

# TEST REPORT

**Applicant** : Linkcom Manufacturing Co., Ltd.  
**Address** : Building 1, No. 21, Huan Qi Boulevard, Qi-Shi Town, Dong Guan City,  
Guang Dong Province, P.R. China  
**Manufacturer's name** : Linkcom Manufacturing Co., Ltd.  
**Address** : Building 1, No. 21, Huan Qi Boulevard, Qi-Shi Town, Dong Guan City,  
Guang Dong Province, P.R. China

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

**Sample Name** : Wireless Charger  
**Trade Mark** : N/A  
**Tested model** : JJT-970  
**Series models** : OPP128  
**Testing Period** : 2023-02-23 to 2023-02-28  
**Date of issue** : 2023-02-28  
**Results** : Please refer to next page(s).

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**TEST REQUEST**

According to the customer's request, based on the performed tests on submitted sample, the result of Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs, PBDEs, Dibutyl Phthalate(DBP), Benzylbutyl Phthalate(BBP), Bis(2-ethylhexyl) Phthalate(DEHP), Diisobutyl phthalate(DIBP) content comply with the limit as set of RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

**CONCLUSION**

Pass

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Signed for and on behalf of HX



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

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

Seq. No.	Tested Part(s)	Results					
		Cd	Pb	Hg	Cr <sup>VI</sup>	Br <sup>VI</sup>	
						PBBs	PBDEs
1	Shell	BL	BL	BL	BL	BL	BL
2	Wire	BL	BL	BL	BL	BL	BL
3	PCB	BL	BL	BL	BL	BL	BL
4	Silica gel	BL	BL	BL	BL	BL	BL
5	SMD LED	BL	BL	BL	BL	BL	BL
6	Resistor	BL	BL	BL	BL	BL	BL
7	Electric heating circle	BL	BL	BL	BL	BL	BL
8	Capacitors	BL	BL	BL	BL	BL	BL
9	IC	BL	BL	BL	BL	BL	BL
10	EVA	BL	BL	BL	BL	BL	BL
11	Plastic	BL	BL	BL	BL	BL	BL
12	Screw	BL	BL	BL	BL	/	/
13	Iron	BL	BL	BL	BL	/	/
14	USB Interface	BL	BL	BL	BL	/	/
15	Copper Wire	BL	BL	BL	BL	/	/
16	Solder	BL	BL	BL	BL	/	/
17	Metal	BL	BL	BL	BL	/	/

**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.

Element	Unit	Non-metal	Metal	Composite Material
Cd	mg/kg	$BL \leq 70 - 3\sigma < X < 130 + 3\sigma \leq OL$	$BL \leq 70 - 3\sigma < X < 130 + 3\sigma \leq OL$	$BL \leq 50 - 3\sigma < X < 150 + 3\sigma \leq OL$
Pb	mg/kg	$BL \leq 700 - 3\sigma < X < 1300 + 3\sigma \leq OL$	$BL \leq 700 - 3\sigma < X < 1300 + 3\sigma \leq OL$	$BL \leq 500 - 3\sigma < X < 1500 + 3\sigma \leq OL$
Hg	mg/kg	$BL \leq 700 - 3\sigma < X < 1300 + 3\sigma \leq OL$	$BL \leq 700 - 3\sigma < X < 1300 + 3\sigma \leq OL$	$BL \leq 500 - 3\sigma < X < 1500 + 3\sigma \leq OL$
Cr	mg/kg	$BL \leq 700 - 3\sigma < X$	$BL \leq 700 - 3\sigma < X$	$BL \leq 500 - 3\sigma < X$
Br	mg/kg	$BL \leq 300 - 3\sigma < X$	--	$BL \leq 250 - 3\sigma < X$

## Note:

BL = Below Limit  
 OL = Over Limit  
 X = Inconclusive

- (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 2015/863/EC amending RoHS directive 2011/65/EU:
- (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

<b>RoHS Restricted Substances</b>	<b>Maximum Concentration Value (mg/kg) (by weight in homogenous materials)</b>
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
Benzylbutyl Phthalate(BBP)	1000
Bis(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 and its amendment Directives 2015/863/EU on Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs, PBDEs, DBP, BBP, DEHP, DIBP content.**

Test method:

Lead(Pb) & Cadmium(Cd) Content:

With reference to IEC 62321-5:2013, by acid digestion and analysis was performed by inductively coupled plasma atomic emission spectrometer (ICP-OES)

Mercury(Hg) Content:

With reference to IEC 62321-4:2013+AMD1:2017 CSV, by acid digestion and analysis was performed by inductively coupled plasma atomic emission spectrometer (ICP-OES)

Hexavalent Chromium(Cr<sup>6+</sup>) Content:

With reference to IEC 62321-7-1:2015 or IEC 62321-7-2:2017, by alkaline digestion and analysis was performed by UV-visible spectrophotometer (UV-Vis)

PBBs & PBDEs Content:

With reference to IEC 62321-6:2015, by solvent extraction and analysis was performed by gas chromatographic-mass spectrometer (GC-MS)

BBP DBP DEHP & DIBP Content:

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

## Note:

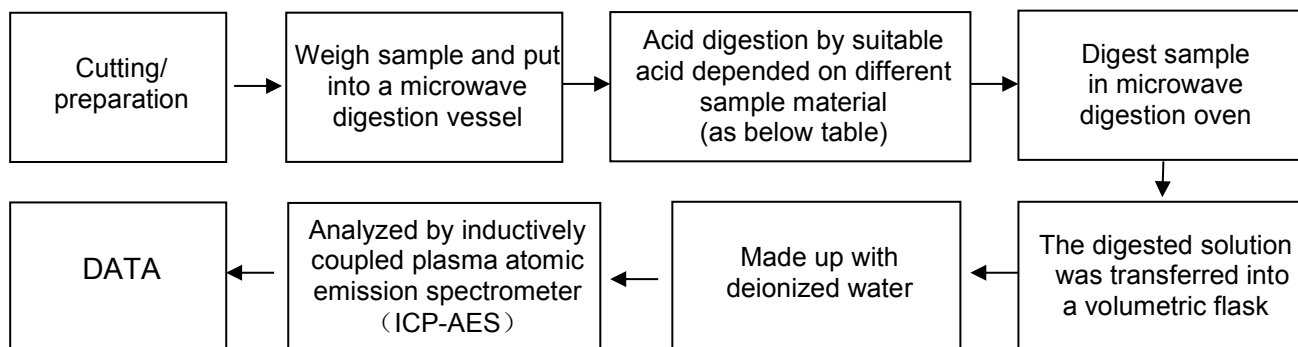
- #1 According to RoHS directive 2011/65/EU and its amendments, Lead is exempted in glass of cathode ray tubes, electronic components and fluorescent tubes.
- #2 According to RoHS directive 2011/65/EU and its amendments, Lead is exempted in electronic ceramic parts (e.g. piezoelectronic devices).
- #3 According to RoHS directive 2011/65/EU and its amendments, Lead is exempted as an alloying element in Copper containing up to 4% (40000ppm) by weight.
- #4 According to RoHS directive 2011/65/EU and its amendments, Lead is exempted in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead).
- #5 According to the statement provided by the customer, according to RoHS directive 2011/65/EU and its amendments, Lead is exempted as an alloying element in Aluminum containing up to 0.4% (4000ppm) by weight.
- #6 According to the statement provided by the customer, according to RoHS directive 2011/65/EU and its amendments, Cadmium and its compounds in electrical contact is exempted.
- #7 According to the statement provided by the customer, according to RoHS directive 2011/65/EU and its Amendments, Lead is exempted in steel for machining purposes and in galvanised steel containing up to 0.35% (3500ppm) by weight.

**1 ) The test results of DBP、BBP、DEHP & DIBP**

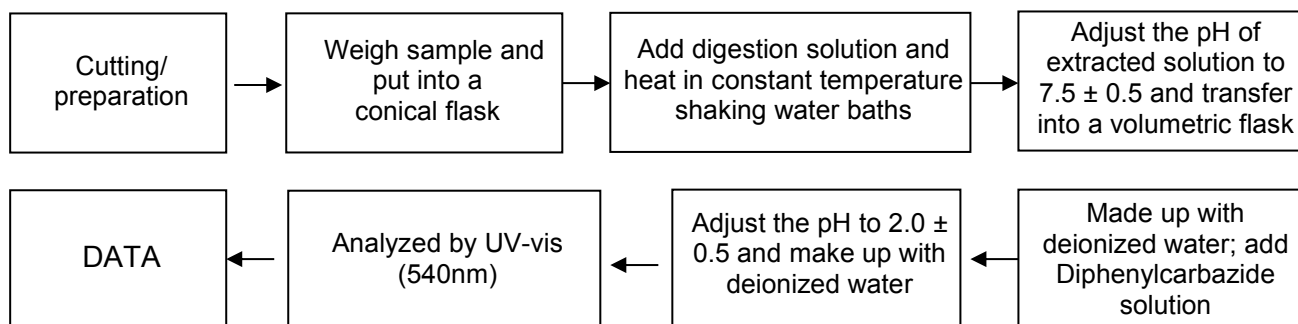
Item	Unit	MDL	Results					Limit
			1	2	4	10	11	
Dibutyl Phthalate(DBP)	mg/kg	50	N.D.	N.D.	N.D.	N.D.	N.D.	1000
Benzylbutyl Phthalate(BBP)	mg/kg	50	N.D.	N.D.	N.D.	N.D.	N.D.	1000
Bis(2-ethylhexyl) Phthalate(DEHP)	mg/kg	50	N.D.	N.D.	N.D.	N.D.	N.D.	1000
Diisobutyl phthalate(DIBP)	mg/kg	50	N.D.	N.D.	N.D.	N.D.	N.D.	1000

## Appendix

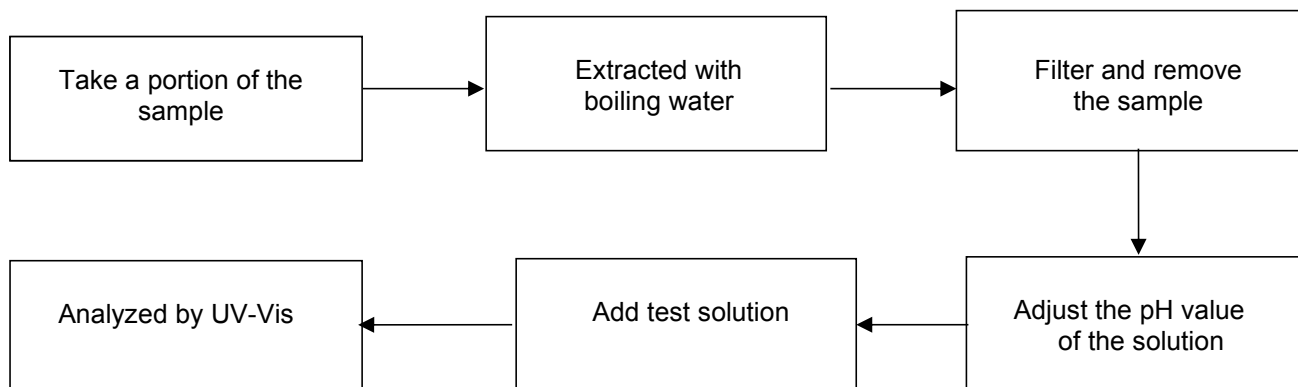
### 1. Test Flow chart for Cd/Pb /Hg content



### 2. Test Flowchart for Cr<sup>6+</sup> content (For non-metal material)

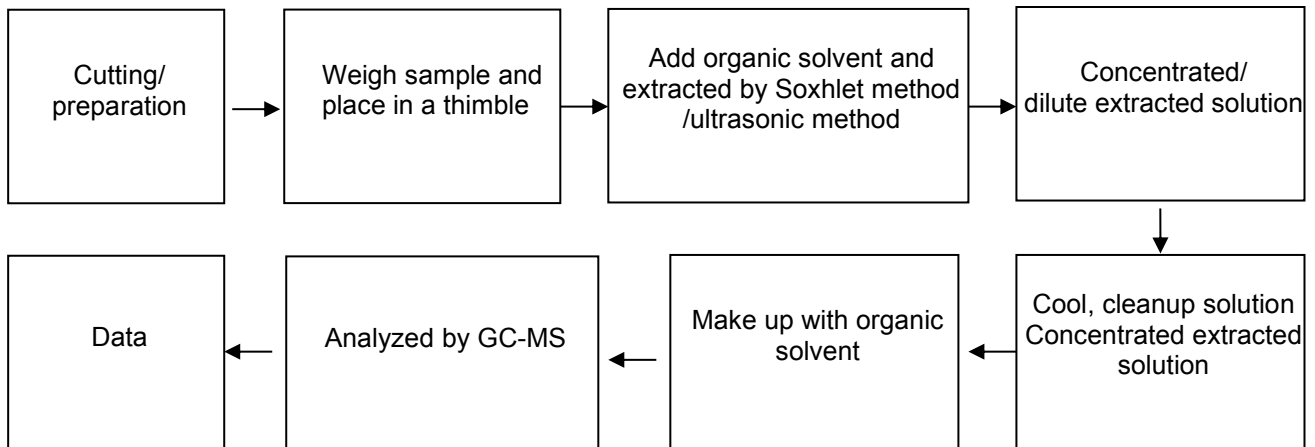


### Test Flowchart for Cr<sup>6+</sup> content (For metal material)





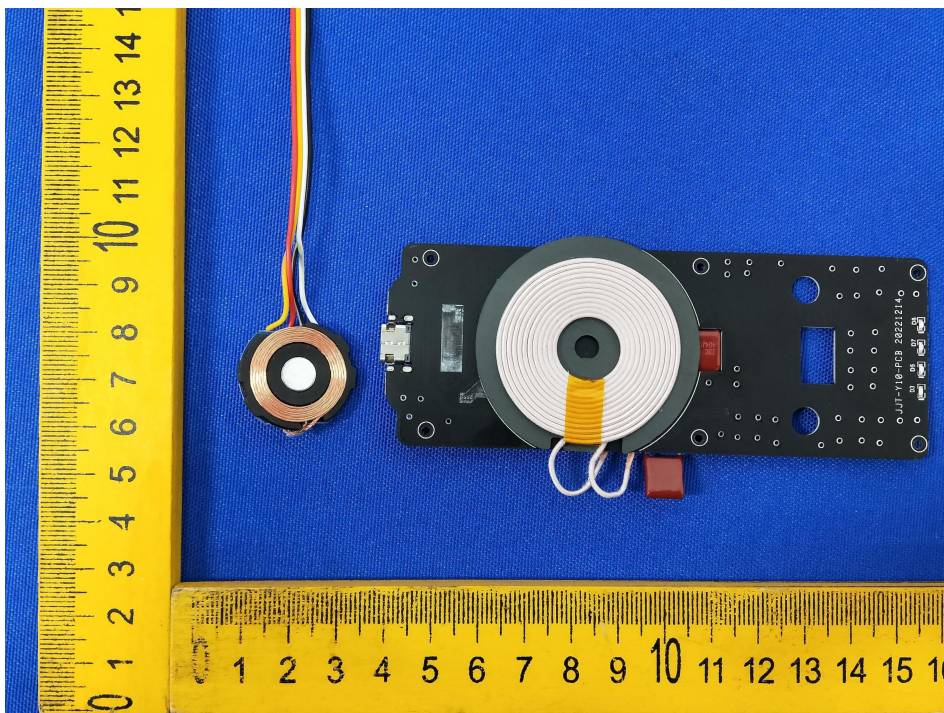
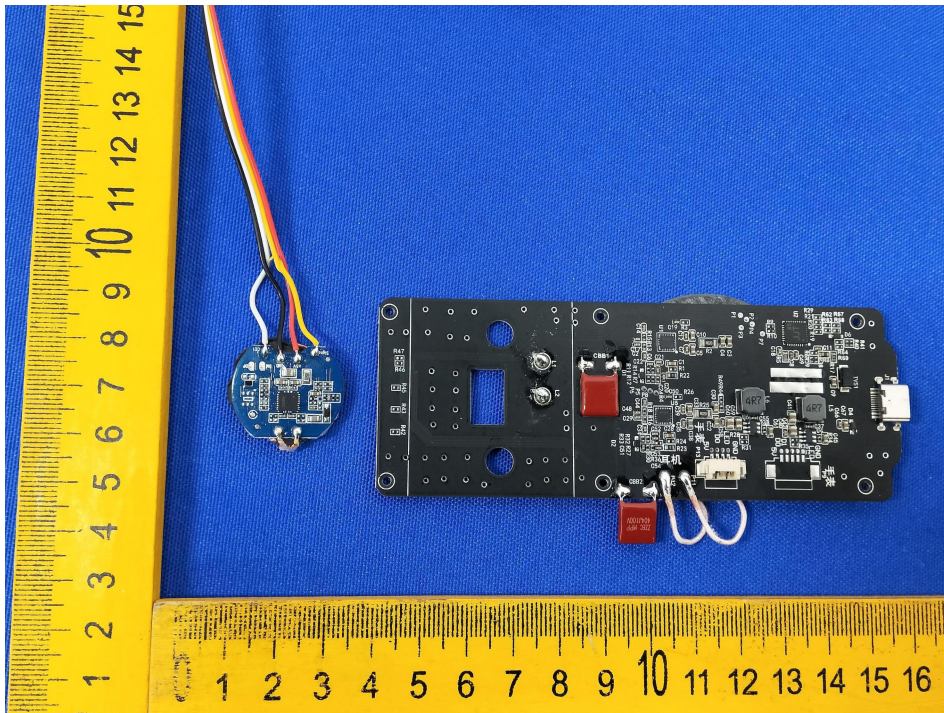
**3. Test Flow chart for PBBs & PBDEs & DBP & BBP & DEHP & DIBP content**



**The photo of the sample**







**END OF REPORT**