SERVICE MANUAL (TROUBLESHOOTING)

ORIGINAL MANUAL ISSUE DATE: 2023/11

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9-888-190-21

LCD TV

SONY

Sony EMCS (Malaysia) Sdn. Bhd. HES-M

MODEL LIST

THIS SERVICE MANUAL CONTAINS **TROUBLESHOOTING INFORMATION** FOR BELOW REGIONS AND MODELS:

Self Diagnosis Supported model

MODEL

KDL-32W600D

TABLE OF CONTENTS

Please refer to Service Procedure for Panel , Board and Software Change / Upgrade Manual , part number 9-888-196-0x in TISS .

Please refer Service Manual (Disassembly) for below information :

-Safety Warnings

-Wire Dressing

-Circuit Board Location

-Disassembly and Exploded View.

Note: Pictures provided in this manual may have difference from actual sets.

SECTION 1
SAFETY NOTES

1-1. Warnings and Caution

1) These servicing instructions are for use by qualified service personnel only.
2) To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.
3) An isolation transformer should be used during any service to avoid Possible shock hazard, because of live chassis. The chassis of this receiver is directly connected to the ac power line.
4) The replaceable fuse could be in the neutral of the mains supply. When replacing the fuse, the mains shall be disconnected for de-energize the phase conductors.
5) Be sure to follow these guidelines to protect your property and avoid causing serious injury :

• Carry the TV with an adequate number of people; larger size TVs require two or more people.
• Correct hand placement while carrying the TV is very important for safety and to avoid damages.

5) Components identified by shading and ⚠ mark on the exploded views, and in the parts list are critical for safe operation. Replace these components with Sony parts whose part numbers appear as shown in this manual or in supplements published by Sony. Circuit adjustments that are critical for safe operation are identified in this manual. Follow these procedures whenever critical components are replaced or improper operation is suspected.

1-2. Caution Handling of LCD Panel

When repairing the LCD Panel, make sure you are grounded with a wrist band. When repairing the LCD Panel on the wall, the panel must be secured using the 4 mounting holes on the rear cover.

1) Do not press the panel or frame edge to avoid the risk of electric shock.
2) Do not scratch or press on the panel with any sharp objects.
3) Do not leave the module in high temperature or in areas of high humidity for an extended period of time.
4) Do not expose the LCD panel to direct sunlight.
5) Avoid contact with water. It may cause short circuit within the module.
6) Disconnect the AC power when replacing the backlight (CCFL) or inverter circuit. (High voltage occurs at the inverter circuit at 650Vrms)
7) Always clean the LCD panel with a soft cloth material.
8) Use care when handling the wires or connectors of the inverter circuit. Damaging the wires may cause a short circuit.
9) Protect the panel from ESD to avoid damaging the electronic circuit (C-MOS).
10) During the repair, DO NOT leave the Power On or Burn-in period for more than 1 hour while the TV is face down on a cloth.

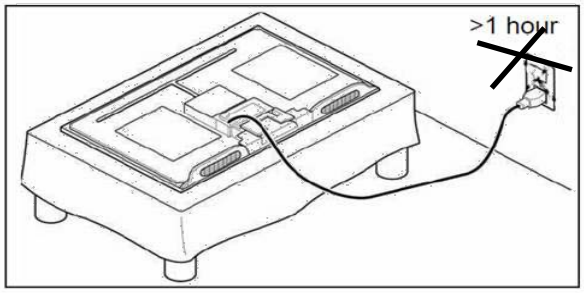


Figure 1. TV is faced down on a cloth during repair.

1-3. Caution About the Lithium Battery

1) Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.

2) Outer case broken battery should not contact to water.

1-4. Safety Check-Out

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:-

1) Check the area of your repair for unsoldered or poorly soldered connections. Check the entire board surface for solder splashes and bridges.

2) Check the inter board wiring to ensure that no wires are pinched or contact high-wattage resistors.

3)Check all control knobs, shields, covers, ground straps and mounting hardware have been replaced. Be absolutely certain you have replaced all the insulators.

4) Look for unauthorized replacement parts, particularly transistors that were installed during a previous repair. Point them out to the customer and recommend their replacement.

5) Look for parts which, though functioning show obvious signs of deterioration. Point them out to the customer and recommend their replacement.

6) Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.

7) Check the antenna terminals, metal trim, metalized knobs, screws and all other exposed metal parts for AC leakage. Check leakage test as described next.

8. For safety reasons, repairing the Power board and/or Inverter board is prohibited.

1-5.Leakage Test

(To protect electric shock when customer touch the terminal.)

Leakage current can be measured by V: Voltmeter or oscilloscope (r.m.s. or peak reading)

Stabilized power supply instrument and isolated voltage transformer:

Use too much current capacity and isolated voltage transformer does not need to use stabilized power supply equipment.

Specification of RMS volt meter: Input resistance > 1 Mohm, Input capacitance < 200 pF, Frequency range: 15 Hz – 1MHz . Refer Figure 1.

Isolated type volt -meter (FLUKE 8921A etc *1)

*1 Not use FLUKE 8920A that connected to protective earth by diode

Leakage current of measurement instrument is less than 10μArms when under test equipment AC plug is opened

Set up the following condition and turn on the set. Applied voltage: Nominal input voltage (Description on Nameplate)

Measure the leakage current between one phase conductor and neutral for terminal 1 and terminal

2. Read rms value, and then calculate to peak value PEAK VALUE =√2 RMS VALUE

Comply with the following requirement

Class II equipment (2-pin plug): for each terminal, the worst value of measurement must not exceed AC 283uA peak).

Note: including AC adaptor, AC adaptor/DC operated unit combination

Note: Products which are always used in touch with human body: 141uA (peak)

Note: As for products destined for Southeast Asia (Rod Antenna is accessory. Or it is packed with a product.), the worst value must not exceed AC 141uA (peak).

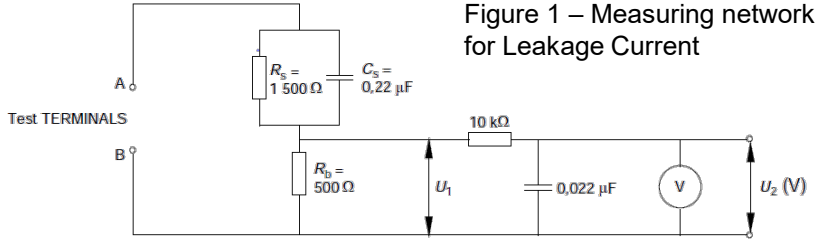


Figure 1 – Measuring network for Leakage Current

1-6. How to Find a Good Earth Ground

1) A cold-water pipe is a guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground.
2) If the retaining screw is to be used as your earth ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms.
3) If a cold-water pipe is not accessible, connect a 60- to 100-watt trouble-light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side on the line; the lamp should light at normal brilliance if the screw is at ground potential (see Figure 3).

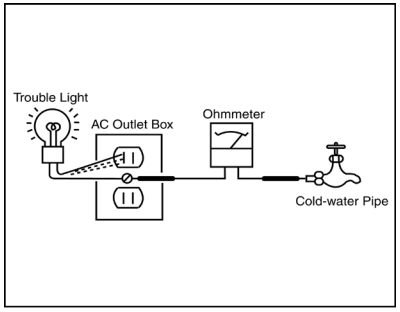


Figure B. Checking for earth ground.

Figure 3. Checking for earth ground.

1-7. Lead Free Information

The circuit boards used in these models have been processed using Lead Free Solder. The boards are identified by the LF logo located close to the board designation.

Figure 4: LF Logo

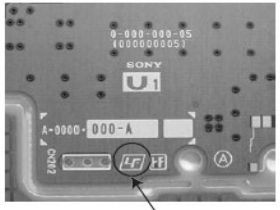
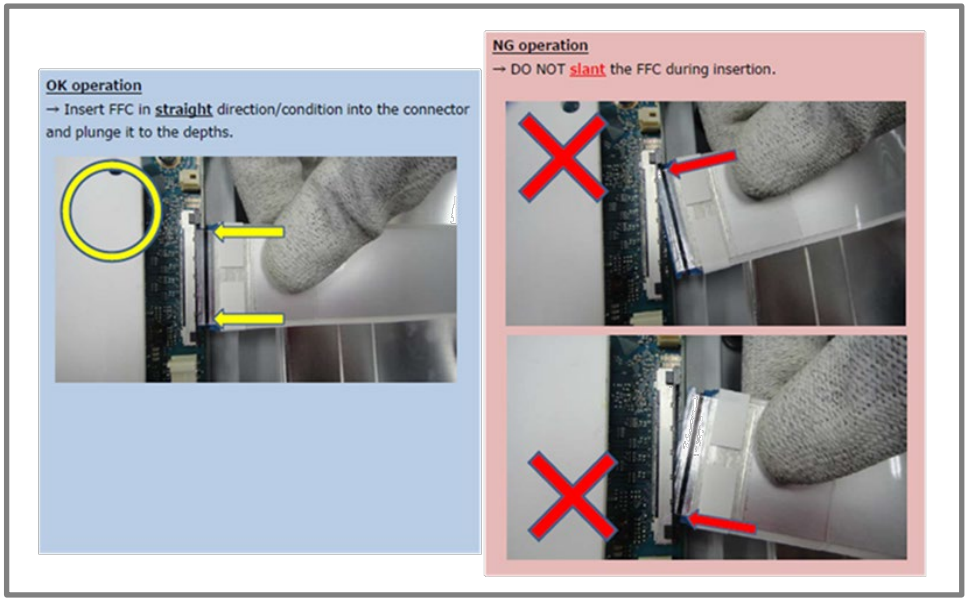


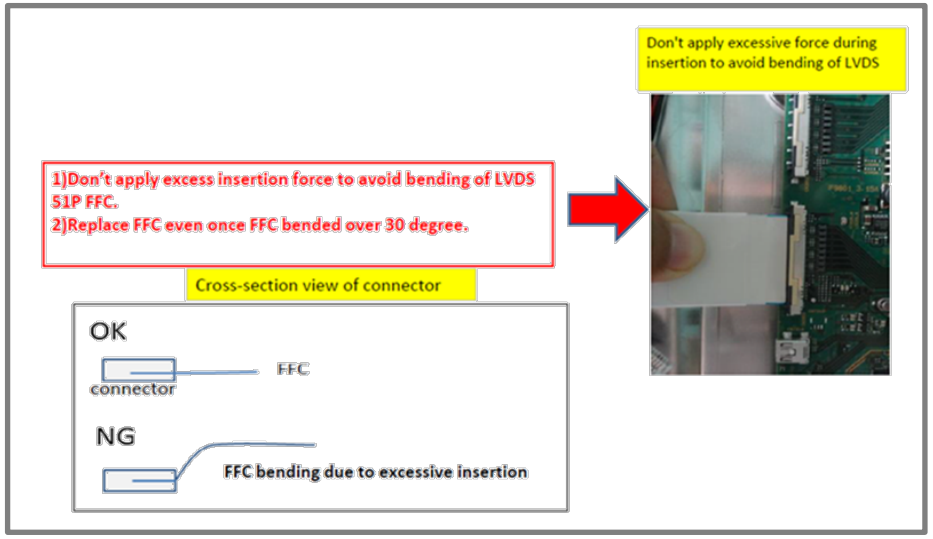
Figure 5: LF logo on circuit board

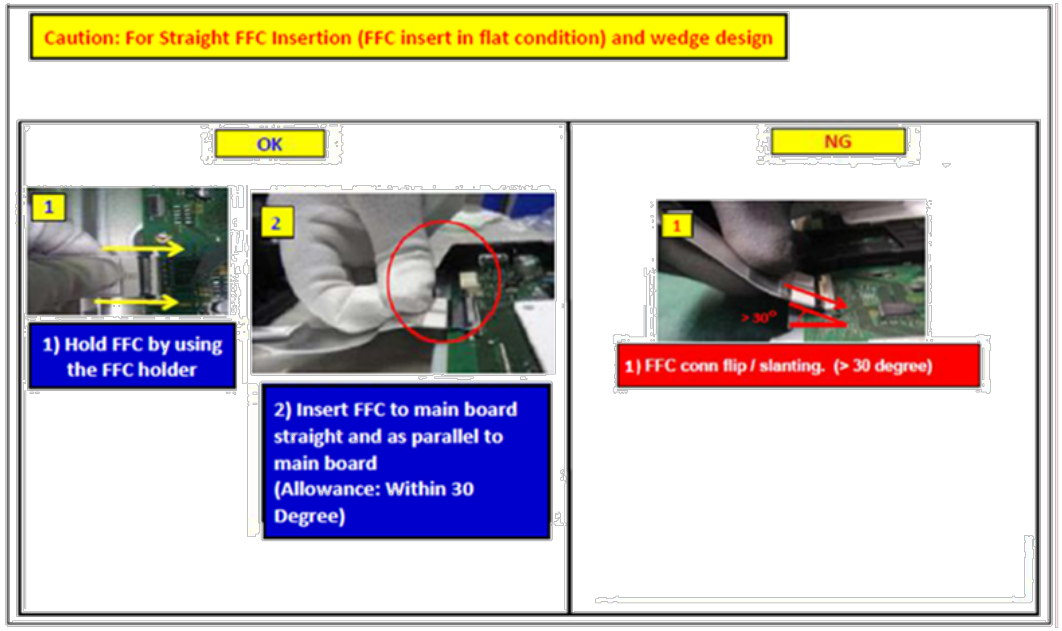
The servicing of these boards requires special precautions. It is strongly recommended to use Lead Free Solder material in order to guarantee optimal quality of new solder joints.

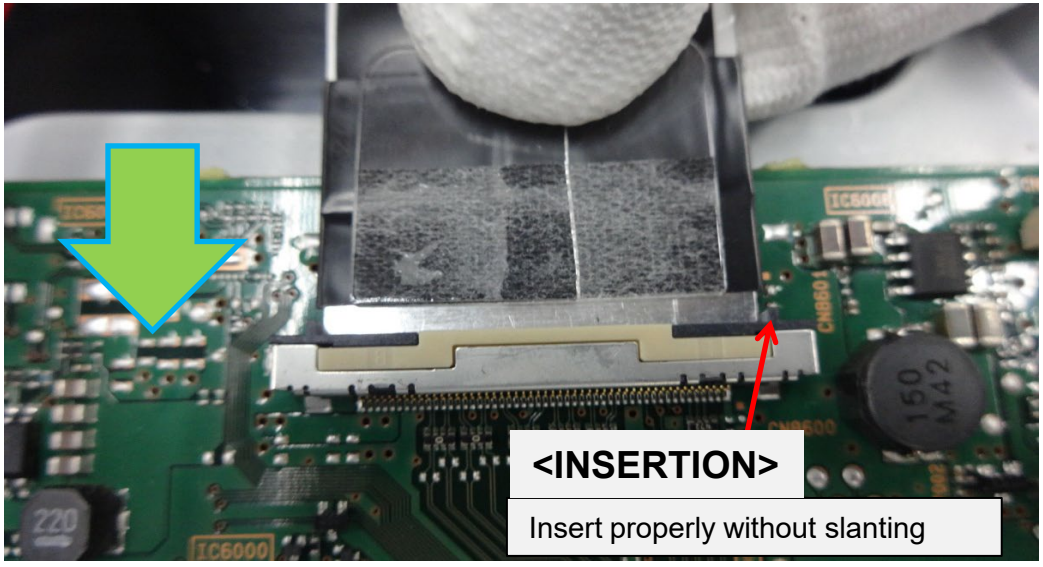
1-8. Handling the FLEXIBLE FLAT CABLE (FFC)

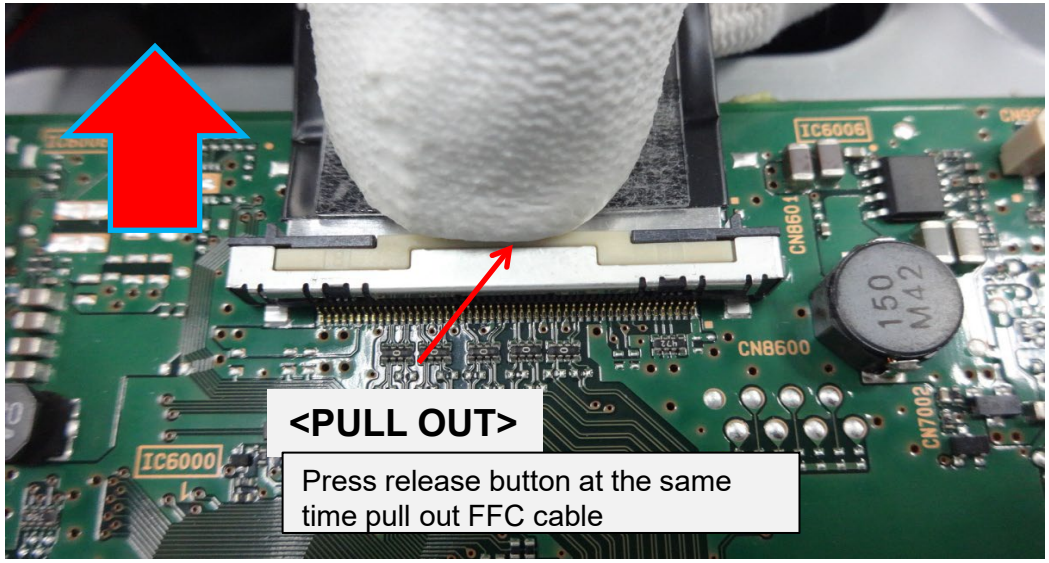
- When you insert / pull out FFC, please grasp a reinforcement board and main body of FFC.






Caution: For Straight FFC Insertion (FFC insert in flat condition) and wedge design
OK
NG
1
2
1) Hold FFC by using the FFC holder
2) Insert FFC to main board straight and as parallel to main board (Allowance: Within 30 Degree)
1
> 30°
1) FFC conn flip / slanting. (> 30 degree)

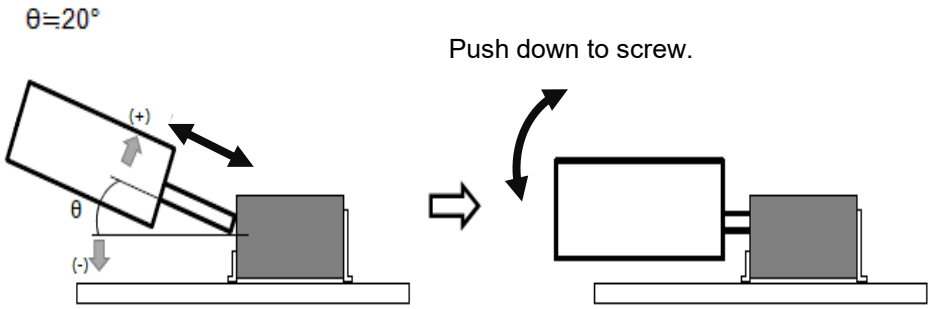

<INSERTION>
Insert properly without slanting


<PULL OUT>
Press release button at the same time pull out FFC cable

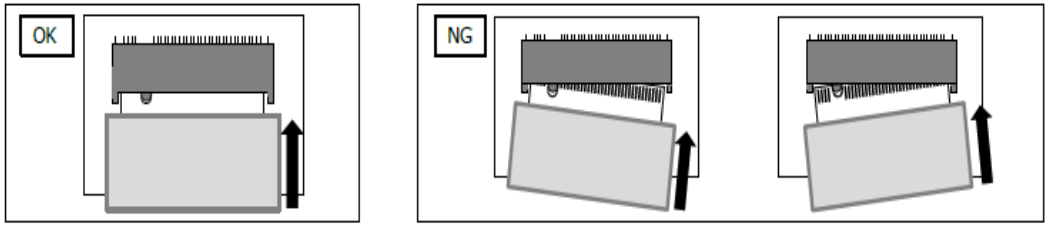
1-9. Assemble and Dissemble Tuner Module

Tuner Module treatment way

1. The insertion & extraction angle of the module is permitted to specified degree for connector



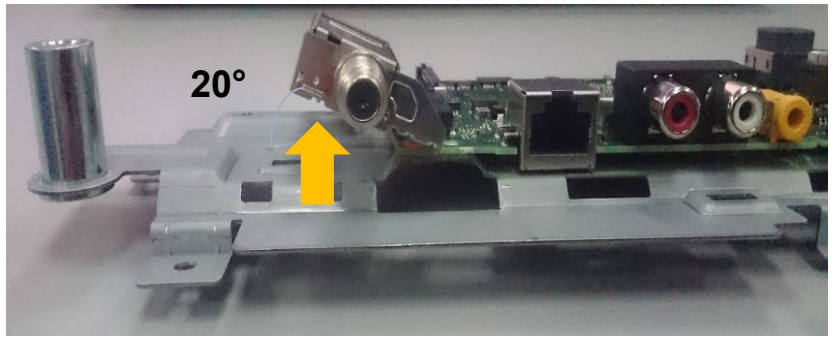
② Please insert or extract the module straightly toward the connector. Do NOT insert or extract the module with an angle.



For removing Tuner Module,

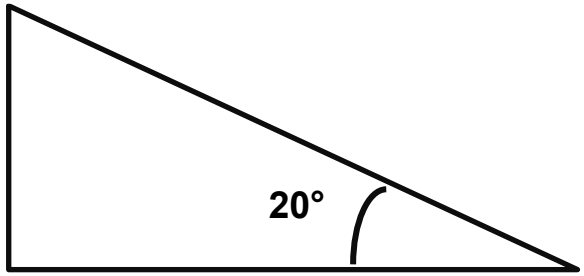
After un screwed, Automatically the Module will float to correct degree.

So please extract it with keeping this degree.



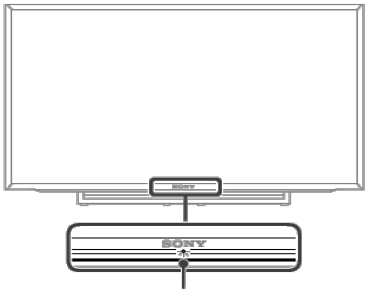
Reference paper for 20 degree

(If need please use for fit by cutting this paper)



SECTION 2
SELF DIAGNOSTIC FUNCTION

2-1. Overview of Control Buttons



LED Indicator

- Lights up in green when you select “Picture Off”.
- Lights up in amber when you set the timer or “Photo Frame Mode”.
- Lights up in green when the TV is turned on.
- Flashes while the remote is being operated.

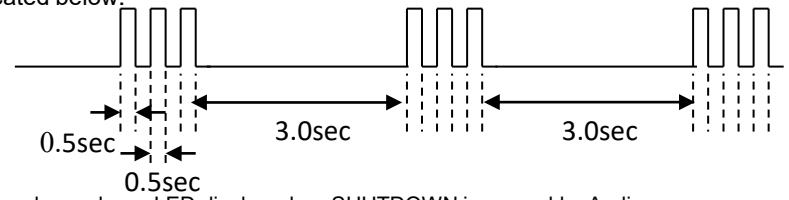
2-2. LED Display Control

Amber = Red + Green

Status	LED Colour	Remarks
Power Off (AC Off and *1)	OFF	*1 power switch off (by touch button)
Power On	Green	
Standby(by remote control off and Side Key off)	OFF	
Picture Off	Green	
Set "Sleep Timer"	Amber	
Set "On Timer” (Power On)	Amber	
Set "On Timer”(Standby)	Amber	
Picture Frame	Amber	
Failure	Red Blinking	The number of LED blinking indicates cause of failure.
Error of panel ID	Amber/Green Blinking	Blinking:0.5sec Amber/ 0.5sec Green
Software Updating	Amber Blinking	Blinking: 1sec On / 1sec Off

2-3. LED Pattern

When safety shutdown occurs, Standby LED display reports the cause by using the lightning patterns as indicated below.



Example: The figure above shows LED display when SHUTDOWN is caused by Audio Error. It repeats flashing for a specified number of times in 0.5sec/cycle and has a 3 seconds interval of lighting off. Please note that a 3 seconds interval of lighting off is fixed regardless of abnormal state types.

2-4. Standby LED Error Display

The Number of Standby LED (RED blinking)	Error Detection	Error Location
2	Main Power Error	AC adapter Error
3	Audio Error	B* board Error
4	Panel Power Error	B* board Error
5	Panel I2C COMM Error	B* or Source board Error
6	Backlight Error	B* board Error

2-5. Triage Chart

Reference	Symptoms - Shutdown. Power LED blinking red diagnostics sequences					No Power (No Pic, No Sound, No BL)	Video (missing/distorted)				Remote	Network *QT,QW,SE3N	Audio (missing/distorted)	front LED	Tact-Key
	2	3	4	5	6	No Power LED & No Reponse to remote (Dead Set)	Stationary colored lines or dots	No Video in 1(one) of Inputs	No Video in All Inputs	RF Cannot Tune	No Reponse when press remote key (Tact-Key OK)	Wireless can't connect	No Audio	No LED (Set is still alive)	No Response when press Tact-Key (Remote OK)
B* Board	●	▲	▲	▲	▲	▲	▲	●	●	▲	▲	▲	▲	▲	▲
AC Adaptor	▲			▲		●									
H* Board											●			●	
Stereo Speaker		●											●		
Wi-Fi module												●			
LVDS FFC			▲	▲			▲		▲						
LED Panel			●	●	●		●		▲						
Tuner module										●					
Switch Unit															●
Problem	Power	Audio	Panel (Power)	Panel (Communication)	Panel (Backlight)										

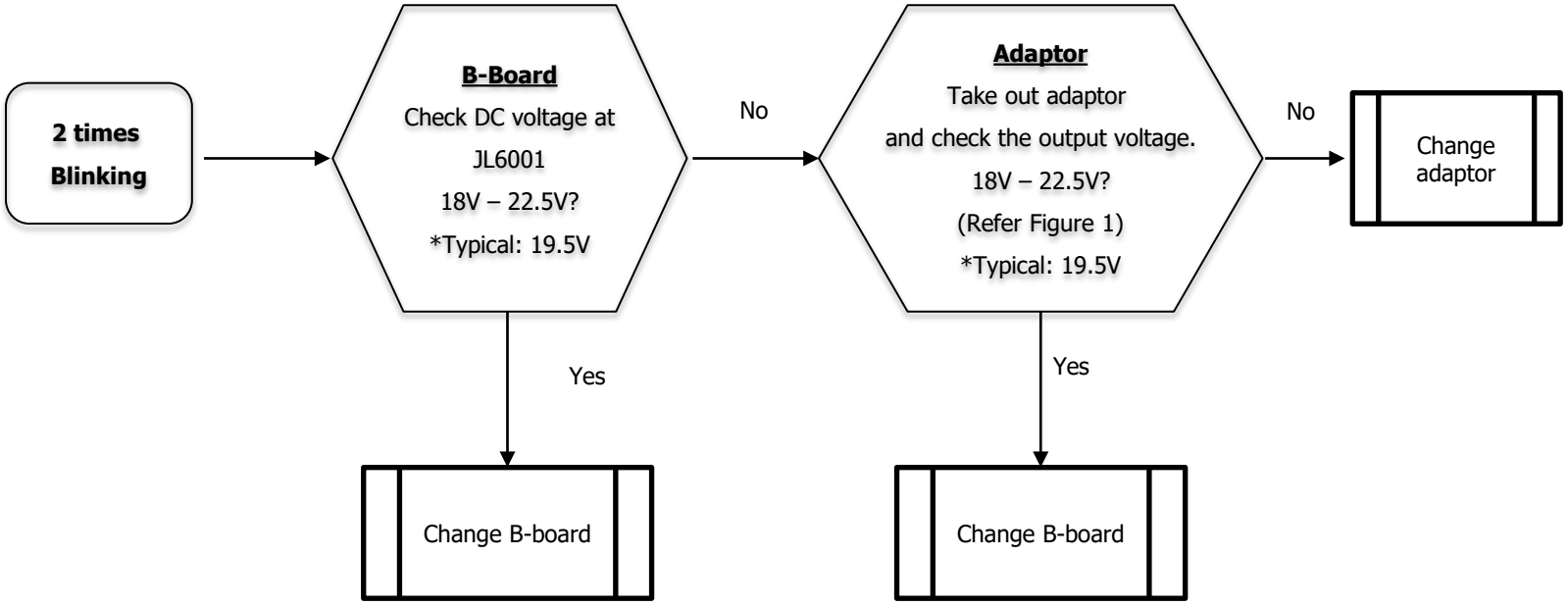
● Most likely defective part

▲ Secondary possible defective part

SECTION 3
TROUBLESHOOTING

3-1. LED BLINKING

3-1-1. 2x Blinking (Main power Error)



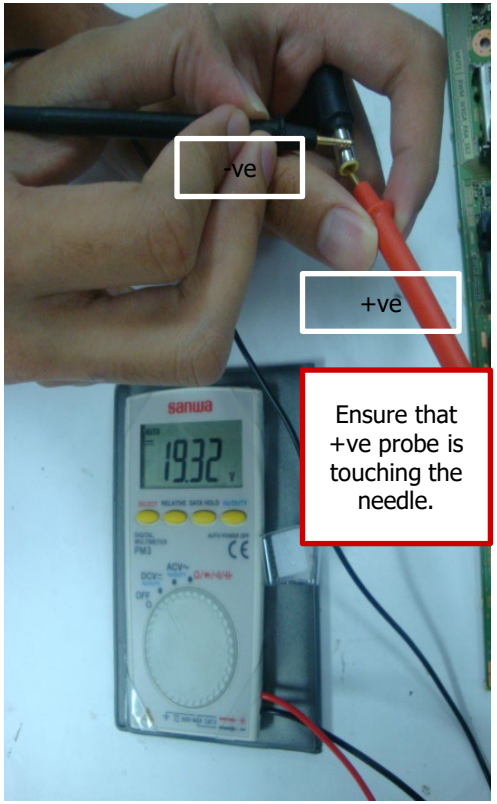
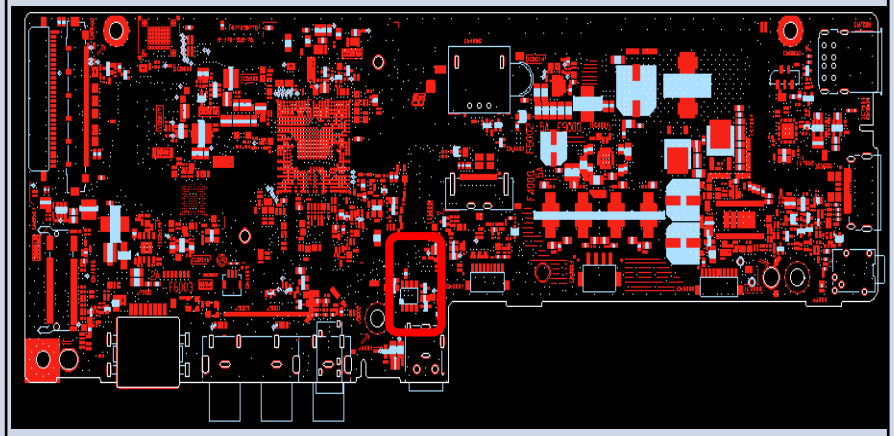
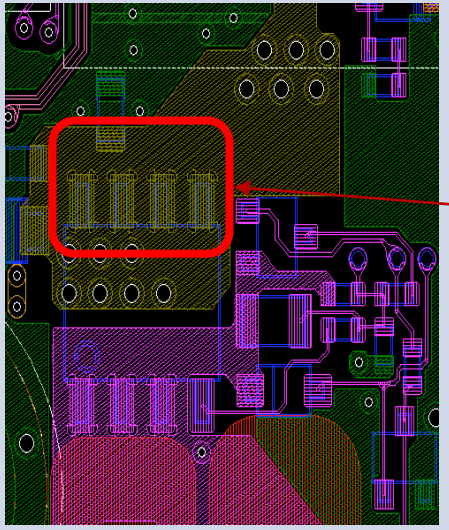


Figure 1: How to check adaptor's output voltage.

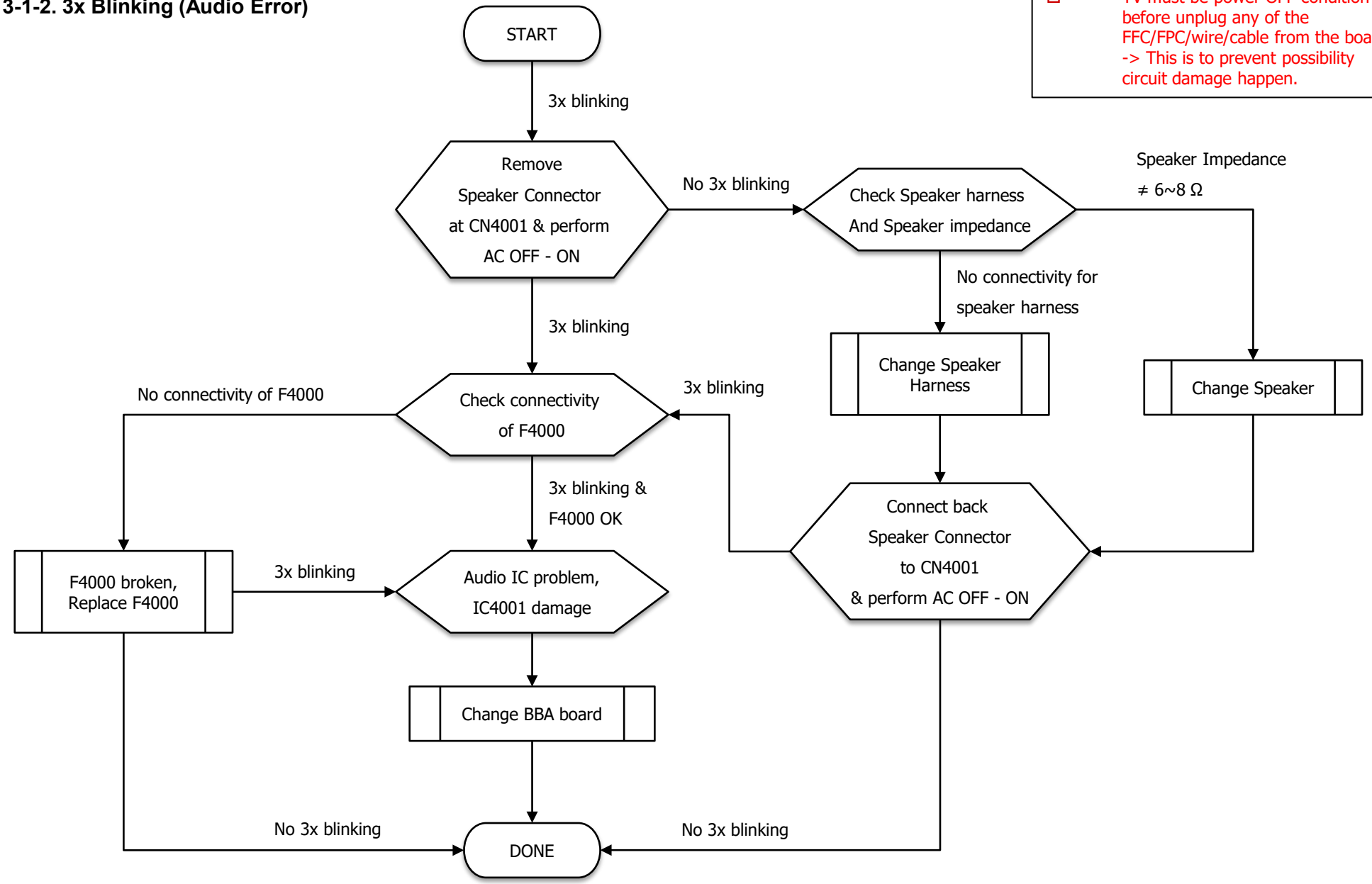
2 x Blinking (Checking Point)

Board Name	Board PWB (A side)	Detail
BBA (Q6020)		

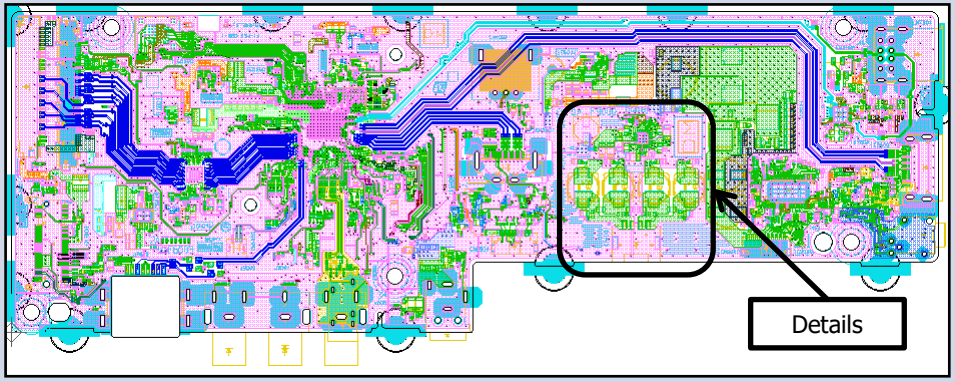
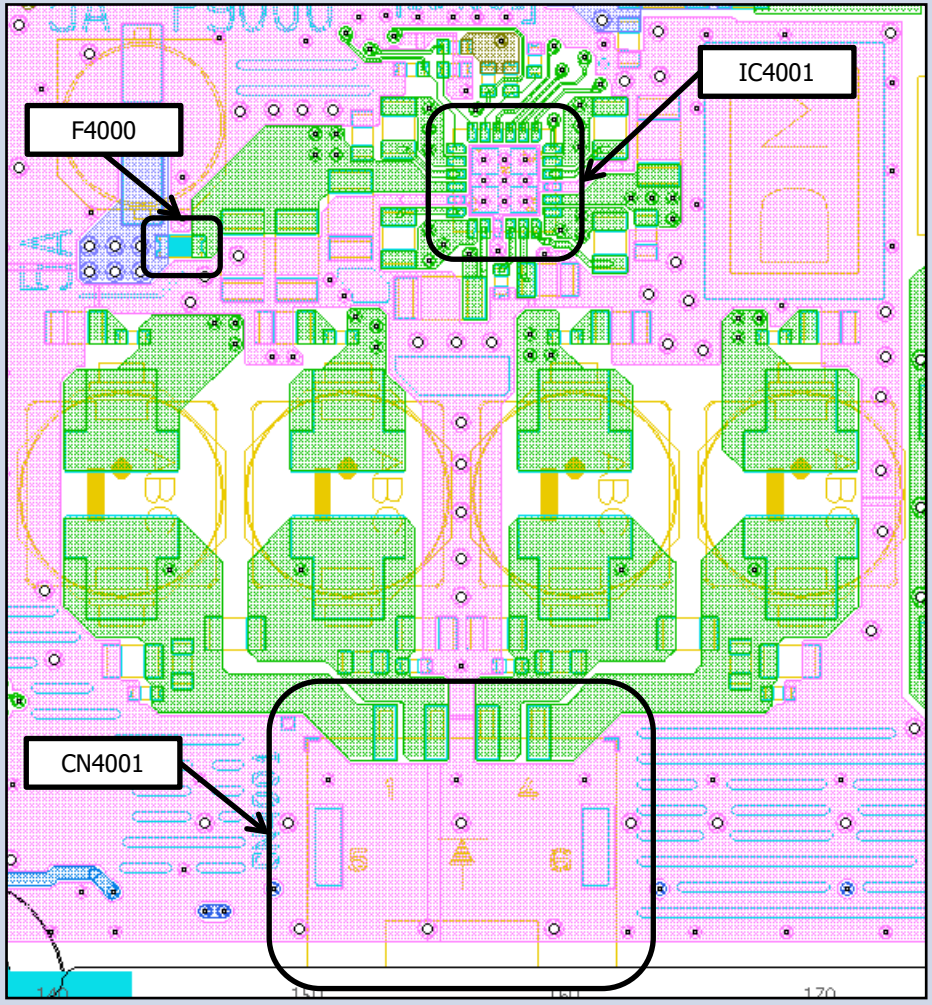
3-1. LED BLINKING

3-1-2. 3x Blinking (Audio Error)

☐ TV must be power OFF condition before unplug any of the FFC/FPC/wire/cable from the board. -> This is to prevent possibility circuit damage happen.

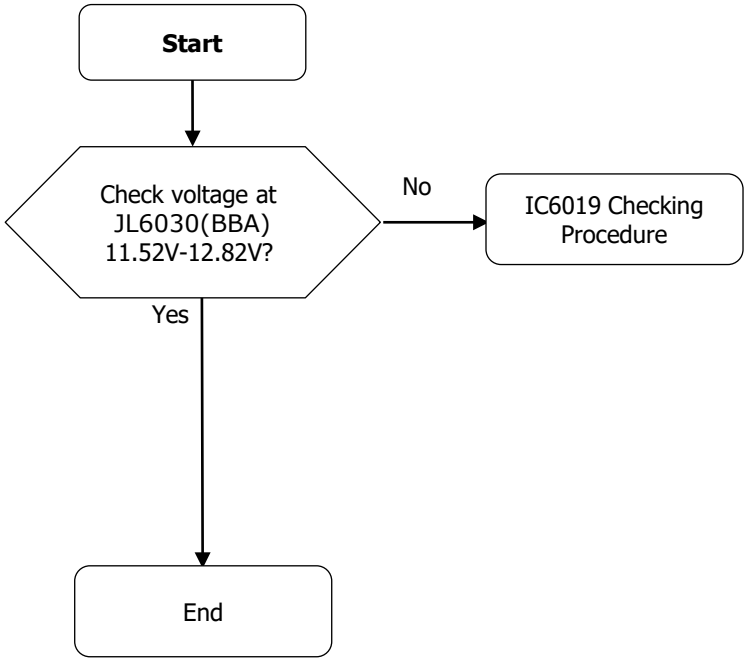


3x Blinking (Checking Point)

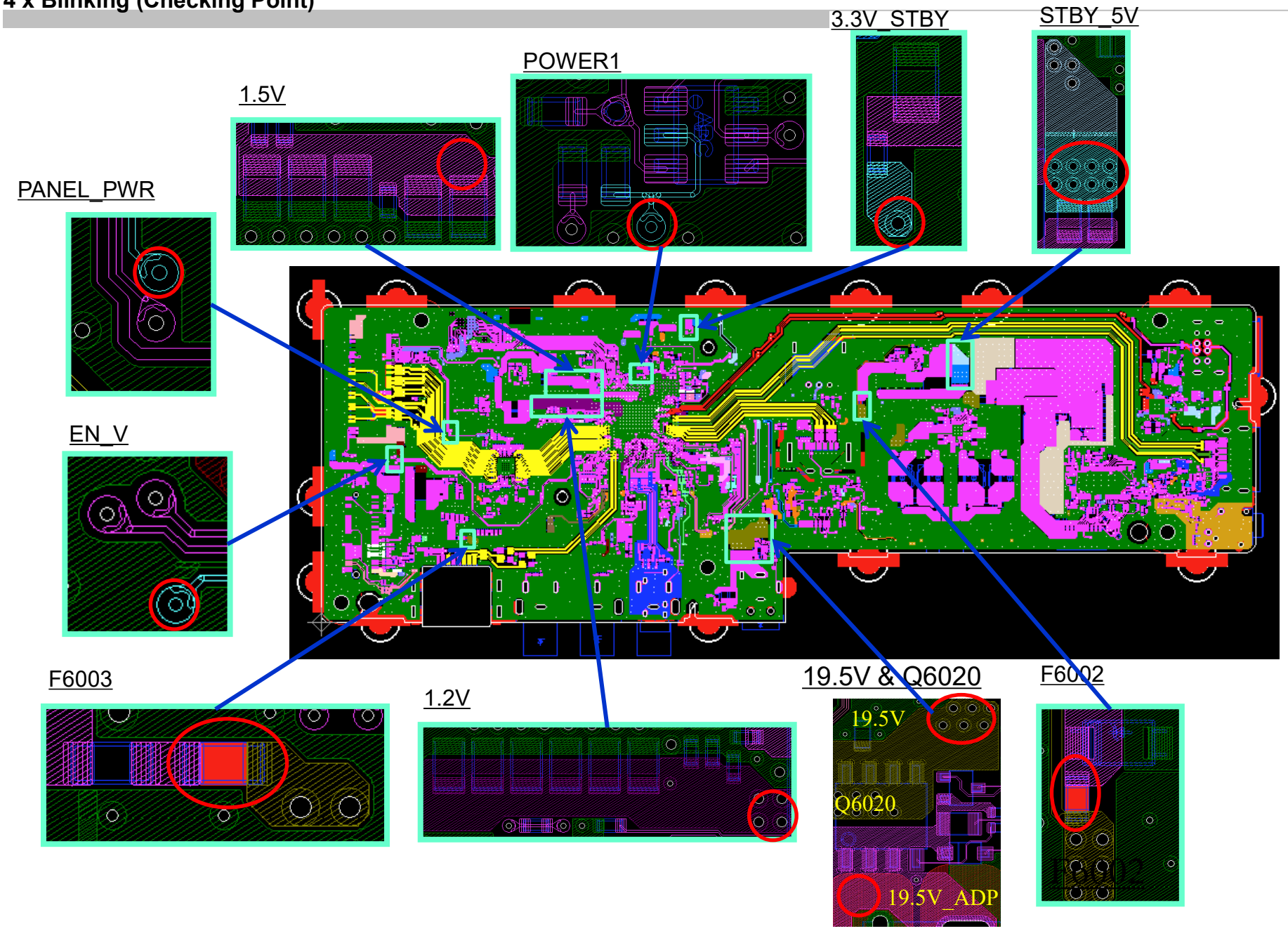
Board Name	Board PWB (A side)	Details
BBA **IC4001** **F4000** **CN4001**		

3-1. LED BLINKING

3-1-3. 4 x Blinking (Panel Power Error)

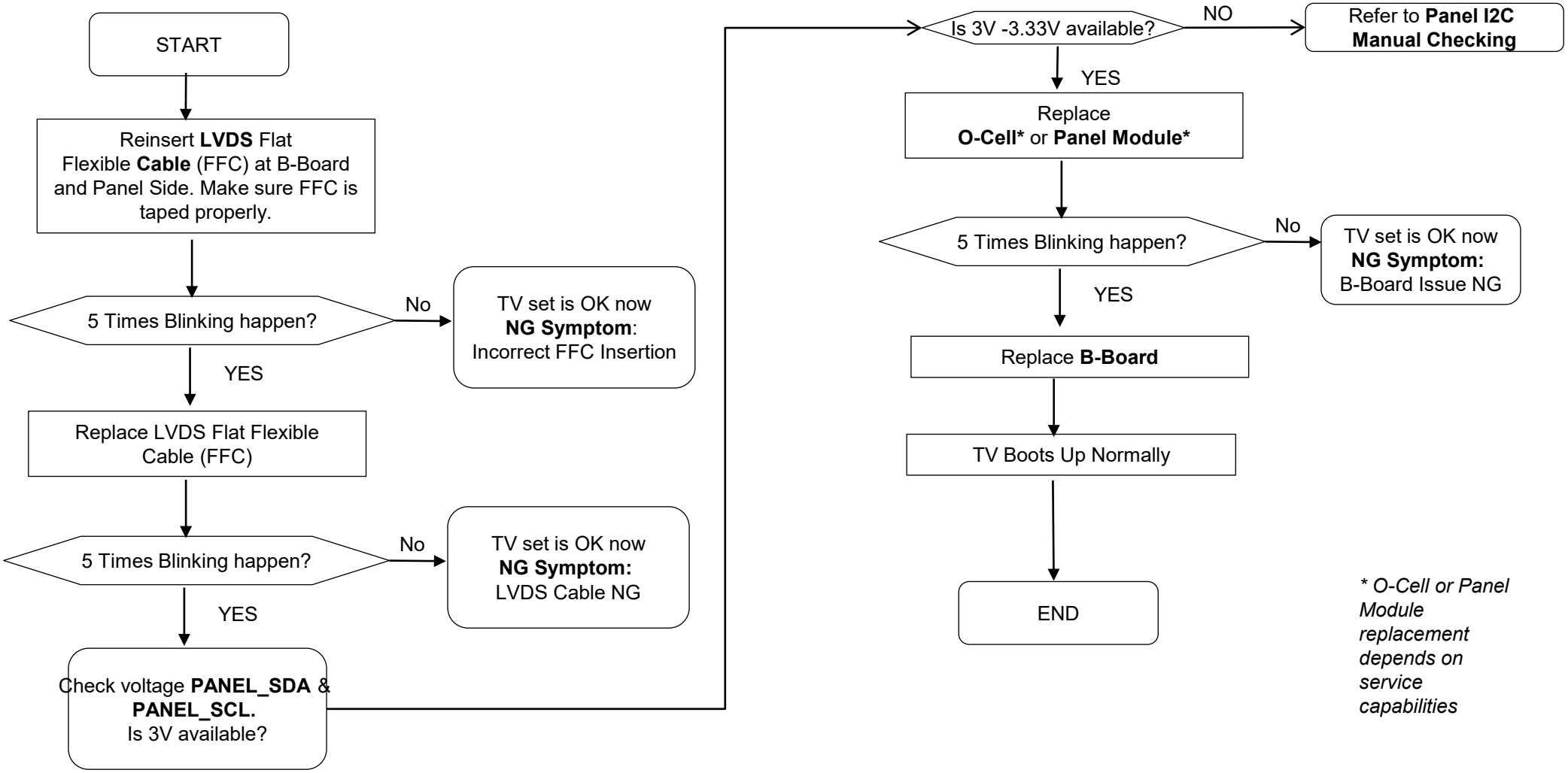


4 x Blinking (Checking Point)



3-1. LED BLINKING

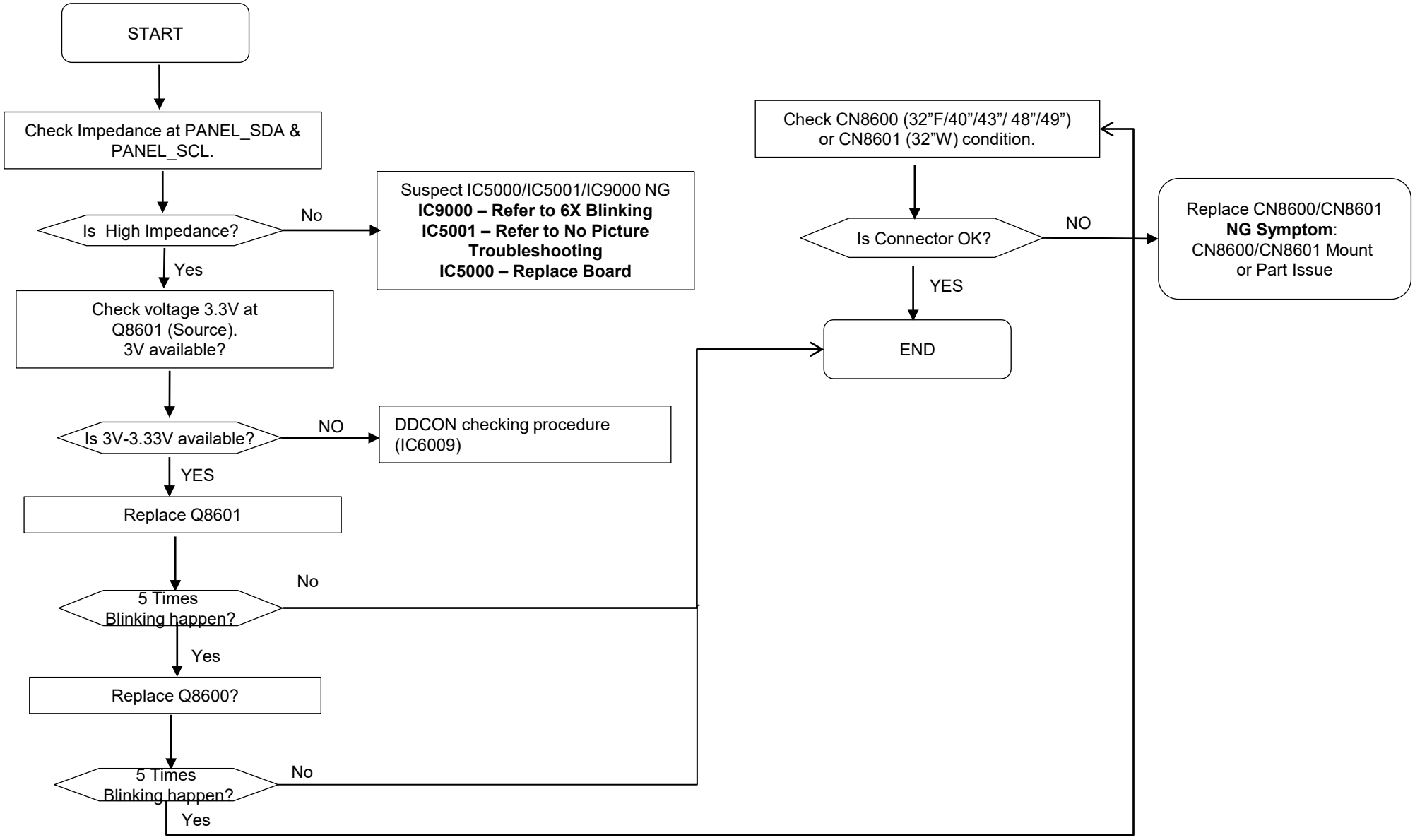
3-1-5. 5 x Blinking (Panel I2C Error - General Checking)



** O-Cell or Panel Module replacement depends on service capabilities*

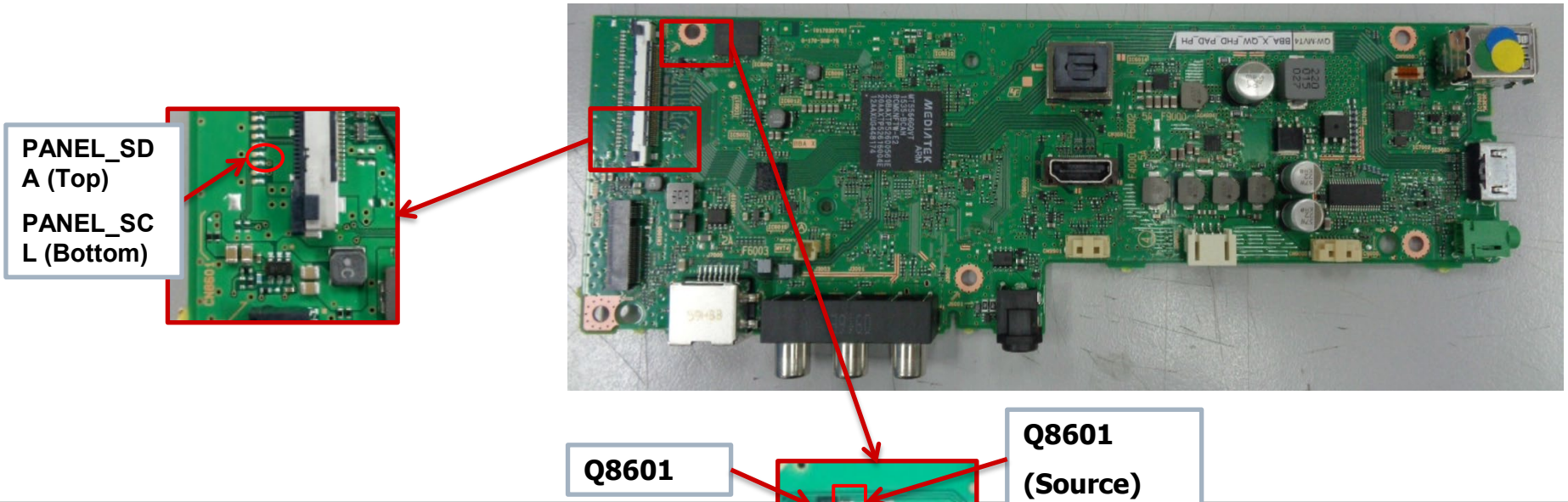
3-1. LED BLINKING

3-1-6. 5x Blinking (Panel I2C Checking Manual)

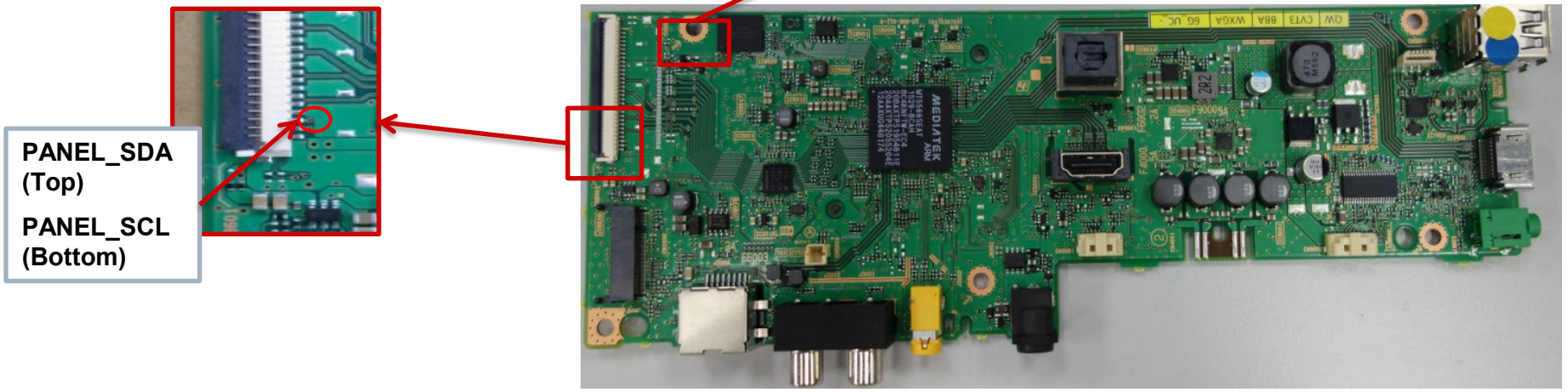


5 x Blinking (checking Point [1/2])

BBA FHD

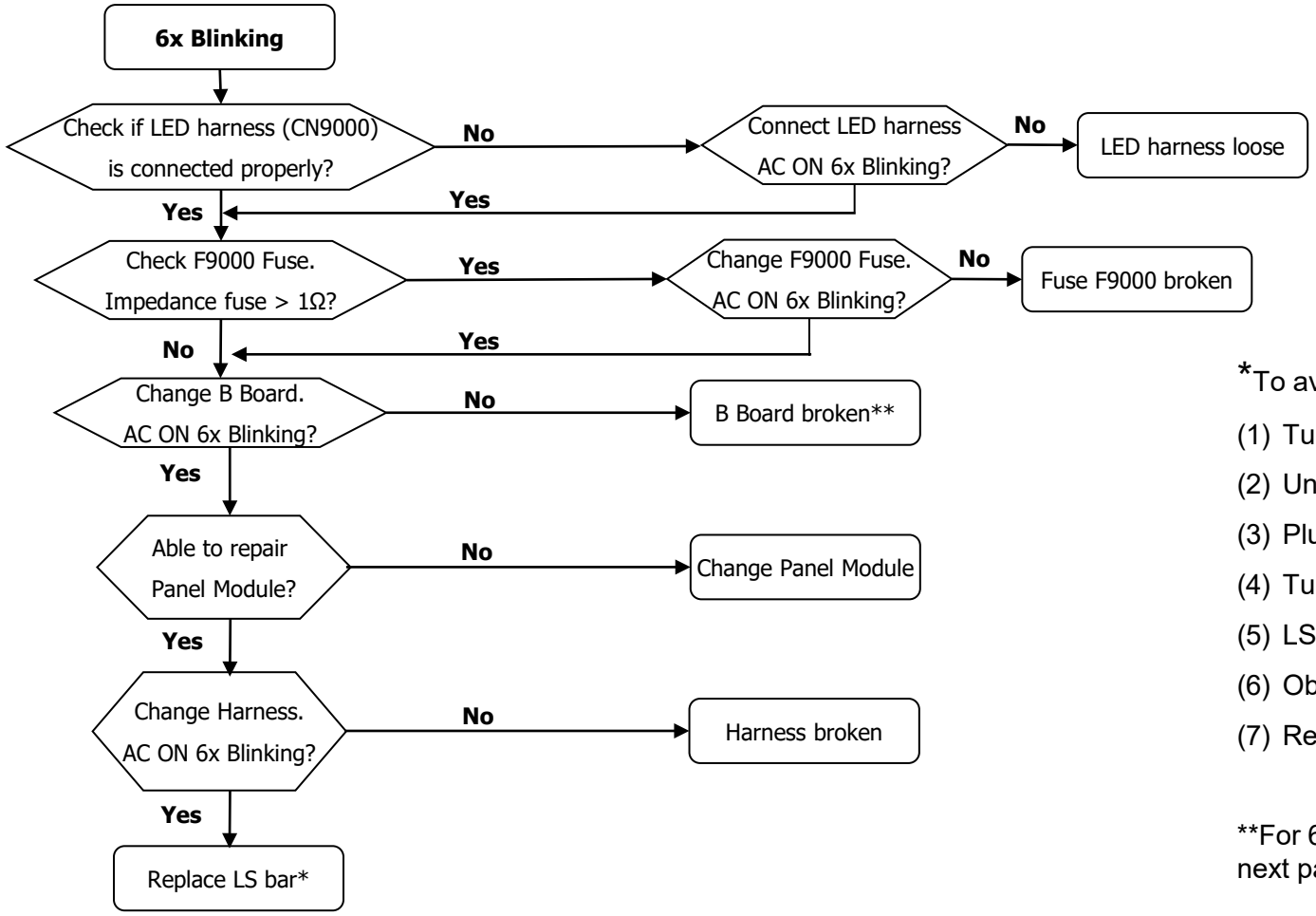


BBA WXGA



3-1. LED BLINKING

3-1-7. 6x Blinking (Backlight Error)



*To avoid changing all LS bar, please follow steps below

(1) Turn off AC

(2) Unplug DC adaptor from DC jack

(3) Plug in DC adaptor to DC jack

(4) Turn on AC

(5) LS bar will turn on for ~4s before 6x blinking

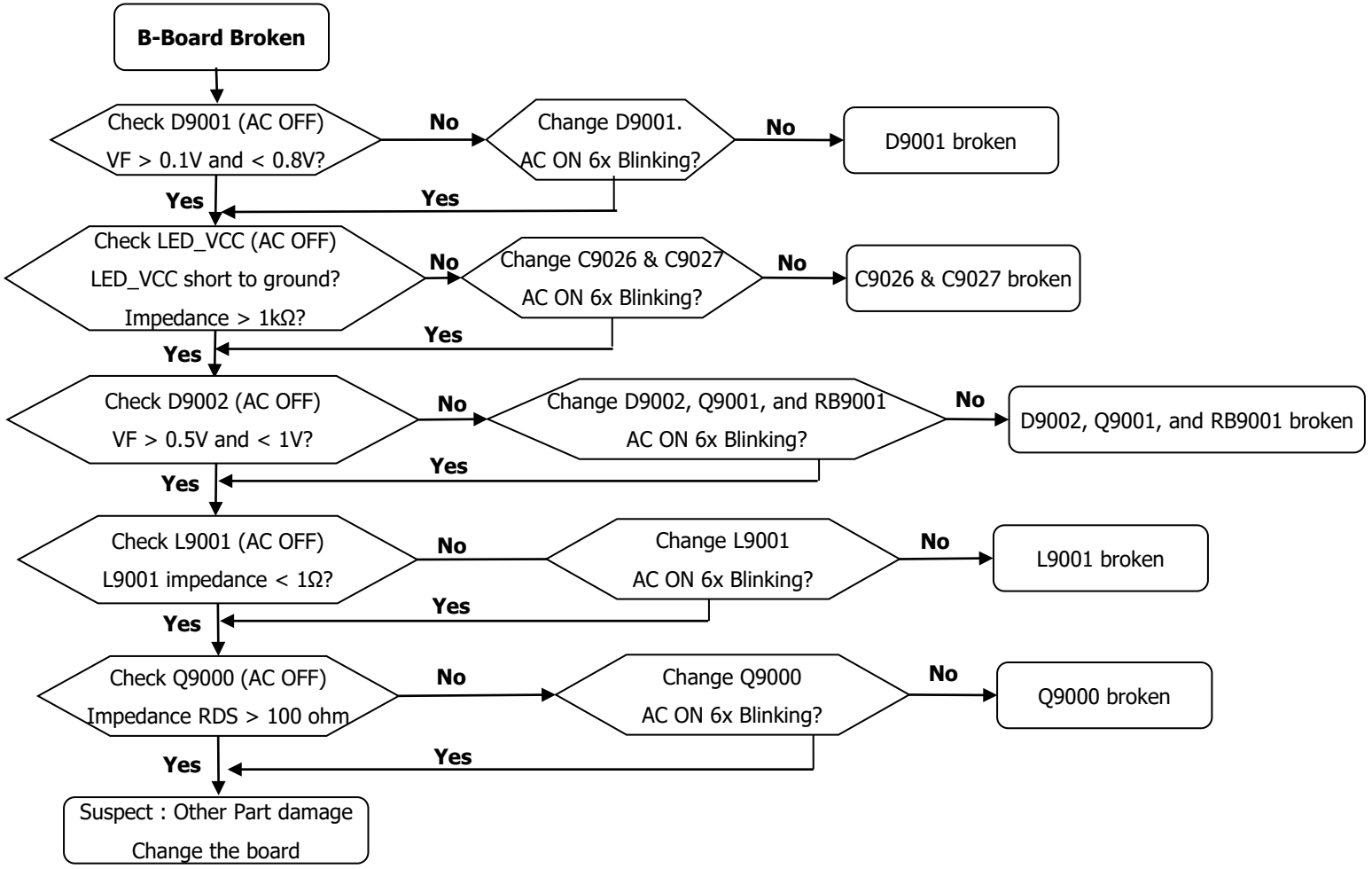
(6) Observe which LS bar cannot turn on during power on

(7) Replace LS bar that failed to turn on

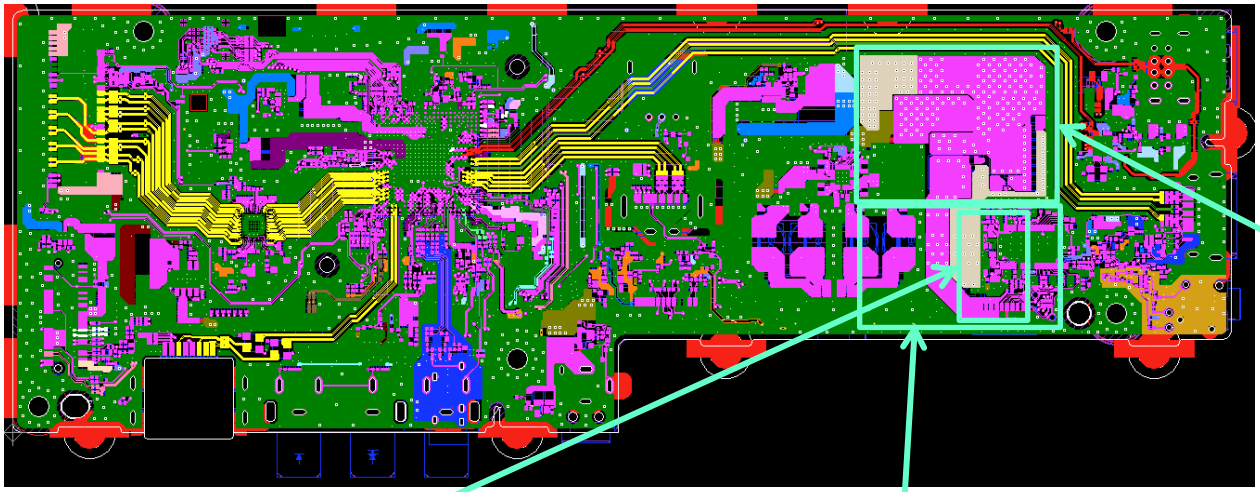
**For 6x blinking B Board Troubleshooting please refer next page.

3-1. LED BLINKING

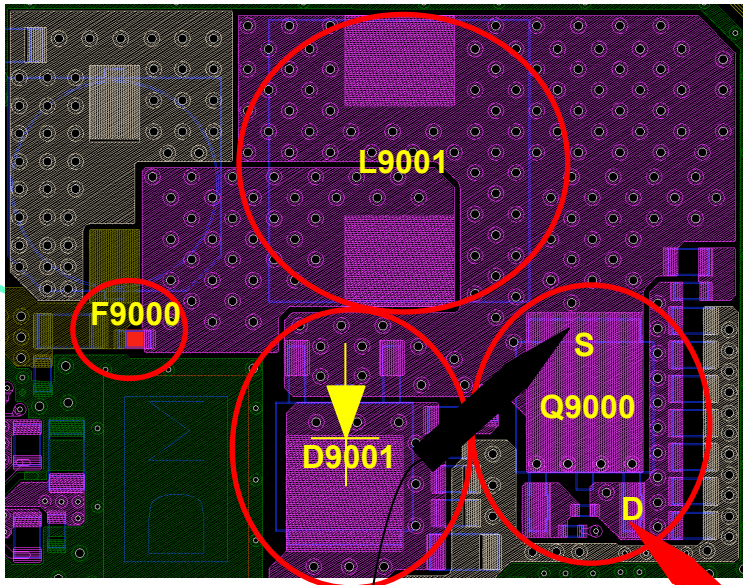
3-1-8. 6x Blinking (Backlight Error - B Board Troubleshooting)



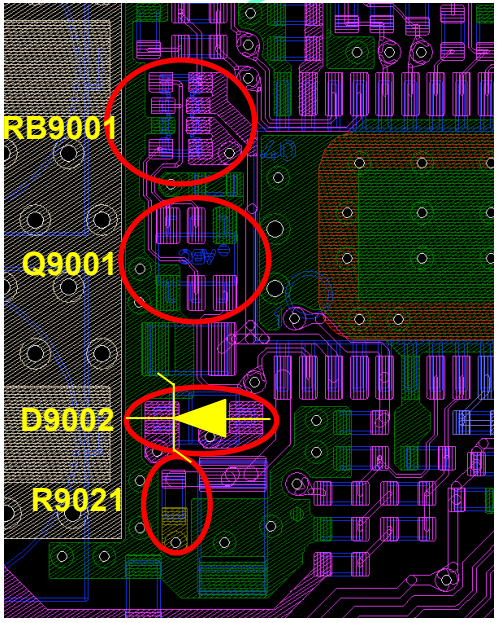
6x Blinking (Checking Point)



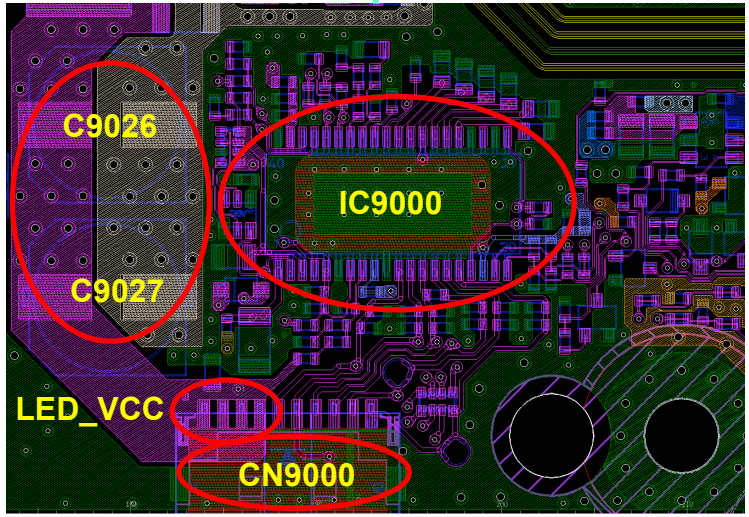
F9000, L9001, D9001, Q9000



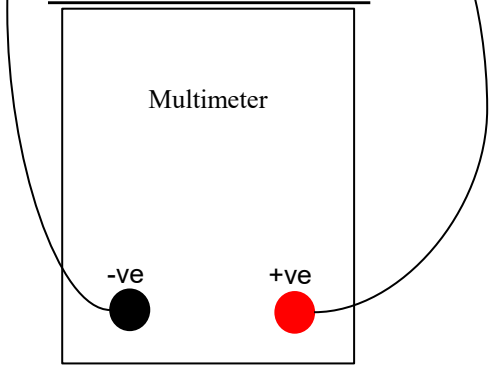
RB9001, Q9001, D9002, R9021



C9026, C9027, CN9000, IC9000, LED_VCC

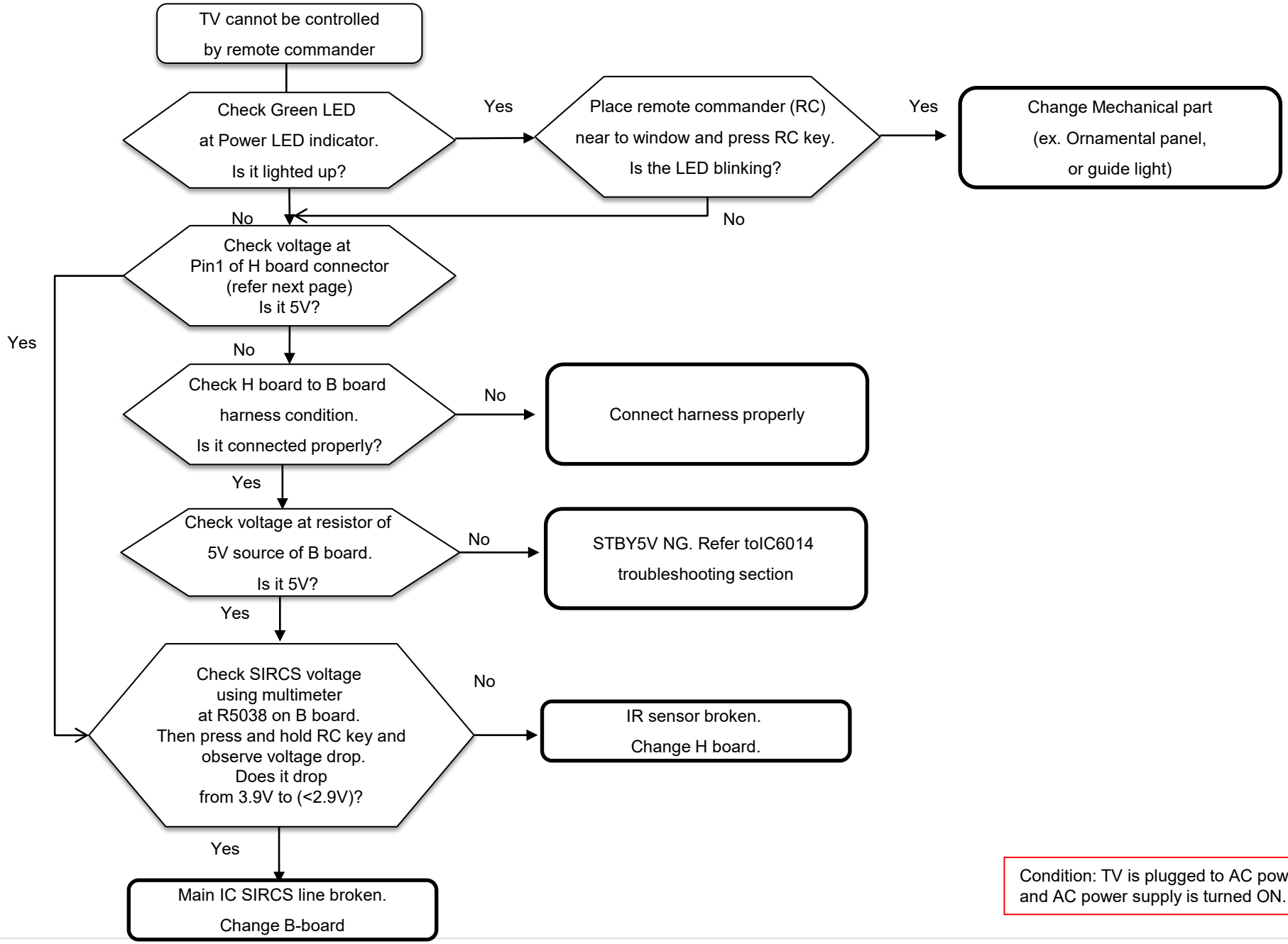


Q9000 RDS Measurement



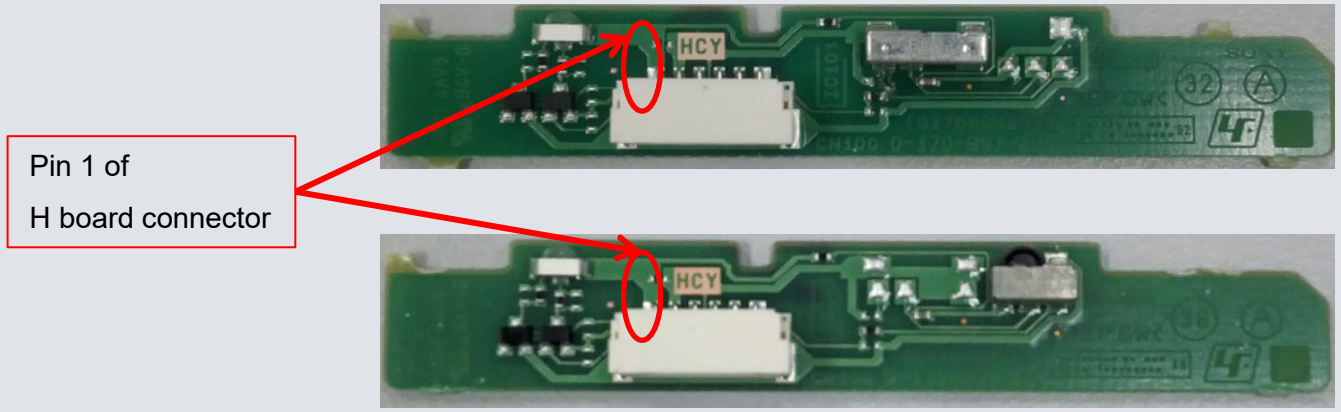
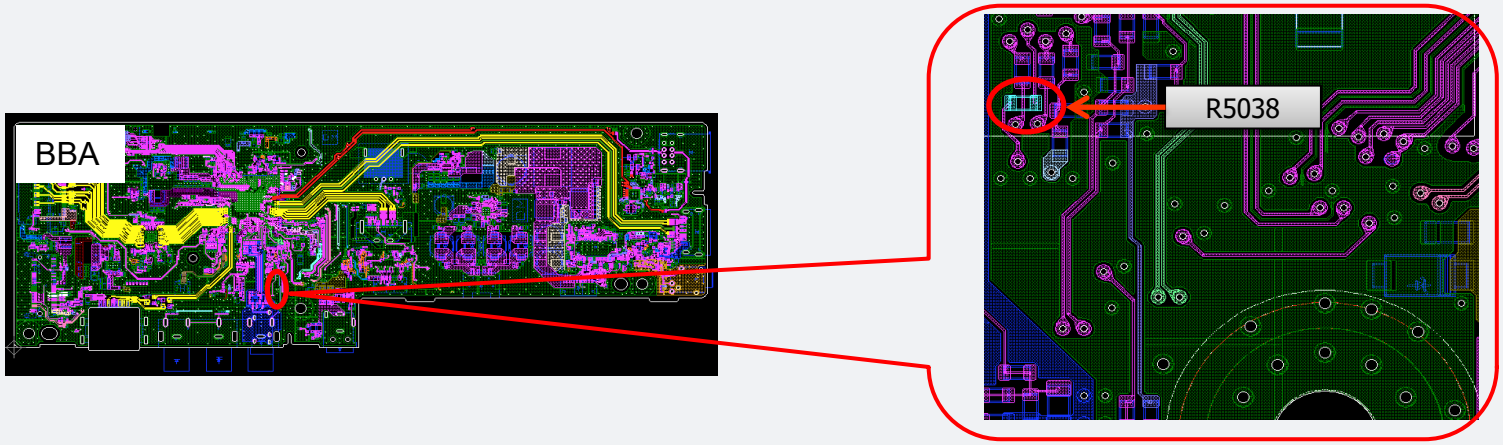
3-2. NO POWER

3-2-1.H-board troubleshooting flow



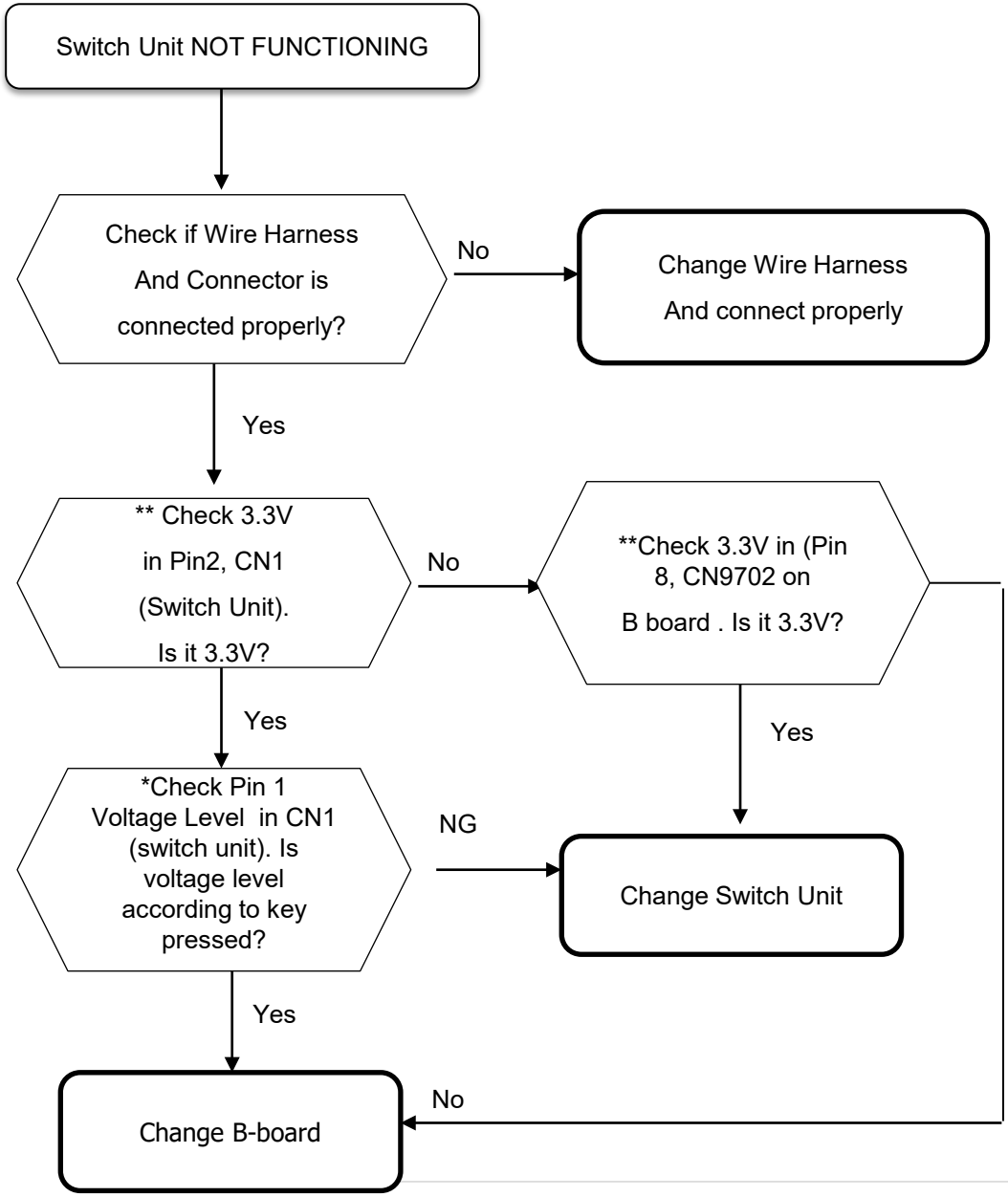
Condition: TV is plugged to AC power supply, and AC power supply is turned ON.

H-board troubleshooting flow (Checking Point)

Board name	Board picture
HCY	
B board	

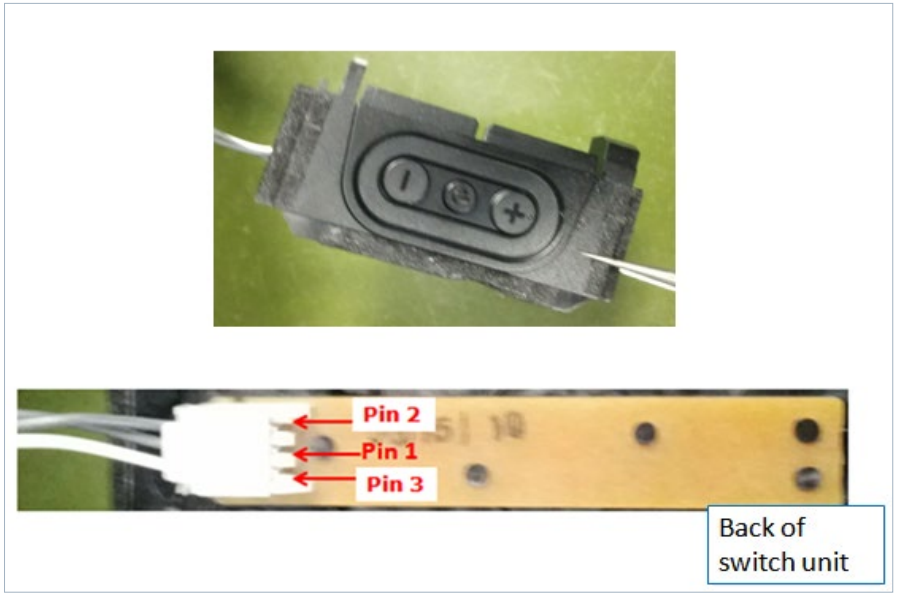
3-2. NO POWER

3-2-2 : Switch unit troubleshooting flow

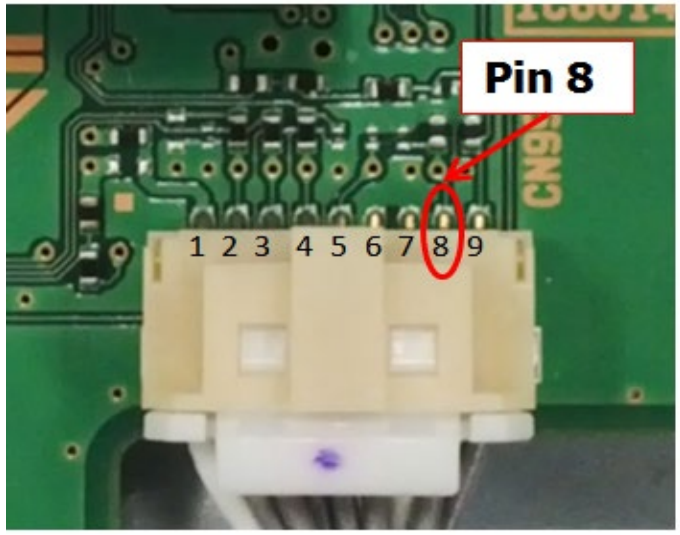


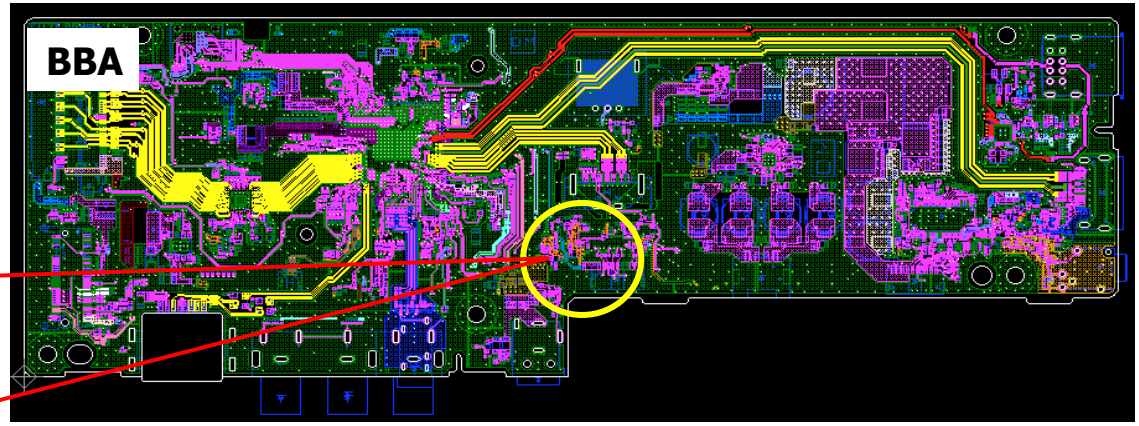
***VOLTAGE LEVEL FOR EACH PRESSED BUTTON**
(for switch unit only)

KEY	Voltage (average)	Voltage range
-	0.000	0.00 – 0.2
+	1.05	1.00 – 1.13
No Input	2.420	2.26 – 2.58

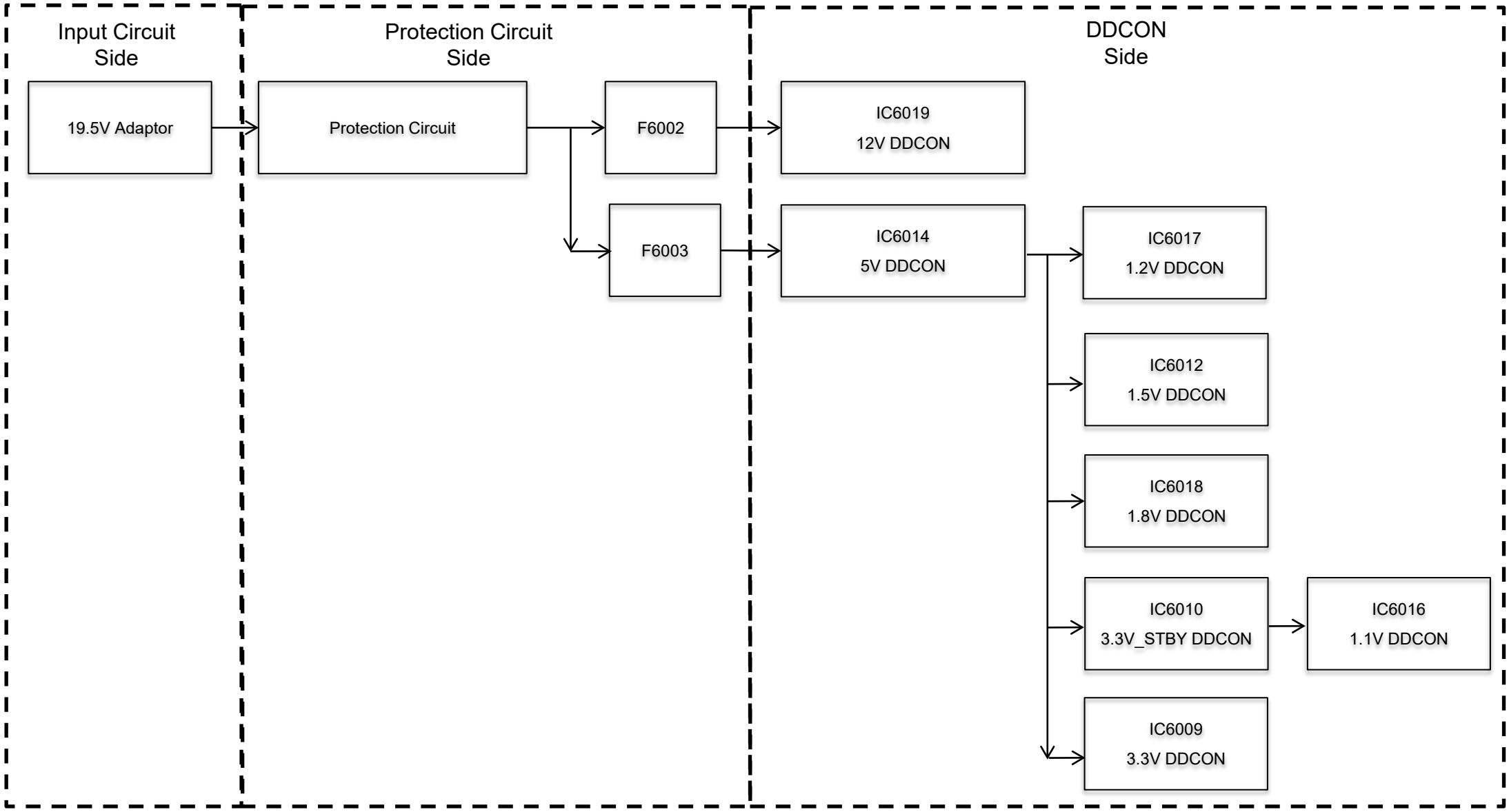


****see next page for probing point of B board**


Pin 8
1 2 3 4 5 6 7 8 9


BBA

3-2-3. DC-DC Converter Basic Block Diagram



3-2-4. Adaptor Checking Procedure

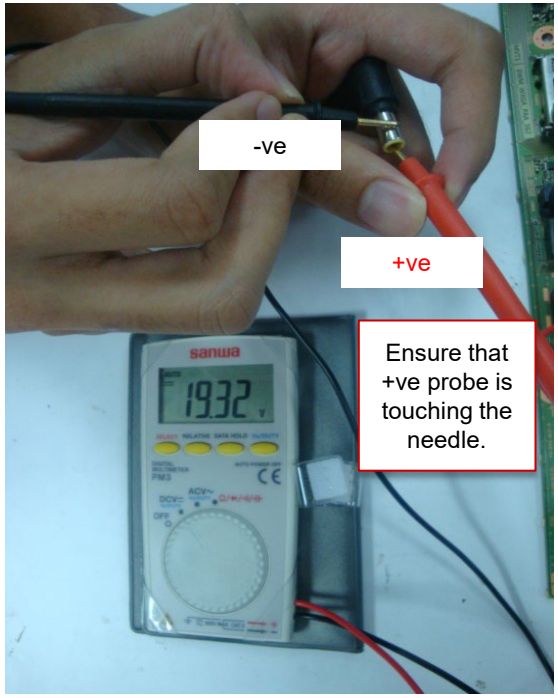
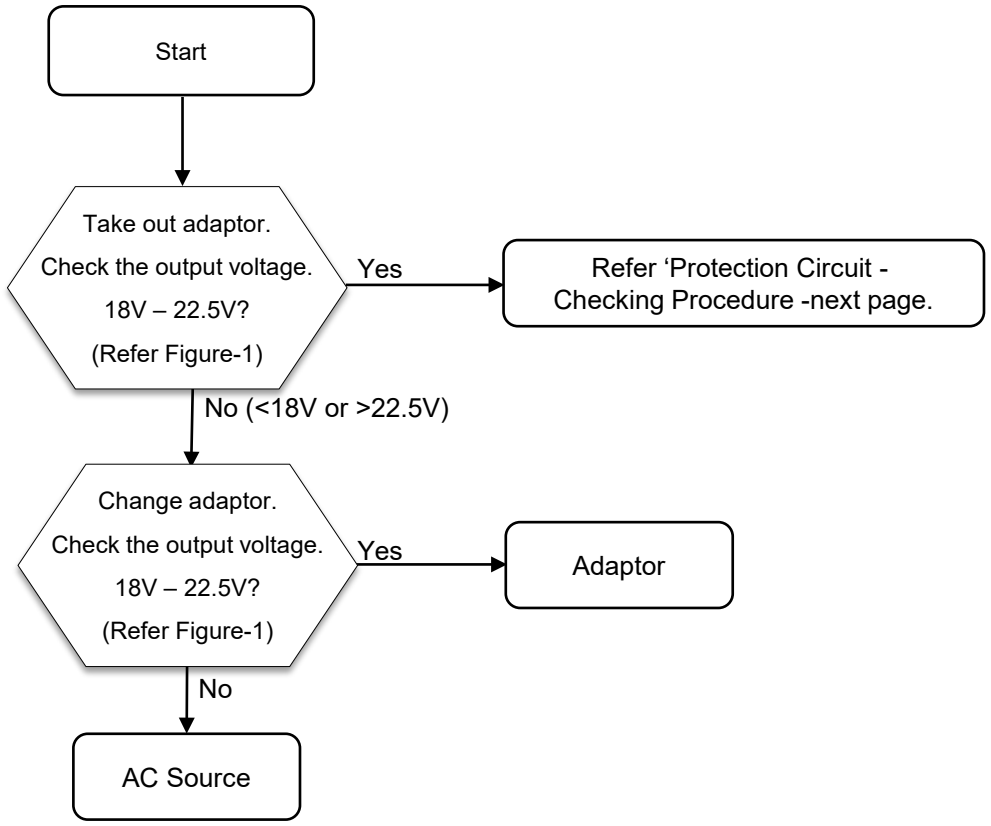
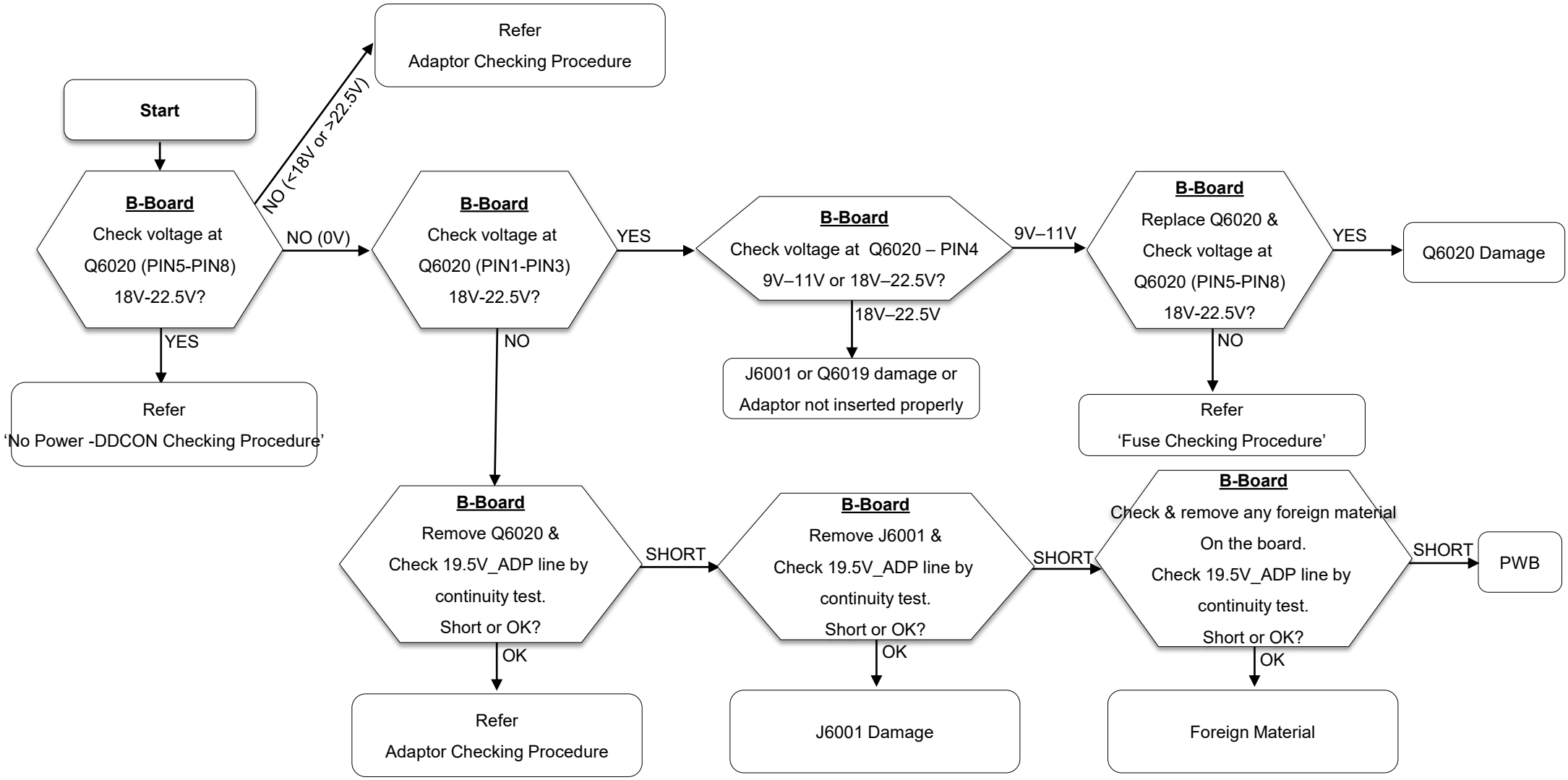


Figure-1: How to check adaptor's output voltage.

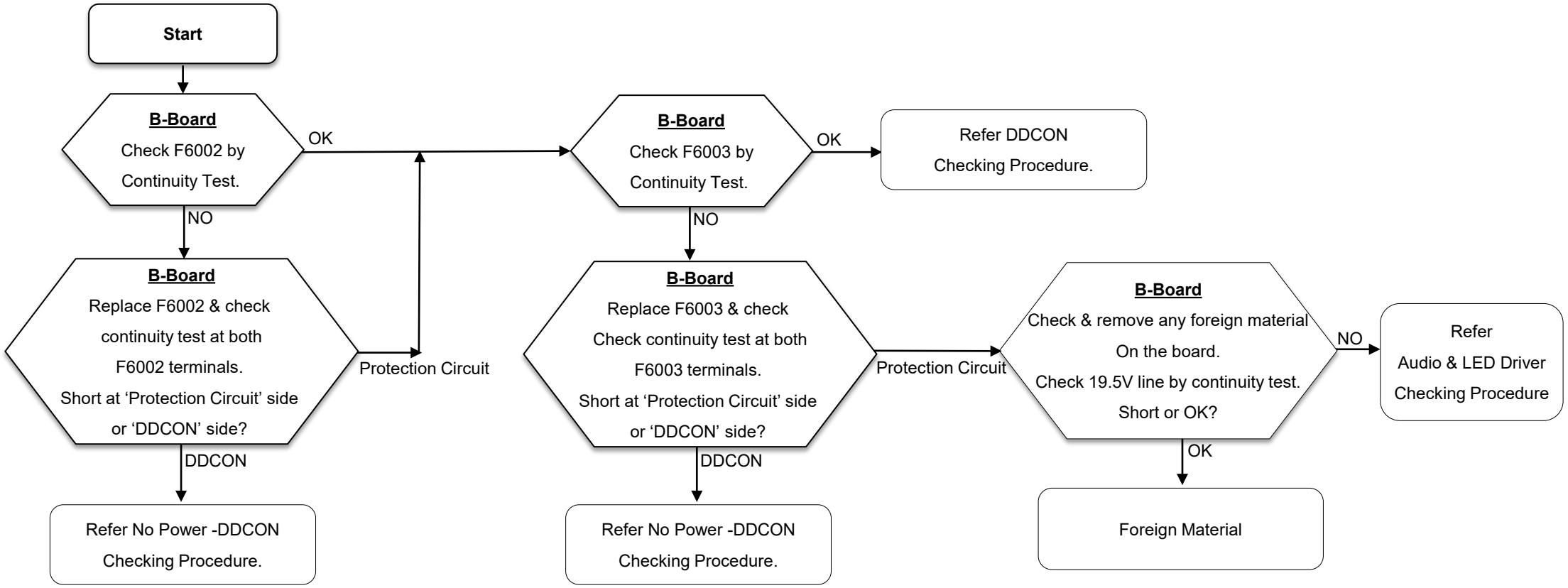


3-2. NO POWER

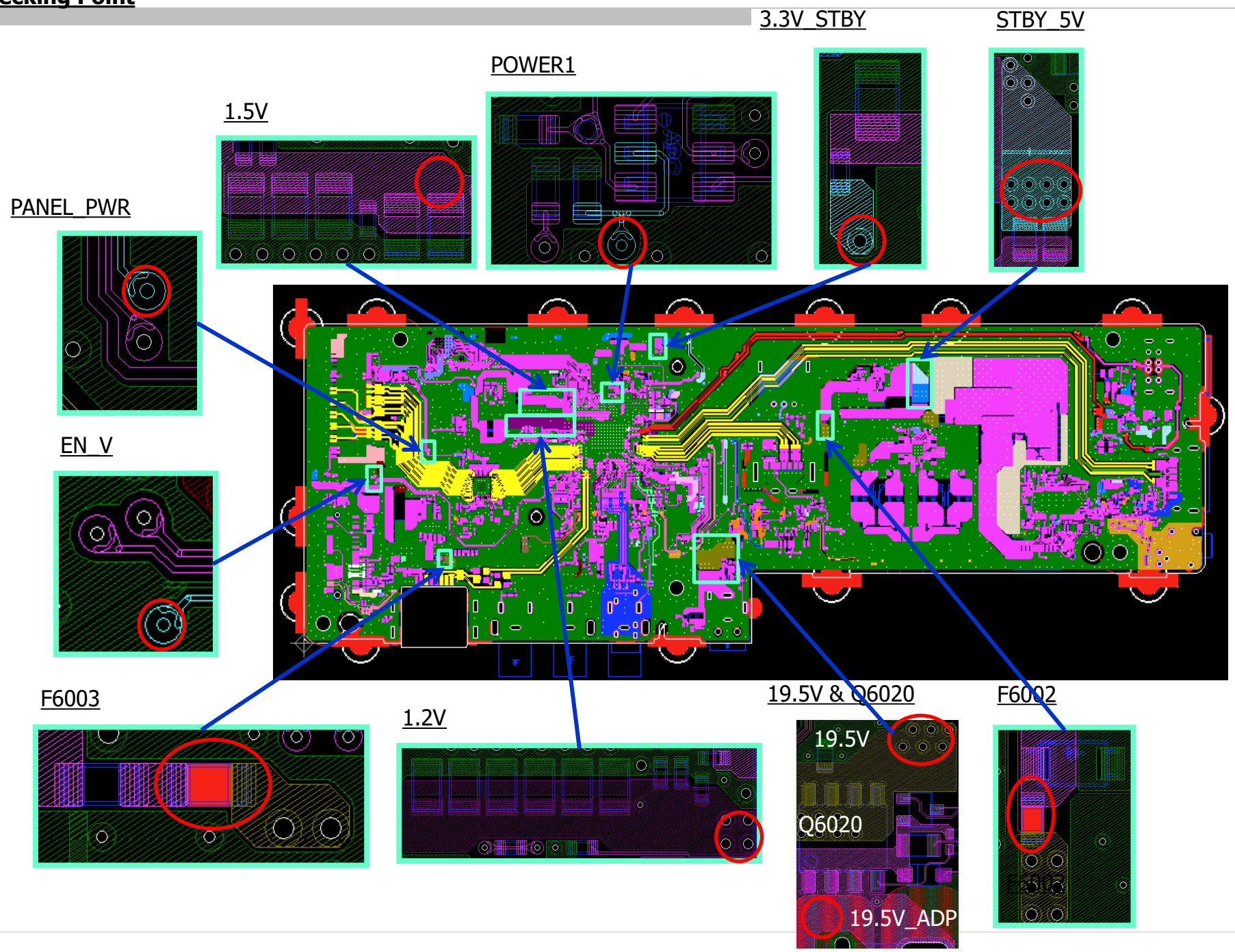
3-2-5. Protection Circuit– Checking Procedure



3-2-6. Fuse Checking Procedure

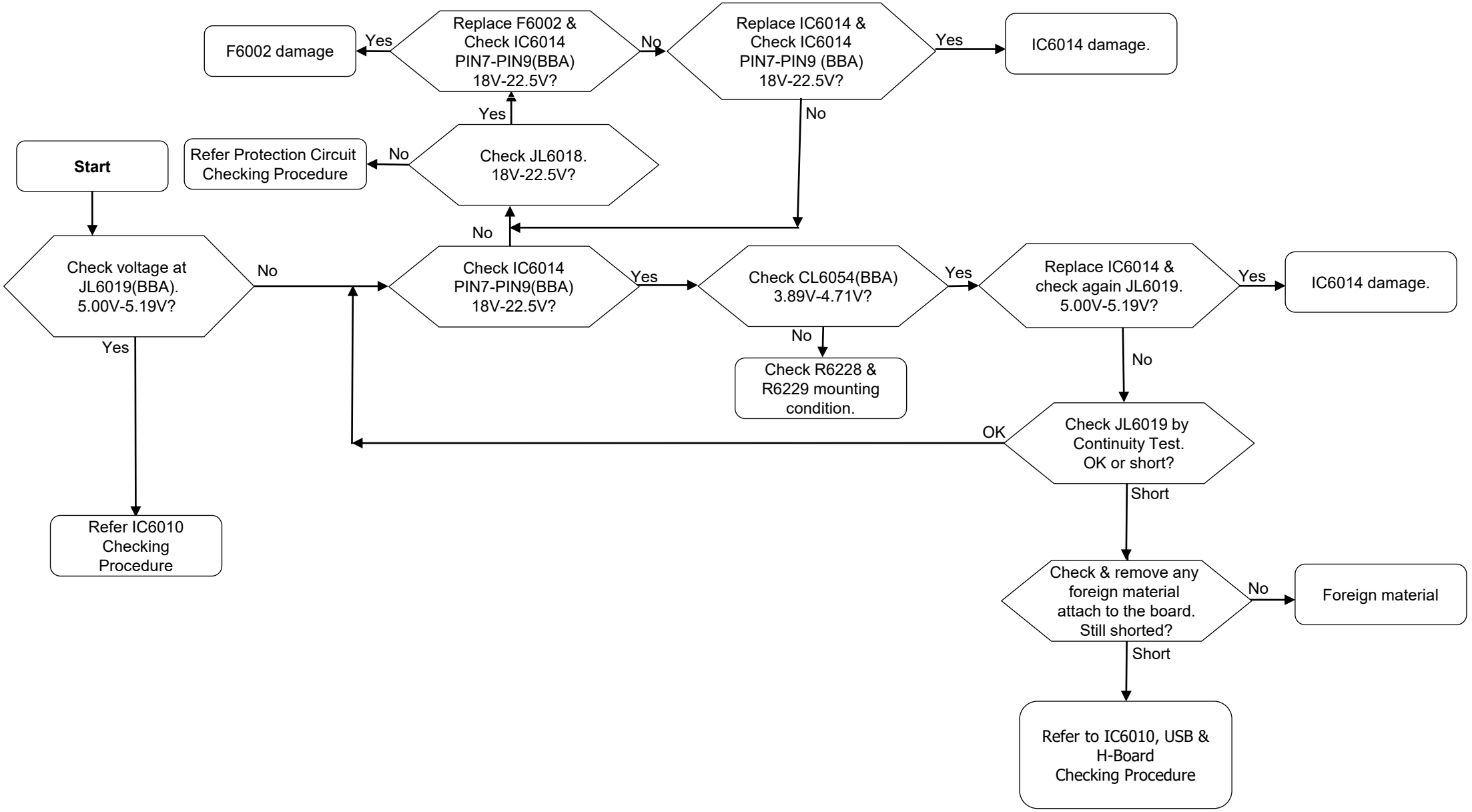


Checking Point

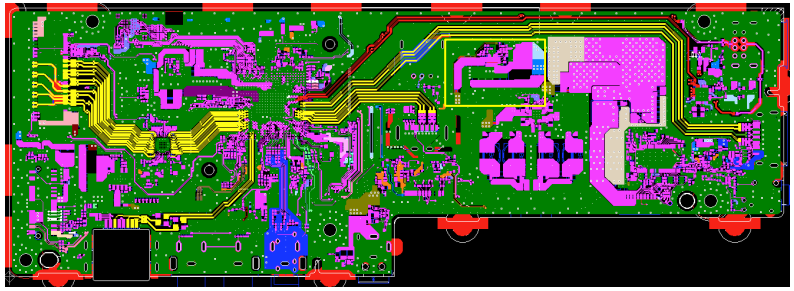
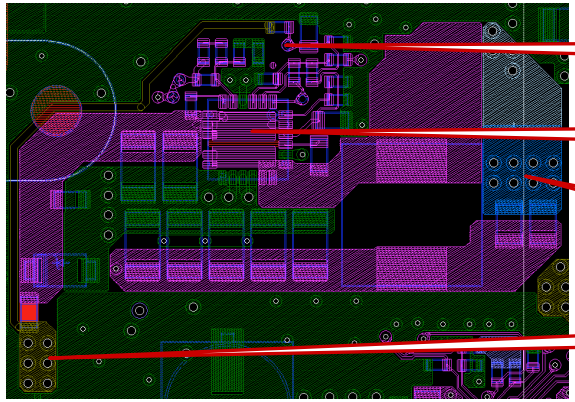


3-2. NO POWER

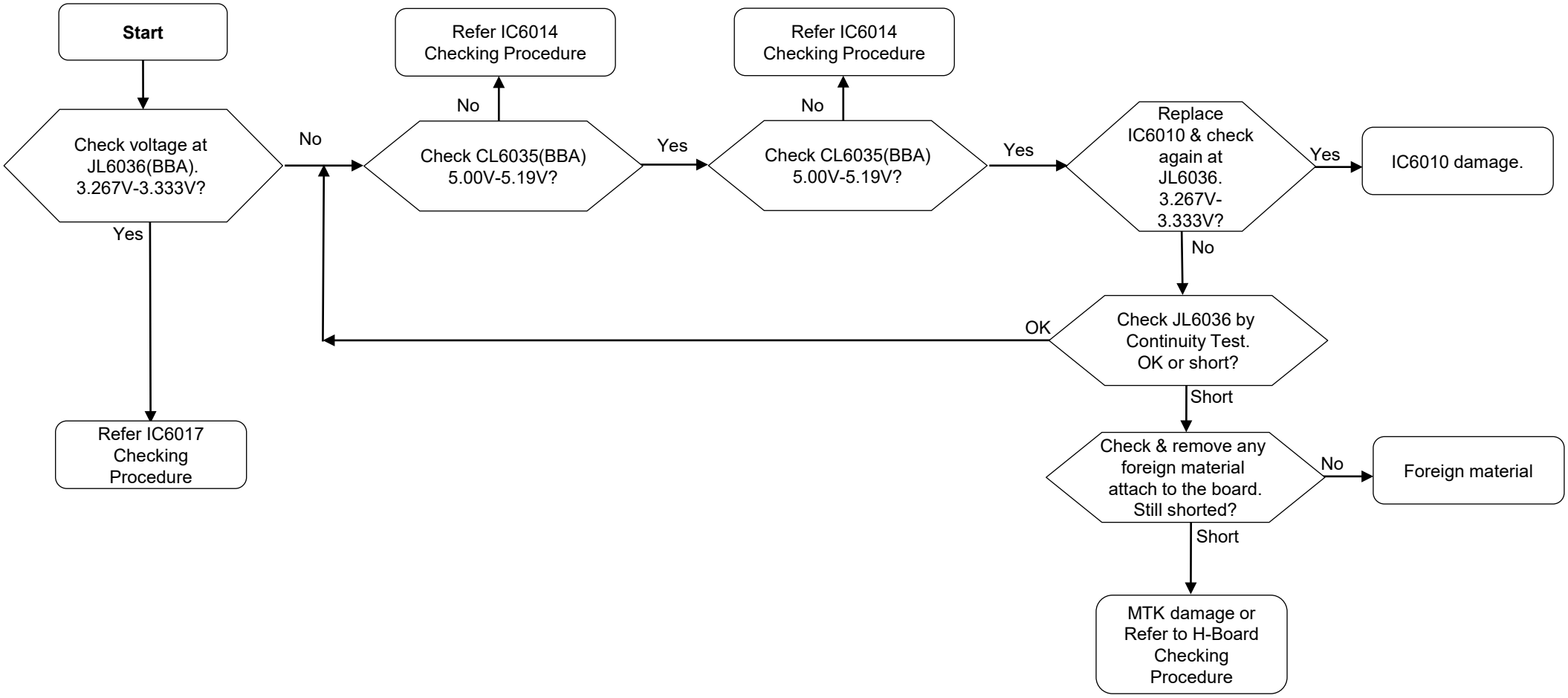
3-2-7. : No Power- IC6014 (5V DDCON) Checking Procedure



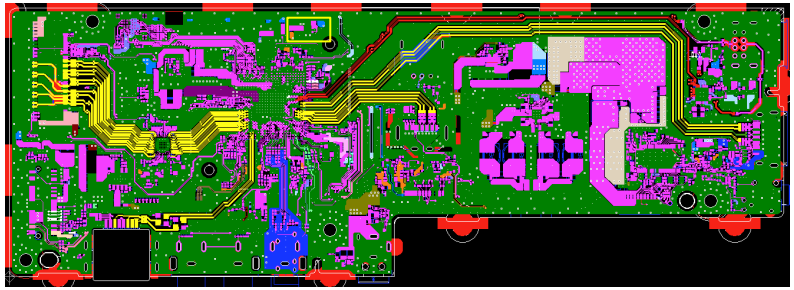
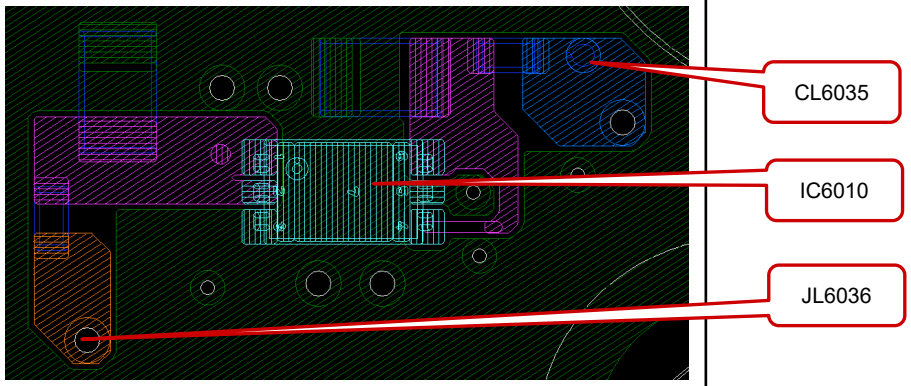
IC6014 Checking Procedure- Checking Point

Board Name	Board PWB (A side)	Detail
BBA (5V)		

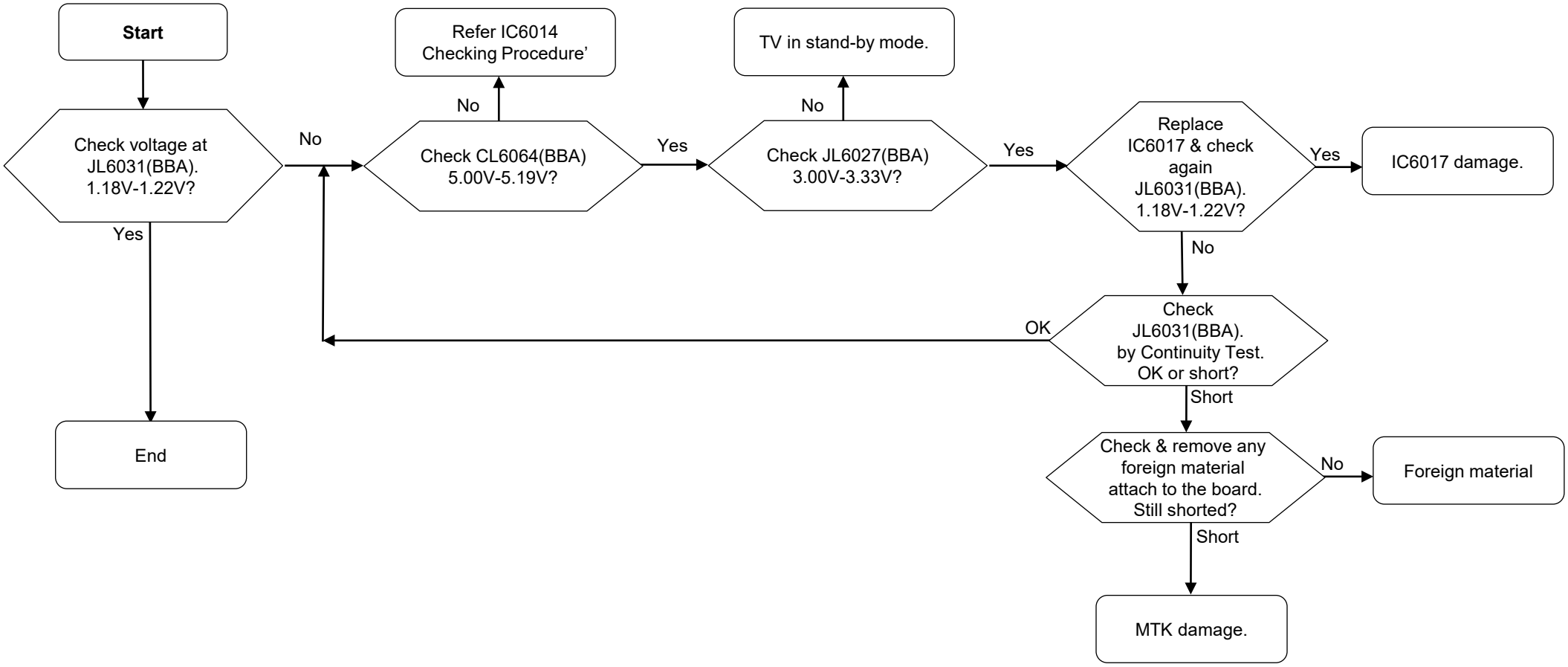
3-2-8. No Power-IC6010 (3.3V_STBY DDCON) Checking Procedure



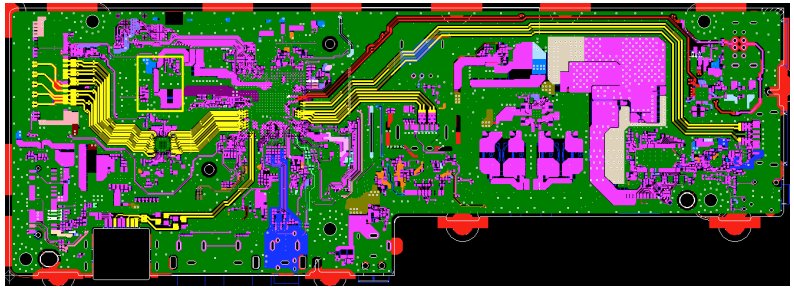
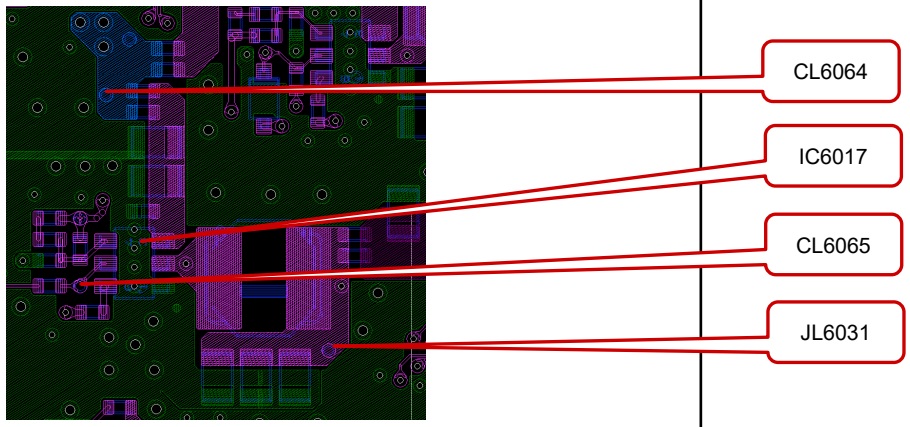
IC6010 Checking Procedure (Checking Point)

Board Name	Board PWB (A side)	Detail
BBA (STBY_3.3V)		

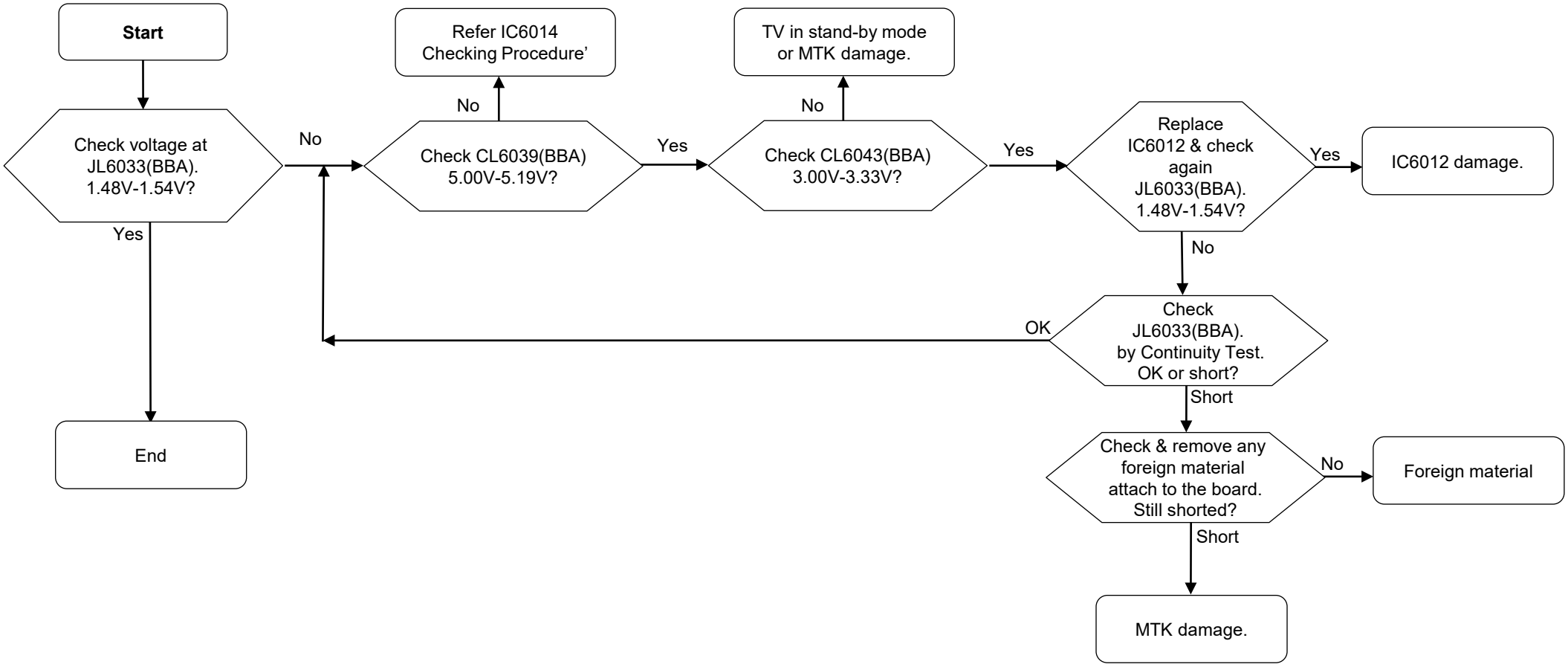
3-2.9. No Power-IC6017(1.2V DDCON) Checking Procedure



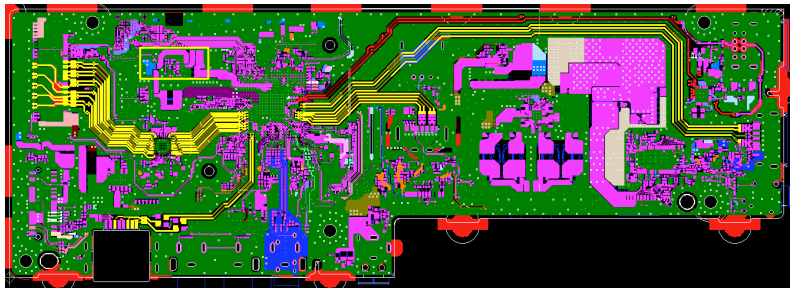
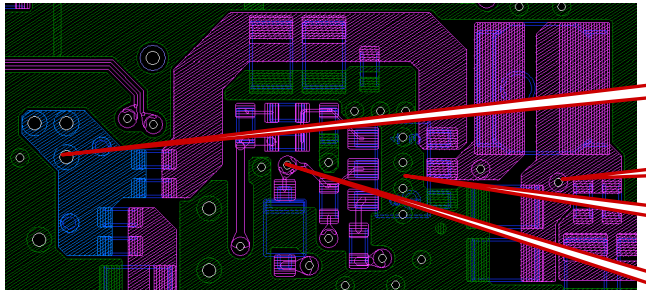
IC6017 Checking Procedure (Checking Point)

Board Name	Board PWB (A side)	Detail
BBA (1.2V)		

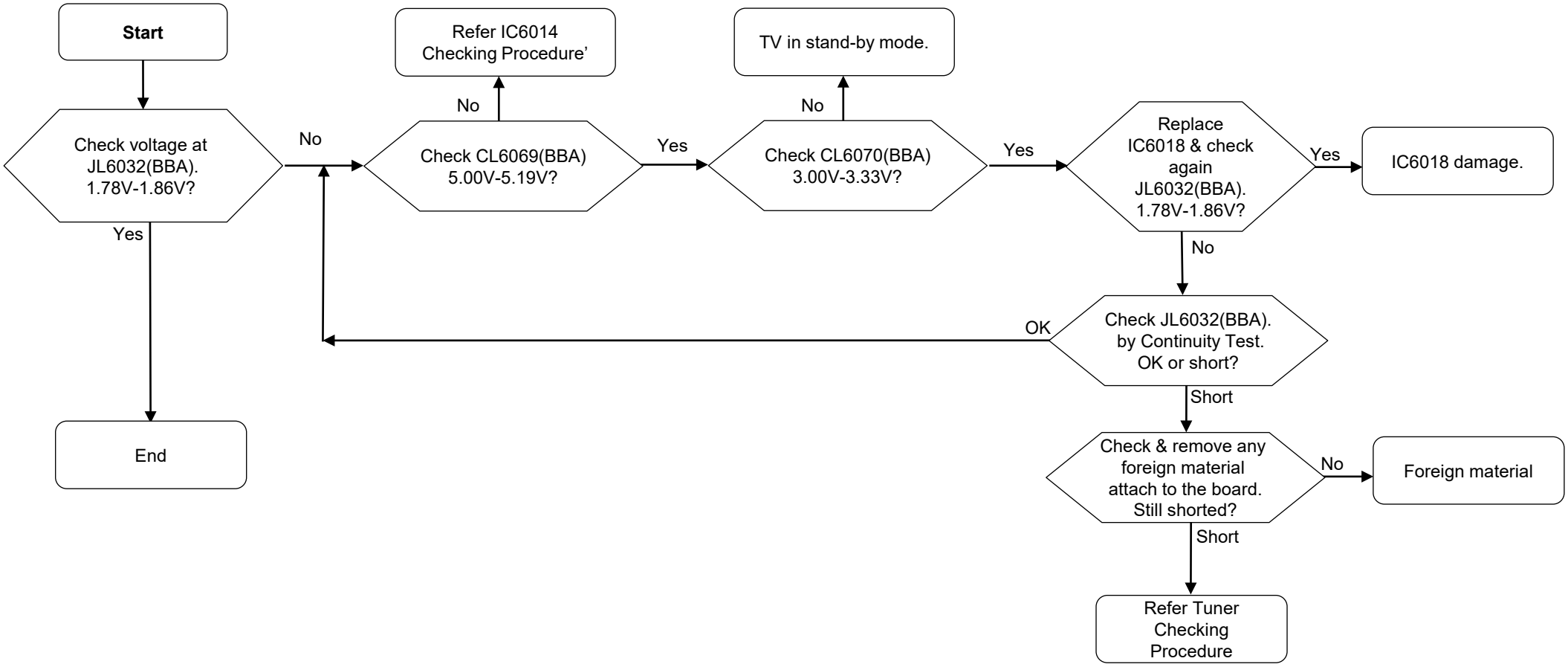
3-2-11. No Power-IC6012(1.5V DDCON) Checking Procedure



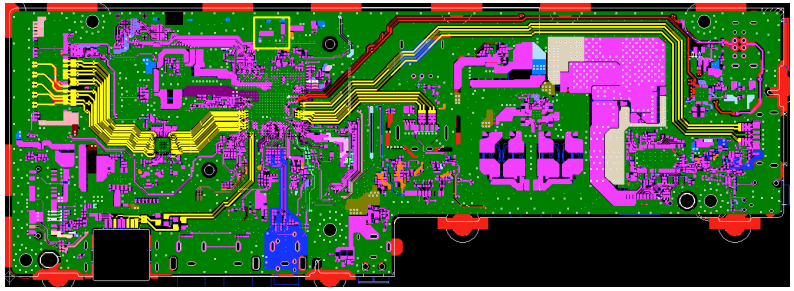
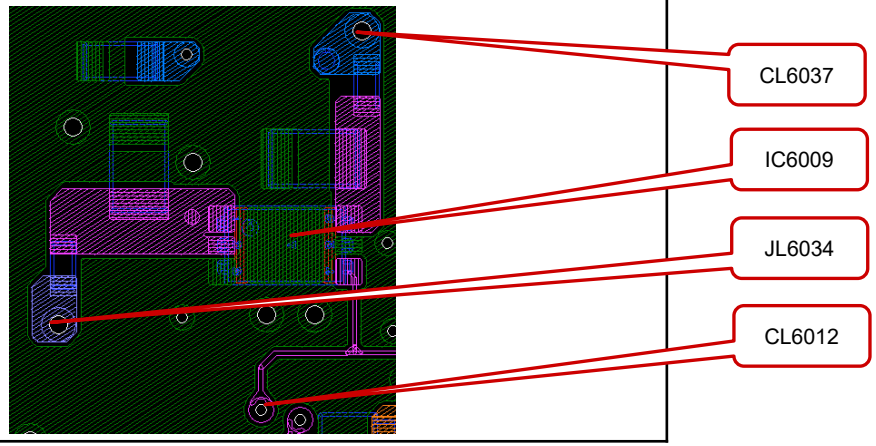
IC6012 Checking Procedure (Checking Point)

Board Name	Board PWB (A side)	Detail
BBA (1.5V)		

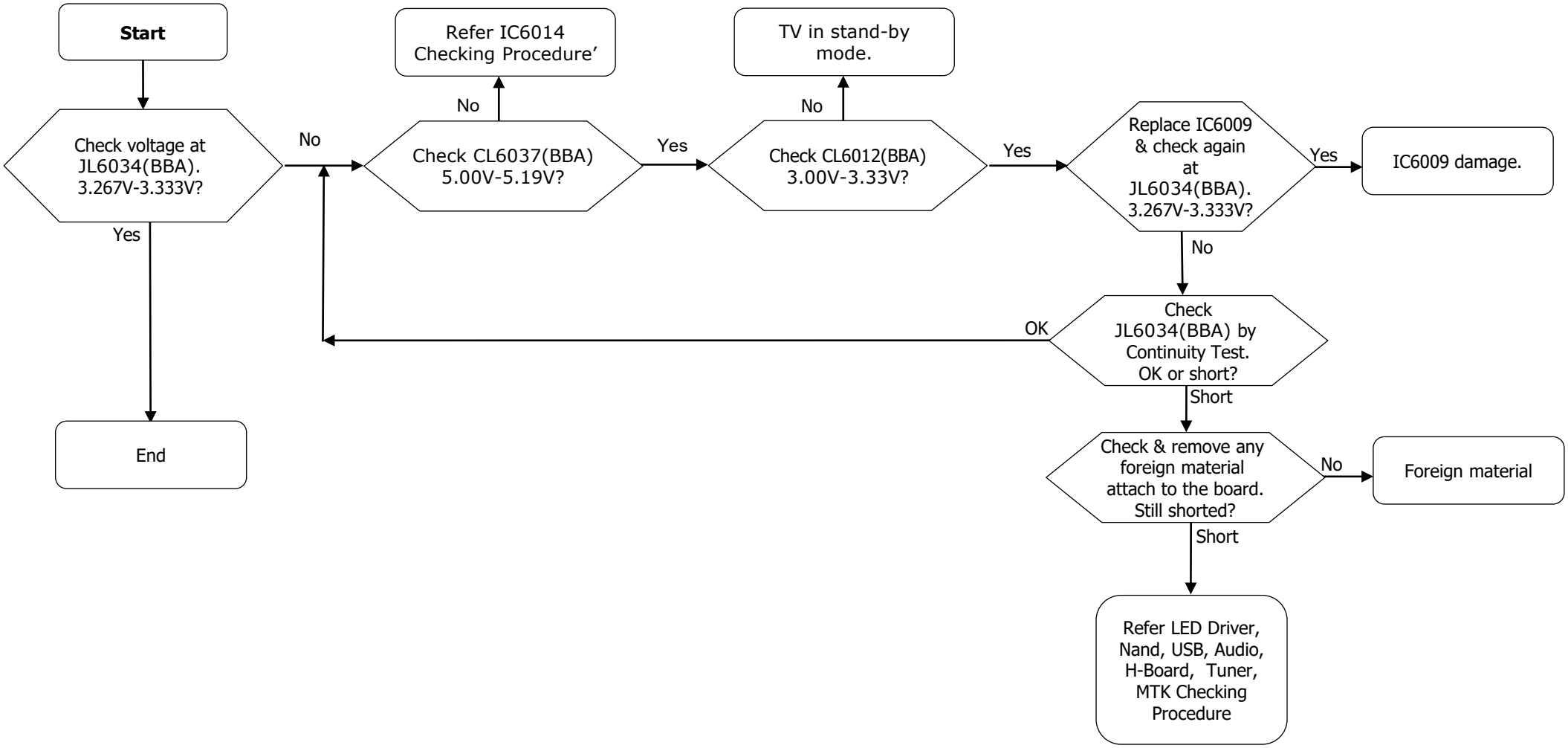
3-2-12. No Power-IC6018(1.8V DDCON) Checking Procedure



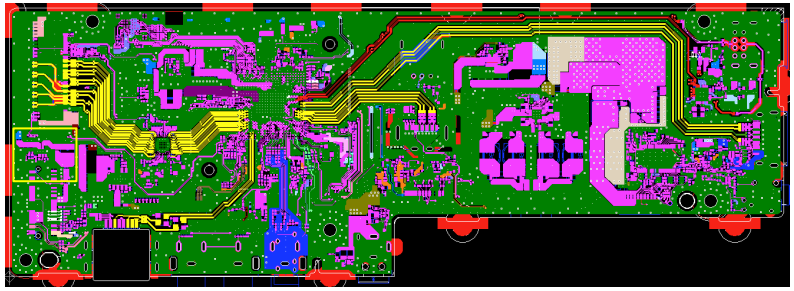
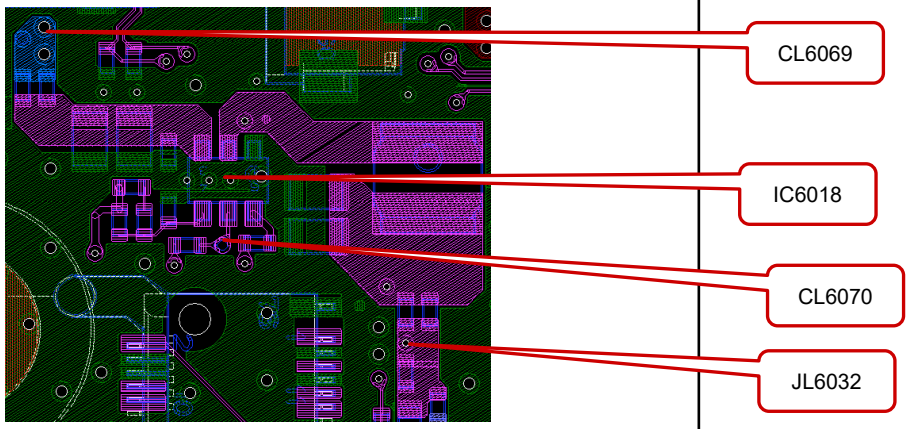
IC6018 Checking Procedure (Checking Point)

Board Name	Board PWB (A side)	Detail
BBA (3.3V)		

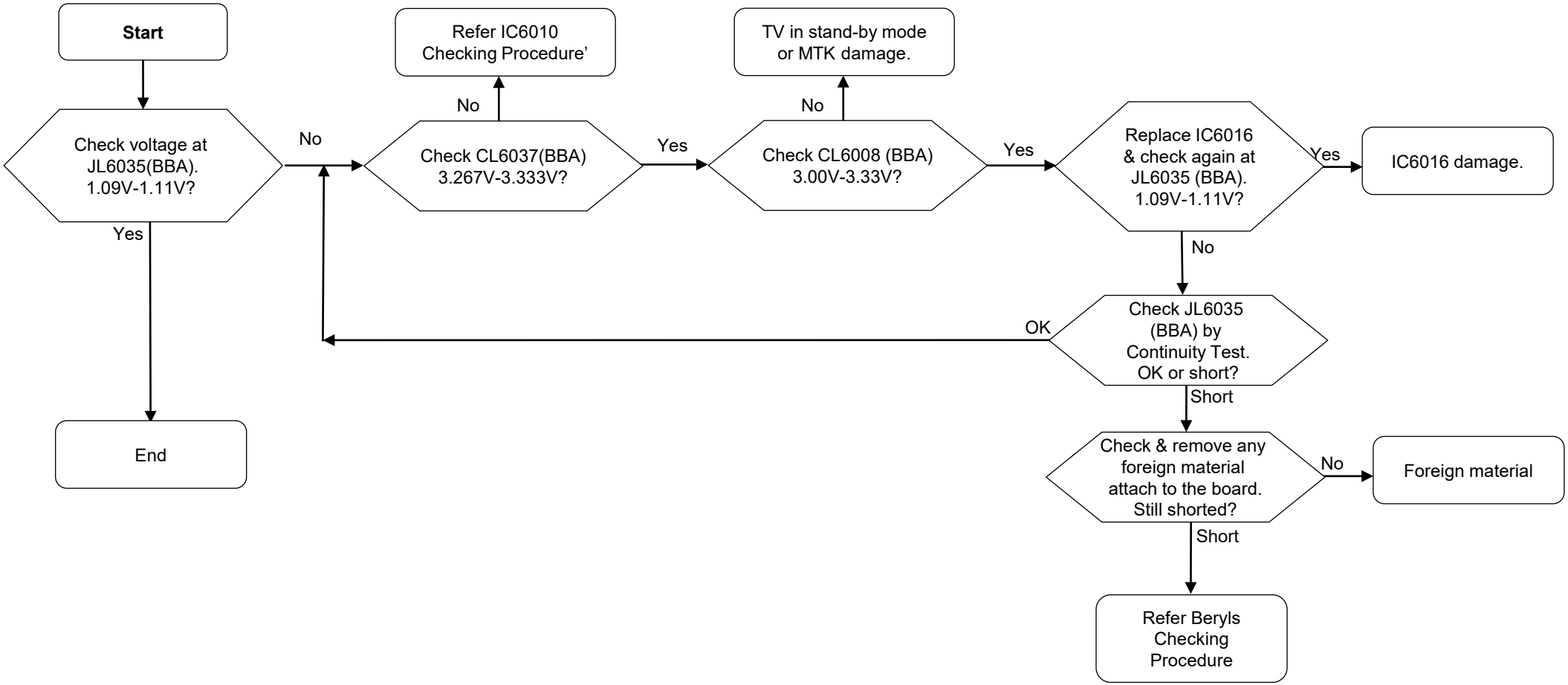
3-2-13. No Power-IC6009(3.3V DDCON) Checking Procedure



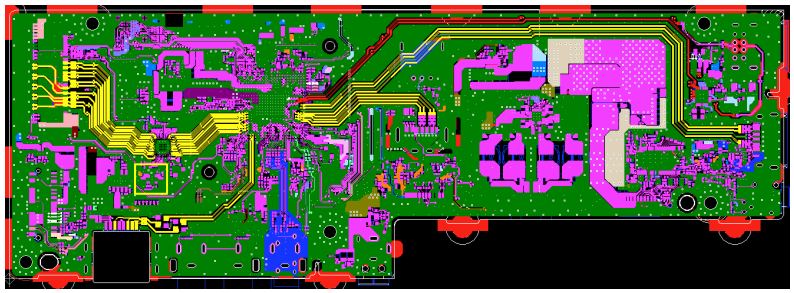
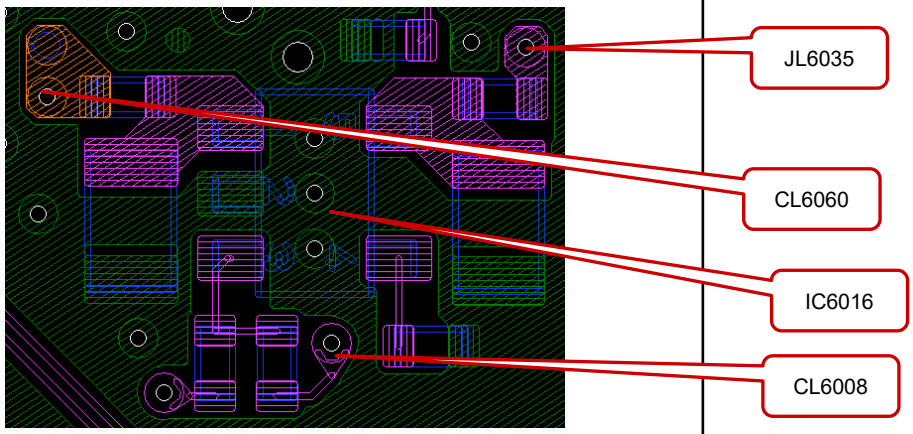
IC6009 Checking Procedure (Checking Point)

Board Name	Board PWB (A side)	Detail
BBA (1.8V)		

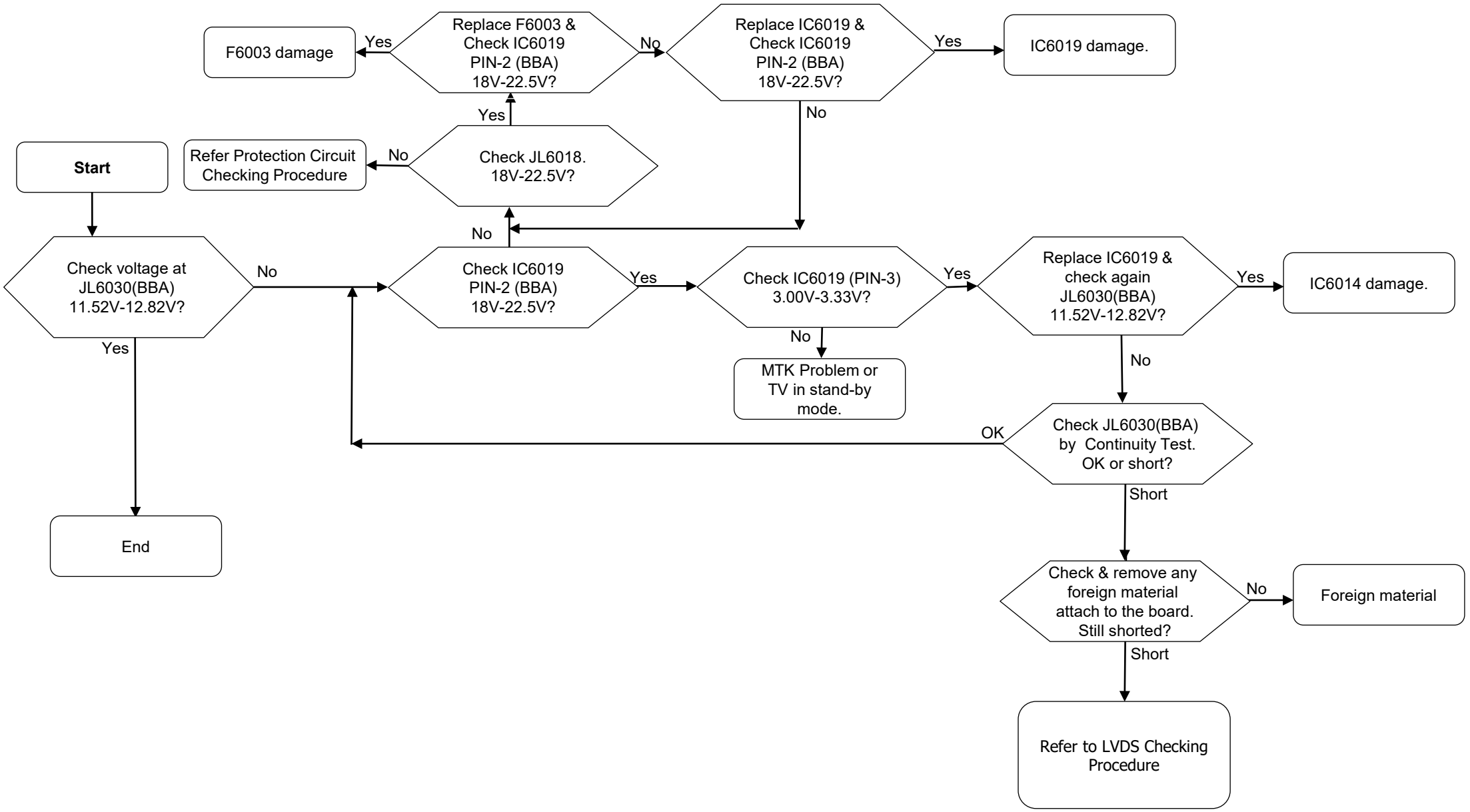
3-2-14. No Power-IC6016(1.1V DDCON) Checking Procedure



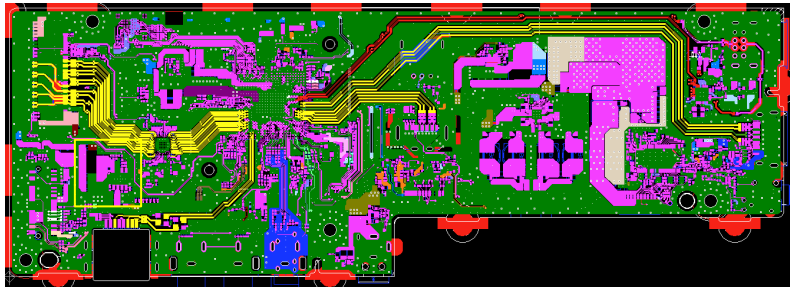
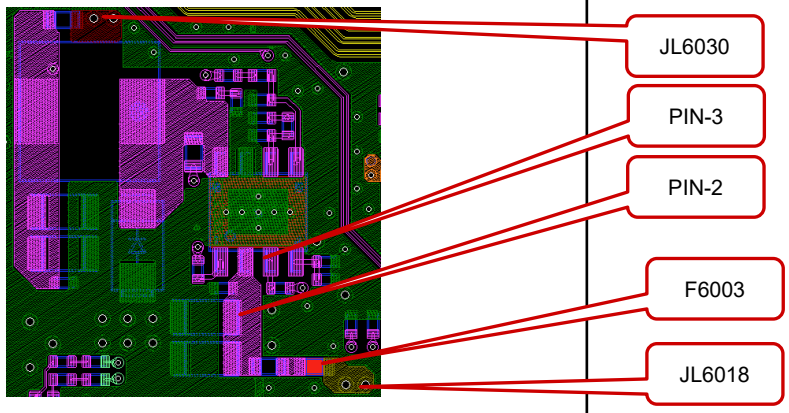
IC6016 Checking Procedure (Checking Point)

Board Name	Board PWB (A side)	Detail
BBA (1.1V)		

3-2-15. No Power-IC6019(12V DDCON) Checking Procedure

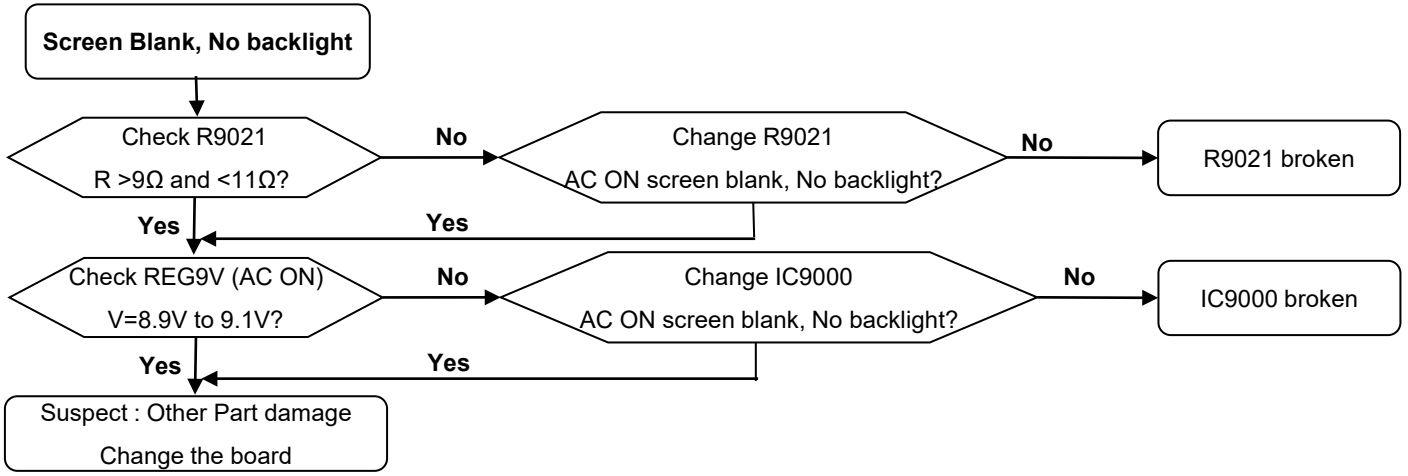


No Power-IC6019 Checking Procedure (Checking Point)

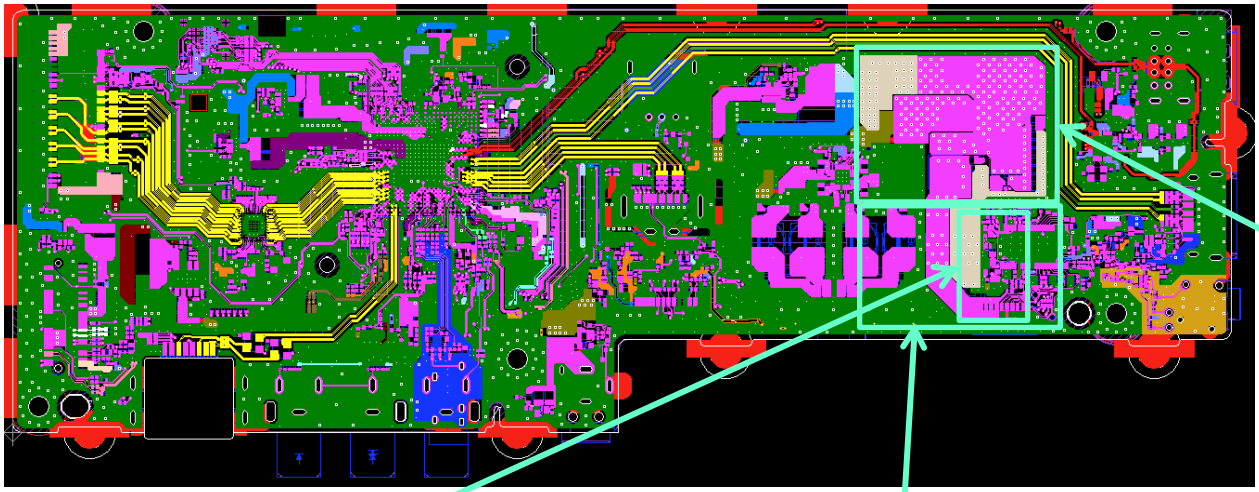
Board Name	Board PWB (A side)	Detail
BBA (12V)		

3-3. No Picture

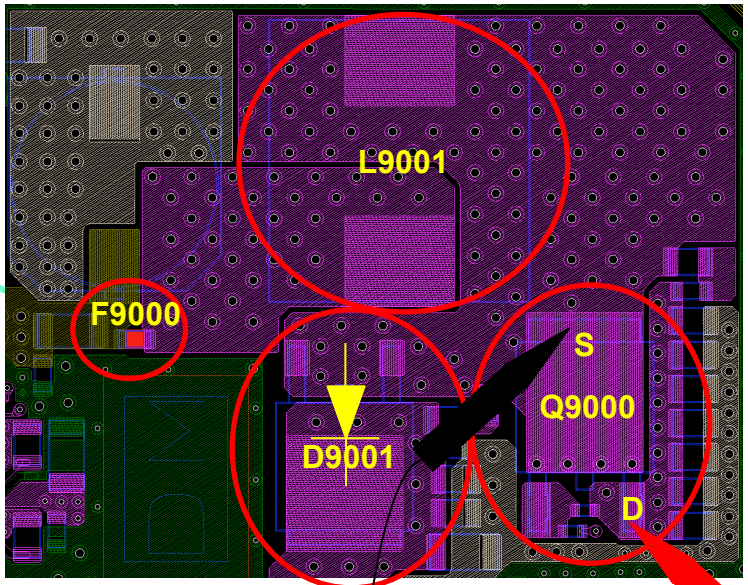
3-3-1. Screen Blank, No Backlight



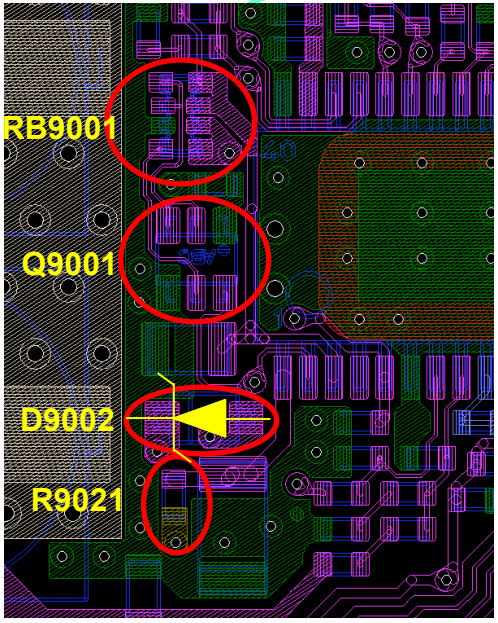
Screen Blank, No Backlight - Checking Point [1/2]-BBA



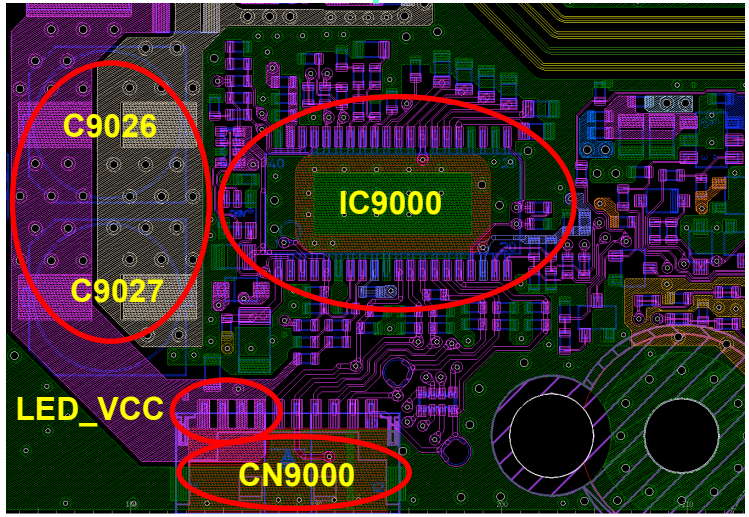
F9000, L9001, D9001, Q9000



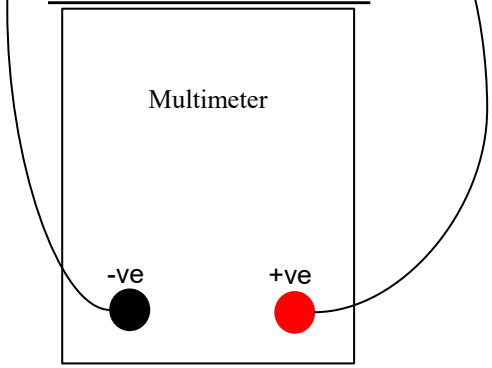
RB9001, Q9001, D9002, R9021



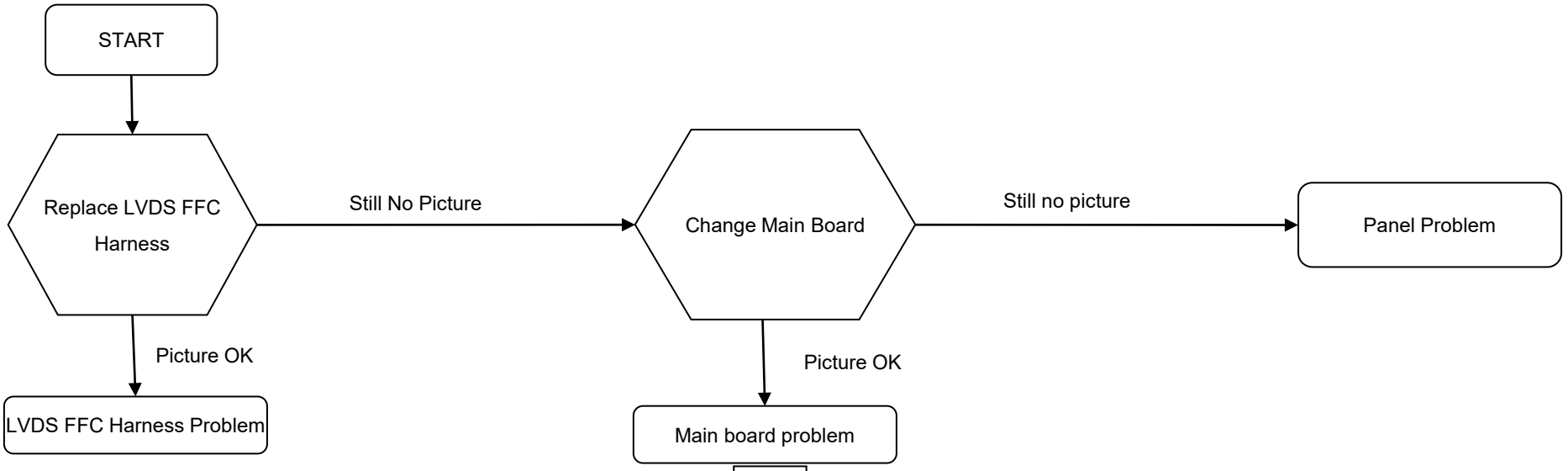
C9026, C9027, CN9000, IC9000, LED_VCC



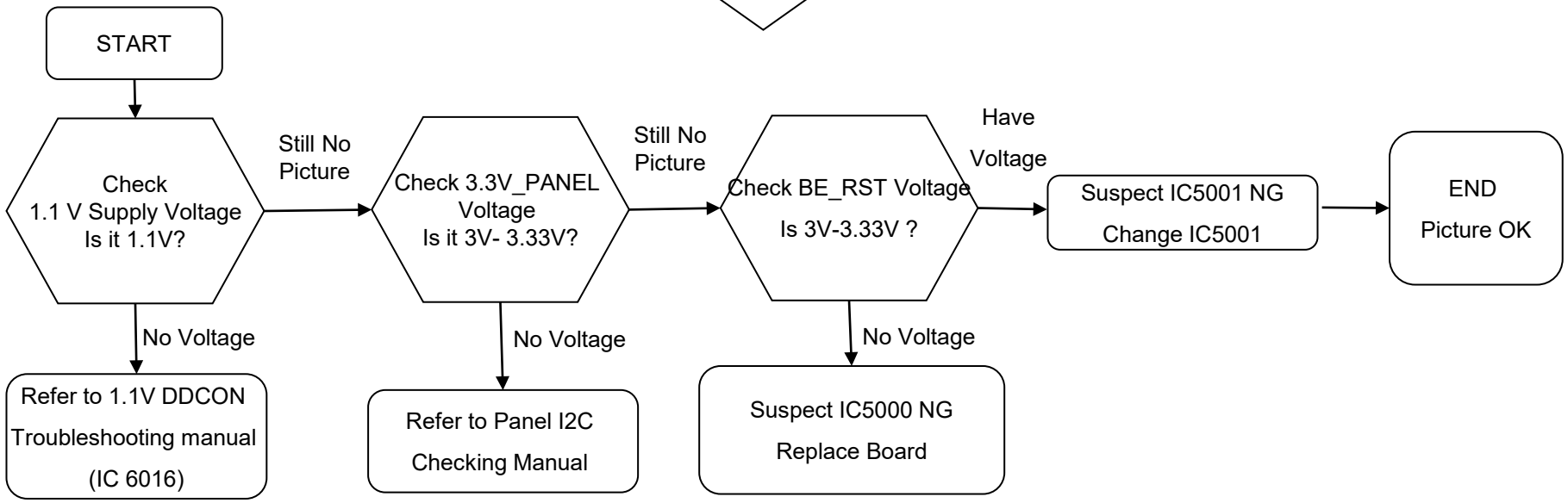
Q9000 RDS Measurement



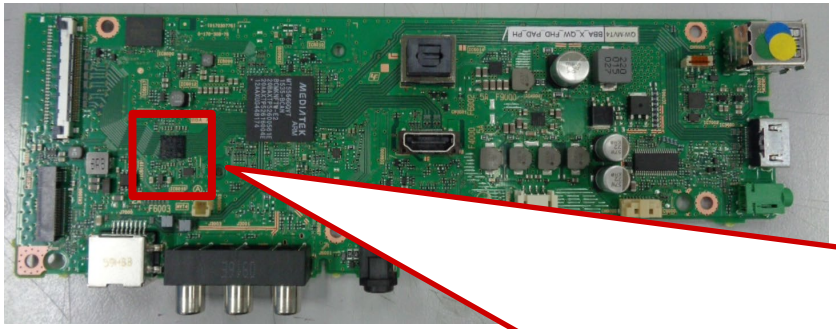
3-3-2. Screen Blank, Backlight visible(General Checking)

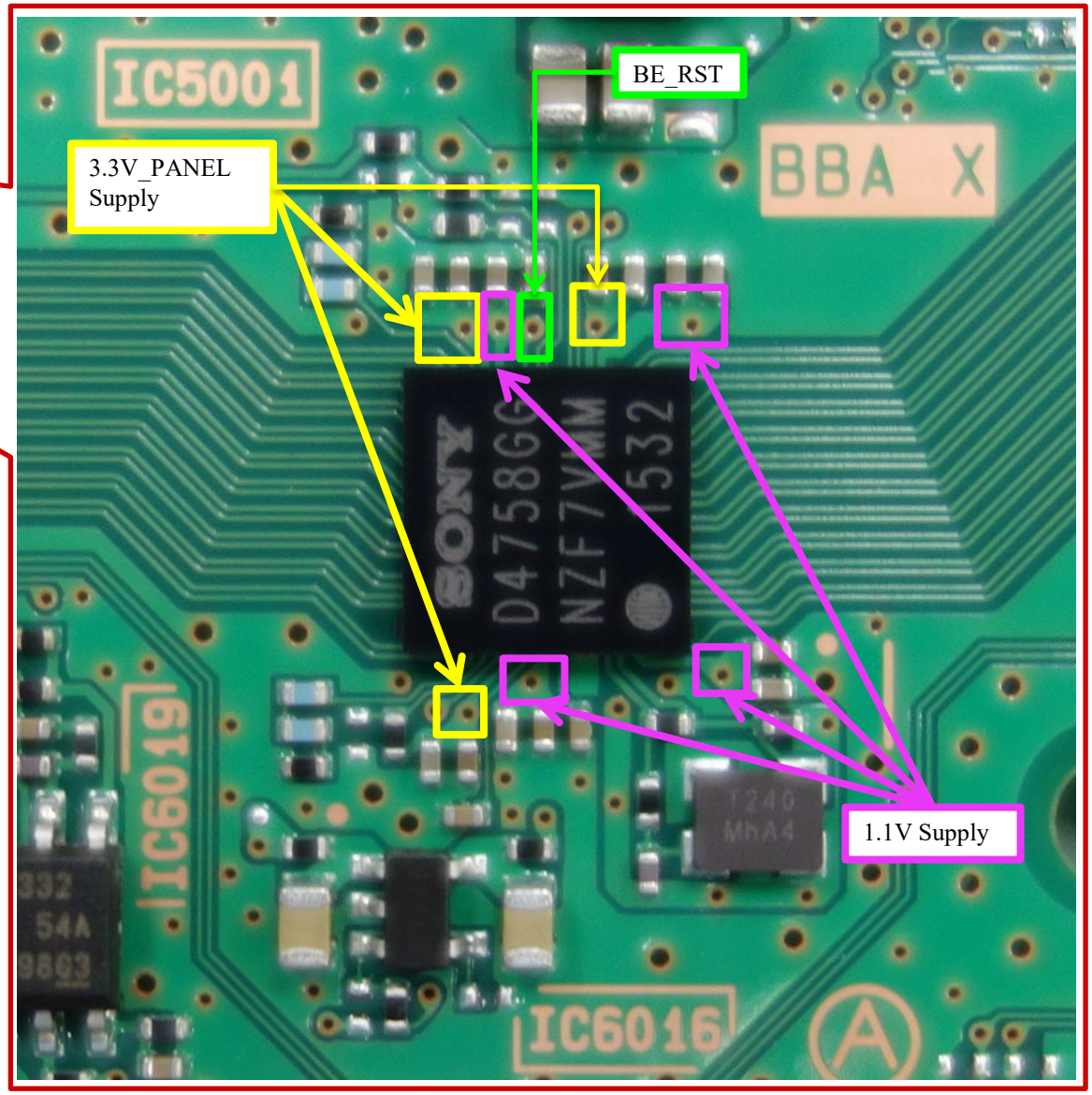


Troubleshooting Detail No Picture (Main Board Issue)



Screen Blank, Backlight visible(Checking Point)-BBA

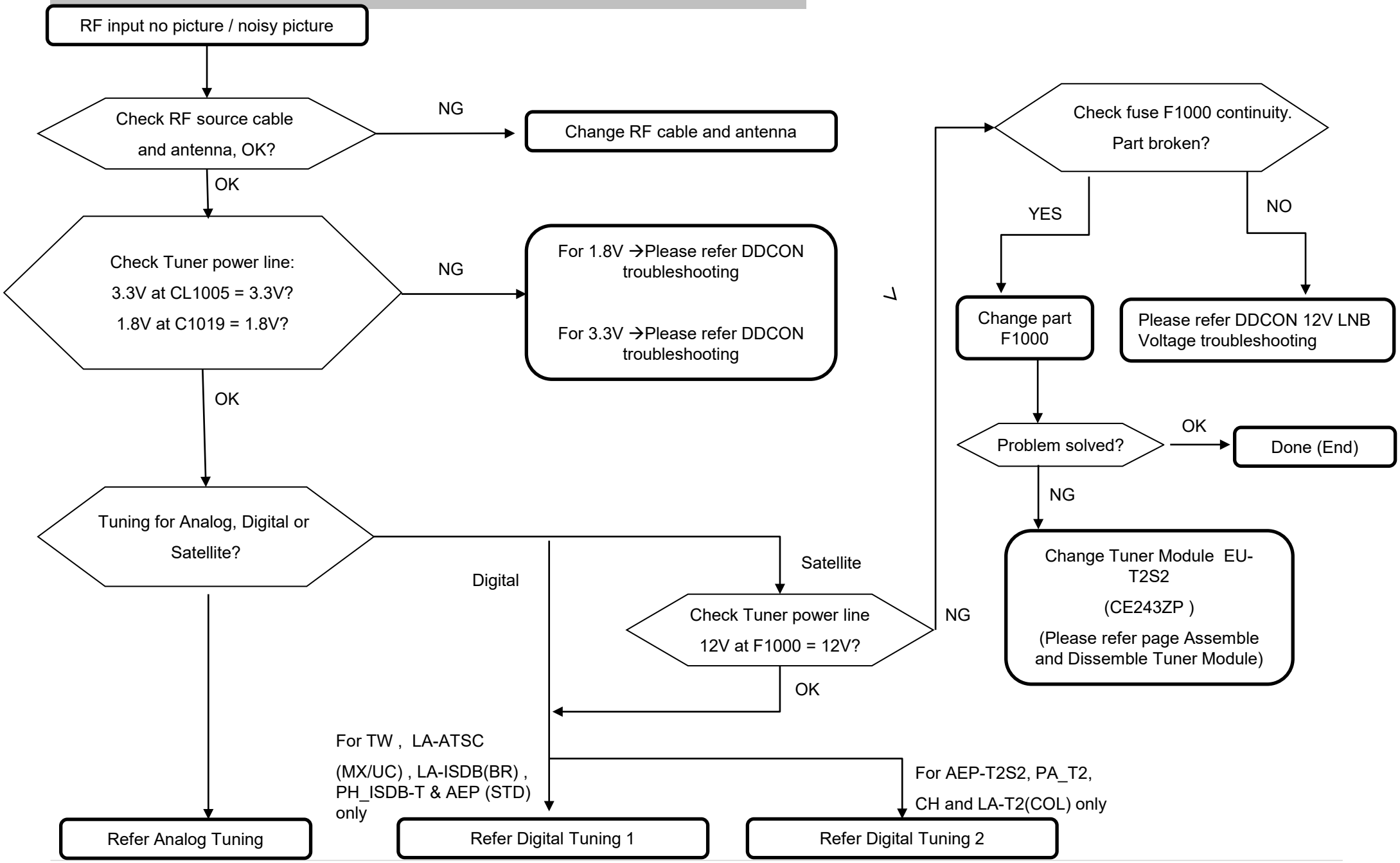




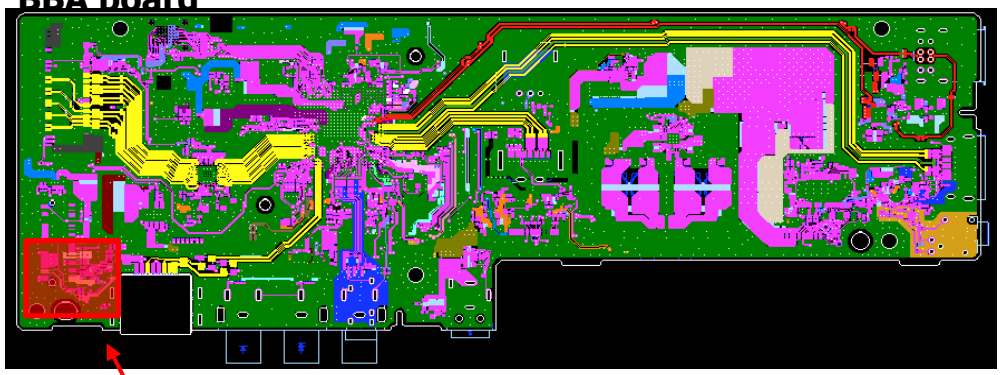
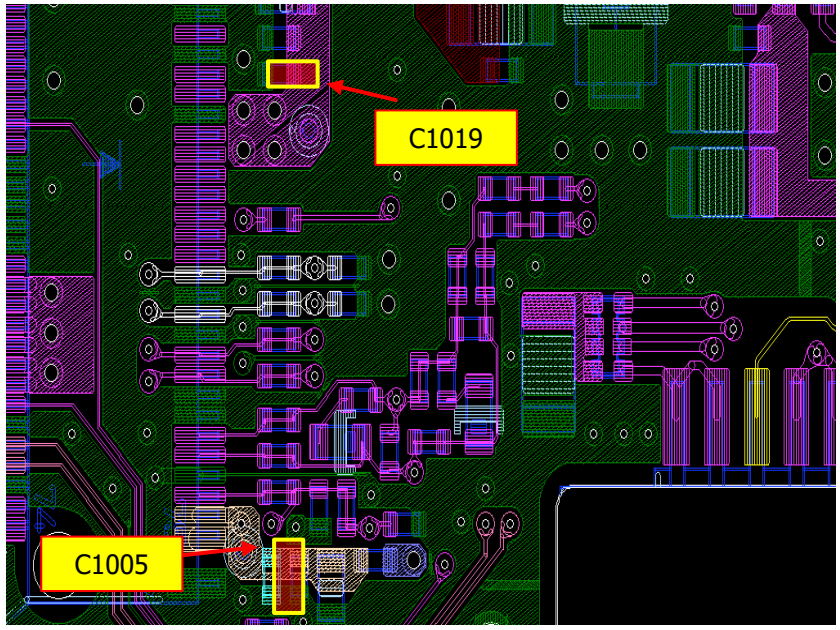
Check Item:

1. Supply voltage
2. Supply voltage impedance

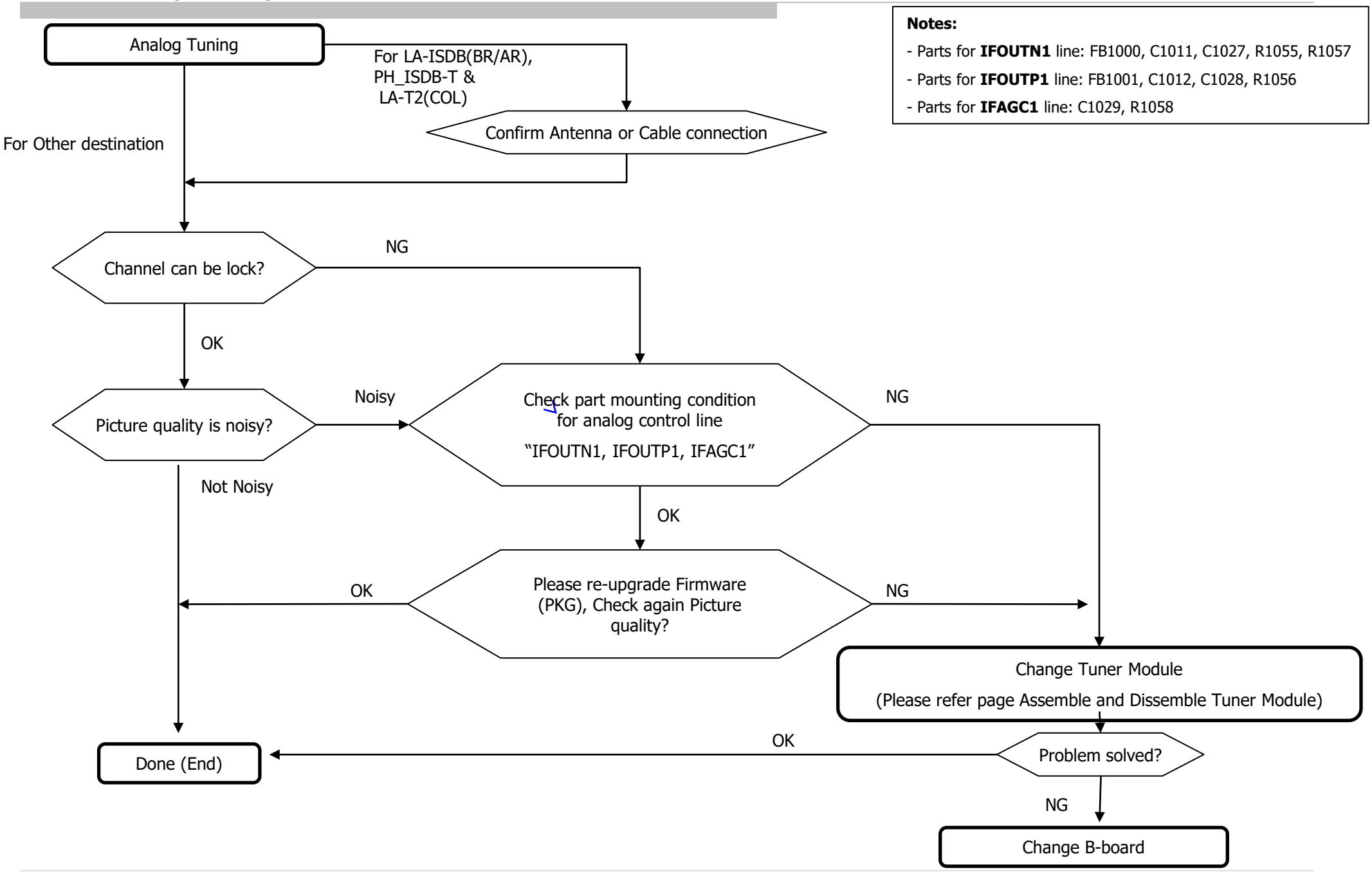
3.3.3 : No Picture: Tuner (for Analogue , Digital and Satellite)



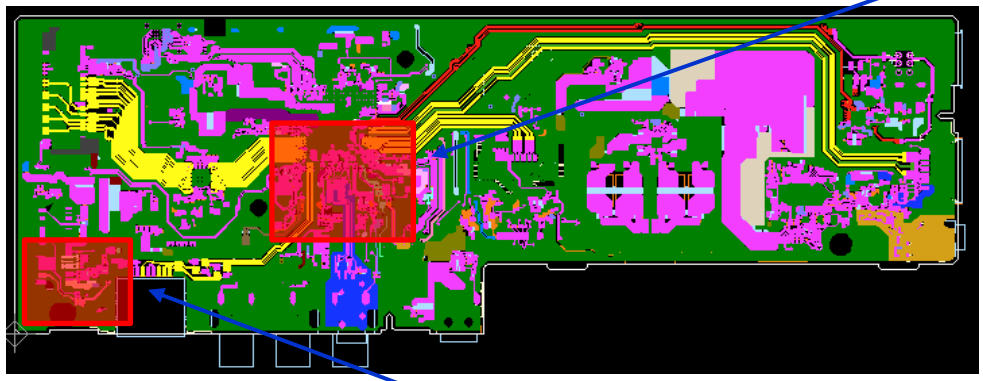
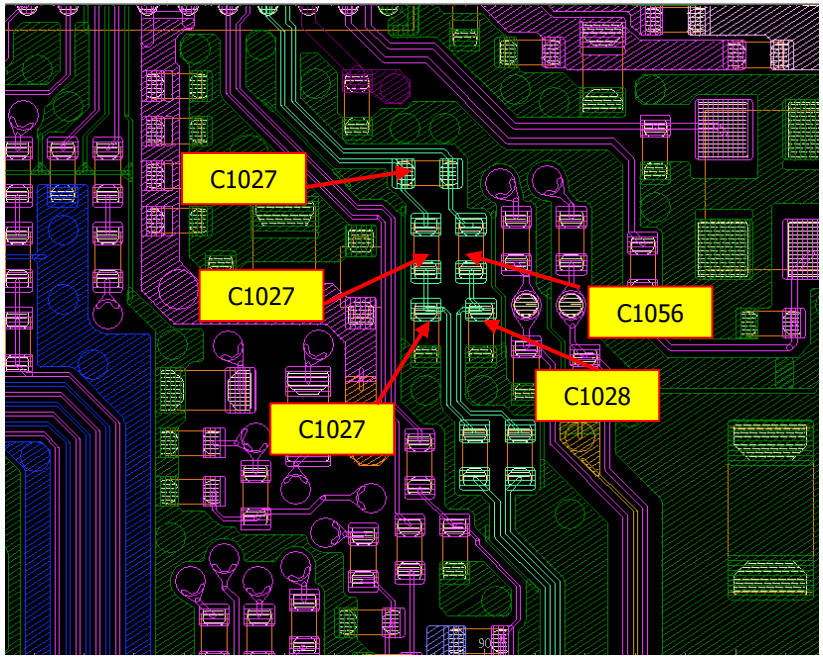
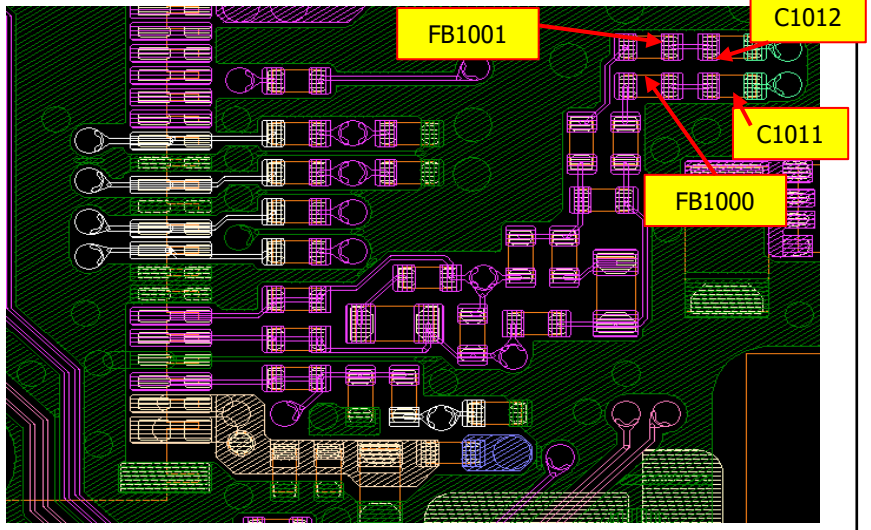
No Picture : Tuner (for Analogue , Digital and Satellite)-Checking Point

Board Name	Board PWB (B side)	Detail
BBA board (A side) **(3.3V)** C1005 **(1.8V)** C1019	**BBA board**  	

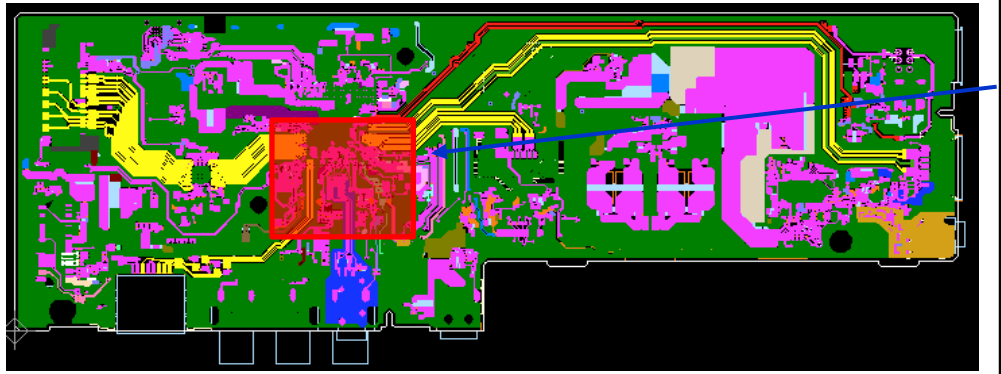
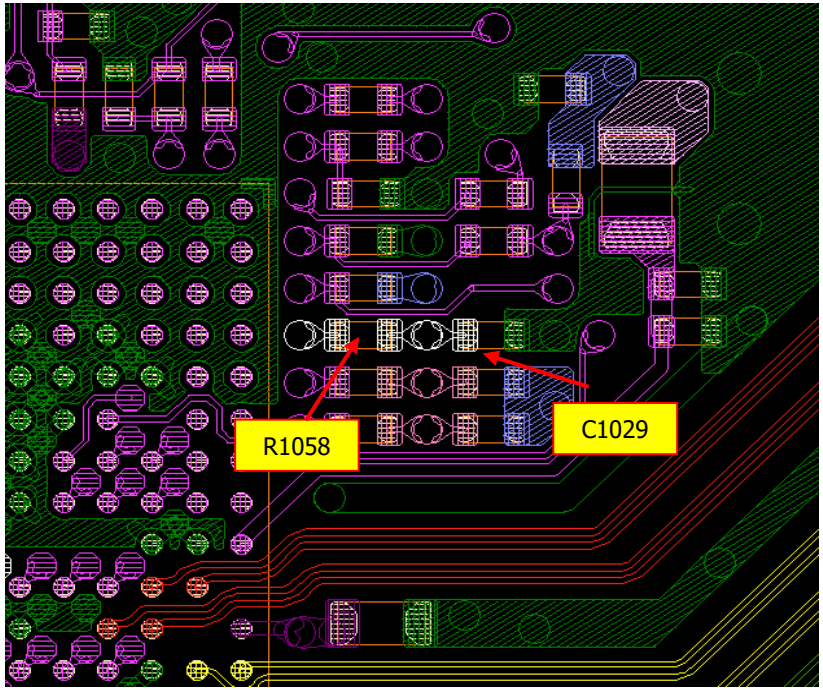
3.3.4 : For Analogue Tuning Failed



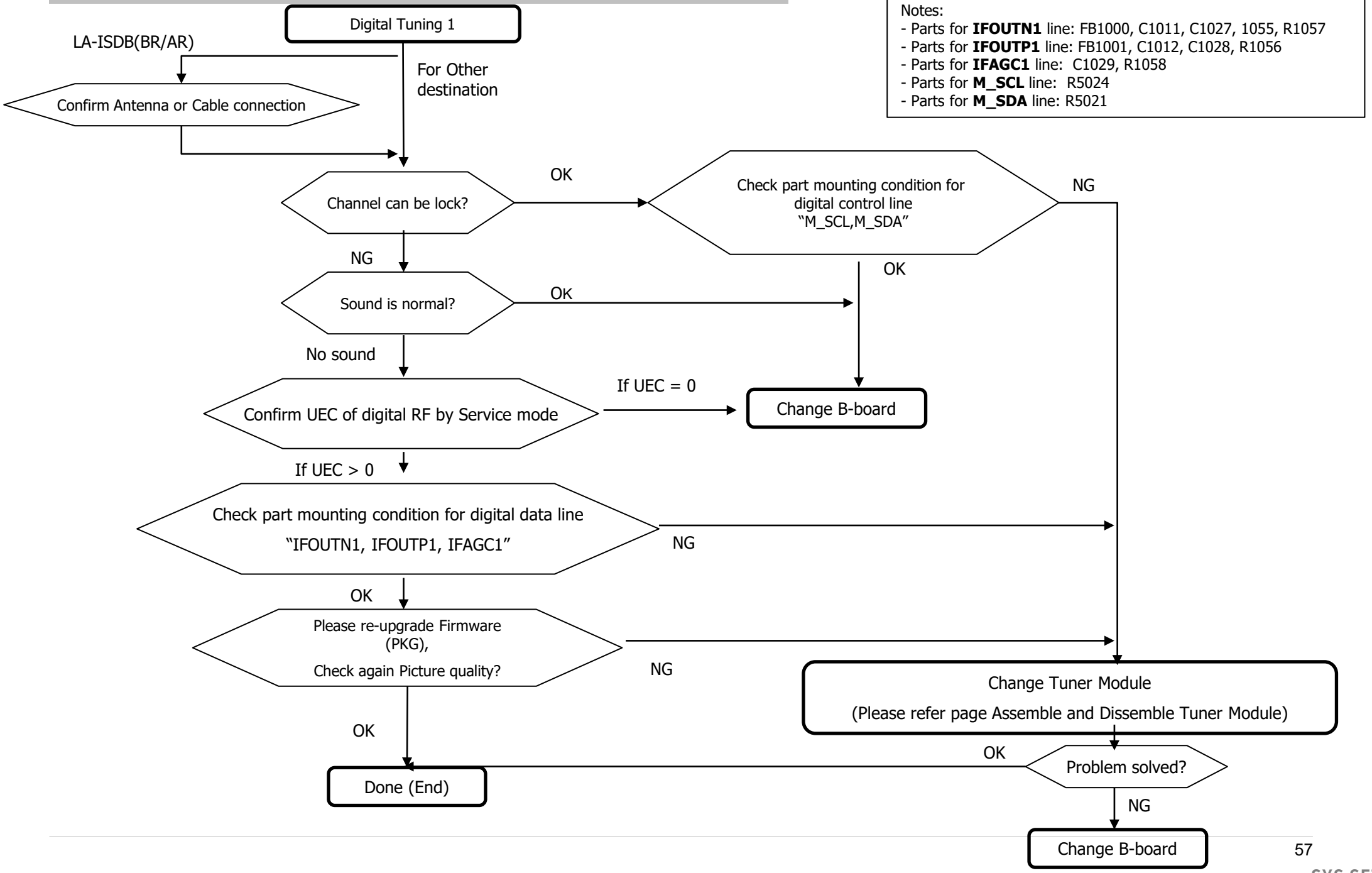
For Analogue Tuning Failed -Checking Point

Board Name	Board PWB (A side)	Detail
BBA board (A side) **(IFOUTN1)** FB1000 C1011 C1027 R1055 **(IFOUTP1)** FB1001 C1012 C1028 R1056		 

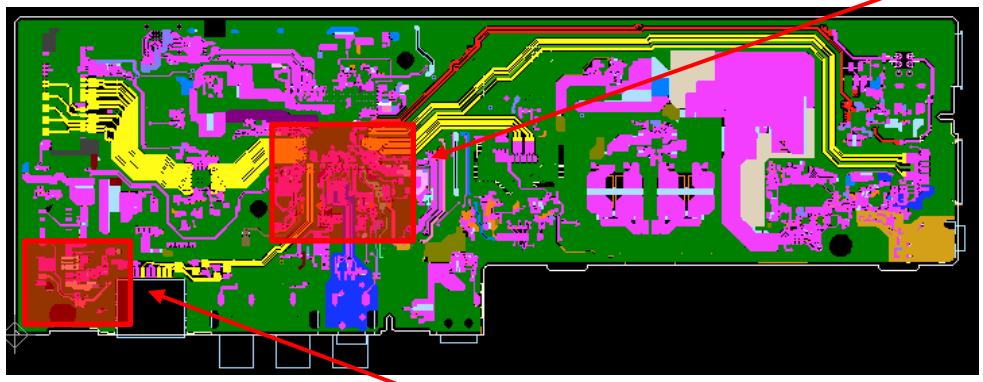
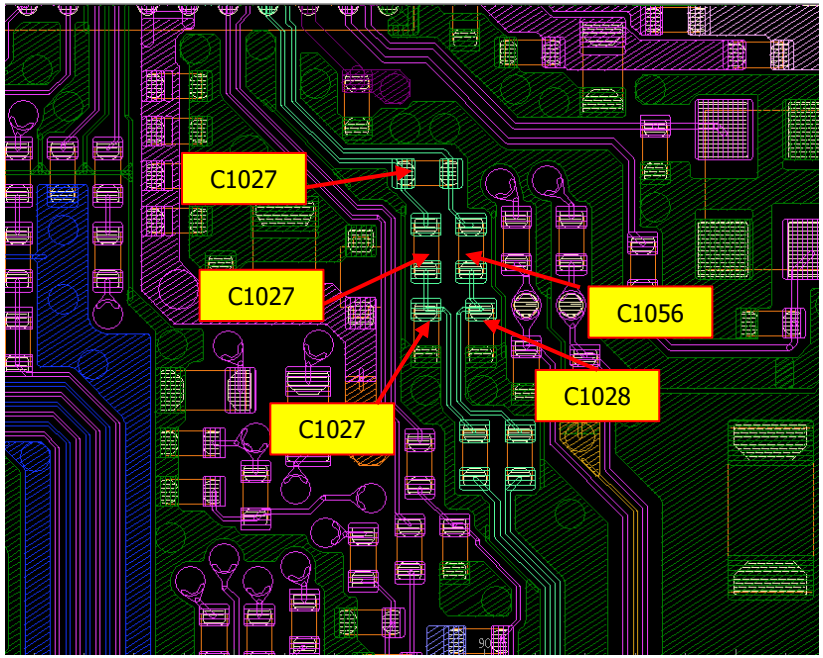
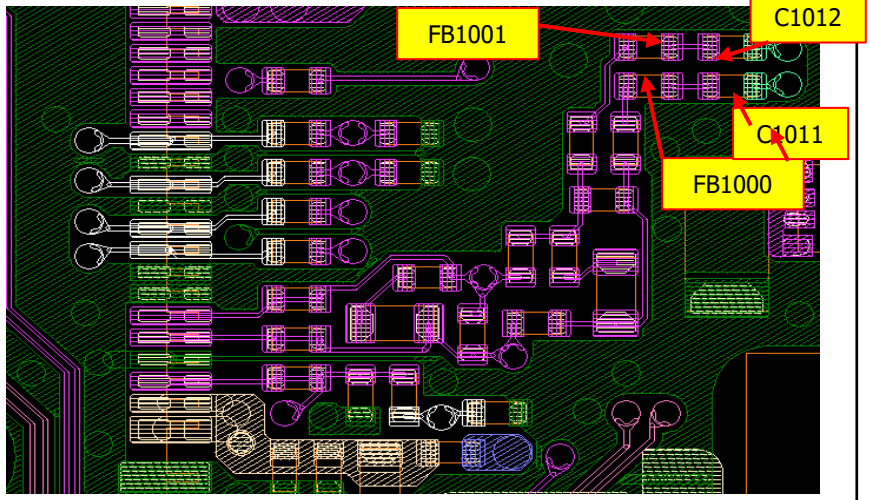
For Analogue Tuning Failed -Checking Point

Board Name	Board PWB (A side)	Detail
BBA board (A side) **(IFAGC1)** C1029 R1058		

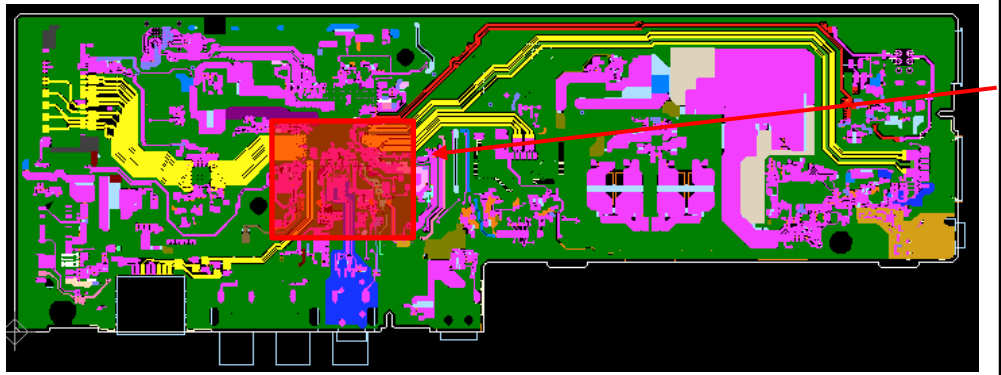
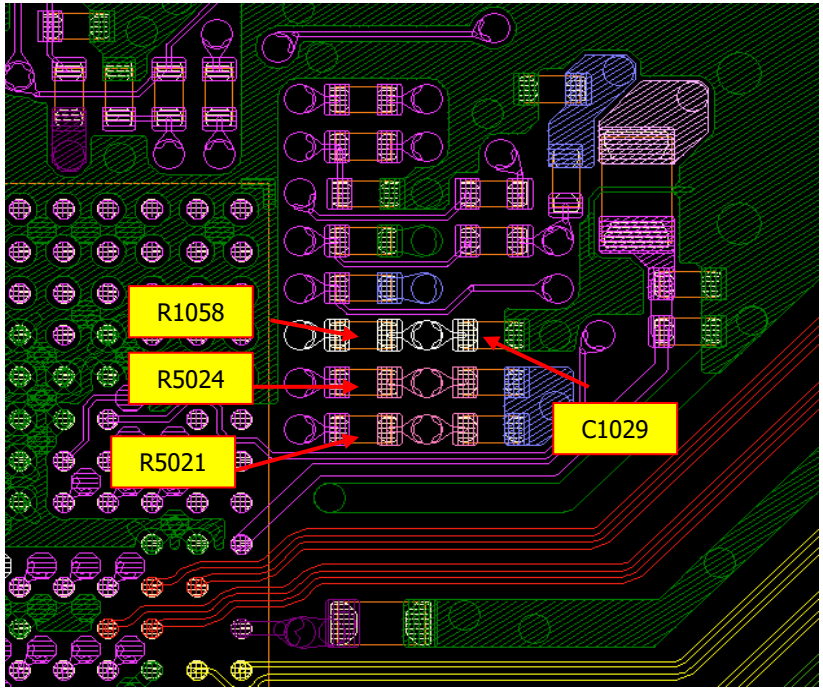
3-3-5. For Digital Tuning 1:



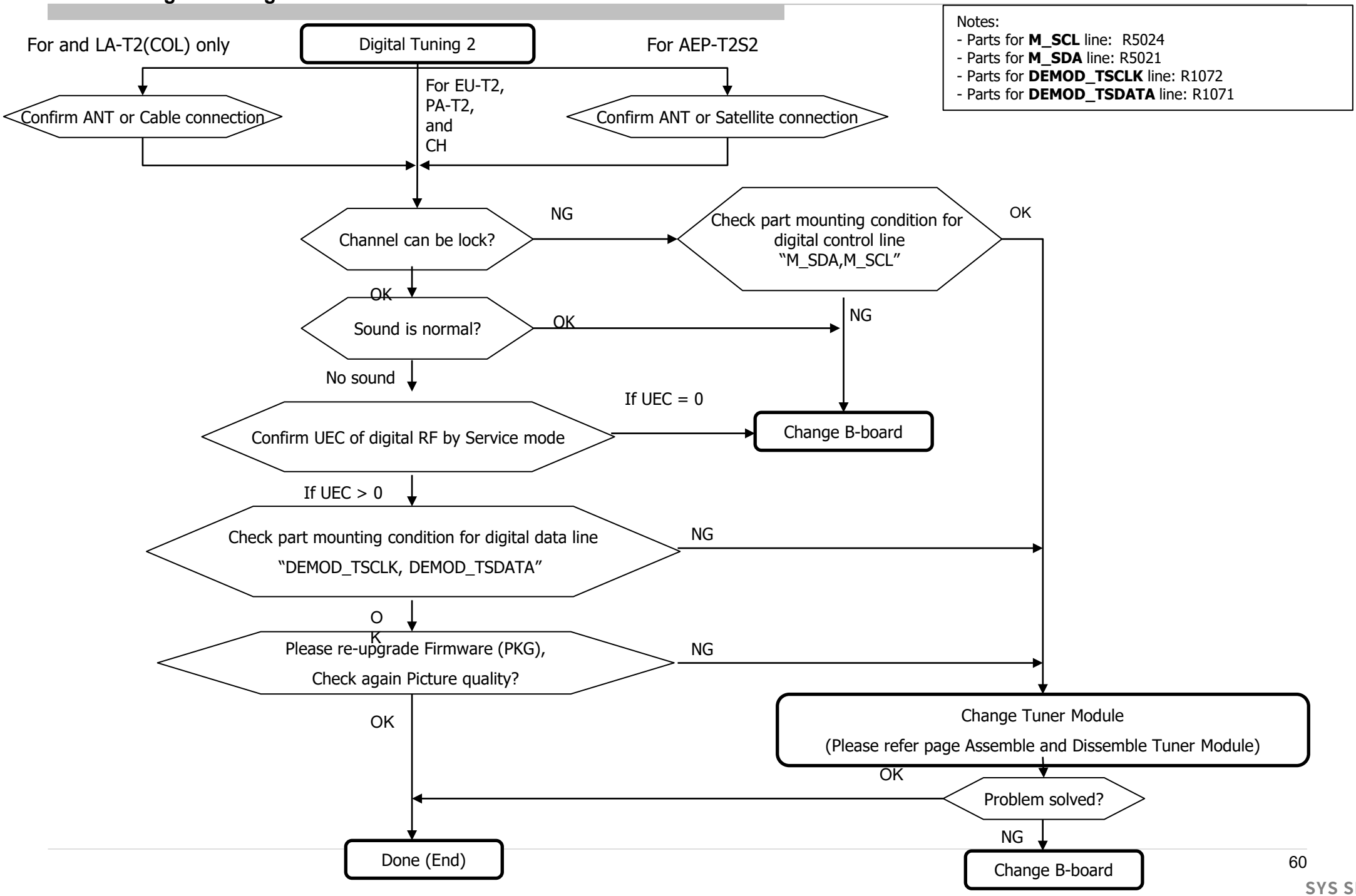
For Digital Tuning 1

Board Name	Board PWB (A side)	Detail
BBA board (A side) **(IFOUTN1)** FB1000 C1011 C1027 R1055 **(IFOUTP1)** FB1001 C1012 C1028 R1056		 

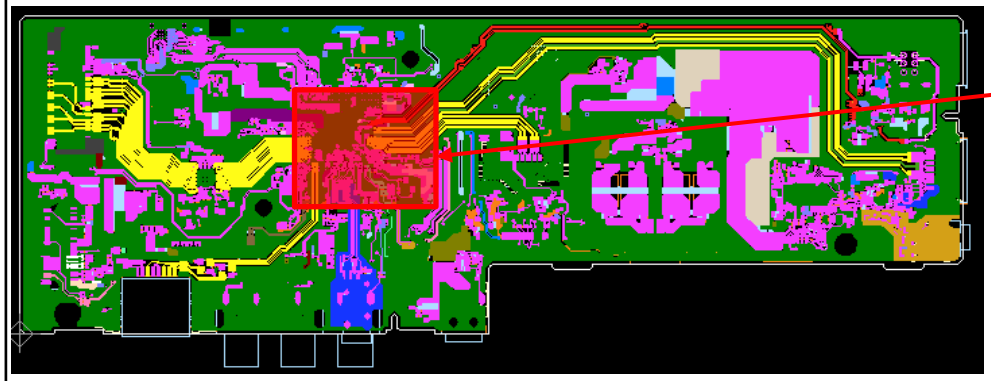
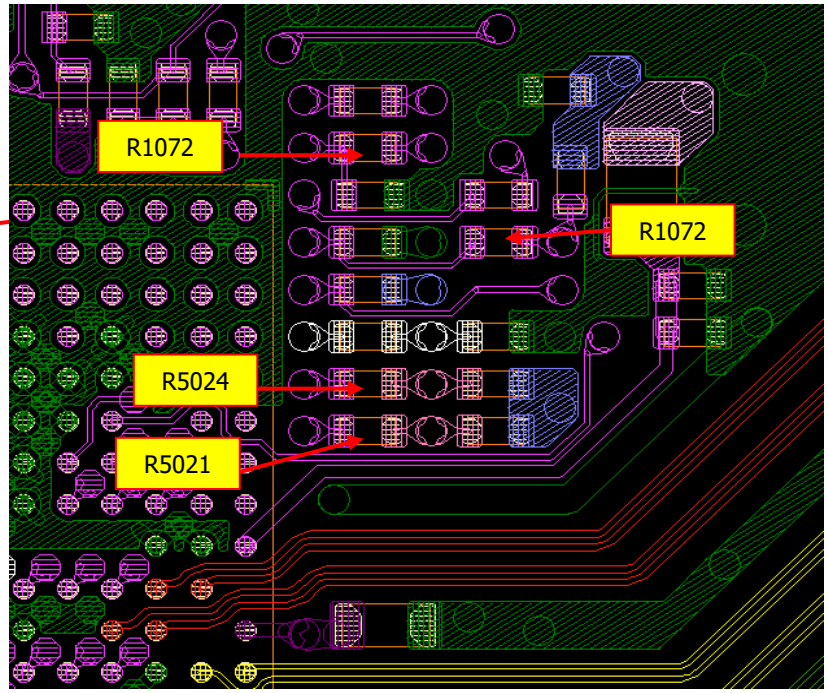
For Digital Tuning 1

Board Name	Board PWB (A side)	Detail
BBA board (A side) **(IFAGC1)** C1029 R1058 **(M_SCL)** R5024 **(M_SDA)** R5021		

3-3-6. For Digital Tuning 2

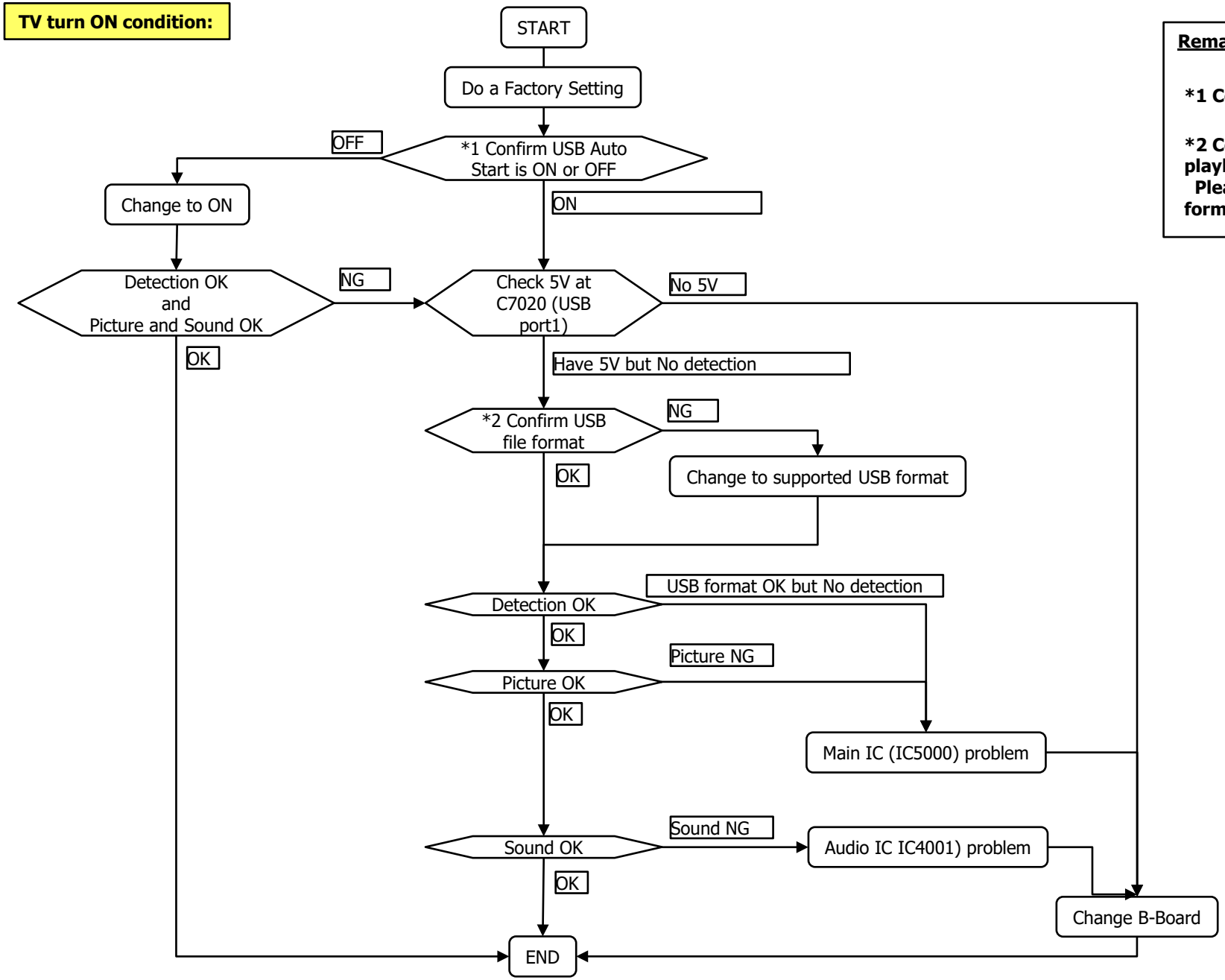


For Digital Tuning 2

Board Name	Board PWB (A side)	Detail
BBA board (A side) **(M_SCL)** R5024 **(M_SDA)** R5021 (**DEMOD_TSCLK**) R1072 (**DEMOD_TSCLK**) R1071		

3-3-7. : USB Port1 – No Detection / Cannot Play / No Picture / No Sound

TV turn ON condition:



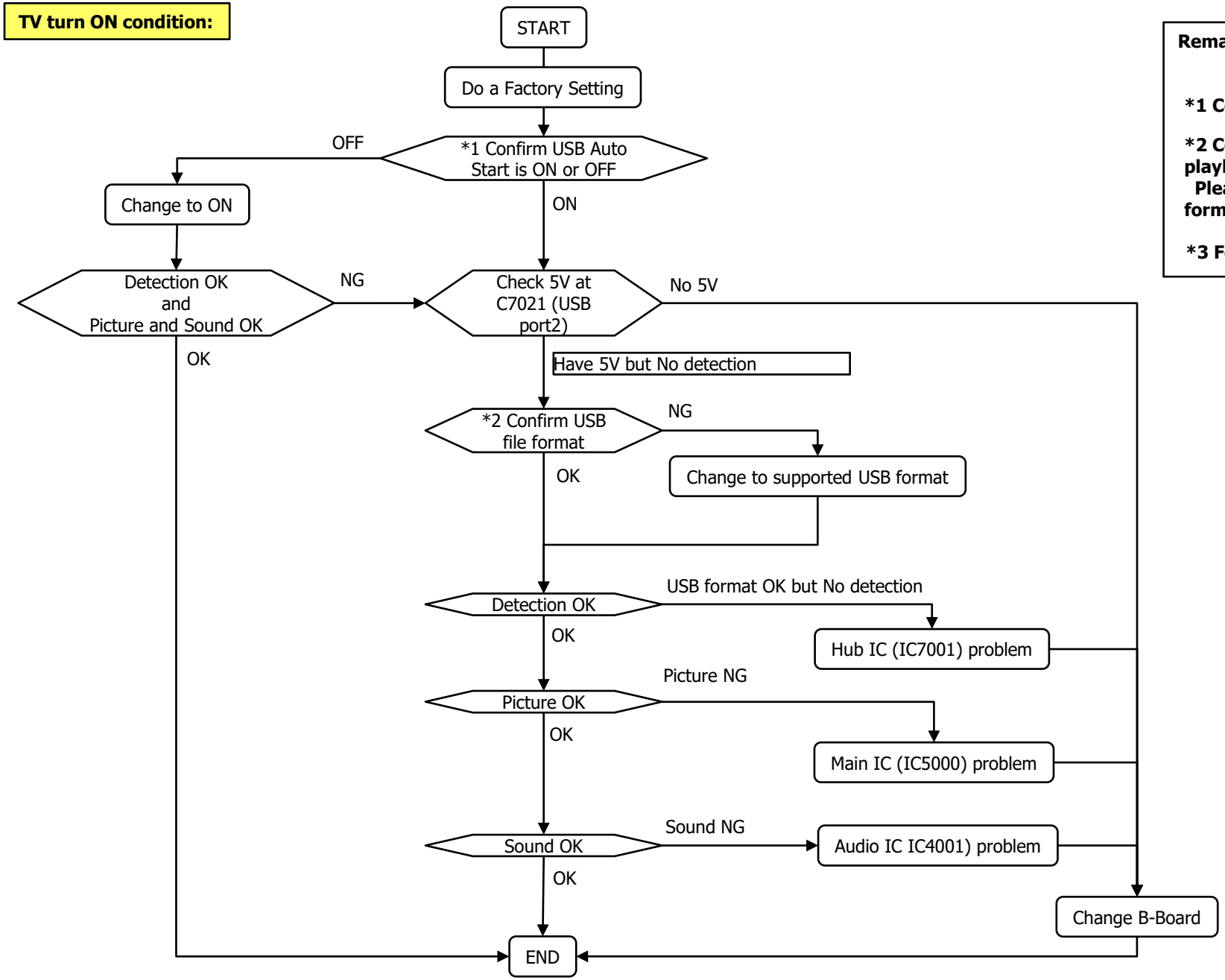
Remarks:

***1 Confirm USB Auto Start at Set-up Menu.**

***2 Confirm with OSD on bottom panel, if playback not support.**
Please refer to IM for detail supported USB format.

3-3-8. : USB Port2 – No Detection / Cannot Play / No Picture / No Sound

TV turn ON condition:



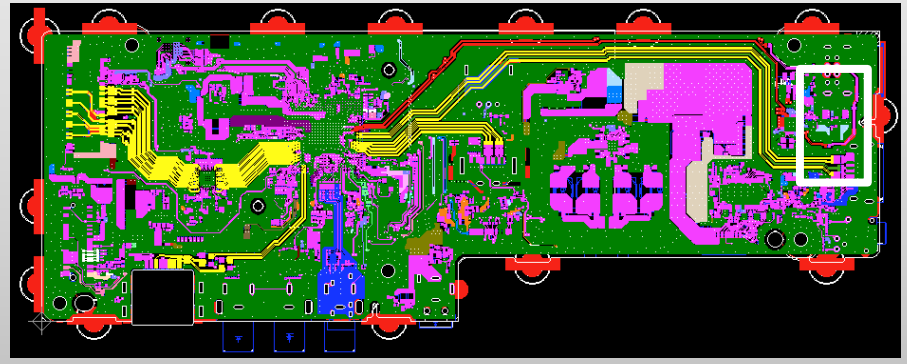
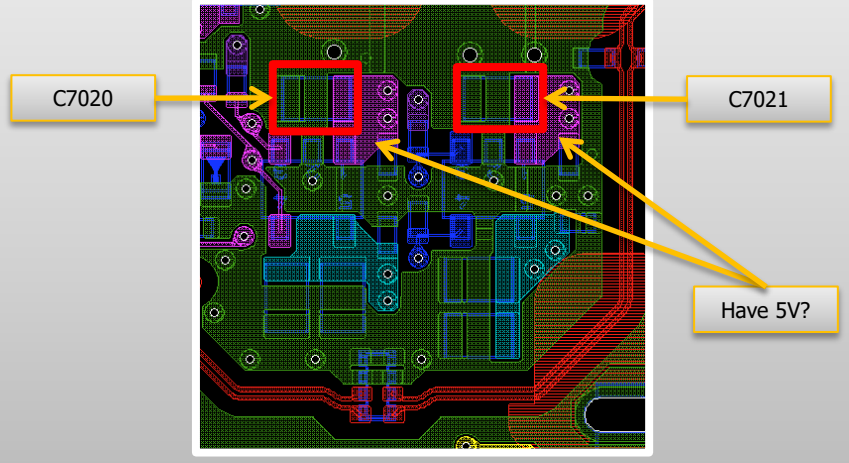
Remarks:

***1 Confirm USB Auto Start at Set-up Menu.**

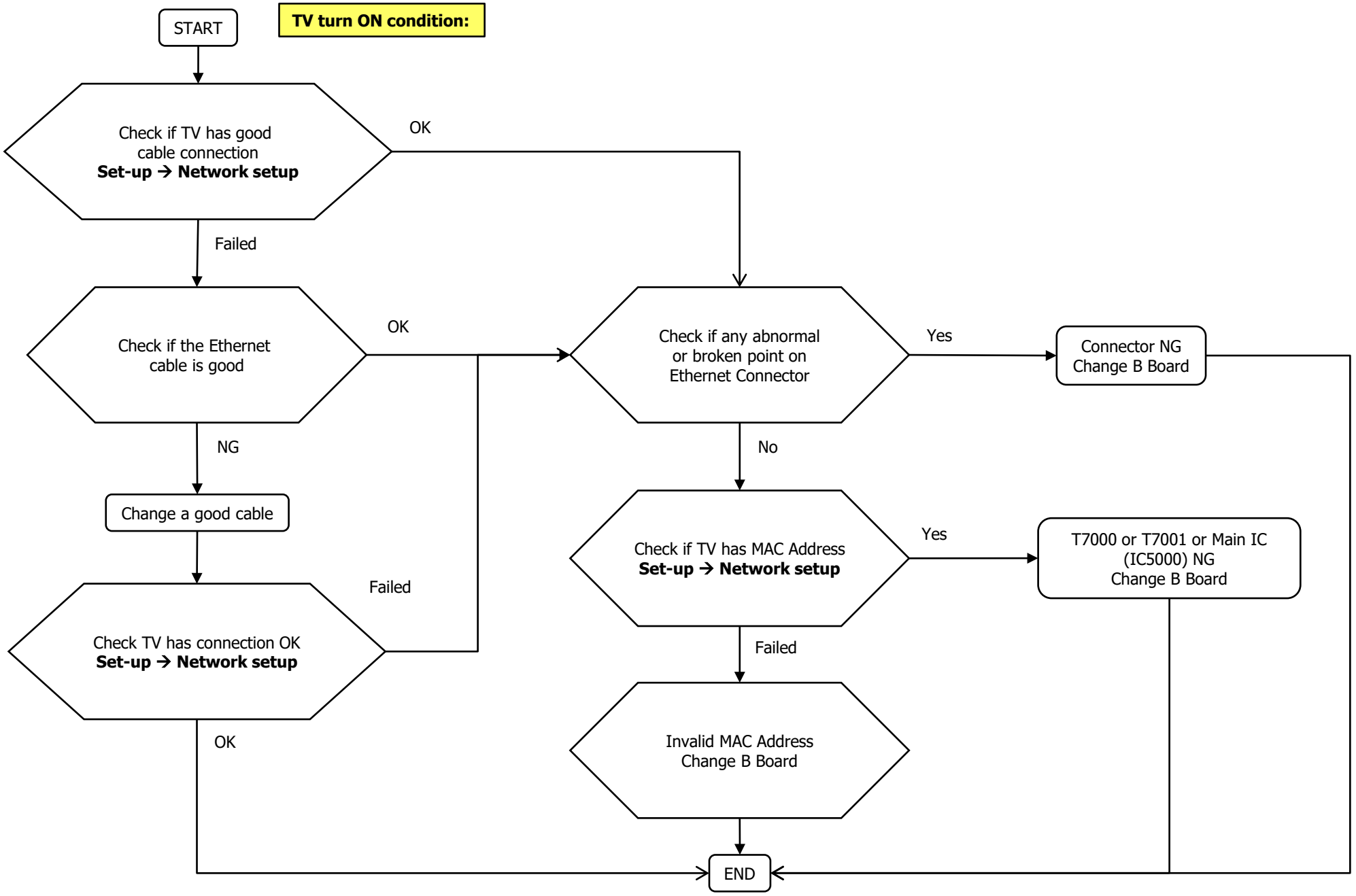
***2 Confirm with OSD on bottom panel, if playback not support.**
Please refer to IM for detail supported USB format.

***3 For model have USB Port2**

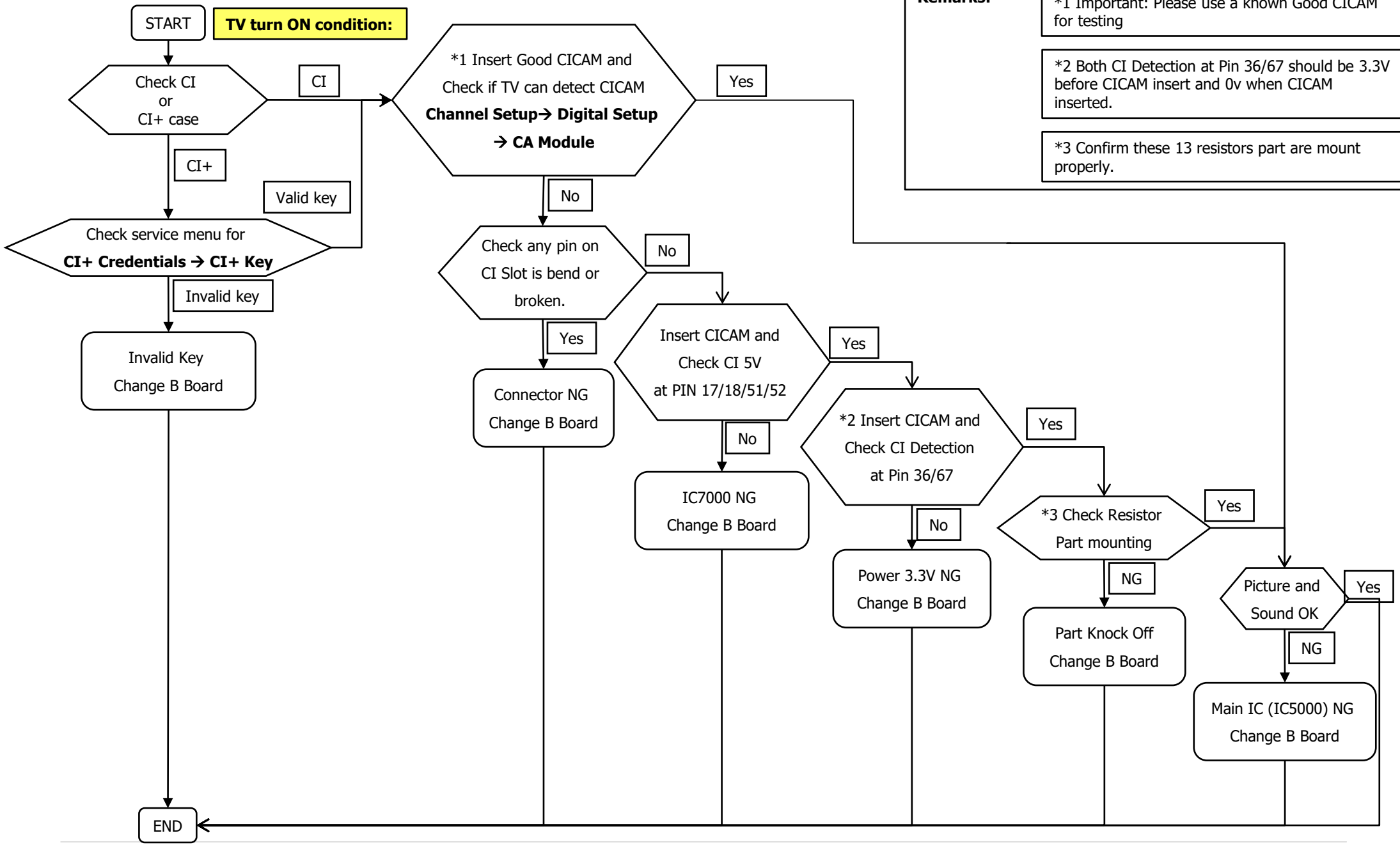
USB (B-board Checking) – Checking 5V Points

Board Name	Board PWB (A side)	Detail
BBA		

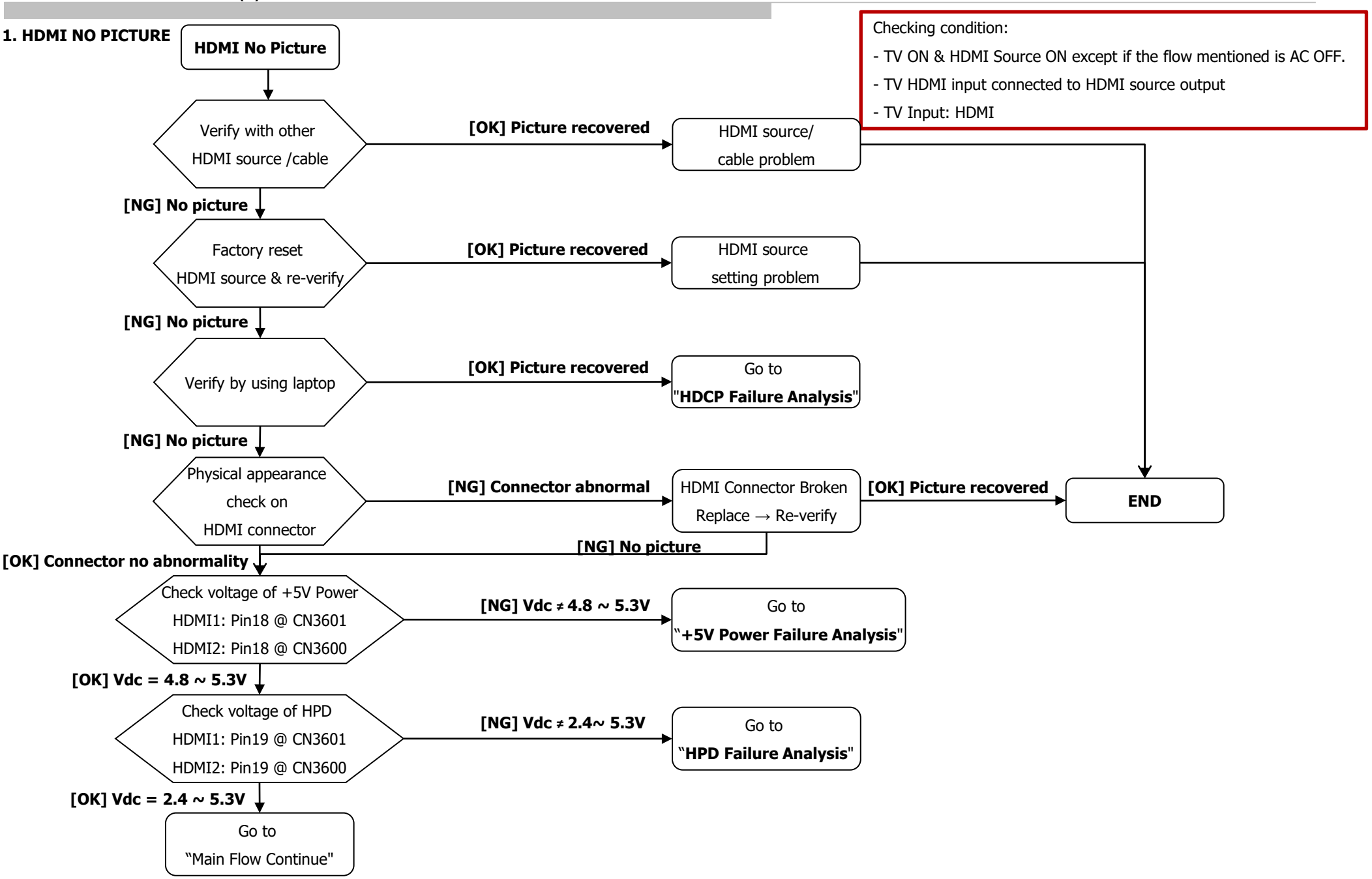
3-3-9 : Ethernet – No Connect



3-3-10 : CI Slot – No Detection / No Picture / No Sound

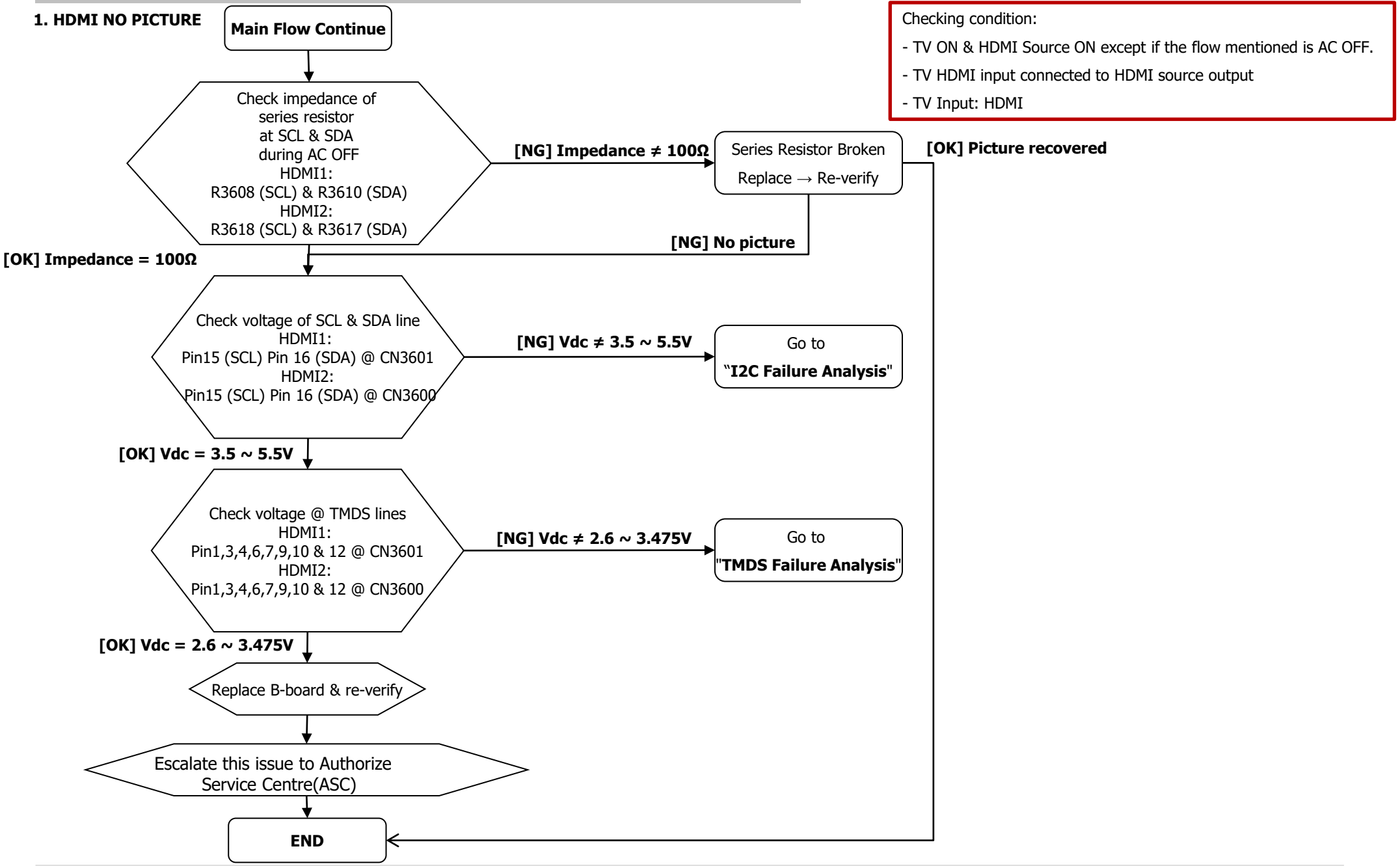


3-3-11. HDMI No Picture (a)



3-3-11. HDMI No Picture – Continue (b)

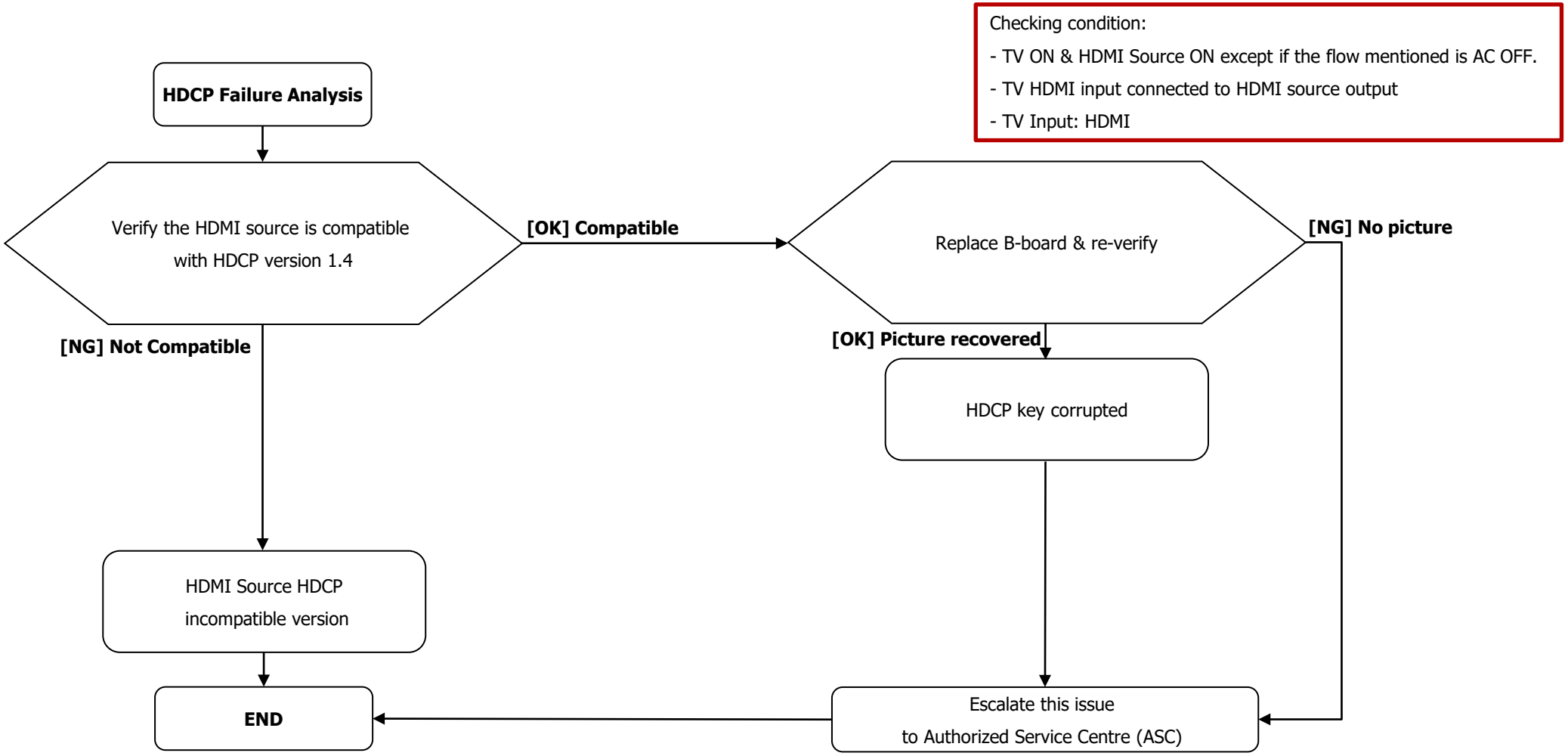
1. HDMI NO PICTURE



Checking condition:

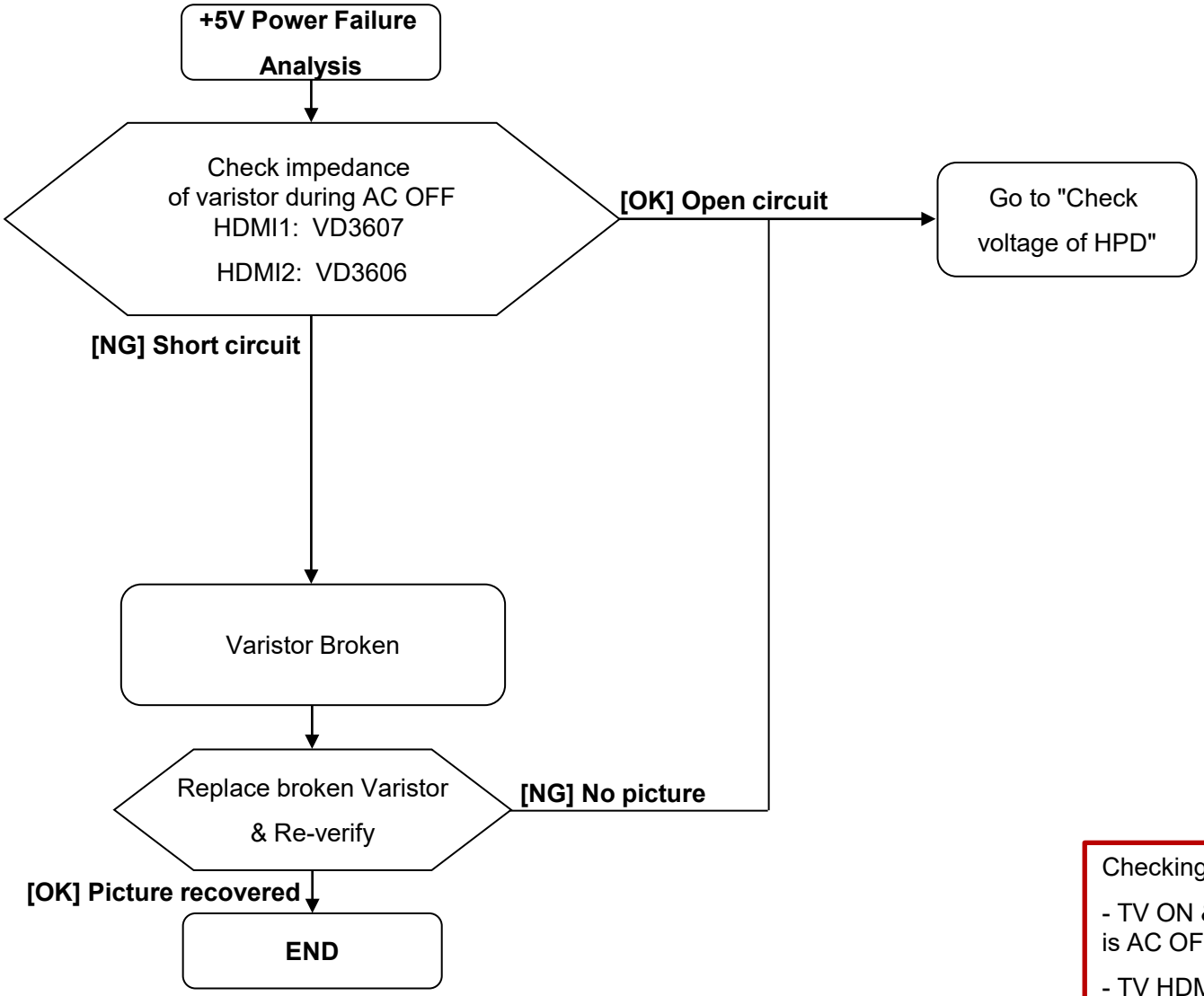
- TV ON & HDMI Source ON except if the flow mentioned is AC OFF.
- TV HDMI input connected to HDMI source output
- TV Input: HDMI

3-3-12. : **HDMI No Picture** – HDCP Failure Analysis



3-3-13. HDMI No Picture – +5V Power Failure Analysis

1. HDMI NO PICTURE



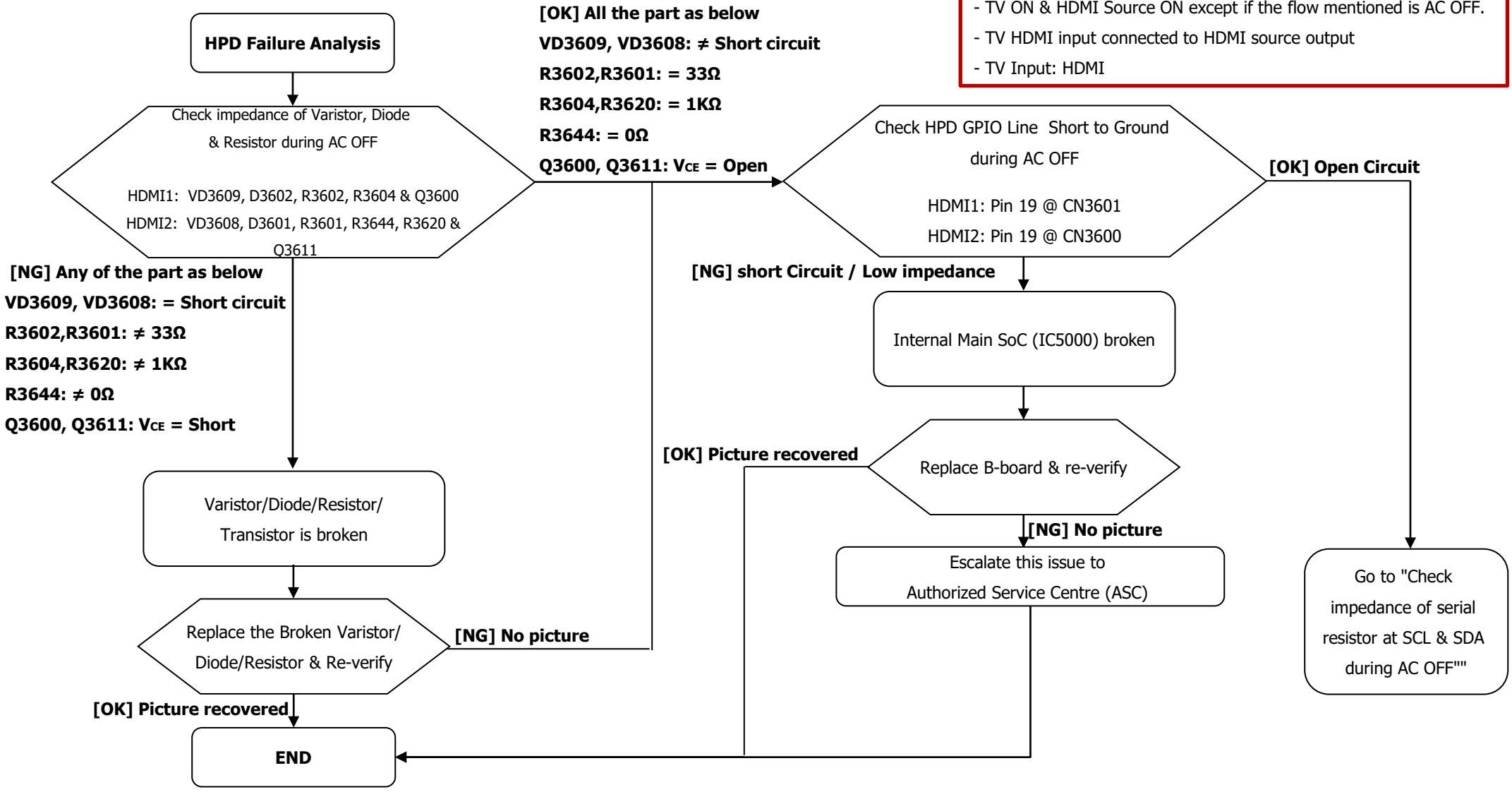
Checking condition:

- TV ON & HDMI Source ON except if the flow mentioned is AC OFF.
- TV HDMI input connected to HDMI source output
- TV Input: HDMI

3-3-14 : HDMI No Picture – HPD Failure Analysis

1. HDMI NO PICTURE

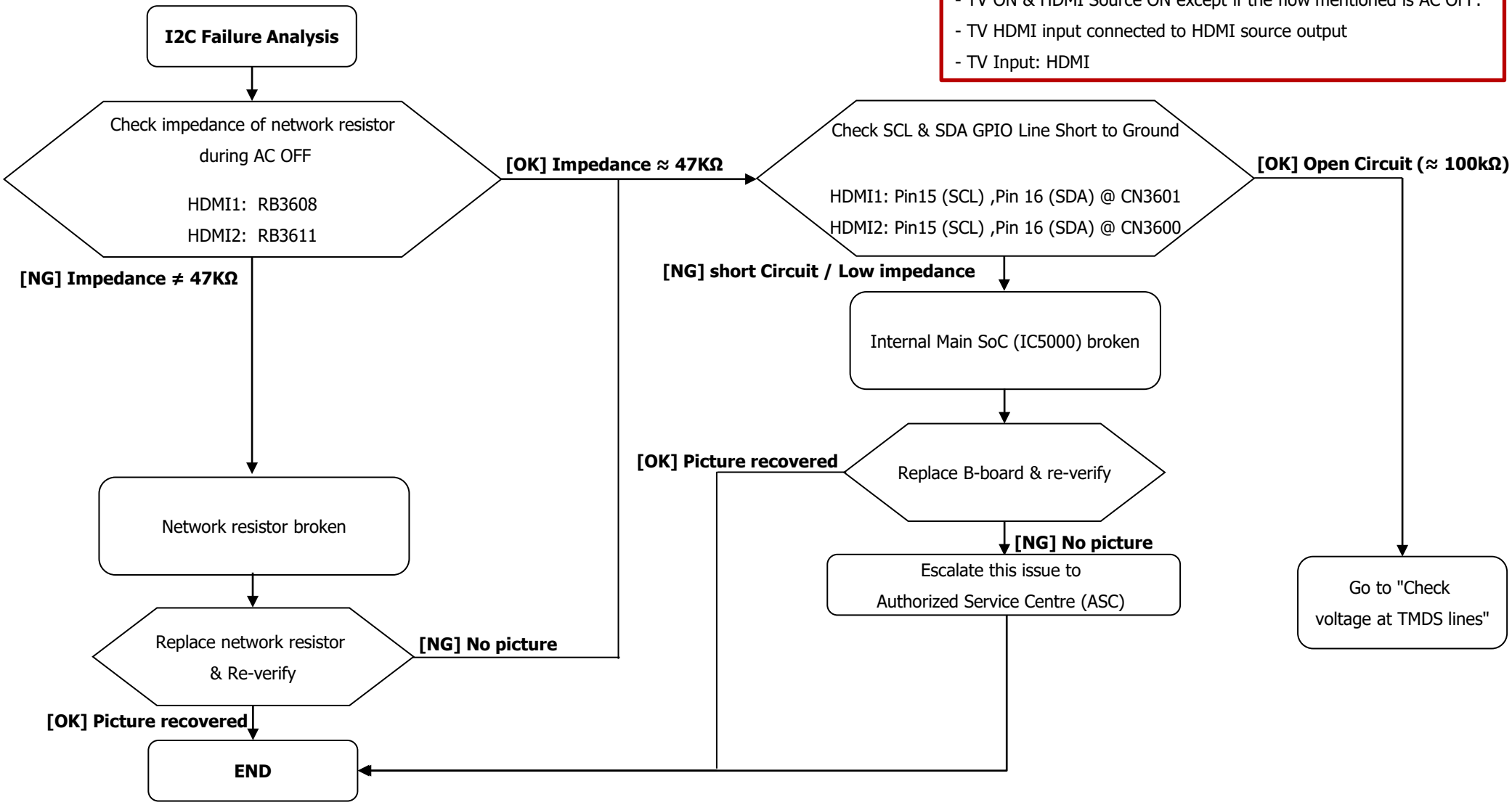
Checking condition:
- TV ON & HDMI Source ON except if the flow mentioned is AC OFF.
- TV HDMI input connected to HDMI source output
- TV Input: HDMI



3-3-15 : HDMI No Picture – I2C Failure Analysis

1. HDMI NO PICTURE

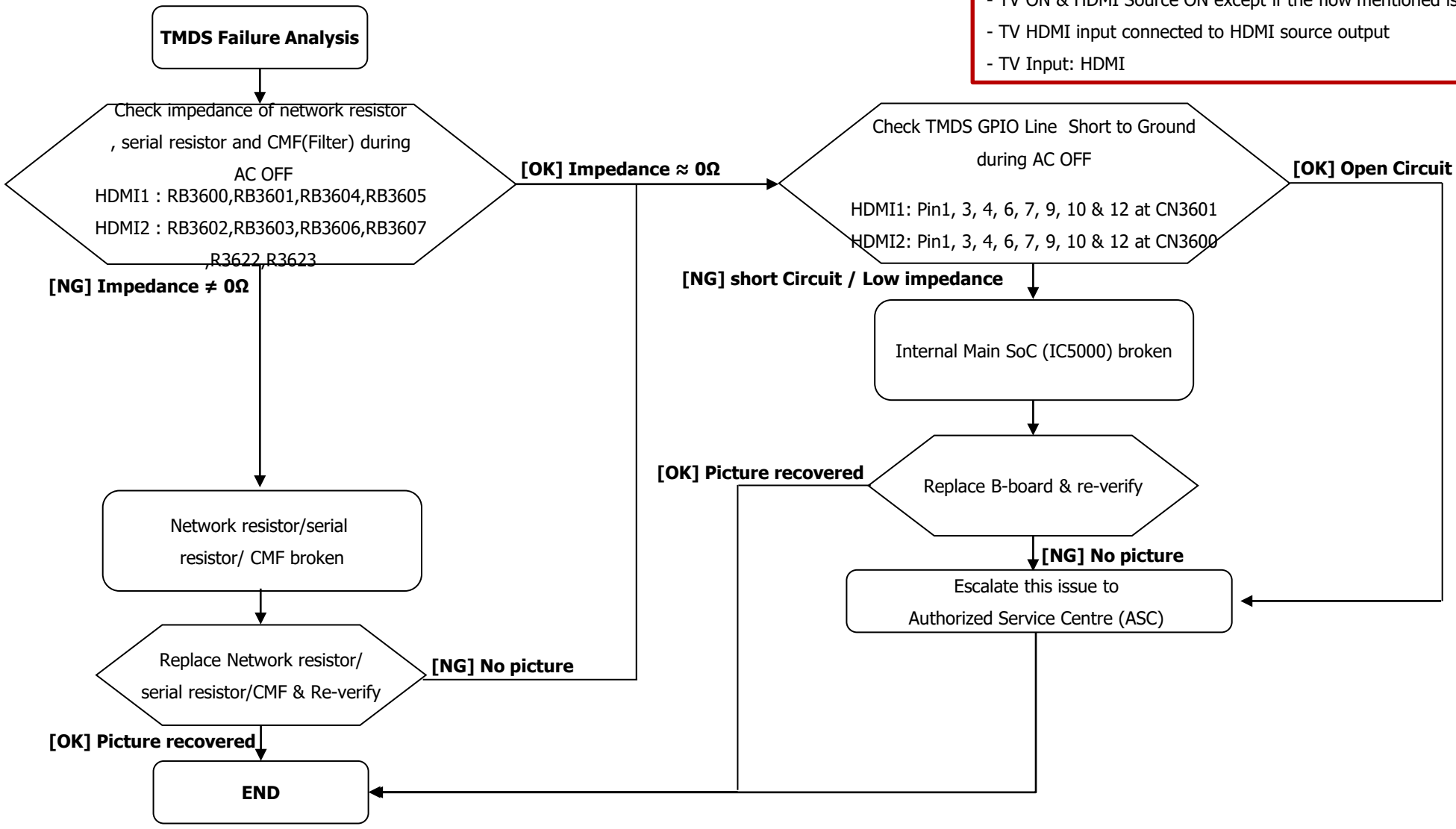
Checking condition:
- TV ON & HDMI Source ON except if the flow mentioned is AC OFF.
- TV HDMI input connected to HDMI source output
- TV Input: HDMI



3-3-16 : HDMI No Picture – TMDS Failure Analysis

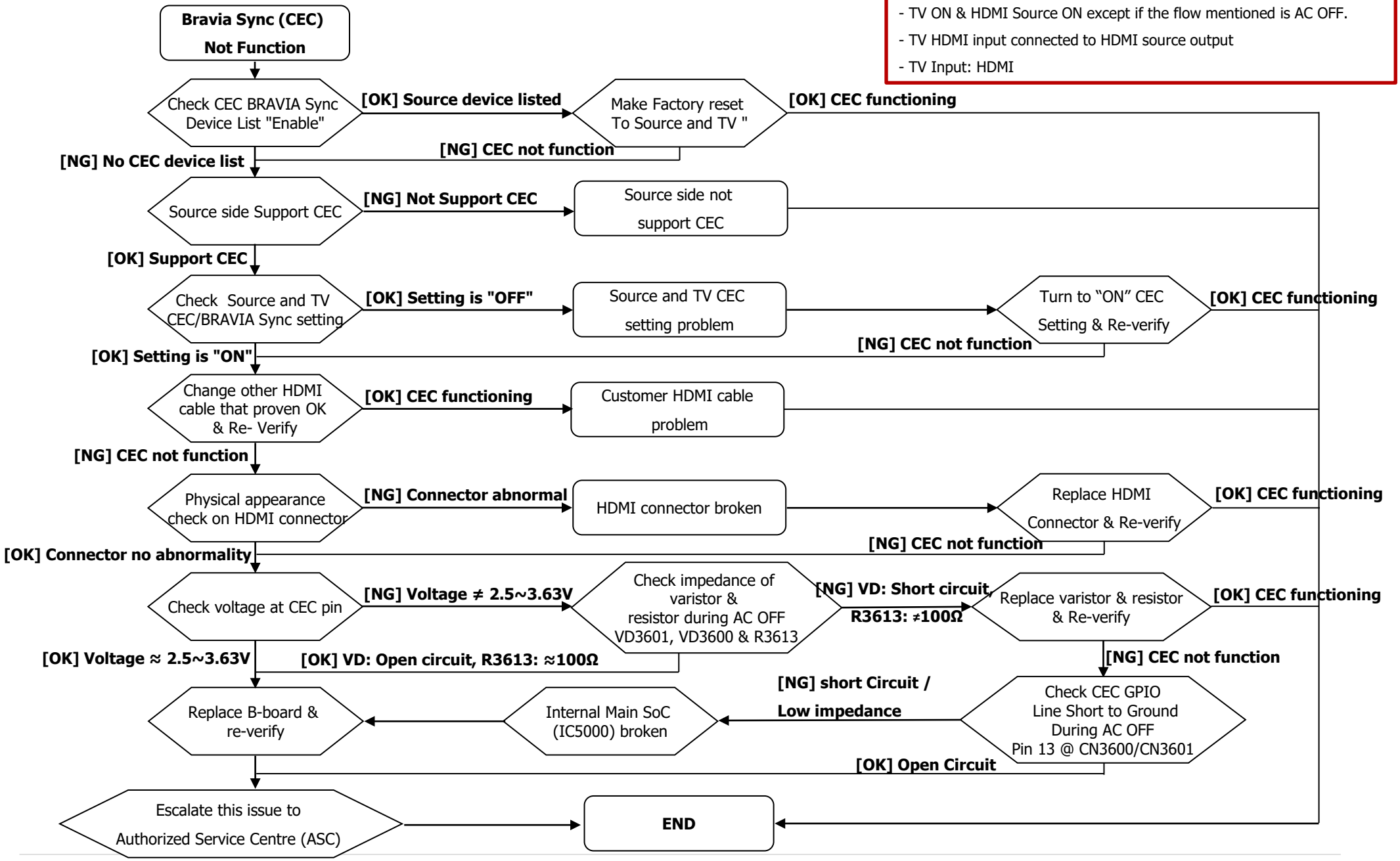
1. HDMI NO PICTURE

Checking condition:
- TV ON & HDMI Source ON except if the flow mentioned is AC OFF.
- TV HDMI input connected to HDMI source output
- TV Input: HDMI



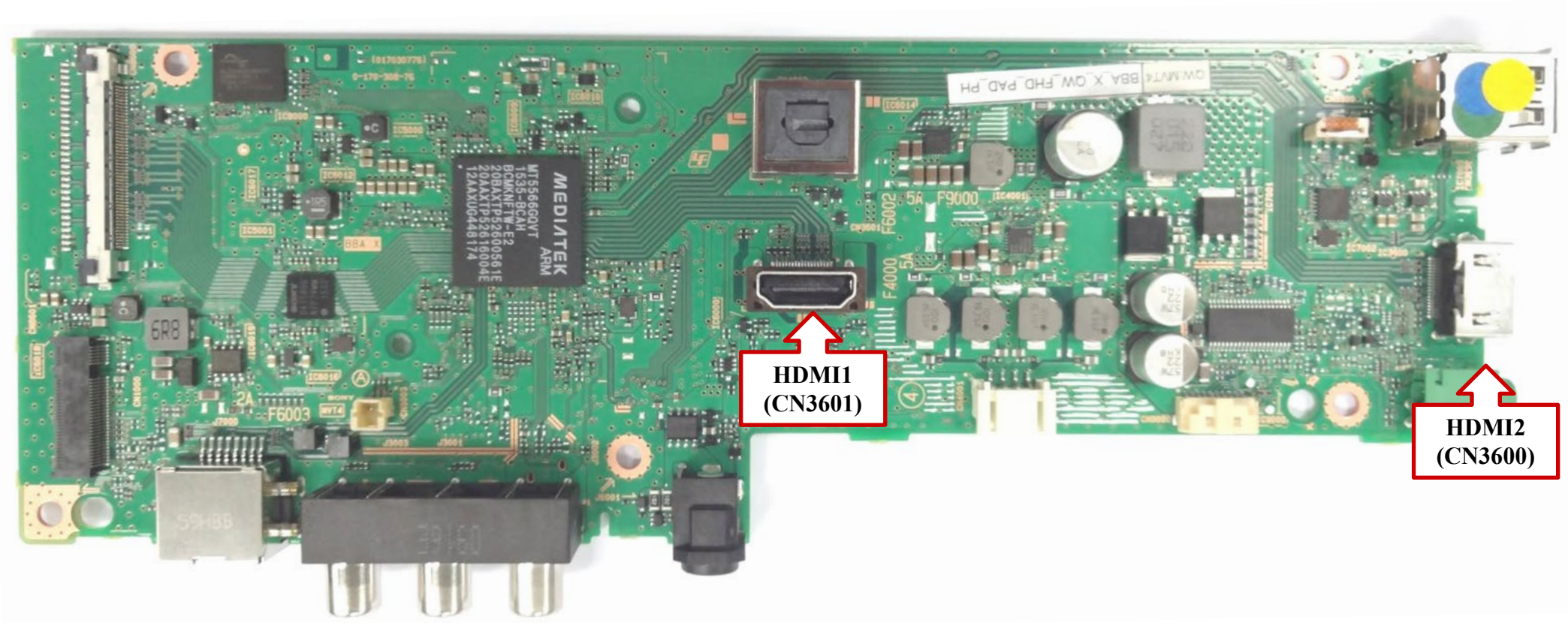
3-3-17 : CEC Not Function- Bravia Sync (CEC) not function- HDMI

Checking condition:
- TV ON & HDMI Source ON except if the flow mentioned is AC OFF.
- TV HDMI input connected to HDMI source output
- TV Input: HDMI



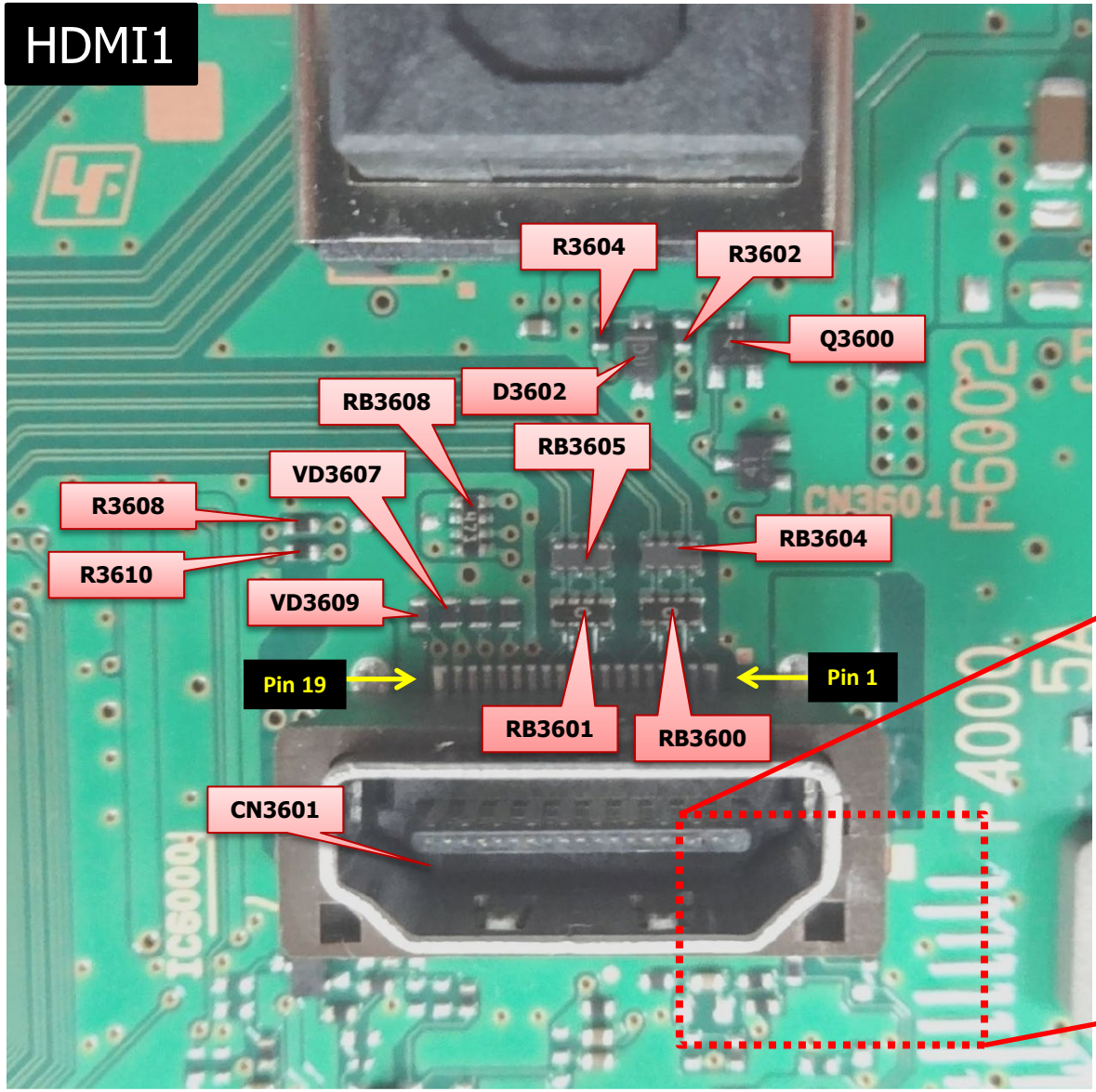
HDMI No Picture- Checking Point[1/8]

BBA (Side A)



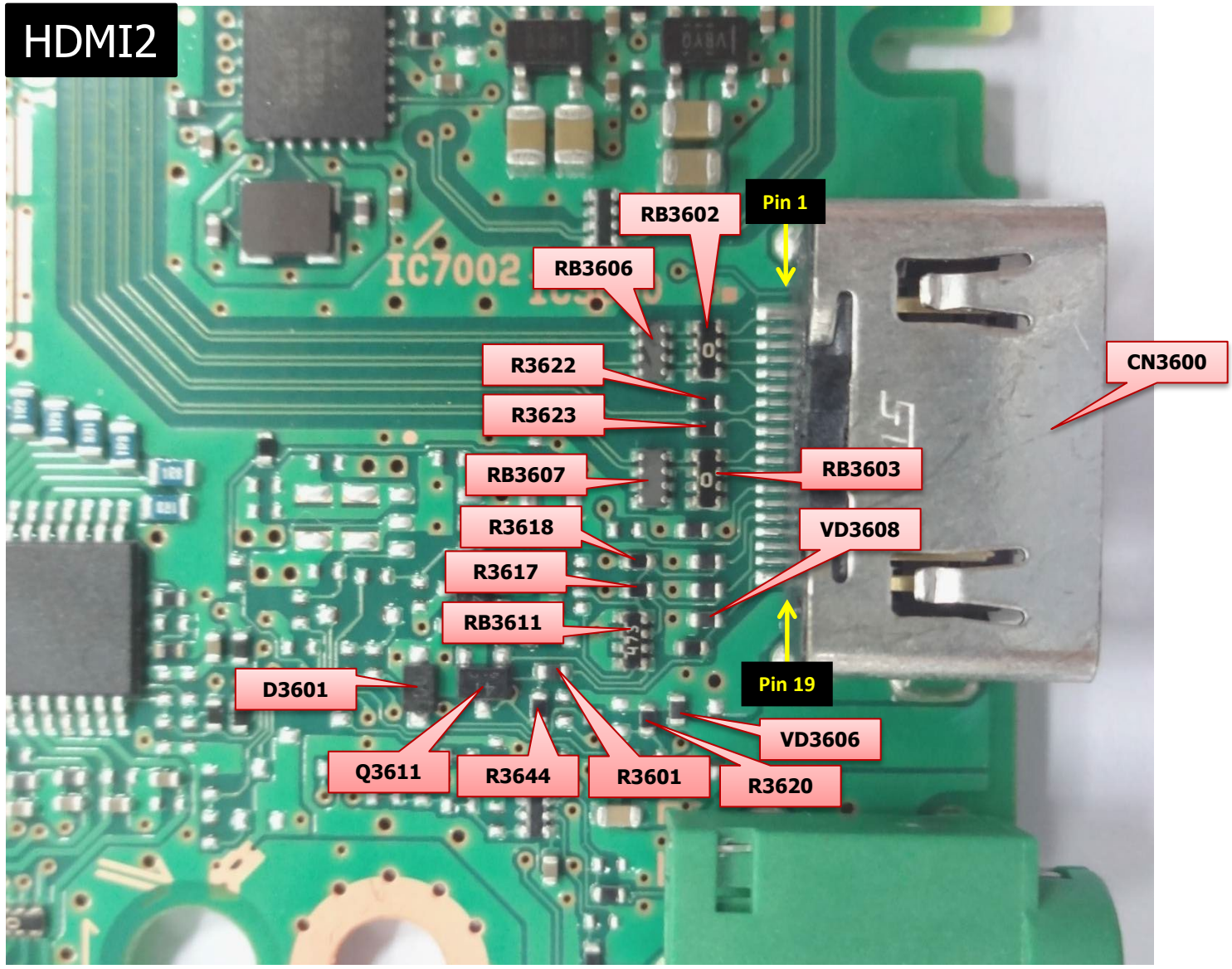
HDMI No Picture- Checking Point[2/8]

BBA (Side A)

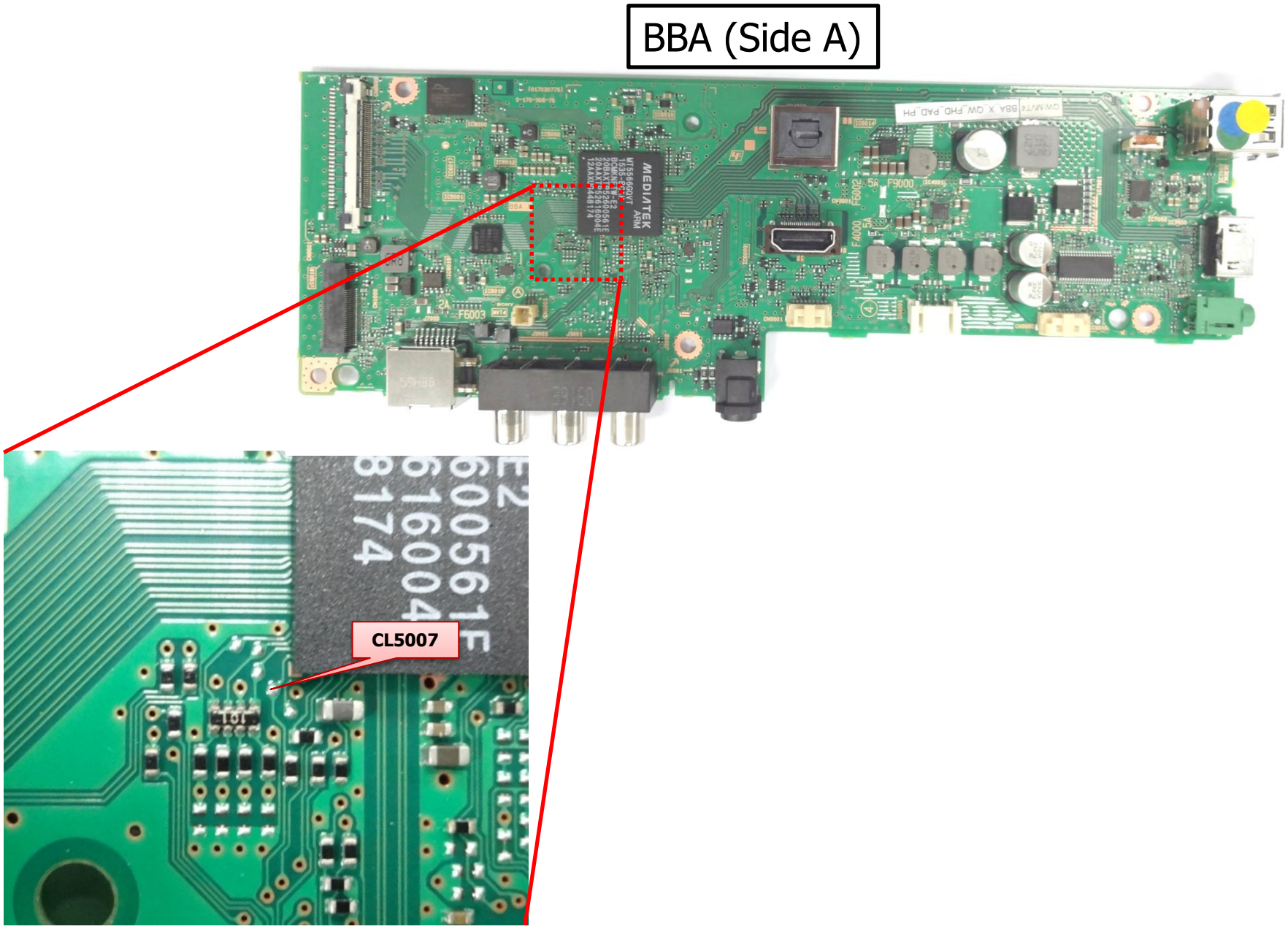


HDMI No Picture- Checking Point[3/8]

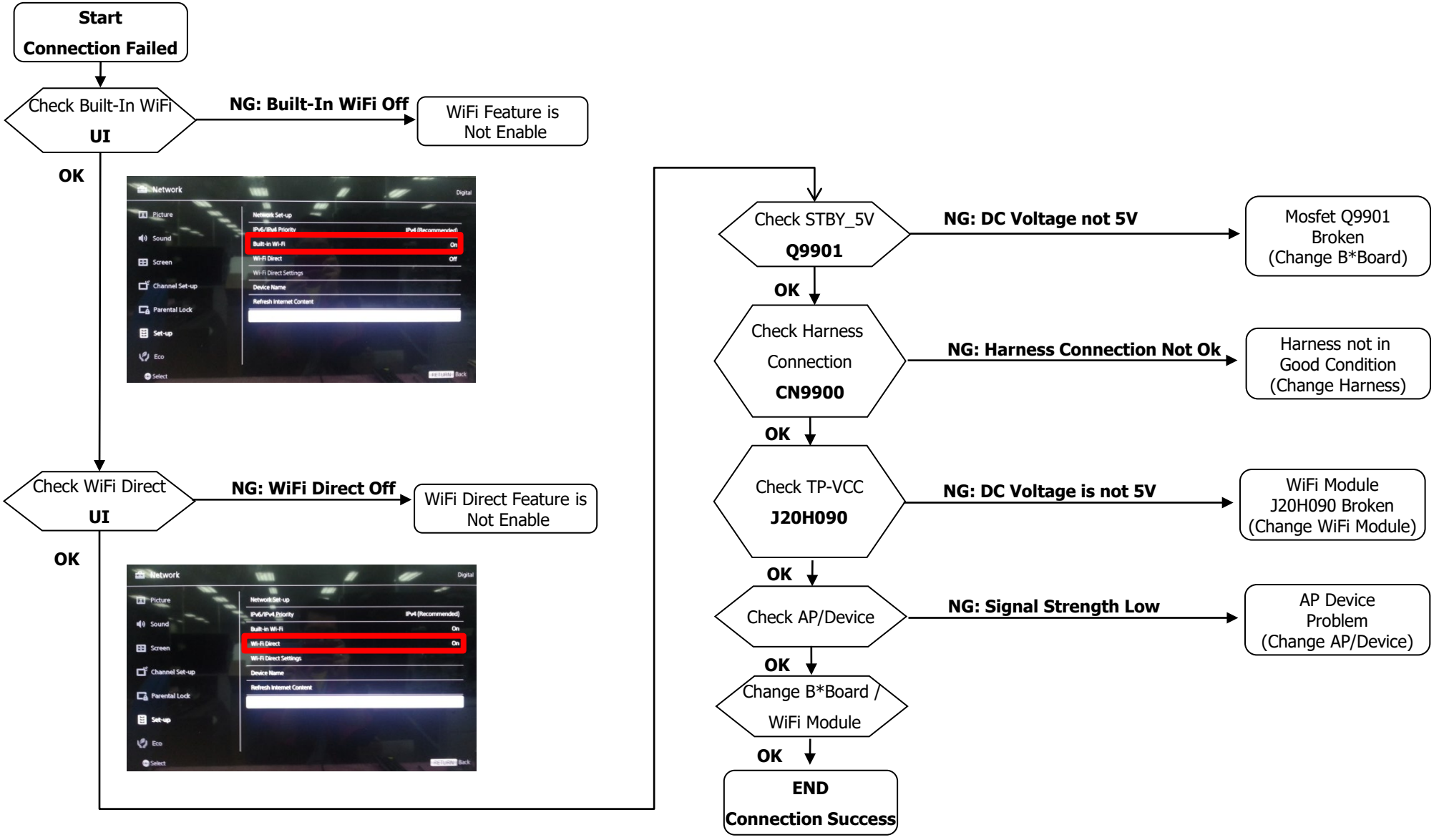
BBA (Side A)



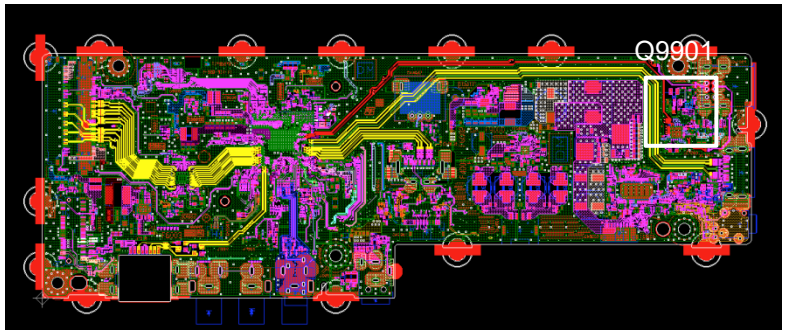
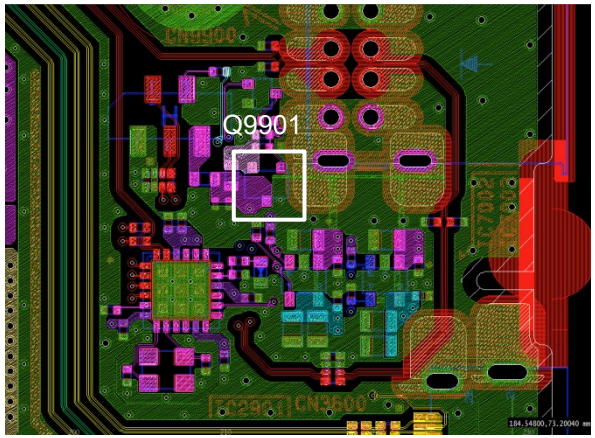
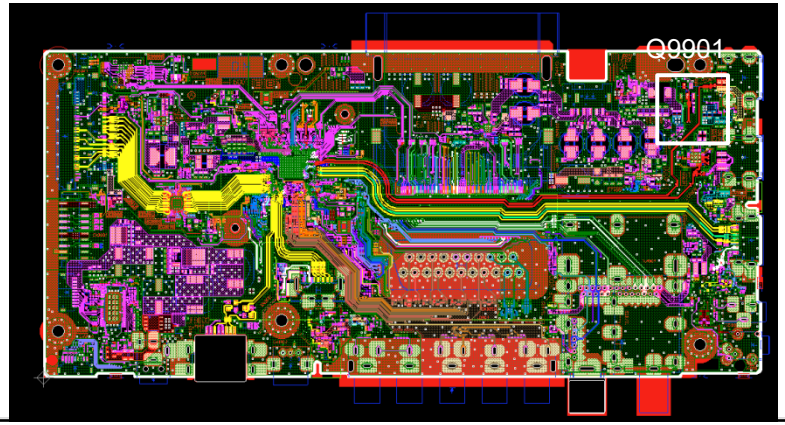
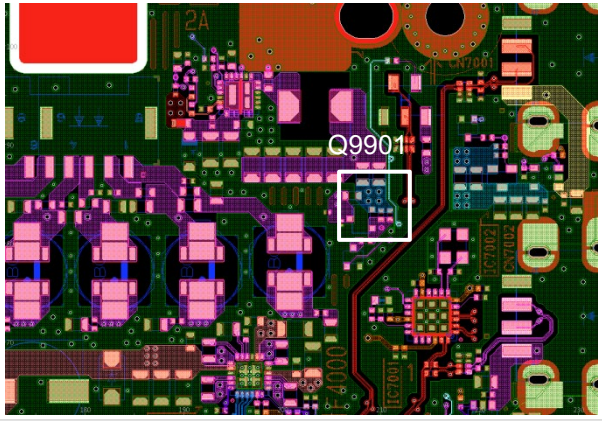
HDMI No Picture- Checking Point[4/8]



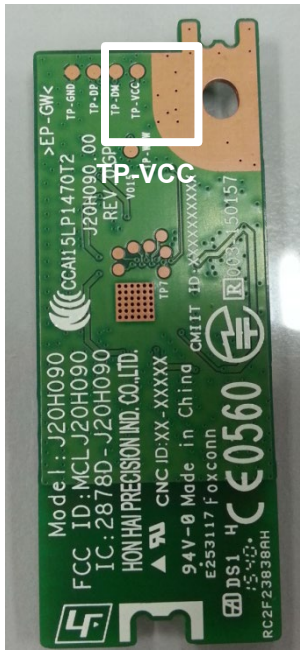
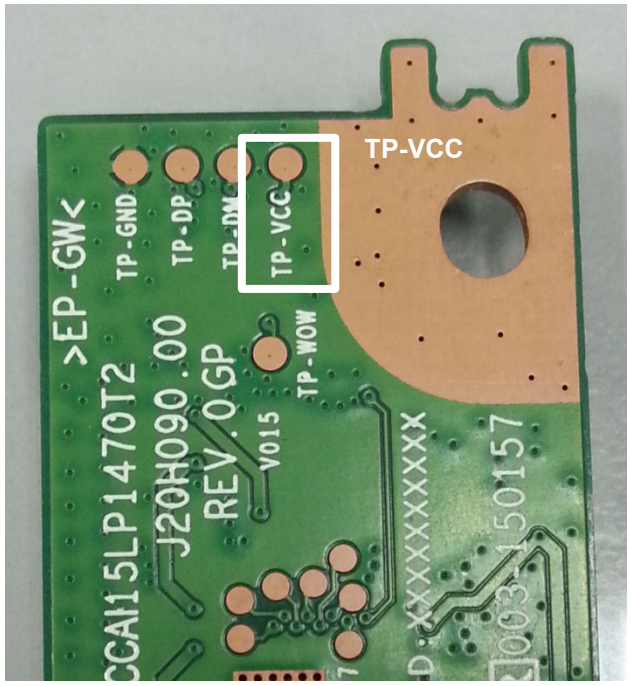
3-3-19. Wi-Fi- Cannot Search Device - Connection Failed



Wi-Fi- Cannot Search Device - Connection Failed – Checking Point [1/2]

Board Name	Board PWB (A side)	Detail
B*Board (BBA) Q9901	BBA 	
B*Board (BB3) Q9901		

Wi-Fi- Cannot Search Device - Connection Failed – Checking Point [2/2]

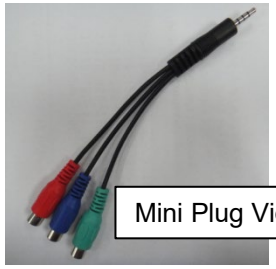
Board Name	Board PWB (B side)	Detail
WiFi Module J20H090		

3-3-21. Video Analog Signal Path - No Picture

Checking condition:
1) Video/Composite/CVBS Condition:
- TV ON & Video/CVBS/Composite input cable is connected to Video/CVBS/Composite source output.
- TV UI Display : Video
2) Component Condition:
- -TV ON & Component input cable is connected to Component source output.
- TV UI Display : Component

No Picture or Abnormal Picture

Reinsert Mini Plug Video Adaptor until hear "click" sound



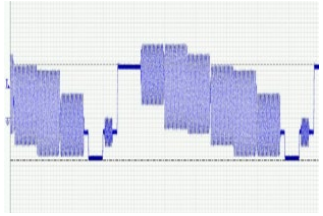
Mini Plug Video Adaptor

Video No Picture

Check waveform before C3031? Is it Vpp : 1V?

No → (IC5000 NG) Change Board

Yes



Check all parts at CVBS1P signal path. [VD3004,R3031, C3030,R3034]

No → Parts Broken. (Change Part)

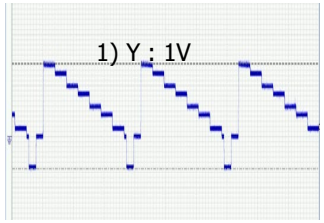
Yes → J3002 connector Problem. (Change connector)

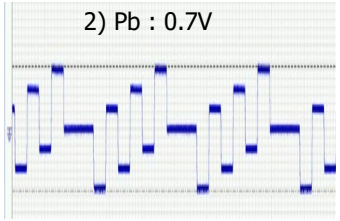
Component No Picture

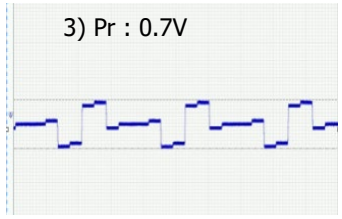
Check Vpp waveform at 1) C3001 for Y : 1V? 2) C3005 for Pb :0.7V? 3) C3007 for Pr :0.7V?

No → (IC5000 NG) Change Board

Yes





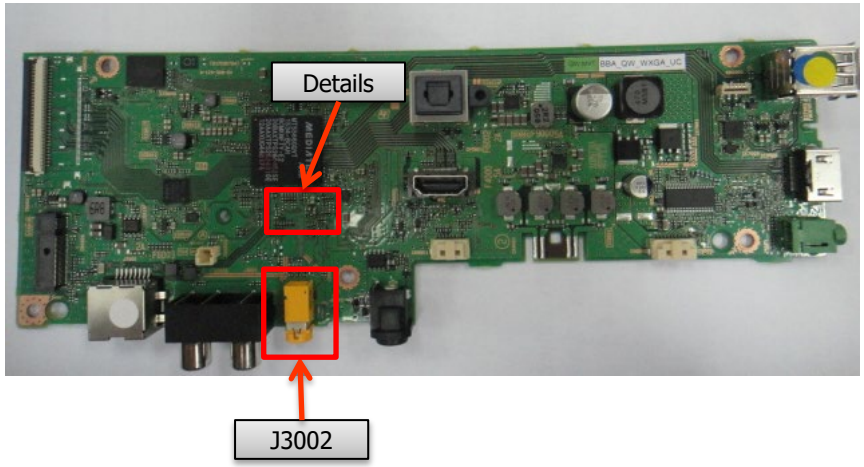
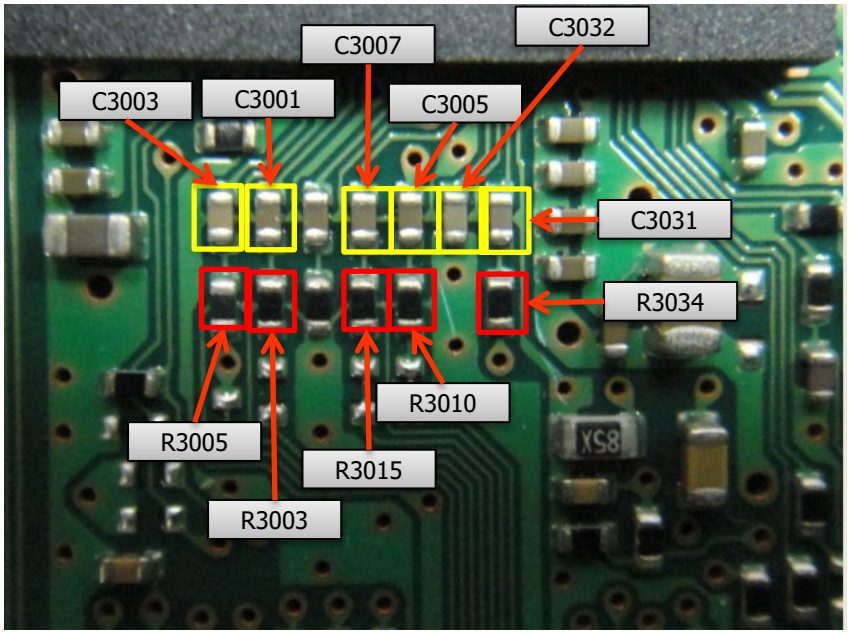
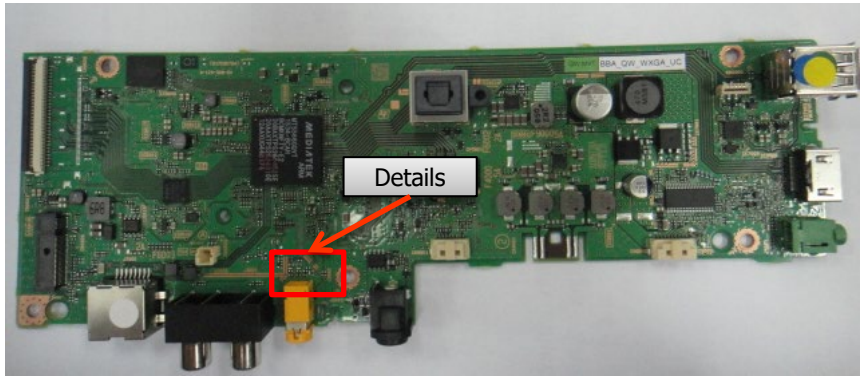
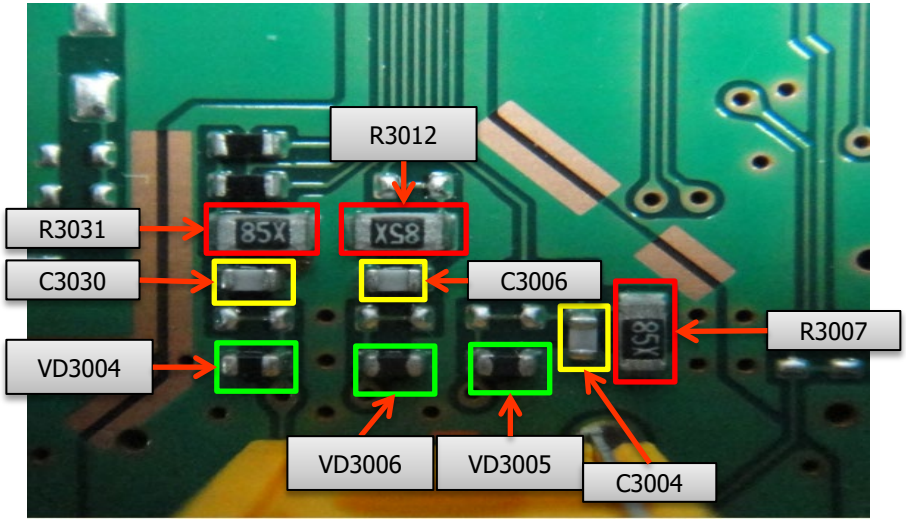


Check all parts. Y: VD3004,R3031,C3030 R3005,C3003,R3003 PB: VD3005,R3007,C3004,R3010 PR: VD3006,R3012,C3006, R3015,C3007

No → Parts Broken. (Change Part)

Yes → J3002 connector Problem. (Change connector)

Video Analog Signal Path- No Picture

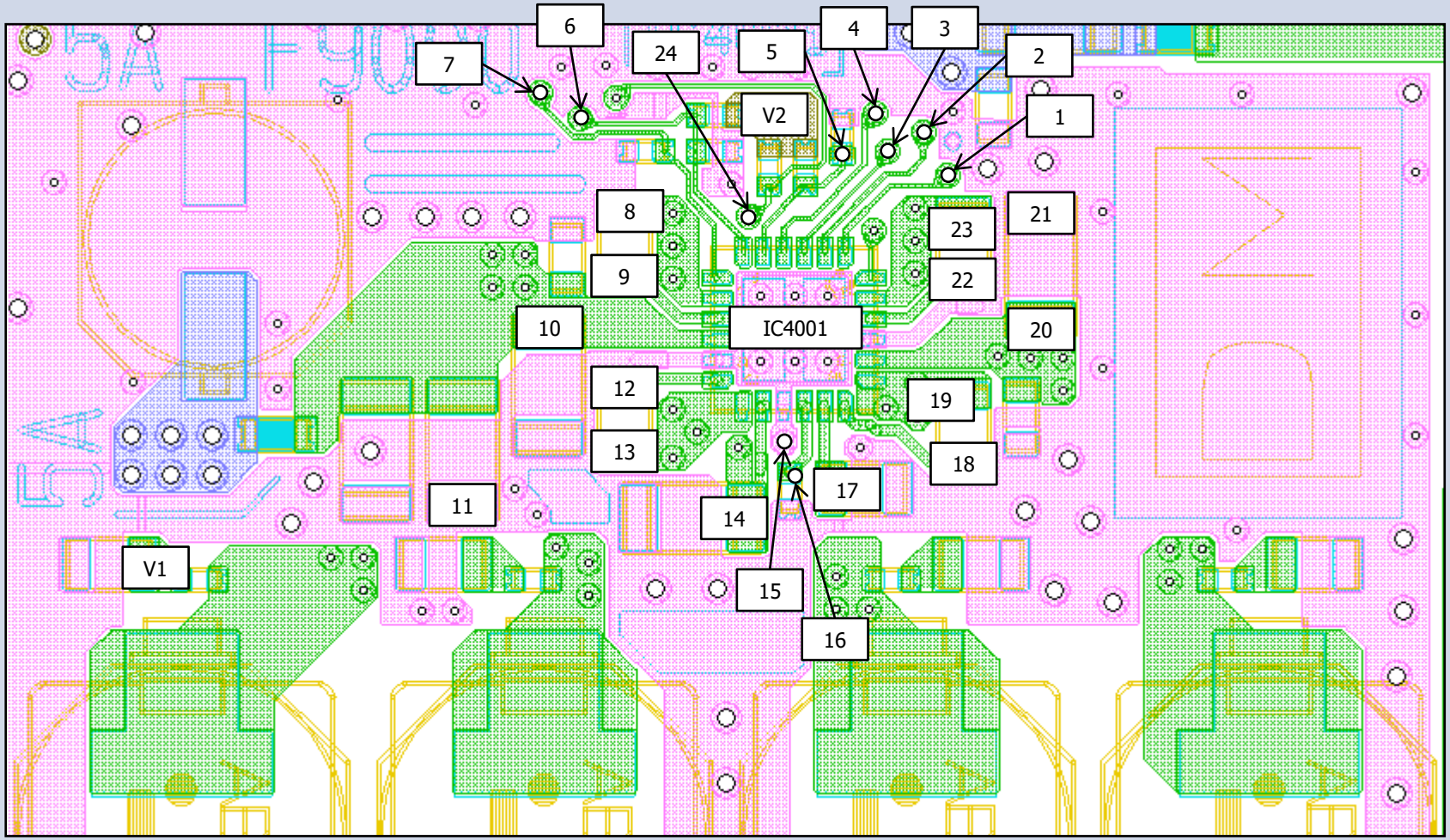
Board Name	Board PWB (A side)	Detail
BBA J3002 C3001 R3003 C3005 C3007 R3010 R3015 C3032 C3003 R3005 C3031 R3034		
BBA R3031 C3030 VD3004 VD3005 C3004 R3007 VD3006 C3006 R3012		

3-4. No Sound

3-4-1. Audio D.Amp IC (IC4001) Normal Operation Condition - BBA board (1)

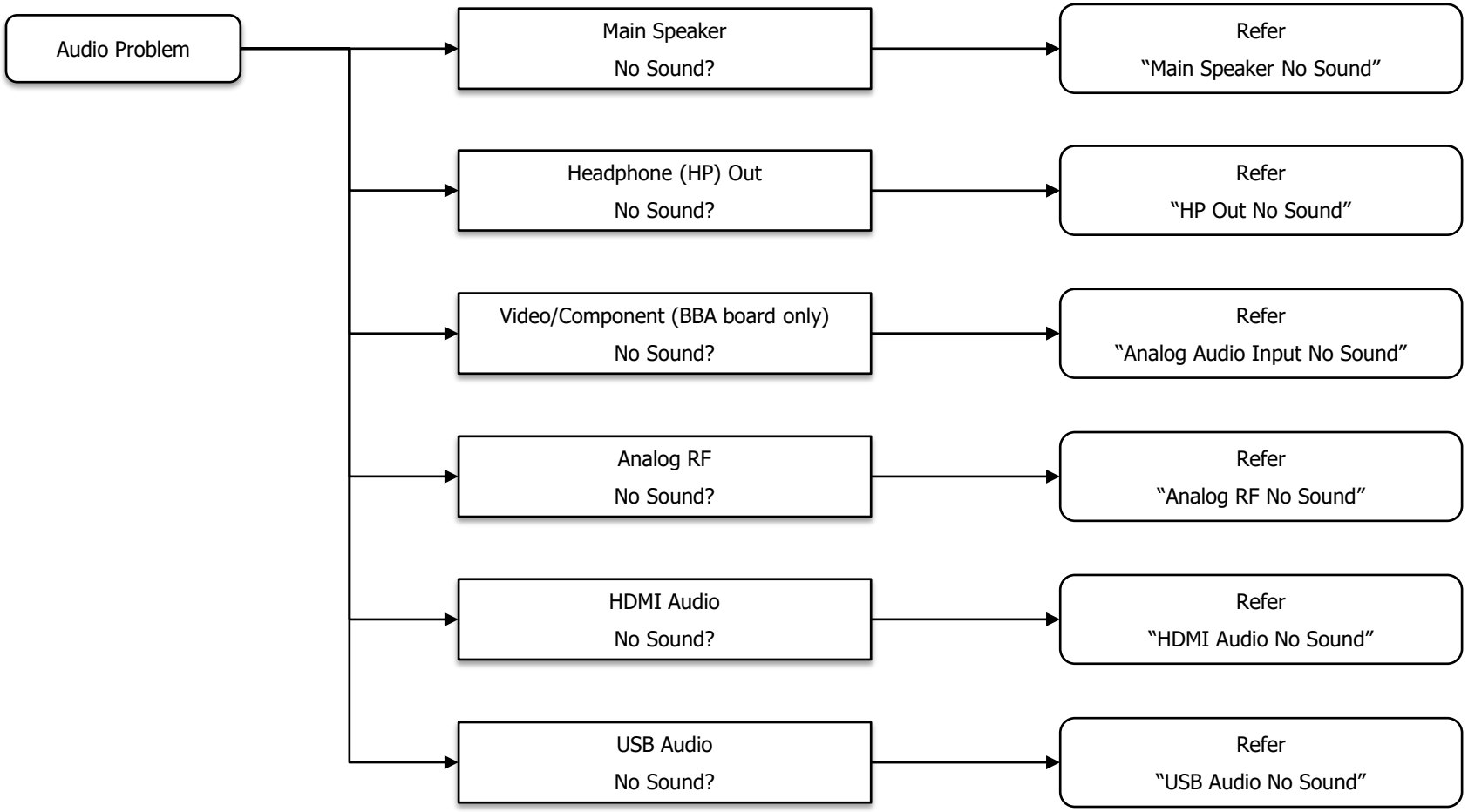
Label	Name	Normal Operation (Approx.)		Comment if abnormal operation
		Voltage	Frequency	
V1	19.5	19.5V	-	Check connection path between Drain of Q6020 to F4000
V2	3.3	3.3V	-	Check connection path between IC6009 to IC4001
1	MCLK	3.3Vpp	12.288MHz	Check connection path between IC5000 to IC4001
2	SDATA	3.3Vpp	Clock signal	Check connection path between IC5000 to IC4001
3	BCLK	3.3Vpp	3.07MHz	Check connection path between IC5000 to IC4001
4	LRCK	3.3Vpp	48kHz	Check connection path between IC5000 to IC4001
5	PLIMT	1.3V	-	Check connection path between IC6009 to IC4001
6	RSTX	3.3V	-	Check connection path between IC5000 to IC4001
7	MUTEX	3.3V	-	Check connection path between IC5000 to IC4001
8	OUT1P	9.6Vrms	768kHz	Check connection path between IC4001 pin8 to CN4001 pin1
9	BSP1P	14Vrms	-	Check connection between IC4001 pin 8 and pin 9
10	VCCP1	19.5V	-	Check connection path between Q6020 to IC4001
11	GNDP1	0V	-	-
12	BSP1N	14Vrms	-	Check connection between IC4001 pin 12 and pin 11
13	OUT1N	9.6Vrms	768kHz	Check connection path between IC4001 pin13 to CN4001 pin2
14	VCCA	19.5V	-	Check connection path between Q6020 to IC4001
15	GNDA	0V	-	-
16	REGD	5.0V	-	Check connection path between C4066 to GND
17	REGG	5.7V	-	Check connection path between C4067 to GND
18	BSP2P	14Vrms	-	Check connection between IC4001 pin 18 and pin 19
19	OUT2P	9.6Vrms	768kHz	Check connection path between IC4001 pin19 to CN4001 pin3
20	VCCP2	19.5V	-	Check connection path between Q6020 to IC4001
21	GNDP2	0V	-	-
22	BSP2N	14Vrms	-	Check connection between IC4001 pin 23 and pin 22
23	OUT2N	9.6Vrms	768kHz	Check connection path between IC4001 pin23 to CN4001 pin4
24	ERROR	3.3V	-	Check connection path between IC5000 to IC4001

Audio D.Amp IC (IC4001) Normal Operation Condition - BBA board (Checking Point)

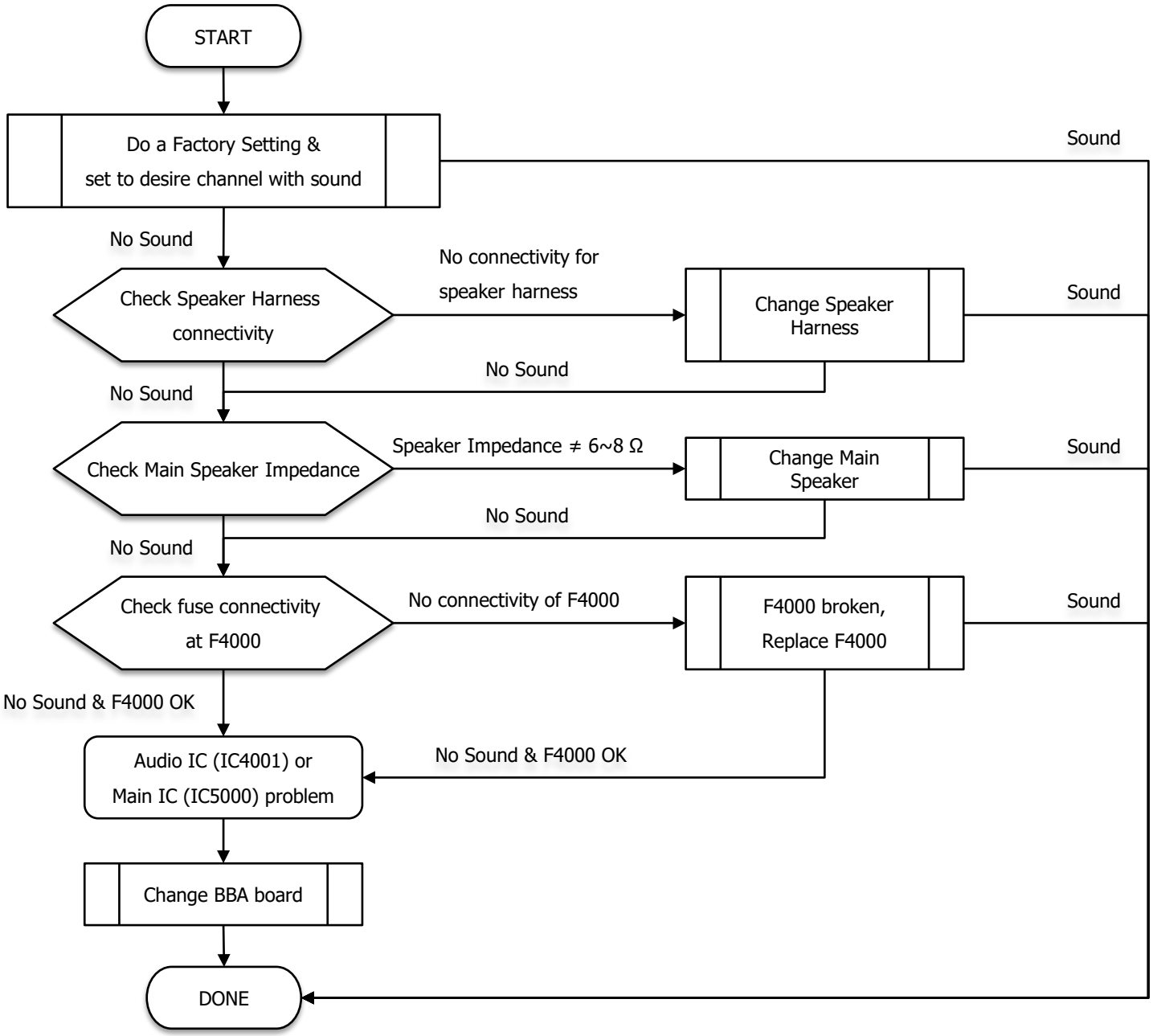
Board Name	Board PWB (A side)
BBA **IC4001**	

3-4. No Sound

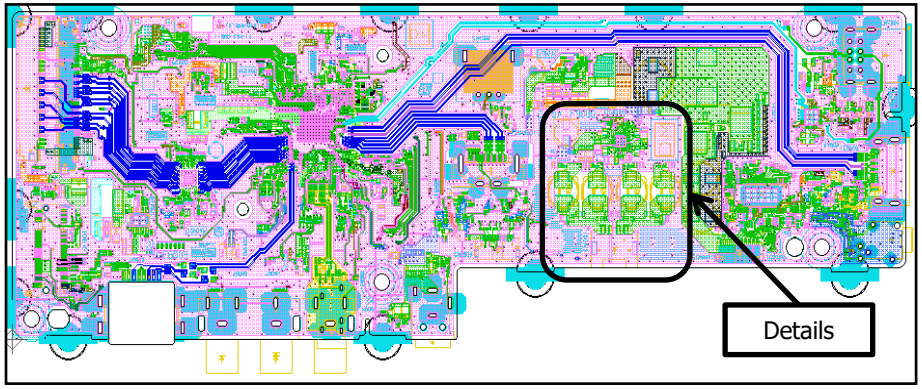
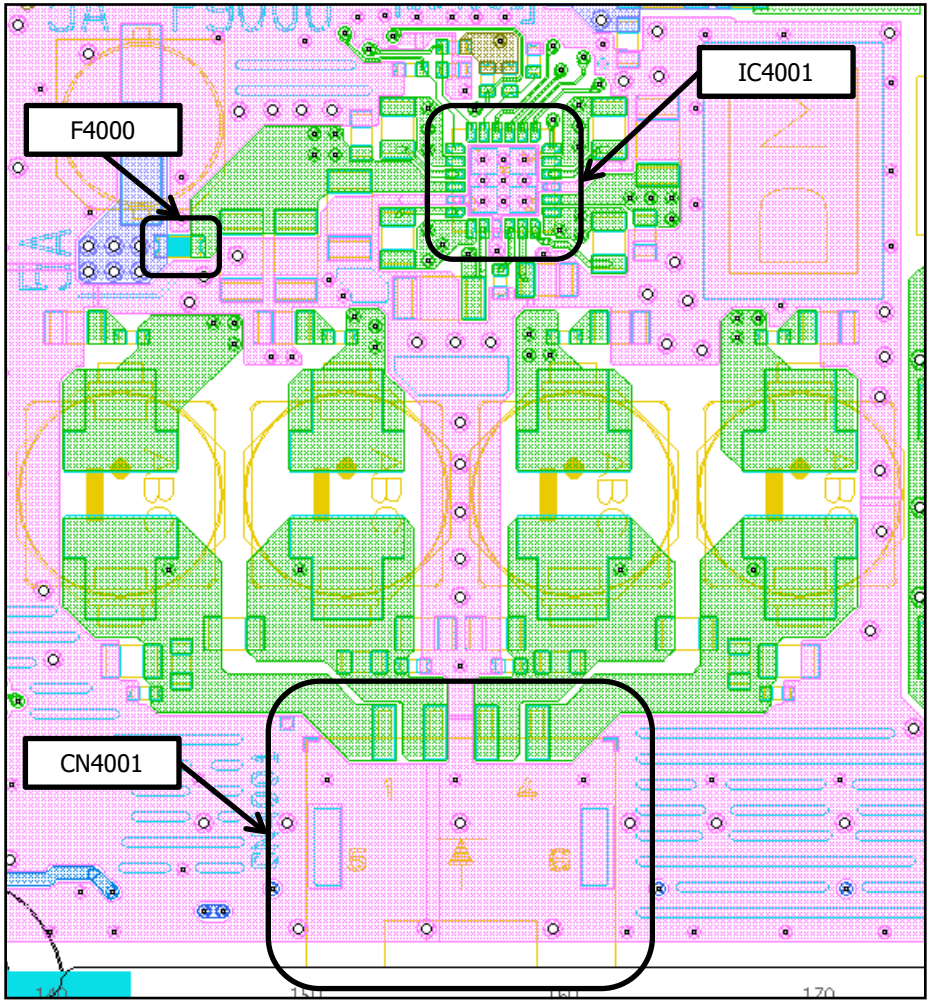
3-4-2 . Troubleshooting Detail Audio Problem (B board)



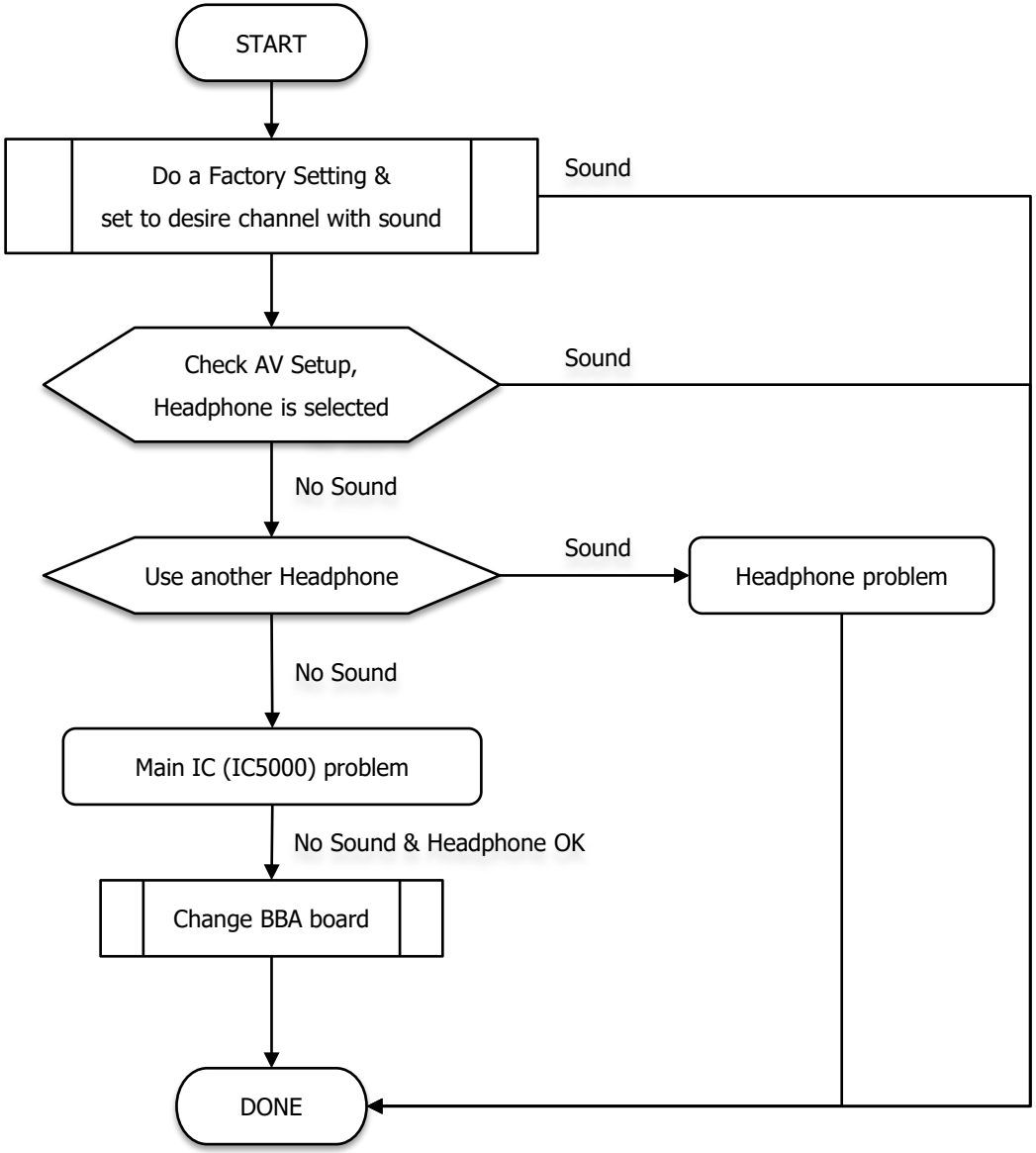
3-4-3. Audio Problem - Main Speaker No Sound (1)



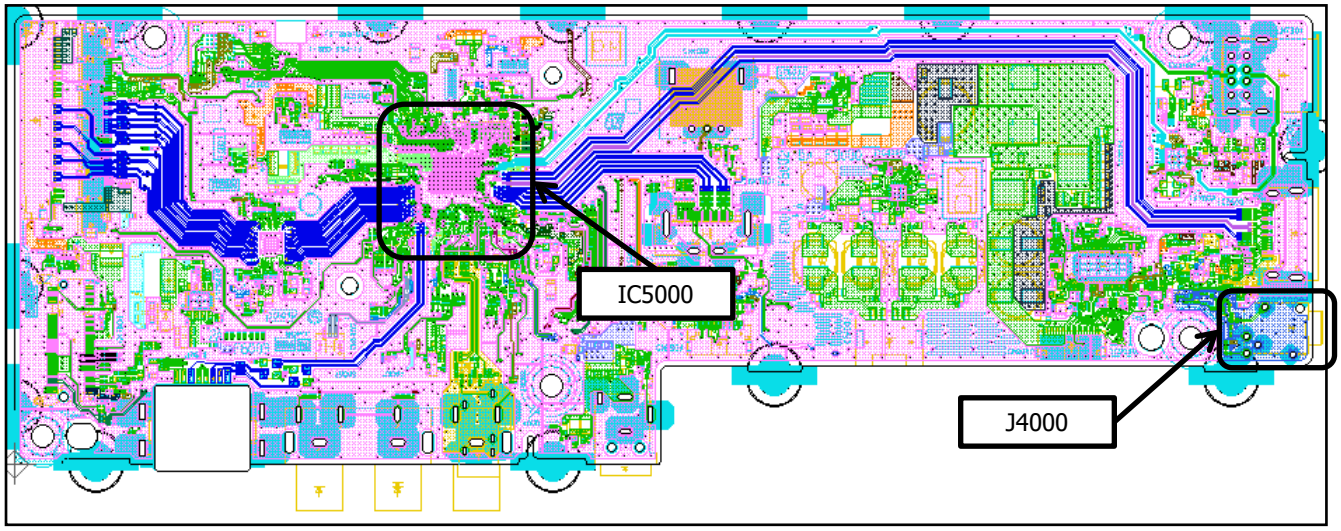
Audio Problem - Main Speaker No Sound (Checking Point)- BBA

Board Name	Board PWB (A side)	Details
BBA **IC4001** **F4000** **CN4001**		

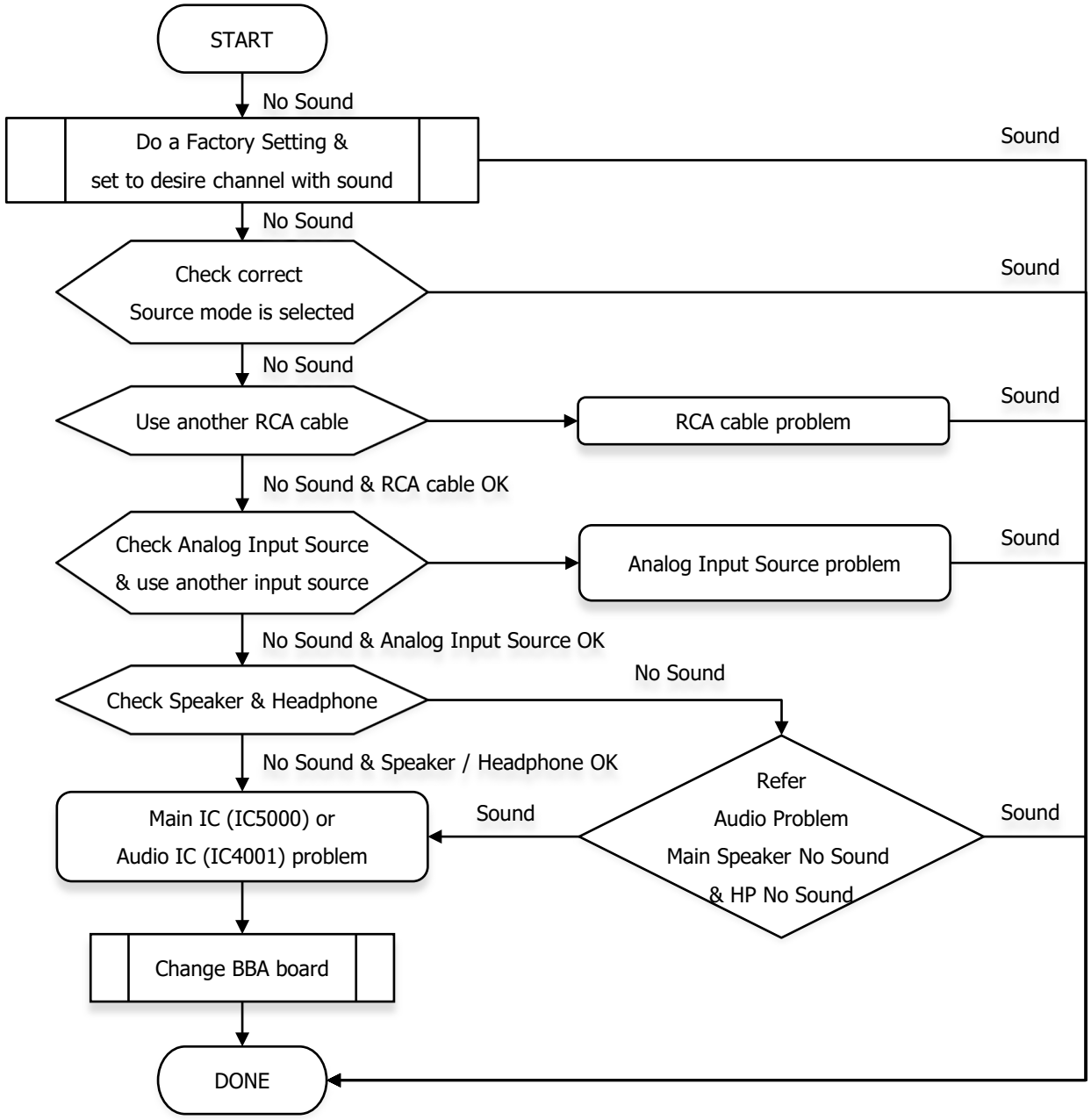
3-4-4. Audio Problem - Headphone (HP) Out No Sound



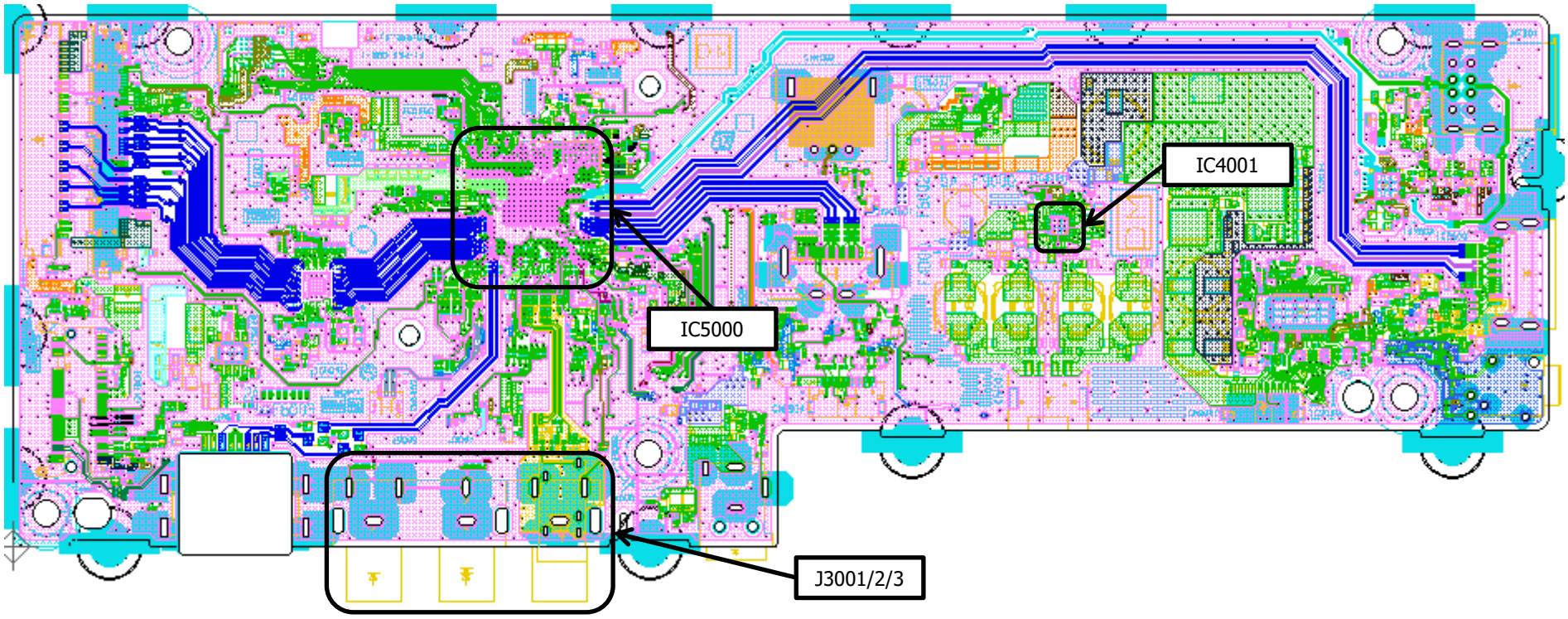
Audio Problem - Headphone (HP) Out No Sound (Checking Point)

Board Name	Board PWB (A side)
BBA **IC5000** **J4000**	

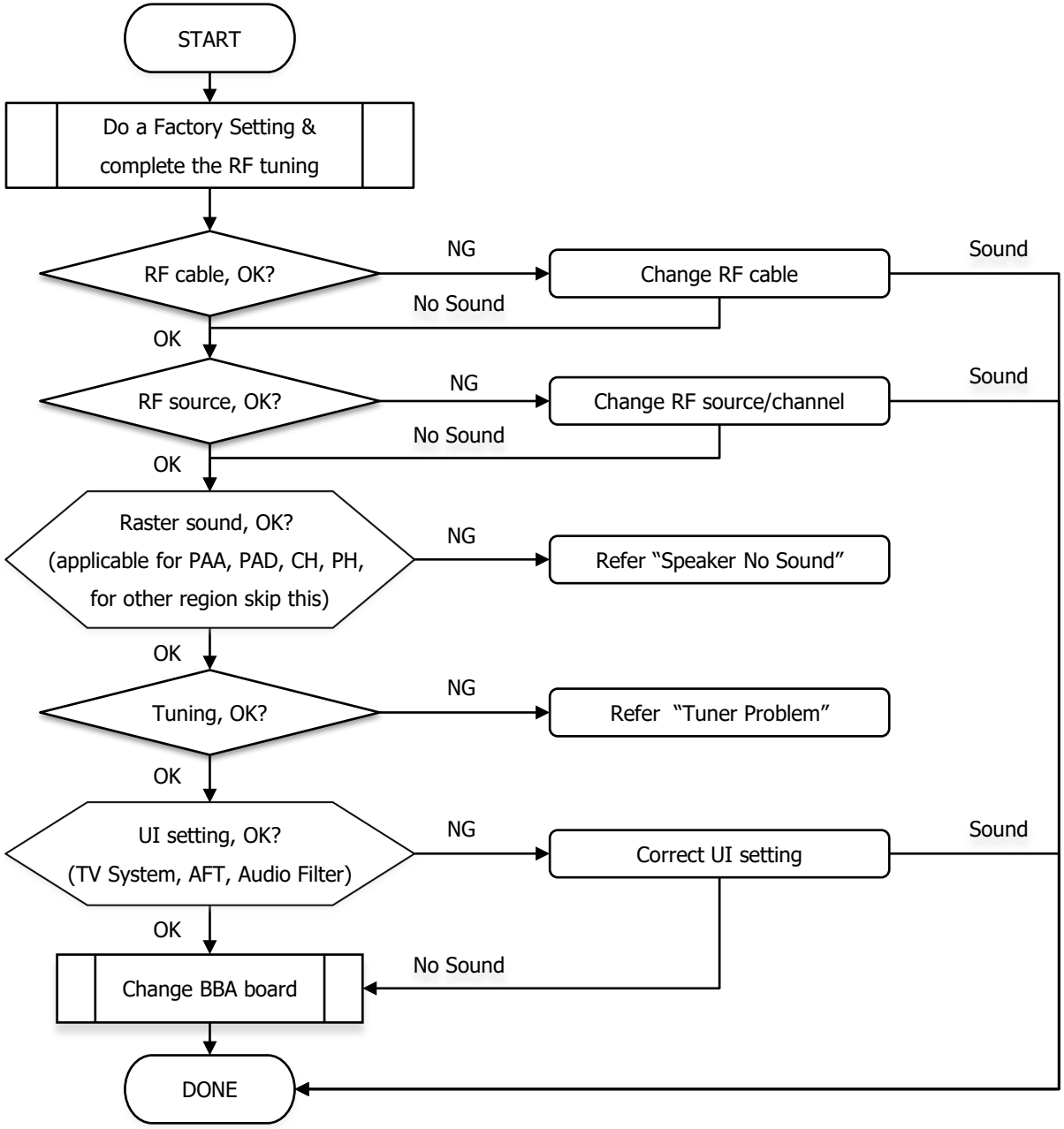
3-4-5. Audio Problem - Analog Audio Input No Sound [BBA board only]



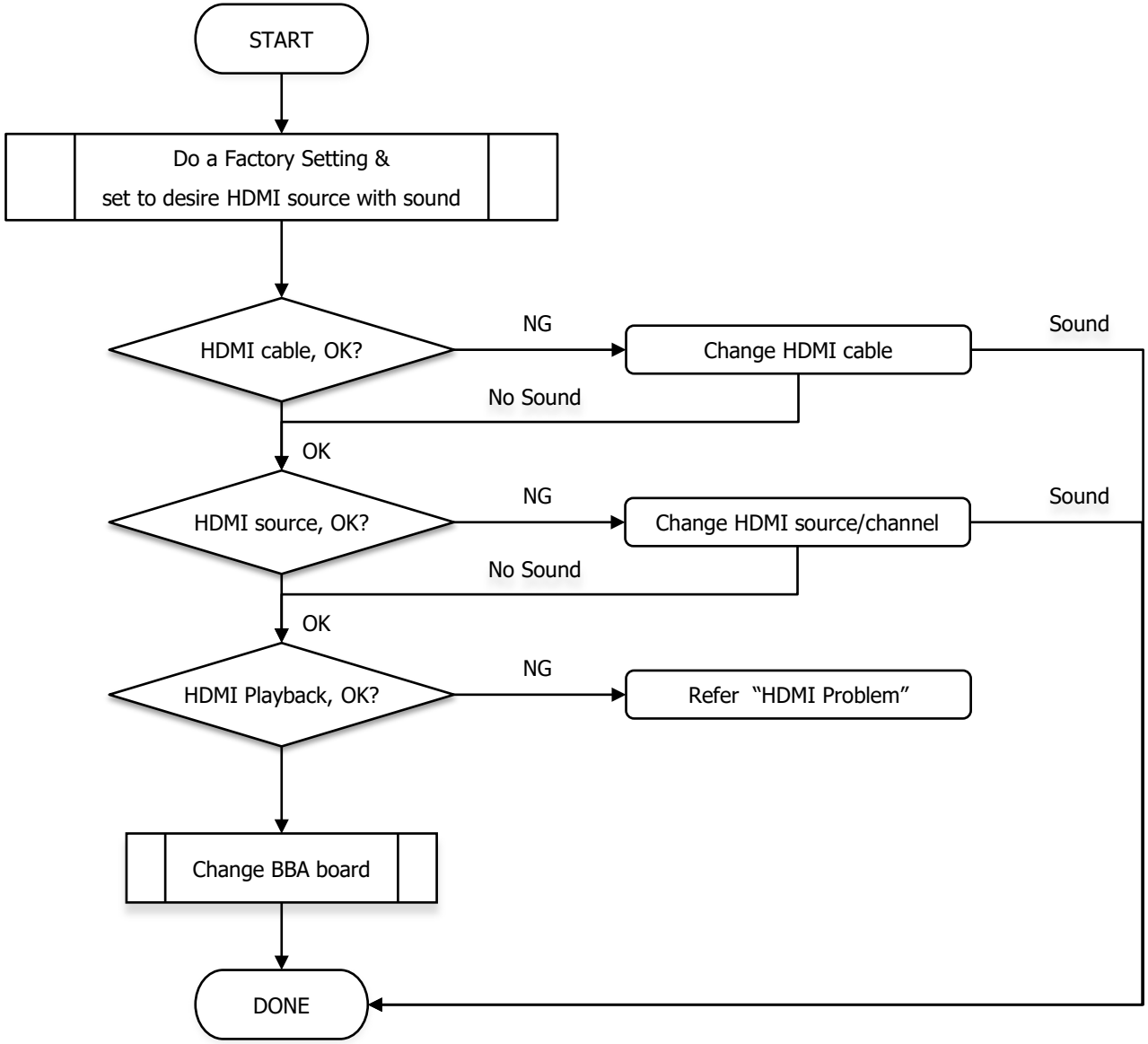
Audio Problem - Analog Audio Input No Sound [BBA board only] (Checking Point)

Board Name	Board PWB (A side)
BBA IC5000 J3001/2/3	

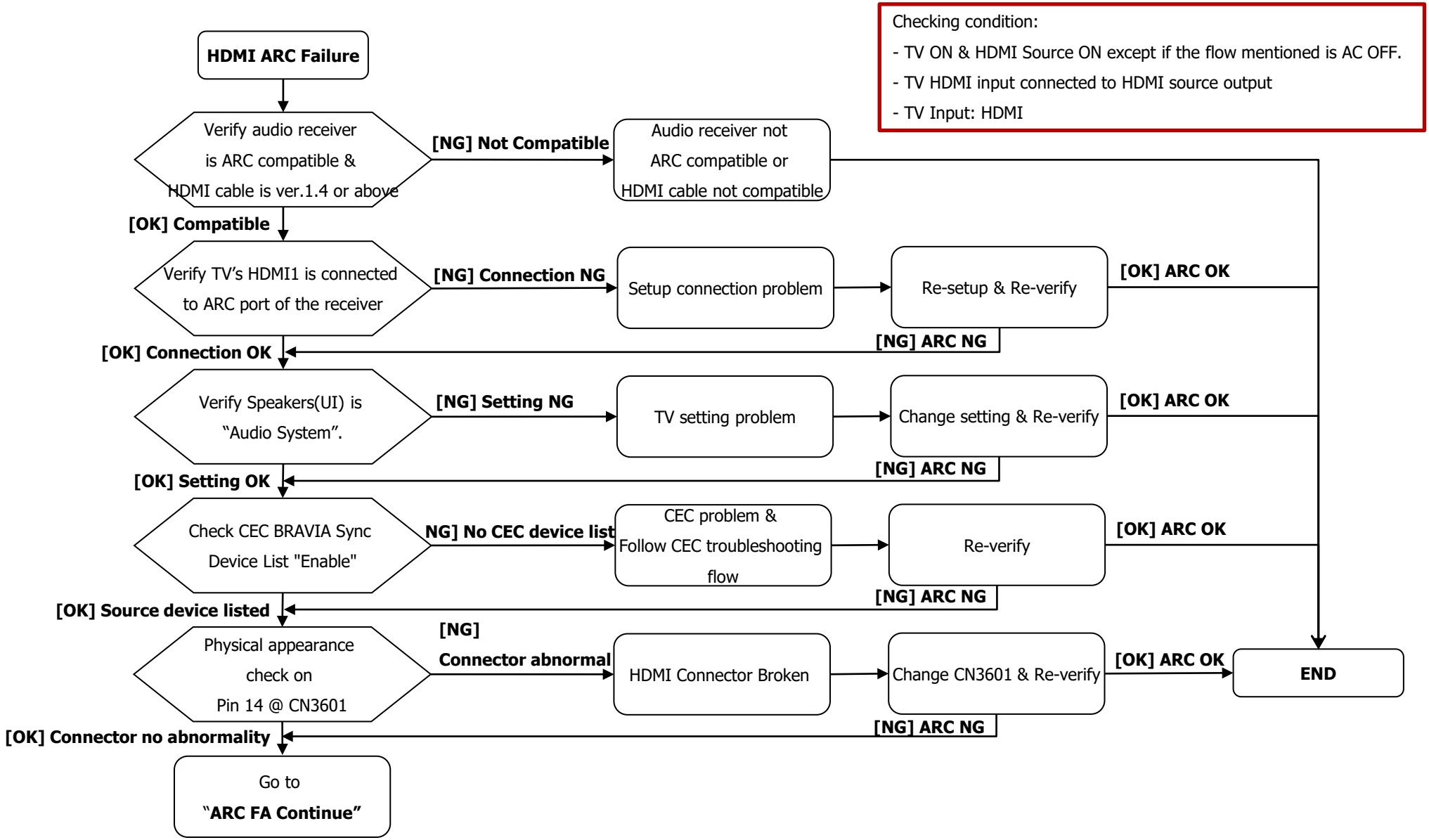
3-4-6. Audio Problem - Analog RF No Sound



3-4-7. Audio Problem - HDMI Audio No Sound



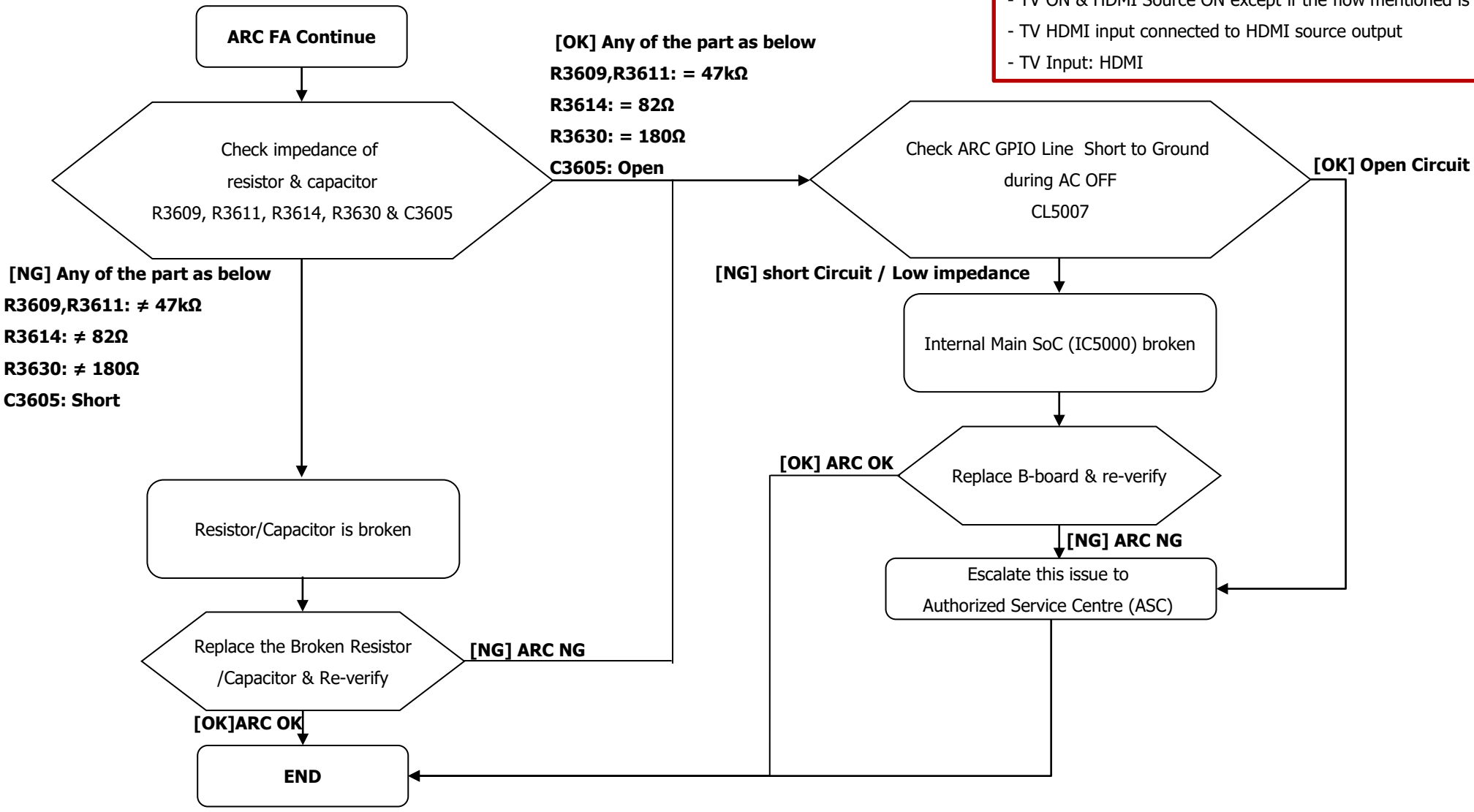
3-4-8. HDMI NO SOUND- HDMI ARC Failure



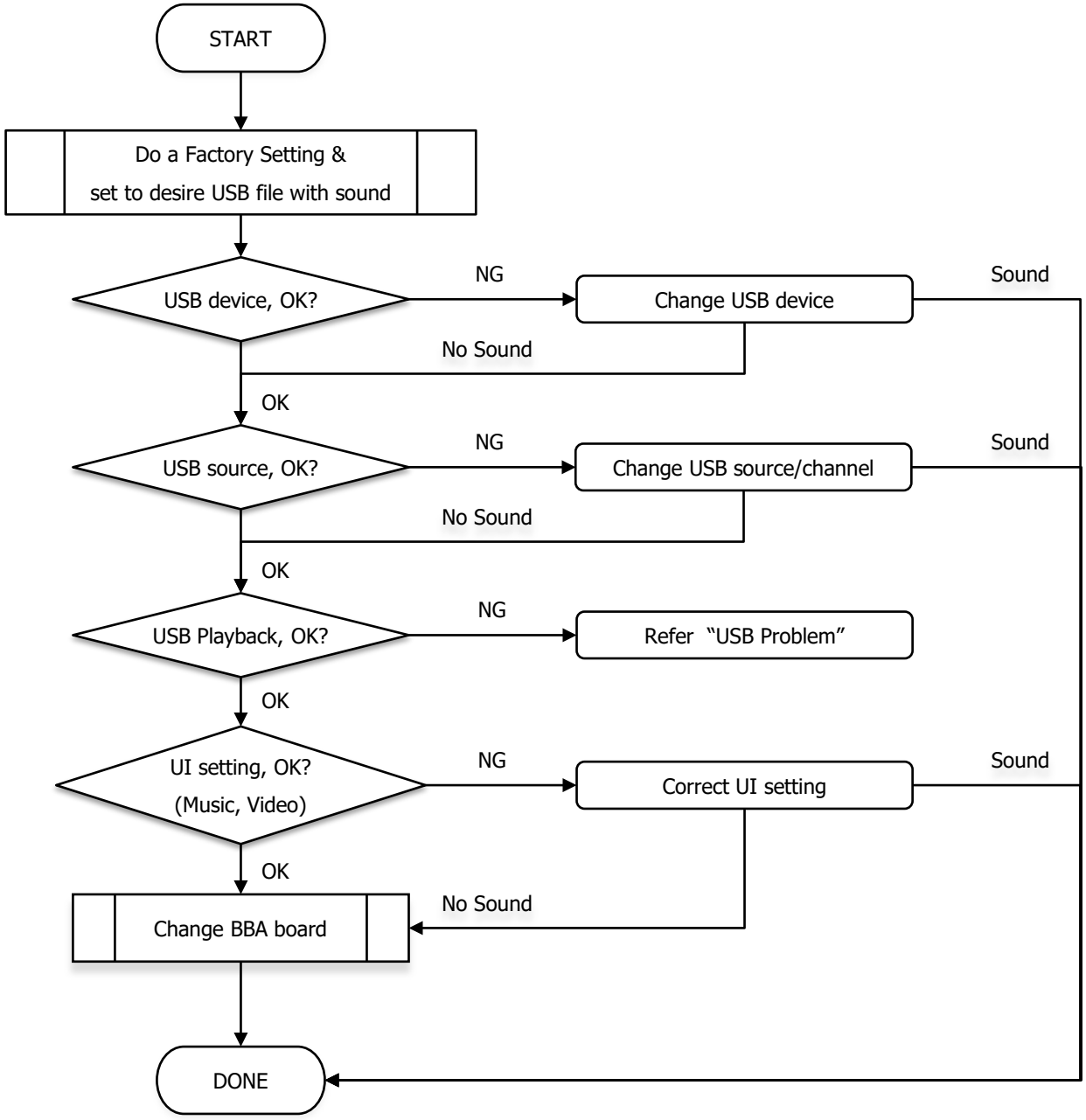
3-4-9. HDMI NO SOUND- HDMI ARC Failure -Continue

No Sound – HDMI

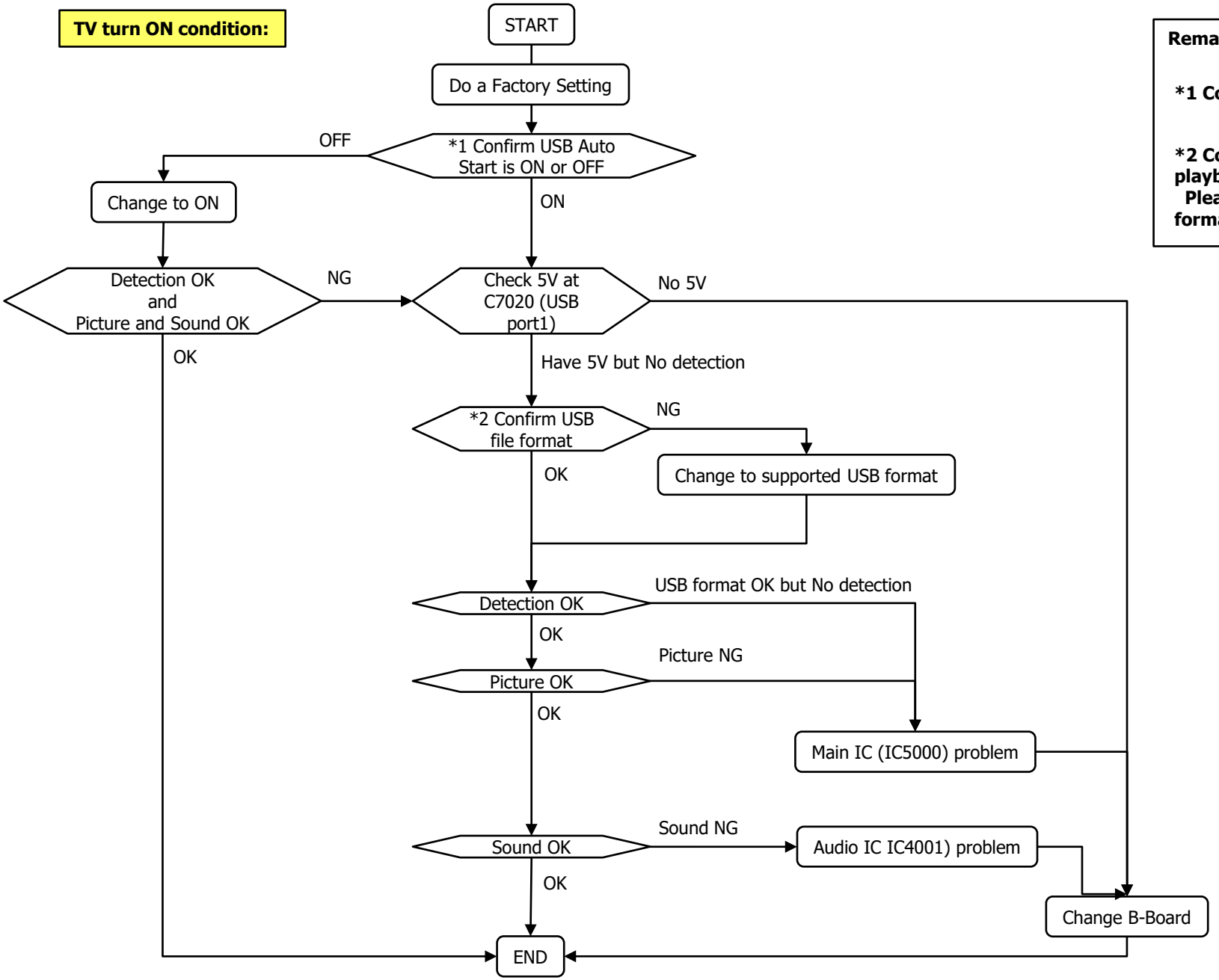
Checking condition:
- TV ON & HDMI Source ON except if the flow mentioned is AC OFF.
- TV HDMI input connected to HDMI source output
- TV Input: HDMI



3-4-10. Audio Problem - USB Audio No Sound



3-4-11. USB Port1 – No Detection / Cannot Play / No Picture / No Sound

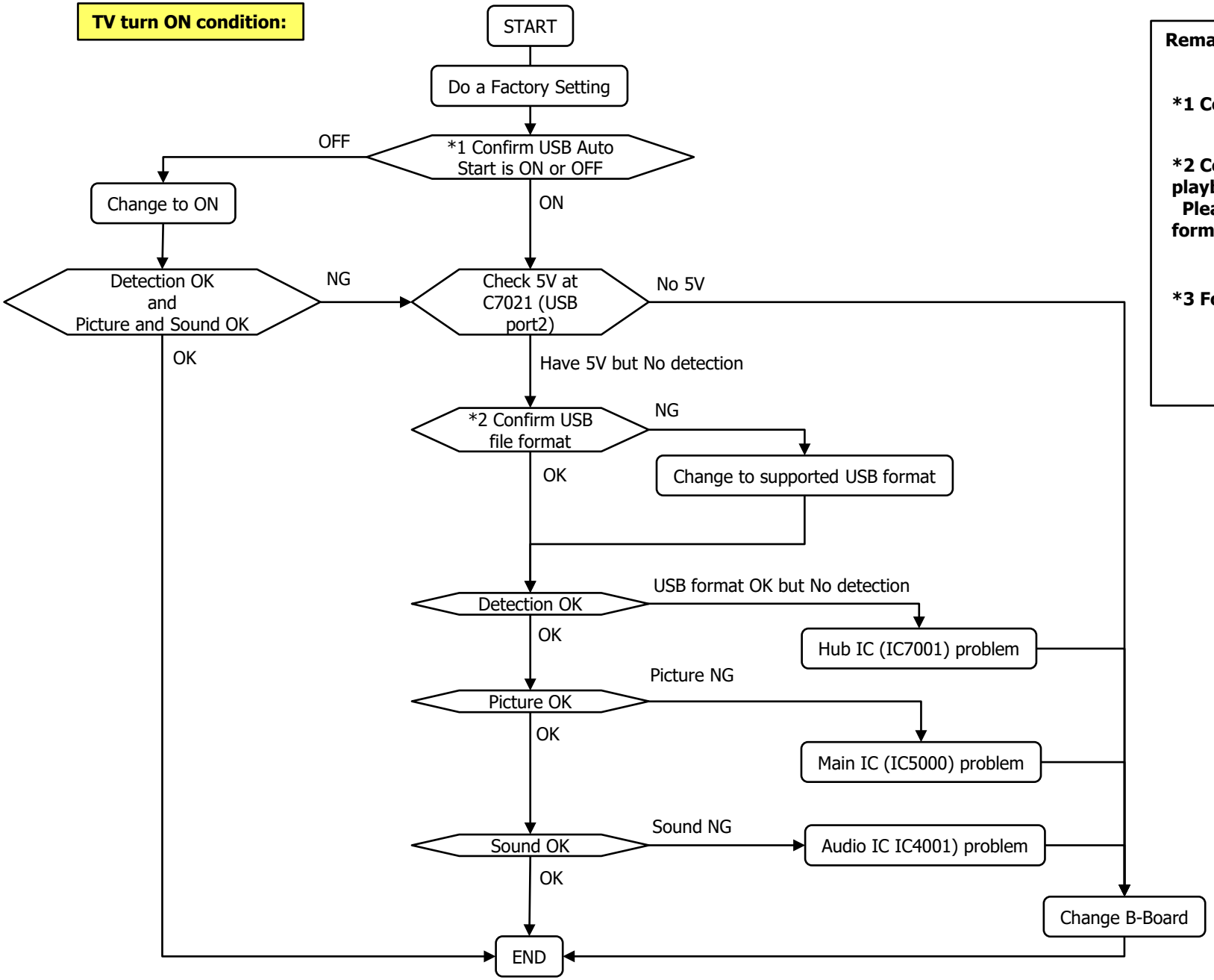


Remarks:

***1 Confirm USB Auto Start at Set-up Menu.**

***2 Confirm with OSD on bottom panel, if playback not support.**
Please refer to IM for detail supported USB format.

3-4-12. USB Port2 – No Detection / Cannot Play / No Picture / No Sound



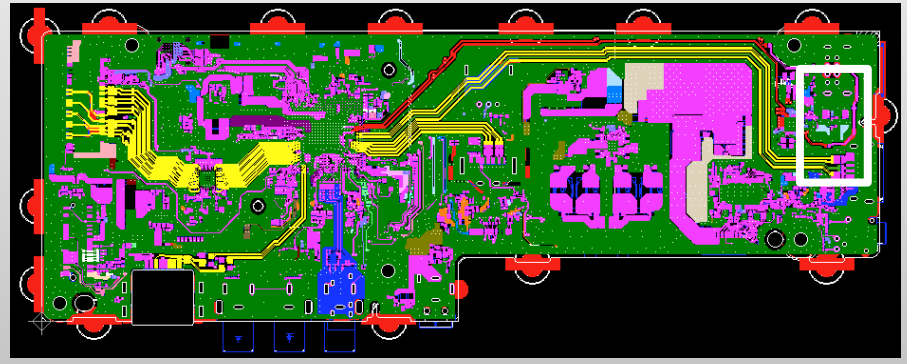
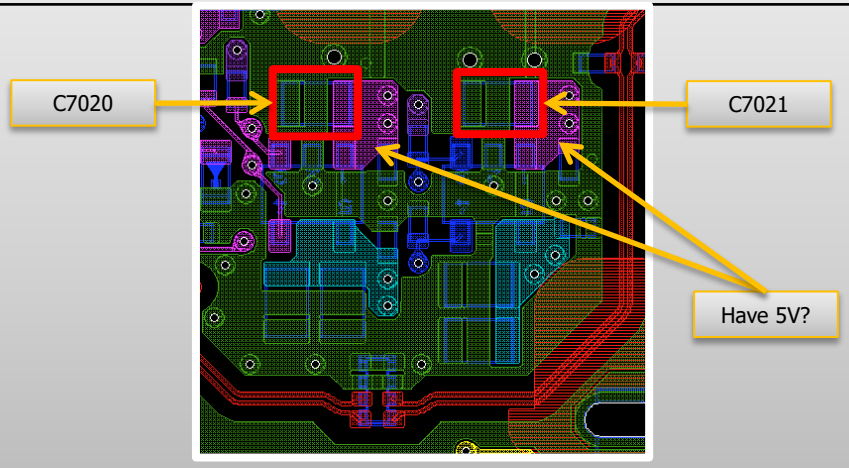
Remarks:

***1 Confirm USB Auto Start at Set-up Menu.**

***2 Confirm with OSD on bottom panel, if playback not support.**
Please refer to IM for detail supported USB format.

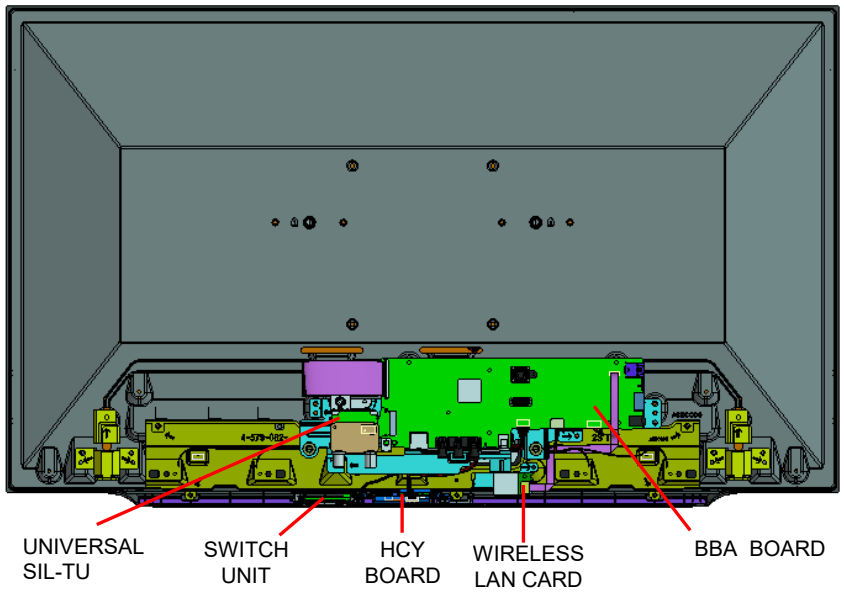
***3 For model have USB Port2**

USB (B-board Checking) – Checking 5V Points

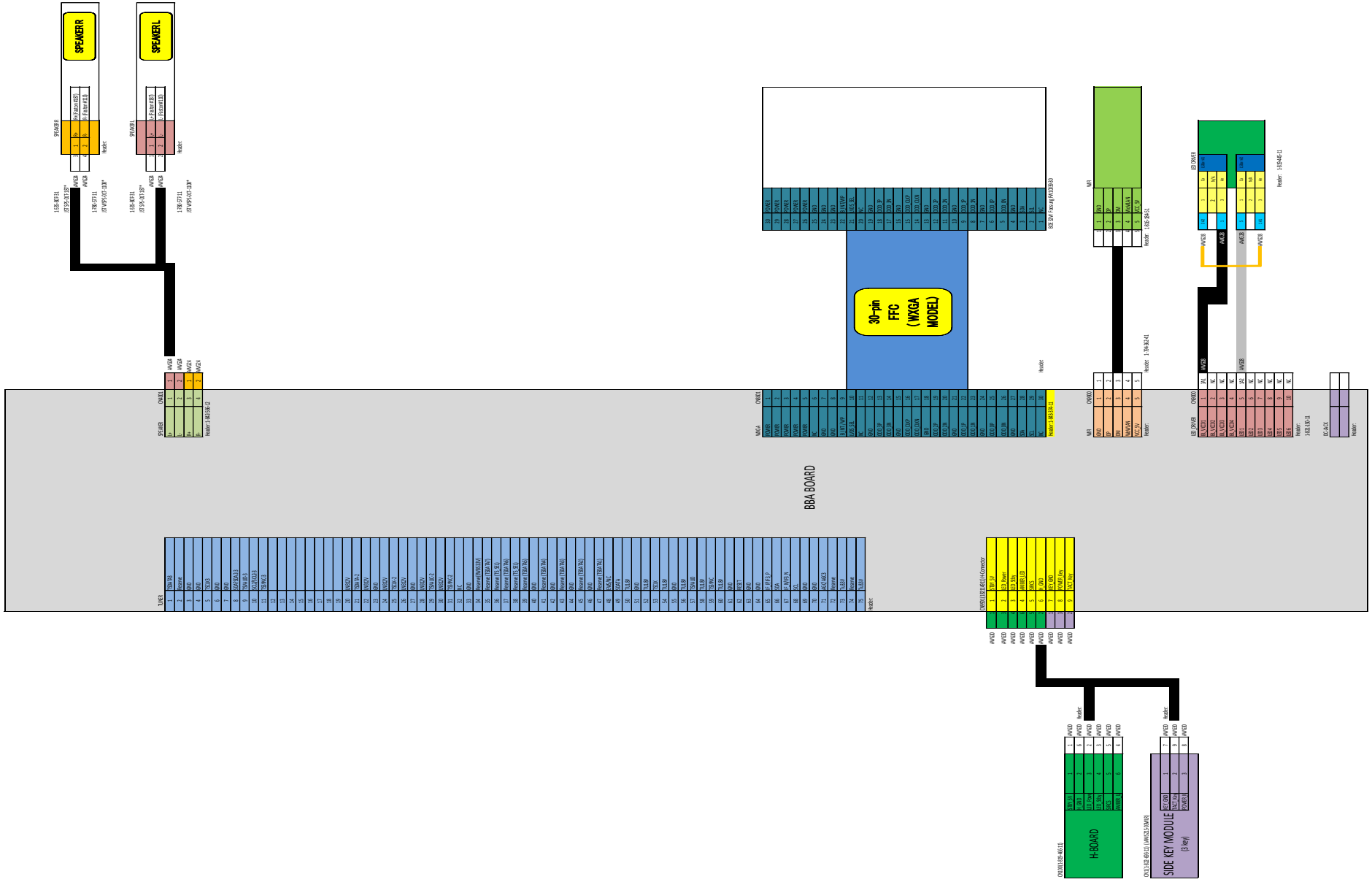
Board Name	Board PWB (A side)	Detail
BBA		

SECTION 5
DIAGRAMS

5-1.CIRCUIT BOARD LOCATION



5-2. Connector Diagram



SERVICE MANUAL (DISASSEMBLY)

ORIGINAL MANUAL ISSUE DATE: 2023/11

9-888-190-U1

LCD TV

SONY

Sony EMCS (Malaysia) Sdn. Bhd. HES-M

SERVICE MANUAL (DISASSEMBLY)

ORIGINAL MANUAL ISSUE DATE: 2023/11

9-888-190-U1

LCD TV

SONY

Sony EMCS (Malaysia) Sdn. Bhd. HES-M

MODEL LIST

Self Diagnosis Supported model

MODEL	REMOTE	DESTINATION
KDL-32W600D	RMT-TX102U	UC2

MODEL LIST

Self Diagnosis Supported model

MODEL	REMOTE	DESTINATION
KDL-32W600D	RMT-TX102U	UC2

TABLE OF CONTENTS

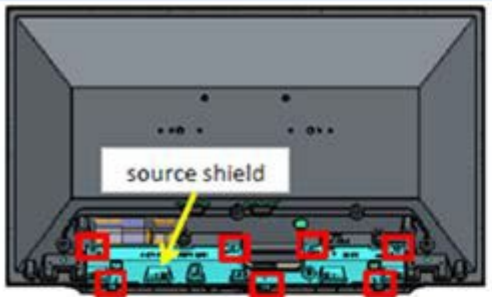
Please refer Service Manual (Troubleshooting) for below information:

- General Safety Notes
- Self Diagnostic Function
- Triage Chart
- Troubleshooting, Troubleshooting reference
- Diagram: Connector Diagram

Note: Pictures provided in all this section might have slight difference from the actual sets

SECTION 1
DISSASSEMBLY AND REMOVAL CAUTION

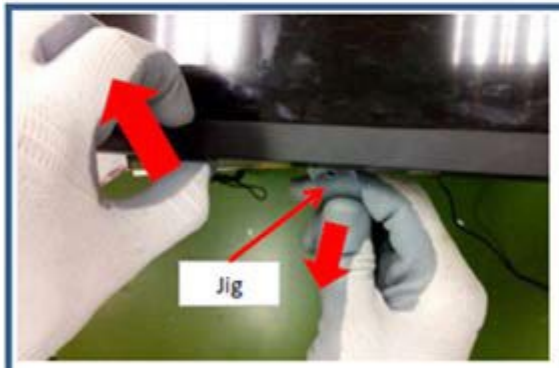
1-1. How To Remove Bezel
1-1-1. General



1. Source Shield should be removed before disassemble the Bezel. Please refer to 1-1-2 for detail of screw positions.

2. Turn the P-MOD to facing up

3. P-MOD is recommended to put at a higher platform for easier disassemble operation.



4. Start to disassemble the Bezel using jig and at the same time pull up the Bezel. Follow the sequence until Bezel is completely disassemble. Please refer 1-1-3.

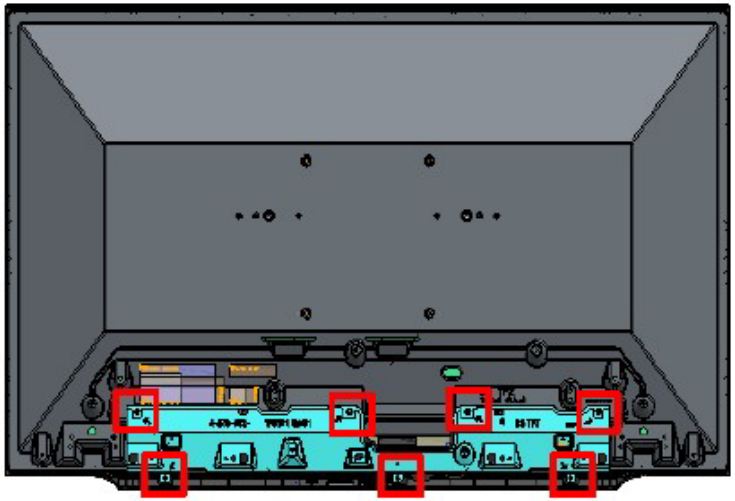
5. Please make sure that no broken and no crack at all area before re-use the Bezel . Brocken and crack Bezel can't be used.

Please refer to 1-1-5 for jig information.

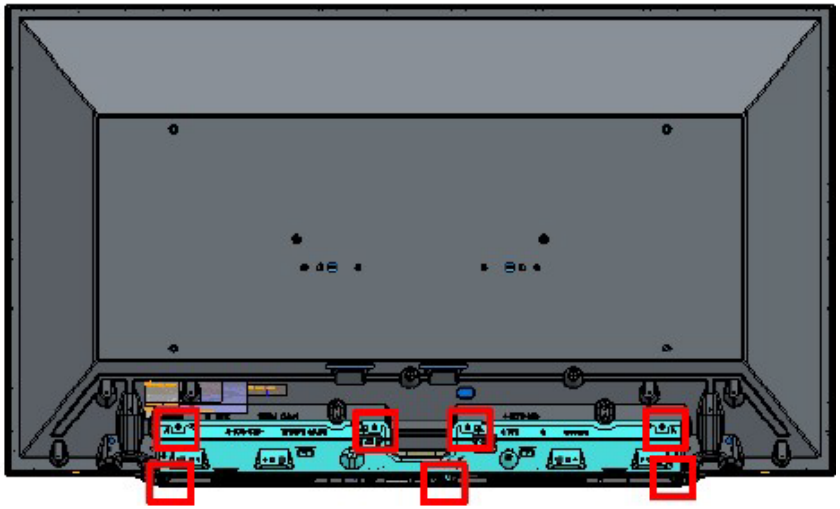
CAUTION: Use glove through out the process.

1-1. How To Remove Bezel
1-1-2. Screw Location

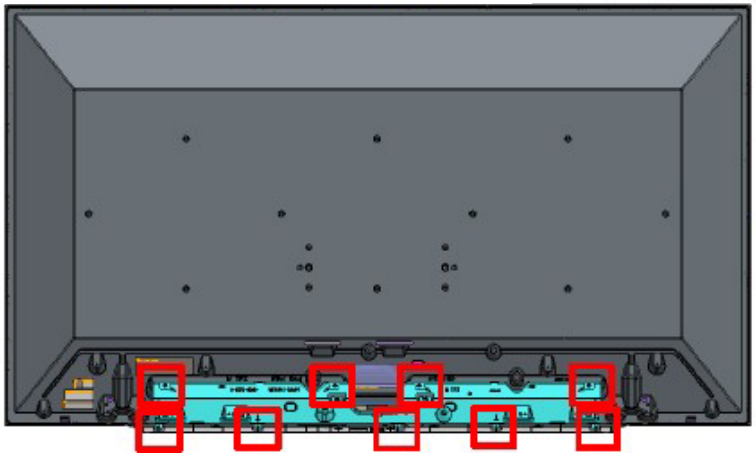
1. 32” Source Shield Screw Positions



2. 40” Source Shield Screw Positions



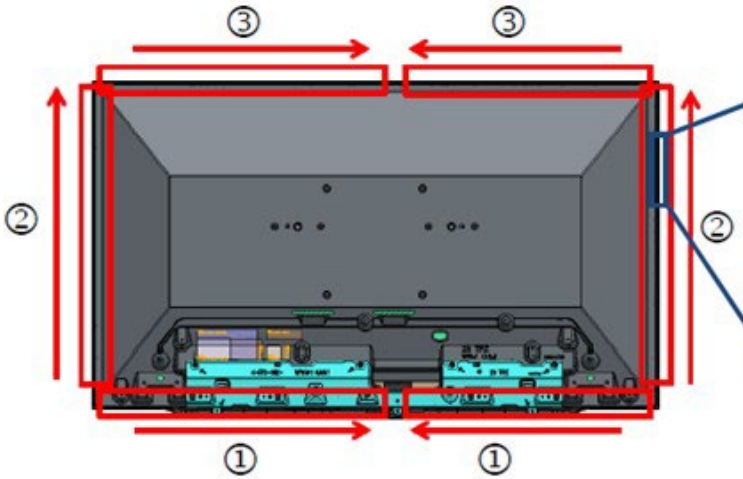
3. 48” Source Shield Screw Positions



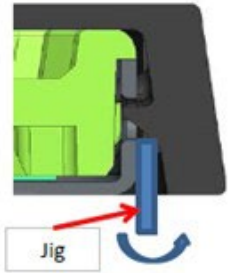
CAUTION: Use glove through out the process.

1-1. How To Remove Bezel
1-1-3. Caution Point

4.1:)Sequence to disassemble Bezel



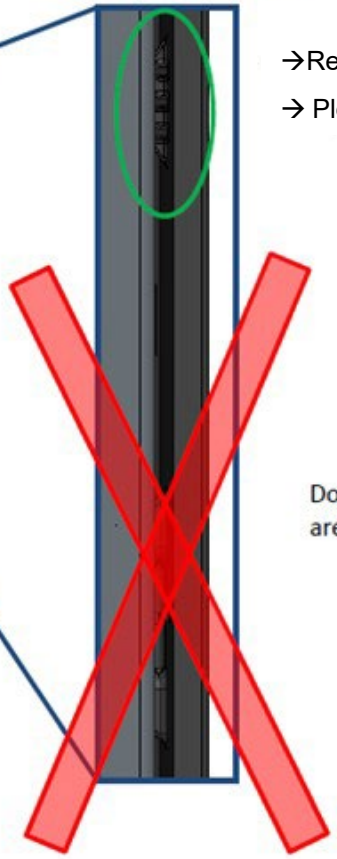
4.2) Method to disassemble the Bezel by using jig.



Detach the Bezel by pulling the jig upwards at the hook area.

Don't detach the Bezel at other area (except hook area only)

4.3) Caution point



→Remove the Bezel using jig at the hook area.

→ Please refer to 1-1-4 for the detail of hook positions.

Don't use jig at others area accept hook area.

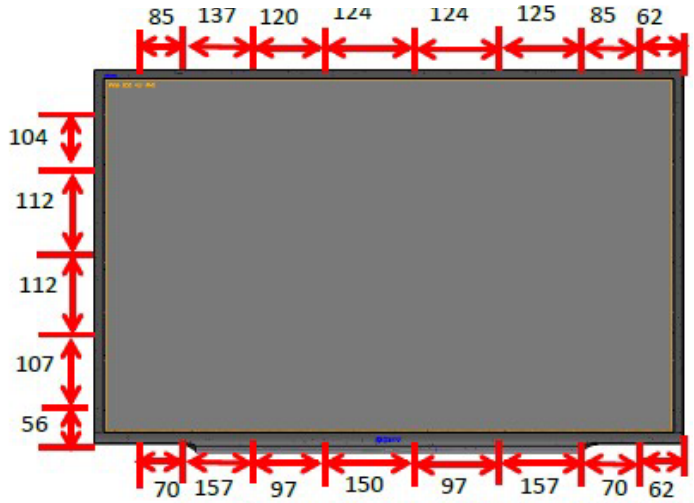
CAUTION: Use glove through out the process.

1-1. How To Remove Bezel
1-1-4. Hook Location

1. 32” Bezel Hook Positions

Same hook locations for both left and right side.

2. 40” Bezel Hook Positions



Same hook locations for both left and right side.

3. 48” Bezel Hook Positions

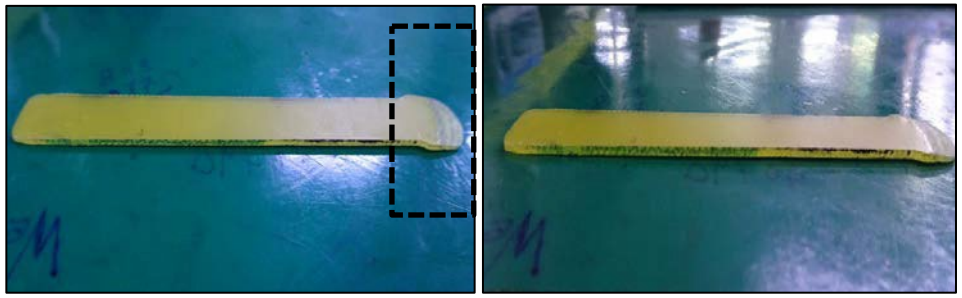
Same hook locations for both left and right side.

CAUTION: Use glove through out the process.

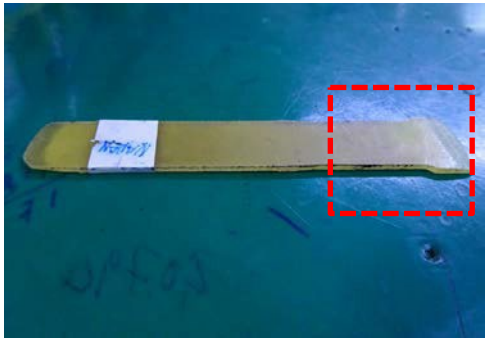
1-1. How To Remove Bezel
1-1-5. Jig information

Sample JIG at production (using spoilage Board) for disassemble bezel

Sample 1

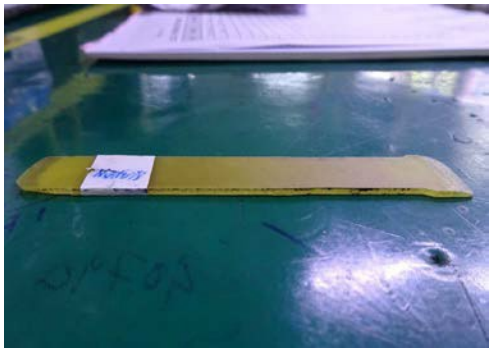


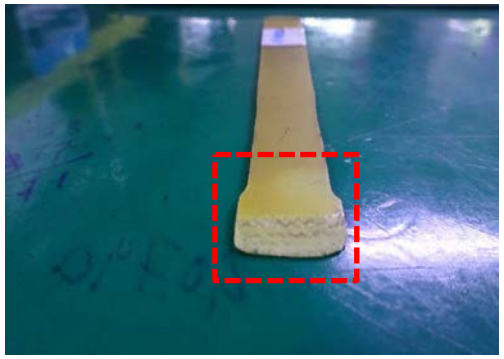
Sample 2



Modified at the end/edge board.

<<1mm





Please be informed that above figure is for sample / guidance only. Please develop own jig by following below measurement requirements:

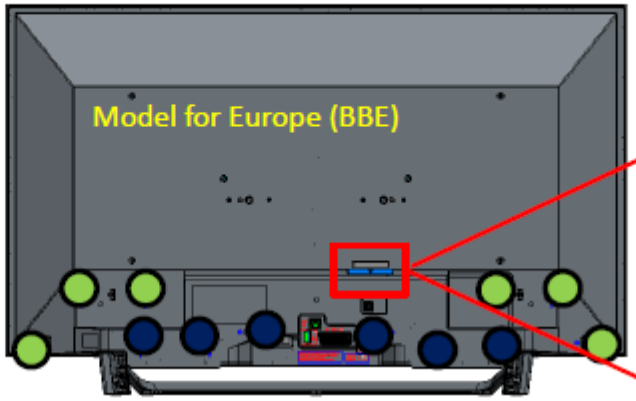
Recommended jig type:
Size: 20mm x 90mm; thickness = 1mm
Material: Plastic part
Prohibited part: Metal part (eg: metal ruler).

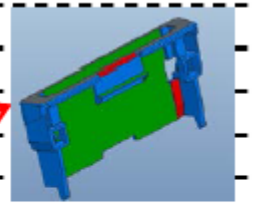
CAUTION: Use glove through out the process.

1-2. How To Remove Under Cover

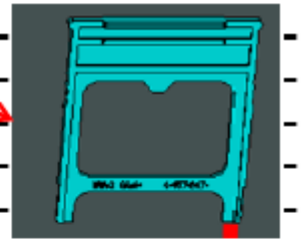
1-2-1. Step 1

1- Remove Under Cover screw as below:





Bracket, PC Card



Dummy Card

QW/QWL under cover can be disassembled without detaching stand.

Screw type and quantity to disassemble under cover

Screw type	32"		40"		48"	
	BBA	BBE	BBA	BBE	BBA	BBE
+psw	4 pcs		6 pcs		6 pcs	
+BVTP	5 pcs	6 pcs	5 pcs	6 pcs	5 pcs	6 pcs

CAUTION: Use glove through out the process.

1-2. How To Remove Under Cover
1-2-2. Step 2

2 Detach Dummy Card & Bracket, PC Card:

– For BBE type Under Cover only

2.1- Remove Dummy Card

2.2- Remove Bracket, PC Card by apply finger pinch in the center, at the slit area

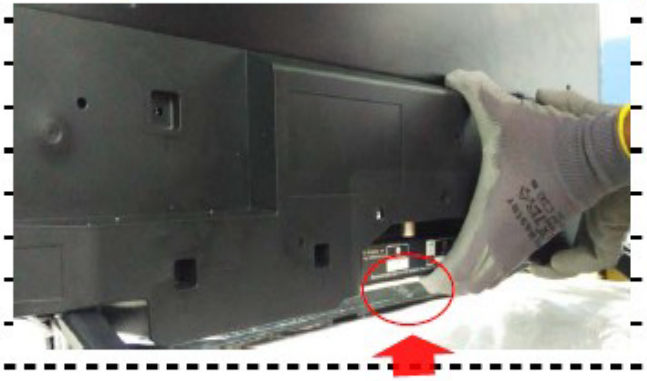
2.3- While apply finger pinch, grab the side of Bracket, PC Card and pull upwards

CAUTION: Use glove through out the process.

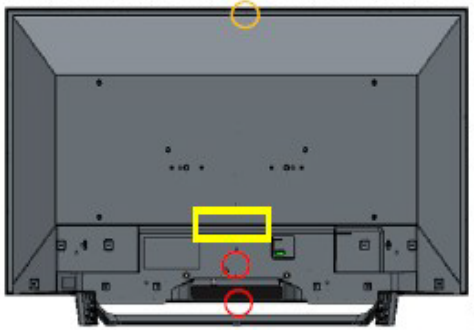
1-2. How To Remove Under Cover
1-2-3. Step 3

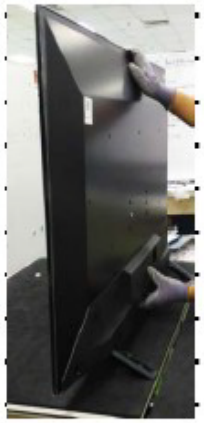
3 Detach the Under Cover from set

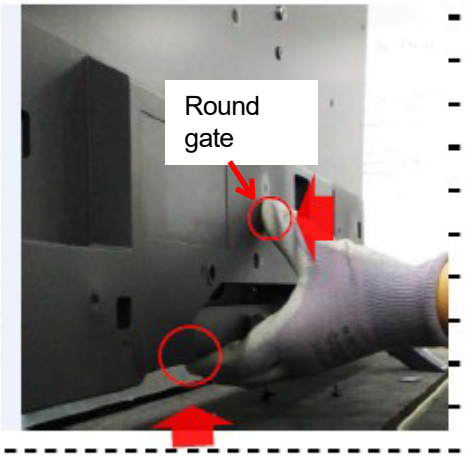
3.1- Loosen hook at bottom area by pinching the bottom side

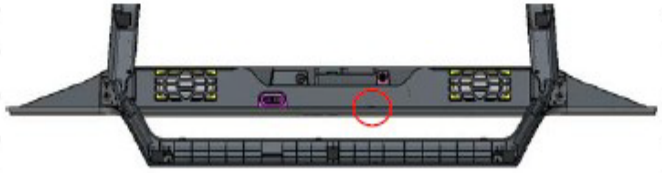


3.2- Hold top of set using one hand, then use another hand to hold at bottom under Cover side as shown in picture. Use thumb finger to pinch below round gate while push up bottom area until top hook (square shape area) is loosen.







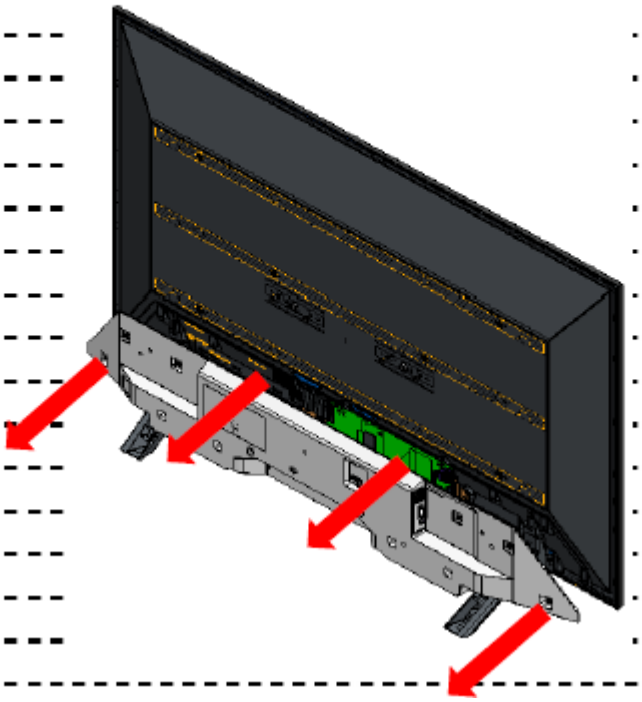


CAUTION: Use glove through out the process.

1-2. How To Remove Under Cover
1-2-4. Step 4

4 Pull out the Under cover

4- Pull out the under cover with below direction

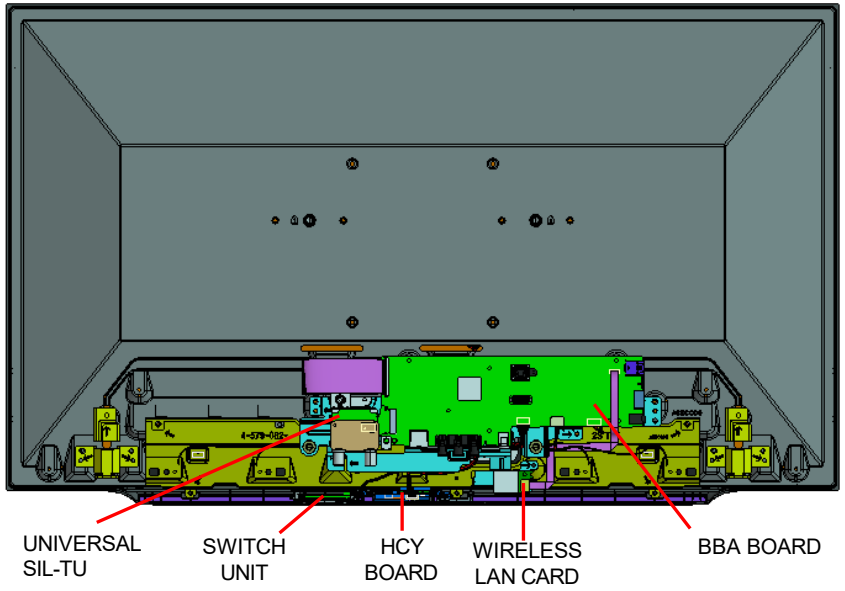


CAUTION: Use glove through out the process.

SECTION 2
DIAGRAMS

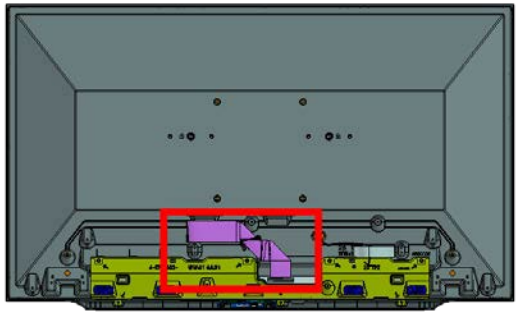
2-1.CIRCUIT BOARD LOCATION

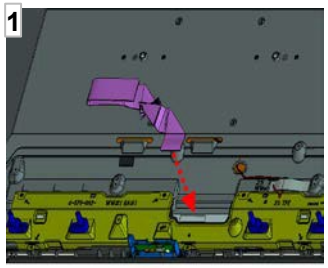
2-1-1. 32”

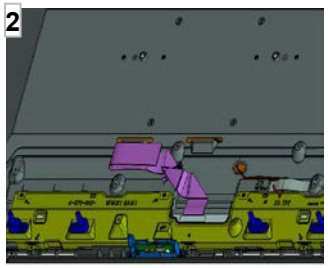


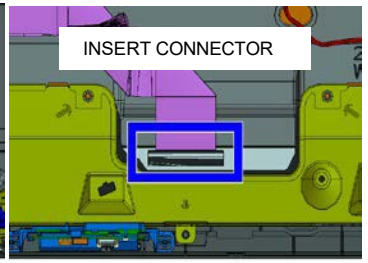
2-2. Wire Dressing

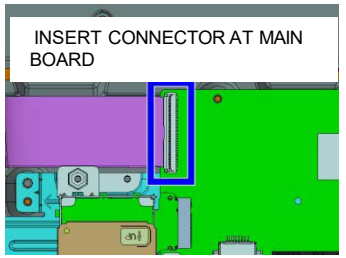
FLEXIBLE FLAT CABLE 30P (32”)

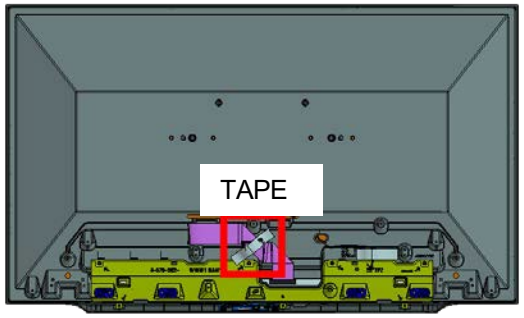


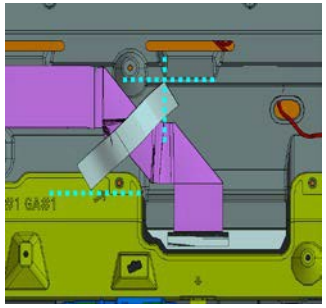


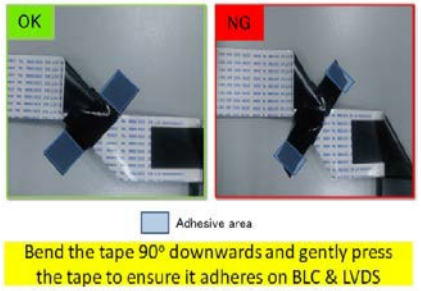


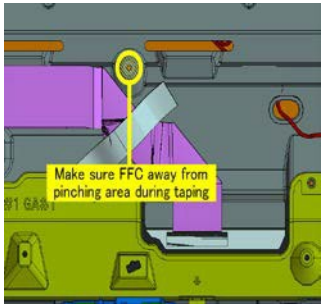


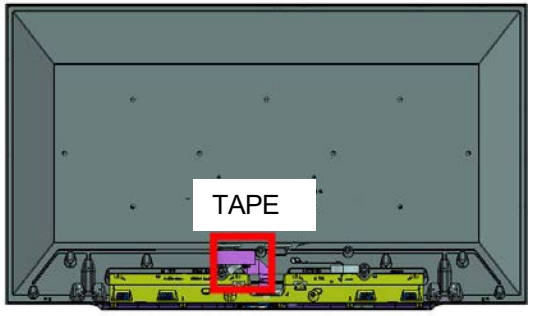


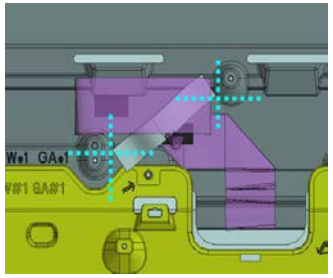


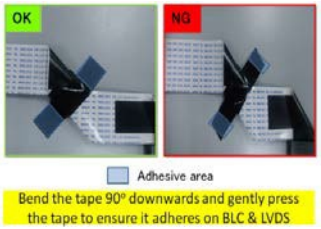


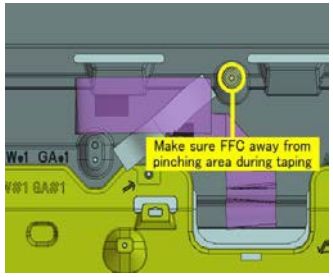








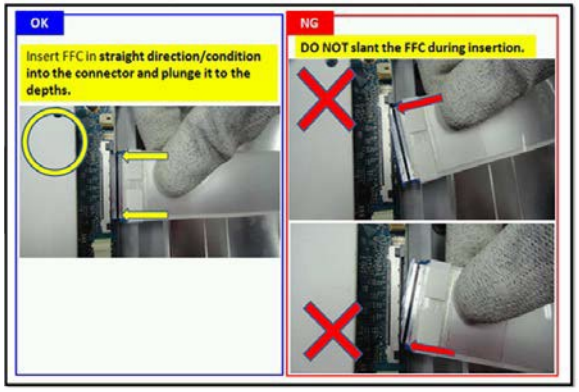




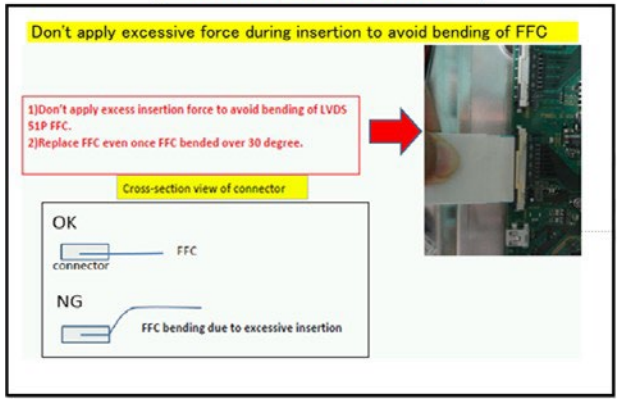
2-2. Wire Dressing

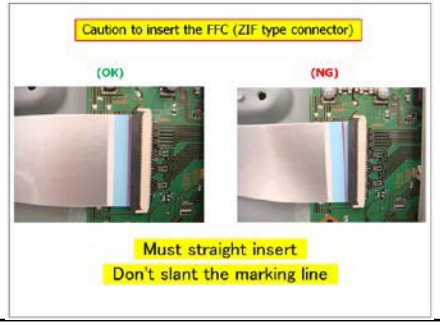
FLEXIBLE FLAT CABLE 30P/51P

OK and NG Condition



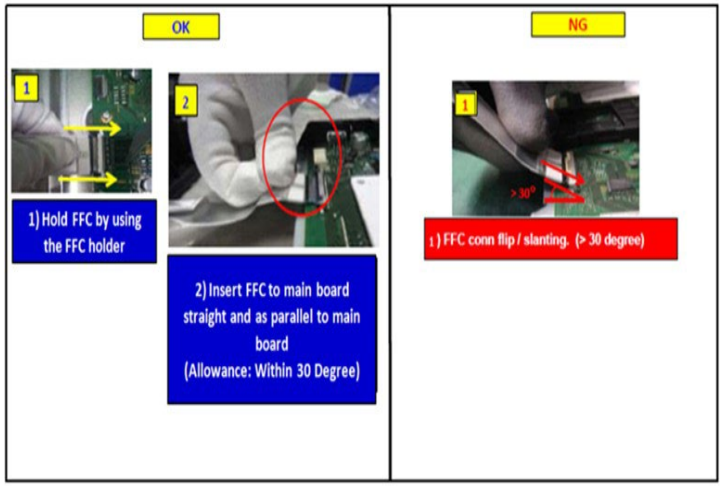
Caution during FFC insertion



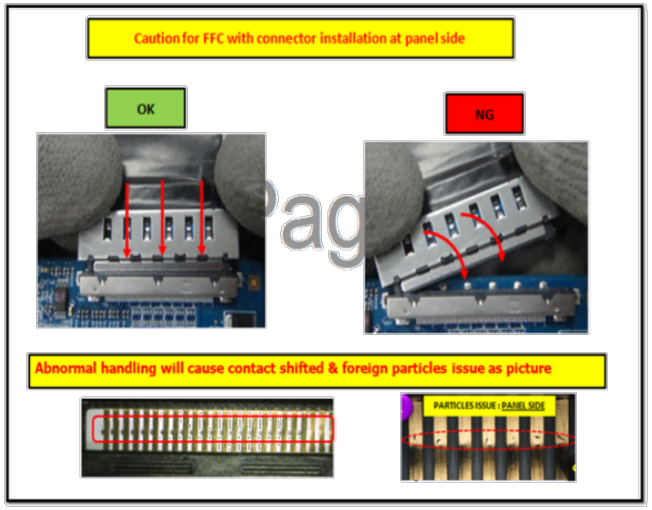


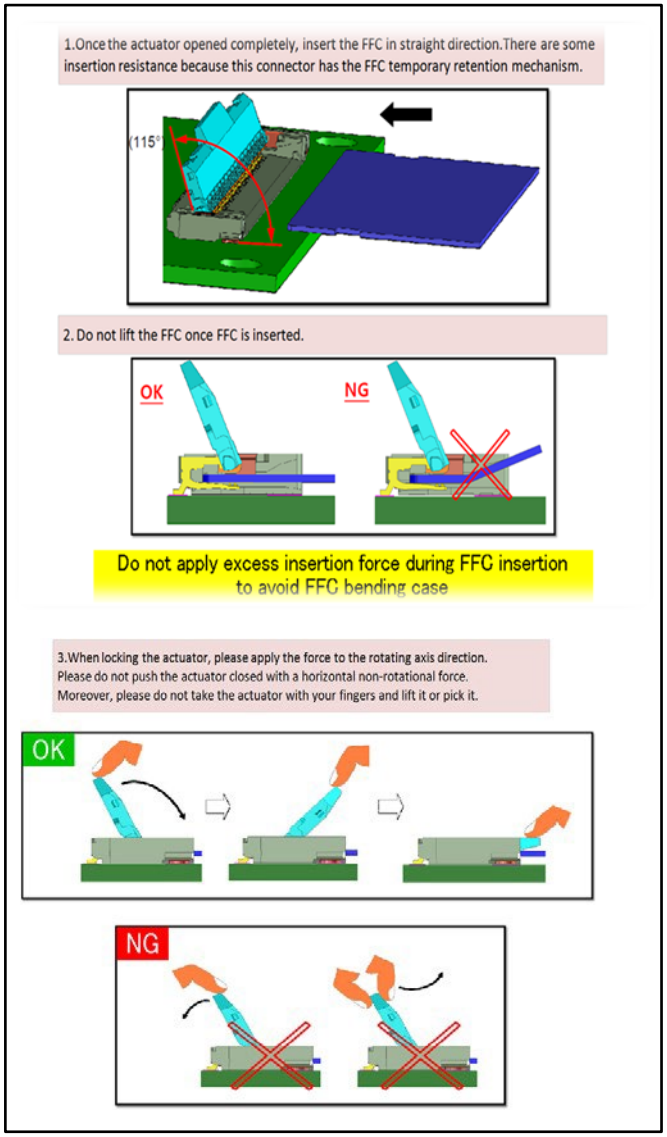
CONNECTOR INFORMATION

Caution: For Straight FFC Side Insertion (FFC insert in flat condition) and Wedge design



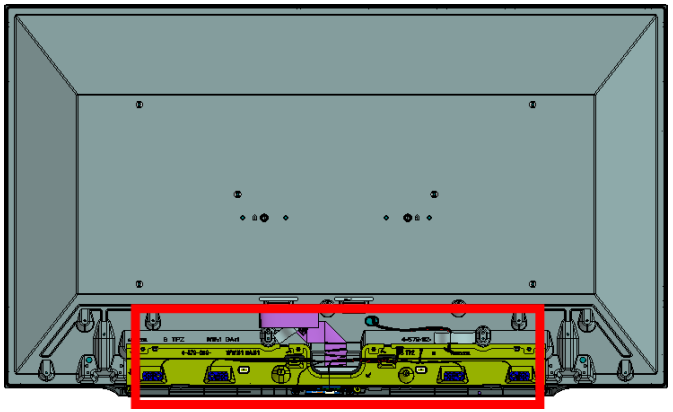
* Note : FFC as in image is only for reference purpose. Actual FFC outlook may vary by each vendor

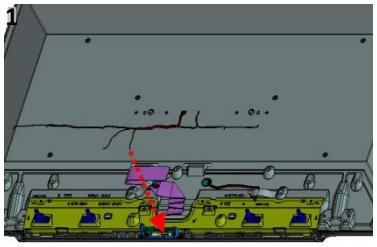


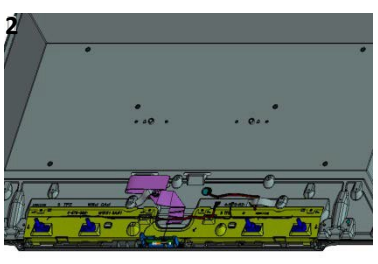


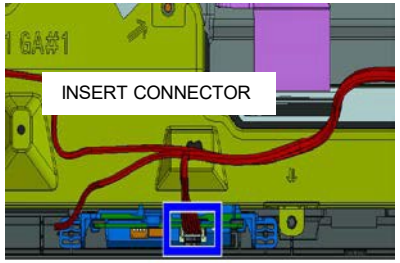
2-2. Wire Dressing

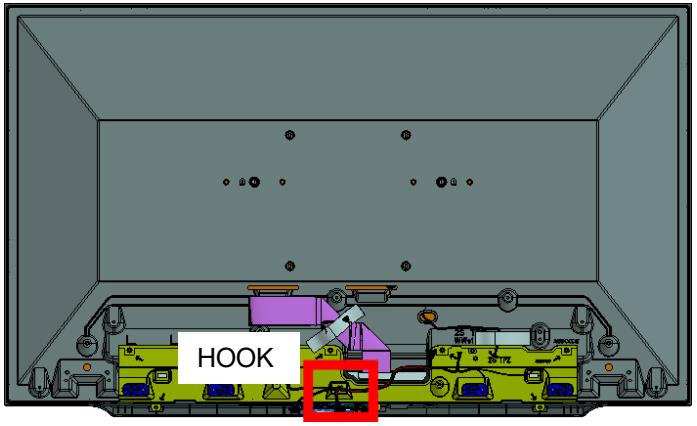
HARNESS ASSY



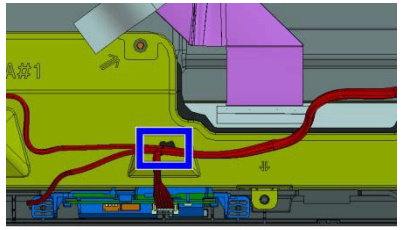


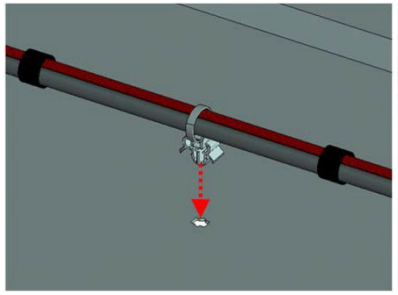


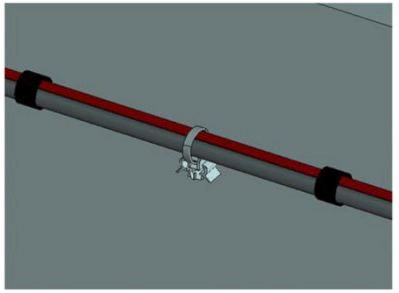




WIRE DRESSING

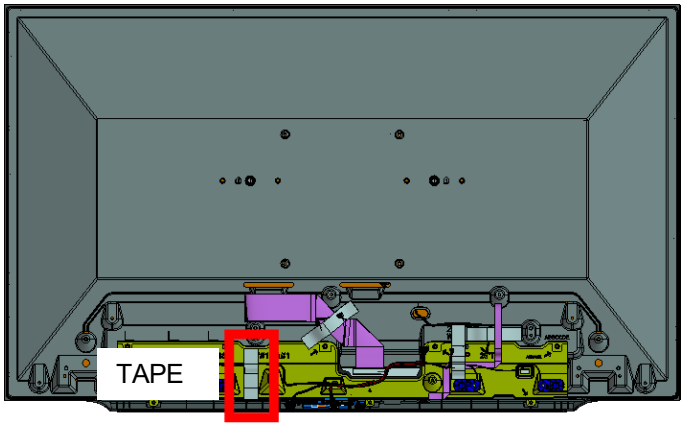


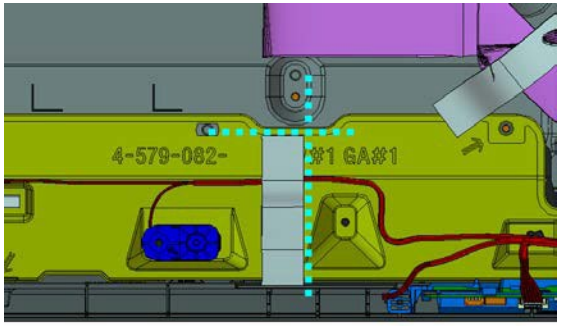


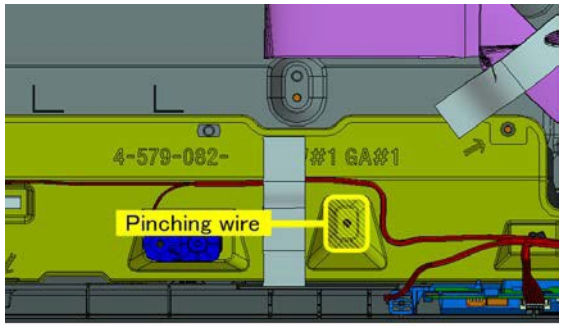


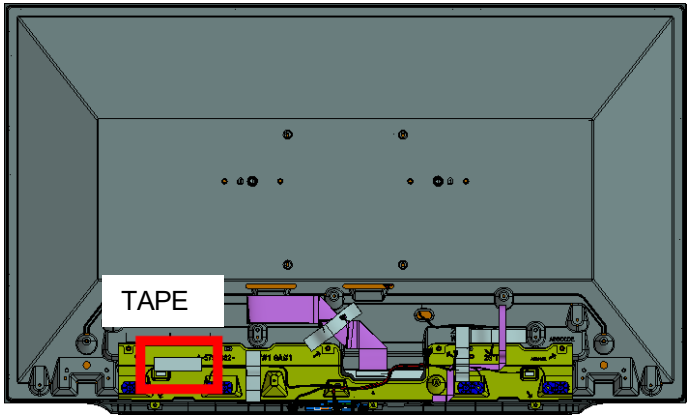
2-2. Wire Dressing

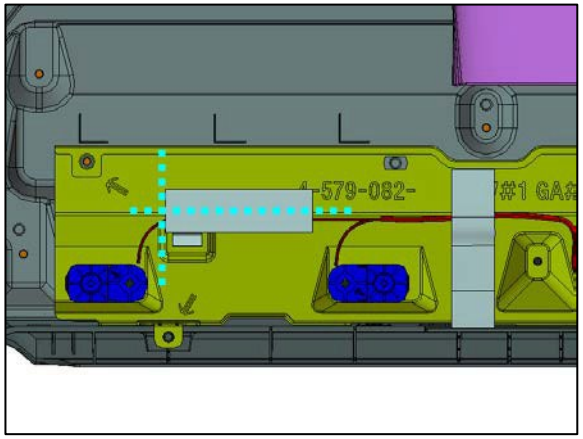
HARNESS ASSY



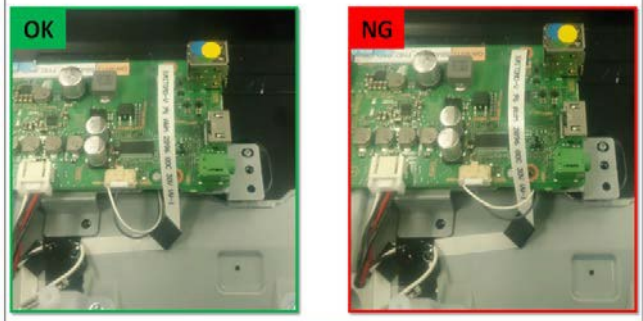








Harness Position during Insertion

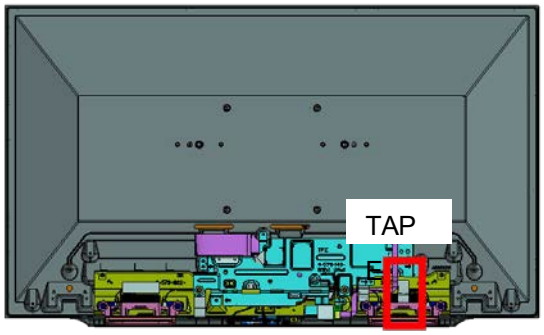


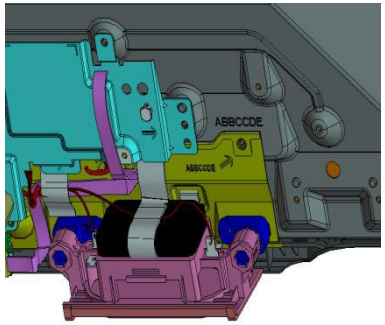
Make sure Connector Assy 10P wire not wrap around FFC 5P

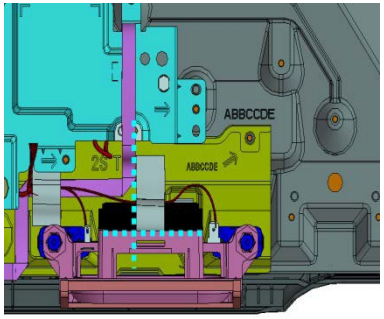
2-2. Wire Dressing

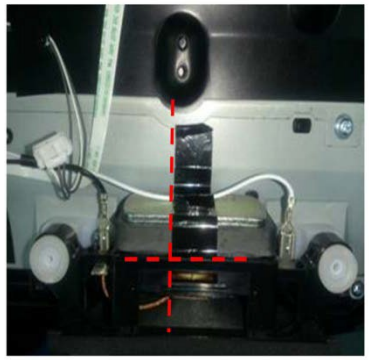
HARNESS ASSY

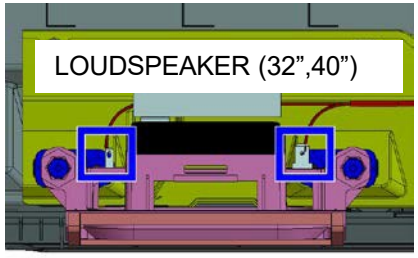
LOUDSPEAKER

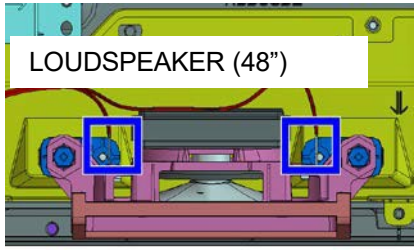


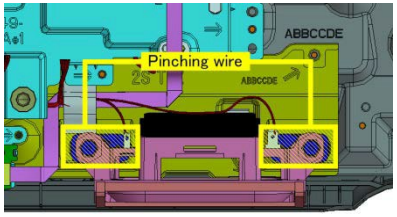




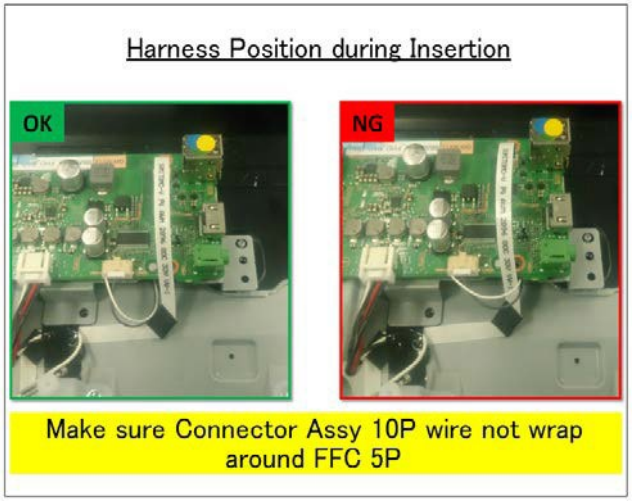






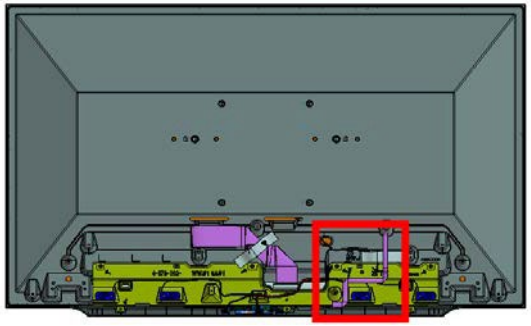


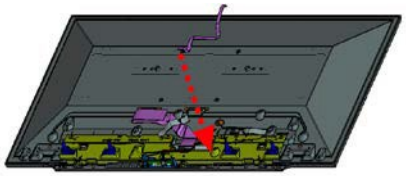
HARNESS INFORMATION

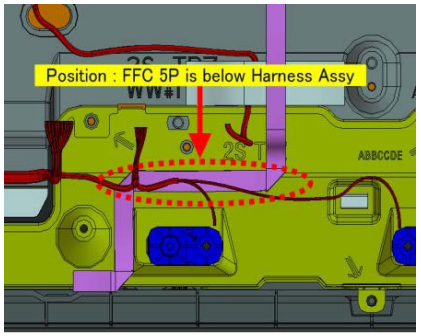


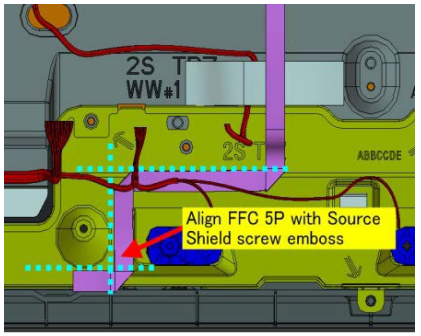
2-2. Wire Dressing

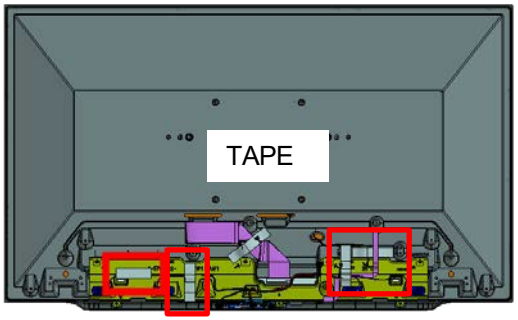
FLEXIBLE FLAT CABLE 5P

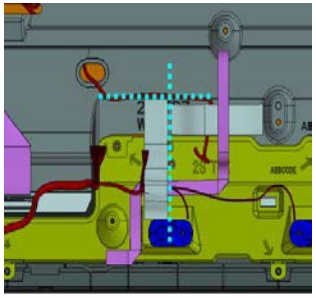


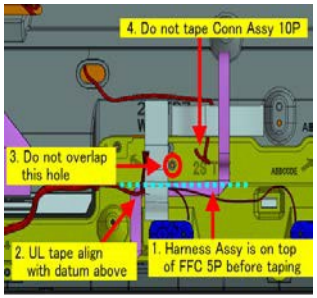


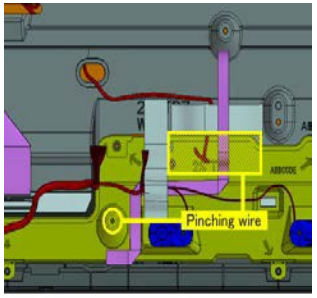


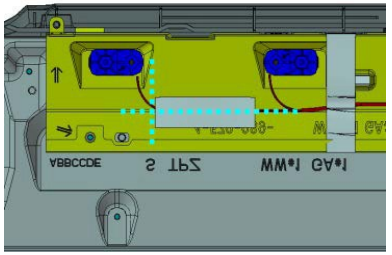


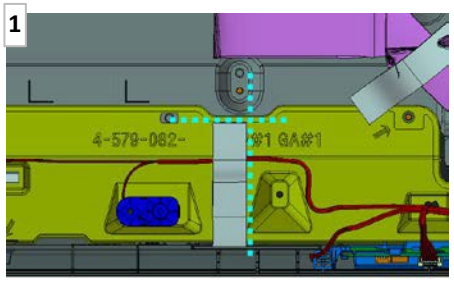


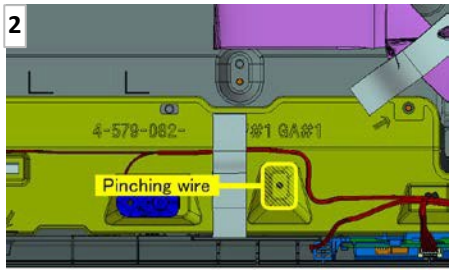


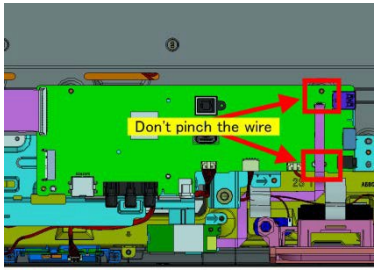






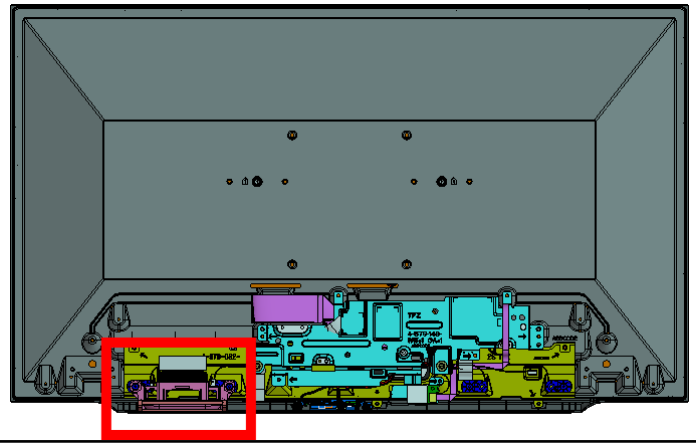


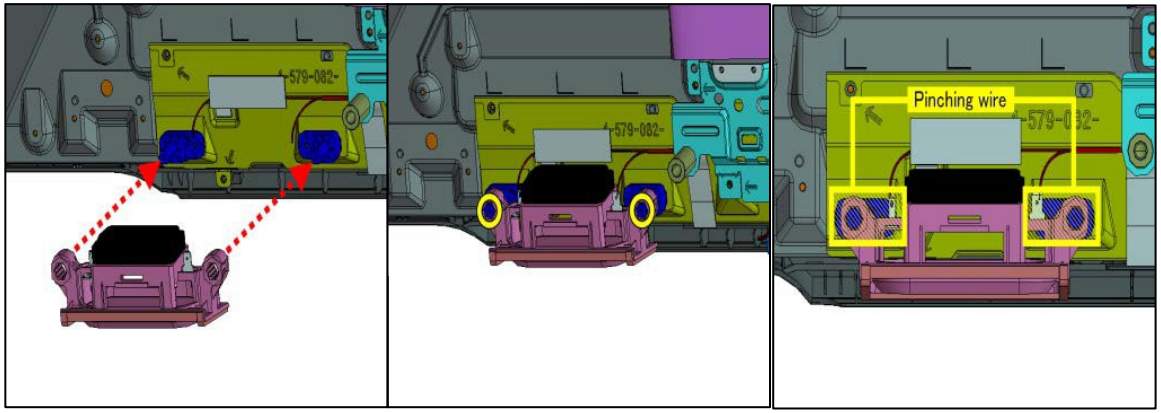




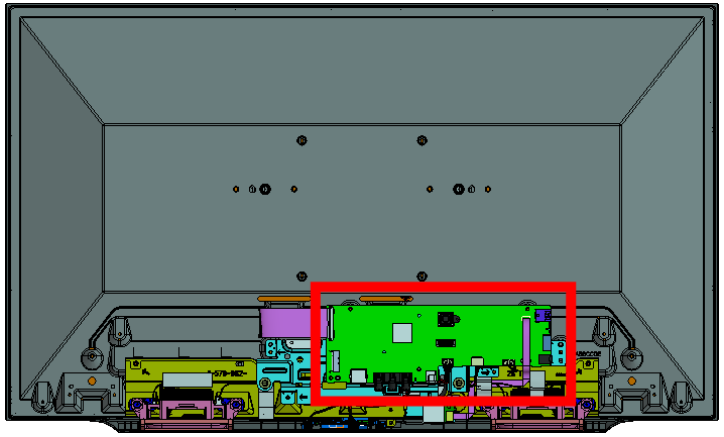
2-2. Wire Dressing

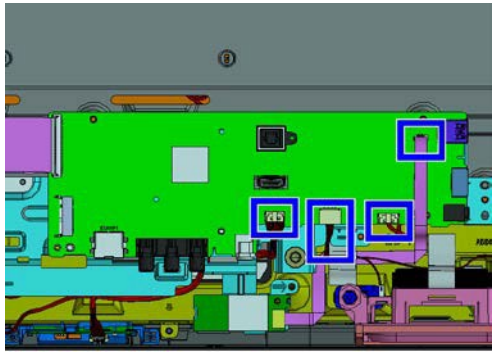
LOUDSPEAKER





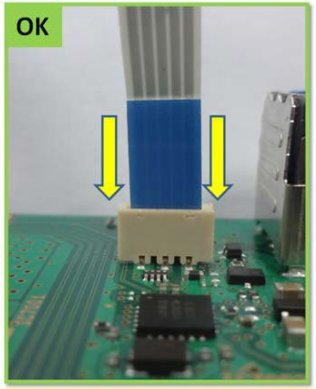
HARN ESS ASSY & FLEXIBLE FLAT CABLE 5P



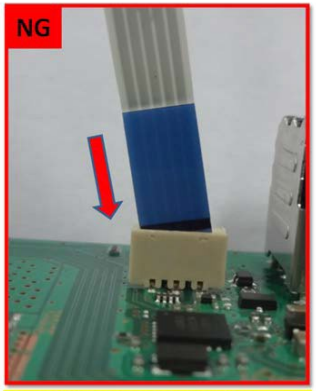


CONNECTOR INFORMATION

OK & NG Condition during FFC 5P Insertion



Insert FFC 5P in straight direction/ condition into the connector and plunge it to the depths

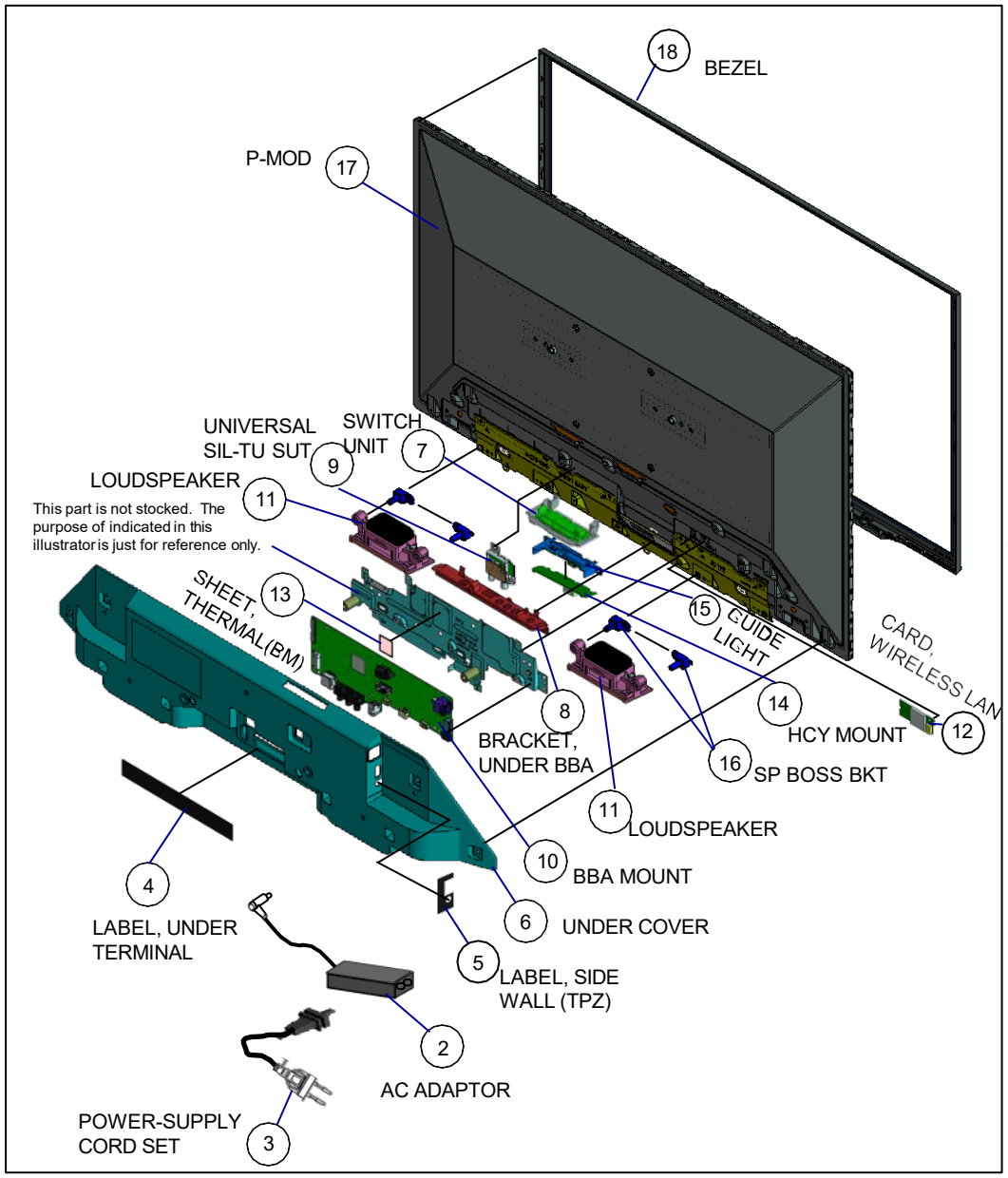


DO NOT slant the FFC during insertion

SECTION 3
DISASSEMBLY, EXPLODED VIEWS AND OTHER PARTS

3-1. KDL-32W600D

3-1-1. Disassembly, Exploded View

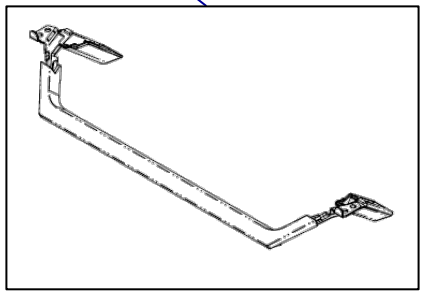


·Place the TV set facing downwards on a stable, level surface before disassembly and assembly of parts.
• ⚠ and shaded parts are critical for safety. Replace only with part number specified.
• Parts contain confidential information. Strictly follow the instruction whenever the components are repaired and/or replaced.

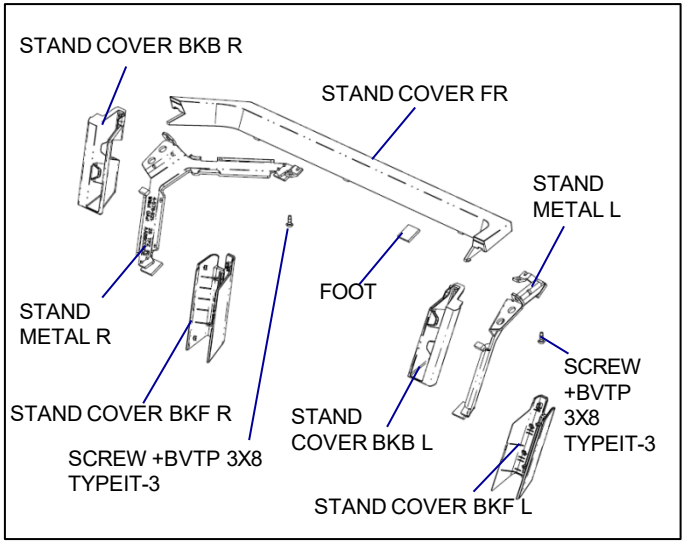
(*) Parts are not stocked since they are seldom required for routine service. Some delays should be anticipated when ordering these components.
• Lines that indicate parts are shown in blue in the illustration.
• The reference number besides the part description in the picture indicates the disassembly sequence.

• Remove screws before disassembly.
• Unplug connectors before disassembly.

STAND, BASE ASSY 1



Stand exploded view are for reference purpose.
(Child parts are UNSTOCKED unless specified: at Screws and Other Parts)



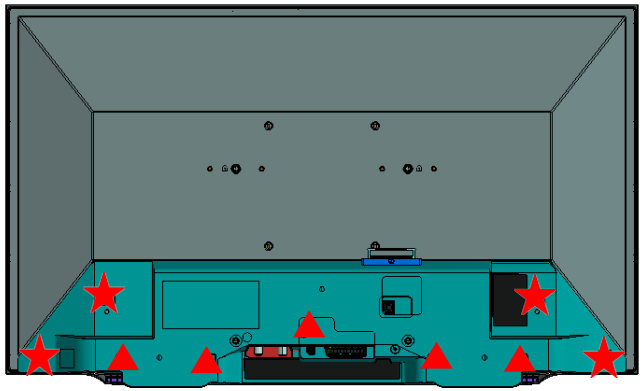
3-1. KDL-32W600D

3-1-1. Disassembly, Exploded View

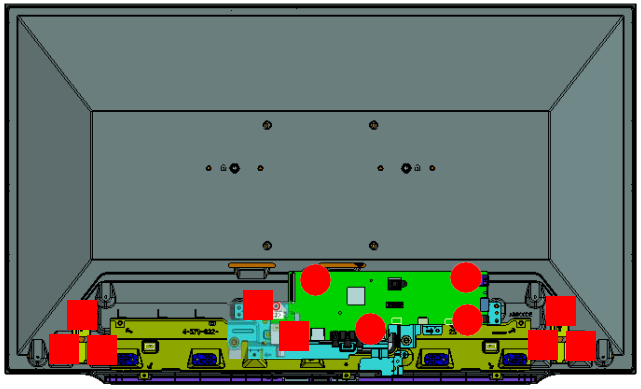
REF. NO.	DESCRIPTION	PART NO.	UC2
1	STAND, BASE ASSY (2S TPZ)	4-578-914-01	•
2	AC ADAPTOR(45W)	1-493-145-11	•
3 ⚠	CORD SET, POWER-SUPPLY	1-846-425-13	•
4	LABEL, UNDER TERMINAL (TPZ)	4-580-097-41	•
5	LABEL, SIDE WALL (TPZ)	4-580-738-01	•
6	UNDER COVER (2S TPZ) A	4-579-060-01	•
7	SWITCH UNIT (3M-E-B1)	1-474-645-21	•
8	BRACKET, UNDER BBA (TPZ)	4-585-061-21	•
9	UNIVERSAL SIL-TU SUT-RA243ZP	* 8-594-302-00	•
10 🔒	COMPL SVC BBA_QW_WXGA_UC	A-2103-931-C	•
11	LOUDSPEAKER	1-859-166-11	•
12	CARD, WIRELESS LAN	1-458-900-11	•
13	SHEET, THERMAL(BM)	4-549-186-01	•
14	HCY_MOUNT	A-2093-735-A	•
15	GUIDE LIGHT (TPZ)	4-585-066-01	•
16	SP BOSS BKT (TPZ)	4-585-067-01	•
17 ⚠	P-MOD (IS6S320DNO0101)	A-2093-094-A	•
18	BEZEL (2S TPZ) A	4-579-083-01	•

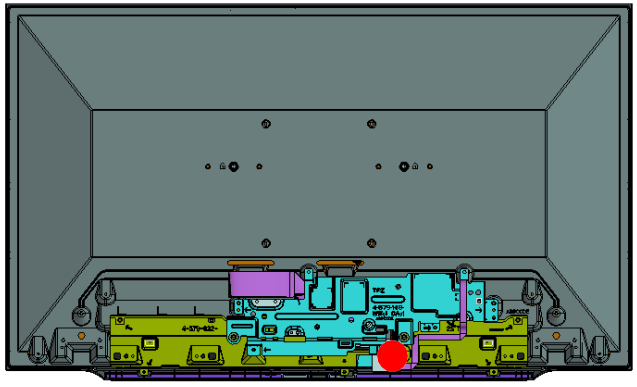
3-1. KDL-32W600D

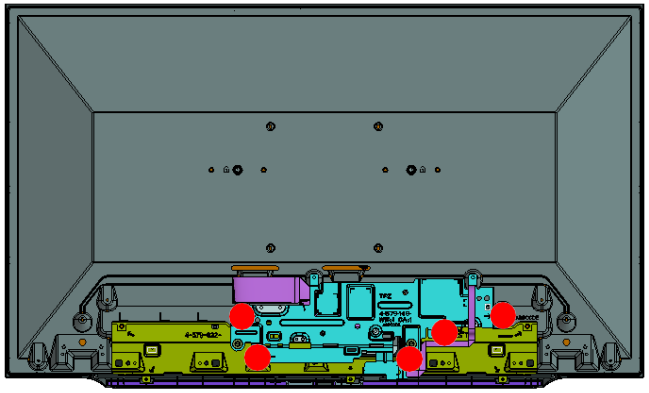
3-1-2. Screws

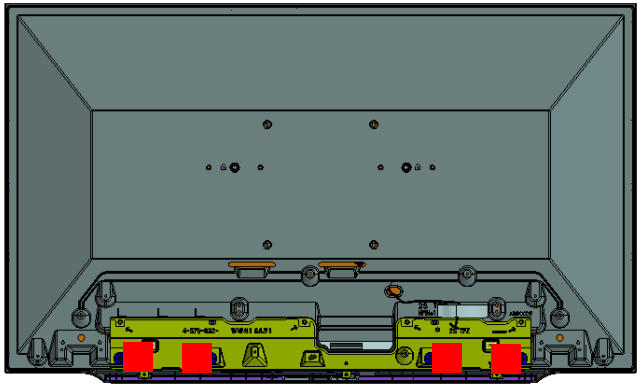


Ref	Description	Part No
■	SCREW, +PSW M3X6	4-472-518-11
●	SCREW, +PSW M3X8 (BLACK)	2-580-592-01
▲	SCREW +BVTP 3X10 TYPE2 IT-3	7-685-647-79
★	SCREW, +PSW M3X6 W12	4-256-393-02



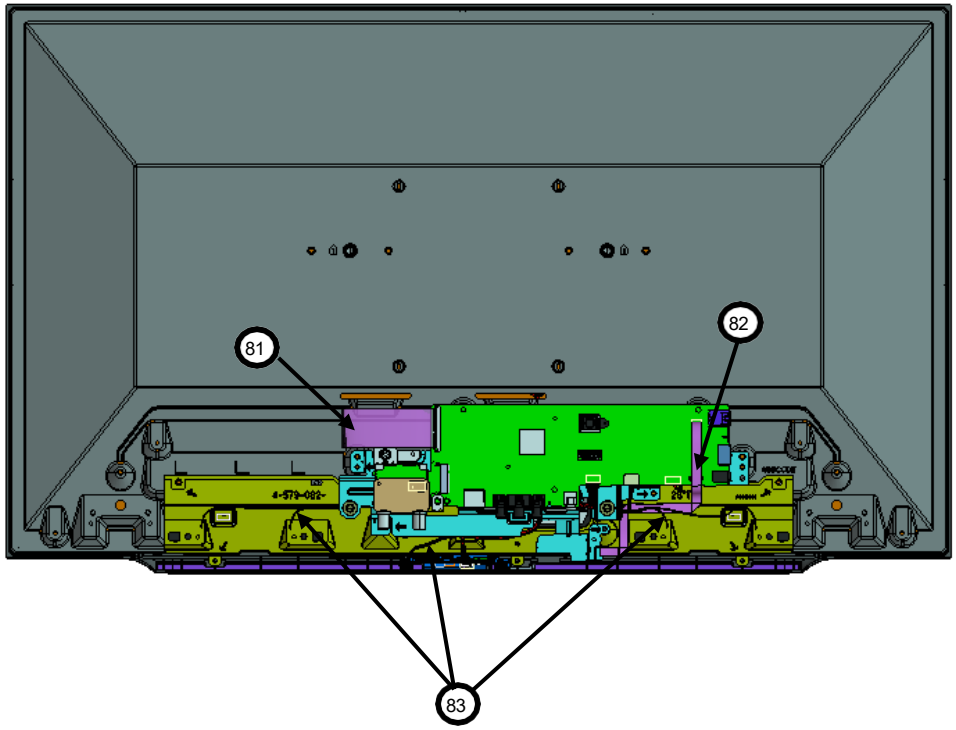






3-1. KDL-32W600D

3-1-3. Connectors



REF. NO.	DESCRIPTION	PART NO.	REMARKS.	UC2
81	FLEXIBLE FLAT CABLE 30P (BM11)	1-849-268-11	CN8601(BBA/BBE)-(SOURCE BOARD) (1)	•
82	FLEXIBLE FLAT CABLE 5P (BM11)	1-849-270-11	CN9900(BBA/BBE)-(WIFI) (1)	•
83	HARNESS ASSY	1-910-805-60	CN9901(BBA/BBE)-CN100(HCY)-CN1(Side key) / CN4001(BBA/BBE)-SP(1)	•

3-1. KDL-32W600D

3-1-4. Other Parts

REF. NO.	DESCRIPTION	PART NO.	UC2
	ATTACHMENT, WALL MOUNT (TPZ) A	* 4-580-630-01	•
	MINI PLUG VIDEO ADAPTER	1-849-276-11	•
	CLAMPER, CABLE	4-262-708-04	•
	MANUAL, INSTRUCTION	* 4-584-787-11	•
	TAPE (3M 1350FB-1)15MMX66M BLK	7-600-031-97	•
	TAPE (3M 1350FW-1)15MMX66M WHT	7-600-031-96	•
	REMOTE COMMANDER (RMT-TX102U)	1-492-980-21	•
	SETUP GUIDE	* 4-584-789-11	•
	SPACER (B)	4-298-004-01	•
	SCREW, +PSW M5X16(BAG, SCREW ASSY (MRS)	2-580-608-01	•
	SCREW +BVTP 3X8 TYPE2 IT-3(STAND, BASE ASSY (2S TPZ))	7-685-646-79	•