



TEST REPORT

Applicant: Dongguan YEHUO Technology Co, Ltd.

Address: Room 301, No. 722, Dalingshan Section, Shida Road, Dalingshan Town, Dongguan City, Guangdong Province

Manufacturer: Dongguan YEHUO Technology Co, Ltd.

Address: Room 301, No. 722, Dalingshan Section, Shida Road, Dalingshan Town, Dongguan City, Guangdong Province

The following sample(s) and sample information by the applicant.

Product Name: Embedfire LubanCat4

Trade Mark:  LubanCat®

Model Number: Embedfire LubanCat4

Sample Received Date: Mar. 04, 2025

Testing Period: Mar. 04, 2025 - Mar. 06, 2025

Test Requested: With reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU.

Test Method: Please refer to next page(s).

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

Conclusion:

As requested by applicant, the submitted sample was tested which is listed as specimen description in the following page. the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP), and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Prepared (Engineer):

Ava liu

Approved (Manager):

Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.

**Version**

Version No.	Date	Description
00	Mar. 14, 2025	Original

Test Method:

1. With reference to IEC 62321-2:2013, review was performed for the samples disjointed from the submitted articles.
2. With reference to IEC 62321-1:2013, tests were performed for the samples indicated by the photos in this report
 - (1) With reference to IEC 62321-3-1:2013, screening by EDXRF spectroscopy
 - (2) Wet chemical test method
 - a. With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES
 - b. With reference to IEC 62321-5:2013, determination of Lead by ICP-OES
 - c. With reference to IEC 62321-4:2013+ A1:2017, determination of Mercury by ICP-OES
 - d. With reference to IEC 62321-7-1:2015 & IEC 62321-7-2:2017, determination of Hexavalent chromium by Colorimetric method using UV-Vis.
 - e. With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS
3. With reference to IEC 62321-8:2017, determination of phthalates by GC-MS

**Test Part Description:**

Part No.	Part Description(s)	Style
A01	Silver metal	-
A02	Silver metal	-
A03	White label	-
A04	Black metal	-
A05	Black plastic	-
A06	Black screw	-
A07	Black IC	-
A08	Grey inductance	-
A09	Black IC	-
A10	Black IC	-
A11	Silver metal	-
A12	Black IC	-
A13	Black IC	-
A14	Yellow capacitance	-
A15	Black IC	-
A16	Black key	-
A17	Black plastic	-
A18	Yellow metal	-
A19	Black metal	-
A20	Black screw	-
A21	Black plastic	-
A22	White plastic	-
A23	Silver metal	-
A24	Black PCB	-
A25	Silver solder	-

**Test Results:**

The results of XRF screening and chemical test (Unit: mg/kg)

Part No.	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
A01	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	---	---		
	PBDEs	---	---		
	DIBP	---	---		
	DBP	---	---		
	BBP	---	---		
	DEHP	---	---		
A02	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	---	---		
	PBDEs	---	---		
	DIBP	---	---		
	DBP	---	---		
	BBP	---	---		
	DEHP	---	---		
A03	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	BL	---		
	PBDEs	BL	---		
	DIBP	---	N.D.		
	DBP	---	N.D.		
	BBP	---	N.D.		
	DEHP	---	N.D.		
A04	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	---	---		
	PBDEs	---	---		
	DIBP	---	---		
	DBP	---	---		
	BBP	---	---		
	DEHP	---	---		



Part No.	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
A05	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	BL	---		
	PBDEs	BL	---		
	DIBP	---	N.D.		
	DBP	---	N.D.		
	BBP	---	N.D.		
	DEHP	---	N.D.		
A06	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	---	---		
	PBDEs	---	---		
	DIBP	---	---		
	DBP	---	---		
	BBP	---	---		
	DEHP	---	---		
A07	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	BL	---		
	PBDEs	BL	---		
	DIBP	---	N.D.		
	DBP	---	N.D.		
	BBP	---	N.D.		
	DEHP	---	N.D.		
A08	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	BL	---		
	PBDEs	BL	---		
	DIBP	---	N.D.		
	DBP	---	N.D.		
	BBP	---	N.D.		
	DEHP	---	N.D.		



Part No.	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
A09	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	BL	---		
	PBDEs	BL	---		
	DIBP	---	N.D.		
	DBP	---	N.D.		
	BBP	---	N.D.		
	DEHP	---	N.D.		
A10	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	BL	---		
	PBDEs	BL	---		
	DIBP	---	N.D.		
	DBP	---	N.D.		
	BBP	---	N.D.		
	DEHP	---	N.D.		
A11	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	---	---		
	PBDEs	---	---		
	DIBP	---	---		
	DBP	---	---		
	BBP	---	---		
	DEHP	---	---		
A12	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	BL	---		
	PBDEs	BL	---		
	DIBP	---	N.D.		
	DBP	---	N.D.		
	BBP	---	N.D.		
	DEHP	---	N.D.		



Part No.	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
A13	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	BL	---		
	PBDEs	BL	---		
	DIBP	---	N.D.		
	DBP	---	N.D.		
	BBP	---	N.D.		
	DEHP	---	N.D.		
A14	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	BL	---		
	PBDEs	BL	---		
	DIBP	---	N.D.		
	DBP	---	N.D.		
	BBP	---	N.D.		
	DEHP	---	N.D.		
A15	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	BL	---		
	PBDEs	BL	---		
	DIBP	---	N.D.		
	DBP	---	N.D.		
	BBP	---	N.D.		
	DEHP	---	N.D.		
A16	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	BL	---		
	PBDEs	BL	---		
	DIBP	---	N.D.		
	DBP	---	N.D.		
	BBP	---	N.D.		
	DEHP	---	N.D.		



Part No.	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
A17	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	BL	---		
	PBDEs	BL	---		
	DIBP	---	N.D.		
	DBP	---	N.D.		
	BBP	---	N.D.		
	DEHP	---	N.D.		
A18	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	---	---		
	PBDEs	---	---		
	DIBP	---	---		
	DBP	---	---		
	BBP	---	---		
	DEHP	---	---		
A19	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	---	---		
	PBDEs	---	---		
	DIBP	---	---		
	DBP	---	---		
	BBP	---	---		
	DEHP	---	---		
A20	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	---	---		
	PBDEs	---	---		
	DIBP	---	---		
	DBP	---	---		
	BBP	---	---		
	DEHP	---	---		



Part No.	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
A21	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	BL	---		
	PBDEs	BL	---		
	DIBP	---	N.D.		
	DBP	---	N.D.		
	BBP	---	N.D.		
	DEHP	---	N.D.		
A22	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	BL	---		
	PBDEs	BL	---		
	DIBP	---	N.D.		
	DBP	---	N.D.		
	BBP	---	N.D.		
	DEHP	---	N.D.		
A23	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	---	---		
	PBDEs	---	---		
	DIBP	---	---		
	DBP	---	---		
	BBP	---	---		
	DEHP	---	---		
A24	Pb	BL	---	Pass	/
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	BL	---		
	PBDEs	BL	---		
	DIBP	---	N.D.		
	DBP	---	N.D.		
	BBP	---	N.D.		
	DEHP	---	N.D.		



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Report No.:DLR-250304009R

Part No.	Element	X-ray Screening	Results of chemical test	Conclusion on RoHS EU	Sample Resubmitted
A25	Pb	OL	N.D.	Pass	Mar. 14, 2025
	Cd	BL	---		
	Hg	BL	---		
	Cr(Cr ⁶⁺)	BL	---		
	PBBs	---	---		
	PBDEs	---	---		
	DIBP	---	---		
	DBP	---	---		
	BBP	---	---		
	DEHP	---	---		

address:

101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area, No.1 Baolong Fifth Road,
Baolong Community, Baolong Street, Longgang District, Shenzhen, China
Tel: 400-688-3552 Web:www.dl-cert.com Email: service@dl-cert.com

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**Remark:**

(1) There are the results on total Br while test items on restricted substances are PBBs and PBDEs. There are the results on total Cr while test items on restricted substances Cr(VI)

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

Element	Polymer Materials	Metal Materials	Composite Materials
Cd	$BL \leq 70-3\sigma < X < 130+3\sigma \leq OL$	$BL \leq 70-3\sigma < X < 130+3\sigma \leq OL$	$BL \leq 50-3\sigma < X < 150+3\sigma \leq OL$
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	$BL \leq 700-3\sigma < X < 1300+3\sigma \leq OL$	$BL \leq 700-3\sigma < X < 1300+3\sigma \leq OL$	$BL \leq 500-3\sigma < X < 1500+3\sigma \leq OL$
Br	$BL \leq 300-3\sigma < X$	---	$BL \leq 250-3\sigma < X$
Cr	$BL \leq 700-3\sigma < X$	$BL \leq 700-3\sigma < X$	$BL \leq 500-3\sigma < X$

(a) BL= Below Limit, OL=Over Limit, X= Inconclusive, LOD= Limit of Detection, -- = Not regulated.

(b) The XRF screening test for RoHS elements - the reading may be different to actual content in the sample be of non-uniformity composition

(c) mg/kg=0.0001%, MDL=MDL=Method Detection Limit, ND=Not Detected (<MDL), --- = Not Regulated

Unit and MDL in wet chemical test

Test Item	Pb	Cd	Hg	DBP	BBP	DEHP	DIBP
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MDL	10	10	10	100	100	100	100

The MDL for single compound of PBBs and PBDEs is 100 mg/kg

MDL of Cr(VI) for polymer and composite sample is 10 mg/kg

MDL of Cr(VI) for metal sample is 0.10ug/cm²

(c) ▼ =Metal sample

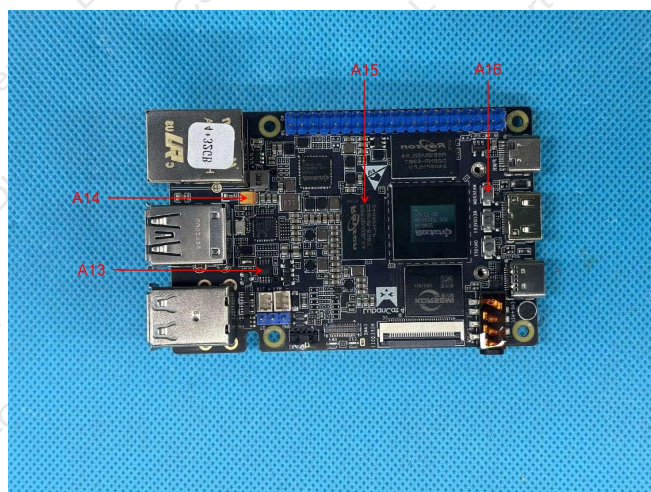
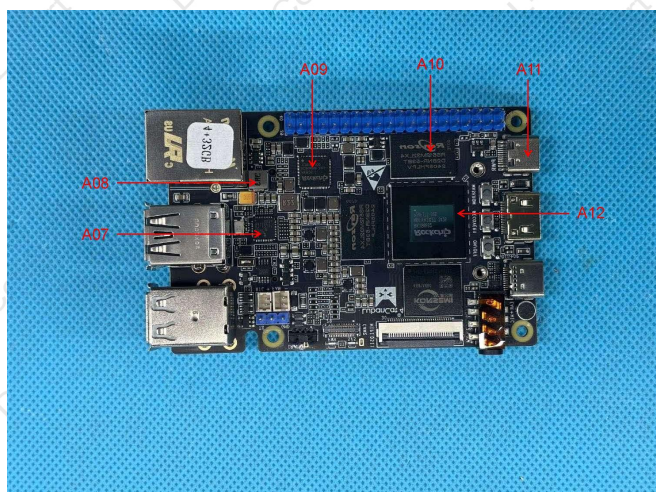
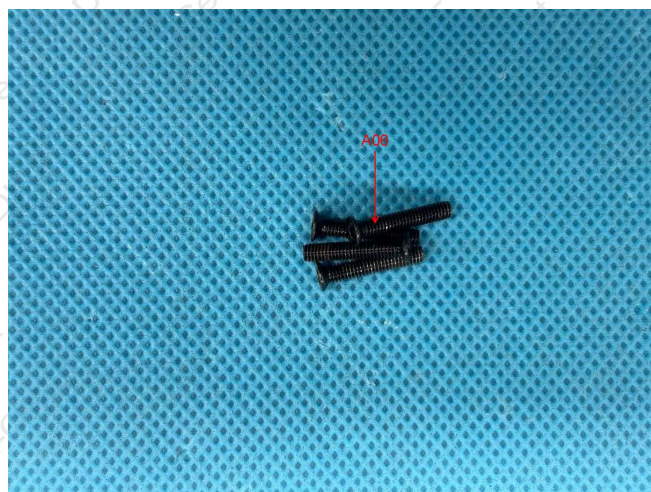
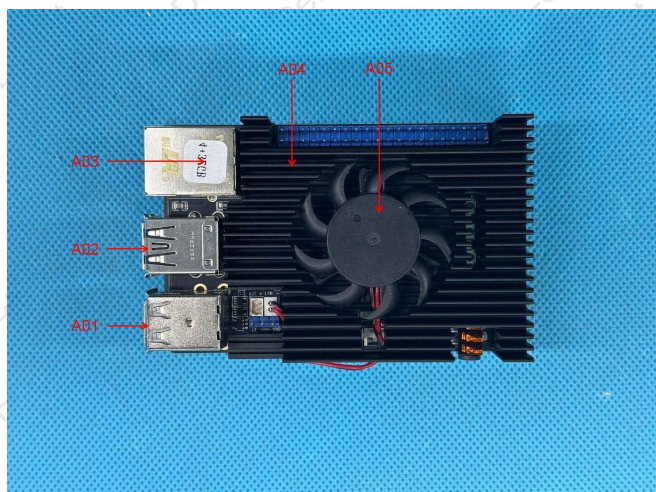
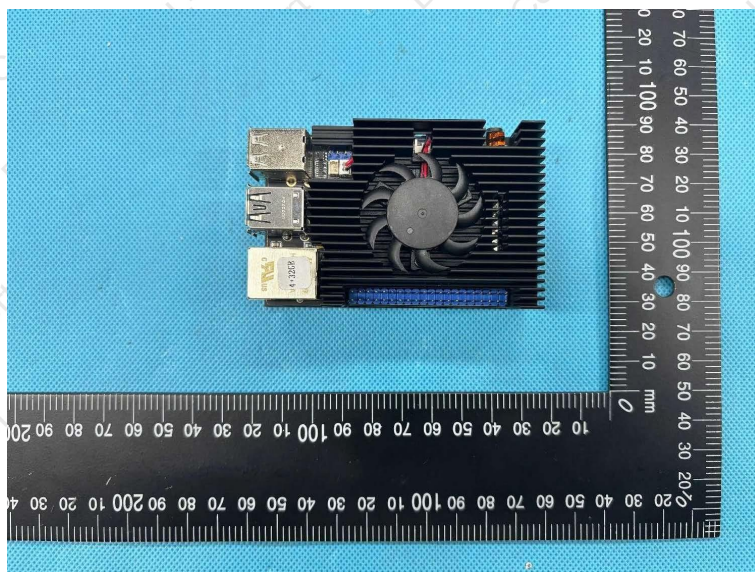
a. The sample is negative for Cr⁶⁺ if Cr⁶⁺ is N.D. (below the limit 0.10ug/cm²). The coating is considered a non Cr⁶⁺ based coating.

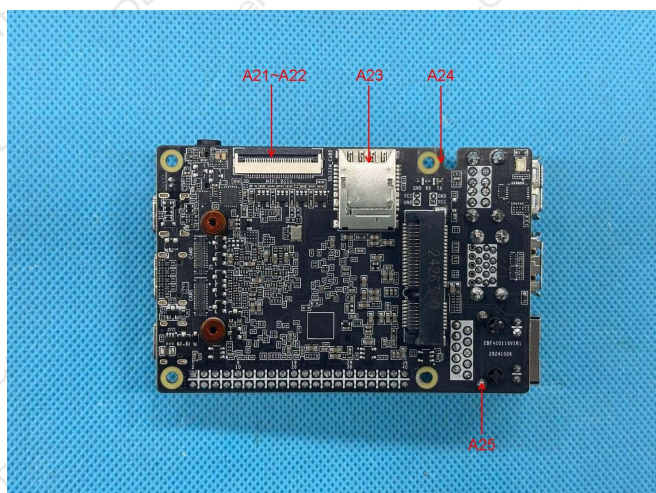
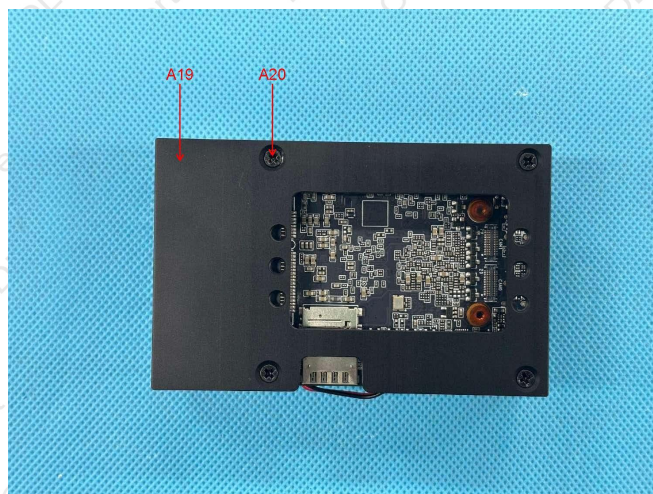
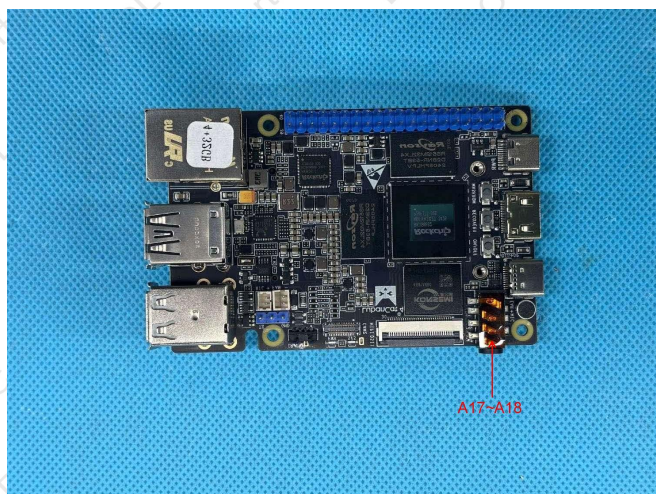
b. The sample positive for Cr⁶⁺ if the Cr⁶⁺ concentration is greater than 0.13ug/cm². The sample coating is considered to contain Cr⁶⁺.

c. The result between 0.10ug/cm² and 0.13ug/cm² is considered to be inconclusive unavoidable coating variations may influence the determination.



Sample photo:





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