

# Verification Report

Report No.: LCS211208015AR

Date: 2021.12.23

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**Applicant** : Khadas Technology(Shenzhen) Co., Ltd.  
**Address** : D#2101A, Caifugang Building, Baoyuan Road, Xixiang Street, Bao'an District, Shenzhen City, China

**Report on the submitted samples said to be:**

**Sample Name(s)** : Magnetic Bluetooth headphone amplifier

**Trade Mark** : KHADAS

**Part No.** : Tea

**Sample Received Date** : December 17, 2021

**Testing Period** : December 17, 2021 ~ December 23, 2021

**Results** : Please refer to next page(s).

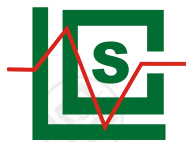
TEST REQUEST	CONCLUSION
As specified by client, based on the performed tests on submitted sample, the result of Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), PBBs, PBDEs, Dibutyl Phthalate(DBP), Butylbenzyl Phthalate(BBP), Di-2-ethylhexyl Phthalate(DEHP) and Diisobutyl phthalate(DIBP) content comply with the limits set by RoHS Directive 2011/65/EU with amendment (EU) 2015/863.	PASS

Signed for and on behalf of LCS

Young/Manager Laboratory



Scan code to check authenticity



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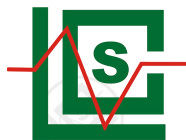
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## Results:

### A. EU RoHS Directive 2011/65/EU and its amendment directives

Test method: With reference to IEC 62321-3-1:2013, Screening by X-ray Fluorescence Spectroscopy (XRF)

Sample No.	Sample Description	Results						Date of sample submission/ Resubmission
		Cd	Pb	Hg	Cr▼	Br▼		
						PBBs	PBDEs	
1	Blue glass sheet	BL	BL	BL	BL	BL	BL	2021-12-17
2	Black tape	BL	BL	BL	BL	BL	BL	2021-12-17
3	Silver sheet metal	BL	BL	BL	BL	/	/	2021-12-17
4	Black plastic sheet	BL	BL	BL	BL	BL	BL	2021-12-17
5	Tin solder	BL	BL	BL	BL	/	/	2021-12-17
6	White soft plastic	BL	BL	BL	BL	BL	BL	2021-12-17
7	White Gel	BL	BL	BL	BL	BL	BL	2021-12-17
8	Gold sheet metal	BL	BL	BL	BL	/	/	2021-12-17
9	Gray plastic wire skin	BL	BL	BL	BL	BL	BL	2021-12-17
10	Silver wire	BL	BL	BL	BL	/	/	2021-12-17
11	White tape	BL	BL	BL	BL	BL	BL	2021-12-17
12	Silver sheet metal	BL	BL	BL	BL	/	/	2021-12-17
13	White plastic sheet	BL	BL	BL	BL	BL	BL	2021-12-17
14	Blue sheet metal	BL	BL	BL	BL	/	/	2021-12-17
15	Silver sheet metal	BL	BL	BL	BL	/	/	2021-12-17
16	Black cable	BL	BL	BL	BL	BL	BL	2021-12-17
17	Gold sheet metal	BL	BL	BL	BL	/	/	2021-12-17
18	Dark grey capacitor	BL	BL	BL	BL	BL	BL	2021-12-17
19	chip resistor	BL	BL	BL	BL	BL	BL	2021-12-17
20	Silver sheet metal	BL	BL	BL	BL	/	/	2021-12-17
21	Black plastic sheet	BL	BL	BL	BL	BL	BL	2021-12-17
22	Silver metal needle	BL	BL	BL	BL	/	/	2021-12-17
23	Silver crystal oscillator	BL	BL	BL	BL	/	/	2021-12-17
24	Black plastic sheet	BL	BL	BL	BL	BL	BL	2021-12-17
25	Silver sheet metal	BL	BL	BL	BL	/	/	2021-12-17
26	Black IC	BL	BL	BL	BL	BL	BL	2021-12-17
27	Black IC	BL	BL	BL	BL	BL	BL	2021-12-17
28	PCB board	BL	BL	BL	BL	BL	BL	2021-12-17
29	Silver metal screw	BL	BL	BL	BL	/	/	2021-12-17



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Sample No.	Sample Description	Results						Date of sample submission/ Resubmission
		Cd	Pb	Hg	Cr▼	Br▼		
						PBBs	PBDEs	
30	Ferrous metal screw	BL	BL	BL	BL	/	/	2021-12-17
31	White plastic sheet	BL	BL	BL	BL	BL	BL	2021-12-17
32	White soft plastic	BL	BL	BL	BL	BL	BL	2021-12-17
33	Silver sheet metal	BL	BL	BL	BL	/	/	2021-12-17
34	Silver sheet metal	BL	BL	BL	BL	/	/	2021-12-17
35	Black plastic sheet	BL	BL	BL	BL	BL	BL	2021-12-17
36	Silver metal needle	BL	BL	BL	BL	/	/	2021-12-17
37	Tin solder	BL	BL	BL	BL	/	/	2021-12-17
38	PCB board	BL	BL	BL	BL	BL	BL	2021-12-17
39	White plastic wire skin	BL	BL	BL	BL	BL	BL	2021-12-17
40	Green wire	BL	BL	BL	BL	/	/	2021-12-17
41	Red wire	BL	BL	BL	BL	/	/	2021-12-17
42	Blue wire	BL	BL	BL	BL	/	/	2021-12-17
43	Gold wire	BL	BL	BL	BL	/	/	2021-12-17
44	White plastic sheet	BL	BL	BL	BL	BL	BL	2021-12-17
45	Silver sheet metal	BL	BL	BL	BL	/	/	2021-12-17



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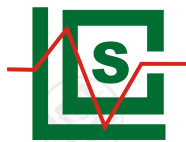
Note:

1. Results were obtained by XRF for primary screening, and further chemical testing by ICP(for Cd, Pb, Hg), UV-Vis(for Cr(VI)) and GC-MS(for PBBs, PBDEs) are recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1:2013(Unit: mg/kg).

Element	Polymers	Metals	Composite material
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$
Br	$BL \leq (300-3\sigma) < X$	N/A	$BL \leq (250-3\sigma) < X$

Remark:

- BL= Below Limit
  - OL= Over Limit
  - X= The range of needing to do further testing
  - $3\sigma$ = The reproducibility of analytical instruments
  - N/A= Not applicable
  - LOD= Detection limit
2. The XRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.
  3. The maximum permissible limit is quoted from the document RoHS Directive 2011/65/EU with amendment (EU) 2015/863.
  4. ▼=For restricted substances PBBs and PBDEs, the results show the total Br content, the restricted substance was Cr(VI), and the results showed the total Cr content.



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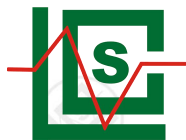
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RoHS Restricted Substances	Maximum Concentration Value (mg/kg) (by weight in homogenous materials)
Cadmium(Cd)	100
Lead(Pb)	1000
Mercury(Hg)	1000
Hexavalent Chromium(Cr(VI))	1000
Polybrominated biphenyls(PBBs)	1000
Polybrominated diphenylethers(PBDEs)	1000
Dibutyl Phthalate(DBP)	1000
Butylbenzyl Phthalate(BBP)	1000
Di-(2-ethylhexyl) Phthalate(DEHP)	1000
Diisobutyl phthalate(DIBP)	1000

## Disclaimers:

This XRF Screening report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF screening report is sufficient for its/his/her purposes. The result shown in this XRF screening report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect (e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis are required to obtain quantitative data.





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## **B. EU RoHS Directive 2011/65/EU with amendment (EU) 2015/863 on DBP, BBP, DEHP & DIBP content**

Test method:

Phthalates(DBP, BBP, DEHP &DIBP) Content:

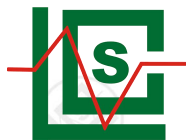
With reference to IEC 62321-8:2017, by solvent extraction and analysis was performed by gas chromatographic-mass spectrometer (GC-MS).

### **1) The test results of Phthalates(DBP, BBP, DEHP &DIBP)**

Tested Items	Unit	MDL	Results	Limit
			1+2+4+6+7+9	
Dibutyl Phthalate(DBP) Content	mg/kg	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	mg/kg	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	mg/kg	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	mg/kg	600	N.D.	1000

Tested Items	Unit	MDL	Results	Limit
			11+13+16+18+19+21	
Dibutyl Phthalate(DBP) Content	mg/kg	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	mg/kg	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	mg/kg	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	mg/kg	600	N.D.	1000

Tested Items	Unit	MDL	Results	Limit
			24+26+27+28+31+32	
Dibutyl Phthalate(DBP) Content	mg/kg	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	mg/kg	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	mg/kg	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	mg/kg	600	N.D.	1000



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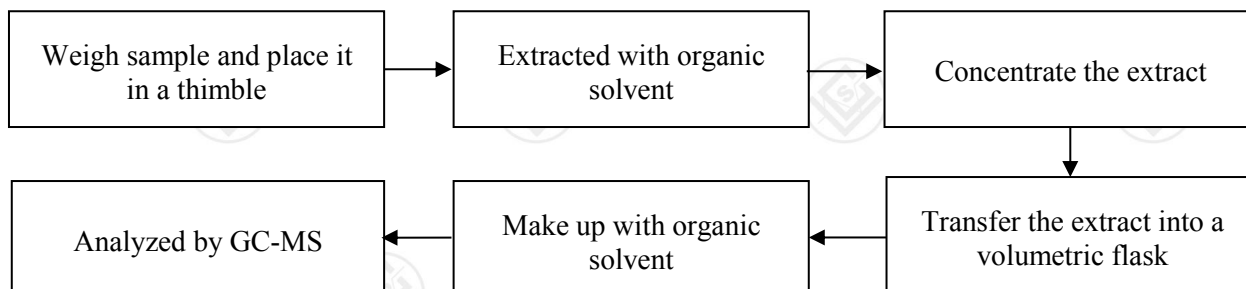
Tested Items	Unit	MDL	Results	Limit
			35+38+39+44	
Dibutyl Phthalate(DBP) Content	mg/kg	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	mg/kg	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	mg/kg	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	mg/kg	600	N.D.	1000

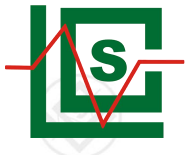
Note:

- MDL = Method Detection Limit
- N.D.=Not Detected(<MDL or LOQ)
- mg/kg = ppm=parts per million

## Test Process

### 1. Phthalates(DBP, BBP, DEHP & DIBP) : IEC 62321-8:2017





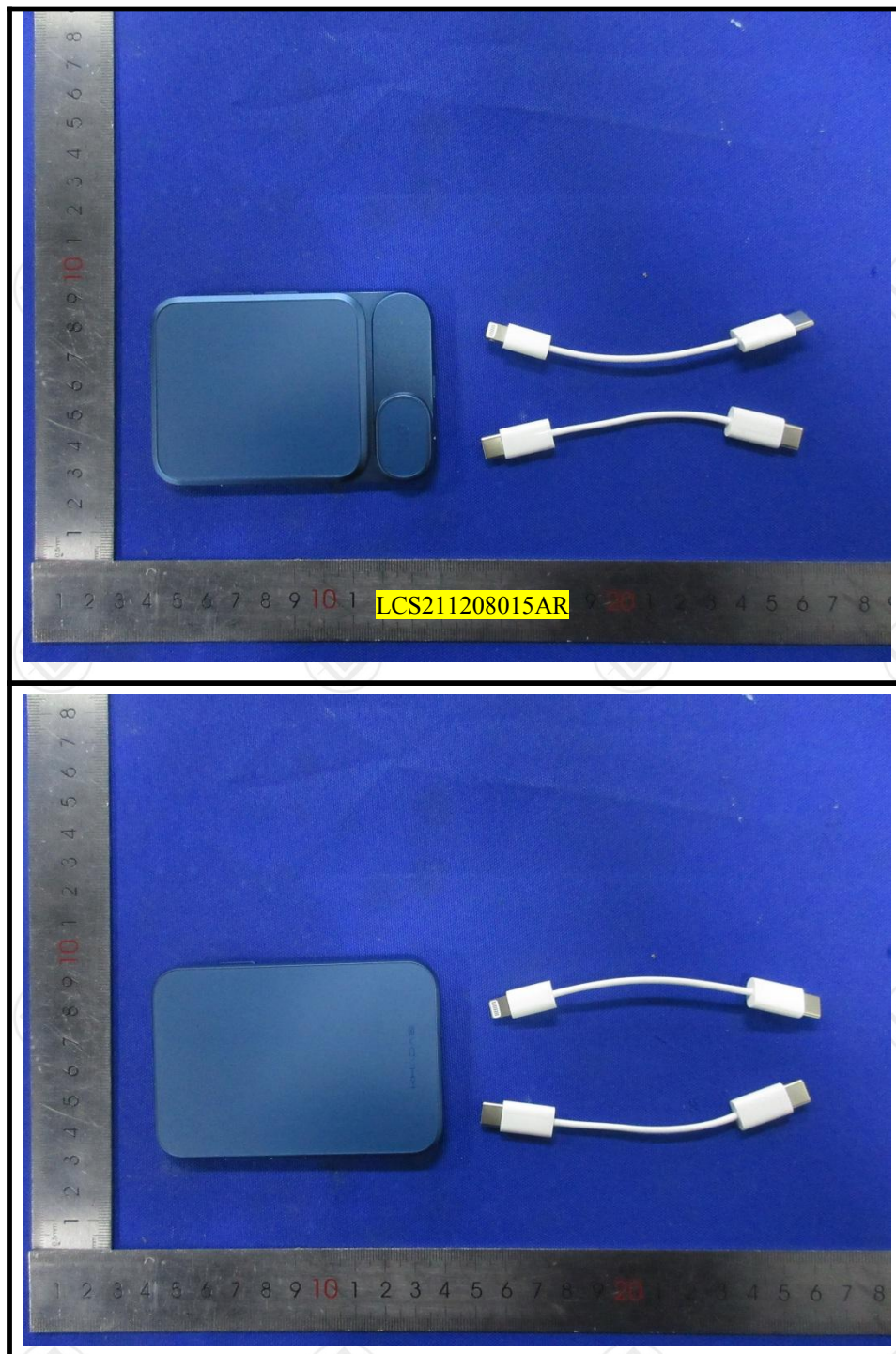
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## The photo(s) of the sample







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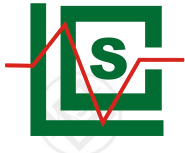
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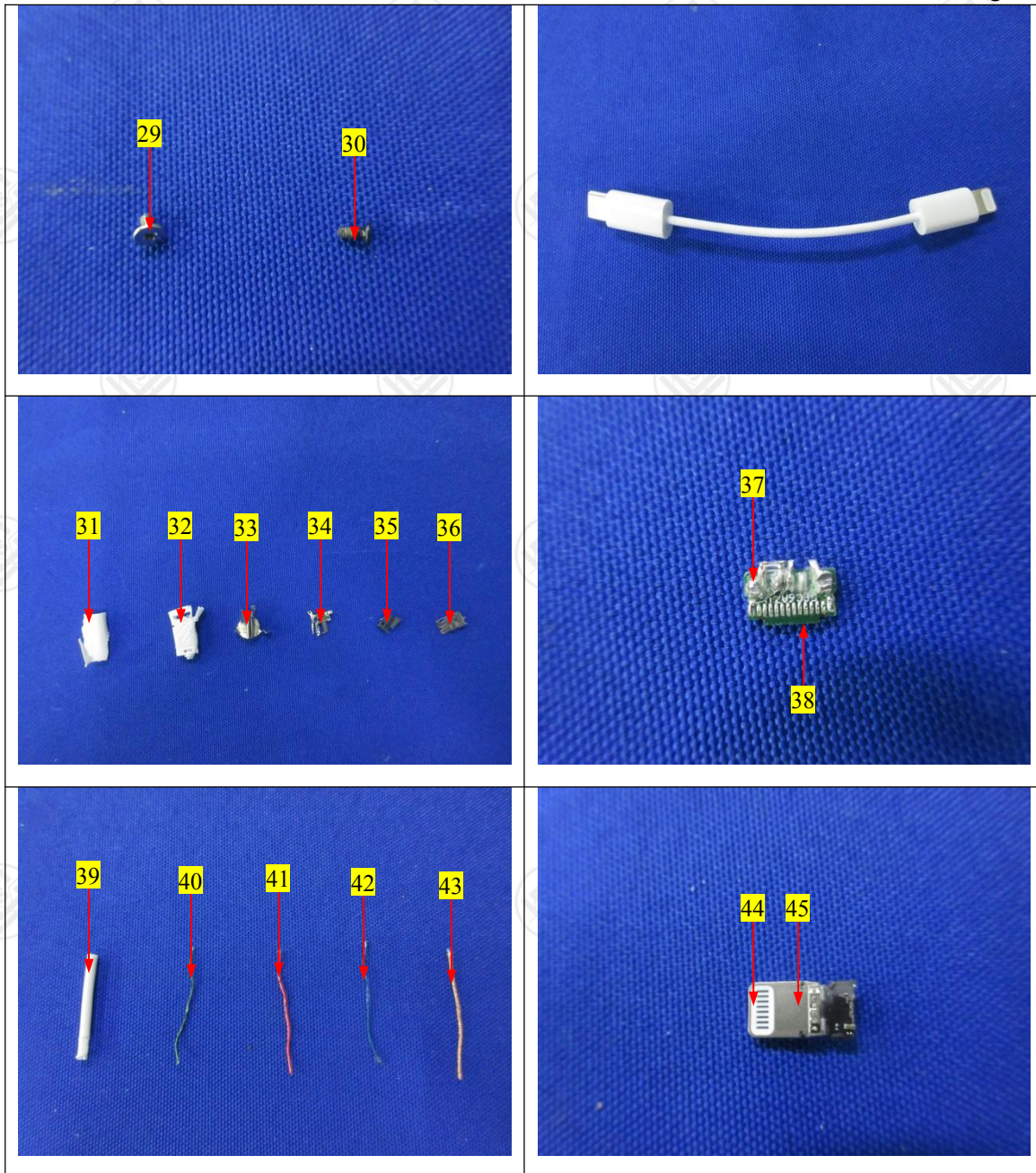


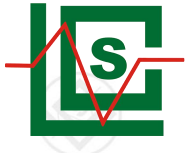
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## Statement:

1. The test report is invalid without the signature of the approver and the special seal for the company's report;
2. The Company Name, Address and sample information shown on the Report were provided by the applicant who should be responsible for the authenticity which are not verified by LCS;
3. The test results in this report are only responsible for the tested samples;
4. Without written approval of LCS, this report can't be reproduced except in full;
5. In case of any discrepancy between the corresponding Chinese and English contents in the test report, the Chinese version shall prevail.

\*\*\* End of Report \*\*\*