



## ROHS TEST REPORT

**Report Reference No**..... : **ZKT-2302271034R**

**Date of issue**..... : Mar. 03, 2023

**Total number of pages**..... : 14

**Testing Laboratory**..... : **Shenzhen ZKT Technology Co., Ltd.**

**Address**..... : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

**Applicant's name**..... : **Guangzhou TOPPING Technology Co., Ltd**

**Address**..... : Rm201, 26<sup>th</sup> Jiaomen Rd, Huangge, Nansha, Guangzhou, China.

**Manufacturer's name** ..... : **Guangzhou TOPPING Technology Co., Ltd**

**Address** ..... : Rm201, 26<sup>th</sup> Jiaomen Rd, Huangge, Nansha, Guangzhou, China.

**Test Requested:****Conclusion**

(1) RoHS Directive 2011/65/EU Annex II amending Annex (EU)2015/863 and amending Annex (EU)2017/2102  
—Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs and PBDEs Content  
—Di-(2-ethylhexyl) phthalate(DEHP), Benzylbutyl phthalate(BBP), Dibutyl phthalate (DBP), Diisobutyl phthalate(DIBP) Content

PASS

**Test Report Form No**..... : --

**Test Report Form(s) Originator**..... : ZKT Testing

**Master TRF**..... : Dated: 2017-06

**This test report is specially limited to the above client company and product model only. It may not be duplicated without prior written consent of ZKT Test.**

**Test item description**..... : **Audio Amplifier**

**Trade Mark**..... : TOPPING

**Model/Type reference**..... : TP22A

TP22AA, TP22AB, TP22AC, TP22AD



**Testing procedure and testing location:**

**Testing Laboratory**.....: **Shenzhen ZKT Technology Co., Ltd.**

**Address**.....: 1/F, No. 101, Building B, No. 6, Tangwei Community  
Industrial Avenue, Fuhai Street, Bao'an District,  
Shenzhen, China

---

**Date of Test**.....: Feb. 27, 2023- Mar. 03, 2023

---

**Tested by (name + signature)**.....: Doris Zhan

**Reviewer (name + signature)**.....: Simon Gong

**Approved (name + signature)**.....: Awen He





## 2. Test Item Description And Photo List

Sample No.	Description
001	Black metal
002	Golden metal
003	Silver metal
004	Transparent plastic
005	PCB
006	IC
007	TIN
008	SMD CAPACITOR
009	SMD RESISTOR
010	SMD DIODE
011	SMD TRANSISTOR
012	SMD Inductor
013	ALUMINUM ELECTROLYTIC CAPACITORS
014	METAL FILM FIXED RESISTORS
015	Pin header
016	SILVER -GREY PLATING ON METAL
017	Red wire
018	Black wire
019	Screw



### 3. Test Results

#### 3.1 Screening test for the specified hazardous substances of RoHS for the selected materials of the submitted sample:

- Heavy Metal (Cadmium, Chromium, Mercury, Lead) Content Test
- Bromine Content Test

According to IEC 62321-3-1:2013, and Quantification analyzed with Energy Dispersive X-ray Fluorescence Spectrometers.

Sample No.	Total Cadmium	Total Lead	Total Mercury	Total Chromium	Total Bromine
Sample 001	BL	BL	BL	BL	N.A.
Sample 002	BL	BL	BL	BL	N.A.
Sample 003	BL	BL	BL	BL	N.A.
Sample 004	BL	BL	BL	BL	BL
Sample 005	BL	BL	BL	BL	BL
Sample 006	BL	BL	BL	BL	BL
Sample 007	BL	BL	BL	BL	N.A.
Sample 008	BL	BL	BL	BL	BL
Sample 009	BL	BL	BL	BL	BL
Sample 010	BL	BL	BL	BL	BL
Sample 011	BL	BL	BL	BL	BL
Sample 012	BL	BL	BL	BL	BL
Sample 013	BL	BL	BL	BL	BL
Sample 014	BL	BL	BL	BL	BL
Sample 015	BL	BL	BL	BL	N.A.
Sample 016	BL	BL	BL	BL	N.A.
Sample 017	BL	BL	BL	BL	BL
Sample 018	BL	BL	BL	BL	BL
Sample 019	BL	BL	BL	BL	N.A.

#### Note:

All Concentrations express in “mg/kg” (milligram per kilogram), mg/kg ~ ppm

“OL” denotes “over limit”

“BL” denotes “below limit”

“N.A.” denotes “Not Applicable”

“Inconclusive” denotes result is intermediate between “OL” and “BL”

“A” denotes the screening result was inconclusive(X) or over limit (OL), thus further confirmation test was conducted, results are listed in 3.2 and 3.3.



XRF screening limits for different materials:

Materials	Concentration (mg/kg)				
	Cd	Cr	Pb	Hg	Br
<b>Metal</b>	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	N.A.
<b>Polymers</b>	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (300-3\sigma) < X$
<b>Composite material</b>	$BL \leq (50-3\sigma) < X < (150+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$	$BL \leq (250-3\sigma) < X$



### 3. 2 Test for Heavy Metals

Lead, Cadmium, Hexavalent Chromium and Mercury Tests according to IEC 62321-4:2013+A1:2017 & IEC 62321-5:2013 & IEC 62321-7-1:2015 & IEC 62321-7-2:2017, Analysis was conducted by ICP-OES, UV-VIS.

Element	Total Cadmium [mg/kg]	Total Lead [mg/kg]	Total Mercury [mg/kg]	Hexavalent Chromium [ $\mu\text{g}/\text{cm}^2$ ]	Hexavalent Chromium [mg/kg]
Detection Limit	5	5	5	0.10	5
Limit	100	1000	1000	0.10	1000

Note:

- All Concentrations express in "mg/kg"(milligram per kilogram), mg/kg ~ ppm.
- "N.D." = "Not Detected".
- Boiling-water-extraction:  
 Negative = Absence of Cr(VI) coating / surface layer: the detected concentration in boiling-water-extraction solution is less than 0.10 $\mu\text{g}$  with 1cm<sup>2</sup> sample surface area. Positive = Presence of Cr(VI) coating / surface layer: the detected concentration in boiling-water-extraction solution is greater than 0.13 $\mu\text{g}$  with 1cm<sup>2</sup> sample surface area.  
 Inconclusive = the detected concentration in boiling-water-extraction solution is greater than 0.10 $\mu\text{g}$  and less than 0.13 $\mu\text{g}$  with 1cm<sup>2</sup> sample surface area.
- Positive = result be regarded as not comply with RoHS requirement  
 Negative = result be regarded as comply with RoHS requirement
- "-" =Not regulated



### 3. 3 Test for Flame retardants

**Test Method: With reference to IEC 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometry (GC-MS). [Reporting Limit: 5mg/kg]**

Test Item		Result [mg/kg]	RoHS Requirement [mg/kg]
		Sample 005	
PBBs	Monobromobiphenyl	< 5	Sum of PBBs < 1000
	Dibromobiphenyl	< 5	
	Tribromobiphenyl	< 5	
	Tetrabromobiphenyl	< 5	
	Pentabromobiphenyl	< 5	
	Hexabromobiphenyl	< 5	
	Heptabromobiphenyl	< 5	
	Octabromobiphenyl	< 5	
	Nonabromobiphenyl	< 5	
	Decabromobiphenyl	< 5	
	Sum of PBBs	< 5	
PBDEs	Monobromodiphenyl Ether	< 5	Sum of PBDEs < 1000
	Dibromodiphenyl Ether	< 5	
	Tribromodiphenyl Ether	< 5	
	Tetrabromodiphenyl Ether	< 5	
	Pentabromodiphenyl Ether	< 5	
	Hexabromodiphenyl Ether	< 5	
	Heptabromodiphenyl Ether	< 5	
	Octabromodiphenyl Ether	< 5	
	Nonabromodiphenyl Ether	< 5	
	Decabromodiphenyl Ether	< 5	
	Sum of PBDEs	< 5	

Note:

1. All Concentrations express in “mg/kg” (milligram per kilogram), mg/kg ~ ppm.
2. “<” denotes less than



### 3.4 Di-(2-ethylhexyl) phthalate(DEHP), Benzylbutyl phthalate(BBP), Dibutyl phthalate (DBP), Diisobutyl phthalate (DIBP) Content—RoHS Directive 2011/65/EU Annex II amending Annex (EU)2017/2102

Test method: With reference to IEC 62321-8:2017; Analysis was conducted by GC-MS.

Element	Di-(2-ethylhexyl) phthalate (DEHP) [mg/kg]	Benzylbutyl phthalate (BBP) [mg/kg]	Dibutyl phthalate (DBP) [mg/kg]	Diisobutyl phthalate(DIBP) [mg/kg]
<b>Detection Limit</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>
<b>Limit</b>	<b>1000</b>	<b>1000</b>	<b>1000</b>	<b>1000</b>
Sample 004	N.D.	N.D.	N.D.	N.D.
Sample 005	N.D.	N.D.	N.D.	N.D.
Sample 006	N.D.	N.D.	N.D.	N.D.
Sample 008	N.D.	N.D.	N.D.	N.D.
Sample 009	N.D.	N.D.	N.D.	N.D.
Sample 010	N.D.	N.D.	N.D.	N.D.
Sample 011	N.D.	N.D.	N.D.	N.D.
Sample 012	N.D.	N.D.	N.D.	N.D.
Sample 013	N.D.	N.D.	N.D.	N.D.
Sample 014	N.D.	N.D.	N.D.	N.D.
Sample 017	N.D.	N.D.	N.D.	N.D.
Sample 018	N.D.	N.D.	N.D.	N.D.

Note:

All Concentrations express in “mg/kg”(milligram per kilogram), mg/kg ~ ppm.

“N.D.” = “Not Detected”.



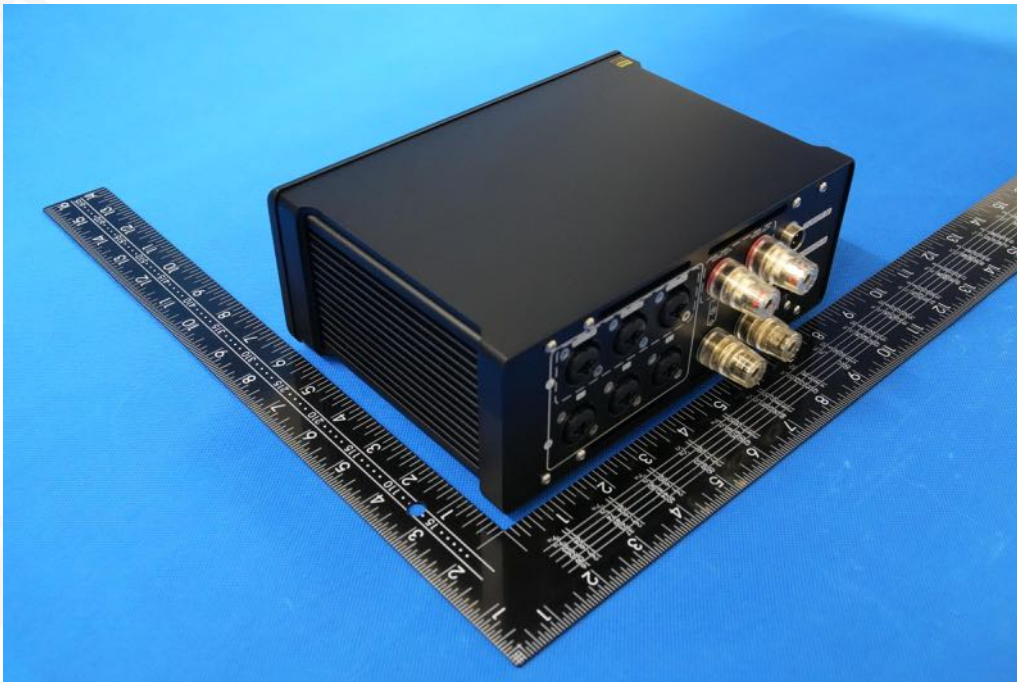


## ANNEX A: Photo-documentation

EUT Photo 1



EUT Photo 2





EUT Photo 3

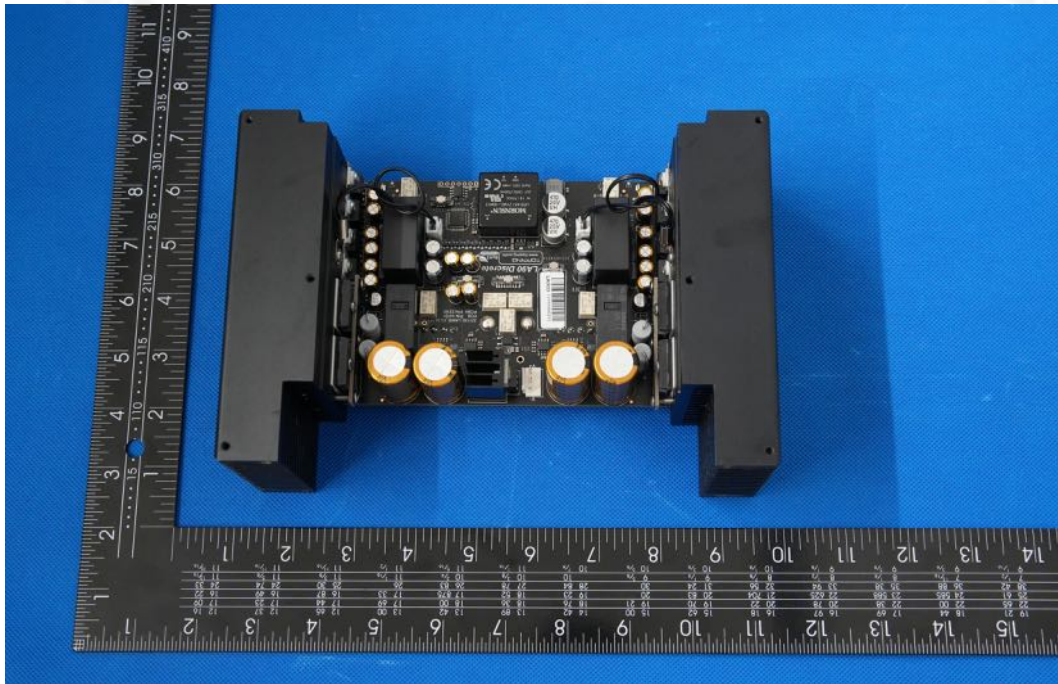


EUT Photo 4

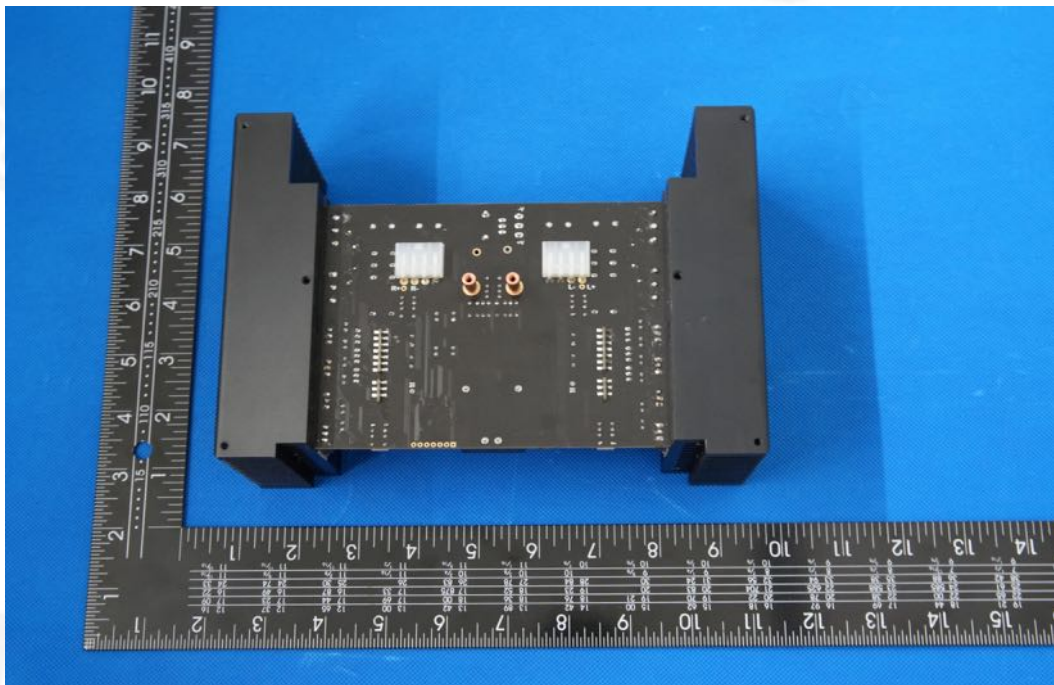




EUT Photo 5

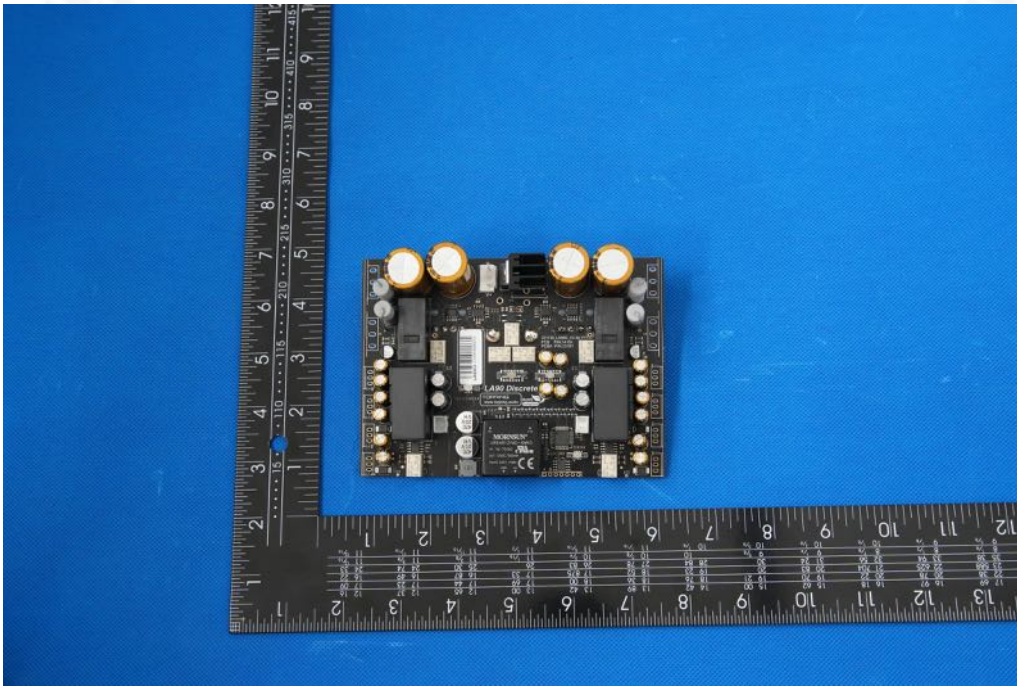


EUT Photo 6

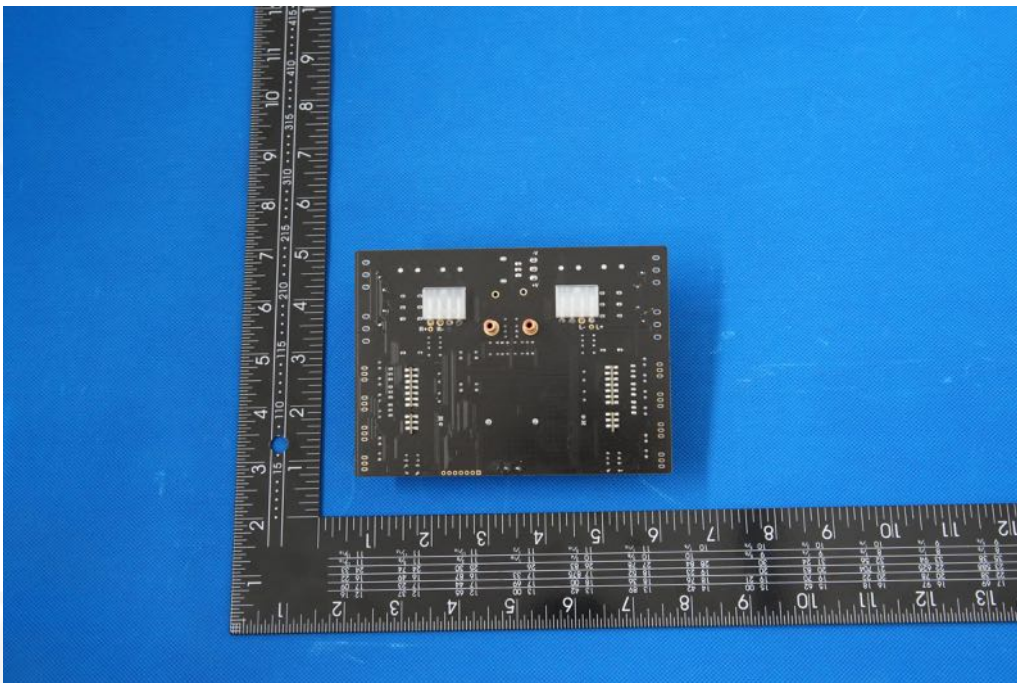




EUT Photo 7

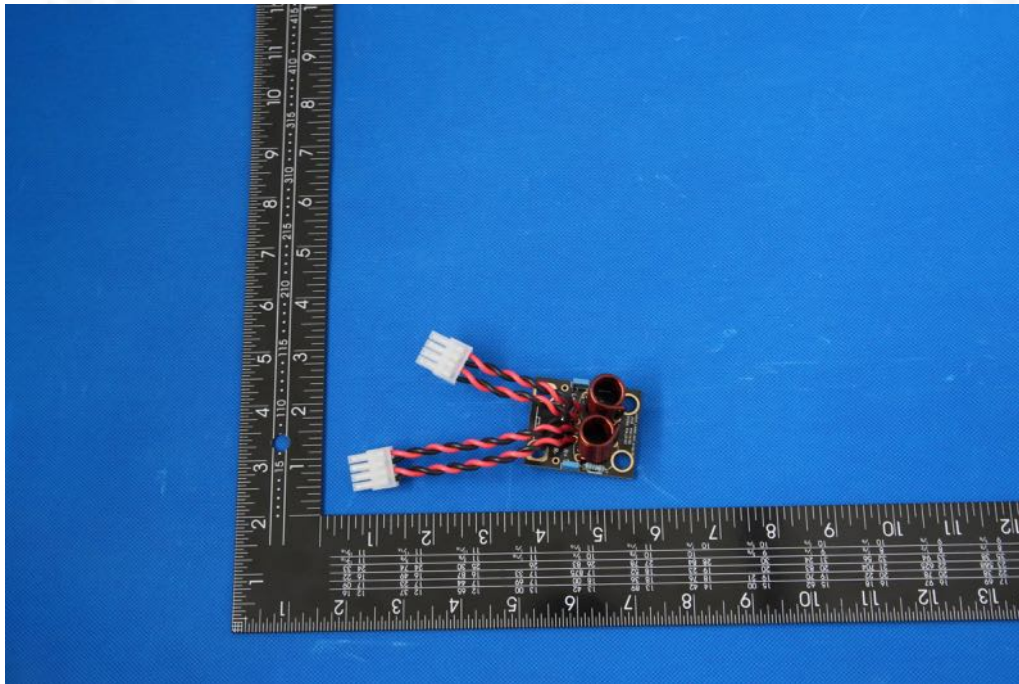


EUT Photo 8

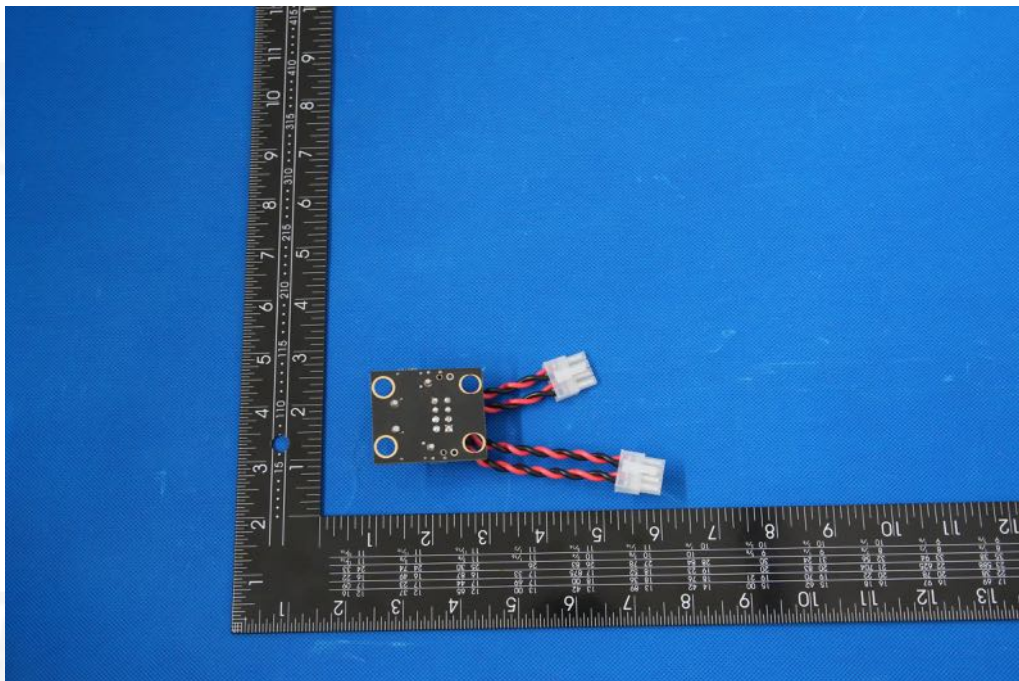




EUT Photo 9

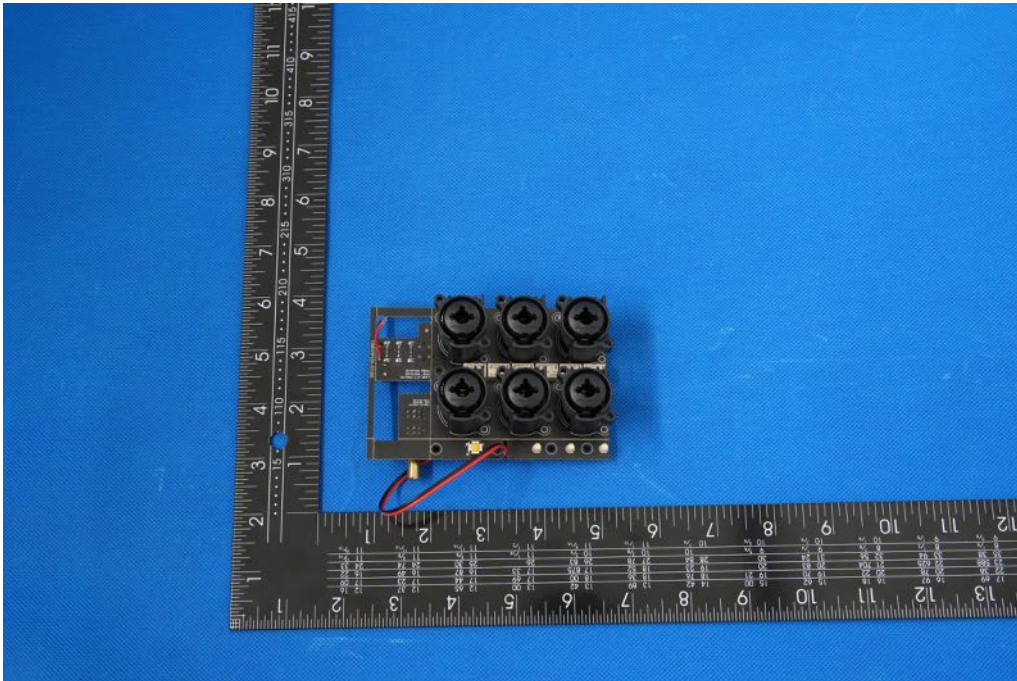


EUT Photo 10

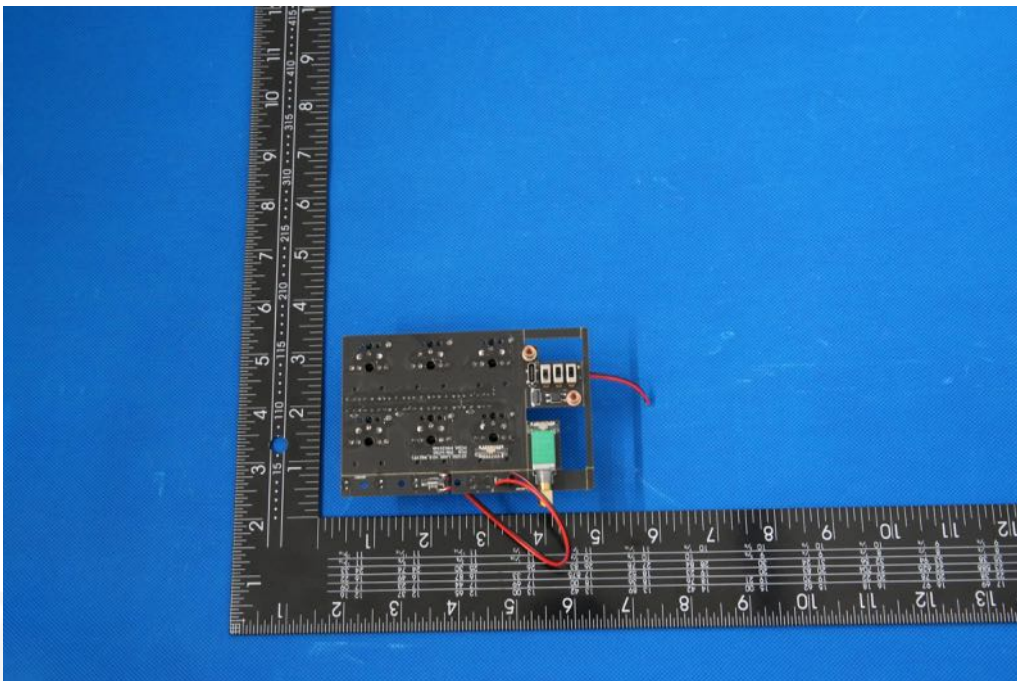




EUT Photo 11



EUT Photo 12



\*\*\*\*\* END OF REPORT\*\*\*\*\*