# Test Report

**Report No.: AGC04094190501-002** Date: May 30, 2019 Page 1 of 13

Applicant: Xindao B.V.

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

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

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

Sample Name: Aluminium 10.000 m Ah W ireless Pow erbank

Model No.: P324.39

1Sample Received Date: May 22, 2019

Testing Period: May 22, 2019 to May 30, 2019

**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 Report

**Report No.: AGC04094190501-002** Date: May 30, 2019 Page 2 of 13

| **Test Requested:** | **Conclusion** |
|---|---|
| 1. 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. | **Pass** |
| 2.As specified by client, to determine the DBP, BBP, DEHP, DIBP content in the submitted sample in accordance with Directive 2011/65/EU (RoHS) and its amendment directive (EU) 2015/863. | **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 Report



**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 | Silver metal aluminum shell(outer shell) | BL | BL | BL | BL | - |
| 2 | Black rubber pad(outer shell) | BL | BL | BL | BL | BL |
| 3 | Black plastic inter shell(outer shell) | BL | BL | BL | BL | X* |
| 4 | Black plastic side cover(outer shell) | BL | BL | BL | BL | X* |
| 5 | Silver screw | BL | BL | BL | BL | - |
| 6 | Blue tape(battery) | BL | BL | BL | BL | BL |
| 7 | Electric core(battery) | BL | BL | BL | BL | BL |
| 8 | Black foam (battery) | BL | BL | BL | BL | BL |
| 9 | Tin solder(battery) | BL | BL | BL | BL | - |
| 10 | Wire core(battery) | BL | BL | BL | BL | - |
| 11 | Black wire jacket(battery) | BL | BL | BL | BL | BL |
| 12 | Red wire jacket(battery) | BL | BL | BL | BL | BL |
| 13 | Black ceramic(induction coil) | BL | BL | BL | BL | BL |
| 14 | Brown tape(induction coil) | BL | BL | BL | BL | BL |
| 15 | Coil wire jacket(induction coil) | BL | BL | BL | BL | BL |
| 16 | Yellow tape(induction coil) | BL | BL | BL | BL | BL |
| 17 | Wire core(induction coil) | BL | BL | BL | BL | - |
| 18 | Black foam(induction coil) | BL | BL | BL | BL | BL |
| 19 | Black plastic button(touch switch) | BL | BL | BL | BL | BL |
| 20 | White plastic seat(touch switch) | BL | BL | BL | BL | BL |
| 21 | USB metal joint(Micro joint) | BL | BL | BL | BL | - |
| 22 | Black plastic seat(Micro joint) | BL | BL | BL | BL | BL |
| 23 | Contact pin(Micro joint) | BL | BL | BL | BL | - |
| 24 | Chip grey inductor | BL | BL | BL | X* | BL |





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# Test Report



| Seq. No. | Tested Part(s) | Results(mg/kg) | | | | |
|---|---|---|---|---|---|---|
| | | Cd | Pb | Hg | Cr | Br |
| 25 | Tin solder | BL | BL | BL | BL | - |
| 26 | Red connecting line | BL | BL | BL | BL | BL |
| 27 | Chip resistor | BL | BL | BL | BL | BL |
| 28 | Chip capacitor | BL | BL | BL | BL | BL |
| 29 | IC body | BL | BL | BL | BL | BL |
| 30 | Tin plating | BL | BL | BL | BL | - |
| 31 | Black wire jacket | BL | BL | BL | BL | BL |
| 32 | Wire core | BL | BL | BL | BL | - |
| 33 | Red wire jacket | BL | BL | BL | BL | BL |
| 34 | Glass diode | BL | OL* | BL | BL | BL |
| 35 | Metallized film capacitor | BL | BL | BL | BL | BL |
| 36 | Tin solder | BL | BL | BL | BL | - |
| 37 | Black thermistor(thermistor) | BL | BL | BL | BL | BL |
| 38 | Enameled wire(thermistor) | BL | BL | BL | BL | - |
| Different | | | | | | |
| 39 | Blue metal shell | BL | BL | BL | BL | - |
| 40 | Black metal shell | BL | BL | BL | BL | - |
| 41 | White film | BL | BL | BL | BL | BL |





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# Test Report



| 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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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) |
|---|---|---|
| | | 34 |
| Lead(Pb) | mg/kg | 17272* |

Note: N.D. = Not Detected or less than MDL
mg/kg = parts per million
MDL = Method Detection Limit
* = As claimed by the material declaration submitted by the client, the materials of the sample No.34 is glass, according to the ROHS 2011/65 / EU, lead in glass of electronic components is exempted.

2) The Test Results of non-metal $Cr^{6+}$

| Test Item(s) | Unit | Result(s) | Limit |
|---|---|---|---|
| | | 24 | |
| Hexavalent Chromium($Cr^{6+}$) | mg/kg | N.D. | 1000 |

Note: N.D. = Not Detected or less than MDL
mg/kg = parts per million
MDL = Method Detection Limit





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3) The Test Results of PBBs & PBDEs

Unit: mg/kg

| Item(s) | MDL | Result(s) | | Limit |
|---|---|---|---|---|
| | | 3 | 4 | |
| **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
mg/kg = parts per million
MDL = Method Detection Limit





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# Test Report



**2.Test result of DBP, BBP, DEHP, DIBP content**

Unit: mg/kg

| Test Item(s) | Test Method/ Equipment | MDL | Result(s) | | | | Limit |
|---|---|---|---|---|---|---|---|
| | | | 2 | 3 | 4 | 6 | |
| Di-(2-ethylhexyl) Phthalate (DEHP) | IEC 62321-8:2017 GC-MS | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Dibutyl phthalate (DBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Butylbenzyl phthalate (BBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Di-iso-butyl phthalate (DIBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| **Conclusion** | | / | **Pass** | **Pass** | **Pass** | **Pass** | / |

Unit: mg/kg

| Test Item(s) | Test Method/ Equipment | MDL | Result(s) | | | | Limit |
|---|---|---|---|---|---|---|---|
| | | | 7 | 8 | 11 | 12 | |
| Di-(2-ethylhexyl) Phthalate (DEHP) | IEC 62321-8:2017 GC-MS | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Dibutyl phthalate (DBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Butylbenzyl phthalate (BBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Di-iso-butyl phthalate (DIBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| **Conclusion** | | / | **Pass** | **Pass** | **Pass** | **Pass** | / |

Unit: mg/kg

| Test Item(s) | Test Method/ Equipment | MDL | Result(s) | | | | Limit |
|---|---|---|---|---|---|---|---|
| | | | 13 | 14 | 15 | 16 | |
| Di-(2-ethylhexyl) Phthalate (DEHP) | IEC 62321-8:2017 GC-MS | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Dibutyl phthalate (DBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Butylbenzyl phthalate (BBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Di-iso-butyl phthalate (DIBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| **Conclusion** | | / | **Pass** | **Pass** | **Pass** | **Pass** | / |





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# Test Report



Unit: mg/kg

| Test Item(s) | Test Method/ Equipment | MDL | Result(s) | | | | Limit |
|---|---|---|---|---|---|---|---|
| | | | 18 | 19 | 20 | 22 | |
| Di-(2-ethylhexyl) Phthalate (DEHP) | IEC 62321-8:2017 GC-MS | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Dibutyl phthalate (DBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Butylbenzyl phthalate (BBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Di-iso-butyl phthalate (DIBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| **Conclusion** | | / | **Pass** | **Pass** | **Pass** | **Pass** | / |

Unit: mg/kg

| Test Item(s) | Test Method/ Equipment | MDL | Result(s) | | | | Limit |
|---|---|---|---|---|---|---|---|
| | | | 24 | 26 | 27 | 28 | |
| Di-(2-ethylhexyl) Phthalate (DEHP) | IEC 62321-8:2017 GC-MS | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Dibutyl phthalate (DBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Butylbenzyl phthalate (BBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Di-iso-butyl phthalate (DIBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| **Conclusion** | | / | **Pass** | **Pass** | **Pass** | **Pass** | / |

Unit: mg/kg

| Test Item(s) | Test Method/ Equipment | MDL | Result(s) | | | | Limit |
|---|---|---|---|---|---|---|---|
| | | | 29 | 31 | 33 | 34 | |
| Di-(2-ethylhexyl) Phthalate (DEHP) | IEC 62321-8:2017 GC-MS | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Dibutyl phthalate (DBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Butylbenzyl phthalate (BBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| Di-iso-butyl phthalate (DIBP) | | 50 | N.D. | N.D. | N.D. | N.D. | 1000 |
| **Conclusion** | | / | **Pass** | **Pass** | **Pass** | **Pass** | / |





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# Test Report



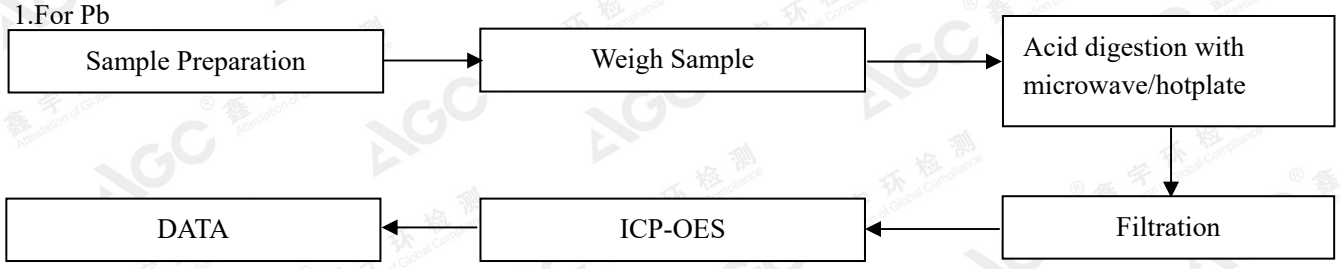
Unit: mg/kg

| Test Item(s) | Test Method/ Equipment | MDL | Result(s) | | | Limit |
|---|---|---|---|---|---|---|
| | | | 35 | 37 | 41 | |
| Di-(2-ethylhexyl) Phthalate (DEHP) | IEC 62321-8:2017 GC-MS | 50 | N.D. | N.D. | N.D. | 1000 |
| Dibutyl phthalate (DBP) | | 50 | N.D. | N.D. | N.D. | 1000 |
| Butylbenzyl phthalate (BBP) | | 50 | N.D. | N.D. | N.D. | 1000 |
| Di-iso-butyl phthalate (DIBP) | | 50 | N.D. | N.D. | N.D. | 1000 |
| **Conclusion** | | / | **Pass** | **Pass** | **Pass** | / |

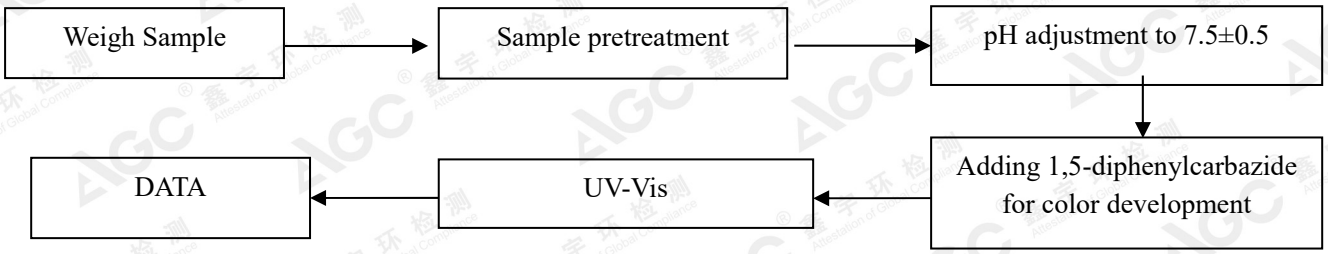
**Note:** 1. MDL＝Method Detection Limit
2. N.D.=Not Detected(less than method detection limit)

## Test Flow Chart

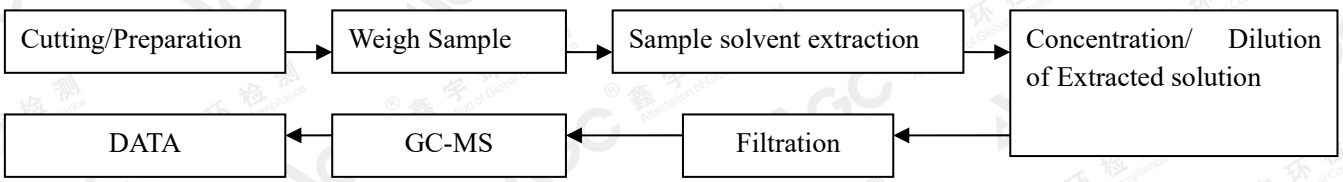
1.For Pb




2.For non-metal Cr(Ⅵ)




3. For PBBs, PBDEs, DBP, BBP, DEHP, DIBP





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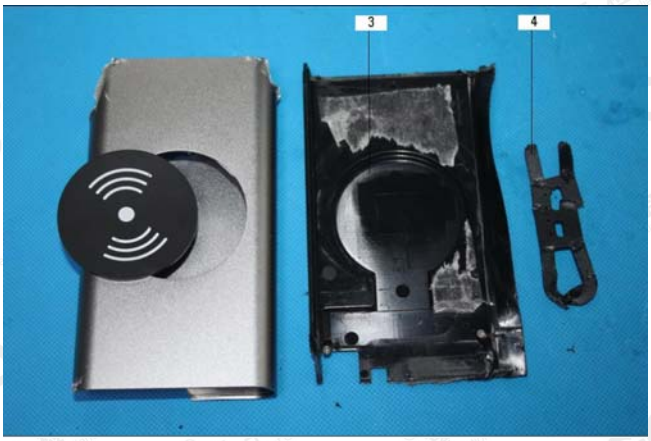
# Test Report



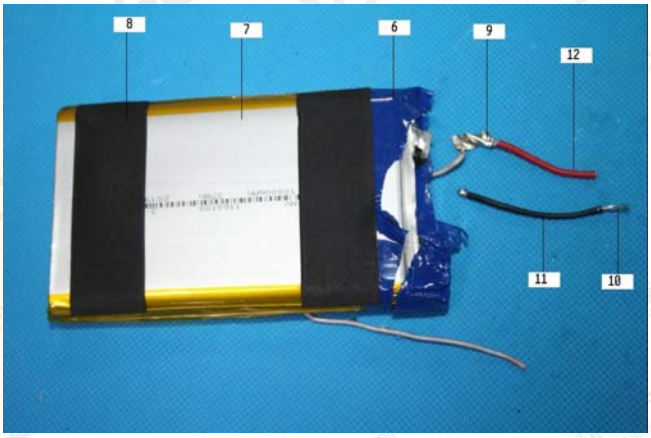
## The photo of the sample


1




2


3

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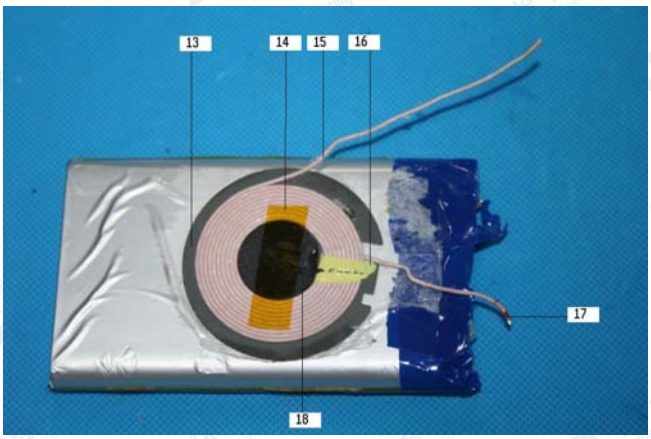


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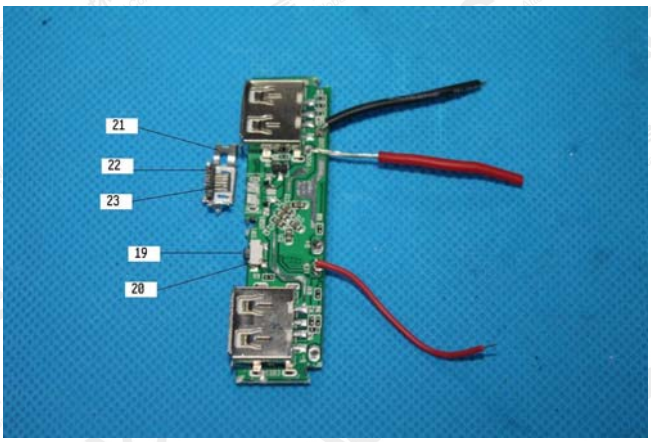


6





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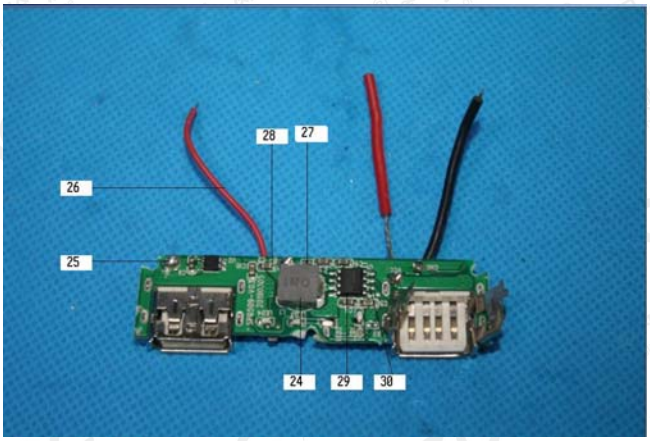
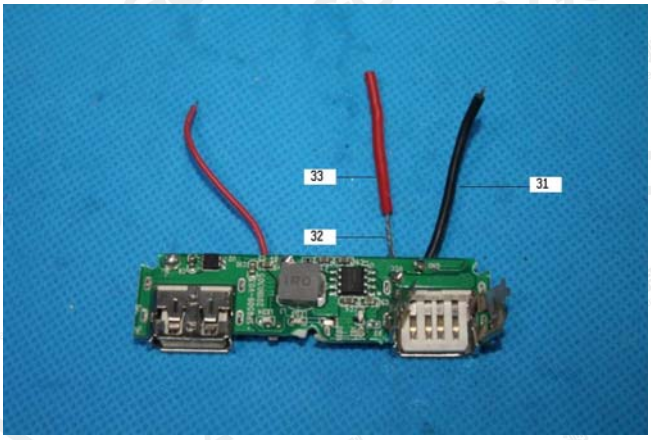



7

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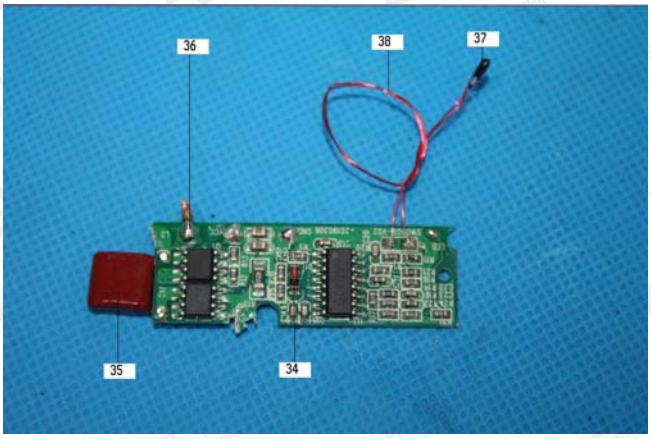


9


10

11

**AGC04094190501-002**

AGC authenticate the photo only on original report

*** End of Report ***





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