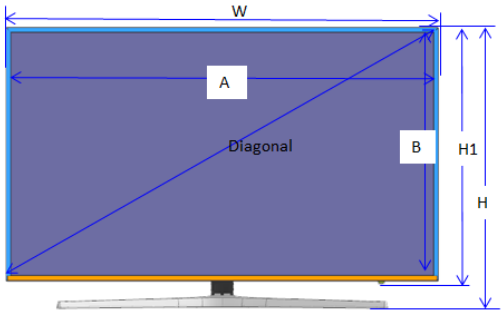

UHD TV
KU6500

Table of Contents

1. Product Introduction
2. Key Features & Operation
3. Front/Rear View
4. Repair Preparations
5. Layout
6. Wiring Diagram
7. Circuit Description
8. Troubleshooting
9. Factory Mode
10. Disassembly & Reassembly

UHD TV

Product Introduction



KU6500 Specification

- 2160P Ultra HD
- 3HDMI, DVI support
- Smart HUB
- Built–in Wi-Fi / BT
- Simple Smart Control

KU6500 Detail spec.

- Front Color : Silver
- Design : ‘16 Chamfer
- Panel : 60Hz
- Memory : Flash 8G

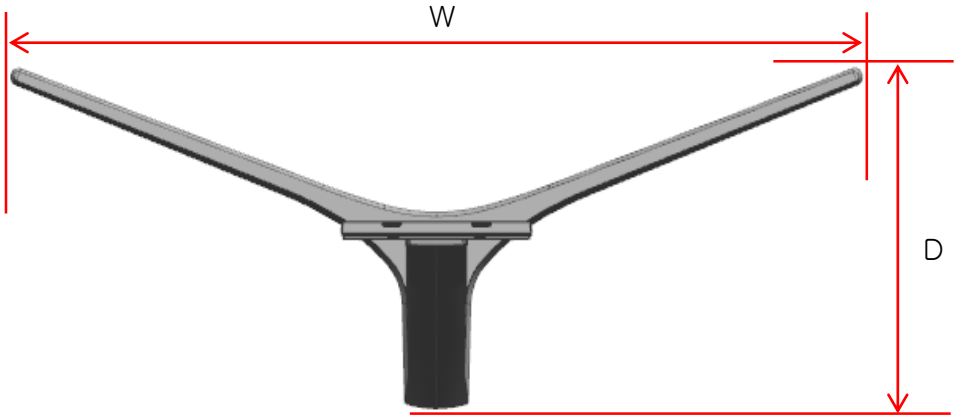
	UN43KU6500KXZL	UN49KU6500KXZL	UN55KU6500KXZL	UN65KU6500KXZL
Size (with Stand) W * H * D [mm]	965.2 * 617.3 * 303.9	1096.3 * 710.5 * 334.0	1233.6*786.9*334.0	1452.4*924.2*378.7
Size (without Stand) W * H1 * D1 [mm]	965.2 * 565.1 * 93.0	1096.3 * 639.4 * 104.0	1233.6*715.3*97.2	1452.4*840.7*114.7
Weight [kg] (with Stand)	11.8	15.9	19.4	27.1
Weight [kg] (without Stand)	10.3	13.9	17.4	23.5

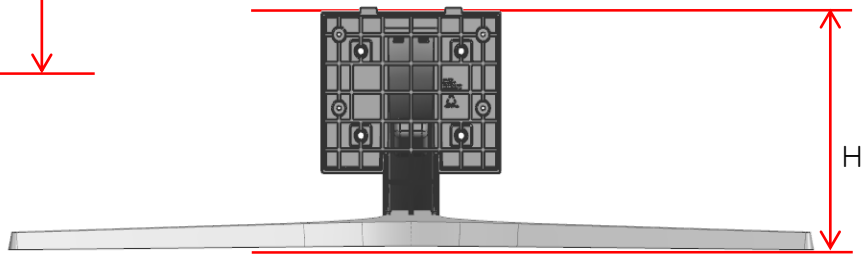
Specification

	KU6500
CPU	CA17 Quad 800MHz 9920 DMIPS
DDR	LPDDR4 2.5GB , 1.25GHz 64bit
Flash	8GB (eMMC5.0)
HDMI	3 INPUT, HDMI DVI Supprot
Voice Recognition	O
Camera	X
Eco Sensor/IR/LED	Built-in bottom Frame
Sound output	20W (Left 10W Right 10W)
Screen Mirroring	YES (TV to Mobile, Mobile to TV)

Dimension – Stand & Cover Rear Area

Stand Dimension

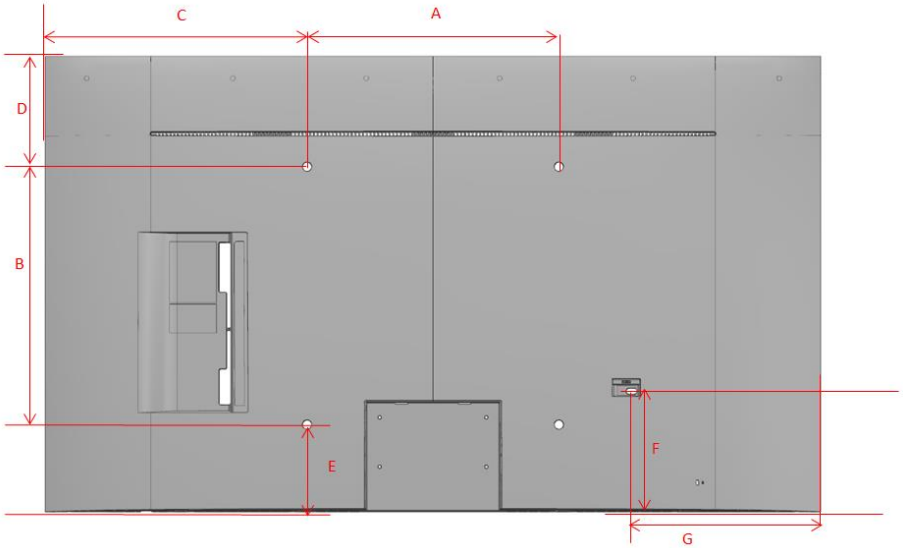




Inch	43	49	55	65
Y-Shape Stand W * D * H [mm]	709.9 * 301.7 * 221.9	947.4*334.2*248.2	947.4*334.2*248.2	1061.2*378.9*276.9

Dimension – Stand & Cover Rear Area

Cover-Rear Dimension

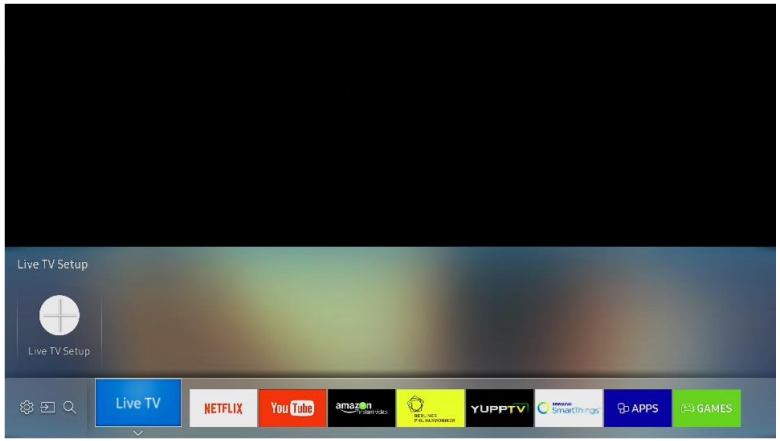


구분	43”	49”	55”	65”
WALL MOUNT(AXB)	200x200	400 X 400	400 X 400	400 X 400
C	380.3	345.8	414.4	524.1
D	185.4	118.0	167.9	230.5
E	170.1	112.3	139.9	201.4
F	172.6	189.4	197.1	273.6
G	132.4	233	296	200.7

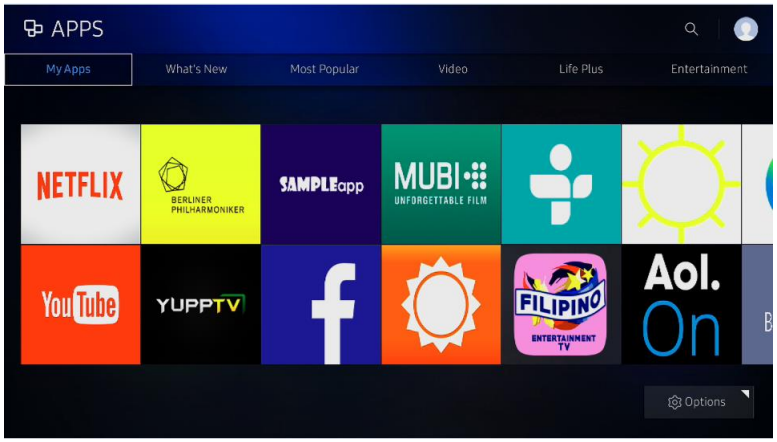
UHD TV

Key Features & Operation

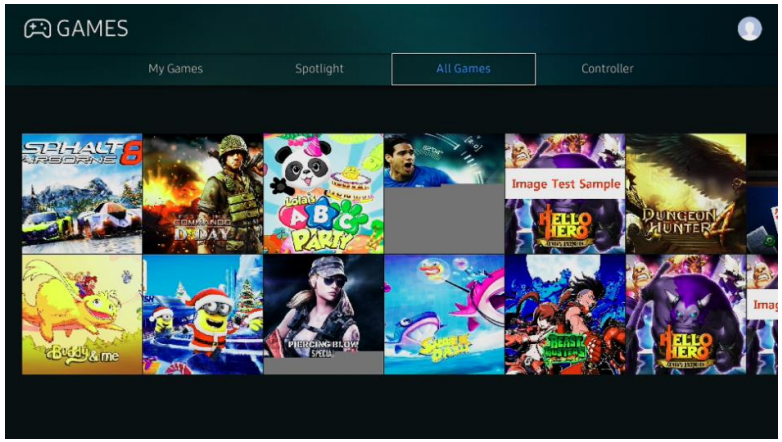
2016’ NEW UI



- Smart Hub first screen



- Apps menu



- Games menu

Remote controller

The Samsung Smart Control

Connecting the Samsung Smart Control to the TV

Connect the Samsung Smart Control to your TV to operate the TV.

When you turn on the TV for the first time, the Samsung Smart Control pairs to the TV automatically. If the Samsung Smart Control does not pair to the TV automatically, point it at the remote control sensor of the TV, and then press and hold the Return and Start/Pause buttons (labeled ① and ② in the figure below) simultaneously for 3 seconds or more.

Button	Description
(Voice recognition)	Runs Voice Interaction. Press the button, say a voice command, and then release the button to run Voice Interaction. When pressed once, the guide to Voice Interaction appears.
123 (Number pad)	When pressed, a number strip appears on the bottom of the screen. Select numbers and then select Done to enter a numeric value. Use to change the channel, enter a PIN, enter a ZIP code, etc.
EXTRA	While watching content, press to display extra information from the content provider.
●●●●	Use these colored buttons to access additional options specific to the feature in use. This button is not available in the U.S.A. and Canada.
Directional pad (up/down/left/right)	Moves the focus and changes the values seen on the TV's menu.
Select	Selects or runs a focused item. When pressed while you are watching content, detailed program information appears.
(Return)	Press to return to the previous menu. When pressed for 1 second or more, the running function is terminated. When pressed while you are watching a program, the previous channel appears.
(Smart hub)	Press to return to the Home Screen.
(Play/pause)	When pressed, the playback controls appear. Using these controls, you can control the media content that is playing.
VOL (Volume)	Move the button up or down to adjust the volume. To mute the sound, press the button. When pressed for 1 second or more, the Accessibility Shortcuts menu appears.
CH (Channel)	Move the button up or down to change the channel. To see the Guide screen, press the button.


UHD TV
Front View

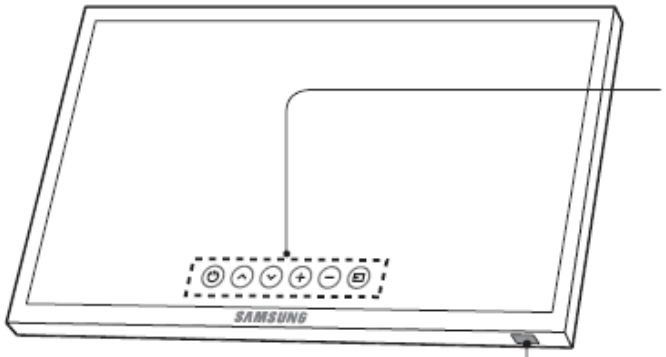
Front View KU6500

Initial Setup

When you turn on your TV for the first time, it immediately starts the Initial Setup. Follow the instructions displayed on the screen and configure the TV's basic settings to suit your viewing environment.

Using the TV Controller

You can turn on the TV with the **TV controller** button at the bottom of the TV, and then use the **Control menu**. The Control Menu appears when the button is pressed while the TV is On. For more information about its usage, refer to the figure below.



Control Menu

- : Power Off
- : Channel Up
- : Channel Down
- : Volume Up
- : Volume Down
- : Source

TV controller / Remote control sensor

Press: Move

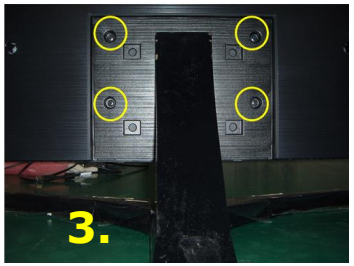
Press & Hold: Select

The TV controller is located on the bottom of the TV.

UHD TV

Repair Preparations

KU6500 Repair Preparations



6003-001334, 4 ea

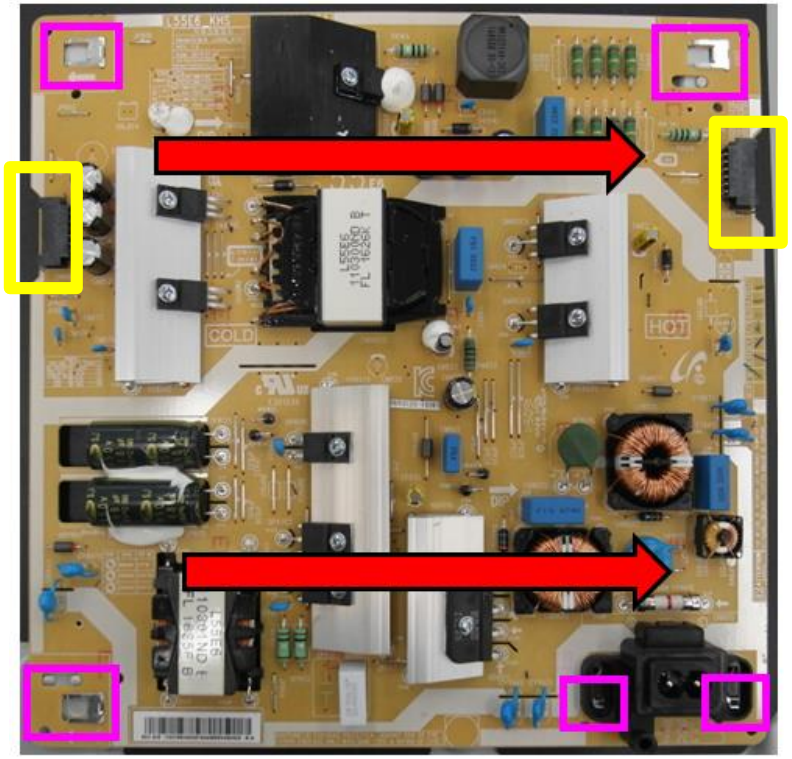
Repair Preparations

1. Disconnect PWR Cord.
2. Lay the TV Face Down on Protective Table with a screen cushion
3. Remove the 4 Stand Screws and remove the stand
4. Remove the Rear Cover.
5. Reconnect PWR.
   Option: Can re-install stand to test the TV in the normal upright position.

Removing SMPS board

- Firstly, Remove 2 Cables
- Use both hands to hold the ‘SMPS' and slide the board to the RIGHT to release the board.

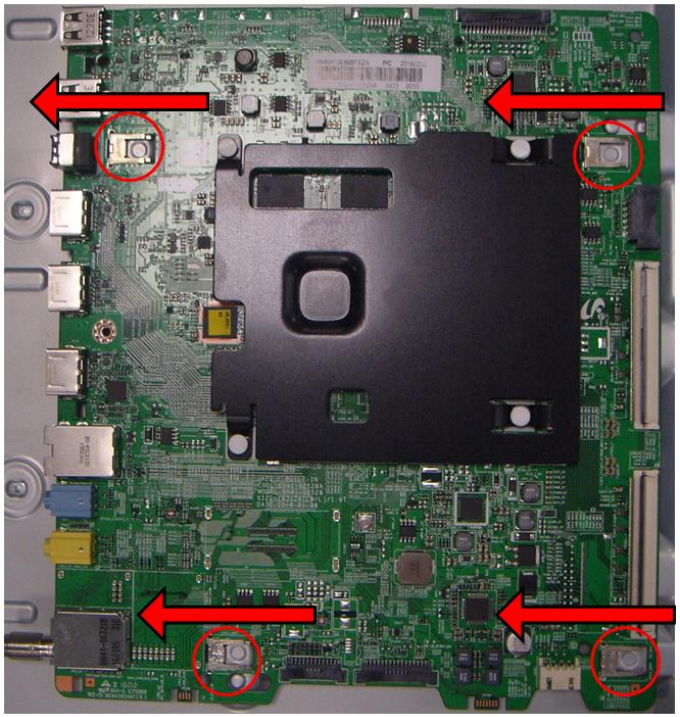
Then carefully remove the ‘SMPS'.



Removing Main board

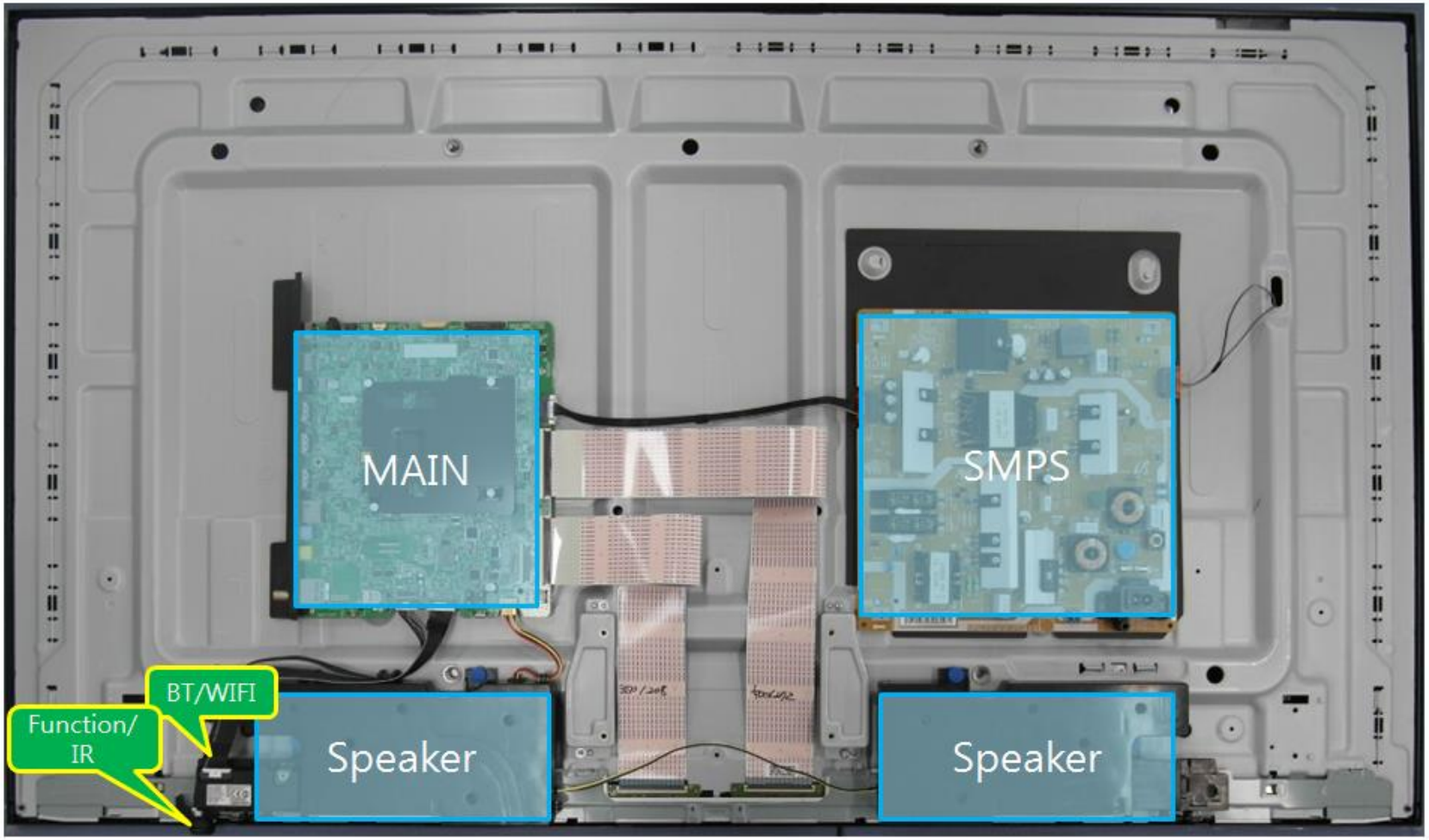
- Use both hands to hold the 'TV Board' and slide the board to the LEFT to release the board.

Then carefully remove the 'TV Board'.




UHD TV
Layout

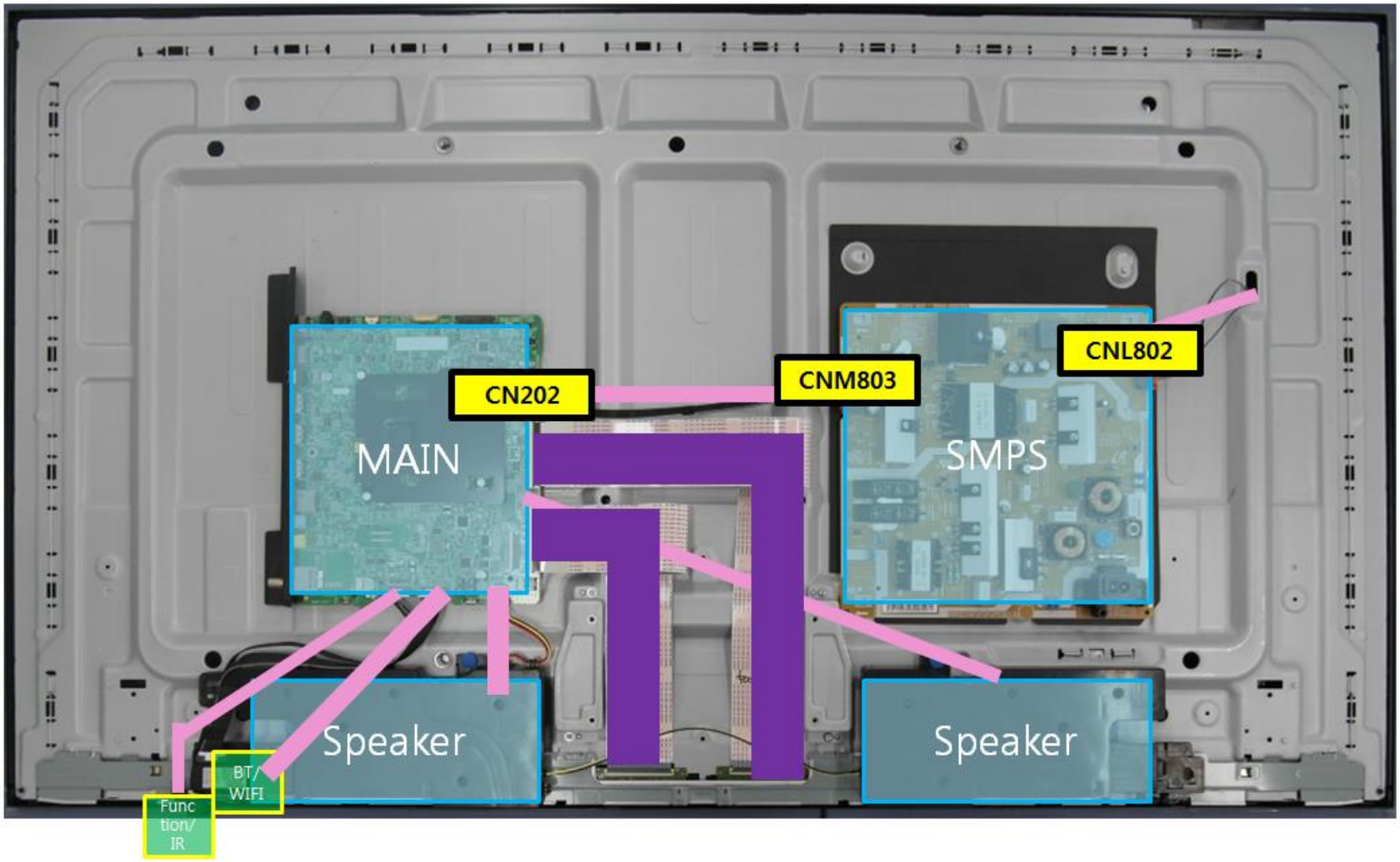
Layout



UHD TV

Wiring Diagram

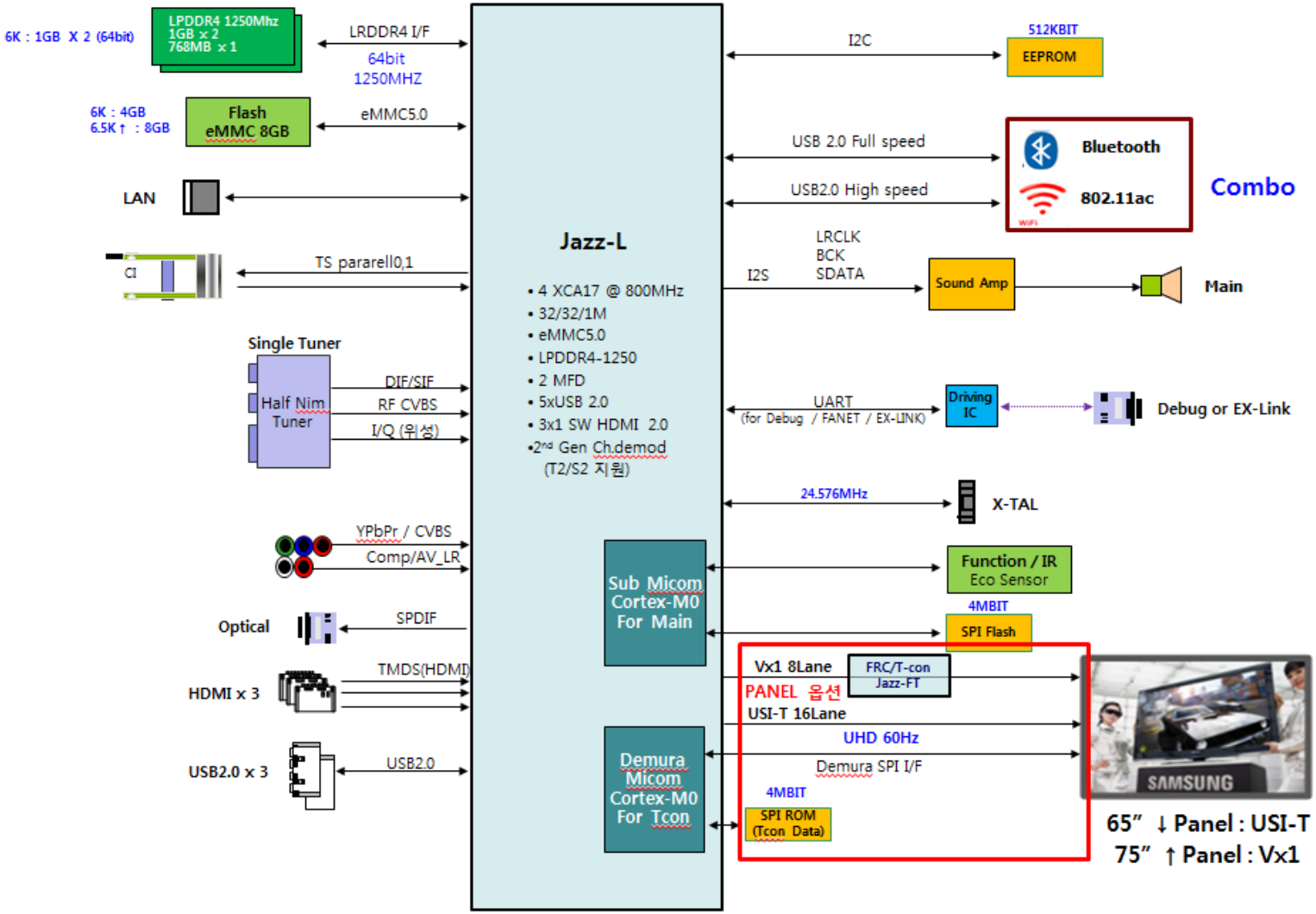
Wiring Diagram



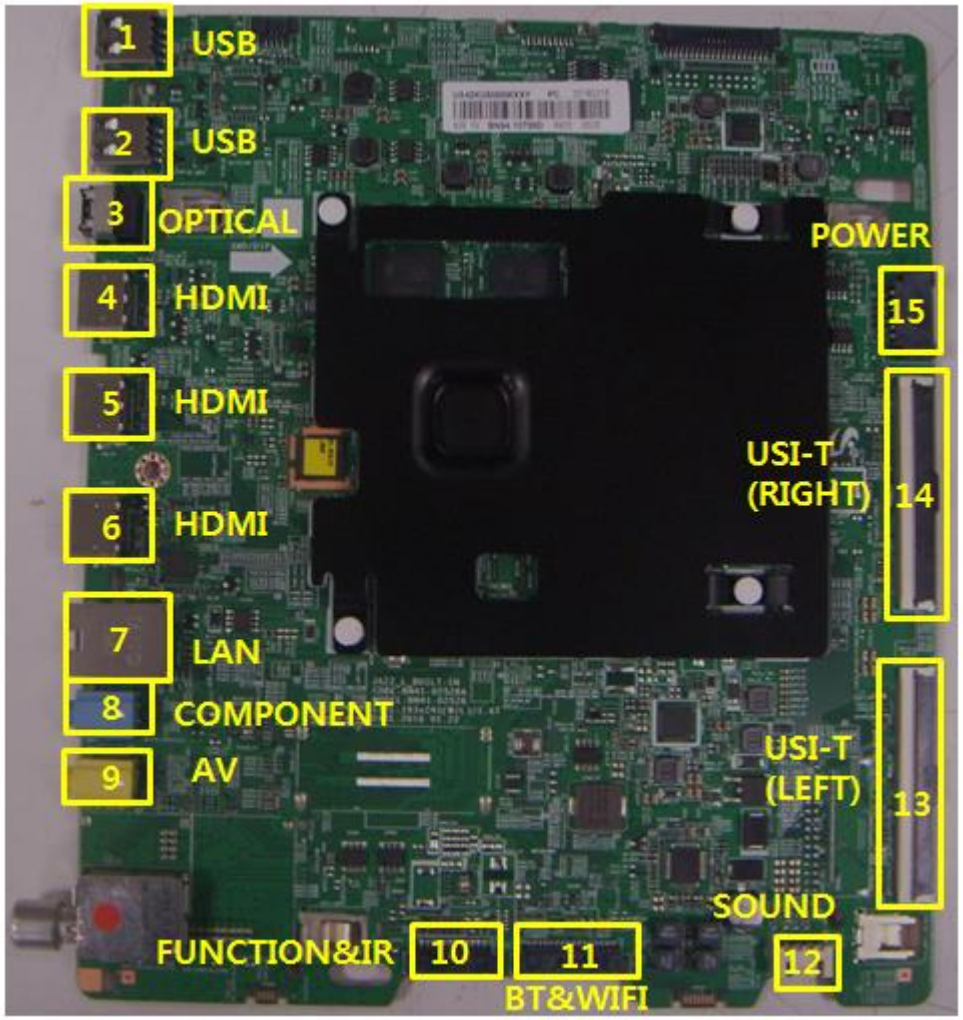
UHD TV

Circuit Description

Block Diagram



Main Board


1
USB
2
USB
3
OPTICAL
4
HDMI
5
HDMI
6
HDMI
7
LAN
8
COMPONENT
9
AV
POWER
15
USI-T
(RIGHT)
14
USI-T
(LEFT)
13
SOUND
12
FUNCTION&IR
10
11
BT&WIFI

Main Board Pin Map

13. CN1801_UT (USI-T LEFT)			
1	FB_TRDY_1	2	GND
3	PANEL_3.3V_PW	4	PANEL_3.3V_PW
5	FB_VCOM1_2_CELL	6	VCOM1_CELL
7	VCOM2_CELL	8	VCOM3_CELL
9	VSS_-7.5V_PW	10	VOFF_-11V_PW
11	-	12	CKV1_MB4
13	CKV2_MB4	14	CKV3_MB4
15	CKV4_MB4	16	CKVB1_MB4
17	CKVB2_MB4	18	CKVB3_MB4
19	CKVB4_MB4	20	STVP_MB4
21	ASG_MON_L_MB4	22	-
23	GND	24	GND
25	DEMURA_SSPHOLD_SPI	26	DEMURA_SSPWP_SPI
27	DEMURA_SSPRXD_SPI	28	DEMURA_SSPTXD_SPI
29	DEMURA_SSPFRM_SPI	30	DEMURA_SSPCLK_SPI
31	GND	32	JM_USIT_TX_CH0_A+
33	JM_USIT_TX_CH0_A-	34	GND
35	JM_USIT_TX_CH0_B+	36	JM_USIT_TX_CH0_B-
37	GND	38	JM_USIT_TX_CH1_A+
39	JM_USIT_TX_CH1_A-	40	GND
41	JM_USIT_TX_CH1_B+	42	JM_USIT_TX_CH1_B-
43	GND	44	JM_USIT_TX_CH2_A+
45	JM_USIT_TX_CH2_A-	46	GND
47	JM_USIT_TX_CH2_B+	48	JM_USIT_TX_CH2_B-
49	GND	50	JM_USIT_TX_CH3_A+
51	JM_USIT_TX_CH3_A-	52	GND
53	JM_USIT_TX_CH3_B+	54	JM_USIT_TX_CH3_B-
55	GND	56	JM_USIT_TX_CH4_A+
57	JM_USIT_TX_CH4_A-	58	GND
59	JM_USIT_TX_CH4_B+	60	JM_USIT_TX_CH4_B-
61	GND	62	JM_USIT_TX_CH5_A+
63	JM_USIT_TX_CH5_A-	64	GND
65	JM_USIT_TX_CH5_B+	66	JM_USIT_TX_CH5_B-
67	GND	68	JM_USIT_TX_CH6_A+
69	JM_USIT_TX_CH6_A-	70	GND
71	JM_USIT_TX_CH6_B+	72	JM_USIT_TX_CH6_B-
73	GND	74	JM_USIT_TX_CH7_A+
75	JM_USIT_TX_CH7_A-	76	GND
77	JM_USIT_TX_CH7_B+	78	JM_USIT_TX_CH7_B-
79	GND	80	SFC1
81	GND	82	PI_DSF_MONITOR
83	PORTNUM	84	VCCA_1.9V_PW
85	VCCB_1.8V_PW	86	L_L_CELL
87	L_H_CELL	88	HAVDD_8.5V_PW
89	U_L_CELL	90	U_H_CELL
91	AVDD_17V_PW	92	AVDD_17V_PW
93	AVDD_17V_PW	94	AVDD_17V_PW
95	-	96	FB_TRDY_2

14. CN1802_UT (USI-T RIGHT)			
1	FB_TRDY_2	2	
3	AVDD_17V_PW	4	AVDD_17V_PW
5	AVDD_17V_PW	6	AVDD_17V_PW
7	U_H_CELL	8	U_L_CELL
9	HAVDD_8.5V_PW	10	L_H_CELL
11	L_L_CELL	12	VCCB_1.8V_PW
13	VCCA_1.9V_PW	14	PI_DSF_MONITOR
15	PORTNUM	16	GND
17	-	18	-
19	-	20	GND
21	SFC1	22	GND
23	JM_USIT_TX_CH8_A+	24	JM_USIT_TX_CH8_A-
25	GND	26	JM_USIT_TX_CH8_B+
27	JM_USIT_TX_CH8_B-	28	GND
29	JM_USIT_TX_CH9_A+	30	JM_USIT_TX_CH9_A-
31	GND	32	JM_USIT_TX_CH9_B+
33	JM_USIT_TX_CH9_B-	34	GND
35	JM_USIT_TX_CH10_A+	36	JM_USIT_TX_CH10_A-
37	GND	38	JM_USIT_TX_CH10_B+
39	JM_USIT_TX_CH10_B-	40	GND
41	JM_USIT_TX_CH11_A+	42	JM_USIT_TX_CH11_A-
43	GND	44	JM_USIT_TX_CH11_B+
45	JM_USIT_TX_CH11_B-	46	GND
47	JM_USIT_TX_CH12_A+	48	JM_USIT_TX_CH12_A-
49	GND	50	JM_USIT_TX_CH12_B+
51	JM_USIT_TX_CH12_B-	52	GND
53	JM_USIT_TX_CH13_A+	54	JM_USIT_TX_CH13_A-
55	GND	56	JM_USIT_TX_CH13_B+
57	JM_USIT_TX_CH13_B-	58	GND
59	JM_USIT_TX_CH14_A+	60	JM_USIT_TX_CH14_A-
61	GND	62	JM_USIT_TX_CH14_B+
63	JM_USIT_TX_CH14_B-	64	GND
65	JM_USIT_TX_CH15_A+	66	JM_USIT_TX_CH15_A-
67	GND	68	JM_USIT_TX_CH15_B+
69	JM_USIT_TX_CH15_B-	70	GND
71	SFC2	72	GND
73	-	74	ASG_MON_R_MB4
75	STVP_MB4	76	CKVB4_MB4
77	CKVB3_MB4	78	CKVB2_MB4
79	CKVB1_MB4	80	CKV4_MB4
81	CKV3_MB4	82	CKV2_MB4
83	CKV1_MB4	84	-
85	VOFF_-11V_PW	86	VSS_-7.5V_PW
87	-	88	VCOM3_CELL
89	FB_VCOM3_CELL	90	VCOM2_CELL
91	VCOM1_CELL	92	FB_VCOM4_CELL
93	PANEL_3.3V_PW	94	PANEL_3.3V_PW
95	FB_TRDY_3	96	GND

1. CN2303 (USB)			
1	A5V_USB2_PW	3	JACK_D+_USB2
2	JACK_D-_USB2	4	GND

2. CN2304 (USB)			
1	B5V_USB1_PW	3	JACK_D+_USB1
2	JACK_D-_USB1	4	GND

3. CN501 (OPTICAL)			
1	SPDIF_OUT	3	GND
2	B5V_PW		

4. CON_H4 (HDMI)			
1	HDMI4_RX2+_HDMI	11	GND
2	GND	12	HDMI4_RXC-_HDMI
3	HDMI4_RX2-_HDMI	13	CEC
4	HDMI4_RX1+_HDMI	14	GND
5	GND	15	HDMI4_SCL_DDC
6	HDMI4_RX1-_HDMI	16	HDMI4_SDA_DDC
7	HDMI4_RX0+_HDMI	17	GND
8	GND	18	HDMI4_IDENT
9	HDMI4_RX0-_HDMI	19	HDMI4_HPD
10	HDMI4_RXC+_HDMI		

5. CON_H3 (HDMI)			
1	HDMI3_RX2+_HDMI	11	GND
2	GND	12	HDMI3_RXC-_HDMI
3	HDMI3_RX2-_HDMI	13	CEC
4	HDMI3_RX1+_HDMI	14	ARC_SINGLE
5	GND	15	HDMI4_SCL_DDC
6	HDMI3_RX1-_HDMI	16	HDMI4_SDA_DDC
7	HDMI3_RX0+_HDMI	17	GND
8	GND	18	HDMI3_IDENT
9	HDMI3_RX0-_HDMI	19	HDMI3_HPD
10	HDMI3_RXC+_HDMI		

6. CON_H2 (HDMI)			
1	HDMI2_RX2+_HDMI	11	GND
2	GND	12	HDMI2_RXC-_HDMI
3	HDMI2_RX2-_HDMI	13	CEC
4	HDMI2_RX1+_HDMI	14	GND
5	GND	15	HDMI2_SCL_DDC_BUFFER
6	HDMI2_RX1-_HDMI	16	HDMI2_SDA_DDC_BUFER
7	HDMI2_RX0+_HDMI	17	GND
8	GND	18	HDMI2_IDENT
9	HDMI2_RX0-_HDMI	19	HDMI2_HPD
10	HDMI2_RXC+_HDMI		

7. CN2401_LAN (LAN)			
1	LAN_TXD+_LAN	5	GND
2	GND	6	LAN_RXD-_LAN
3	LAN_TXD-_LAN	7	NC
4	LAN_RXD+_LAN	8	GND

8. CN601 (COMPONENT)			
1	GND	5	TEST_PR
2	COMP_PB	6	GND
3	COMP_PR	7	GND
4	IDENT_COMP		

9. CN602 (AV)			
1	GND	5	TEST_SR
2	AV1_CVBS_IN	6	TEST_SL
3	COMP_AV1_SR_IN	7	COMP_AV1_SL_IN
4	IDENT_VIDEO		

10. CN1101 (FUNCTION&IR)			
1	IR	7	KEY_INPUT2
2	GND	8	LED_STB_OUT
3	A3.3V_PW	9	NC
4	AMP_SCL_I2C	10	NC
5	AMP_SDA_I2C	11	NC
5	KEY_INPUT1	12	NC

11. CN2301 (BT&WIFI)			
1	BT_NRESET	9	WIFI_PHY_ON
2	BT_MODULE_WAKE	10	GND
3	BT_WAKE	11	WIFI_D+_USB
4	GND	12	WIFI_D-_USB
5	BT_D-_USB	13	GND
6	BT_D+_USB	14	A5V_PW
7	GND	15	WIFI_WOL
8	BT_WELCOME	16	WIFI_NRESET

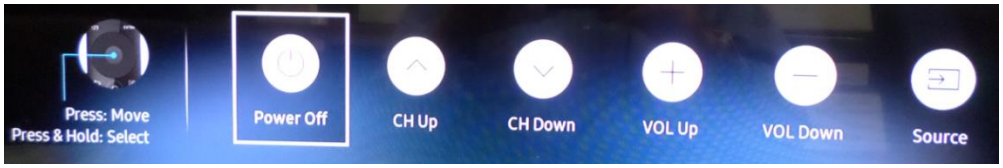
12. CN501 (SOUND)			
1	OUT_C	3	OUT_A
2	OUT_D	4	OUT_B

15. CN202 (POWER)			
1	GND	7	A13V_PW
2	GND	8	PWM_DIMMING_OUT1
3	A13V_PW	9	A13V_PW
4	GND	10	OVD_ON_OFF
5	A13V_PW	11	SMPS_FET_FAIL_DEFECT
6	SW_POWER	12	ANA_DIMMING

UHD TV

Troubleshooting

Function Control Operation/Test



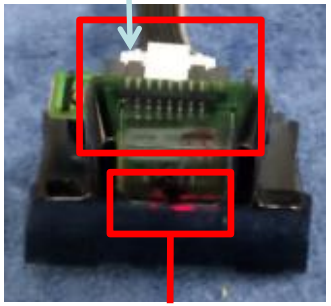
On Screen Selections with Function Control

FUNCTION/IR Control Test

1. TV in Standby
2. Check **LED Status**
3. If **LED is OFF**
   - ✓ LED 1.7Vdc (pin 8)and VCC for 3.3Vdc (pin 3)
   - • If missing suspect Function Assy/Cable/Main board.
4. If **LED is ON**
   - ✓ Switch Operation activates on screen display
   - • If missing:
   - ✓ **Key _Input1 Pin 6** change to 0V with a command.
   - • If wrong voltage or no change:
   - ✓ Switch for stuck or miss-operation.
5. Check **IR** operation with Standard Remote command changes. (3.3V to 2.5V effective DC)
6. **SDA**, **SCL** for effective 3.3Vdc (after power on)
   - • If missing suspect Function Assy/Cable Assy./Main Assy.

Function/IR

Pin 1

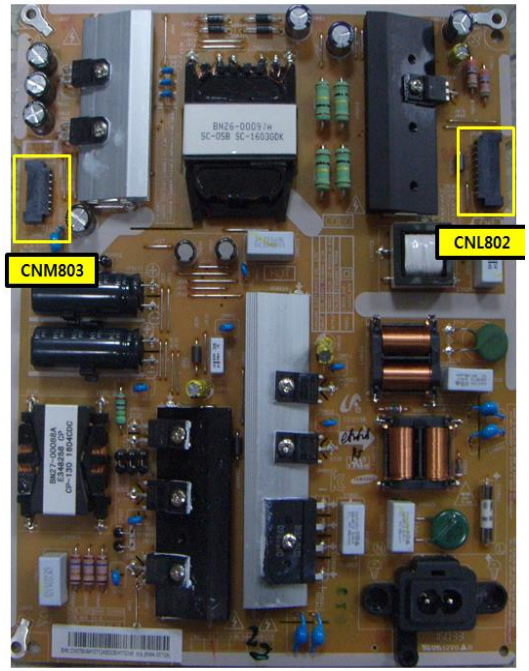


LED Status/ Function Switch

	Main Board - CN1101 (FUNCTION/IR)		
1	IR 3.3Vdc to 2.5Vdc (Effective DC)	2	GND
3	A3.3V_PW	4	AMP_SCL_I2C 3.3Vdc (effective DC)
5	AMP_SDA_I2C 3.3 Vdc (effective DC)	6	KEY_INPUT1 1.8dc to 0V with PWR On command
7	KEY_INPUT2 1.8Vdc to command Voltage	8	LED_STB_OUT 1.7Vdc STBY
9	N/C	10	N/C
11	N/C	12	N/C

CNM803			
1	Fail Count	7	A13V
2	ANA-DIM	8	Power_On/Off
3	A13V	9	A13V
4	OD_ON/OFF	10	GND
5	A13V	11	GND
6	BLU_PWM	12	GND

CNL802			
1	2+	9	1+
2	NC	10	NC
3	NC	11	NC
4	2-	12	1-
5	NC	13	NC
6	NC	14	NC
7	NC	15	IF2
8	NC	16	IF1



TV POWER ON SEQUENCE TEST:

1. **Power TV On**

✓ PS_ON **.2Vdc** (when off) changes to **3.3Vdc** (on)

- PS On stays active for approx 20 sec. after TV is placed in Standby. It also remains ON for approx 2 min. after initial AC Power Cord is connected, even though standby indicator is lit.

2. If voltage error or no change:

✓ Jog Function Control Test

3. If OK replace Main Board.

✓ All A13V **supplies to** full voltage level **12.7VDC**

4. If any wrong voltage, remove SMPS connector to Main Board

✓A13V again for 12.7VDC

5. If OK replace Main Board

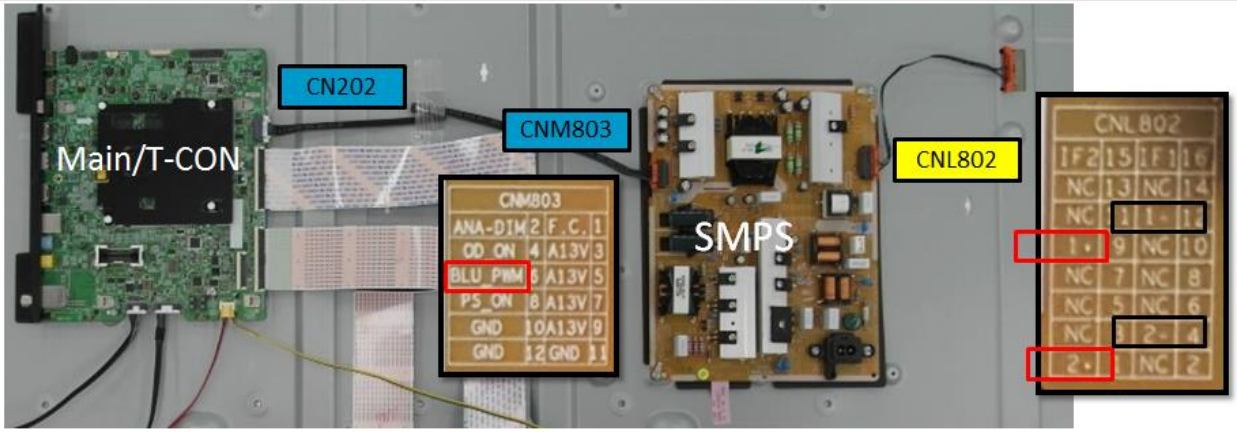
6. If still wrong voltage replace SMPS.

✓OD (Over Voltage Detect) 3.3Vdc - Operating Normal

7. If 0V or changing, an SMPS or Panel error exists. Perform Backlight Test.

✓ BLU_PWM 0V- Off to approx 1 – 3.3 V pending Backlight dim level

•If missing/error replace Main Board.



Simplified: SMPS/PANEL BACKLIGHT TEST (43"~55"):

Activate Backlights Test: – Disconnect Lead Cable from Main to Power Supply. (CN202)

√ TV Screen for active backlight LEDs.

2. If NO BACKLIGHTS

√ Plus (+) & Minus (-) pin voltages on the Panel Connector.

•If no pin voltages replace SMPS.

•If voltages exist but no backlight:

√ The highest pin voltage (BL Drive Supply)

•Remove Panel connector and measure again to compare.

•If the voltage was high and stays the same high reading a string of Panel LEDs are open. Replace the Panel.

•If the **voltage was low** and remains low the SMPS is defective.

•If the voltage was low and goes high a string of panel LEDs are shorted replace the **Panel.**

BACK LIGHT DIMMING PROBLEMS:

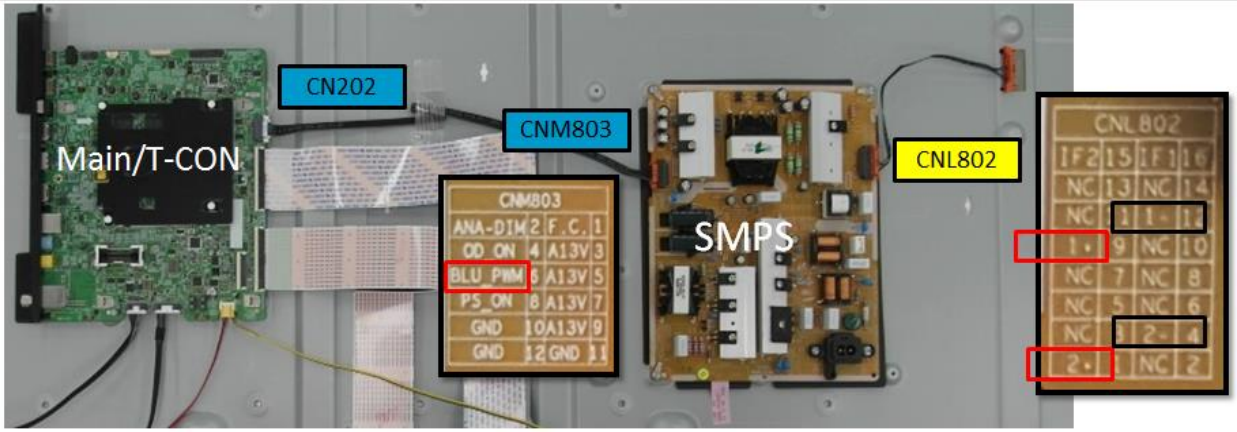
•Go to Menu/Picture/Expert/Backlight and vary level (0 – 20)

•If no backlight changes are observed:

✓Panel Connector pin voltages and BLU_PWM voltages (CNL802) while changing backlight level.

•If Panel voltages don't change, and BLU_PWM changes, replace **SMPS.**

•If BLU_PWM doesn't change replace **Main/T-Con Board**.



Simplified: SMPS/PANEL BACKLIGHT TEST (65"~):

Activate Backlights Test: – Disconnect Lead Cable from Main to Power Supply. (CN202)

√ TV Screen for active backlight LEDs.

2. If NO BACKLIGHTS

√ Minus (Control) pins & Plus (Supply) pins voltages on the Panel Connector.

•If no pin voltages replace **SMPS**.

3. If BACKLIGHTS ON BUT PANEL SECTION(S) OFF (for SMPS wired in parallel)

√ The Supply Drive + pins should each measure the same voltages.

And the - pins should each measure the same voltages. This verifies the SMPS is wired with LED Strings in parallel and operating correctly.

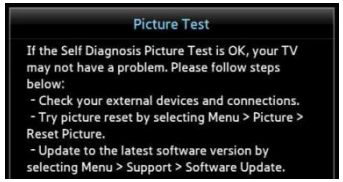
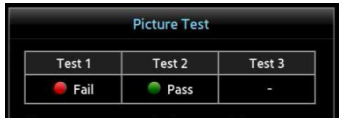
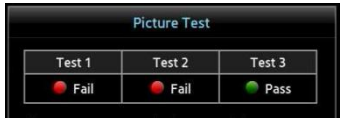
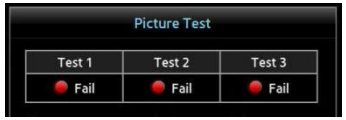
•If a Minus (-) pin measures low (near 0 volts), a string(s) of LEDs are likely open. **Replace Panel.**

•If a plus pins measures higher than the others, a string of LEDs is also likely opened. **Replace Panel.**

•Can remove Panel connector and verify same open backlight voltage condition. **Replace Panel.**

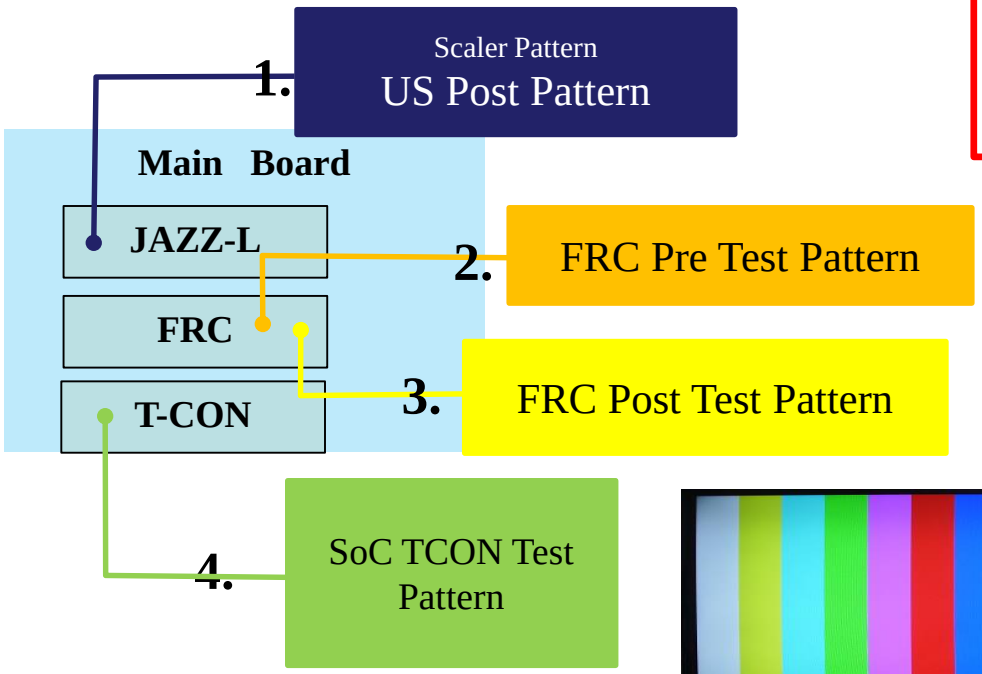
•If a Plus pin measures low: Remove the Panel connector, if it stays low **Replace SMPS**. If it goes high like the other plus pins, **the Replace Panel.**

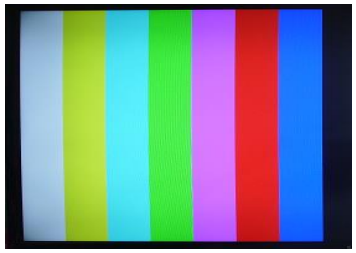
Video: Customer Picture Test

MAIN/TCON BOARD				
Main Section 	Pre- FRC (T-CON) 	Post FRC (T-CON) 	Test Result	Problem
Pass	Pass	Pass		Check Signal Source and other inputs to One Connect
Fail	Pass	Pass		Replace Main/T-CON Board
Fail	Fail	Pass		Replace Main/T-CON Board
Fail	Fail	Fail		Replace Main/T-CON Board or Panel

Video

ENTER: Factory mode -> SVC -> Test Pattern



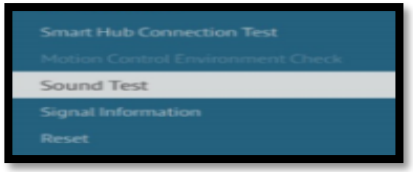


Check Test Patterns

1. Verify "Scaler Pattern" and "US Post Pattern"
2. Verify "FRC Pre Test Pattern"
3. Verify "FRC Post Test Pattern"
4. Verify "SoC TCON Test Pattern"

AUDIO Troubleshooting:

Source (One Connect Mini) ➡ **Main Board** ➡ **Speakers**



AUDIO TEST

- **No TV Sound**
- ✓ Menu/Audio/Speaker Settings/set to **TV Speaker**

- **Noisy/Distorted TV Audio**
- ✓ Customer Menu/Support/ **SOUND TEST**

- **If SOUND TEST FAILS (Missing/Noisy Audio)**
- ✓ Speakers (compare resistance/quality)
- Compare audio level out to speakers with multi meter.
- ✓ Replace defective Speakers or Main Board or Cable

- **IF SOUND TEST OK**
- ✓ Audio Source & External Cables
- ✓ With external Audio Generator (device or App)
- ✓ Other Inputs
- ✓ One Connect Mini

- **Optical Digital Out Errors**
- ✓ Red light from Optical Digital Out
  If missing replace One Connect Mini

- **No HDMI Audio**
- ✓ Source / HDMI Cable & One Connect Mini Connectors
- Swap with other HDMI Inputs/Sources
- Perform **EDID Write** in Factory Mode
- (Can restore missing HDMI Audio).
- ✓ Bulletins and Latest firmware on TV
- If not restored replace One Connect Mini/Main.
- Check Audio Format PCM/Dolby based on external Receiver

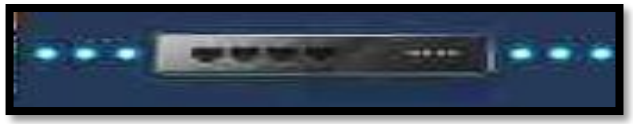
- **ARC Issues**
- ✓ HDMI Cable is input to the ARC Designated HDMI port
- ✓ ARC (HDMI Control) is enabled on the external Receiver.

- **Bluetooth Audio "Sound Share" Connection Issues**
- ✓ Sound Bar is in TV Mode
- To Connect, Press & Hold Play Button until Sound Bar pairing mode begins.

SAMSUNG

Network Troubleshooting

TV

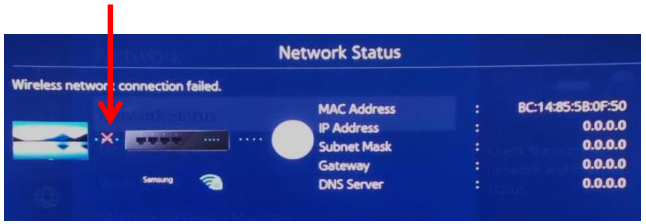


Router

Internet

TV to Router "Failure"

✓ **Check** Network Status



✓ **Wired & Wireless MAC Address** in Customer Support Menu.

- **No Wired MAC Address**: Replace Main Board
- **No Wireless MAC Address**:

✓ Module cabling & voltages from Main Board.

- If operating voltages are OK but signal missing Replace WiFi Module (WiFi/Bluetooth Module)

✓ Proper **security passcode**

✓ **Check** Wi-Fi signal strength at TV (use WiFi Analyzer or similar App)

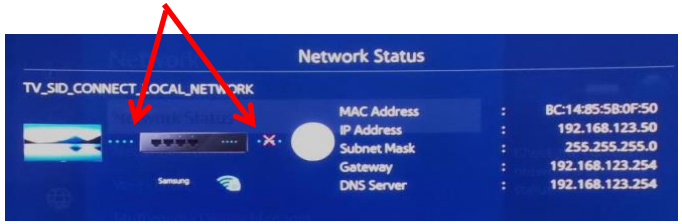
- Try another source (Hot spot or Test Router)

✓ **Check** related Bulletins

✓ **Check** Factory Mode / SVC / Info/ WiFi Error Count (replace module for high error counts)

Router to Network "Failure"

✓ **Check** Network Status



- Instruct the customer the TV has proper connection to t he router and is likely OK.

✓ **Check** other devices using network are OK. If they test OK this does not mean the TV should be working.

- Try another source (Hotspot) to test/show TV Network operation.

SAMSUNG

Smart Hub Connection Test

TV

Router

Internet

Samsung Server

➢ **Go to Menu > Support > Self Diagnosis > Smart Hub Connection Test**

Network Test/ Gateway Test

- If it Fails
- ✓ TV to Router Connection Test in "Network Trouble - shooting"

DNS Test

- If it fails
- ✓ **DNS** setting in "Network Settings"
- If DNS is set manually
- ✓ settings are correct (may be set to 8.8.8.8 to prevent Netflix issues)
- If it still fails
- ✓ DNS Test with setting to Auto Mode
- If it fails both Manual & Auto
- problem is ISP or Router

ISP Blocking

- If it fails
- ✓ Internet Service Provider is Active
- ✓ With DNS setting at 8888
- ✓ With Hot Spot

Samsung Server Test

- If it fails
- ✓ Network Status
- If OK
- Reset Smart Hub
- ✓ Terms of Agreement are accepted.

Samsung Apps Test

- If it Fails
- **Reset** Smart Hub
- ✓ Samsung Apps load correctly
- If it Fails
- Perform **"Apps Reset"** in Factory Mode
- Go to Smart Hub and complete Terms of Agreement and set up information
- ✓ Samsung Apps load correctly
- Before selecting an App, allow Apps to load or failure will re-occur.

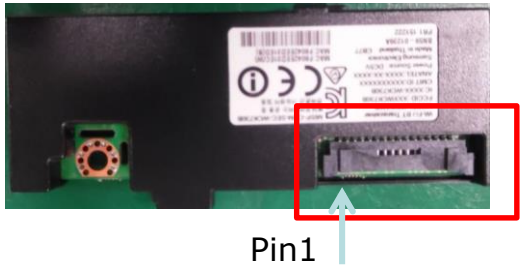
For Netflix Operation/Connection Issues:

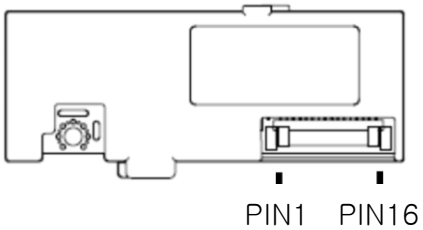
- ✓ **Check** Certificate & Netflix ESN Status in Factory Mode.
- If Certificate and ESN exists, "**CO**", "**NfO**", change the **DNS** to **8.8.8.8**
- If Certificate is missing, "**C/"** replace the TV's Main board.
- If ESN number is missing: **NF/** do not replace the Main Board.
  - Reset TV Clock and check for correct Time & Date. Netflix rel ies on correct settings.
  - Reset Smart Hub. / Reset Apps In Factory Mode

For Streaming Issues:

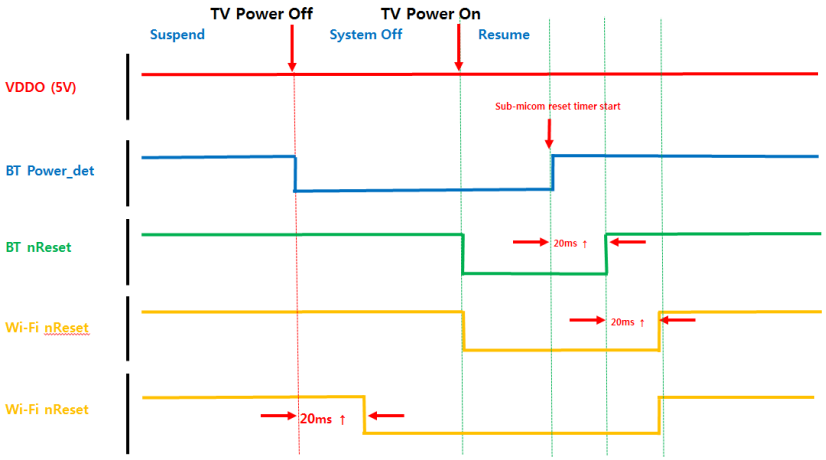
- Go to TV Web Browser / Go to speedof. me / testmy.net
- ✓ **Check Speed** for at least 5 Mbps (HD streaming)/ 25 Mbps (4K Streaming)
- ✓ **Check Latency** for less than 50ms

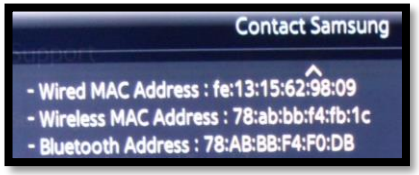
BT/WIFI			
1	BT_NRESET	2	BT_POWER_DET
3	BT_WAKE	4	-
5	BT_D-_USB	6	BT_D+_USB
7	-	8	BT_WELCOME
9	WIFI_PHY_ON	10	-
11	WIFI_D+_USB	12	WIFI_D-_USB
13	-	14	WIFI_5V
15	WIFI_WOL	16	WIFI_NRESET





Pins	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Standby	3.3 Vdc	0	3.3V Vdc	NC	0	0	0	0 V	0V	0	3 Vdc	0	0	5Vdc VCC	3.3 Vdc	3.3 Vdc
Pwr On	3.3V dc	3.3 Vdc	3.3V dc		0.7V *eff.* dc BT Sig (DM) 4V P-P	2.5V eff.dc BT Sig (DP) 4VP-P	0	0 V	3.3 Vdc	0	.02V *eff.*dc WiFi Sig (DP) 0.5V P-P	.02V *eff.*dc WiFi Sig (DM) 0.5V P-P	0	5Vdc VCC	3.3 Vdc	3.3 Vdc





- **Go to Menu/Support/Contact Samsung**

✓. **Wired MAC Address (missing or error - replace Main Board)**

✓. **Wireless MAC Address**

✓. **Bluetooth Address**

- If **Bluetooth Address** or **Wireless MAC Address** are missing or errors exist

✓ **BT & Wi-Fi Connector Voltages**. If Voltages are OK but no BT or Wi-Fi Signals voltage(s), replace defective Module.

UHD TV

Factory Mode

Factory Mode

Setting TV into Factory Mode:

Part No.
AA81-00243A

Factory Remote

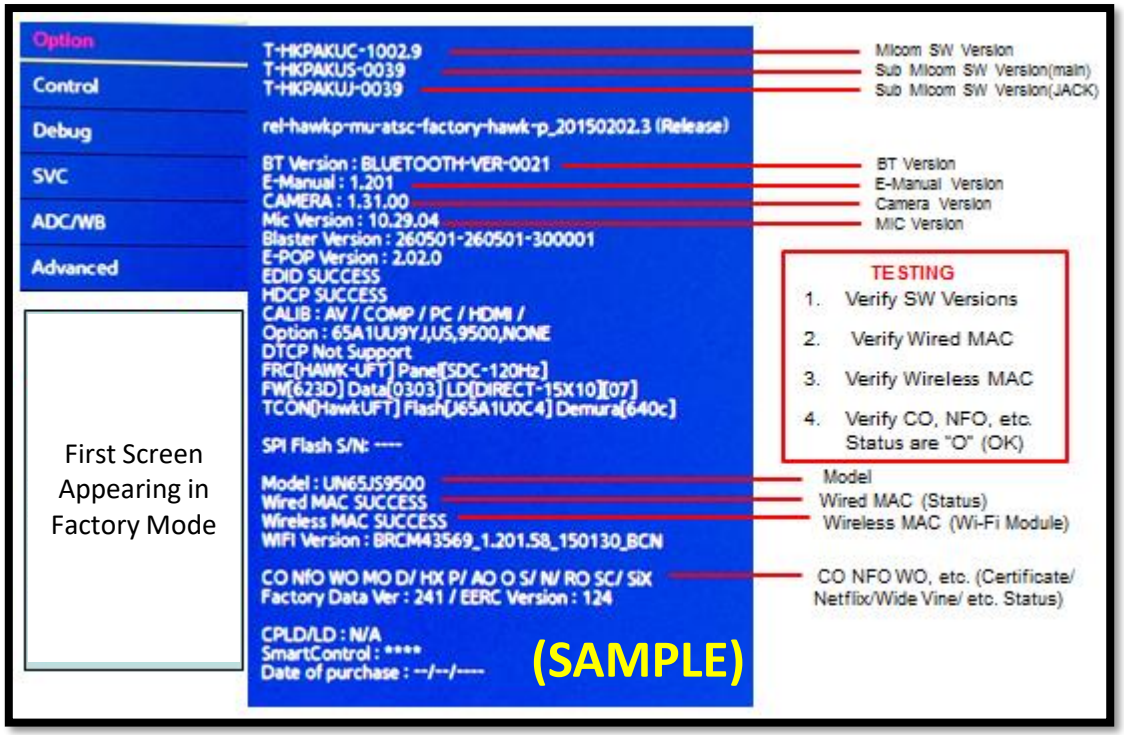
1. Power TV ON
2. Select TV Source
3. Info/Factory
4. Use MENU for return

Samsung IR Remote
(Limited Operation)

1. TV Power Standby
2. Info/Menu/Mute/Power

Important Items:

- **Option** (must set Option Bytes when replacing Main Board)
- Option/ **Factory Reset** (returns TV to out of box condition. Does not reset Apps)
- SVC / **Test Patterns**
- SVC/Info/ **ER Count** (Important to check for errors. Note: Resets to 0 with Factory Reset.



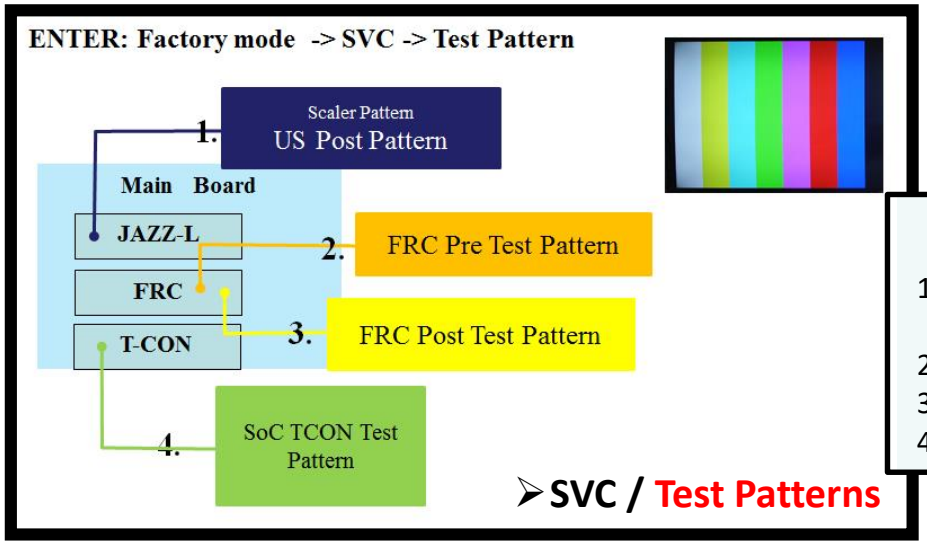
- **Factory Reset:** Select Factory Reset

- **Setting Option Bytes**

1. Enter Factory Mode with Service Remote (only)
2. Check Option Byte Table located on GSPN (Fast Track or Tips)
3. Select each item to change
4. Soft power TV Off to load

SAMSUNG

Scaler Pattern	OFF
US Post Pattern	OFF
FRC Pre Pattern	0
FRC Post Pattern	0
SOC TCON Pattern	0
SOC TCON Pattern Level	255
FRC OSD Pre Pattern	0
FRC OSD Post Pattern	0
FRC2 Pre Pattern	0
FRC2 Post Pattern	0
SOC TCON2 Pattern	0
SOC TCON2 Pattern Level	255



➢ SVC / Test Patterns

Check Test Patterns

1. Verify "Scaler Pattern" and "US Post Pattern"
2. Verify "FRC Pre Test Pattern"
3. Verify "FRC Post Test Pattern"
4. Verify "SoC TCON Test Pattern"

WD Count	0
Power Fail Count	0
AR Count	0
RS Count	3
WIFI NO DETECTION COUNT	0
WIFI DETACHMENT COUNT	0
BT ER Count	0
BT NO DETECTION COUNT	0
BT DETACHMENT COUNT	0
BT MGT OPEN FAIL COUNT	0
BT MGT DISCONNECT COUNT	0
Camera ER Count	0
FRC3D Emergency Reboot On/Off	ON
FRC3D ER Count	0
Fan Error Count	0

Serdes Error Count	0
Serdes Reset Count	0
Serdes WatchDog On/Off	ON
SMPS FET Fail Detect	0

➢ SVC / Info/ER Count

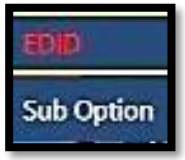
- **WD Count**: Watch Dog (Hardware related issue)
- **AR Count**: Auto Reset (software (i.e. Apps) related

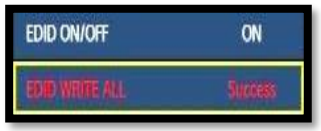
✓ important **Error Count** Status Screen.

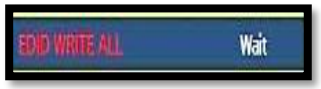
- Verify each item listed.

➢ Factory Mode / Control / EDID

1. **Remove ALL HDMI connections**
2. **Factory Mode/Control/EDID** (Press Enter)
3. **Select EDID/OFF to ON** (Right Arrow Key)
4. **Select EDID WRITE ALL** (Enter)
5. **Wait to Success** (Right Arrow Key)
6. **Confirm EDID WRITE ALL Success** (Menu Key)







UHD TV

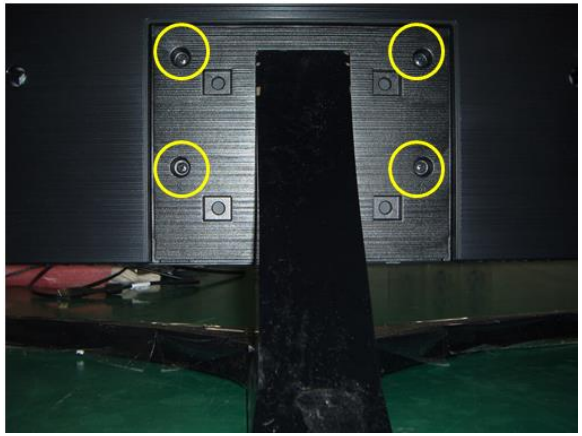
Disassembly And Reassembly

※ Cautions

≫ The Open Jig and the Cushion must be used otherwise panel may be damaged
≫ Never use a scredriver or any other objects other than the Open Jig to remove the back cover
≫ Do not use the Open Jig on the bottom side of screen

1. Carefully position the TV so that the screen is facing downwards. Make sure to place the TV upon a soft cushion or any material that will prevent damage to the screen.

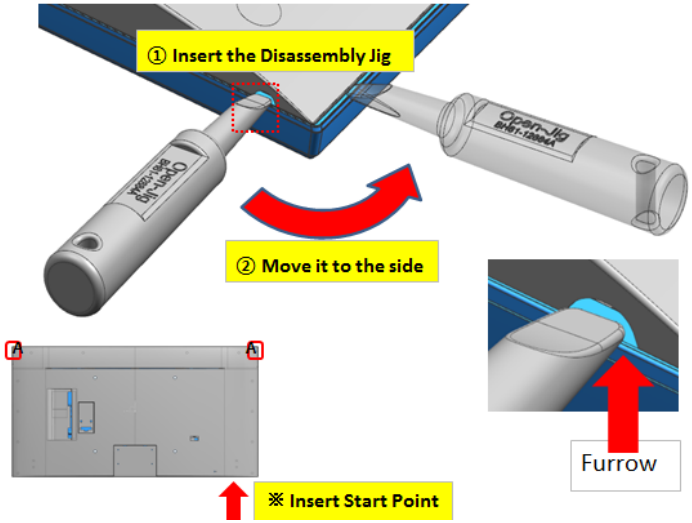
2. Remove the screws connecting the stand to the TV. Then carefully remove the stand.



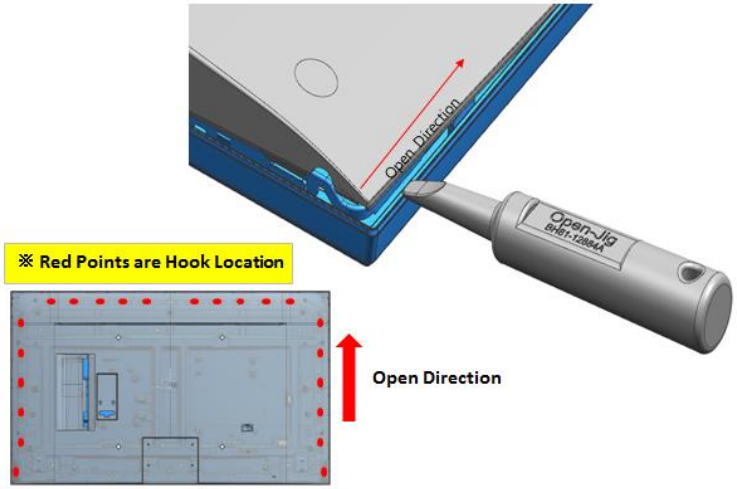
6003-001334
4EA

3. Removing the 'Rear Cover'.

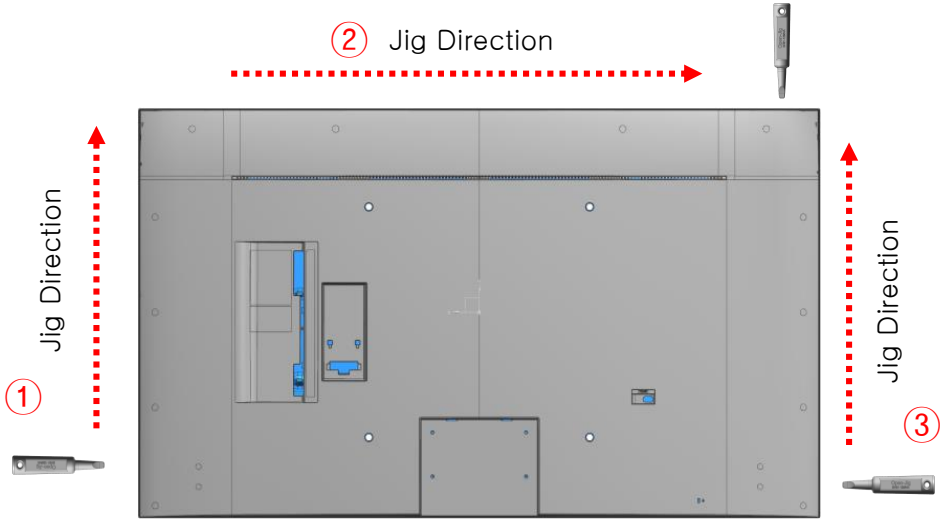
3-1. Insert Disassembly Jig in a Disasmbly furrow to Open the furrow. And Move Dissemblu Jig to the side.



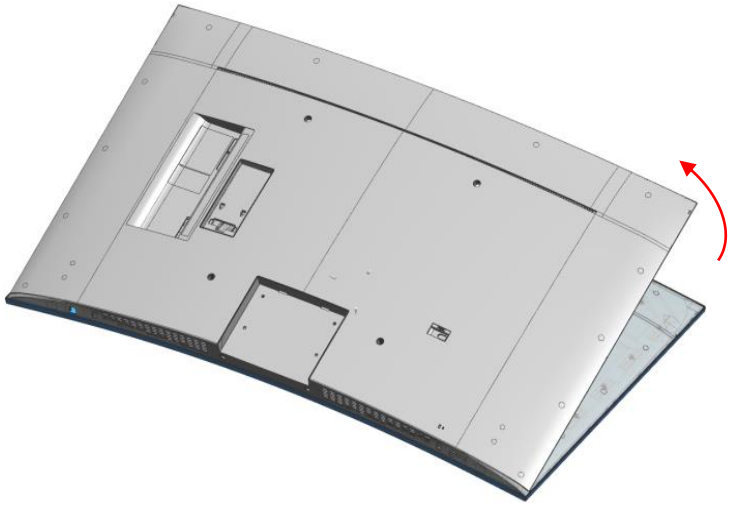
3-2. Continue moving the dissembly Jig to the 'Open Direction' to lift 'Hook'



3-3. Disassemble all Hooks of Cover Rear along the three side



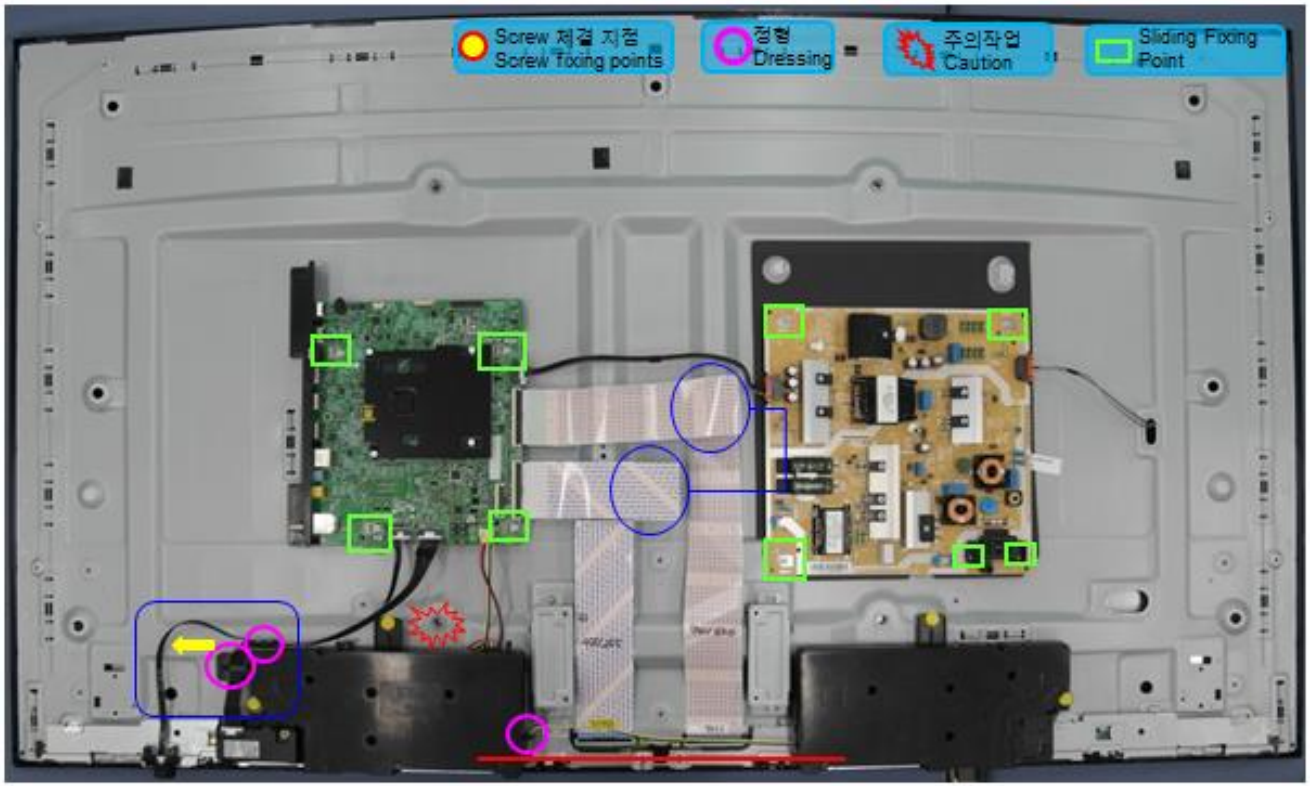
3-4. Finally Open the 'Rear Cover'



※ Panel Back Side View

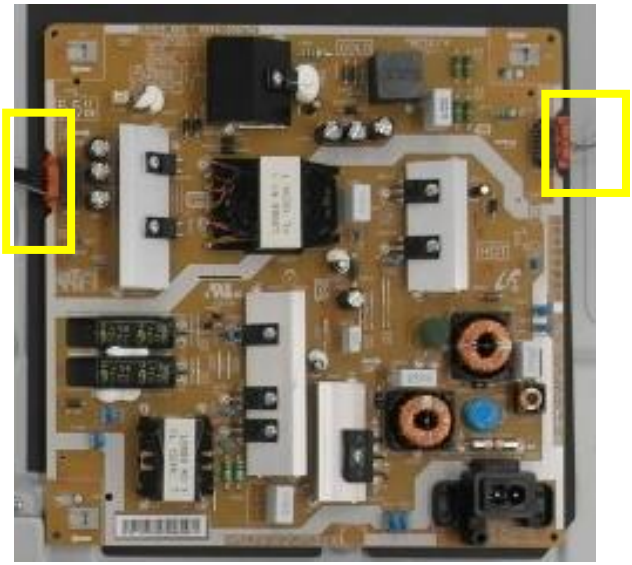
4. If there are Electric tapes, Remove them.

※When assembling the TV, the electric tapes must be applied on the same locations. Please remember to take a picture of where the tapes were first applied.

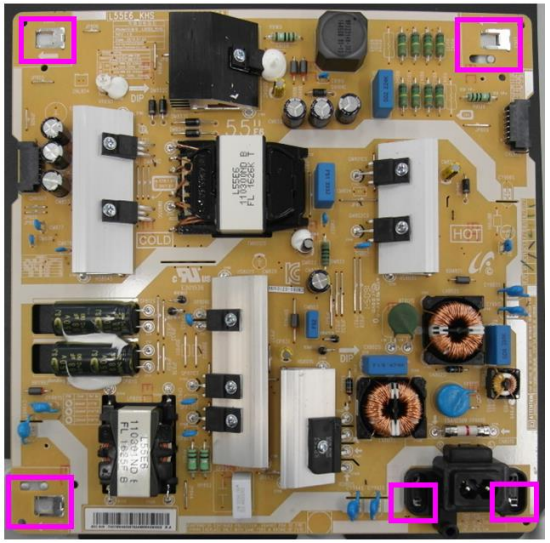


5. Removing SMPS

5-1. Remove the 'Lead Connectors' from the SMPS unit

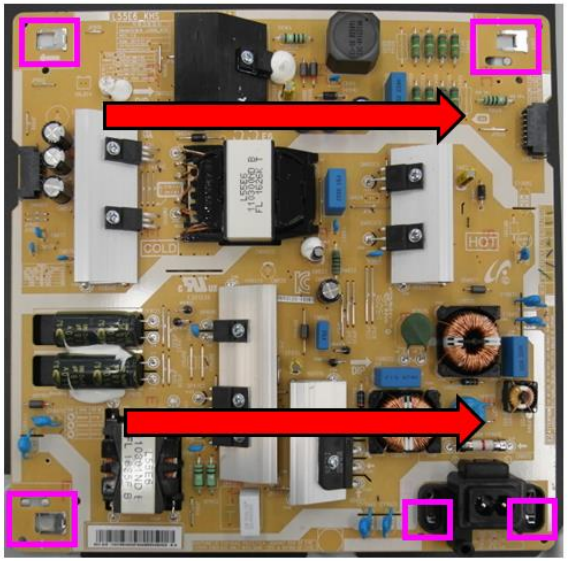


5-2. Use both hands to hold the 'SMPS' and gently lift up 5 point marked.

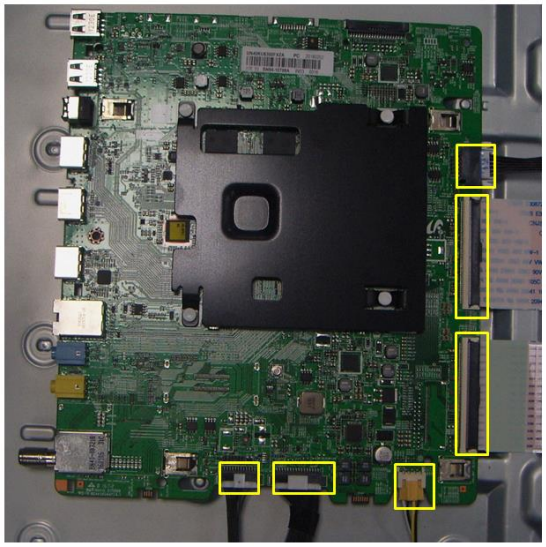


5-3. Slide the board to the Right side to release the board.

Then carefully remove the 'TV Board'.

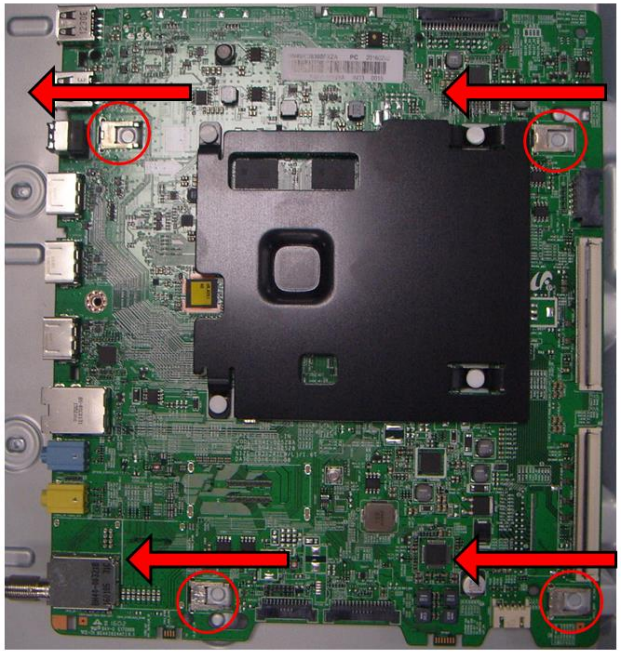


6. Remove the cables from the 'TV Board'



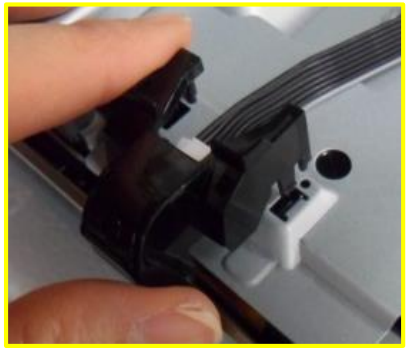
7. Use both hands to hold the 'TV Board' and slide the board to the right to release the board.

Then carefully remove the 'TV Board'.

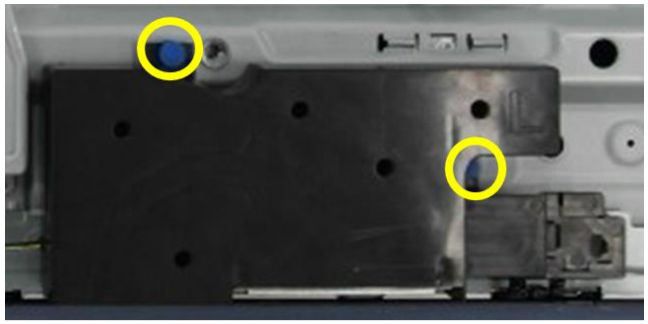


8. Remove the BT/WIFI unit.

9. Remove the IR unit.



10. Lastly, remove the speakers on both side.



11. Completely Disassembly