



Verification Report

Applicant : KHADAS TECHNOLOGY CO., LTD
Address : 2709 QIANCHENG CENTER, HAICHENG ROAD, XIXIANG STREET,
BAO'AN DISTRICT, SHENZHEN, CHINA. 518101

Report on the submitted samples said to be:

Sample Name(s) : VIM4
Trade Mark : Khadas
Part No. : VIM4
Sample Received Date : March 09, 2022
Testing Period : March 09, 2022 ~ March 21, 2022
Date of Report : March 21, 2022
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/Laboratory Manager



**Results:****A. EU RoHS Directive 2011/65/EU and its amendment directives**

Test method: With reference to IEC 62321-1:2013&IEC 62321-2:2021&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	White plastic	BL	BL	BL	BL	BL	BL	2022-03-09
2	Silver metal core	BL	BL	BL	BL	/	/	2022-03-09
3	Black body	BL	BL	BL	BL	BL	BL	2022-03-09
4	Silver metal needle	BL	BL	BL	BL	/	/	2022-03-09
5	Dark grey metal	BL	BL	BL	BL	/	/	2022-03-09
6	Silver sheet metal	BL	BL	BL	BL	/	/	2022-03-09
7	Silver sheet metal	BL	BL	BL	BL	/	/	2022-03-09
8	Black plastic button	BL	BL	BL	BL	BL	BL	2022-03-09
9	Off white plastic trough	BL	BL	BL	BL	BL	BL	2022-03-09
10	Black chip capacitor	BL	BL	BL	BL	BL	BL	2022-03-09
11	Black body IC	BL	BL	BL	BL	BL	BL	2022-03-09
12	Yellow metal copper ring	BL	BL	BL	BL	/	/	2022-03-09
13	Black plastic	BL	BL	BL	BL	BL	BL	2022-03-09
14	Black PCB	BL	BL	BL	BL	BL	BL	2022-03-09
15	Brown chip capacitor	BL	BL	BL	BL	BL	BL	2022-03-09
16	Yellow translucent plastic sheet	BL	BL	BL	BL	BL	BL	2022-03-09
17	Silver sheet metal	BL	BL	BL	BL	/	/	2022-03-09
18	Silver gold metal core	BL	BL	BL	BL	/	/	2022-03-09
19	Black body IC	BL	BL	BL	BL	BL	BL	2022-03-09
20	White patch	BL	BL	BL	BL	BL	BL	2022-03-09
21	Black plastic	BL	BL	BL	BL	BL	BL	2022-03-09
22	Gold metal core	BL	BL	BL	BL	/	/	2022-03-09
23	Black plastic	BL	BL	BL	BL	BL	BL	2022-03-09
24	Yellow copper core	BL	BL	BL	BL	/	/	2022-03-09
25	Silver flake	BL	BL	BL	BL	/	/	2022-03-09
26	Silver metal shell	BL	BL	BL	BL	/	/	2022-03-09
27	Silver metal shell	BL	BL	BL	BL	/	/	2022-03-09
28	Black plastic trough	BL	BL	BL	BL	BL	BL	2022-03-09
29	Silver white wire	BL	BL	BL	BL	/	/	2022-03-09





Sample No.	Sample Description	Results						Date of sample submission/ Resubmission
		Cd	Pb	Hg	Cr ^{VI}	Br ^{VI}		
						PBBs	PBDEs	
30	Silver metal skin	BL	BL	BL	BL	/	/	2022-03-09
31	Black plastic	BL	BL	BL	BL	BL	BL	2022-03-09
32	Yellow wire	BL	BL	BL	BL	/	/	2022-03-09
33	Silver metal shell	BL	BL	BL	BL	/	/	2022-03-09
34	Black plastic	BL	BL	BL	BL	BL	BL	2022-03-09
35	Yellow metal core	BL	BL	BL	BL	/	/	2022-03-09
36	Silver screw	BL	BL	BL	BL	/	/	2022-03-09
37	Silver sheet metal	BL	BL	BL	BL	/	/	2022-03-09
38	Milky plastic	BL	BL	BL	BL	BL	BL	2022-03-09
39	Silver white wire	BL	BL	BL	BL	/	/	2022-03-09
40	Black metal screw	BL	BL	BL	BL	/	/	2022-03-09
41	Silver foil	BL	BL	BL	BL	/	/	2022-03-09
42	Black plastic	BL	BL	BL	BL	BL	BL	2022-03-09
43	Silver metal shell	BL	BL	BL	BL	/	/	2022-03-09
44	Black plastic shell	BL	BL	BL	BL	BL	BL	2022-03-09
45	Black hinge	BL	BL	BL	BL	BL	BL	2022-03-09
46	White plastic paste	BL	BL	BL	BL	BL	BL	2022-03-09
47	Red plastic thread cover	BL	BL	BL	BL	BL	BL	2022-03-09
48	Silver wire	BL	BL	BL	BL	/	/	2022-03-09
49	Gray white plastic wire skin	BL	BL	BL	BL	BL	BL	2022-03-09
50	Blue plastic thread cover	BL	BL	BL	BL	BL	BL	2022-03-09
51	Black plastic ring	BL	BL	BL	BL	BL	BL	2022-03-09
52	Yellow metal copper wire	BL	BL	BL	BL	/	/	2022-03-09
53	Golden plastic sticker	BL	BL	BL	BL	BL	BL	2022-03-09
54	Black body IC	BL	BL	BL	BL	BL	BL	2022-03-09

Note:

- 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
 - 3σ = 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.

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.



**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	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		1+3+8+9+10+11	
Dibutyl Phthalate(DBP) Content	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	600	N.D.	1000

Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		13+14+15+16+19+20	
Dibutyl Phthalate(DBP) Content	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	600	N.D.	1000

Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		21+23+28+31+34+38	
Dibutyl Phthalate(DBP) Content	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	600	N.D.	1000





Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		42+44+45	
Dibutyl Phthalate(DBP) Content	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	600	N.D.	1000

Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		46+47+49+50+51+53	
Dibutyl Phthalate(DBP) Content	600	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	600	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	600	N.D.	1000
Diisobutyl phthalate(DIBP) Content	600	N.D.	1000

Tested Items	MDL (mg/kg)	Results (mg/kg)	Limit (mg/kg)
		54	
Dibutyl Phthalate(DBP) Content	100	N.D.	1000
Butylbenzyl Phthalate(BBP) Content	100	N.D.	1000
Di-(2-ethylhexyl) Phthalate(DEHP) Content	100	N.D.	1000
Diisobutyl phthalate(DIBP) Content	100	N.D.	1000

Note:

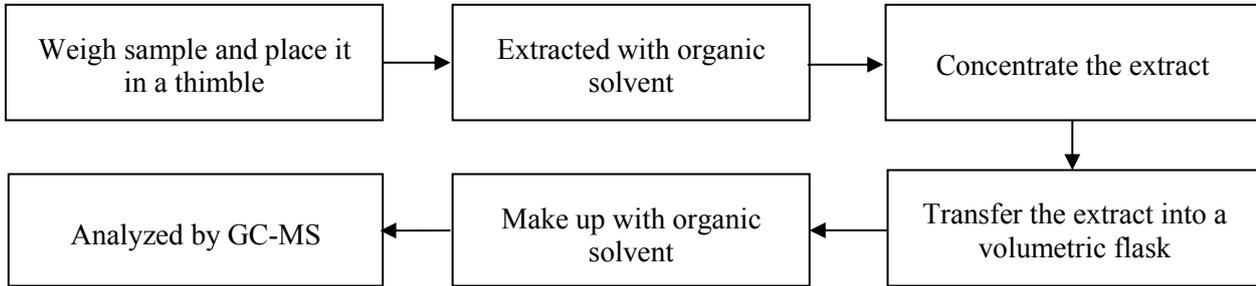
- MDL = Method Detection Limit
- N.D.=Not Detected(<MDL)
- mg/kg = milligrams per kilogram
- According to customer's requirement, only the appointed materials have been tested.



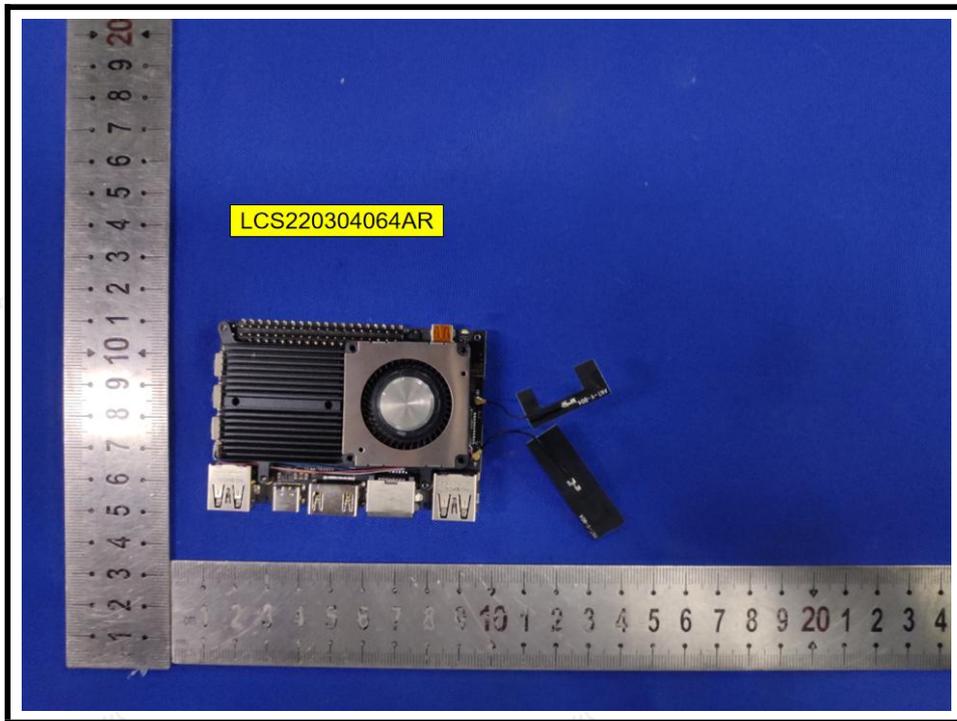


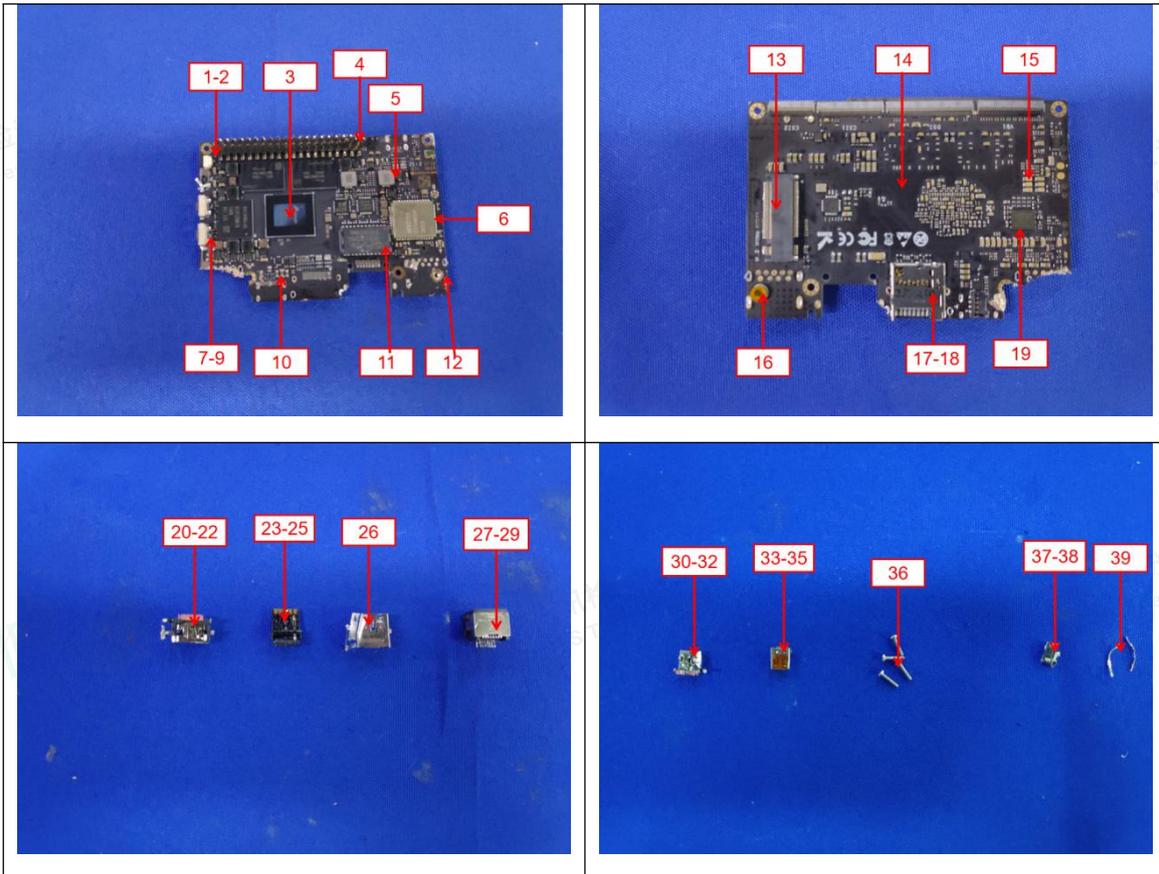
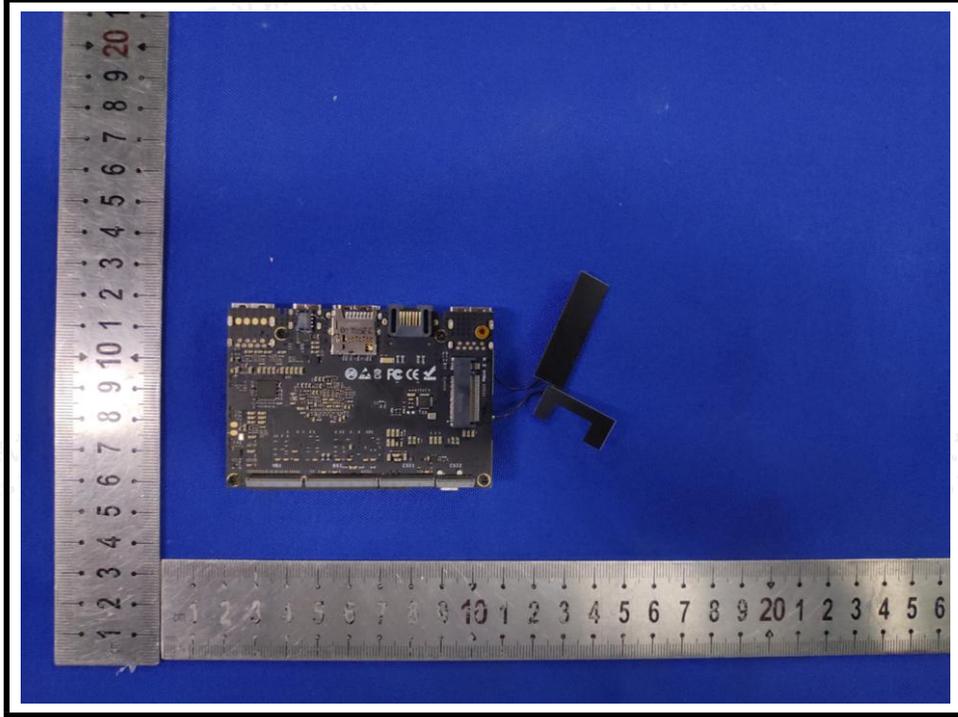
Test Process

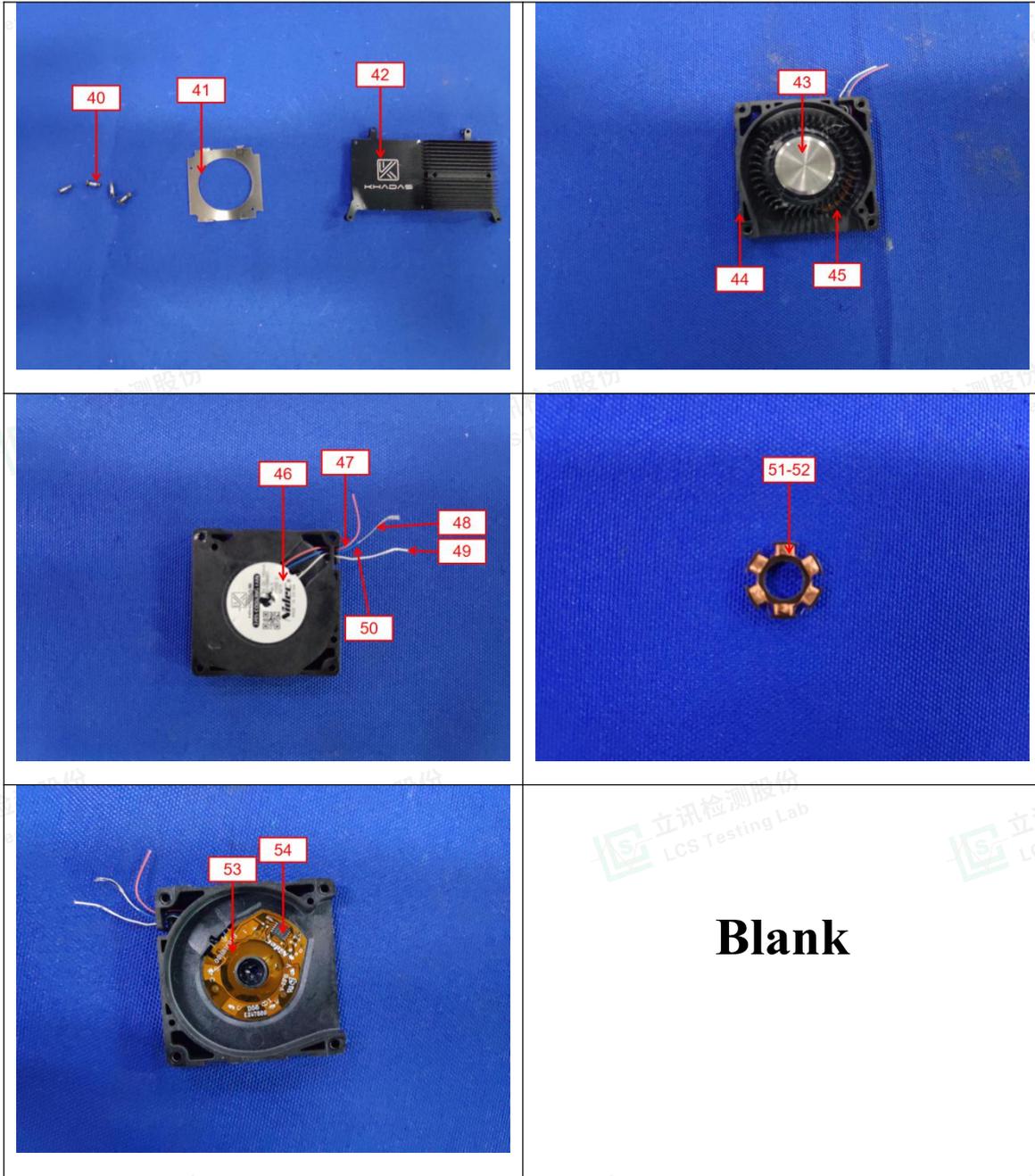
1. Phthalates(DBP, BBP, DEHP & DIBP) : IEC 62321-8:2017



The photo(s) of the sample







**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 English version shall prevail.

*** End of Report ***

