
3. Alignment & Adjustment

3-1 Service Instruction

■ Before Performing After Sales Services

1. Check if the measurement and test equipment is working properly.
2. Secure sufficient work space for disassembling the product.
3. Prepare a soft pad for disassembling the product.

3-2 How to Access Service Mode

1. General Remote

To Enter : Power Off → INFO → MENU → MUTE → Power On
(Interval between key strokes : less than 3 sec)

To Exit : Power Off → ON

2. Factory Remote

To Enter : Power On → INFO → FACTORY Key (Interval between key strokes : less than 3 sec)

To Exit : Power Off → On

Press the Factory key twice with a key stroke interval of more than 1 second (Pressing once enters Aging Mode)

3. Settings when entering Factory mode

- Sharp Screen (Dynamic), Color Tone (Cool1), Factory (Dynamic CE Off)

4. Adjustment Procedures

- Channel ▲ ▼ Key : Select an item.
- Volume ◀ ▶ Key : Adjust the value up or down.
- MENU Key : Save the changes to the EEPROM and return to the higher-level mode.
- Using the Numeric (0~9) keys, you can select a channel.
- Using the SOURCE key, you can switch AV modes.

5. Initial SERVICE MODE DISPLAY State

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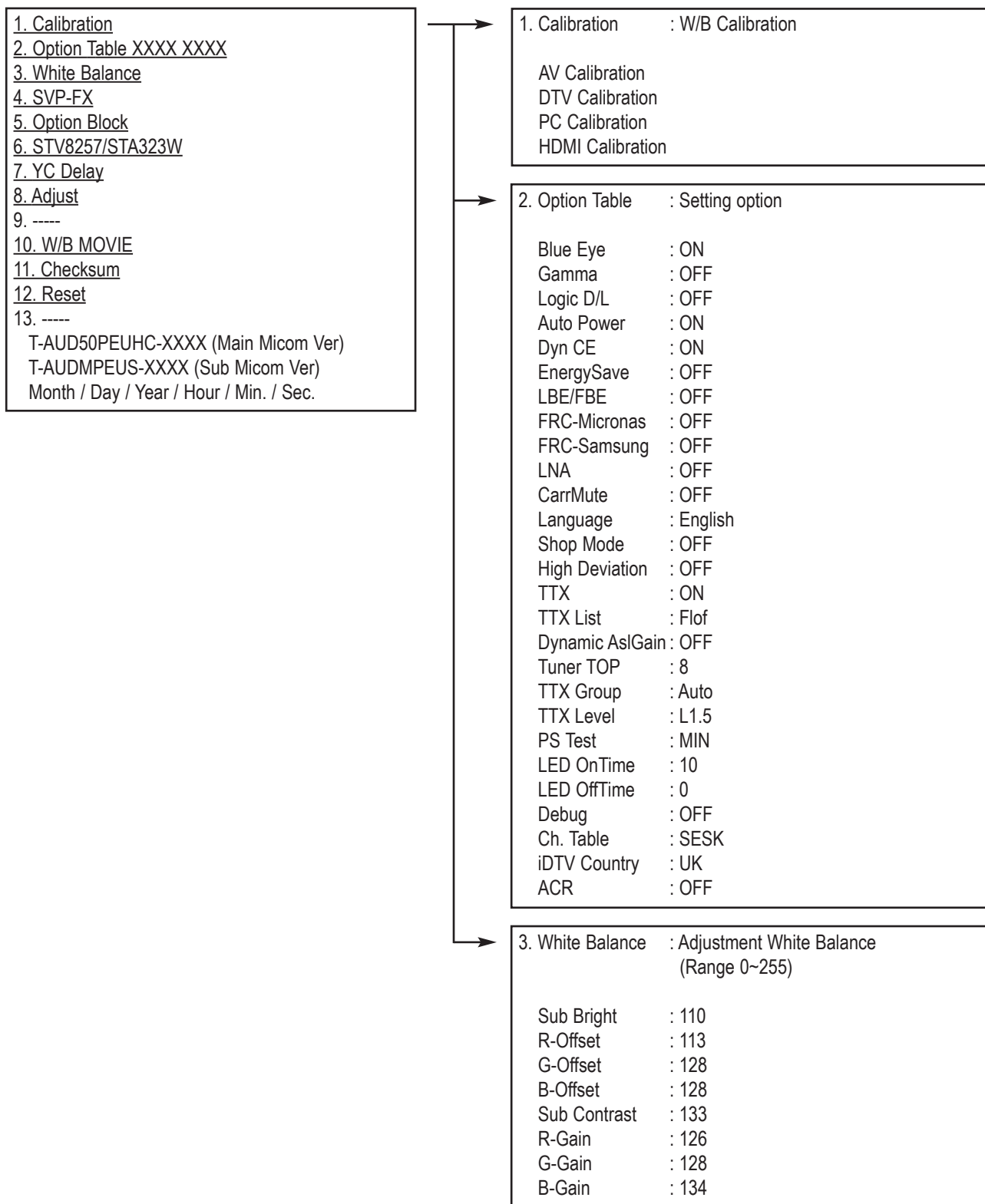
1. Calibration
2. Option Table XXXX XXXX
3. White Balance
4. SVP-FX
5. Option Block
6. STV8257/STA323W
7. YC Delay
8. Adjust
9. -----
10. W/B MOVIE
11. Checksum
12. Reset
13. -----
    T-AUD50PEUHC-XXXX (Main Micom Ver)
    T-AUDMPEUS-XXXX (Sub Micom Ver)
    Month / Day / Year / Hour / Min. / Sec.
```

※ The version of the firmware displayed at the bottom of the screen may differ and the firmware is subject to change for the improvement of product functions.

※ If you have adjusted the settings in Service Mode, you have to reset the product.

3-3 Factory Data

★ The underlined are items applied during the service adjustment. None of the others should be adjusted.



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4. SVP-PX	: SVP-PX Correct Register				
ComB Filter	: Y-Filter - 80H				
Sharpness	:	RF/AV	COMP	PC	HDMI
H2Gain		0FH	10H	10H	08H
H4Gain		10H	04H	04H	00H
V2Gain		10H	10H	10H	08H
V4Gain		10H	04H	04H	04H
Sr2Gain		00H	00H	00H	00H
Sr4Gain		00H	00H	00H	00H
SI2Gain		00H	00H	00H	00H
SI4Gain		00H	00H	00H	00H
Peakth1		00H	00H	00H	00H
Peakth2		40H	80H	80H	80H
Peakth3		00H	00H	00H	00H
NR	:	YNROFF	80H		
		CNROFF	80H		
		YNRON	80H		
		CNRON	80H		
RGB Calibration	:	RF/AV	COMP	PC	HDMI
R-Offset		4EH	4CH	49H	48H
G-Offset		4EH	4CH	49H	48H
B-Offset		4EH	4CH	49H	48H
R-Gain		7CH	7BH	78H	9DH
G-Gain		7CH	7BH	80H	9DH
B-Gain		7CH	7BH	7AH	9DH
ADC Calibration	:	RF/AV	COMP	PC	HDMI
TCD3 Contrast		82H	78H	78H	78H
TCD3 Brightness		21H	20H	20H	20H
TCD3 CR		80H	80H	80H	80H
TCD3 CB		80H	80H	80H	80H
TCD3 Delay		00H	00H	00H	00H
Analog Y Offset		40H	40H	42H	40H
Analog PB Offset		80H	80H	38H	80H
Analog PR Offset		80H	80H	39H	80H
Analog Y Gain		D6H	DAH	D0H	D6H
Analog PB Gain		FEH	9AH	80H	FEH
Analog PR Gain		FEH	9AH	80H	FEH
Black Level		00H	00H	00H	00H
SVP Brightness		00H	00H	00H	00H
Calibration Target	:	low	high	delta	
AV ADC		10H	F8H	04H	
COMP ADC		10H	F8H	04H	
PC ADC		10H	F8H	04H	
ALL RGB		04H	F8H	10H	

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5. Option Block

FRC-Micronas		
FRC-Samsung	: Patt Sel	00H
	B Ratio	00H
	W Ratio	50H
	Pdf Min	55H
	Urd Th	33H
	Max Gain	01H
	Test Mcc	80H
	Oclk Phase	70H
	Cep Bypass	64H
	Bws Bypass	00H
	Mcc Bypass	80H
	Dnie Bypass	4FH
	Full Bypass	54H
	Ramp Speed	3EH
	Nolinear On	42H
	OccModeOn	40H
	Text En	40H
	Rep Mode	3DH
	PC C Coeff	45H
	PC B Coeff	00H
	Dout Mode	00H

LBE/FBE

6. STV8257/STA323W : Sound IC Correct Register

Ch1 Volume	: 55H
Ch2 Volume	: 55H
AGC Gain	: 07H
AM-Prescale	: 00H
ZWT TH	: 0AH
AV Delay	: 55H
Comp Delay	: 32H
HDMI Delay	: 32H
PC Delay	: 32H
L1 Att/Rel Th	: EDH

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7. YC Delay

PAL B/G	: 99H
PAK D/K	: 88H
PAL I	: 88H
SECAM B/G	: 88H
SECAM D/K	: 77H
SECAM L/L'	: 66H
NTSC 3.58	: 95H
NTSC 4.43	: CCH
AV PAL	: AAH
AV SECAM	: 55H
AV NT3.58	: 98H
AV NT4.43	: CCH
AV PAL60	: 77H

8. Adjust

V Mute Time	: 10	
Melody Volume	: 9	
Ana_Dimm_Max	: FEH	
TTX Contrast	: 50	
TTX Brightness	: 50	
TTX Color	: 50	
Dynamic Contrast	: 100	
Dynamic Sharpness	: 60	
Standard Contrast	: 90	
Standard Brightness	: 80	
Standard Color	: 70	
Standard Sharpness	: 70	
Movie Contrast	: 60	
Movie Brightness	: 50	
Movie Color	: 50	
Movie Sharpness	: 40	
LNA PLUS	: RFDB-1 Level	2
	RFDB-2 Level	5
	RFDB-3 Level	9
	RFDB-4 Level	24
Hotel Option	: Hotel Mode	OFF
	PWR On CH	1
	PWR On Vol.	10
	Max Volume	100
	L.Key Lock	OFF
	PWR On Src	RF

9. -----

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10. W/B MOVIE

	RF/AV	COMP	PC	HDMI
WB Movie	OFF	OFF	OFF	OFF
Color Mode	Movie	Movie	Movie	Movie
Color Tone	Warm2	Warm2	Warm2	Warm2
W1 R Gain	131	131	130	132
W1 B Gain	118	117	119	118
W1 R Offset	131	129	138	128
W1 B Offset	127	131	115	129
W2 R Gain	133	133	134	134
W2 B Gain	104	109	115	110
W2 R Offset	127	128	141	128
W2 B Offset	132	120	113	119
Movie Contrast	70	70	70	70
Movie Brightness	50	50	50	50
Movie Color	45	45	45	45
Movie Sharpness	25	25	25	25

11. Checksum

12. Reset

13. -----

3-4 Service Adjustment

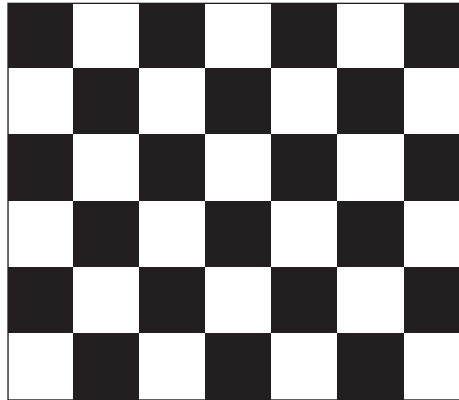
3-4-1 White Balance - Calibration

If picture color is wrong, do calibration first.

Execute calibration in Factory Mode

1. Source : VIDEO
2. Setting Mode : PAL Video (MODE : #2)
3. Pattern : Pattern #24 (Chess Pattern)
4. Use Equipment : K-7256 or Equipment of equality level
5. Work order
 - 1) Enter by Factory Mode select "1.CALIBRATION".
 - 2) Select "AV CALIBRATION" again in CALIBRAION MENU.
 - 3) After Completing Calibration, come out "Av success". OSD on the screen (bottom-side) for about 3 seconds.

Source AV : PAL composite, Component : 1280*720/60Hz
PC : 1024*768/60Hz



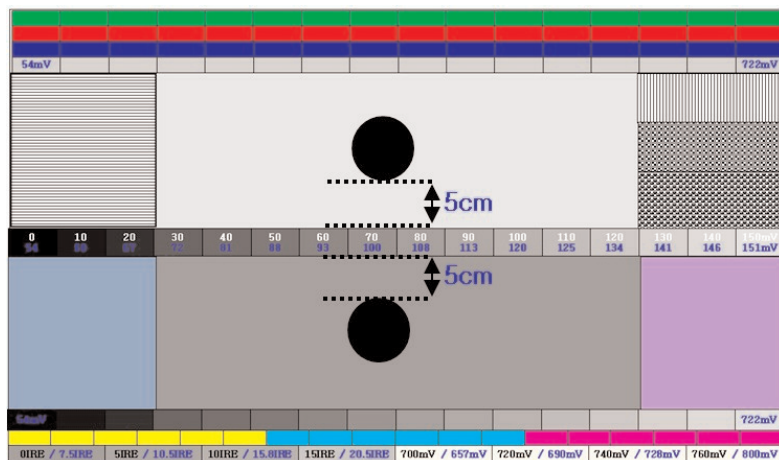
(Chess Pattern)

3-4-2 White Balance - Adjustment

If picture color is wrong, check White Balance condition.

Equipment : CA210, Patten : Toshiba
Adjust W/B in Factory Mode

Sub brightness and R/G/B Offset controls low light region
Sub contrast and R/G/B Gain controls high light region
Source AV : PAL composite, Component : 1280*720/60Hz,
HDMI[DVI] : 1280*720/60Hz



(SAMSUNG WHITE BALANCE Adjustment PATTERN with FPD)

[Test Pattern : MSPG-945 Series Pattern #16]

* Color temperature
1500K +/-500, -6 ~-20 MPCD

* Color coordinate
H/L : 270/280 +/- 2
L/L : 270/280 +/- 3, 2.1 Ft +/-0.05 Ft

3-4-3 Conditions for Measurement

- On the basis of toshiba ABL pattern : High Light level (57 IRE)
 - INPUT SIGNAL GENERATOR : MSPG-925LTH
 - * Mode No 2 : 744X484@60 Hz
 - No 6 : 1280X720@60 Hz
 - No 21 : 1024X768@60 Hz
 - * Pattern No 36 : 16 Color Pattern
 - No 16 : Toshiba ABL Pattern
- Optical measuring device : CA210 (FL)
 - Please use the MSPG-925 LTH generator for model PS-42E7H / PS-42E7HD / PS-42C7H.

3-4-4 Method of Adjustment

1. Adjust the white balance of AV, Component and DVI Modes.

(AV → Component)

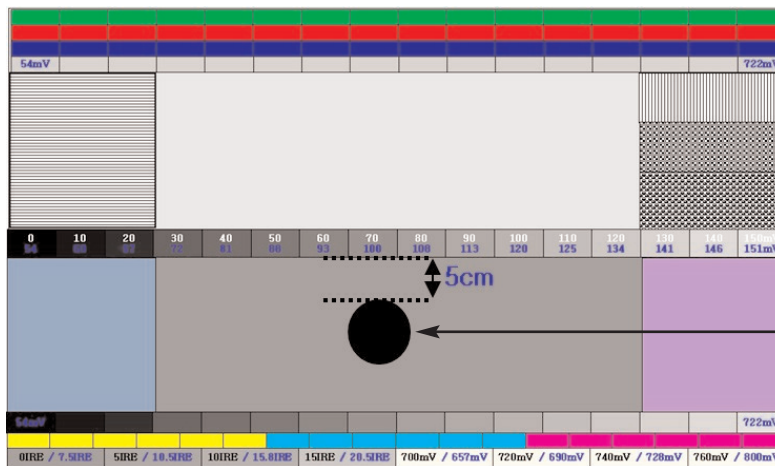
a) Set the input to the mode in which the adjustment will be made (RF → DTV → PC → DVI).

- * Input signal - VIDEO Mode : Model #2 (744*484 Mode), Pattern #16
- DTV, DVI Mode : Model #6 (1280*720 Mode), Pattern #16
- HDMI Mode : Model #6 (1280*720 Mode), Pattern #16

b) Enter factory color control, confirm the data.

c) Adjust the low light. (Refer to table 1, 2 in adjustment position by mode)

- Adjust sub - Brightness to set the 'Y' value.
- Adjust red offset ('x') and blue offset ('y') to the color coordinates.

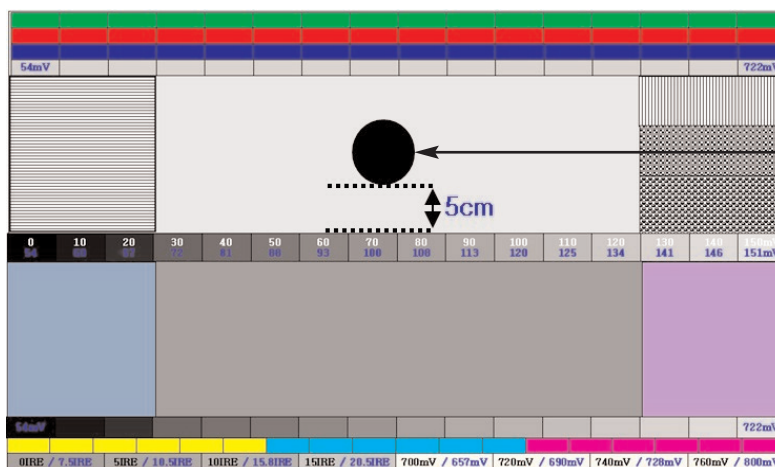


(SAMSUNG WHITE BALANCE Adjustment PATTERN with FPD)

* Do not adjust green offset data.

d) Adjust the high light. (Refer to table 1, 2 in adjustment position by mode)

- Adjust red gain ('x') and blue gain ('y') to the color coordinates.



(SAMSUNG WHITE BALANCE Adjustment PATTERN with FPD)

* Do not adjust the green gain and sub-contrast (Y) data.

3-5 Software Upgrade

3-5-1 How to Update Flash ROM

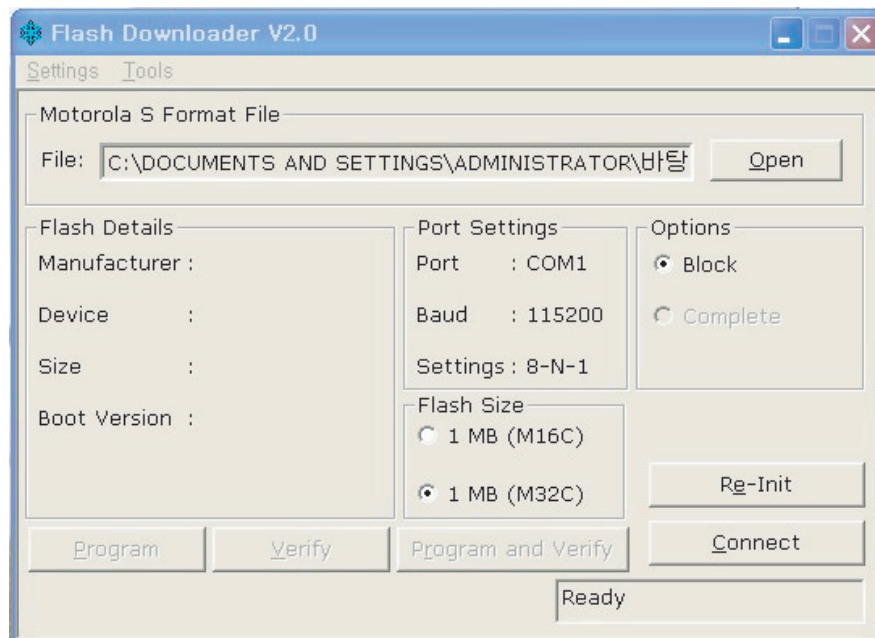
1. Install the Flash Downloader

Connect Set (Service Jack) and Jig Cable to execute Program Update.



2. Flash Downloader program update

- Before Turning on the set, Click "connect" which is under of OSD Screen.
- Turn on the Set.



3-6 Replacements & Calibration

※ The ASSY code can be changed, see "5 Chapter. Electrical Part List."

* Check items listed after changing each

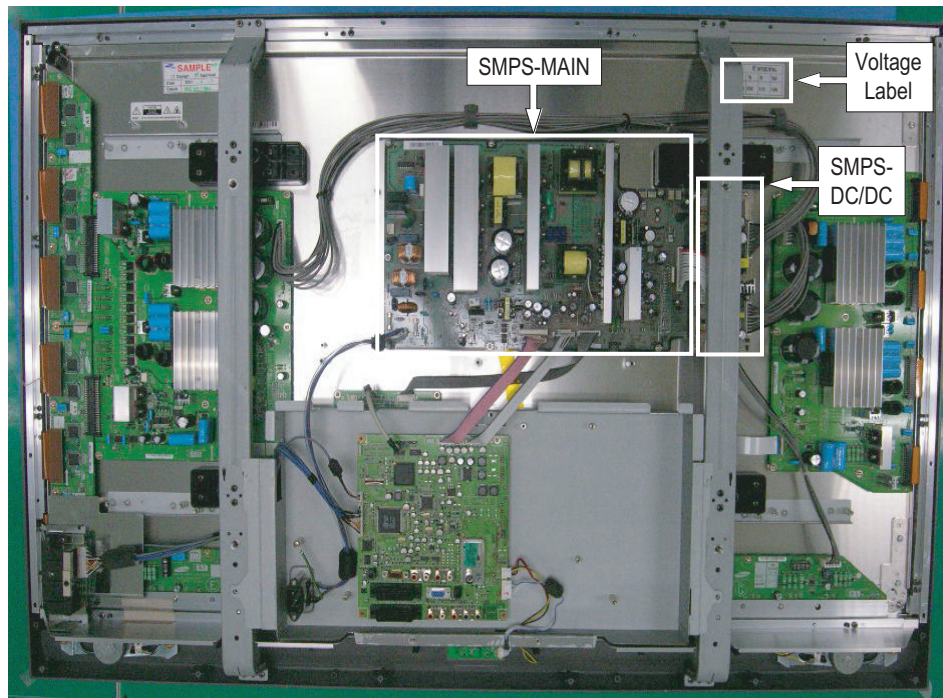
Replaced Items	Code No.	Check Items
ASSY PCB MISC-MAIN	BN94-00957A	1) Auto Program 2) Let the user go through subscription process after contacting user's cable service provider.
ASSY PCB P-SMPS(MAIN)	BN96-03051A	Vs, Va voltage check and adjust
ASSY PCB P-SMPS(DC DC)	BN96-01856A	Output voltage check and adjust
ASSY PDP P-LOGIC BOARD	BN96-03366A	Not adjustment
ASSY PDP P-X MAIN BOARD	BN96-03359A	
ASSY PDP P-Y MAIN BOARD	BN96-03360A	
ASSY PDP P-Y UPPER SCAN BOARD	BN96-03361A	
ASSY PDP P-Y LOWER SCAN BOARD	BN96-03362A	
ASSY PDP P-ADDRESS E BUFF BOARD	BN96-03363A	
ASSY PDP P-ADDRESS F BUFF BOARD	BN96-03364A	
ASSY PDP P-ADDRESS G BUFF BOARD	BN96-03365A	

※ When replacing the SMPS or PDP panel, you have to check the voltage printed on the panel sticker and adjust it.

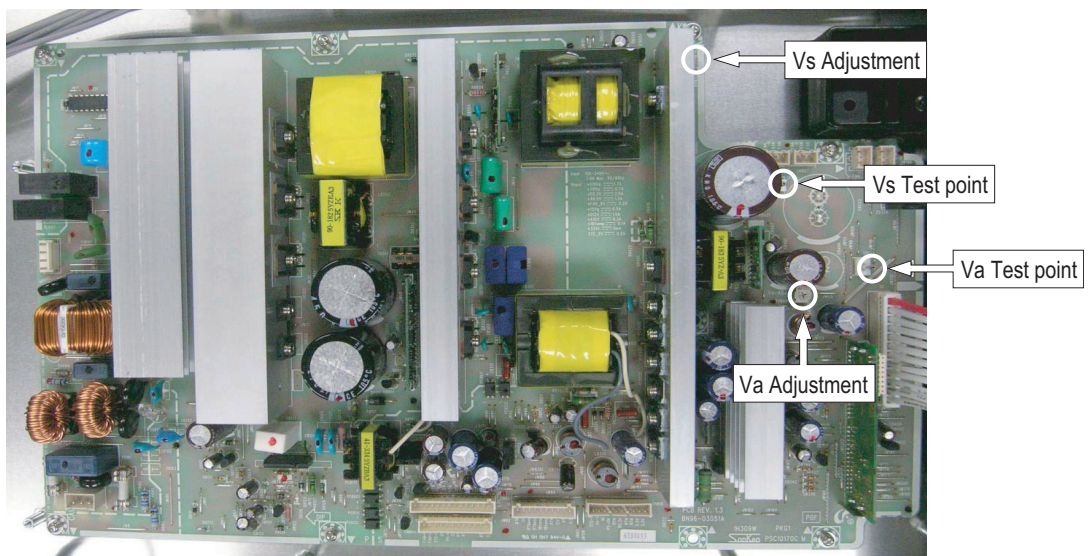
3-6-1 Voltage Adjustment

1. After replacing the SMPS or PDP panel, you must adjust the voltage referring to the voltage label printed on the panel.
(If you do not adjust the voltage, an abnormal discharge symptom may appear.)

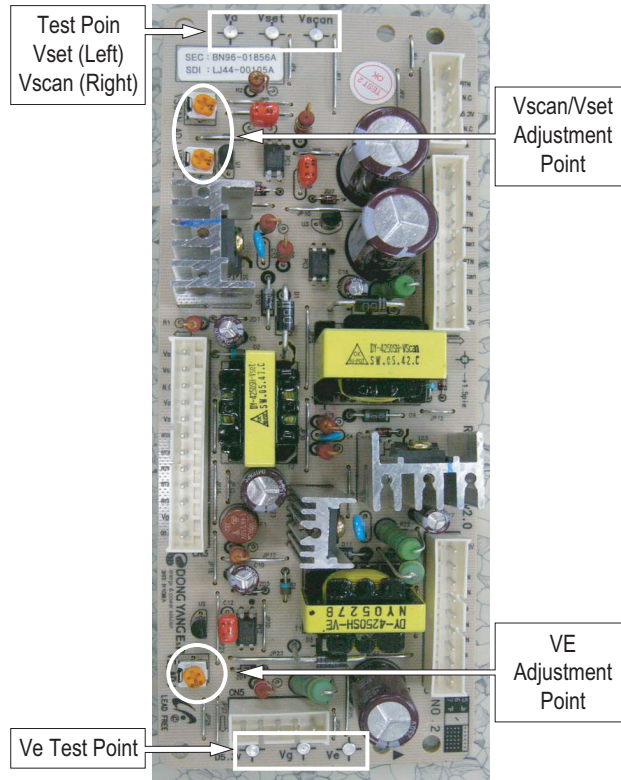
	Value	Board Adjustment
Vs	200	SMPS-MAIN
Va	65	
Vset	190	SMPS-DC/DC
Ve	115	
Vscan	-190	



2. A point of adjusting SMPS-MAIN voltage.



3. A point of adjusting SMPS-DC/DC.



* Use base chassis of PDP panel as GND point.