

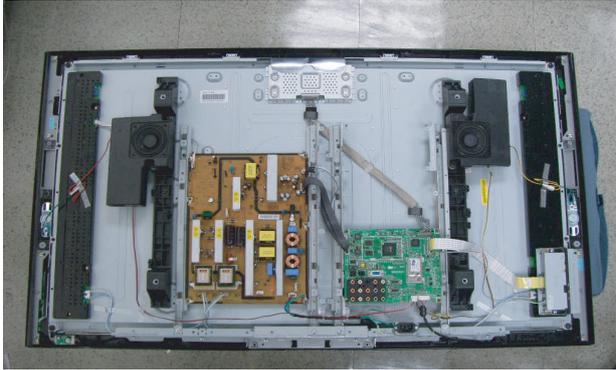
4. Troubleshooting

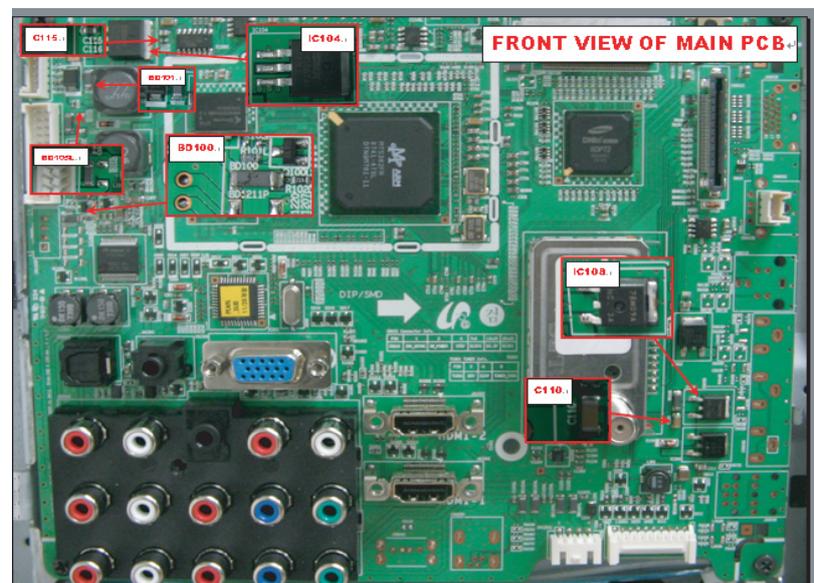
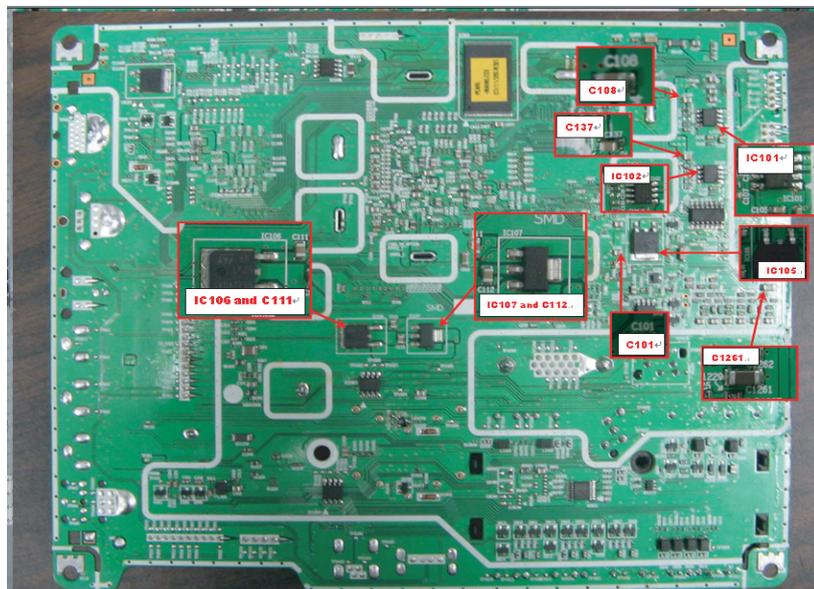
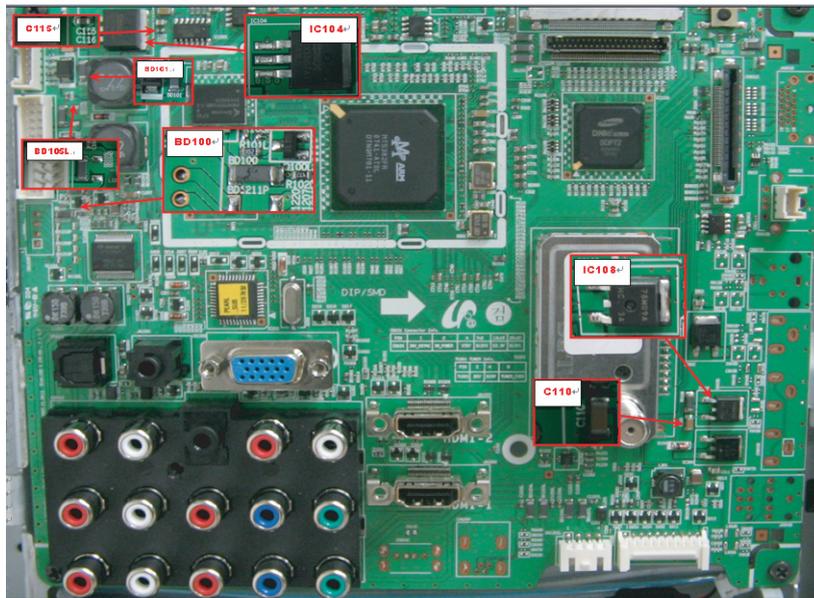
4-1. Troubleshooting

4-1-1. Previous check

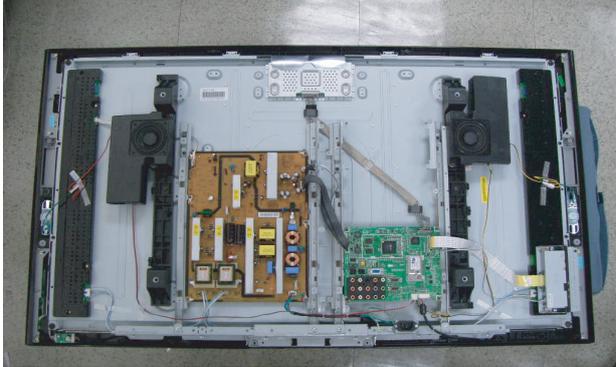
1. Check the various cable connections first.
 - Check to see if there is a burnt or damaged cable.
 - Check to see if there is a disconnected or loose cable connection.
 - Check to see if the cables are connected according to the connection diagram.
2. Check the power input to the Main Board.

4-1-2. No Power

Symptom	<ul style="list-style-type: none"> - 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 units appears to be dead.
Major checkpoints	<p>The IP 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:</p> <ul style="list-style-type: none"> - Check the internal cable connection status inside the unit. - Check the fuses of each part. - Check the output voltage of SMPS. - Replace the Main Board.
Diagnostics	<div style="text-align: center;">  </div> <pre> graph TD Q1[Lamp(Backlight) Off, power indicator LED on?] -- No --> A1[Check power cable. P/N: BN39-00702F] Q1 -- Yes --> Q2[Does proper Stand-By DC STB5V appear at BD100?] Q2 -- No --> A2[Change the Main Power assembly BN44-00202A] Q2 -- Yes --> Q3[Does proper Main DC B13V,B12V,B5V appear at BD105L,C1261,BD101?] Q3 -- No --> A2 Q3 -- Yes --> Q4[Does proper Inverter DC 120V appear at CN801 in IP?] Q4 -- No --> A2 Q4 -- Yes --> Q5[Does proper DC STB3.3V appear at C101?] Q5 -- No --> A3[Check IC105 Change the Main assembly BN94-01628C] Q5 -- Yes --> Q6[Does proper DC D3.3V,B8V,CORE1.1V appear at C108,C110,C137?] Q6 -- No --> A4[Check IC101,IC108,IC102 Change the Main assembly BN94-02077B] Q6 -- Yes --> Q7[Does proper D1.8V,A2.5V,A1.2V appear at C115, C111, C112?] Q7 -- No --> A5[Check IC104, IC106, IC107 Change the Main assembly BN94-02077B] Q7 -- Yes --> Q8[A power is supplied to set?] Q8 -- No --> A6[Check a other function (No picture part) Replace a LCD Panel BN07-00518A] </pre>
Caution	<p>Make sure to disconnect the power before working on the IP board.</p>



4-1-3. No Video (Analog PC signal)

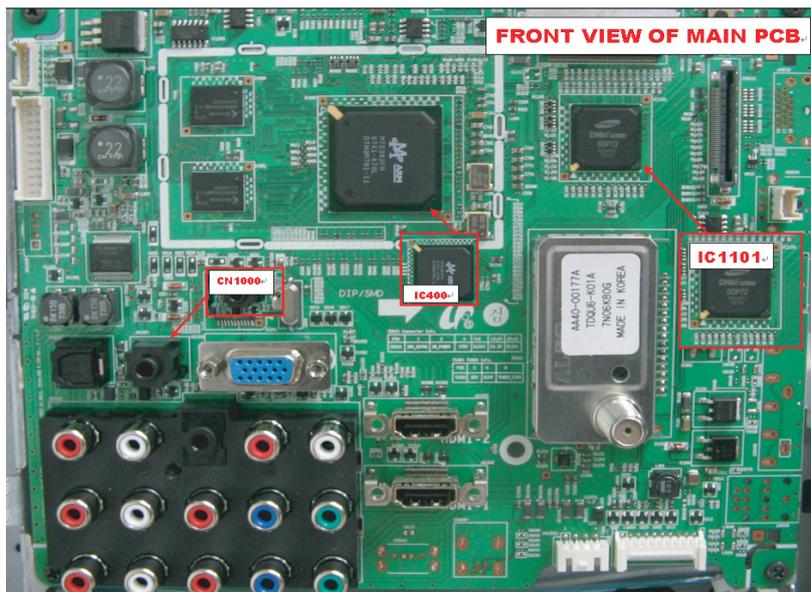
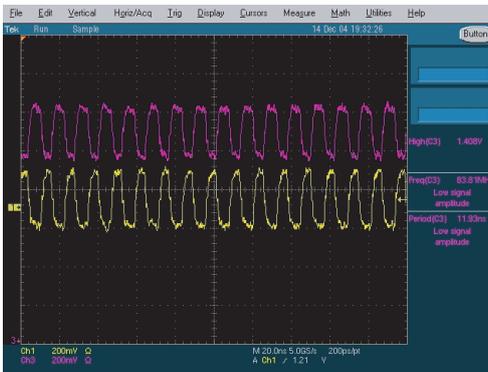
Symptom	<ul style="list-style-type: none"> - Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> - Check the PC source - Check the MT5382 - This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD Start[Power Indicator is off. Lamp on, no video] -- Yes --> Q1[Check the PC source and check the connection of DSUB?] Q1 -- No --> A1[Input an analog PC signal. Check the connected cable.] Q1 -- Yes --> Q2[1 Does the signal appear at #AE18,#AE17,#AF16,#AC16,#AB17 (R, G, B, H, V) of IC400?] Q2 -- No --> A2[Check CN1000, PC cable. Change the PC cable. Change the main PCB assembly] Q2 -- Yes --> Q3[2 Does the digital data appear at output of R721~R740,R788~R791?] Q3 -- No --> A3[Check IC400 Change the main PCB assembly] Q3 -- Yes --> Q4[3 Does the digital data appear at output of R1109, R1110, R1113P, R1114P, R1116P, R1120P, R1122~R1128, R1133, R1135, R1137P~R1141P, R1143~R1150?] Q4 -- No --> A4[Check IC1101 Change the main PCB assembly] Q4 -- Yes --> Q5[Check the LVDS cable? Replace the LCD panel?] Q5 -- No --> A5[Please, Contact 1 800 Samsung] </pre>
Caution	<p>Make sure to disconnect the power before working on the IP board.</p>

WAVEFORMS

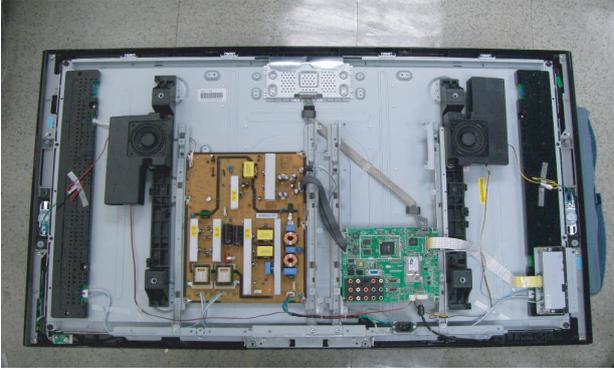
1 2 PC Input (V-Sync, H-Sync)



3 LVDS Out (CLK + / -)



4-1-4. No Video (HDMI - Digital Signal)

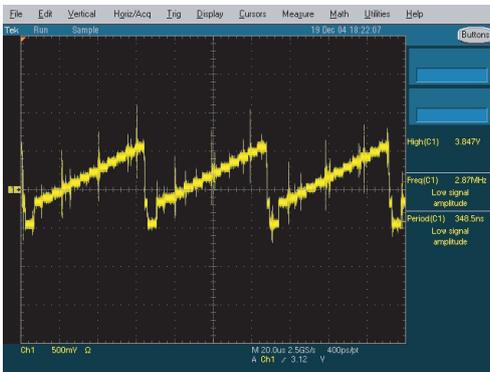
Symptom	<ul style="list-style-type: none"> - Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> - Check the HDMI source - Check the MT5382 - This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD Start[Power Indicator is off. Lamp(Backlight) Off, no video] -- Yes --> Q1{Check the HDMI source and check the connection of HDMI cable?} Q1 -- No --> A1[Input an HDMI signal. Check the connected cable.] Q1 -- Yes --> Q2{4 Does the signal appear at R1027, R1029, R1034, R1036, R1040, R1042, R1063, R1065, R1067, R1069, R1071, R1073(DATA), R1020, R1023, R1059, R1061(Clk+/-)?} Q2 -- No --> A2[Check JA1000,JA1002, HDMI cable. Change the HDMI cable. Change the main PCB assembly] Q2 -- Yes --> Q3{5 Does the digital data appear at output of R721~R740,R788~R791?} Q3 -- No --> A3[Check IC400 Change the main PCB assembly] Q3 -- Yes --> Q4{6 Does the digital data appear at output of R1034-7, R1039, RA061~063, RA065, RA067, RA068?} Q4 -- No --> A4[Check IC1101 Change the main PCB assembly] Q4 -- Yes --> Q5{Check the LVDS cable? Replace the LCD panel?} Q5 -- No --> A5[Please, Contact 1 800 Samsung] </pre>
Caution	<p>Make sure to disconnect the power before working on the IP board.</p>

WAVEFORMS

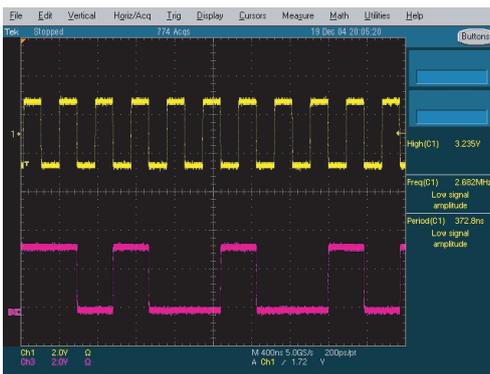
4 5 HDMI Input (CLK + / -)

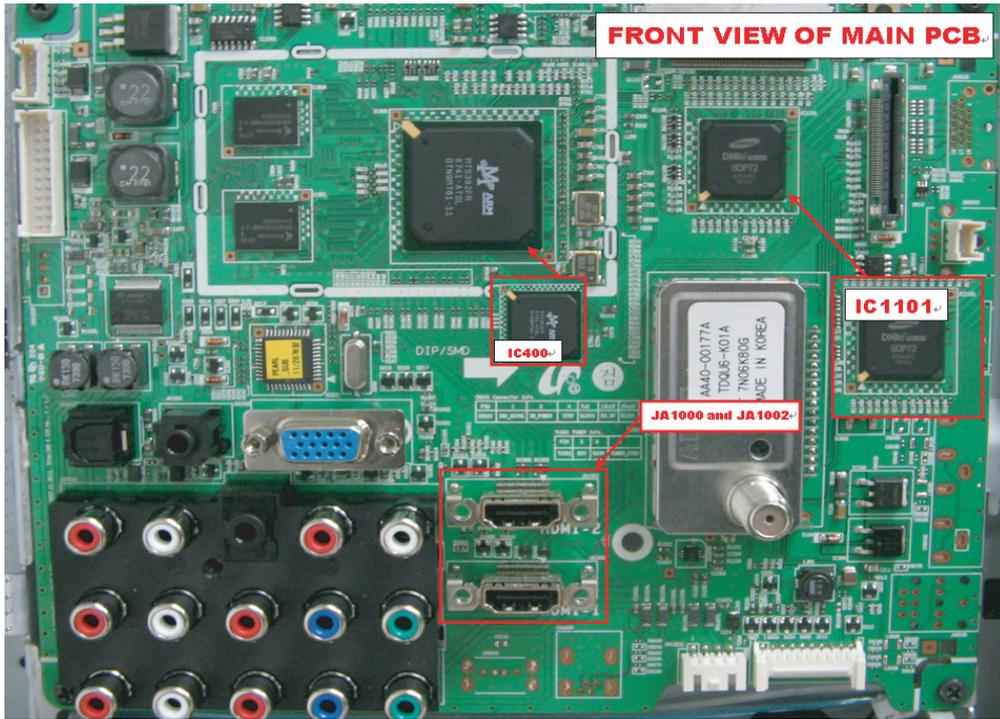


6 Tuner CVBS Out (Pattern: Grey Bar)

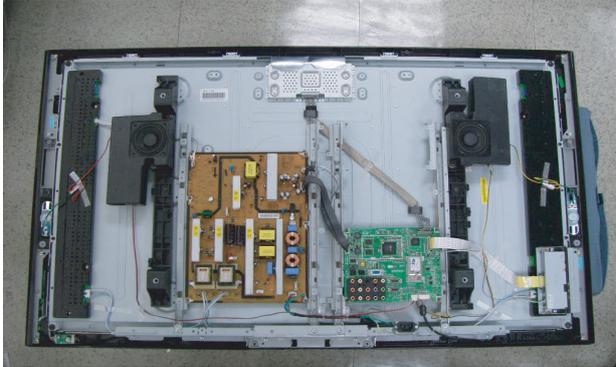


7 TS DATA Out (Clk, Data [0])



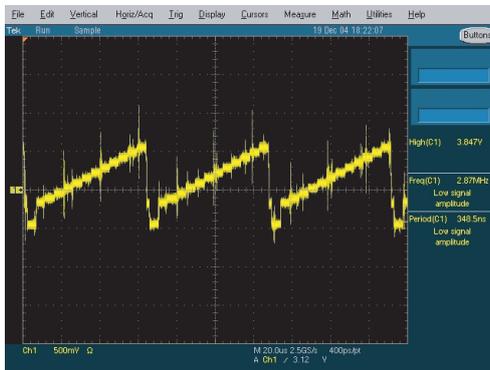


4-1-5. No Video (Tuner_CVBS)

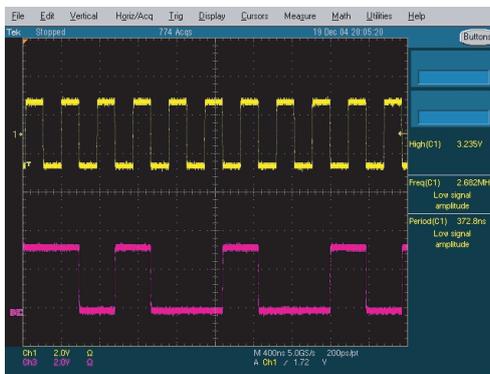
Symptom	<ul style="list-style-type: none"> - Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> - Check the Tuner CVBS source - Check the MT5382 - This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD Start[Power Indicator is off. Lamp(Backlight) Off, no video] -- Yes --> Q1{Check the RF source and check the connection of RF cable?} Q1 -- No --> A1[Input the RF signal. Check the connected cable.] Q1 -- Yes --> Q2{8 Does the signal appear at TU301?} Q2 -- No --> A2[Check TU301 Change the main PCB assembly or tuner.] Q2 -- Yes --> Q3{6 Does the digital data appear at output of R721~R740, R788~R791?} Q3 -- No --> A3[Check IC400 Change the main PCB assembly] Q3 -- Yes --> Q4{7 Does the digital data appear at output of R1109, R1110, R1113P, R1114P, R1116P, R1120P, R1122~R1128, R1133, R1135, R1137P~R1141P, R1143~R1150?} Q4 -- No --> A4[Check IC1101 Change the main PCB assembly] Q4 -- Yes --> Q5{Check the LVDS cable? Replace the LCD panel?} Q5 -- No --> A5[Please, Contact 1 800 Samsung] </pre>
Caution	<p>Make sure to disconnect the power before working on the IP board.</p>

WAVEFORMS

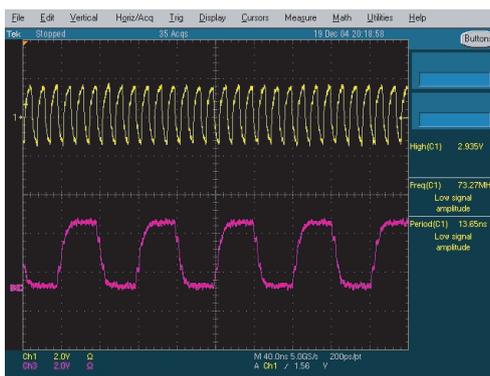
6 Tuner CVBS Out (Pattern: Grey Bar)

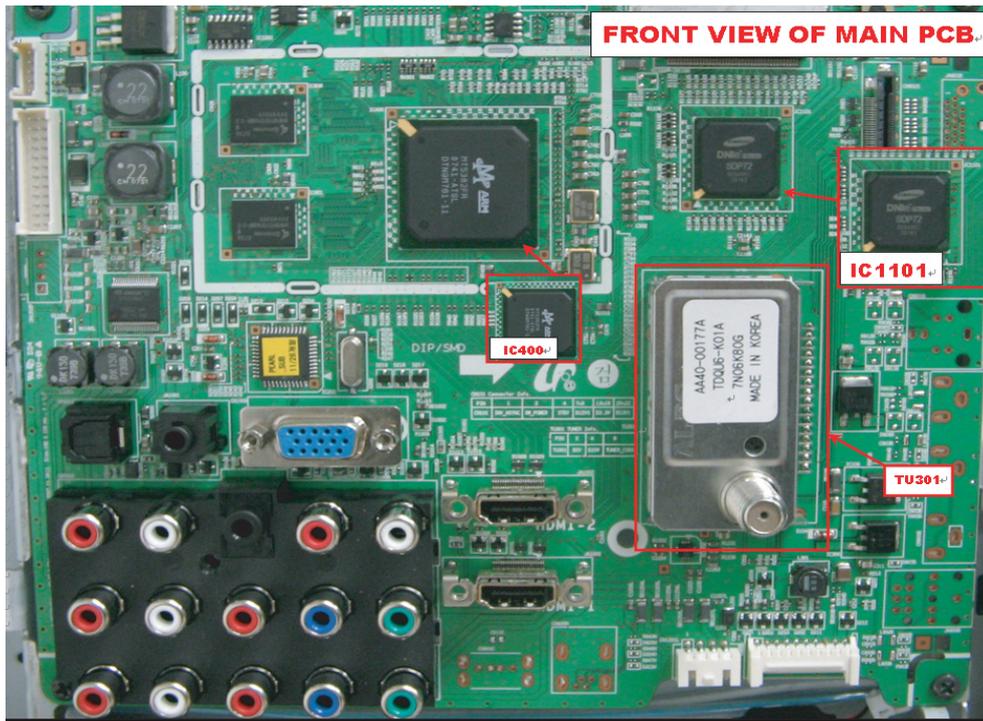


7 TS DATA Out (Clk, Data [0])

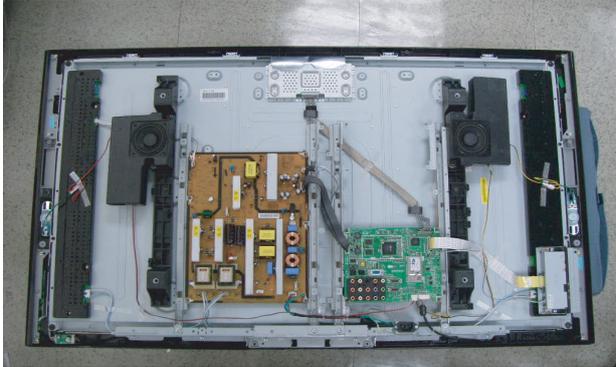


8 Eagle+ Out (Clk, H-Sync)



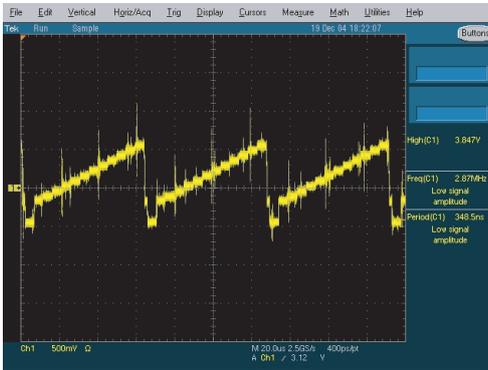


4-1-6. No Video (Tuner DTV)

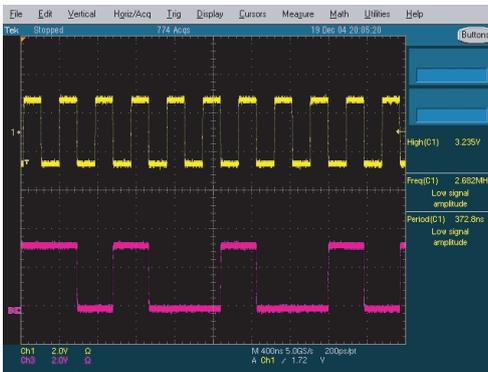
Symptom	<ul style="list-style-type: none"> - Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> - Check the DTV source - Check the MT5382 - This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	<div style="text-align: center;">  </div> <pre> graph TD Start[Power Indicator is off. Lamp(Backlight) Off, no video] -- Yes --> Q1{Check the RF source and check the connection of RF cable?} Q1 -- No --> A1[Input the RF signal. Check the connected cable.] Q1 -- Yes --> Q2{6 Does the digital data appear at output of R721~R740,R788~R791?} Q2 -- No --> A2[Check IC400 Change the main PCB assembly] Q2 -- Yes --> Q3{7 Does the digital data appear at output of R1109, R1110, R1113P, R1114P, R1116P, R1120P, R1122~R1128, R1133, R1135, R1137P~R1141P, R1143~R1150?} Q3 -- No --> A3[Check IC400 Change the main PCB assembly] Q3 -- Yes --> Q4{Check the LVDS cable? Replace the LCD panel?} Q4 -- No --> A4[Please, Contact 1 800 Samsung] </pre>
Caution	<p>Make sure to disconnect the power before working on the IP board.</p>

WAVEFORMS

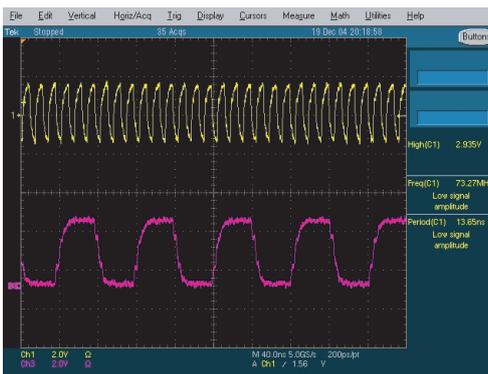
6 Tuner CVBS Out (Pattern: Grey Bar)

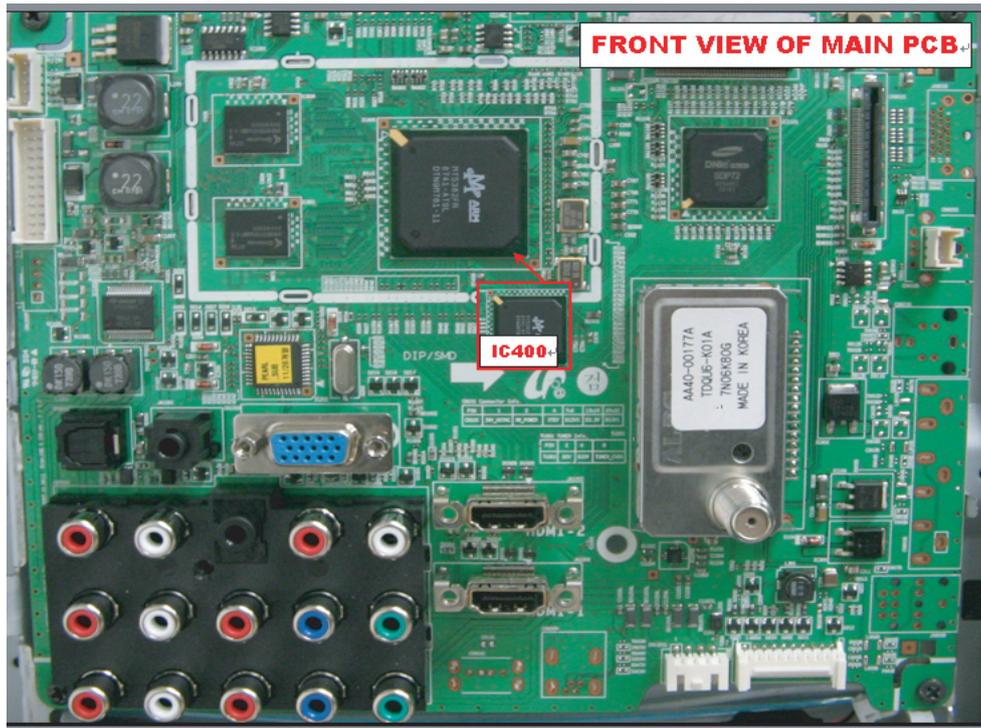


7 TS DATA Out (Clk, Data [0])

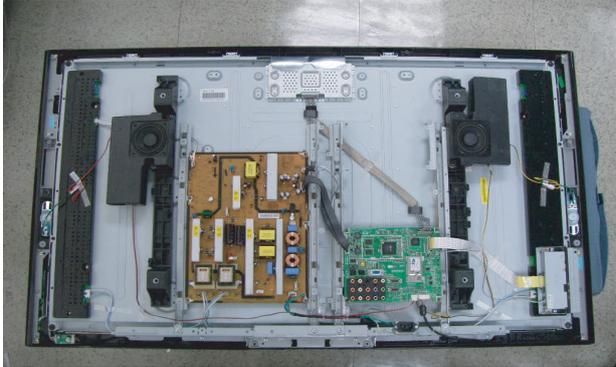


8 Eagle+ Out (Clk, H-Sync)



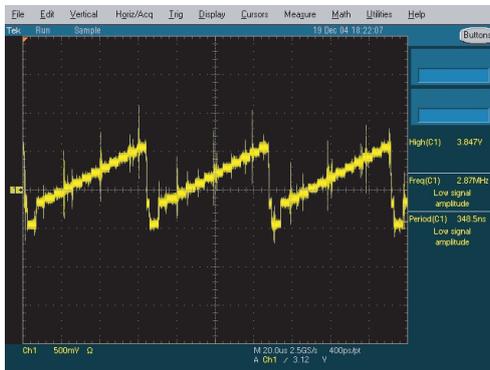


4-1-7. No Video (Video CVBS)

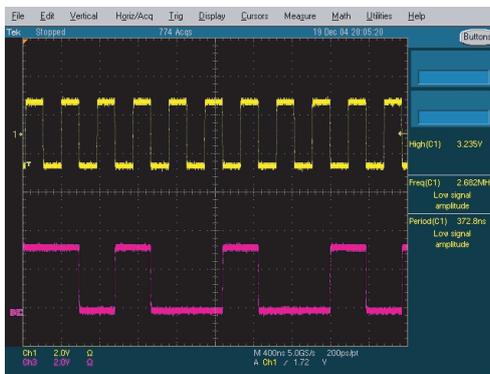
Symptom	<ul style="list-style-type: none"> - Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> - Check the Video CVBS source - Check the MT5382 - This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD Start[Power Indicator is off. Lamp on, no video] -- Yes --> Q1{Check the video source and check the connection of video cable?} Q1 -- No --> A1[Input a video signal. Check the connected cable.] Q1 -- Yes --> Q2{6 Does the signal appear at C702 of IC400?} Q2 -- No --> A2[Check CN7002 or Side-AV Change the main PCB ass'y or Side-AV assembly] Q2 -- Yes --> Q3{6 Does the digital data appear at output of R721~R740,R788~R791?} Q3 -- No --> A3[Check IC400 Change the main PCB assembly] Q3 -- Yes --> Q4{7 Does the digital data appear at output of R1109, R1110, R1113P, R1114P, R1116P, R1120P, R1122~R1128, R1133, R1135, R1137P~R1141P, R1143~R1150?} Q4 -- No --> A4[Check IC400 Change the main PCB assembly] Q4 -- Yes --> Q5{Check the LVDS cable? Replace the LCD panel?} Q5 -- No --> A5[Please, Contact 1 800 Samsung] </pre>
Caution	<p>Make sure to disconnect the power before working on the SMPS board.</p>

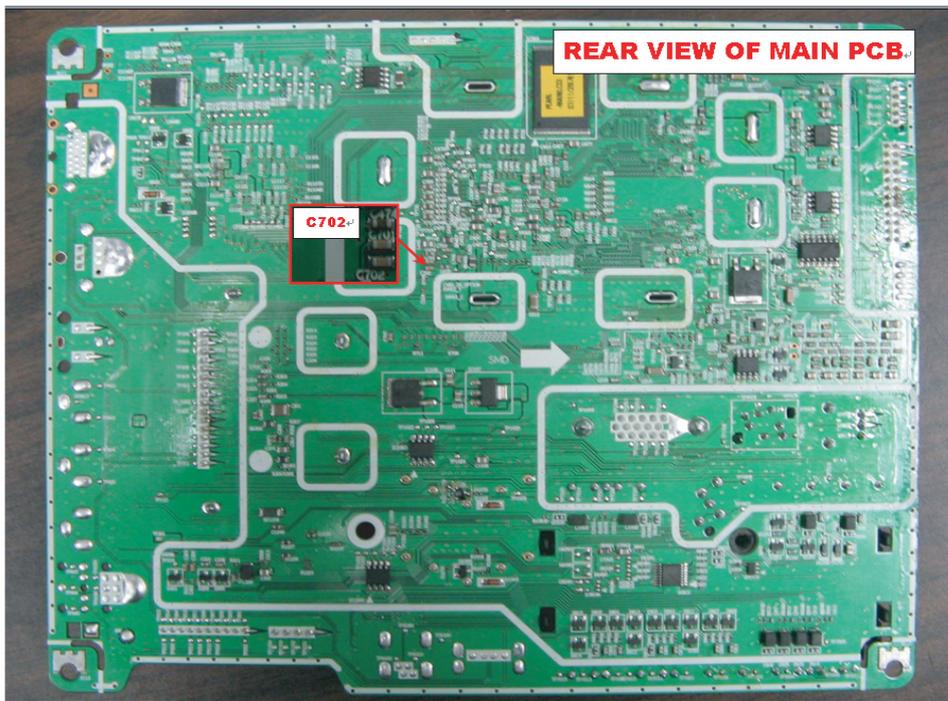
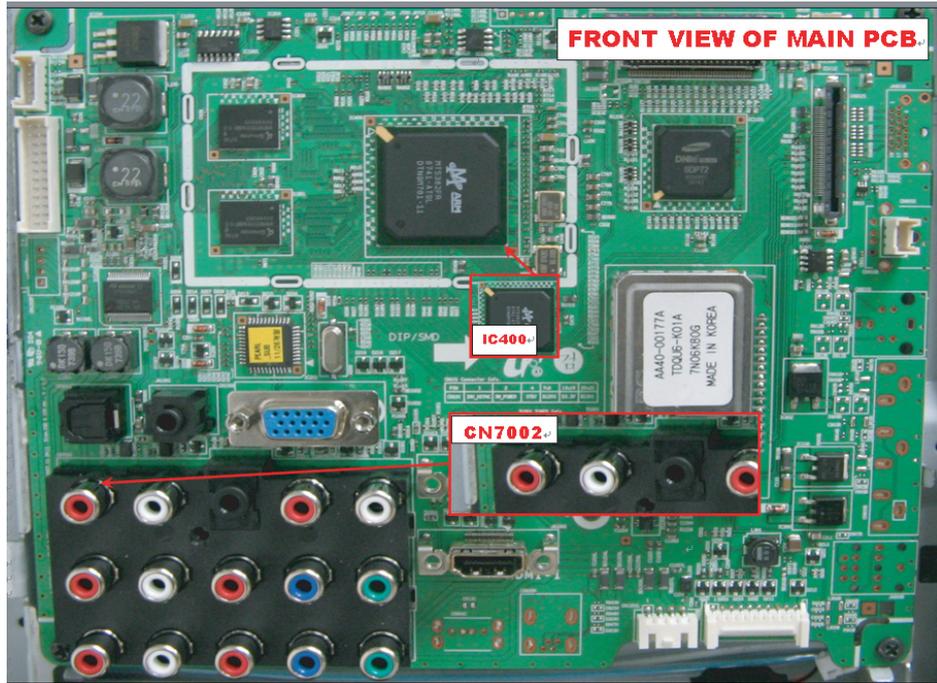
WAVEFORMS

6 Tuner CVBS Out (Pattern: Grey Bar)

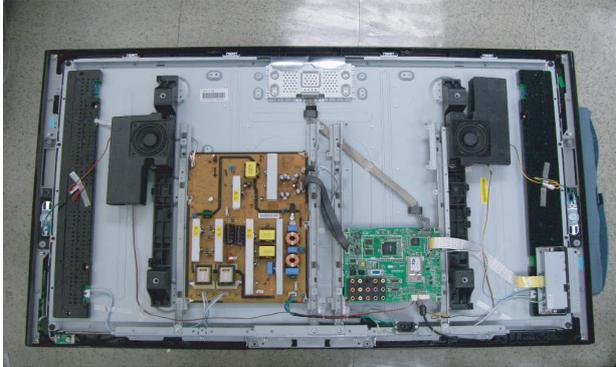


7 TS DATA Out (Clk, Data [0])



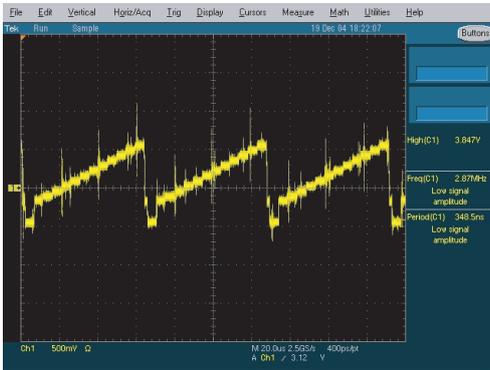


4-1-8. No Video (S-Video 1, 2)

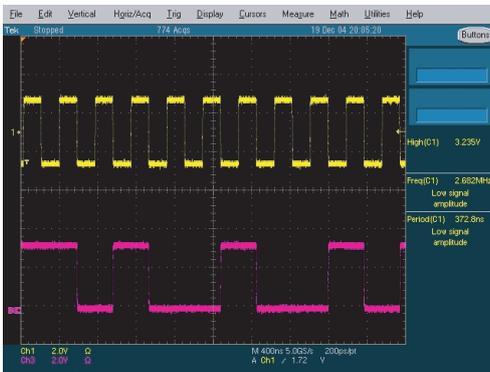
Symptom	<ul style="list-style-type: none"> - Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> - Check the S-Video source - Check the MT5382 - This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD Start[Power Indicator is off. Lamp on, no video] -- Yes --> Q1{Check the video source and check the connection of video cable?} Q1 -- No --> A1[Input a video signal. Check the connected cable.] Q1 -- Yes --> Q2{9 Does the signal appear at C706, C707 (Y, C) of IC400?} Q2 -- No --> A2[Check CN901B or Side-AV Change the main PCB ass'y or Side-AV assembly] Q2 -- Yes --> Q3{6 Does the digital data appear at output of R721~R740, R788~R791?} Q3 -- No --> A3[Check IC400 Change the main PCB assembly] Q3 -- Yes --> Q4{7 Does the digital data appear at output of R1109, R1110, R1113P, R1114P, R1116P, R1120P, R1122~R1128, R1133, R1135, R1137P~R1141P, R1143~R1150?} Q4 -- No --> A4[Check IC400 Change the main PCB assembly] Q4 -- Yes --> Q5{Check the LVDS cable? Replace the LCD panel?} Q5 -- No --> A5[Please, Contact 1 800 Samsung] </pre>
Caution	<p>Make sure to disconnect the power before working on the IP board.</p>

WAVEFORMS

6 Tuner CVBS Out (Pattern: Grey Bar)

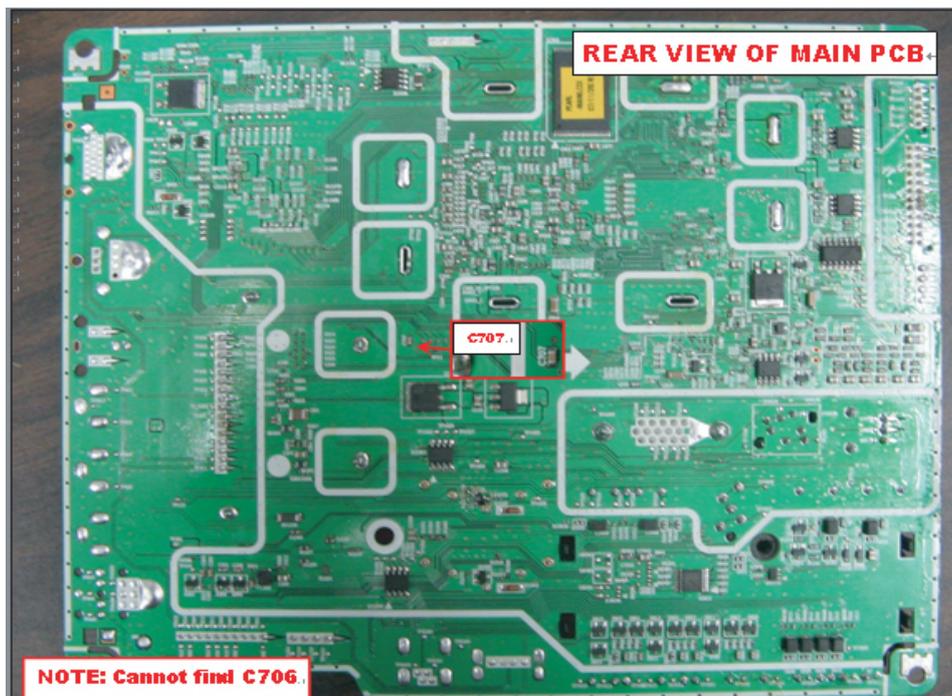
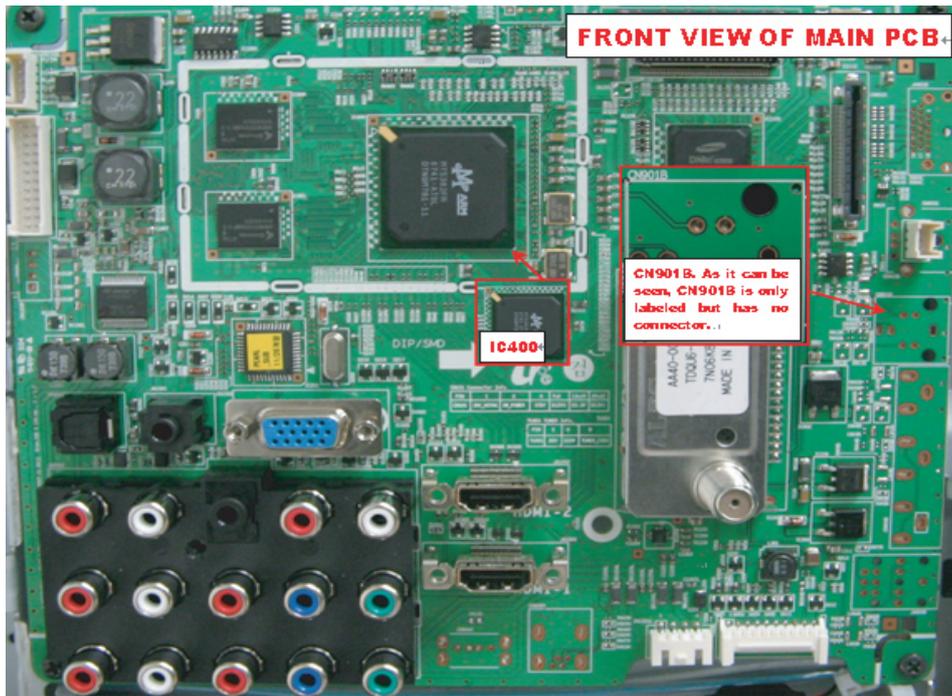


7 TS DATA Out (Clk, Data [0])



9 S-VIDEO Input (Y/C)



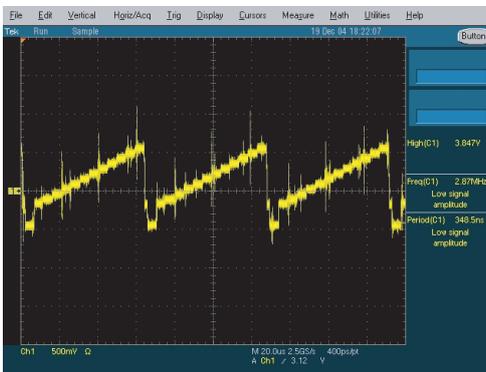


4-1-9. No Video (Component 1, 2)

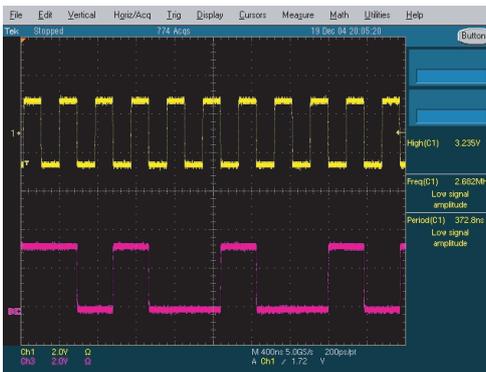
Symptom	<ul style="list-style-type: none"> - Audio is normal but no picture is displayed on the screen.
Major checkpoints	<ul style="list-style-type: none"> - Check the Component source - Check the MT5382 - This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	 <pre> graph TD Start[Power Indicator is off. Lamp on, no video] -- Yes --> Q1{Check component source and check the connection of component cable?} Q1 -- No --> A1[Input a component signal. Check the connected cable.] Q1 -- Yes --> Q2{10 Does the signal appear at C715, C719, C716, C720, C717, C721 (Y, Pb, Pr) of IC400?} Q2 -- No --> A2[Check CN173, CN7002 Change the main PCB assembly] Q2 -- Yes --> Q3{6 Does the digital data appear at output of R721~R740, R788~R791?} Q3 -- No --> A3[Check IC400 Change the main PCB assembly] Q3 -- Yes --> Q4{7 Does the digital data appear at output of R1109, R1110, R1113P, R1114P, R1116P, R1120P, R1122~R1128, R1133, R1135, R1137P~R1141P, R1143~R1150?} Q4 -- No --> A4[Check IC400 Change the main PCB assembly] Q4 -- Yes --> Q5{Check the LVDS cable? Replace the LCD panel?} Q5 -- No --> A5[Please, Contact 1 800 Samsung] </pre>
Caution	<p>Make sure to disconnect the power before working on the IP board.</p>

WAVEFORMS

6 Tuner CVBS Out (Pattern: Grey Bar)

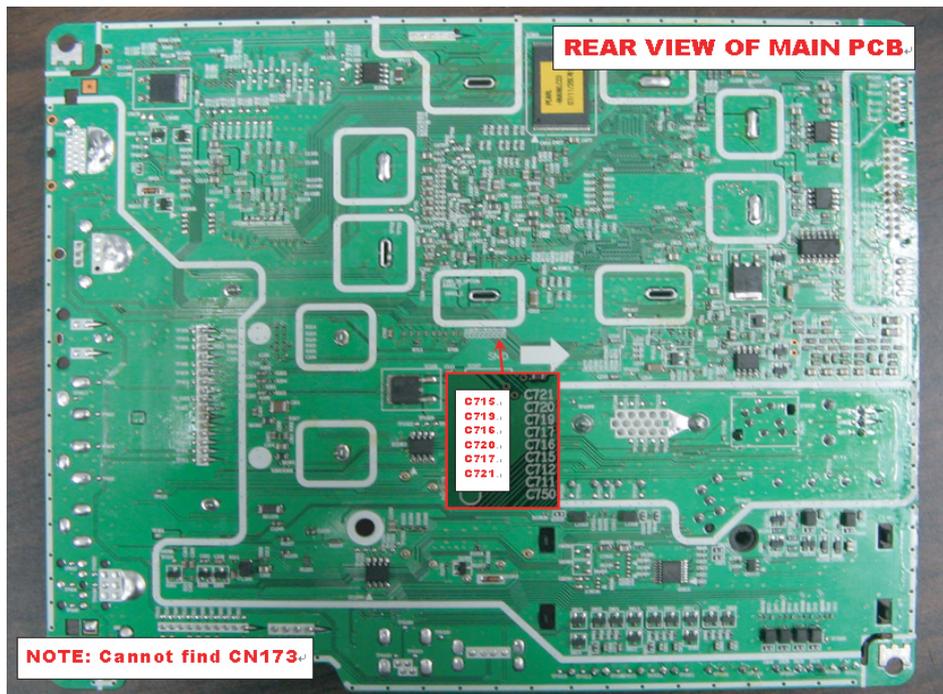
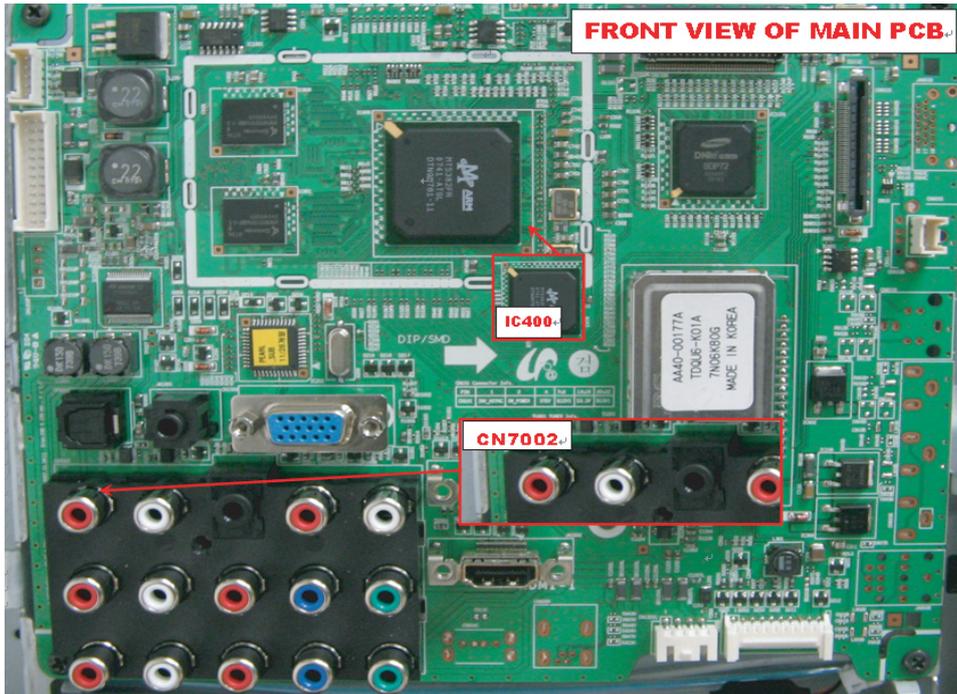


7 TS DATA Out (Clk, Data [0])

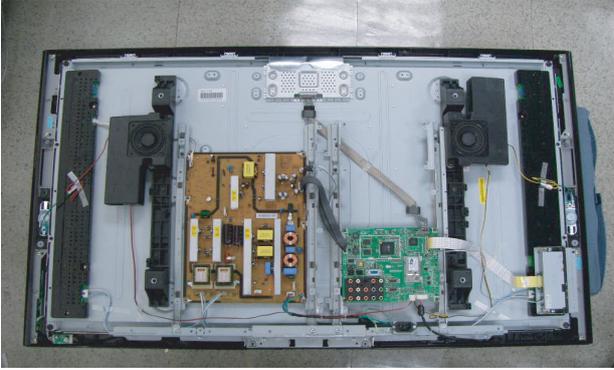


10 Component Input (Y/Pb)



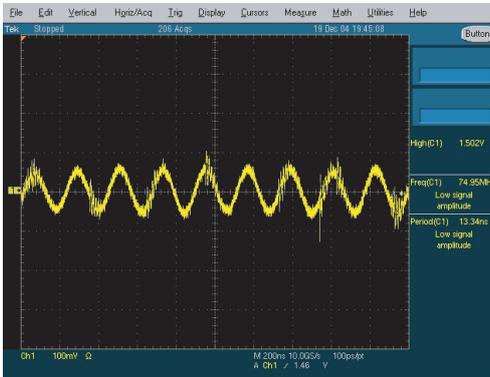


4-1-10. No Sound

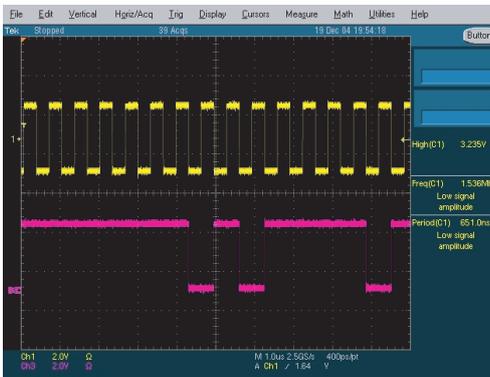
Symptom	<ul style="list-style-type: none"> - Video is normal but there is no sound..
Major checkpoints	<ul style="list-style-type: none"> - When the speaker connectors are disconnected or damaged. - When the sound processing part of the Main Board is not functioning. - Speaker defect..
Diagnostics	<div style="text-align: center;">  </div> <pre> graph TD Start[Picture is display, no sound.] -- Yes --> Q1{Check component source and check the connection of component cable?} Q1 -- No --> A1[Input a component signal. Check the connected cable.] Q1 -- Yes --> Q2{11 Does the signal appear at C762~C771 of IC400?} Q2 -- No --> A2[Check IC400 or Side-AV. Change the main PCB ass'y or side-AV assembly] Q2 -- Yes --> Q3{12 Does the digital data appear at #27~#30 (Mclk, Sclk, LRclk, data) of IC1203?} Q3 -- No --> A3[Check IC1203 Change the main PCB assembly] Q3 -- Yes --> Q4{13 Does the signal appear at L1201, L1202 (L/R output)?} Q4 -- No --> A4[Check IC1203 Change the main PCB assembly] Q4 -- Yes --> Q5{Check the LVDS cable? Replace the LCD panel?} Q5 -- No --> A5[Please, Contact 1 800 Samsung] </pre>
Caution	<p>Make sure to disconnect the power before working on the IP board.</p>

WAVEFORMS

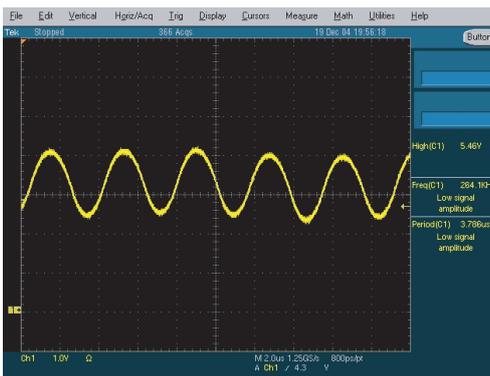
11 Audio Input (Sign Wave)

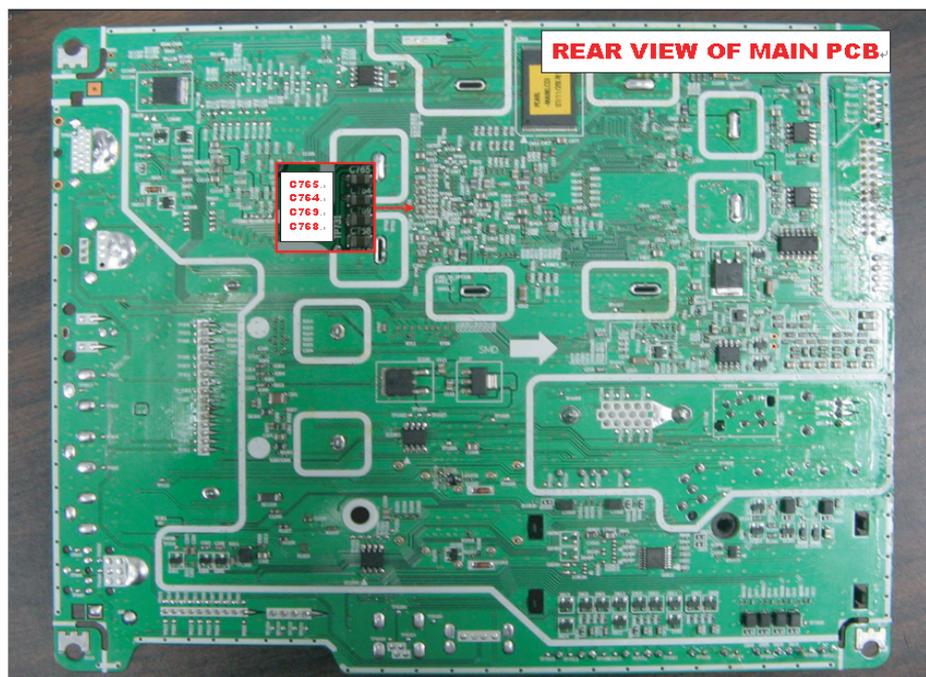
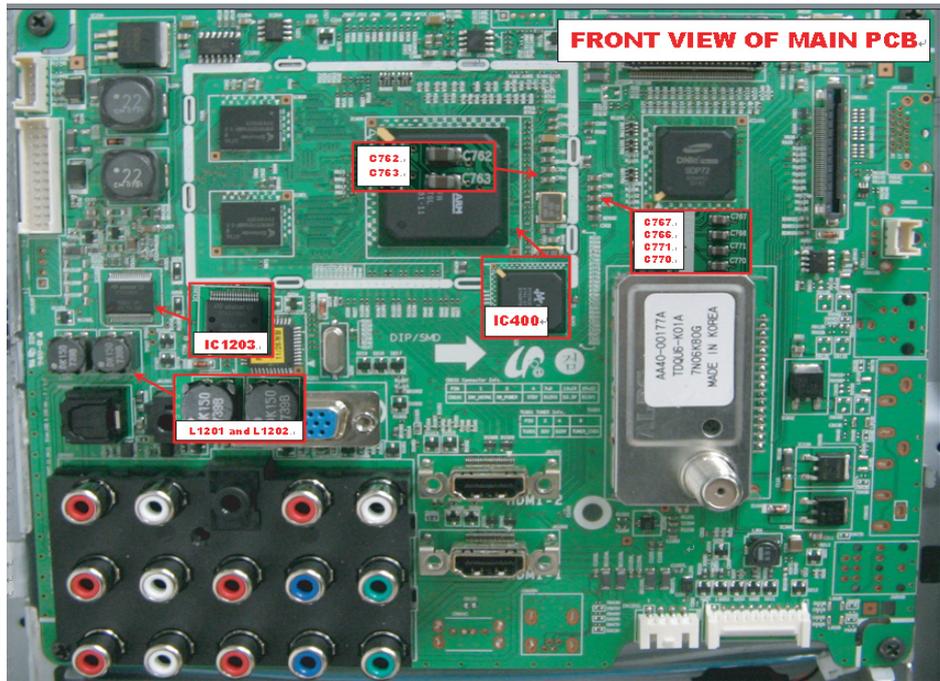


12 12S Input (Clk, Data)



13 Audio Amp Out (Sign Wave)





4-2. Alignments and Adjustments

4-2-1. General Alignment Instruction

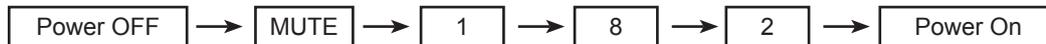
1. Usually, a color LCD-TV needs only slight touch-up adjustment upon installation.
Check the basic characteristics such as height, horizontal and vertical sync.
2. Use the specified test equipment or its equivalent.
3. Correct impedance matching is essential.
4. Avoid overload. Excessive signal from a sweep generator might overload the front-end of the TV. When inserting signal markers, do not allow the marker generator to distort test result.
5. Connect the TV only to an AC power source with voltage and frequency as specified on the backcover nameplate.
6. Do not attempt to connect or disconnect any wire while the TV is turned on. Make sure that the power cord is disconnected before replacing any parts.
7. To protect against shock hazard, use an isolation transformer.

4-3. Factory Mode Adjustments

4-3-1 Entering Factory Mode

To enter 'Service Mode' Press the remote -control keys in this sequence :

- If you do not have Factory remote - control



4-3-2 How to Access Service Mode

Using the Customer Remote

1. Turn the power off and set to stand-by mode
2. Press the remote buttons in this order; POWER OFF-MUTE-1-8-2-POWER ON to turn the set on.
3. The set turns on and enters service mode. This may take approximately 20 seconds.
4. Press the Power button to exit and store data in memory.
- If you fail to enter service mode, repeat steps 1 and 2 above.
5. Initial SERVICE MODE DISPLAY State

ADC	Expert D-Settings
ADC Target	Expert Gray Scale
ADC Result	Expert C-Space
Option Byte	Expert Others
White Balance	CHECKSUM 0x0000
W/B Movie	VisualTEST
EPA Standard	Font Data Viewer
Video/Scaler	T-PRLAUSC-0038
Enhancement	T-PRLAUSM-0017
SOUND	MTK-DRV 2.0.25.0
Dynamic Contrast	RFS : T-PRLAUS-20071127
LNA+	2007-12-07
Hotel Option	PANEL : 46AM
EDID	LN46A550P1FXZA
Expert Setting	EDID Success
	Option :
	0311 1110 5120 8000 0c18
	0010 0000 00
	DTP-COMP-0052
	DTP-LM-0064
	Date of purchase : 12/9/2007

- "T-TULPUS0-0025" and "T-TULPAUS5-C007" are firmware.....

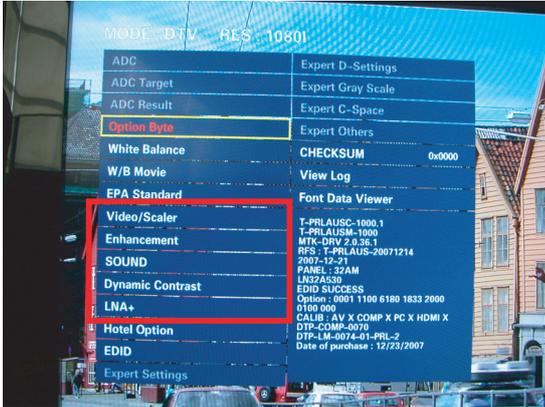
4. Troubleshooting

* How to enter the hidden factory mode.

- a. into the factory mode
- b. key input : 0 + 2 + 1 + 4 + exit
- c. select option byte menu -> in menu -> out menu
(... hidden menu appear...)

** hidden menu : Video/Scaler, Enhancement, SOUND, Dynamic Contrast, LNA+
- FBE3(image enhance IC) generate internal pattern

** hidden menu



6. Buttons operations with Service Mode

Menu	Full Menu Display/Move to Parent Menu
Direction Keys ▲/▼	Item Selection by Moving the Cursor
Direction Keys ◀/▶	Data Increase / Decrease for the Selected Item
Source	Cycles through the active input source that are connected to the unit

4-3-3 Factory Data

ADC	AV Calibration	success
	COMP Calibration	success
	PC Calibration	success
	HDMI Calibration	success

ADC Target	1st_AV_Low	16	2nd_AV_Delta	2
	1st_AV_High	220	2nd_COMP_R_Low	1
	1st_AV_Delta	2	2nd_COMP_G_Low	1
	1st_COMP_YLow	16	2nd_COMP_B_Low	1
	1st_COMP_CbLow	128	2nd_COMP_High	235
	1st_COMP_CrLow	128	2nd_COMP_Delta	1
	1st_COMP_High	235	2st_PC_Low	1
	1st_COMP_Delta	1	2st_PC_High	235
	1st_PC_Low	4	2st_PC_Delta	1
	1st_PC_High	235	2st_HDMI_Low	1
	1st_PC_Delta	1	2st_HDMI_High	235
	2nd_AV_R_Low	1	2st_HDMI_Delta	1
	2nd_AV_G_Low	1		
	2nd_AV_B_Low	1		
	2nd_AV_High	235		

ADC Result	1ST_Y_GH	124
	1ST_Y_GL	135
	1ST_Cb_BH	202
	1ST_Cb_BL	184
	1ST_Cr_RH	118
	1ST_Cr_RL	184
	2nd_R_L	113
	2nd_G_L	113
	2nd_B_L	113
	2nd_R_H	164
	2nd_G_H	164
	2nd_B_H	164

4. Troubleshooting

Option Byte	Factory Reset		PC Mode Ident	Auto	Expert Adj	OFF
	Panel Option	46AM	7.5 IRE	...	WB Reset	OFF
	Model	PEARL	7.5 IRE Offset	...	EER Reset	
	Watchdog Enable	ON	HDMI Hot Plug	Enable		
	Spread Spectrum	1%	HDMI Delay Time	600ms		
	Spectrum Period	1000ns	HDMI Mode Ident	Auto		
	Dimming Selection	PWM_EXT	Wall Calib.			
	RS-232 jack	Debug	Caption Level	ON		
	Gamma	0.95	Watchdog Count	0		
	LVDS OUT Format	JEIDA	Out Clock INV	0		
	Panel Display Time	0HR	Out Clock Phase	0		
	Panel Time Reset		SUB MICOM DOWN	OFF		
	Mute Time[RF]	600ms	EPROM COUNT	594		
	Shop Mode[Aft. F/R]	OFF	IC BUS STOP	OFF		
	DDC WP	OFF	SIDE AV OPTION	46Inch		

White Balance	Sub Brightness	128
	R-Offset	512
	G-Offset	512
	B-Offset	512
	Sub Contrast	128
	R-Gain	512
	G-Gain	512
	B-Gain	512

W/B Movie	W/B Movie	OFF	NOR_Roffset	...
	Mode	...	NOR_Boffset	...
	Color Tone	...	C2_Rgain	...
	Msub Brightness	...	C2_Bgain	...
	Msub Contrast	...	C2_Roffset	...
	W1_Rgain	...	C2_Boffset	...
	W1_Bgain	...	Movie Gamma	...
	W1_Roffset	...	Movie Contrast	...
	W1_Boffset	...	Movie Brightness	...
	W2_Rgain	...	Movie Color	...
	W2_Bgain	...	Movie Sharpness	...
	W2_Roffset	...	Movie Tint	...
	W2_Boffset	...	Movie Backlight	...
	NOR_Rgain	...		
	NOR_Bgain	...		

EPA Standard	Standard Contrast	90
	Standard Brightness	45
	Standard Sharpness	50
	Standard Color	50
	Standard Tint	0
	Standard Backlight	7

Video/Scaler	manual AGC	OFF	Gain2	5
	MIN_HWIDTH	7	Gain3	5
	MAX_HWIDTH	20	Gain4	5
	TH_HIGH	7	Gain5	5
	TH_SUPER	26	Gain6	10
	Noise Level	101	Gain7	2
	Low Gain	64	Gain8	10
	Middle Gain	80	LTI_Gain	2
	High Gain	80	ECTI_Gain	3
	Local Low	64	PIP_CTI_GAIN	4
	Local Middle	96	PIP_CTI_FGAIN	32
	Local High	96	U delay	0
	Limit Pos	64	V delay	0
	Limit Neg	64	Color_mid_value	156
	Gain1	5	Chip_th	40

Enhancement	Patt-Sel	0	M-Skin-UV	-
	B-Slope gain	80	M-Sub color	-
	B-Tilt min	30		
	B-Tilt-max	110		
	Lfunc-Basis	60		
	Hfunc-Basis	90		
	Mean-Offset1	50		
	Mean-Offset2	235		
	Mean-Slope	100		
	ACR-Offset	10		
	ACR-Th1	10		
	ACR-Th2	110		
	Skin-Enable	ON		
	Skin-UV	128		
	Sub color	128		

4. Troubleshooting

SOUND	FM/AM Prescale	3ch
	Carrier Mute	ON
	High Devision	OFF
	Pilot Low	1eh
	Melody Volume	fh
	Audio Delay	10
	STA Amp Vol.	36
	STA Limit Att.	29h
	STA Limit Rel.	9h
	STA Post Scale	fh
	STA Speaker EQ	7fh
		ON

Dynamic Contrast	Dynamic CE	OFF
	Dynamic Dimming	ON
	LBE Y_MEAN	708

LNA+	LNA PLUS	ON
	RF_dB0_TH	2
	RF_dB1_TH	4
	RF_dB2_TH	8
	RF_dB3_TH	21
	NR1_Coring	0
	NR2_Coring	1
	NR3_Coring	2
	NR4_Coring	4

Hotel Option	Hotel Mode	ON
	Power On Channel	3
	Power On Band	Air
	Power On Volume	10
	Max Volume	100
	Panel Button Lock	UnLock
	Power On Source	TV

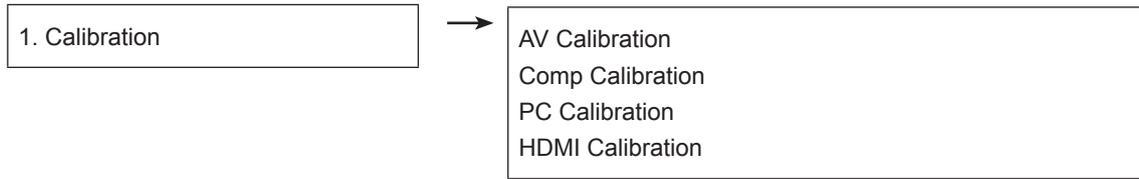
EDID	EDID ON/OFF	ON
	ALL EDID	Success
	PC EDID	Success
	HDMI1 EDID	Success
	HDMI2 EDID	Success
	HDMI3 EDID	...
	EDID VERSION	HDMI 1.3

CHECKSUM	0X0000
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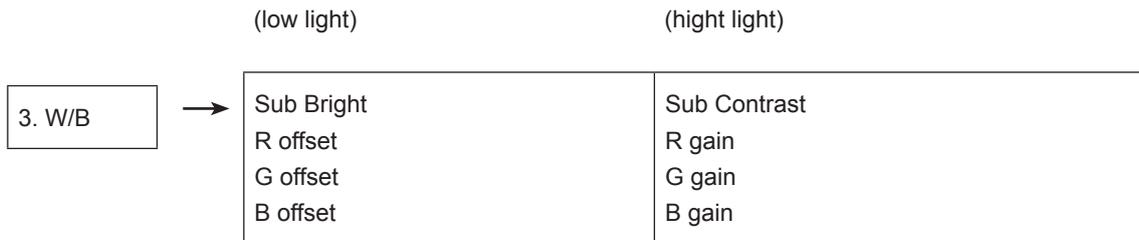
VisualTEST	VisualTEST	Disable
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4-4. White Balance - Calibration

4-4-1 White Balance -Calibration



4-4-2 White Balance - Adjustment

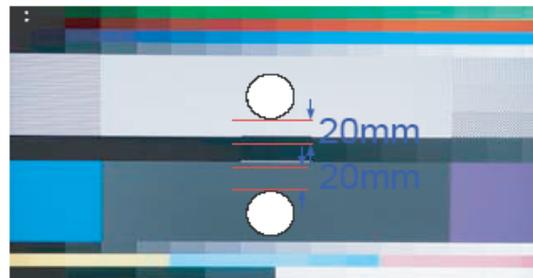


(W/B adjustment Condition refer next page)

4-5. White Ratio (Balance) Adjustment

1. You can adjust the white ratio in factory mode (1:Calibration, 3:White-Balance).
2. Since the adjustment value and the data value vary depending on the input source, you have to adjust these in CVBS, Component 1 and HDMI 1 modes.
3. The optimal values for each mode are configured by default. (Refer to Table 1, 2)
It varies with Panel's size and Specification.

- Equipment : CS-210
- Pattern: MIK K-7256 #92 "Flat W/B Pattern" as standard
- Use other equipment only after comparing the result with that of the Master equipment.
- Set Aging time : 60min ↑



- Calibration and Manual setting for WB adjustment.

- HDMI : Calibration at #24 Chessboard Pattern → Manual adjustment #92 pattern (720p)
- COMP: Calibration at #24 Chessboard Pattern → Manual adjustment at #92 pattern (720p)
- CVBS: Calibration at #24 Chessboard Pattern → Manual adjustment at #92 pattern (NTSC)

- If finishing in HDMI mode, adjustment coordinate is almost same in AV/COMP mode.
- White Balance Manual Adjustment

	Adjustment Coordinate				
		x	y	Y(L)	T(K) + MPCD
CVBS (NTSC)	H/L	266	288	- (Sub_CT:130)	12,000 (±0)
	L/L	266	288	12.6cd/m ² (3.7 Ft)	12,000 (±0)
COMP (720P)	H/L	266	288	- (Sub_CT:130)	12,000 (±0)
	L/L	266	288	13.0cd/m ² (3.8 Ft)	12,000 (±0)
HDMI (720P)	H/L	266	288	- (Sub_CT:130)	12,000 (±0)
	L/L	266	288	13.0cd/m ² (3.8 Ft)	12,000 (±0)

- Adjustment Specification

White Balance : High light (±2), Low light (±3)

Luminance : High light (Don't care), Low light (±0.2 Ft/L)

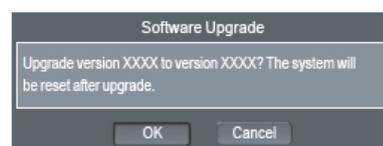
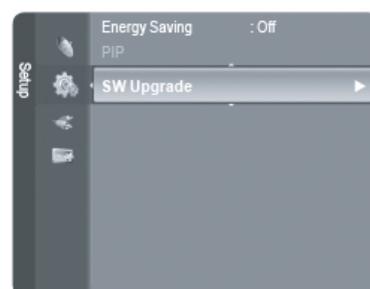
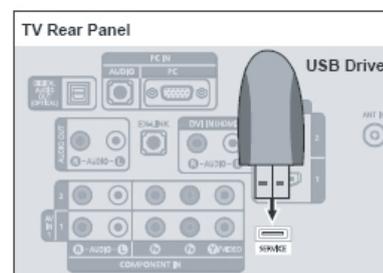
4-6. Servicing Information

4-6-1 USB Download Method

Samsung may offer upgrades for TV's firmware in the future. Please contact the Samsung call center at 1-800-SAMSUNG (726-7864) to receive information about downloading upgrades and using a USB drive. Upgrades will be possible by connecting a USB drive to the USB port located on your TV.

1. Insert a USB drive containing the firmware upgrade into the WISELINK port on the side of the TV.
2. Press the **MENU** button to display the menu. Press the **▲** or **▼** button to select "Setup", then press the **ENTER** button.
3. Press the **▲** or **▼** button to select "SW Upgrade", then press the **ENTER** button.
4. Press the **ENTER** button. The message "Scanning for USB... It may take up to 30 seconds." is displayed.
5. The message "Upgrade version XXXX to version XXXX? The system will be reset after upgrade." is displayed. Press the **◀** or **▶** to select the "OK", then press the **ENTER** button.

Please be careful to not disconnect the power or remove the USB drive while upgrades are being applied. The TV will turn off and turn on automatically after completing the firmware upgrade. Please check the firmware version after the upgrades are complete. 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.



Memo