# Service Manual

55 inch Class 1080p LED LCD TV
Model No. TC-55AS650U

LA51 Chassis
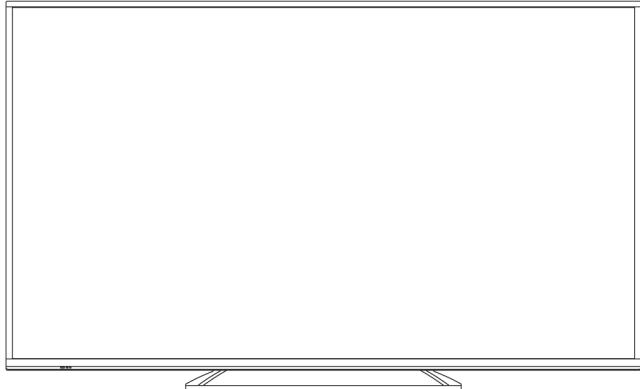
⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

■ IMPORTANT SAFETY NOTICE ■

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

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Panasonic®

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1 Safety Precautions

1.1.   General Guidelines

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.
4. When conducting repairs and servicing, do not attempt to modify the equipment, its parts or its materials.
5. When wiring units (with cables, flexible cables or lead wires) are supplied as repair parts and only one wire or some of the wires have been broken or disconnected, do not attempt to repair or re-wire the units. Replace the entire wiring unit instead.
6. When conducting repairs and servicing, do not twist the Fasten connectors but plug them straight in or unplug them straight out.

1.2.   Touch-Current Check

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a measuring network for touch currents between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use Leakage Current Tester (Simpson 228 or equivalent) to measure the potential across the measuring network.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reserve the AC plug in the AC outlet and repeat each of the above measure.
6. The potential at any point (TOUCH CURRENT) shall not exceed 0.5 MIU.
7. In case a measurement is out of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

Measuring network for TOUCH CURRENTS
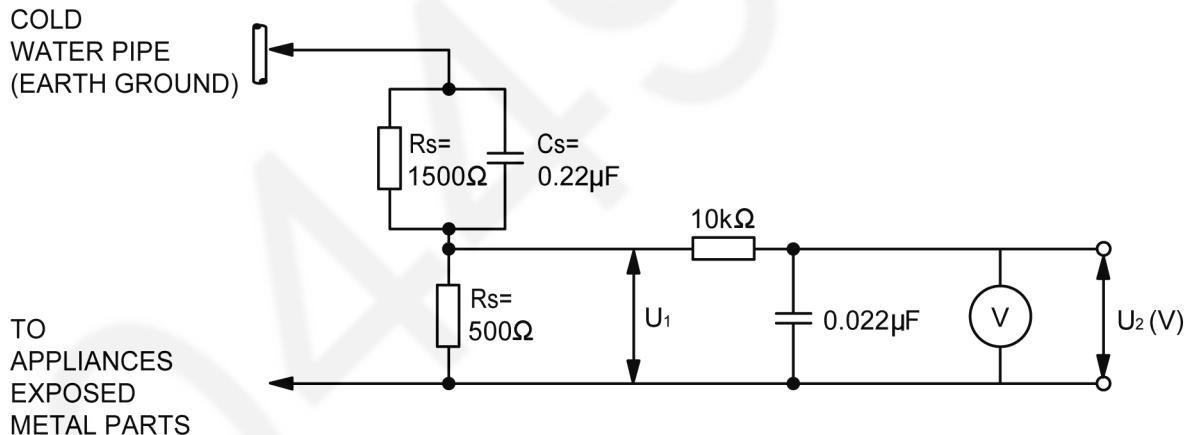
Resistance values in ohms (Ω)

V: Voltmeter or oscilloscope
      (r.m.s. or peak reading)

Input resistance: $\geq 1M\Omega$
Input capacitance: $\leq 200pF$
Frequency range: 15 Hz to 1 MHz and d.c. respectively

MIU = U_2 x 2 (r.m.s. value)

NOTE - Appropriate measures should be taken to obtain the correct value in case of non-sinusoidal waveforms.

Figure 1

2 Warning

2.1. Prevention of Electrostatic Discharge (ESD) to Electrostatically Sensitive (ES) Devices

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

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as [anti-static (ESD protected)] can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   Caution
     Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise ham less motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

2.2.   About lead free solder (PbF)

Note: Lead is listed as (Pb) in the periodic table of elements.

In the information below, Pb will refer to Lead solder, and PbF will refer to Lead Free Solder.

The Lead Free Solder used in our manufacturing process and discussed below is (Sn+Ag+Cu).

That is Tin (Sn), Silver (Ag) and Copper (Cu) although other types are available.

This model uses Pb Free solder in it's manufacture due to environmental conservation issues. For service and repair work, we'd suggest the use of Pb free solder as well, although Pb solder may be used.

PCBs manufactured using lead free solder will have the PbF within a leaf Symbol **PbF** stamped on the back of PCB.

Caution

• Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 ~ 70 °F (30~40 °C) higher. Please use a high temperature soldering iron and set it to 700 ± 20 °F (370 ± 10 °C).

• Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C).
  If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before applying Pb solder. If this is not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.

• After applying PbF solder to double layered boards, please check the component side for excess solder which may flow onto the opposite side. (see figure below)
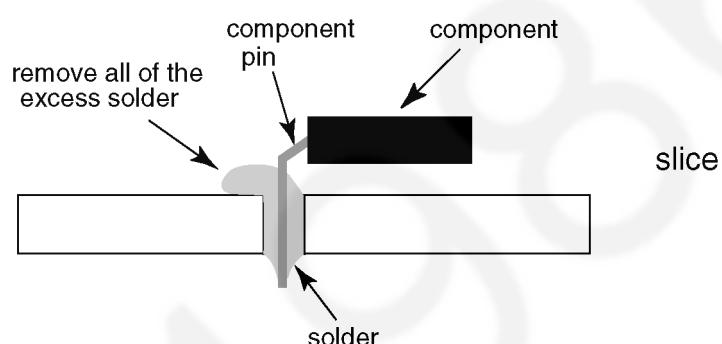
Suggested Pb free solder

There are several kinds of Pb free solder available for purchase. This product uses Sn+Ag+Cu (tin, silver, copper) solder. However, Sn+Cu (tin, copper), Sn+Zn+Bi (tin, zinc, bismuth) solder can also be used.

0.3mm X 100g	0.6mm X 100g	1.0mm X 100g

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3 Service Navigation

3.1. PCB Layout
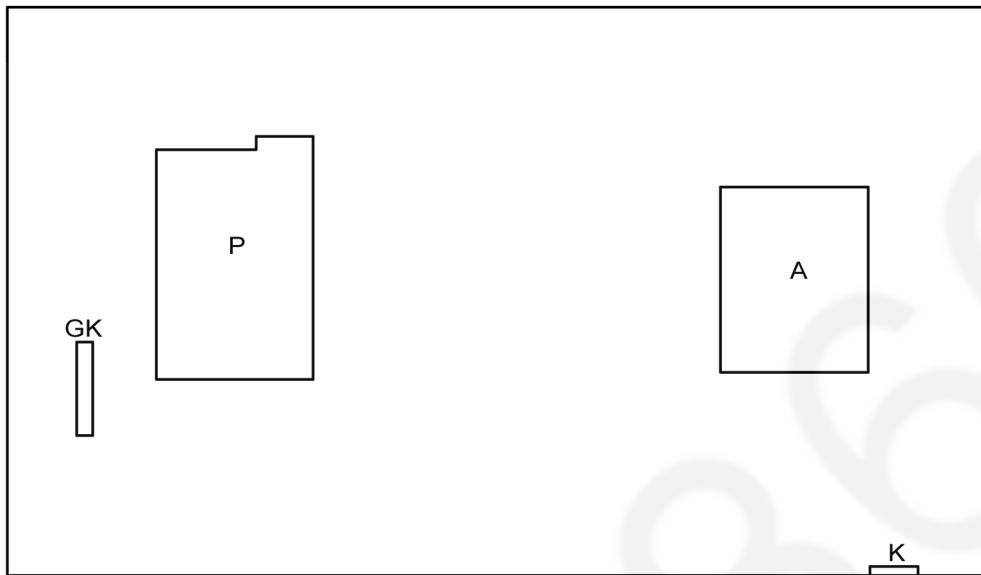
Board Name	Function
A-Board	Main
K-Board	Remote, LED, Luminunce Sensor
P-Board	Power Supply / LED Driver
GK-Board	Control Panel

4 Specifications

Display Panel
    Panel System   LCD panel with LED backlight
    Screen size   55 inch class (54.6 inches measured diagonally)
    W × H × Diagonal   47.6 inch × 26.7 inch × 54.6 inch (1,210 mm × 680 mm × 1388 mm)
    Number of pixels   1,920 × 1,080
Speaker Output   20 W [10 W + 10 W] (10 % THD)
Channel Capability (Digital/Analog) VHF/ UHF: 2 - 69, CATV: 1 - 135
Operating Conditions   Temperature: 32 °F - 95 °F (0 °C - 35°C)
    Humidity: 20 % - 80 % RH (non-condensing)
Connection Terminals
    VIDEO IN   RCA PIN (VIDEO, AUDIO-L, AUDIO-R)
    COMPONENT IN   RCA PIN (Y, PB/CB, PR/CR, AUDIO-L, AUDIO-R)
    HDMI IN 1/2/3   TYPE A Connector (supports [HDAVI Control 5] function)
    USB 1/2   Type A connector   DC 5V, Max. 500mA [Hi-Speed USB (USB 2.0)]
    DIGITAL AUDIO OUT   PCM / Dolby Digital / DTS, Fiber Optic
    OTHERS   SD Card slot, ETHERNET (10BASE-T/100BASE-TX)
Dimensions (W × H × D)
    Including pedestal   49.0 inch × 30.2 inch × 11.5 inch (1,244 mm × 767 mm × 292 mm)
    TV Set only   49.0 inch × 28.4 inch × 2.2 inch (1,244 mm × 722 mm × 54 mm)
Mass
    Including pedestal   43.0 lb. (19.5 kg) NET
    TV Set only   40.8 lb. (18.5 kg) NET

■ Wireless LAN

Standard Compliance and   IEEE 802.11a/n:
Frequency Range*[1],*[2]   5.15 GHz - 5.35 GHz, 5.47 GHz - 5.85 GHz

    IEEE 802.11b/g/n:
    2.400 GHz - 2.4835 GHz
Security   WPA2-PSK (TKIP/AES)
    WAP-PSK (TKIP/AES)
    WEP (64bit/128bit)

*[1] The frequency and channel differ depending on the country.

*[2] 802.11b/g/n CH1 ~ CH11 only use for United States and Canada.

■ Bluetooth

Standard Compliance   Bluetooth 3.0
Frequency Range   2.402 GHz - 2.480 GHz

Note
    Design and Specifications are subject to change without notice. Mass and Dimensions shown are approximate.
    For information about the power source and power consumption, refer to nameplate on the rear enclosure.

5 Technical Descriptions

5.1. Specification of KEY for DTCP-IP, HDCP2.0, Netflix, Widevine, Mac and DIMORA-ID.

5.1.1. General information:

1. eMMc Memory (IC8903) for spare parts has the seed of KEY for each.
2. The final KEY data will be generated by Main IC (IC8000) when SELF CHECK was done and are stored in both Main IC (IC8000) and eMMc (IC8903).

5.1.2. Replacement of ICs:

When Main IC (IC8000) is replaced, eMMc Memory (IC8903) should be also replaced with new one the same time.

When eMMc Memory (IC8903) is replaced, Main IC (IC8000) is not necessary to be replaced the same time.

After the replacement of IC, SELF CHECK should be done to generate the final KEY data.

How to SELF CHECK: While pressing [VOLUME (-)] button on the main unit, press [MENU] button on the remote control for more than 3 seconds.

TV will be forced to the factory shipment setting after this SELF CHECK.

6 Service Mode

6.1. How to enter into Service Mode

6.1.1. Purpose/

After exchange parts, check and adjust the contents of adjustment mode.

While pressing [VOLUME (-)] button of the main unit, press [INFO] button of the remote control three times within 2 seconds.
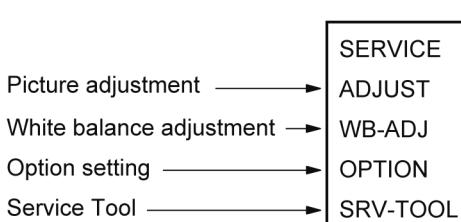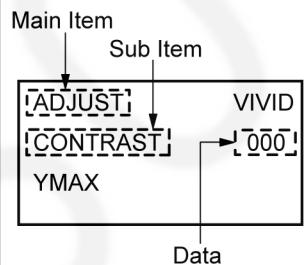
6.1.2. Key command

[1] button...Main items Selection in forward direction
[2] button...Main items Selection in reverse direction
[3] button...Sub items Selection in forward direction
[4] button...Sub items Selection in reverse direction
[VOL] button...Value of sub items change in forward direction (+), in reverse direction (-)

6.1.3. How to exit

Switch off the power with the [POWER] button on the main unit or the [POWER] button on the remote control.

6.1.4. Contents of adjustment mode

 • Value is shown as a hexadecimal number.
 • Preset value differs depending on models.
 • After entering the adjustment mode, take note of the value in each item before starting adjustment.

Main item	Sub item	Sample Data	Remark
ADJUST	CONTRAST	000	
	COLOR	34	
	TINT	00	
	SUB-BRT	800	
	BACKLGT	FFF	
	B-Y-G	40	
	R-Y-A	00	
WB-ADJ	R-GAIN	7A	
	G-GAIN	80	
	B-GAIN	79	
	R-CENT	80	
	G-CENT	80	
	B-CENT	7E	
OPTION	Boot	ROM	Factory Preset.
	STBY-SET	00	
	EMERGENCY	ON	
	CLK MODE	00	
	CLOCK	000	
	EDID-CLK	HIGH	
SRV-TOOL		00	See next.

6.2.   SRV-TOOL

6.2.1.   How to access

1. Select [SRV-TOOL] in Service Mode.
2. Press [OK] button on the remote control.

SRV-TOOL	
Flash ROM : 98 - DC	
PTCT: 00 . 00 . 00 . 00	Time 000040:40 Count 0000049

Display of Flash ROM maker code ⟶ Flash ROM : 98 - DC

Display of SOS History ⟶ PTCT: 00 . 00 . 00 . 00

POWER ON TIME/COUNT ⟵ Press [MUTE] button (3 sec)

6.2.2.   Display of SOS History

SOS History (Number of LED blinking) indication.

From left side; Last SOS, before Last, three occurrence before, 2nd occurrence after shipment, 1st occurrence after shipment.

This indication except 2nd and 1st occurrence after shipment will be cleared by [Self-check indication and forced to factory shipment setting].

6.2.3.   POWER ON TIME/COUNT

Note : To display TIME/COUNT menu, highlight position, then press MUTE for 3 sec.

Time : Cumulative power on time, indicated hour : minute by decimal

Count : Number of ON times by decimal

Note : This indication will not be cleared by either of the self-checks or any other command.

6.2.4.   Exit

Disconnect the AC cord from wall outlet or press the [POWER] button on the main unit for 3 seconds to turn off and then turn on automatically.

6.3. Hotel mode

1. Purpose
   Restrict a function for hotels.
2. Access command to the Hotel mode setup menu
   In order to display the Hotel mode setup menu:
   While pressing [VOLUME (-)] button of the main unit,
   press [INPUT] button of the remote control three times
   within 2 seconds.

   Then, the Hotel mode setup menu is displayed.

```
Hotel Mode

Mode               Off
Input              –
Channel            –
Volume             ▭──────┤  25
Vol. Max           ▭──────────┤ 100
OSD Ctrl           Off
FP Ctrl            Off
Pow Ctrl           Off

              Select
   Change──╱◁◎▷╲
              ▼
            ○RETURN
```

3. To exit the Hotel mode setup menu
   Switch off the power with the [POWER] button on the
   main unit or the [POWER] button on the remote control.
4. Explain the Hotel mode setup menu

| Item	Function
Mode	Select hotel mode On/Off
Input	Select input signal modes. Set the input, when each time power is switched on. Selection: -,RF,HDMI1,HDMI2,HDMI3,AV • Off: give priority to a last memory.
Channel	Select channel when input signal is RF. Set the channel, each time power is switched on. Selection: Any channel number or [-]. [-] means the channel when turns off.
Volume	Adjust the volume when each time power is switched on. Range: 0 to 100
Vol. Max	Adjust maximum volume. Range: 0 to 100
OSD Ctrl	Restrict the OSD. Selection: Off/Pattern1 • Off: No restriction • Pattern1: restriction
FP Ctrl	Select front key conditions. Selection: Off/Pattern1/All • Off: altogether valid. • Pattern1: only input key is valid. • All: altogether invalid.
Pow Ctrl	Select POWER-On/Off condition when AC power cord is disconnected and then connected. Off: The same condition when AC power cord is disconnected. On: Forced power ON condition.

6.4. Data Copy by USB Memory

Note:

SD card can not be used for Data Copy.

6.4.1. Purpose

(a) Board replacement (Copy the data when exchanging A-board):

When exchanging A-board, the data in original A-board can be copied to USB Memory and then copy to new A-board.
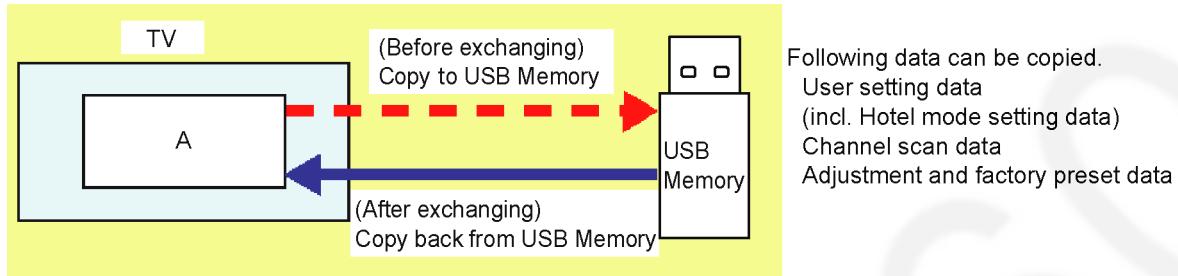
(b) Hotel (Copy the data when installing a number of units in hotel or any facility):

When installing a number of units in hotel or any facility, the data in master TV can be copied to USB Memory and then copy to other TVs.
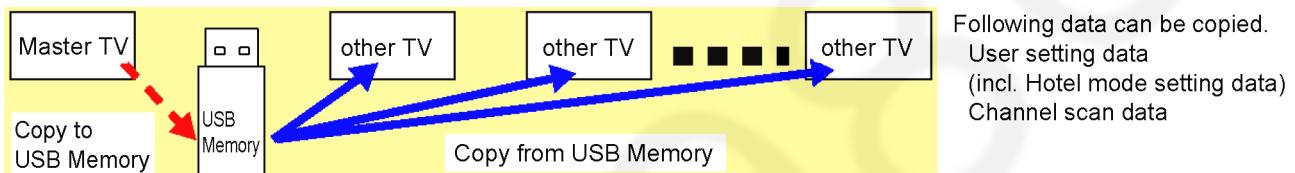
6.4.2. Preparation

Make pwd file as startup file for (a) or (b) in a empty USB Memory.

1. Insert a empty USB Memory to your PC.
2. Right-click a blank area in a USB Memory window, point to New, and then click text document. A new file is created by default (New Text Document.txt).
3. Right-click the new text document that you just created and select rename, and then change the name and extension of the file to the following file name for (a) or (b) and press ENTER.

File name:

(a) For Board replacement : boardreplace.pwd

(b) For Hotel : hotel.pwd

Note:

Please make only one file to prevent the operation error.

No any other file should not be in USB Memory.

6.4.3. Data copy from TV set to USB Memory

1. Turn on the TV set.
2. Insert USB Memory with a startup file (pwd file) to USB terminal.
   On-screen Display will be appeared according to the startup file automatically.
3. Input a following password for (a) or (b) by using remote control.
   - (a) For Board replacement : 2770
   - (b) For Hotel : 4850

   Data will be copied from TV set to USB Memory.
   It takes around 2 to 6 minutes maximum for copying.
4. After the completion of copying to USB Memory, remove USB Memory from TV set.
5. Turn off the TV set.

Note:
   Following new folder will be created in USB Memory for data from TV set.
   - (a) For Board replacement : user_setup
   - (b) For Hotel : hotel
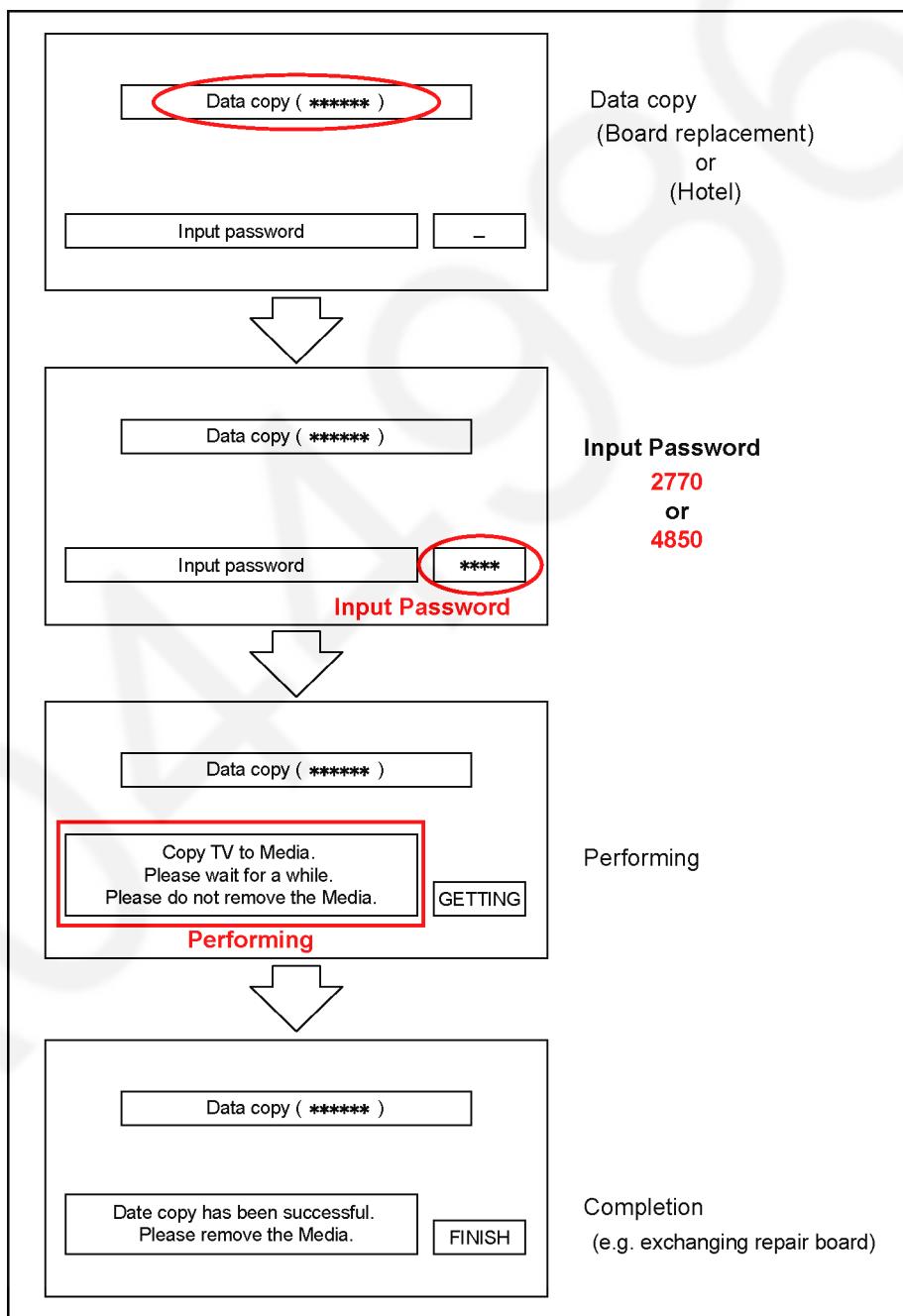
6.4.4. Data copy from USB Memory to TV set

1. Turn on the TV set.
2. Insert USB Memory with Data to USB terminal.
   On-screen Display will be appeared according to the Data folder automatically.
3. Input a following password for (a) or (b) by using remote control.
   (a) For Board replacement : 2771
   (b) For Hotel : 4851
   Data will be copied from USB Memory to TV set.
4. After the completion of copying to USB Memory, remove USB Memory from TV set.
   (a) For Board replacement : Data will be deleted after copying (Limited one copy).
   (b) For Hotel : Data will not be deleted and can be used for other TVs.
5. Turn off the TV set.

Note:

1. Depending on the failure of boards, function of Data copy for board replacement does not work.
2. This function can be effective among the same model numbers.

Data copy (******)

Input password   _

(e.g. For exchanging repair board)

Data copy (******)

Input password   ****

Input Password

Input Password
2771
or
4851

Data copy (******)

Copy Media to TV.
Please wait for a while.
Please do not remove the Media.   WRITING

Performing

Performing

Data copy (******)

Date copy has been successful.
Please turn off the TV system initializing.   FINISH

Completion

14
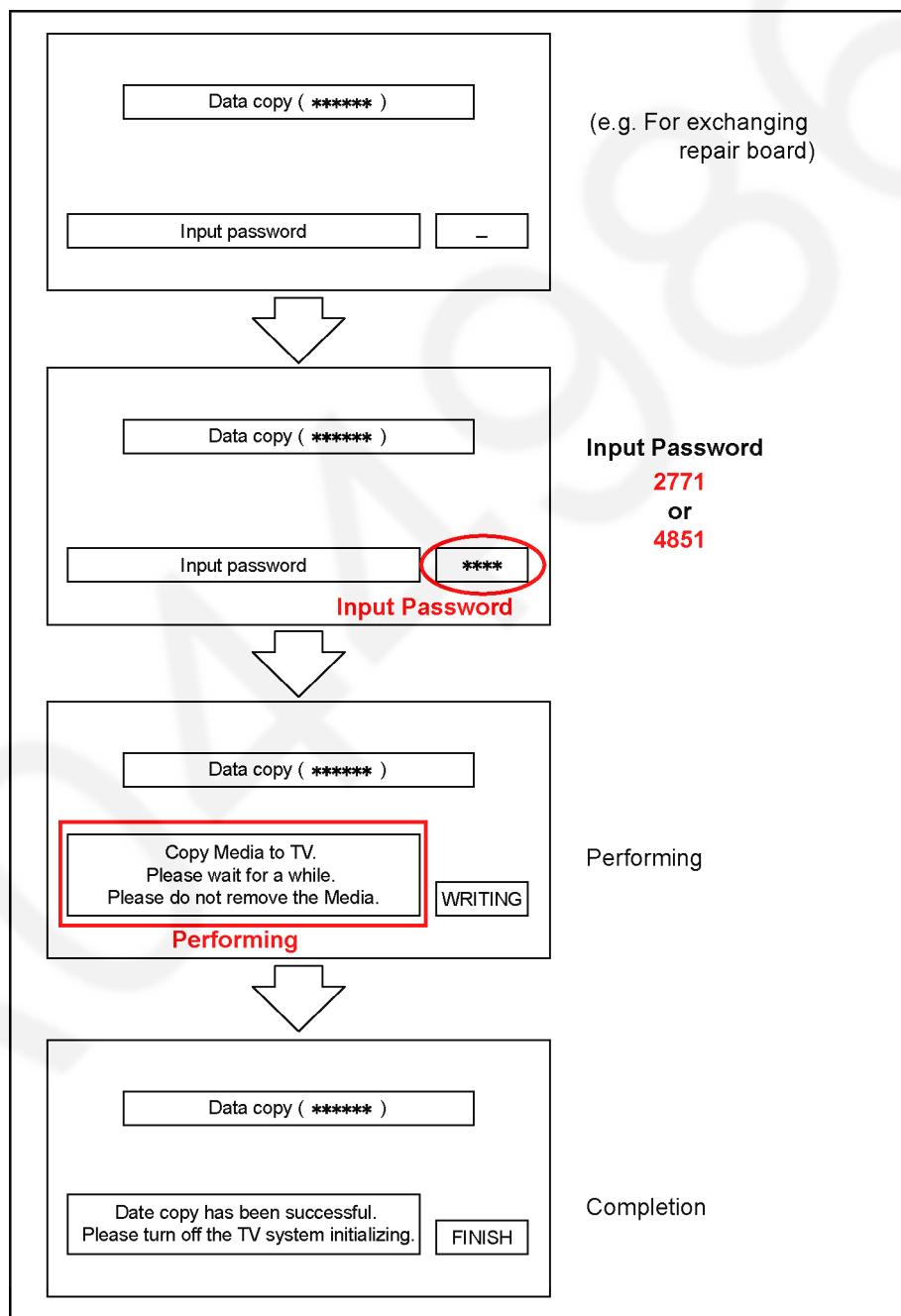
7 Troubleshooting Guide

Use the self-check function to test the unit.
1. Checking the IIC bus lines
2. Power LED Blinking timing

7.1. Check of the IIC bus lines

7.1.1. How to access

7.1.1.1. Self-check indication only:

Produce TV reception screen, and while pressing [VOLUME (-)] button on the main unit, press [OK] button on the remote control for more than 3 seconds.

7.1.1.2. Self-check indication and forced to factory shipment setting:

Produce TV reception screen, and while pressing [VOLUME (-)] button on the main unit, press [MENU] button on the remote control for more than 3 seconds.

7.1.2. Exit

Disconnect the AC cord from wall outlet or press the [POWER] button on the main unit for 3 seconds to turn off and then turn on automatically.

7.1.3. Screen display

```
55FHD
                          SELF CHECK COMPLETE

H14TUN      OK     PEAKS-SOFT      *.***
H90STBY     OK     PEAKS-EEP    **.**.****
H92MEM1     OK     LSI-PACKAGE     *.***
H91MEM2     OK     LSI-RELEASE     *.**
H17LAN      OK     STBY-SOFT     *.**.**         MODEL ID           **
H96ID       OK     STBY-EEP    *.**.****                       ********
H97ID2      OK                                                 ********
H45BT       OK
H42WiFi     OK
```
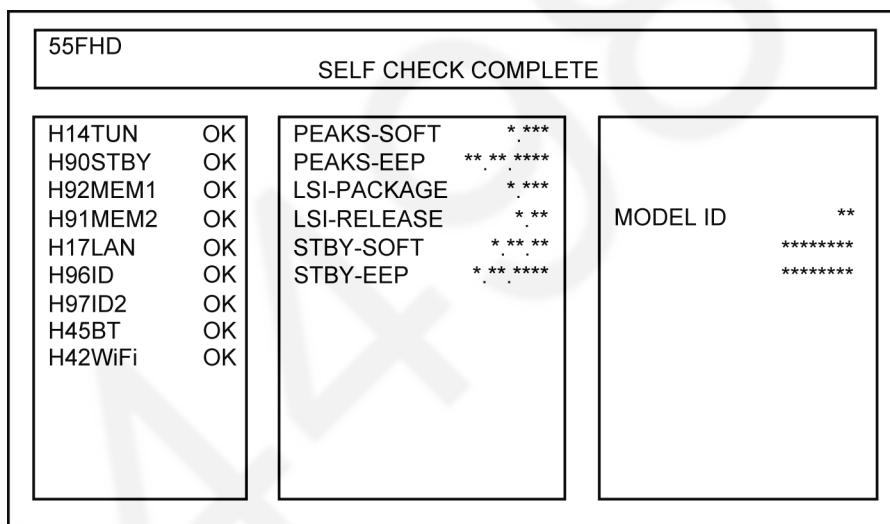
7.1.4. Check Point

Confirm the following parts if NG was displayed.

DISPLAY	Check Ref. No.	Description	Check Point
H14TUN	IC6750/JK6751	TUNER	A-Board
H90STBY	IC8000	IC Peaks-LD6	A-Board
H92MEM1	IC8901	EEPROM STM	A-Board
H91MEM2	IC8903	eMMc Memory	A-Board
H17LAN	IC8903	MAC	A-Board
H96ID	IC8903	DTCP-IP	A-Board
H97ID2	IC8903	Dimora, HDCP2, Netflix,Widevine	A-Board
H45BT	IC8601, IC8000	USB HUB, IC Peaks-LD6, Blueetooth	A-Board BT-Dongle
H42WiFi	IC8601, IC8000	USB HUB, IC Peaks-LD6, WiFi	A-Board WiFi Dongle

7.2. Power LED Blinking timing chart

1. Subject

   Information of LED Flashing timing chart.

2. Contents

   When an abnormality has occurred the unit, the protection circuit operates and reset to the stand by mode. At this time, the defective block can be identified by the number of blinks of the Power LED on the front panel of the unit.

Blinking Times	Contents	Check point
1	LED driver: BL_SOS	LCD PANEL P-Board
3	Power on Problem (No F15V / SUB3.3V / SUB1.5V voltage)	A-Board P-Board
7	No voltage SUB3.3V detected	A-Board
9	Audio Amplifier: SOUND_SOS	A-Board Speaker
12	Back End SOS (inside of Peaks)	A-Board
13	Emergency SOS	A-Board

7.3. LCD Panel test mode

Purpose:

   To find the possible failure point where in LCD Panel or Printed Circuit Board when the abnormal picture is displayed.

How to Enter:

   While pressing [VOLUME (-)] button of the main unit, press [OPTION] button of the remote control three times within 2 seconds.

How to Exit:

   Switch off the power with the [POWER] button on the main unit or the [POWER] button on the remote control.

How to confirm:

   If the abnormal picture is displayed, go into LCD Panel test mode to display the several test patterns.

   And then, judge by the following method.

   Still abnormal picture is displayed: The cause must be in LCD Panel.

   Normal picture is displayed: The cause must be in A board.

Remarks:

   The test pattern is created by the circuit in LCD Panel.

   In LCD Panel test mode, this test pattern is displayed unaffected by signal processing for RF or input signal.

   If the normal picture is displayed, LCD Panel must be okay and the cause of failure must be in A board.

8 Disassembly and Assembly Instructions

8.1. Disassembly Flow Chart for the Unit

This is a disassembly chart.
When assembling, perform this chart conversely.

```
Pedestal
   │
Rear Cover
   │
   ├──────────────┬──────────────┬──────────────┐
A-Board        P-Board       GK-Board      Vesa Metals
   │              │              │
Side/Bottom    P-PCB         Key Button
AV Bracket     Barrier       Bracket
   │
Heatsink Bottom
   │
   ├──────────────┬──────────────┬──────────────┐
K-Board       Bottom Metals  Speaker Unit   WiFi Dongle
   │              │              │              │
LED Panel                    Speaker        USB Cable
   │                         Brackets          │
LED Panel Case                             WiFi Metal
   │              │
BT Dongle      Cabinet
   │              │
           LCD Panel
```
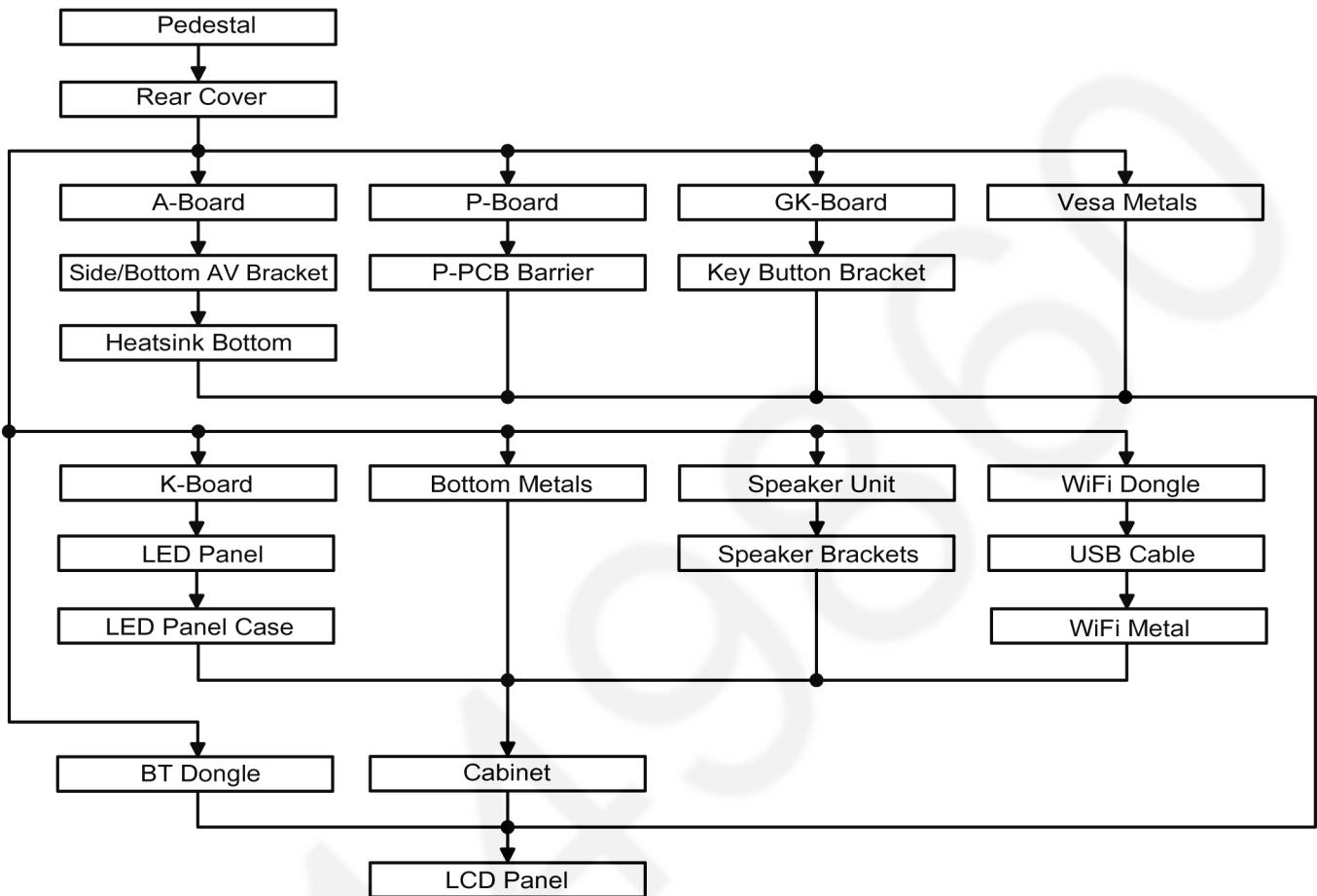
8.2. Disassembly Procedure for the Unit

8.2.1. Pedestal

1. Lay down the unit so that the rear cover faces upward.
2. Remove the 4 screws.
3. Remove the pedestal.

SCREW
THE5ZL002N (4)

PEDESTAL
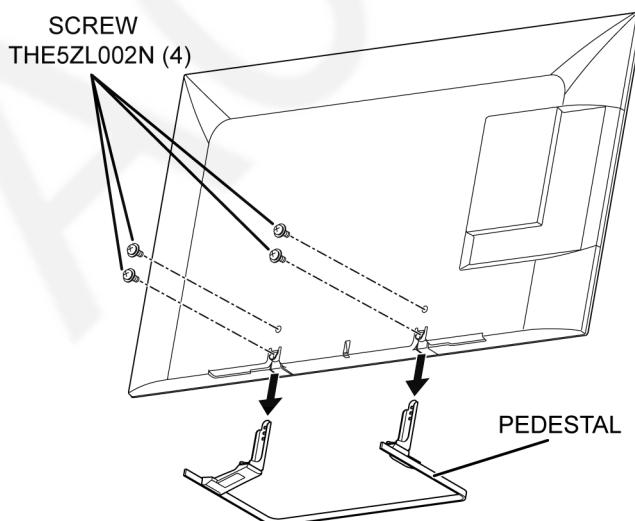
8.2.2. Back Cover

1. Remove the 19 screws (A).
2. Remove the 8 screws (B).
3. Remove the Back Cover.

BACK COVER

SCREW (A) THTD037J (19)
SCREW (B) THEC1509 (8)
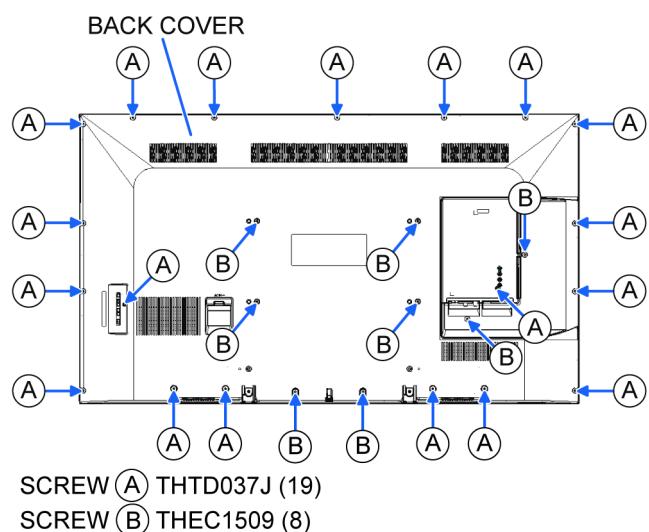
8.2.3. P-Board

1. Remove the 7 screws.
2. Disconnect the connectors (P2, P4 and P5).
3. Remove the P-Board.

P4

P5

P2

P-BOARD

SCREW THEJ036J (7)
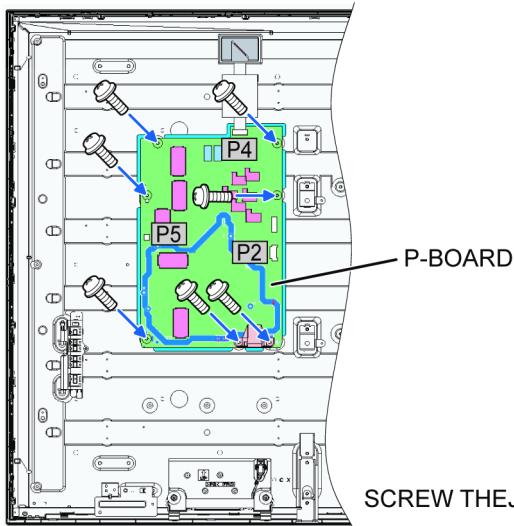
4. Remove the P-PCB Barrier.

BARRIER P-PCB
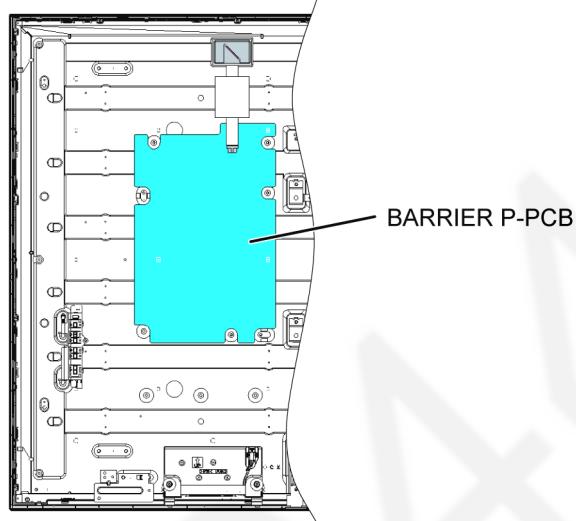
8.2.4. A-Board

1. Remove the 6 screws.
2. Disconnect the connectors (A02, A10, A12, A15, A16 and WiFi).

A02

WiFi

A12

A-BOARD

A15

A16

A10

SCREW THEJ036J (6)
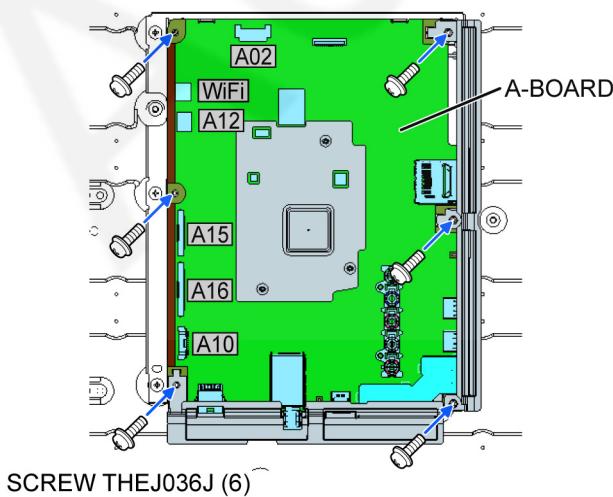
3. Remove the Side and Bottom AV Brackets.

A-BOARD

SIDE AV BRACKET

BOTTOM AV BRACKET
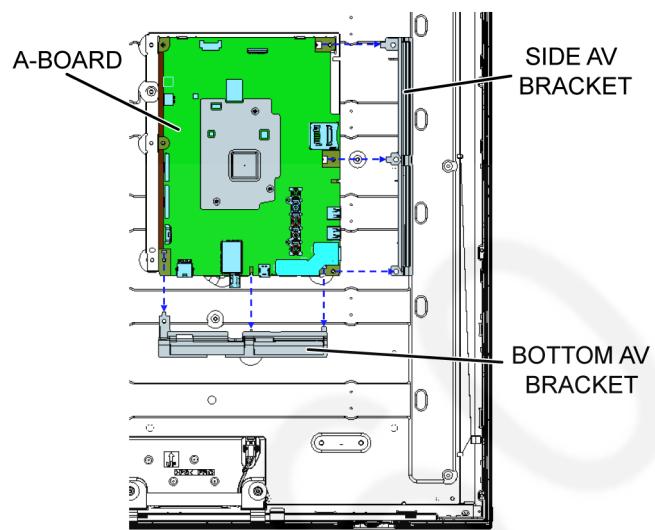
4. Remove the A-Board.
5. Remove the 7 screws.

HEAT SINK BOTTOM

SCREW THEC1509 (7)
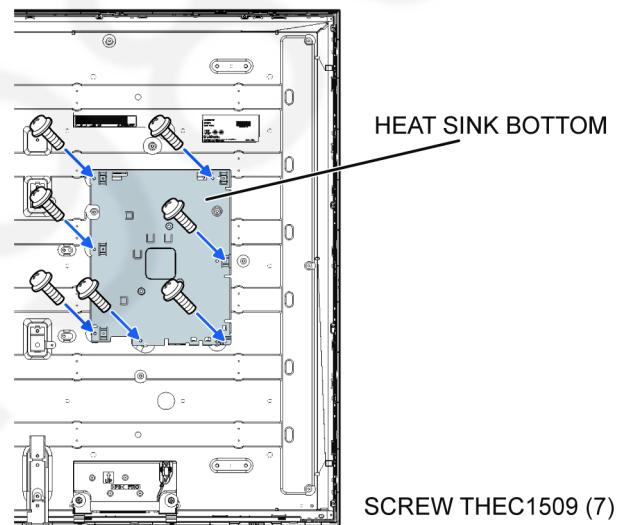
6. Remove the Heat Sink Bottom.

8.2.5. K-Board

1. Remove the LED panel assy.
2. Disconnect the connector (K10).

LED PANEL ASSY

Hook

Hook

Bottom view

Cabinet
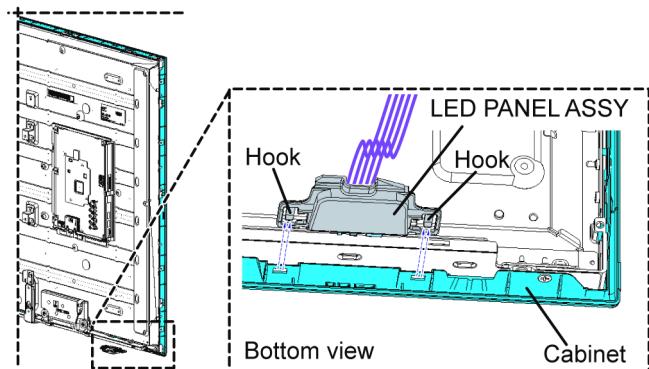
3. Remove the LED panel, the K-Board and LED panel case.

LED PANEL
GUIDE
K-BOARD
K10 GUIDE
LED PANEL CASE

8.2.6. GK-Board

1. Remove the control unit.

GK4
CONTROL UNIT
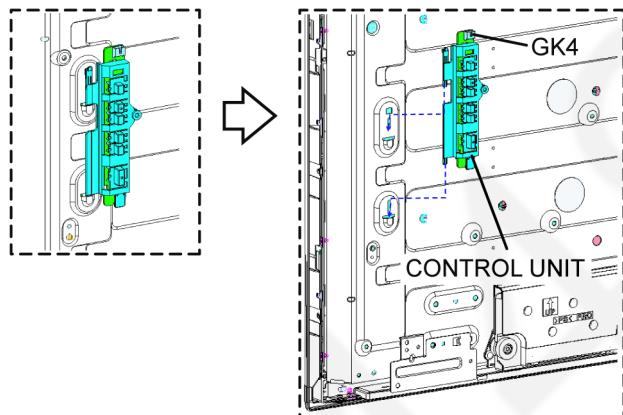
2. Disconnect the connector (GK4).
3. Remove the locking tab.

Guide pin
Hook
Locking Tab

GK-Board
KEY BUTTON BRACKET
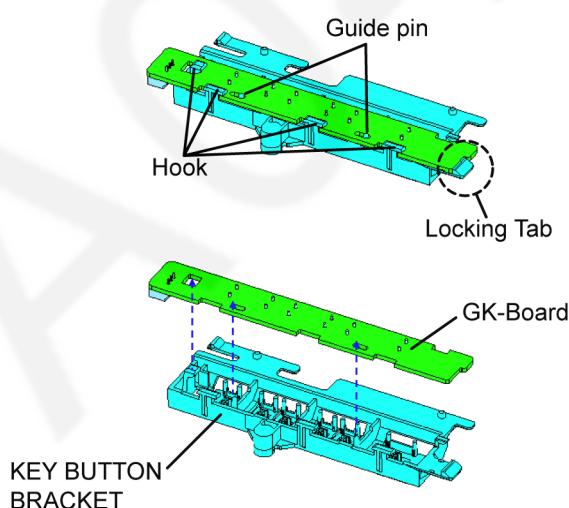
4. Remove the GK-Board and the Key Button Bracket.

8.2.7. WiFi Dongle

1. Remove the 1 screw.
2. Remove the WiFi-Dongle.

SCREW THEJ036J (1)   WiFi DONGLE

3. Remove the 1 screw
4. Remove the WiFi cable.

Guide
SCREW THEJ036J (1)   USB CABLE
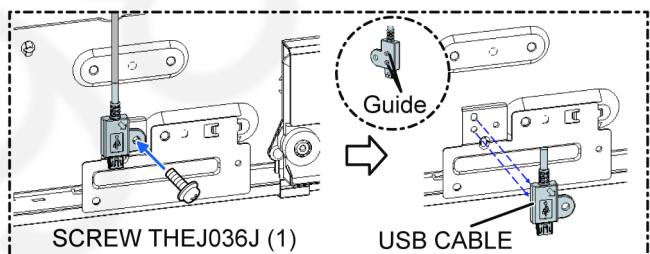
5. Remove the 1 screw.
6. Remove the WiFi Metal.

WiFi METAL
SCREW THEJ036J (1)
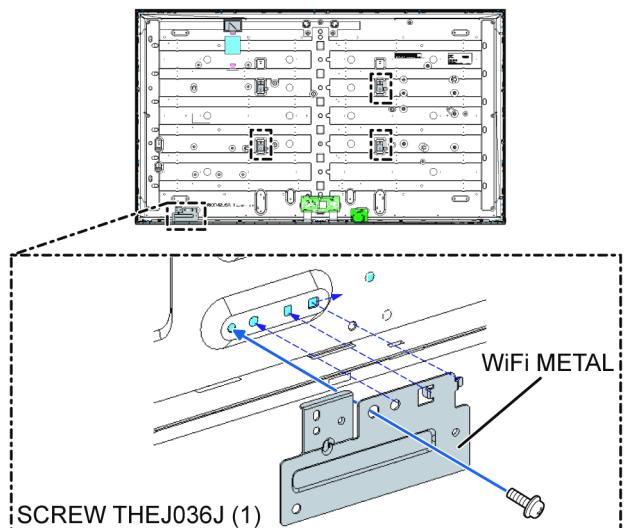
8.2.8. Speakers

1. Remove the 2 speaker units.

SPEAKER
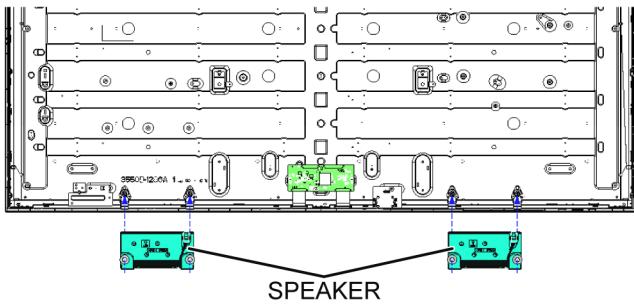
2. Remove the 4 screws.
3. Remove the 4 SP Brackets and the 4 LCD MTG Bottom.

Detail A

Detail B

SCREW
THEJ036J (4)

Detail C

SP BRACKET (4)

Guide

LCD MTG BOTTOM (4)
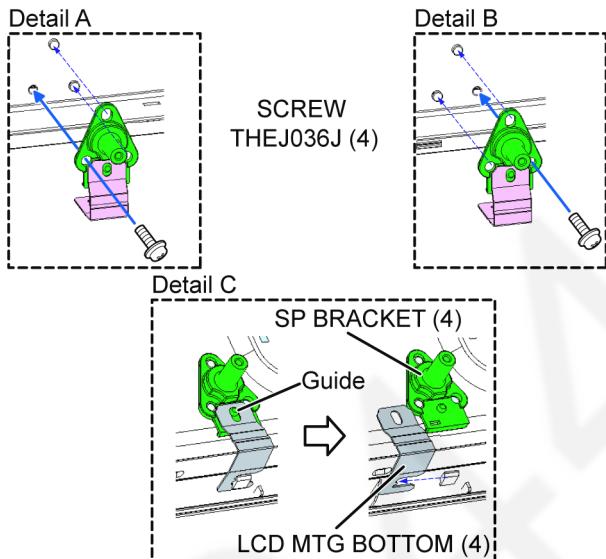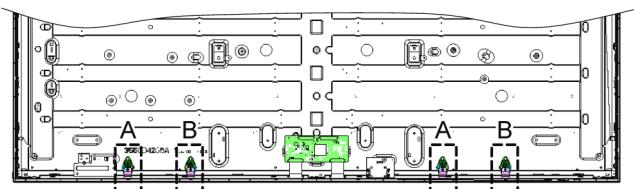
8.2.9. Bottom Metals

1. Remove the 4 screws.
2. Remove the 2 Bottom Metals.

SCREW THEJ036J (4)

Detail

BOTTOM METAL
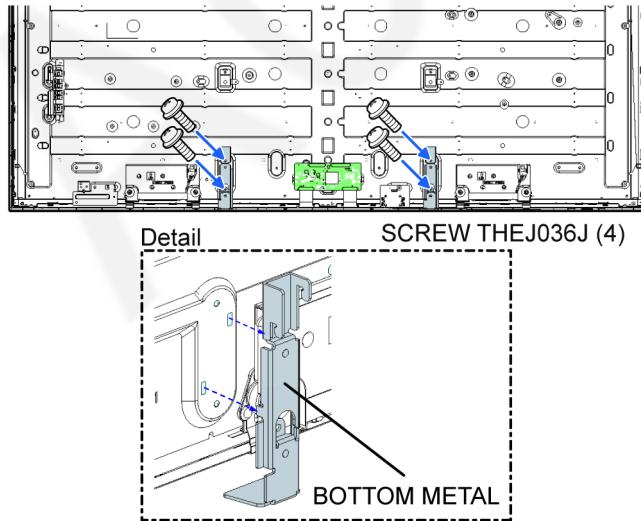
8.2.10. Bluetooth Dongle

1. Remove the BT Dongle.
2. Disconnect the connector.

BT DONGLE

Locking tab

Guide
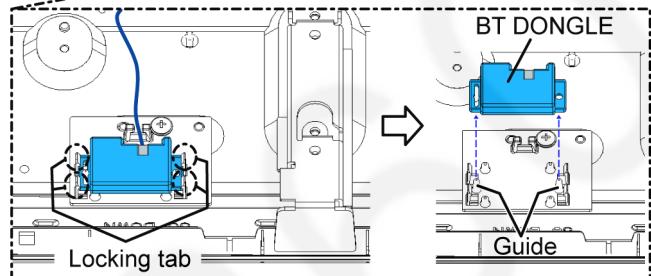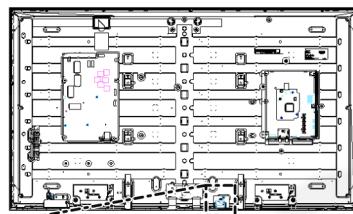
3. Remove the screw.
4. Remove the Bluetooth Bracket.

BLUETOOTH
BRACKET

SCREW THEJ036J (1)
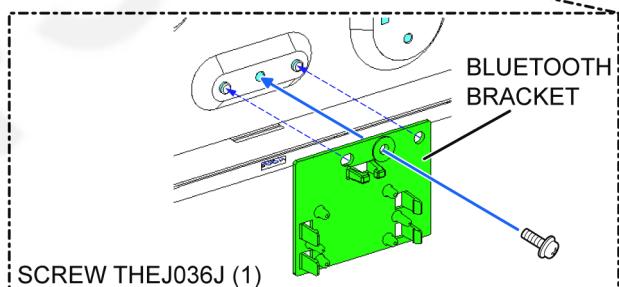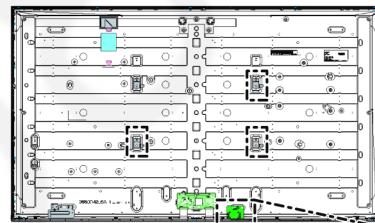
8.2.11. Vesa Metals

1. Remove the 4 screws.
2. Remove the 4 Vesa Metals.

Detail A

SCREW THEJ036J (4)
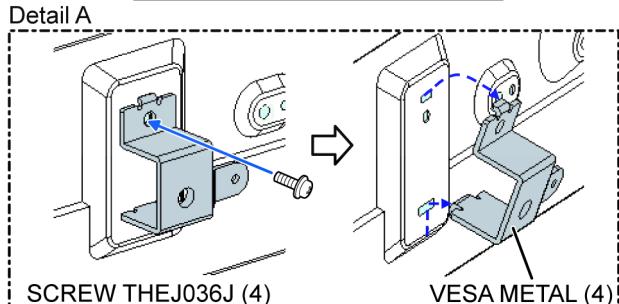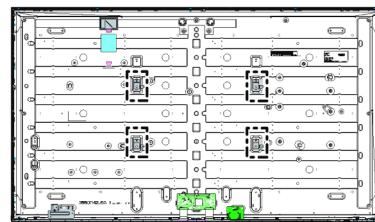
VESA METAL (4)

8.2.12. Cabinet & LCD panel

1. Remove the 4 screws.
2. Remove the 4 Vesa Metals.

SCREW
THE5Z009J (16)

CABINET
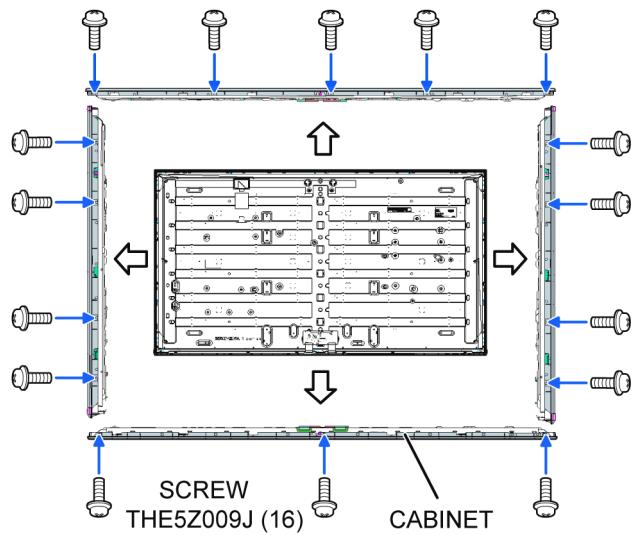
3. Remove the LCD panel.

LCD PANEL

CABINET
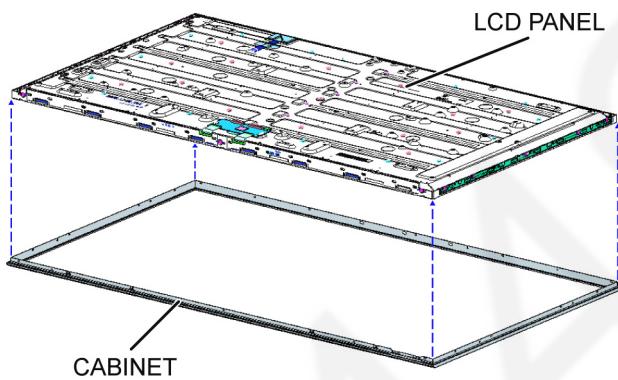
8.2.13. Felt, Sponge, and so on.

(BACK VIEW)

Mark on Board

0 ~ 1mm

0 ~ 1mm

GASKET
(T5xW10xL10)

A-BOARD

HDMI SHIELD

GASKET
(T2xW7xL15)

0 ~ 1mm

0 ~ 1mm

GASKET
(T2xW7xL15)

0 ~ 1mm

0 ~ 1mm

Make sure the spacer
is well seated

HEAT SINK TOP

0 ~ 2mm

0 ~ 2mm

0 ~ 2mm

0 ~ 2mm

0 ~ 2mm

0 ~ 2mm

0 ~ 2mm

0 ~ 2mm

0 ~ 2mm

0 ~ 2mm

0 ~ 2mm

(A)

RUBBER FOR DDR

HEAT SINK BOTTOM

A-THERMAL
CONDUCIVE SHEET

(A)

(A)

Detail (A)

SPACER (3)

Short side

± 1mm

± 1mm

± 1mm

GASKET (T4xW5xL10)

23

KEY BUTTON BRACKET

FELT (0.45 X 95 X 8)

0 ~ 1mm

0 ~ 1mm

GK-BOARD

± 1mm

P-BOARD

AC INLET

FELT(0.45 X 20 X 10)

± 1mm

BOTTOM AV BRACKET

FELT (0.45 x 20 x 10)

± 1mm

FELT (W8 x L170 x T0.5)

0~1mm

0~1mm

1 ~ 2mm

± 3mm

FELT
(0.35X540X3)

1 ~ 2mm

± 3mm

FELT
(0.35X540X3)

CABINET

(Top view)

± 3mm

(Back view)

FELT(0.35X540X3)

1 ~ 2mm

(Side view)

CABINET

FELT

Side view

Bend

AL-PET TAPE

Bend

LCD Panel molding

± 3mm

± 3mm

X

AL-PET TAPE
(W15 X L20)

± 3mm

20mm

15mm

± 3mm

AL-PET TAPE
(W15 X L20)

± 3mm

20mm

15mm

9   Measurements and Adjustments

9.1.   Voltage chart of P-board

Power Supply Name	Test point	Spec	
24V	TP7407	23.4V ± 1.2V	
16V	TP7411	15.7V ± 0.6V	
5VS	TP7501	5.2V ± 0.2V	
PFC	TP7201 or TP7202	390V ± 15V	*HOT

9.2.   Voltage chart of A-board

Power Supply Name	Test point	Spec
PNL12V	TP4000,TP4001	12V ± 1.2V
SUB3.3V	TP8705	3.39V ± 0.15V
SUB5V	TP8704	5.17V ± 0.25V
HDMI3.3V	TP8710	3.3V ± 0.17V
SUB_AI_3.3V	TP2206	3.3V ± 0.17V
EU_TU_1.8V	TP5704	1.84V ± 0.1V
SUB1.5V	TP8101	1.52V ± 0.08V
SUB1.1V	TP8100	1.21V ± 0.06V
USB-WiFi	TP8620	5.15V ± 0.20V
SD3.3V	TP8617	3.34V ± 0.17V
USB1	TP8615	5.0V ± 0.25V
USB2	TP8611	5.0V ± 0.25V

10 Block Diagram

10.1. Main Block Diagram
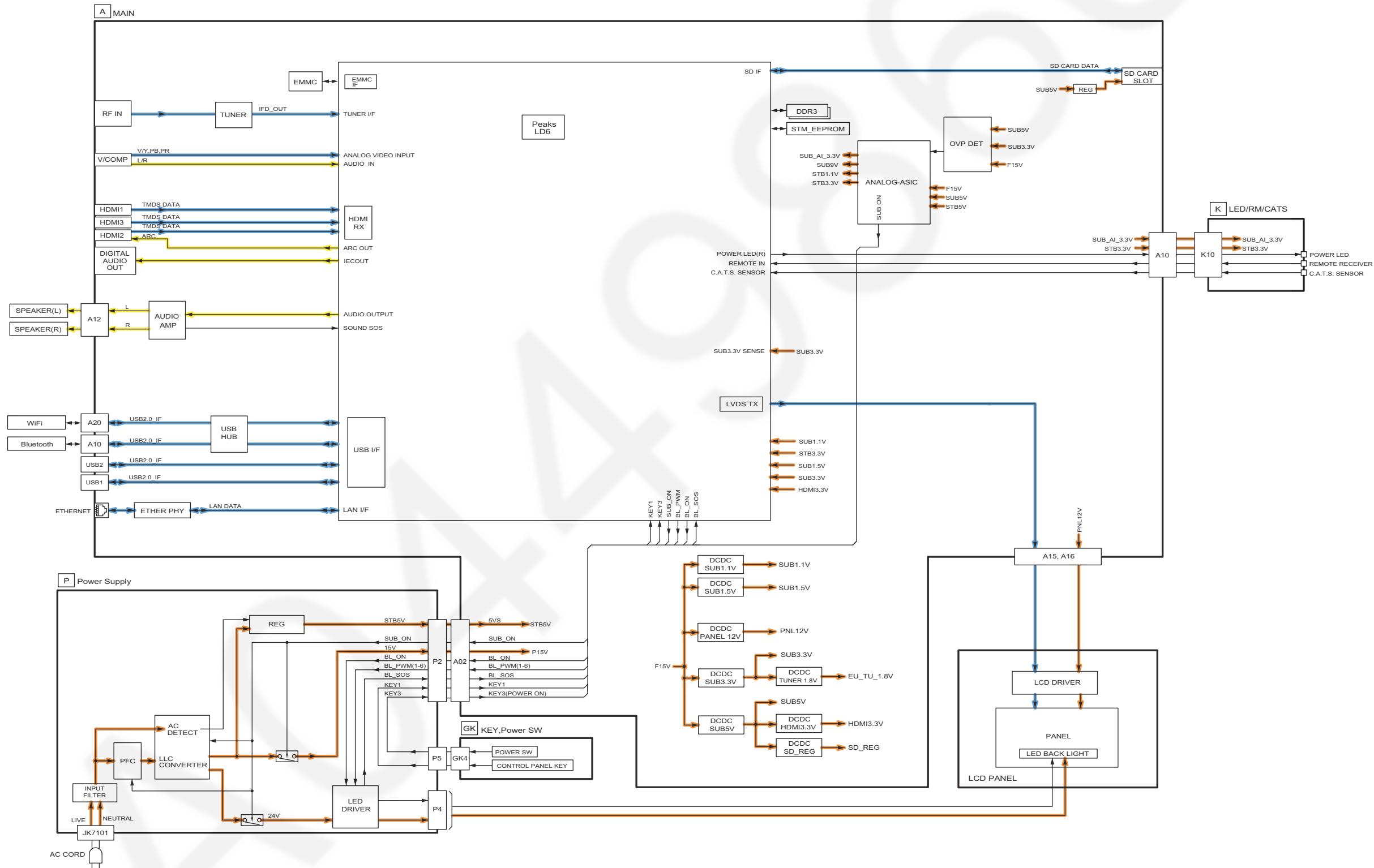
10.2. Block (1/2) Diagram
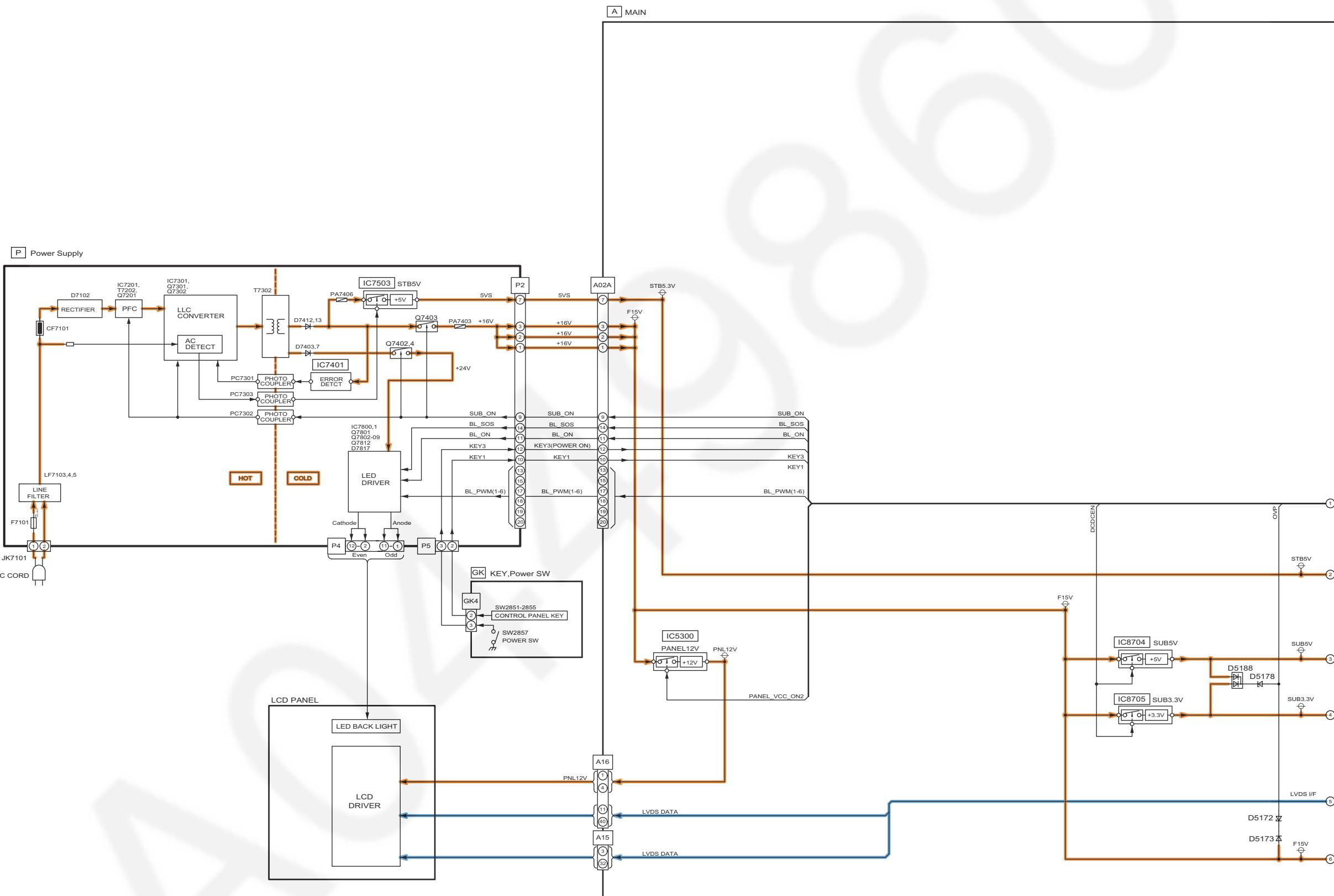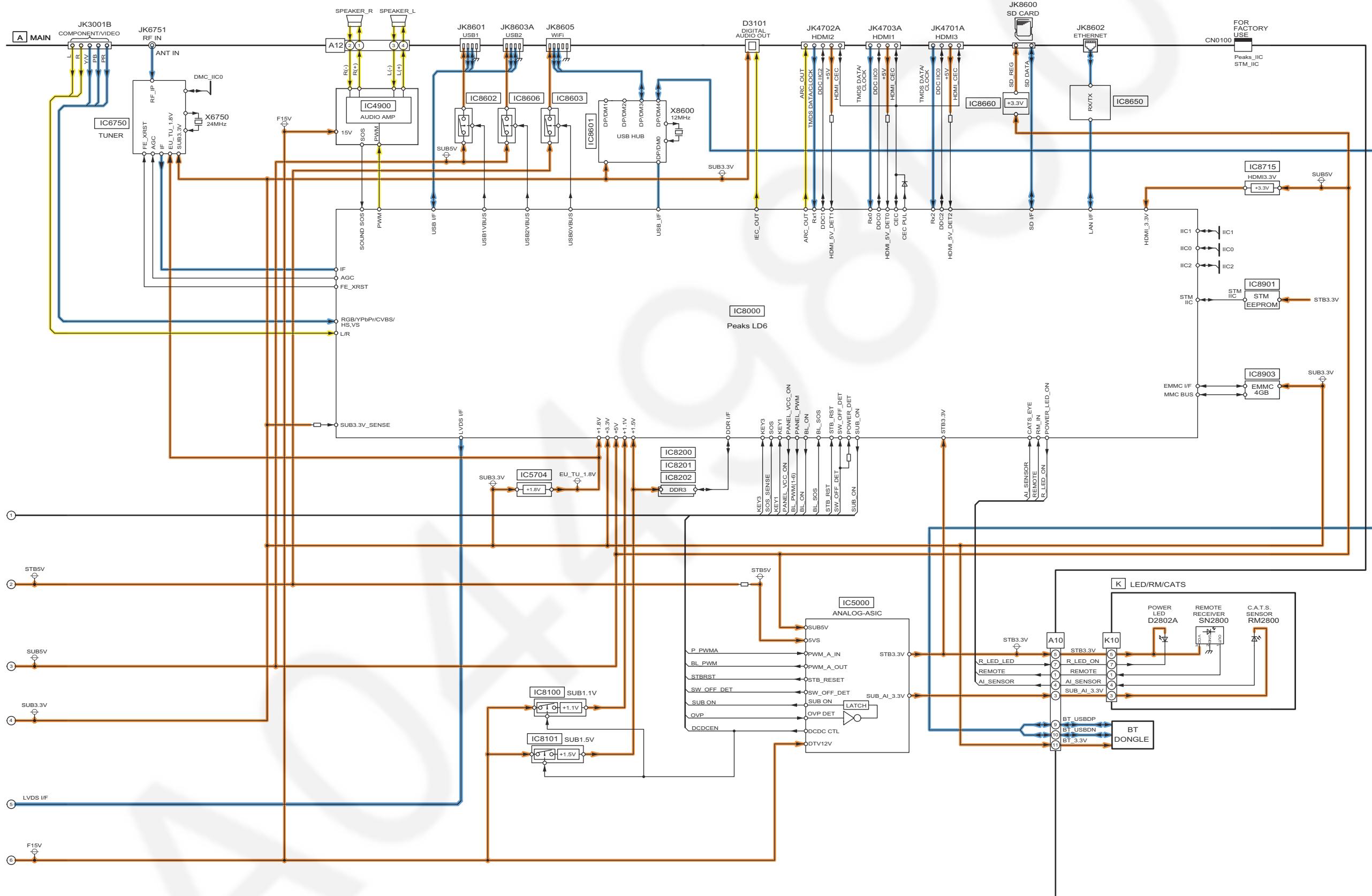
11 Wiring Connection Diagram

11.1. Caution statement.

Caution:
   Please confirm that all flexible cables are assembled correctly.
   Also make sure that they are locked in the connectors.
   Verify by giving the flexible cables a very slight pull.

11.2. Wiring 1

1) Open connector
2) Remove flat cable
3) Close connector

Press both sides of flat cable
and remove from connector.

Press

Press

110mm (2pcs)

PET TAPE

11.3. Wiring 2

0 ~ 5mm **± 1mm** **0 ~ 5mm** **0 ~ 3mm**

A-BOARD

A16

F

G

E

0 ~ 3mm

D

± 3mm

LVDS FFC (51PIN)

H

15±5mm

C

± 3mm

1) Open connector
2) Remove flat cable
3) Close connector

Press both sides of flat cable
and remove from connector.

Press

Press

60mm (1pc)

PET TAPE

110mm (5pcs)

PET TAPE

AL PET TAPE (2pcs)
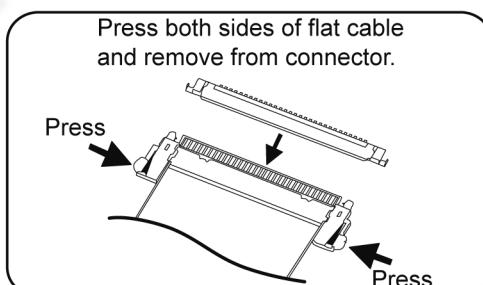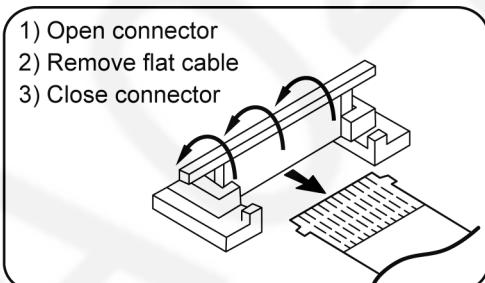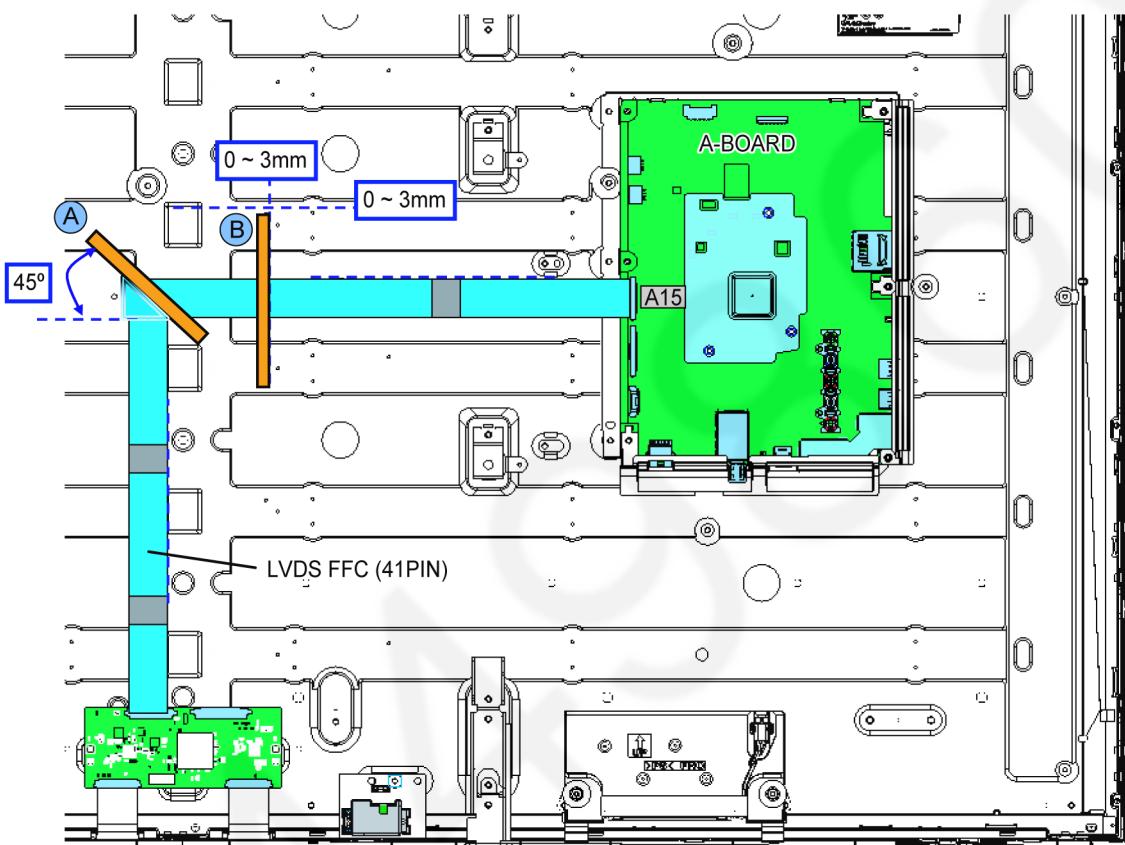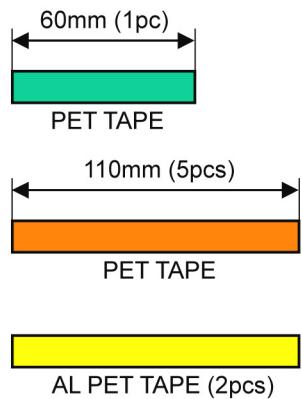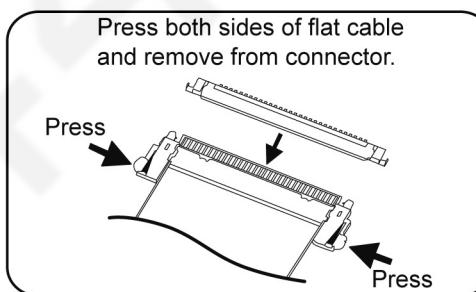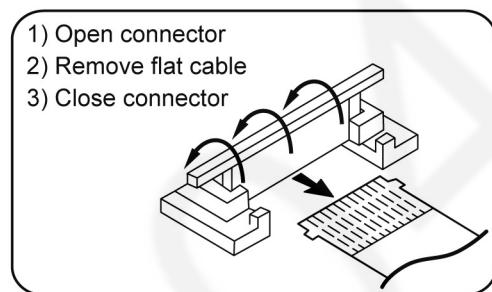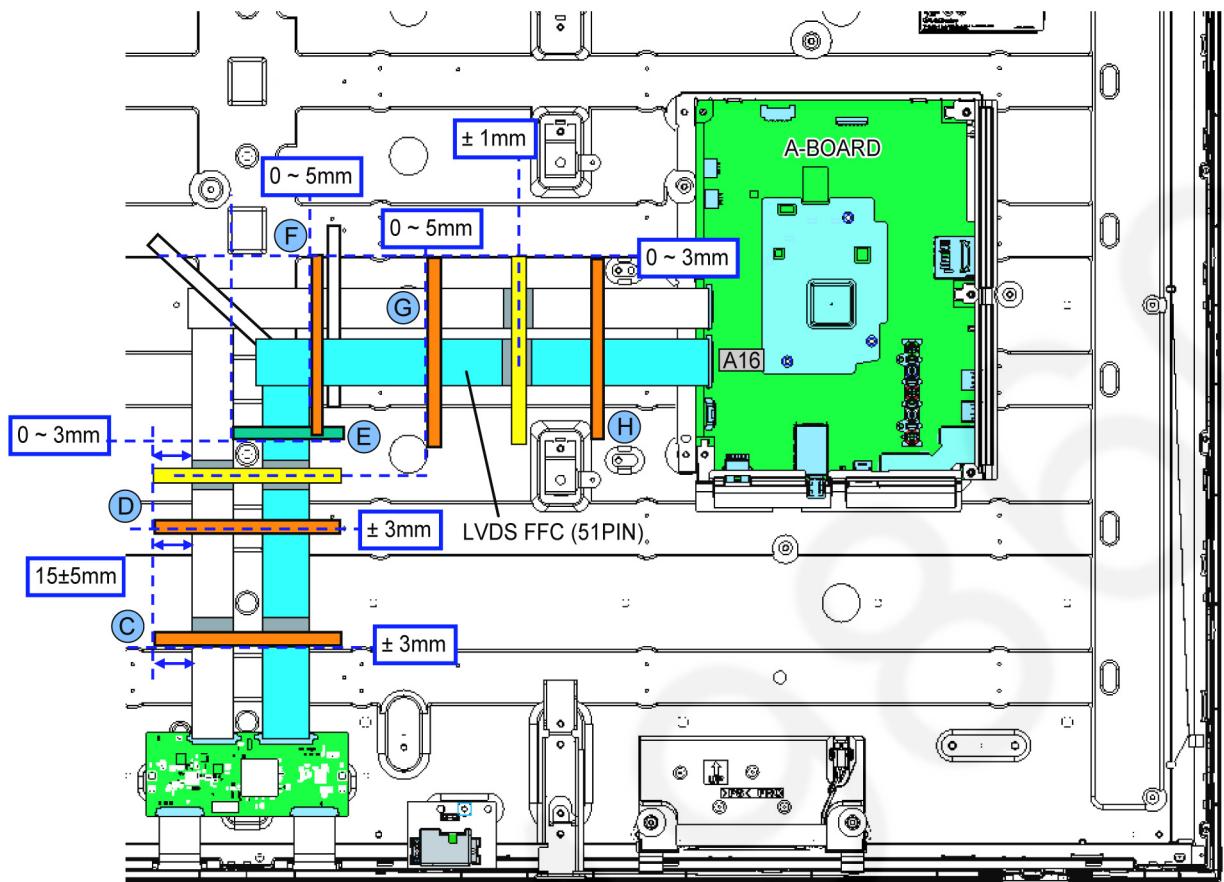
11.4. Wiring 3
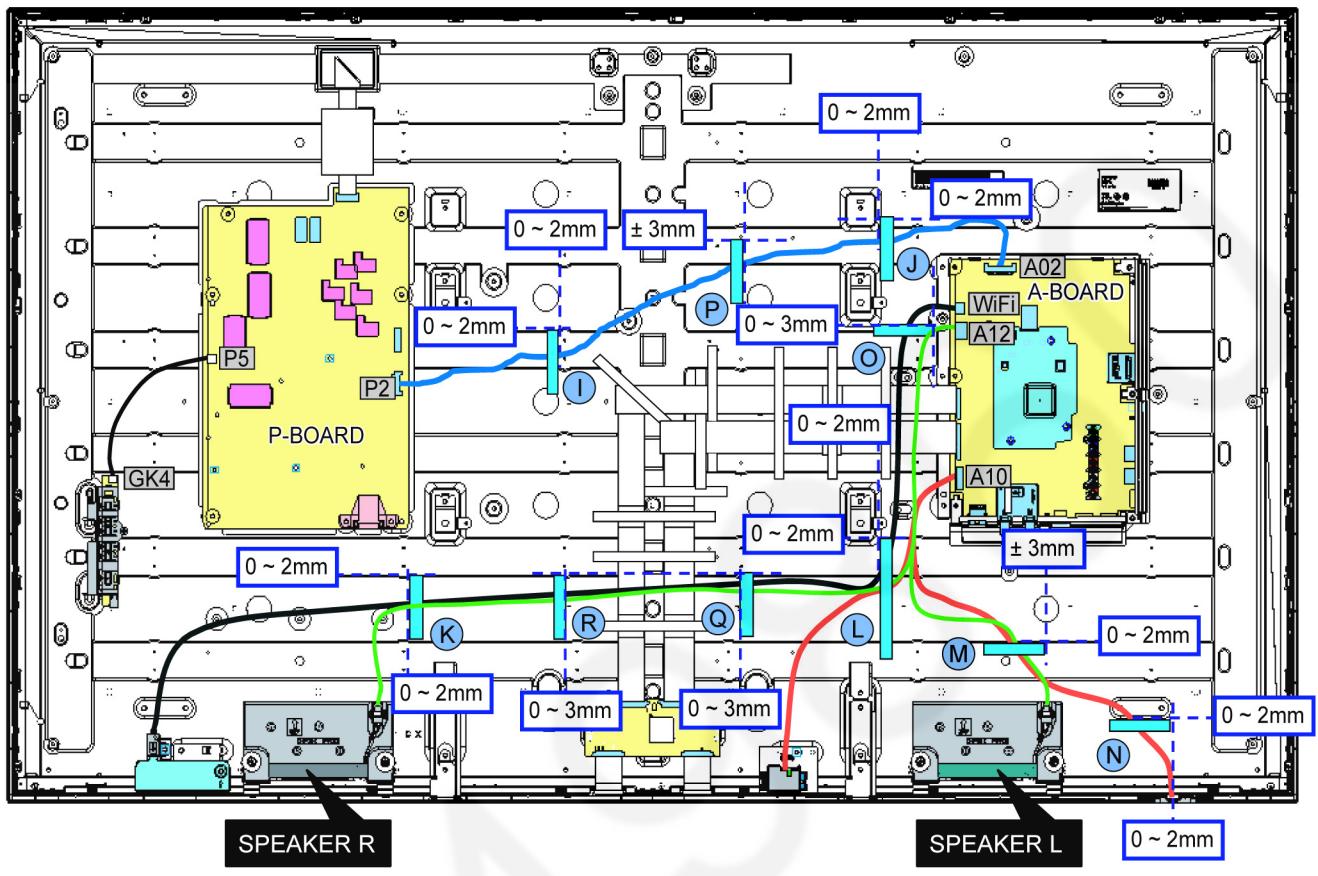
	TAPE									
CABLES	I	J	K	L	M	N	O	P	Q	R
WIRE (GK4-P5)										
WIRE (A02 - P2)	●	●						●		
WIRE (A10 - K10)					●	●				
WIRE (A10 - BT)				●						
WIRE (A12 - SPL)					●					
WIRE (A12 - SPR)			●	●					●	●
WiFi			●	●			●		●	●

60mm (9pcs)

PET TAPE

110mm (1pc)

PET TAPE
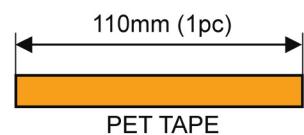
11.5. Wiring 4
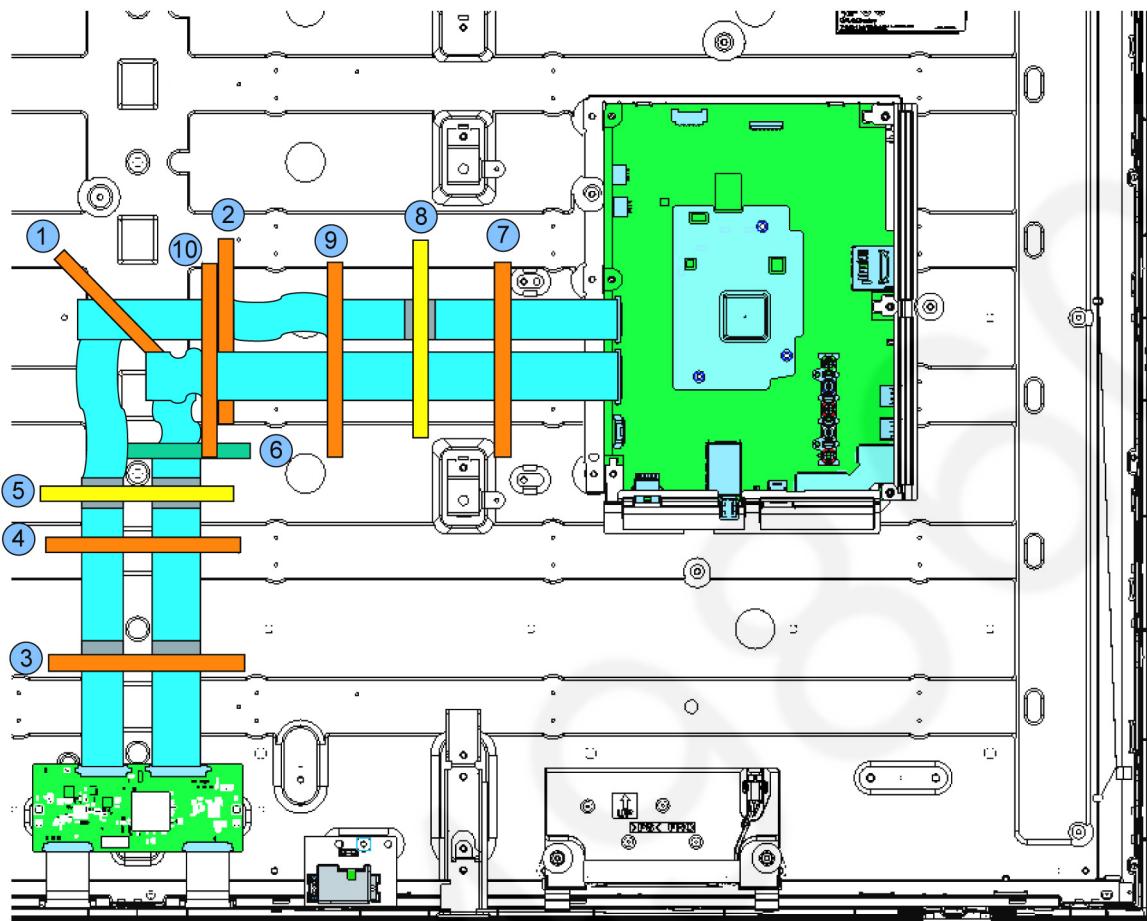
POINTS OF CARE:

Make sure the LVDS cables are correctly address, some areas of the LVDS are:

Stretched (Attached to the LCD panel)

Wavey (Separate from the LCD panel)

Follow the sequence of how to add the tapes according to the numbers.