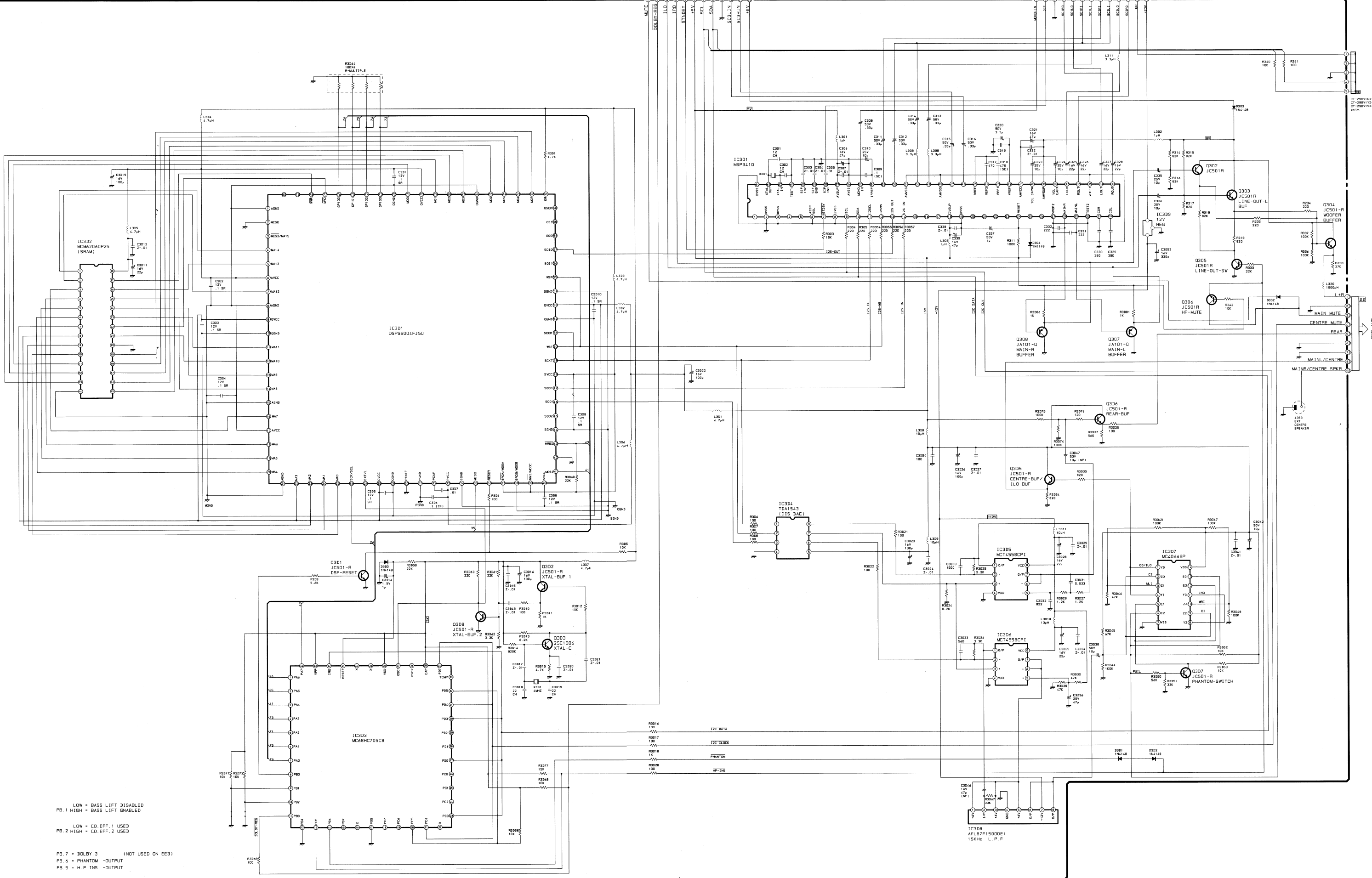


# Audio Amp Diagram

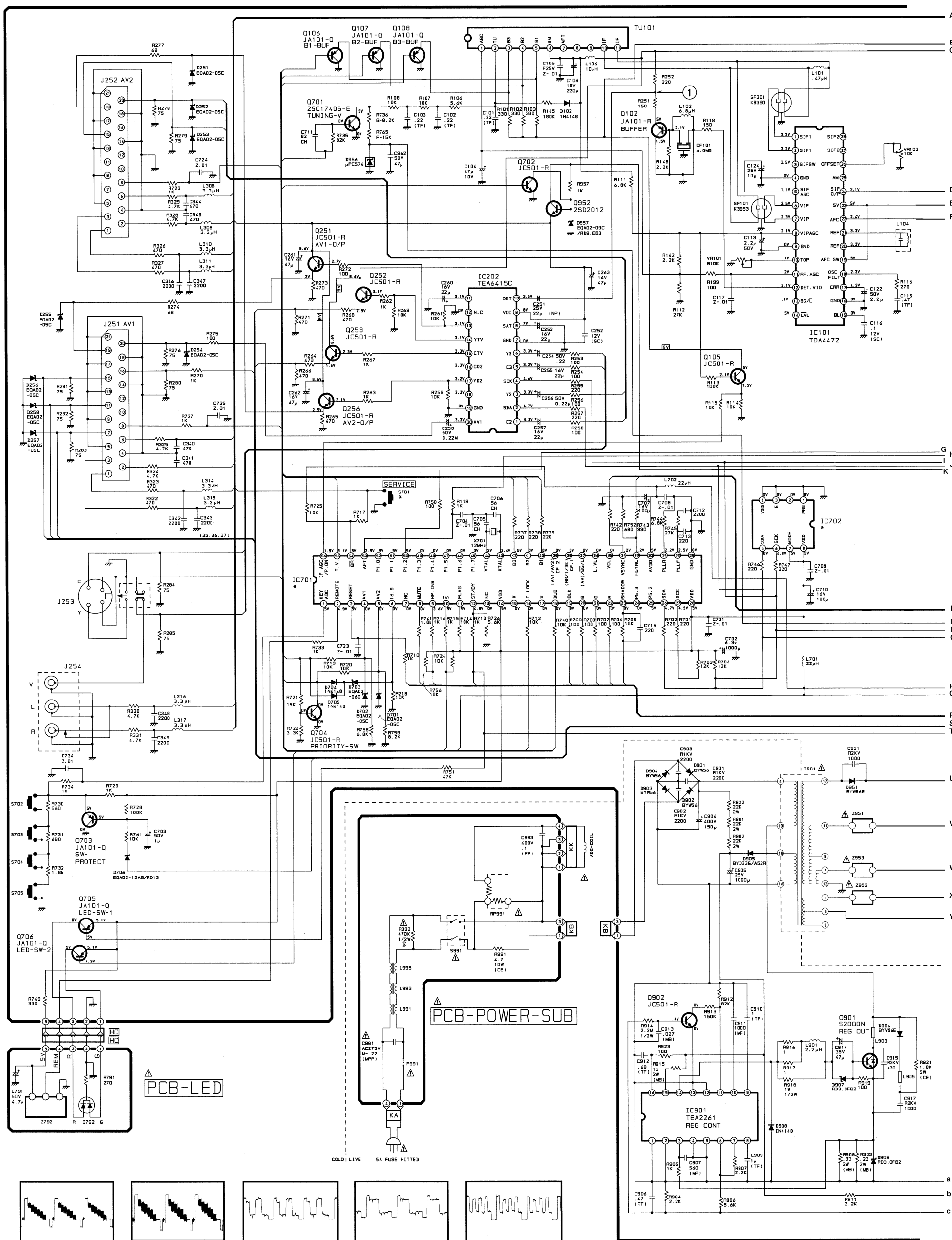


# Dolby PCB Diagram

PCB-DOLBY



## Continued at 1



**1** 2.0V p-p (H)    **2** 1.0V p-p (H)    **3** 1.5V p-p (H)    **4** 1.6V p-p (H)    **5** 1.7V p-p (H)

<b>6</b>	1.9V p-p (V)	<b>7</b>	2.0V p-p (V)	<b>8</b>	0.62V p-p (H)	<b>9</b>	0.35V p-p (V)	<b>10</b>	54V p-p (V)	<b>11</b>	0.68V p-p (H)	<b>12</b>	146V p-p (H)	<b>13</b>	0.86V p-p (H)
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