

Test Report

Report No.: AGC04094181002-001

Date: Dec.07, 2018

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Applicant: Xindao B.V.

Address: P.O. Box 3082, 2280 GB, Rijswijk, The Netherlands

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

Sample Name: Travel adapter wireless powerbank

Sample Model: P820.55

Sample Received Date: Oct.17, 2018

Testing Period: Oct.17, 2018 to Dec.07, 2018

Test site: 6/F., Building 2, No.1-4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Baoan District, Shenzhen, Guangdong, China

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

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

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

Approved by: 

Liulinwen, Lewis

Technical Director



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Test Requested:

Conclusion

As specified by client, to determine the Pb, Cd, Hg, Cr⁶⁺, 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.

Pass

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	ICP-OES	2 mg/kg
Lead (Pb)	IEC 62321-5:2013 Ed 1.0	ICP-OES	2 mg/kg
Mercury (Hg)	IEC 62321-4:2013+A1:2017 Ed 1.1	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
Charge connector						
1	White plastic shell (Outer shell)	BL	BL	BL	BL	BL
2	Grey plastic shell (Outer shell)	BL	BL	BL	BL	BL
3	Wire core wire jacket (Inductance)	BL	BL	BL	BL	BL
4	Grey ceramic (Inductance)	BL	BL	BL	X*	BL
5	Blue tape (Inductance)	BL	BL	BL	BL	BL
6	Enameled wire (Inductance)	BL	BL	BL	BL	-
7	White sponge cotton pad (Inductance)	BL	BL	BL	BL	BL
8	Barley paper (Battery)	BL	BL	BL	BL	BL
9	Red wire jacket (Battery)	BL	BL	BL	BL	BL
10	Wire core (Battery)	BL	BL	BL	BL	-
11	Tin solder (Battery)	BL	BL	BL	BL	-
12	Green sleeving (Battery)	BL	BL	BL	BL	BL
14	Black wire jacket (Battery)	BL	BL	BL	BL	BL
15	White plastic seat (Connector seat)	BL	BL	BL	BL	BL
16	Silver metal clasp (Connector seat)	BL	BL	BL	BL	-
17	Contact pin (Connector seat)	BL	BL	BL	BL	-
18	White wire jacket (Connector seat)	BL	BL	BL	BL	BL
19	Tin solder (Connector seat)	BL	BL	BL	BL	-
20	Wire core (Connector seat)	BL	BL	BL	BL	-
21	Chip triode (Blue circuit board)	BL	BL	BL	BL	BL
22	Grey magnetic plane inductance (Blue circuit board)	BL	BL	BL	BL	BL
23	Chip resistor (Blue circuit board)	BL	BL	BL	BL	BL
24	IC body (IC) (Blue circuit board)	BL	BL	BL	BL	BL

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Seq. No.	Tested Part(s)	Results(mg/kg)				
		Cd	Pb	Hg	Cr	Br
25	Tin plating pin (IC) (Blue circuit board)	BL	BL	BL	BL	-
26	Black plastic micropositioner (Blue circuit board)	BL	BL	BL	BL	X*
27	Copper button (Touch switch) (Blue circuit board)	BL	BL	BL	BL	-
28	Silver metal shell (Touch switch) (Blue circuit board)	BL	BL	BL	X*	-
29	Chip LED (Blue circuit board)	BL	BL	BL	BL	BL
30	Tin solder (Blue circuit board)	BL	BL	BL	BL	-
31	Blue PCB board (Blue circuit board)	BL	BL	BL	BL	X*
32	USB metal joint (USB joint) (Blue circuit board)	BL	BL	BL	BL	-
33	Black plastic contact (USB joint) (Blue circuit board)	BL	BL	BL	BL	BL
34	Contact pin (USB joint) (Blue circuit board)	BL	BL	BL	BL	-
35	TYPE-C metal connector (TYPE-C connector) (Blue circuit board)	BL	BL	BL	X*	-
36	Black plastic contact (TYPE-C connector) (Blue circuit board)	BL	BL	BL	BL	BL
37	Contact pin (TYPE-C connector)	BL	BL	BL	BL	-
38	White glue (Power board)	BL	BL	BL	BL	BL
39	Black wire jacket (Power board)	BL	BL	BL	BL	BL
40	Wire core (Power board)	BL	BL	BL	BL	-
41	Red wire jacket (Power board)	BL	BL	BL	BL	BL
42	Tin solder (Power board)	BL	BL	BL	BL	-
43	Black PCB board (Power board)	BL	BL	BL	BL	BL
44	Chip resistor (Power board)	BL	BL	BL	BL	BL
45	Chip IC (Power board)	BL	BL	BL	BL	BL
46	Yellow tape (Transformer) (Power board)	BL	BL	BL	BL	BL
47	Magnet frame (Transformer) (Power board)	BL	BL	BL	BL	BL
48	Enameled wire (Transformer) (Power board)	BL	BL	BL	BL	-
49	Black wire jacket (Transformer) (Power board)	BL	BL	BL	BL	BL

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Seq. No.	Tested Part(s)	Results(mg/kg)				
		Cd	Pb	Hg	Cr	Br
50	Black plastic skeleton (Transformer) (Power board)	BL	BL	BL	BL	BL
51	Three layer insulation line (Transformer) (Power board)	BL	BL	BL	X*	BL
52	Transparent sleeving (Transformer) (Power board)	BL	BL	BL	BL	BL
53	Silver metal terminal (Fuse) (Power board)	BL	BL	BL	BL	-
54	White ceramic (Fuse) (Power board)	BL	BL	BL	BL	BL
55	Pin (Fuse) (Power board)	BL	BL	BL	BL	-
56	Ceramic capacitance (Power board)	BL	BL	BL	BL	BL
57	Black sleeving (Inductance) (Power board)	BL	BL	BL	BL	BL
58	Magnet frame (Inductacne) (Power board)	BL	BL	BL	BL	BL
59	Enameled wire (Power board)	BL	BL	BL	BL	-
60	Black sleeving (Electrolytic capacitor) (Power board)	BL	BL	BL	BL	BL
61	Black rubber plug (Electrolytic capacitor) (Power board)	BL	BL	BL	BL	BL
62	Aluminum shell (Electrolytic capacitor) (Power board)	BL	BL	BL	BL	-
63	Pin (Electrolytic capacitor) (Power board)	BL	BL	BL	BL	-
64	Anode foil (Electrolytic capacitor) (Power board)	BL	BL	BL	BL	-
65	Electrolytic paper (Electrolytic capacitor) (Power board)	BL	BL	BL	BL	BL
66	Cathode foil (Electrolytic capacitor) (Power board)	BL	BL	BL	BL	-
Plug						
67	Tin solder (Chinese standard plug)	BL	BL	BL	BL	-
68	Red wire jacket (Chinese standard plug)	BL	BL	BL	BL	BL
69	Silvery metal plug (Chinese standard plug)	BL	BL	BL	BL	-
70	White plastic shell (American standard plug)	BL	BL	BL	BL	BL
71	Silvery metal plug (American standard plug)	BL	BL	BL	BL	-
72	Silvery metal wafer (American standard plug)	BL	BL	BL	BL	-
73	Grey plastic shell (American standard plug)	BL	BL	BL	BL	BL
74	Silvery metal plug (European standard plug)	BL	BL	BL	BL	-

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Seq. No.	Tested Part(s)	Results(mg/kg)				
		Cd	Pb	Hg	Cr	Br
75	Silvery metal wafer (European standard plug)	BL	BL	BL	BL	-
76	Silvery metal plug (England standard plug)	BL	OL*	BL	BL	-
77	Copper contact piece (England standard plug)	BL	BL	BL	BL	-

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 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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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 Pb

Test Item(s)	Unit	Result(s)
		76
Lead(Pb)	mg/kg	22008*

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

MDL = Method Detection Limit

- * 1= As claimed by the material declaration submitted by the client, the materials of the sample No.76 is copper alloy, according to the RoHS 2011/65 / EU, Lead is exempted as an alloying element in Copper containing up to 4% (40000ppm) by weight.

2) The Test Results of non-metal Cr⁶⁺

Test Item(s)	Unit	Result(s)		Limit
		4	51	
Hexavalent Chromium(Cr ⁶⁺)	mg/kg	N.D.	N.D.	1000

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

MDL = Method Detection Limit

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3)The Test Results of metal Cr⁶⁺

Test Item(s)	MDL	Result(s)		Limit
		28	35	
Hexavalent Chromium(Cr ⁶⁺)	See note	Negative	Negative	#

Note:

- 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/cm ² 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/cm ² and ≤ the 0,13 µg/cm ² 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/cm ² 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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4) The Test Results of PBBs & PBDEs

Unit: mg/kg

Item(s)	MDL	Result(s)		Limit
		26	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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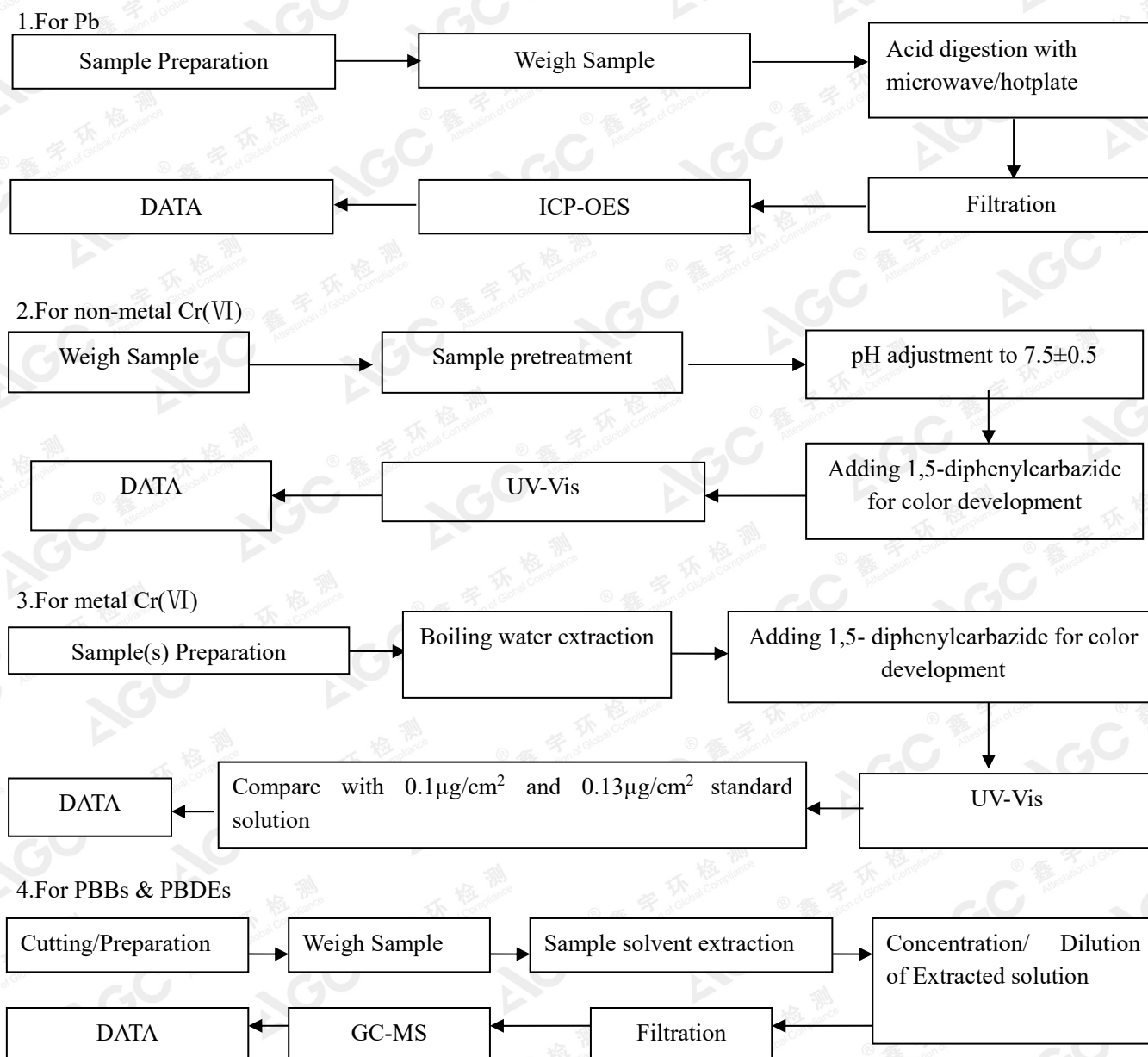
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Test Flow Chart



Test result on specimen No.67 was resubmitted sample on Dec.06, 2018.

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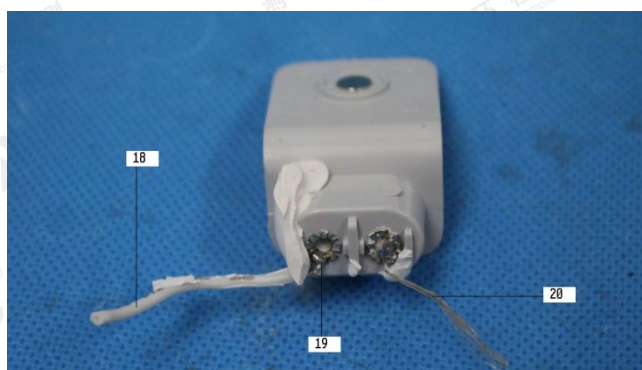
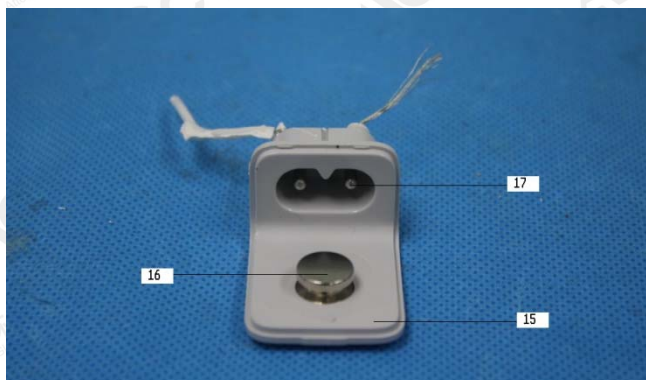
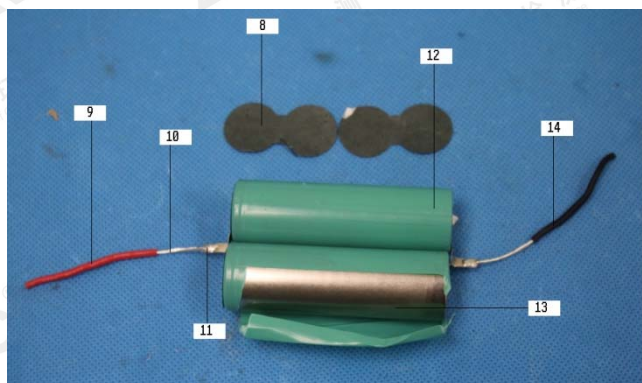
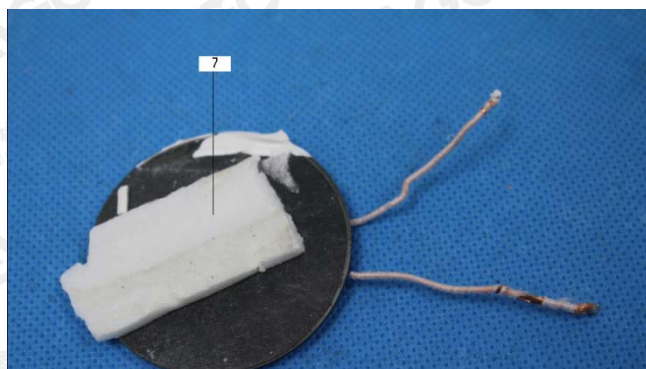
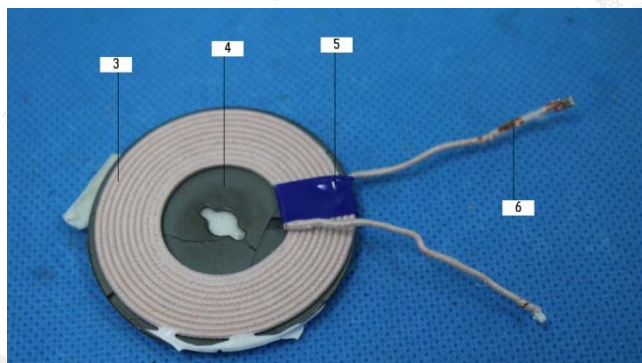
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The photo of the sample



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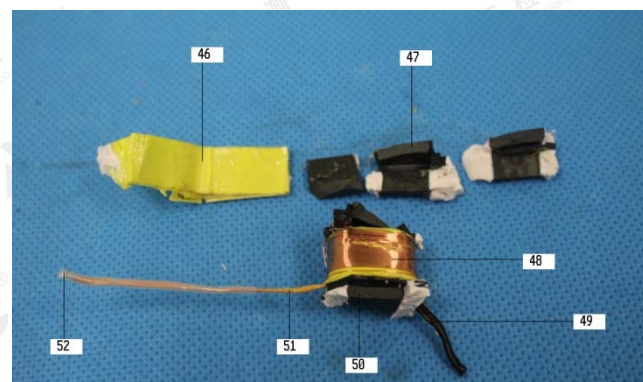
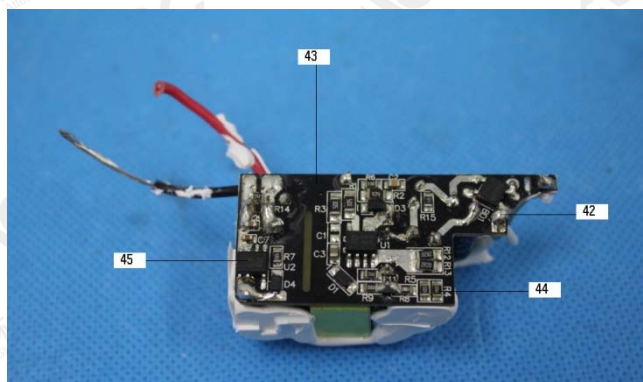
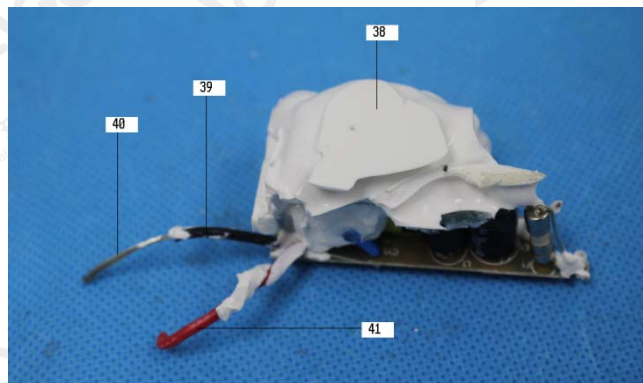
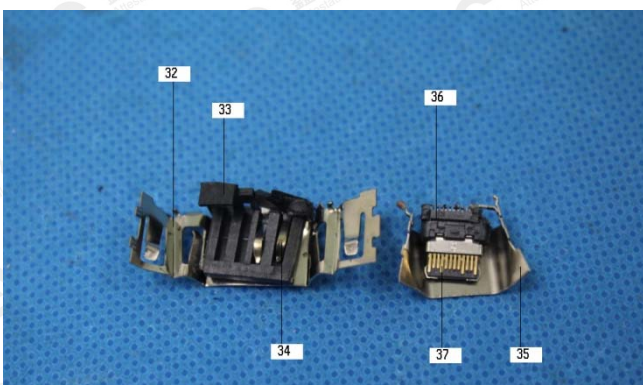
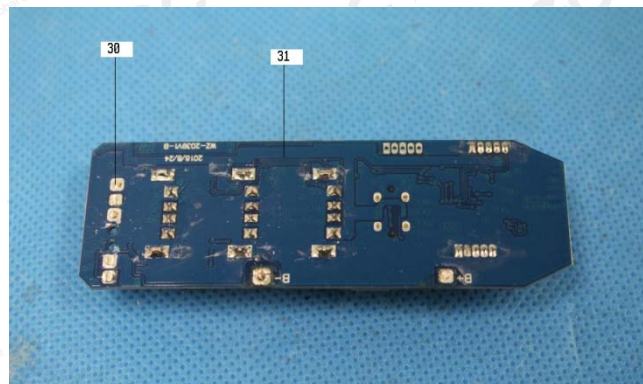
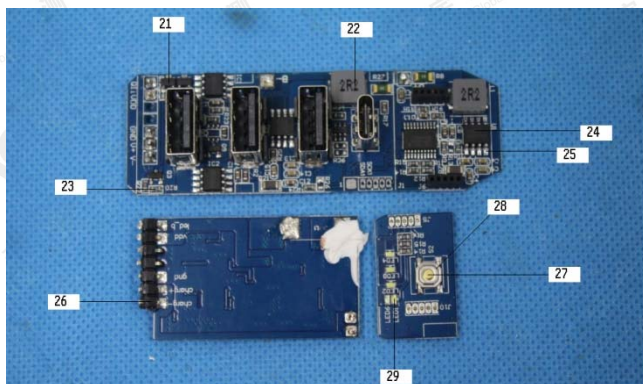
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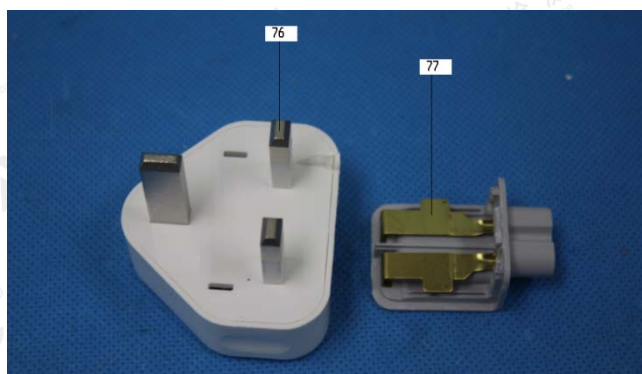
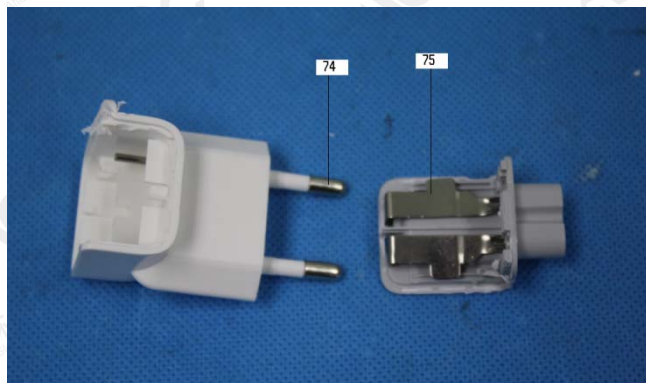
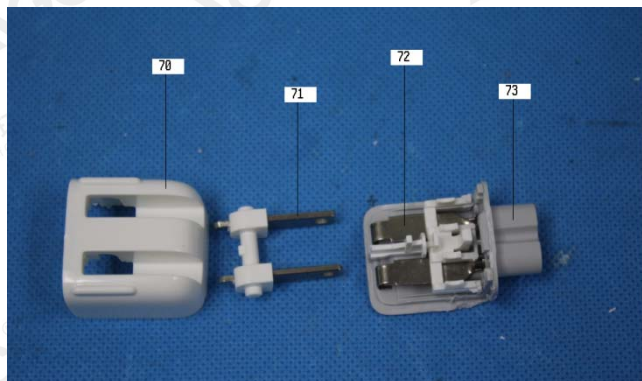
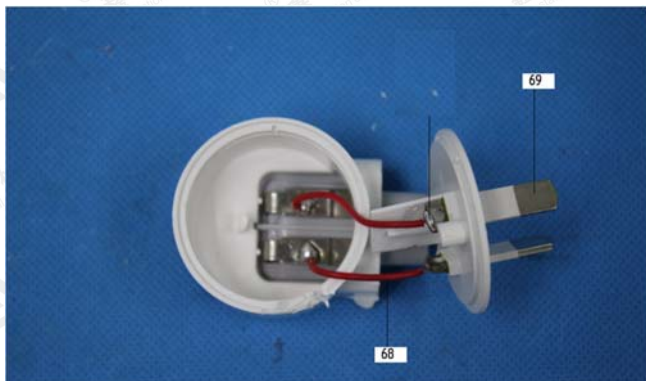
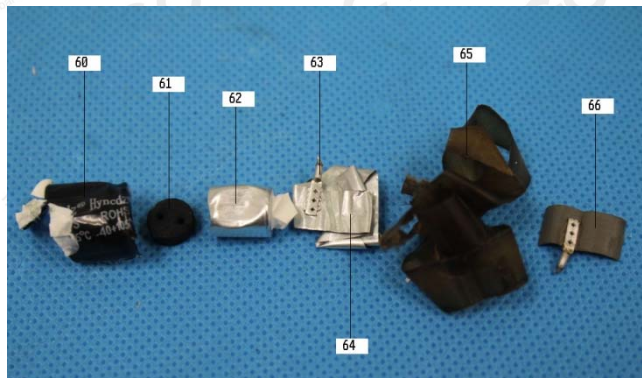
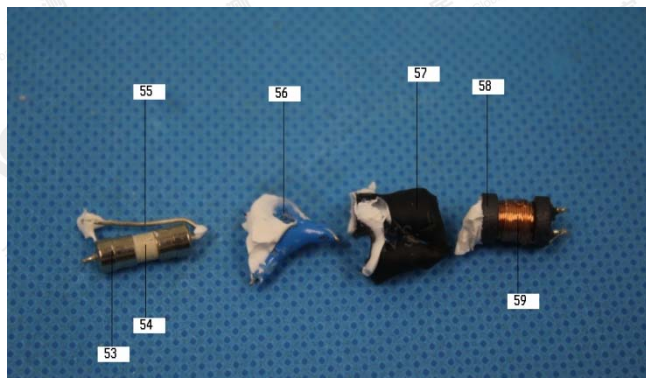
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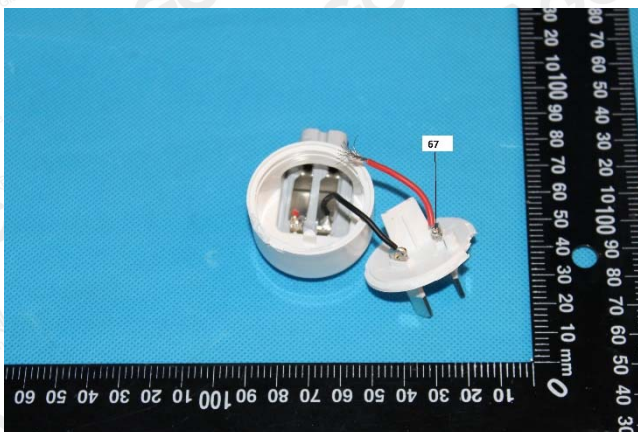
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Test Report

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