

[AI2 MAX:BFX-UA300]

Acoustic Improvement Report

Organization
R&D Lab. 2

Issued Date
2020.12.28

Version
1.0

Revision History

Version	Date	Description	Owner
1.0	2020/12/28	1 st Draft version	SH, Son

Rub and Buzz Improvement Points



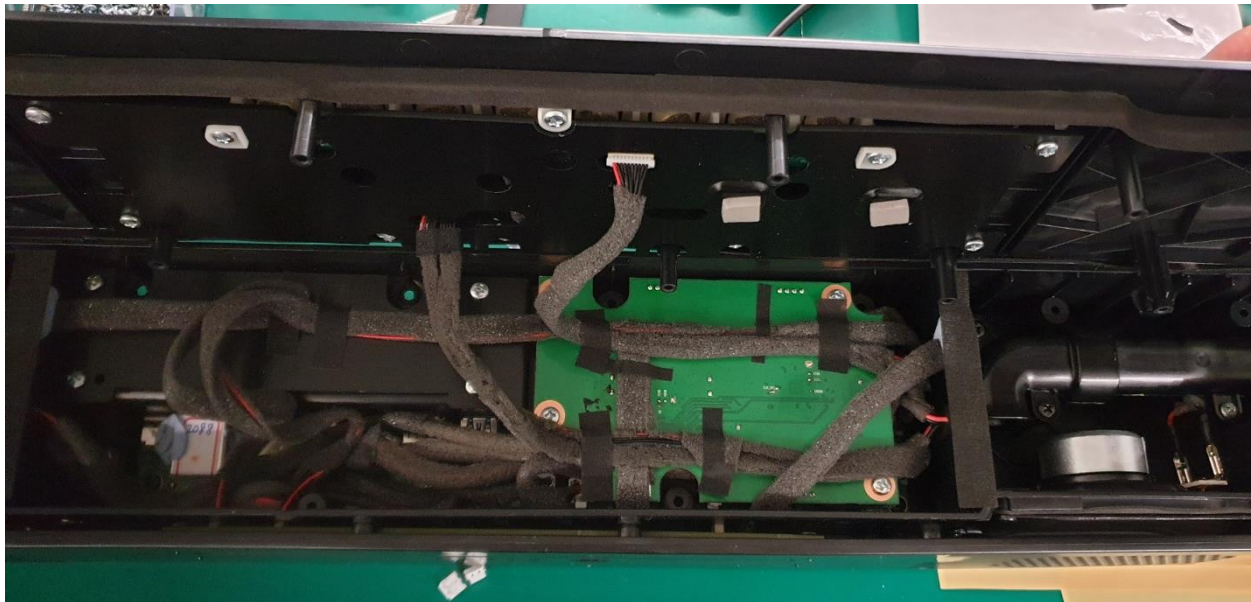
Overall

1. Base line : EVT PCBA and Thermal solution + T0 housing

- Some of parts or structure are may different then DVT build.
- many point from noise occurred in the PCBA area : components, cables, etc..

2. Reference assembly picture

- Applied all of improvement this document below.



70Hz / 100Hz

1. Speaker Unit : Woofer

: speaker unit Improvement for self-vibration

- Improving the edge of the diaphragm
- Additional bonding : terminal and voice coil

Owner : DreamUs
will improve next production



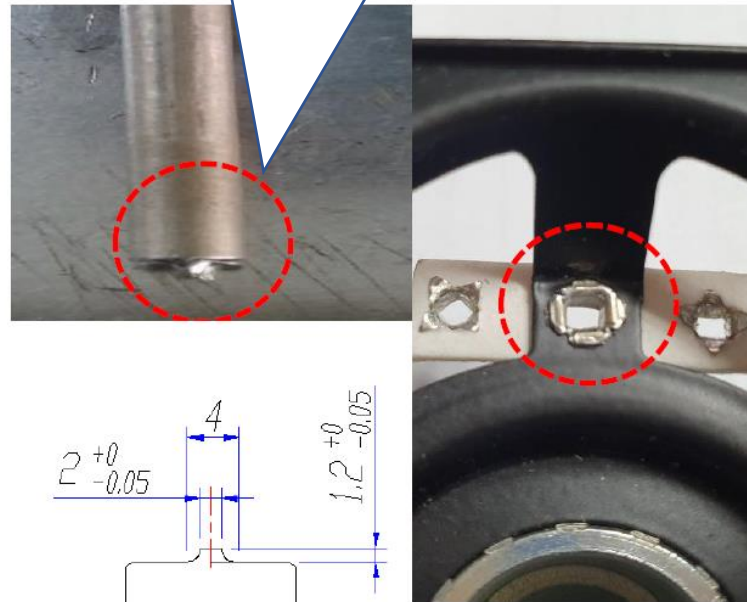
Test condition

SPK input voltage	8.94V
Input source	Woofer Left

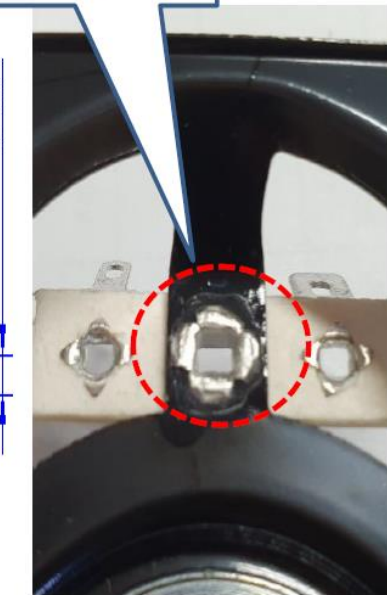
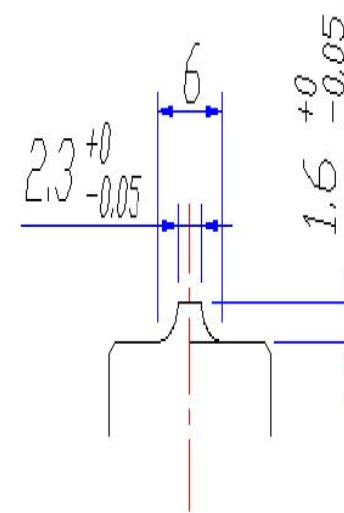
Improving the edge of the diaphragm

Terminal Caulking Mold update

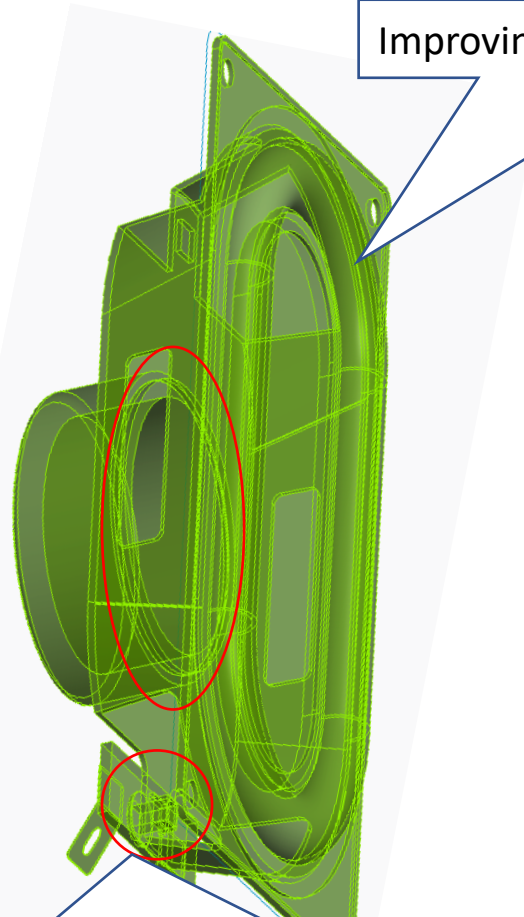
Add bonding



Before



After

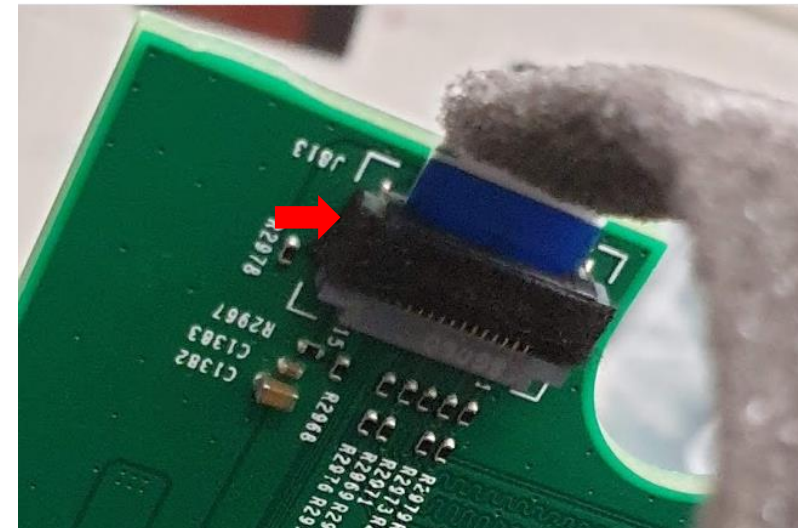
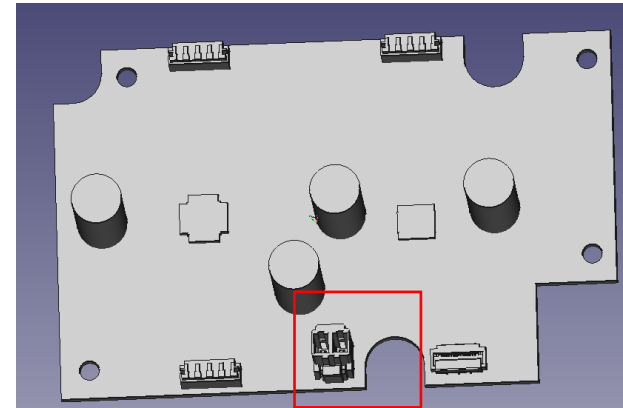


- Additional bonding : terminal and voice coil

1. FFC Cable

- : Apply PU foam for cable
- : Apply silicon or Nonwoven tape for connector at locking area
 - AMP PCBA and SoC PCBA
- : To avoid vibration with FFC cable and connector

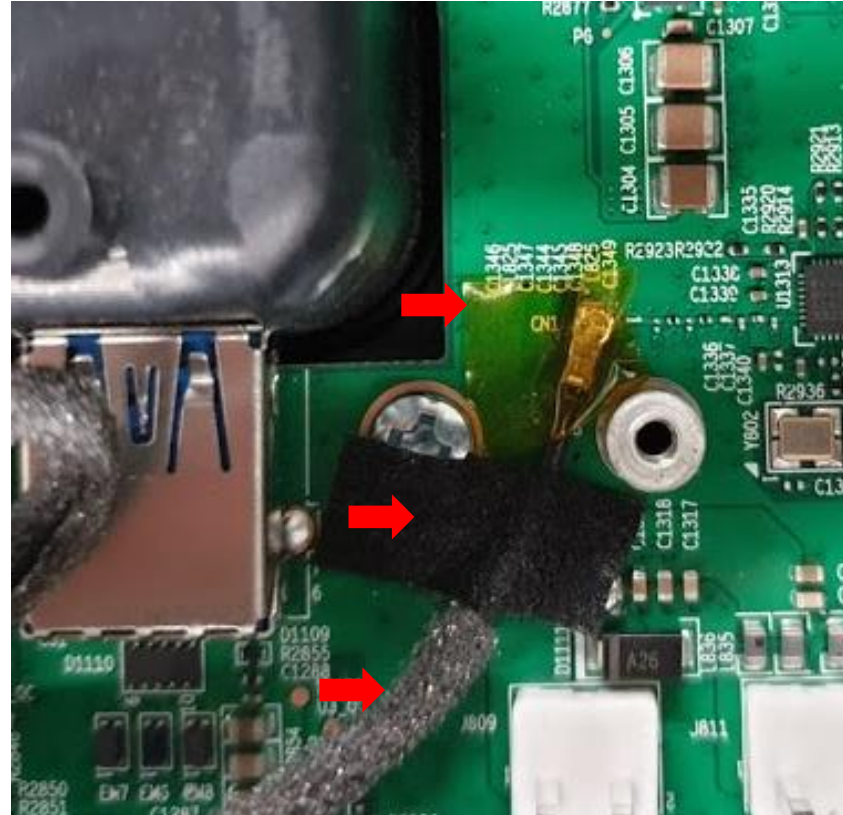
Owner : Foxconn
Apply DVT built



Test condition	
SPK input voltage	8.94V
Input source	Woofer Left

- : Apply PU foam for cable
- : Apply Kapton tape to fix the connector
- : To avoid vibration Bluetooth cable

Owner : Foxconn
Apply DVT built



Example picture

Test condition	
SPK input voltage	8.94V
Input source	Woofer Left

130Hz / 220Hz

1. Grill Fabric vibration
 - : Apply glue for tight fix fabric
 - : To avoid fabric vibration between grill

Owner : Inkel
Apply DVT built



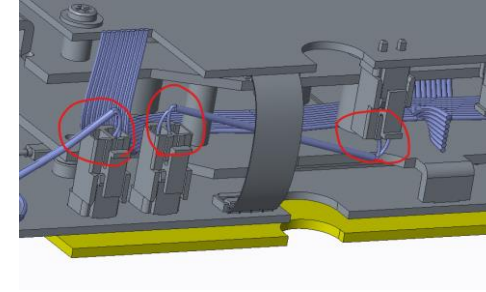
Test condition

SPK input voltage	8.94V
Input source	Woofer_Left : 130Hz Woofer_Right : 220Hz



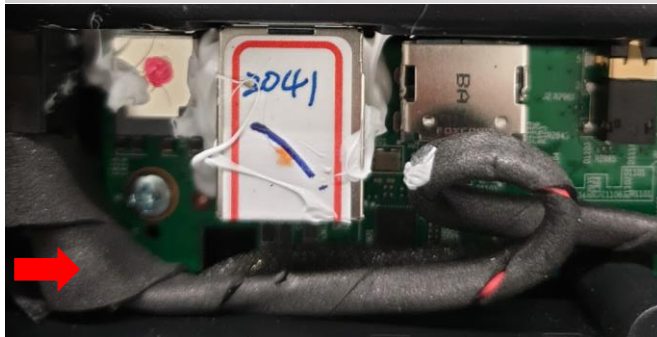
150Hz

1. Power connector + Wire module
 - : Apply silicon all of power connector and wire module
 - : To avoid vibration with connector and cable
2. Power Cable and Case Bottom Interference
 - : Apply PU foam
 - : To avoid vibration with cable and bottom case
 - : DC Power cable and Amp Power cable

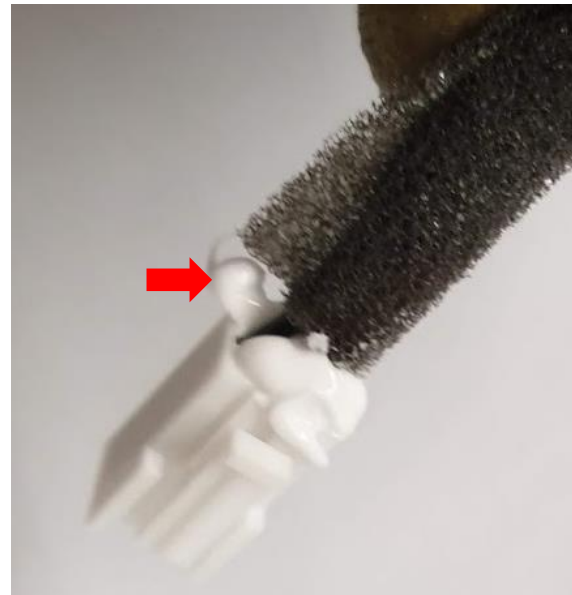


Test condition

SPK input voltage	8.94V
Input source	Woofer_Left

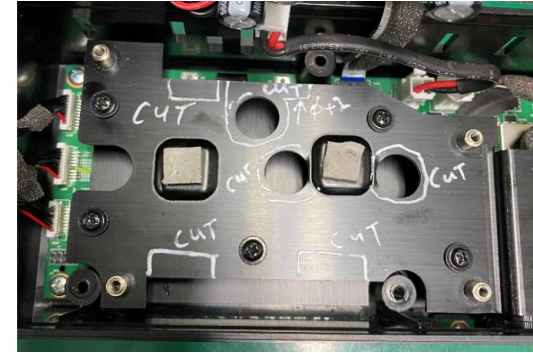


Example picture

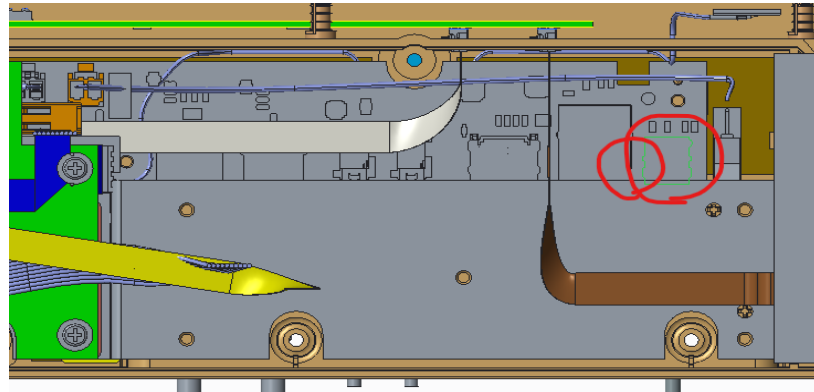


150Hz

3. Interference between PCBA parts and thermal parts
: Additional cutting of heat sink
: To avoid Interference with PCBA and thermal parts
: connector side cutting area is only for EVT



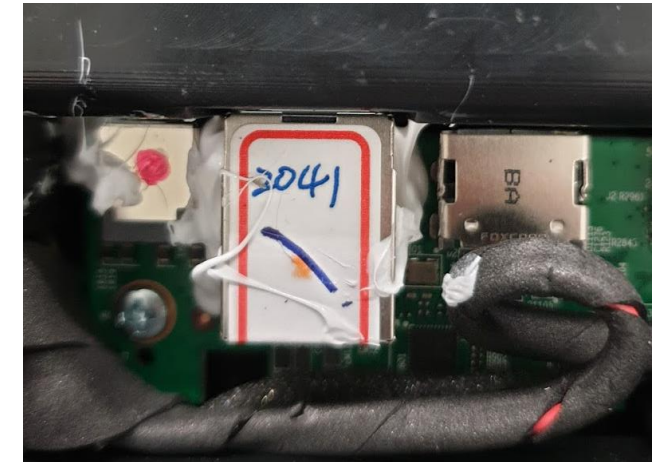
4. DC jack in main board
: Apply silicon on the connector
: To avoid vibration connector



No. 1~4
Owner : Foxconn
Apply DVT built



Test condition	
SPK input voltage	8.94V
Input source	Woofer_Left



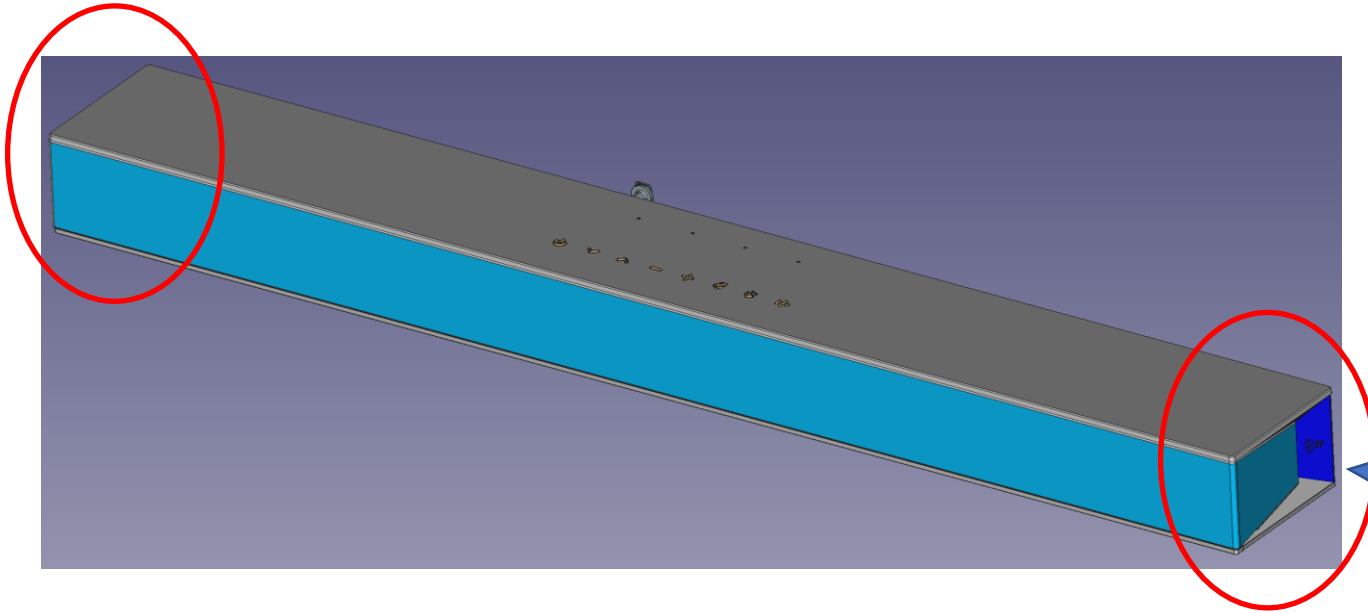
Example picture



170Hz

1. Side LED bracket
 - : Apply EVA foam gasket
 - : To avoid vibration with bracket and bottom case

Test condition	
SPK input voltage	8.94V
Input source	Woofer_Left



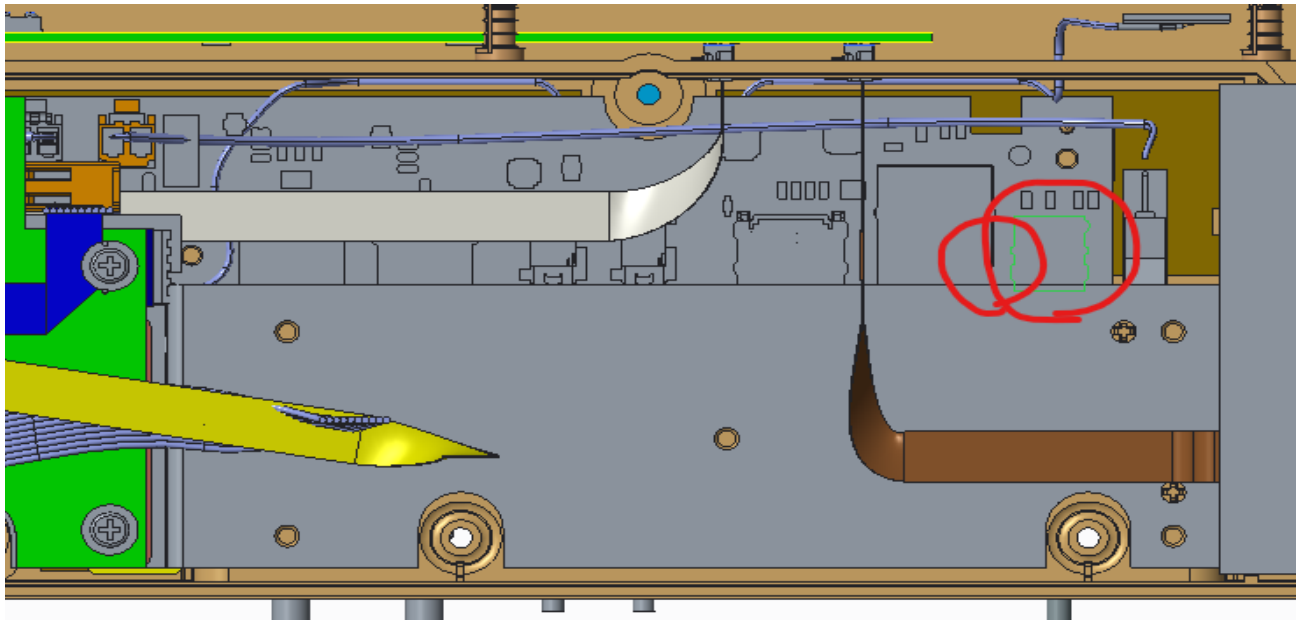
Owner : Foxconn
Apply DVT built
This material will be supplied by Inkel.

Example picture



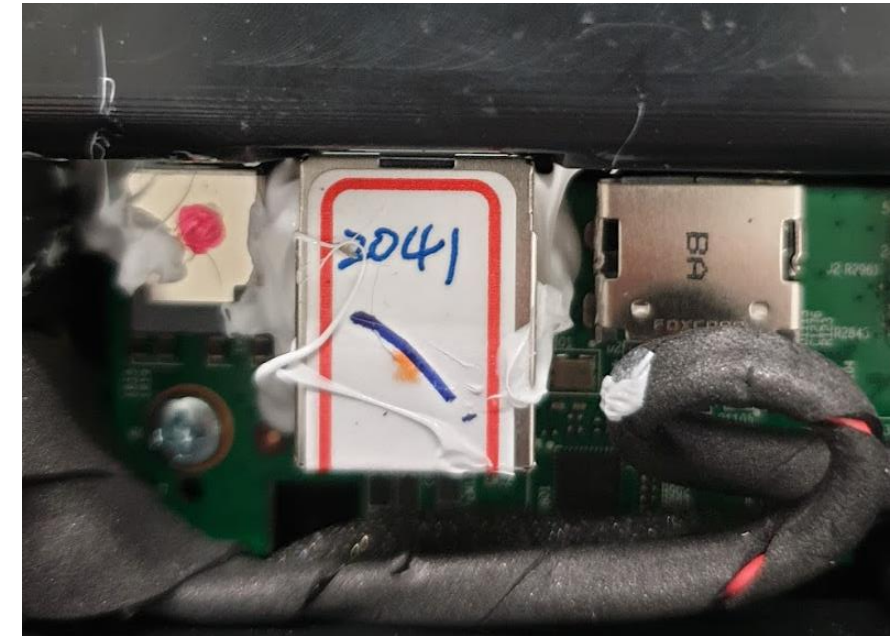
320Hz / 390Hz

1. Main Board DC jack with Ethernet connector
 - : Apply silicon on the connector
 - : To avoid vibration with DC jack and Ethernet connector
 - : Same as 150Hz No.4



Owner : Foxconn
Apply DVT built

Test condition	
SPK input voltage	8.94V
Input source	Woofer_Left : 320Hz Woofer_Right : 390Hz



Example picture

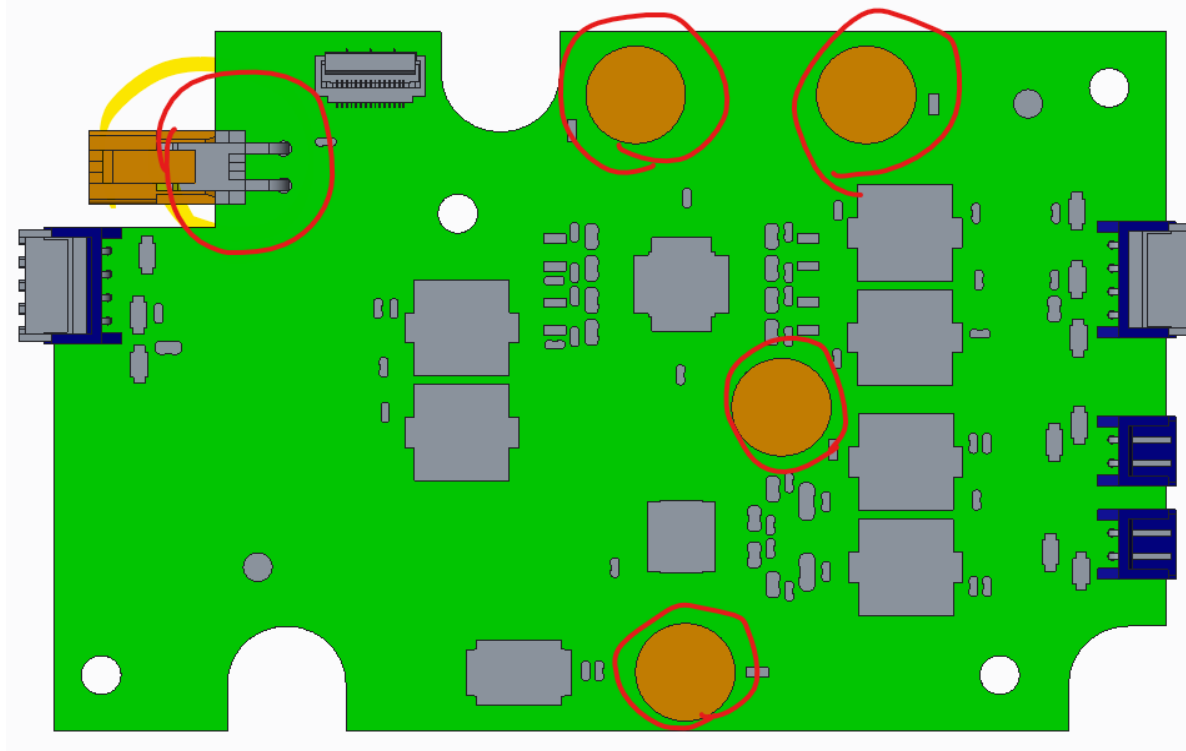


350Hz

1. AMP board components vibration

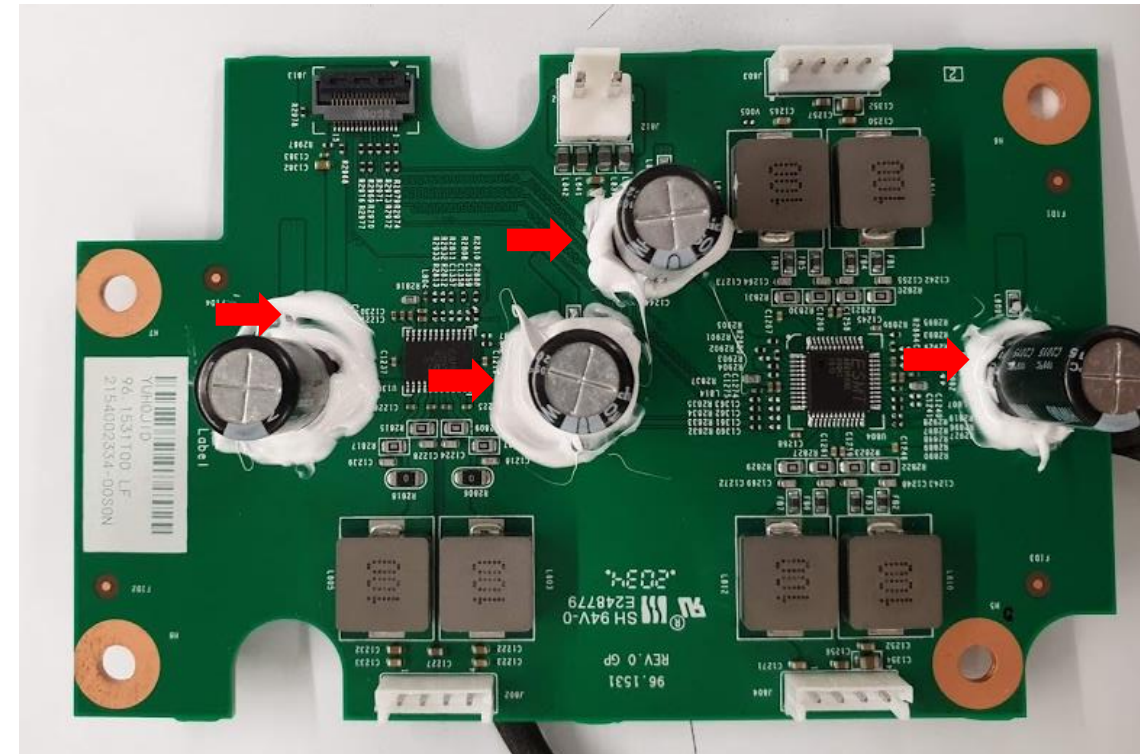
: Apply silicon on the connector

: To avoid vibration with DC jack and Ethernet connector



Owner : Foxconn
Apply DVT built

Test condition	
SPK input voltage	8.94V
Input source	Woofer_Left



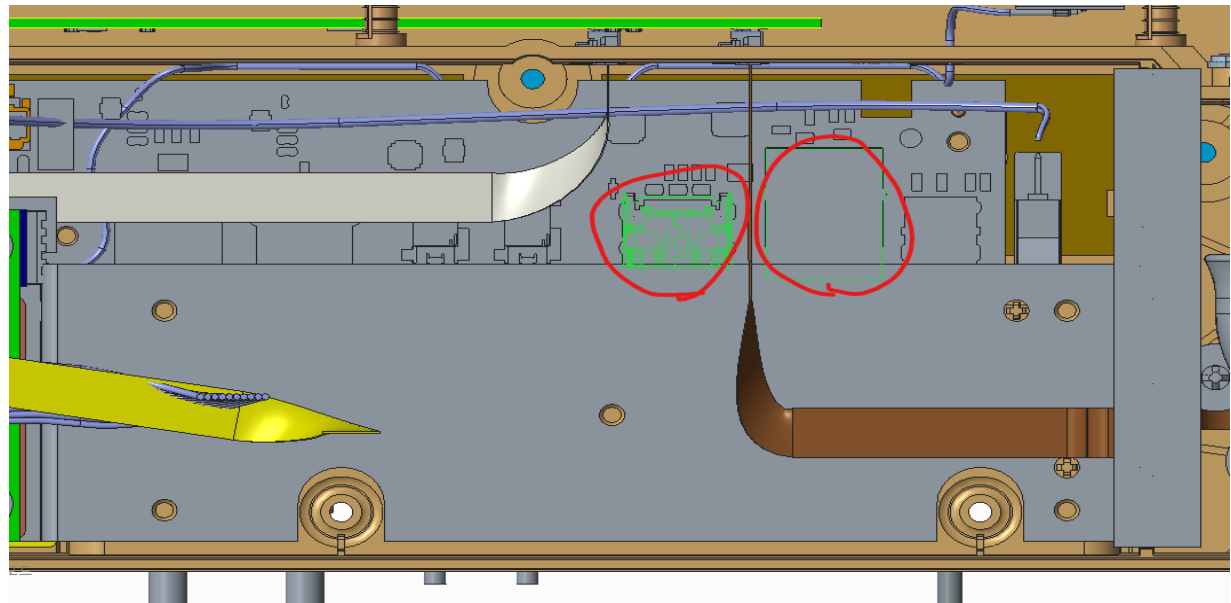
Example picture

510Hz



1. Main Board Ethernet connector with HDMI connector
: Apply silicon on the connector
: To avoid vibration with Ethernet connector and HDMI Connector

Test condition	
SPK input voltage	8.94V
Input source	Woofer_Left



Owner : Foxconn
Apply DVT built

750Hz / 1300Hz

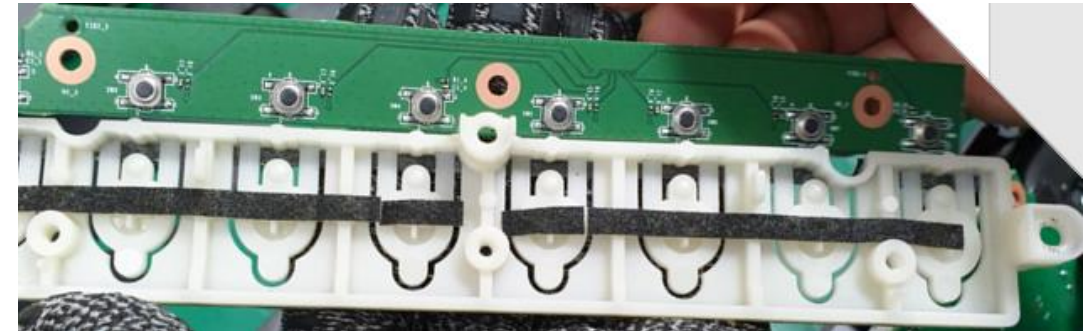
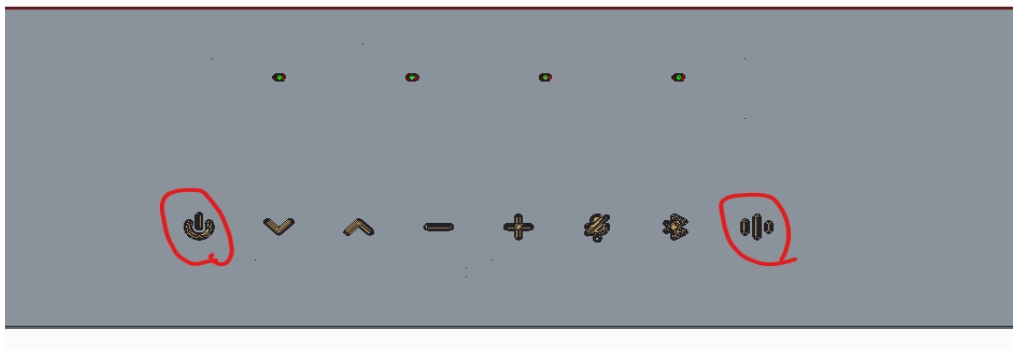


1. Button Knob vibration

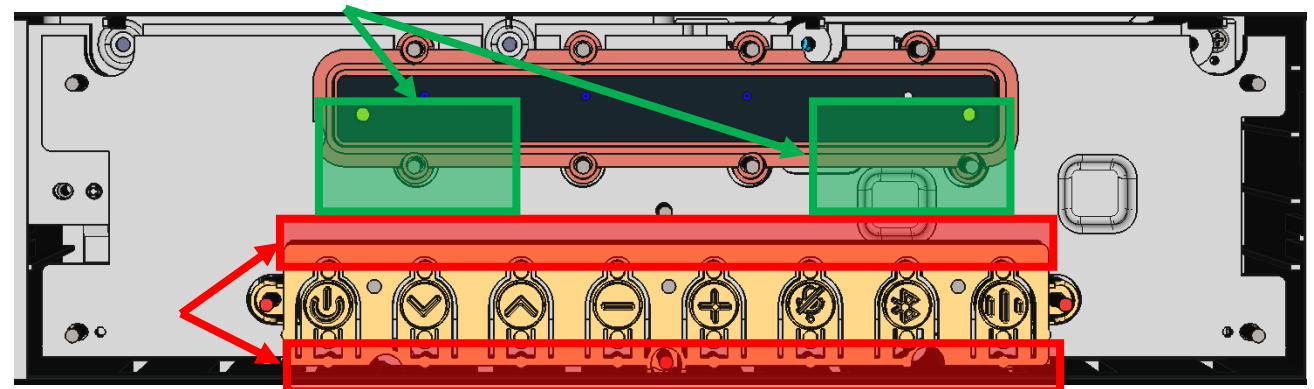
: Left side Power key and right side Sound field key

: Apply PU foam between button knob and Top housing.

Test condition	
SPK input voltage	8.94V
Input source	Woofer Left



“Add EVA sponge”



Owner : Inkel
Apply DVT built

“Apply PU foam”

Action item



1. All of cables need to apply PU foam.

- if not in cable specification of PU foam supplied by foxconn, need to be apply before DVT assembly.
- SPK use PU 3T sheet
- : reference PU foam data sheet will be update

2. Factory have to prepare to fact cure silicon

- Need to check the list of subsidiary materials approved by the factory
- : Other sound product manufacturing line may use this item.
- this document improvement used this silicon. Also Inkel use this silicon
- : GB-508W_[En_TDS__rev20111108]

3. Factory have to prepare to Felt Tape for cable fix to assembly

- Need to check the list of subsidiary materials approved by the factory
- : Other sound product manufacturing line may use this item.
- Please refer to the below picture.

