SAMSUNG

LED-TV

Chassis :	U78A	U79A
Model :	UE**ES61***	UE**ES65***
	UE**ES63***	UE**ES67***
		UE**ES68***

SERVICE MANUAL

LED TV

UEES65*****

Contents

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

Contents

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.

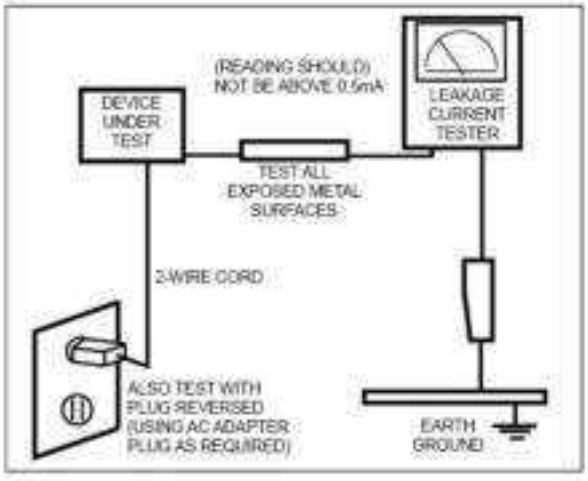
1-1-2. Servicing the LED TV

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.

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.

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.

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.

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.

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.

2. Product Specifications

2.1. Product Information

2-1-1. Model Comparison

Model			UE**ES61*** / UE**ES63***
Front View			
Detail View			
Front Color	Tint Black		
Dimensions (W x H x D)	32"	Set with Stand	739.6 x 514.8 x 241.3 mm
		Set without Stand	739.6 x 448.0 x 46.9 mm
	37"	Set with Stand	861.4 x 582.7 x 241.3 mm
		Set without Stand	861.4 x 516.9 x 46.9 mm
	40"	Set with Stand	926.8 x 619.1 x 241.3 mm
		Set without Stand	926.8 x 553.4 x 46.9 mm
	46"	Set with Stand	1062.2 x 700.8 x 276.6 mm
		Set without Stand	1062.2 x 629.8 x 46.9 mm
	55"	Set with Stand	1252.8 x 807.6 x 276.6 mm
		Set without Stand	1252.8 x 736.6 x 46.9 mm
	60"	Set with Stand	1372.9 x 875.3 x 309.6 mm
		Set without Stand	1372.9 x 804.1 x 46.9 mm

Model	UE**ES61** / UE**ES63**		
Weight	32"	Set with Stand	7.7 kg
		Set without Stand	6.5 kg
	37"	Set with Stand	10.3 kg
		Set without Stand	9.0 kg
	40"	Set with Stand	11.0 kg
		Set without Stand	9.0 kg
	46"	Set with Stand	14.0 kg
		Set without Stand	12.0 kg
	55"	Set with Stand	16.2 kg
		Set without Stand	18.0 kg
	60"	Set with Stand	23.0 kg
		Set without Stand	19.7 kg
Panel Type	Anti Glare		
Internal Memory	256 Mbtye		
DDR	768 Mbtye		
Feature	Media Play(USB/DLNA), Wi-Fi(Built-in), Bluetooth, 3D, SMART HUB, Web Browser, USB HID		

Model	UE**ES65***		
Front View			
Detail View			
Front Color	Clear + Black		
Dimensions (W x H x D)	32"	Set with Stand	743.2 x 516.6 x 241.3 mm
		Set without Stand	743.2 x 439.6 x 48.1 mm
	40"	Set with Stand	930.4 x 620.9 x 241.3 mm
		Set without Stand	930.4 x 545.0 x 48.1 mm
	46"	Set with Stand	1065.8 x 721.2 x 276.7 mm
		Set without Stand	1065.8 x 621.4 x 48.1 mm
	55"	Set with Stand	1256.4 x 806.4 x 276.7 mm
		Set without Stand	1256.4 x 728.2 x 48.1 mm
Weight	32"	Set with Stand	7.9 kg
		Set without Stand	6.7 kg
	40"	Set with Stand	12.2 kg
		Set without Stand	10.9 kg
	46"	Set with Stand	15.6 kg
		Set without Stand	13.8 kg
	55"	Set with Stand	16.5 kg
		Set without Stand	18.3 kg
Panel Type	Anti Glare		
Internal Memory	256 Mbtye		
DDR	768 Mbtye		
Feature	Media Play(USB/DLNA), Wi-Fi(Built-in), Bluetooth, 3D, SMART HUB, Web Browser, USB HID		

Model	UE**ES67***		
Front View			
Detail View			
Front Color	Clear + White		
Dimensions (W x H x D)	32"	Set with Stand	738.0 x 514.0 x 241.3 mm
		Set without Stand	738.0 x 435.4 x 46.9 mm
	37"	Set with Stand	859.8 x 579.8 x 241.3 mm
		Set without Stand	859.8 x 504.2 x 46.9 mm
	40"	Set with Stand	924.9 x 618.0 x 241.3 mm
		Set without Stand	924.9 x 540.5 x 46.9 mm
	46"	Set with Stand	1060.4 x 699.9 x 276.7 mm
		Set without Stand	1060.4 x 617.0 x 46.9 mm
Weight	32"	Set with Stand	7.4 kg
		Set without Stand	6.2 kg
	37"	Set with Stand	10.2 kg
		Set without Stand	8.8 kg
	40"	Set with Stand	12.0 kg
		Set without Stand	10.6 kg
	46"	Set with Stand	15.5 kg
		Set without Stand	13.6 kg
Panel Type	Anti Glare		
Internal Memory	256 Mbtye		
DDR	768 Mbtye		
Feature	Media Play(USB/DLNA), Wi-Fi(Built-in), Bluetooth, 3D, SMART HUB, Web Browser, USB HID		

Model	UE**ES68***		
Front View	 * W: Width H: High D: Depth		
Detail View			
Front Color	Clear/CB		
Dimensions (W x H x D)	32"	Set with Stand	747.5 x 519.6 x 241.3 mm
		Set without Stand	747.5 x 446.5 x 46.9 mm
	40"	Set with Stand	936.0 x 623.5 x 241.3 mm
		Set without Stand	936.0 x 559.8 x 46.9 mm
	46"	Set with Stand	1070.2 x 702.0 x 276.7 mm
		Set without Stand	1070.2 x 635.6 x 46.9 mm
	55"	Set with Stand	1260.8 x 811.1 x 276.7 mm
		Set without Stand	1260.8 x 742.4 x 46.9 mm
Weight	32"	Set with Stand	7.5 kg
		Set without Stand	6.3 kg
	40"	Set with Stand	12.2 kg
		Set without Stand	10.8 kg
	46"	Set with Stand	15.5 kg
		Set without Stand	13.6 kg
	55"	Set with Stand	18.9 kg
		Set without Stand	17.0 kg
Panel Type	Anti Glare		
Internal Memory	256 Mbtye		
DDR	768 Mbtye		
Feature	Media Play(USB/DLNA), Wi-Fi(Built-in), Bluetooth, 3D, SMART HUB, Web Browser, USB HID		

2-1-2. Feature & Specifications

Model	32" (ES61** / ES63** / ES65** / ES67** / ES68**)

Feature

- Digital-TV, RF, 3-HDMI, 1-Component, 1-A/V, 3-USB2.0(Media Play), LAN, 1-Scart
- 16:9 Mega Contrast
- PIP (Main Picture : HDMI1/HDMI2/HDMI3/Component1, Sub picture : TV)
- Dolby Digital+, Dolby Pulse, SRS Theater Sound HD

Specifications

Item	Description	
LCD Panel	32 inch FHD 100 Hz / 120 Hz	
Display Colors	10bits, 1.07G colors	
Maximum Resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω, internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Active Display (H x V)* * Horizontal x Vertical	698.4 (H) x 392.85(V) mm	
AC Power Voltage & Frequency	AC 220-240 V, 50/60 Hz	
Power Consumption	63**	82 W (Under 0.3 W, Stand by)
	65**	88 W (Under 0.3 W, Stand by)
TV System	Tunning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	61** DVB-T/C, PAL, SECAM, NT4.43
		63**1 DVB-T/C/S2 (UK and Nordic : T2/C/S2), PAL, SECAM, NT4.43
	Sound	BK, DK, NICAM, MPEG1
Environmental Considerations	Operating Temperature : 32°F ~ 122°F (0°C ~ 50°C) Operating Humidity : 20% ~ 90% Storage Temperature : -4°F ~ 140°F (-20°C ~ 60°C) Storage Humidity : 10% ~ 90%	
Audio Specifications	MAX Internal Audio Output Power : Right : 10W, Left : 10W Frequency Range : -10 dB ~ +10 dB Response Frequency : 250 ± 50 Hz Sound Pressure Level : 82 ± 2 dB Buzz & Rattle Test : 7.74 Vrms / Sine Wave	

Note : 3D, Media Bridge, AllShare, SMART HUB, Built-in Wi-Fi, Web Browser, Bluetooth, USB HID

Model	37" (ES61** / ES63** / ES67**)

Feature

- Digital-TV, RF, 3-HDMI, 1-Component, 1-A/V, 3-USB2.0(Media Play), LAN, 1-Scart
- 16:9 Mega Contrast
- PIP (Main Picture : HDMI1/HDMI2/HDMI3/Component1, Sub picture : TV)
- Dolby Digital+, Dolby Pulse, SRS Theater Sound HD

Specifications

Item	Description	
LCD Panel	37 inch FHD 100 Hz / 120 Hz	
Display Colors	10bits, 1.07G colors	
Maximum Resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω, internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Active Display (H x V)* * Horizontal x Vertical	819.36 (H) x 460.89 (V) mm	
AC Power Voltage & Frequency	AC 220-240 V, 50/60 Hz	
Power Consumption	63**	93 W (Under 0.3 W, Stand by)
	65**	107 W (Under 0.3 W, Stand by)
TV System	Tunning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	61** DVB-T/C, PAL, SECAM, NT4.43
		63**† DVB-T/C/S2 (UK and Nordic : T2/C/S2), PAL, SECAM, NT4.43
	Sound	BK, DK, NICAM, MPEG1
Environmental Considerations	Operating Temperature : 32 F ~ 122 F (0 C ~ 50 C) Operating Humidity : 20% ~ 90% Storage Temperature : -4°F ~ 140°F (-20°C ~ 60°C) Storage Humidity : 10% ~ 90%	
Audio Specifications	MAX Internal Audio Output Power : Right : 10W, Left : 10W Frequency Range : -10 dB ~ +10 dB Response Frequency : 250 ± 50 Hz Sound Pressure Level : 92 ± 2 dB Buzz & Rattle Test : 7.74 Vrms / Sine Wave	
Note : 3D, Media Bridge, AllShare, SMART HUB, Built-in Wi-Fi, Web Browser, Bluetooth, USB HID		

Model	40" (ES61** / ES63** / ES65** / ES67** / ES68**)

Feature

- Digital-TV, RF, 3-HDMI, 1-Component, 1-A/V, 3-USB2.0(Media Play), LAN, 1-Scart
- 16:9 Mega Contrast
- PIP (Main Picture : HDMI1/HDMI2/HDMI3/Component1, Sub picture : TV)
- Dolby Digital+, Dolby Pulse, SRS Theater Sound HD

Specifications

Item	Description	
LCD Panel	40 inch FHD 100 Hz / 120 Hz	
Display Colors	10bits, 1.07G colors	
Maximum Resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω, internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Active Display (H x V)* * Horizontal x Vertical	885.6 (H) x 498.15 (V) mm	
AC Power Voltage & Frequency	AC 220-240 V, 50/60 Hz	
Power Consumption	63**	113 W (Under 0.3 W, Stand by)
	65**	124 W (Under 0.1 W, Stand by)
TV System	Tunning	Frequency Synthesize (Refer to detailed Frequency Table)
	System 61**	DVB-T/C, PAL, SECAM, NT4.43
	System 63**†	DVB-T/C/S2 (UK and Nordic : T2/C/S2), PAL, SECAM, NT4.43
	Sound	BK, DK, NICAM, MPEG1
Environmental Considerations	Operating Temperature : 32 F ~ 122 F (0 C ~ 50 C) Operating Humidity : 20% ~ 90% Storage Temperature : -4°F ~ 140°F (-20°C ~ 60°C) Storage Humidity : 10% ~ 90%	
Audio Specifications	MAX Internal Audio Output Power : Right : 10W, Left : 10W Frequency Range : -10 dB ~ +10 dB Response Frequency : 250 ± 50 Hz Sound Pressure Level : 92 ± 2 dB Buzz & Rattle Test : 7.74 Vrms / Sine Wave	

Note : 3D, Media Bridge, AllShare, SMART HUB, Built-in Wi-Fi, Web Browser, Bluetooth, USB HID

Model	46" (ES61** / ES63** / ES65** / ES67** / ES68**)

Feature

- Digital-TV, RF, 3-HDMI, 1-Component, 1-A/V, 3-USB2.0(Media Play), LAN, 1-Scart
- 16:9 Mega Contrast
- PIP (Main Picture : HDMI1/HDMI2/HDMI3/Component1, Sub picture : TV)
- Dolby Digital+, Dolby Pulse, SRS Theater Sound HD

Specifications

Item	Description	
LCD Panel	46 inch FHD 100 Hz / 120 Hz	
Display Colors	10bits, 1.07G colors	
Maximum Resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω, internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Active Display (H x V)* * Horizontal x Vertical	1018.08 (H) x 572.67 (V) mm	
AC Power Voltage & Frequency	AC 220-240 V, 50/60 Hz	
Power Consumption	63**	117 W (Under 0.3 W, Stand by)
	65**	134 W (Under 0.1 W, Stand by)
TV System	Tunning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	61** DVB-T/C, PAL, SECAM, NT4.43
		63**† DVB-T/C/S2 (UK and Nordic : T2/C/S2), PAL, SECAM, NT4.43
	Sound	BK, DK, NICAM, MPEG1
Environmental Considerations	Operating Temperature : 32 F ~ 122 F (0 C ~ 50 C) Operating Humidity : 20% ~ 90% Storage Temperature : -4°F ~ 140°F (-20°C ~ 60°C) Storage Humidity : 10% ~ 90%	
Audio Specifications	MAX Internal Audio Output Power : Right : 10W, Left : 10W Frequency Range : -10 dB ~ +10 dB Response Frequency : 250 ± 50 Hz Sound Pressure Level : 92 ± 2 dB Buzz & Rattle Test : 7.74 Vrms / Sine Wave	
Note : 3D, Media Bridge, AllShare, SMART HUB, Built-in Wi-Fi, Web Browser, Bluetooth, USB HID		

Model	55" (ES61** / ES63** / ES65** / ES68**)

Feature

- Digital-TV, RF, 3-HDMI, 1-Component, 1-A/V, 3-USB2.0(Media Play), LAN, 1-Scart
- 16:9 Mega Contrast
- PIP (Main Picture : HDMI1/HDMI2/HDMI3/Component1, Sub picture : TV)
- Dolby Digital+, Dolby Pulse, SRS Theater Sound HD

Specifications

Item	Description	
LCD Panel	55 inch FHD 100 Hz / 120 Hz	
Display Colors	10bits, 1.07G colors	
Maximum Resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω, internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Active Display (H x V)* * Horizontal x Vertical	1209.6 (H) x 680.4 (V) mm	
AC Power Voltage & Frequency	AC 220-240 V, 50/60 Hz	
Power Consumption	63**	139 W (Under 0.3 W, Stand by)
	65**	157 W (Under 0.1 W, Stand by)
TV System	Tunning	Frequency Synthesize (Refer to detailed Frequency Table)
	System 61**	DVB-T/C, PAL, SECAM, NT4.43
	System 63**†	DVB-T/C/S2 (UK and Nordic : T2/C/S2), PAL, SECAM, NT4.43
	Sound	BK, DK, NICAM, MPEG1
Environmental Considerations	Operating Temperature : 32 F ~ 122 F (0 C ~ 50 C) Operating Humidity : 20% ~ 90% Storage Temperature : -4°F ~ 140°F (-20°C ~ 60°C) Storage Humidity : 10% ~ 90%	
Audio Specifications	MAX Internal Audio Output Power : Right : 10W, Left : 10W Frequency Range : -10 dB ~ +10 dB Response Frequency : 250 ± 50 Hz Sound Pressure Level : 92 ± 2 dB Buzz & Rattle Test : 7.74 Vrms / Sine Wave	

Note : 3D, Media Bridge, AllShare, SMART HUB, Built-in Wi-Fi, Web Browser, Bluetooth, USB HID

Model	60" (ES61** / ES63**)

Feature

- Digital-TV, RF, 3-HDMI, 1-Component, 1-A/V, 3-USB2.0(Media Play), LAN, 1-Scart
- 16:9 Mega Contrast
- PIP (Main Picture : HDMI1/HDMI2/HDMI3/Component1, Sub picture : TV)
- Dolby Digital+, Dolby Pulse, SRS Theater Sound HD

Specifications

Item	Description	
LCD Panel	60 inch FHD 100 Hz / 120 Hz	
Display Colors	10bits, 1.07G colors	
Maximum Resolution	Horizontal : 1920 Pixels Vertical : 1080 Pixels	
Input Signal	Analog 0.7 Vp-p ± 5% positive at 75Ω, internally terminated	
Input Sync Signal	H/V Separate, TTL, P. or N.	
Active Display (H x V)* * Horizontal x Vertical	1329.12 (H) x 747.63 (V) mm	
AC Power Voltage & Frequency	AC 220-240 V, 50/60 Hz	
Power Consumption	63**	158 W (Under 0.3 W, Stand by)
TV System	Tunning	Frequency Synthesize (Refer to detailed Frequency Table)
	System	61** DVB-T/C, PAL, SECAM, NT4.43 63**1 DVB-T/C/S2 (UK and Nordic : T2/C/S2), PAL, SECAM, NT4.43
	Sound	BK, DK, NICAM, MPEG1
Environmental Considerations	Operating Temperature : 32°F ~ 122°F (0°C ~ 50°C) Operating Humidity : 20% ~ 90% Storage Temperature : -4°F ~ 140°F (-20°C ~ 60°C) Storage Humidity : 10% ~ 90%	
Audio Specifications	MAX Internal Audio Output Power : Right : 10W, Left : 10W Frequency Range : -10 dB ~ +10 dB Response Frequency : 250 ± 50 Hz Sound Pressure Level : 92 ± 2 dB Buzz & Rattle Test : 7.74 Vrms / Sine Wave	

Note : 3D, Media Bridge, AllShare, SMART HUB, Built-in Wi-Fi, Web Browser, Bluetooth, USB HID

2-1-3. Specification Comparison to Old Models

Model	UE**ES6****		UE**D65****
Design	6100 6300		
	65*0		
	6710		
	68*0		
Diplay Type	LED TV		LED TV
Built-in Tuner	O		O
Resolution	1920 x 1080		1920 x 1080
LCD Panel	TFT LCD Panel 100 Hz / 120 Hz		TFT LCD Panel 100 Hz / 120 Hz
Picture ratio	16:9		16:9
Screen Size	32"/37"/40"/46"/55"/60"		32"/37"/40"/46"/55"/60"
Picture Enhancer	3D HyperReal Engine		3D HyperReal Engine
3D	O		O
Built-in Wi-Fi	O		O
Light Sensor	O		O

Model	UE**ES6****	UE**D65****
Picture Enhancer	Wide Color Enhancer Plus	Wide Color Enhancer Plus
Auto Motion Plus	O	O
Surround Sound	SRS Theater Sound HD	SRS Theater Sound HD
Dolby	Dolby Digital Plus / Dolby Pulse	Dolby Digital Plus
Speaker Output	10 W x 10 W	10 W x 10 W 55"/60" : 15 W x 15 W
Energy Saving	O	O
PIP	O	O
Game mode	O	O
Anynet+	O	O
HID Device Support	O	X
Antena	1 (Cable/Air)	1 (Cable/Air)

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".

UE**ES61***/63***

Model Name		UE32ES61***/63***	UE37ES61***/63***	UE40ES61***/63***
PANEL	Vendor	CMI	AUO	AMLCD(LCM)
	Code	BN07-01093A	BN07-01145A	BN95-00611A
	Spec.	LE320CSM-C1	LE370CSA-C1	LTJ400HV05-V
SMPS	Vendor	SEM	SEM	HANSOE
	Code	BN44-00517A	BN44-00518A	BN44-00518B
	Spec.	-	-	-
MAIN	Chassis Ass'y	Depending on Region, Chassis Ass'y is different.		
	PBA Ass'y	Depending on Region, PBA Ass'y code is different.		

Byte	Item			
0	Factory Reset	-	-	-
1	Type	32P1AF6E	37R1AF6E	40A1AF6E
2	Local Set	Depending on Region, Local Set is different.		
3	Basic Model	UE**ES61** UE**ES63**	UE**ES61** UE**ES63**	UE**ES61** UE**ES63**
4	SVC Model	61** 63**	61** 63**	61** 63**
5	TUNER	Auto SEC_TC(UE**ES61**) / DVB_TCS2(UE**ES63**) / DVB_T2CS2 (63** UK and nordic models)		
6	Ch Table	-	-	-
7	Front Color	U-T-CG-M61 (UE61**) U-T-CG-M61 (UE630*) U-T-RG-M (UE634*)		

Model Name		UE46ES61**/63**	UE55ES61**/63**	UE60ES61**/63**
PANEL	Vendor	CMI	AMLCD(LCM)	SHARP
	Code	BN07-01105A	BN95-00609A	BN95-00632A
	Spec.	LE460CSM-C1	LTJ550HW08-V	LE600CSS-V1
SMPS	Vendor	HANSOE	HANSOE	SEM
	Code	BN44-00518B	BN44-00519B	BN44-00525A
	Spec.	-	-	-
MAIN	Chassis Ass'y	Depending on Region. Chassis Ass'y is different.		
	PBA Ass'y	Depending on Region. PBA Ass'y code is different.		

Byte	Item			
0	Factory Reset	-	-	-
1	Type	32P1AF6E	37R1AF6E	60H1AF6E
2	Local Set	Depending on Region. Local Set is different.		
3	Basic Model	UE**ES61** UE**ES63**	UE**ES61** UE**ES63**	UE**ES61** UE**ES63**
4	SVC Model	61** 63**	61** 63**	61** 63**
5	TUNER	Auto SLC IC(UL=ES61**) DVB T2S2(UL=ES63**) DVB T2S2(EU= UK and nordic models)		
6	Ch Table	-	-	-
7	Front Color	U-T-CG-M61 (UE61**) U-T-CG-M61 (UE63**) U-T-RG-M (UE63**)		

UE**ES65***/67***/68***

Model Name		UE32ES65*** / 67*** / 68***	UE40ES65*** / 67*** / 68***	UE46ES65*** / 67*** / 68***	UE55ES65*** / 67*** / 68***
PANEL	Vendor	CMI	AMLCD(LCM) CMI	CMI	AMLCD(LCM)
	Code	BN07-01093A	BN95-00611A BN07-01101A	BN07-01105A	BN95-00609A
	Spec.	LE320CSM-C1	LTJ400HV05-V LE400CSM-C1	LE460CSM-C1	LTJ550HW08-V
SMPS	Vendor	SEM	DYREL	DYREL	DYREL
	Code	BN44-00517C	BN44-00520C	BN44-00520C	BN44-00521C
	Spec.	-	-	-	-
MAIN	Chassis Ass'y	Depending on Region, Chassis Ass'y is different.			
	PBA Ass'y	Depending on Region, PBA Ass'y code is different.			
Byte	Item	-	-	-	-
0	Factory Reset	-	-	-	-
1	Type	32P1AF6E	40A1AF6E 40P1AF6E	46P1AF6E	55A1AF6E
2	Local Set	Depending on Region, Local Set is different.			
3	Basic Model	UE**ES65** UE**ES67** UE**ES68**	UE**ES65** UE**ES67** UE**ES68**	UE**ES65** UE**ES67** UE**ES68**	UE**ES65** UE**ES67** UE**ES68**
4	SVC Model	61** 63** 68**	61** 63** 68**	61** 63** 68**	61** 63** 68**
5	TUNER	Auto DVB_TCS2(UE**ES65**/68**) / DVB_T2CS2 (65**/68** UK and nordic models)			
6	Ch Table	-	-	-	-
7	Front Color	U-T-CL-M65 (UE**65***/UE**657**) U-T-CL-M68 (UE**658**) U-T-CL-M65 (UE676*~UE678*) U-T-CL-M65 (UE68**)			

UE**ES671* (White model)

Model Name		UE32ES67***	UE37ES67***	UE40ES67***	UE46ES67***
PANEL	Vendor	CMI	AUO	AMLCD(LCM) CMI	CMI
	Code	BN07-01093B	BN07-01145B	BN95-00611B BN07-01101B	BN07-01105B
	Spec.	LE320CSM-C2	LE370CSA-C2	LTJ400HV08-B LE400CSM-C2	LE460CSM-C2
SMPS	Vendor	SEM	SEM	DYREL	DYREL
	Code	BN44-00517C	BN44-00518D	BN44-00520C	BN44-00520C
	Spec.	-	-	-	-
MAIN	Chassis Ass'y	Depending on Region, Chassis Ass'y is different.			
	PBA Ass'y	Depending on Region, PBA Ass'y code is different.			
Byte	Item	-	-	-	-
0	Factory Reset	-	-	-	-
1	Type	32P1AF6E	37R1AF6E	40A1AF6E 40P1AF6E	46P1AF6E
2	Local Set	Depending on Region, Local Set is different.			
3	Basic Model	UE**ES671*	UE**ES671*	UE**ES671*	UE**ES671*
4	SVC Model	671*	671*	671*	671*
5	TUNER	Auto DVB_TCS2(UE**ES65**/68**) / DVB_T2CS2 (65**/68** UK and nordic models)			
6	Ch Table	-	-	-	-
7	Front Color	U-T-CL-M67			

2.3. Accessories

Product	Description	Code. No	Remark
	Remote Control	AA59-00581A (Except Italy Models) AA59-00584A (Italy Models) AA59-00560A (671" White Models) AA59-00581A (671" Italy White Models)	Samsung Electronics Service center
	Batteries (AAA x 2)	4301-000121	
	Power Cord	3903-000525 3903-000539 (UK) 3903-000626 (671" White Models) 3903-000627 (671" Italy White Models)	
	Warranty Card	BN68-00514K	
	Safety Guide	BN68-03019A	
	User Manual (Simple Guide)	BN68-04093* (UE**ES61***) BN68-04108* (UE**ES63***) BN68-04109* (UE**ES65***/UE**ES67***) BN68-04210* (UE**ES68***)	
	Holder-Ring (4 EA)	BN61-07295A (6500↑)	
	Holder-Wire Stand	BN61-05491A (6500↑)	
	CI Gender (Only for EU)	3709-001663 (6500↑)	

	SCART Gender (Only for EU)	BN39-01154A (6500↑)	

NOTE

The part code for some accessories may differ depending on your region.

3. Disassembly and Reassembly

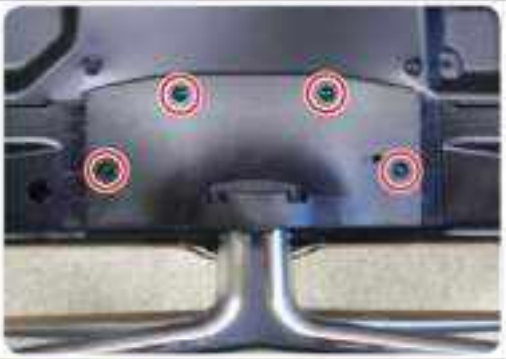
This section of the service manual describes the disassembly and reassembly procedures for the LED TV.

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

3.1. Disassembly and Reassembly

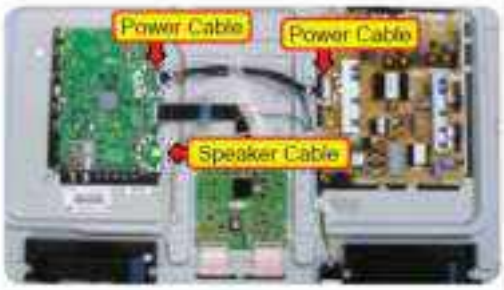
CAUTION

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.

Description	Picture Description	Screws
1 Place TV face down on cushioned table.		
2 Remove 4 screws from the Stand.		 6001-001782
3 Remove Stand.		

Description	Picture Description	Screws
4 Remove the 1 screw of COVER-JACK.		 6001-002754
5 Remove screws of ASSY COVER P-REAR. • 40"/46"/50"/55"/60" : 8 EA		 6001-002754  6001-001782
Remove screws of ASSY COVER P-MIDDLE REAR. • 32"/37" : 11 EA		 6001-002754
6 Remove the COVER-JACK.		
Remove the ASSY COVER P-REAR. **! CAUTION** Becareful when you lift up the ASSY COVER P-REAR, It's really sharp.		

Description	Picture Description	Screws
7 Disconnect the Function Cable.		
		
8 Remove screws of ASSY COVER P-MIDDLE.		 6001-002754
9 Remove the ASSY COVER P-MIDDLE.		
10 Remove the screws of MAIN BOARD, SMPS BOARD. • MAIN BOARD: 6 EA • SMPS BOARD: 6 EA		 6001-002756

Description	Picture Description	Screws
11 Remove the Power Cables and Speaker Cables.		
12 Remove the LVDS Cable and Panel Drive Cable.		
13 Remove the Speakers (R/L).		
14 Remove the Wi-Fi module.		 6001-002754
15 Remove the T-CON Bracket.		 6001-002756
16 Unlock the locking of T-CON cable.		

Description	Picture Description	Screws
17 Completed disassembly.		

NOTE

Reassembly procedures are in the reverse order of disassembly procedures.

3.2. Function module & Bluetooth module

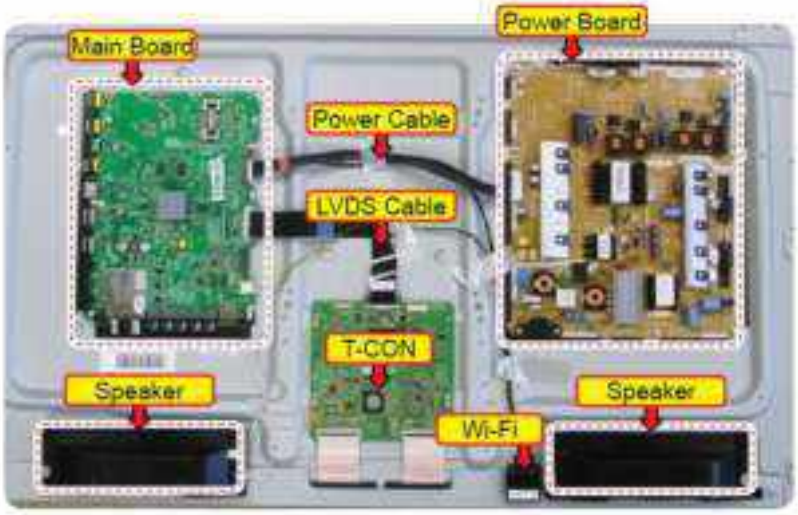
	Description	Picture Description	Screws
1	Remove the 2 screw of Function.		 6003-000115
2	Remove the 1 screw of Bluetooth.		 6003-000115
3	Adjust the wire in the ASSY COVER P-MIDDLE like the picture.		

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.



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 → INFO → MENU → MUTE → 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.

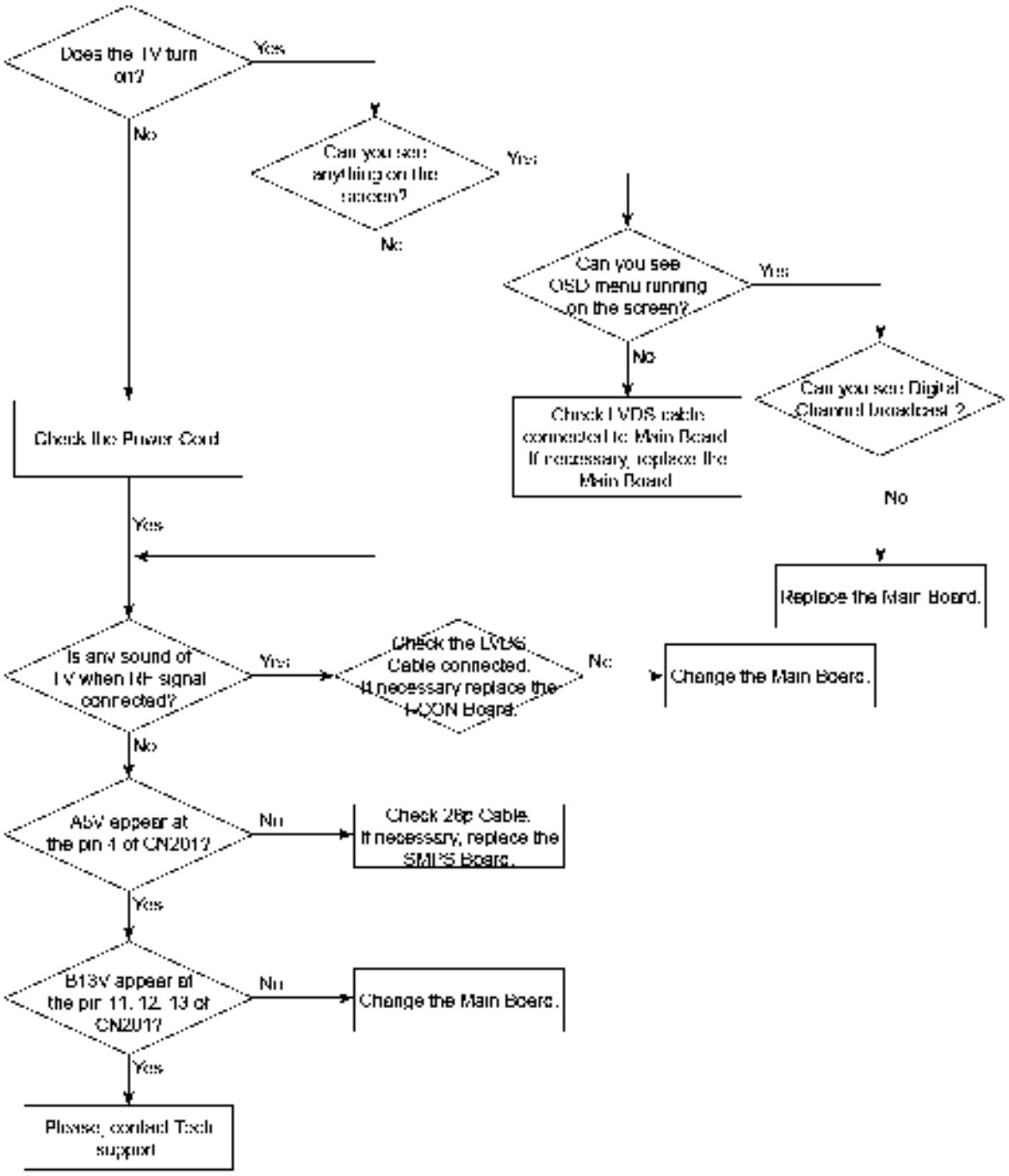
- **For All mode**

X10+	Echo_FS FRC Post	Picture	Problem
OK	OK	NG	Main Board or Signal Source.
NG	OK	NG	Main Board.
NG	NG	NG	Main or LVDS cable or T-CON or Panel.

- **Only for HDMI mode (additional check)**

HDMI	Picture	Problem
OK	NG	There is no problems after HDMI IC check HDMI source or HDMI jack.
NG	NG	There is no problems before HDMI IC check X10+ pattern or LVDS cable or T-CON.

■ Simple flow chart of malfunction



4.2. How to check fault symptom

4-2-1. No Power

Symptom

- The PD board relay does not work when connecting the power cord.
- The units appears to be dead.

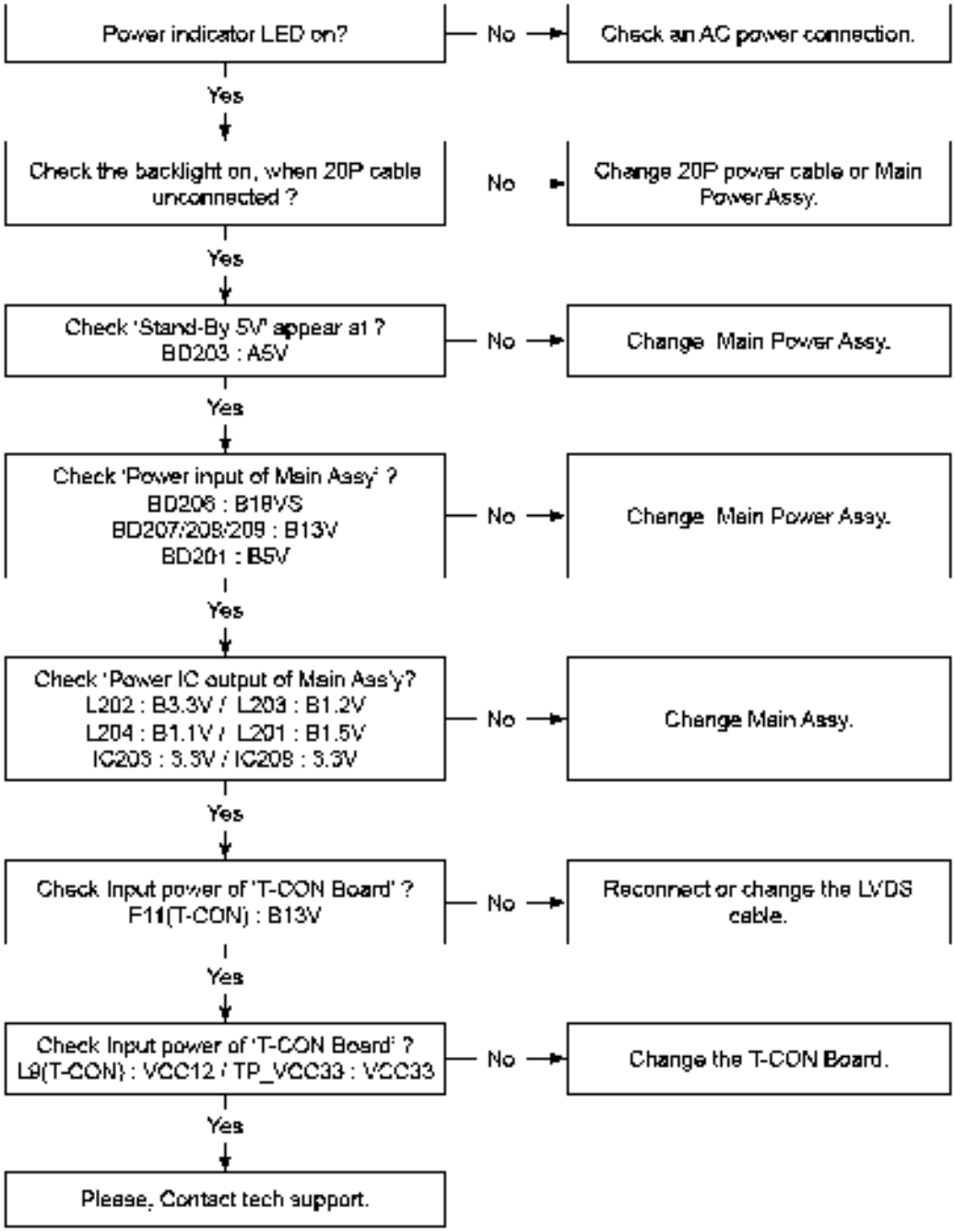
Major checkpoints

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 voltages of PD.
- Replace the Main Board.

Diagnostics

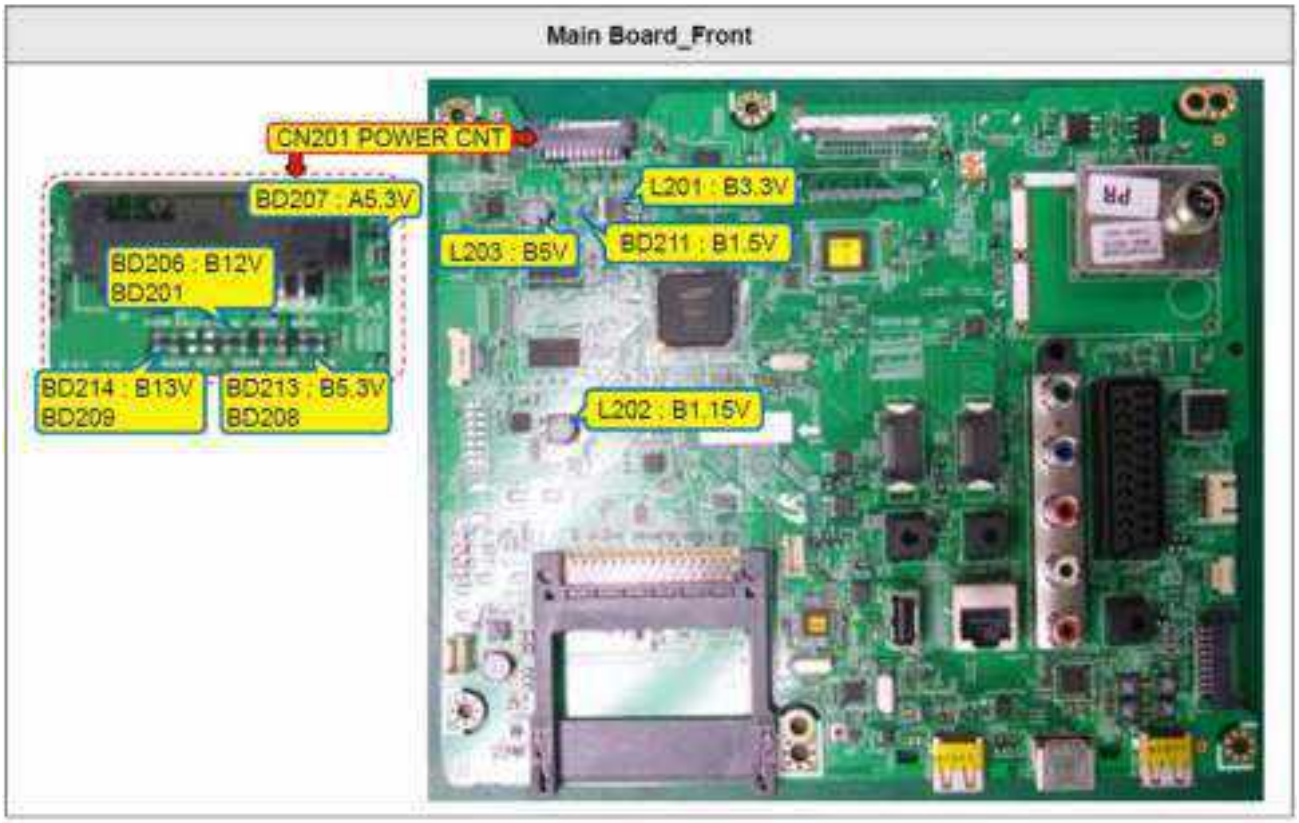


Caution

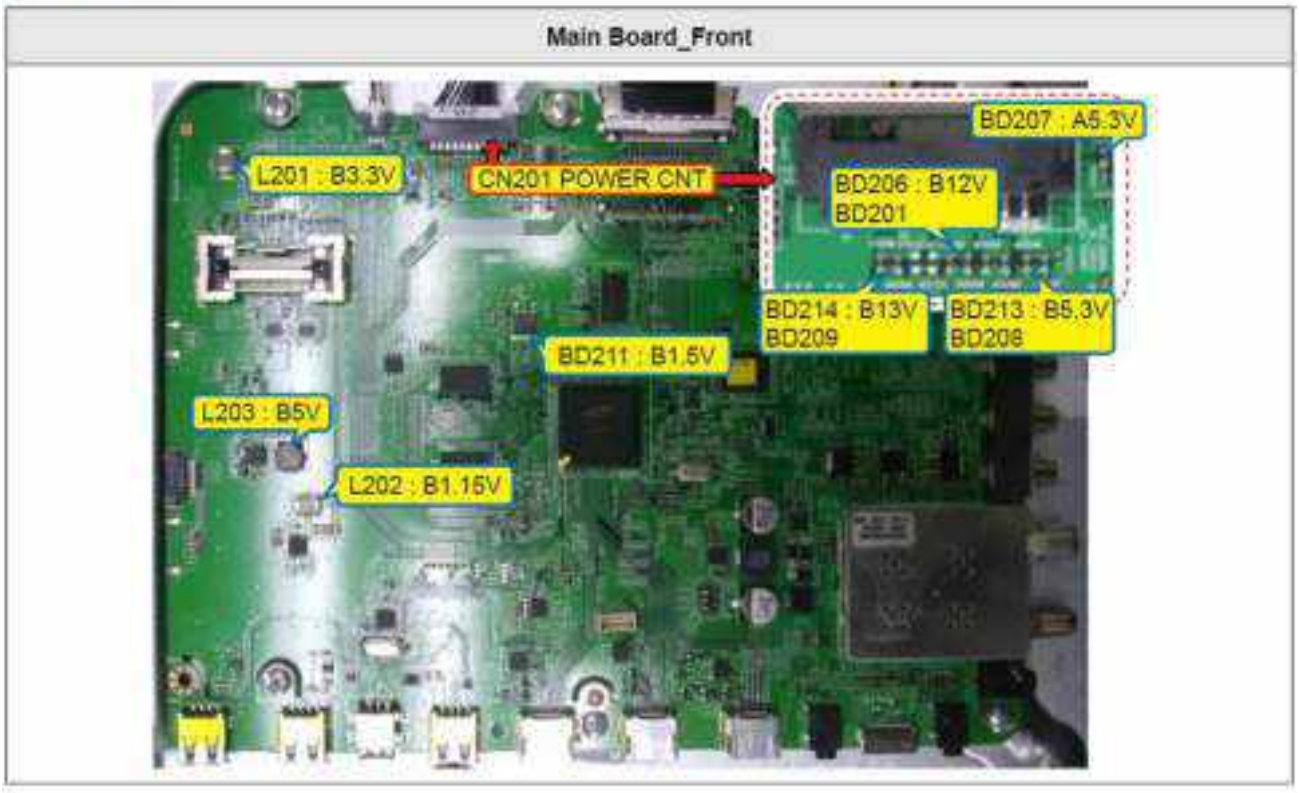
Make sure to disconnect the power before working on the IP Board.

■ Location of Parts

UE**ES61***



UE**ES65***



4-2-2. No Video (3-HDMI_Digital signal)

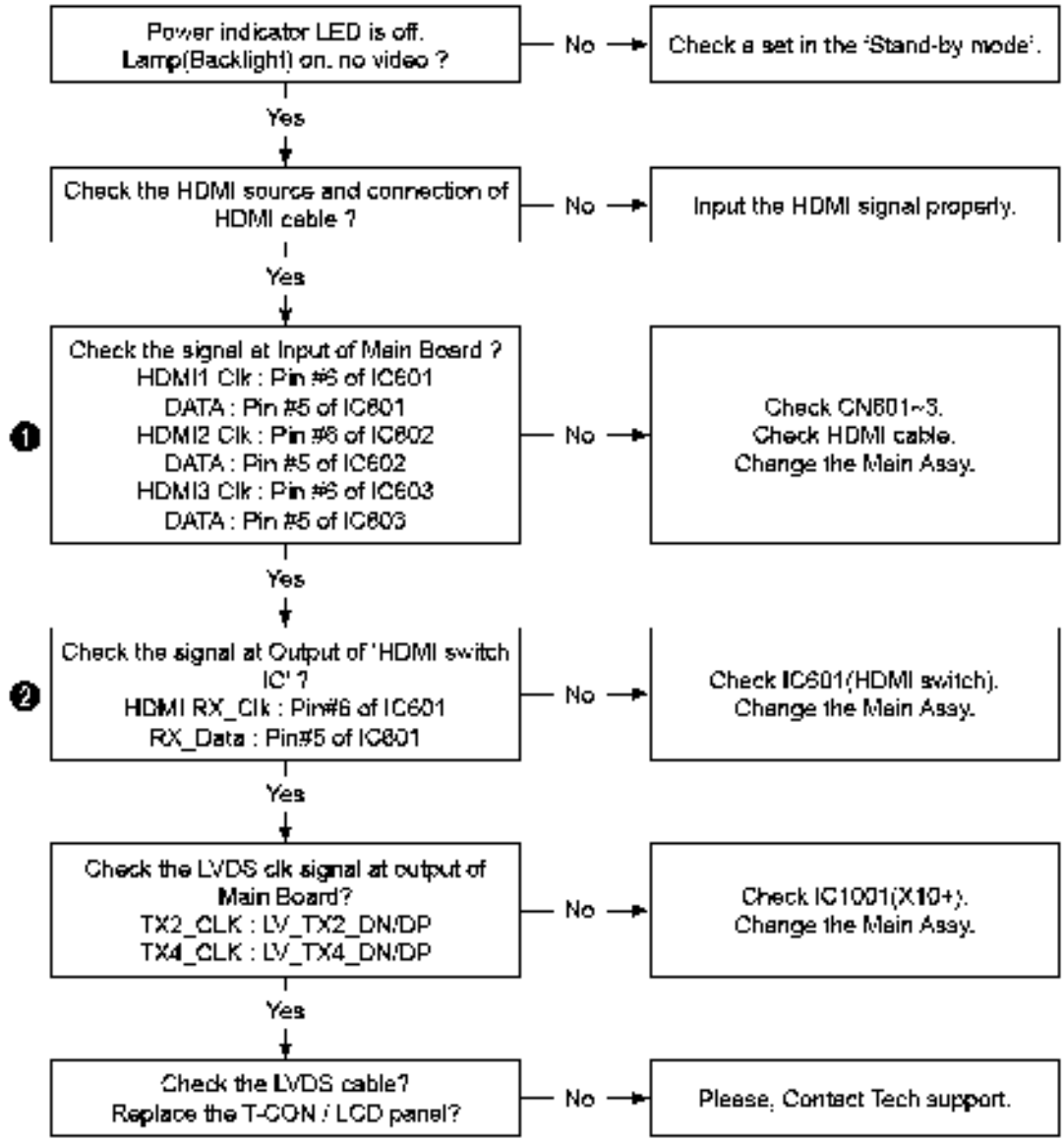
Symptom

Audio is normal but no picture is displayed on the screen.

Major checkpoints

- Check the HDMI source.
- Check the HDMI switch.
- This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.

Diagnostics



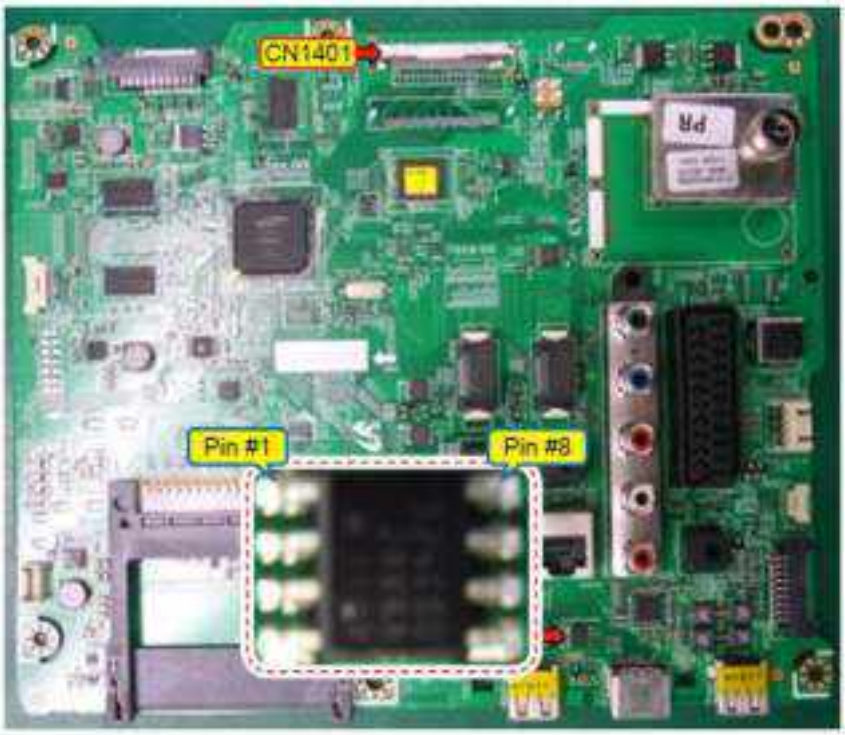
Caution

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

■ Location of Parts

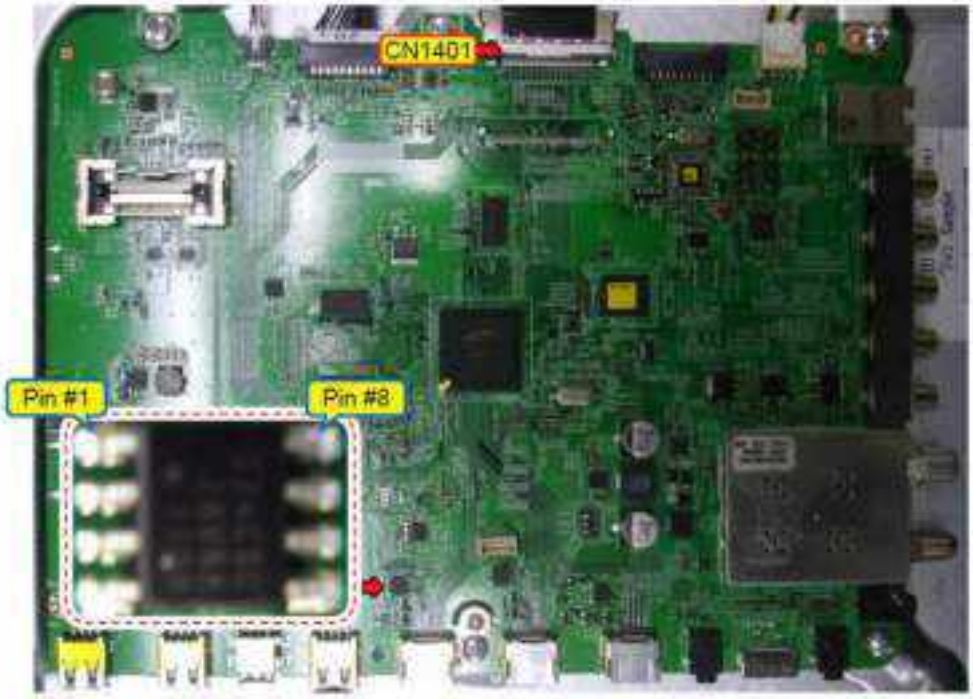
UE**ES61***

Main Board_Front



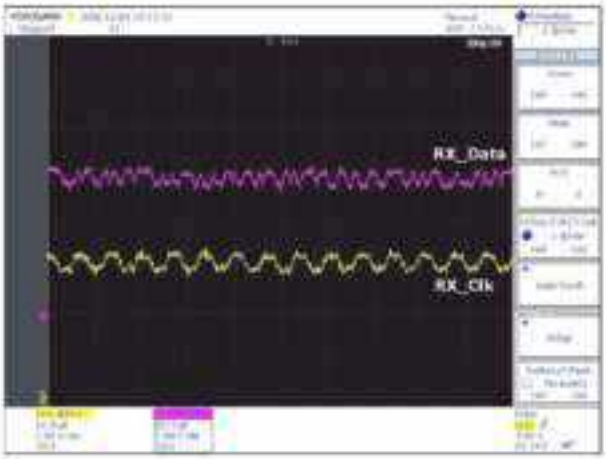
UE**ES65***

Main Board_Front

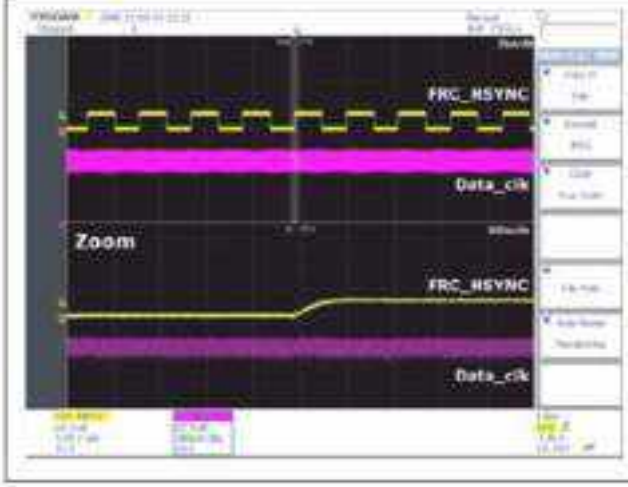


■ Waveforms

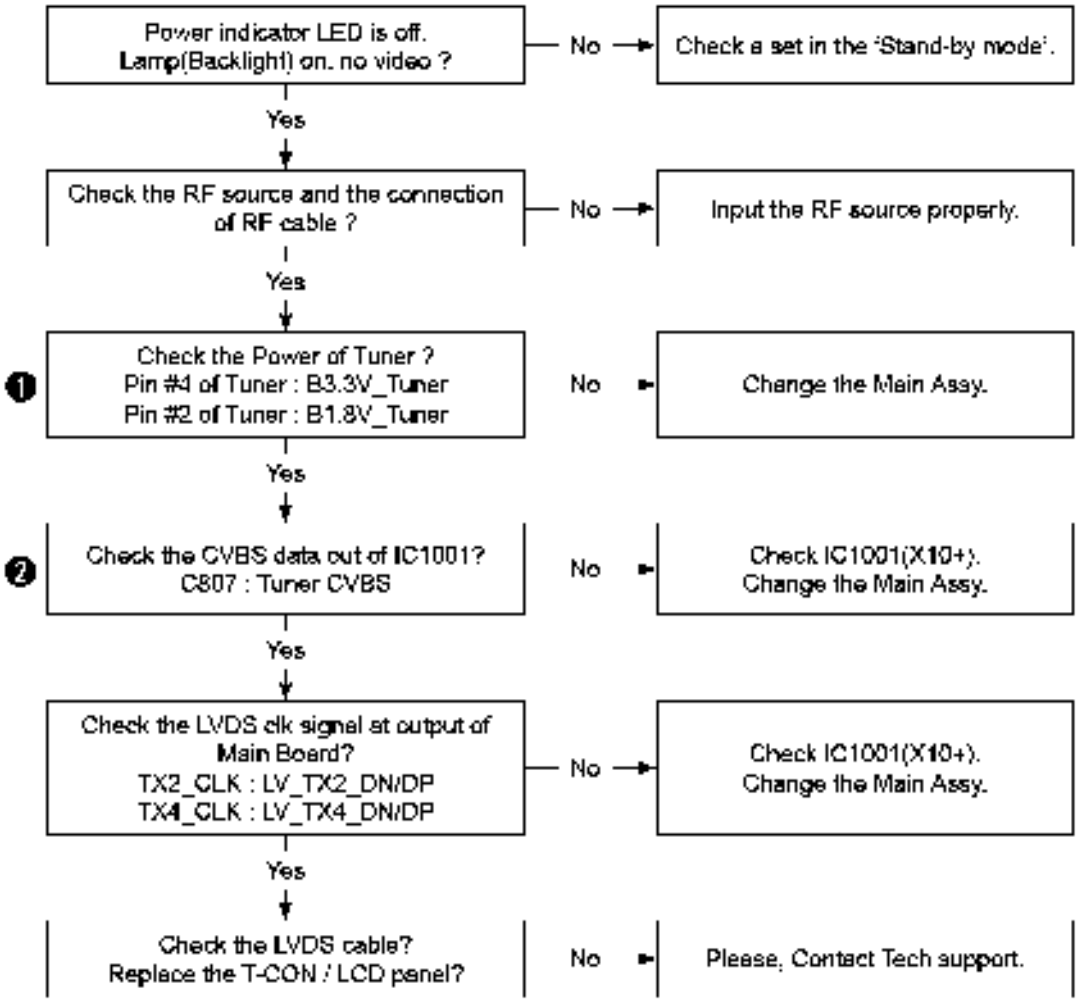
❸ HDMI input (RX_Data, RX_Clk)



❷ LVDS output



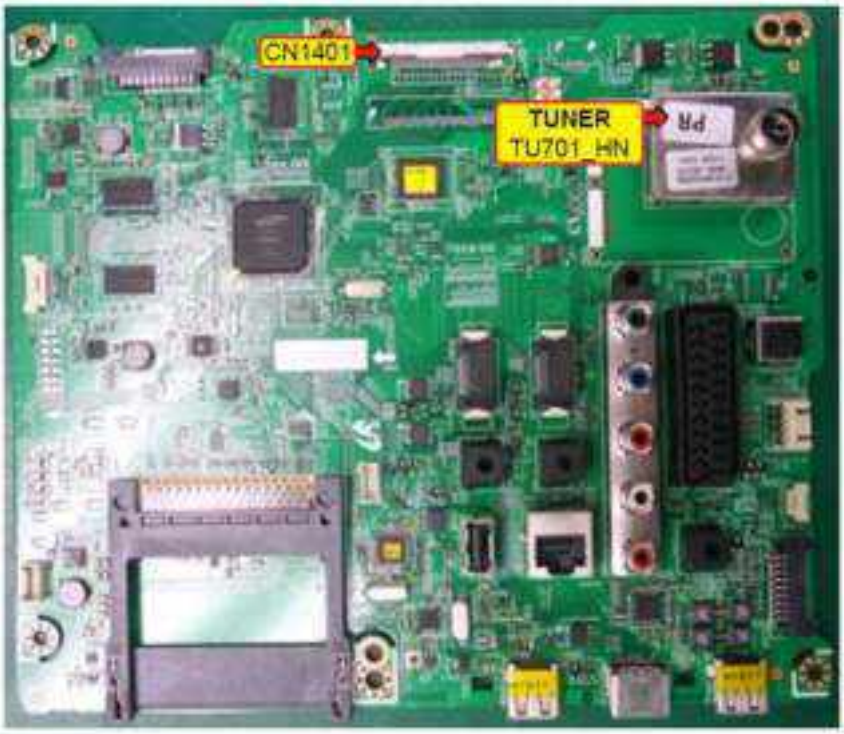
4-2-3. No Video (Tuner_CVBS)

Symptom	Audio is normal but no picture is displayed on the screen.
Major checkpoints	- Check the Tuner CVBS source. - Check the Tuner. + 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.

■ Location of Parts

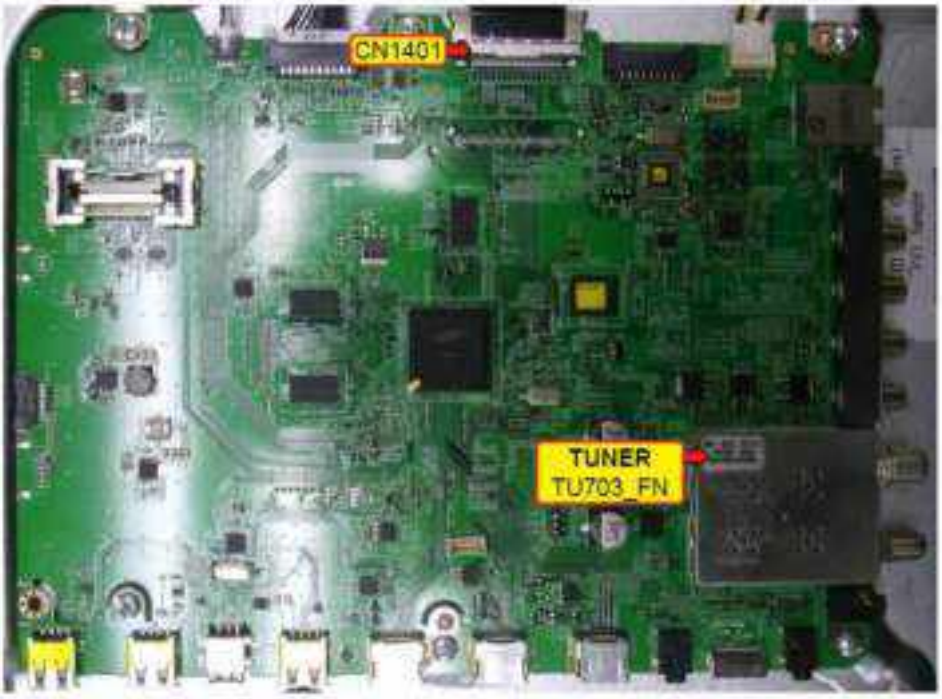
UE**ES61***

Main Board_Front



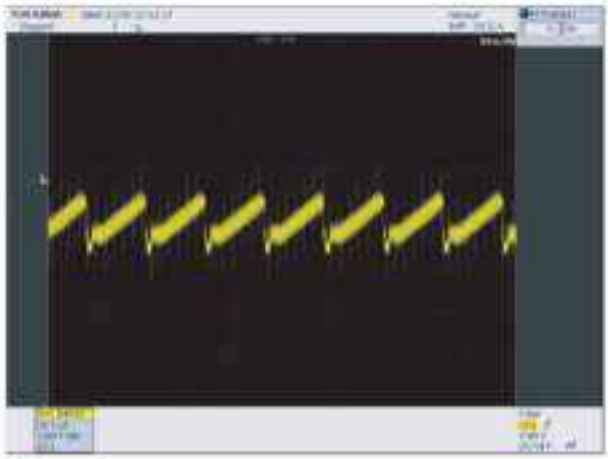
UE**ES65***

Main Board_Front

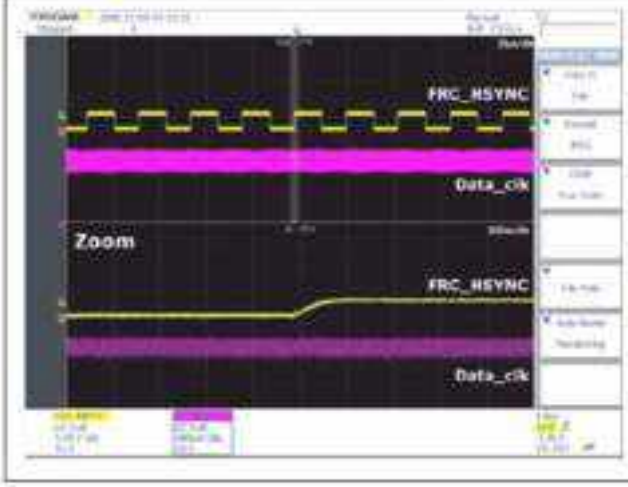


■ Waveforms

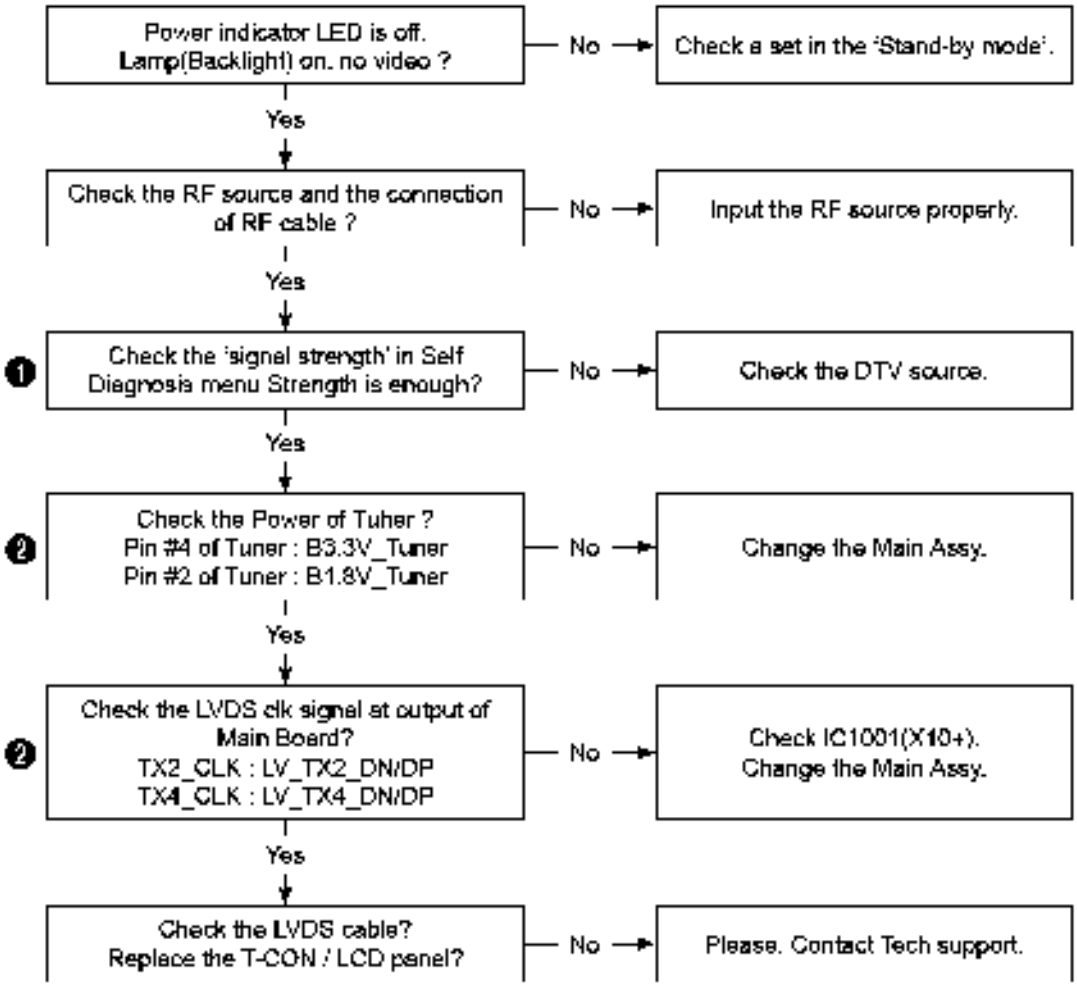
❸ CVBS OUT (Grey Bar)



❷ LVDS output



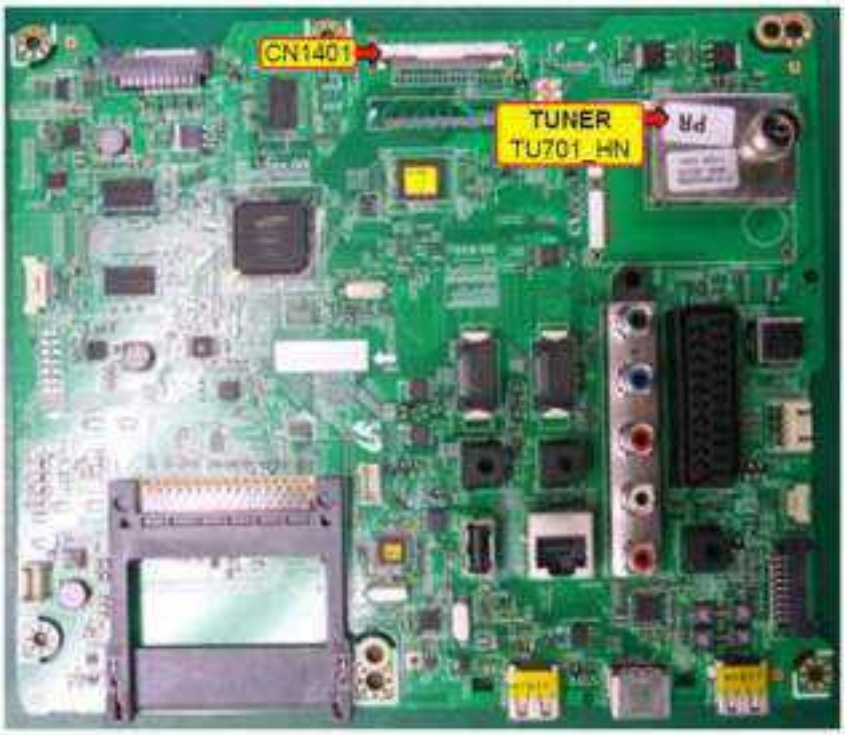
4-2-4. No Video (Tuner_DTV)

Symptom	Audio is normal but no picture is displayed on the screen.
Major checkpoints	- Check the DTV source. - Check the Tuner. + 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.

■ Location of Parts

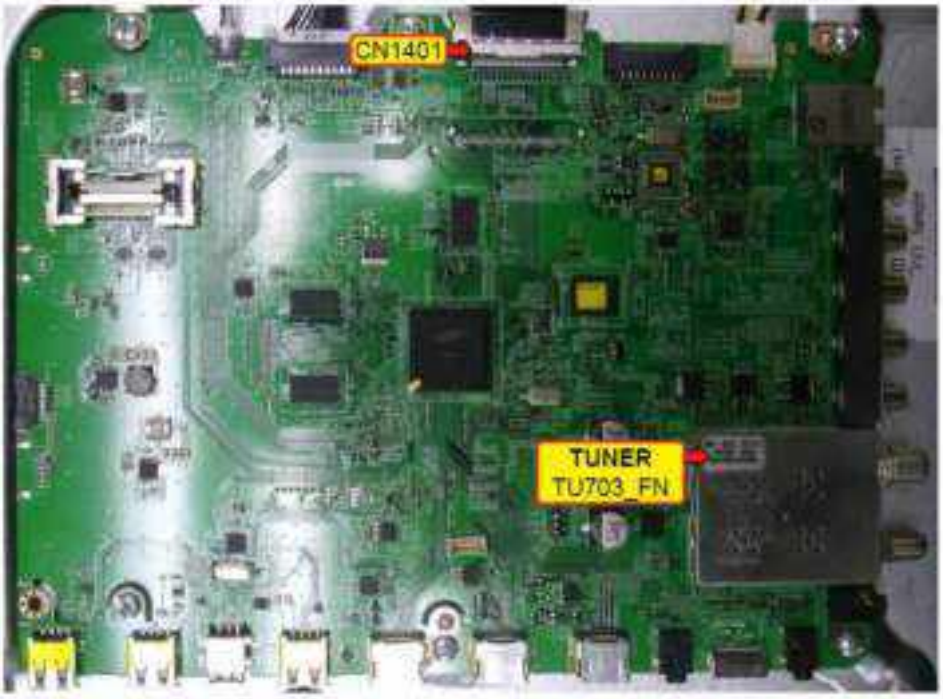
UE**ES61***

Main Board_Front



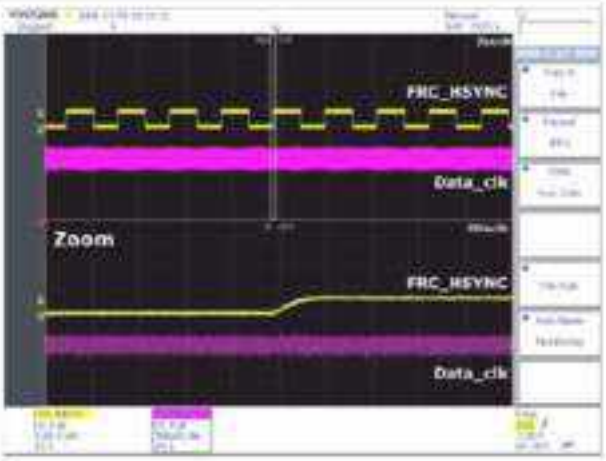
UE**ES65***

Main Board_Front

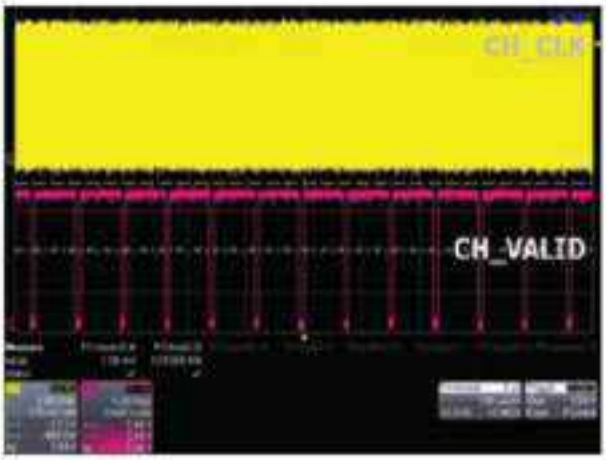


■ Waveforms

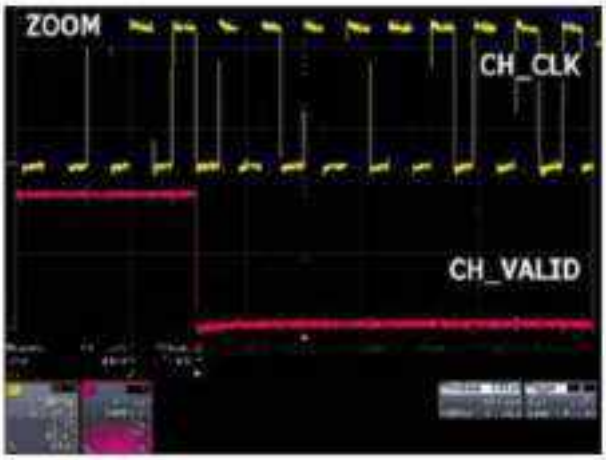
❶ LVDS output



❷ CH_CLK



❸ CH_VALID



4-2-5. No Video (Scart)

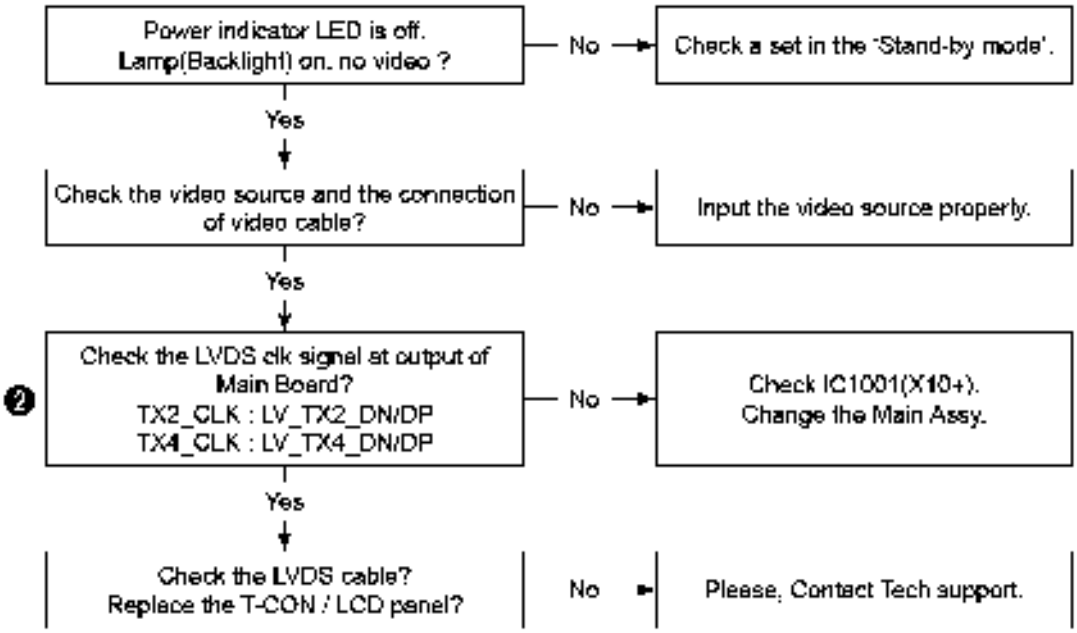
Symptom

Audio is normal but no picture is displayed on the screen.

Major checkpoints

- Check the Video CVBS source.
- This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.

Diagnostics



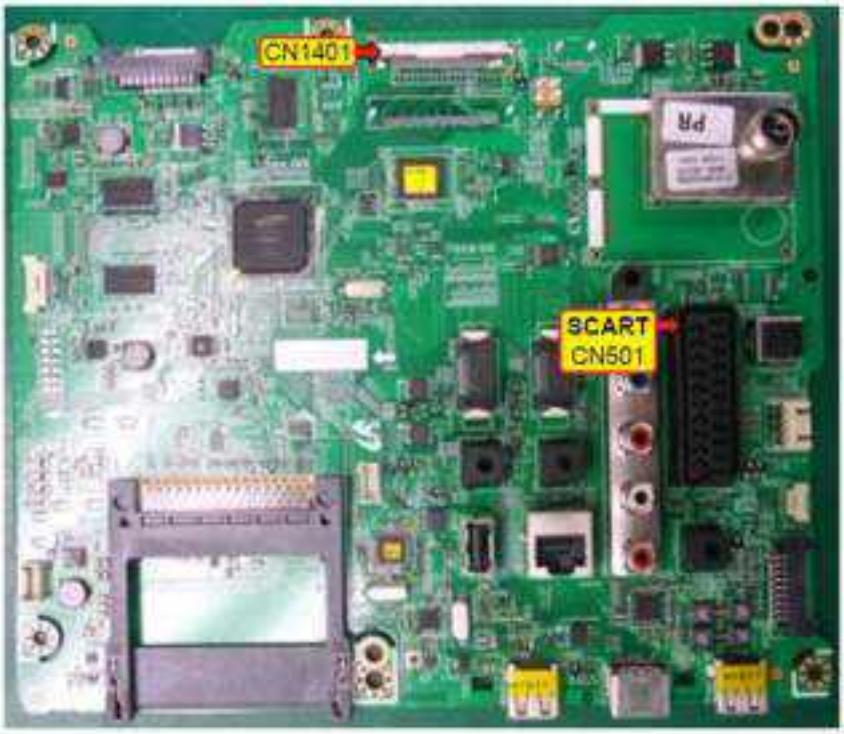
Caution

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

■ Location of Parts

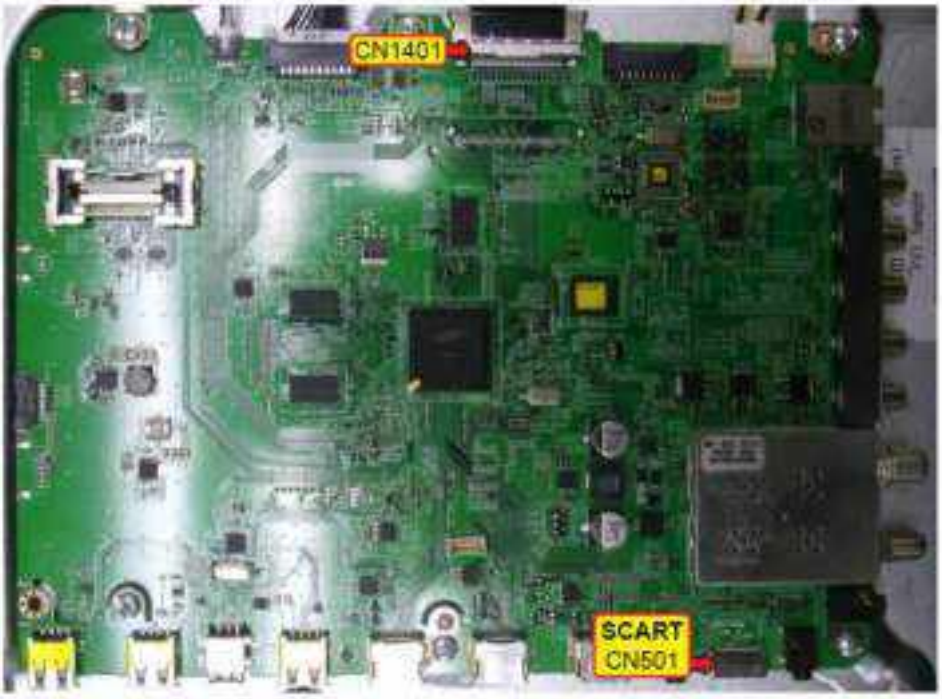
UE**ES61***

Main Board_Front



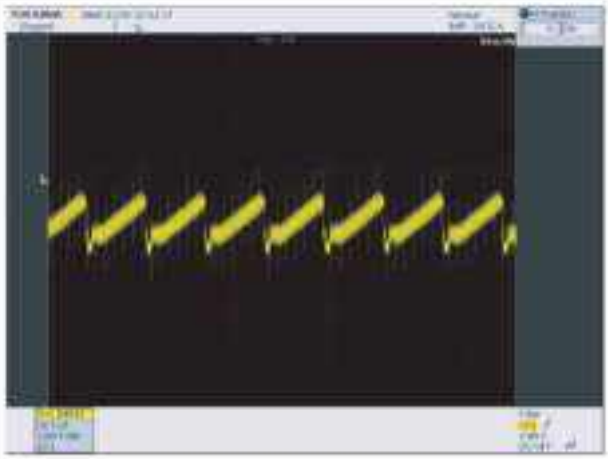
UE**ES65***

Main Board_Front

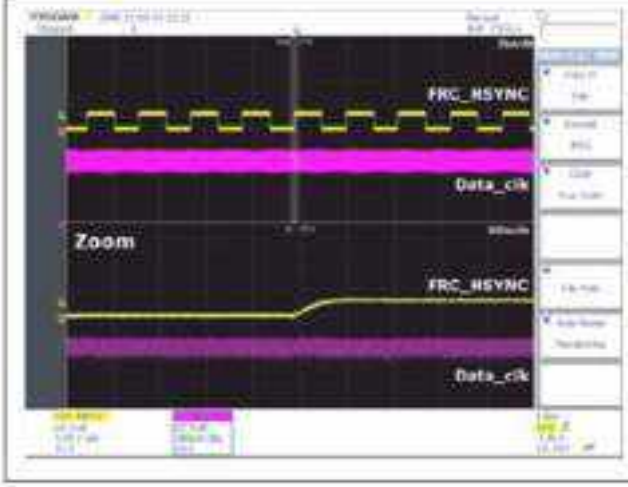


■ Waveforms

❶ CVBS OUT (Grey Bar)



❷ LVDS output



4-2-6. No Video (Component)

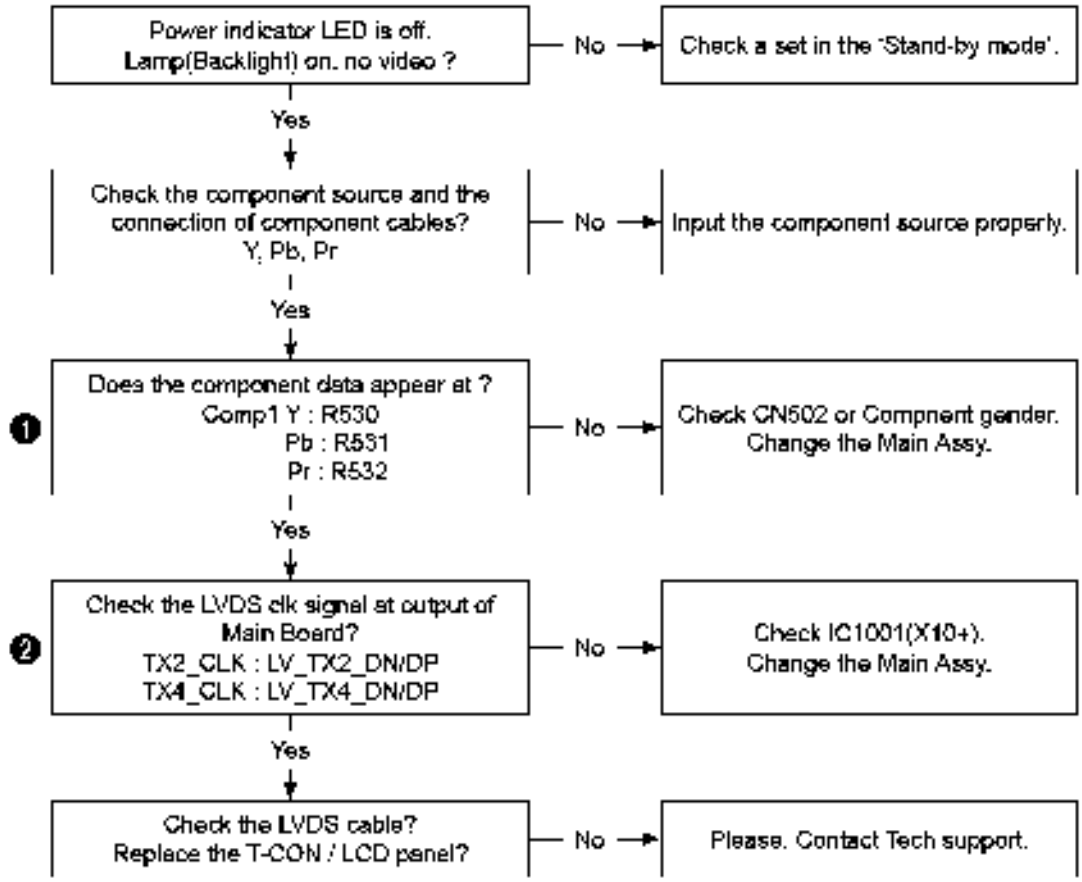
Symptom

Audio is normal but no picture is displayed on the screen.

Major checkpoints

- Check the Component source.
- This may happen when the LVDS cable connecting the Main Board and the Panel is disconnected.

Diagnostics



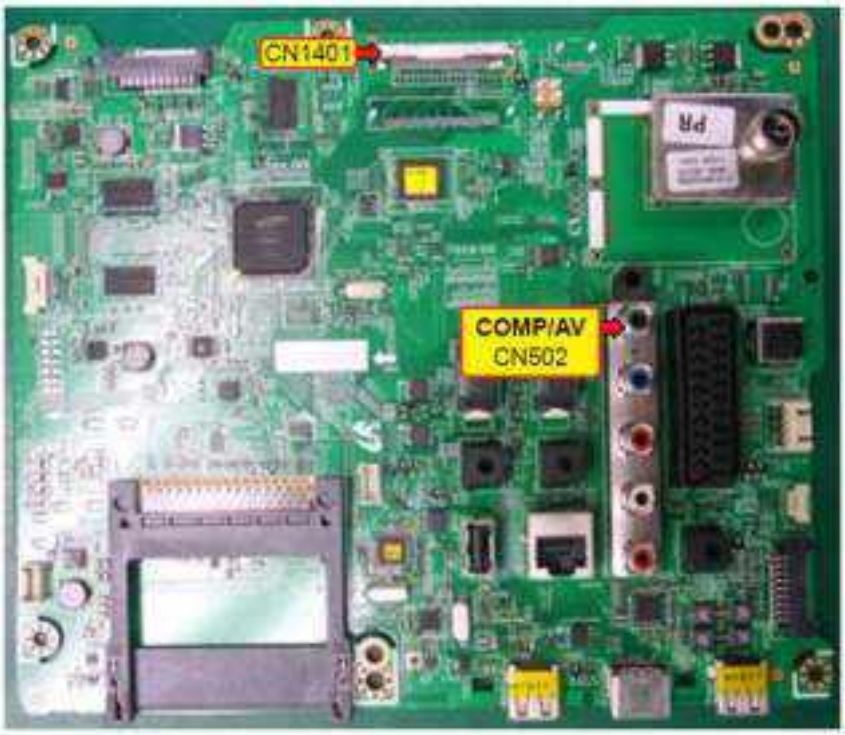
Caution

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

■ Location of Parts

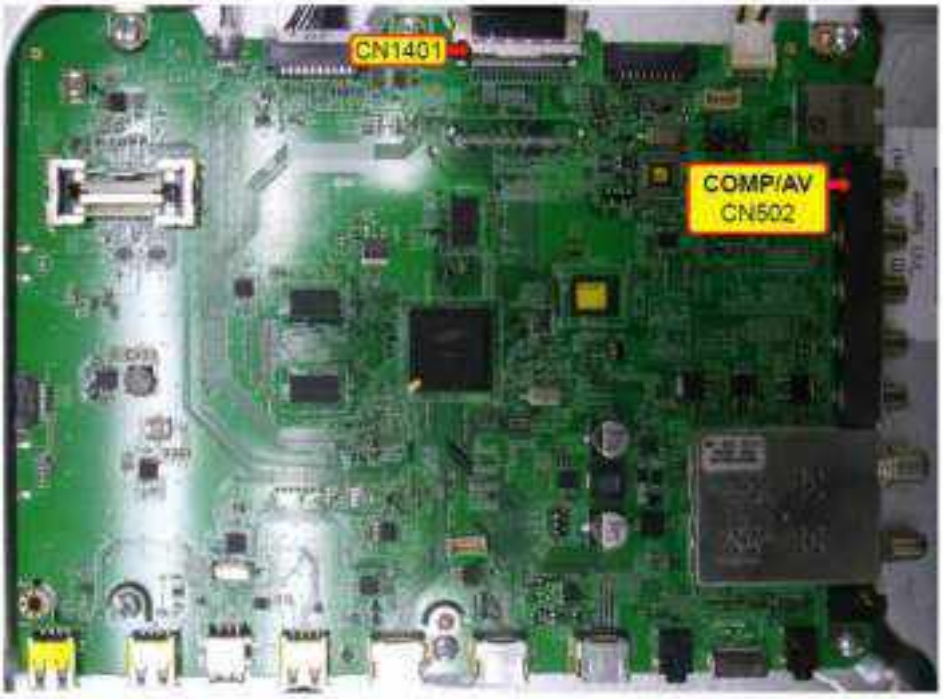
UE**ES61***

Main Board_Front



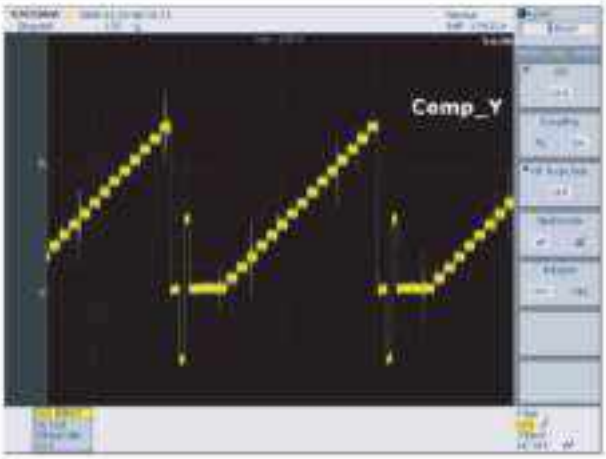
UE**ES65***

Main Board_Front

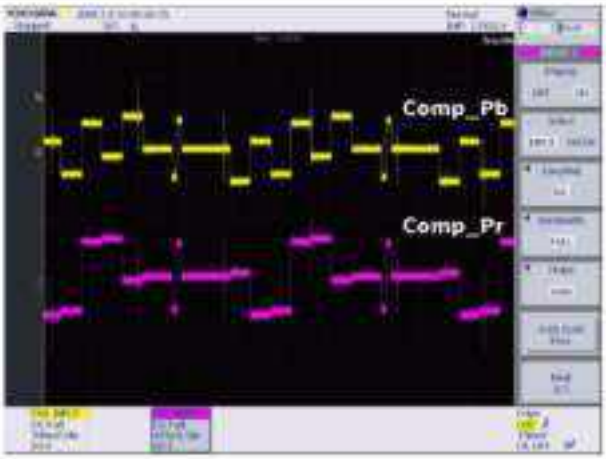


■ Waveforms

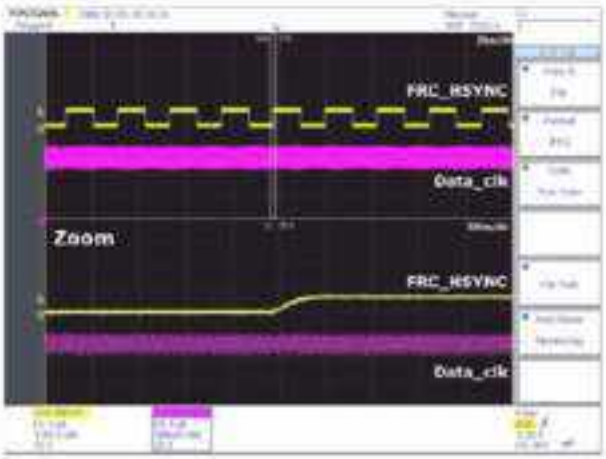
❶ Compnent_Y (Gray scale)



❶ Compnent_Pb / Pr (Color bar)



❷ LVDS output



4-2-7. No No Sound (1.Speaker, 2.Monitor_Out, 3.Optical)

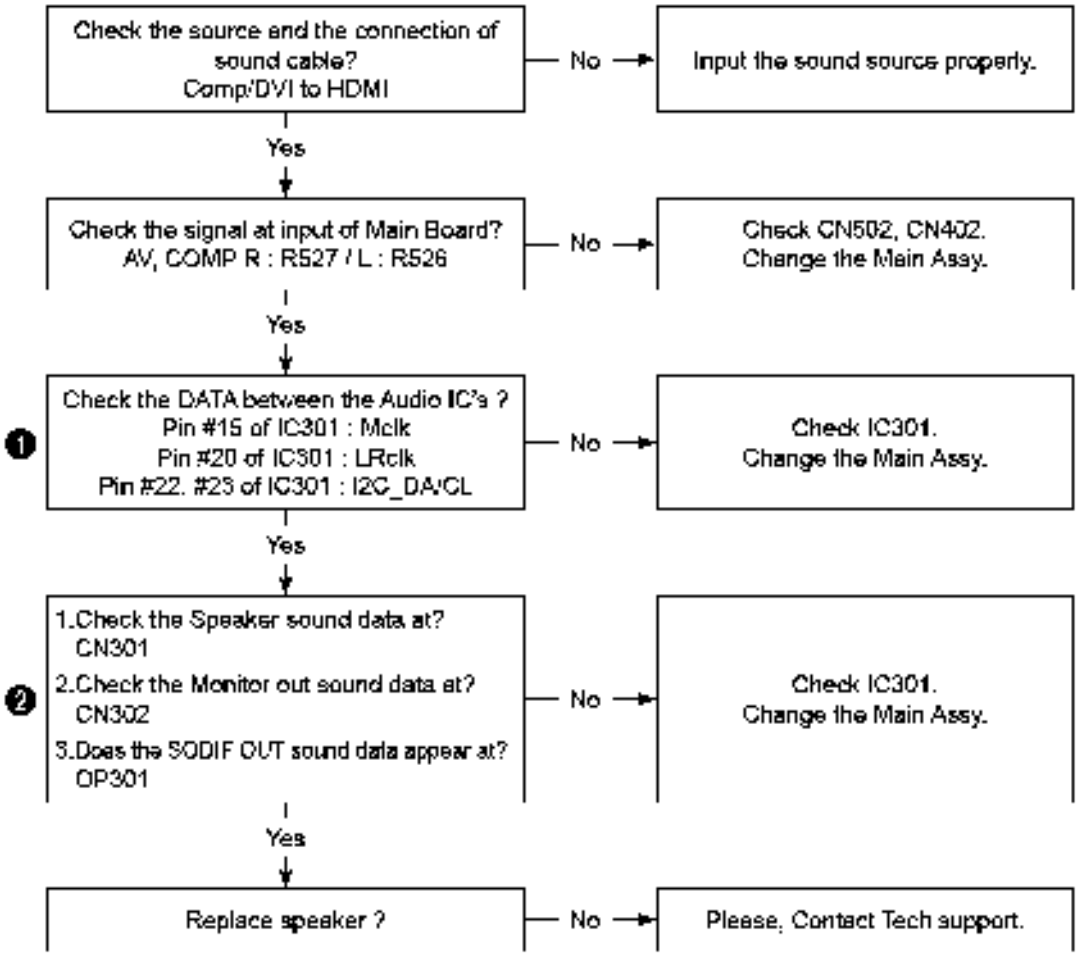
Symptom

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.

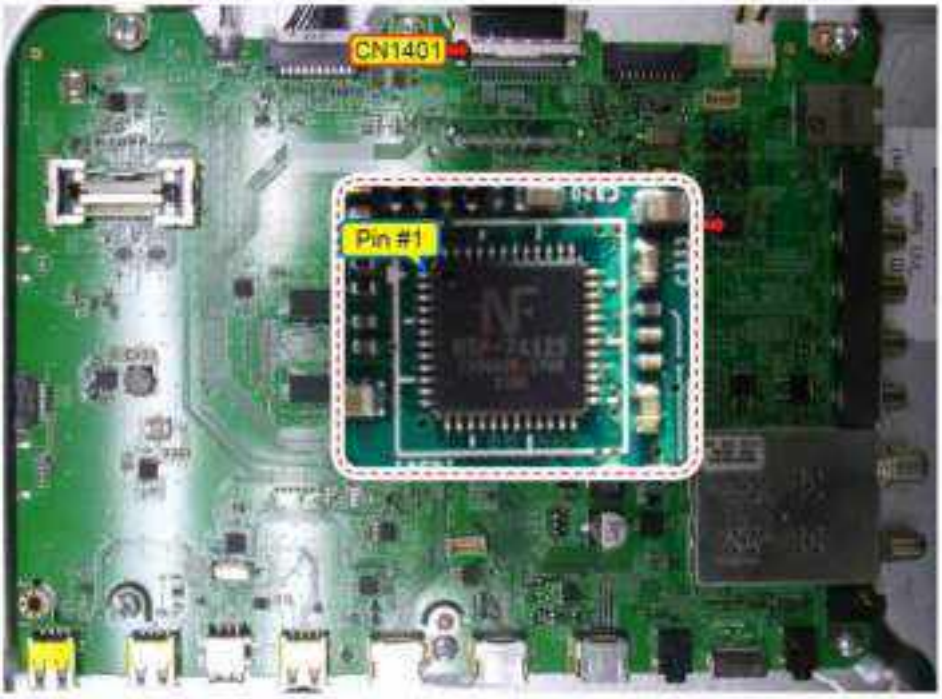
■ Location of Parts

UE**ES61***

Main Board_Front

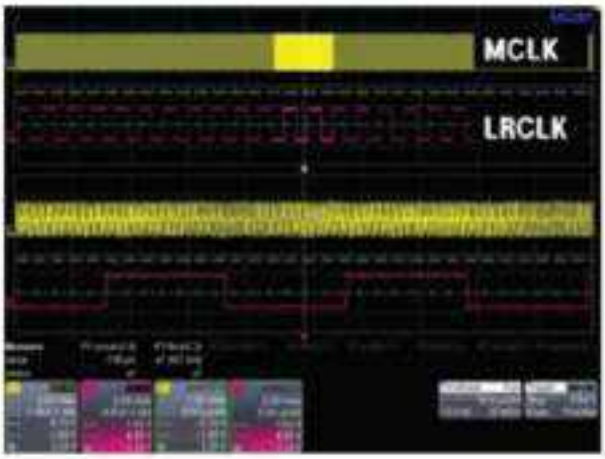
UE**ES65***

Main Board_Front

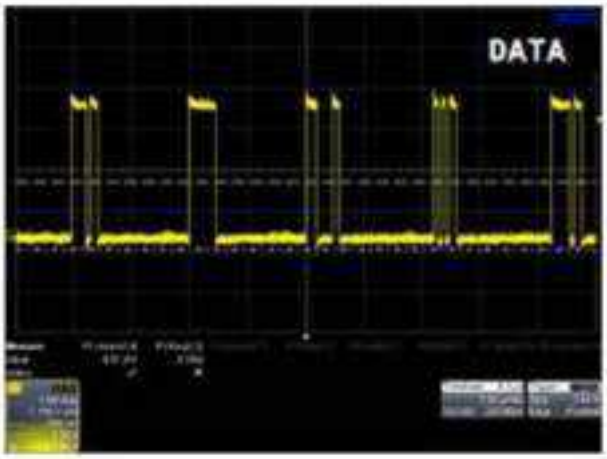


■ Waveforms

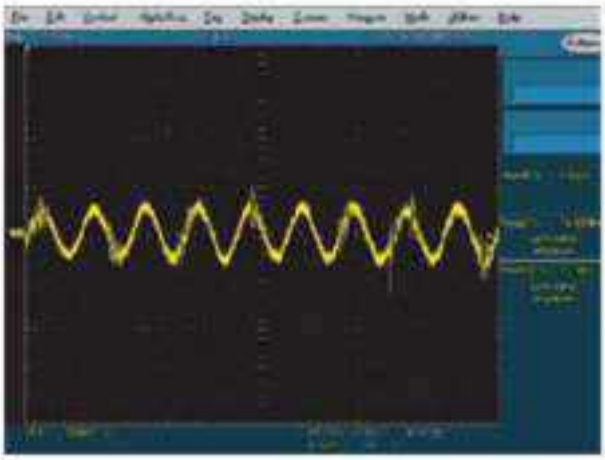
❶ MCLK / LRCLK



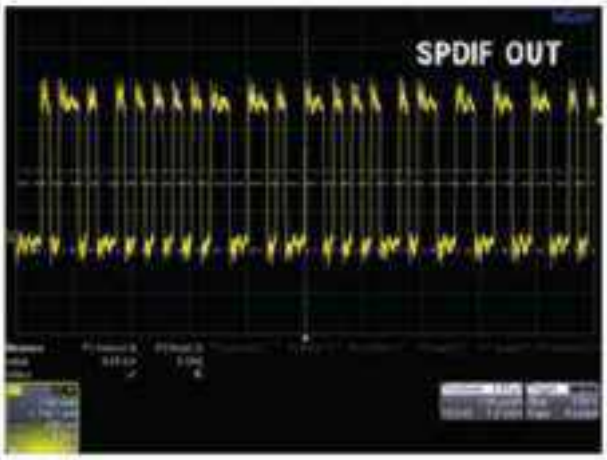
❶ PCM_I2C_DATA



❷ Speaker



❷ Monitor OUT , SPDIF OUT



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)

- 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

4-3-2. Factory Data

■ Option

Factory Menu Name	Data	Range
Factory Reset	-	
Type	32P1ADBC / 37R1ADBC / 40M1ADBC / 46P1ADBC / 55M1ADBC / 60I1ADBC	
Local set	EU/EU ITALY / EU GER / EU FRANCE / EU BENELUX / EU SPAIN / EU UK / CIS CA MS / NORDIC / CIS RUSSIA / CIS UKR / EU TURKEY	
Basic Model	UE6**	
S/C Model	U**	
TUNER	SI AIC2 / DVB T2S2 / DVB T2CS2	
Ch table	NONE	
Front Color	U T **	U T CG M61 / U T CG M61 / U T RG M / U T CI M65 / U T CI M65 / U T CI M67 / U T CI M65 / U T CI M65

■ Control

Factory Menu Name	Data	Range
EDID		
EDID ON/OFF	Off	
EDID WRITE ALL EDID WRITE HDMI EDID WRITE PC	...	
HDMI EDID Ver	...	
HDMI EDID Port	...	
Sub Option		
RF Mute Time	650ms	
RS 232 Jack	UART	
Watchdog	ON	
WD Count Lvds Format	0 JEIDA	
Language Arabic	EU	
TOOLS Support	127	
LNA Support	OFF	
NETWORK Support	Int'266	
IPTRT	Supprot	
Infolink Server Type	development	
Infolink Country TTX Lst	None Def	

Factory Menu Name	Data	Range
TTX Group	User OSD	
24bit Support	OFF	
Power Indicator Support	ON	
BD Wise Support	ON	
Data Service Support	ON	
IIC BUS STOP	OFF	
Visual Test	Disable	
Emergency Log Copy		
Checksum	fxxxxx	
View Log		
CamstarOnOff	OFF	
WSS Support	ON	
PVR Support	ON	
CI Support	ON	
EEPROM RESET		
EER RESET		
NVR All Clear	OFF	
Spread Spectrum		
LVDS Spread	ON	
Period	***	
Amplitude	***	
DDR Spread	***	
Echo FS LVDS SSC ON/OFF	xx	
Echo FS LVDS SSC MFR	xx	
Echo FS LVDS SSC MRR	xx	
Echo FS DDR SSC ON/OFF	xx	
Echo FS DDR SSC MFR	xx	
Echo FS DDR SSC MRR	xx	
DDR Margin	FN	
ACTRL_OFFSET_0_3	0	
ACTRL_OFFSET_D	0	
DCTRL_OFFSET_0_3	0	
DCTRL_OFFSET_D	0	
H264 Margin	0	
MPEG Margin	1000	
2nd mips	ON	
2nd mips count	0	
Region	PANEURO	

Factory Menu Name	Data	Range
PnP Language	ITA	
I²C Auto Ident	Enable	
OTP Lock	...	
Auto Power	MEMORY	
KEY SENSITIVITY	Not used	
OTA Support	General	
FKP Down		
WIFI REGION	F	
e Pop Default	ON	
OPTION_SWU		
OTN Server Type	operating	
OTN Test Server	OFF	
SWU Reset		
SWU Duration	OFF	
SWU Drill Test	OFF	
OTN Support	ON	
SWU_Disp_Cnt$		
OPTION_MEDIAPLAY		
MediaPlay DB	On with SMB	
MediaPlay Movie	-	
MediaPlay DLNA	ON	
MediaPlay PlayList	ON	
3D OPTIMIZE VALUE	1	
LOGIC TYPE	NT51036	
Energy Star Logo	OFF	
Fast USB Booting	ON	
Num of Network Stream	0	
PDP Option		
LOGIC CONNECT		
PIXEL SHIFT TEST		
PANEL VERSION		
PANEL INCH		
PANEL TYPE		
PANEL TEMPERATURE		
LOGIC SW VERSION		
LOGIC SW CHECKSUM		
SAPC TIMER		
APC SPEED		

Factory Menu Name	Data	Range
Real 100 Hz Support PLC SHDI		
Hospitality Option		
HOSPITALITY MODE	OFF	
Power On	...	
Menu OSD		
Operation		
Music Mode		
External Source Eco Solution Cloning	... ...	
Shop Option		
Shop Mode	OFF	
Exhibition Mode	OFF	
3D CUBE	OFF	
Asia Option		
TTX China HD NT Conversion	OFF OFF OFF	
Sepco 120Hz	OFF	
Unbalance	OFF	
FM Transmitter Support	OFF	
FM Transmitter Carrier	OFF	
AT Level Adjust	3	
TX Power Level Mono Level Memory H Shaking	0 OFF OFF	
SOUND		
High Devi	OFF	
Carrier Mute	OFF	
Volume Curve	Type1	
Speaker Delay normal	11D	
Pilot Level High Thld Pilot Level Low Thld FM Prescale	0x28h 0x18h 0B	
AM Prescale	19	
NICAM Prescale	15	
Amp Volume	0xc7	

Factory Menu Name	Data	Range
Amp Scale	0x0a	
Amp Check Sum	0xxxxxxxxx	
Woofer Type	1	
Woofer Scale	0x9ah	
Woofer Check Sum		
Speaker EQ	ON	
PEQ Test	0	
Amp Model	NTP7417	
Speaker cut off Freq	4	
SPDIF PCM Level	-9 dB	
PWM Prescale	18	
BTSC Mono Prescale	25	
BTSC stereo Prescale	17	
SAP Prescale	13	
AD Identify High Thld	31	
AD Identify Low Thld	2	
CArrier2 Amplitude High Thld	4	
CArrier2 Amplitude Thld	3	
Carrier2 SNR High Thld	16	
CArrier2 SNR Low Thld	80	
Audio-IP Test	Ready	
TruBass CheckSum	0xxxxxxxxx	
PWM Mode	BD	
Mic Scale	0	
SubWoofer Support	0	
Index Source	OFF	
Config Option		
Num of ATV	1	
Num of DTV	1	
Num of AV	1	
Num of SVIDEO	0	
Num of COMP	1	
Num of HDMI	3	
Num of PC	0	
Num of SCART	1	
Num of DVI	0	
Num of OPTICAL Link	1	
Num of MEDIA	1	

Factory Menu Name	Data	Range
Num of PANEL KEY	6	
Num of USB Port	3	
Num of Headphone	1	
Num of RS232	0	
MHL Offset	02.5	
Select LCD/PDP	LCD	
HDMI/DVI SEL	1	
Inspection Text	OFF	
Wall Mount	OFF	
HV Flip	ON	
Num Of Display	2	
DVI HDMI SOUND	Auto	
HDMI HOT PLUG	Disable	
HOT PLUG SWITCHING	Boot	
HOTPLUG DURATION	1200ms	
CLK TERM DURATION	1200ms	
HDMI FIT CNT SIG	150ms	
HDMI FIT CNT LOS	150ms	
UNSTABLE BAN CNT	350ms	
HDMI Err Cnt	1	
HDMI ROBIN	ON	
HDMI Callback	OFF	
HDMI CTS TH1	0	
HDMI CTS Cnt1	1	
HDMI EQ	AUTO	
HDMI Wire Type	Separate	
HDMI Switch	NONE	
DVI SET TIME	300ms	
Type Of PANEL KEY	None	
EcoSensor Support	ON	
LFDMagicInfo Support	ON	
Natural Mode Support	ON	
All Share Support	ON	
Relax Mode Support	ON	
BT Support	ON	
3D Support	ON	
H/Write		
HDMI Sync	DE	

Factory Menu Name	Data	Range
HeadPhone Port PANEL	 OFF	
Support MultiMedia Key	ON	
Config AV PATH		
Num of IPTV	0	
PVR RECORD NUM	1	
Num of RUI	0	
5Way Direction Key	R BACK	
Contents Bar Num Of Tuner	OFF 1	

■ SVC

Factory Menu Name	Data	Range
Test Pattern		
Pattern Sel Logic Pattern Sel Logic Level Sel	Off ...	
Echo-FS Pre Test Pattern	0	
Echo-FS Post Test Pattern	0	
Echo-FS FRC FDISPLAY ON/OFF	OFF	
Echo-FS 3D FDISPLAY ON/OFF	OFF	
Echo-FS PC Mode ON/OFF	OFF	
PANEL DISPLAY TIME	14Hr	
Logic Usb D/L **T-CON USB Download**		
T-CON CheckSum		
Tuner Margin	10	
CAM Wait Time		
TS Clock delay	0	
SUBMICOM UPGRADE	Off	
BT ADDRESS	xxxxxxxxxxxxxxxxxxx	
BT UPGRADE **BT FREEPAIRING** **SVC Reset**	 ON 	
TCON_TEMP READ	36.66	
TEMP LAST	36.66	
DCC VERSION	0xxxxx	
DCC CHK SEL	0	

Factory Menu Name	Data	Range
DCC CHECK LOCAL DCC CHECK TOTAL	0xXXXX	
Function Upgrade	Off	
Smart Hub Reset	Off	
WIFI ER COUNT	0	
BT ER COUNT	0	
Debug Log Down		
MultiACC Checksum	0xXXXX	
CSVC Info TS Clock delay TC TS Clock delay S	 0 0	
CAL Data Backup	...	
CAL Data Restore	....	

■ Expert

Factory Menu Name	Data	Range
N/D ADJ		
Source		

■ ADC/WB

Factory Menu Name	Data	Range
ADC		
AV Calibration		
Comp Calibration		
PC Calibration HDMI Calibration		
ADC Target		
1st AV Low		
1st AV High		
1st AV Delta		
1st COMP_Y_Low		
1st COMP_Cb_Low		
1st COMP_Cr_Low 1st COMP_Y_High 1st COMP_Cb High		
1st COMP Cr High		
1st COMP Delta		
1st PC Low		
1st PC_High		

Factory Menu Name	Data	Range
1st_PC_Data 2nd ACH Low		
2nd ACH High		
2nd I²C Low		
2nd I²C High		
2nd_Data		
ADC Result		
1st_Y_GH		
1st_Y_GL 1st Cb BH 1st Cb BL		
1st Cr BH		
1st Cr BL		
2nd R_L		
2nd_G_L		
2nd_B_L		
2nd_R_H 2nd_G_H 2nd B_H		
White Balance		
Sub Brightness		
R-Offset		
G-Offset		
B-Offset		
Sub Contrast R Gain G-Gain		
B-Gain		
Movie R-Offset		
Movie B-Offset		
Movie R Gain		
Movie B Gain		

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.

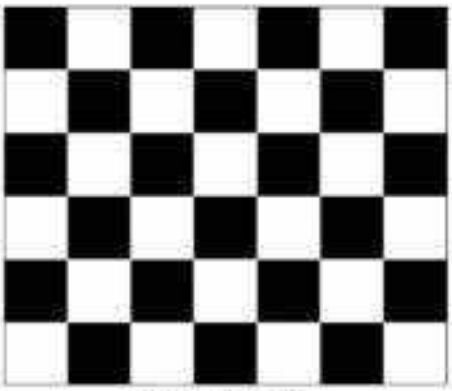
4-4-2. Service Adjustment

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

■ 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)

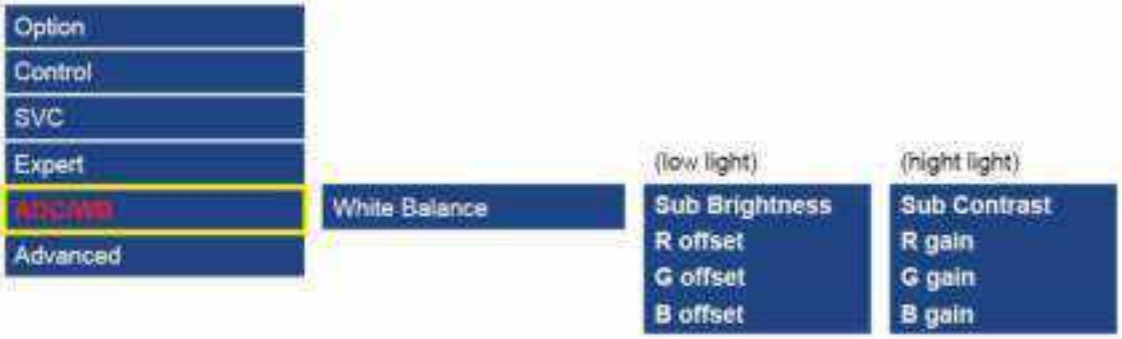
1. Apply the VESA XGA Lattice (N0. 21) pattern signal to the PC IN port.
2. Press the Source key to switch to "PC" mode.
3. Enter Service mode.
4. Select the "ADC" menu.
5. Select the "PC Calibration" menu.
6. In "PC Calibration Off" status, press the "►" key to perform Calibration.
7. When Calibration 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.

4-4-3. Adjustment

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



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.

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

4-6-2. How to Upgade Software

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

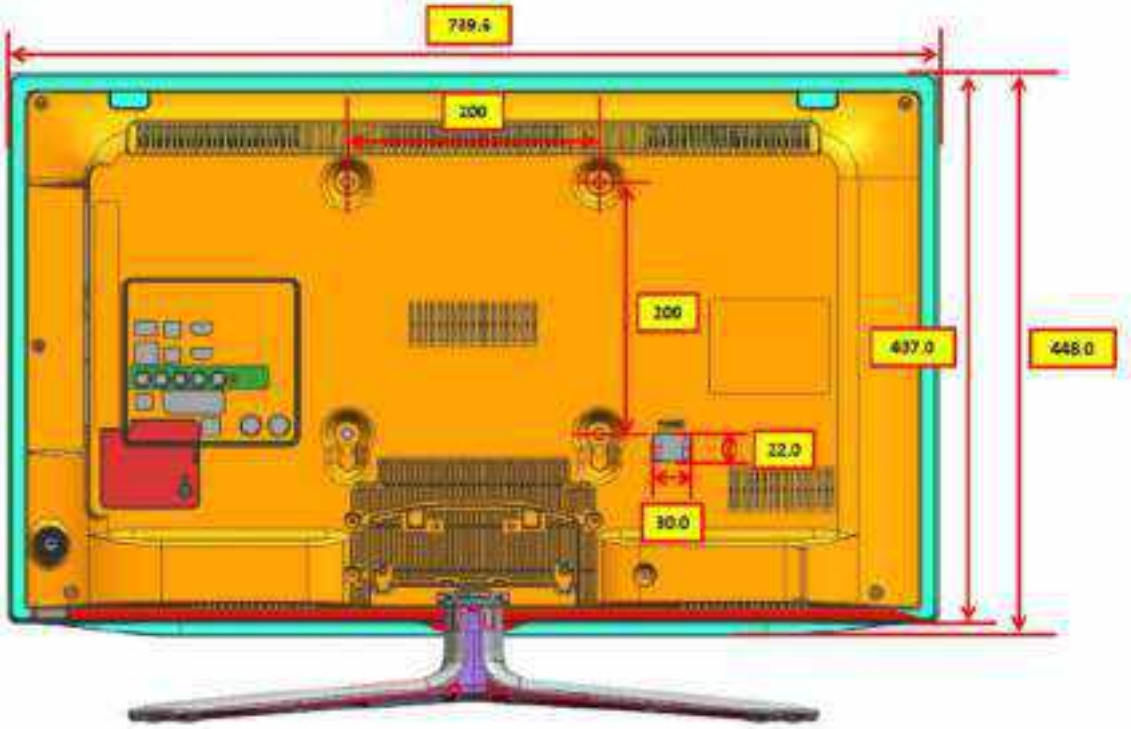
1. Store the sw program named "T-MST10PDEUC" in USB memory stick.

2. Click the "MENU" key in Remote Controller.
3. Select "Support - Software Upgrade - By USB" menu.

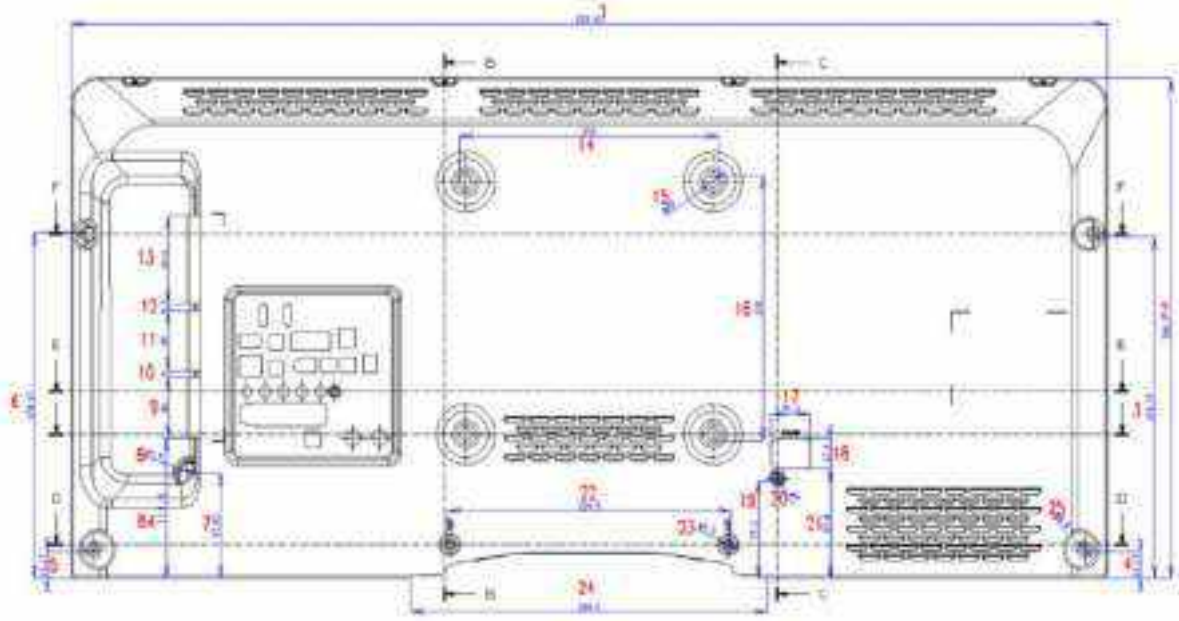
4. Click the "ENTER" key.
   - Wait for upgrade complete.
   - Check the Software Version.

4.7. Cover-Middle Rear Dimension

■ UE32ES61***



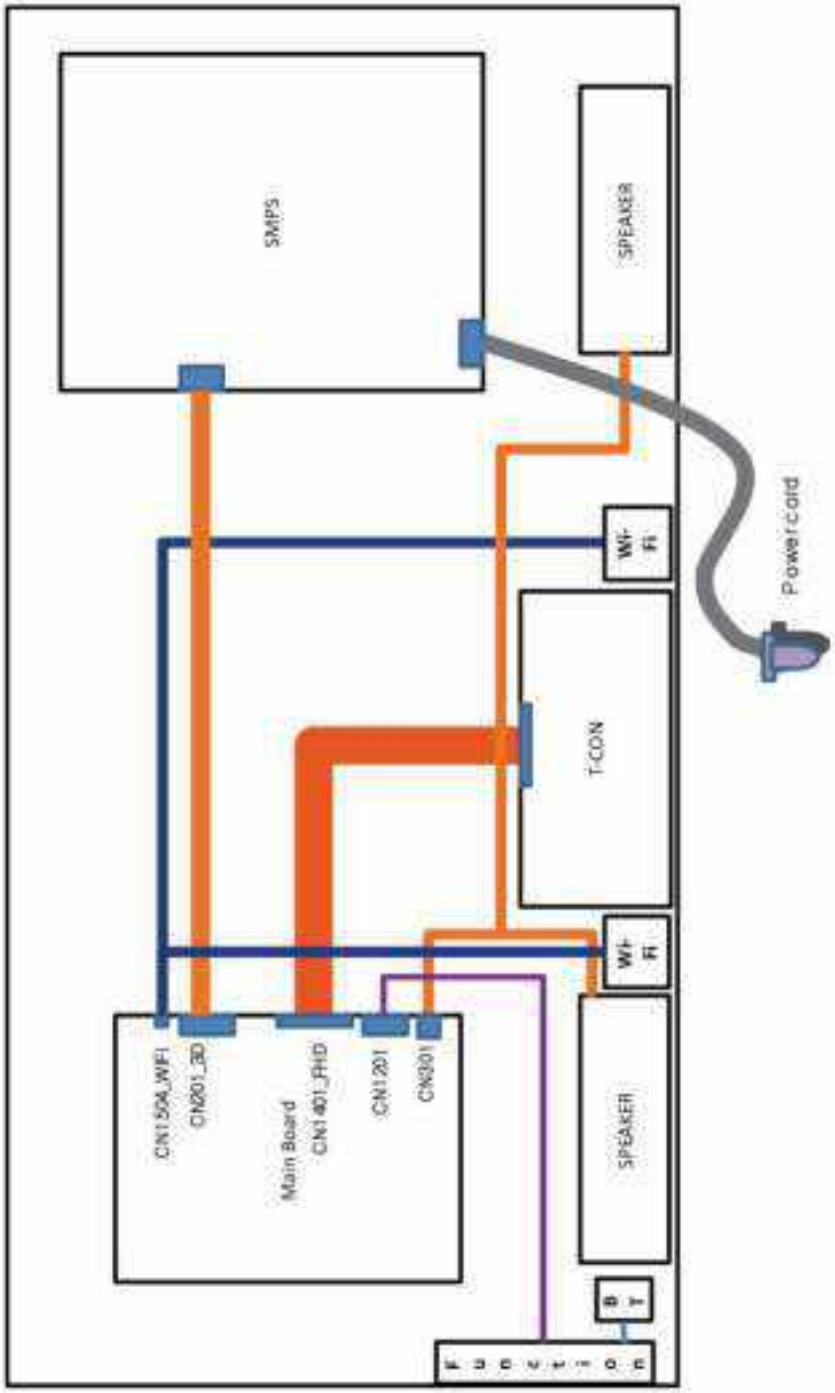
■ UE40ES61***



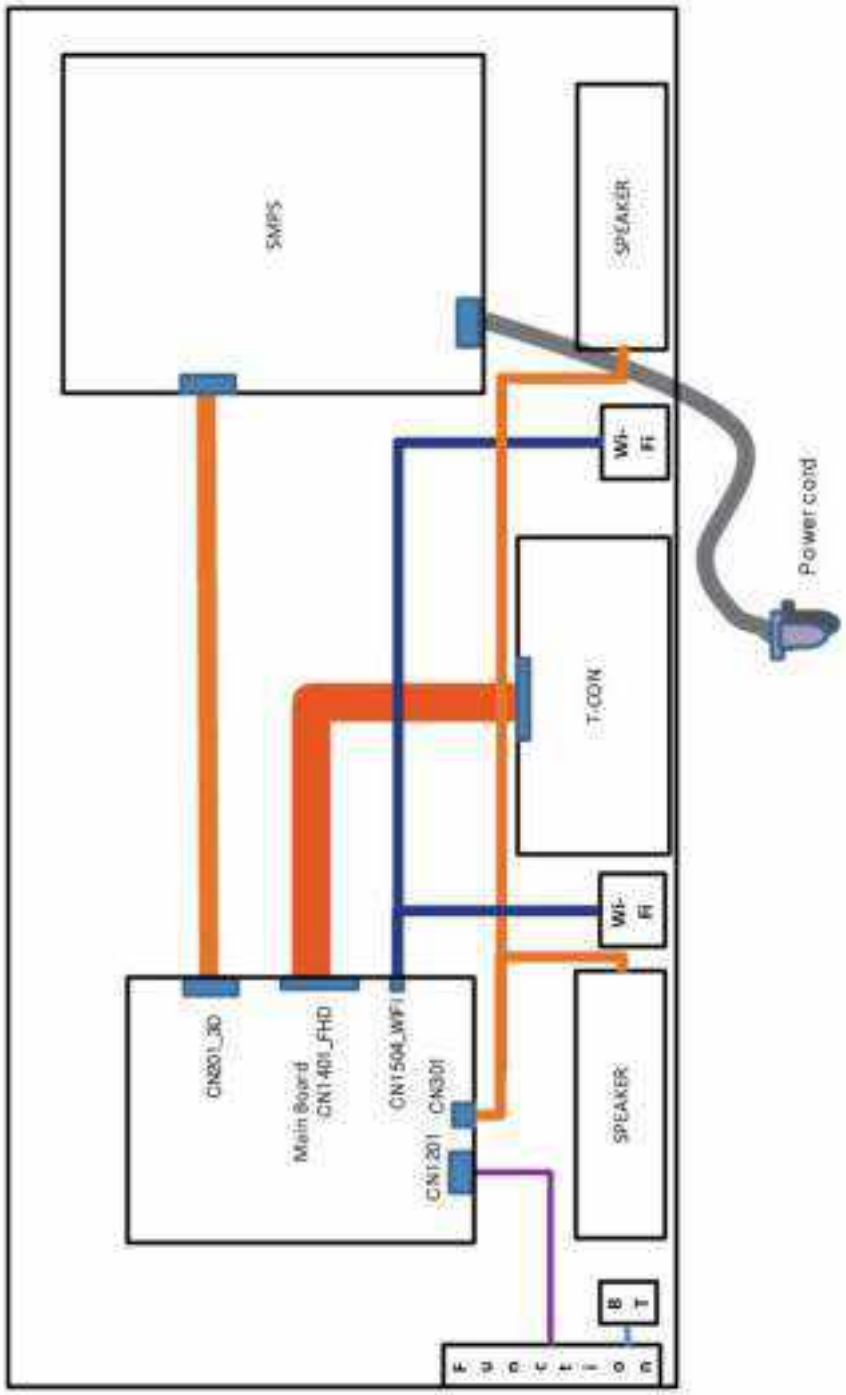
5. Wiring Diagram

5.1. Wiring Diagram

■ More than 6500 model



■ Less than 6300 model



5.2. Connector

CN1401_FHD (to Panel)			
1	NC	27	EVEN_TX0-
2	GND	28	GND
3	ECHO_FS_SDA	29	ODD_TX4+
4	FRC_PWM1	30	ODD_TX4-
5	ECHO_FS_SCL	31	ODD_TX3+
6	FRC_PWM3	32	ODD_TX3-
7	FRC_PWM2	33	GND
8	TCON_SDA	34	ODD_TXCLK+
9	PANEL_I2C_EN	35	ODD_TXCLK-
10	BT_SYNC	36	GND
11	UPDATE_CHK	37	ODD_TX2+
12	TCON_SCL	38	ODD_TX2-
13	GND	39	ODD_TX1+
14	EVEN_TX4+	40	ODD_TX1-
15	EVEN_TX4-	41	ODD_TX0+
16	EVEN_TX3+	42	ODD_TX0-
17	EVEN_TX3-	43	GND
18	GND	44	GND
19	EVEN_TXCLK-	45	GND
20	EVEN_TXCLK+	46	FRC_PWM4
21	GND	47	PANEL_13V_PW
22	EVEN_TX2+	48	PANEL_13V_PW
23	EVEN_TX2-	49	PANEL_13V_PW
24	EVEN_TX1+	50	PANEL_13V_PW
25	EVEN_TX1-	51	PANEL_13V_PW
26	EVEN_TX0+		

CN501(to HDMI1)			
1	HDMI1_RX2+	11	GND
2	GND	12	HDMI1_RXCLK-
3	HDMI1_RX2-	13	CEC
4	HDMI1_RX1+	14	NC
5	GND	15	HDMI1_SCL_DDC
6	HDMI1_RX1-	16	HDMI1_SDA_DDC
7	HDMI1_RX0+	17	GND
8	GND	18	HDMI1_5V
9	HDMI1_RX0-	19	HDMI1_HPD
10	HDMI1_RXCLK+		

CN502(to HDMI2)			
1	HDMI2_RX2+	11	GND
2	GND	12	HDMI2_RXCLK-
3	HDMI2_RX2-	13	CEC
4	HDMI2_RX1+	14	NC
5	GND	15	HDMI2_SCL_DDC
6	HDMI2_RX1-	16	HDMI2_SDA_DDC
7	HDMI2_RX0+	17	GND
8	GND	18	HDMI2_5V
9	HDMI2_RX0-	19	HDMI2_HPD
10	HDMI2_RXCLK+		

CN503(to HDMI3)			
1	HDMI3_RX2+	11	GND
2	GND	12	HDMI3_RXCLK-
3	HDMI3_RX2-	13	CEC
4	HDMI3_RX1+	14	NC
5	GND	15	HDMI3_SCL_DDC
6	HDMI3_RX1-	16	HDMI3_SDA_DDC
7	HDMI3_RX0+	17	GND
8	GND	18	HDMI1_5V
9	HDMI3_RX0-	19	HDMI1_HPD
10	HDMI3_RXCLK+		

CN402(to PC Sound)			
1	GND	4	NC
2	PC_SL_IN	5	NC
3	PC_SL_IN	6	NC

CN302(to Speaker)			
1	R+	3	L+
2	R-	4	L-

OP301(to Optical Jack)			
1	SPDIF_OUT	3	GND
2	B5V_DC_PW		

CN1501(USB1)			
1	B5V_USB1_PW	3	USB1_DP
2	USB1_DM	4	GND

CN1502(USB2)			
1	B5V_USB2_PW	3	USB2_DP
2	USB2_DM	4	GND

CN1503(USB3)			
1	B5V_USB3_PW	3	USB3_DP
2	USB3_DM	4	GND

CN301(to Headpune&LR OUT)			
1	GND	4	IDENT_HP
2	HP_LINE_SL_OUT	5	GND
3	HP_LINE_SR_OUT	6	HP_LINE_SL_OUT

CN1201(to Function/IR)			
1	IR	10	USB_BT_DM
2	FRAME_SYNC_IN	11	KEY_INPUT1
3	GND	12	A5.3V
4	BT_SYNC	13	KEY_INPUT2
5	A3.3V	14	BT_WAKE
6	GND	15	LED_STB
7	MSCL	16	POWER_DET
8	USB_BT_DP	17	NC
9	MSDA	18	NC

CN502(to Component & AV)			
1	GND	8	COMP2_PR
2	COMP2_AV2_SR_IN	9	COMP2_PR
3	COMP2_AV2_SL_IN	10	GND
4	GND	11	COMP2_PB
5	COMP2_AV2_SL_IN	12	INDENT_COMP2
6	COMP2_AV2_SR_IN	13	GND
7	GND	14	COMP2_Y_CVBS

CN201(to Power board)			
1	GND	13	NC
2	GND	14	SC_G
3	GND	15	GND
4	GND	16	NC
5	SC_CVBS_IN	17	IDENT_SC
6	GND	18	SC_B
7	SC_CVBS_OUT	19	GND
8	GND	20	SC_SL_IN
9	SC_FB	21	SC_SR_IN
10	GND	22	GND
11	SC_R	23	SC_SL_OUT
12	GND	24	SC_SR_OUT

CN201(to Power board)			
1	B5.3V_PW	11	B13V_PW
2	SW_POWER_OUT	12	B13V_PW
3	B5.3V_PW	13	B13V_PW
4	A5.3V_PW	14	FRC_PWM1
5	GND	15	GND
6	GND	16	FRC_PWM2
7	B12VS_PW	17	OVD_ON_OFF
8	GND	18	FRC_PWM3
9	GND	19	OVD_LEVEL
10	SW_INVERTER	20	FRC_PWM4

5.3. Connector Functions

Connector	Function
CN201_3D ↔ IP CNM803	Supply main power and dimming signal from IP Board to Main Board.
CN1401_FHD ↔ T-CON CNF1	The LVDS signal transfered from Main Board to Panel.

5.4. Cables

■ Less than 6300 model

Use	Main-SMPS	Main-Tcon	Function-Main	Wi-Fi-Main
Code No.	32" : BN39-01475A 37" : BN39-01475D 40" : BN39-01475B 46" : BN39-01475C 55" : BN39-01475H 60" : BN39-01475G	32" : BN96-22239R 37" : BN96-22239T 40" : BN96-17116N 46" : BN96-17116P 55" : BN96-17116T 60" : BN96-17116T	32" : BN39-01628D 37" : BN39-01628E 40" : BN39-01628E 46" : BN39-01628F 55" : BN39-01628F 60" : BN39-01628F	32" : BN39-01646E 37" : BN39-01646E 40" : BN39-01646E 46" : BN39-01646C 55" : BN39-01646H 60" : BN39-01646H
Image				

■ More than 6500 model

Use	Main-SMPS	Main-Tcon	Function-Main	Wi-Fi-Main
Code No.	32" : BN39-01475A 37" : BN39-01475D 40" : BN39-01474C 46" : BN39-01474B 55" : BN39-01474A	32" : BN96-22239R 37" : BN96-22239T 40" : BN96-17116N 46" : BN96-17116P 55" : BN96-17116T	32" : BN39-01628H 37" : BN39-01628C 40" : BN39-01628J 46" : BN39-01628B 55" : BN39-01628A	32" : BN39-01646A 37" : BN39-01646J 40" : BN39-01646D 46" : BN39-01646B 55" : BN39-01646A
Image				

NOTE

The part code for some cables may differ depending on your region.

5.5. The types of module

Use	Wi-Fi module	Bluetooth module	Function module
Code No.	BN59-01148A	BN96-21431C	BN96-22457* (Black) BN96-22940* (White)
Standard	IEEE802.11abgn	-	-
Image			

NOTE

The part code for some module may differ depending on your region.

GSPN (GLOBAL SERVICE PARTNER NETWORK)

Area	Web Site
Europe, MENA, CIS, Africa	https://gspn1.samsungcsportal.com
E.Asia, W.Asia, China, Japan	https://gspn2.samsungcsportal.com
N.America, S.America	https://gspn3.samsungcsportal.com

Printed in Korea
Code No.: