LED-TV

Chassis : U73A

Model : UA26EH4000R
UA32EH40*0R

UA19ES4000R

SERVICE MANUAL

LED TV

UA19ES4000R/UNEH40*0R**

Contents

1. Precautions
2. Product Specifications
3. Disassembly and Reassembly
4. Troubleshooting
5. Wiring Diagram

Refer to the service manual in the GSPN (see the rear cover) for more information.

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1. Precautions

1.1. Safety Precautions

Follow these safety, servicing and ESD precautions to prevent damage and to protect against potential hazards such as electrical shock.

1-1-1. Warnings

WARNING

For continued safety, do not attempt to modify the circuit board.
Disconnect the AC power and DC power jack before servicing.

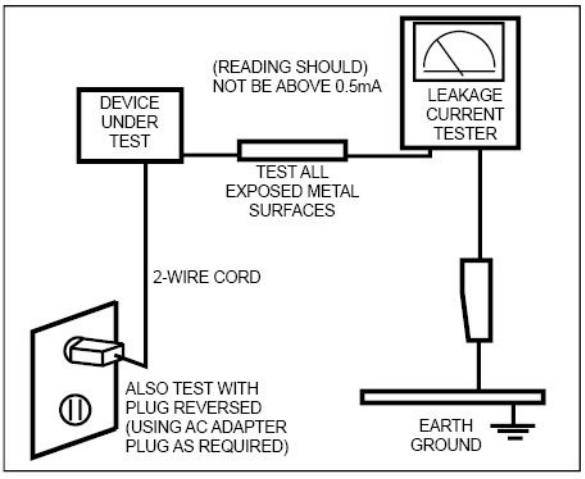
1-1-2. Servicing the LED TV

1. When servicing the LED TV, Disconnect the AC line cord from the AC outlet.
2. It is essential that service technicians have an accurate voltage meter available at all times. Check the calibration of this meter periodically.

1-1-3. Fire and Shock Hazard

Before returning the monitor to the user, perform the following safety checks:

1. Inspect each lead dress to make certain that the leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the monitor.
2. Inspect all protective devices such as nonmetallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistorcapacitor networks, mechanical insulators, etc.
3. Leakage Current Hot Check:



WARNING

Do not use an isolation transformer during this test.
Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI C101.1, Leakage Current for Appliances), and Underwriters Laboratories (UL Publication UL1410, 59.7).

4. With the unit completely reassembled, plug the AC line cord directly into a 120V AC outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including: metal cabinets, screwheads and control shafts.
   The current measured should not exceed 0.5 milliamp.
   Reverse the power-plug prongs in the AC outlet and repeat the test.

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1-1-4. Product Safety Notices

Some electrical and mechanical parts have special safetyrelated characteristics which are often not evident from visual inspection. The protection they give may not be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by ⚠ on schematics and parts lists. A substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire and/or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate.

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1.2. Servicing Precautions

An electrolytic capacitor installed with the wrong polarity might explode.

Before servicing units covered by this service manual, read and follow the Safety Precautions section of this manual.

If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions.

1-2-1. General Servicing Precautions

1. Always unplug the unit's AC power cord from the AC power source and disconnect the DC Power Jack before attempting to: (a) remove or reinstall any component or assembly, (b) disconnect PCB plugs or connectors, (c) connect a test component in parallel with an electrolytic capacitor.
2. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.
3. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the area around the serviced part has not been damaged.
4. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).
5. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500 V) to theblades of the AC plug. The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.
6. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

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1.3. Static Electricity Precautions

Some semiconductor (solid state) devices can be easily damaged by static electricity. Such components are commonly called Electrostatically Sensitive Devices (ESD). Examples of typical ESD are integrated circuits and some field-effect transistors. The following techniques will reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. To avoid a shock hazard, be sure to remove the wrist strap before applying power to the monitor.
2. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of an electrostatic charge.
3. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESDs.
4. Use only a grounded-tip soldering iron to solder or desolder ESDs.
5. Use only an anti-static solder removal device. Some solder removal devices not classified as “anti-static” can generate electrical charges sufficient to damage ESDs.
6. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.
7. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION Be sure no power is applied to the chassis or circuit and observe all other safety precautions.

8. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting your foot from a carpeted floor can generate enough static electricity to damage an ESD.

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1.4. Installation Precautions

1. For safety reasons, more than a people are required for carrying the product.
2. Keep the power cord away from any heat emitting devices, as a melted covering may cause fire or electric shock.
3. Do not place the product in areas with poor ventilation such as a bookshelf or closet. The increased internal temperature may cause fire.
4. Bend the external antenna cable when connecting it to the product. This is a measure to protect it from being exposed to moisture. Otherwise, it may cause a fire or electric shock.
5. Make sure to turn the power off and unplug the power cord from the outlet before repositioning the product. Also check the antenna cable or the external connectors if they are fully unplugged. Damage to the cord may cause fire or electric shock.
6. Keep the antenna far away from any high-voltage cables and install it firmly. Contact with the highvoltage cable or the antenna falling over may cause fire or electric shock.
7. When installing the product, leave enough space (0.4m) between the product and the wall for ventilation purposes. A rise in temperature within the product may cause fire.

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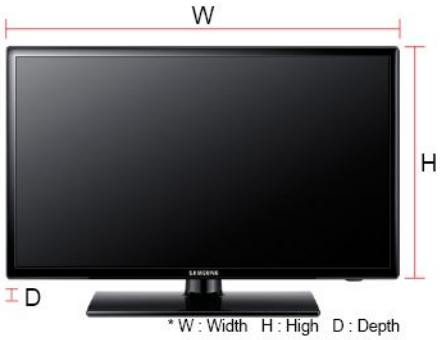
2. Product Specifications

2.1. Product Information

2-1-1. Model Comparison

Model	UA**EH4000R		
Front View			
Detail View			
Front Color	Black (Panel)		
Dimensions (W x H x D)	26"	Set with Stand	615.1 x 419.2 x 180.7 mm
		Set without Stand	615.1 x 365.6 x 93.3 mm
	32"	Set with Stand	738.8 x 493.3 x 191.7 mm
		Set without Stand	738.8 x 463.7 x 93.3 mm
Weight	26"	Set with Stand	4.5 kg
		Set without Stand	4.0 kg
	32"	Set with Stand	6.3 kg
		Set without Stand	5.7 kg
Panel Type	Anti Glare		
Internal Memory	None		
DDR	128 Mbtye		
Feature	Media Play(Movie)		

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Model	UA19ES4000R		
Front View	* W : Width H : High D : Depth		
Detail View			
Front Color	Black (Panel)		
Dimensions (W x H x D)	19"	Set with Stand	446.8 x 326.9 x 161.0 mm
		Set without Stand	446.8 x 278.7 x 49.6 mm
Weight	19"	Set with Stand	3.0 kg
		Set without Stand	2.7 kg
Panel Type	Anti Glare		
Internal Memory	None		
DDR	128 Mbtye		
Feature	Media Play(Movie)		

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Model	UA32EH4030R		
Front View	* W : Width H : High D : Depth		
Detail View			
Front Color	Dark Red		
Dimensions (W x H x D)	32"	Set with Stand	738.8 x 493.3 x 191.7 mm
		Set without Stand	738.8 x 463.7 x 93.3 mm
Weight	32"	Set with Stand	6.3 kg
		Set without Stand	5.7 kg
Panel Type	Anti Glare		
Internal Memory	None		
DDR	128 Mbtye		
Feature	Media Play(Movie)		

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2-1-2. Feature & Specifications

Model	UA26EH4000R
Feature	
• ATV, 2-HDMI, 1-Component, 1-A/V, 1-USB2.0 • Brightness : 300 cd/m^2 • High Contrast Ratio : 3000:1 • Response Time : 6.5 ms	

Specifications		
Item	**Description**	
LCD Panel	26 inch HD	
Scanning Frequency	Horizontal : 60 kHz ~ 73 kHz (Automatic) Vertical : 47 Hz ~ 63 Hz (Automatic)	
Display Colors	16.7M colors	
Maximum Resolution	Horizontal : 1366 Pixels Vertical : 768 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω, internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Maximum Pixel Clock Rate	80 MHz (Typ 74.25 MHz)	
Active Display (H x V)* * Horizontal x Vertical	580.8 (H) x 328.7 (V) mm (23.7 (H) x 13.4 (V) Inches)	
AC Power Voltage & Frequency	AC 100 ~ 240 V, 50/60 Hz	
Power Consumption	39 W (Under 0.3 W, Stand by)	
Dimensions Set (W x H x D)* * Width x High x Depth	Set with Stand	615.1 x 419.2 x 180.7 mm
	Set without Stand	615.1 x 365.6 x 93.3 mm
Weight	Set with Stand	4.5 kg
	Set without Stand	4.0 kg
TV System	Tunning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	PAL, SECAM, NT4.43
	Sound	BG, DK, L/L', NICAM, MPEG1, DD, DD+, HH-AAC
Environmental Considerations	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Operating Humidity : 10% ~ 80%, non-condensing Storage Temperature : -13°F ~ 113°F (-25°C ~ 45°C) Storage Humidity : 5% ~ 95%, non-condensing	
Audio Specifications	MAX Internal Audio Output Power : Each 5 W(Left/Right) Equalizer : 5 Band Output Frequency : • PG : 20 Hz ~ 15.4 kHz • AV/Componet/HDMI : 20 Hz ~ 20 kHz	
Note: Dolby Digital +, USB2.0(0.5A), Film Mode, Energy Saving		

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Model	UA32EH4000R/UA32EH4030R
Feature	
• ATV, 2-HDMI, 1-Component, 1-A/V, 1-USB2.0 • Brightness : 300 cd/m^2 • High Contrast Ratio : 3000:1 • Response Time : 6.5 ms	

Specifications		
Item	**Description**	
LCD Panel	32 inch HD	
Scanning Frequency	Horizontal : 60 kHz ~ 73 kHz (Automatic) Vertical : 47 Hz ~ 63 Hz (Automatic)	
Display Colors	16.7M colors	
Maximum Resolution	Horizontal : 1366 Pixels Vertical : 768 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω, internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Maximum Pixel Clock Rate	74.25 MHz	
Active Display (H x V)* * Horizontal x Vertical	902.0 (H) x 162.0 (V) mm (36.8 (H) x 6.6 (V) Inches)	
AC Power Voltage & Frequency	AC 100 ~ 240 V, 50/60 Hz	
Power Consumption	51 W (Under 0.3 W, Stand by)	
Dimensions Set (W x H x D)* * Width x High x Depth	Set with Stand	738.8 x 493.3 x 191.7 mm
	Set without Stand	738.8 x 463.7 x 93.3 mm
Weight	Set with Stand	6.3 kg
	Set without Stand	5.7 kg
TV System	Tunning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	PAL, SECAM, NT4.43
	Sound	BG, DK, L/L', NICAM, MPEG1, DD, DD+, HH-AAC
Environmental Considerations	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Operating Humidity : 10% ~ 80%, non-condensing Storage Temperature : -13°F ~ 113°F (-25°C ~ 45°C) Storage Humidity : 5% ~ 95%, non-condensing	
Audio Specifications	MAX Internal Audio Output Power : Each 10 W(Left/Right) Equalizer : 5 Band Output Frequency : • PG : 20 Hz ~ 15.4 kHz • AV/Componet/HDMI : 20 Hz ~ 20 kHz	
Note: Dolby Digital +, USB2.0(0.5A), Film Mode, Energy Saving		

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Model	UA19ES4000R
Feature	
• ATV, 1-HDMI, 1-Component, 1-A/V, 1-USB2.0, D-SUB • Brightness : 250 cd/m^2 • High Contrast Ratio : 1,000 : 1 • Response Time : 5 ms	

Specifications		
Item	**Description**	
LCD Panel	19 inch HD	
Scanning Frequency	Horizontal : 47 kHz ~ 63 kHz (Automatic) Vertical : 43 Hz ~ 53 Hz (Automatic)	
Display Colors	16.7M colors	
Maximum Resolution	Horizontal : 1366 Pixels Vertical : 768 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω, internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Maximum Pixel Clock Rate	80 MHz (Typ 74.25 MHz)	
Active Display (H x V)* * Horizontal x Vertical	409.8 (H) x 230.4 (V) mm (16.1 (H) x 9.1 (V) Inches)	
AC Power Voltage & Frequency	AC 100 ~ 240 V, 50/60 Hz	
Power Consumption	19 W (Under 0.3 W, Stand by)	
Dimensions Set (W x H x D)* * Width x High x Depth	Set with Stand	446.8 x 326.9 x 161.0 mm
	Set without Stand	446.8 x 278.7 x 49.6 mm
Weight	Set with Stand	3.0 kg
	Set without Stand	2.7 kg
TV System	Tunning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	PAL, SECAM, NT4.43
	Sound	BG, DK, L/L', NICAM, MPEG1, DD, DD+, HH-AAC
Environmental Considerations	Operating Temperature : 50°F ~ 104°F (10°C ~ 40°C) Operating Humidity : 10% ~ 80%, non-condensing Storage Temperature : -13°F ~ 113°F (-25°C ~ 45°C) Storage Humidity : 5% ~ 95%, non-condensing	
Audio Specifications	MAX Internal Audio Output Power : Each 3 W(Left/Right) Equalizer : 5 Band Output Frequency : • PG : 20 Hz ~ 15.4 kHz • AV/Componet/HDMI : 20 Hz ~ 20 kHz	
Note: Dolby Digital +, USB2.0(0.5A), Film Mode, Energy Saving		

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2-1-3. Specification Comparison to Old Models

Model	UE4J(UA19ES4000R / UA**EH4000R)		LD4E(LA**D400E1)	
Design				
Diplay Type	FULL-LED TV		LCD TV	
Built-in Tuner	O		O	
Resolution	1366 x 768		1366 x 768	
LCD Panel	TFT LCD Panel 60 Hz		TFT LCD Panel 60 Hz	
Screen Size	19" / 26" / 32"		19" / 26" / 32"	
Picture ratio	16 : 9		16 : 9	
Power Consumption	19"	19 W (Under 0.3W, Standby)	19"	35 W (Under 0.3 W, Standby)
	26"	39 W (Under 0.3W, Standby)	26"	85 W (Under 0.3 W, Standby)
	32"	51 W (Under 0.3W, Standby)	32"	110 W (Under 0.3 W, Standby)
Dimensions (W x H x V)	19"	446.8 x 326.9 x 161.0 mm_with Stand	19"	476.5 x 356.1 x 160.7 mm_with stand
		446.8 x 278.7 x 49.6 mm_without Stand		476.5 x 315.7 x 63.3 mm_without Stand
	26"	615.1 x 419.2 x 180.7 mm_with Stand	26"	660.7 x 482.8 x 160.7 mm_with stand
		615.1 x 365.6 x 93.3 mm_without Stand		660.7 x 435.0 x 78.6 mm_with stand
	32"	738.8 x 493.3 x 191.7 mm_with stand	32"	795.5 x 571.1 x 251.7 mm_with stand
		738.8 x 463.7 x 93.3 mm_without Stand		795.5 x 510.3 x 80.4 mm_without Stand
Weight	19"	3.0 kg_with Stand	19"	4.2 kg_with stand
		2.7 kg_without Stand		4.0 kg_without Stand
	26"	4.5 kg_with Stand	26"	6.7 kg_with stand
		4.0 kg_without Stand		6.2 kg_without Stand
	32"	6.3 kg_with Stand	32"	10.8 kg_with stand
		5.7 kg_without Stand		8.6 kg_without Stand
Brightness	19"	250 cd/m^2	19"	230 cd/m^2
	26"	300 cd/m^2	26"	450 cd/m^2
	32"	300 cd/m^2	32"	450 cd/m^2
Contrast Ratio	19"	1,000:1	19"	1,000:1
	26"	3,000:1	26"	3,000:1
	32"	5,000:1	32"	3,500:1

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Model	UE4J(UA19ES4000R / UA**EH4000R)		LD4E(LA**D400E1)	
Picture Enhancer	HyperReal Engine (X9N)		HyperReal Engine (X9)	
Equalizer	5 Band		5 Band	
Auto Volume Control	O		O	
Surround Sound	Dolby Digital Plus/Pulse		Dolby Digital Plus/Pulse	
Speaker Output	19"	3 W x 3 W	19"	3 W x 3 W
	26"	5 W x 5 W	26"	5 W x 5 W
	32"	10 W x 10 W	32"	10 W x 10 W
PIP	X		O	
Caption	O		O	
Game Mode	O		O	
Energy Saving	O		O	
Network	X		X	
Anynet+	X		O	
Antenna	1(Cable/Air)		1(Cable/Air)	

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2.2. Detail Factory Option

NOTE

If you replace the main board with new one, please change the factory option as well.
The options you must change are "Type".

Model Name			UA19ES4000R	UA26EH4000R	UA32EH40*0R
Panel		Vendor	AML	CMI	AUO
		Code	BN07-01043A	BN07-01094A	BN07-01112A
		Spec.	LTM185AT05-V	DE260AGM-C1	DE320AGA-B1
SMPS		Vendor	POWERNET	DONGYANG	DONGYANG
		Code	BN44-00504A	BN44-00492B	BN44-00492B
		Spec.	PD23A0T_CPN	PD26AV0_CSM	PD32AV0_CDY
Byte	Item	Chassis Ass'y	BN91-06354L	BN91-06354P	BN91-07059J
0	Factory Reset	PBA Ass'y code	BN94-04583L (SP01)	BN94-04583P (CS01)	BN94-04583Q (AD01)
1	Type		19A6TH0E	26P6AH0D	32L6AH0D
2	Model		EA_Thai	EA_Thai	EA_Thai
3	SVC Model		4000	4000	4000
4	Local Set		ES4000	EH4000	EH4000
5	Tuner		-	-	-
6	Ch Table		SUWON	SUWON	SUWON

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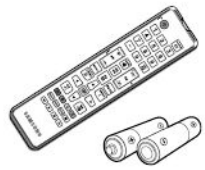
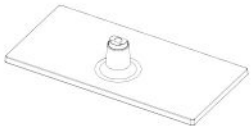
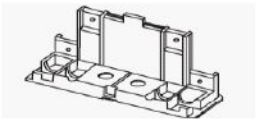
2.3. Accessories

Product	Description	Code. No	Remark
	Remote Control	AA59-00607A	Samsung Electronics Service center
	Batteries (AAA x 2)	4301-000121	
	Power Cord	3903-000607	
	Warranty Card / Registration Card / Safety Guide Manual (Not available in all locations)	19" : BN96-18705S 26" : BN96-18705T 32" : BN96-18705T	
	Holder-Wire Stand	26" : BN61-05491A 32" : BN61-05491A	
	Stand	19" : BN96-16986A	
		26" : BN96-21809A 32" : BN96-21735F	
	Guide Stand	26" : BN96-21831D 32" : BN96-21741D	

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3. Disassembly and Reassembly

This section of the service manual describes the disassembly and reassembly procedures for the LED TV.

WARNING This LED TV contains electrostatically sensitive devices. Use caution when handling these components.

3.1. Disassembly and Reassembly

CAUTION

1. Disconnect the LED TV from the power source before disassembly.
2. Follow these directions carefully; never use metal instruments to pry apart the cabinet.
3. If there is no additional coment, it is same for all inches.

■ UA**EH40*0R

Description	Picture Description	Screws
1 Place TV face down on cushioned table.		
2 Remove 4 screws from the Stand.		6003-001782
3 Remove Stand.		

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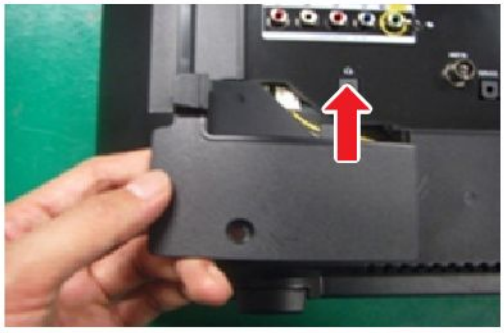
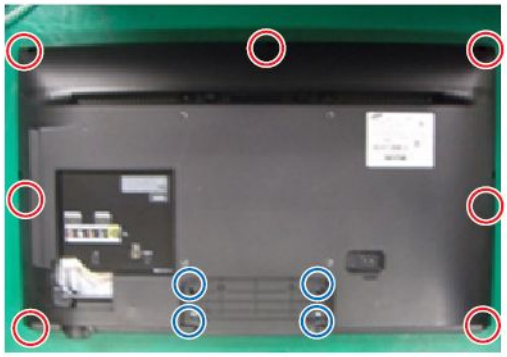
Description	Picture Description	Screws
4 Remove the 1 screw of Cover-Jack.		6003-001782
5 Remove the Cover-Jack.		
6 Disconnect the Function Ass'y Cable.		
7 Remove the 12 screws of Rear-Cover.		6003-001782 6003-002755 (Machine)
8 Remove the Rear-Cover.		

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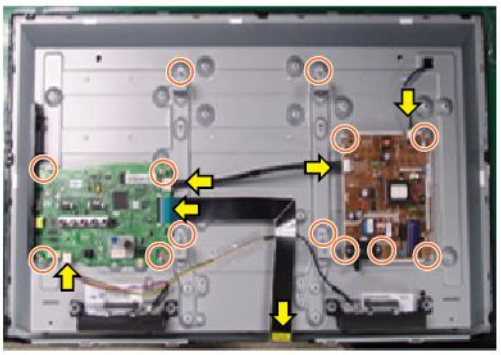
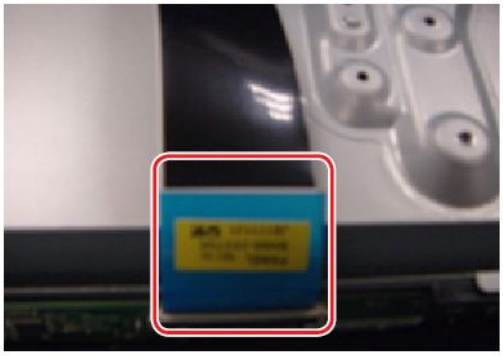
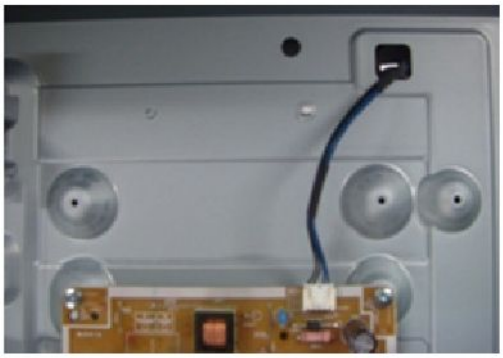
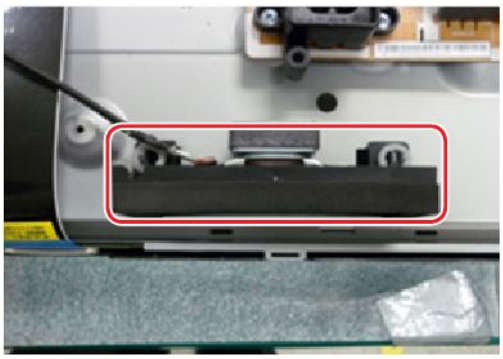
Description	Picture Description	Screws
9 Remove the 12 screws of Main Board and SMPS Board and Panel.		6001-002756
10 Remove the LVDS Cable and Panel Drive Cable.	 	
11 Remove the Speakers and Power Cables.		

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Description	Picture Description	Screws
12 Completed disassembly.		

NOTE

Reassembly procedures are in the reverse order of disassembly procedures.

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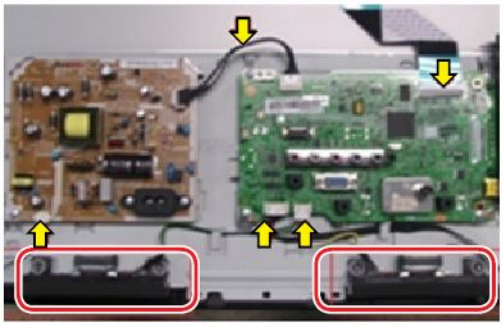
■ UA19ES4000R

Description	Picture Description	Screws
1 Place TV face down on cushioned table.		
2 Remove 3 screws from the Stand. Remove Stand. **NOTE** If you want to remove the only rear cover, you don`t need to remove the stand)		 6003-001782
3 Remove 5 screws of Rear-Cover.		 6003-001782
4 Lift up the Rear-Cover.		
5 Separate the Left/Right Speaker, Cables.		

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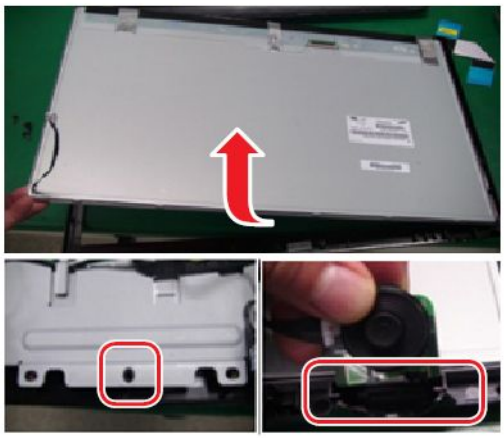
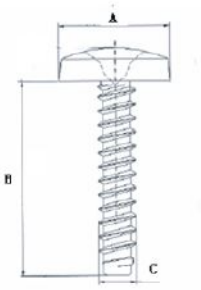
Description	Picture Description	Screws
6 Remove the screws of Main Board and SMPS Board. • Remove the 4 screws of Main Board. • Remove the 3 screws of SMPS Board. **NOTE** • If you need, Side Bracket also. • If you want to change the only Panel, you don`t need to separate Boards and cables (except LVDS).		 6001-002756 (Machine)
7 Lift up the Panel. **NOTE** If you re-assemble, you should keep the stop-point.		

NOTE

Reassembly procedures are in the reverse order of disassembly procedures.

■ Screw Size

Code No.	COLOR	A (mm)	B (mm)	C (mm)	
6003-001782	BLACK	7.80~8.30	11.20~12.00	3.81~3.91	
6001-002755	BLACK	7.1~7.5	5.7~6.0	2.98~3.02	
6001-002756	WHITE	7.1~7.5	5.7~6.0	2.98~3.02	

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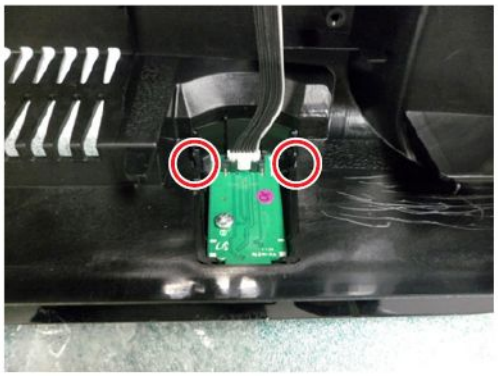
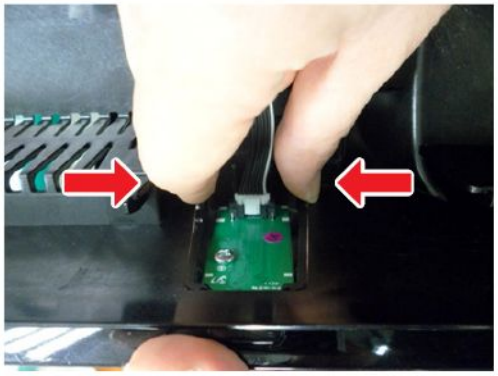
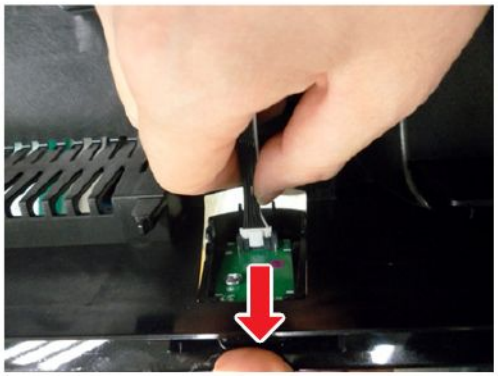
3.2. Assy Board P-Jog Switch & Ir

■ How to disassembly

	Description	Picture Description	Refer
1	Check the 2 Locking Holders.		
2	Press both holders.		
3	Remove the Function Assy.		

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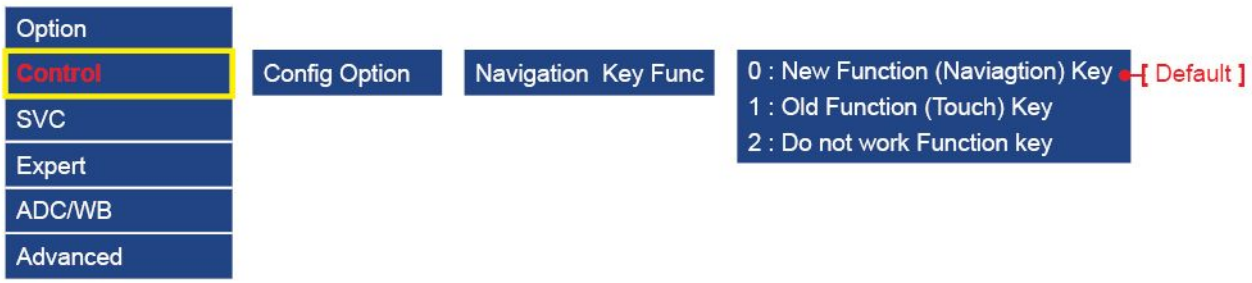
■ How to assembly

Description	Picture Description	Refer
1 Check the locking hole.		
2 Combine the function assy to locking hole.		
3 Press the function assy to TV.		

When you want to ignore the funtion key actions



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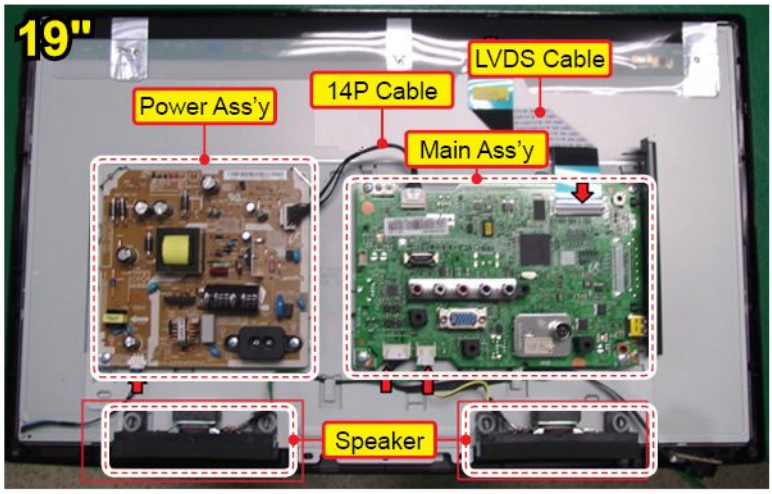
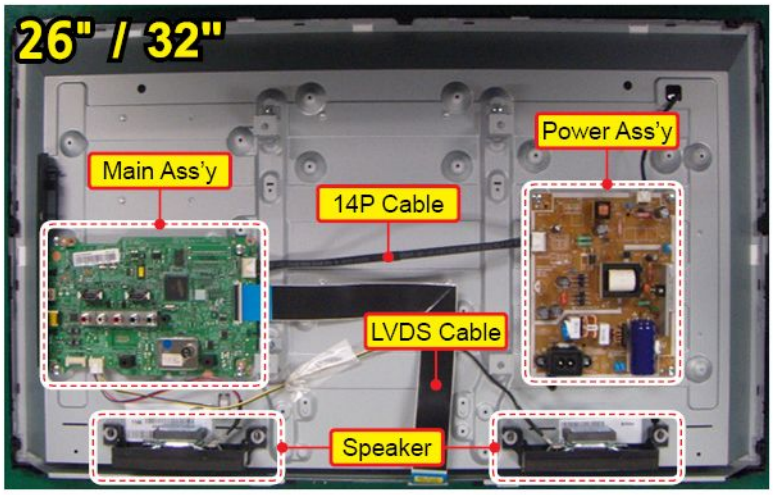
4. Troubleshooting

4.1. Troubleshooting

■ 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.





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Main Ass'y (CN204_L, CN203_S)			
13	B13V	14	B13V
11	B13V	**12**	**B13V**
9	B13VS	10	SW_INV
7	B13VS	8	GND
5	GND	6	GND
3	B5.3V	4	A5.3V
1	B5.3V	2	SW_PW

Power Ass'y (CMN801)			
14	B13V	13	B13V
12	**B13V**	11	B13V
10	SW_INV	9	B13VS
8	GND	7	B13VS
6	GND	5	GND
4	A5.3V	3	B5.3V
2	SW_PW	1	B5.3V

* Change the 12 PIN to B13V(2012) from NC(2011)

3. Check the power in & output between IP & Main Board, Main Board & Panel, IP & Panel.

■ How to know it is from Main Board or T-Con when some problems happen

1. No Picture : Backlight is on, but there is no picture and LED indicator in front of TV is blinking.
   - Check the LVDS Cable connection. If still problems, change the T-Con Board and then Main Board step by step.
2. Picture distortion : Enter the service mode ⋯› Choose 'SVC' ⋯› Check the 'internal pattern.'
   - Enter 'Service Mode.'
     - If you do not have Factory remote control

       Power OFF → MENU → 1 → 8 → 2 → Power On
     - If you have Factory remote control

       INFO → Factory
3. Choose 'SVC.'
4. Choose 'Test pattern.'
5. Select the each pattern and then check all pattern is ok or not.

Pattern Status is	Change the	Test Pattern is made by the MSTAR IC
OK	Main Board	We guess front of MSTAR IC has problem.
NG	Panel and T-Con Board	We guess back of MSATR IC has problem.

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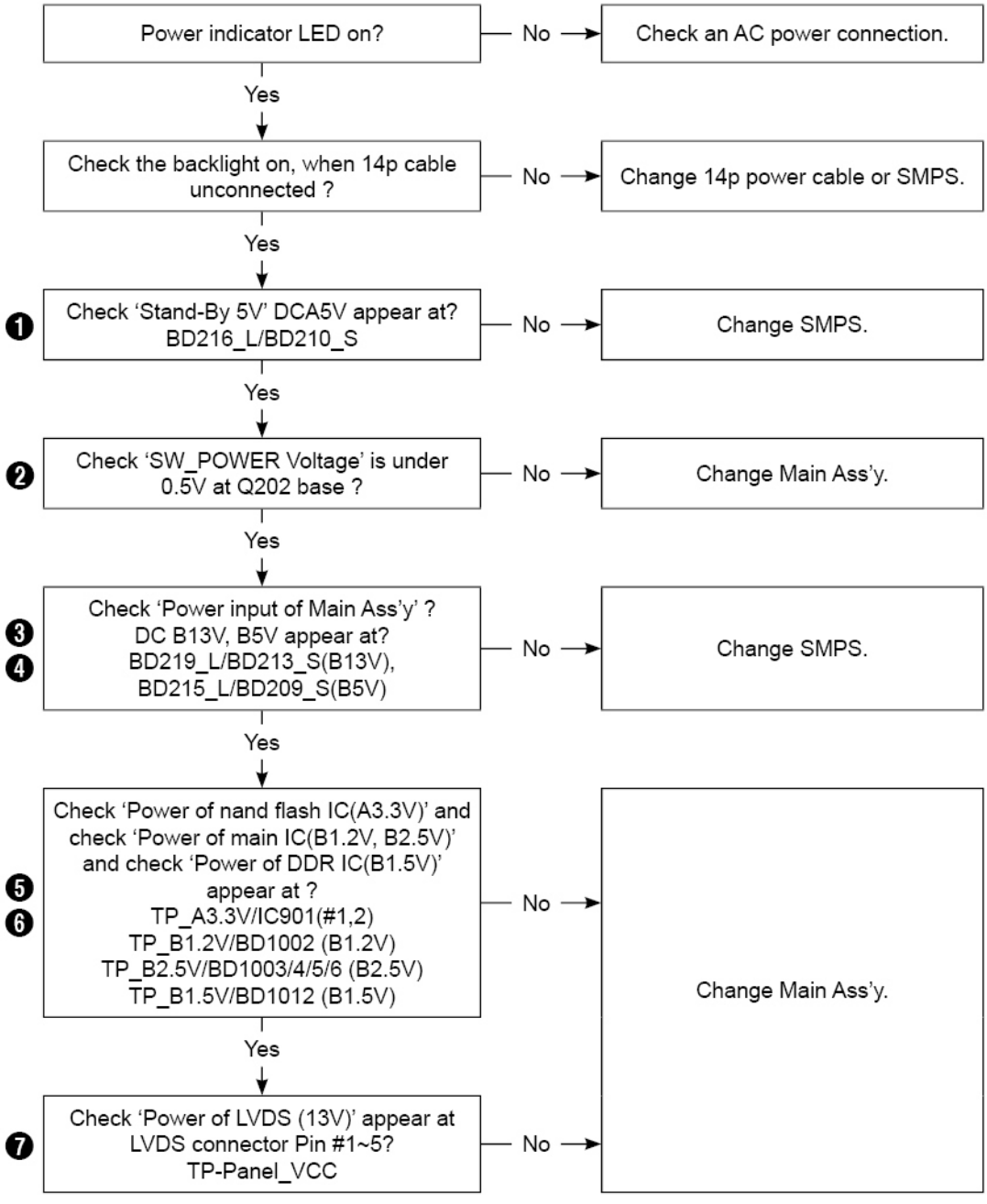
4.2. How to check fault symptom

■ No Power

Symptom	• The PD board relay does not work when connecting the power cord. • The units appears to be dead.
Major checkpoints	The PD relay does not work when connecting the power cord if the cables are improperly connected or the Main Board or PD is not functioning. In this case, check the following: Check the internal cable connection status inside the unit. • Check the fuses of each part. • Check the output voltage of PD. • Replace the Main Board.
Diagnostics	

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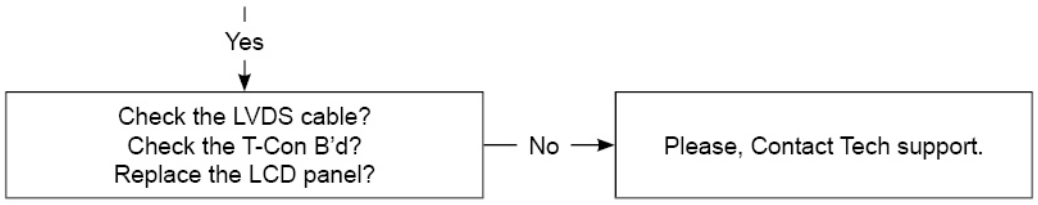
Diagnostics	
Caution	Make sure to disconnect the power before working on the IP Board.

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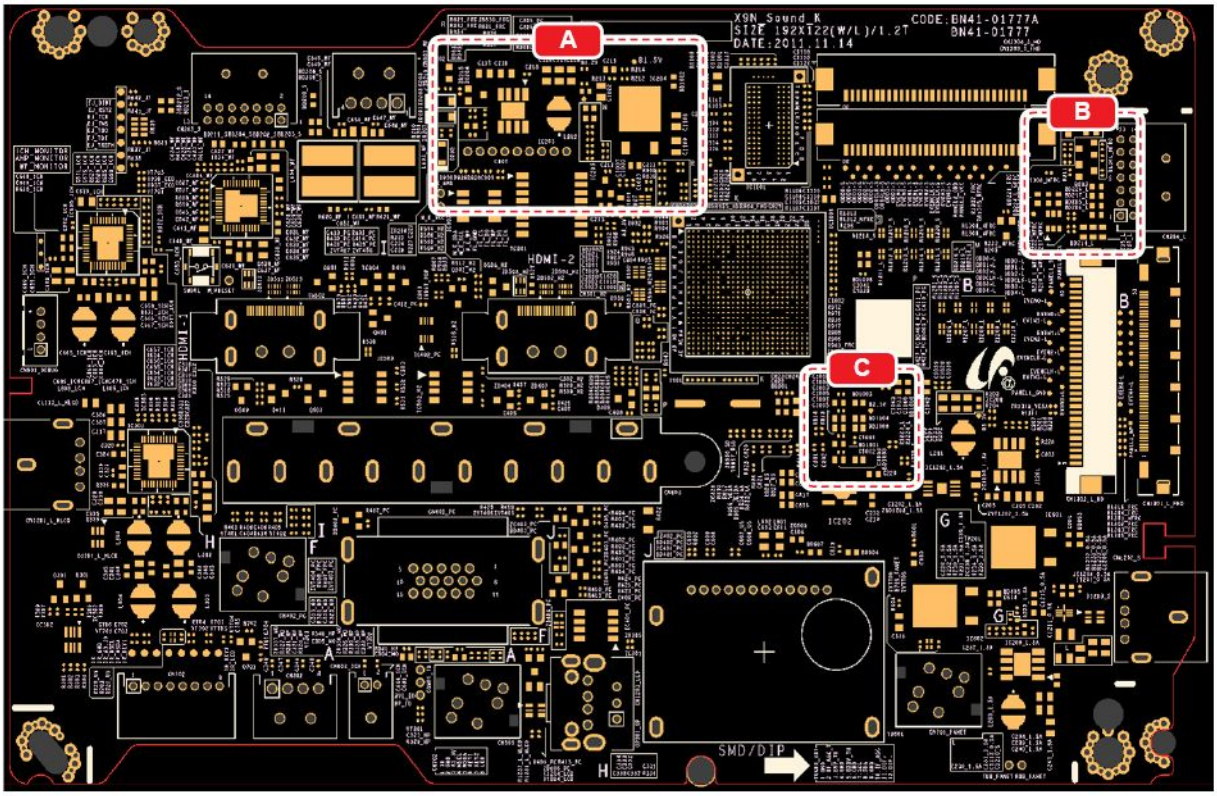
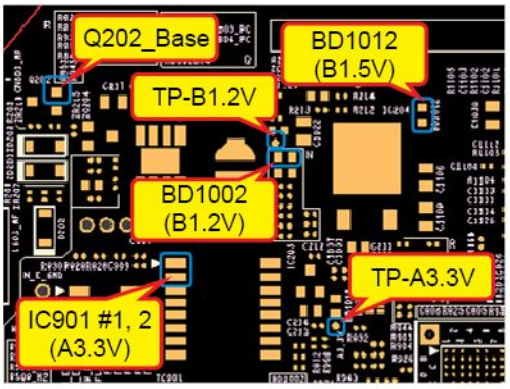
■ Location of Parts

Main Board_Front

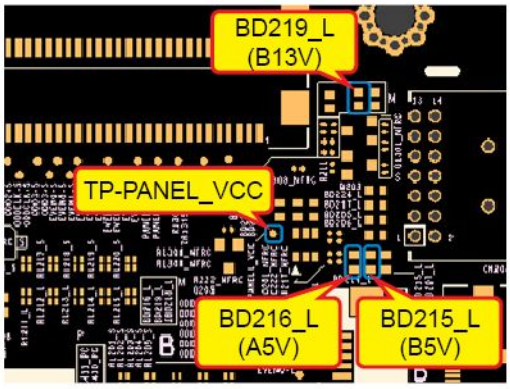


Detail Image

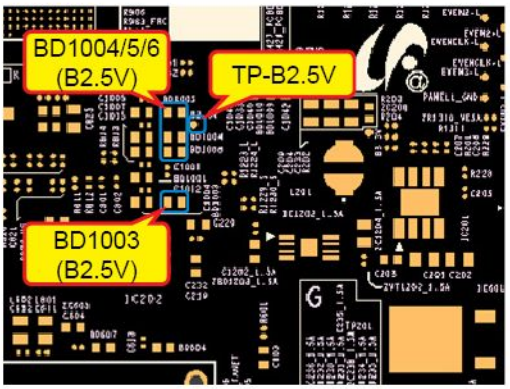
A



B



C



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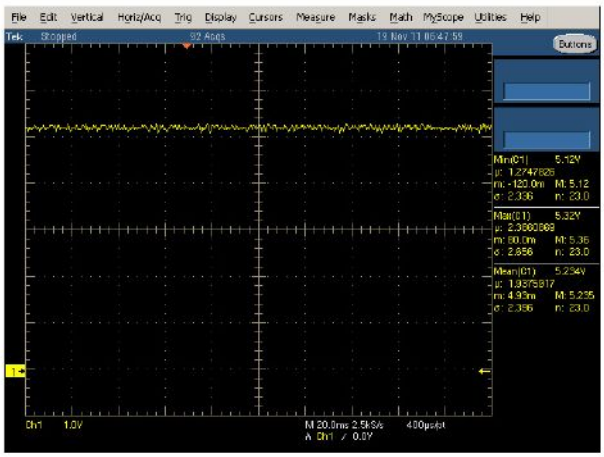
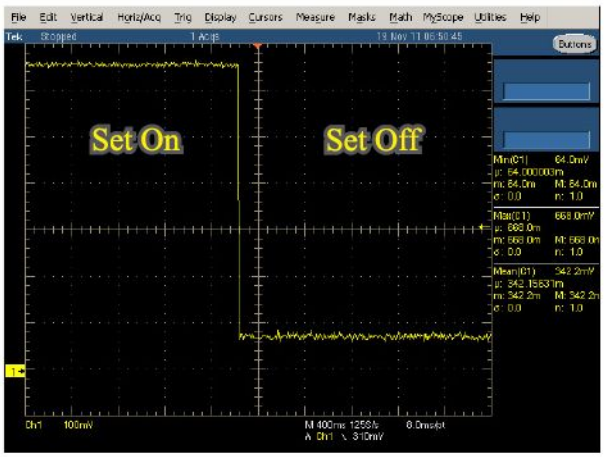
■ Waveforms

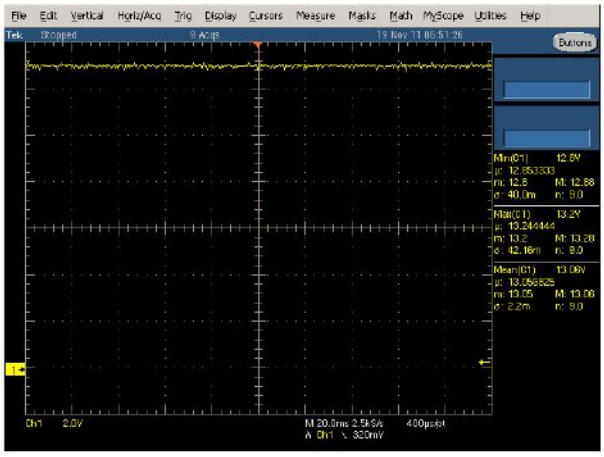
❶ Stand-By A5.3V



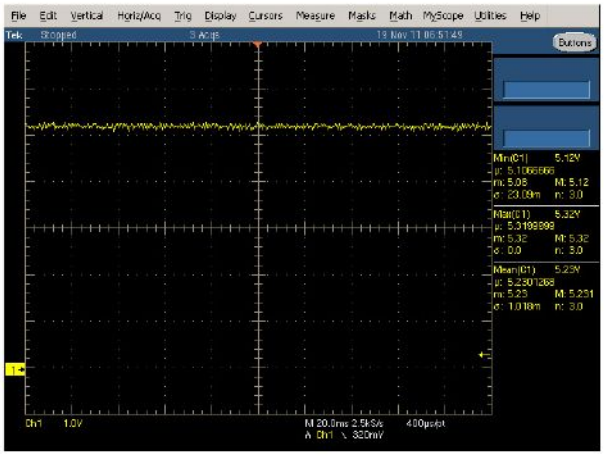
❷ SW_POWER



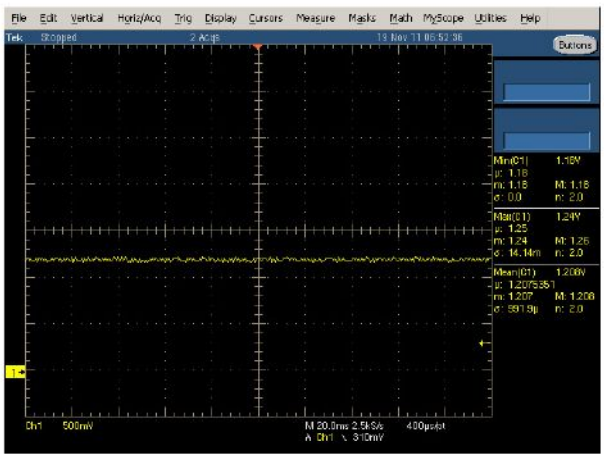
❸ B13V



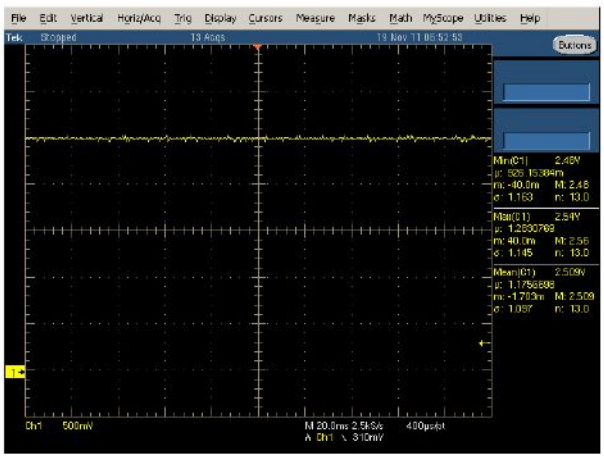
❹ B5.3V



❺ B1.2V



❻ B2.5V



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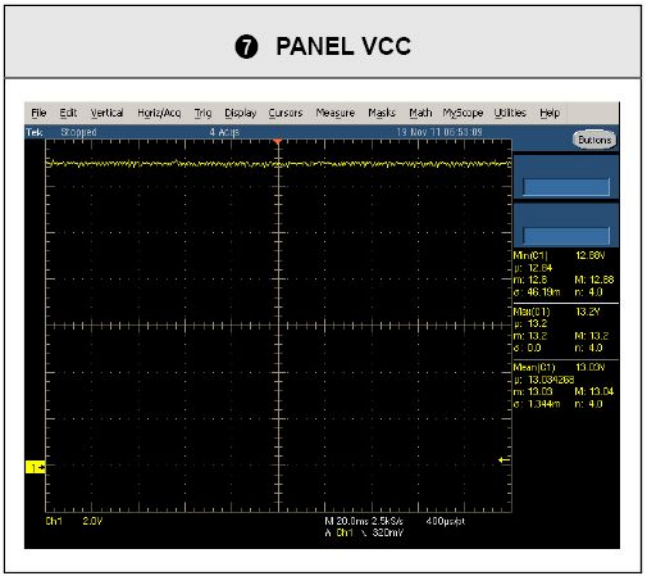

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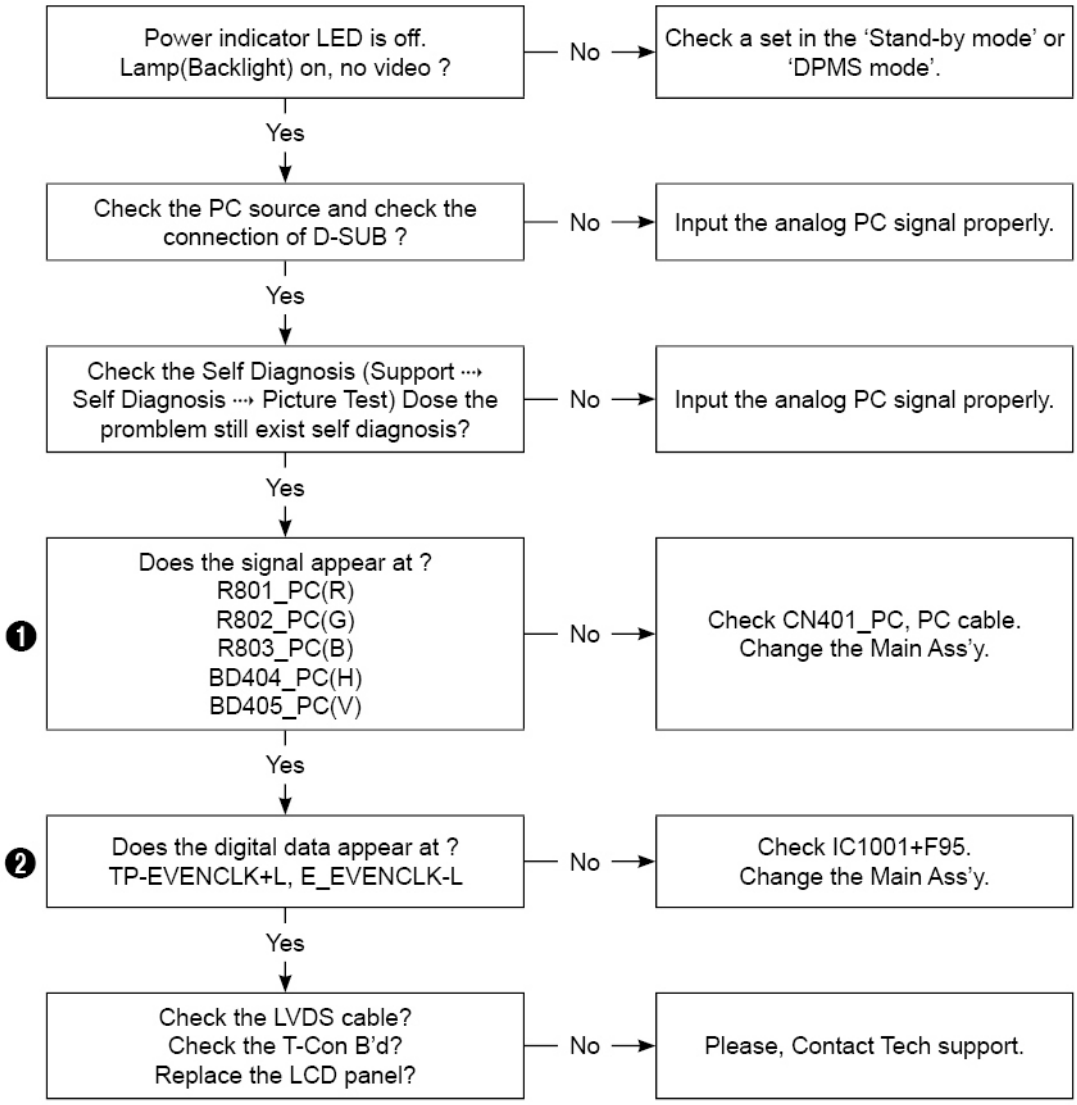
■ No video (Analog PC signal)

Symptom	Audio is normal but no picture is displayed on the screen.
Major checkpoints	• Check the PC source • Check the X9 • This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	
Caution	Make sure to disconnect the power before working on the IP Board.

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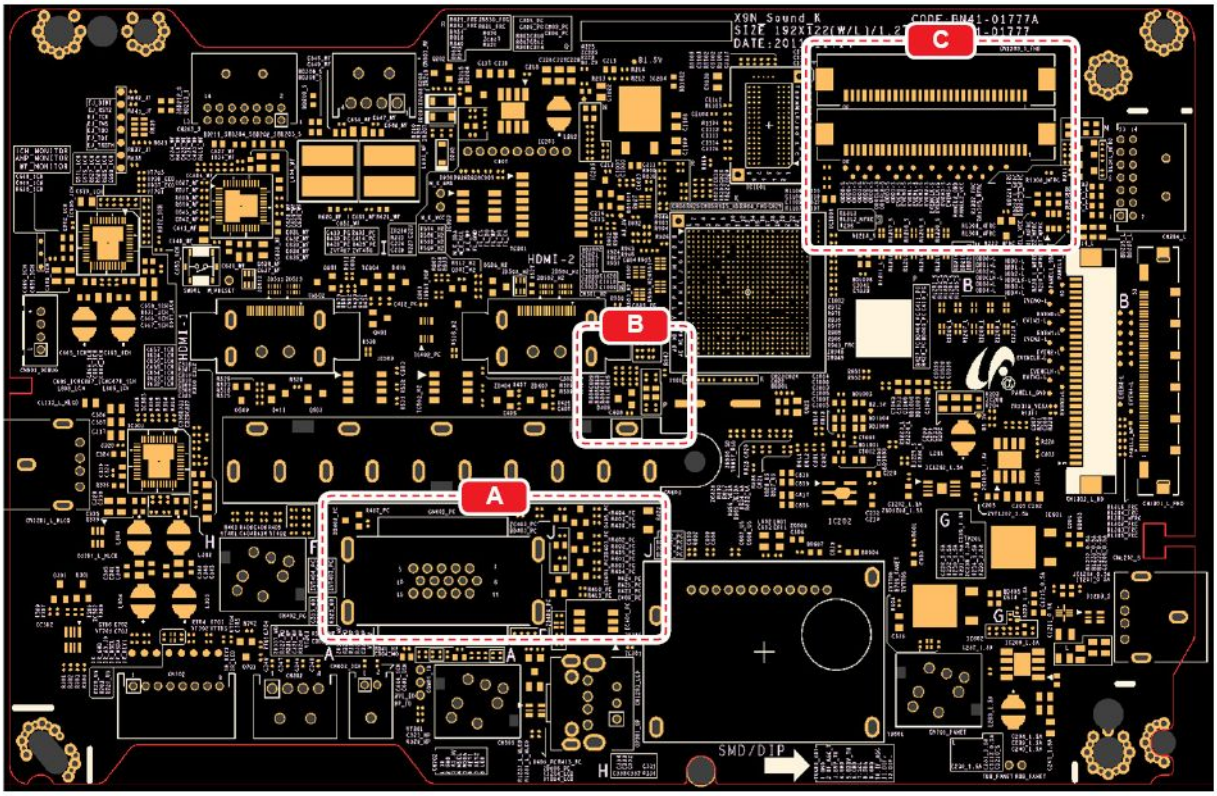
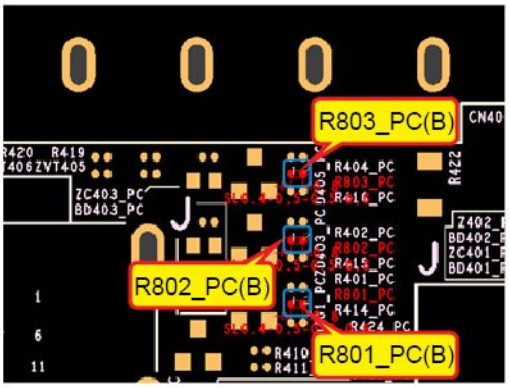
■ Location of Parts

Main Board_Front

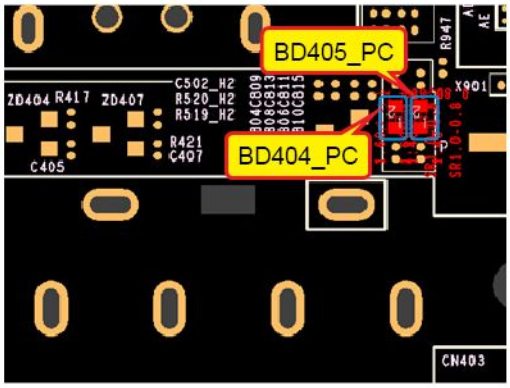


Detail Image

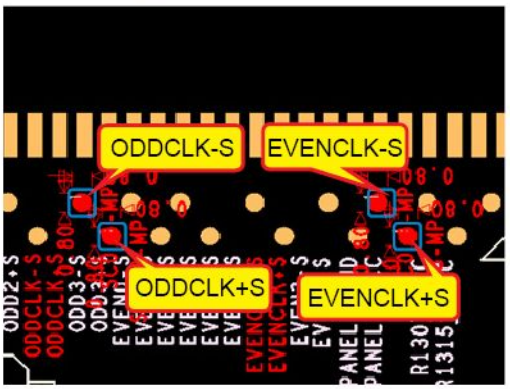
A



B



C



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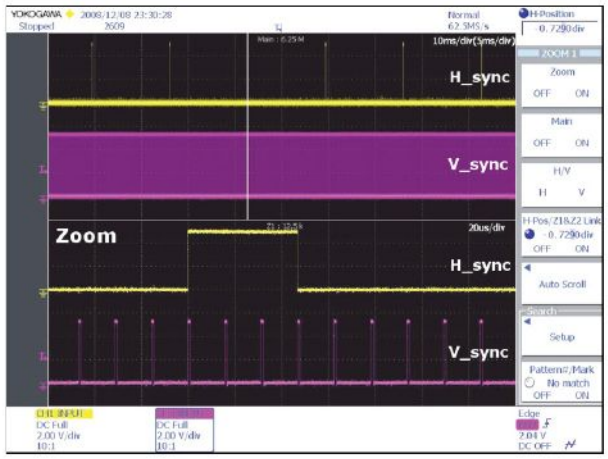
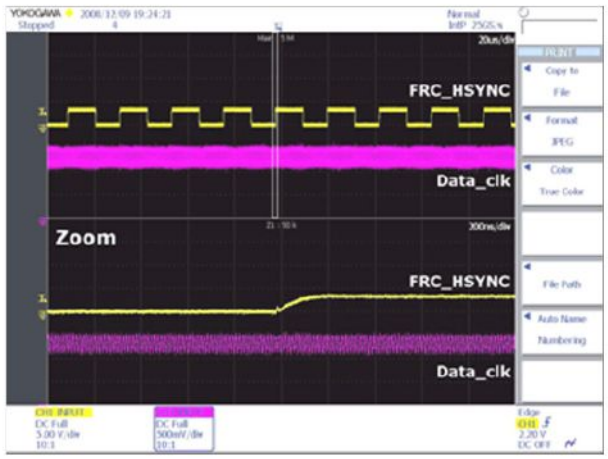
■ Waveforms

❶ PC input (V-sink , H-sink , R/G/B)



❶ PC input (V-sink , H-sink , R/G/B)

❷ LVDS output



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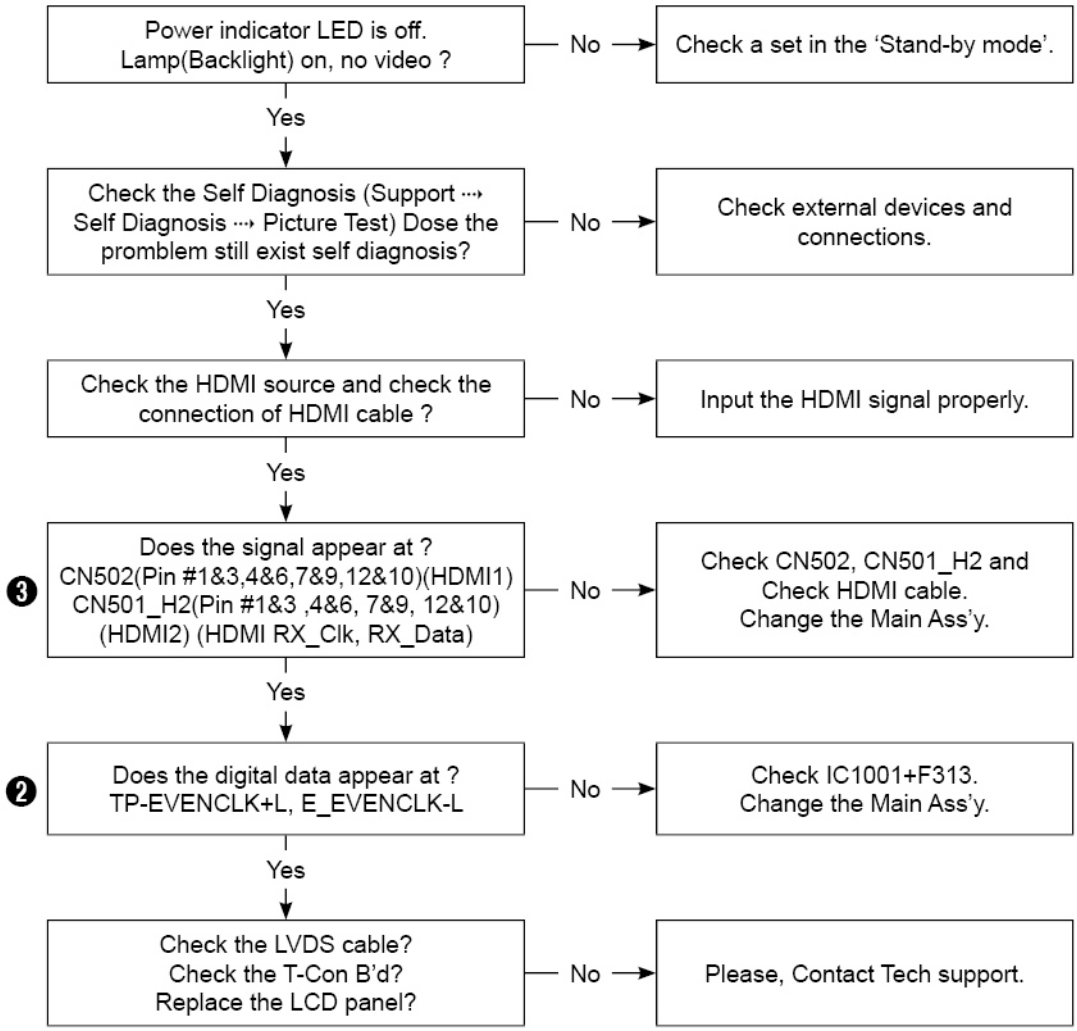
■ No video (HDMI1, 2 - Digital signal)

Symptom	Audio is normal but no picture is displayed on the screen.
Major checkpoints	• Check the HDMI source • Check the X9 • This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	
Caution	Make sure to disconnect the power before working on the IP Board.

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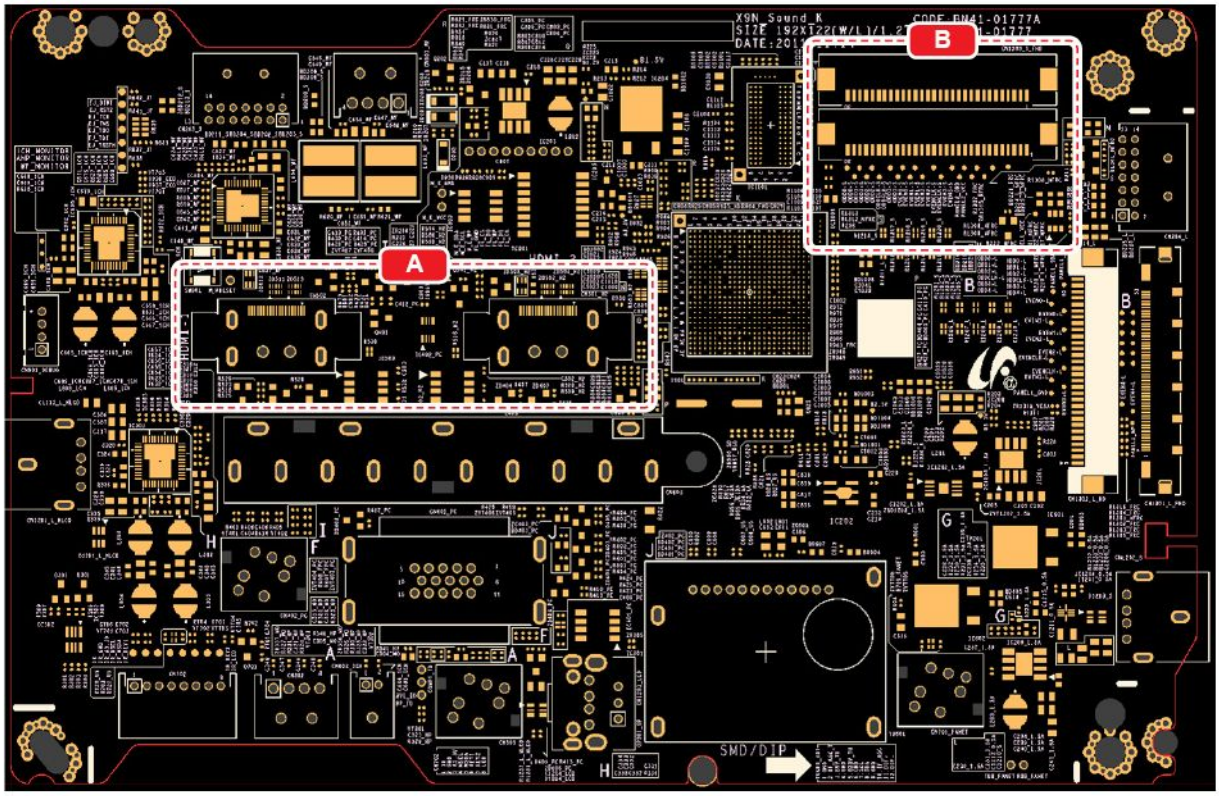
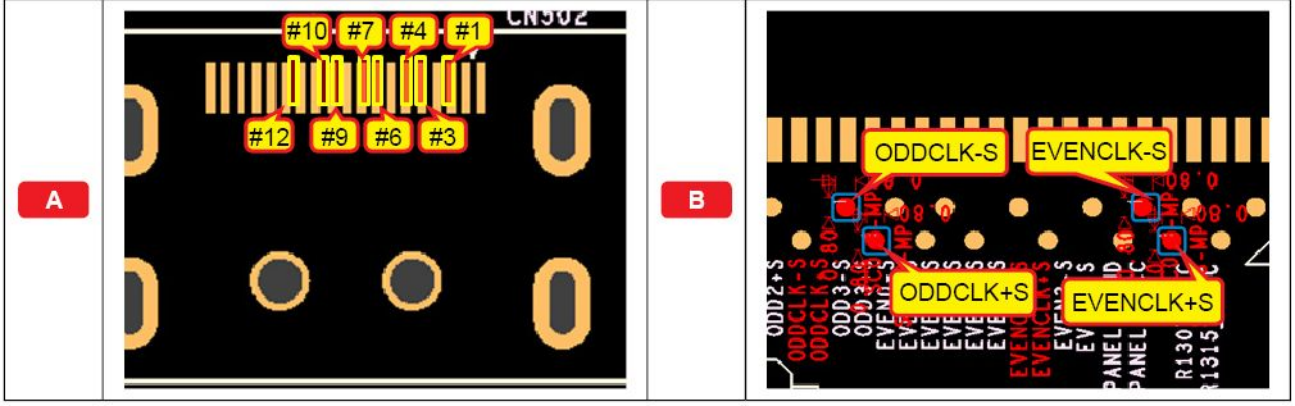
■ Location of Parts

Main Board_Front



Detail Image



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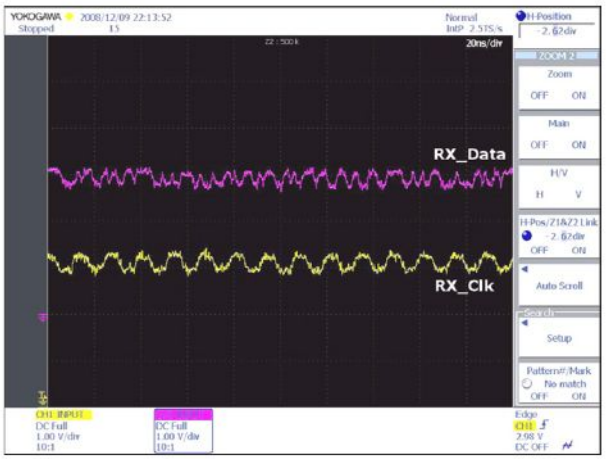
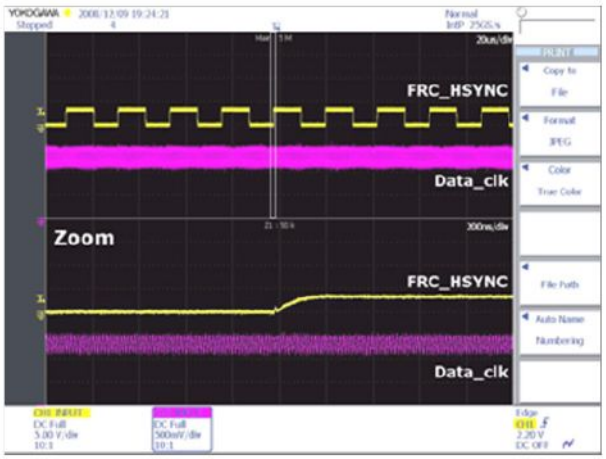
■ Waveforms

❸ HDMI input (RX_Data, RX_Clk)	❷ LVDS output
	

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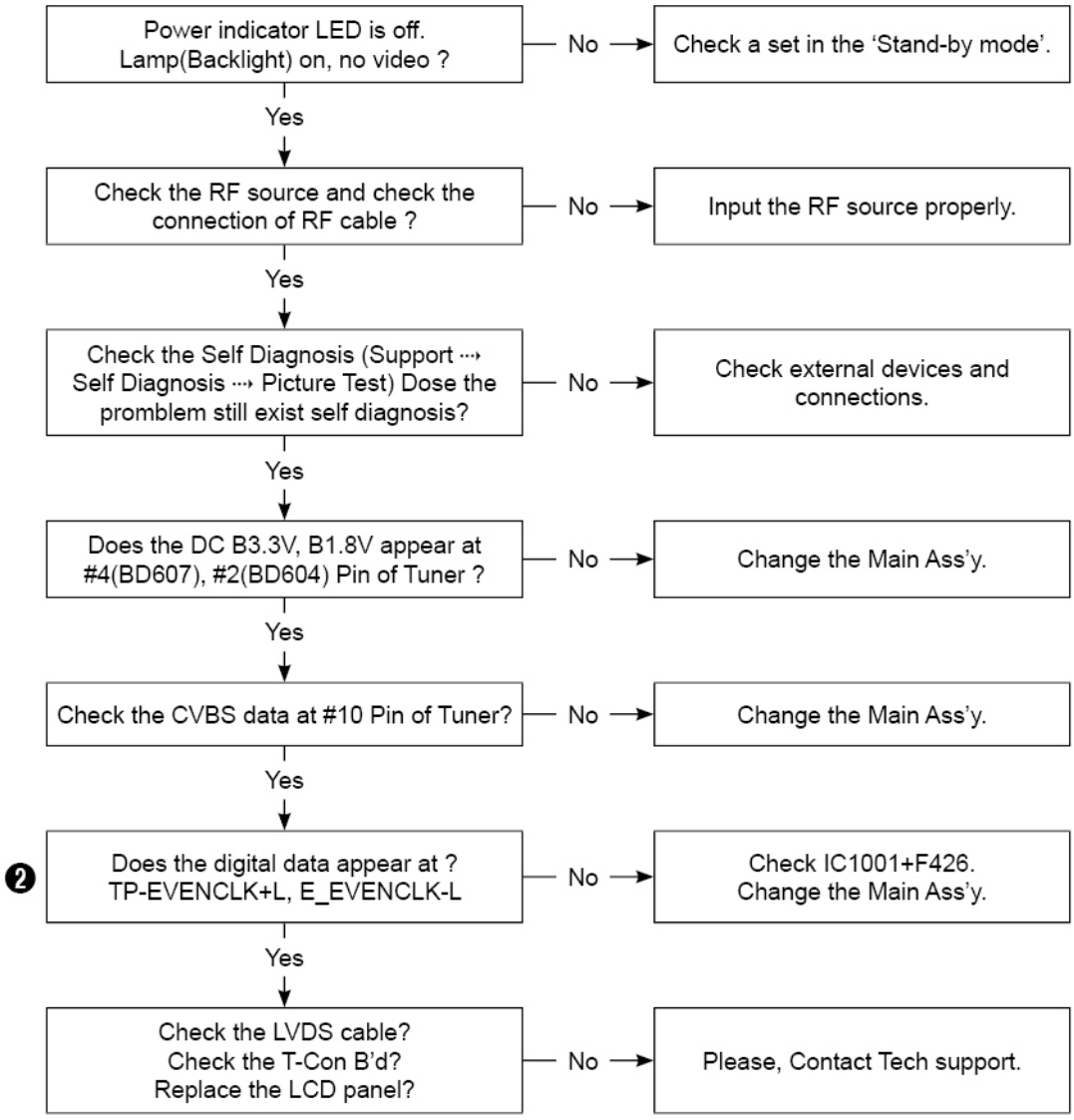
■ No video (Tuner_CVBS)

Symptom	Audio is normal but no picture is displayed on the screen.
Major checkpoints	• Check the Tuner CVBS source • Check the X9 • This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	
Caution	Make sure to disconnect the power before working on the IP Board.

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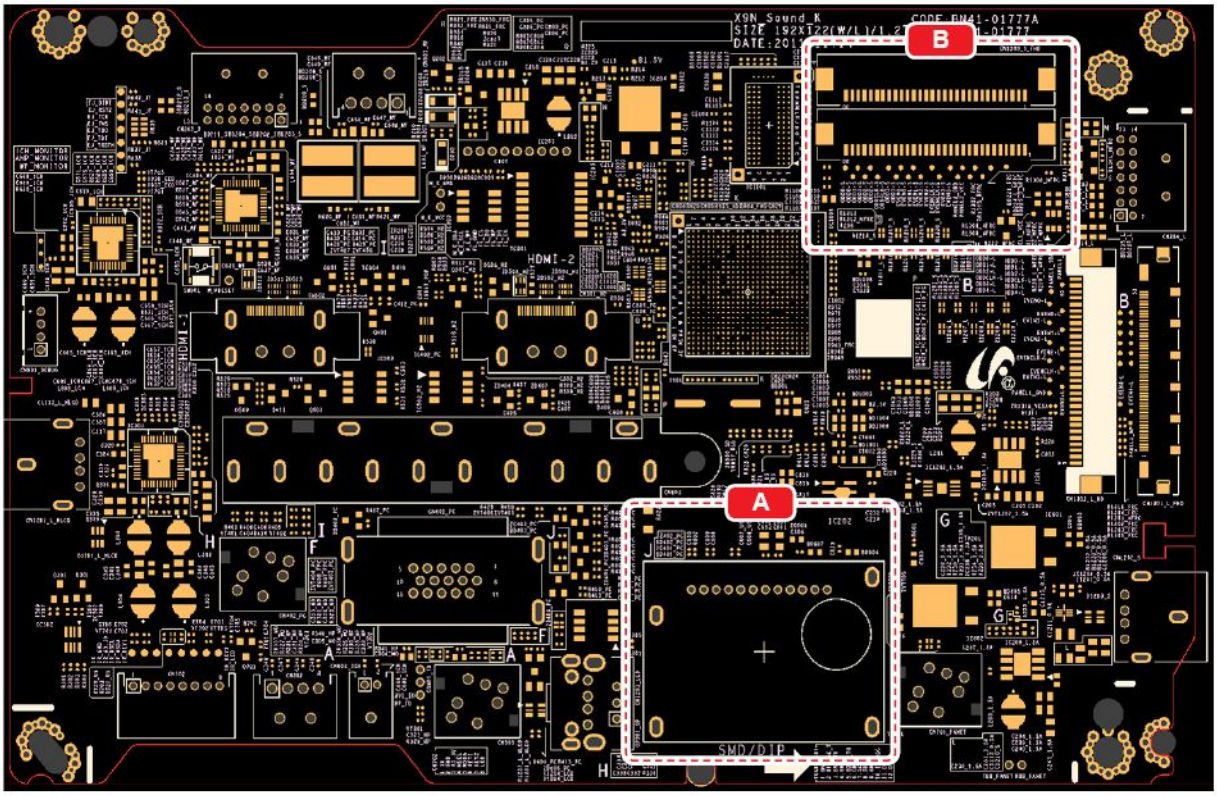
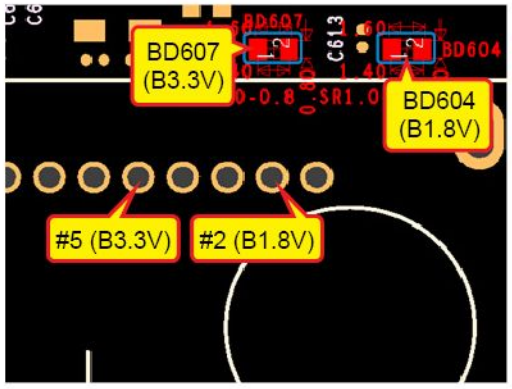
■ Location of Parts

Main Board_Front

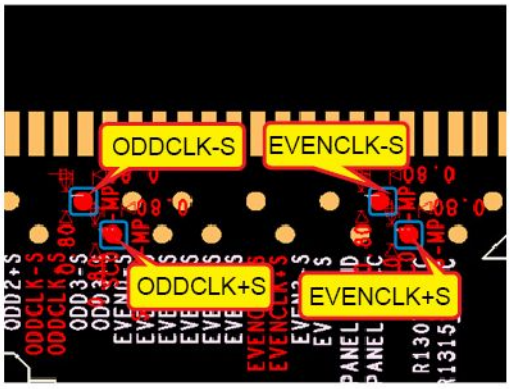


Detail Image

A



B



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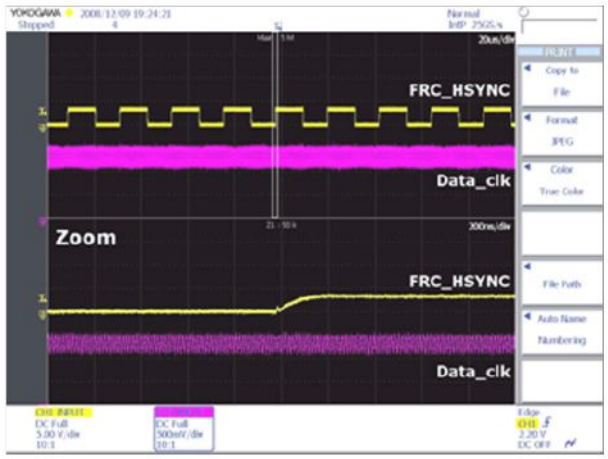
■ Waveforms

❷ LVDS output



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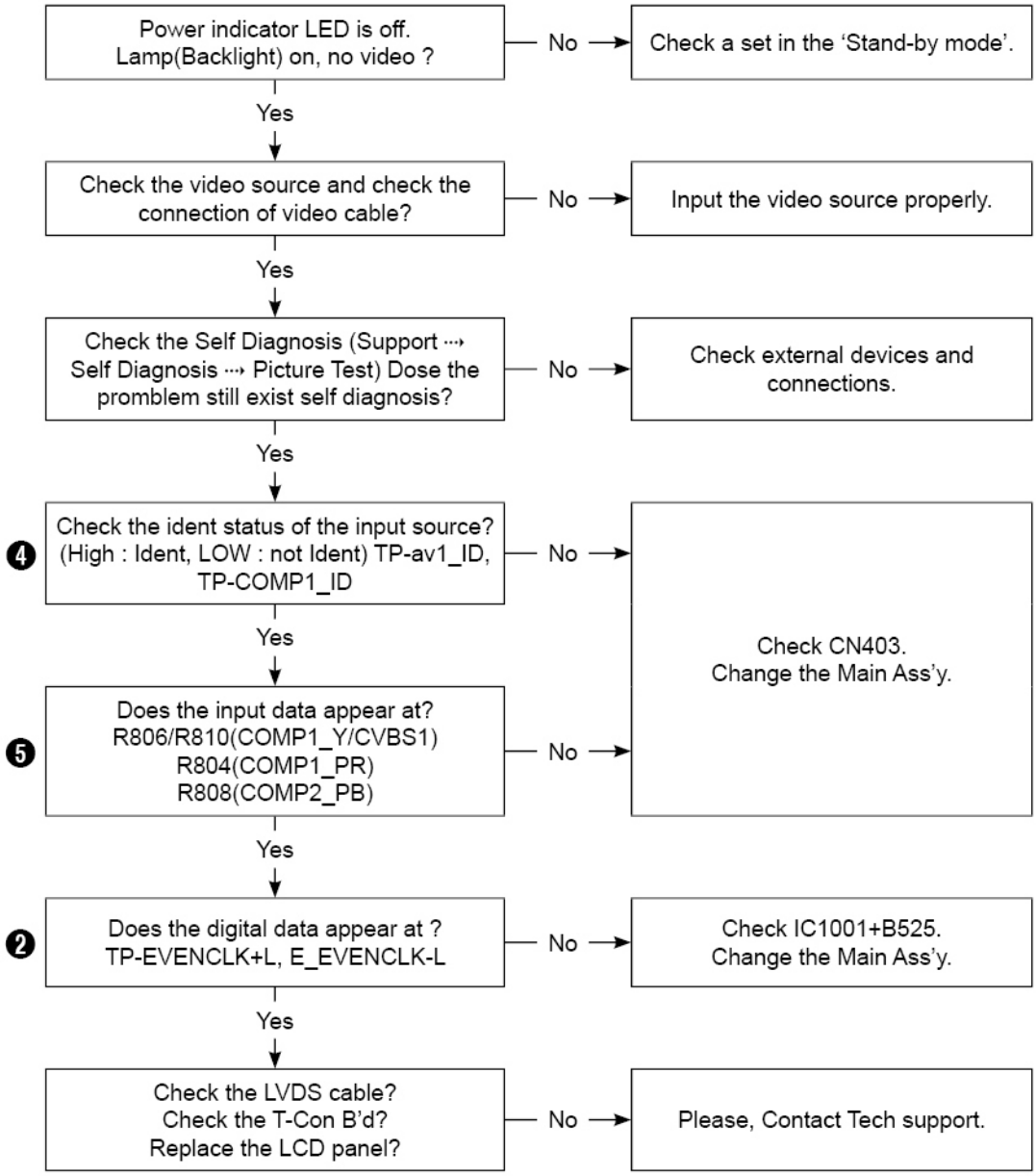
■ No video (Video CVBS, COMPONENT)

Symptom	Audio is normal but no picture is displayed on the screen.
Major checkpoints	• Check the Video CVBS source and Component source. • This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.
Diagnostics	
Caution	Make sure to disconnect the power before working on the IP Board.

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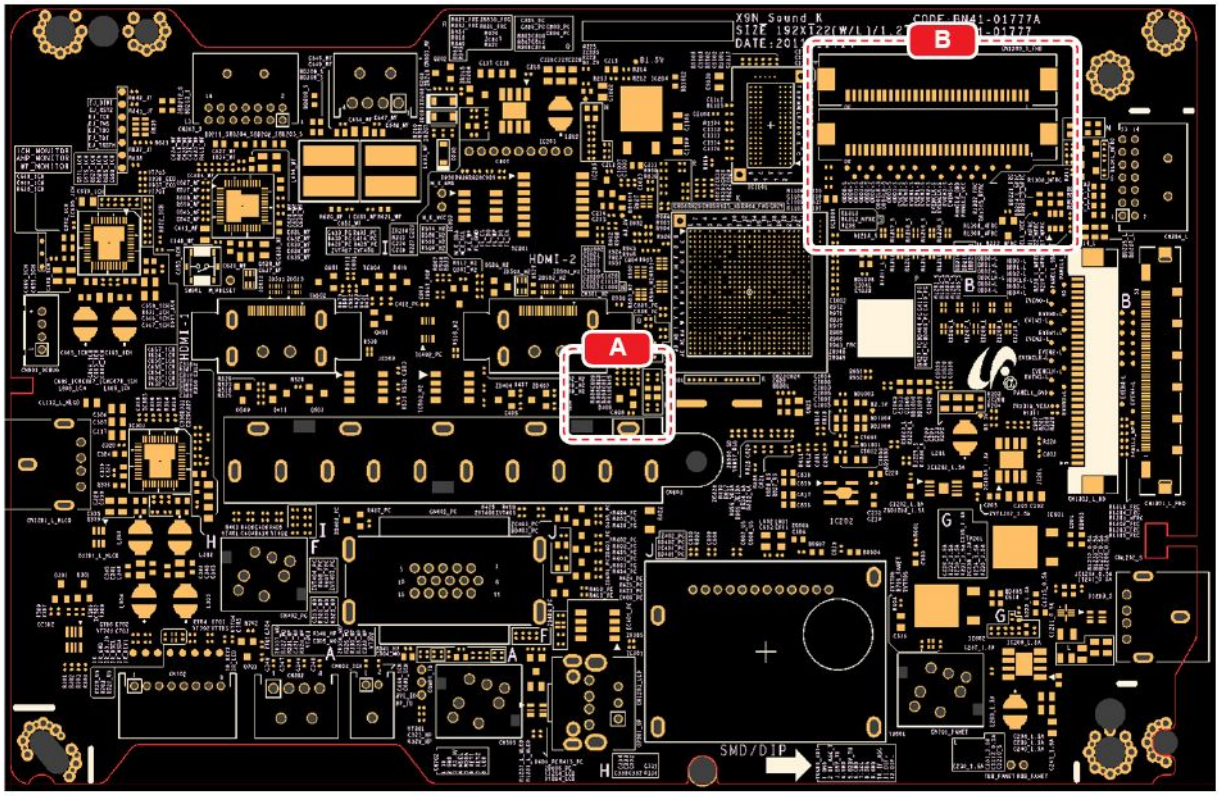
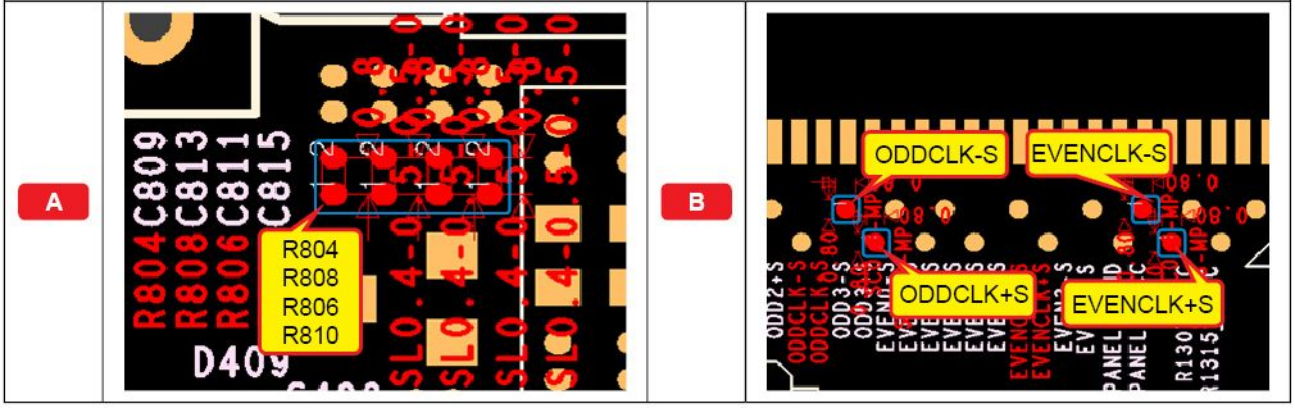
■ Location of Parts

Main Board_Front



Detail Image



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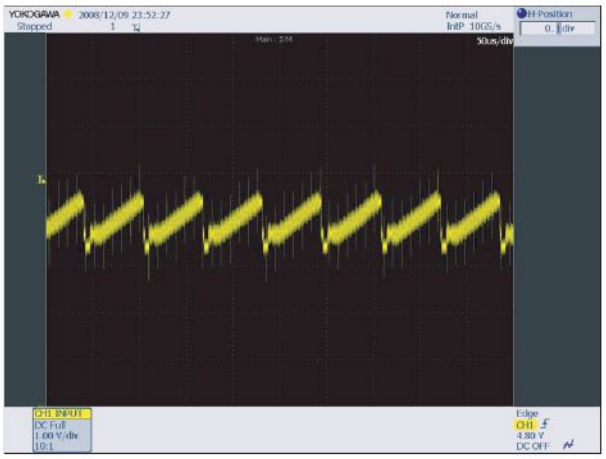
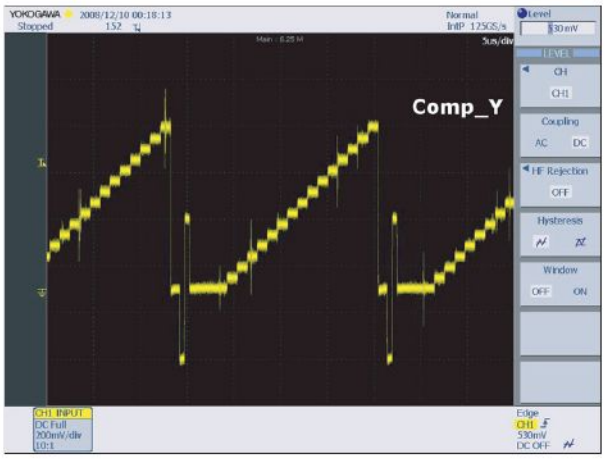
■ Waveforms

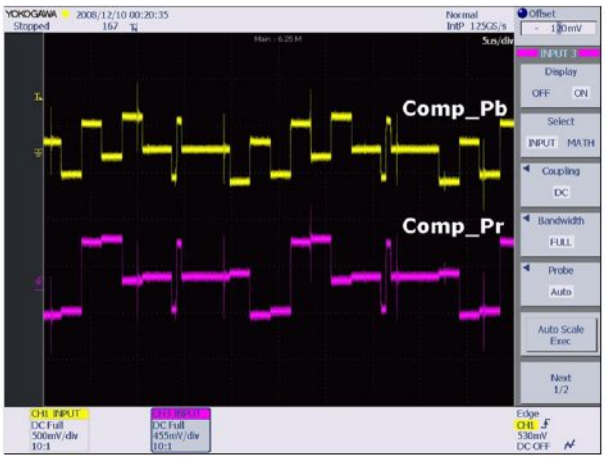
❹ Input data(CVBS)



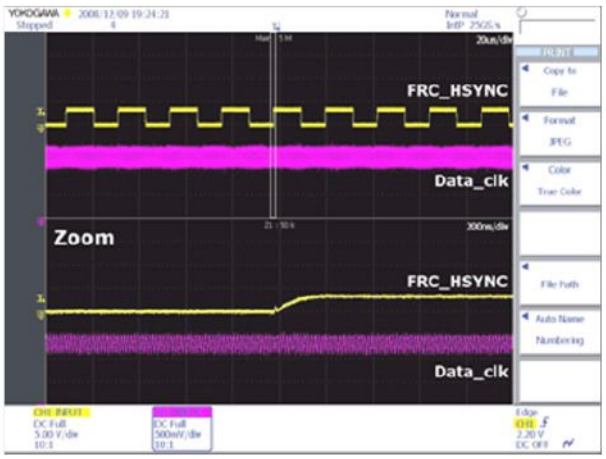
❺ Compnent_Y (Gray scale) / Pb / Pr (Color bar)



❺ Compnent_Y (Gray scale) / Pb / Pr (Color bar)



❷ LVDS output



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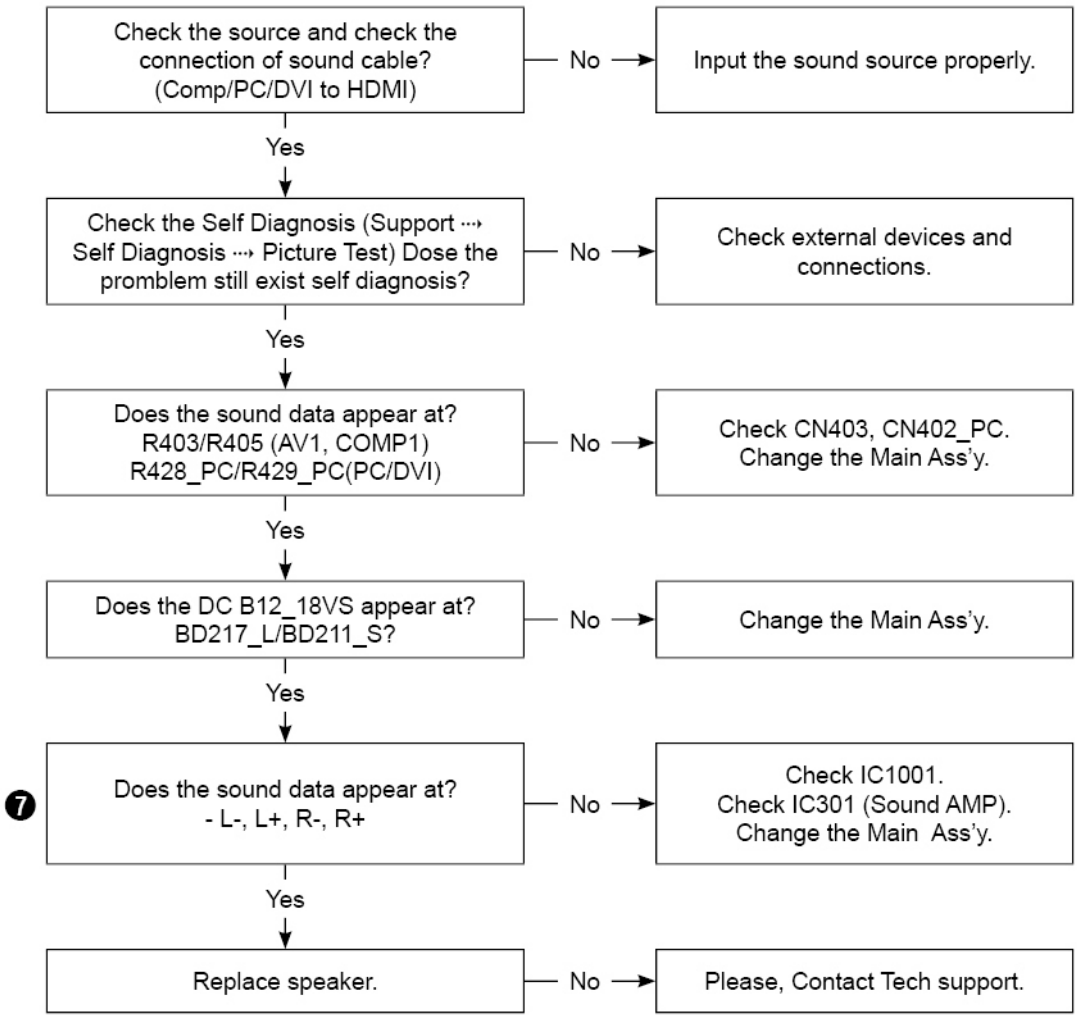
■ No sound

Symptom	Video is normal but there is no sound.
Major checkpoints	• When the speaker connectors are disconnected or damaged. • When the sound processing part of the Main Board is not functioning. • Speaker defect.
Diagnostics	
Caution	Make sure to disconnect the power before working on the IP Board.

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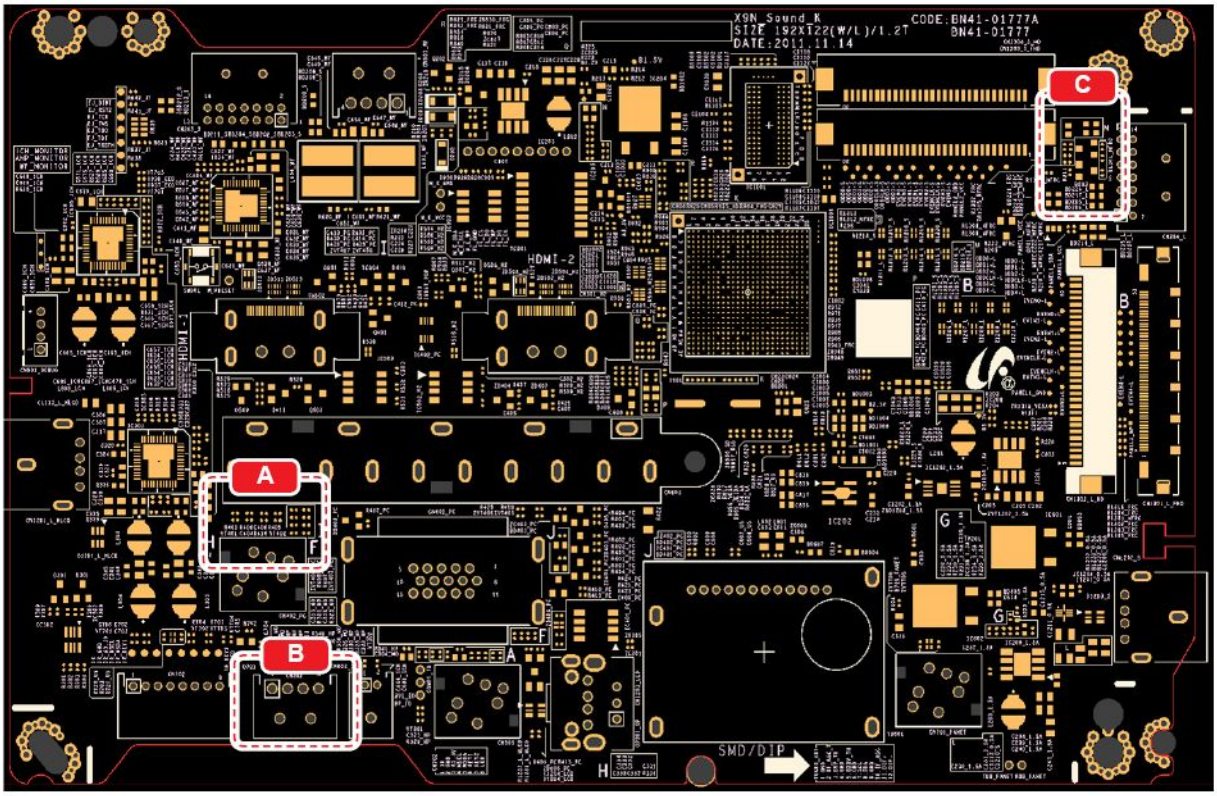
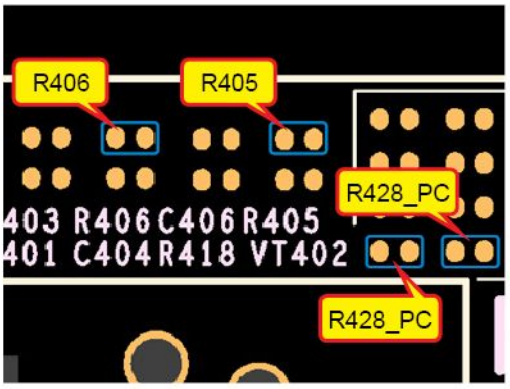
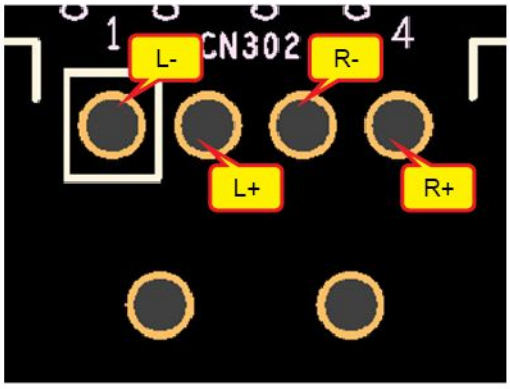
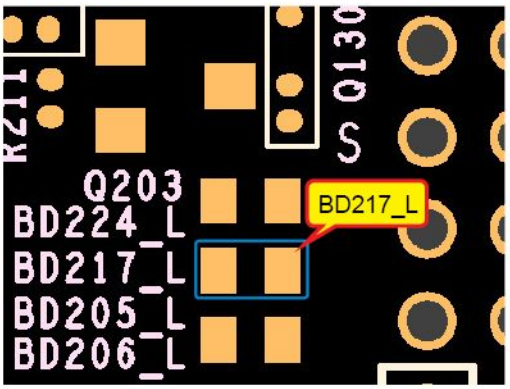
■ Location of Parts

Main Board_Front


Detail Image			
A		B	
C			

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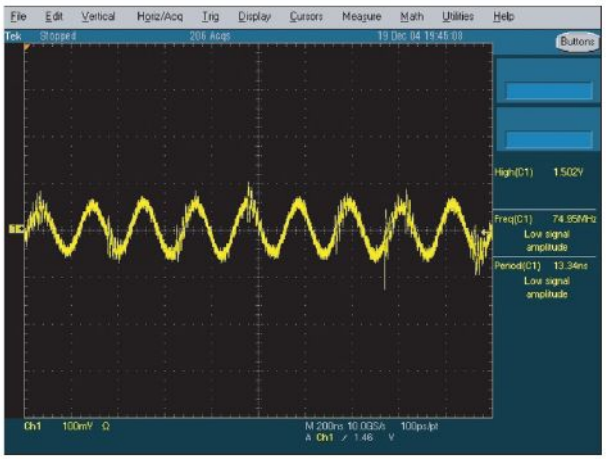
■ Waveforms

❼ Speaker out



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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

  Power OFF → MENU → 1 → 8 → 2 → Power On

- If you have Factory remote control

  INFO → Factory

- If you don't have Factory remote control, can't control some menus. (Expert, Advanced menu)

Option	**T-MX9HMAFC(AFRICA)/T-MX9HMASC(ASIA)/ T-MX9HMCHC(CHINA)-**** : HD S/W**
Control	**DTP-LP3-****
SVC	**DTP-LP3-App-****
Expert	**OPTION:32L6AH0D, THAI, 4000, NONE**
ADC/WB	**FactoryCS:*********
Advanced	**ADC : HDMI / COMP / PC / AV /**
	EDID : SUCCESS
	HDCP : SUCCESS
	BuildDate : **--****

- How to enter the hidden factory mode.

1. Into the factory mode.
2. Move the tap to Advanced.
3. Key input : 0 + 0 + 0 + 0.

NOTE

hidden menu : Advanced

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4-3-2. Factory Data

Note

- Black : I should not be possible to adjust or change that does not require a change item
  Blue : Adjustment Services for the corresponding
  Red : Items that are secured

■ Option

Factory Menu Name	Data	Range	Remark	Key
Factory Reset	-	-		
Type	19A6TH0E 26P6AH0D 32L6AH0D			
Model	UE4000	E4000/E4030/E4050/E4800/ E5000/E5010/E5030/E5050/ E5100/E6000/E6050/E420/ E4080/E5080/E3900/E4900/ E5005/E450		
SVC Model	4000			
Local Set	Thai	Viet/Thai/Ina/India/Middle Asia/ East Asia/Philippine/		
Tuner	SI_ATSC2		do not change	
Ch Table	SUWON			
Front Color	NONE	NONE/S-C-BLK/S-R-BLK/S- BLK/T-R-BLK/T-C-BLK/S-B- BLK		

■ Control

Factory Menu Name	Data	Range	Remark	Key
EDID				
EDID ON/OFF	Off	On/Off		
EDID WRITE ALL		Success/Failure	use to write the EDID	
EDID WRITE PC		Success/Failure		
EDID WRITE DVI		Success/Failure		
EDID WRITE HDMI1		Success/Failure		
EDID WRITE HDMI2		Success/Failure		
EDID WRITE HDMI3		Success/Failure		
EDID WRITE HDMI4		Success/Failure		
EDID VERSION		HDMI 1.3/HDMI1/2		
Sub Option				
Mute Time(VIDEO)	4	0~10		
ready	Off	On/Off		
TTX LIST	Flof	Flof/List		

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Factory Menu Name	Data	Range	Remark	Key
TTX Group	Lang OSD	Lang OSD/W Europe/E Europe/Russia/Greek/Turkey/ Arab/Farsi/ArabHbrw		
HotPlug	On			
Hotplugcontrol	On			
Spread Spectrum				
Spread Spectrum	On	On/Off		
Period	60K	40K/50K/60K		
Amplitude	2	0/0.5/1/1.5/2		
DDR Spread	2%	Off/1%/2%		
FRC LVDS Spread	On			
FRC LVDS Period	30K			
FRC LVDS Amplitude	1.0%			
FRC DDR Spread	On			
FRC DDR Period	30K			
FRC DDR Ampliture	1.0%			
Auto Power	On			
Mirror	ON	ON/ OFF		
HDMI EQ1	Middle	Low/Middle/High/Strong	use to solve HDMI Noise	
HDMI EQ2	Middle	Low/Middle/High/Strong		
HDMI EQ3	Middle	Low/Middle/High/Strong		
HDMI EQ4	Middle	Low/Middle/High/Strong		
EER Count	-			
WM Calib				
Panel Enter Key				
Panel Display Time	9Hr			
Checksum	XXXX			
View Log				
Font Data Viewer				
Dimm Type	EXT			
Carrier Mute	Off	On/Off		
Anynet+	Off	On/Off		
HPD Polarity				
High Devi	Off	On/Off		
Hot Plug Delay	12	0~63		
HP Ident	High	High/Low		
PC Ident	On	On/Off		
Watchdog	On	On/Off		

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Factory Menu Name	Data	Range	Remark	Key
FRC LVDS Order	DCAB			
FRC Auto Recovery	Off			
LVDS Format	JEIDA	JEIDA / VESA		
OSD Resolution	1366*768			
Bus Stop				
OTA Code				
OTA Duration Test				
Alternate Del				
Watch Dog Count	0	-		
E-POP Default	Off			
Energy Star	Off			
PDP Option				
Hotel Option				
Shop Option				
Shop Mode		ON/OFF		
USB DEMO ON(SEC)				
USB DEMO OFF(SEC)				
Exhibition Mode		ON/OFF		
Asia Option				
TTX	On	ON/OFF		
China HD				
NT Conversion	Off	ON/OFF		
Sepco 120Hz				
Mono Last Memory				
H Shaking				
India Sound	Off	ON/OFF		
Sound				
Audio Amp	NTP7412s	NTP7412s/NTP7411s	do not change	
Volume Curve	EA	EU/EA	do not change	
FM Prescale	48	0~80		
Nicam Prescale	31	0~80		
A2 M2S Threshold	0x00	0x00~0xFF		
A2 S2M Threshold	0x00	0x00~0xFF		
A2 PilotPhaseOn	0x00	0x00~0xFF		
A2 PilotPhaseOff	0x00	0x00~0xFF		
A2 IdentOn	0x00	0x00~0xFF		
A2 IdentOff	0x00	0x00~0xFF		

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Factory Menu Name	Data	Range	Remark	Key
A2 Carr2AmpOnThr	0x00	0x00~0xFF		
A2 Carr2AmpOffThr	0x00	0x00~0xFF		
A2 Carr2NsrOnThr	0x00	0x00~0xFF		
A2 Carr2NsrOffThr	0x00	0x00~0xFF		
Nicam Sig Error On	0x00	0x00~0xFF		
Nicam Sig Error Off	0x00	0x00~0xFF		
DTV Level	-12dB			
Audio Delay	20ms	0~150ms		
Main Amp Master Vol	199			
Center Amp Master Vol	199			
Woofer Amp Master Vol	199			
Main Amp PWM Mod	142	0~255		
Center Amp PWM Mod	103			
Woofer Amp PWM Mod	103			
Woofer Type	0	0~8		
Main Speaker EQ	On	On/Off		
Center Speaker EQ	On			
Woofer EQ	On			
Main EQ CS	-			
Center EQ CS	-			
Woofer EQ CS	-			
Config Option				
Num of AV	1	0~3		
Num of PC	0	1~3		
Num of Comp	1	1~3		
Num of HDMI	2	0~4		
Num of SCART	0			
DVI Sound	0	0~1		
Number of HeadPhone	1	0~1		
Num of USB Port				
Num of SPDIF OUT	0	0~1		
LNA SUPPORT	Off	On/Off		
Navigation Key Func	5Way	5Way : New function (Navigation jog) Key		
		Old : Old function (Touch) Key		
Eco Sensor Support	Off	On/OFF		
MFT OFFSET				
SIL2165FW1128				

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■ SVC

Factory Menu Name	Data	Range	Remark	Key
Test pattern				
Mstar Test Pattern	Off	Off/0~13		
FBE Test Pattern				
LOGIC Test Pattern	Off	Off/0~31		
FRC Post Pattern	Off			
FRC Pre Pattern	Off			
FRC PC Mode	Off			
T-CON Download				

■ ADC/WB

Factory Menu Name	Data	Range	Remark	Key
ADC				
AV Calibration	Success	Success / Failure		
Comp Calibration	Success	Success / Failure		
PC Calibration	Success	Success / Failure		
HDMI Calibration	Success	Success / Failure		
ADC Target				
1st_AV_Low	18	0~255		
1st_AV_High	220	0~255		
1st_AV_Delta	1	0~255		
1st_COMP_Low	16	0~255		
1st_COMP_High	235	0~255		
1st_COMP_Delta	1	0~255		
1st_PC_Low	2	0~255		
1st_PC_High	235	0~255		
1st_PC_Delta	1	0~255		
2nd_Low	1	0~255		
2nd_High	235	0~255		
2nd_Delta	1	0~255		
ADC Result				
1st_AV_Gain	121			
1st_AV_Offset	141			
1st_Comp_Gain	70			
1st_Comp_Gain_Cb	70			
1st_Comp_Gain_cr	70			
1st_Comp_Offset	127			
1st_Comp_Offset_Cb	127			

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Factory Menu Name	Data	Range	Remark	Key
1st_Comp_Offset_Cr	127			
1st_PC_R_Gain	94			
1st_PC_G_Gain	93			
1st_PC_B_Gatin	94			
1st_PC_R_Offset	127			
1st_PC_G_Offset	127			
1st_PC_B_Offset	127			
2nd_R_Offset	113	0~255		
2nd_G_Offset	113	0~255		
2nd_B_Offset	113	0~255		
2nd_R_Gain	144	0~255		
2nd_G_Gain	144	0~255		
2nd_B_Gain	144	0~255		
WB				
Sub Brightness	128	0~255		
R_Offset	128	0~255		
G_Offset	128	0~255		
B_Offset	128	0~255		
Sub Contrast	128	0~255		
R_Gain	128	0~255		
G_Gain	128	0~255		
B_Gain	128	0~255		
Movie R Offset	133	0~255		
Movie B Offset	129	0~255		
Movie R Gain	131	0~255		
Movie B Gain	64	0~255		

■ Advanced

Factory Menu Name	Data	Range	Remark	Key
PBE				
WB Movie				
Mode	Off	On/Off		
Color Mode	Movie			
Color Tone	Cool			
Msub Brigh	128			
Msub Contr	128			
W1_RGAIN	138			
W1_BGAIN	104			

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Factory Menu Name	Data	Range	Remark	Key
W1_ROFFS	130			
W1_BOFFS	127			
W2_RGAIN	131			
W2_BGAIN	64			
W2_ROFFS	133			
W2_BOFFS	129			
W3_RGAIN	128			
W3_BGAIN	128			
W3_ROFFS	128			
W3_BOFFS	128			
N_RGAIN	131			
N_BGAIN	122			
N_ROFFS	128			
N_BOFFS	129			
Movie Countr	100			
Movie Brigh	45			
Movie Color	55			
Movie Sharp	55			
Movie Tint	50			
Movie BkLight	10			
M.Gamma	Off			
M_Sub Gamma	0			
EPA Standard				
Std Contr	100	0~100		
Std Bright	45	0~100		
Std Sharp	50	0~100		
Std Color	50	0~100		
Std Tint	50	0~100		
Std Backight	8	0~10		
ADJUST				
Dynamic Dimming	Off	On/Off		
Power Key Protects	Off	On/Off		
UART Select	Auto Wall	Auto Wall/Debug/MDC/On1/ On2		
Debug Mode	Debug Off	Debug Off/Debug Smart/Debug RunTime		
Back End Mute				
PDP FRC				

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Factory Menu Name	Data	Range	Remark	Key
VisualTEST Plus	Disable			
Standby Mode Time	45 Min	2 Min/45 Min		
Delete alt.ver	1 Flash			
OTA confirm Time	90 Min	3 Min/90 Min		
OTA limit Time	3 Hour	3 Min/3Hour		
Dynamic CE	Off	On/Off		
FWC	Off	On/Off		
1080p 48Hz	On	On/Off		
PWM Max	100	1~100		
PWM Max2	95	1~100		
PWM Mid	10	0~10		
PWM Min	0	0~10		
COMP PHASW	110			
Quick Start				
DTV LNA	Auto	On/Off		
HDCP Download	Off	On/Off		
USB Download	Off	On/Off		
LED Peak OnOFF				
COLOR MAPPING				
WCE				
SHARPNESS				
ENHANCE				
LNA_Plus				
FCC				
PC_Picture				
FRC				
PQ OTHERS				
7.5 IRE NTSC	OFF	ON/OFF		
7.5 IRE OFFSET	16	0~60		
EEPROM RESET				

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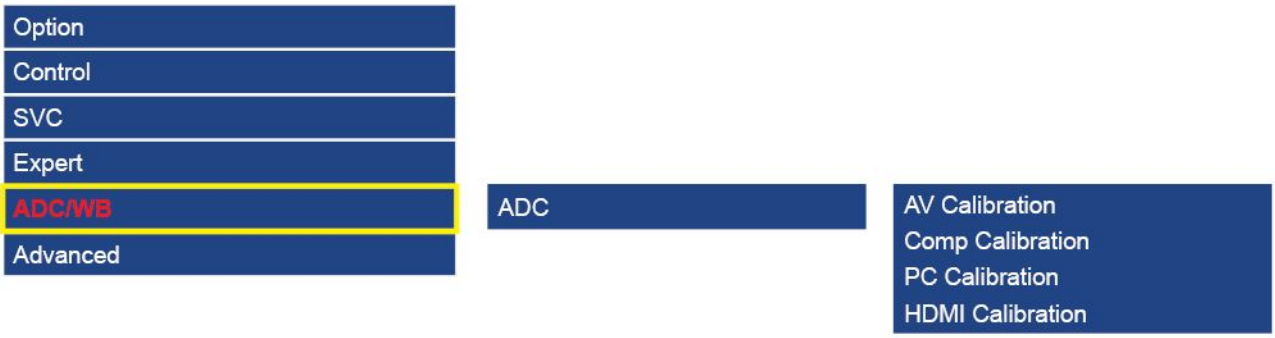
4.4. White Balance

4-4-1. Calibration

1. Into the Factory Mode.
2. Select SVC Menu.
3. Select ADC/WB menu.
4. Select ADC menu.



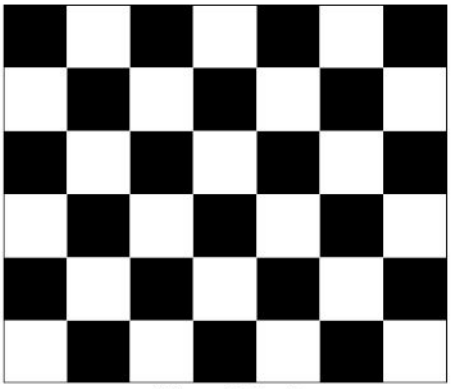
4-4-2. Service Adjustment

You must perform Calibration in the Lattice Pattern before adjusting the White Balance.

■ Color Calibration

- Adjust Specification

Source	Setting Mode	Pattern	Use Equipment
HDMI	1280 x 720@60 Hz	Pattern #24 (Chess Pattern)	CA210 & Master MSPG925 Generator



(Chess Pattern)

– Use other equipment only after comparing the result with that of the Master equipment.

Input mode	Calibration	Pattern
CVBS IN (Model_#1)	Perform in NTSC B&W Pattern #24	Lattice
Component IN (Model_#6)	Perform in 720p B&W Pattern #24	Lattice
PC Analog IN (Model_#21)	Perform in VESA XGA (1024x768) B&W Pattern #24	Lattice
HDMI IN	Perform in 720p B&W Pattern #24	Lattice

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■ Method of Color Calibration (AV)

1. Apply the NTSC Lattice (N0. 3) pattern signal to the AV IN 1 port.
2. Press the Source key to switch to “AV1” mode.
3. Enter Service mode.
4. Select the “ADC” menu.
5. Select the “AV Calibration” menu.
6. In “AV Calibration Off” status, press the “► ” key to perform Calibration.
7. When Calibration is complete, it returns to the high-level menu.
8. You can see the change of the “AV Calibration” status from Failure to Success.

■ Method of Color Calibration (Component)

1. Apply the 720p Lattice (N0. 6) pattern signal to the Component IN 1 port.
2. Press the Source key to switch to “Component1” mode.
3. Enter Service mode.
4. Select the “ADC” menu.
5. Select the “Comp Calibration” menu.
6. In “Comp Calibration Off” status, press the “ ►” key to perform Calibration.
7. When Calibration is complete, it returns to the high-level menu.
8. You can see the change of the “Comp Calibration” status from Failure to Success.

■ Method of Color Calibration (PC)

1. Apply the VESA XGA Lattice (N0. 21) pattern signal to the PC IN port.
2. Press the Source key to switch to “PC” mode.
3. Enter Service mode.
4. Select the “ADC” menu.
5. Select the “PC Calibration” menu.
6. In “PC Calibration Off” status, press the “ ►” key to perform Calibration.
7. When Calibration is complete, it returns to the high-level menu.
8. You can see the change of the “PC Calibration” status from Failure to Success.

■ Method of Color Calibration (HDMI)

1. Apply the 720p Lattice (N0. 6) pattern signal to the HDMI1/DVI IN port.
2. Press the Source key to switch to “HDMI1” mode.
3. Enter Service mode.
4. Select the “ADC” menu.
5. Select the “HDMI Calibration” menu.
6. In “HDMI Calibration Off” status, press the “►” key to perform Calibration.
7. When Calibration is complete, it returns to the high-level menu.
8. You can see the change of the “HDMI Calibration” status from Failure to Success.

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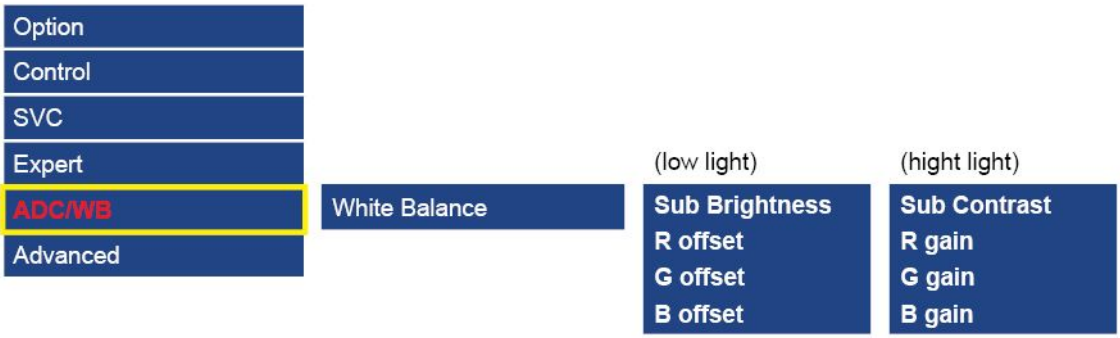
4-4-3. Adjustment

1. Into the Factory Mode.
2. Select SVC Menu.
3. Select ADC/WB menu.
4. Select White Balance menu.



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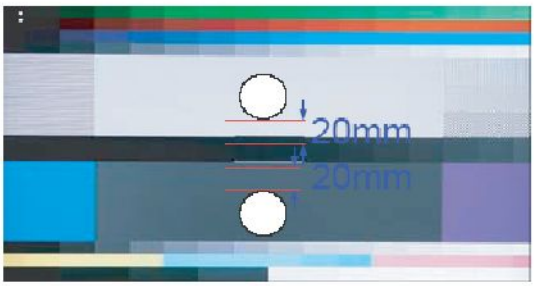
4.5. White Ratio (Balance) Adjustment

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. It varies with Panel's size and Specification.

- Equipment : CS-210
- Pattern: MIK K-7256 #92 "Flat W/B Pattern" as standard
- Altenate Equipmet : CA200& anyone Master supported pattern#92(refer to right photo)
- Use other Equipment only after comparing the result with that of the Master equipment.
- Set Aging time : 60 min



Calibration and Manual setting for WB adjustment

- HDMI : Calibration at #24 Chessboard Pattern Manual adjustment at #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)

Note

If finishing in HDMI mode, adjustment coordinate is almost same in AV/COMP mode.

White Balance Manual adjustment

UA19ES4000R

P-Mode Input source	Section	Adjustment Coordinate CA-210					
HDMI COMP VIDEO	W/B High	Hx	281	Hy	288	HY	-
	W/B Low	Lx	-	Ly	-	LY	-
MOVIE	W/B High	Hx	-	Hy	-	HY	-
	W/B Low	Lx	-	Ly	-	LY	-

Fixed Parameter

Sub Contrast	128	**Sub Bright**	128		
R-Gain	121	**G-Gain**	128	**B-Gain**	172
R-Offset	128	**G-Offset**	128	**B-Offset**	128

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P-Mode Input source	Section	Adjustment Coordinate CA-210					
HDMI COMP VIDEO	W/B High	Hx	264	Hy	274	HY	-
	W/B Low	Lx	-	Ly	-	LY	-
MOVIE	W/B High	Hx	318	Hy	340	HY	-
	W/B Low	Lx	-	Ly	-	LY	-

Fixed Parameter

Sub Contrast	135	Sub Bright	128		
R-Gain	ADJ	G-Gain	128	B-Gain	ADJ
R-Offset	128	G-Offset	128	B-Offset	128

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P-Mode Input source	Section	Adjustment Coordinate CA-210					
HDMI COMP VIDEO	W/B High	Hx	264	Hy	274	HY	-
	W/B Low	Lx	-	Ly	-	LY	-
MOVIE	W/B High	Hx	318	Hy	340	HY	-
	W/B Low	Lx	-	Ly	-	LY	-

Fixed Parameter

Sub Contrast	135	Sub Bright	128		
R-Gain	ADJ	G-Gain	128	B-Gain	ADJ
R-Offset	128	G-Offset	128	B-Offset	128

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4.6. Software Upgrade

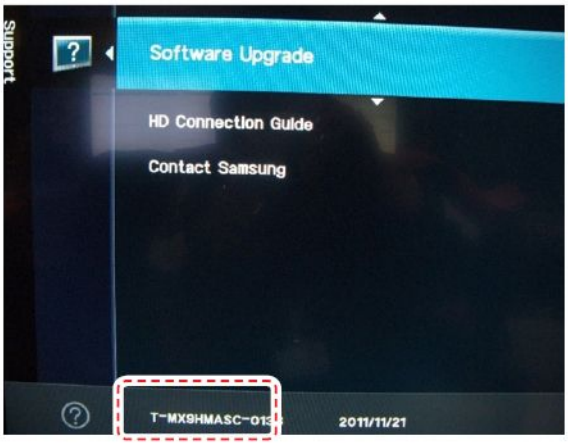
Software Upgrade can be performed by downloading the. latest firmware from samsung.com to a USB memory device.

- Current Version - The software already installed in the TV.
- Software is represented as 'Year/Month/Day_Version'.

4-6-1. How to Check the Software Version

■ Use the Main Menu

1. Click the "MENU" key in remote controller.
2. Select "Support" menu.
3. Locate the menu cursor "Software Upgrade" menu.
4. Click the "INFO" key.
   - Check the Main SW and Micom version.



■ Use the Factory Mode

Option	T-MX9HMAFC(AFRICA)/T-MX9HMASC(ASIA)/ T-MX9HMCHC(CHINA)-**** : HD S/W DTP-LP3-**** DTP-LP3-App-**** OPTION:32L6AH0D, THAI, 4000, NONE FactoryCS:********* ADC : HDMI / COMP / PC / AV / EDID : SUCCESS HDCP : SUCCESS BuildDate : **-**-****
Control	
SVC	
Expert	
ADC/WB	
Advanced	

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4-6-2. How to Upgade Software and Micom

1. Insert a USB drive containing the firmware upgrade downloaded from samsung.com into the TV.

> **Note**
>
> Please be careful not to disconnect the power or remove the USB drive while upgrades are being applied.

2. The TV will turn off and turn on automatically after completing the firmware upgrade.
3. Please check the firmware version after the upgrades are complete.
   - the new version will have a higher number than the older version.

> **Note**
>
> - 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 before beginning firmware update.

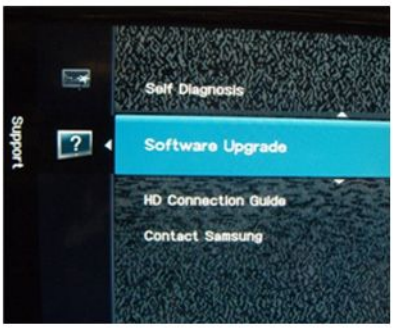
4. After update is completed, restore your previous settings.

■ Main Software Upgrade

1. Store the sw program named "T-MX9FMASC(FHD), T-MX9HMAFC(AFRICA)/ T-MX9HMASC(ASIA)/T-MX9HMCHC(CHINA)[HD]" in USB memory stick.
   - Connect the USB.

2. Click the "MENU" key in Remote Controler.

3. Select "Support" menu.
   Locate the menu cursor "Software Upgrade" menu.



4. Click the "ENTER" key.

5. Click the "ENTER" key.
   - Wait for upgrade complete.
   - Check the Software Version.

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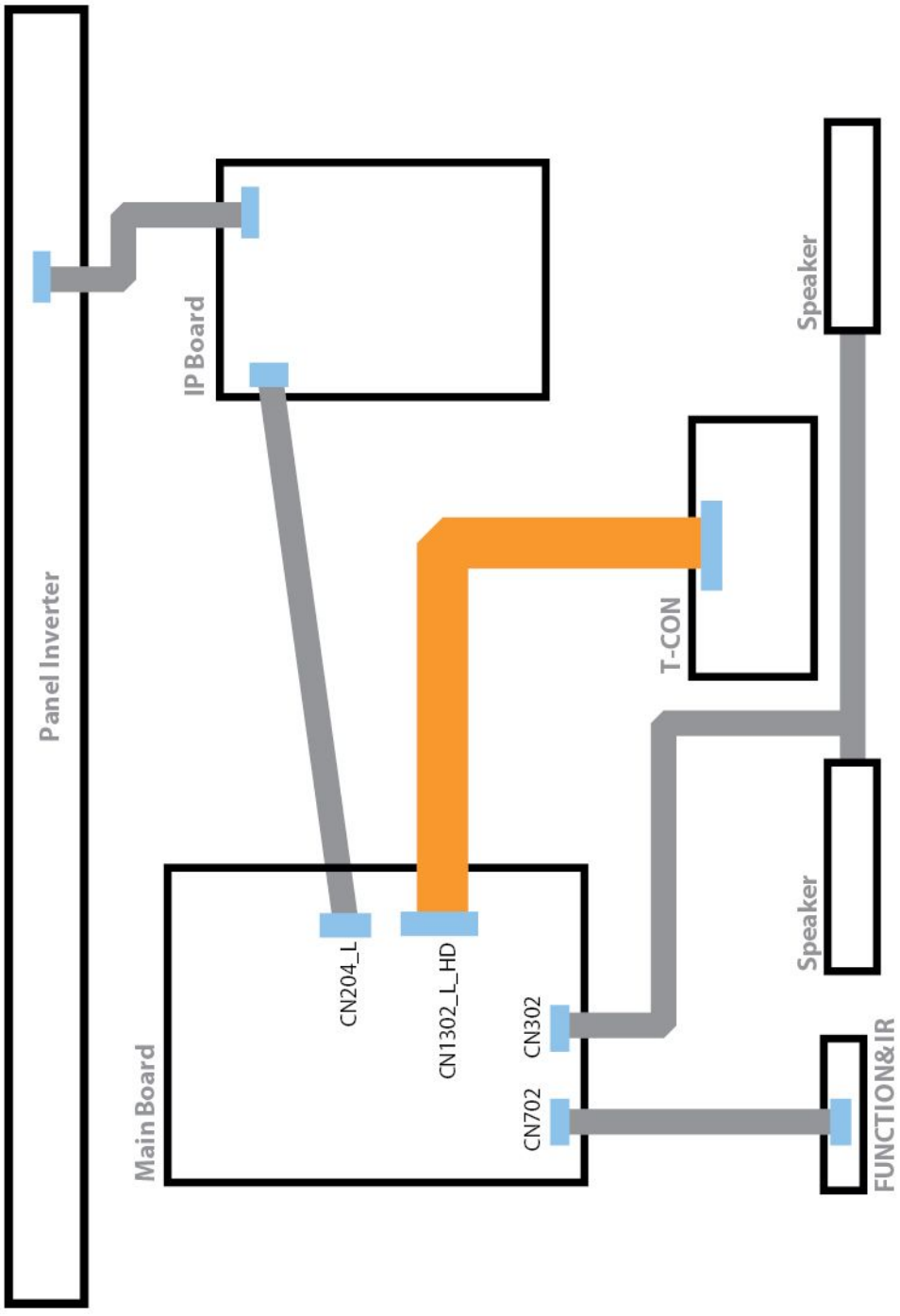
5. Wiring Diagram

5.1. Wiring Diagram

■ UA**EH40*0R



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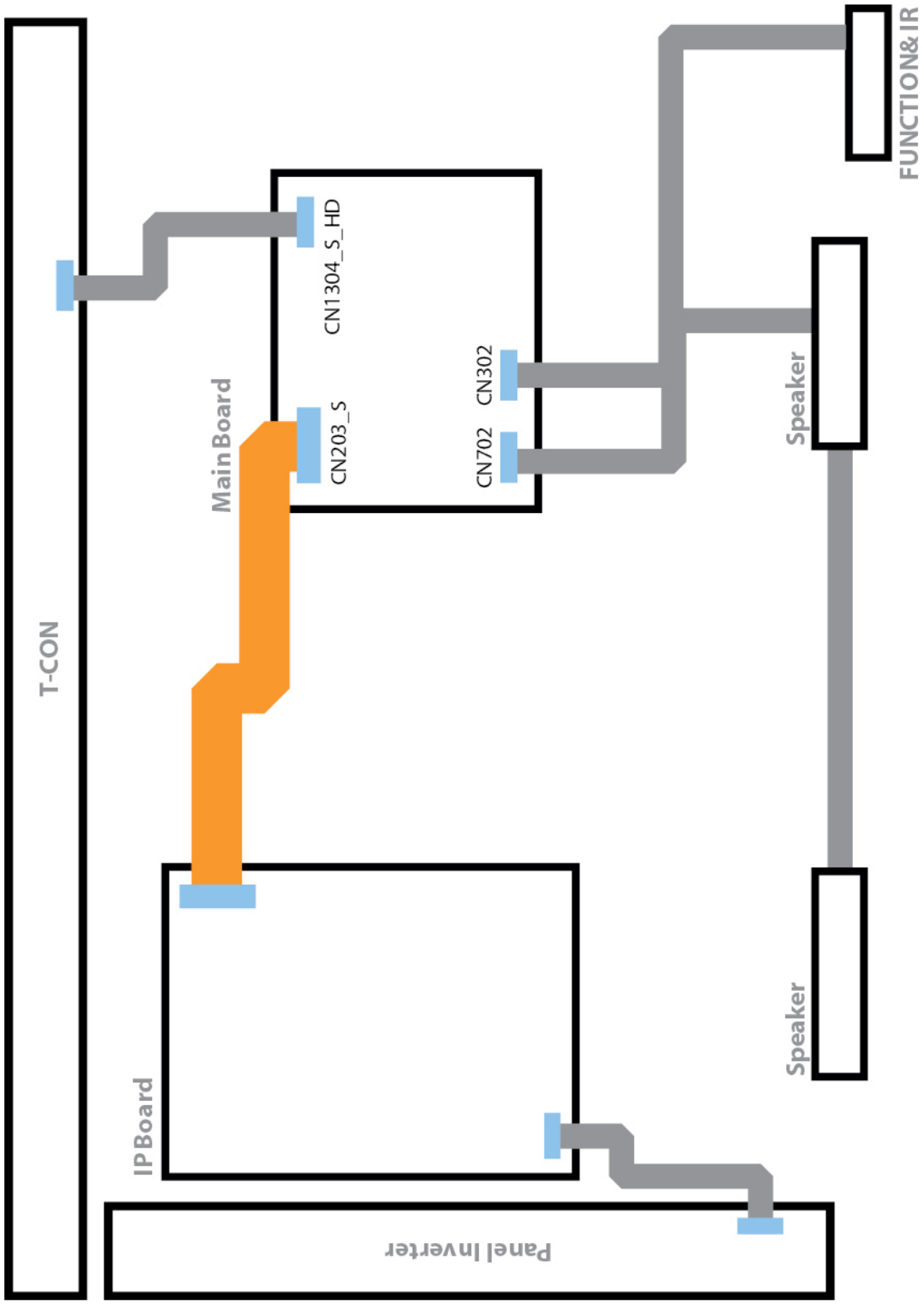
■ UA19ES4000R



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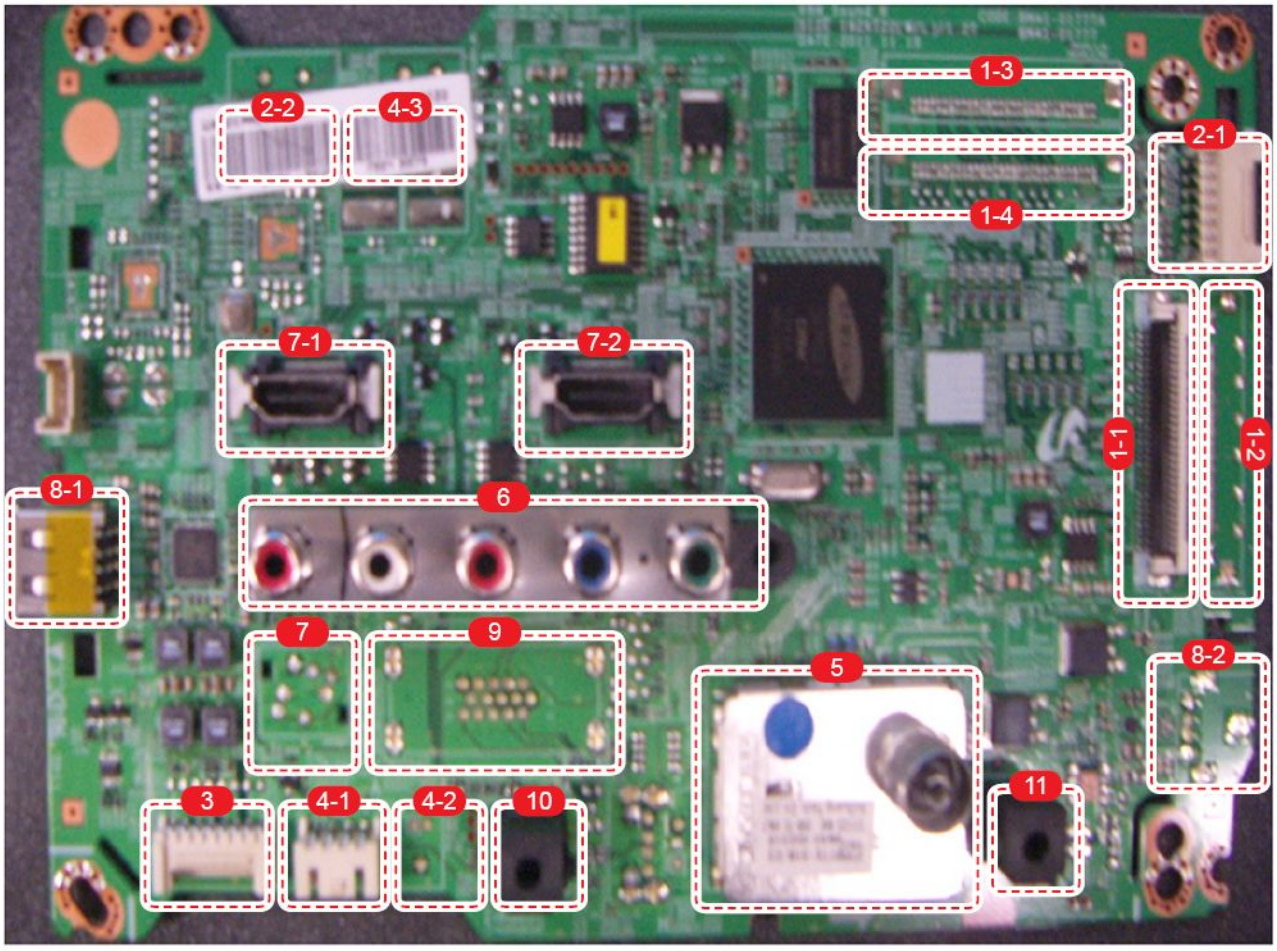
5.2. Connector



1-1 CN1302_L_HD(to Panel)			
1	PANEL_VCC	16	ODD_CLK+
2	PANEL_VCC	17	ODD_CLK-
3	PANEL_VCC	18	GND
4	PANEL_VCC	19	ODD2+
5	PANEL_VCC	20	ODD2-
6	GND	21	GND
7	GND	22	ODD1+
8	GND	23	ODD1-
9	WP_PANEL	24	GND
10	LVDS_FORMAT	25	ODD0+
11	NC	26	ODD0-
12	GND	27	GND
13	ODD3+	28	SDA
14	ODD3-	29	SCL
15	GND	30	NC

1-2 CN1301_L_FHD (to Panel)			
1	NC	18	GDN
2	GND	19	EVENCLK+
3	FRC_SDA	20	EVENCLK-
4	FRC_PWM1	21	GND
5	FRC_SCL	22	EVEN2+
6	FRC_RESET	23	EVEN2-
7	LVDS_FORMAT	24	EVEN1+
8	TCON_SDA	25	EVEN1-
9	TCON_WP	26	EVEN0+
10	NC	27	EVEN0-
11	UPDATE_CHECK	28	GND
12	TCON_SCL	29	ODD4+
13	GND	30	ODD4-
14	EVEN4+	31	ODD3+
15	EVEN4-	32	ODD3-
16	EVEN3+	33	GND
17	EVEN3-	34	ODD_CLK+

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1-2 CN1301_L_FHD (to Panel)			
35	ODD_CLK-	44	GND
36	GND	45	GND
37	ODD2+	46	NC
38	ODD2-	47	PANEL_VCC
39	ODD1+	48	PANEL_VCC
40	ODD1-	49	PANEL_VCC
41	ODD0+	50	PANEL_VCC
42	ODD0-	51	PANEL_VCC
43	GND		

1-3 CN1304_S_HD (to Panel)			
1	PANEL_VCC	16	EVEN_CLK+
2	PANEL_VCC	17	EVEN_CLK-
3	PANEL_VCC	18	GND
4	PANEL_VCC	19	EVEN2+
5	PANEL_VCC	20	EVEN2-
6	GND	21	GND
7	GND	22	EVEN1+
8	GND	23	EVEN1-
9	TCON_WP	24	GND
10	LVDS_FORMAT	25	EVEN0+
11	NC	26	EVEN0-
12	GND	27	GND
13	EVEN3+	28	TCON_SDA
14	EVEN3-	29	TCON_SCL
15	GND	30	NC

1-4 CN1303_S_FHD (to Panel)			
1	PANEL_VCC	16	EVEN1-
2	PANEL_VCC	17	GND
3	PANEL_VCC	18	EVEN0+
4	NC	19	EVEN0-
5	NC	20	ODD3+
6	NC	21	ODD3-
7	GND	22	ODDCLK+
8	EVEN3+	23	ODDCLK-
9	EVEN3-	24	GND
10	EVENCLK+	25	ODD2+
11	EVENCLK-	26	ODD2-
12	EVEN2+	27	ODD1+
13	EVEN2-	28	ODD1-
14	GND	29	ODD0+
15	EVEN1+	30	ODD0-

2-1 CN204_L (to Power board)			
1	B5V	8	GND
2	SW_POWER	9	B13VS
3	B5V	10	SW_INVERTER
4	A5V	11	B13V
5	GND	12	B13V
6	GND	13	B13V
7	B13VS	14	PWM_DIMM

2-2 CN203_S (to Power board)			
1	B5V	8	GND
2	SW_POWER	9	B13VS
3	B5V	10	SW_INVERTER
4	A5V	11	B13V
5	GND	12	B13V
6	GND	13	B13V
7	B13VS	14	PWM_DIMM
8	PR		

3 CN702 (FUNCTION)			
1	IR	5	MSDA
2	GND	6	KEY1
3	A3.3V	7	KEY2
4	MSCL	8	GND

4-1 CN302 (SPEAKER)			
1	R+	3	L+
2	R-	4	L-

4-2 CN602_1CH (SPEAKER)			
1	R-	2	L-

4-3 CN601_WF (SPEAKER)			
1	R+	3	L+
2	R-	4	L-

5 TU601 (TUNER)			
1	NC	7	IF_AGC
2	B1.8V	8	DIF+
3	GND	9	DIF-
4	B3.3V	10	TUNER_CVBS
5	TUNER_SCL	11	TUNER_SIF
6	TUNER_SDA	12	TUNER_NRESET

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6 CN403(COMPONETN)			
1	GND	9	GND
2	COMP1_Y	10	GND
3	IDENT_AV	11	SL
4	GND	12	SR
5	PB	13	GND
6	IDENT_COMP	14	SR
7	GND	15	SL
8	PR		

7-1 CN501 (HDMI1)			
1	HDMI1_RX2+	11	GND
2	GND	12	HDMI1_RXCLK-
3	HDMI1_RX2-	13	HDMI_CEC
4	HDMI1_RX1+	14	GND
5	GND	15	SCL
6	HDMI1_RX1-	16	SDA
7	HDMI1_RX0+	17	GND
8	GND	18	5V
9	HDMI1_RX0-	19	HPD
10	HDMI1_RXCLK+		

7-2 CN502 (HDMI2)			
1	HDMI2_RX2+	11	GND
2	GND	12	HDMI2_RXCLK-
3	HDMI2_RX2-	13	HDMI_CEC
4	HDMI2_RX1+	14	GND
5	GND	15	SCL
6	HDMI2_RX1-	16	SDA
7	HDMI2_RX0+	17	GND
8	GND	18	5V
9	HDMI2_RX0-	19	HPD
10	HDMI2_RXCLK+		

8-1 CN1201_L_NLCD(USB)			
1	USB_VCC	3	USB_DP
2	USB_DM	4	GND

8-2 CN1202_S(USB)			
1	USB_VCC	3	USB_DP
2	USB_DM	4	GND

9 CN401_PC (ANALOG-PC)			
1	PC_RED+	9	PC_5V
2	PC_GREEN+	10	IDNET_PC
3	PC_BLUE+	11	RDB_FANET
4	TDB_FANET	12	DSDA
5	GND	13	H_SYNC
6	PC_RED-	14	V_SYNC
7	PC_GREEN-	15	DSCL
8	PC_BLUE-		

10 OP301 (OPTICAL)			
1	USB_VCC	3	USB_DP
2	USB_DM	4	GND

11 CN701_FANET(FANET)			
1	GMD	5	TDB_FANET
2	RDB_FANET	6	RDB_FANET
3	TDB_FANET	7	RDB_FANET
4	TDB_FANET		

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5.3. Connector Functions

■ UA**EH40*0R

Connector	Function
CN204_L ↔ IP CNM803	Supply main power and dimming signal from IP board to Main Board.
CN1302_L_HD ↔ T-CON	Translate the LVDS Signal.
IP CNL802 ↔ PANEL Driver Board	Power Supply to Panel.

■ UA19ES4000R

Connector	Function
CN201 ↔ IP CNM803	Supply main power and dimming signal from IP board to Main Board.
CN1304_S_HD ↔ T-CON	Translate the LVDS Signal.
IP CNL802 ↔ PANEL Driver Board	Power Supply to Panel.

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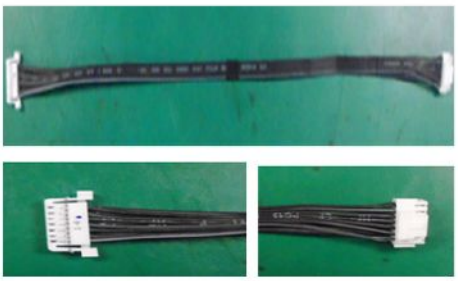
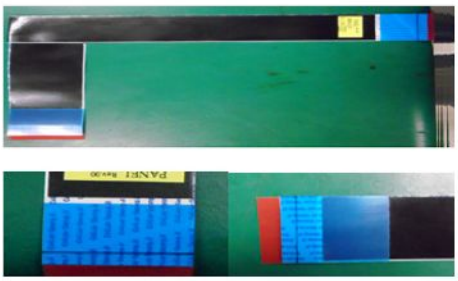
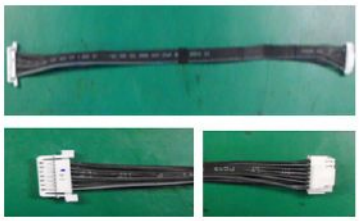
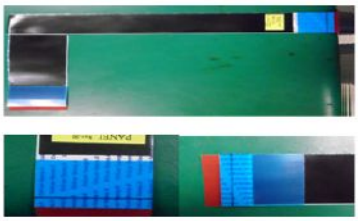
5.4. Cables

■ UA**EH40*0R

Use	LEAD (Main-IP 14P)	LVDS (Main - Panel 30P)
Code No.	26" : BN39-01449N 32" : BN39-01449C	26" : BN96-20370D 32" : BN96-20370K
Image		

■ UA19ES4000R

Use	LEAD (Main-IP 14P)	LVDS (Main - Panel 30P)	LEAD (IP-Driver B'D 4P/6P)
Code No.	BN39-01449E	BN96-20370E	BN39-01465C
Image			

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GSPN (GLOBAL SERVICE PARTNER NETWORK)

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E.Asia, W.Asia, China, Japan	https://gspn2.samsungcsportal.com
N.America, S.America	https://gspn3.samsungcsportal.com

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