

6 Service Mode

6.1. How to enter into Service Mode

6.1.1. Purpose

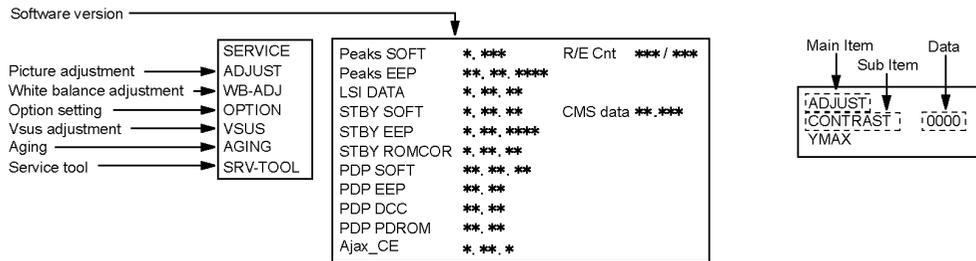
After exchange parts, check and adjust the contents of adjustment mode.

While pressing [VOLUME (-)] button of the main unit, press [INFO] button of the remote control three times within 2 seconds

Note:

Service Mode can not be entered when 3D signal input.

Input 2D signal to enter Service Mode.



6.1.2. Key command

- [1] button...Main items Selection in forward direction
- [2] button...Main items Selection in reverse direction
- [3] button...Sub items Selection in forward direction
- [4] button...Sub items Selection in reverse direction
- [VOL] button...Value of sub items change in forward direction (+), in reverse direction (-)

6.1.3. How to exit

Switch off the power with the [POWER] button on the main unit or the [POWER] button on the remote control.

6.1.4. Contents of adjustment mode

- Value is shown as a hexadecimal number.
- Preset value differs depending on models.
- After entering the adjustment mode, take note of the value in each item before starting adjustment.

Main item	Sub item	Sample Data	Remark
ADJUST	CONTRAST	000	
	COLOR	30	
	TINT	00	
	SUB-BRT	800	
WB-ADJ	R-CUT	80	
	G-CUT	80	
	B-CUT	80	
	R-DRV	FC	
	G-DRV	FF	
	B-DRV	8C	
	ALL-CUT	80	
	ALL-DRV	FF	
OPTION	Boot	ROM	Factory Preset
	STBY-SET	00	
	EMERGENCY	OFF	
	CLK MODE	00	
	CLOCK	000	
	EDID-CLK	HIGH	
	MIRROR	00 (See Option-Mirror)	
VSUS		LOW	See Vsus selection
AGING	ALL WHITE		Built-in test patterns can be displayed.
	ALL BLUE WITH WHITE OUTSIDE FRAME		
	ALL GREEN		
	ALL RED		
	LOW STEP WHITE		
	LOW STEP BLUE		
	LOW STEP GREEN		
	LOW STEP RED		
	WHITE DIAGONAL STRIPE		
	RED DIAGONAL STRIPE		
	GREEN DIAGONAL STRIPE		
	BLUE DIAGONAL STRIPE		
	A-ZONE & B-ZONE		
	1% WINDOW		
	COLOR BAR		
	9 POINTS BRIGHT MEASURE		
	2 DOT OUTSIDE FRAME		
	ALL BLUE		
	DOUBLE FIXED 1% WINDOW		
	VERTICAL LINE SCROLL		
ON/OFF OR WHITE			
R/G/B/W ROTATION			
HALF FIXED ALL WHITE			
ALL WHITE WITH COUNT DISPLAY			
SRV-TOOL	-		See Service tool mode

6.2. Option - Mirror

Picture can be reversed left and right or up and down.

00 : Default (Normal picture is displayed)

01 : Picture is reversed left and right.

02 : Picture is reversed up and down.

00



01



02



Hint : If the defective symptom (e.g. Vertical bar or Horizontal bar) is moved by selection of this mirror, the possible cause is in A-board.

6.3. Service tool mode

6.3.1. How to access

1. Select [SRV-TOOL] in Service Mode.
2. Press [OK] button on the remote control.

	SRV-TOOL		
Display of TD2Microcode version →	TD2Microcode:0200b104		
Display of Flash ROM maker code →	Flash ROM : AD-DA		
Display of SOS History →	PTCT : 00 . 00 . 00 . 00 . 00	Time 00000:40	Count 0000001

← POWER ON TIME/COUNT
Press [MUTE] button (3 sec)

6.3.2. Display of SOS History

SOS History (Number of LED blinking) indication.

From left side; Last SOS, before Last, three occurrence before, 2nd occurrence after shipment, 1st occurrence after shipment.

This indication except 2nd and 1st occurrence after shipment will be cleared by [Self-check indication and forced to factory shipment setting].

6.3.3. POWER ON TIME/COUNT

Note : To display TIME/COUNT menu, highlight position, then press MUTE for 3 sec.

Time : Cumulative power on time, indicated hour : minute by decimal

Count : Number of ON times by decimal

Note : This indication will not be cleared by either of the self-checks or any other command.

6.3.4. Exit

1. Disconnect the AC cord from wall outlet.

6.4. Hotel mode

1. Purpose

Restrict a function for hotels.

2. Access command to the Hotel mode setup menu

In order to display the Hotel mode setup menu:

While pressing [VOLUME (-)] button of the main unit, press [INPUT] button of the remote control three times within 2 seconds.

Then, the Hotel mode setup menu is displayed.

Hotel Mode

Mode	Off
Input	-
Channel	-
Volume	+ 25
Vol. Max	+ 100
OSD Ctrl	Off
FP Ctrl	Off
Pow Ctrl	Off

Select Change RETURN

3. To exit the Hotel mode setup menu

Disconnect AC power cord from wall outlet.

4. Explain the Hotel mode setup menu

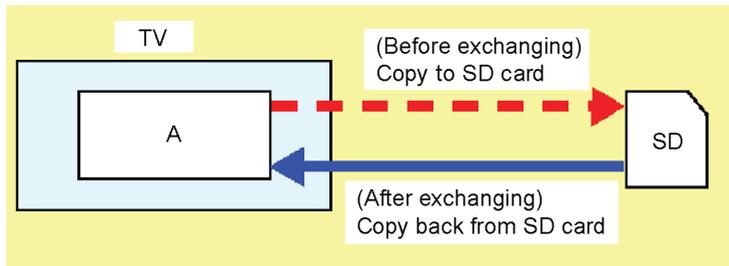
Item	Function
Mode	Select hotel mode On/Off
Input	Select input signal modes. Set the input, when each time power is switched on. Selection: -/RF/HDMI1/HDMI2/HDMI3/Component/Video • Off: give priority to a last memory.
Channel	Select channel when input signal is RF. Set the channel, each time power is switched on. Selection: Any channel number or [-]. [-] means the channel when turns off.
Volume	Adjust the volume when each time power is switched on. Range: 0 to 100
Vol. Max	Adjust maximum volume. Range: 0 to 100
OSD Ctrl	Restrict the OSD. Selection: Off/Pattern1 • Off: No restriction • Pattern1: restriction
FP Ctrl	Select front key conditions. Selection: Off/Pattern1/All • Off: altogether valid. • Pattern1: only input key is valid. • All: altogether invalid.
Pow Ctrl	Select POWER-On/Off condition when AC power cord is disconnected and then connected. Off: The same condition when AC power cord is disconnected. On: Forced power ON condition.

6.5. Data Copy by SD Card

6.5.1. Purpose

(a) Board replacement (Copy the data when exchanging A-board):

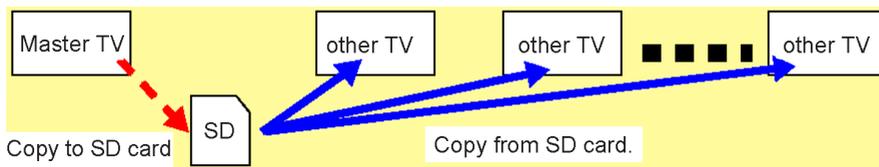
When exchanging A-board, the data in original A-board can be copied to SD card and then copy to new A-board.



Following data can be copied.
User setting data
(incl. Hotel mode setting data)
Channel scan data
Adjustment and factory preset data

(b) Hotel (Copy the data when installing a number of units in hotel or any facility):

When installing a number of units in hotel or any facility, the data in master TV can be copied to SD card and then copy to other TVs.



Following data can be copied.
User setting data
(incl. Hotel mode setting data)
Channel scan data

6.5.2. Preparation

Make pwd file as startup file for (a) or (b) in a empty SD card.

1. Insert a empty SD card to your PC.
2. Right-click a blank area in a SD card window, point to New, and then click text document. A new file is created by default (New Text Document.txt).
3. Right-click the new text document that you just created and select rename, and then change the name and extension of the file to the following file name for (a) or (b) and press ENTER.

File name:

- (a) For Board replacement : boardreplace.pwd
- (b) For Hotel : hotel.pwd

Note:

Please make only one file to prevent the operation error.

No any other file should not be in SD card.

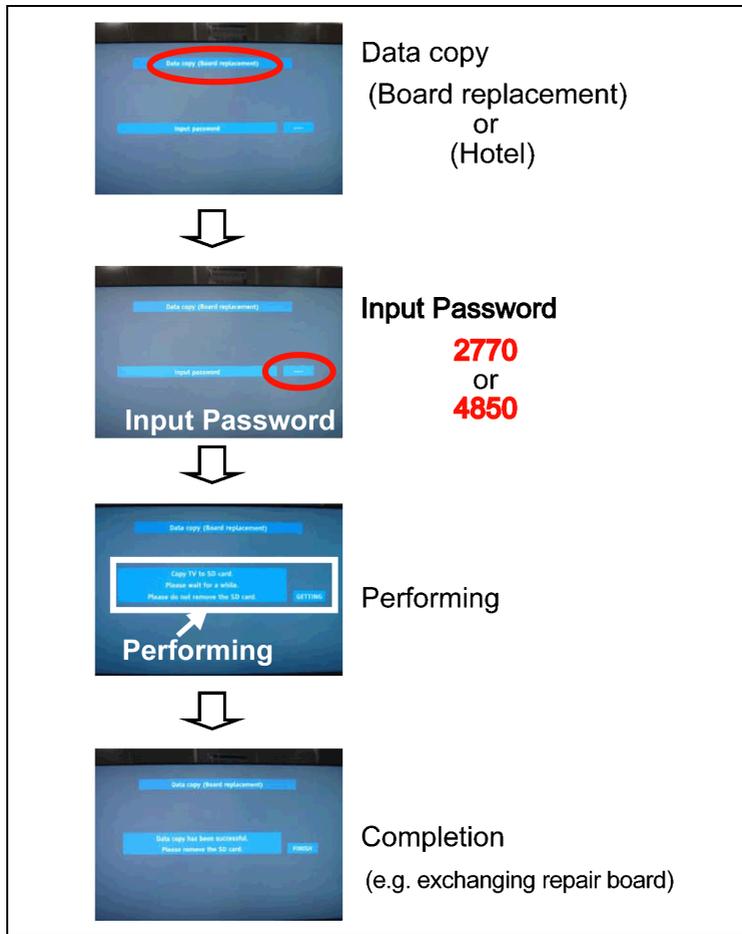
6.5.3. Data copy from TV set to SD Card

1. Turn on the TV set.
2. Insert SD card with a startup file (pwd file) to SD slot.
On-screen Display will be appeared according to the startup file automatically.
3. Input a following password for (a) or (b) by using remote control.
 - (a) For Board replacement : 2770
 - (b) For Hotel : 4850Data will be copied from TV set to SD card.
It takes around 2 to 6 minutes maximum for copying.
4. After the completion of copying to SD card, remove SD card from TV set.
5. Turn off the TV set.

Note:

Following new folder will be created in SD card for data from TV set.

- (a) For Board replacement : user_setup
- (b) For Hotel : hotel

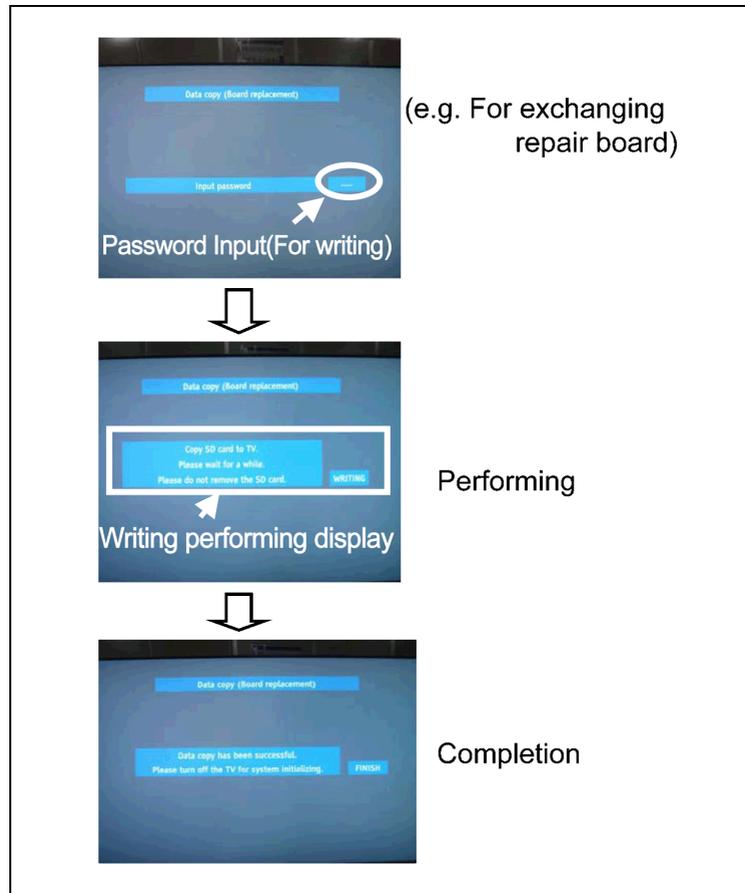


6.5.4. Data copy from SD Card to TV set

1. Turn on the TV set.
2. Insert SD card with Data to SD slot.
On-screen Display will be appeared according to the Data folder automatically.
3. Input a following password for (a) or (b) by using remote control.
(a) For Board replacement : 2771
(b) For Hotel : 4851
Data will be copied from SD card to TV set.
4. After the completion of copying to SD card, remove SD card from TV set.
(a) For Board replacement : Data will be deleted after copying (Limited one copy).
(b) For Hotel : Data will not be deleted and can be used for other TVs.
5. Turn off the TV set.

Note:

1. Depending on the failure of boards, function of Data copy for board replacement does not work.
2. This function can be effective among the same model numbers.



7 Troubleshooting Guide

Use the self-check function to test the unit.

1. Checking the IIC bus lines
2. Power LED Blinking timing

7.1. Check of the IIC bus lines

7.1.1. How to access

7.1.1.1. Self-check indication only:

Produce TV reception screen, and while pressing [VOLUME (-)] button on the main unit, press [OK] button on the remote control for more than 3 seconds.

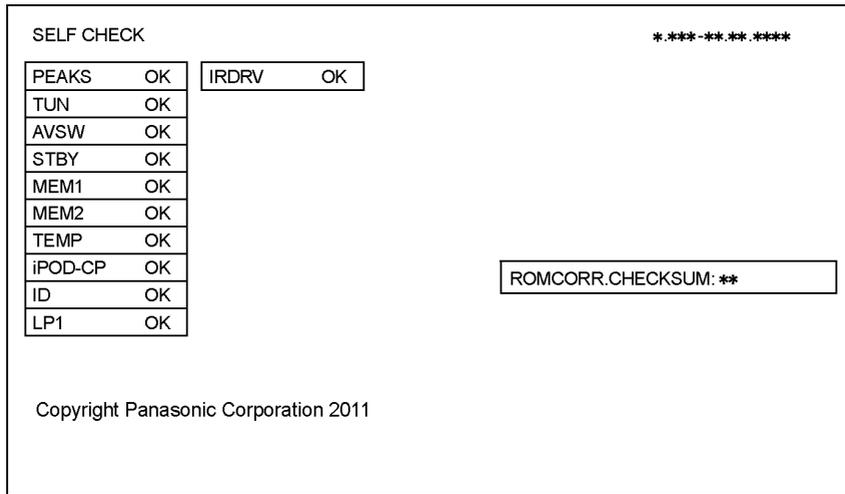
7.1.1.2. Self-check indication and forced to factory shipment setting:

Produce TV reception screen, and while pressing [VOLUME (-)] button on the main unit, press [MENU] button on the remote control for more than 3 seconds.

7.1.2. Exit

Disconnect the AC cord from wall outlet.

7.1.3. Screen display



7.1.4. Check Point

Confirm the following parts if NG was displayed.

DISPLAY	Check Ref. No.	Description	Check P.C.B.
PEAKS	IC8000	PEAKS-LDA3	A-Board
TUN	TU4801	TUNER	A-Board
AVSW	IC3001	AUDIO/VIDEO SW	A-Board
STBY	IC8000	PEAKS-LDA3 (STM)	A-Board
MEM1	IC8902	PEAKS EEPROM	A-Board
MEM2	IC8901	STM EEPROM	A-Board
TEMP	IC3753	TEMP SENSOR	A-Board
iPOD-CP	IC3900	iPOD-CP	A-Board
ID			A-Board
LP1	IC9300	LP1	A-Board
IRDRV	IC5901	IR LED DRIVER	A-Board

7.2. Power LED Blinking timing chart

1. Subject

Information of LED Flashing timing chart.

2. Contents

When an abnormality has occurred the unit, the protection circuit operates and reset to the stand by mode. At this time, the defective block can be identified by the number of blinks of the Power LED on the front panel of the unit.

Blinking Times	Contents	Check point
1	Panel information SOS LP1 Start SOS	-
3	P+ 3.3V SOS	A-Board
4	Power SOS	P-Board
5	P+ 5V SOS	A-Board
6	Driver SOS1 (SN Energy recovery circuit) (A-SN FPC DET)	SN-Board A-SN FPC
7	Driver SOS2 (SN Connector DET) (SN Scan and Logic IC)	SN-Board
8	Driver SOS3 (SS FPC DET) (SS Energy recovery circuit)	SS-Board SS FPC
9	Discharge Control SOS	A-Board
10	Sub 5V SOS Sub 3.3V SOS Tuner power SOS	A-Board SN-Board SS-Board P-Board
12	Sound SOS	A-Board Speaker
13	Emergency SOS	A-Board
14	IR LED SOS	A-Board

9 Measurements and Adjustments

9.1. Adjustment

9.1.1. Vsus selection

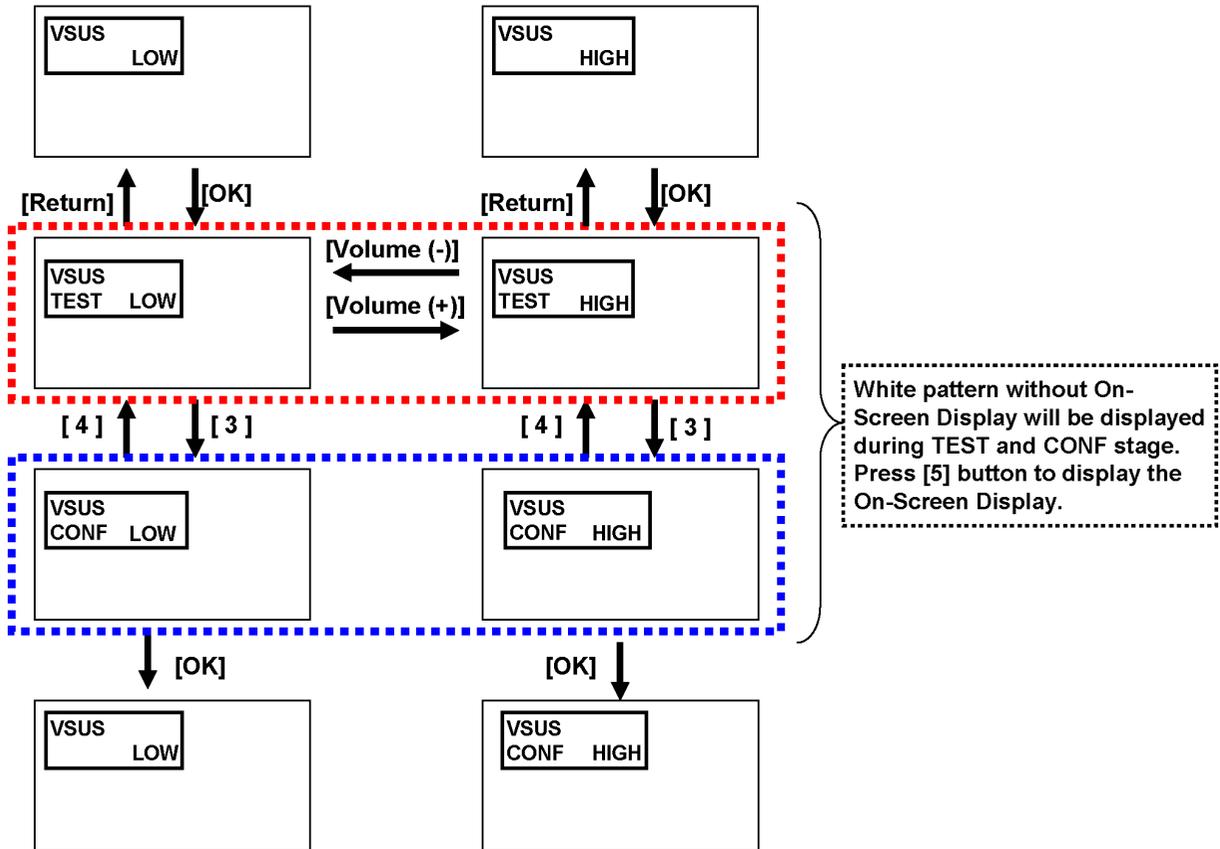
Caution:

When Plasma panel or A-board is replaced, Vsus should be set to LOW or HIGH.

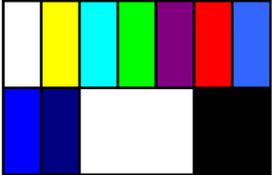
Procedure

1. Go into main item [VSUS] in Service Mode. LOW or HIGH will be displayed.
2. Press [OK] button to go to TEST stage.
White pattern without On-Screen Display will be displayed during TEST and CONF stage. Press [5] button to display the On-Screen Display.
3. Press [VOL (-)] button to set to LOW.
4. In LOW setting
 - a. If no several dead pixel is visible remarkably in white pattern, press [3] button to go to CONF stage.
 - b. If the several dead pixels are visible remarkably in white pattern, Set to HIGH by press [VOL (+)] button. Press [3] button to go to CONF stage if the symptom is improved.
5. Press [OK] button in CONF stage to store LOW or HIGH.
6. Exit Service Mode by pressing [Power] button.

Vsus selection in Service mode



9.1.2. RF video sub contrast adjustment

Instrument Name	Remarks									
1. REMOTE TRANSMITTER 2. RF analog signal (Sprit color bar. The pattern for adjustment must contain 100% white part.)										
Adjustment or Inspection Procedure	Remarks									
1. Receive the sprit color bar with RF analog signal. (ASPECT FULL, Picture menu: Vivid) 2. Enter Service mode menu, and select ADJUST -- CONTRAST. Pushing the remote controller [OK] key for about 3 seconds, GAIN is suited to the adjustment value automatically. <div style="text-align: center; margin: 10px 0;">  <p data-bbox="615 464 961 495">(The Sprit Color Bar Pattern)</p> </div> <p data-bbox="228 624 537 654">EEPROM address (Peaks)</p> <table border="1" data-bbox="228 654 732 748"> <thead> <tr> <th colspan="2"></th> <th>adr</th> </tr> </thead> <tbody> <tr> <td>sub_contrast</td> <td>RF_NTSC</td> <td>0150</td> </tr> <tr> <td></td> <td></td> <td>0151</td> </tr> </tbody> </table>			adr	sub_contrast	RF_NTSC	0150			0151	
		adr								
sub_contrast	RF_NTSC	0150								
		0151								

9.1.3. White balance adjustment

Name of measuring instrument	Remarks
<p>Color analyzer (Minolta CA-100 or equivalent)</p> <p>Note: The CA-100 which was calibrated to less than +0.001 with CS-1000.</p>	<p>Note: When white balance adjustment is executed, The TV set should be display some video signal, or select VIDEO input (with no signal) or select component input (with no signal). WB adjustment function will not be worked when digital TV (with no signal) or HDMI input (with no signal) is selected.</p>
Steps	Remarks
<ul style="list-style-type: none"> • Make sure the front panel to be used on the final set is fitted. • Make sure a color signal is not being shown before adjustment. • Put the color analyzer where there is little color variation. <ol style="list-style-type: none"> 1. Set to Service mode, WB-ADJ. 2. Select [VIVID] for picture menu. 3. Select [Cool] for color temperature. 4. Push [5] key of remote controller to display window pattern. 5. Confirm the brightness. The following is the confirmation value. TC-P42ST30 82cd/m2 or more 6. Set [R-CUT] [G-CUT] [B-CUT] the values written in table 1. 7. Attach the sensor of color analyzer to the center of window pattern. 8. Fix G drive at [C0] and adjust [B-DRV] and [R-DRV] so x, y value of color analyzer become the [Color temperature High] in table 2. 9. Increase RGB together so the maximum drive value in RGB becomes [FF]. That is, set [ALL DRIVE] to [FF]. Execute adjustment again. When that, the maximum value of R/G/B DRV should be [FF], and either R/G/B DRV should be [FF]. 10. The average of the adjusted values in color temperature Cool, Mid, and Warm is shown in Table 4. The setting value for color temperature Mid will be calculated by multiplying the adjusted value of color temperature Cool to the ratio of the value of Cool and Mid in each GBR value in Table 4. Write that values to the data area of color temperature Mid in EEPROM. 11. The setting value for color temperature Warm will be calculated by multiplying the adjusted value of color temperature Cool to the ratio of the value of Cool and Warm in each GBR value in Table 4. Write that values to the data area of color temperature Warm in EEPROM. 	<p>Note: Adjusted value must be written to both SD data area and HD data area of the EEPROM.</p>

Table 1: R-CUT,G-CUT,B-CUT setting data

Color temperature	R-CUT	G-CUT	B-CUT
High(Cool)	80	80	80
Mid	80	80	80
Low(Warm)	80	80	80

Table 2: W/B adjustment values

Color temperature	x	y
High(Cool)	0.276	0.280
Mid	0.288	0.303
Low(Warm)	0.313	0.329

Table 3: EEPROM data addresses

SD Color temperature High	R-CUTOFF G-CUTOFF B-CUTOFF R-DRIVE G-DRIVE B-DRIVE	017C 017D 017E 017F 0180 0181
SD Color temperature Mid	R-CUTOFF G-CUTOFF B-CUTOFF R-DRIVE G-DRIVE B-DRIVE	0182 0183 0184 0185 0186 0187
SD Color temperature Low	R-CUTOFF G-CUTOFF B-CUTOFF R-DRIVE G-DRIVE B-DRIVE	0188 0189 018A 018B 018C 018D
HD Color temperature High	R-CUTOFF G-CUTOFF B-CUTOFF R-DRIVE G-DRIVE B-DRIVE	018E 018F 0190 0191 0192 0193
HD Color temperature Mid	R-CUTOFF G-CUTOFF B-CUTOFF R-DRIVE G-DRIVE B-DRIVE	0194 0195 0196 0197 0198 0199
HD Color temperature Low	R-CUTOFF G-CUTOFF B-CUTOFF R-DRIVE G-DRIVE B-DRIVE	019A 019B 019C 019D 019E 019F

Table 4: EEPROM data addresses

SD Color temperature High DIFF	R-CUTOFF G-CUTOFF B-CUTOFF R-DRIVE G-DRIVE B-DRIVE	01A0 01A1 01A2 01A3 01A4 01A5
SD Color temperature Mid DIFF	R-CUTOFF G-CUTOFF B-CUTOFF R-DRIVE G-DRIVE B-DRIVE	01A6 01A7 01A8 01A9 01AA 01AB
SD Color temperature Low DIFF	R-CUTOFF G-CUTOFF B-CUTOFF R-DRIVE G-DRIVE B-DRIVE	01AC 01AD 01AE 01AF 01B0 01B1
HD Color temperature High DIFF	R-CUTOFF G-CUTOFF B-CUTOFF R-DRIVE G-DRIVE B-DRIVE	01B2 01B3 01B4 01B5 01B6 01B7
HD Color temperature Mid DIFF	R-CUTOFF G-CUTOFF B-CUTOFF R-DRIVE G-DRIVE B-DRIVE	01B8 01B9 01BA 01BB 01BC 01BD
HD Color temperature Low DIFF	R-CUTOFF G-CUTOFF B-CUTOFF R-DRIVE G-DRIVE B-DRIVE	01BE 01BF 01C0 01C1 01C2 01C3