4. Troubleshooting

4-1 Troubleshooting

4-1-1 First Checklist for Troubleshooting

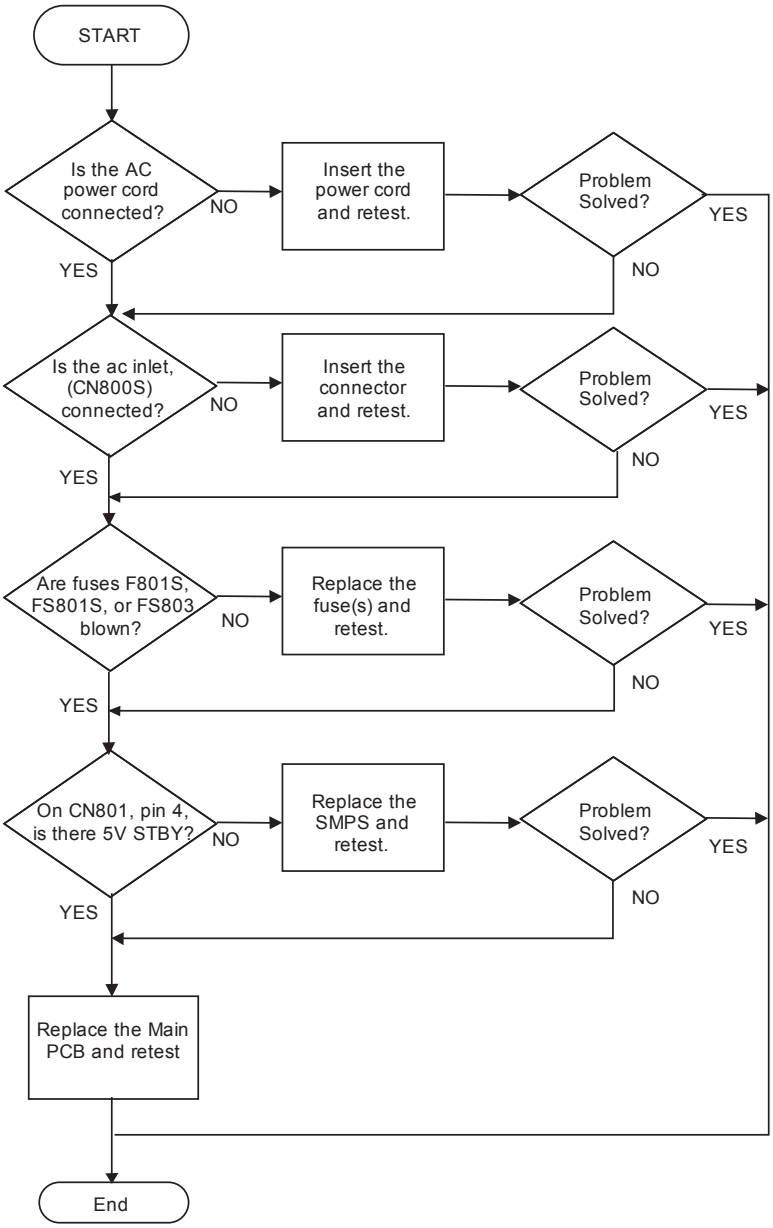
1. Check the various cable connections first.
   - Check to see if there is a burnt or damaged cable.
   - Check to see if there is a disconnected or loose cable connection.
   - Check to see if the cables are connected according to the connection diagram.

2. Check the power input to the Main Board.

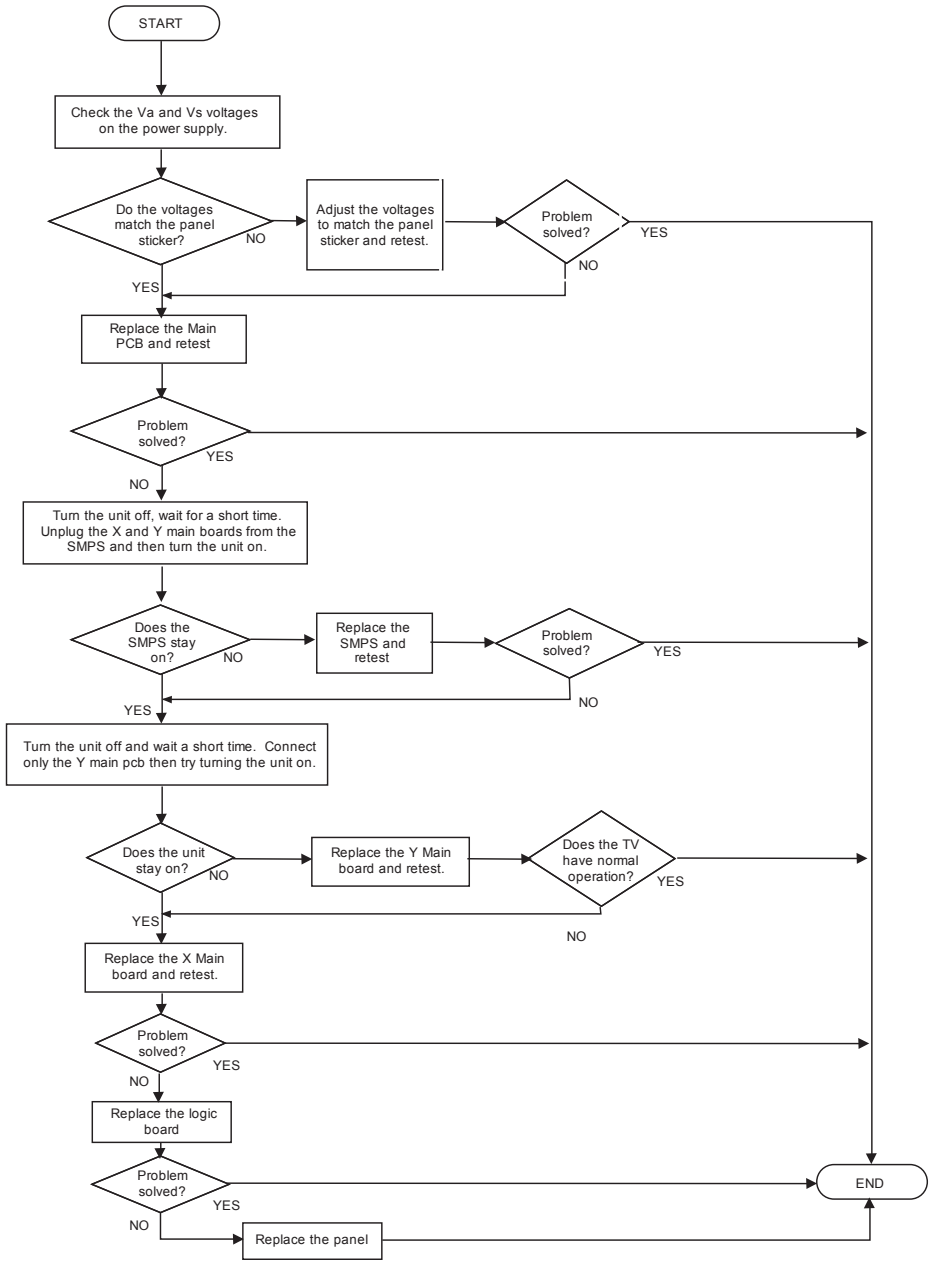
3. Check the following voltages;
   - SMPS to the Main board
   - SMPS to the X Main board
   - SMPS to the Y Main board
   - SMPS to the Logic board.

4-1-2 Checkpoints by Error Mode

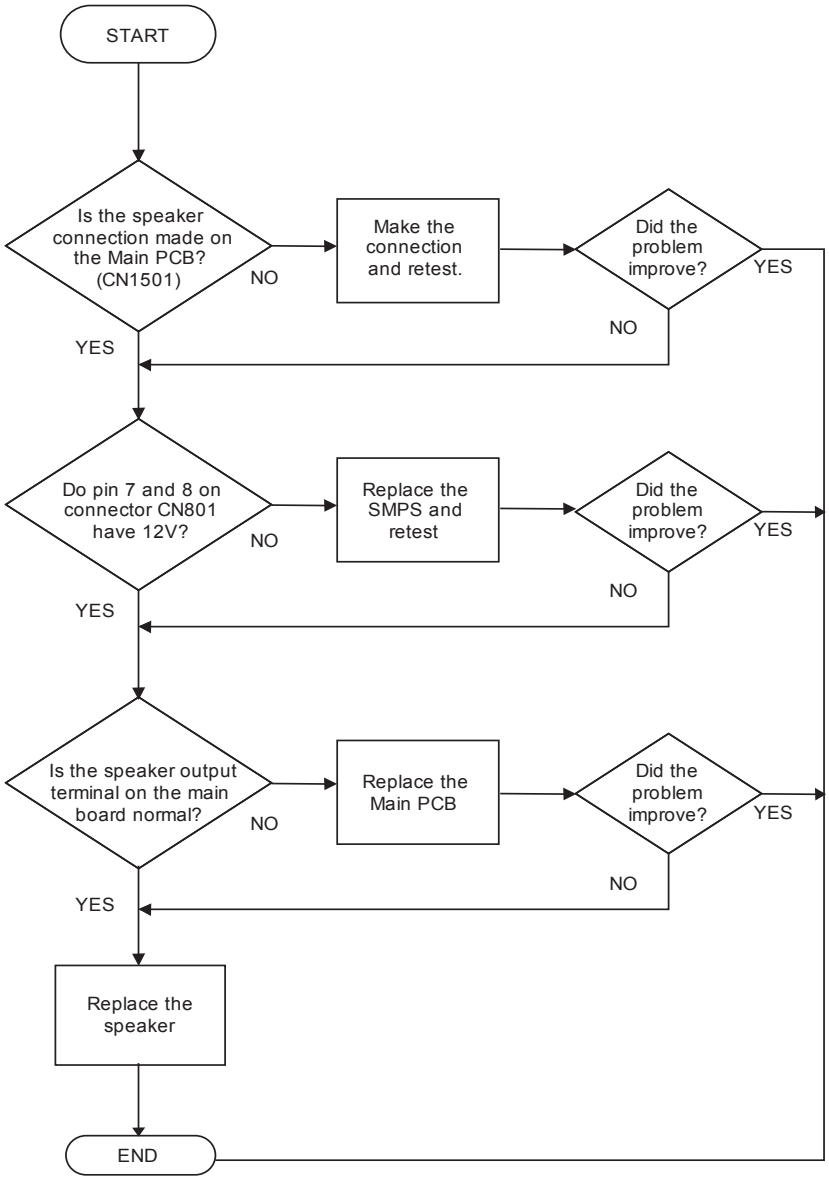
■ No Power

Symptom	- The LEDs on the front panel do not work when connecting the power cord. - The SMPS relay does not work when connecting the power cord. - The unit appears to be dead.
Major Checklist	The SMPS relay or the LEDs on the front panel does not work when connecting the power cord if the cables are improperly connected or the Main Board or SMPS is not functioning. In this case, check the following: - Check the internal cable connection. - Check the fuses. - Check the output voltages of the SMPS. - Replace the Main Board.
Troubleshooting Procedures	

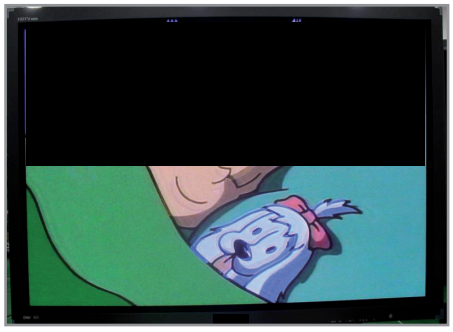
■ When the unit is repeatedly turning on and off

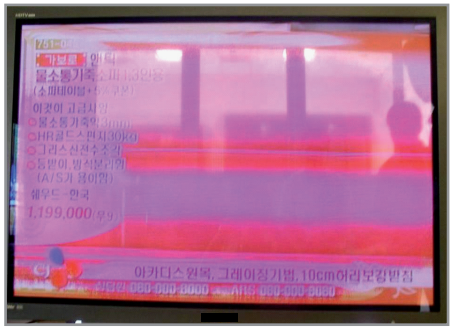
Symptom	- The SMPS relay is repeatedly turning on and off.
Major Checklist	In general, the SMPS relay repeatedly turns on and off by the protection function due to a defect on a board connected to the SMPS. - Disconnect all cables from the SMPS, operate the SMPS alone and check if the SMPS works properly and if each voltage output is correct. - If the symptom continues even when SMPS is operated alone, replace the SMPS. - If the symptom is not observed when operating the SMPS alone, find any defective assemblies by connecting the cables one by one.
Troubleshooting Procedures	
Caution	When separating and connecting the cables such as CN800,CN801,CN802,CN803, CN804,CN805 of the MAIN SMPS,CN4005 of the X MAIN Board, and CN5005 of the Y MAIN Board, a spark may be generated by the electric charge of the high capacity capacitor. Therefore, wait some time after disconnecting the power cord from the unit.

■ No Sound

Symptom	- Video is normal but there is no sound.
Major Checklist	- When the speaker connectors are disconnected or damaged. - When the sound processing part of the Main Board is not functioning. - Speaker defect.
Troubleshooting Procedures	

4-1-3 Faults and Corrective Actions

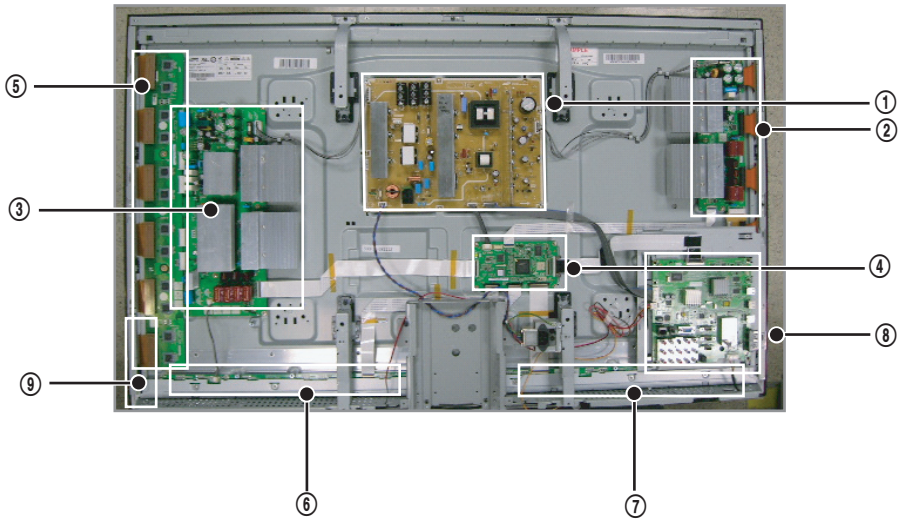
Symptom	Related Image	Causes and Countermeasures
A blank vertical cell (block) appears on the screen.		Address buffer defect - Replace the corresponding upper/ lower buffers (E, F or G) COF defect (burnt) - Replace the module
A green screen appears when the TV is turned on.		The Scale is not reseting - Replace the Main board
The OSD box appears but there is no text.		Incorrect program version - Check the version of each program - Replace the Main board
A blank upper (or lower) block appears on the screen.		Upper/Lower Y Buffer defect - Replace the corresponding upper/ lower buffers

Symptom	Related Image	Causes and Countermeasures
Either the main or sub picture does not appear.		Replace the Main board
A vertical green line appears on the screen.		The SMPS voltage is incorrect - Adjust the SMPS voltage according to the voltage printed on the module label
Dim screen (blurred in red)		X-Main board defect - Replace the X-Main board
A blank screen appears		- Replace the Y-Main board

4-1-4 Troubleshooting Procedures by assembly

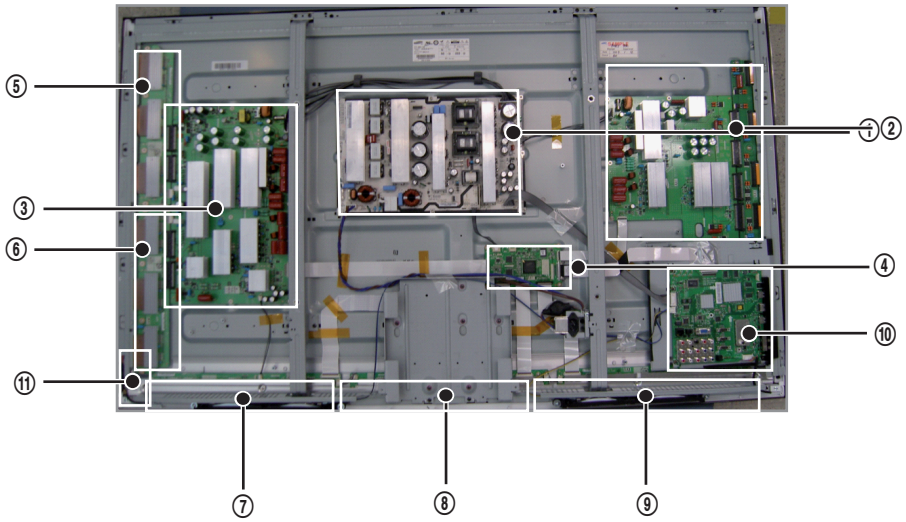
► 50”

No	Assembly	Major Symptoms
1	SMPS-PDP TV	No power, Blank screen, the Relay repeats On and Off
2	ASSY PDP MODULE P-X MAIN	Blank screen
3	ASSY PDP MODULE P-Y MAIN	Blank screen
4	ASSY PDP MODULE P-LOGIC MAIN	Blank screen, Screen noise
5	ASSY PDP MODULE P Y MAIN SCAN BUFFER	Blank screen
6	ASSY PDP MODULE P-ADDRESS E BUFFER	Corresponding Buffer Board block screen is blank
7	ASSY PDP MODULE P-ADDRESS F BUFFER	Corresponding Buffer Board block screen is blank
8	ASSY PCB MISC-MAIN	No Power, Abnormal screen for each input source, PIP screen trouble, Sound trouble
9	ASSY BOARD P-FUNCTION&IR	The side function key does not work properly. The remote control does not work properly, the LED does not work properly.



▶ 58”

No	Assembly	Major Symptoms
1	SMPS-PDP TV	No power, Black screen, the relay repeats On and Off
2	ASSY PDP P-X MAIN	Blank screen
3	ASSY PDP P-Y MAIN	Blank screen
4	ASSY PDP P-LOGIG MAIN	Blank screen, Screen noise
5	ASSY PDP P Y SCAN UPPER BOARD	Blank screen
6	ASSY PDP P Y SCAN LOWER BOARD	Blank screen
7	ASSY PDP P ADDRESS E-BUFFER	Corresponding Buffer Board block screen is blank
8	ASSY PDP P ADDRESS F-BUFFER	Corresponding Buffer Board block screen is blank
9	ASSY PDP P ADDRESS G-BUFFER	Corresponding Buffer Board block screen is blank
10	ASSY PCB MISC-MAIN	No power, Abnormal screen for each input source, PIP screen trouble, Sound trouble
11	ASSY BOARD P-FUNCTION IR	The side function key does not work properly The remote control does not work properly, the LED does not work properly



4-2 Adjustment

4-2-1 Service Instruction

■ Before performing service.

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

■ Service adjustment after board replacement.

<If adjustment equipment is available>

① PDP Option of Factory Mode → set the Factory Data Type item as the suitable value of relevant model.
② Adjust Calibration of Factory Mode for each mode.
③ Adjust White Balance of Factory Mode.

<If adjustment equipment is not available>

① Write down the value of HDMI White Balance of Factory Mode before replacing Board.
② PDP Option of Factory Mode → set the Factory Data Type item as the suitable value of relevant model.
③ Set the value of HDMI White Balance with the value written down before.

4-2-2 How to Access Service Mode

1. General Remote

   To Enter: **POWER OFF** → **MUTE** → **1** → **8** → **2** → **POWER ON**

   (Interval between key strokes: less than 3 sec)

   To Exit: Power the unit off and then back on.

2. Factory Remote

   To Enter: **POWER ON** → **INFO** → **Factory Key** (Interval between key strokes: less than 3 sec)

   To Exit: Press the factory key twice (Pressing only once forces the TV into aging mode)

3. Settings when entering Factory mode
   - Sharp Screen (Dynamic), Color Tone (Cool1), Factory (Dynamic CE Off)

4. Adjustment Procedures
   - ▲▼ Key: Select an item.
   - ◀▶ 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

```
Option
ADC/WB
Control
Advanced
Expert
T-STL5PAUSFC-XXXX
DTP-LP-XXXX-XX
DTP-LP-App-XXXX-XX
Option : 6110 00
ADC : HDMI O COMP O PC O AV O
EDID : SUCCESS
HDCP : SUCCESS
Build Date : XX-XX-XXXX
Date Of Purchase : XX/XX/XX
```

※ 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.

4-2-3 Factory Data

1. Option

ITEM	Data	Range
Factory Reset		
Type	50FSmL4(50")/58FMfK1(58")	50FSmL4,58FMfK1
Model		
TUNER	SEC_Custom	ALPS, SEC_TI_SEC_INF,SEC_Custom
Region	USA	USA,KOR
DDR	0	0~2
Light Effect	OFF	ON, OFF
Media Link Type		Canada,America, Mexico,S.America,Infolink ON,Infolink OFF
PDP GROUP		

2. ADC W/B

ADC

ITEM	Data	Range
AV Calibration	Success	Success, Failure,Initial
Comp Calibration	Success	Success, Failure,Initial
PC Calibration	Success	Success, Failure,Initial
HDMI Calibration	Success	Success, Failure,Initial

ADC Target

ITEM	Data	Range
1st_AV_Low	64	0 ~ 1020
1st_AV_High	880	0 ~1020
1st_AV_Delta	1	0 ~7
1st_COMP_Y_Low	64	0 ~1020
1st_COMP_Cb_Low	512	0 ~1020
1st_COMP_Cr_Low	512	0 ~1020
1st_COMP_Y_High	940	0 ~1020
1st_COMP_Cb_High	512	0 ~1020
1st_COMP_Cr_High	512	0 ~1020
1st_COMP_Delta	1	0 ~7
1st_PC_R_Low	16	0 ~1020
1st_PC_G_Low	16	0 ~1020
1st_PC_B_Low	16	0 ~1020
1st_PC_R_High	1004	0 ~1020
1st_PC_G_High	1004	0 ~1020
1st_PC_B_High	1004	0 ~1020
1st_PC_Delta	1	0 ~7
2nd_AV_R_Low	4	0 ~124
2nd_AV_G_Low	4	0 ~124
2nd_AV_B_Low	4	0 ~124
2nd_AV_R_High	940	0 ~1020
2nd_AV_G_High	940	0 ~1020
2nd_AV_B_High	940	0 ~1020
2nd_AV_Delta	1	0 ~7
2nd_COMP_R_Low	4	0 ~124
2nd_COMP_G_Low	4	0 ~124
2nd_COMP_B_Low	4	0 ~124
2nd_COMP_R_High	940	0 ~1020
2nd_COMP_G_High	940	0 ~1020
2nd_COMP_B_High	940	0 ~1020
2nd_COMP_Delta	1	0 ~7
2nd_PC_R_Low	4	0 ~124
2nd_PC_G_Low	4	0 ~124
2nd_PC_B_Low	4	0 ~124
2nd_PC_R_High	940	0 ~1020
2nd_PC_G_High	940	0 ~1020
2nd_PC_B_High	940	0 ~1020
2nd_PC_Delta	1	0 ~7
2nd_HDMI_R_Low	4	0 ~124
2nd_HDMI_G_Low	4	0 ~124
2nd_HDMI_B_Low	4	0 ~124
2nd_HDMI_R_High	940	0 ~1020
2nd_HDMI_G_High	940	0 ~1020
2nd_HDMI_B_High	940	0 ~1020
2nd_HDMI_Delta	1	0 ~ 7

ADC RESULT

ITEM	Data	Range
1st_Y_GH	0	0 ~ 511
1st_Y_GL	0	0 ~ 511
1st_Cb_BH	0	0 ~ 511
1st_Cb_BL	0	0 ~ 511
1st_Cr_RH	0	0 ~ 511
1st_Cr_RL	0	0 ~ 511
2nd_R_L	0	0 ~ 255
2nd_G_L	0	0 ~ 255
2nd_B_L	0	0 ~ 255
2nd_R_H	0	0 ~ 255
2nd_G_H	0	0 ~ 255
2nd_B_H	0	0 ~ 255

WB

ITEM	Data	Range
Sub Brightness	128	0 ~255
R-Offset	512	0 ~1023
G-Offset	512	0 ~1023
B-Offset	512	0 ~1023
Sub Contrast	128	0 ~255
R-Gain	512	0 ~1023
G-Gain	512	0 ~1023
B-Gain	512	0 ~1023
Movie R-Offset	512	0 ~1023
Movie B-Offset	512	0 ~1023
Movie R-Gain	512	0 ~1023
Movie B-Gain	512	0 ~1023

3. Control

EDID

ITEM	Data	Range
EDID ON/OFF		ON, OFF
EDID WRITE ALL		Failure, Success
EDID WRITE PC		Failure, Success
EDID WRITE HDMI		Failure, Success
EDID WRITE HDMI1		Failure, Success
EDID WRITE HDMI2		Failure, Success
EDID WRITE HDMI3		Failure, Success
EDID WRITE HDMI4		Failure, Success
EDID 1.2 PORT		Failure, Success

Sub Option

ITEM	Data	Range
RF Mute Time	600ms	
SUB U-COM	OFF	
RS-232 Jack	UART	
Watchdog	ON	
WD COUNT	0	
SSC ON/Off	ON	
SSC MRR	2	
SSC MFR	2	
SSC QLC	4	
Gamma	0.93	
PANEL DISPLAY TIME	0	
Dimm Type	0	
LVDS FORMAT	PDP	
Language	2	
UI COLOR	BLUE	
TOOLS Support	1	
LNA Support	0	
Wiselink WithOut DB	with DB	
WiseLink Movie	ON	
WiseLink DLNA	ON	
WiseLink Write	ON	
NETWORK Support	Cable/Wireless	
High Devi	OFF	
Carrier Mute	ON	
Volume Curve	US_KR	
PWM MAX	256	
DVOUT CD	0	
CVBS CD	0	
EDID Jack Ident	OFF	
Info Link Server Type	operating	
ND ADJ Support	ON	
24Px4 Support	ON	
Power Indicator Support	OFF	
BD Wise Support	ON	
RF Remocon Support	OFF	
OTA Duration Test	OFF	
Alternate Del	OFF	
OTN Server Type	OFF	
OTN Test Server	ON	
OTN Support	ON	
OTN Reset		
OTN Duration	OFF	
OTN Fail Test	OFF	
IIC BUS STOP	OFF	
Visual Test	Disable	
Checksum		
View Log		
Font Data Viewer		

PDP Option

ITEM	Data	Range
PATTERN SEL	0	
LOGIC CONNECT	OFF	
PIXEL SHIFT TEST	OFF	
PANEL VERSION	W3	
PANEL INCH	50FHD	
PANEL TYPE	144	
PANEL TEMPERATURE	46(-46)	
LOGIC SW VERSION		
LOGIC SW CHECKSUM		
SAPC TIMER	ON	
APC SPEED	SLOW	
LOGIC USB D/L	OFF	

Hotel Option

ITEM	Data	Range
HOTEL MODE	OFF	
POWER ON CHANNEL		
POWER ON BAND		
POWER ON VOLUME		
MIN VOLUME		
MAX VOLUME		
PANEL BUTTON LOCK		
POWER ON SOURCE		

Shop Option

ITEM	Data	Range
Shop Mode	OFF	
USB DEMO ON(SEC)	OFF	
USB DEMO OFF(SEC)	OFF	
Exhibition Mode	OFF	
PLG_MAX_SHOP	130	

Sound

ITEM	Data	Range
SAP High Threshold	0x1ah	
SAP Low Threshold	0x9h	
Speaker Delay Normal	0x59h	
Auxout Delay Normal	0x59h	
Spdif Delay Normal	0x0h	
Speaker Delay Game	0x28h	
Auxout Delay Game	0x28h	
Spdif Delay Game	0x0h	
STA Amp Vol.	0x28h	
STA Post Scale	0x6eh	
STA Speaker EQ	ON	
STA Sub Woofer	1	
Mono to Stereo Thld	0x60h	
Stereo to Mono Thld	0x30h	
Pilot Level High Thld	0x30h	
Pilot Level Low Thld	0x10h	
A2 Pilot AM Carr High Thld		
A2 Pilot AM Carr Low Thld		
NICAM Error High Thld		
NICAM Error Low Thld		
FM1 CarrMute High Thld	0x20h	
FM1 CarrMute Low Thld	0x10h	
DRC H Thresh	0x35h	
DRC L Thresh	0x30h	
DRC SW Thresh	0x3dh	
Chattering Cnt	5	
FM Prescale		
AM Prescale		
NICAM Prescale		
BTSC Mono Prescale	20	
BTSC Stereo Prescale	20	
BTSC Sap Prescale	20	
A2K Prescale		
M Prescale		

Config Option

ITEM	Data	Range
Num of ATV	1	
Num of DTV	1	
Num of AV	2	
Num of SVIDEO	0	
Num of COMP	2	
Num of HDMI	4	
Num of PC	1	
Num of SCART	0	
Num of DVI	0	
Num of OPTICAL Link	0	
Num of MEDIA	1	
Num of PANEL KEY	6	
Num of USB Port	0	
MFT Offset	62.5	
Select LCD/PDP	PDP	
HDMI/DVI SEL	2	
Indicator Led	ON	
Wall Mount	OFF	
Chelsea HV Flip	OFF	
Num of DISPLAY	2	
HDMI AV MUTE TIME	40	
DVI/HDMI SOUND	Auto	
HDMI HOT PLUG	Disable	
HOT PLUG OFF HOLD TIME	1200ms	
HDMI FLT CNT SIG	300ms	
HDMI FLT CNT LOS	300ms	
UNSTABLE BAN CNT	2500ms	
HDMI Err Cnt	5	
HDMI ROBIN	ON	
HDMI Callback	ON	
HDMI CTS Thld	7	
HDMI CTS Cnt1	1	
TMDS_EQ2_Boost	1	
TMDS_EQ2_Gain	0	
TMDS_PLL_Loop	3	
TMDS_CPREG_BLEED	1	
HDMI EQ	AUTO	
HDMI Switch	SIL9287	

4. Advanced
* How to access Hidden menu
set the cursor to advanced menu and press 0 → 0 → 0 → 0

FBE3

ITEM	Data
BM_slope1	19
BM_slope2	36
BM_slope3	56
BM_slope4	75
BM_start	68
BM_start_max	110
Lfunc-basis	70
Hfunc-basis	80
Mean-Offset1	30
Mean-Offset2	235
Mean-Slope	112
ACR-Offset	10
ACR-th1	10
ACR-th2	110
Skin-Enable	ON
Skin-UV	135
Sub color	128
M-Skin-UV	…
M-Sub Color	…

WB Movie

Item	Data	Item	Data
W/B MOVIE ON/OFF	OFF	W1_Roffset	…
MODE	…	W1_Boffset	…
Color Tone	…	Cool_Rgain	…
MSub Brightness	…	Cool_Bgain	…
MSub Contrast	…	Cool_Roffset	…
W3_Rgain	…	Cool_Boffset	…
W3_Bgain	…	Movie Contrast	…
W3_Roffset	…	Movie Bright	…
W3_Boffset	…	Movie Color	…
W2_Rgain	…	Movie Sharpness	…
W2_Bgain	…	Movie Tint	…
W2_Roffset	…	Movie Backlight	…
W2_Boffset	…	Movie Gamma	…
W1_Rgain	…	M_Sub_Gamma	…

EPA Standard

Item	Range	ALL Source
Standard Contrast	0~100	95
Standard Brightness	0~100	45
Standard Sharpness	0~100	50
Standard Color	0~100	50
Standard Tint	-50 ~ 50	0
Standard Backlight	0 ~ 10	7

CH_VDEC

Item	Range	ALL Source	Item	Range	ALL Source
AGC_mode	0~1	1	CTI_level	0~63	15
Gain_VCR	0~1	0	ST_Beg_NTSC	0~127	10
Y_Gain_Man	0~8191	880	VS_Slice_Level	0~7	3
Saturation	0~255	128	HS_Slice_Level	0~15	6
Hue	0~255	0	FB_Delay_adj	0~7	0
Y_Shape_sel	0~63	13	RGB_Delay_adj	0~7	0
Y_Shape_SCM	0~63	29	h_pk_gain	0~15	4
C_Shape_sel	0~31	4	v_pk_gain	0~15	2
C_Shape_SCM	0~31	4	h_pk_band	0~3	0
If_iir	0~1	0	2d_pk_gain	0~15	0
If_filt_sel	0~31	0	2d_pk_band	0~7	2
LTI_en	0~1	0	slice_mod_fine	0~127	0
LTI_level	0~127	0	scm_fdet_lvl	0~255	150
CTI_en	0~1	0	bl_range	0~7	3
SCM_STI_EN	0~1	0			

YC_Delay

Item	Range	ALL Source
V_Delay_adj	0~7	0
U_Delay_adj	0~7	0

AR_ADC

Item	Range	ALL Source
RED CUTOFF	-128~+127	0
GREEN CUTOFF	-128~+127	0
BLUE CUTOFF	-128~+127	0
RED GAIN	-128~+127	0
GREEN GAIN	-128~+127	0
BLUE GAIN	-128~+127	0
PHASE	0~31	16
SOG_BW	0~7	0
SSC_PC	0~31	6
RGB_DLY	0~3	3

CH_DP

Item	Range	ALL Source
MNR	1:ON, 0:OFF	OFF
	1:ON, 0:OFF	OFF
DCR	1:ON, 0:OFF	OFF
SD2HD_DCR	1:ON, 0:OFF	OFF
SD2HD_DE	1:ON, 0:OFF	OFF
SD2HD_SCL	1:ON, 0:OFF	OFF
SD2HD_LTI	1:ON, 0:OFF	OFF
SD2HD_NARS	0~3	0
SD2HD_DUR	0~1023	50
SD2HD_Metric	0~255	225
Coring_ON_OFF	1:ON, 0:OFF	ON
SD_CSC		7094
HD_CSC		7438
M_SD_CSC		7094
M_HD_CSC		7438
PC_SD_CSC		7094
MJC_DBG	0~8	0
MB_STEPS	0~2047	72
LIMIT_MV_STEP	0~2047	80
GLOBAL_FALLBACK	0~255	48
LOCAL_FALLBACK	0~255	5

NR

Item	Range	ALL Source	Item	Range	ALL Source
OFF_Y	0~255	20	MED_Y	0~255	80
OFF_C	0~63	6	MED_C	0~63	19
Noise_bias	0~31	1	Noise_bias	0~31	1
OFF_YMAX	0~255	128	MED_YMAX	0~255	155
	0~255	128		0~255	155
OFF_FADER	0~255	180	MED_FADER	0~255	170
LOW_Y	0~255	65	HIGH_Y	0~255	90
LOW_C	0~63	18	HIGH_C	0~63	20
Noise_bias	0~31	1	Noise_bias	0~31	1
LOW_YMAX	0~255	140	HIGH_YMAX	0~255	165
	0~255	140		0~255	165
LOW_FADER	0~255	160	HIGH_FADER	0~255	180

Sharpness

Item	Range	ALL Source
Pre_GainH1	0~FF	10
Pre_GainH2	0~FF	15
Pre_GainH3	0~FF	10
Post_GainH1	0~FF	10
Post_GainH2	0~FF	15
Post_GainH3	0~FF	10
Post_GainV1	0~FF	40
Post_GainV2	0~FF	50
Post_GainV3	0~FF	40
CTI_Gain	0~F	15
Pre_LTIH	0~3F	4
SD_TH	0~FF	100
HD_TH	0~FF	132
NORMAL_LTIH	0~3F	8
NORMAL_LTIV	0~3F	4
SD_LTIH	0~3F	16
SD_LTIV	0~3F	24
PRE_CORING	0~FF	32
POST_CORING_H	0~FF	32
POST_CORING_V	0~FF	32
Pre_TOT	0~3F	32
Post_TOT	0~3F	32
Sub Color	30~80	59

Sharpness_LNA

Item	ALL Source
Pre_GainH1	7
Pre_GainH2	11
Pre_GainH3	7
Post_GainH1	7
Post_GainH2	11
Post_GainH3	7
Post_GainV1	30
Post_GainV2	37
Post_GainV3	30

CE_DIMMING

Item	Range	ALL Source
Contrast Dimming	ON/OFF	OFF
Dimming in Standard	ON/OFF	On
Dimming in Moive	ON/OFF	On

LNA Plus

Item	Range	ALL Source
Synctip_Noise	0~4095	-
dB01_th	0 ~1023	16
dB12_th	0 ~1023	48
dB23_th	0 ~1023	73
dB34_th	0 ~1023	185
dB45_th	0 ~1023	318

FRC

	Item	Range	ALL Source
FRCQ Option	SSC_OnOff	ON	
	SSC_Width	96	
	SSC_Freq	240	
	FMD_Demo	0	
	PATT_BeforeDDR	0	
	PATT_AfterDDR	0	
	CSB Vertical	ON	
	CSB Horizontal	ON	
	X_VStabStatVid	7	
	X_VStabStatF	0	
	X_VStabCorF	8	
	X_VStabSensF	48	
	X_HaloSizStatVid	7	
	X_HaloSizStatF	0	
	X_HaloSizCorF	12	
	X_HaloSizSensF	32	
	Film_Low_SD	12 -> 32	NO Dejudder
	Film_Medium_SD	3	
	Film_High_SD	0	
	Film_Low_HD	12 -> 32	No Dejudder
	Film_Medium_HD	3	
	Film_High_HD	0	
	Video_Judder_Low	10 -> 0	blur max
	Video_Judder_Med	5 -> 0	blur max
	Video_Judder_High	0	
	Hangup Detection	On	
	Q LVDS Sequence	0-1-2-3	
	Q LVDS Format	JEIDA	
	Q LVDS bit width	10bit	

	Item	Data
FRCQ Fallback	SensD_Film_Low	31
	SensD_Film_Medium	31
	SensD_Film_High	31
	Rel_Start_Film	20
	Rel_Slope_Film	3
	H_Len_Start_Film	127
	H_Len_Slope_Film	1
	V_Len_Start_Film	40
	V_Len_Slope_Film	1
	SensD_Video	0
	Rel_Start_Video	20
	Rel_Slope_Video	1
	H_Len_Start_Video	127
	H_Len_Slope_Video	1
	V_Len_Start_Video	40
	V_Len_Slope_Video	1

PQ Others

Item	Range	ALL Source
7.5 IRE NTSC	ON/OFF	ON
7.5 IRE OFFSET	0~256	60
HDMI 48Hz Enable	On/ OFF	OFF
HDMI Black level		Normal

5. Expert

ITEM	Data	Range
N/D ADJ	OFF	
Source		

4-2-4 Service Adjustment

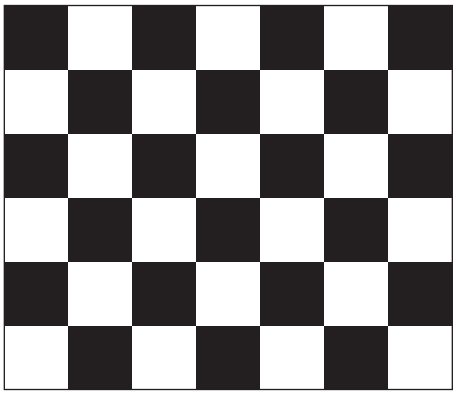
■ White Balance - Calibration

If picture color is wrong, do calibration first.

Execute calibration in Factory Mode

1. Source : VIDEO
2. Setting Mode : NTSC-M (Mode: #3)
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 "2. WB Adjust".
   ② Select “CALIBRATION”.
   ③ Select “AV CALIBRATION” again in CALIBRATION MENU.
   ④ After Completing Calibration, come out “Av success”. OSD on the screen (bottom-side) for about 3 seconds.

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

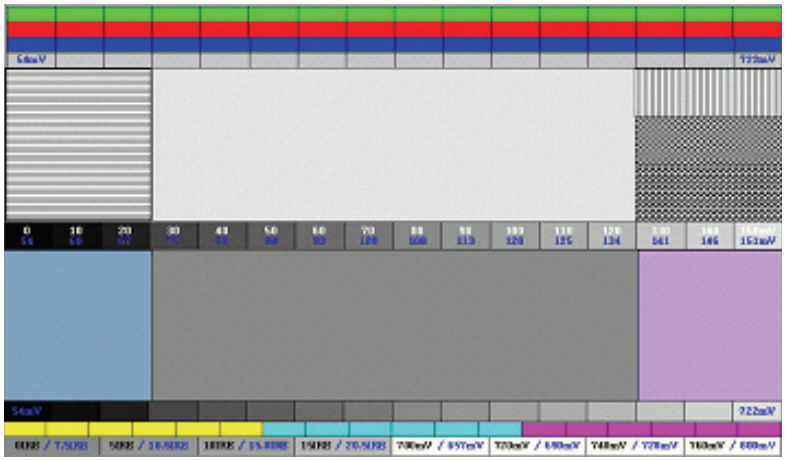


< Chess Pattern >

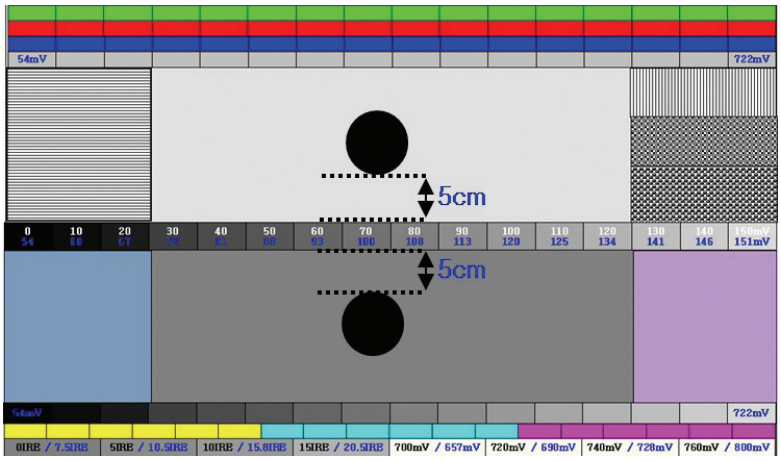
■ White Balance

Adjust spec.

1. Source : HDMI
2. Setting Mode : 1280*720@60Hz
3. Pattern : Pattern #92
4. Use Equipment : MIK-7256 (MSPG925L)



5. Work order
   ① Connect HDMI (DVI) output terminal of MIK-7256 (MSPG925L) to the HDMI input in main set
   ② Set the input to HDMI mode
   ③ Enter the White Balance menu of service mode
   ④ Contact CA-210 sensor to glass filter



< Fixed Position of CA210 Probe >

   ⑤ Adjust the low light
   - Adjust Sub-Bright to set the 'Y' value
   - Adjust R-Offset ('x') and B-Offset ('y') to the color coordinates.
   * Do not adjust G-Offset data

   ⑥ Adjust the high light
   - Adjust Sub-Contrast to set the 'Y' value
   - Adjust R-Gain ('x') and B-Gain ('y') to the color coordinates.
   * Do not adjust the G-gain data

<50”

Input mode		(CA-210)			
		x	y	Y(L)	T(K), MPCD
CVBS (NTSC)	H/L	278	285	Don’t Control (Sub_CT:133)	10,500/±0
	L/L	278	285	7.3 cd/m² (2.2 Ft)	10,500/±0
COMP (720P)	H/L	278	285	Don’t Control (Sub_CT:133)	10,500/±0
	L/L	278	285	7.3 cd/m² (2.2 Ft)	10,500/±0
HDMI (720P)	H/L	278	285	Don’t Control (Sub_CT:133)	10,500/±0
	L/L	278	285	7.3 cd/m² (2.2 Ft)	10,500/±0

<58”)

Input mode		(CA-210)			
		x	y	Y(L)	T(K), MPCD
CVBS (NTSC)	H/L	278	285	Don’t Control (Sub_CT:133)	10,500/±0
	L/L	278	285	6.9 cd/m² (2 Ft)	10,500/±0
COMP (720P)	H/L	278	285	Don’t Control (Sub_CT:133)	10,500/±0
	L/L	278	285	6.9 cd/m² (2 Ft)	10,500/±0
HDMI (720P)	H/L	278	285	Don’t Control (Sub_CT:133)	10,500/±0
	L/L	278	285	6.9 cd/m² (2 Ft)	10,500/±0

4-2-5 Replacements & Calibration

* Check items listed after changing each

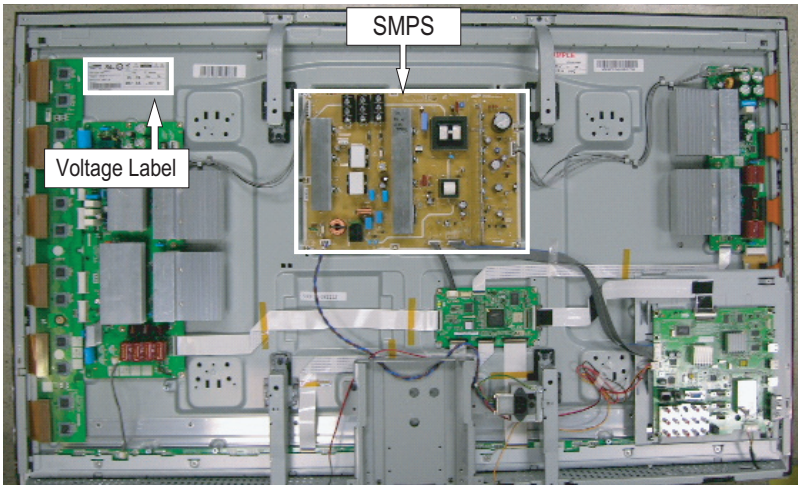
No	Replaced assembly items	Check Items
1	ASSY PCB MISC-MAIN	① Auto Program ② White Balance Adjust
2	SMPS-PDP TV	Vs, Va voltage check and adjust
3	ASSY PDP MODULE P-X MAIN	Not to be adjusted
4	ASSY PDP MODULE P-Y MAIN	
5	ASSY PDP MODULE P Y MAIN SCAN BUFFER	
6	ASSY PDP MODULE P-X MAIN SCAN LOWER	
7	ASSY PDP MODULE P-ADDRESS E-BUFFER	
8	ASSY PDP MODULE P-ADDRESS F-BUFFER	
9	ASSY BOARD P-FUNCTION&IR	

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

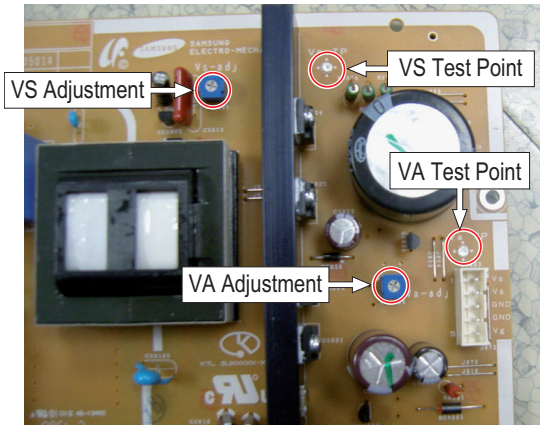
■ Voltage Adjustment

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.)

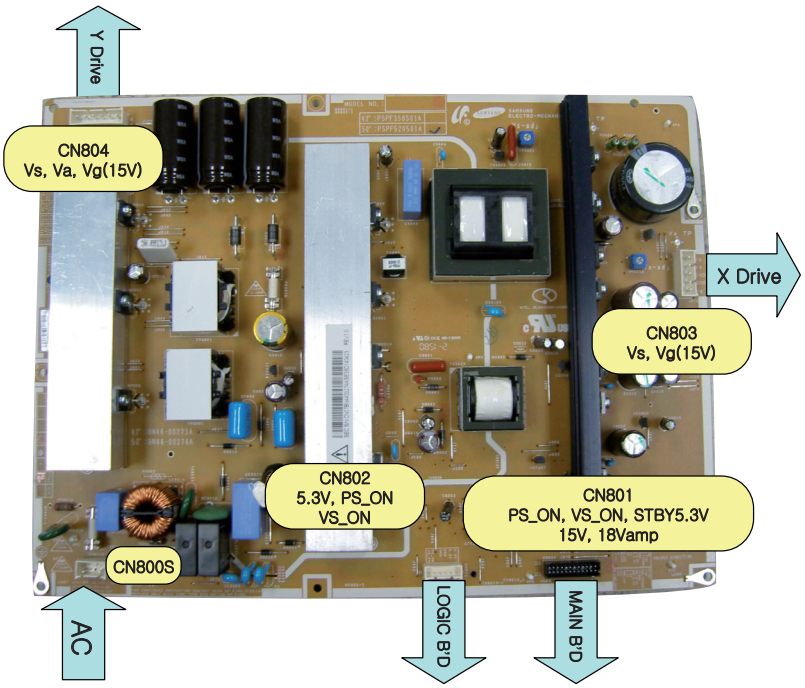
	Value	Board Adjustment
	UF1	
Vs	207	SMPS
Va	56	
Ve	97	
Vsc	-197	



2. A point of adjusting SMPS-MAIN voltage.

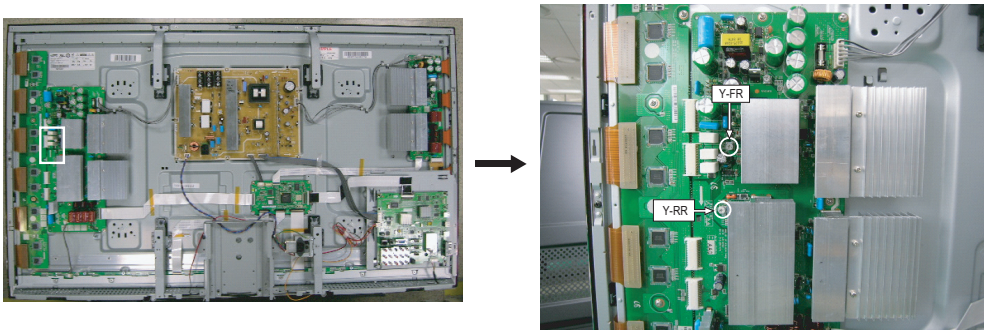


■ SMPS Output Voltage

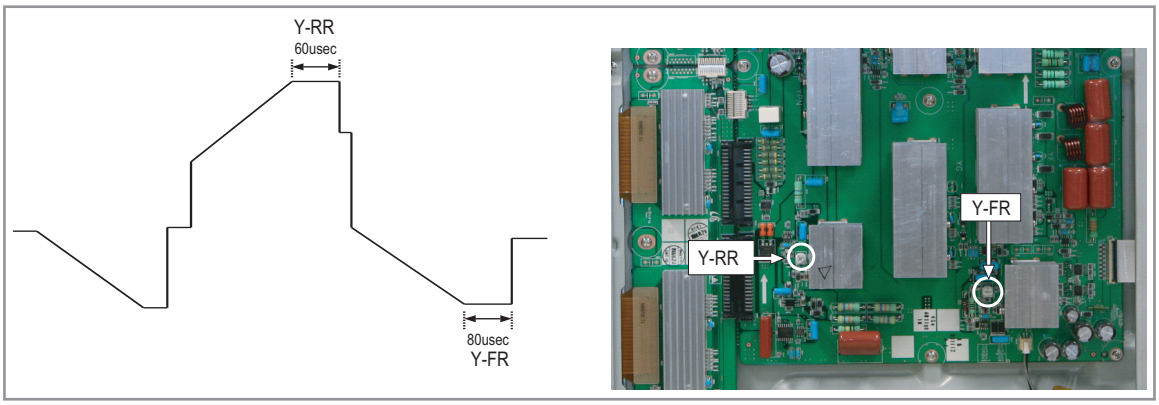


		Output Voltage			Output Current				Load Characteristics	Usage	Remark
		Nominal	Regulation	Variable Range	Min	Max	Peak	Typical			
1	Vs	198V	±1.5%	195~210	0.0 A	2.4 A	15.0 A	**2.0 A**	Pulsating	Drive	
2	Va	55V	±2%	Fixed	0.0 A	2.0 A	13.0 A	**1.5 A**	Pulsating	Drive	
3	D5.3V	5.2V	±5%	Fixed	0.0 A	6.5 A	7.0 A	**4.5 A**	Constant	Image, Logic	
4	D15V	15V	±5%	Fixed	0.0 A	3.0 A	5.0 A	**2.2 A**	Constant/ Pulsating	Image, Drive	
5	15V_amp	18V	±5%	Fixed	0.0 A	3.0 A	5.0 A	**0.5 A**	Constant /Pulsating	Sound	
6	STBY	5.2V	±3%	5V	0.0 A	1.0 A	1.5 A	**0.3 A**	Constant	Stand-by	step change

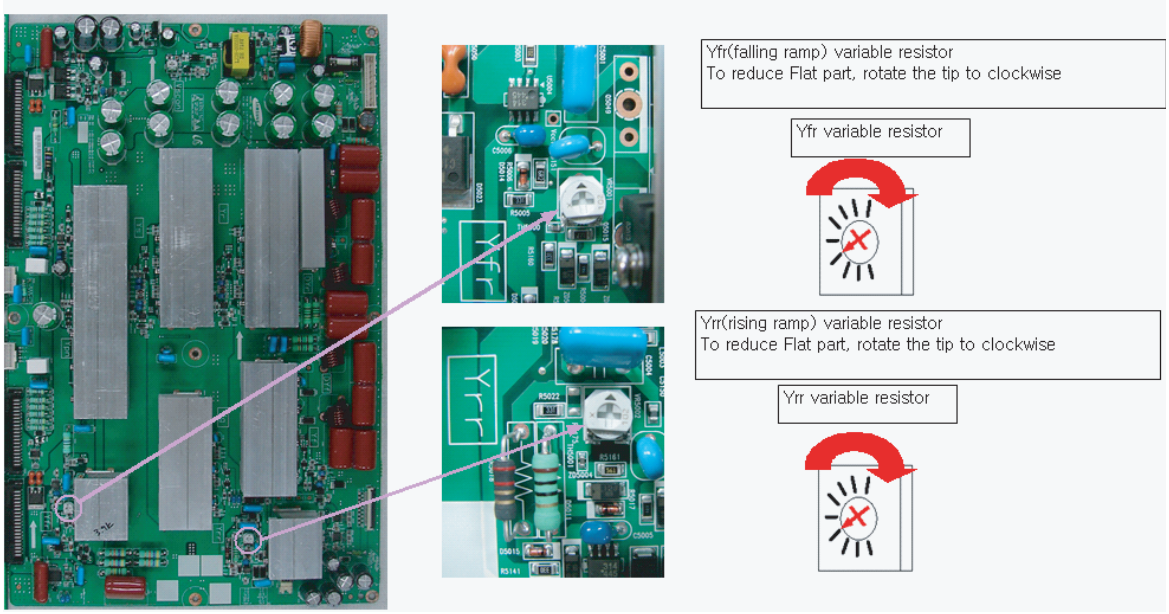
■ Y-RR and Y-FR controls



Set the main reset (rising : 60usec, falling : 80usec) by change the value of variable resistor.

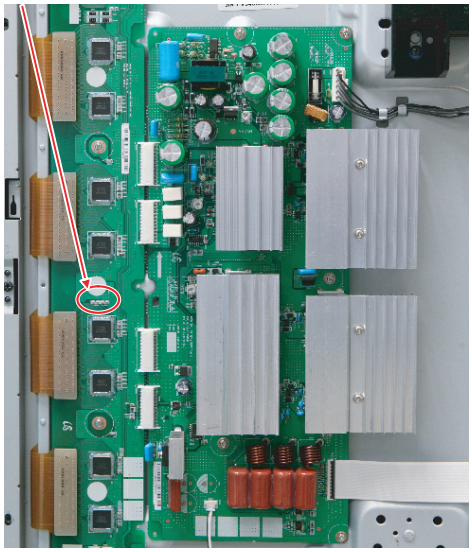


■ Wavefrom Adjustment (Y Main Output waveform)
(Y board 1st Sub-field wavefrom)

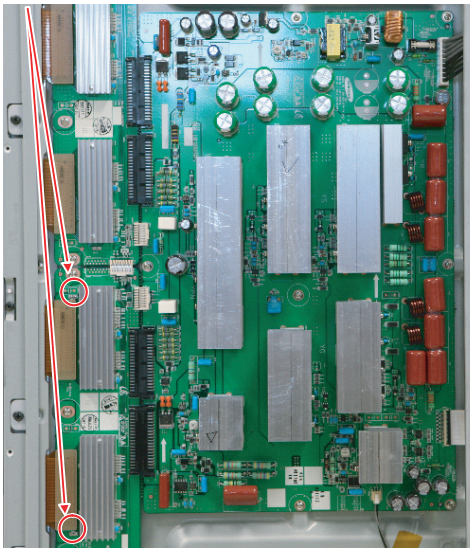


TP Point

50”

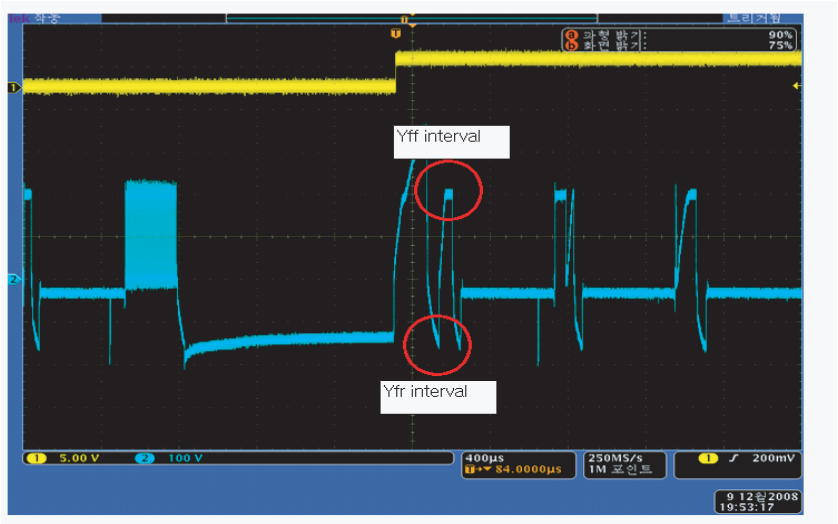


58”



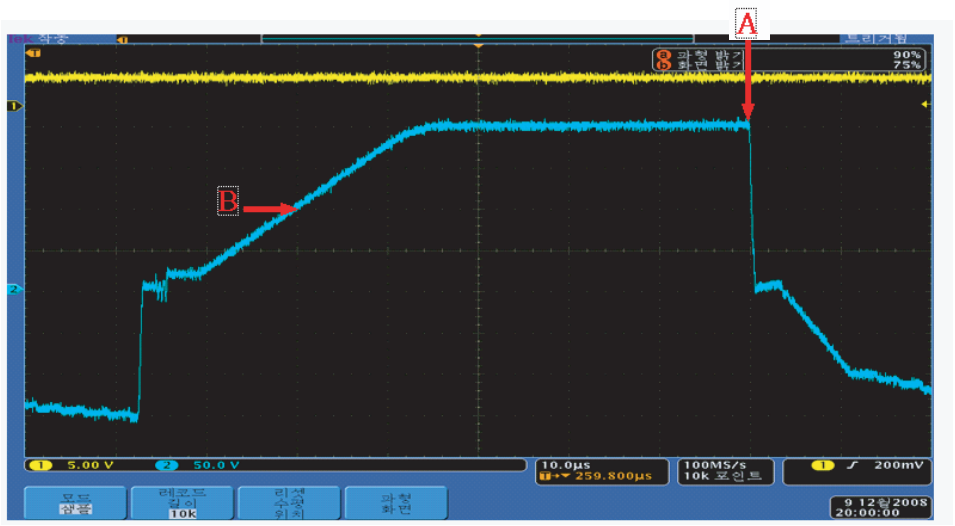
1. Waveform slope adjustment

(Y Board 1st. Subfield waveform)



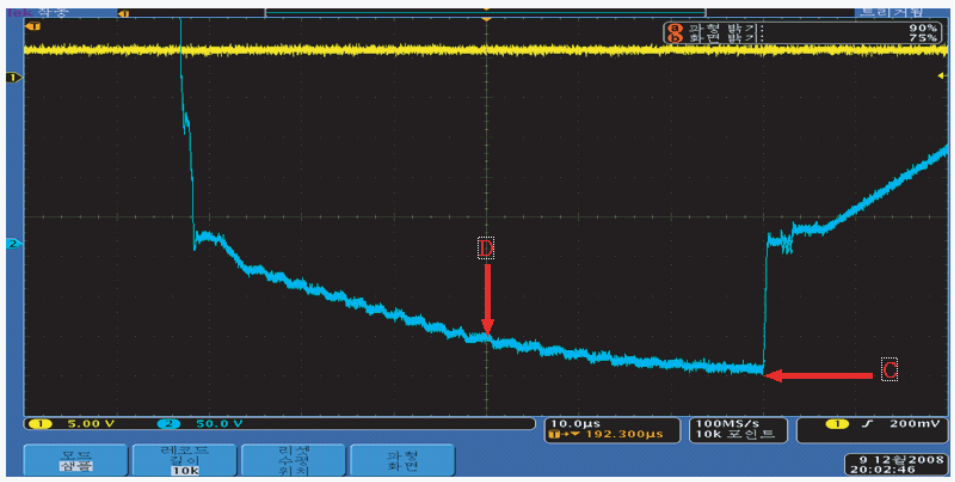
2. Rising slope

1) Extend1st Sub-Field of Preset Rising Part.
2) Adjust the scale of scope to 50V, 10us division
3) Adjust waveform just like the following C(rising edge),D



3. Falling slope

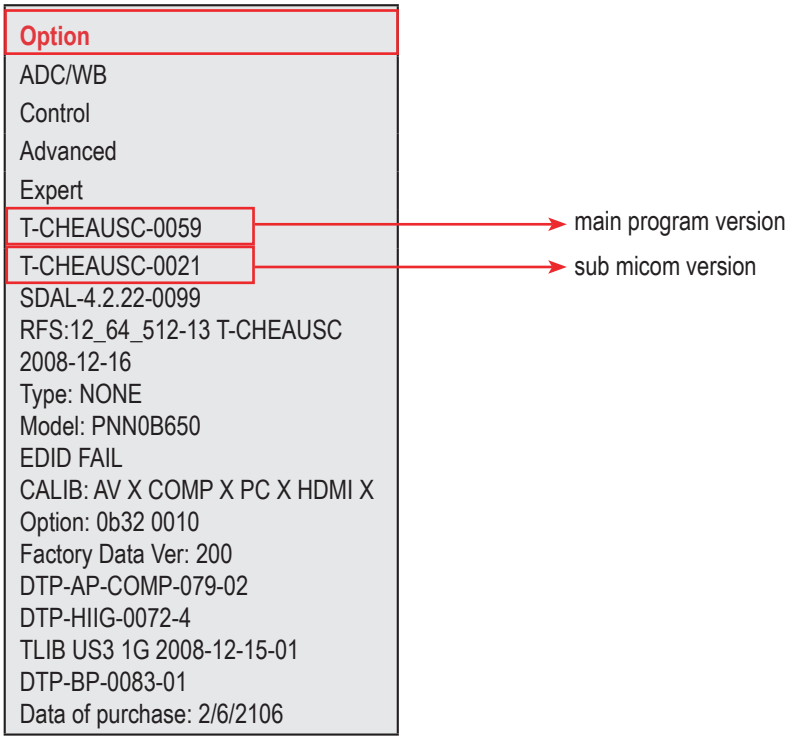
1) Extend1st Sub-Field of Main_Reset Falling Part.
2) Adjust the scale of scope to 50V, 10us division
3) Adjust waveform just like the following C(falling edge),D



4-3 Upgrade

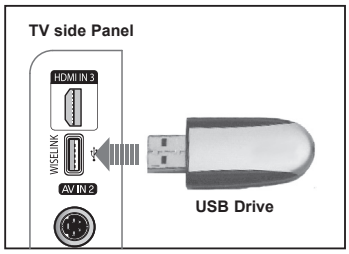
4-3-1 How to Check the Version of the Program

1. Procedures for checking in the Factory Menu.
   When entering Factory Mode, the version of the software is displayed at the bottom of the menu as described on page 4-9.



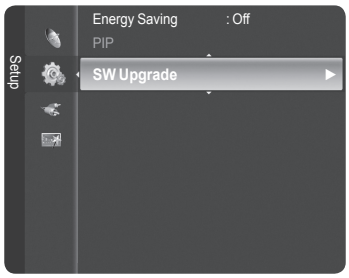
4-3-2 How to Upgrading the Software

1. Insert a USB drive containing the firmware upgrade into the USB Upgrade Port on the side of the TV.



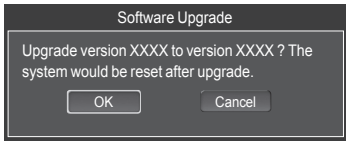
2. Press the MENU button to display the menu.
   Press the ▲ or ▼ button to select Support, then press the ENTER button.

3. Press the ▲ or ▼ button to select SW Upgrade, then press the ENTER button.



4. The message Scanning for USB... It may take up to 30 seconds. is displayed.

5. If the firmware on the USB is properly recognized, the message Upgrade version xxxx to version xxxx? The system would be reset after upgrade. is displayed.
   Press the ◄ or ► button to select OK, then press the ENTER button. The upgrade starts.
   Please be careful not to disconnect the power or remove the USB drive while upgrades are being applied. The TV will shut off and turn on automatically after completing the firmware upgrade.



   ► When software is upgraded, video and audio settings you have made will return to their default (factory) settings. We recommend you write down your settings so that you can easily reset them after the upgrade.

4-3-3 BSP Version Update

1. BSP: uImage, pack.bin, rootfs.img, boot.img

2. Open [SpinelUS]update-XXXX.zip file in the USB file.

3. Equip USB in the state of set watchdog ‘OFF’, and progress upgrade with mute 7 8 9 exit.