Test Report

Report No.: A001R20160704046-7 Date: Aug.01,2016 Page 1 of 16

Applicant: [redacted]
Address: [redacted] DONGGUAN [redacted] CHINA

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

Sample Name:	Portfolio with 5000mAh power bank
Sample Model:	B1267
Item No.:	B1267
Buyer:	BAGCO
Supplier:	[redacted]
Country of Origin:	CHINA
Country of Destination:	England
Manufacturer:	[redacted]
Address:	[redacted] DONGGUAN [redacted] CHINA
Sample Received Date:	Jul.06,2016
Testing Period:	Jul.06,2016 to Jul.28,2016

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:
Liwenlong, Felix.Li	Jiangyuncheng, Jason	Liulinwen, Lewis
Test Engineer	Laboratory Manager	Technical Director

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Test Requested: **Conclusion**

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**

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 62321:2008 Ed 1.0 Annex C	UV-Vis	1 mg/kg
Metal Hexavalent Chromium (Cr^{6+})	IEC 62321:2008 Ed 1.0 Annex B	UV-Vis	/
PBBs/PBDEs	IEC 62321:2008 Ed 1.0 Annex A	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	Electric core(Battery)	BL	BL	BL	BL	BL
2	Brown adhesive tape(Battery)	BL	BL	BL	BL	BL
3	Metal nickel sheet(Battery)	BL	BL	BL	BL	-
4	Tin solder(Battery)	BL	BL	BL	BL	-
5	Red line leather(Battery)	BL	BL	BL	BL	BL
6	Black line leather(Battery)	BL	BL	BL	BL	BL
7	Wire core(Battery)	BL	BL	BL	BL	-
8	Patch capacitor	BL	BL	BL	BL	BL
9	Patch resistor	BL	BL	BL	BL	BL
10	IC Ontology(IP5360)	BL	BL	BL	BL	BL
11	Pin(IP5360)	BL	BL	BL	BL	-
12	Patch IC	BL	BL	BL	BL	X*
13	IC Ontology(IC(Big))	BL	BL	BL	BL	BL
14	Pin(IC(Big))	BL	BL	BL	BL	-
15	Patch LED	BL	BL	BL	BL	BL
16	Magnetic frame(Inductance)	BL	BL	BL	X*	BL
17	Enameled wire(Inductance)	BL	BL	BL	BL	-
18	Solder resistance(PCB board)	BL	BL	BL	BL	BL
19	Substrate(PCB board)	BL	BL	BL	BL	X*
20	Copper foil(PCB board)	BL	BL	BL	BL	-
21	Tin solder(PCB board)	BL	BL	BL	BL	-
22	Metal shell(Android plug)	BL	BL	BL	BL	-
23	Black plastic(Android plug)	BL	BL	BL	BL	BL
24	Pin(Android plug)	BL	BL	BL	BL	-

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Seq. No.	Tested Part(s)	Results(mg/kg)				
		Cd	Pb	Hg	Cr	Br
25	Black plastic button(Light touch switch)	BL	BL	BL	BL	BL
26	Black plastic shell(Light touch switch)	BL	BL	BL	BL	BL
27	Pin(Light touch switch)	BL	BL	BL	BL	-
28	Metal sheet(Light touch switch)	BL	BL	BL	BL	-
29	Shrapnel(Light touch switch)	BL	BL	BL	BL	-
30	Black handle(Plug)	BL	BL	BL	BL	BL
31	White inner glue(Plug)	BL	BL	BL	BL	BL
32	Black plastic(Android plug) (Plug)	BL	BL	BL	BL	X*
33	Metal needle(Android plug) (Plug)	BL	BL	BL	X*	-
34	Pin(Android plug) (Plug)	BL	BL	BL	BL	-
35	Metal shell(Android plug) (Plug)	BL	BL	BL	X*	-
36	Pin(Apple plug) (Plug)	BL	OL*	BL	BL	-
37	White plastic(Apple plug) (Plug)	BL	BL	BL	BL	BL
38	Metal shell(Apple plug) (Plug)	BL	BL	BL	BL	-
39	Blue PCB board(Apple plug) (Plug)	BL	BL	BL	BL	X*
40	Tin solder(Apple plug) (Plug)	BL	BL	BL	BL	-
41	Patch IC(Plug)	BL	X*	BL	BL	X*
42	Patch triode(Plug)	BL	BL	BL	BL	X*
43	Black outer line leather(Wire rod) (Plug)	BL	BL	BL	BL	BL
44	Black line leather(Wire rod) (Plug)	BL	BL	BL	BL	BL
45	Wire core(Wire rod) (Plug)	BL	BL	BL	BL	-
46	Red line leather(Wire rod) (Plug)	BL	BL	BL	BL	BL
Difference plug						
47	Black plastic handle(Plastic handle USB plug)	BL	BL	BL	BL	BL
48	Tin solder(Plastic handle USB plug)	BL	BL	BL	BL	-
49	Pin(Plastic handle USB plug)	BL	BL	BL	BL	-

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Seq. No.	Tested Part(s)	Results(mg/kg)				
		Cd	Pb	Hg	Cr	Br
50	White plastic(Plastic handle USB plug)	BL	BL	BL	BL	BL
51	Metal shell(Plastic handle USB plug)	BL	BL	BL	BL	-
52	Tin solder(Metal handle USB plug)	BL	BL	BL	BL	-
53	Black inner glue(Metal handle USB plug)	BL	BL	BL	BL	X*
54	Pin(Metal handle USB plug)	BL	BL	BL	BL	-
55	Metal shell(Metal handle USB plug)	BL	BL	BL	BL	-
56	Black aluminum handle(Metal handle USB plug)	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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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 the document 2005/618/EC amending 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.

Remark: As client's request, add this report that the results are copied from report No.:A001R20160704046-2.

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B、The Test Results of Chemical Method:

1) The Test Results of Pb

Test Item(s)	Unit	Result(s)	
		36	41
Lead(Pb)	mg/kg	6664*	334

Note: N.D. = Not Detected or less than MDL
mg/kg = ppm= parts per million
MDL = Method Detection Limit
* = As claimed by the material declaration submitted by the client, the materials of the sample No.36 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 Cr^{6+}

Test Item(s)	Unit	Result(s)	Limit
		16	
Hexavalent Chromium(Cr^{6+})	mg/kg	N.D.	1000

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

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

Test Item(s)	MDL	Result(s)		Limit
		33	35	
Metal Hexavalent Chromium (Cr^{6+})	**	Negative	Negative	#

Note:

- Negative = Absence of Cr(VI) on the tested areas
- MDL = Method Detection Limit
- ** = Spot-test:
  Negative = Absence of Cr(VI) coating/ surface layer
  Positive = Presence of Cr(VI) coating/ surface layer
  (The tested sample should be further verified by boiling-water-extraction method if the spot test result cannot be confirmed)
  Boiling-water-extraction:
  Negative = Absence of Cr(VI) coating/ surface layer
  The detected concentration in boiling- water-extraction solution is less than 0.02 mg/kg with $50cm^2$ sample surface areas.
  Positive = Presence of Cr(VI) coating/ surface layer
  The detected concentration in boiling- water-extraction solution is equal or greater than 0.02 mg/kg with $50cm^2$ sample surface areas.
- # =
  Negative indicates the absence of Cr(VI) on the tested areas and result be regarded as no conflict with RoHS requirement.
  Positive indicates the presence of Cr(VI) on the tested areas.
  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
		12	19	32	39	41	42	53	
Polybrominated Biphenyls (PBBs)									
Monobromobiphenyl	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	Total PBBs Content <1000
Dibromobiphenyl	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Tribromobiphenyl	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Tetrabromobiphenyl	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Pentabromobiphenyl	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Hexabromobiphenyl	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Heptabromobiphenyl	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Octabromobiphenyl	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Nonabromodiphenyl	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Decabromodiphenyl	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Total content	/	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Polybrominated Diphenylethers (PBDEs)									
Monobromodiphenyl ether	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	Total PBDEs Content <1000
Dibromodiphenyl ether	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Tribromodiphenyl ether	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Tetrabromodiphenyl ether	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Pentabromodiphenyl ether	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Hexabromodiphenyl ether	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Heptabromodiphenyl ether	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Octabromodiphenyl ether	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Nonabromodiphenyl ether	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Decabromodiphenyl ether	5	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Total content	/	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Conclusion	/	**Pass**	**Pass**	**Pass**	**Pass**	**Pass**	**Pass**	**Pass**	/

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

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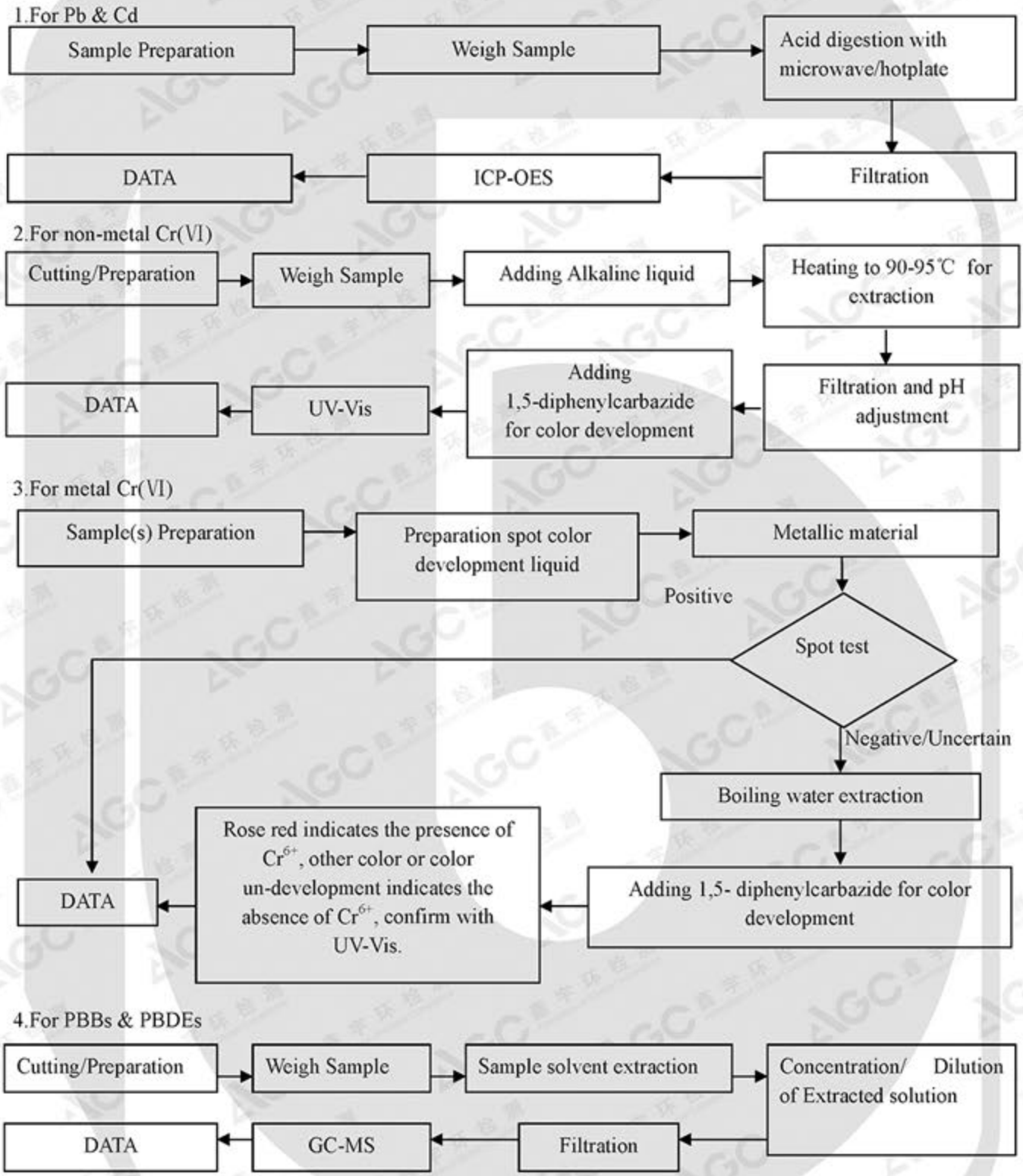
Test Report

Test Flow Chart



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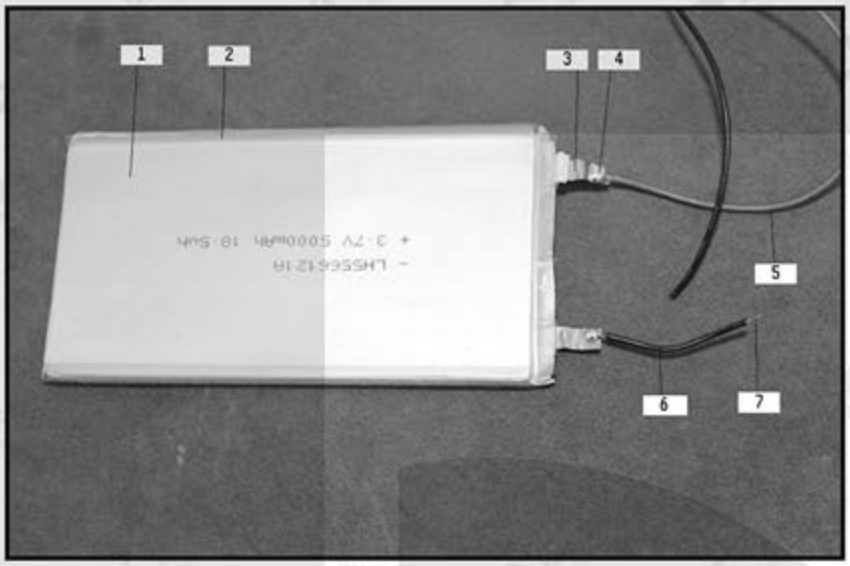
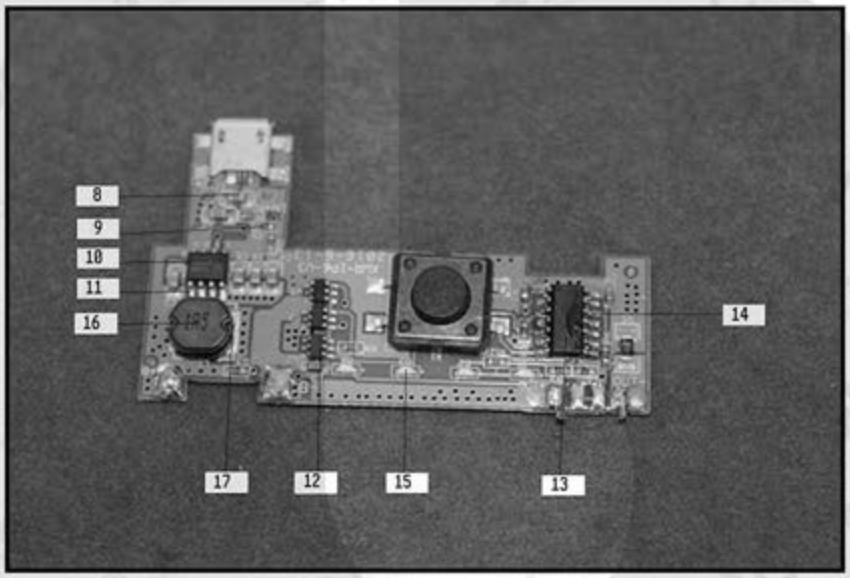
The photo of the sample





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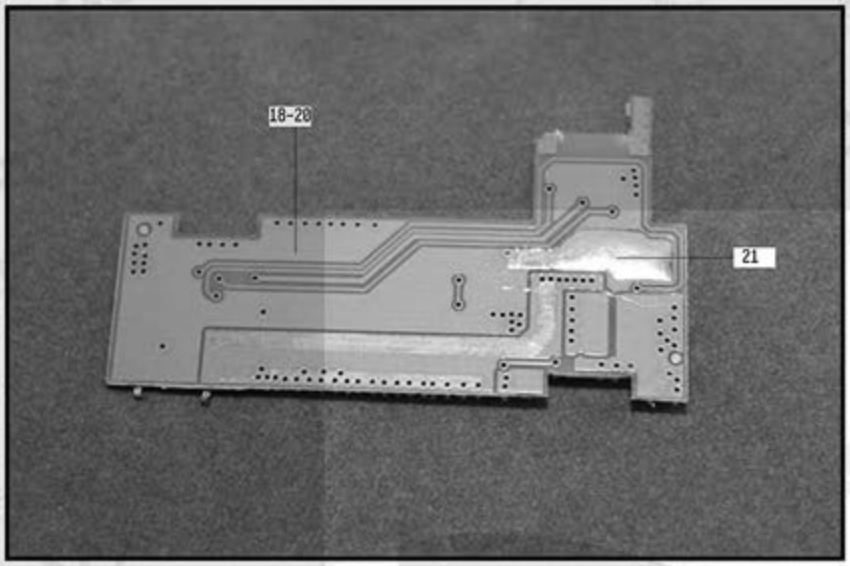

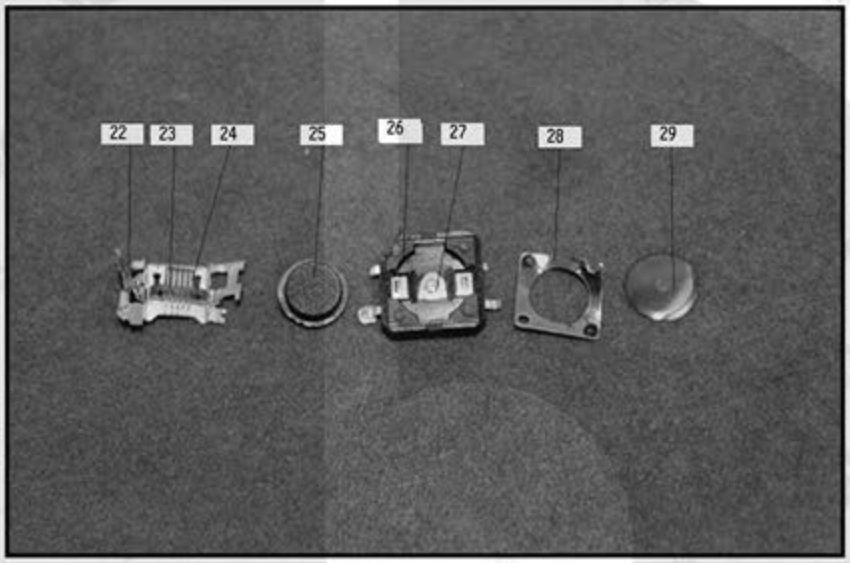

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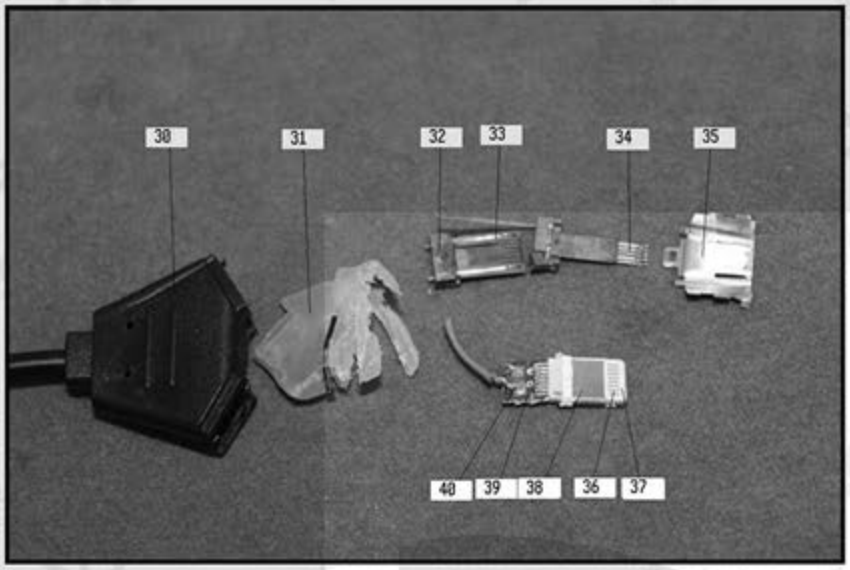

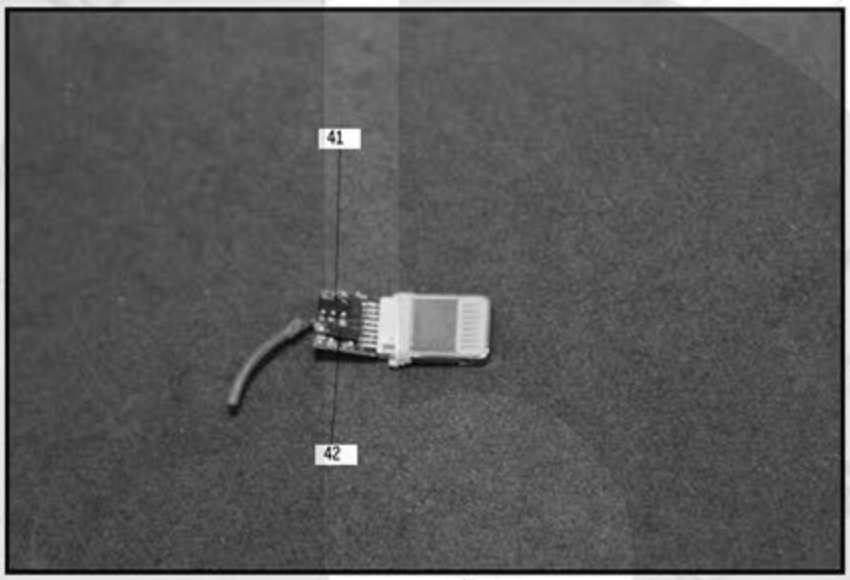

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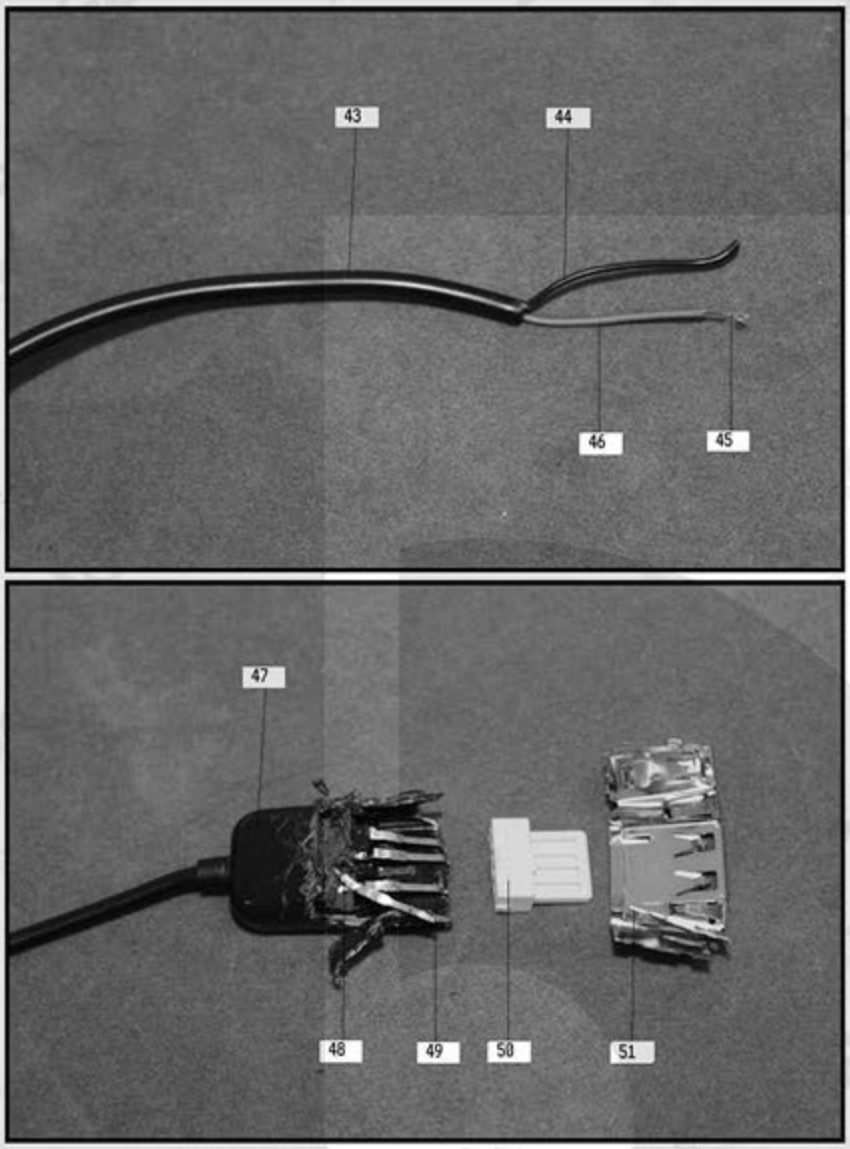

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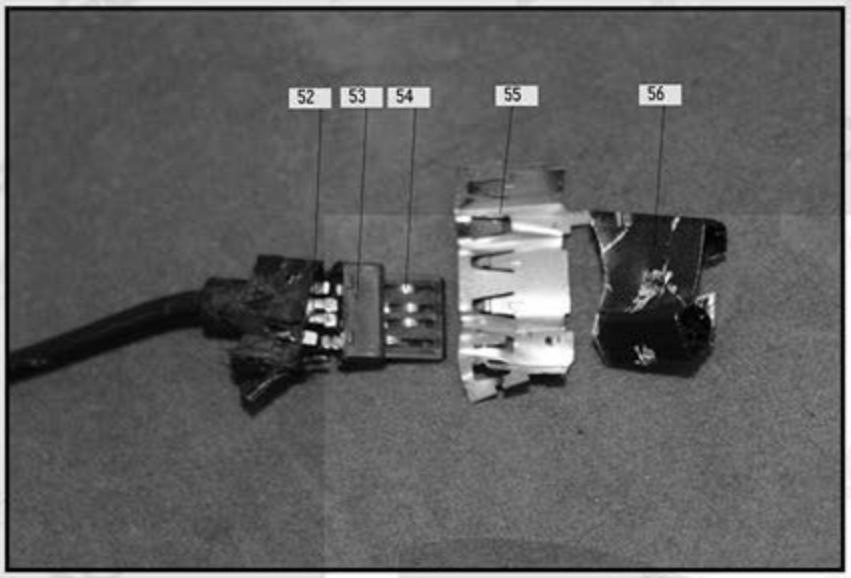

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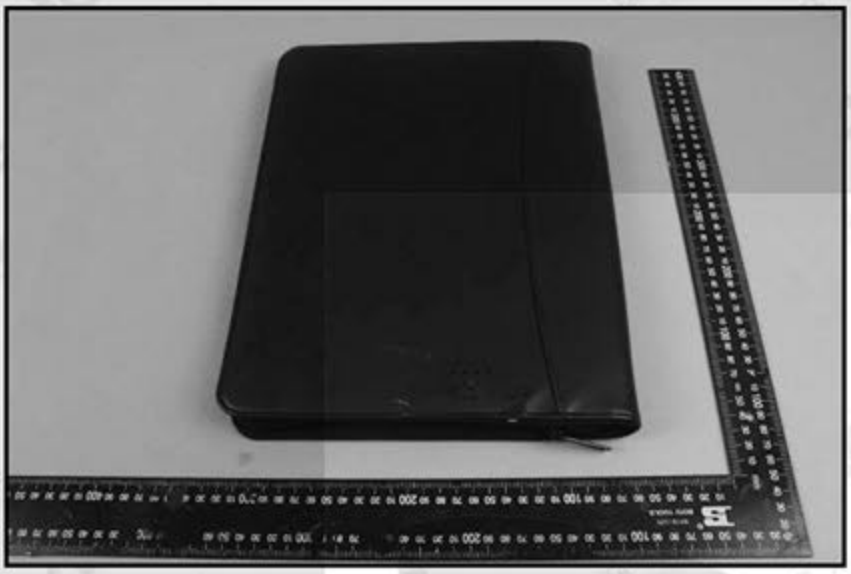

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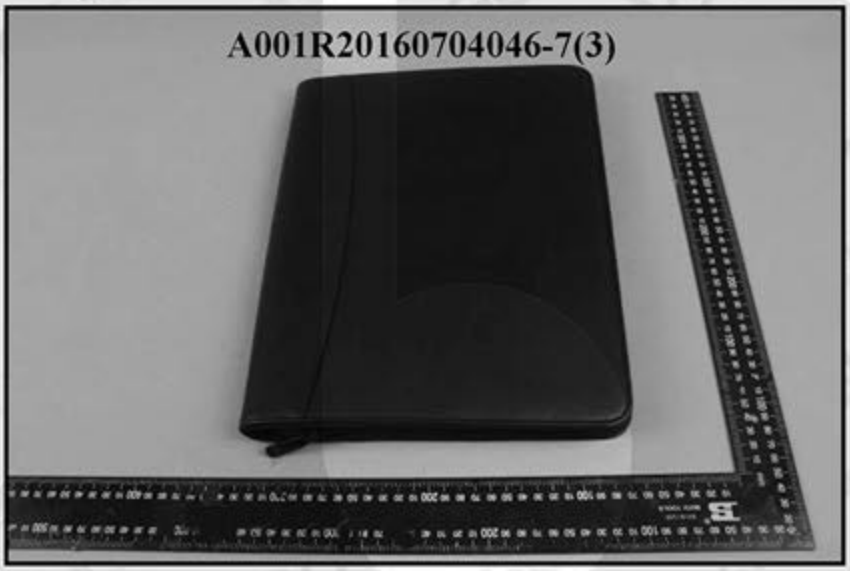

AGC authenticate the photo only on original report

*** End of Report ***

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