



**LG**  
Life's Good

# **OLED TV**

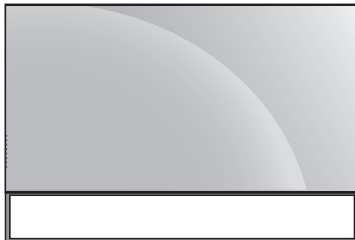
# **SERVICE MANUAL**

**CHASSIS : EAX1Z**

**MODEL : OLED88ZXP UA**

## **CAUTION**

BEFORE SERVICING THE CHASSIS, READ THE SAFETY PRECAUTIONS IN THIS MANUAL.



P/NO : MFL71717001 (2003-REV00)

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# SAFETY PRECAUTIONS

## IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by  $\triangle$  in the Exploded View.

It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent Shock, Fire, or other Hazards.

Do not modify the original design without permission of manufacturer.

### General Guidance

An **isolation Transformer should always be used** during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and its components from being damaged by accidental shorts of the circuitry that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this TV receiver is blown, replace it with the specified.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1 W), keep the resistor 10 mm away from PCB.

Keep wires away from high voltage or high temperature parts.

### Before returning the receiver to the customer,

always perform an **AC leakage current check** on the exposed metallic parts of the cabinet, such as antennas, terminals, etc., to be sure the set is safe to operate without damage of electrical shock.

### Leakage Current Cold Check(Antenna Cold Check)

With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on position, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.

If the exposed metallic part has a return path to the chassis, the measured resistance should be between 1 M $\Omega$  and 5.2 M $\Omega$ .

When the exposed metal has no return path to the chassis the reading must be infinite.

An other abnormality exists that must be corrected before the receiver is returned to the customer.

### Leakage Current Hot Check (See below Figure)

Plug the AC cord directly into the AC outlet.

### Do not use a line Isolation Transformer during this check.

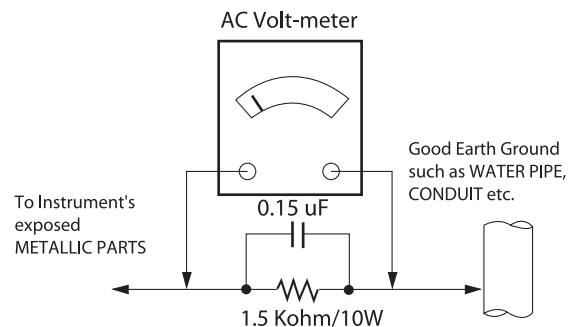
Connect 1.5 K / 10 watt resistor in parallel with a 0.15 uF capacitor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.

Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.

Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each exposed metallic part. Any voltage measured must not exceed 0.75 volt RMS which corresponds to 0.5 mA.

In case any measurement is out of the limits specified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

### Leakage Current Hot Check circuit



When 25A is impressed between Earth and 2nd Ground for 1 second, Resistance must be less than 0.1  $\Omega$

\*Base on Adjustment standard

# SERVICING PRECAUTIONS

**CAUTION:** Before servicing receivers covered by this service manual and its supplements and addenda, read and follow the **SAFETY PRECAUTIONS** on page 3 of this publication.  
**NOTE:** If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. Remember: Safety First.

## General Servicing Precautions

1. Always unplug the receiver AC power cord from the AC power source before;
  - a. Removing or reinstalling any component, circuit board module or any other receiver assembly.
  - b. Disconnecting or reconnecting any receiver electrical plug or other electrical connection.
  - c. Connecting a test substitute in parallel with an electrolytic capacitor in the receiver.**CAUTION:** A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.
2. Test high voltage only by measuring it with an appropriate high voltage meter or other voltage measuring device (DVM, FETVOM, etc) equipped with a suitable high voltage probe. Do not test high voltage by "drawing an arc".
3. Do not spray chemicals on or near this receiver or any of its assemblies.
4. Unless specified otherwise in this service manual, clean electrical contacts only by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable non-abrasive applicator; 10 % (by volume) Acetone and 90 % (by volume) isopropyl alcohol (90 % - 99 % strength)  
**CAUTION:** This is a flammable mixture.  
Unless specified otherwise in this service manual, lubrication of contacts is not required.
5. Do not defeat any plug/socket B+ voltage interlocks with which receivers covered by this service manual might be equipped.
6. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
7. Always connect the test receiver ground lead to the receiver chassis ground before connecting the test receiver positive lead.  
Always remove the test receiver ground lead last.
8. Use with this receiver only the test fixtures specified in this service manual.  
**CAUTION:** Do not connect the test fixture ground strap to any heat sink in this receiver.

## 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 static by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed to prevent 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 type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges 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 harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

## General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range of 500 °F to 600 °F.
2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.
3. Keep the soldering iron tip clean and well tinned.
4. Thoroughly clean the surfaces to be soldered. Use a mall wire-bristle (0.5 inch, or 1.25 cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.
5. Use the following unsoldering technique
  - a. Allow the soldering iron tip to reach normal temperature. (500 °F to 600 °F)
  - b. Heat the component lead until the solder melts.
  - c. Quickly draw the melted solder with an anti-static, suction-type solder removal device or with solder braid.  
**CAUTION:** Work quickly to avoid overheating the circuit board printed foil.
6. Use the following soldering technique.
  - a. Allow the soldering iron tip to reach a normal temperature (500 °F to 600 °F)
  - b. First, hold the soldering iron tip and solder the strand against the component lead until the solder melts.
  - c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.  
**CAUTION:** Work quickly to avoid overheating the circuit board printed foil.
  - d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.



### IC Remove/Replacement

Some chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in paragraphs 5 and 6 above.

#### Removal

1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.
2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

#### Replacement

1. Carefully insert the replacement IC in the circuit board.
2. Carefully bend each IC lead against the circuit foil pad and solder it.
3. Clean the soldered areas with a small wire-bristle brush. (It is not necessary to reapply acrylic coating to the areas).

### "Small-Signal" Discrete Transistor

#### Removal/Replacement

1. Remove the defective transistor by clipping its leads as close as possible to the component body.
2. Bend into a "U" shape the end of each of three leads remaining on the circuit board.
3. Bend into a "U" shape the replacement transistor leads.
4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the "U" with long nose pliers to insure metal to metal contact then solder each connection.

### Power Output, Transistor Device

#### Removal/Replacement

1. Heat and remove all solder from around the transistor leads.
2. Remove the heat sink mounting screw (if so equipped).
3. Carefully remove the transistor from the heat sink of the circuit board.
4. Insert new transistor in the circuit board.
5. Solder each transistor lead, and clip off excess lead.
6. Replace heat sink.

### Diode Removal/Replacement

1. Remove defective diode by clipping its leads as close as possible to diode body.
2. Bend the two remaining leads perpendicular y to the circuit board.
3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.
4. Securely crimp each connection and solder it.
5. Inspect (on the circuit board copper side) the solder joints of the two "original" leads. If they are not shiny, reheat them and if necessary, apply additional solder.

### Fuse and Conventional Resistor

#### Removal/Replacement

1. Clip each fuse or resistor lead at top of the circuit board hollow stake.
2. Securely crimp the leads of replacement component around notch at stake top.

3. Solder the connections.

**CAUTION:** Maintain original spacing between the replaced component and adjacent components and the circuit board to prevent excessive component temperatures.

### Circuit Board Foil Repair

Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board causing the foil to separate from or "lift-off" the board. The following guidelines and procedures should be followed whenever this condition is encountered.

#### At IC Connections

To repair a defective copper pattern at IC connections use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections).

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary).
2. Carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.
3. Bend a small "U" in one end of a small gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.
4. Route the jumper wire along the path of the out-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area and clip off any excess jumper wire.

#### At Other Connections

Use the following technique to repair the defective copper pattern at connections other than IC Pins. This technique involves the installation of a jumper wire on the component side of the circuit board.

1. Remove the defective copper pattern with a sharp knife. Remove at least 1/4 inch of copper, to ensure that a hazardous condition will not exist if the jumper wire opens.
2. Trace along the copper pattern from both sides of the pattern break and locate the nearest component that is directly connected to the affected copper pattern.
3. Connect insulated 20-gauge jumper wire from the lead of the nearest component on one side of the pattern break to the lead of the nearest component on the other side.

Carefully crimp and solder the connections.

**CAUTION:** Be sure the insulated jumper wire is dressed so the it does not touch components or sharp edges.

# SPECIFICATION

NOTE : Specifications and others are subject to change without notice for improvement.

## 1. Application range

This specification is applied to the OLED TV used EAX1Z chassis.

## 2. Test condition

Each part is tested as below without special appointment.

- (1) Temperature :  $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$  ( $77^{\circ}\text{F} \pm 9^{\circ}\text{F}$ ) , CST :  $40^{\circ}\text{C} \pm 5^{\circ}\text{C}$
- (2) Relative Humidity:  $65\% \pm 10\%$
- (3) Power Voltage  
: Standard input voltage (AC 100-240 V~, 50/60 Hz)  
\* Standard Voltage of each products is marked by models.
- (4) Specification and performance of each parts are followed each drawing and specification by part number in accordance with BOM.
- (5) The receiver must be operated for about 5 minutes prior to the adjustment.

## 3. Test method

- (1) Performance: LGE TV test method followed
- (2) Demanded other specification
  - Safety : UL, CSA, CE, IEC specification
  - EMC : FCC, ICES, CE, IEC specification

## 4. General Specification

No	Item		Specification	Remark
1	Market		North America	
2	Broadcasting system		ATSC / NTSC-M, 64 & 256 QAM	
3	Available Channel		VHF : 02~13	
			UHF : 14~69	
			DTV : 02-69	
			CATV : 01~135	
			CADTV : 01~135	
4	Receiving system		Digital : ATSC, 64 & 256 QAM Analog : NTSC-M	
5	Video Input		NTSC-M	Rear gender(1EA)
6	HDMI Input	HDMI 1	PC / DTV format	Support HDMI2.1
		HDMI 2	PC / DTV format	Support HDMI2.1
		HDMI 3	PC / DTV format	Support HDMI2.1
		HDMI 4	PC / DTV format	Support HDMI2.1
7	Audio Input		AV Audio / DVI Audio	Rear(AV Gender), L/R Input : Rear AV and DVI use same jack
8	Audio out	SPDIF(1EA)	Optical Audio out	Rear(1EA)
		HeadPhone(1EA)	HeadPhone out	Rear(1EA)
9	USB Input(3EA)		EMF, DivX HD, For SVC (download)	JPEG, MP3, DivX HD
10	Ethernet Connect (1EA)		Ethernet Connect	

## 5. External Input Support Format

### 5.1. HDMI Input (PC/DTV)

No.	Resolution	H-freq(kHz)	V-freq.(kHz)	Pixel clock(MHz)	Proposed	Remarks
HDMI-PC						
1	640*350	31.46	70.09	25.17	EGA	
2	720*400	31.46	70.08	28.32	DOS	
3	640*480	31.46	59.94	25.17	VESA(VGA)	
4	800*600	37.87	60.31	40	VESA(SVGA)	
5	1024*768	48.36	60	65	VESA(XGA)	
6	1360*768	47.71	60.01	84.75	VESA(WXGA)	
7	1152*864	54.34	60.05	80	VESA	
8	1280*1024	63.98	60.02	109	SXGA	Support to HDMI-PC
9	1920*1080	67.5	60	158.4	WUXGA(Reduced Blanking)	
10	1920*1080	134.86	119.88	296.7	UDTV 2160P	Not Support for FHD.
11	1920*1080	135	120	297	UDTV 2160P	Not Support for FHD.
12	3840*2160	53.95	23.98	296.7	UDTV 2160P	Not Support for FHD.
13	3840*2160	54	24	297	UDTV 2160P	Not Support for FHD.
14	3840*2160	56.25	25	297	UDTV 2160P	Not Support for FHD.
15	3840*2160	61.43	29.97	296.7	UDTV 2160P	Not Support for FHD.
16	3840*2160	67.5	30	297	UDTV 2160P	Not Support for FHD.
17	3840*2160	112.5	50	594	UDTV 2160P	Not Support for FHD.
18	3840*2160	134.86	59.94	593.4	UDTV 2160P	Not Support for FHD.
19	3840*2160	135	60	594	UDTV 2160P	Not Support for FHD.
20	4096*2160	53.95	23.98	296.7	UDTV 2160P	Not Support for FHD.
21	4096*2160	54	24	297	UDTV 2160P	Not Support for FHD.
22	4096*2160	56.25	25	297	UDTV 2160P	Not Support for FHD.
23	4096*2160	61.43	29.97	296.7	UDTV 2160P	Not Support for FHD.
24	4096*2160	67.5	30	297	UDTV 2160P	Not Support for FHD.
25	4096*2160	112.5	50	594	UDTV 2160P	Not Support for FHD.
26	4096*2160	134.86	59.94	593.4	UDTV 2160P	Not Support for FHD.
27	4096*2160	135	60	594	UDTV 2160P	Not Support for FHD.
28	2560*1440	88.78	59.95	241.5	3K	(UHD 60Hz models only), Support only when UHD DeepColor is On
29	2560*1440	182.99	119.99	497.7	3K	

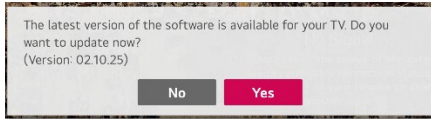
No.	Resolution	H-freq(kHz)	V-freq.(kHz)	Pixel clock(MHz)	Proposed	Remarks
HDMI-DTV						
1	640*480	31.46	59.94	25.12	SDTV 480P	
2	640*480	31.5	60	25.12	SDTV 480P	
3	720*480	31.47	59.94	27	SDTV 480P	
4	720*480	31.5	60	27.02	SDTV 480P	
5	720*576	31.25	50	27	SDTV 576P	
6	1280*720	44.96	59.94	74.17	HDTV 720P	
7	1280*720	45	60	74.25	HDTV 720P	
8	1280*720	37.5	50	74.25	HDTV 720P	

No.	Resolution	H-freq(kHz)	V-freq.(kHz)	Pixel clock(MHz)	Proposed	Remarks
9	1920*1080	28.12	50	74.25	HDTV 1080I	
10	1920*1080	33.72	59.94	74.17	HDTV 1080I	
11	1920*1080	33.75	60	74.25	HDTV 1080I	
12	1920*1080	26.97	23.97	63.29	HDTV 1080P	
13	1920*1080	27	24	63.36	HDTV 1080P	
14	1920*1080	33.71	29.97	79.12	HDTV 1080P	
15	1920*1080	33.75	30	79.2	HDTV 1080P	
16	1920*1080	56.25	50	148.5	HDTV 1080P	
17	1920*1080	67.43	59.94	148.35	HDTV 1080P	
18	1920*1080	67.5	60	148.5	HDTV 1080P	
19	1920*1080	112.5	100	297	UDTV 2160P	Not Support for FHD.
20	1920*1080	134.86	119.88	296.7	UDTV 2160P	Not Support for FHD.
21	1920*1080	135	120	297	UDTV 2160P	Not Support for FHD.
22	3840*2160	53.95	23.98	296.7	UDTV 2160P	Not Support for FHD.
23	3840*2160	54	24	297	UDTV 2160P	Not Support for FHD.
24	3840*2160	56.25	25	297	UDTV 2160P	Not Support for FHD.
25	3840*2160	61.43	29.97	296.7	UDTV 2160P	Not Support for FHD.
26	3840*2160	67.5	30	297	UDTV 2160P	Not Support for FHD.
27	3840*2160	112.5	50	594	UDTV 2160P	Not Support for FHD.
28	3840*2160	134.86	59.94	593.4	UDTV 2160P	Not Support for FHD.
29	3840*2160	135	60	594	UDTV 2160P	Not Support for FHD.
30	3840*2160	225	100	1188	UDTV 2160P	4K120 model (K6Hp HDMI 3,4 port, O20) or 8K model
31	3840*2160	269.73	119.88	1186.8	UDTV 2160P	
32	3840*2160	270	120	1188	UDTV 2160P	
33	4096*2160	53.95	23.98	296.7	UDTV 2160P	Not Support for FHD.
34	4096*2160	54	24	297	UDTV 2160P	Not Support for FHD.
35	4096*2160	56.25	25	297	UDTV 2160P	Not Support for FHD.
36	4096*2160	61.43	29.97	296.7	UDTV 2160P	Not Support for FHD.
37	4096*2160	67.5	30	297	UDTV 2160P	Not Support for FHD.
38	4096*2160	112.5	50	594	UDTV 2160P	Not Support for FHD.
39	4096*2160	134.86	59.94	593.4	UDTV 2160P	Not Support for FHD.
40	4096*2160	135	60	594	UDTV 2160P	Not Support for FHD.
41	4096*2160	225	100	1188	UDTV 2160P	4K120 model (K6Hp HDMI 3,4 port, O20) or 8K model
42	4096*2160	269.73	119.88	1186.8	UDTV 2160P	
43	4096*2160	270	120	1188	UDTV 2160P	
44	7680*4320	107.89	23.98	1188	8K	8K Model Only.
45	7680*4320	108	24	1188	8K	8K Model Only.
46	7680*4320	110	25	1188	8K	8K Model Only.
47	7680*4320	131.87	29.97	1188	8K	8K Model Only.
48	7680*4320	132	30	1188	8K	8K Model Only.
49	7680*4320	220	50	2376	8K	8K Model Only.
50	7680*4320	263.74	59.94	2376	8K	8K Model Only.
51	7680*4320	264	60	2376	8K	8K Model Only.

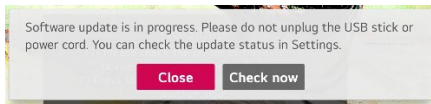
# SOFTWARE UPDATE

## 1. USB

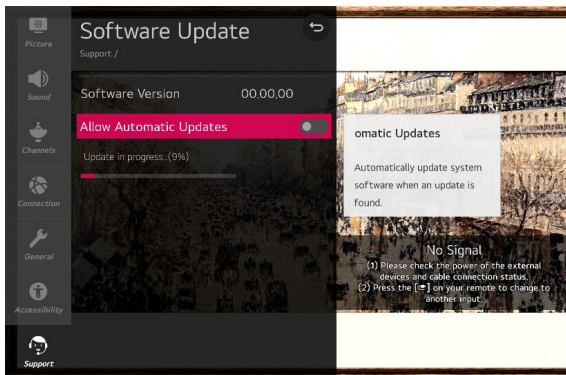
- (1) Insert the USB memory Stick to the USB port
- (2) Automatically detect the SW Version and show the below message



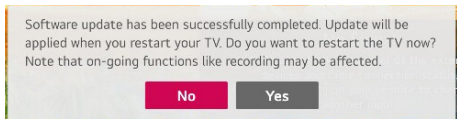
- (3) Click [YES]: initiate the download and install of the update.



- (4) Click [Check Now]: move to "About This TV" page for update
- (5) TV is updating



- (6) After finished the update, below Pop-up appear

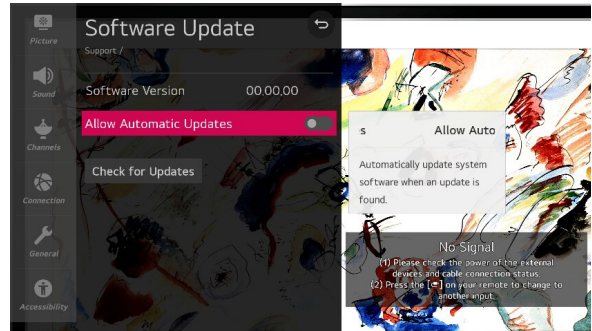


- (7) Click [Yes] : TV will be DC OFF -> ON
- (8) After TV turned on, Check the updated SW Version and Tool Option

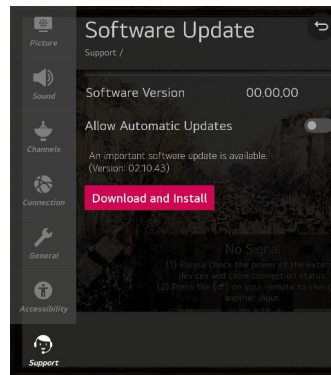
## 2. NSU

(This Function is needed to connect to the internet)

- (1) Menu -> All Settings -> Support -> Software Update

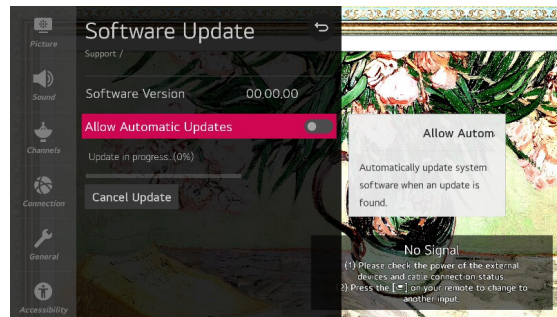


- (2) Click [CHEK FOR UPDATES] : system check newest version

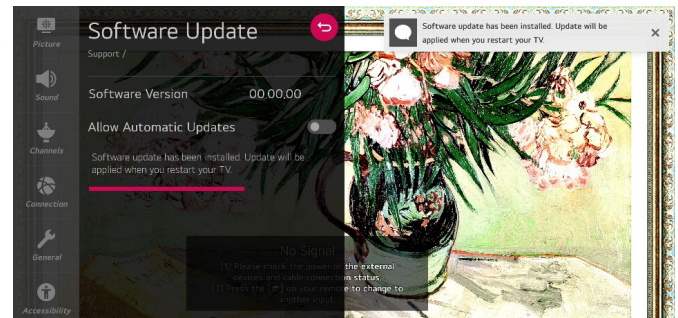


- (3) Click [DOWNLOAD AND INSTALL]

- (4) TV is updating



- (5) After finished the update, below Pop-up appear




- (6) Turn OFF the TV and On. Check the updated SW Version and Tool Option

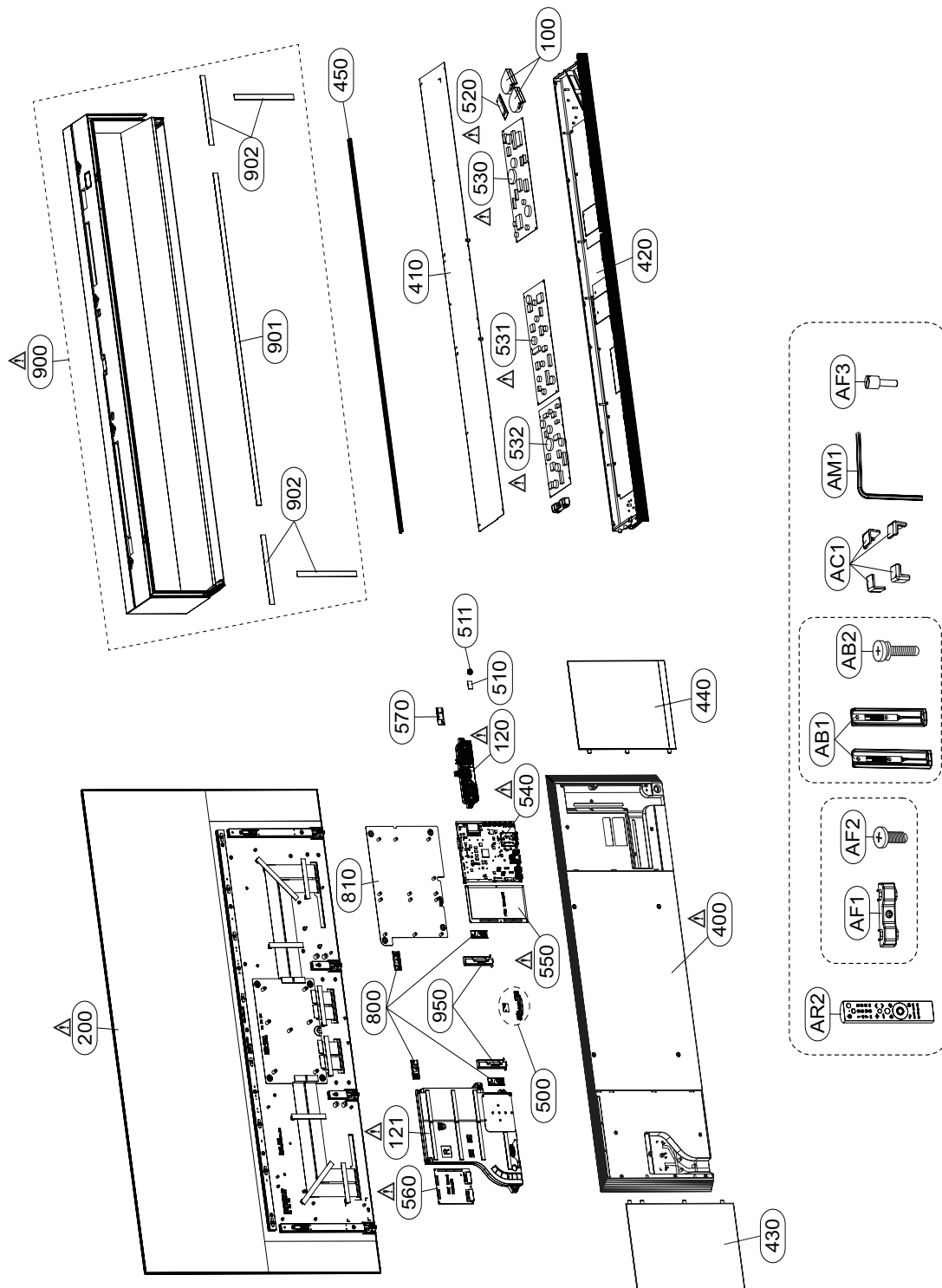




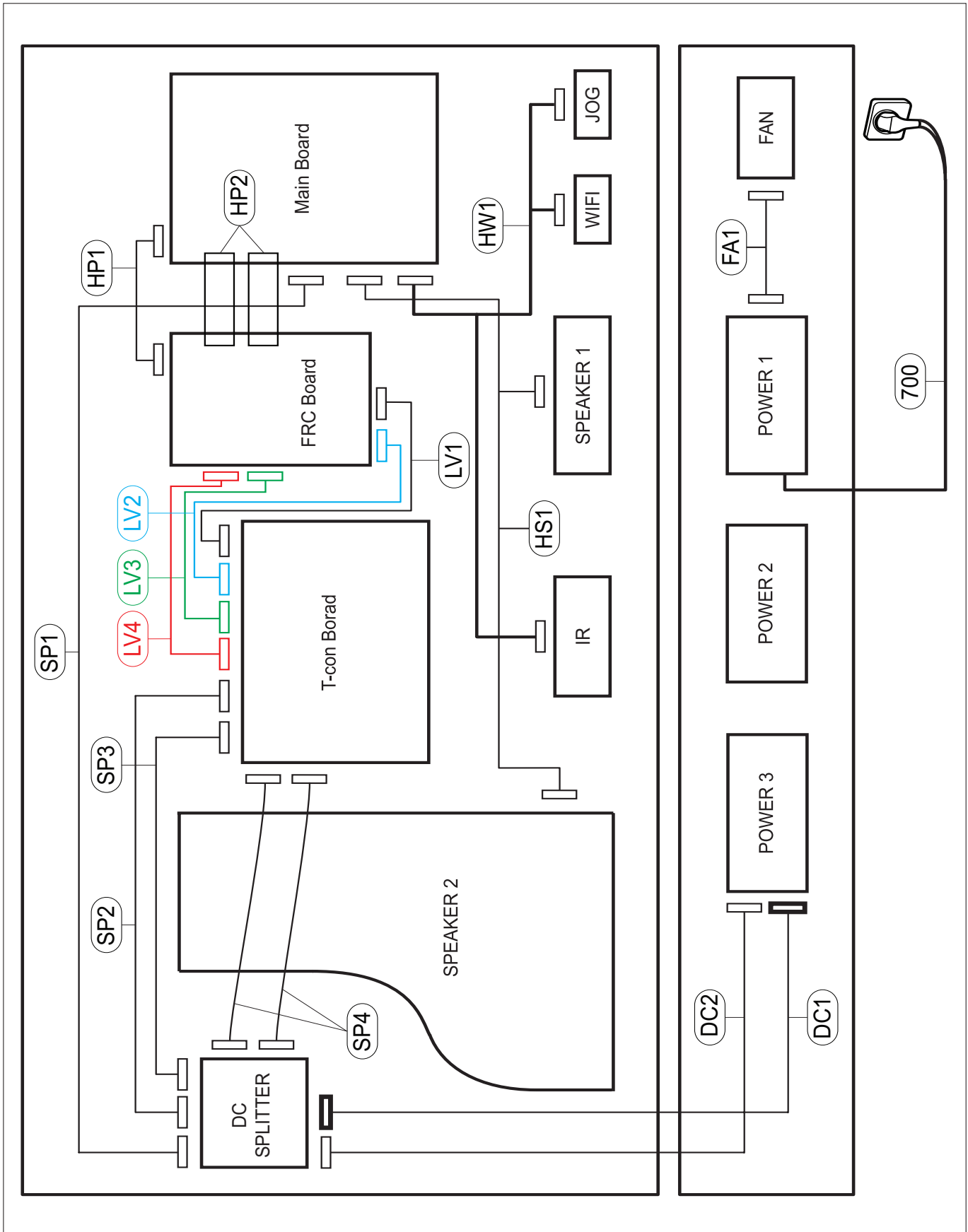
## EXPLODED VIEW

## — IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by  in the EXPLODED VIEW. It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent Shock, Fire, or other Hazards. Do not modify the original design without permission of manufacturer.



## EXPLODED VIEW(CABLE)





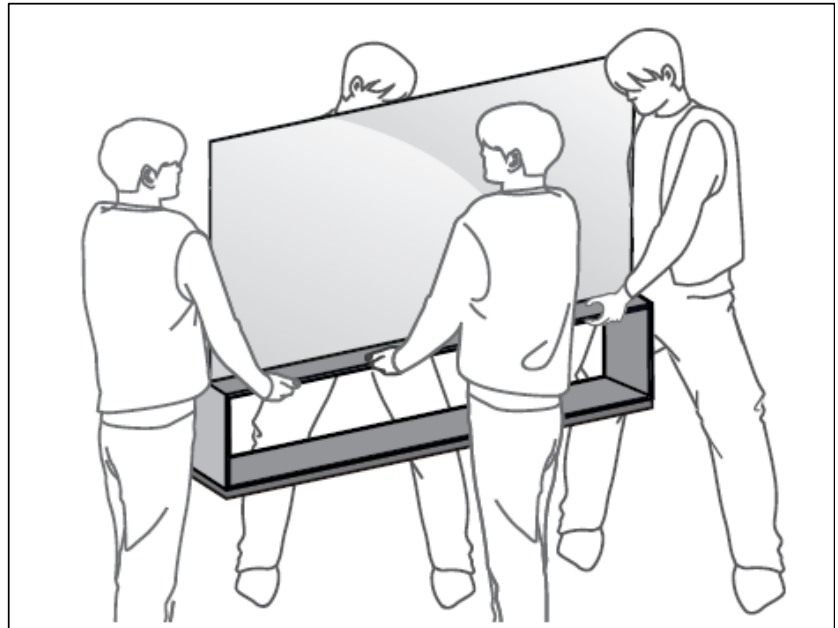
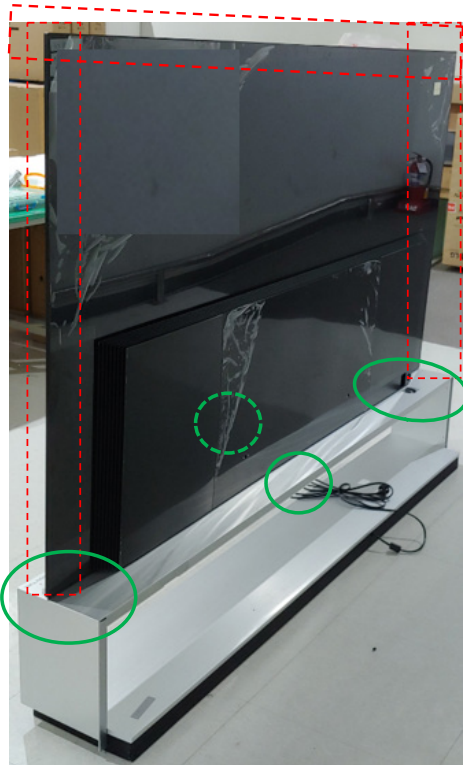
## ASSEMBLY / DISASSEMBLY GUIDE(SET)

### [Precautions for OLED88ZX Handling]

When moving the set, do not hold the head part (red dotted line part) by hand, move it by holding the stand (green line part).

When moving the set, Handling by more than 4 persons.

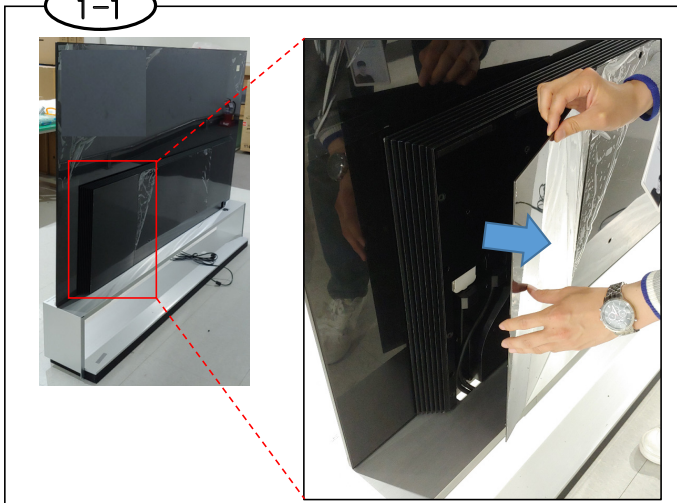
\* Refer to the picture below.



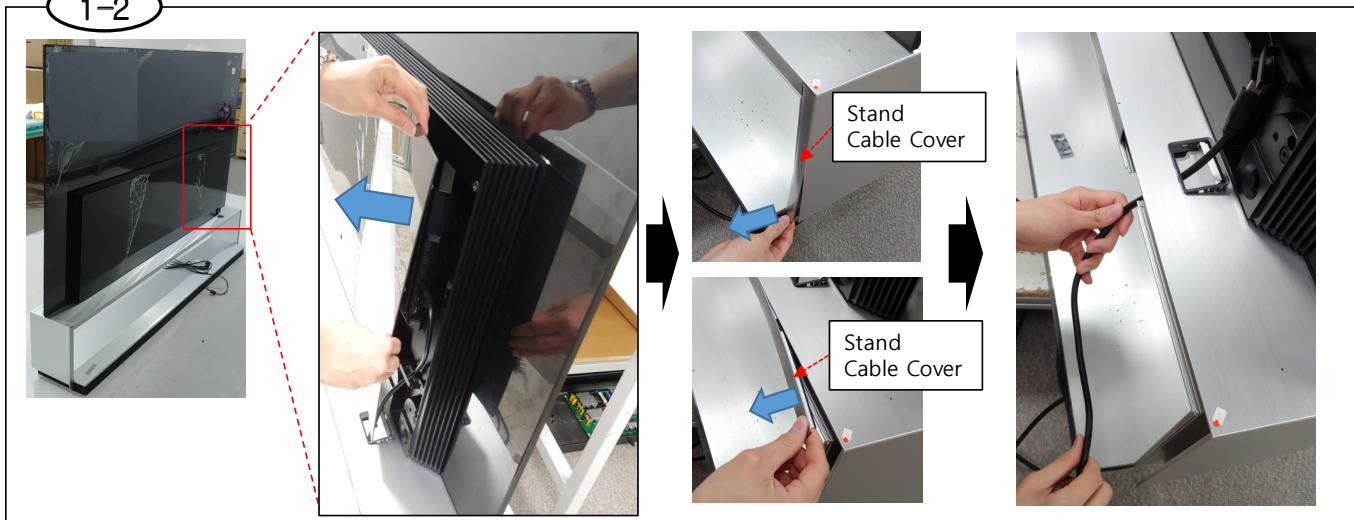
## [Disassembly Guide]

- (1-1) Put the set on a flat floor and separate the DC Cable Cover.(Pull the left side of the cover to separate.)
- (1-2) Separate the Main Cable Cover. (Pull the right side of the cover to separate.)  
Pull the Stand Cable Cover to separate (vertical direction, horizontal direction 1EA each), and disconnect the varieties of cables.
- (1-3) Unscrew Screw(A) 1EA for DC Cable Fixer, and disconnect the DC Cable.

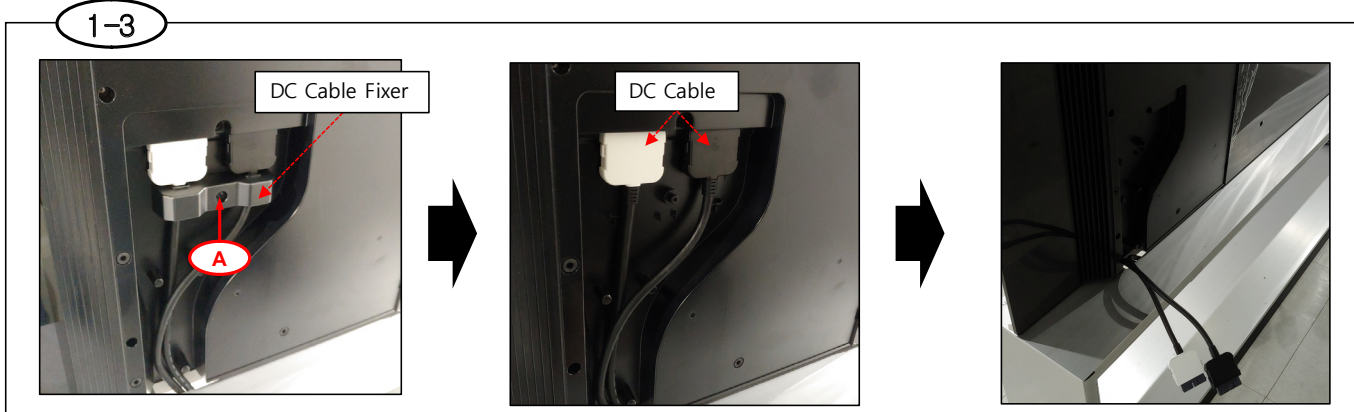
1-1



1-2



1-3

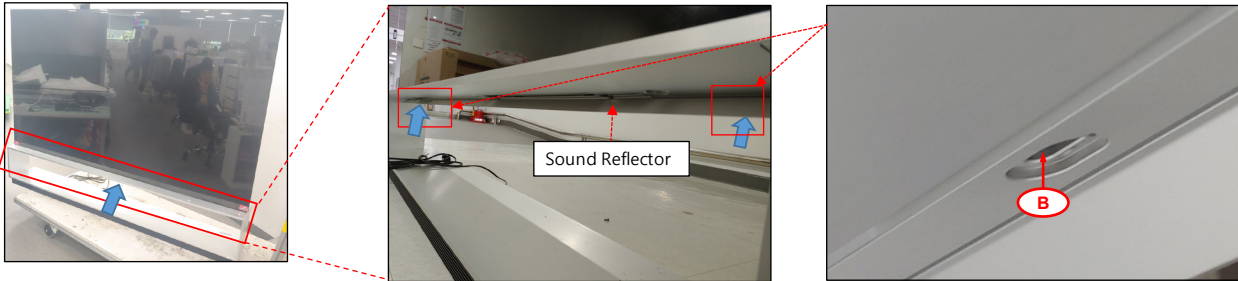


(2-1) Unscrew the Sound Reflector Fixation Screw(B) 2EA on the underside of a stand-top.

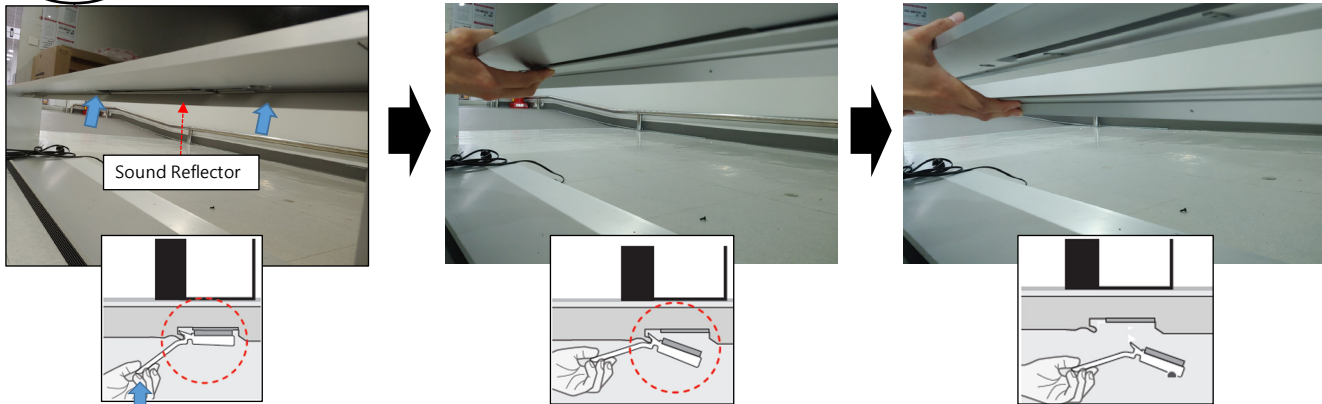
(2-2) Push the front protrusion of the Sound Reflector upwards to separate it from the stand.

\* The Sound Reflector is attached to the stand only by a magnet. Thus, Make sure that the Sound Reflector does not fall off to the floor when it is removed.

2-1

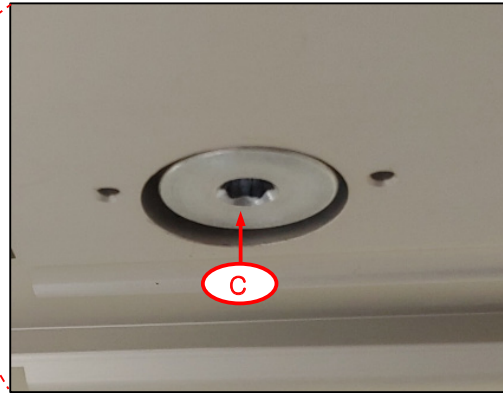
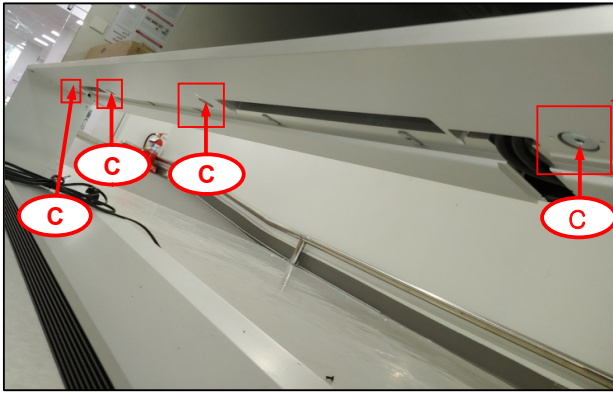


2-2



- (3-1) Unscrew the Shaft(C) 4EA on the underside of a stand-top. (Use hexagonal wrench)  
 \* The Shaft(C) is not completely separated from the Stand. (The Shaft(C) is fixed to the Stand by washer.)  
 (4-1) Lift the Head part and separate it from the Stand.

3-1



The Shaft is fully released status.  
 (\* The Shaft is not separated from the Stand)

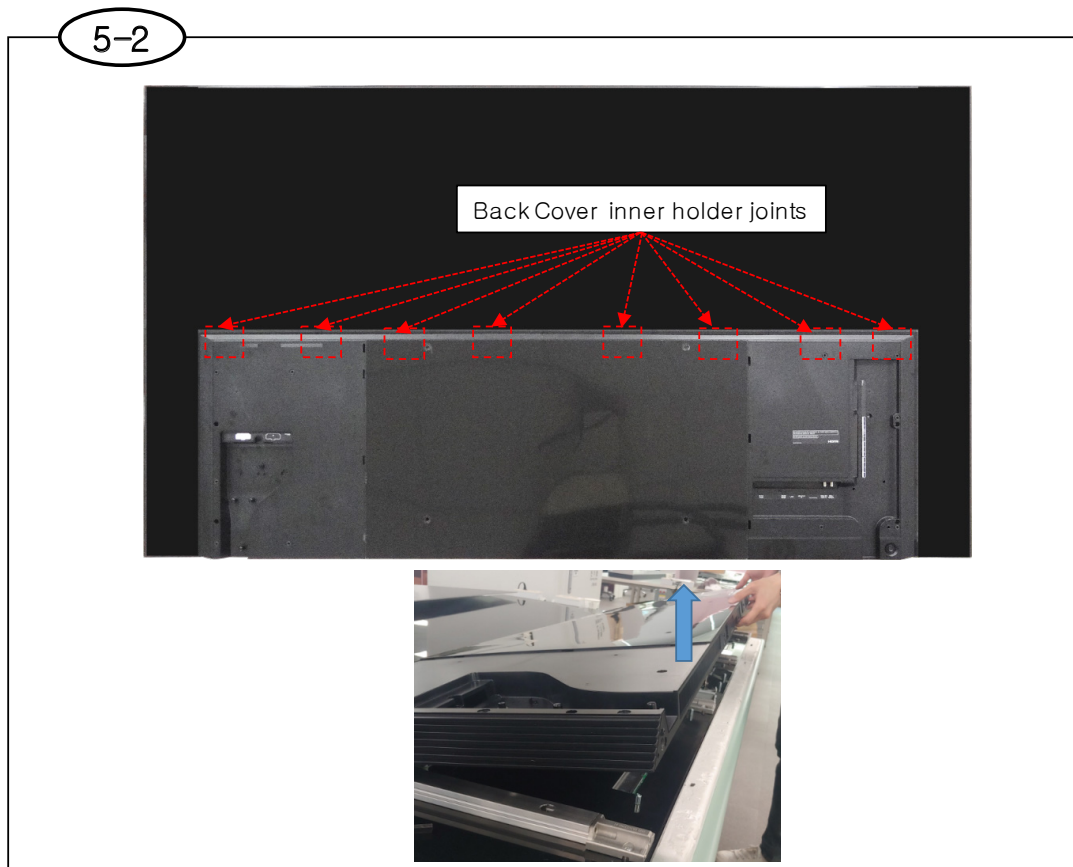
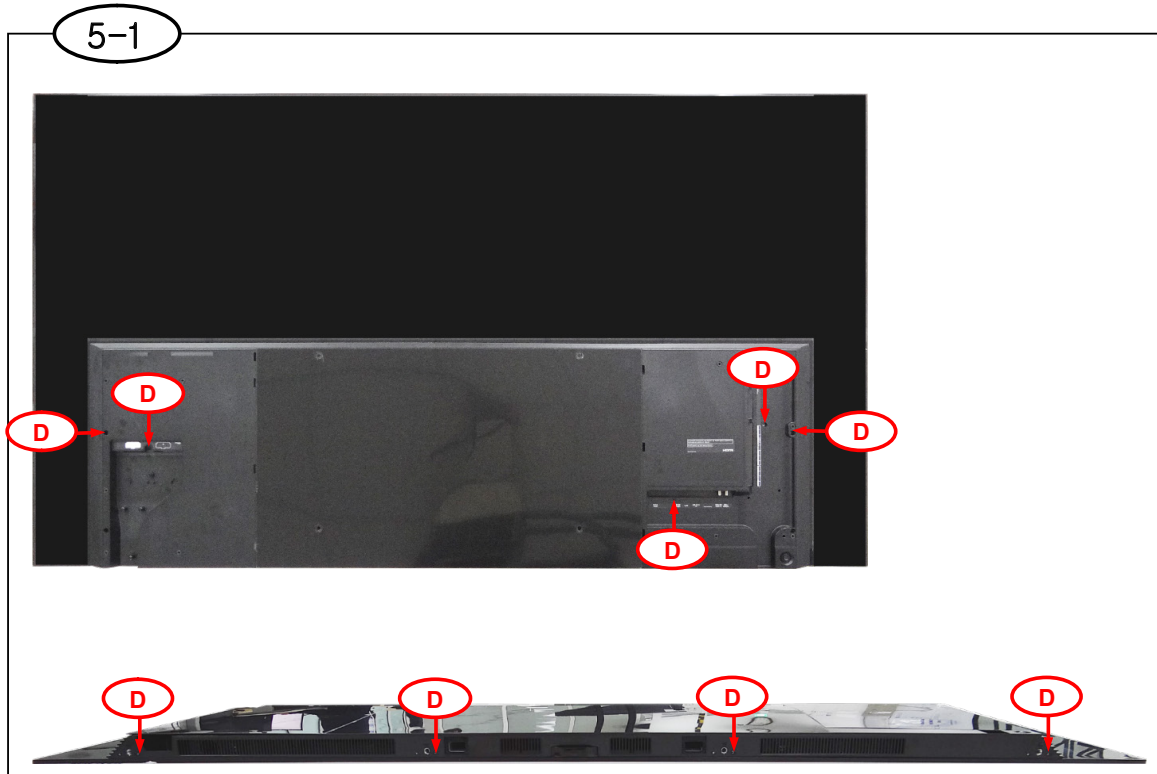
4-1



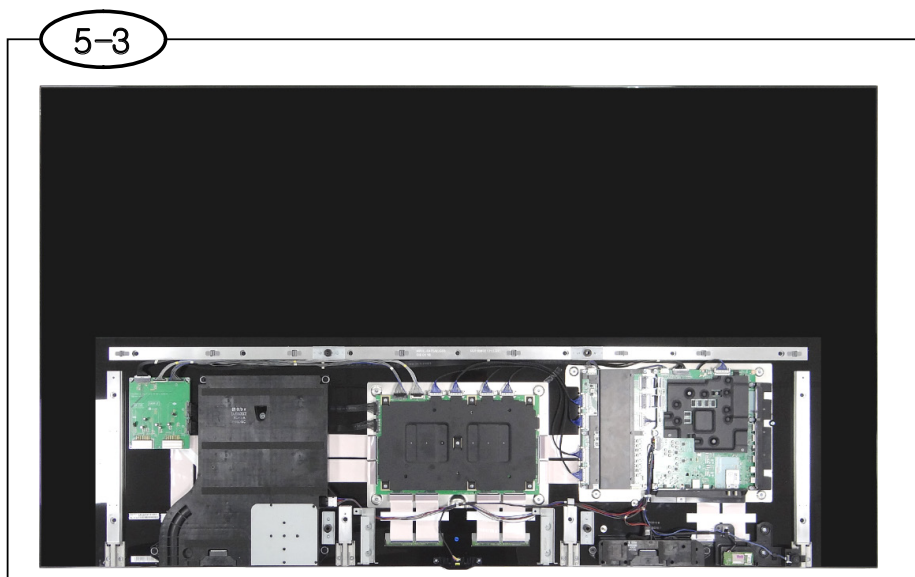


(5-1) Unscrew the Back Cover Fixation Screw(D) 9EA.

(5-2) Separate the Back Cover by lifting the bottom of the Back Cover. (Carefully separate the upper holder joints.)

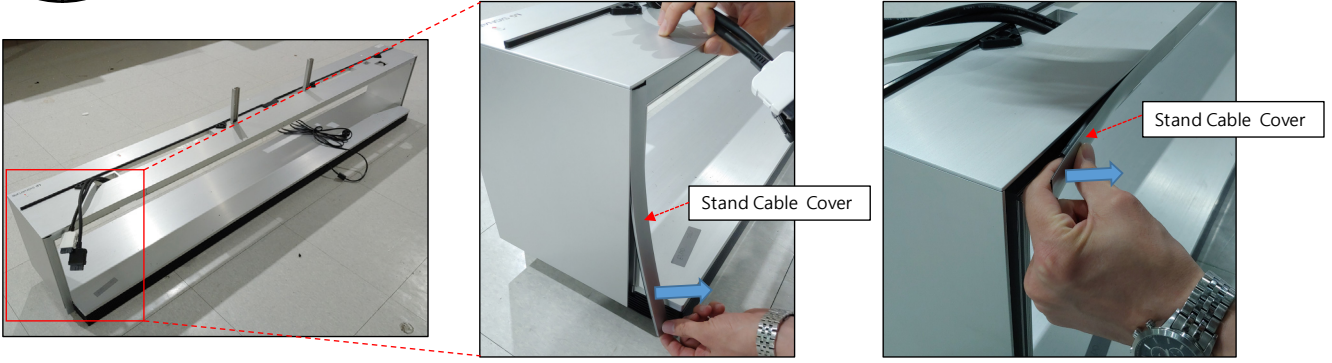


(5-3) Back Cover disassembly completed.

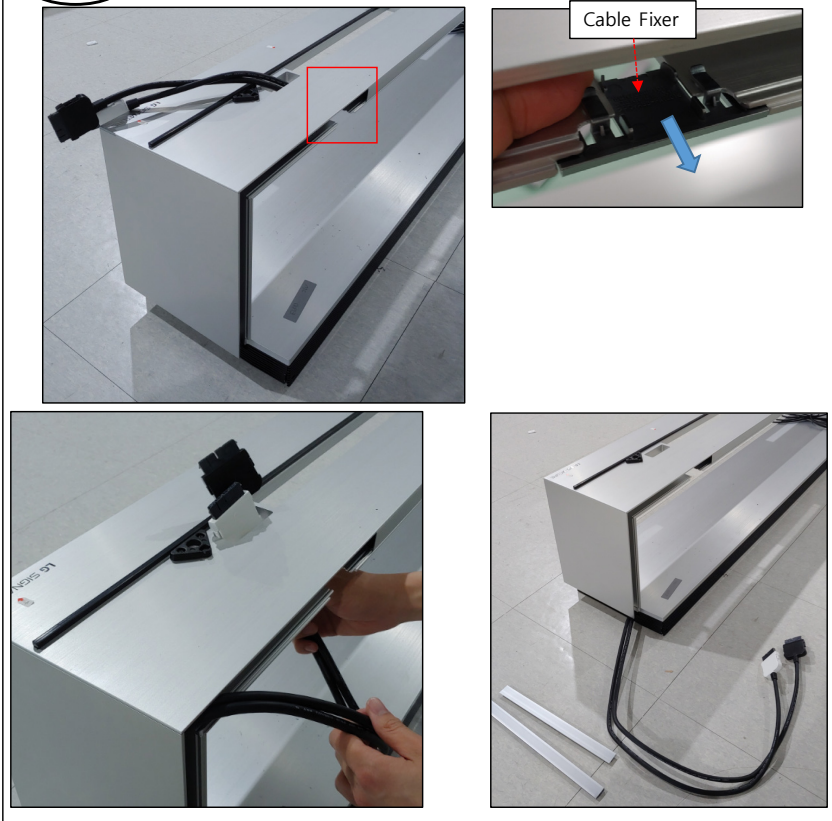


- (6-1) Pull the Stand Cable Cover on the back of the Stand to separate it. (Vertical direction 1EA, Horizontal direction 1EA)
- (6-2) Separate the Cable Fixer, Pass the DC Cable through the holes, and pull down.

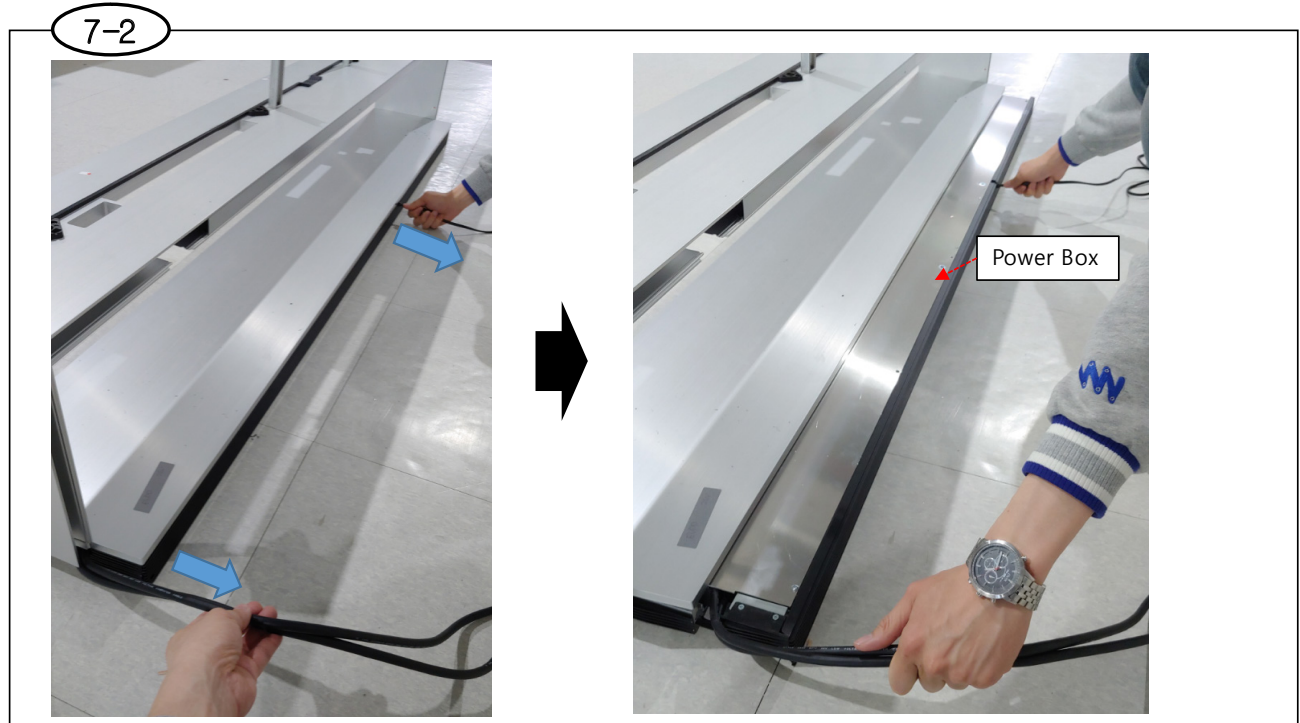
6-1



6-2



- (7-1) Unscrew the Power Box Fixation Screw(E) 3EA on the back of the Stand.
- (7-2) Separate the Power Box from Stand by pulling the DC Cable and the Power Code Cable.
- \* Pull out gently while pulling the left and right simultaneously to avoid damage or missing the cable.

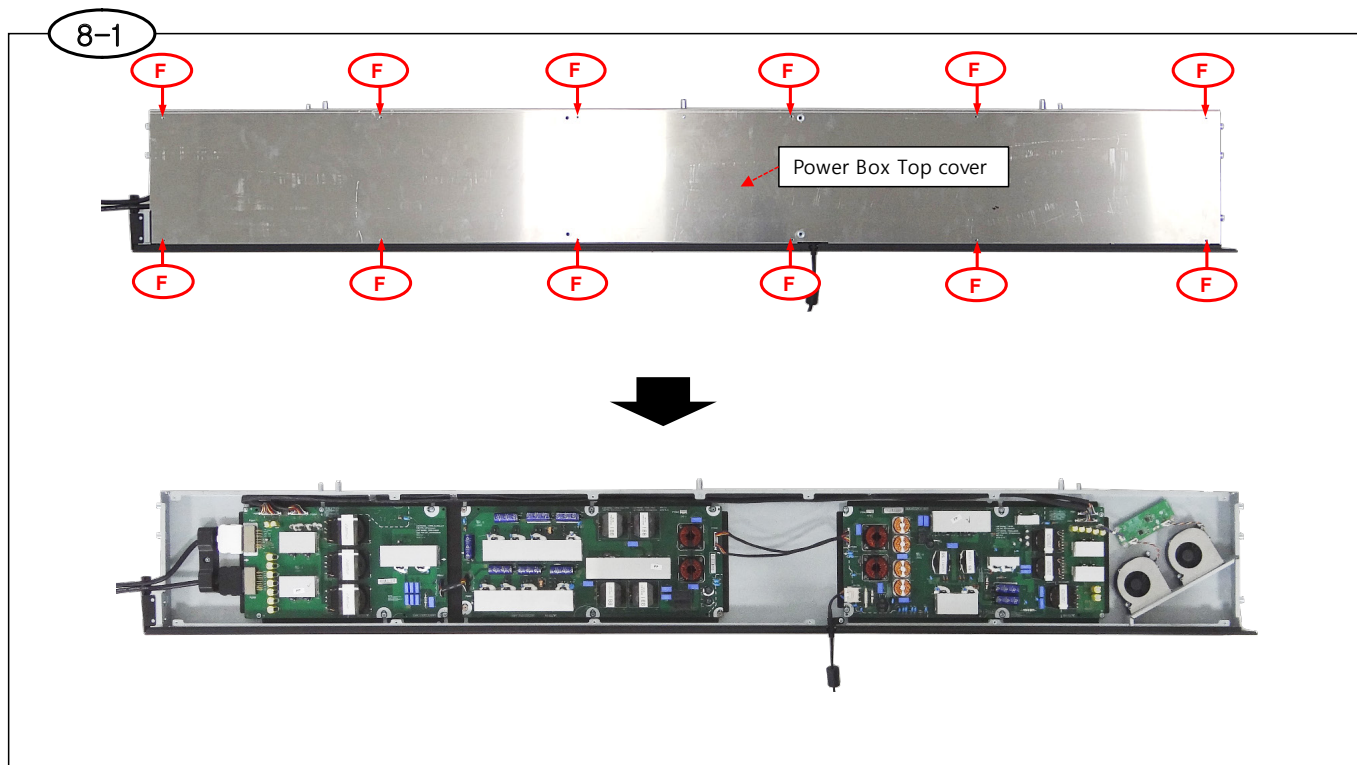




\* As follows, When re-assembling the Power Box  
Make sure that the Guide Pem-nut on the Power Box is inserted into the Stand inner Guide Rail.  
For normal assembly, the left and right sides must be inserted to the end at the same time.



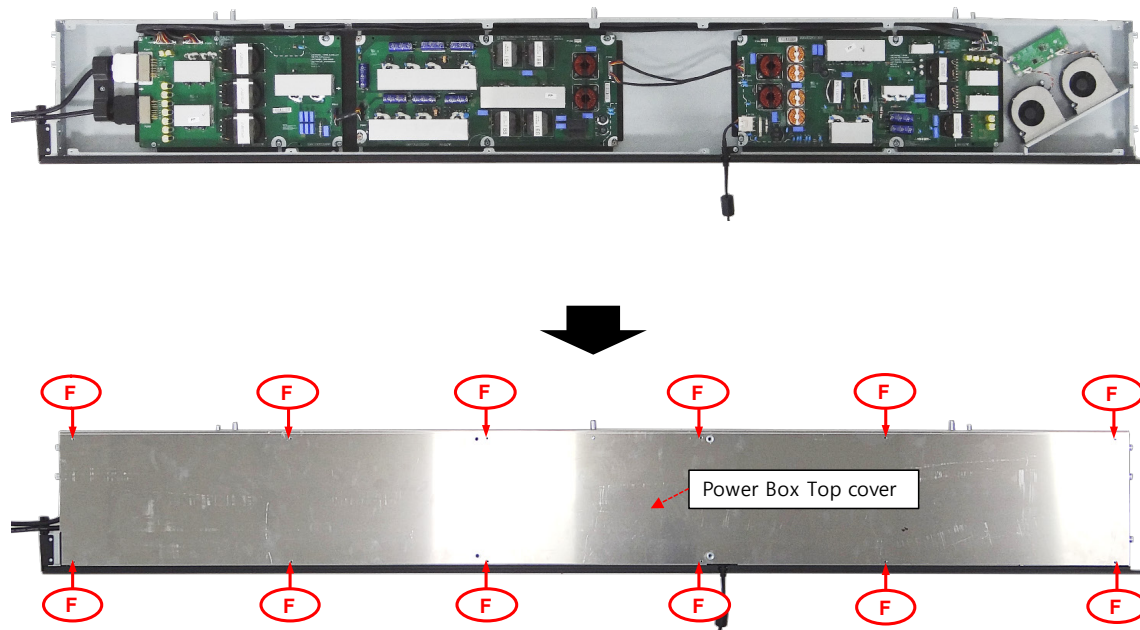
(8-1) Unscrew Screw(F) 12EA on top of Power Box and separate Power Box Top Cover.



## [Assembly Guide]

(1-1) Cover the Power Box Top Cover and Screw the Screw(F) 12EA.

1-1

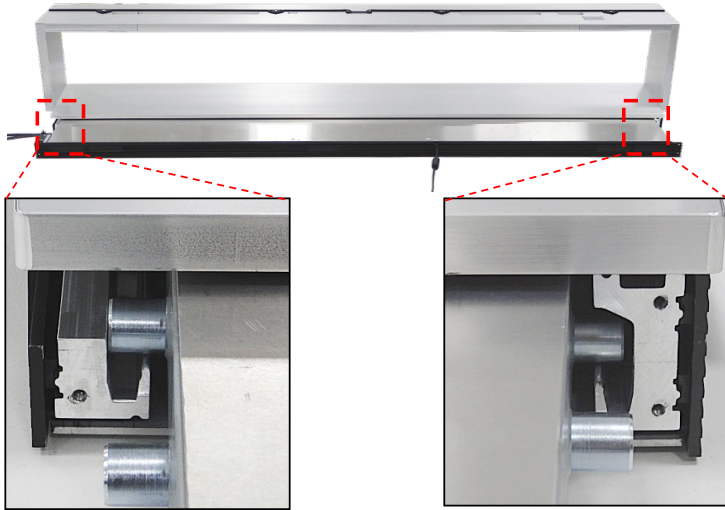


(2-1) Insert the Power Box into the stand. (Make sure that the Guide Pem-nut on the Power Box is inserted into the Stand inner Guide Rail.)

\* For normal assembly, the left and right sides must be inserted to the end at the same time.

(2-2) Screw the Power Box Fixation Screw(E) 3EA on the back of the Stand.

2-1



2-2

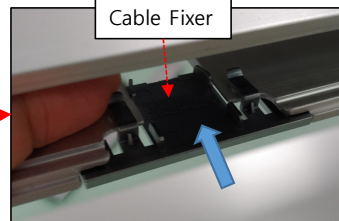
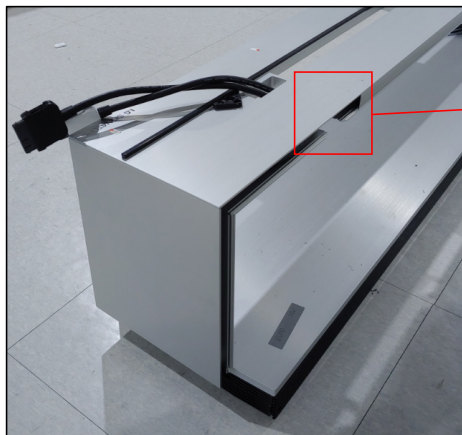
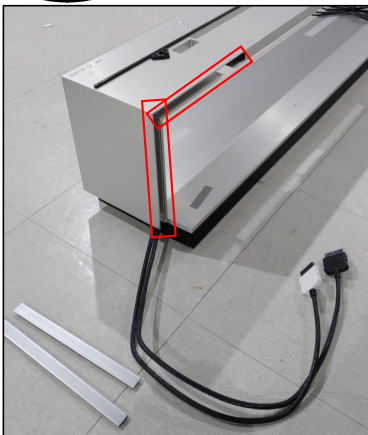


(3-1) Insert the DC cable inside the back of the stand (red square part), and Pass through the upper square hole (green square part).

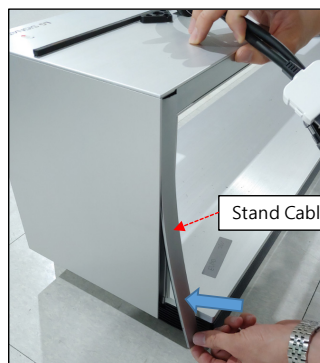
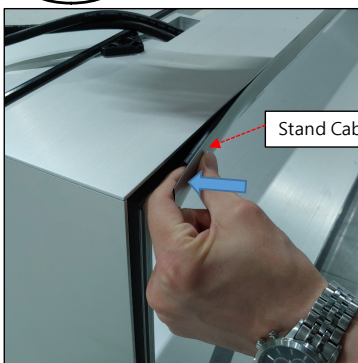
Tighten the cable fixer.

(3-2) Tighten the Stand Cable Cover. (Vertical direction 1EA, Horizontal direction 1EA)

3-1



3-2

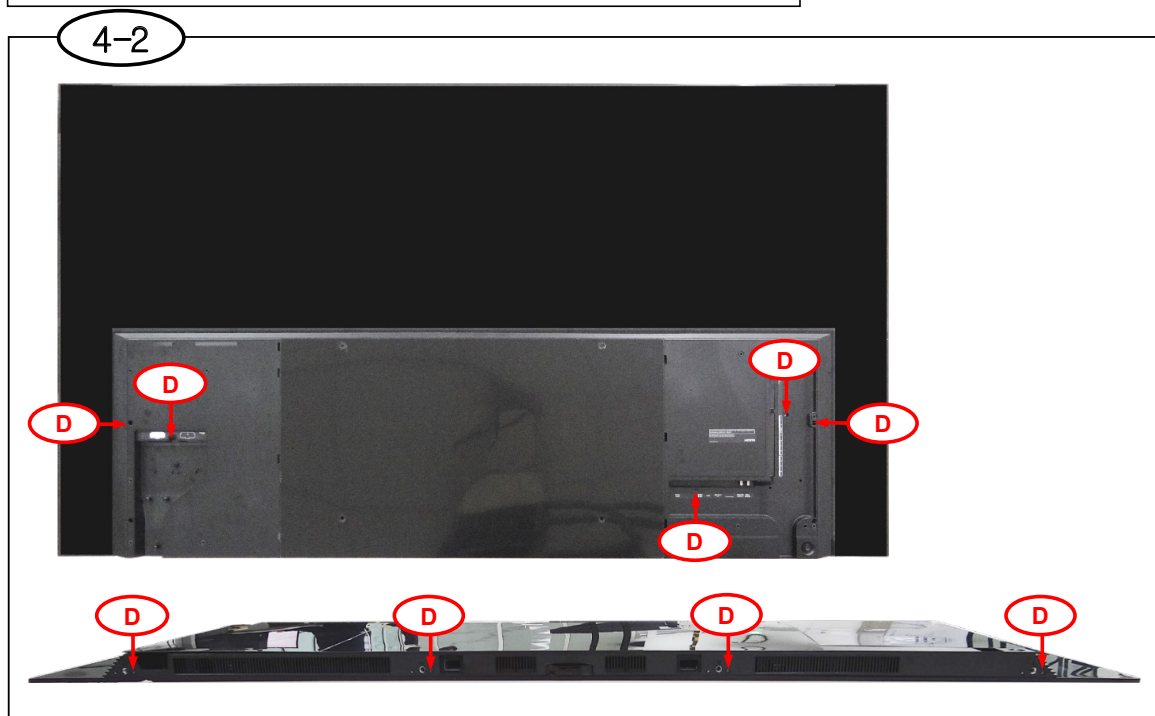
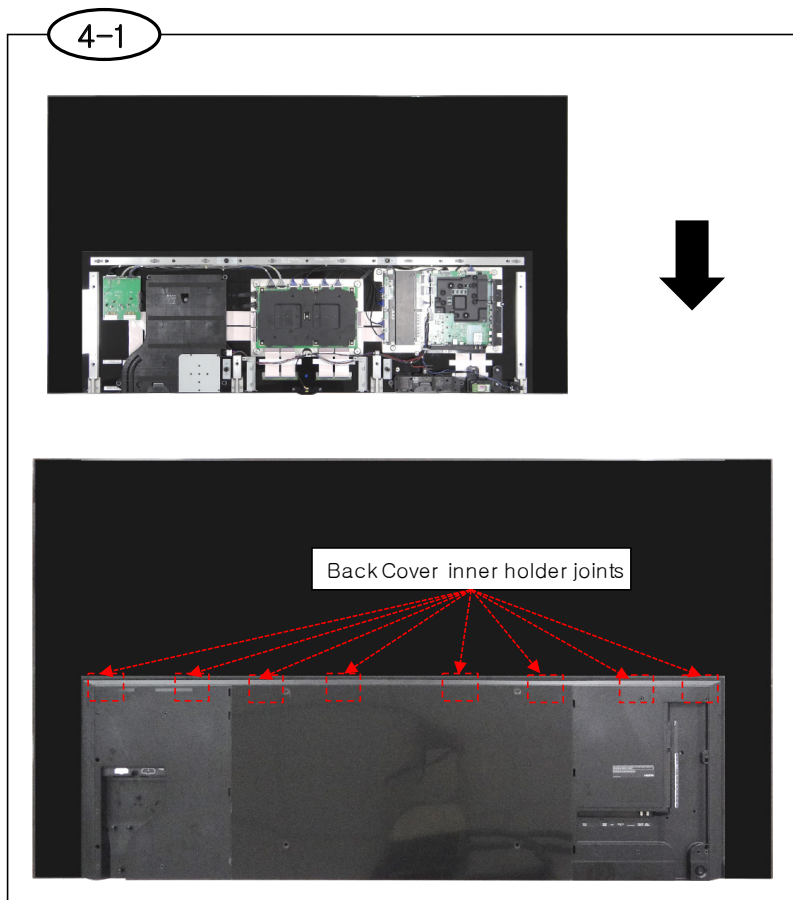




(4-1) Cover the Back Cover and tighten the Latch by pressing the Latch part.

\* When pressing the Latch part, Make sure that you hear a 'Tap' sound and make a normal connection.

(4-2) Screw the Back Cover Fixation Screw(D) 9EA.



(5-1) Insert the Head into the Stand.

\* Be careful not to fit the DC Cable between the Head and the Stand. (If necessary, fix the DC Cable with tape before inserting the Head.)

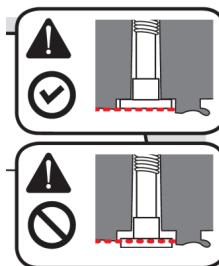
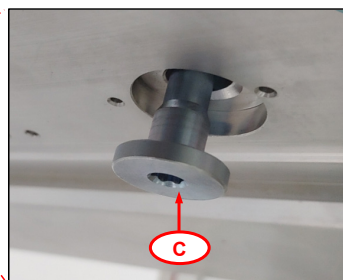
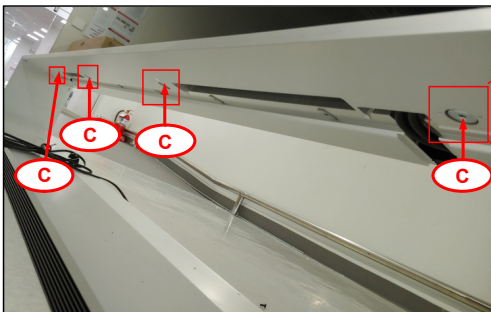
(5-2) Screw the Shaft(C) 4EA.

\* If the head of the shaft does not protrude from the stand surface, it is normally fastened.

5-1



5-2



\* The head of the shaft does not protrude from the stand surface.

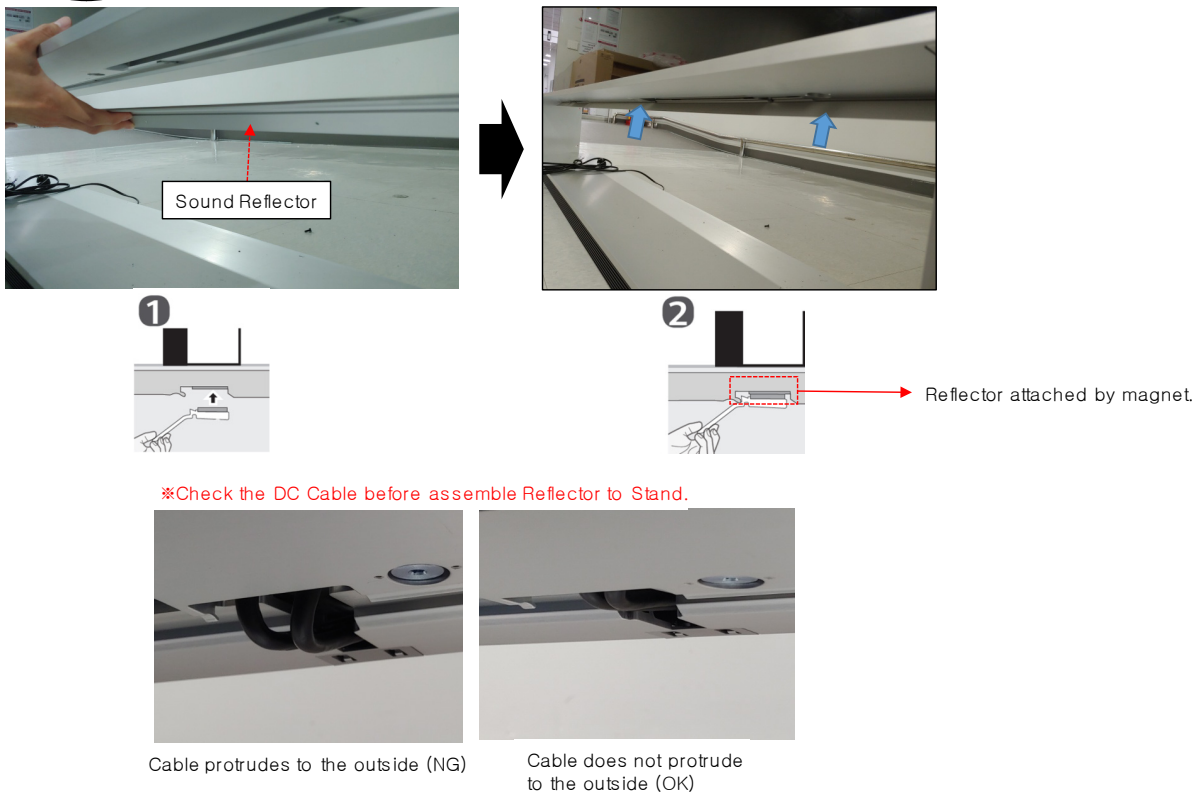
(6-1) Tighten the Sound Reflector. (Attached with magnet)

\* Check the DC Cable clearance before the Sound Reflector tightening. The Sound Reflector does not tighten properly if the DC Cable is protruding.

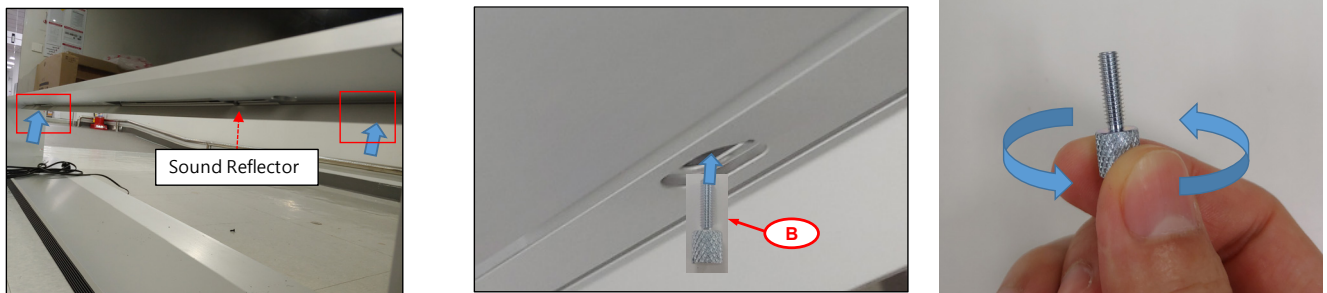
(6-2) Screw the Sound Reflector Fixation Screw(B) 2EA

\* Be careful not to scratch inside the stand when Sound reflector is assembled to Stand.

6-1



6-2





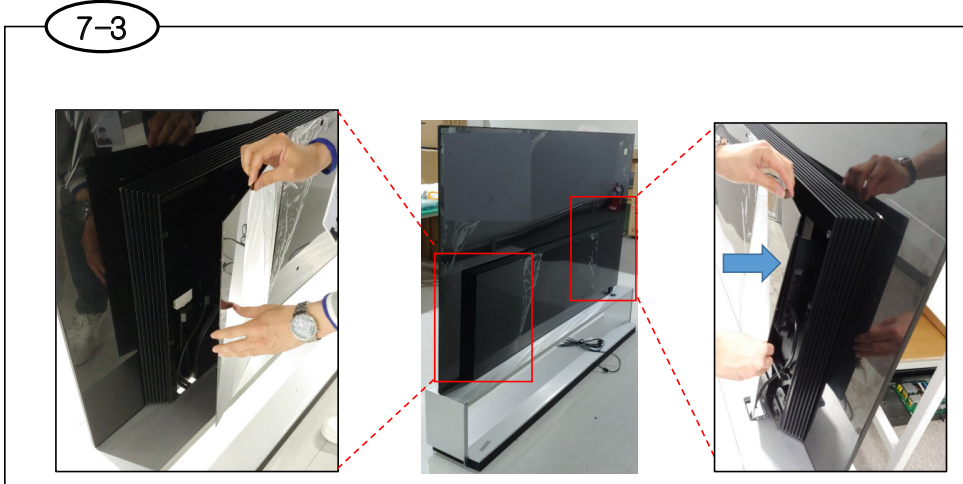
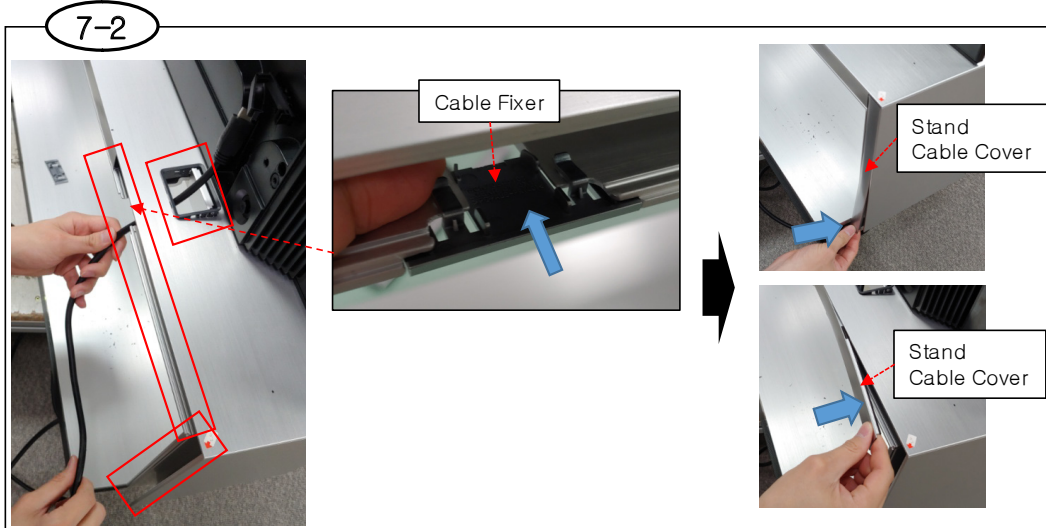
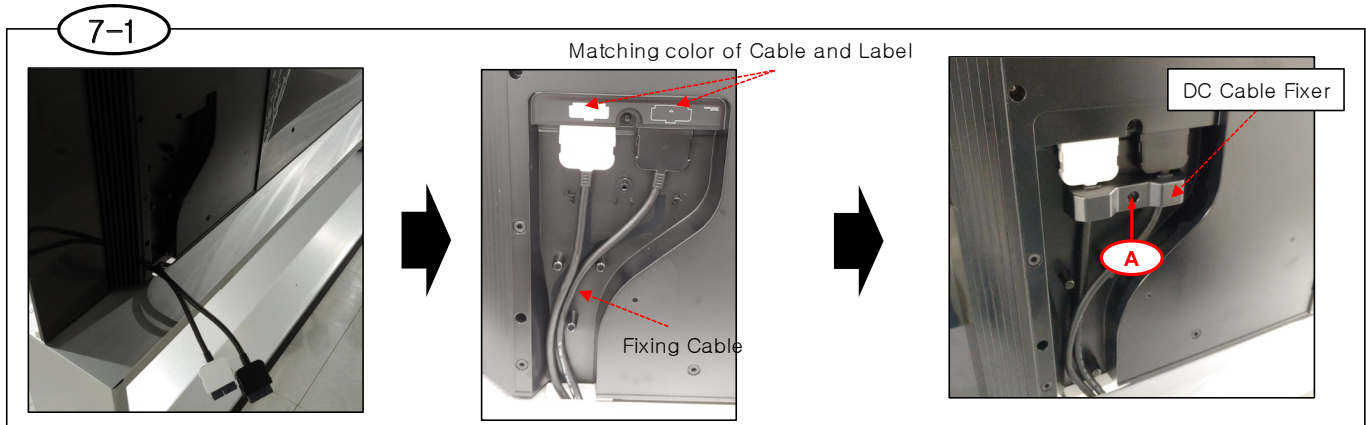
(7-1) Insert the DC Cable to connector.

\* Match the color of label and cable. Fix the cable as below picture.

Insert the DC Cable Fixer and Screw the Screw (A) 1EA.

(7-2) Insert Cables to back of Stand, and pass the cable through the top cover hole. Insert Cable Fixer. Assemble Stand Cable Cover. (Vertical, Horizontal each direction 1EA)

(7-3) Assemble the Main Cover and the Power Cover.



# **TROUBLE SHOOTING GUIDE**

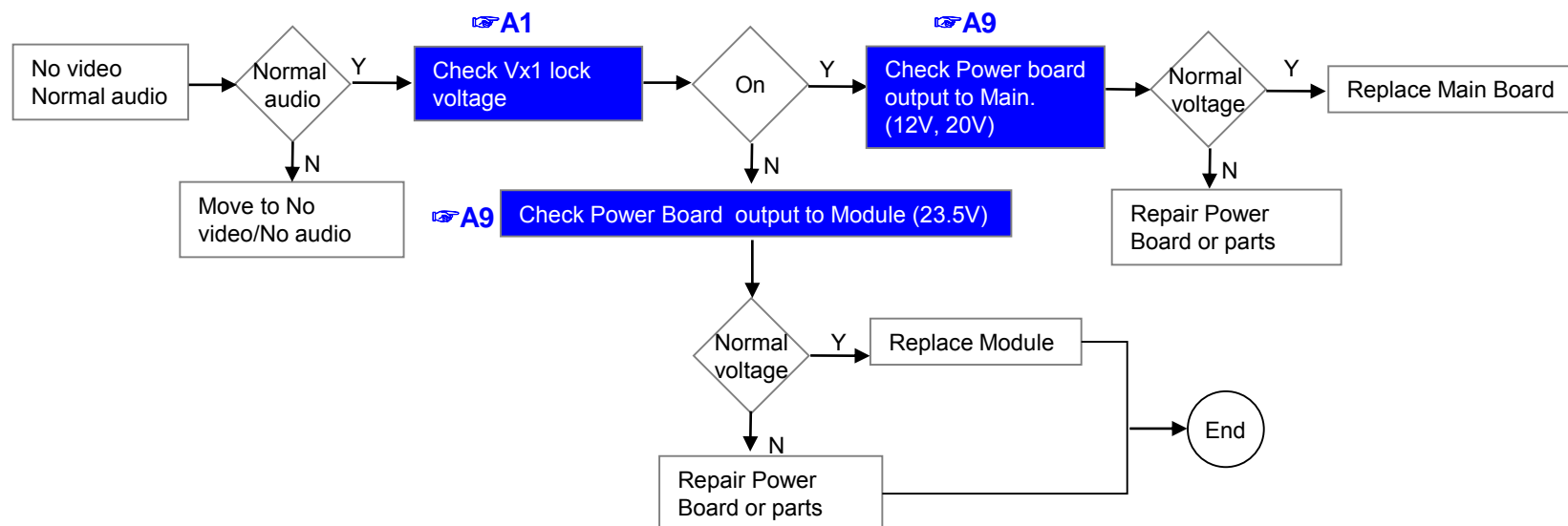
# Contents of Standard Repair Process

No.	Error symptom (High category)	Error symptom (Mid category)	Page	Remarks
1	A. Video error	No video/Normal audio	1	
2		No video/No audio	2	
3		Picture broken/ Freezing	3	
4		Color error	4	
5		Vertical/Horizontal bar, residual image, light spot, external device color error	5	
6	B. Power error	No power	6	
7		Off when on, off while viewing, power auto on/off	7~8	
8	C. Audio error	No audio/Normal video	9	
9		Wrecked audio/discontinuation/noise	10	
10	D. Function error	Remote control & Local switch checking	11	
11		PM20 operating checking	12	
12		Wifi operating checking	13	
13		External device recognition error	14	
14		Voice Recognition function error	15	
15	E. Noise	Circuit noise, mechanical noise	16	
16	F. Exterior error	Exterior defect	17	

**First of all, Check whether there is SVC Bulletin in GSCS System for these model.**

	Error symptom	A. Video error	Established date		
		No video/ Normal audio	Revised date		

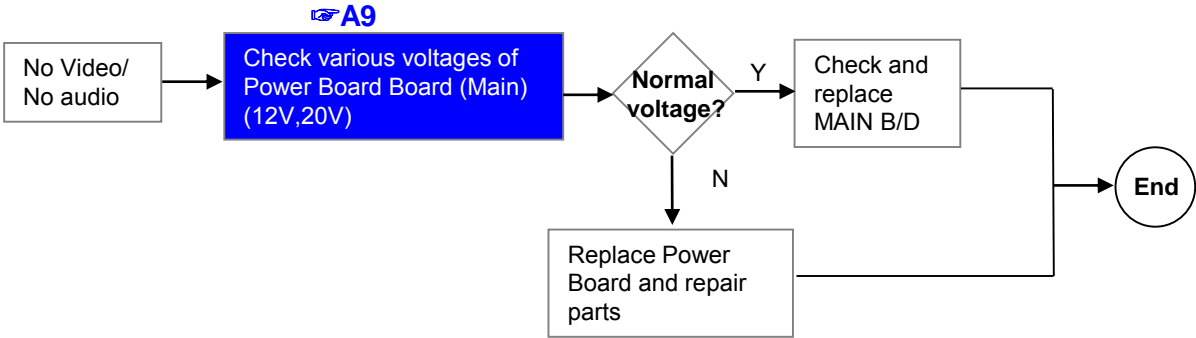
**First of all, Check whether all of cables between board is inserted properly or not.  
(Main B/D↔ Power B/D, VX1 or EPI Cable, Speaker Cable, IR B/D Cable,,,)**



※Precaution A4 & A2



	Error symptom	A. Video error	Established date		
		No video/ No audio	Revised date		

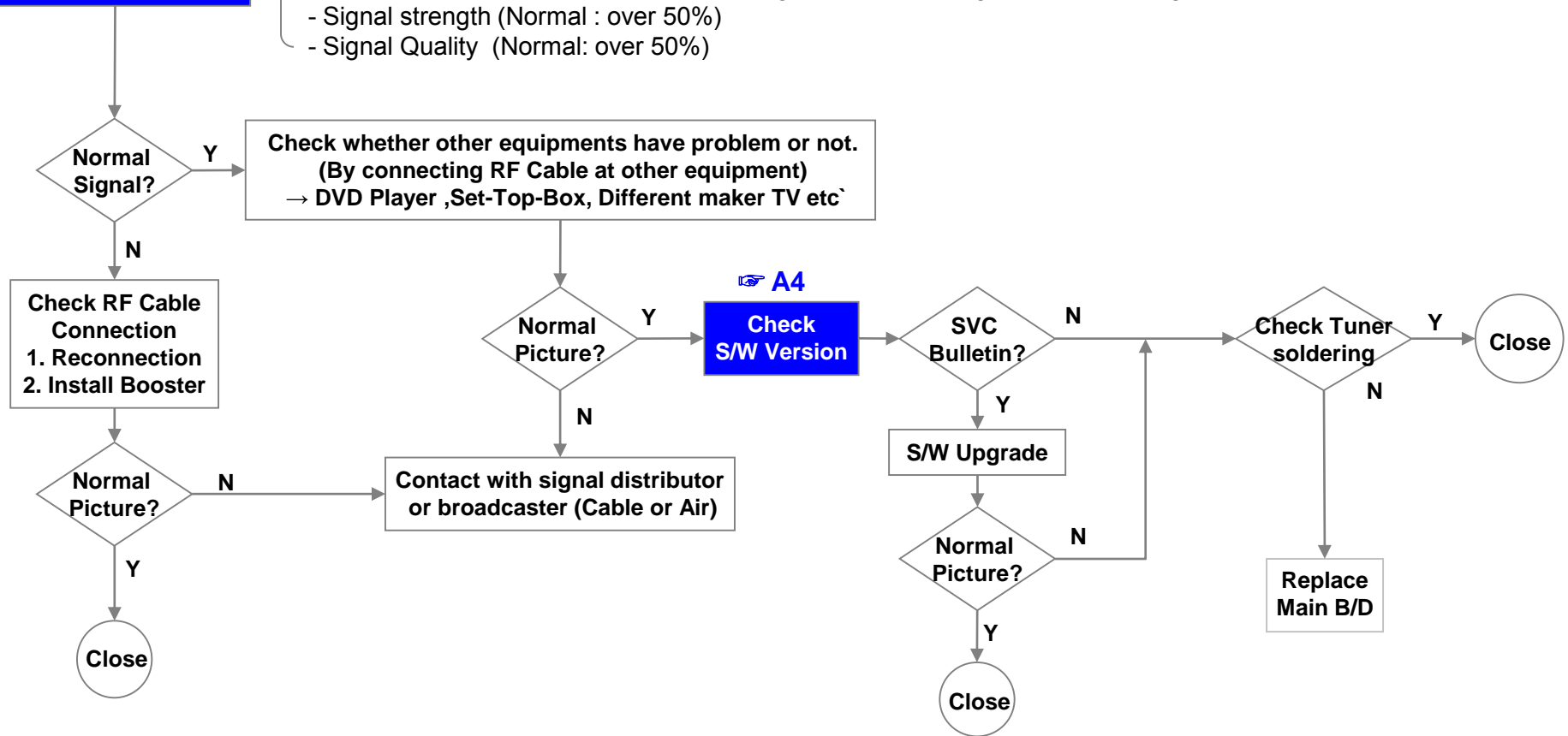


	Error symptom	A. Video error	Established date		
		Picture broken/ Freezing	Revised date		

**A3**

**Check RF Signal level**

- . By using Digital signal level meter
- . By using Diagnostics menu on OSD  
( Advanced → Channels → Channel Tuning → Manual Tuning → Check the Signal )
- Signal strength (Normal : over 50%)
- Signal Quality (Normal: over 50%)



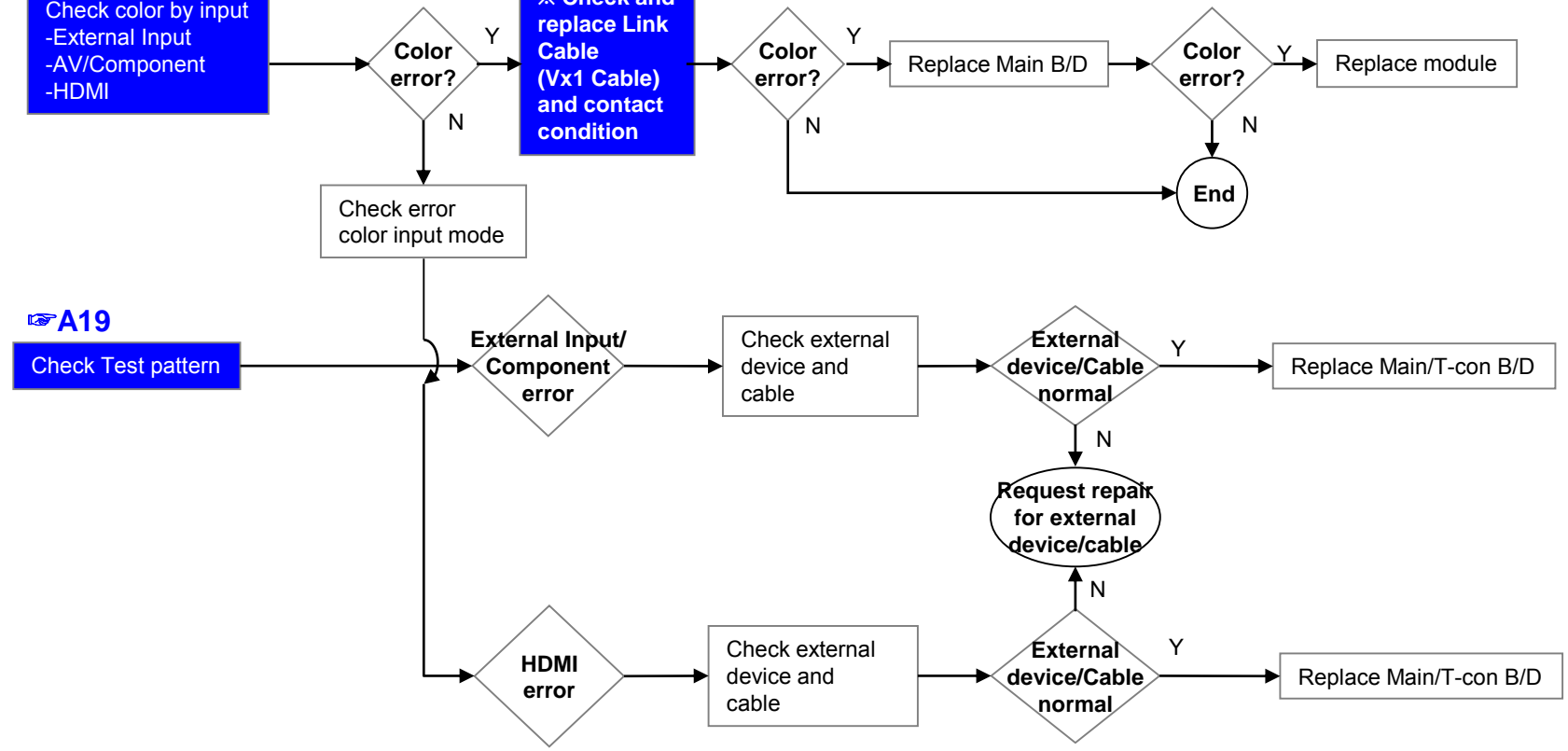
	Error symptom	A. Video error	Established date		
		Color error	Revised date		

**A6**

Check color by input  
-External Input  
-AV/Component  
-HDMI

**A7**

※ Check and replace Link Cable (Vx1 Cable) and contact condition

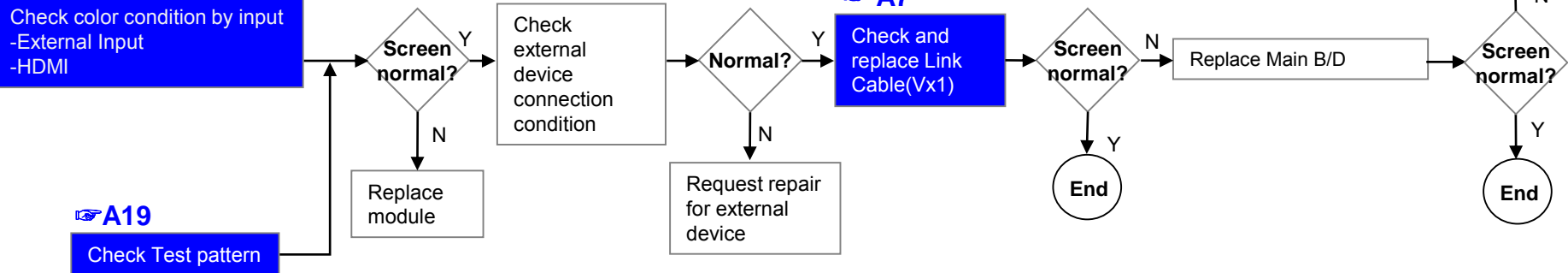


	Error symptom	A. Video error	Established date		
		Vertical / Horizontal bar, residual image, light spot, external device color error	Revised date		

## Vertical/Horizontal bar, residual image, light spot

### A6

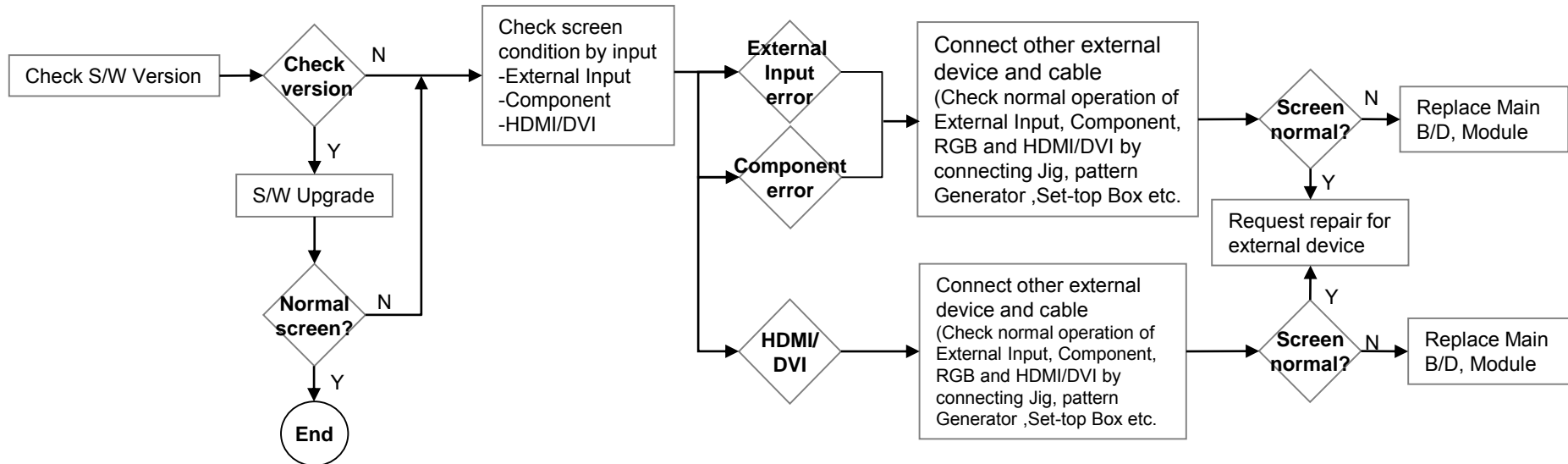
Check color condition by input  
-External Input  
-HDMI



### A19

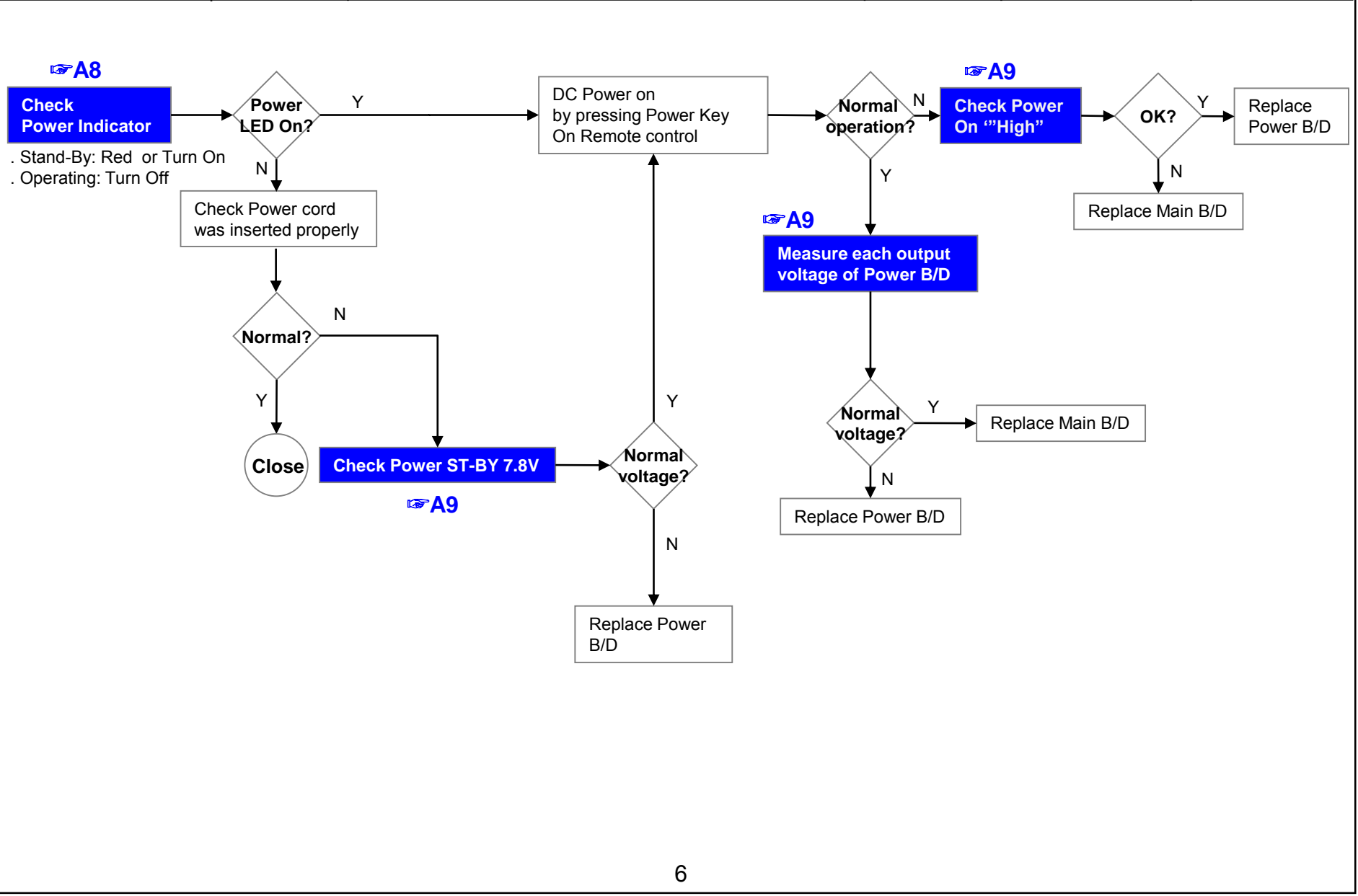
Check Test pattern

## External device screen error-Color error

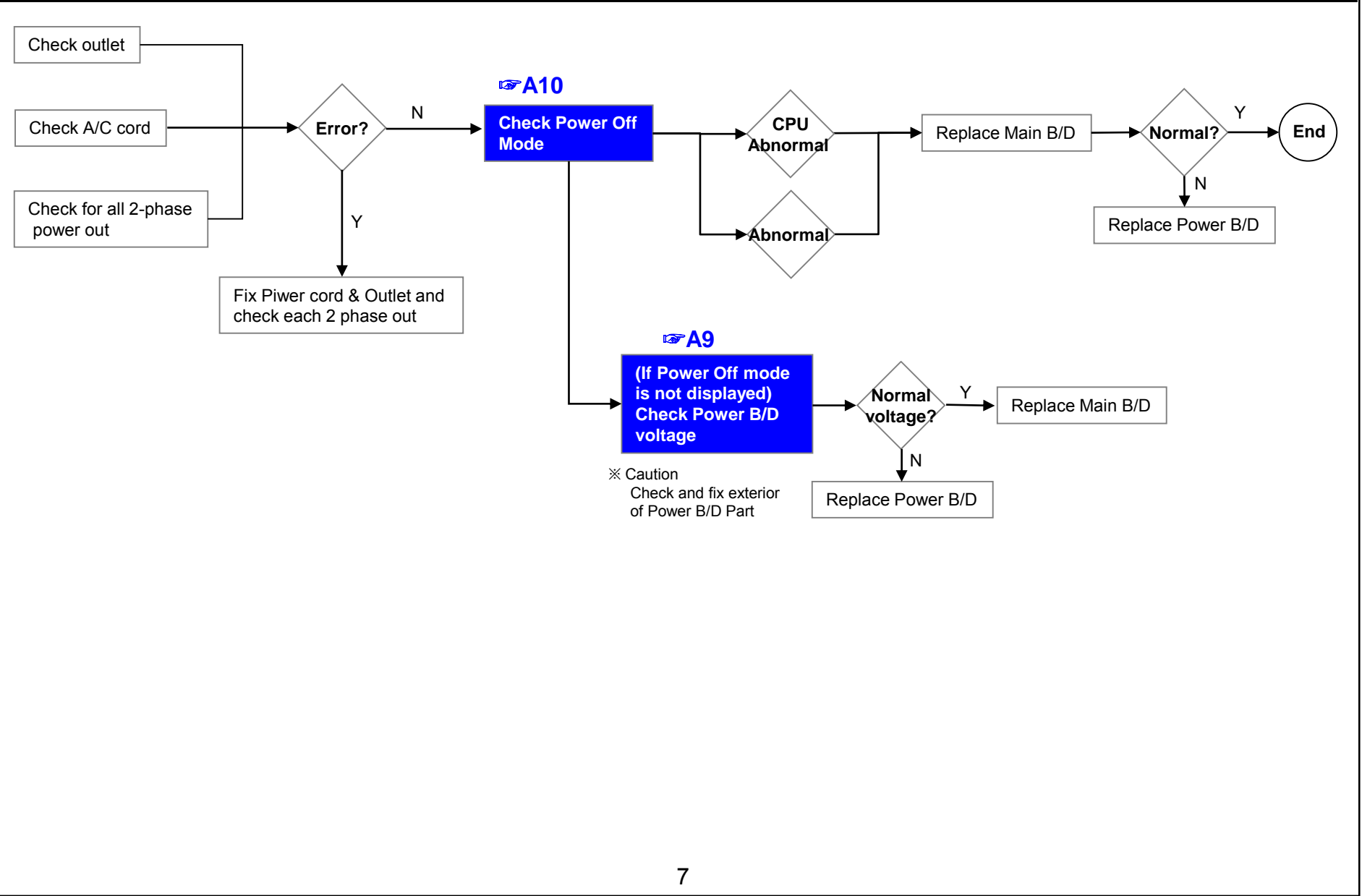




	Error symptom	B. Power error	Established date		
		No power	Revised date		



	Error symptom	B. Power error	Established date		
		Off when on, off while viewing, power auto on/off	Revised date		

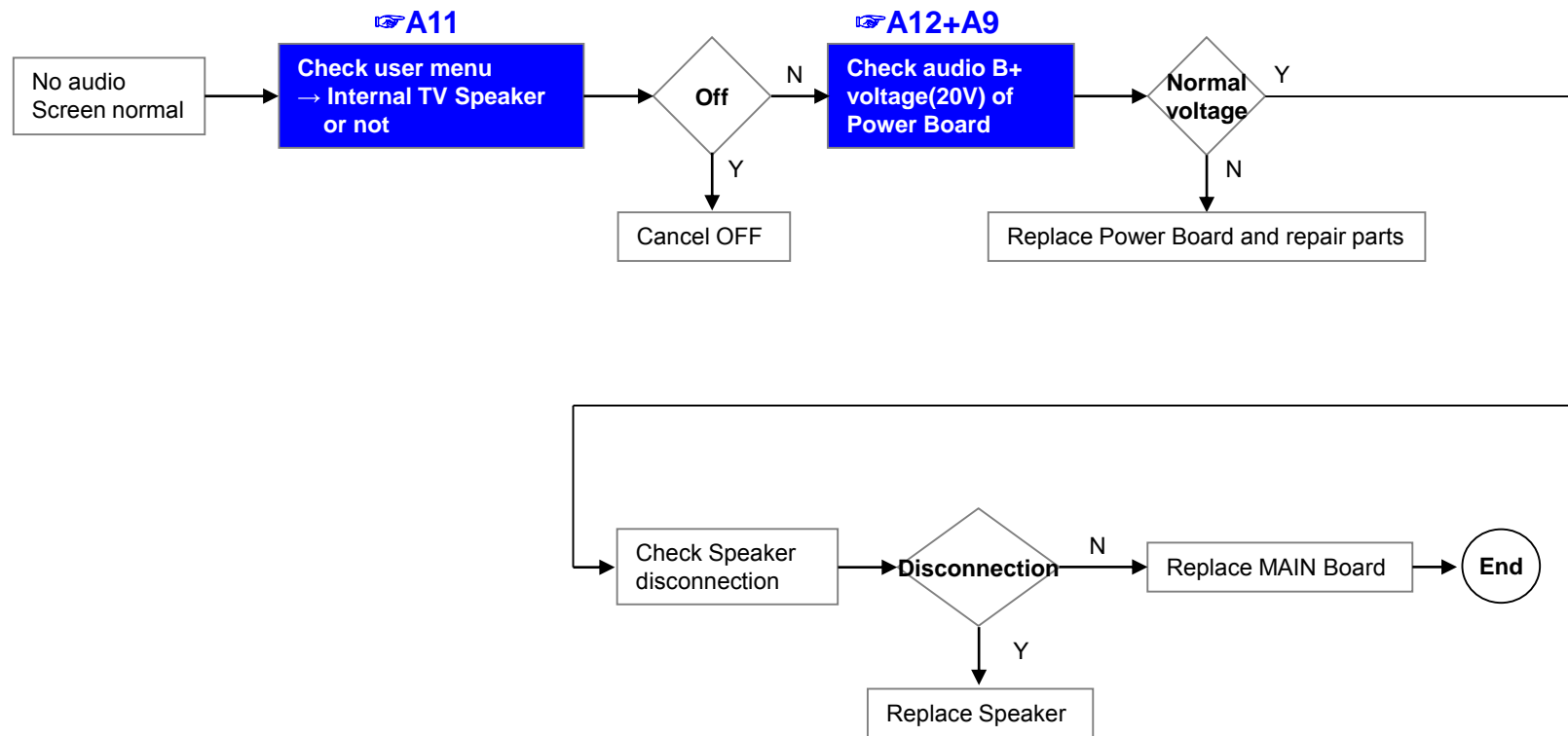


	Error symptom	B. Power error	Established date		
		Off when on, off while viewing, power auto on/off	Revised date		

\* Please refer to the all cases which can be displayed on power off mode.

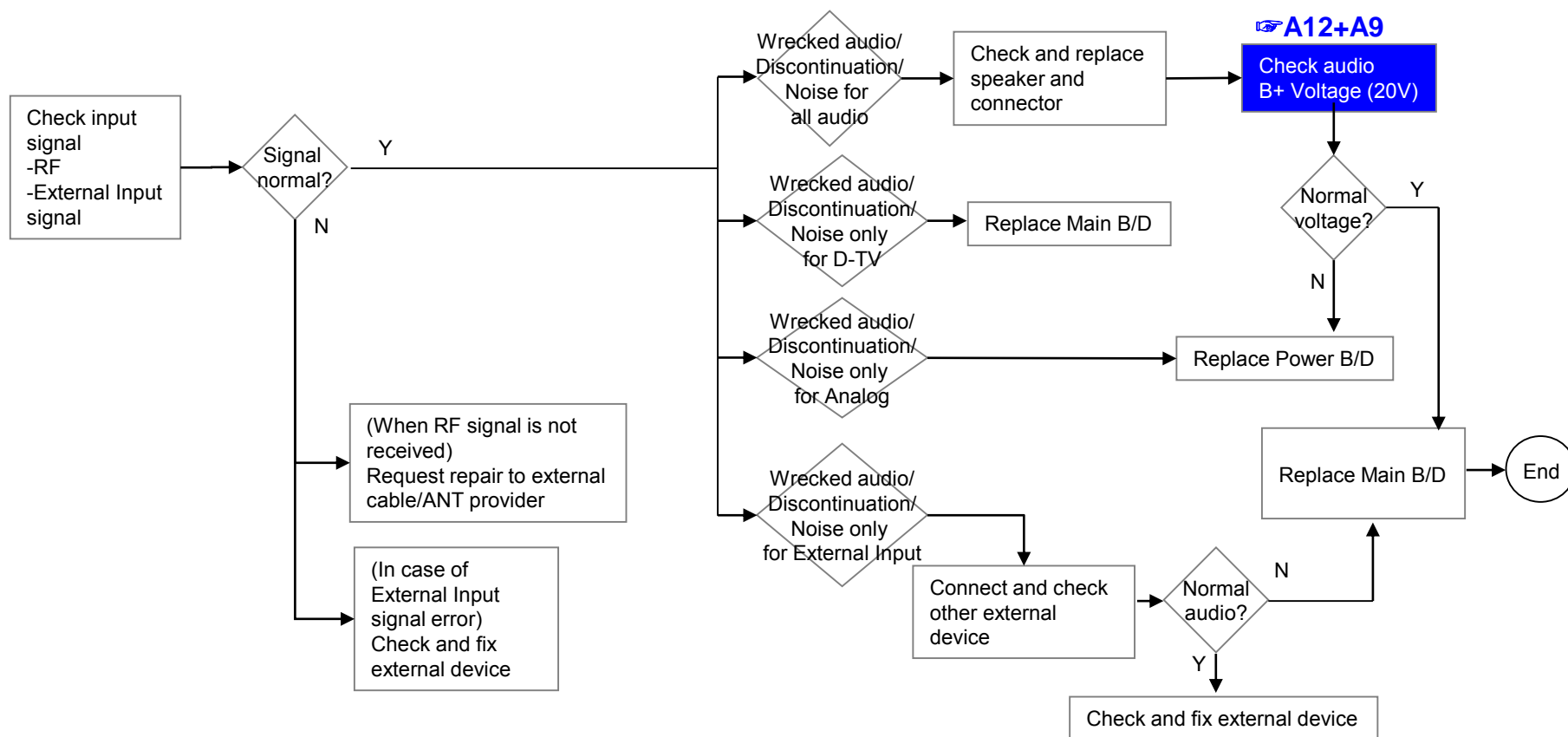
Power Off list	Explanation	Action contents
KEYTIMEOUT	Power off when TV is not turned off during a certain time RESULT : micom force to trigger TV power off. CONDITION : When pressing power key while power on/off status, CPU does not response within 8 seconds	Check & Change Main B/D
1SEC Power OFF	Almost the same as Power Off by KEYTIMEOUT. If there is no valid communication between CPU and MICOM for more than 5 seconds, the MICOM switched off PSU and Records. Power off by 1SEC Power off. In this case, we don't have information where the malfunction exactly occurred. But it indicates that CPU had stopped and rebooted.	Check & Change Main B/D
ACDET	In case of AC Off (It is normal when the power cord is unplugged.)	Normal
	If there are many ACDETs connected, Power Board is defective	Check & Change Power B/D
5V MNT	Power off by unstable AC power detect. RESULT : micom check the stable power. CONDITION : When AC on or DC on, stabilization check routine (Power Detect High Check) fail after multi power on.	Check & Change Power B/D
CPUABNORMAL	If the CPU attempts to reset in case of abnormal operation and Shut Down in case of failure.	Check & Change Main B/D
NO POLING	Power off when receiving no ack. RESULT : TV power off/on (Reboot) CONDITION : There is no I2C response from CPU for 15 seconds.	Check & Change Main B/D
CPUCMD	Power off by main SoC command.	Check & Change Main B/D
BDP_ERROR	Power off by module error (OLED) CONDITION : OLED Module send signal to micom	Check & Change OLED Module
ONRF_FAIL	RESULT : Reboot, CONDITION : OLED module compensation is running but fails.	Check & Change OLED Module
PNWASHFAIL	Power off by panel noise wash function fail case.	Check & Change OLED Module
RESET	When Micom is reset by AC Off	Normal Case
KEY	Power off by Local key	
OFFTIMER	Power off by Off timer	
SLEEPTIMER	Power off by sleep timer	
NOSIG	Power off by No Signal	
FANSTOP	Power off by FAN operation stopped	
INSTOP	Power off by Instop Key	
AUTO OFF	Power off by auto off function	
RESREC	Power off by reserved recording	
RECEND	Power off when recording stops	
SWDOWN	Reboot by SW down load function	
UNKNOWN	No meaning (same as initial value)	
COMP_END	OLED threshold voltage degradation(Compensation) completes.	
PNWASHDONE	Power off by panel noise wash function completed. (OLED)	

	Error symptom	C. Audio error	Established date		
		No audio/ Normal video	Revised date		



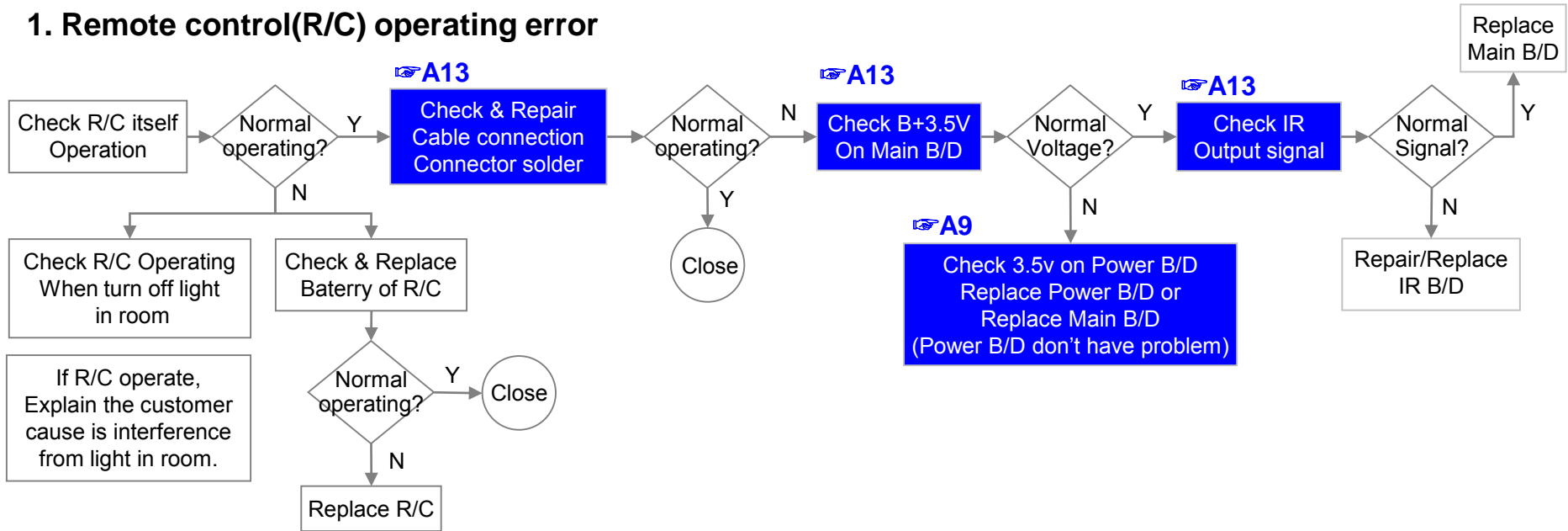
	Error symptom	C. Audio error	Established date		
		Wrecked audio/ discontinuation/noise	Revised date		

→ abnormal audio/discontinuation/noise is same after “Check input signal” compared to No audio



	Error symptom	D. Function error	Established date		
		Remote control & Local switch checking	Revised date		

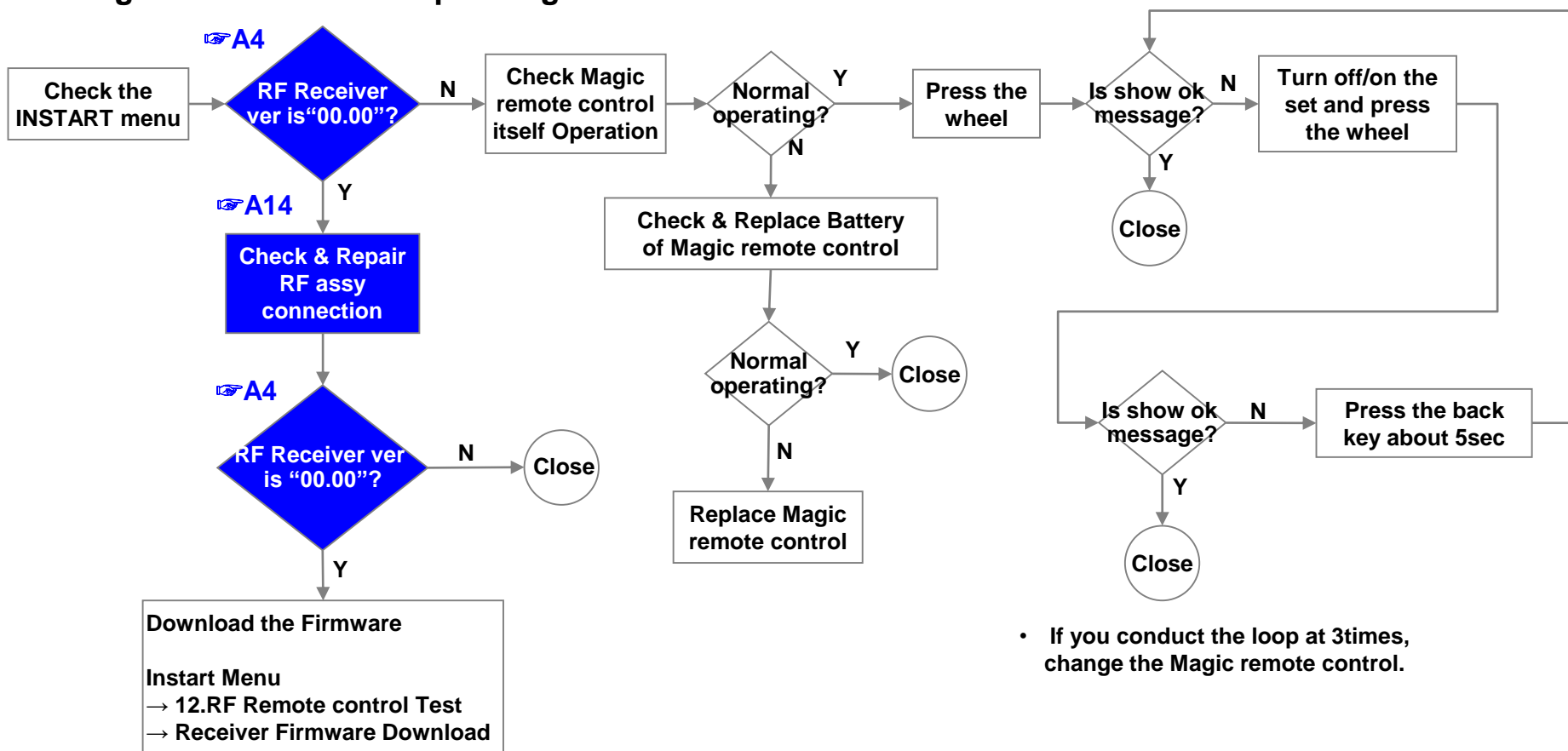
## 1. Remote control(R/C) operating error





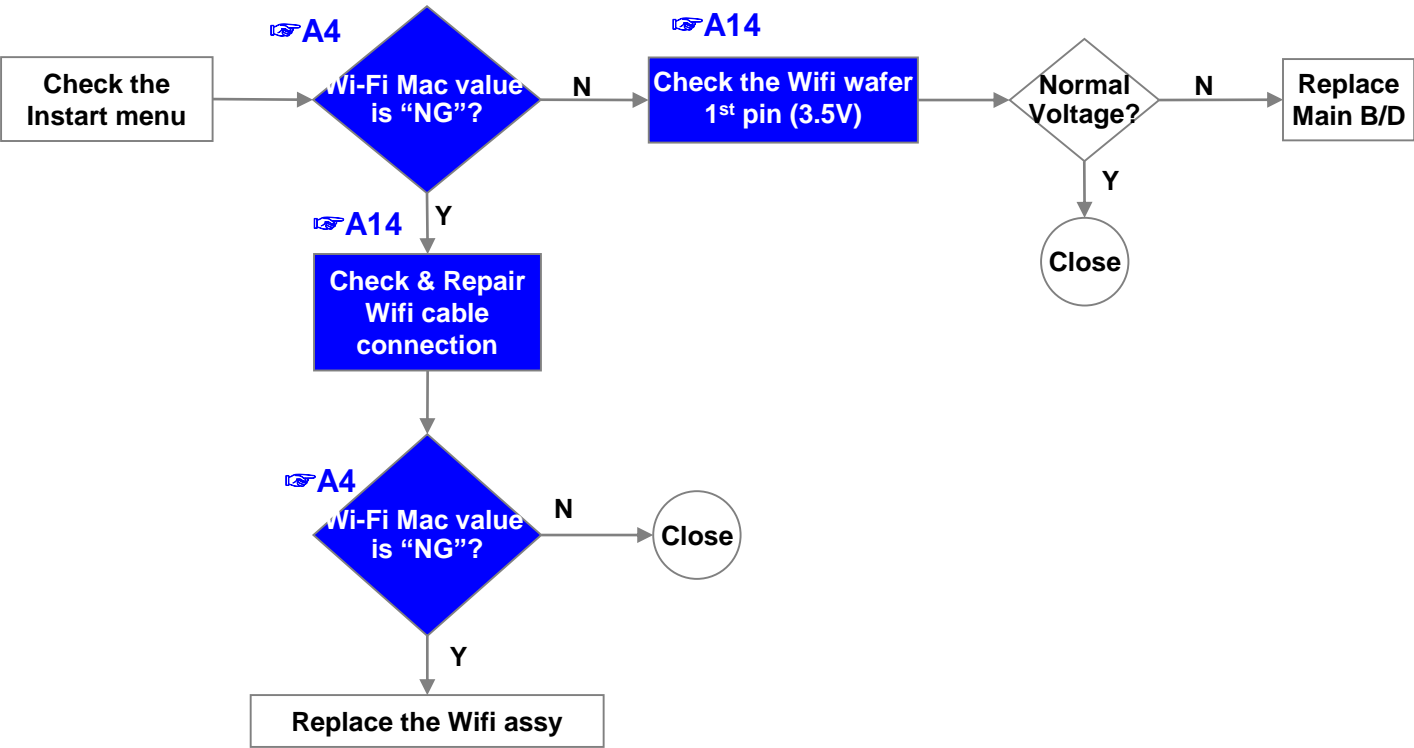
	Error symptom	D. Function error	Established date		
		Magic remote operating checking	Revised date		

## 2. Magic Remote Control operating error

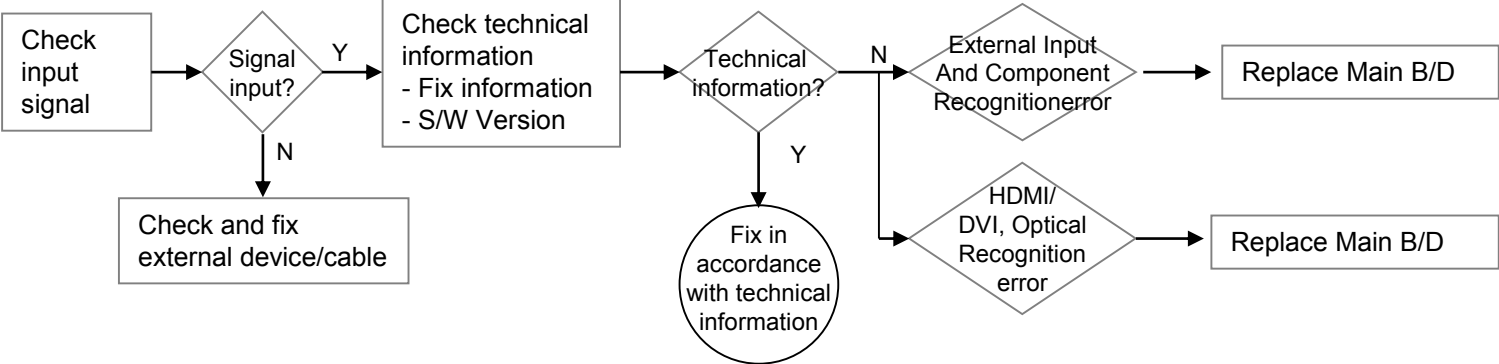


	Error symptom	D. Function error	Established date		
		Wifi operating checking	Revised date		

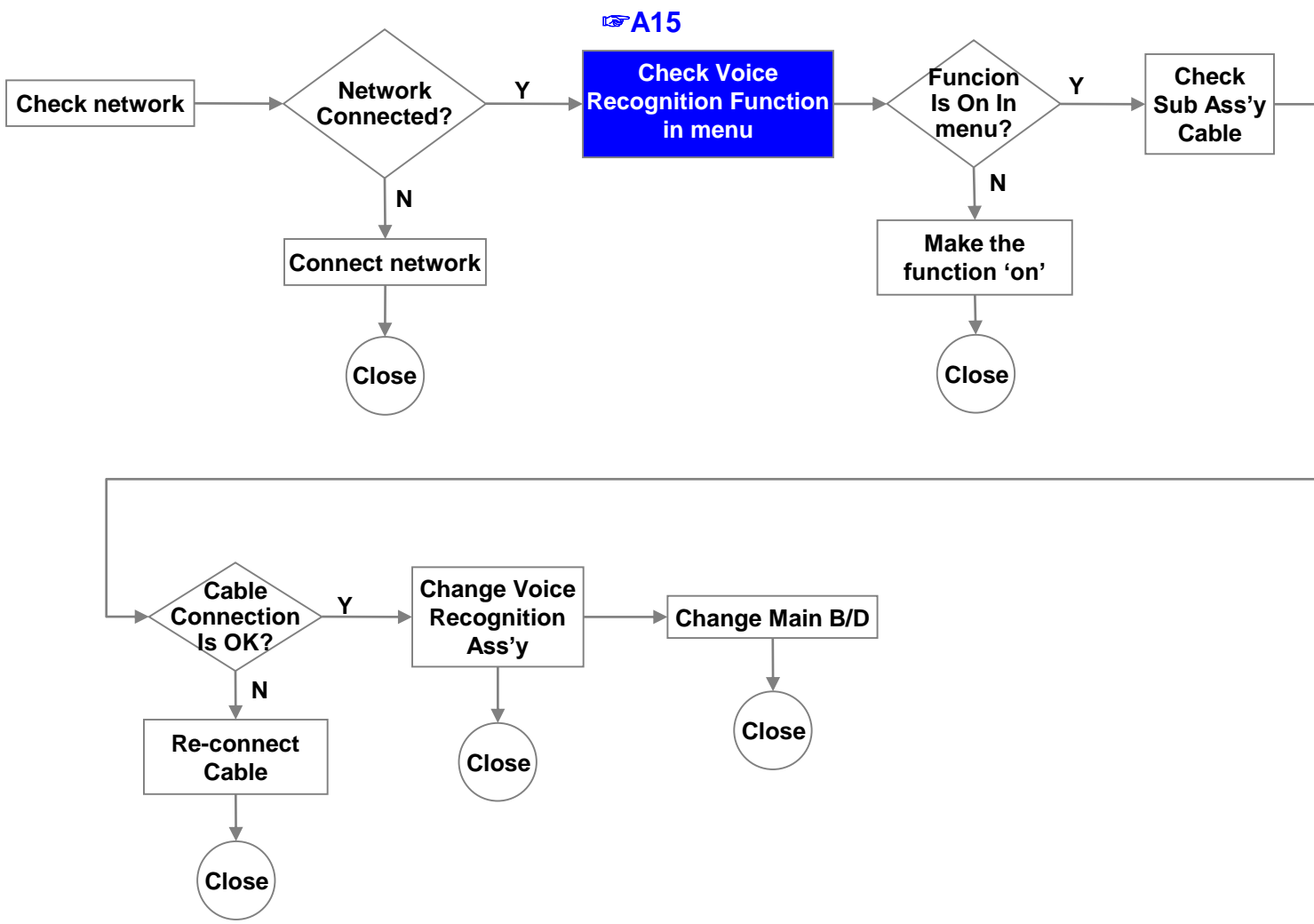
### 3.Wifi operating error



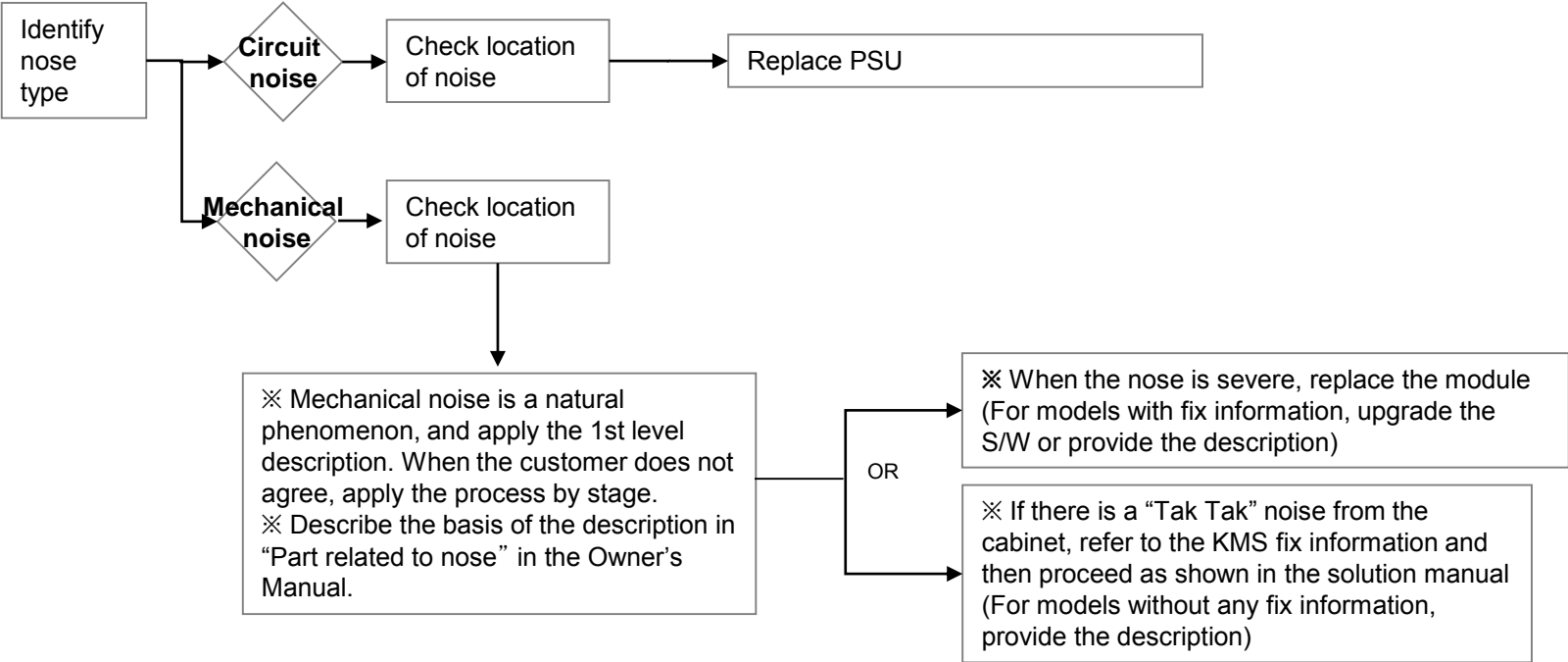
	Error symptom	D. Function error	Established date		
		External device recognition error	Revised date		



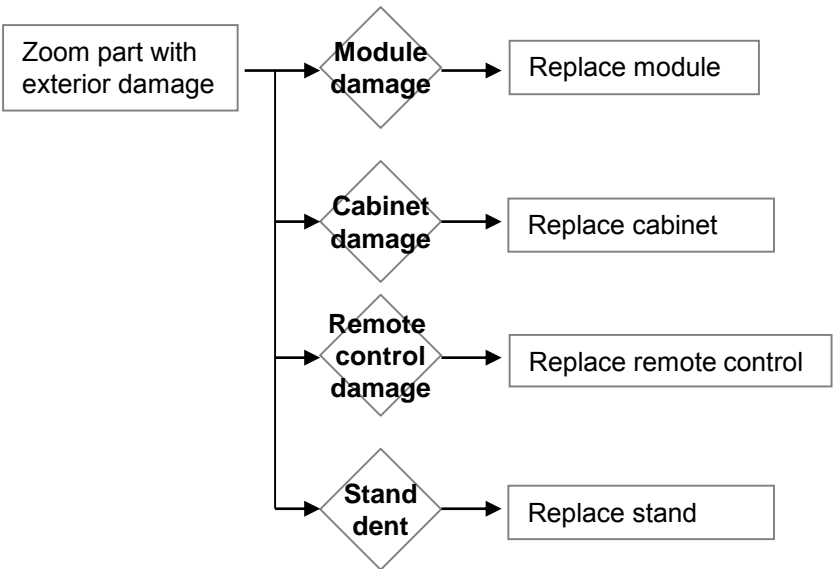
	불량증상	D. Function error			
		Voice Recognition Function Error			



	Error symptom	E. Noise	Established date		
		Circuit noise, mechanical noise	Revised date		



	Error symptom	F. Exterior defect	Established date		
		Exterior defect	Revised date		





# Contents of Standard Repair Process Detail Technical Manual

No.	Error symptom	Content	Page	Remarks
1	A. Video error_ No video/Normal audio	Check Vx1 Lock	A1	
2		Check White Balance value	A2	
3	A. Video error_ video error /Video lag/stop	TUNER input signal strength checking method	A3	
4		Version checking method	A4	
5		Tuner Checking Part	A5	
6	A. Video error _Vertical/Horizontal bar, residual image, light spot	Connection diagram	A6	
7	A. Video error_ Color error	Check Link Cable (Vx1/EPI) reconnection condition	A7	
8	<b>&lt;Appendix&gt;</b> Defected Type caused by Cable / Main Board / Module	Examples of Symptoms (Image Error)	A-1~2/10	
		Examples of Symptoms (Main Board)	A-3~5/10	
		Examples of Symptoms (Module)	A-6~9/10	
		Examples of Symptoms (Power Board)	A-10/10	

**Continue to the next page**

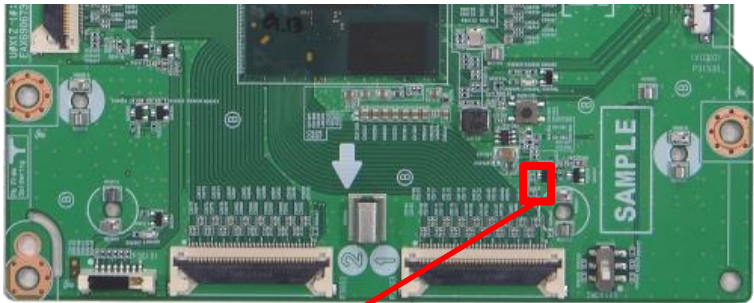
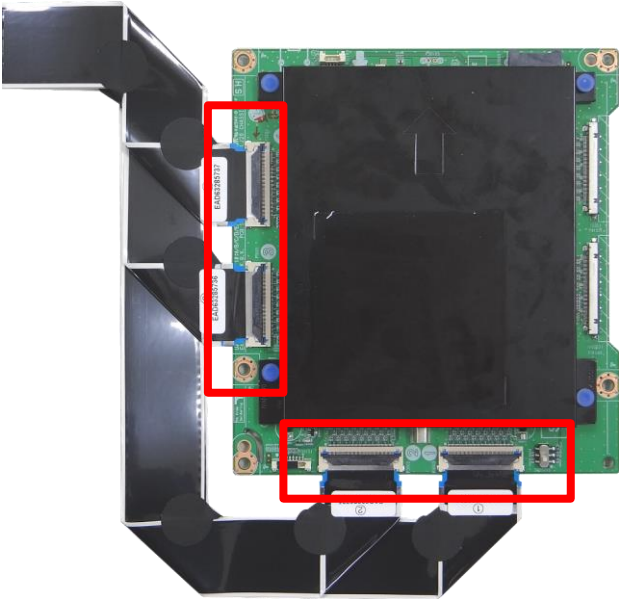
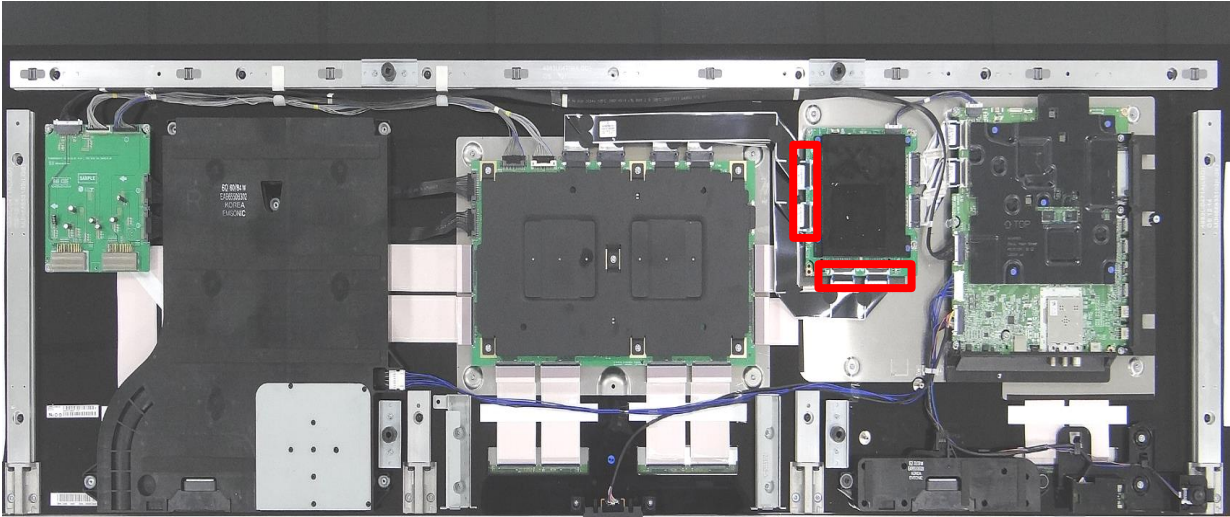
# Contents of Standard Repair Process Detail Technical Manual

Continued from previous page

No.	Error symptom	Content	Page	Remarks
9	B. Power error_ No power	Check front Power Indicator	A8	
10		Check power input Voltage & ST-BY 7.8V	A9	
11	B. Power error_Off when on/off, while viewing	POWER OFF MODE checking method	A10	
12	C. Audio error_ No audio/Normal video	Checking method in menu when there is no audio	A11	
13		Voltage and speaker checking method when there is no audio	A12	
14	D. Function error	Remote control operation checking method	A13	
15		Wifi/Motion remote operation checking method	A14	
16		Voice Recognition operation checking method	A15	
17	E. Etc	How to use the Service remote control	A16~18	
18		Check items after Main B/D replacement	A19	

# Standard Repair Process Detail Technical Manual

	Error symptom	A. Video error_No video/Normal audio	Established date		
	Content	Check Vx1 Lock	Revised date		A1

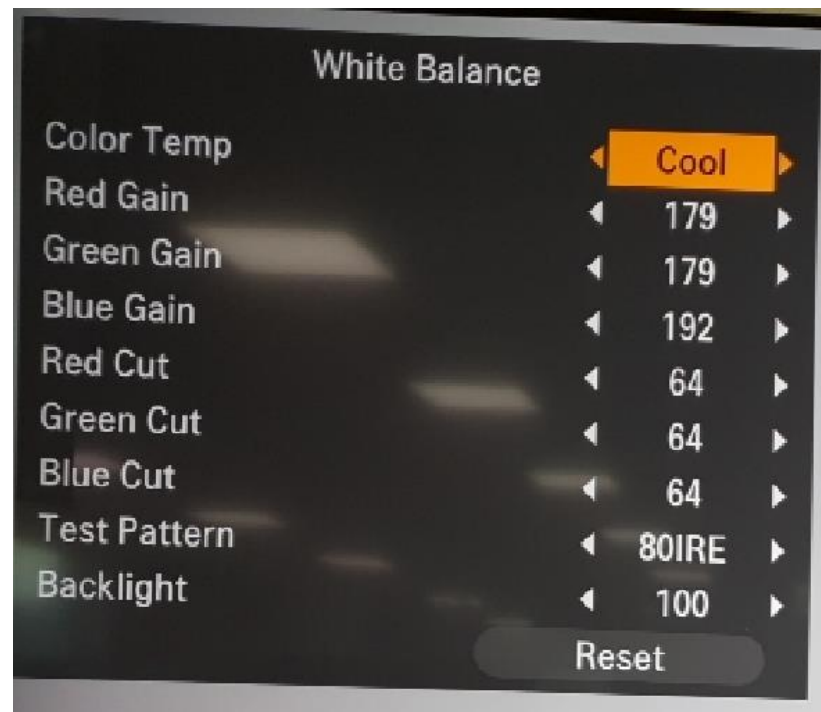
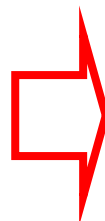
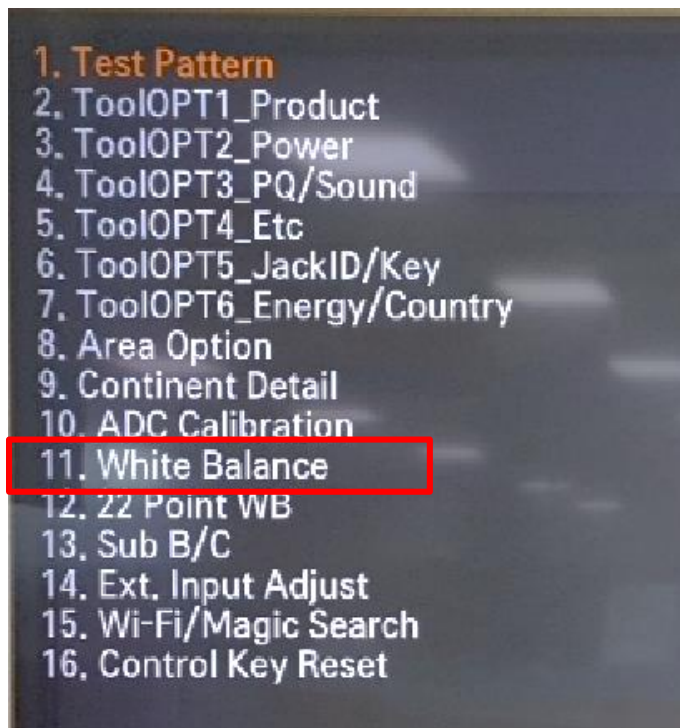


Check a voltage of R30325 when TV is on.  
Vx1 is OK if the voltage is 0V(Low).



# Standard Repair Process Detail Technical Manual

	Error symptom	A. Video error_No video/Normal audio	Established date		
	Content	Check White Balance value	Revised date		A2



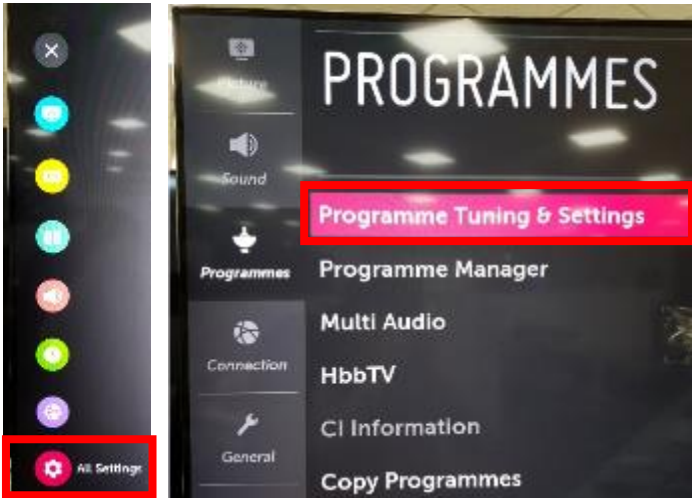
## Entry method

1. Press the ADJ button on the remote control for adjustment.
2. Enter into White Balance.
3. After recording the R, G, B (GAIN, Cut) value of Color Temp (Cool/Medium/Warm), re-enter the value after replacing the MAIN BOARD.

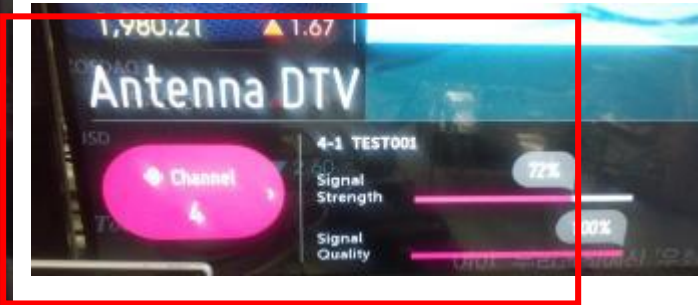
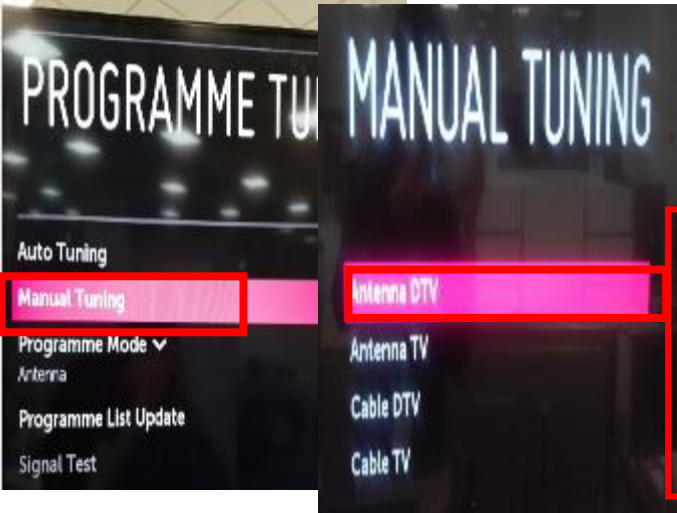


Standard Repair Process Detail Technical Manual

	Error symptom	A. Video error_Video error, video lag/stop	Established date		
	Content	TUNER input signal strength checking method	Revised date		A3



All settings → Programmes → Programme Tuning & settings → Manual Tuning



When the signal is strong, use the attenuator (-10dB, -15dB, -20dB etc.)





# Standard Repair Process Detail Technical Manual

	Error symptom	A. Video error_Video error, video lag/stop	Established date		
	Content	Version checking method	Revised date		A4

## 1. Checking method for remote control for adjustment

Version

```

Instart
Model Name : WEBOSS.0
Serial Number : SK IV107
S/W Version : 02.00.41.01
Micom Version : V3.05.1
Boot Version : 4.04.63/4.04.63
UHD BE Version : 00.00.26.00
Chip Type : 020
Wi-Fi Channel/Speed : N/A/USB 2.0
Wi-Fi MAC : 60:AB:14:43:A8:F8
MAC Address : CC:2D:8C:CB:A8:DE
IP Address : 0.0.0.0
SFU Key/RPMB Key : OK/OK
Widevine : LGTV20CLGE100302580
ESN Num. : LGTV20205=51001000160
HDCP1.4 : OK
HDCP2(Miracast/HDMI) : OK/OK
RF Receiver Version : 39:15:11:05
Wi-Fi/Magic Search : OK/OK
Debug Status : EVENT
SIGN Key : DEVELKEY
Far Field Voice : NG(N/A)
Eye Check : NG
Control Key : NG
Access USB Status : 1/-1(T)/-1(C)
UTT : Currently signed 158
OLED Comp. Count(OffRS/IR) : 0/0
App History Version : 145 (jamestowne)
PQL DB : XXXXX_LGD_OLED_3U_XXXX
Demo : NULL
Gallery : NULL/
    
```

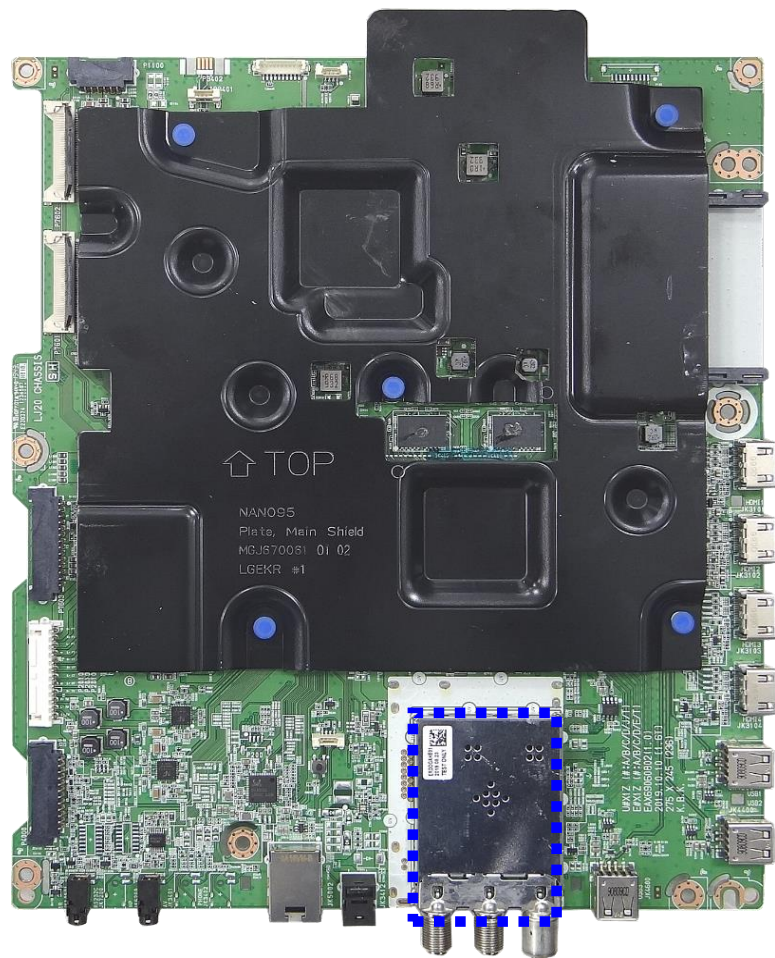


Press the IN-START with the remote control for adjustment



# Standard Repair Process Detail Technical Manual

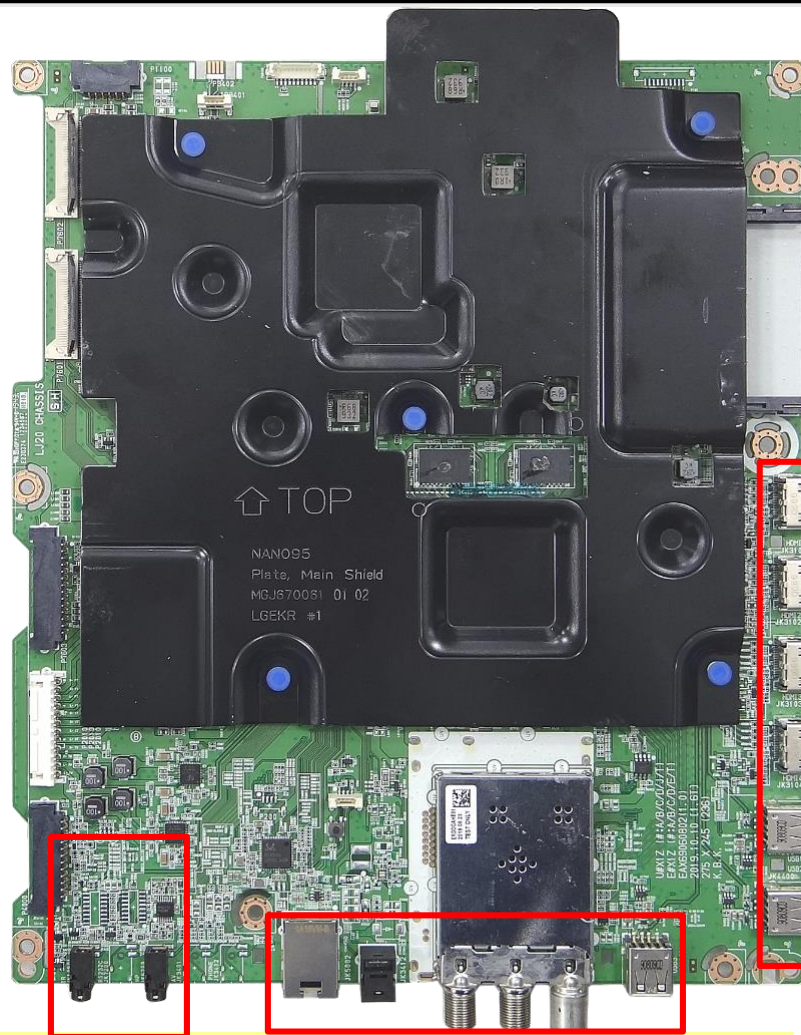
	Error symptom	A. Video error_Video error, video lag/stop	Established date		
	Content	TUNER checking part	Revised date		A5



- Checking method:
1. Check the signal strength or check whether the screen is normal when the external device is connected.
  2. After measuring each voltage from power supply, finally replace the MAIN BOARD.

# Standard Repair Process Detail Technical Manual

	Error symptom	A. Video error _Vertical/Horizontal bar, residual image, light spot	Established date		
	Content	Connection diagram	Revised date		A6

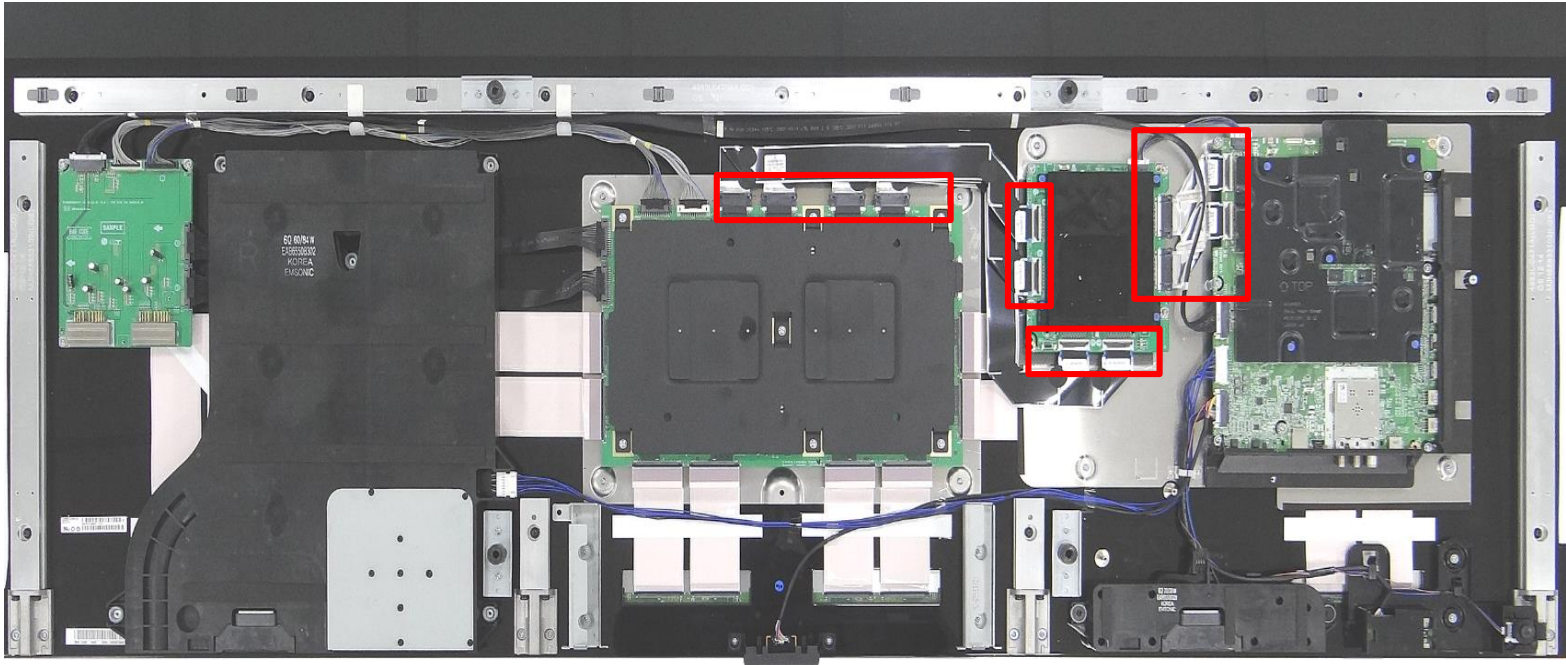


As the part connecting to the external input, check the screen condition by signal



# Standard Repair Process Detail Technical Manual



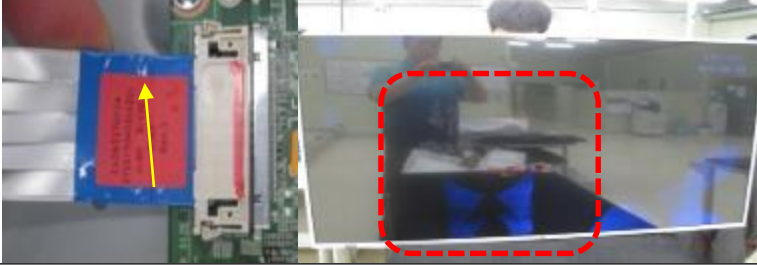

	Error symptom	A. Video error_Color error	Established date		
	Content	Check Link Cable(VX1/EPI) reconnection condition	Revised date		A7




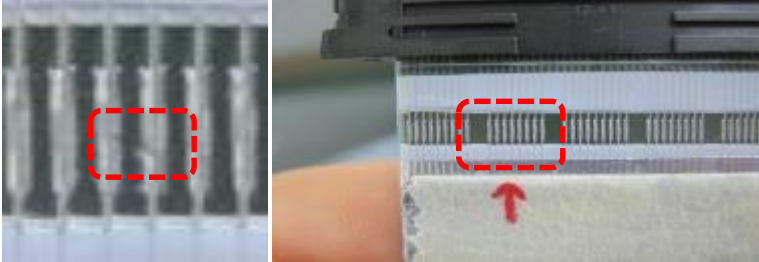






Check the contact condition of the Link Cable, especially dust or mis insertion.









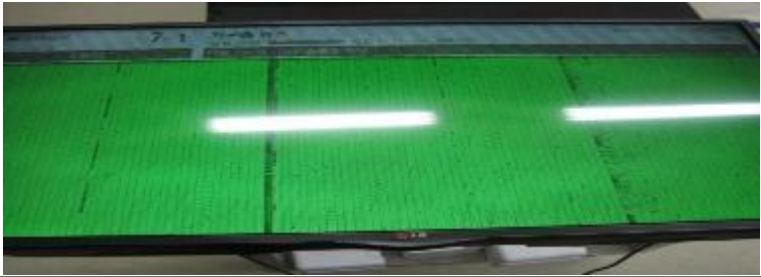



Item	Symptom Name	Cause	Symptom Image
CABLE	Color smear	Poor broken pin of FFC cable	
CABLE	R Color Excessive	Color is Excessive due to FFC Cable Contact.	
CABLE	Screen darkness	screen is dark due to poor contact due to disconnection of the FFC cable pin.	
CABLE	G Color Excessive	G color transient due to poor FFC cable connection	

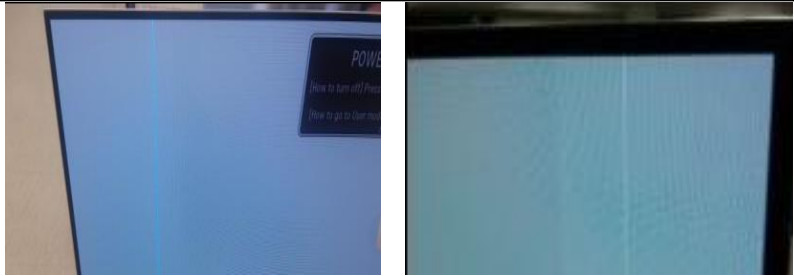



Item	Symptom Name	Cause	Symptom Image
CABLE	Color spread	VX1 cable connection problem	
CABLE	Color spread	VX1 cable connection problem	
CABLE	Color spread	VX1 cable connection problem	
CABLE	Screen stop	Due to foreign substance withi nVx1 cable PIN	


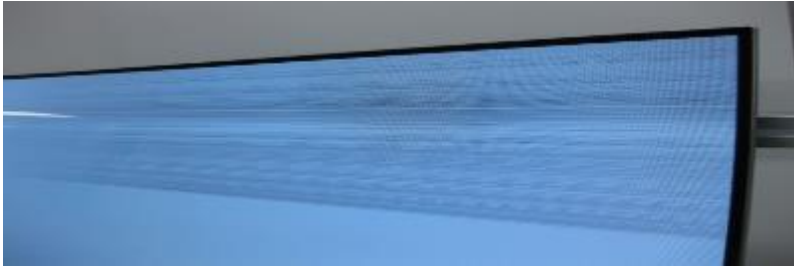


Item	Symptom Name	Cause	Symptom Image
Main	Screen noise	Bit noise from horizontal screen	
Main	Screen noise	Broken screen due to Main IC problem	
Main	Dark picture	Dark left-side screen	
Main	Broken picture	Top/bottom screen part Picture problem due to tuner Inner side quality problem	



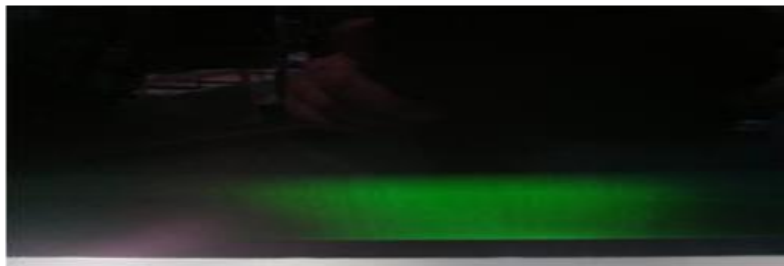






Item	Symptom Name	Cause	Symptom Image
Main	Broken screen	Broken screen in a horizontal manner	
Main	Screen spread	Screen corner appears blurry	
Main	Color Spread	Color spread on the screen	
Main	Blurry Screen	Blurry picture on the screen	

Item	Symptom Name	Cause	Symptom Image
Main	Broken picture	No problem at the initial stage, G-color spread after 10 minutes	
Main	Right-side Screen problem	Right-side screen problem	
Main	LG logo Screen problem	Screen picture spread problem	
Main	Right-side picture problem	No problem at the initial stage. During Heat run, right-side picture problem	

Item	Symptom Name	Cause	Symptom Image
MODULE	Vertical bar	Un-repairable cases In this case please exchange the module	
MODULE	Image broken	Source-driver issue	
MODULE	White dot	White dot cause by panel issue	
MODULE	Line dim	Vertical line cause by source-driver IC	

Item	Symptom Name	Cause	Symptom Image
MODULE	Burnt	Module burnt	
MODULE	Horizontal line	Module is damaged	
MODULE	Line defect	Module is damaged	
MODULE	Press damage	Un-repairable cases In this case please exchange the module	

Item	Symptom Name	Cause	Symptom Image
MODULE	Vertical bar	Vertical bar cause by source-driver IC	
MODULE	Vertical Noise Brightness difference	Un-repairable cases In this case please exchange the module	
MODULE	Green light	Compensation error when power on/off	
MODULE	Color difference	Color difference between screen cause by compensation error	

Item	Symptom Name	Cause	Symptom Image
MODULE	No image	Module is damaged (Can't fix it)	
MODULE	Burnt	Burnt (Can't fix it)	
MODULE	Mura	Screen Mura (Can't fix it)	

## Appendix : Exchange Power Board (PSU)



No Light



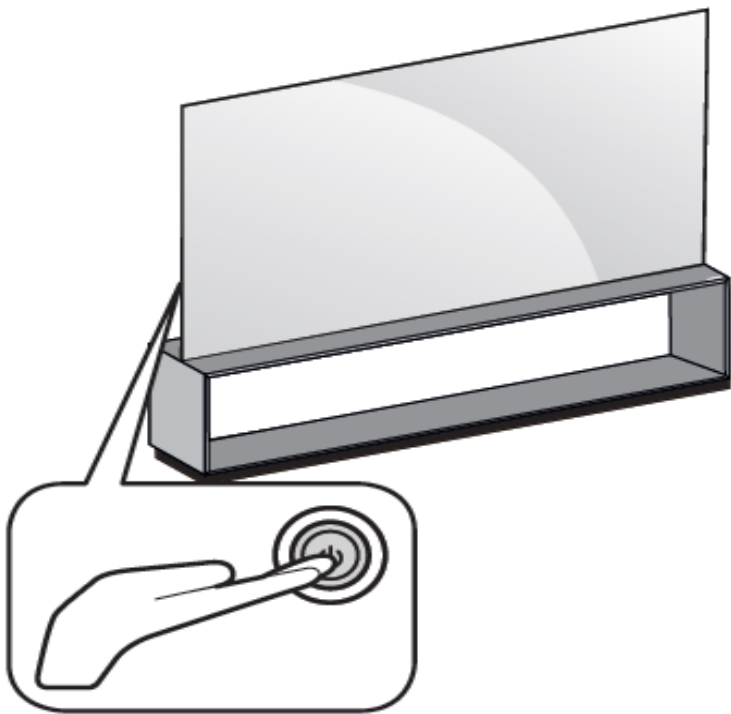
No picture/Sound Ok



# Standard Repair Process Detail Technical Manual




	Error symptom	B. Power error _No power	Established date		
	Content	Check front Power Indicator	Revised date		A8

You can simply operate the TV functions, using the button.




ST-BY condition: On or Off  
Power ON condition: Turn Off





## Basic functions

	Power On (Press) Power Off <sup>1</sup> (Press and hold)
	Volume Control
	Programmes Control

<sup>1</sup> All running apps will close, and any recording in progress will stop.  
(Depending on country)

## Adjusting the menu

When the TV is turned on, press the  button one time. You can adjust the Menu items using the button.

	Turns the power off.
	Accesses the settings menu.
	Clears on-screen displays and returns to TV viewing.
	Changes the input source.



# Standard Repair Process Detail Technical Manual

Error  
symptom

B. Power error \_No power

Established  
date

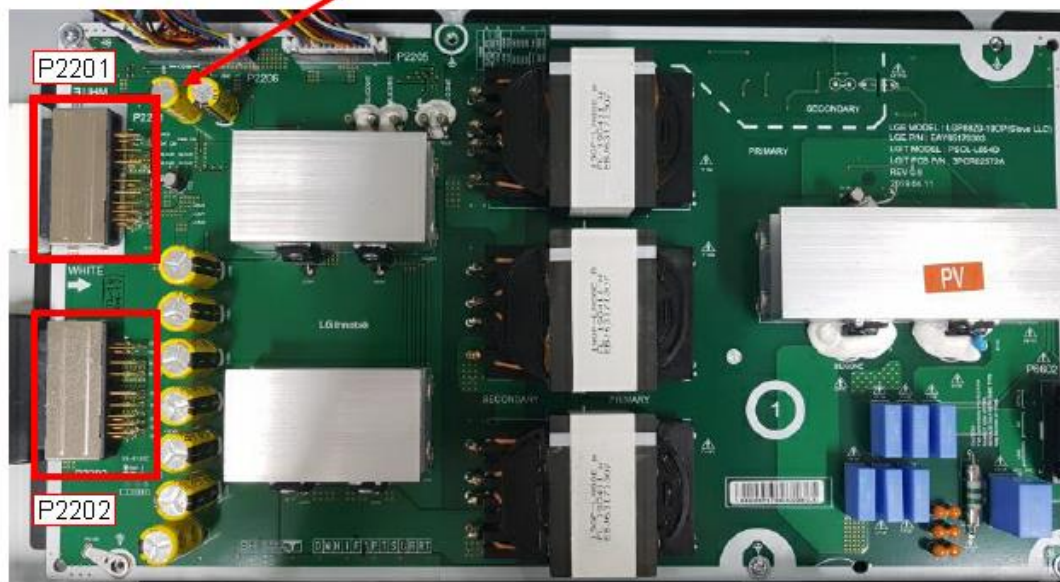
Content

Check power input voltage and ST-BY 7.8V

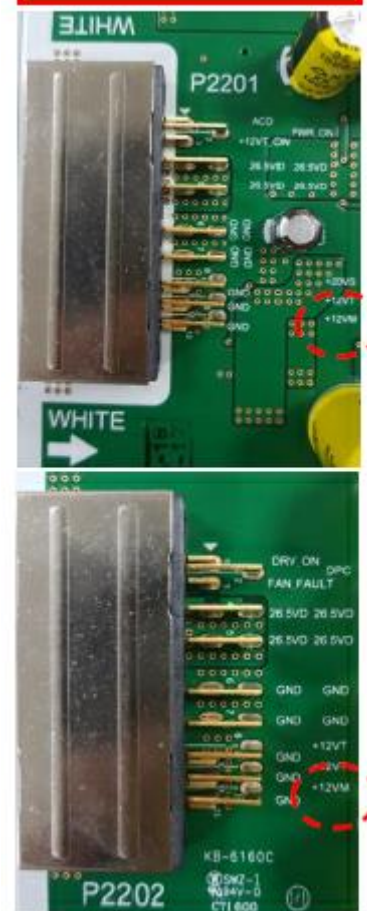
Revised  
date

A9

Check a voltage of DC 12VM  
(ST-BY : 7.8V, Normal : 12V)



Power Box To  
Main/Module B'd



Appellation	Explanation	Signal Direction	Action
PWR-ON	Vcc Circuit ON/OFF	Input	2.5V Over : Vcc ON 0.3V Under : Vcc OFF
12VT-ON	12.25V(12VT) Circuit ON/OFF	Input	2.5V Over : 12.25V(12VT) ON 0.3V Under : 12.25V(12VT) OFF
DRV-ON	26.5V Circuit ON/OFF	Input	2.5V Over : 26.5V ON 0.3V Under : 26.5V OFF
DPC	24.5V(26.5V→24.5V) Circuit ON/OFF	Input	2.5V Over : 26.5V → 24.5V 0.3V Under : 26.5V
ACD	EVDD_ON/OFF	Output	2.7V Over : EVDD ON 2.7V Under : EVDD OFF

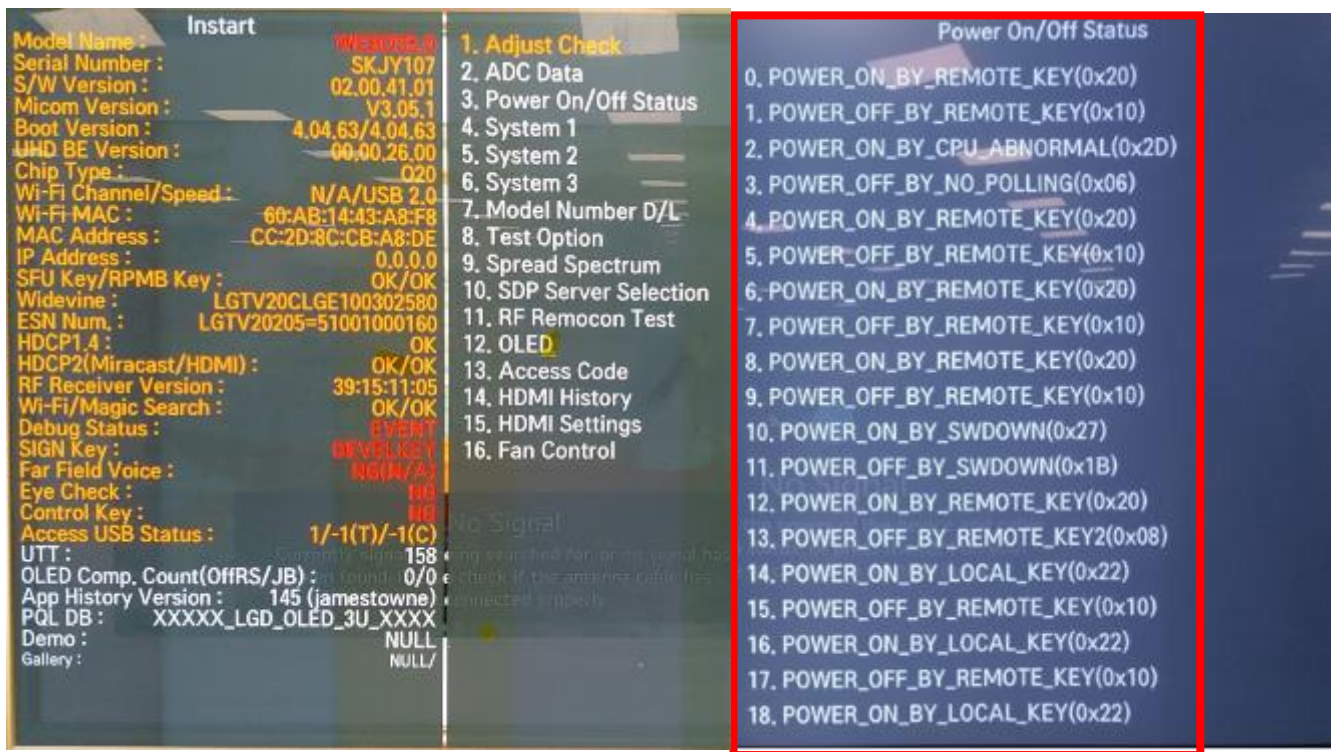
P2201	
Type	PW-13P-RAD-BK
Maker	ARN TECH
Pin No.	Signal
1	ACD
2	PWR_ON
3	+12VT_ON
4	EVDD
5	EVDD
6	GND
7	GND
8	+20V
9	GND
10	+12VT
11	GND
12	+12VM
13	GND

P2202	
Type	PW-13P-RAD-BK
Maker	ARN TECH
Pin No.	Signal
1	DRV_ON
2	DPC
3	FAN_FAULT
4	EVDD
5	EVDD
6	GND
7	GND
8	+12VT
9	GND
10	+12VT
11	GND
12	+12VM
13	GND

A9

# Standard Repair Process Detail Technical Manual

	Error symptom	B. Power error _Off when on, off whiling viewing	Established date		
	Content	POWER OFF MODE checking method	Revised date		A10



## Entry method

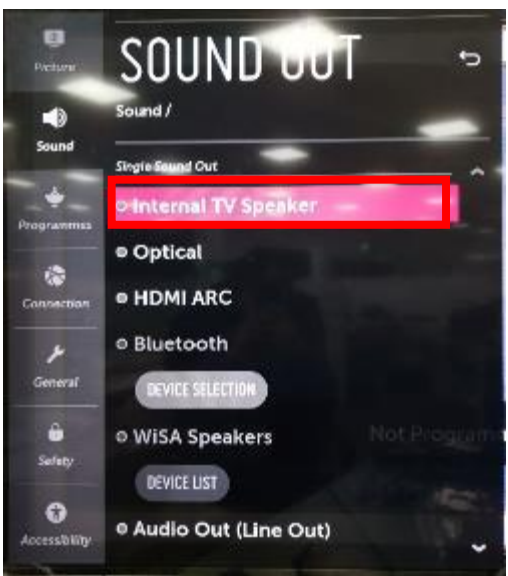
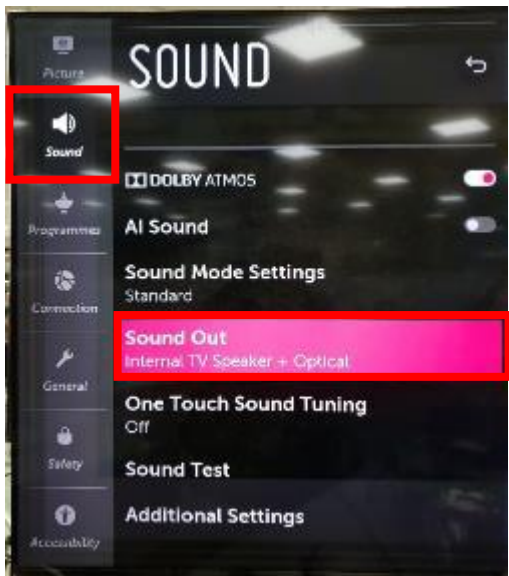
1. Press the IN-START button of the remote control for adjustment
2. Check the entry into adjustment item 3



# Standard Repair Process Detail Technical Manual

	Error symptom	C. Audio error_No audio/Normal video	Established date		
	Content	Checking method in menu when there is no audio	Revised date		A11

<ALL MODELS>



## Checking method

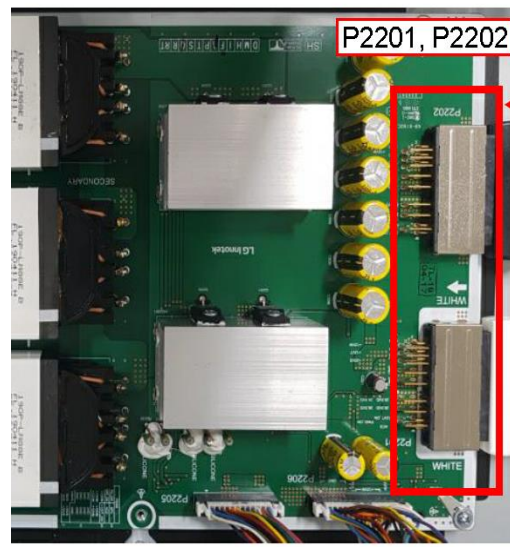
1. Press the Setting button on the remote control
2. Select the Sound function of the Menu
3. Select the Sound Out
4. Select TV Speaker





# Standard Repair Process Detail Technical Manual

	Error symptom	C. Audio error_No audio/Normal video	Established date		
	Content	Voltage and speaker checking method when there is no audio	Revised date		A12

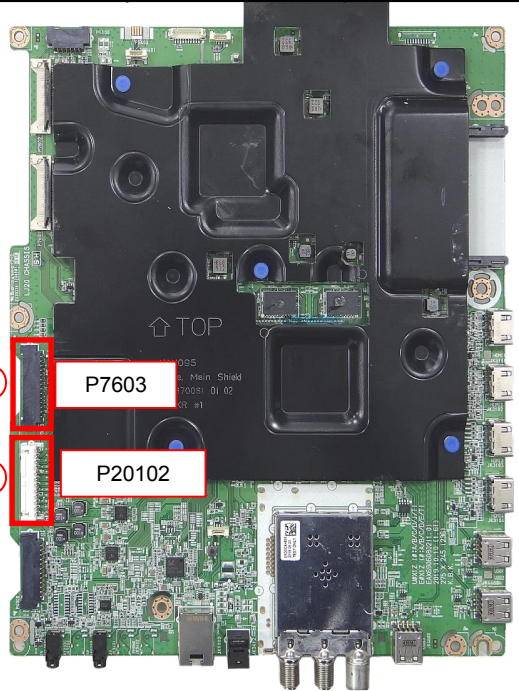


P2201, P2202

②

P2201	
Pin No.	Signal
1	ACD
2	PWR_ON
3	+12VT_ON
4	EVDD
5	EVDD
6	GND
7	GND
8	+20VS
9	GND
10	+12VT
11	GND
12	+12VM
13	GND

P2202	
Pin No.	Signal
1	DRV_ON
2	DPC
3	FAN_FAULT
4	EVDD
5	EVDD
6	GND
7	GND
8	+12VT
9	+12VT
10	+12VT
11	GND
12	+12VM
13	GND



① P7603

③ P20102

1	SPK_R-_FT	P20102
2	SPK_R+_FT	
3	SPK_L-_FT	
4	SPK_L+_FT	
5	SPK_R-_CT	
6	SPK_R+_CT	
7	SPK_L-_CT	
8	SPK_L+_CT	
9	SPK_R-_TW	
10	SPK_R+_TW	
11	SPK_L-_TW	
12	SPK_L+_TW	

## Checking order when there is no audio

- 1.Check the contact condition of or 20V connector of Main Board.
2. Measure the 20V input voltage supplied from Power Board.  
(If there is no input voltage, remove and check the connector.)
- 3.Connect the tester P20102 to the speaker terminal and if you hear the ‘Chik~ Chik~’ sound when you touch the GND and output terminal, the speaker is normal.

# Standard Repair Process Detail Technical Manual

	Error symptom	D. Function error	Established date		
	Content	Remote control operation checking method	Revised date		A13

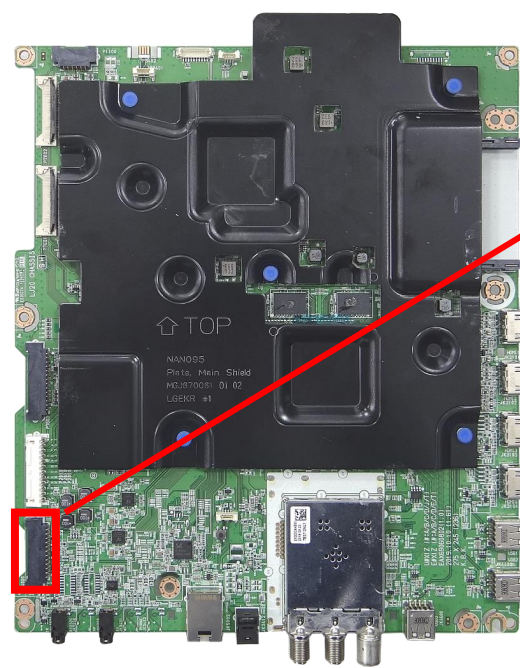
## ① IR & EYE Sensor



EyeLED IR

Voice  
Recognition  
MIC

②



③

Pin	Pin name
1	LED_R_JACK
2	GND
3	IR JACK
4	+3.5V_ST
5	GND
6	N.C.
7	EYE_SCL_JACK
8	KEY2_JACK
9	EYE_SDA_JACK
10	WOV_PDM0_DATAIN_JACK
11	N.C.
12	WOV_PDM_CLKOUT_JACK
13	+3.5V_WIFI
14	GND
15	COMBO_RESET_JACK
16	BT_WAKEUP_HOST_JACK
17	WOL/WIFI_POWER_ON_JACK
18	GND
19	+3.5V_WIFI
20	WIFI_DP_JACK
21	WIFI_SUSPEND/ RESUME_JACK
22	WIFI_DM_JACK
23	GND
24	+3.5V_WIFI

## Checking order to check remote control

### Checking order

1. Check IR cable condition between IR & Main board.( Check picture number① and ②)
2. Check the standby 3.5V on the terminal (③)
3. AS checking the Pre-Amp(IR LED light) , the power is in ON condition, an Analog Tester needle should move slowly, otherwise, it's defective.

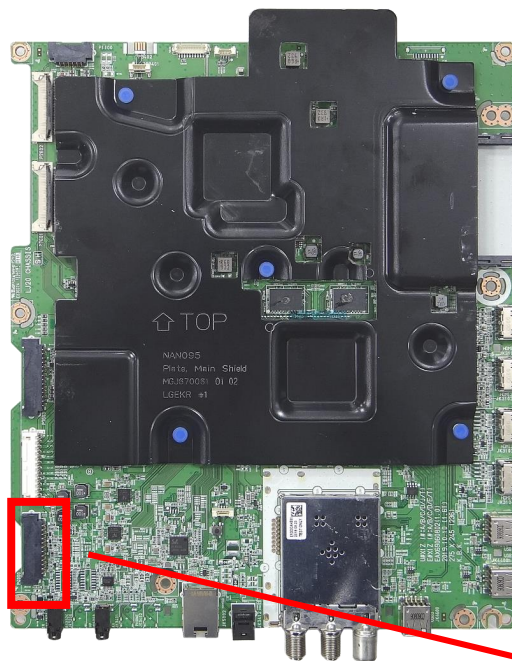
# Standard Repair Process Detail Technical Manual

	Error symptom	D. Function error	Established date		
	Content	WiFi/Motion Remote operation checking method	Revised date		A14

## ① Wifi & BT Front



## ① Wifi & BT Rear



②

Pin	Pin name
1	LED_R_JACK
2	GND
3	IR_JACK
4	+3.5V_ST
5	GND
6	GND
7	EYE_SCL_JACK
8	KEY2_JACK
9	EYE_SDA_JACK
10	WOV_PDM0_DATAIN_JACK
11	KEY1_JACK
12	WOV_PDM_CLKOUT_JACK
13	+3.5V_WIFI
14	GND
15	COMBO_RESET_JACK
16	BT_WAKEUP_HOST_JACK
17	WOL/WIFI_POWER_ON_JACK
18	GND
19	+3.5V_WIFI
20	WIFI_DP_JACK
21	WIFI_SUSPEND/RESUME_JACK
22	WIFI_DM_JACK
23	GND
24	+3.5V_WIFI

## Checking order to check motion remote/wifi

### Checking order

1. Check BT/Wifi cable condition between BT/Wifi assy & Main board.
2. Check the 3.5V\_WIFI on the terminal 13, 19, 24 Pin

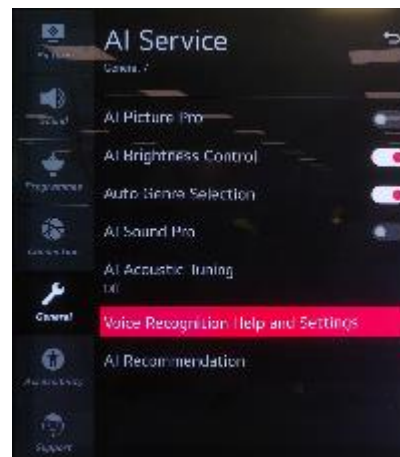


# Standard Repair Process Detail Technical Manual

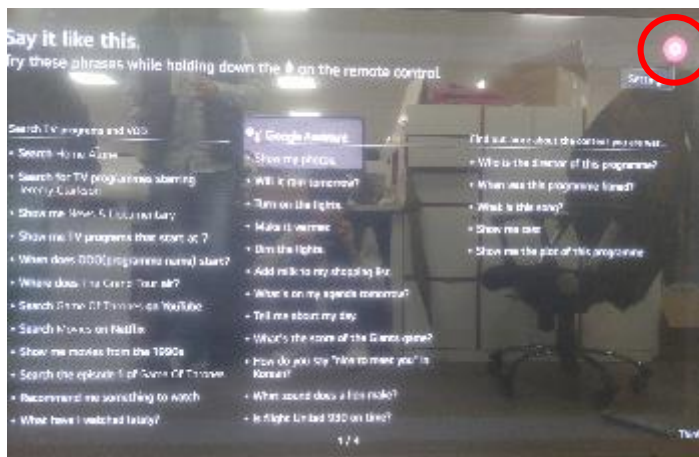
	Error symptom	D. Function error	Established date		
	Content	Voice Recognition operating checking method	Revised date		A15



1. Menu > General > AI Service



2. Voice Recognition Help and Settings



3. Settings



4. Active 'Use Hands-free Voice Control'

A15

# Standard Repair Process Detail Technical Manual

	Error symptom	E. ETC	Established date		
	Content	How to use the Service remote control	Revised date		A16

## 1. How to access the remote control









# Standard Repair Process Detail Technical Manual

	Error symptom	E. ETC	Established date		
	Content	How to use the Service remote control	Revised date		A17

## 2. Remote control part definition



POWER	Power On/Off
ETC (Added Function)	[ETC] Each time pressing the KEY button, Mode gets changed to ETC and P-ONLY each time All KEY function [PIP PR-][PIP PR+][SWAP] [PIP INPUT][DVI] KEY Function
P-ONLY (Added Function)	Changed to factory mode All KEY function &[INFO][STILL][HDMI HOT][USB HOT][HDMI4] KEY Action
INPUT	Change to the external device mode
ARC	Change in the order of 16:9=>Zoom1=>Zoom2=>Cinema Zoom=>Auto Screen=>4:3=>16:9
PSM	Changes in the order of Bright Picture=>Easy Picture=>Cinema=>Spots=>Game=> Custom Picture1=>Custom Picture2=>Bright Picture
SSM (Added Function)	Standard(user)=>music=>cinema=>sports=>game=>standard(user)
PIP	Picture In Picture is activated
TEXT	Access to the Power Only mode
CAP	Broadcasting caption(on/off)
MPX	Stereo mode (mono, stereo, foreign language) access
	Used when in factory mode
Simplink (Added Function)	Access to the Simplink-connected device
EYE	Digital EYE function ON/OFF For some Model, access to the Test Pattern
TILT	Used for screen tilting change (Access to the old PDP control mode)

A17

# Standard Repair Process Detail Technical Manual

	Error symptom	E. ETC	Established date		
	Content	How to use the Service remote control	Revised date		A18



<b>B-TOOTH (Added function)</b>	Connected to Blue-Tooth
<b>IN-START</b>	Model Nam ex) 42PG60D-NA Current Model Name S/W Version ex) V03.11.0 Current S/W version MICOM Version ex) V3.05.0 current Mi-Com version UTT ex) User TV total usage time
<b>ADJ</b>	POWER OFF STATUS ex) Shows power-off status Test Pattern (Off=>White=>Red=>Green=>Blue=>Black=>Pattern=>Off) Change
<b>X-STUDIO (Added function)</b>	HDD,USB, external device's HDD screen is activated
<b>MENU</b>	User function gets activated
<b>EXIT</b>	Exit from the current mode
<b>TIME SHIFT (Added function)</b>	Moves forward/backward of recorded contents
<b>MUTE</b>	Mute function (0 Volume)
<b>IN-STOP</b>	SET to factory mode
<b>VOL + -</b>	Volume Up/Down
<b>CH + -</b>	Channel Up/Down
<b>AV1,2,3 (Added function)</b>	Connects to external input 1,2,3
<b>COMP1,2 (Added function)</b>	Connects to Component 1,2
<b>HDMI1,2,3,4 (Add function)</b>	Connects to HDMI 1,2,3,4
<b>DVI (Add function)</b>	Connects to DVI

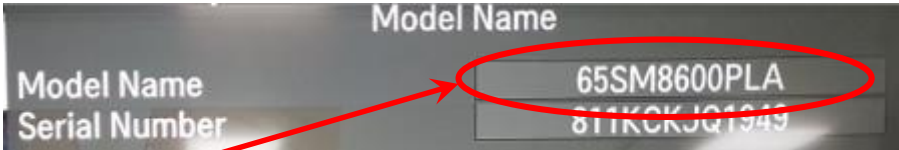


# Standard Repair Process Detail Technical Manual

	Error symptom	E. ETC	Established date		
	Content	Check items after Main B/D replacement	Revised date		A19

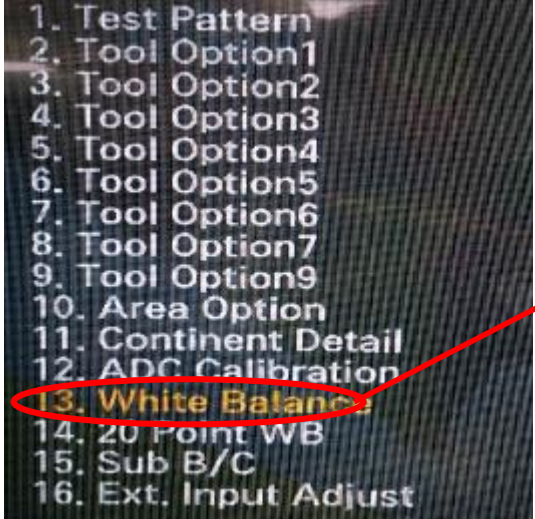
Check items after Main B/D (Model Number D/L, White Balance)

1. Press the Service remote control instart Key.



No.7 Select Model Number D/L  
– Key in the model name and serial number after checking the ID label on the back cover.

2. Press the Service remote control ADJ Key.



No.13 Select White Balance  
– Record the R, G, B (GAIN, Cut) value of the color temperature before main board replacement.  
After replacing the main board, key in the recorded value.

