



LED TV

Chassis : UWK61

Model : UN40K5300AG
UN49K5300AG

SERVICE Manual

LED TV



UN**K5300AG

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

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1-1. Exploded ViewANNEX-1

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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



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

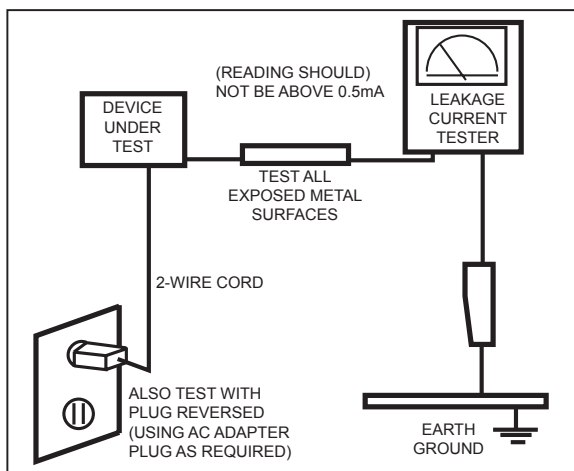
1-1-2. Servicing the LED TV

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 resistor/capacitor networks, mechanical insulators, etc.
3. Leakage Current Hot Check:




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 the blades 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

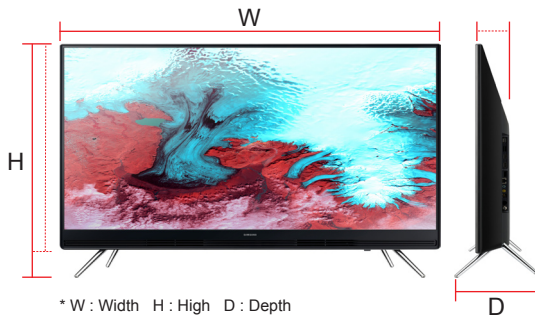

1. For safety reasons, more than a people are required for carrying the product.
2. Keep the power cord away from any heat emitting devices, as a melted covering may cause fire or electric shock.
3. Do not place the product in areas with poor ventilation such as a bookshelf or closet. The increased internal 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.
8. If an equipment is provided with a replaceable battery, and if replacement by an incorrect type could result in an explosion (for example, with some lithium batteries), the following applies:

**CAUTION**

- Risk of explosion if battery is replaced by an incorrect type dispose of used batteries according to the instructions.
- Do not dispose of batteries in a fire.
- Do not short circuit, disassemble or overheat the batteries.
- Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.
- Do not be exposed to excessive heat such as sunshine, fire or the like.

2. Product Specifications

2-1. Product information

| Model | UN**K5300AG | | |
|---------------------------|--|---------------|---------------------------|
| Front View |  <p>* W : Width H : High D : Depth</p> | | |
| Detail View |  | | |
| Color | Front : INDIGO BLACK, Stand : SILVER, Middle : INDIGO BLACK | | |
| Dimensions (W x H x D) | 40" | With Stand | 901.1 x 621.5 x 191.4 mm |
| | | Without Stand | 901.1 x 557.1 x 78.0 mm |
| | 49" | With Stand | 1096.8 x 742.8 x 230.2 mm |
| | | Without Stand | 1096.8 x 676.2 x 88.0 mm |
| Weight | 40" | With Stand | 8.2 kg |
| | | Without Stand | 8.1 kg |
| | 49" | With Stand | 12.9 kg |
| | | Without Stand | 12.8 kg |
| Panel Type | All | | Slim LED |

2-2. Product specification

2-2-1. Detailed Specifications


NOTE

Design and specifications are subject to change without prior notice.

| Item | | UN40K5300AGXPR |
|---------------------|---------------------------------|---------------------|
| General Information | Product | LED |
| | Series | 5 |
| | Country | PARAGUAY |
| Display | Screen Size | 40" |
| | Resolution | 1,920 × 1,080 |
| | Quantum Dot Display | N/A |
| | Ultra Black | N/A |
| | Screen Curvature | N/A |
| | 10 bit Support | N/A |
| Video | Picture Engine | HyperReal |
| | Motion Rate | 60 |
| | PQI (Picture Quality Index) | 300 |
| | HDR (High Dynamic Range) | N/A |
| | Dynamic Contrast Ratio | Mega Contrast |
| | Micro Dimming | M/D Pro |
| | Precision Black (Local Dimming) | N/A |
| | Quantum Dot Color | N/A |
| | Active Crystal Color | N/A |
| | Wide Color Enhancer (Plus) | Yes |
| | PurColor | N/A |
| | Auto Depth Enhancer | N/A |
| | Contrast Enhancer | Yes |
| | Auto Motion Plus | N/A |
| | Film Mode | Yes |
| | Natural Mode Support | Yes |
| | Peak Illuminator | N/A |
| Audio | Dolby Digital Plus | Yes |
| | DTS Codec | Yes |
| | Sound Output (RMS) | 10W+10W |
| | Speaker Type | 2CH(Full Range SPK) |
| | Woofer | N/A |

| Item | | UN40K5300AGXPR |
|--------------------|-------------------------------------|----------------|
| Audio | Wallmount Sound Mode | Yes |
| | Multiroom Link | Yes |
| | TV SoundConnect | N/A |
| | BT Headset Support | N/A |
| Smart TV | Samsung SMART TV | Yes |
| | Apps | Yes |
| | Games | N/A |
| | Cloud Game | N/A |
| | Billing | Yes |
| | EXTRA | Yes |
| | TV Plus | N/A |
| | Automated Content Recognition (ACR) | N/A |
| | Skype™ on Samsung TV | N/A |
| | Web Browser | Yes |
| Smart Interaction | Voice Recognition | N/A |
| Convergence | TV to Mobile - Mirroring | Yes |
| | Mobile to TV - Mirroring, DLNA | Yes |
| | Family Square with S-Cloud | N/A |
| | Together Play | Yes |
| | Easy Setup | N/A |
| | Samsung SMART View | Yes |
| | App Casting | Yes |
| | Wireless TV On - Samsung WOL | Yes |
| | Wired TV On - Samsung WOL | N/A |
| | Bluetooth Low Energy | N/A |
| | Briefing On TV | N/A |
| | RVU | N/A |
| | WiDi | N/A |
| | WiFi Direct | Yes |
| IoT Service | TV as Hub Support | N/A |
| | TV as Things Support | N/A |
| | IoT Client Application | N/A |
| Tuner/Broadcasting | Digital Broadcasting | ISDB-T/DVB-T |
| | Analog Tuner | Yes (Trinorma) |
| Connectivity | HDMI | 2 |
| | USB | 1 |

2. Product specifications

| Item | | UN40K5300AGXPR |
|--------------------|---|-----------------------------------|
| Connectivity | Component In (Y/Pb/Pr) | 1 |
| | Composite In (AV) | 1 (Common Use for Component Y) |
| | Ethernet (LAN) | 1 |
| | Headphone | N/A |
| | Audio Out (Mini Jack) | 1 |
| | Digital Audio Out (Optical) | N/A |
| | RF In (Terrestrial / Cable input / Satellite input) | 1/1(Common Use for Terrestrial)/0 |
| | Ex-Link (RS-232C) | N/A |
| | CI Slot | N/A |
| | Scart | N/A |
| | MHL | N/A |
| | HDMI A / Return Ch. Support | Yes |
| | HDMI Quick Switch | N/A |
| | Wireless LAN Adapter Support | N/A |
| | Wireless LAN Built-in | Yes |
| | Anynet+ (HDMI-CEC) | Yes |
| Design | Design | Louvre |
| | Bezel Type | VNB |
| | Slim Type | Semi Edge Slim |
| | Front Color | Indigo Black |
| | Light Effect (Deco) | N/A |
| | Stand Type | Node |
| | Swivel (Left/Right) | N/A |
| Additional Feature | Samsung 3D | N/A |
| | Instant On | Yes |
| | Processor | Quad-Core |
| | SCSA Support | N/A |
| | Accessibility | Enlarge/ High contrast |
| | Digital Clean View | Yes |
| | One Connect (Jack) | N/A |
| | Auto Channel Search | Yes |
| | Auto Power Off | Yes |
| | BD Wise Plus | N/A |
| | Caption (Subtitle) | Yes |
| | Channel List USB-Clone | N/A |

| Item | | UN40K5300AGXPR |
|--------------------|-------------------------|-----------------|
| Additional Feature | Connect Share™ (HDD) | NA |
| | ConnectShare™ (USB 2.0) | Yes |
| | Embedded POP | Yes |
| | EPG | Yes |
| | Extended PVR | Yes |
| | Game Mode | Yes |
| | OSD Language | Local Languages |
| | BT HID Built-in | N/A |
| | USB HID Support | Yes |
| | Smart Evolution Support | N/A |
| | Teletext (TTX) | N/A |
| | Time Shift | Yes |
| | V-Chip | N/A |
| | MBR Support | N/A |
| | Ultra Clean View | Yes |
| Eco Feature | Energy Star | N/A |
| | Eco Sensor | Yes |
| | Energy Efficiency Class | N/A |

| Item | | UN49K5300AGXPR |
|---------------------|---------------------------------|----------------|
| General Information | Product | LED |
| | Series | 5 |
| | Country | PARAGUAY |
| Display | Screen Size | 49" |
| | Resolution | 1,920 × 1,080 |
| | Quantum Dot Display | N/A |
| | Ultra Black | N/A |
| | Screen Curvature | N/A |
| | 10 bit Support | N/A |
| Video | Picture Engine | HyperReal |
| | Motion Rate | 60 |
| | PQI (Picture Quality Index) | 300 |
| | HDR (High Dynamic Range) | N/A |
| | Dynamic Contrast Ratio | Mega Contrast |
| | Micro Dimming | M/D Pro |
| | Precision Black (Local Dimming) | N/A |
| | Quantum Dot Color | N/A |

2. Product specifications

| Item | | UN49K5300AGXPR |
|-------------------|-------------------------------------|---------------------|
| Video | Active Crystal Color | N/A |
| | Wide Color Enhancer (Plus) | Yes |
| | PurColor | N/A |
| | Auto Depth Enhancer | N/A |
| | Contrast Enhancer | Yes |
| | Auto Motion Plus | N/A |
| | Film Mode | Yes |
| | Natural Mode Support | Yes |
| | Peak Illuminator | N/A |
| Audio | Dolby Digital Plus | Yes |
| | DTS Codec | Yes |
| | Sound Output (RMS) | 10W+10W |
| | Speaker Type | 2CH(Full Range SPK) |
| | Woofer | N/A |
| | Wallmount Sound Mode | Yes |
| | Multiroom Link | Yes |
| | TV SoundConnect | N/A |
| | BT Headset Support | N/A |
| Smart TV | Samsung SMART TV | Yes |
| | Apps | Yes |
| | Games | N/A |
| | Cloud Game | NA |
| | Billing | N/A |
| | EXTRA | NA |
| | TV Plus | N/A |
| | Automated Content Recognition (ACR) | N/A |
| | Skype™ on Samsung TV | N/A |
| | Web Browser | Yes |
| Smart Interaction | Voice Recognition | N/A |
| Convergence | TV to Mobile - Mirroring | Yes |
| | Mobile to TV - Mirroring, DLNA | Yes |
| | Family Square with S-Cloud | N/A |
| | Together Play | Yes |
| | Easy Setup | N/A |
| | Samsung SMART View | Yes |
| | App Casting | Yes |

| Item | | UN49K5300AGXPR |
|--------------------|---|-----------------------------------|
| Convergence | Wireless TV On - Samsung WOL | Yes |
| | Wired TV On - Samsung WOL | N/A |
| | Bluetooth Low Energy | N/A |
| | Briefing On TV | N/A |
| | RVU | N/A |
| | WiDi | N/A |
| | WiFi Direct | Yes |
| IoT Service | TV as Hub Support | N/A |
| | TV as Things Support | N/A |
| | IoT Client Application | N/A |
| Tuner/Broadcasting | Digital Broadcasting | ISDB-T/DVB-T |
| | Analog Tuner | Yes (Trinorma) |
| Connectivity | HDMI | 2 |
| | USB | 1 |
| | Component In (Y/Pb/Pr) | 1 |
| | Composite In (AV) | 1 (Common Use for Component Y) |
| | Ethernet (LAN) | 1 |
| | Headphone | N/A |
| | Audio Out (Mini Jack) | 1 |
| | Digital Audio Out (Optical) | N/A |
| | RF In (Terrestrial / Cable input / Satellite input) | 1/1(Common Use for Terrestrial)/0 |
| | Ex-Link (RS-232C) | N/A |
| | CI Slot | N/A |
| | Scart | N/A |
| | MHL | N/A |
| | HDMI A / Return Ch. Support | Yes |
| | HDMI Quick Switch | N/A |
| | Wireless LAN Adapter Support | N/A |
| | Wireless LAN Built-in | Yes |
| | Anynet+ (HDMI-CEC) | Yes |
| Design | Design | Louvre |
| | Bezel Type | VNB |
| | Slim Type | Semi Edge Slim |
| | Front Color | Indigo Black |
| | Light Effect (Deco) | N/A |

2. Product specifications


| Item | | UN49K5300AGXPR |
|--------------------|-------------------------|------------------------|
| Design | Stand Type | Node |
| | Swivel (Left/Right) | N/A |
| Additional Feature | Samsung 3D | N/A |
| | Instant On | Yes |
| | Processor | Quad-Core |
| | SCSA Support | N/A |
| | Accessibility | Enlarge/ High contrast |
| | Digital Clean View | Yes |
| | One Connect (Jack) | N/A |
| | Auto Channel Search | Yes |
| | Auto Power Off | Yes |
| | BD Wise Plus | N/A |
| | Caption (Subtitle) | Yes |
| | Channel List USB-Clone | N/A |
| | Connect Share™ (HDD) | NA |
| | ConnectShare™ (USB 2.0) | Yes |
| | Embedded POP | Yes |
| | EPG | Yes |
| | Extended PVR | Yes |
| | Game Mode | Yes |
| | OSD Language | Local Languages |
| | BT HID Built-in | N/A |
| | USB HID Support | Yes |
| | Smart Evolution Support | N/A |
| | Teletext (TTX) | N/A |
| | Time Shift | Yes |
| | V-Chip | N/A |
| | MBR Support | N/A |
| | Ultra Clean View | Yes |
| Eco Feature | Energy Star | N/A |
| | Eco Sensor | Yes |
| | Energy Efficiency Class | N/A |

2-2-2. Specifications

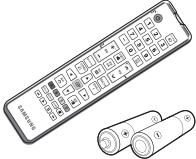


■ Specifications

| Model | UN**K5300AG | |
|------------------------------|--|-----------|
| Item | Description | |
| Screen Size (Diagonal) | 40 inches | 49 inches |
| LCD Panel | FHD 60Hz | |
| Display Colors | 16.7M color | |
| Display Resolution | 1920 x 1080 | |
| Input Signal | Analog 0.7 Vp-p \pm 5% positive at 75 Ω , internally terminated | |
| Input Sync Signal | H/V Separate, TTL, P. or N. | |
| Environmental Considerations | Operating Temperature: 50°F ~ 104°F (10°C ~ 40°C) Operating Humidity: 10% ~ 80%, non-condensing Storage Temperature: -4°F ~ 113°F (-20°C ~ 45°C) Storage Humidity: 5% ~ 95%, non-condensing | |
| AC Power Voltage & Frequency | AC 100~240V 50/60Hz | |
| Sound (Output) | 20W (10W X 2) | |

2-3. Accessories

 **NOTE**

- The items' colors and shapes may vary depending on the model.
- Cables not included in the package contents can be purchased separately.
- The part code for some accessories may differ depending on your region.

| Product | Description | Code. No | Remark |
|--|----------------------------|-------------------|--------|
|  | Remote Control & Batteries | BN59-01254A | - |
| | | 4301-000121 | |
|  | Power Cord | 3903-001081 | |
|  | Manual Users | 49" : BN68-07904G | |

3. Disassembly and Reassembly

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



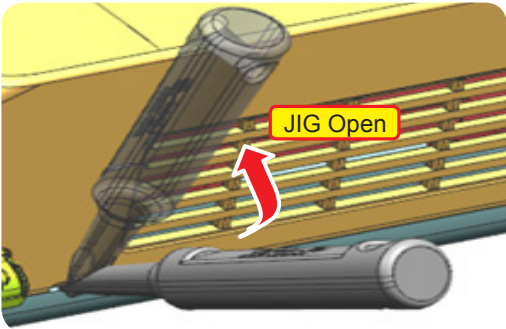
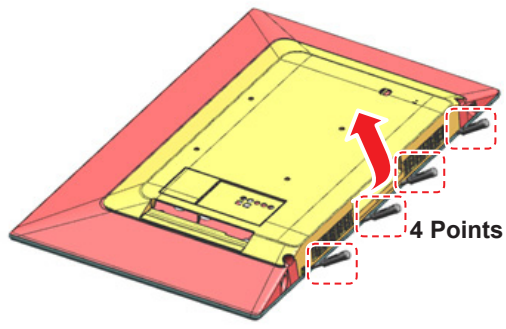
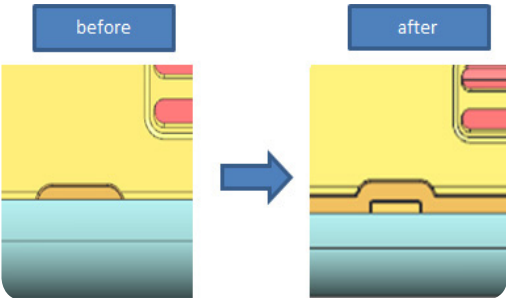
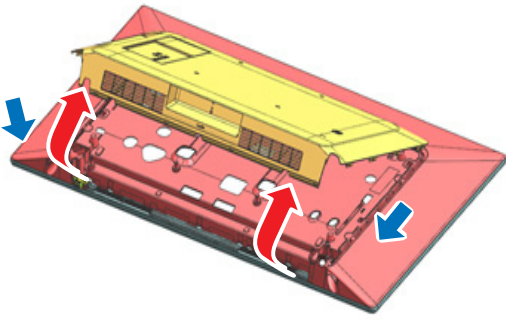
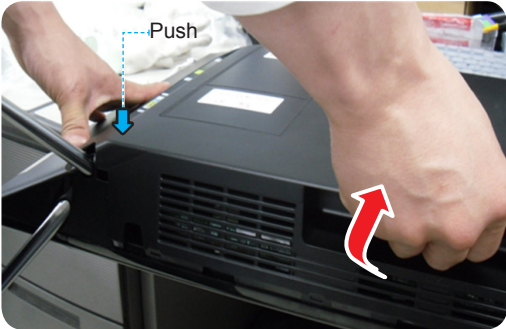
This LED TV contains electrostatically sensitive devices. Use caution when handling these components.




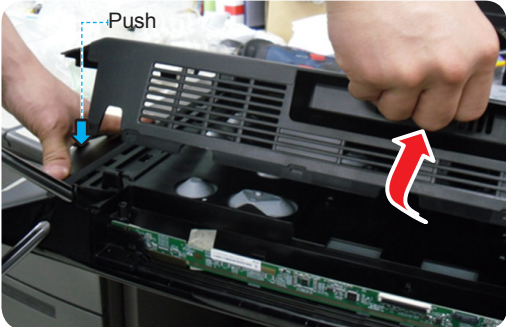

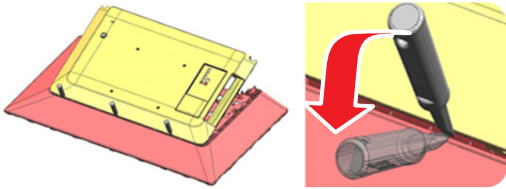
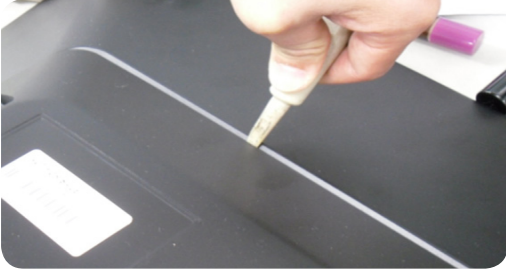
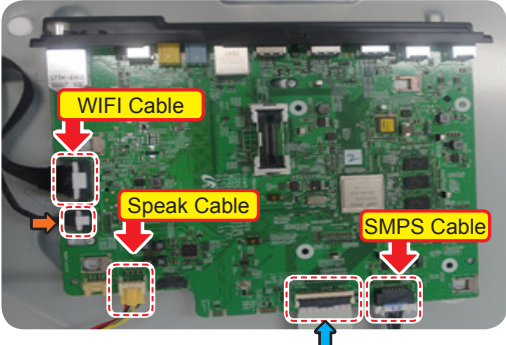
3-1. Disassembly and Reassembly



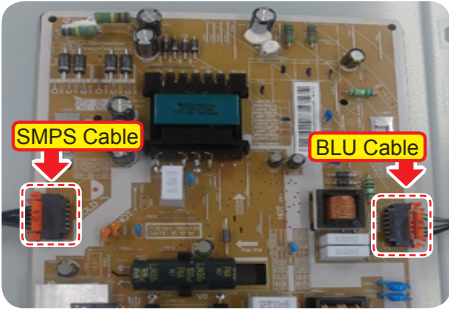
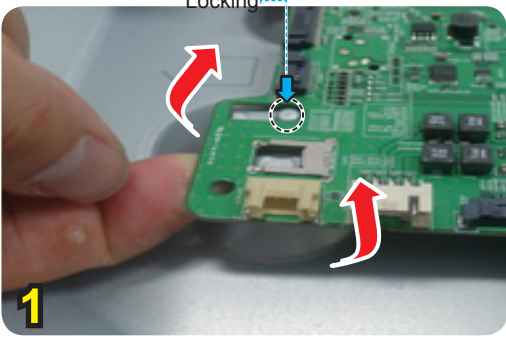

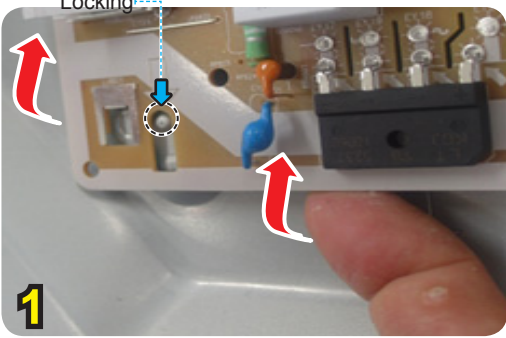
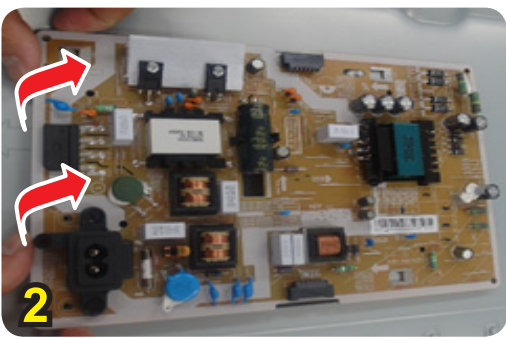
1. Disconnect the LED TV from the power source before disassembly.
2. Follow these directions carefully; never use metal instruments to pry apart the cabinet.
3. If there is no additional coment, it is same for all inches.

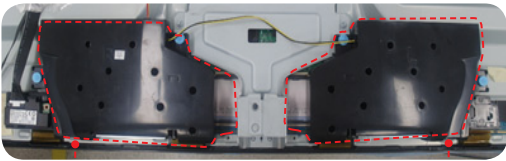
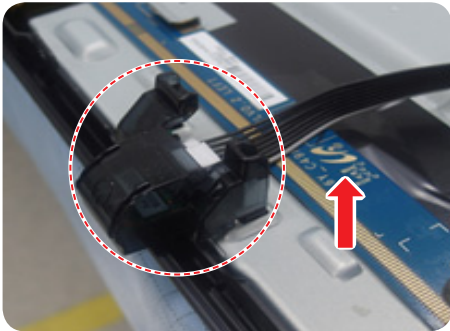
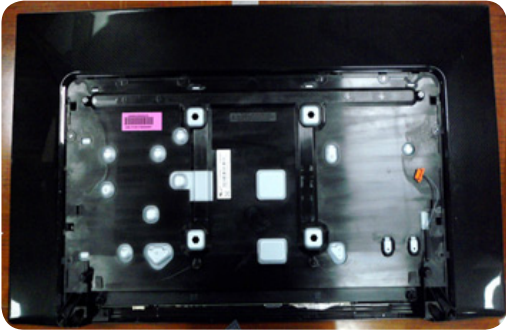
| Description | Picture Description | Note |
|--|--------------------------|------|
| 1 Place TV face down on cushioned table. | | |
| 2 Remove the 4ea Stand. | | |
| 3 Insert the Opening-Jig(BN81-12884A) at the indicated positions to release bottom of the Rear Cover. | | |
| NOTE | Opening-Jig is required. | |

| Description | Picture Description | Note |
|---|---|------|
| <div>4</div> <div>Lift up the Jig, disassemble the Rear Cover from chassis top.</div> <div>(Total 4 points, * 55" model 6 points).</div> | <div></div> <div></div> <div><div>before</div><div>after</div></div> | |
| <div>5</div> <div>Gently lift up the Rear Cover as shown in the picture.</div> <div>(When lift up the Rear Cover, one hand need to push the SET(Blue arrow)</div> | <div></div> <div></div> | |

| Description | Picture Description | Note |
|---|---|------|
| <div>NOTE</div> <p>If the Rear Cover not open well, insert the JIG to the top side and lift down.</p> <div><div>6</div><div>Remove the Function Cable, WIFI cable, Speaker Cable, SMPS Cable and LVDS Cable.</div><div><div> Function Cable</div><div> LVDS Cable</div></div></div> | <div><p>Push</p></div> <div></div> <div></div> <div></div> | |
| | <div></div> | |

3. Disassembly and Reassemble

| Description | Picture Description | Note |
|---|---|------|
| <p>7 Remove the SMPS Cable and BLU Cable.</p> |  <p>The image shows the main board with two cables highlighted by red dashed boxes and red arrows. The 'SMPS Cable' is on the left, and the 'BLU Cable' is on the right. Both labels are in yellow boxes with black text.</p> | |
| <p>8 Removing Main Board.</p> <ul style="list-style-type: none"> Gently lift up (Bottom Right corner) to release the lock. Use both hands to hold the board and slide UP to release the board. |  <p>Step 1: A hand is shown lifting the bottom right corner of the green main board. A red arrow indicates the upward movement. A blue dashed line points to a locking mechanism labeled 'Locking'.</p>  <p>Step 2: The main board is being slid upwards. Red arrows indicate the upward movement.</p> | |
| <p>9 Removing SMPS Board.</p> <ul style="list-style-type: none"> Gently lift up (Bottom Left corner) to release the lock. Use both hands to hold the board and slide UP to release. |  <p>Step 1: A hand is shown lifting the bottom left corner of the SMPS board. A red arrow indicates the upward movement. A blue dashed line points to a locking mechanism labeled 'Locking'.</p>  <p>Step 2: The SMPS board is being slid upwards. Red arrows indicate the upward movement.</p> | |

| Description | Picture Description | Note |
|-------------------------------------|---|------|
| 10 Remove the speaker and function. |  ASSY SPEAKER P (R/L) | |
| |  | |
| 11 Completed disassembly. |  | |



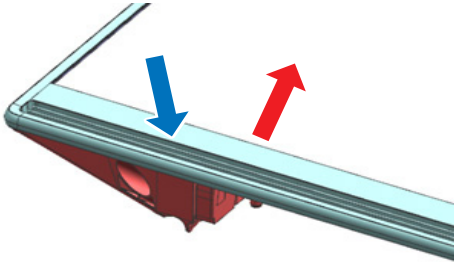
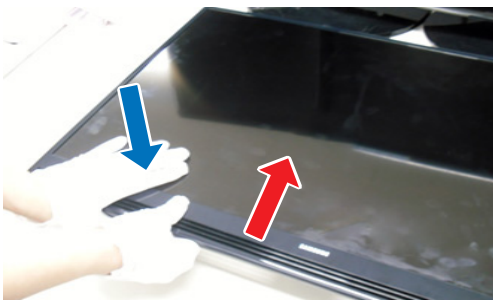
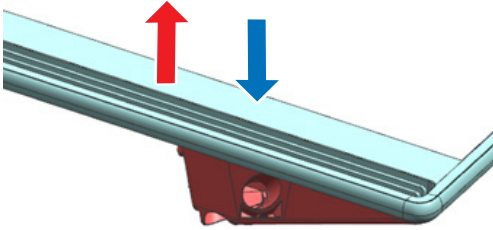



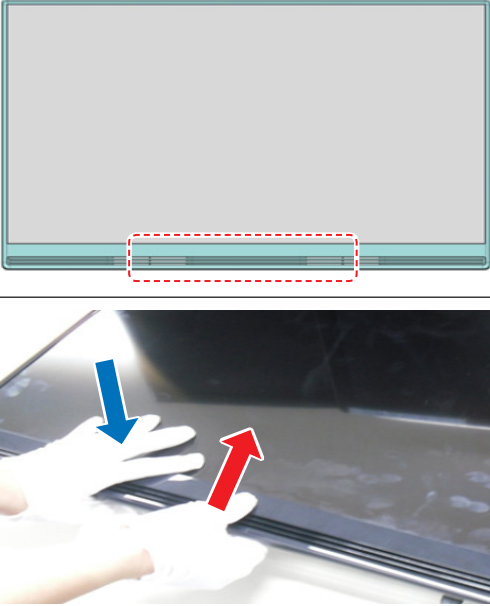
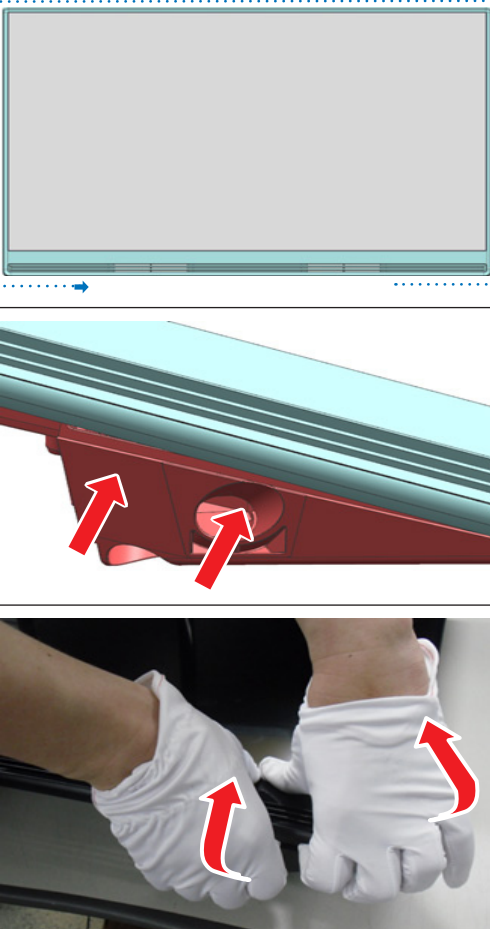
NOTE

Reassembly procedures are in the reverse order of disassembly procedures.


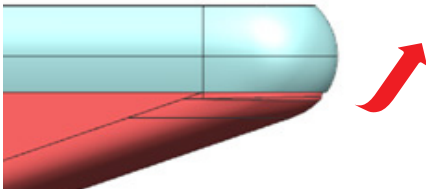
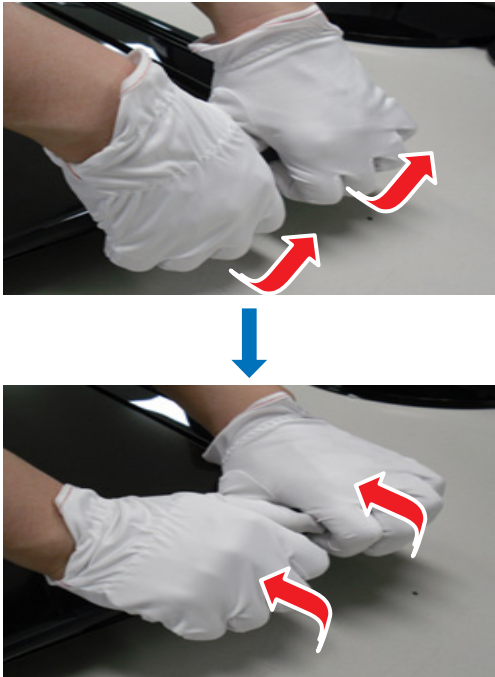
3-2. Disassembly (PTC)


■ How to disassembly

| Description | Picture Description | Reference |
|--|--|-----------|
| 1 Place Panel facing up on the table with cushion. |  | |
| |  | |
| 2 One hand push the chassis front, another hand lift up chassis front. (Disassemble chassis front hook from chassis rear) |  | |
| |  | |
| 3 Disassemble opposite side by same way. |  | |
| |  | |

| Description | Picture Description | Reference |
|---|--|-----------|
| 4 Disassemble center hooks of chassis front from chassis rear. (The way to disassemble is same as 2) |  <p>The diagram shows a chassis with a red dashed rectangle highlighting the center hooks at the bottom. The photo shows a person's hands in white gloves pulling the center hooks of the chassis front from the chassis rear. A blue arrow points down to the left hook, and a red arrow points up to the right hook.</p> | |
| 5 Use the finger, Disassemble side hooks of chassis front from chassis rear. (Disassemble direction can reverse) |  <p>The diagram shows a chassis with a blue dotted rectangle highlighting the side hooks at the bottom. A blue arrow points to the right. The photo shows a close-up of the side hooks of the chassis front from the chassis rear. Two red arrows point upwards to the hooks. The second photo shows a person's hands in white gloves pulling the side hooks of the chassis front from the chassis rear. Two red arrows point upwards to the hooks.</p> | |

3. Disassembly and Reassemble

| Description | Picture Description | Reference |
|--|--|-----------|
| <div>NOTE</div> <div>When the disassemble hook from chassis rear, it can disassemble easily as picture on the right.</div> | <div></div> <div></div> | |

**NOTE**

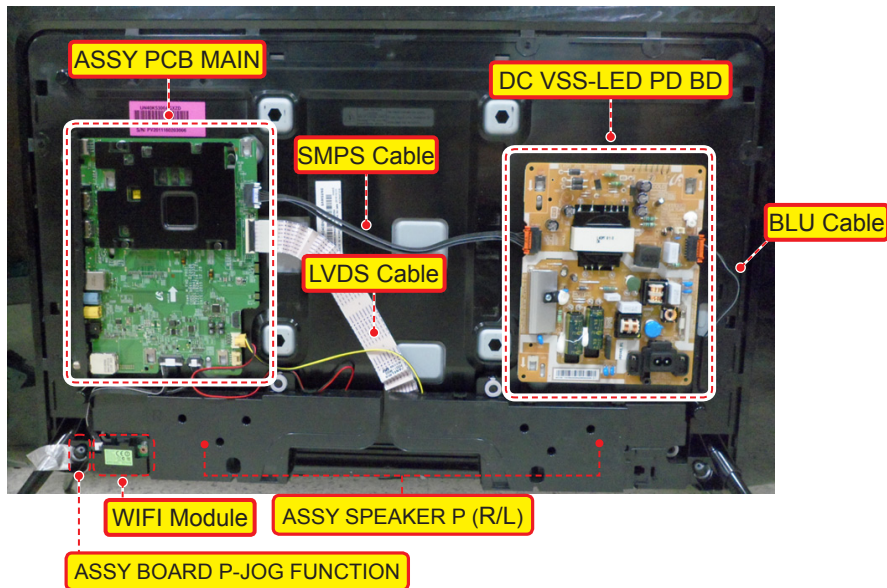
Reassembly procedures are in the reverse order of disassembly procedures.

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 ASSY PCB MAIN.



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

4-2. How to Check Fault Symptom

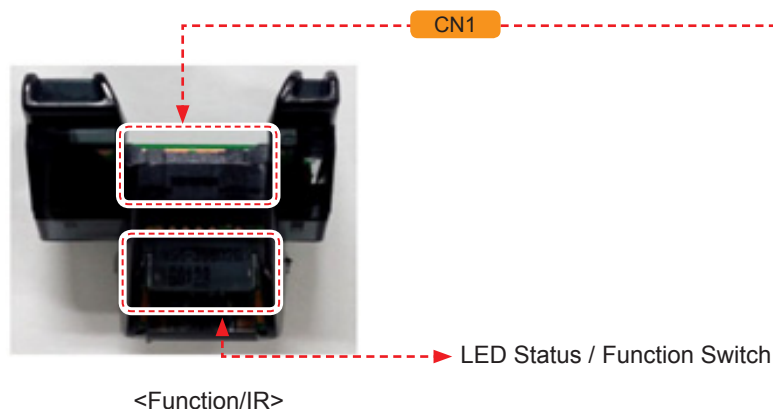
4-2-1. Power

■ TV POWER STANDBY

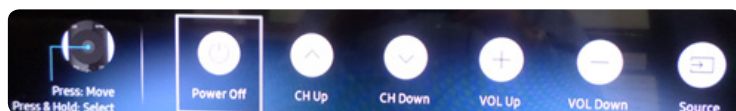
1. TV in Standby
 - √ **Standby LED Indicator**
2. If Not Lit:
 - √ AC 120Vac Line
3. If missing:
 - √ 120Vac Source and Power Cord
4. If OK:
 - √ Resistance on SMPS **Fuse** after first removing AC power cord.
5. If fuses are open replace SMPS.
6. If fuses are OK:
 - √ **Standby: A13V** (Always On) to Main Board. Should all be approx. 9 **VDC**
7. If any missing remove the SMPS connector to Main Board .
 - √ Standby A13V again for 9VDC.
 - If OK replace **Main Board**.
 - If still missing replace **SMPS**.

■ FUNCTION/IR Control

| CN1 (FUNCTION/IR) | | | |
|-------------------|-------------------------------------|---|-------------------------------------|
| 1 | IR 3.3Vdc to 2.5Vdc (Effective DC) | 2 | GND |
| 3 | A3.3V_PW | 4 | AMP_SCL_I2C 3.3Vdc (effective DC) |
| 5 | AMP_SDA_I2C 3.3 Vdc (effective DC) | 6 | KEY_INPUT1 1.8dc to 0V with command |
| 7 | KEY_INPUT2 0V (no operation change) | 8 | LED_STB_OUT 1.7Vdc STBY |



1. TV in Standby
√ **LED Status**
2. If **LED** is **OFF**
√ LED 1.7Vdc (pin 8) and VCC for 3.3Vdc (pin 3)
• If missing suspect **Function Assy/Cable Assy/Main Assy**.
3. If **LED** is **ON**
√ Switch Operation activates on screen display.

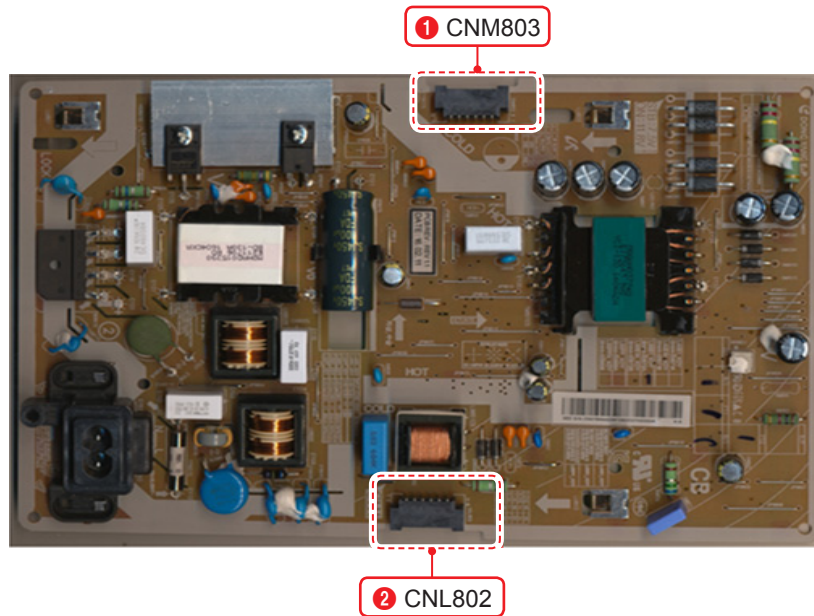


<On Screen Selections with Function Control>

- If missing:
√ **Key _Input1 Pin 6** change to 0V with a command.
 - If wrong voltage or no change:
√ Switch for stuck or miss-operation.
4. Check **IR** operation with Standard Remote command changes. (3.3V to 2.5V effective DC)
 5. **SDA, SCL** for effective 3.3Vdc (after power on)
– If missing suspect **Function Assy/Cable Assy/Main Assy**.

■ SMPS POWER

SMPS_Front



Detail



Testing

1. **A13V** Standby to Main Board : Approx 9Vdc.
2. **Power_On/Off** : 3.3Vdc Power ON/OFF.
3. **A13V** : to steady 12.7 Vdc.
4. **OD/UD : 3.3Vdc** Over & Under Drive.
5. **BLU_PWM : .9V~3.3Vdc** also labeled "**BLU On/Off**" Backlight On/Off & Backlight (PWM signal) Level Control.

■ BACKLIGHTS



1. Activate Backlights Test:

- Disconnect Lead Cable from Main Board to Power Supply. (CNM803)
- ✓ TV Screen for active backlight LEDs.

2. If NO BACKLIGHTS

- ✓ Minus (Control) & Plus pins (Supply) on the Panel Connector voltages to the Panel.
- If no pin voltages replace SMPS.

3. If BACKLIGHTS ON BUT PANEL SECTION(S) OFF

- ✓ The Supply Drive + pins. All should measure same.
- If a + pin measures higher voltage, a string(s) of LEDs are likely open.
- Remove Panel connector and verify same open backlight voltage condition. **Replace Panel.**

4. If a + pin measures low voltage disconnect connector to panel

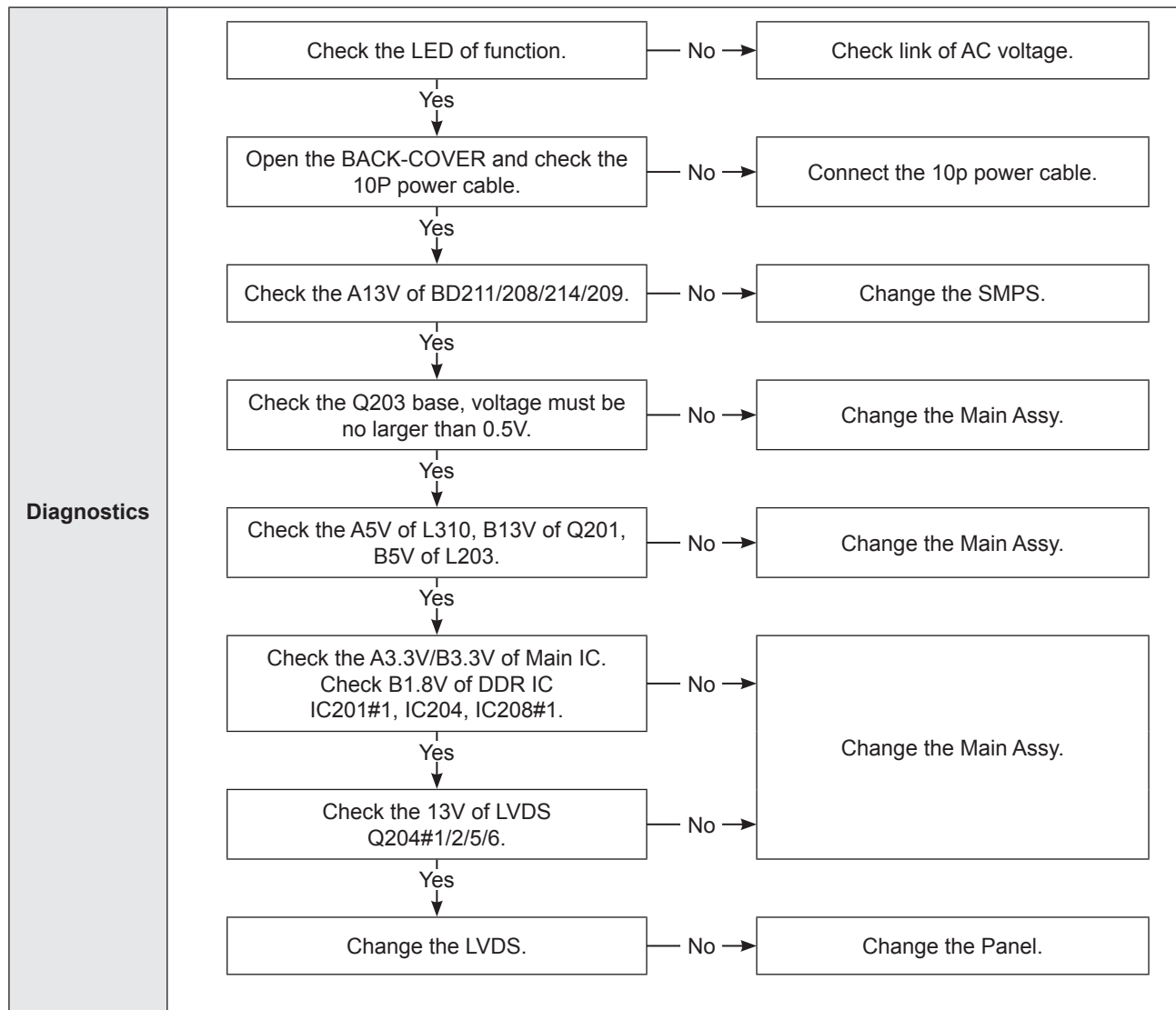
- ✓ The Low Plus Pin Voltage again.
- If it stays low the **SMPS** is defective, if it goes high, defective **Panel**.

For BACKLIGHT DIMMING PROBLEMS:

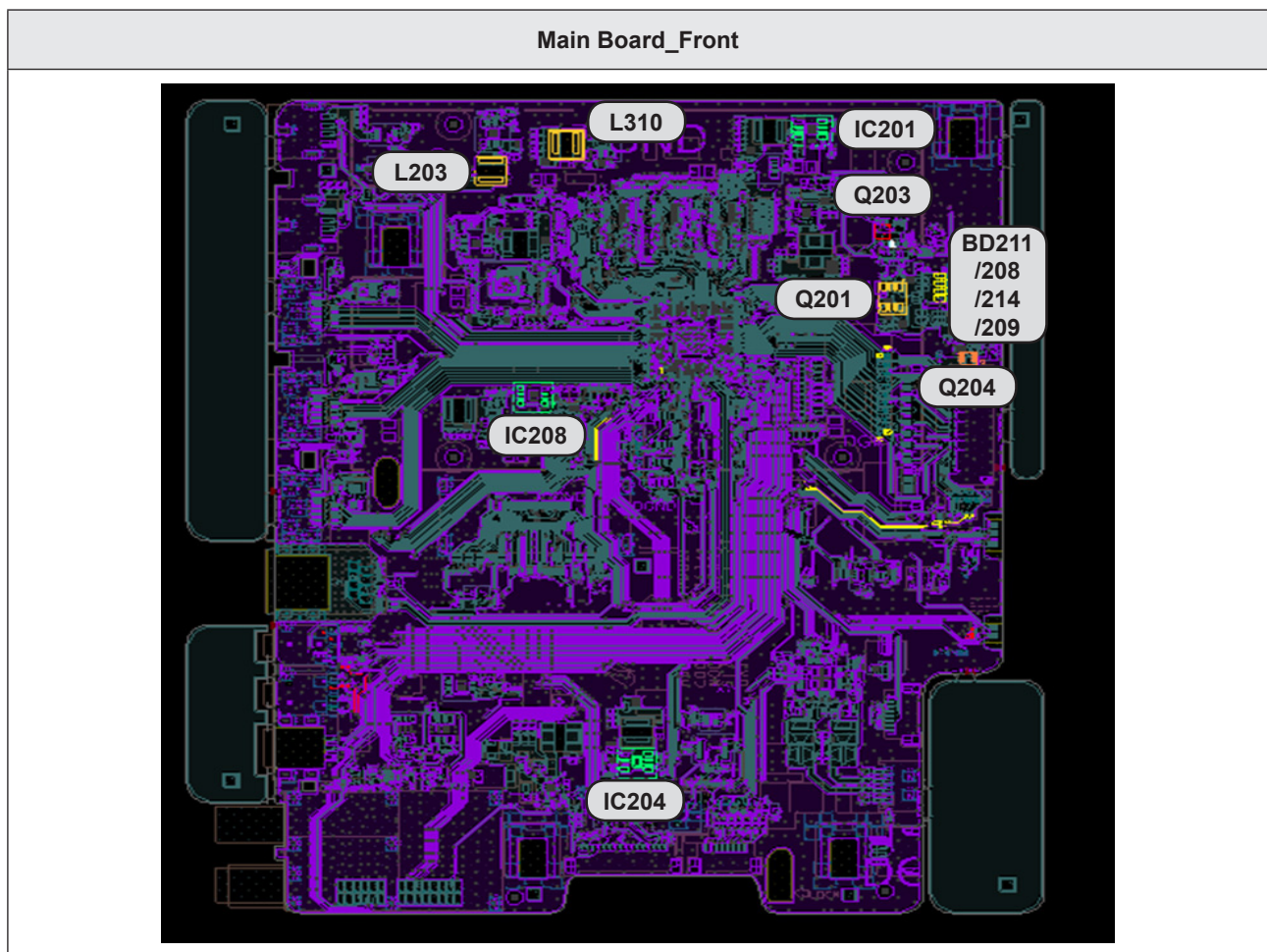
- Go to **Menu > Picture > Backlight** and vary level (0 – 20)
- If no backlight changes observed:
 - ✓ Panel Connector pin voltages and BLU_PWM voltages (CNL802) while changing backlight level.
- If Panel voltages don't change, and BLU_PWM changes, replace **SMPS**.
- If BLU_PWM doesn't change replace **Main/T-CON Board**.

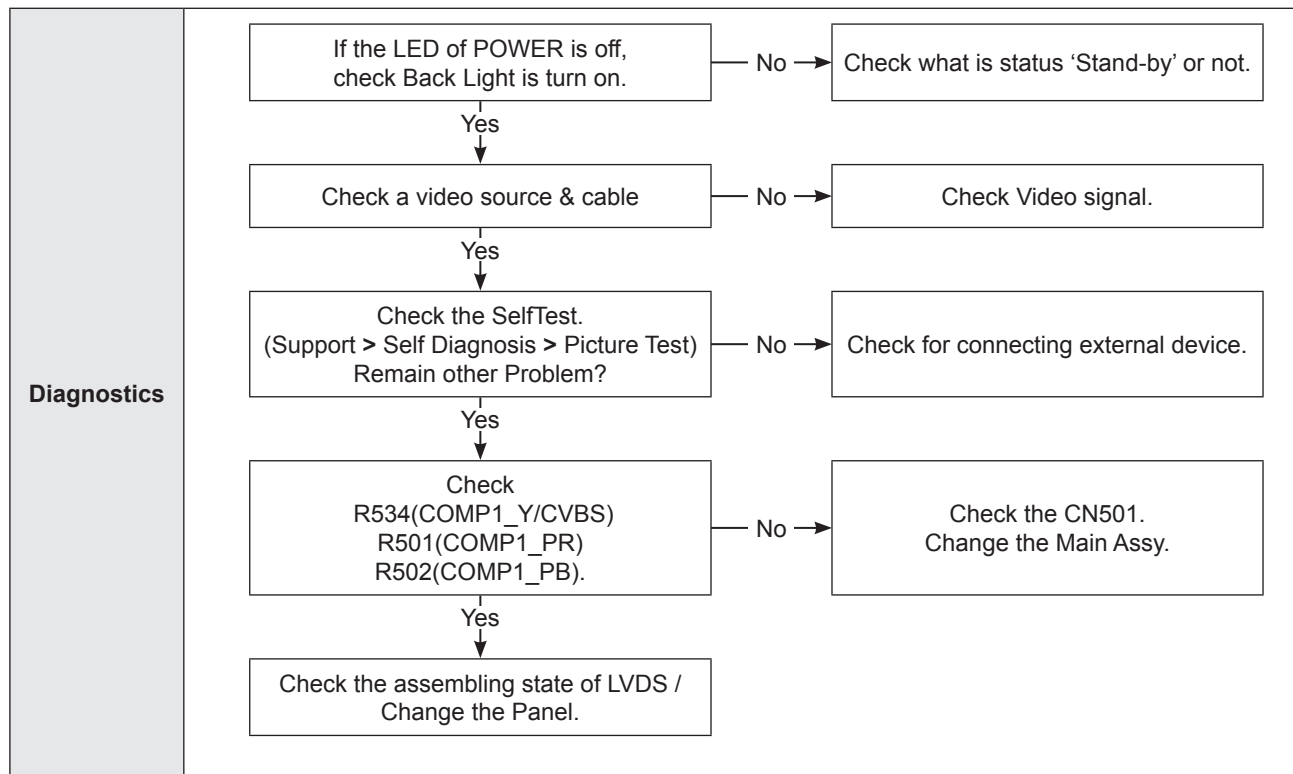
4-2-2. Main

■ No power & No picture



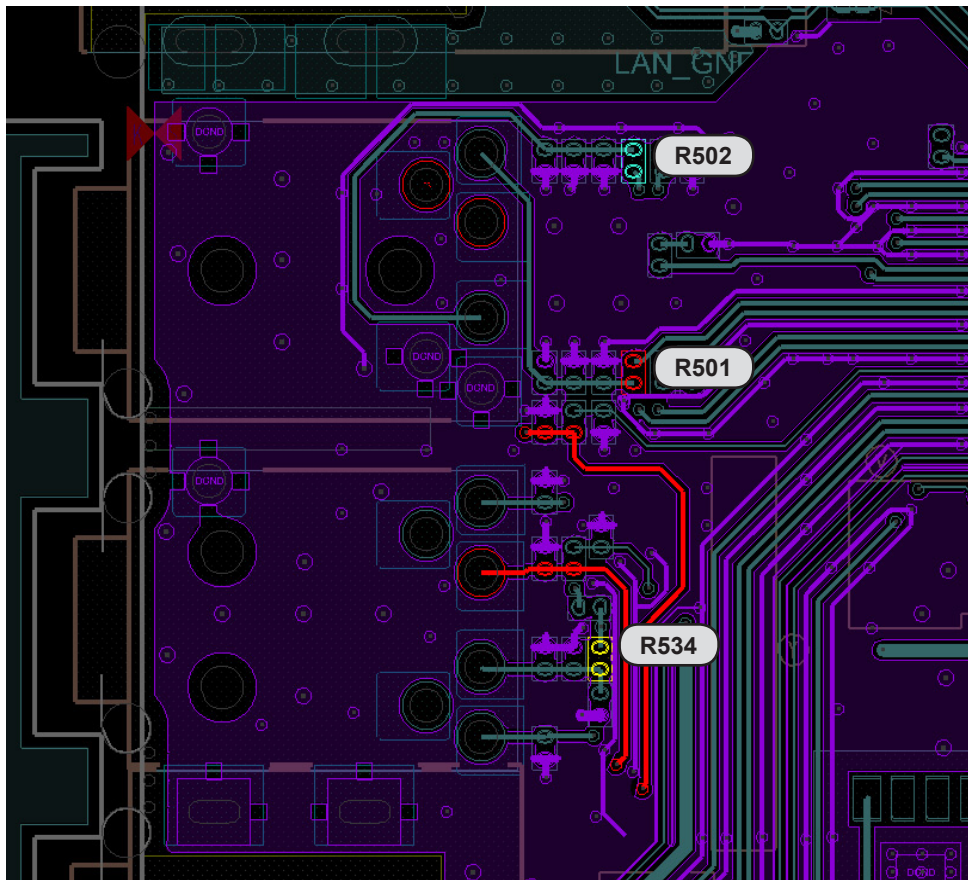
■ Location of Parts



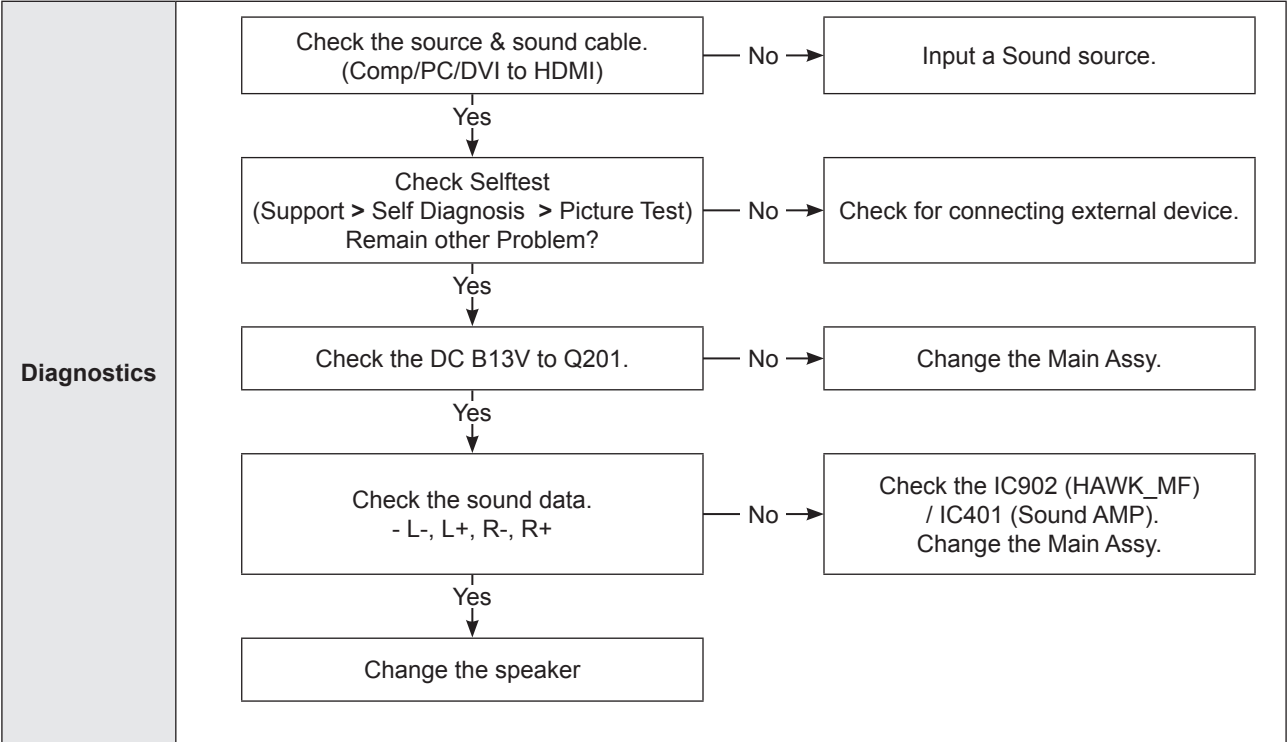
■ No picture (COMPONENT)

■ Location of Parts

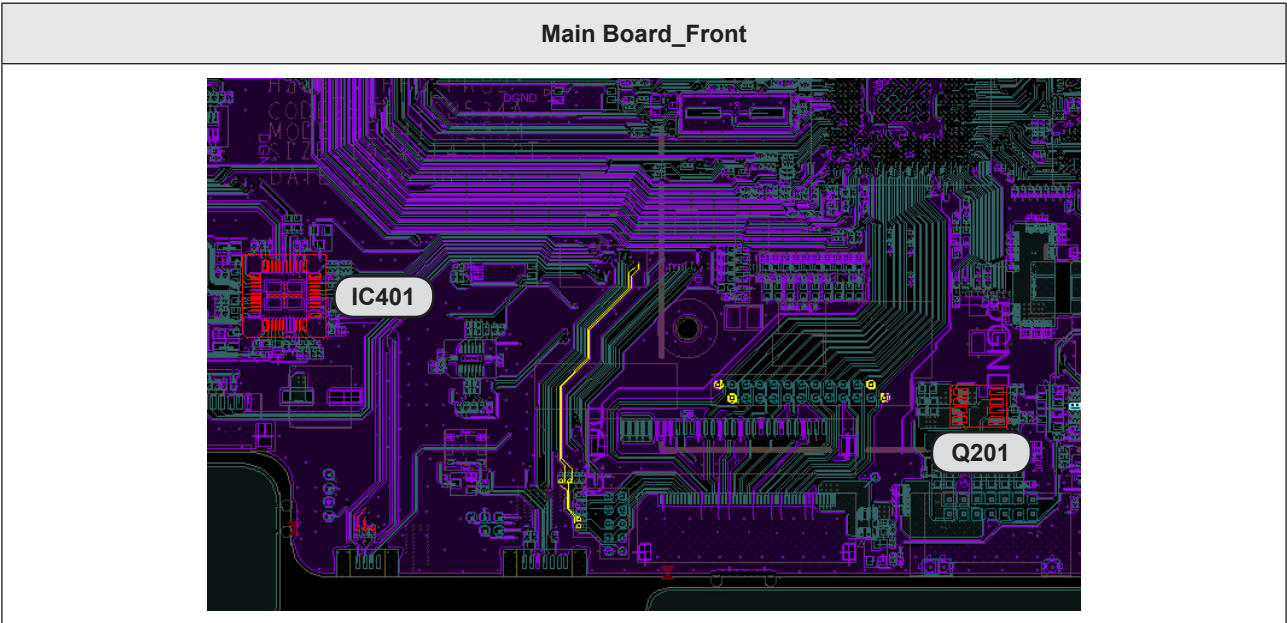
Main Board_Front



No sound

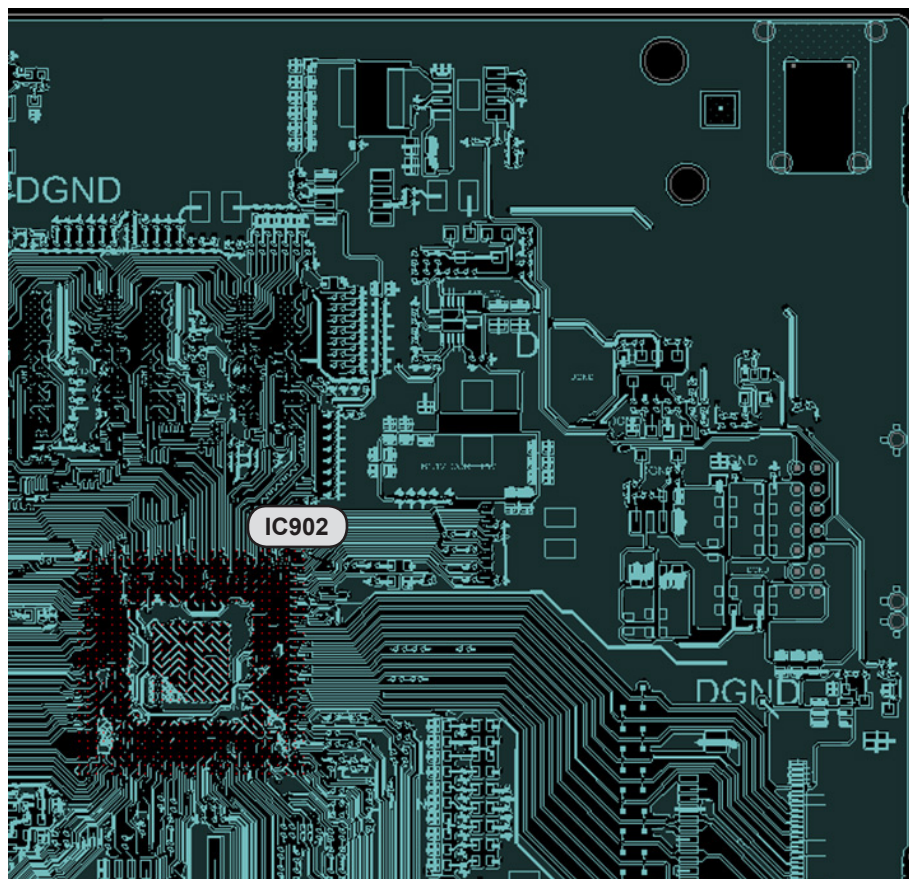


Location of Parts



■ Location of Parts

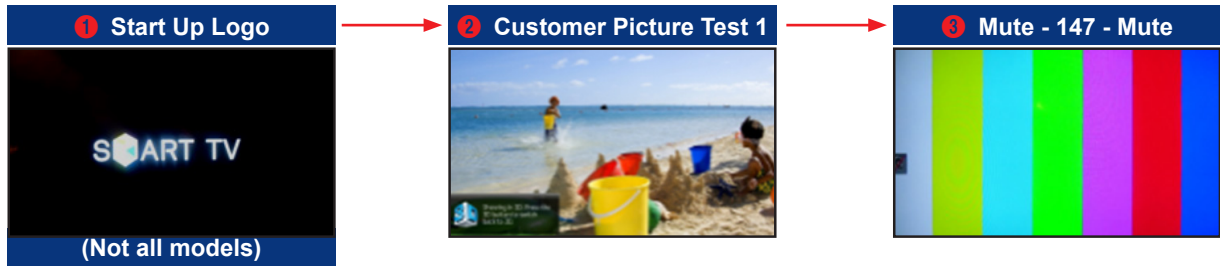
Main Board_Front



4-2-3. Video

■ MAIN / T-CON Board

1. Main Board Section



Video Operation : **Generated on Main Section.**

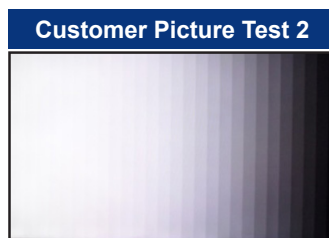
1. If OK:

- ✓ Source & Input Cables.
- ✓ Other inputs.
- ✓ One Connect Cable/Box.

2. If Noisy:

- ✓ T-CON Section Test Patterns.

2. PRE FRC of T-CON Section



Video Operation : **Generated at Pre FRC, of T-CON Section.**

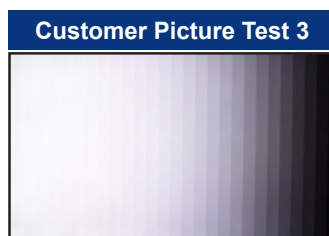
1. If OK:

- ✓ Main Section.

2. If Noisy:

- ✓ Post FRC Pattern.

3. POST FRC of T-CON Section



Video Operation : **Generated at Post FRC of T-CON Section.**

1. If OK:

- ✓ Main / T-CON Board (defective).

2. If Noisy:

- ✓ Mute - 369 - Mute.

1. T-CON Section



NOTE

May not be available for Larger models over 70 inches.

Video Operation : **Generated at T-CON Section.**

1. If OK:

- ✓ Main / T-CON Board (defective).

2. If Noisy:

- ✓ Main / T-CON Board.

■ PANEL

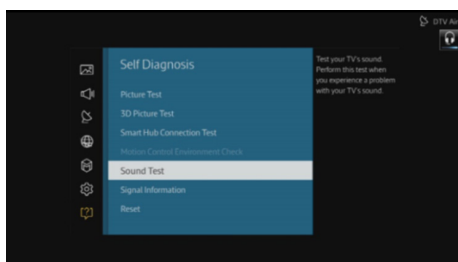


1. If Noisy:

- ✓ Panel (defective).

4-2-4. Audio

AUDIO

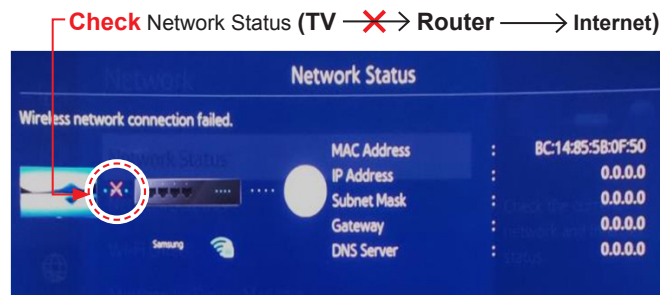


- **No TV Sound**
 - ✓ Menu → Audio → Speaker Settings set to **TV Speaker**
- **Noisy / Distorted TV Audio**
 - ✓ Customer Menu → Support → **Sound Test**
- **If **Sound Test** FAILS : (Missing / Noisy Audio)**
 - ✓ Speakers (compare resistance/quality)
 - ✓ Main Board
 - Compare audio level out to speakers with multi meter.
 - ✓ Replace defective Speakers or Main Board or Cable.
- **IF **Sound Test** OK :**
 - ✓ Audio Source & External Cables.
 - ✓ Other Inputs.
 - ✓ With external Audio Generator (device or App).
- **Optical Digital Out Errors**
 - ✓ Red light from Optical Digital Out.
- **No HDMI Audio**
 - ✓ Source / HDMI Cable
 - Swap with other HDMI Inputs/Sources.
 - Perform **EDID Write** in Factory Mode (Can restore missing HDMI Audio).
 - ✓ Bulletins and Latest firmware on TV.
 - If not restored replace One Connect Box.
 - Check Audio Format PCM/Dolby based on external Receiver.
- **ARC Issues**
 - ✓ HDMI Cable is input to the ARC Designated HDMI port.
 - ✓ ARC (HDMI Control) is enabled on the external Receiver.
- **Bluetooth Audio "**Sound Share**" Connection Issues**
 - ✓ Sound Bar is in TV Mode.
 - To Connect, Press & Hold Play Button until Sound Bar pairing mode begins.

4-2-5. Network

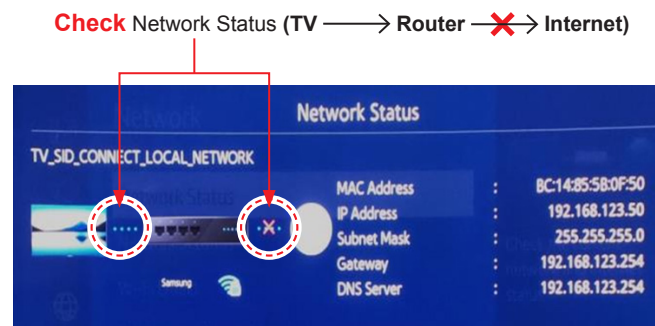


■ TV to Router "Failure"



- **Wired & Wireless MAC Address** in Customer Support Menu.
 - ✓ **No Wired MAC Address:** Replace Main Board.
 - ✓ **No Wireless MAC Address:** Module cabling & voltages from Main Board.
 - ✓ If operating voltages are OK but signal missing.
 - Replace WiFi Module (WiFi/Bluetooth Module).
- Proper **security passcode**
 - ✓ Check Wi-Fi signal strength at TV (use WiFi Analyzer or similar App).
 - Try another source (Hot spot or Test Router).
 - ✓ Check related Bulletins.
 - ✓ Check **Factory Mode** → **SVC** → **Info** → **WiFi Error Count** (replace module for high error counts).

■ Router to Network "Failure"



- Instruct the customer the TV has proper connection to the router and is likely OK.
 - ✓ Check other devices using network are OK. If they test OK this does not mean the TV should be working.
- Try another source (Hotspot) to test/show TV Network operation.

4-2-6. Smart Hub

Go to [Menu](#) → [Support](#) → [Self Diagnosis](#) → [Smart Hub Connection Test](#)



1. Network / Gateway

- **If it Fails:**
 - ✓ TV to Router Connection Test in "[Network Trouble shooting](#)"

2. DNS Test

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

3. ISP Blocking

- **If it Fails:**
 - ✓ Internet Service Provider is Active.
 - ✓ With DNS setting at 8888.
 - ✓ With Hot Spot.

4. Samsung Server Test

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

5. Samsung Apps

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

For Netflix Operation/Connection Issues:

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

For Streaming Issues:

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

4-2-7. WIFI Module

■ WIFI Module

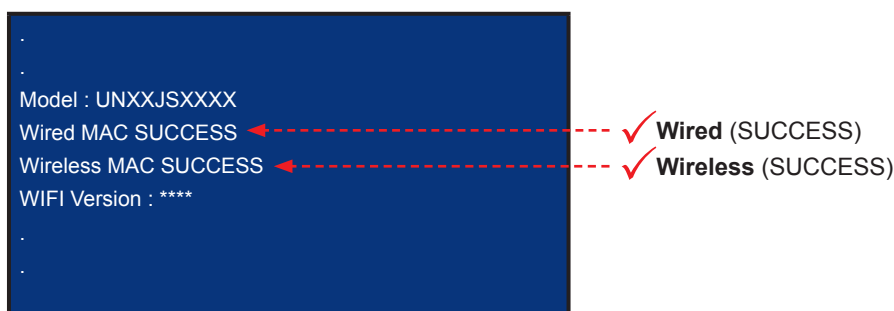
Major check points

1. Check **Wired MAC Address** and **Wireless MAC Address** at [Contact Samsung](#).

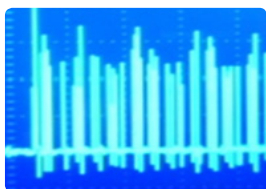


2. Check **Wired MAC** and **Wireless MAC** at [Factory Mode](#) screen. (Success/Failure)

- Wired MAC errors : **Main Board** is defective.



- Wireless MAC errors :
 - Check the Wi-Fi Module Connector voltage.
 - If OK replace **Module**.



Wi-Fi Signal
(500mv P-P)



| Pins | 1 | 2 | 3 | 4 | 5 | 6 |
|-----------------|---|------------------|------------------|---------|---------|---------|
| Standby | 0 | 0 | 0 | 0 | .8 | 0 |
| Power ON | 0 | .04Vdc Wi-Fi Sig | .04Vdc Wi-Fi Sig | 5.3 Vdc | 3.3 Vdc | 3.3 Vdc |

- All Measurements in the Chart are DC Volts with Multi Meter.



Voltage is normal, but Wi-Fi Sig. pins (DC Ref.) If you do not measure, Wi-Fi Module can possibly defective.

4-3. Factory Mode Adjustments

4-3-1. 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".

■ UN40K5300AGXPR

| Inches | | 40" |
|---------------------------|----------------|---------------------|
| Panel | Vendor | TBD |
| | Code | |
| | Spec. | |
| SMPS (DC VSS-PD Board) | Vendor | |
| | Code | |
| | Spec. | |
| MAIN ASSY | Chassis Ass'y | |
| | PBA Ass'y code | |
| Byte | Item | |
| 0 | Factory Reset | - |
| 1 | Type | TBD |
| 2 | SW Model | UK5300 |
| 3 | BOM Model | 5300 |
| 4 | Local Set | PAR_DTV |
| 5 | Tuner | Auto (ISDB-T/DVB-T) |

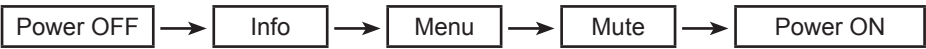
■ UN49K5300AGXPR

| Inches | | 49" |
|---------------------------|----------------|---------------------|
| | | FA01 |
| Panel | Vendor | SDC |
| | Code | BN95-02698A |
| | Spec. | CY-FK049BNLV1V |
| SMPS (DC VSS-PD Board) | Vendor | DYREL |
| | Code | BN44-00868A |
| | Spec. | L55PF_KDY |
| MAIN ASSY | Chassis Ass'y | BN91-17221Y |
| | PBA Ass'y code | BN94-10761Y |
| Byte | Item | |
| 0 | Factory Reset | - |
| 1 | Type | 49A6AF0FK |
| 2 | SW Model | UK5300 |
| 3 | BOM Model | 5300 |
| 4 | Local Set | PAR_DTV |
| 5 | Tuner | Auto (ISDB-T/DVB-T) |

4-3-2. Entering Factory Mode

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

- If you do not have Factory remote control



- If you have Factory remote control



- If you don't have Factory remote control, can't control some menus.

| | |
|----------|--|
| Option | T-HKMFKAKUC_-xxxx (T-HKMFKABC-**** : AG***) T-HKMFKAKUS_-xxxx tztv-2.4-main2016-hawk-m-fhd_2016***** |
| Control | |
| Debug | |
| SVC | BT Version : xxxx E-Manual : ---- |
| ADC/WB | Camera Version : Not Support Blaster Version :Not Support |
| Advanced | E-POP Version :HAWKMFD-****.** EDID SUCCESS HDCP SUCCESS CALIB : AV/COMP/PC/HDMI/ Option : xxxx,xxxx,5300,NONE DTCP Not Support TCON Version : ----- Model : ***** Wired MAC SUCCESS Wireless MAC SUCCESS WIFI : ***** (3.0.7.107) CO Nf/W/M/D/HO P / AO O S / M RO SC SiX Factory Data Ver : 126 EERC Version : CPLD/HD :N/A SmartControl : **** Date of purchase : mm/dd/yyyy |

4-3-3. Factory Data

■ Option

| Factory Menu Name | Data | Range |
|-----------------------|---------------------|---|
| Factory Reset | - | |
| Type | 40D6AF0FK | 49A6AF0FK/... |
| Local Set | PAR_DTV | |
| SW Model | UK5300 | |
| BOM Model | 5300 | |
| TUNER | Auto (ISDB-T/DVB-T) | |
| Ch Table | NONE | |
| MRT Option | | |
| Front Color | U-L-K53-39.5 | U-L-K53-32 / U-L-K53-39.5 / U-L-K53-49 / U-L-K53-55 |
| LVDS FORMAT | JEIDA | |
| Language_Arabic | US | |
| Region | USA | |
| PnP Language | ENG_US | |
| WIFI REGION | S | Differ each local |
| OTN Support | ON | |
| OTA Support | OFF | |
| TTX | OFF | |
| China HD | OFF | |
| NT Conversion | OFF | |
| OPTION_NUM | | |
| BD Wise Support | OFF | |
| PVR Support | | |
| LEDMotionPlus Support | | |
| Natural Mode Support | ON | |
| HDMI/DVI SEL | 4 | |
| HV Flip | | HV Flip / H Filp / OFF |
| Light Effect | OFF | |
| e-Pop Default | ON | |
| CAMERA Support | OFF | |
| NETWORK Support | Int-Wifi | |
| EcoSensor Support | ON | |
| Frameless Support | | |
| 3D Support | OFF | |
| BT Support | ON | |
| BT ADDRESS | Not support | |

4. Troubleshooting

| Factory Menu Name | Data | Range |
|--------------------------|---------|-------|
| HP LINE | LineOut | |
| Resolution Sel | FHD | |
| Multiview Support | OFF | |
| Local Dimming Panel | OFF | |
| Wifi Vendor | QCA | |
| FAN Vendor | OFF | |
| Voice Recog | OFF | |
| Motion Recog | OFF | |
| TTV Support (21_9) | OFF | |
| PC Mode Dimming Support | OFF | |
| PX Support | OFF | |
| No Glass 3D support | OFF | |
| MLS Support | OFF | |
| MBR Support | OFF | |
| SmartView Support | ON | |
| Provider Setup Support | OFF | |
| Bezel Light Support | OFF | |
| Smart control Supoort | OFF | |
| Bendable Support | OFF | |
| Engineer option | | |
| Type Of PANEL KEY | None | |
| 5 Way Function Key | R BACK | |
| Power Panelkey Only | | |
| Contents Bar | 0 | |
| Cable Modulation | ... | |
| Standby led on/off | ON | |
| Recognition Support | OFF | |
| IF AGC | 7 | |
| D AGC | 0 | |
| PH BW | 3 | |
| FQ BW | 3 | |
| PH RATE | 4 | |
| PD EN | 1 | |
| WF Scale | | |
| WF Type | 0 | |
| Number of Network Stream | 1 | |
| BT_AUDIO_ON_OFF | OFF | |
| Config_AV_PATH | | |

| Factory Menu Name | Data | Range |
|-----------------------|------|-------|
| USING_PSI_UPDATE | - | |
| Fast Logo Delay | 0 | |
| JP Tuner Reset Delay | | |
| Num of PANEL KEY | 7 | |
| Panel Init Time | | |
| Tcon Init Time | | |
| Write MAC Address | | |
| data sync Init | | |
| Common Source Support | ON | |
| OVD Support | 0 | |
| EcoSensor Location | 0 | |
| BENDABLE PEQ Inx | 0 | |

■ Control

| Factory Menu Name | Data | Range |
|-------------------------|-------------|------------|
| EDID | | |
| EDID ON/OFF | OFF | |
| EDID WRITE ALL | ... | |
| EDID WRITE HDMI | ... | |
| EDID Ver | ... | |
| EDID Port | | |
| Sub Option | | |
| RS-232 Jack | UART | Debug/UART |
| EXT Link Support | OFF | |
| Serial Log On/Off | ON | |
| Watchdog | OFF | |
| FRC Monitoring | | |
| Checksum | 0x0000 | |
| Fast Boot in Production | OFF | |
| UART Enable | OFF | |
| Eeprom Reset | | |
| ECO IC TYPE | MC8121 | |
| Info Link Server Type | development | |
| Info Link Country | None | |
| TTX Group | UserOSD | |
| Visual Test | - | |
| OPTION_SWU | | |

4. Troubleshooting

| Factory Menu Name | Data | Range |
|------------------------------|-----------|-------|
| OTN Server Type | operating | |
| OTN Test Server | OFF | |
| SWU Reset | | |
| SWU Duration | OFF | |
| SWU Fail Test | OFF | |
| RF Remocon Support | OFF | |
| CDD mode | - | |
| DPMS Support | OFF | |
| T-CON Device | | |
| RM | | |
| Server Type | Operating | |
| RTS Mode | OFF | |
| LMN 1ST THRESHOLD | 80 | |
| LMN 2ST THRESHOLD | 60 | |
| LMN 3ST THRESHOLD | 40 | |
| EOS Click | OFF | |
| BP PMS Reset | 1 | |
| Fanet Thread | 2 | |
| User InstantOn Default Value | ON | |
| CI CPLD Version | | |
| ACM_MC | ON | |
| HotkeyList | | |
| UNIQUE TRIPLET | ON | |
| FS_FAV | OFF | |
| Pricate Range USE | ON | |
| SCSA Support | OFF | |
| OCM Reboot | ON | |
| SPI Protection | | |
| HOTEL Option | | |
| Hospitality Mode | OFF | |
| Power On | ... | |
| Menu OSD | ... | |
| Operation | ... | |
| Music Mode | ... | |
| External Source | ... | |
| Eco Solution | ... | |
| Cloning | ... | |
| Shop Option | | |

| Factory Menu Name | Data | Range |
|--------------------------|---------|-------|
| Shop Mode | OFF | |
| Exhibition Mode | OFF | |
| 3D Cube | OFF | |
| Asia Option | | |
| Unbalance | OFF | |
| AF Level adjust | 3 | |
| TX Power Level | 0 | |
| Mono Last Memory | OFF | |
| H Shaking | OFF | |
| SOUND | | |
| High Devi | OFF | |
| Carrier_Mute | OFF | |
| Pilot Level High Thld | 0x70h | |
| Pilot Level Low Thld | 0x20h | |
| Carrier2 Amp High THID | 6 | |
| Carrier2 Amp Low THID | 4 | |
| Amp Volume | 0xc5h | |
| Amp Scale | | |
| Amp EQ Check Sum | | |
| Subwoofer Support | | |
| Woofer Type | 0 | |
| Woofer Volume | 0xcbh | |
| Woofer Scale | 0x8ah | |
| Woofer Check Sum | NONE | |
| Woofer Local EQ Checksum | 0 | |
| PEQ Inx | | |
| PEQ Test | | |
| Amp Model | NTP7415 | |
| Speaker EQ | ON | |
| Bottom CheckSum | NONE | |
| Wall Filter Type | 2 | |
| SRS Tuning Parm | 0 | |
| SPDIF PCM Gain | -9dB | |
| AudioDock BT Delay | | |
| 3D_Glass BT Delay | | |
| Mic Scale | | |
| India Sound | | |
| Specker Delay Normal | | |

4. Troubleshooting

| Factory Menu Name | Data | Range |
|---------------------|-----------|-------|
| NTV CU Delay | | |
| Lipsync Inx | | |
| Lipsync CheckSum | OK:0x9631 | |
| Lipsync USB Test | Ready | |
| LipSync BT CheckSum | OK:0x696A | |

■ Debug

| Factory Menu Name | Data | Range |
|------------------------|---------------|-------|
| Spread Spectrum | | |
| LVDS Spread | ON | |
| DDR Spread | 1.0% Spectrum | |
| Period | 30K | |
| Amplitude | 1 | |
| HD SSC ON/Off | ON | |
| HD SSC Value | 1 | |
| FHD SSC ON/Off | ON | |
| FHD SSC Value | 0 | |
| UHD SSC ON/Off | ON | |
| UHD SSC Value | 0 | |
| US DDR SSC ON/Off | ON | |
| US DDR SSC Value | 1 | |
| US Ebus SSC ON/OFF | ON | |
| US Ebus Value | 0 | |
| P ebus SSC ON/OFF | ON | |
| P ebus SSC Value | 0 | |
| LVDS SSC ON/OFF | ON | |
| LVDS SSC Value | 3 | |
| US LVDS SSC ON/OFF | ON | |
| US LVDS Value | 5 | |
| FRC Vx1 SSC ON/OFF | OFF | |
| FRC Vx1 SSC Period | 0 | |
| FRC Vx1 SSC Modulation | 1 | |
| FRC LVDS SSC ON/OFF | OFF | |
| FRC LVDS SSC MRR | 3 | |
| FRC LVDS SSC MFR | 2 | |
| FRC DDR SSC ON/OFF | ON | |
| FRC DDR SSC MRR | 3 | |

| Factory Menu Name | Data | Range |
|------------------------|---------|-------|
| FRC DDR SSC MFR | 4 | |
| FRC DDR SSC Period | 0 | |
| FRC DDR SSC Modulation | 2 | |
| DDR Margin | | |
| A CTRL_OFFSET_0_3 | 0x0 | |
| A CTRL_OFFSET_D | 0x0 | |
| B CTRL_OFFSET_0_3 | 0x0 | |
| B CTRL_OFFSET_D | 0x0 | |
| BT_ON_OFF | ON | |
| RF Mute Time | 600ms | |
| FRC | | |
| FRC FDISPLAY ON/OFF | 0 | |
| 3D FDISPLAY ON/OFF | OFF | |
| PC Mode ON/OFF | OFF | |
| Home Panel FRC | OFF | |
| DDR Test | 0 | |
| FRC VX1 RX EQ SETTING | OFF | |
| Netfilix OSD Threshold | 1 | |
| Tuner Margin | 3 | |
| MPEG Margin | 20 | |
| H.264 Margin | 15 | |
| CAM Wait Time | 0 | |
| TCON_TEMP READ | 0 | |
| TEMP LAST | 6000 | |
| DCC VERSION | 0x0 | |
| DCC CHK SEL | 0 | |
| DCC CHECK LOCAL | 0x0 | |
| DCC CHECK TOTAL | 0x0 | |
| Voice Debug | OFF | |
| Power Management | | |
| Cert Option | Waiting | |
| RM_BIST_DTV | 5 | |
| RM_BIST_ATV | 0 | |
| RM_BIST_CABLE | 29 | |
| SerDES_Check | | |
| EU_CIS | 0 | |
| Stress Mode | OFF | |
| Log Analyzer | ON | |

4. Troubleshooting

| Factory Menu Name | Data | Range |
|------------------------|------|-------|
| Error Popup On/off | ON | |
| DeadLock KILL | OFF | |
| CES mode on/off | NONE | |
| CES Option | OFF | |
| CES convergence Option | OFF | |
| TCON Demura Bypass | OFF | |

■ SVC

| Factory Menu Name | Data | Range |
|--------------------------|------|-------|
| Self Test(for HW) | | |
| Loop Back | | |
| LAN Test | | |
| AV Audio Test | | |
| AV2 Audio Test | | |
| CVBS Test | | |
| CVBS2 Test | | |
| COMP Test | | |
| USB HUB Test | | |
| SPDIF Test | | |
| HDMI Test | | |
| SCART Audio | | |
| SCART Video | | |
| CPU | ... | |
| DDR | | |
| FLASH | | |
| EEPROM | | |
| Tuner X-TAL | | |
| Tuner 1 | | |
| HDMI Switch IC | | |
| USB HUB IC | | |
| WIFI | | |
| LVDS | | |
| LVDS2 | | |
| T-CON/FRC | ... | |
| PCB Test | ... | |
| MOIP | | |
| BT | | |

| Factory Menu Name | Data | Range |
|---------------------------|---------|-------|
| EcoSensor | | |
| Voltage | | |
| Chip Test | | |
| Module Test | | |
| ATV CH Inspection | | |
| DTV CH Inspection | | |
| Satellite CH Inspection | | |
| EXT Sound Inspection | | |
| Woofers Sound Inspection | | |
| Tweeter Sound Inspection | | |
| DP TEST | | |
| DP CRC Result | | |
| Voltage Result | | |
| Aging line test | | |
| Satellite CH Inspection | | |
| Info | 0 | |
| SVC Info | | |
| ER Count | | |
| Panel Display Time | | |
| Factory Entry Numver | | |
| Factory Execution History | | |
| Factory Reset History | | |
| Sudden Power Off Count | | |
| SPI Flash | | |
| OCM Count | | |
| Upgrade | | |
| T-CON Usb Download | ... | |
| T-CON CheckSum | Ready | |
| T-CON2 Usb Download | | |
| T-CON2 CheckSum | | |
| PANEL EEPROM UPGRADE | | |
| PANEL FLASH UPGRADE | | |
| Logic Usb D/L | | |
| SUBMICOM UPGRADE | ON | |
| SUBMICOM JP USB UPGRADE | | |
| BT UPGRADE | Failure | |
| BT FREEPAIRING | | |

4. Troubleshooting

| Factory Menu Name | Data | Range |
|------------------------|---------|-------|
| Function Upgrade | Failure | |
| FRC3D FW Upgrade | | |
| FRC3D LD UPGRADE | | |
| FRC3D FW UPGRADE | | |
| Camera Upgrade | | |
| Mic Upgrade | Failure | |
| Jump Upgrade | | |
| IR Blaster Upgrade | 0 | |
| IR Blaster delay time | | |
| NTV CU UPDATE | | |
| UD LDC PROFILE UPGRADE | | |
| Pic Data USB Update | 0 | |
| Audio Data USB Update | | |
| Eco Data USB Update | 0 | |
| CI CPLD UPGRADE | | |
| SC ADK Upgrade | | |
| SC MCU Upgrade | | |
| TCON DEMURA FW UPGRADE | | |
| Reset | 0 | |
| Apps Reset | | |
| SVC Reset | 0 | |
| SPI Flash Reset | | |
| Data Sync Reset | | |
| OPTION_HDMI | | |
| DVI/HDMI SOUND | Auto | |
| HDMI HOT PLUG | Disable | |
| HOTPLUG SWITCHING | Boot | |
| HOT PLUG DURATION | 1200ms | |
| CLK TERM DURATION | 1200ms | |
| HDMI FLT CNT SIG | 100ms | |
| HDMI FLT CNT LOS | 100ms | |
| UNSTABLE BAN CNT | 5000ms | |
| HDMI ROBIN | ON | |
| HDMI Callback | OFF | |
| HDMI CTS THLD | 8 | |
| HDMI CTS Cnt1 | 1 | |
| HDMI EQ | AUTO | |
| HDMI Write Type | Combine | |

| Factory Menu Name | Data | Range |
|-------------------------|---------|-------|
| HDMI Switch | NONE | |
| DVI SET TIME | 300ms | |
| H Write | | |
| HDMI Sync | | |
| HDMI 3D DET | 0 | |
| HOT PLUG OFF HOLD TIME | | |
| HDMI MUTE TIME | | |
| REPEA AUDIO PKT | | |
| HDMI HDCP EN | | |
| HDMI HDCP EN FLAG | | |
| POWER ON FLT CNT LOS | | |
| HDCP UPDATE SPI | | |
| SPI VERSION | 1 | |
| DVB CI | | |
| TS Clock delay TC | 0 | |
| TS Clock delay S | 0 | |
| CI Control Buf On | ON | |
| TS Clock delay CPU | 1 | |
| TS Clock delay TC2 | 0 | |
| TS Clock delay S2 | 0 | |
| CI Control Buf On2 | 1 | |
| TS Clock delay CPU2 | 0 | |
| Test Pattern | | |
| Scaler Pattern | | |
| US Post Pattern | | |
| FRC Pre Pattern | 0 | |
| FRC Post Pattern | 0 | |
| SOC TCON Pattern | 0 | |
| SOC TCON Pattern Level | 255 | |
| FRC OSD Pre Pattern | | |
| FRC OSD Post Pattern | | |
| FRC2 Pre Pattern | | |
| FRC2 Post Pattern | | |
| SOC TCON2 Pattern | | |
| SOC TCON2 Pattern Level | | |
| Other Setting | | |
| Delete S/N | 0 | |
| IPERF | Stopped | |

4. Troubleshooting

| Factory Menu Name | Data | Range |
|----------------------|------------|-------|
| Expert | | |
| CAL Data Backup | ... | |
| CaL Data Restore | | |
| MICOM POWER OFF | ON | |
| NTV RF Region | | |
| NTV CU FW VER | 0 | |
| ATV IF AGC SPEED | 0 | |
| Source Direct On/Off | OFF | |
| Apps Update | | |
| Auto Power | LAST POWER | |
| SMCE Control | | |
| Moter Test | ORIGINAL | |
| SVC Panel | | |
| Tizen | | |
| Export | | |
| Import | | |
| Verify | | |
| Flash Reset | | |
| Tizen EEPROM Reset | | |
| S/N | | |
| Serial number | | |
| Writing S/N | | |

■ ADC/WB

| Factory Menu Name | Data | Range |
|-------------------|------|-------|
| ADC | | |
| AV Calibration | / | |
| Comp Calibraion | / | |
| PC Calibration | / | |
| HDMI Calibration | / | |
| ADC Result | | |
| 1st_Y_GH | 0 | |
| 1st_Y_GL | 0 | |
| 1st_Cb_BH | 0 | |
| 1st_Cb_BL | 0 | |
| 1st_Cr_RH | 0 | |
| 1st_Cr_RL | 0 | |

| Factory Menu Name | Data | Range |
|----------------------|------|-------|
| 2nd_R_L | 130 | |
| 2nd_G_L | 130 | |
| 2nd_B_L | 130 | |
| 2nd_R_H | 69 | |
| 2nd_G_H | 69 | |
| 2nd_B_H | 69 | |
| White Balance | | |
| R-Offset | 128 | |
| G-Offset | 128 | |
| B-Offset | 128 | |
| R-Gain | 128 | |
| G-Gain | 128 | |
| B-Gain | 128 | |
| WB_W2_R_Offset | 128 | |
| WB_W2_B_Offset | 128 | |
| WB_W2_R_Gain | 164 | |
| WB_W2_B_Gain | 63 | |
| WB_N_R_Offset | 128 | |
| WB_N_B_Offset | 128 | |
| WB_N_R_Gain | 151 | |
| WB_N_B_Gain | 108 | |
| MGA | | |
| MGA On/Off | OFF | |
| R1_Gain | ... | |
| B1_Gain | ... | |
| G1_Gain | ... | |
| R2_Gain | ... | |
| B2_Gain | ... | |
| G2_Gain | ... | |
| R3_Gain | ... | |
| B3_Gain | ... | |
| G3_Gain | ... | |
| R4_Gain | ... | |
| B4_Gain | ... | |
| G4_Gain | ... | |
| R5_Gain | ... | |
| B5_Gain | ... | |
| G5_Gain | ... | |

4. Troubleshooting

| Factory Menu Name | Data | Range |
|-------------------|------|-------|
| R6_Gain | ... | |
| B6_Gain | ... | |
| G6_Gain | ... | |
| R7_Gain | ... | |
| B7_Gain | ... | |
| G7_Gain | ... | |
| R8_Gain | ... | |
| B8_Gain | ... | |
| G8_Gain | ... | |
| R9_Gain | ... | |
| B9_Gain | ... | |
| G9_Gain | ... | |
| R10_Gain | ... | |
| B10_Gain | ... | |
| G10_Gain | ... | |
| MGA On/Off | OFF | |
| R1_Gain | ... | |
| B1_Gain | ... | |
| G1_Gain | ... | |
| R2_Gain | ... | |
| B2_Gain | ... | |
| G2_Gain | ... | |
| R3_Gain | ... | |
| B3_Gain | ... | |
| G3_Gain | ... | |
| R4_Gain | ... | |
| B4_Gain | ... | |
| G4_Gain | ... | |
| R5_Gain | ... | |
| B5_Gain | ... | |
| G5_Gain | ... | |
| R6_Gain | ... | |
| B6_Gain | ... | |
| G6_Gain | ... | |
| R7_Gain | ... | |
| B7_Gain | ... | |
| G7_Gain | ... | |
| R8_Gain | ... | |

| Factory Menu Name | Data | Range |
|--------------------------|------|-------|
| B8_Gain | ... | |
| G8_Gain | ... | |
| R9_Gain | ... | |
| B9_Gain | ... | |
| G9_Gain | ... | |
| R10_Gain | ... | |
| B10_Gain | ... | |
| G10_Gain | ... | |
| SPI White Balance | ... | |
| SPI White Balance On/OFF | ... | |
| SPI R-Offset | ... | |
| SPI G-Offset | ... | |
| SPI B-Offset | ... | |
| SPI R-Gain | ... | |
| SPI G-Gain | ... | |
| SPI B-Gain | ... | |
| SPI N Rgain | ... | |
| SPI N Bgain | ... | |
| SPI N Roffset | ... | |
| SPI N Boffset | ... | |
| SPI W2 Rgain | ... | |
| SPI W2 Bgain | ... | |
| SPI W2 Roffset | ... | |
| SPI W2 Boffset | ... | |
| SPI MGA | ... | |
| SPI MGA On/OFF | ... | |
| SPI R1_Gain | ... | |
| SPI G1_Gain | ... | |
| SPI B1_Gain | ... | |
| SPI R2_Gain | ... | |
| SPI G2_Gain | ... | |
| SPI B2_Gain | ... | |
| SPI R3_Gain | ... | |
| SPI G3_Gain | ... | |
| SPI B3_Gain | ... | |
| SPI R4_Gain | ... | |
| SPI G4_Gain | ... | |
| SPI B4_Gain | ... | |

4. Troubleshooting

| Factory Menu Name | Data | Range |
|-----------------------|------|-------|
| SPI R5_Gain | ... | |
| SPI G5_Gain | ... | |
| SPI B5_Gain | ... | |
| SPI R6_Gain | ... | |
| SPI G6_Gain | ... | |
| SPI B6_Gain | ... | |
| SPI R7_Gain | ... | |
| SPI G7_Gain | ... | |
| SPI B7_Gain | ... | |
| SPI R8_Gain | ... | |
| SPI G8_Gain | ... | |
| SPI B8_Gain | ... | |
| SPI R9_Gain | ... | |
| SPI G9_Gain | ... | |
| SPI B9_Gain | ... | |
| SPI R10_Gain | ... | |
| SPI G10_Gain | ... | |
| SPI B10_Gain | ... | |
| WB Data to SPI | ... | |

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.



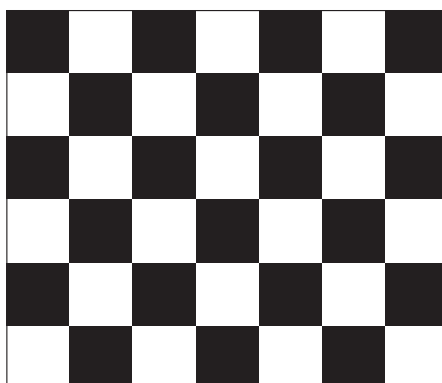
4-4-2. Service Adjustment

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 **WB** menu.

| | | | |
|---------------|---------------|---|--|
| Option | | | |
| Control | | | |
| Debug | | | |
| SVC | | | |
| ADC/WB | White Balance | (Low light) Sub Bright R offset G offset B offset | (High light) Sub Contrast R gain G gain B gain |
| Advanced | | | |

4-5. Software Upgrade

Samsung may offer upgrades for the TV's firmware in the future. These upgrades can be performed via the TV when it is connected to the Internet, or by downloading the new firmware from samsung.com to a USB memory device.

- Alternative Software (Backup) shows The previous version that will be replaced.
- Software is represented as 'Year/Month/Day_Version'. The more recent the date, the newer the software version. Installing the latest version is recommended.



4-5-1. By USB

Insert a USB drive containing the firmware upgrade downloaded from samsung.com into the TV. Please be careful to not disconnect the power or remove the USB drive while upgrades are being applied. The TV will turn off and turn on automatically after completing the firmware upgrade. Please check the firmware version after the upgrades are complete (the new version will have a higher number than the older version). When software is upgraded, video and audio settings you have made will return to their default (factory) settings. We recommend you write down your settings so that you can easily reset them after the upgrade.

"MENU → Support → Software Update"

4-5-2. By Online

Upgrades the software using the Internet.

- First, configure your network. For detailed procedures on using the Network Setting, refer to the 'Setting the Network' instructions.
- If The internet connection doesn't operate properly, connection can be broken, please retry downloading. If the problem still happens, download by USB and upgrade.

4-5-3. Alternative Software (Backup)

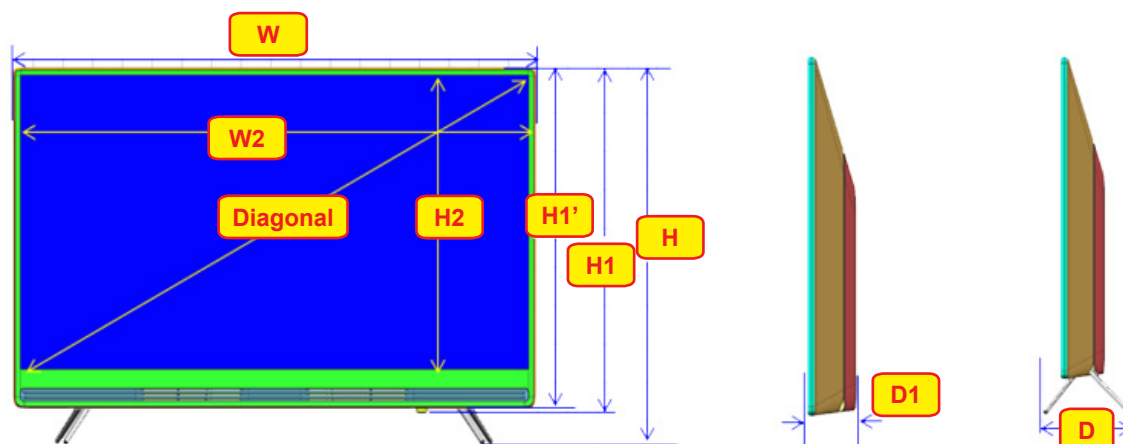
If there is an issue with the new firmware and it is affecting operation, you can change the software to the previous

- If Software was changed, existing Software is displayed.
- you can change current Software to Alternative Software by 'Alternative Software'.

4-6. The Dimension of K5300 Models

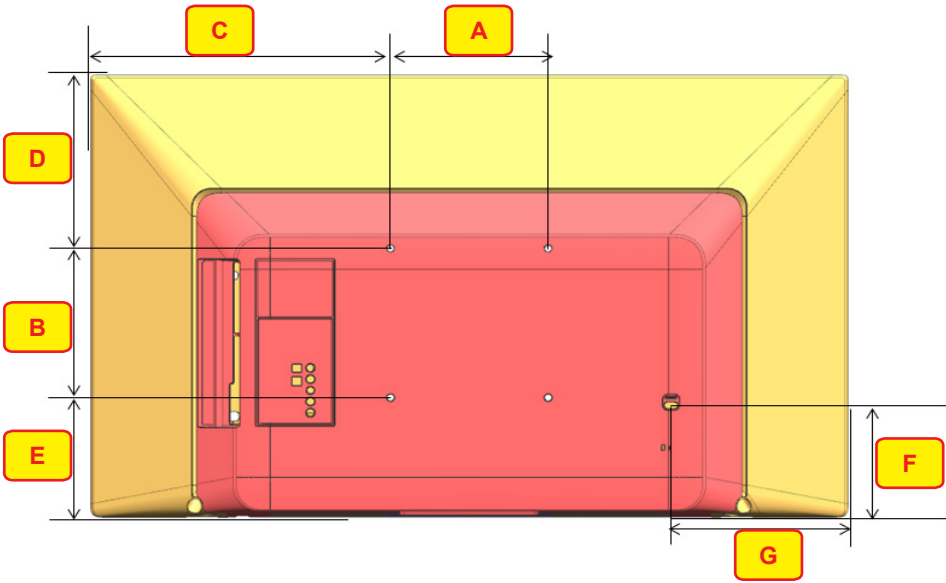
■ K5300 Dimension

| Item | 39.5" (40") | 49" |
|--|-----------------------------|------------------------------|
| SET (With Stand) mm (W * H * D) | 901.1 * 621.5 * 181.8 | 1096.8 * 742.8 * 224.5 |
| SET (Without Stand) mm (W * H1(H1') * D1) | 901.1 * 557.1(550.8) * 78.0 | 1096.8 * 676.2(670.0) * 88.0 |
| Opening Size (W2 * H2, Diagonal CAD) | 881.1 * 487.8 * 1006.4 | 1076.7 * 607.0 * 1235.2 |
| Packing Size (W * H * D) | 974.0 * 644.0 * 132.0 | 1185.0 * 765.0 * 155.0 |
| Net(Set) Weight (With Stand) Kg | 8.2 | 12.1 |
| Net(Set) Weight (Without Stand) Kg | 8.1 | 12.0 |
| Gross Weight (kg) (After Packing) | 10.0 | 15.2 |
| Loading Q'ty 20ft/40ft/40ft-HC/45ft/ 53ft | 240/567/567/690/1080 | 120/264/396 |



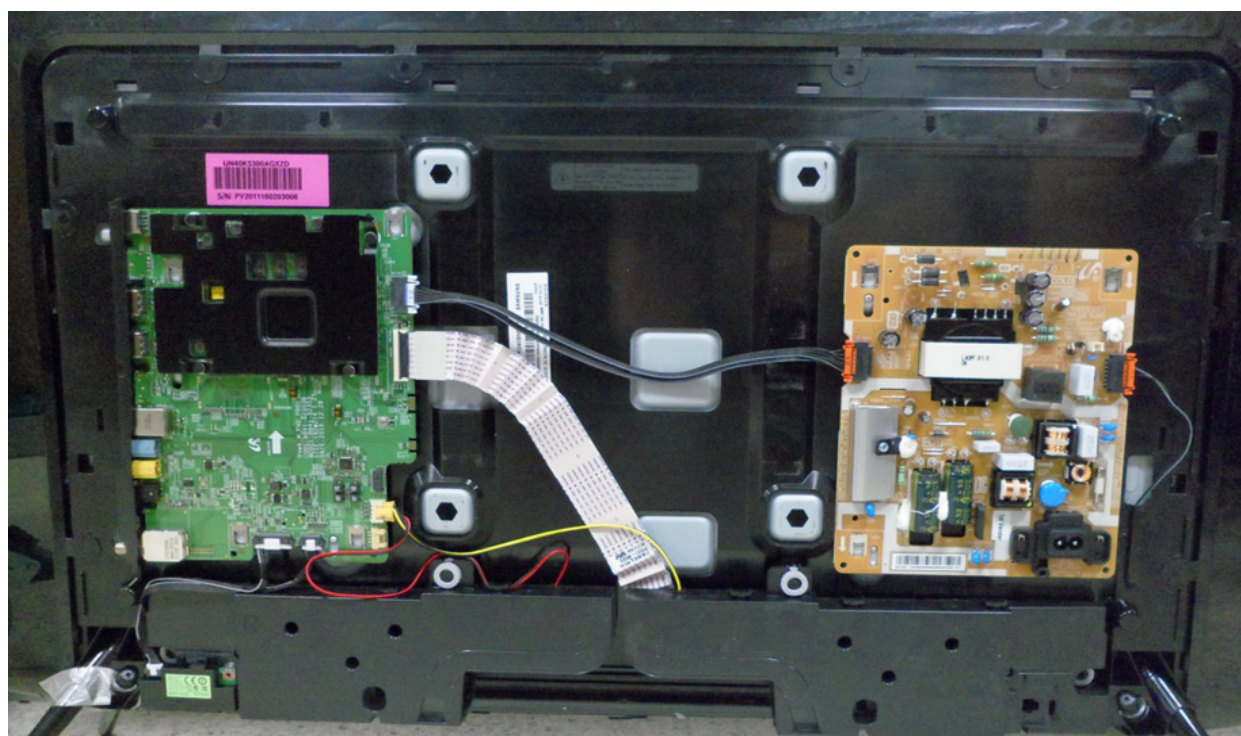
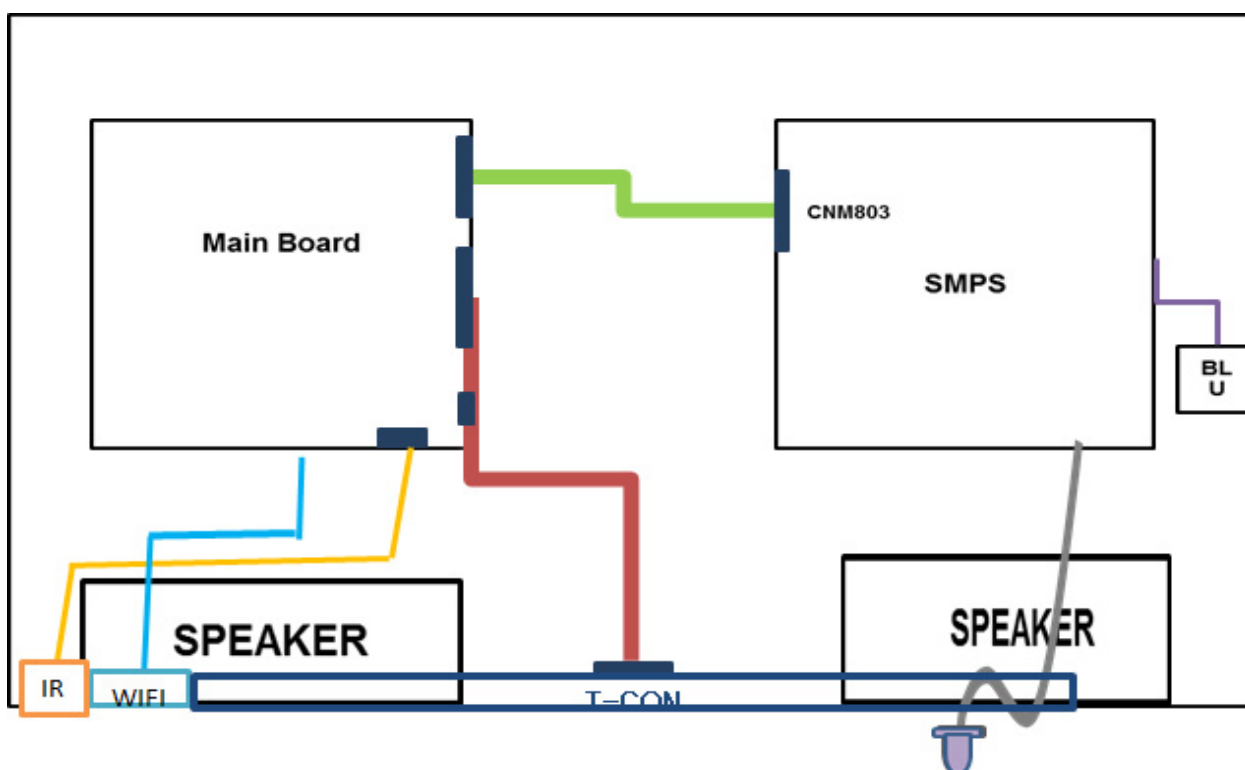
■ K5300 Rear Dimension

| Item | 39.5" (40") | 49" |
|--------------------|-------------|-----------|
| WALL MOUNT (A X B) | 200 X 200 | 200 X 200 |
| C | 350.5 | 448.3 |
| D | 206.6 | 306.5 |
| E | 144.1 | 163.5 |
| F | 133.6 | 154.1 |
| G | 200.5 | 273.4 |



5. Wiring Diagram

5-1. Wiring Diagram



5-1-1. Cables

| USE | | LVDS CABLE | Power Cable |
|------|-----|-------------|----------------------|
| | | FFC CABLE | LEAD CONNECTOR-POWER |
| Code | 40" | TBD | TBD |
| | 49" | BN96-40209A | BN39-02217A |

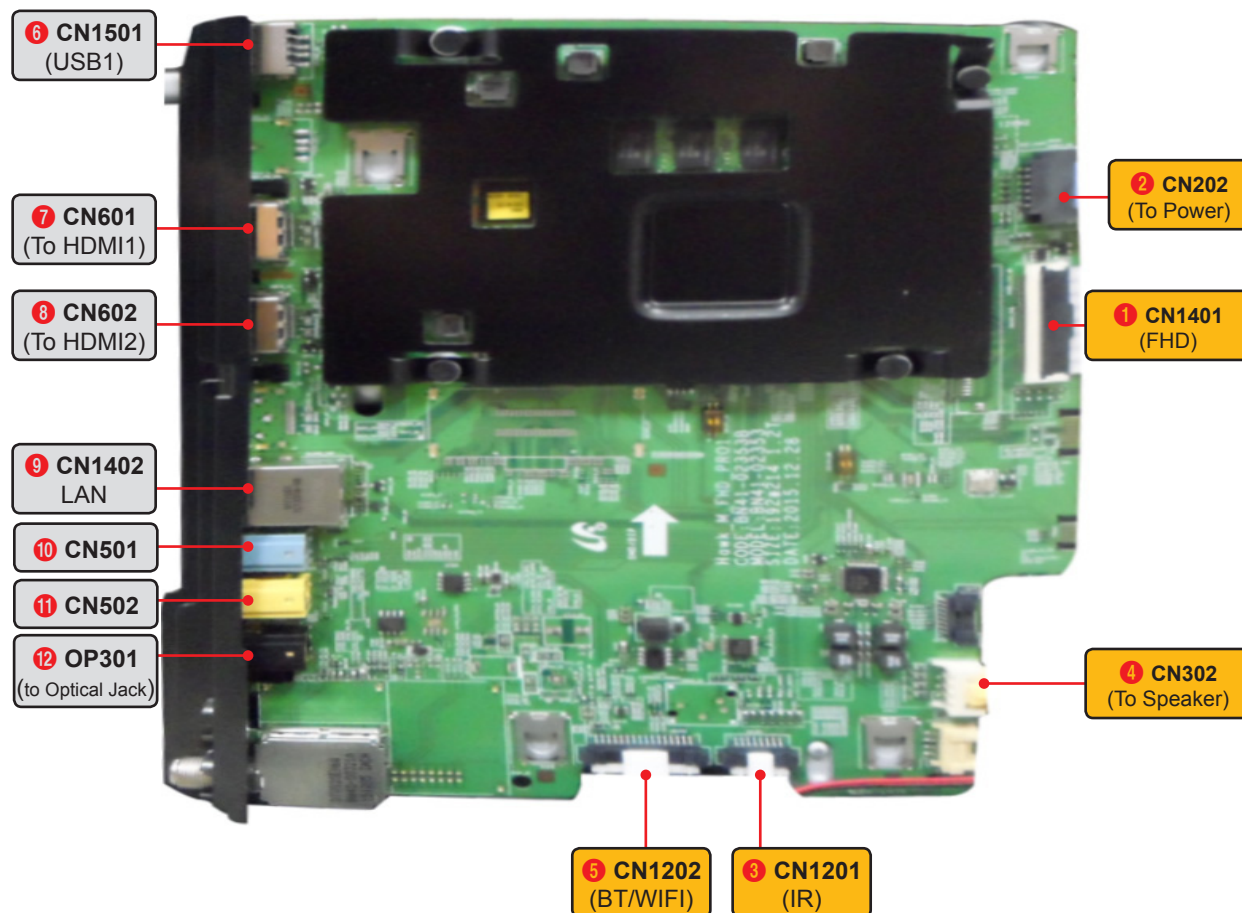
| USE | | IR/Function Cable | Wifi Cable |
|------|-----|-------------------------|-------------------------|
| | | LEAD CONNECTOR-SUB ASSY | LEAD CONNECTOR-SUB ASSY |
| Code | 40" | TBD | TBD |
| | 49" | BN39-02223B | BN39-02230A |

**NOTE**

The code number of cable can be changed, see "Exploded Views and Parts List".

5-2. Connector

■ Main Board



■ Main Board Pin Map

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

5. Wiring Diagram

| 2 CN202 (to Power board) | | | |
|--------------------------|--------------|----|----------------------|
| 1 | GND | 7 | A13V_PW |
| 2 | GND | 8 | PWM_DIM |
| 3 | A13V_PW | 9 | A13V_PW |
| 4 | GND | 10 | OVD_LEVEL |
| 5 | A13V_PW | 11 | SMPS_FET_FAIL_DETECT |
| 6 | SW_POWER_OUT | 12 | OVD_ON_OFF |

| 3 CN1201 (IR) | | | |
|---------------|----------|---|------------|
| 1 | IR | 5 | MSDA |
| 2 | GND | 6 | KEY_INPUT1 |
| 3 | A3.3V_PW | 7 | KEY_INPUT2 |
| 4 | MSCL | 8 | LED_STB |

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

| 5 CN1202 (to WIFI) | | | |
|--------------------|-----|---|---------|
| 1 | GND | 4 | A5V_PW |
| 2 | D- | 5 | Wake Up |
| 3 | D+ | 6 | RESET |

| 6 CN1501 (USB1) | | | |
|-----------------|-------------|---|---------|
| 1 | B5V_USB1_PW | 3 | USB1_DP |
| 2 | USB1_DM | 4 | GND |

| 7 CN601 (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_HOT_PLUG |
| 10 | HDMI1_RXCLK+ | | |

| 8 CN602 (to HDMI2) | | | |
|--------------------|--------------|----|----------------|
| 1 | HDMI2_RX2+ | 11 | GND |
| 2 | GND | 12 | HDMI2_RXCLK- |
| 3 | HDMI2_RX2- | 13 | CEC |
| 4 | HDMI2_RX1+ | 14 | ARC2_SIGLE |
| 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_HOT_PLUG |
| 10 | HDMI2_RXCLK+ | | |

| 9 CN1402_LAN | | | |
|--------------|----------|---|----------|
| 1 | LAN_TXD+ | 5 | B2.5V |
| 2 | B2.5V | 6 | LAN_RXD- |
| 3 | LAN_TXD- | 7 | NC |
| 4 | LAN_RXD+ | 8 | GND |

| 10 CN501 | | | |
|----------|------------|---|-----|
| 1 | GND | 5 | PR |
| 2 | COMP_PB | 6 | GND |
| 3 | COMP_PR | 7 | GND |
| 4 | IDENT_COMP | | |

| 11 CN502 | | | |
|----------|---------------|---|---------------|
| 1 | GND | 5 | TEST_SR |
| 2 | COMP_Y_CVBS | 6 | TEST_SL |
| 3 | COMP_AV_SR_IN | 7 | COMP_AV_SL_IN |
| 4 | AV1_IDENT(Y) | | |

| 12 OP301 (to Optical Jack) | | | |
|----------------------------|----------------|---|----------|
| 1 | GND | 5 | TEST_SR |
| 2 | HP_LINE_SL_OUT | 6 | IDENT_HP |
| 3 | HP_LINE_SR_OUT | 7 | GND |
| 4 | TEST_SL | | |