Test Report

Report No.: AGC01978180105-002 Date: Feb.07, 2018 Page 1 of 10

Applicant: Xindao B.V.
Address: VERRIJN STUARTLAAN 1D 2288EK RIJSWIJK NETHERLANDS

Report on the submitted sample(s) said to be:

Sample Name: Portfolio with wireless power bank

Sample Model: P773.881

Manufacturer:

Address:

Country of origin: CHINA

Sample Received Date: Jan.31, 2018

Testing Period: Jan.31, 2018 to Feb.07, 2018

Test Requested: Please refer to following page(s).

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

Test Result: Please refer to following page(s).

Tested by:	Reviewed by:	Approved by:
Suhongliang, Leon	Liangdan, Jessie.Liang	Liulinwen, Lewis
Test Team Leader	Technical Supervisor	Technical Director

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Test Requested:

As specified by client, to determine the Pb, Cd, Hg, Cr^{6+}, PBBs, PBDEs content in the submitted sample in accordance with EU RoHS Directive 2011/65/EU(RoHS) and its amendment directives on XRF and Chemical Method.

Conclusion

Pass

Test Result(s):

Test Methods:

A: Screening by X-ray Fluorescence Spectrometry (XRF) :With reference to IEC 62321-3-1:2013 Ed 1.0 Screening – Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry

B: Chemical test:

Test Item	Test Method	Measuring Instrument	MDL
Cadmium (Cd)	IEC 62321-5:2013 Ed 1.0 Section 7	ICP-OES	2 mg/kg
Lead (Pb)	IEC 62321-5:2013 Ed 1.0 Section 7	ICP-OES	2 mg/kg
Mercury (Hg)	IEC 62321-4:2013 Ed 1.0 Section 7	ICP-OES	2 mg/kg
Non-metal Hexavalent Chromium (Cr^{6+})	IEC 62321-7-2:2017 Ed 1.0	UV-Vis	1 mg/kg
Metal Hexavalent Chromium (Cr^{6+})	IEC 62321-7-1:2015 Ed 1.0	UV-Vis	/
PBBs/PBDEs	IEC 62321-6:2015 Ed 1.0	GC-MS	5 mg/kg

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Test Results:

A、EU RoHS Directive 2011/65/EU and its amendment directives on XRF

Seq. No.	Tested Part(s)	Results(mg/kg)				
		Cd	Pb	Hg	Cr	Br
1	Tea tape (battery)	BL	BL	BL	BL	BL
2	Electric core (battery)	BL	BL	BL	BL	BL
3	White (battery)	BL	BL	BL	BL	BL
4	Soldering tin (battery)	BL	BL	BL	BL	-
5	Black line (battery)	BL	BL	BL	BL	BL
6	Red line (battery)	BL	BL	BL	BL	BL
7	Wire core (battery)	BL	BL	BL	BL	-
8	Black plastic sheet (battery sheet)	BL	BL	BL	BL	BL
9	Spring (battery)	BL	BL	BL	X*	-
10	Silver screw (battery)	BL	BL	BL	BL	-
11	Sheet metal (battery sheet)	BL	BL	BL	X*	-
12	Black adhesive paper (battery sheet)	BL	BL	BL	BL	BL
13	Red line skin	BL	BL	BL	BL	BL
14	Wire core	BL	BL	BL	BL	-
15	Black line skin	BL	BL	BL	BL	BL
16	Tin solder	BL	BL	BL	BL	-
17	PCB board	BL	BL	BL	BL	X*
18	IC Ontology (IC)	BL	BL	BL	BL	BL
19	Pin (IC)	BL	BL	BL	BL	-
20	Patch capacitance	BL	BL	BL	BL	BL
21	chip resistor	BL	BL	BL	BL	BL
22	Patch triode	BL	BL	BL	BL	BL
23	Wire core (induction coil)	BL	BL	BL	BL	-
24	Coil line (induction coil)	BL	BL	BL	BL	BL

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Seq. No.	Tested Part(s)	Results(mg/kg)				
		Cd	Pb	Hg	Cr	Br
25	Gray ceramic (induction coil)	BL	BL	BL	BL	BL
26	Patch magnetic frame inductor	BL	BL	BL	BL	BL
27	Patch LED	BL	BL	BL	BL	BL
28	Red enameled wire	BL	BL	BL	BL	-
29	Brown enameled wire	BL	BL	BL	BL	-
30	Tin solder	BL	BL	BL	BL	-
31	PCB board	BL	BL	BL	BL	X*
32	Metal shell (USB joint)	BL	BL	BL	BL	-
33	White plastic joint (USB joint)	BL	BL	BL	BL	BL
34	Needle (USB joint)	BL	BL	BL	BL	-
35	Metal shell (Micro joint)	BL	BL	BL	BL	-
36	Black plastic joint (Micro joint)	BL	BL	BL	BL	BL
37	Needle (Micro joint)	BL	BL	BL	BL	-

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

Note: BL= Below Limit
OL= Over limited
X= Inconclusive
"-"= Not regulated
*= Scanning by XRF and detected by chemical method. The test results of chemical method please refer to next pages.

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Test Report

Remark:

i Results were obtained by XRF for primary scanning, 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 above warning value according to IEC 62321-3-1:2013 Ed 1.0.

ii The XRF scanning test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.

iii The maximum permissible limit is quoted from RoHS directive 2011/65/EU:

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

Disclaimers:

This XRF Scanning 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 scanning 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、The Test Results of Chemical Method:

1)The Test Results of metal Cr^{6+}

Test Item(s)	MDL	Result(s)		Limit
		9	11	
Hexavalent Chromium (Cr^{6+})	See note	Negative	Negative	#

Note: s

- Negative = Absence of Cr(Ⅵ) on the tested areas
- MDL = Method Detection Limit
- Boiling-water-extraction:

Number	Colorimetric result (Cr(VI) concentration)	Qualitative result
1	The sample solution is<the 0,10 μg/cm² equivalent comparison standard solution	The sample is negative for Cr(VI) − The Cr(VI) concentration is below the limit of quantification. The coating is considered a non-Cr(VI) based coating.
2	The sample solution is ≥ the 0,10 μg/cm² and ≤ the0,13 μg/cm² equivalent comparison standard solutions	The result is considered to be inconclusive – Unavoidable coating variations may influence the determination.
3	The sample solution is > the 0,13 μg/cm² equivalent comparison standard solution	The sample is positive for Cr(VI) − The Cr(VI) concentration is above the limit of quantification and the statistical margin of error. The sample coating is considered to contain Cr(VI).

- # =Negative indicates the absence of Cr(Ⅵ) on the tested areas concentration is below the limit of quantification. The coating is considered a non-Cr(VI) based coating.

Uncertainty indicates the absence of Cr(Ⅵ) on the tested areas unavoidable coating variations may influence the determination.

Positive indicates the presence of Cr(Ⅵ) on the tested areas concentration is above the limit of quantification and the statistical margin of error. The sample coating is considered to contain Cr(VI).

Storage conditions and production date of the tested sample are unavailable and thus result of Cr(VI) represent status of the sample at the time of testing.

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2）The Test Results of PBBs & PBDEs

Item(s)	MDL	Result(s)		Limit
		17	31	
Polybrominated Biphenyls (PBBs)				
Monobromobiphenyl	5	N.D.	N.D.	Total PBBs Content <1000
Dibromobiphenyl	5	N.D.	N.D.	
Tribromobiphenyl	5	N.D.	N.D.	
Tetrabromobiphenyl	5	N.D.	N.D.	
Pentabromobiphenyl	5	N.D.	N.D.	
Hexabromobiphenyl	5	N.D.	N.D.	
Heptabromobiphenyl	5	N.D.	N.D.	
Octabromobiphenyl	5	N.D.	N.D.	
Nonabromodiphenyl	5	N.D.	N.D.	
Decabromodiphenyl	5	N.D.	N.D.	
Total content	/	N.D.	N.D.	
Polybrominated Diphenylethers (PBDEs)				
Monobromodiphenyl ether	5	N.D.	N.D.	Total PBDEs Content <1000
Dibromodiphenyl ether	5	N.D.	N.D.	
Tribromodiphenyl ether	5	N.D.	N.D.	
Tetrabromodiphenyl ether	5	N.D.	N.D.	
Pentabromodiphenyl ether	5	N.D.	N.D.	
Hexabromodiphenyl ether	5	N.D.	N.D.	
Heptabromodiphenyl ether	5	N.D.	N.D.	
Octabromodiphenyl ether	5	N.D.	N.D.	
Nonabromodiphenyl ether	5	N.D.	N.D.	
Decabromodiphenyl ether	5	N.D.	N.D.	
Total content	/	N.D.	N.D.	
Conclusion	/	**Pass**	**Pass**	/

Note: N.D. = Not Detected or less than MDL
MDL = Method Detection Limit

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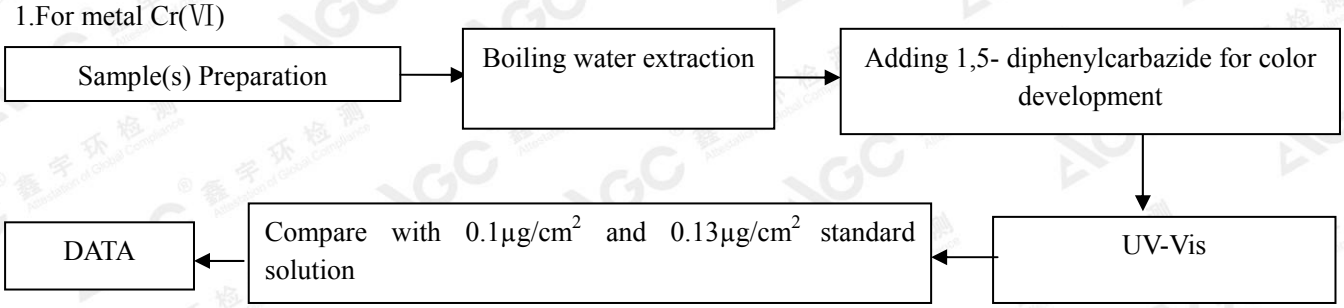
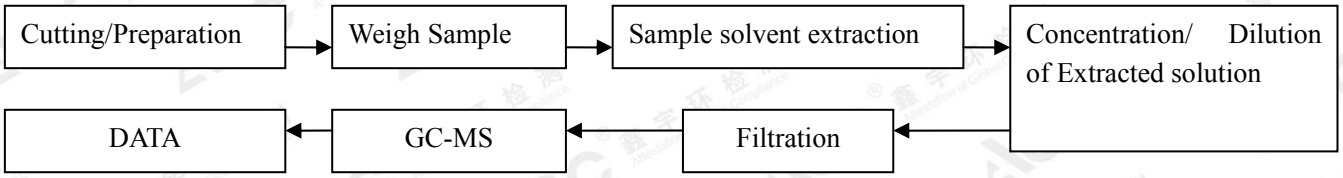
Test Flow Chart

1.For metal Cr(Ⅵ)



2.For PBBs & PBDEs



As client's request, add this report that the results are copied from report No.: AGC01978180105-001.

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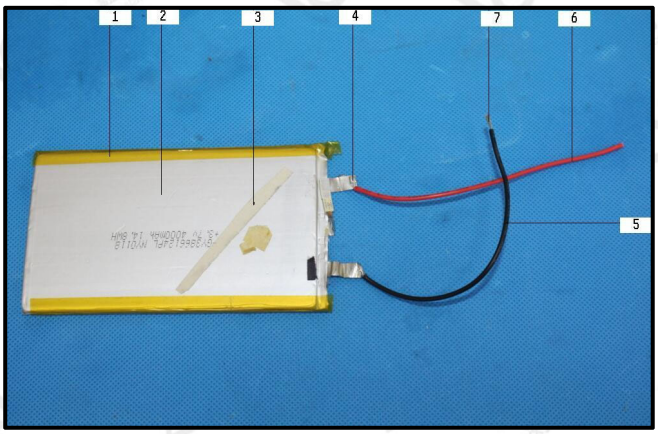
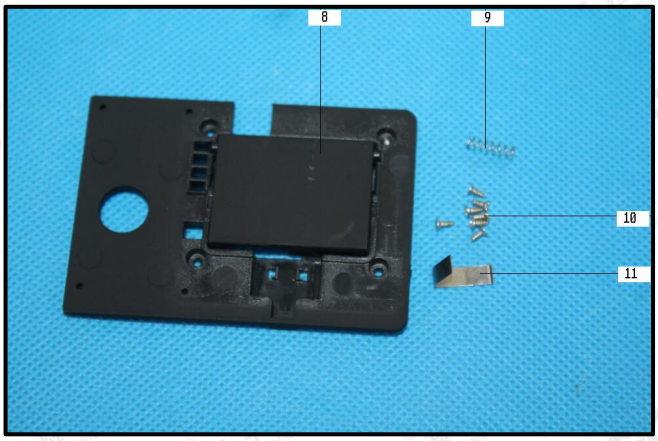
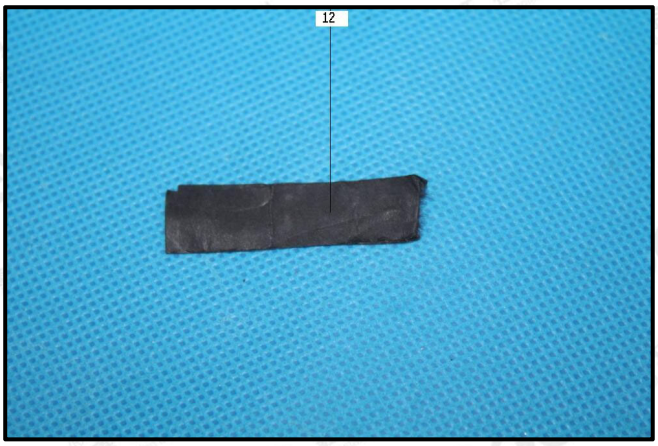
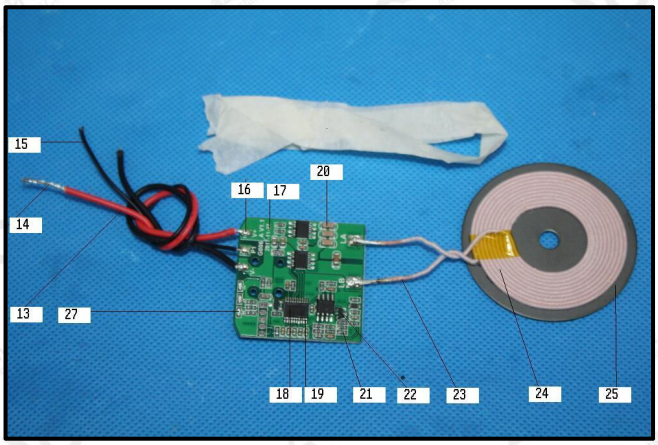
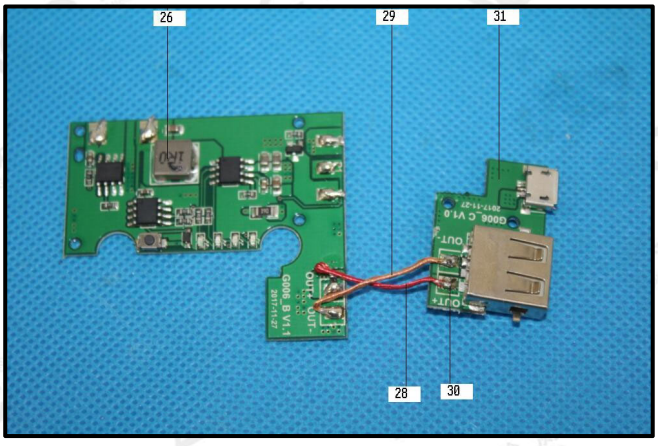
The photo of the sample

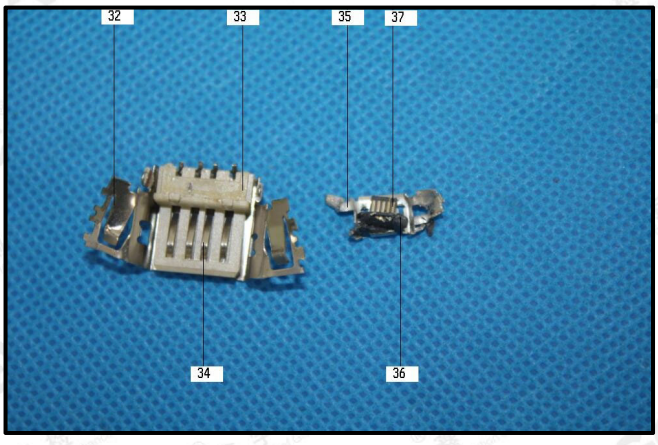












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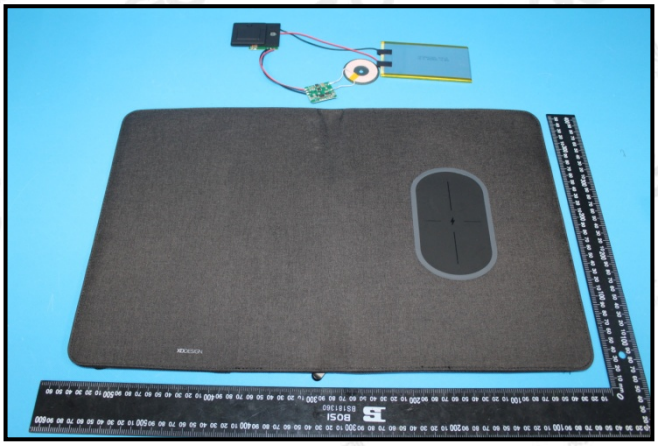
AGC01978180105-002(1)



AGC01978180105-002(2)

AGC authenticate the photo only on original report

*** End of Report ***

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