Test Report

Applicant	:	Shenzhen Hai Bao Audio Technology Co., Ltd.
Address	:	301, Building 12, Zone C, Fangxing Science Park, No. 33, Baonan Road, Nanlian Community, Longgang Street, Longgang District, Shenzhen
Manufacturer	:	Shenzhen Hai Bao Audio Technology Co., Ltd.
Address	:	301, Building 12, Zone C, Fangxing Science Park, No. 33, Baonan Road, Nanlian Community, Longgang Street, Longgang District, Shenzhen

The submitted sample and sample information was/were submitted and identified by/on the behalf of the client

Sample name	:	Bluetooth headset
Sample Model	:	hi 90, hi 6, hi 8, hi 60, hi 70, hi 72, hi 77, hi 96, hi 98, hi 99
Brand Name	:	hileo

TEST INFORMATION

Date of Receipt	:	2022-11-01
Date of Test	:	2022-11-01 to 2022-11-10
Issue Date	:	2022-11-11
Test Method	:	Please refer to the following page(s).
Test Result(s)	:	Please refer to the following page(s).

Test Requested	Conclusion
As specified by client, according to RoHS Directive 2011/65/EU with amendment (EU) 2015/863 to test Lead (Pb), Cadmium (Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs), Phthalates(DBP, BBP, DEHP, DIBP) in the submitted sample(s)	Pass

Test/Witness Engineer : York xin

Approved & Authorized : Jack su

Tested Sample/Part Description

No.	Component Description(non-metallic)	No.	Component Description(metal)
1	PCBA	21	Stainless steel shaft
2	Battery	22	magnet
3	horn	23	Screw
4	Decorative sheet		
5	Light guide column		
6	Face shell		
7	Bottom shell		
8	ear-hook		
9	Volume key		
10	Charging deck		
11	Charging cabin bottom		
12	Charging compartment middle shell		
13	Charging chamber		
14	3M glue		
15	Microphone sheath		
16	Wheat net		
17	Tuning network		
18	Scratch resistant film		
19	Contact protection film		
20	LED digital screen		

Test Result of XRF
(1)XRF

Tested Item(s)	Result											
	1	2	3	4	5	6	7	8	9	10	11	12
Lead (Pb)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Cadmium (Cd)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Mercury (Hg)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Total Chromium (Cr)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Total Bromine (Br)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL

Tested Item(s)	Result										
	13	14	15	16	17	18	19	20	21	22	23
Lead (Pb)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Cadmium (Cd)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Mercury (Hg)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Total Chromium (Cr)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Total Bromine (Br)	BL	BL	BL	BL	BL	BL	BL	BL	/	/	/

(1)Test Method

Tested Item(s)	Test Method	Test instrument
Lead (Pb) Cadmium (Cd) Mercury (Hg) Total Chromium (Cr) Total Bromine (Br)	IEC 62321-2:2013, IEC 62321-1:2013, IEC 62321-3-1:2013.	XRF

Remark:

(a) BL = Below Limit, OL = Over Limit, LOD = Limit of Detection, -- = Not Regulated,
3σ = The reproducibility of analytical instruments
X: the region where further investigation is necessary,
*=The screened result was found by XRF and further chemical test was suggested

(b) There are the results on total Br while test items on restricted substances are PBBs and PBDEs. There is the result on total Cr while test item on restricted substances is Cr(VI).

(c) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP-OES (for Cd, Pb, Hg), UV-Vis (for Cr(VI) and GC-MS (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC62321 (unit: mg/kg).

Element	Polymer materials	Metallic materials	Composite materials
Cadmium (Cd)	BL≤(70-3δ)<X<（130+3δ）≤OL	BL≤(70-3δ)<X<（130+3δ）≤OL	LOD<X< (150+3δ)≤OL
Lead (Pb)	BL≤(700-3δ)<X<（1300+3δ）≤OL	BL≤(700-3δ)<X<（1300+3δ）≤OL	BL≤(500-3δ)<X<（1500+3δ）≤OL
Mercury (Hg)	BL≤(700-3δ)<X<（1300+3δ）≤OL	BL≤(700-3δ)<X<（1300+3δ）≤OL	BL≤(500-3δ)<X<（1500+3δ）≤OL
Chromium (Cr)	BL≤(700-3δ)<X	BL≤(700-3δ)<X	BL≤(500-3δ)<X
Bromine (Br)	BL≤(300-3δ)<X	Not Applicable	BL≤(250-3δ)<X

RoHS Requirement

Restricted substances	Test result (ppm)	Limits	Conclusion
Lead(Pb)	＜10	100 mg/kg	Pass
Cadmium(Cd)	＜10	1000 mg/kg	Pass
Mercury(Hg)	＜10	1000 mg/kg	Pass
Chromium(VI)(Cr6+)	＜30	1000 mg/kg	Pass
Polybrominated biphenyls(PBBs)	＜10	1000 mg/kg	Pass
Polybrominated diphenyl ethers (PBDEs)	＜10	1000 mg/kg	Pass
Dibutyl phthalate(DBP)	＜30	1000 mg/kg	Pass
Benzylbutyl phthalate(BBP)	＜30	1000 mg/kg	Pass
Di-2-ethylhexyl phthalate(DEHP)	＜30	1000 mg/kg	Pass
Diisobutyl phthalate(DIBP)	＜30	1000 mg/kg	Pass

Remarks: 1ppm=1mg/kg=0.0001%

The above limits were quoted from 2011/65/EU with amendment (EU) 2015/863.

(2)Chemical Test

(a)The test result of PBBs, PBDEs

Tested Item	Result(mg/kg)									
	1	2	3	4	5	6	7	8	9	10
Monobromobiphenyl (MonoBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Dibromobiphenyl (DiBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tribromobiphenyl (TriBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tetrabromobiphenyl (TetraBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Pentabromobiphenyl (PentaBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Hexabromobiphenyl (HexaBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Heptabromobiphenyl (HeptaBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Octabromobiphenyl (OctaBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nonabromobiphenyl (NonaBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Decabromobiphenyl (DecaBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Sum of polybrominated Biphenyls(PBBs)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Monobromodiphenyl ether (MonoBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Dibromodiphenyl ether (DiBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tribromodiphenyl ether (TriBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tetrabromodiphenyl ether (TetraBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Pentabromodiphenyl ether (PentaBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Hexabromodiphenyl ether (HexaBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Heptabromodiphenyl ether (HeptaBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Octabromodiphenyl ether (OctaBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nonabromodiphenyl ether (NonaBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Decabromodiphenyl ether (DecaBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Sum of polybrominated diphenyl ethers(PBDEs)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Tested Item	Result(mg/kg)									
	11	12	13	14	15	16	17	18	19	20
Monobromobiphenyl (MonoBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Dibromobiphenyl (DiBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tribromobiphenyl (TriBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tetrabromobiphenyl (TetraBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Pentabromobiphenyl (PentaBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Hexabromobiphenyl (HexaBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Heptabromobiphenyl (HeptaBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Octabromobiphenyl (OctaBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nonabromobiphenyl (NonaBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Decabromobiphenyl (DecaBB)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Sum of polybrominated Biphenyls(PBBs)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Monobromodiphenyl ether (MonoBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Dibromodiphenyl ether (DiBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tribromodiphenyl ether (TriBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Tetrabromodiphenyl ether (TetraBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Pentabromodiphenyl ether (PentaBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Hexabromodiphenyl ether (HexaBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Heptabromodiphenyl ether (HeptaBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Octabromodiphenyl ether (OctaBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Nonabromodiphenyl ether (NonaBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Decabromodiphenyl ether (DecaBDE)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Sum of polybrominated diphenyl ethers(PBDEs)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

(b) The test result of DBP, BBP, DEHP, DIBP

Tested Item(s)	Result									
	1	2	3	4	5	6	7	8	9	10
Dibutyl phthalate(DBP)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Benzylbutyl phthalate(BBP)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Di-2-ethylhexyl phthalate(DEHP)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Diisobutyl phthalate(DIBP)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Tested Item(s)	Result									
	11	12	13	14	15	16	17	18	19	20
Dibutyl phthalate(DBP)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Benzylbutyl phthalate(BBP)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Di-2-ethylhexyl phthalate(DEHP)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Diisobutyl phthalate(DIBP)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

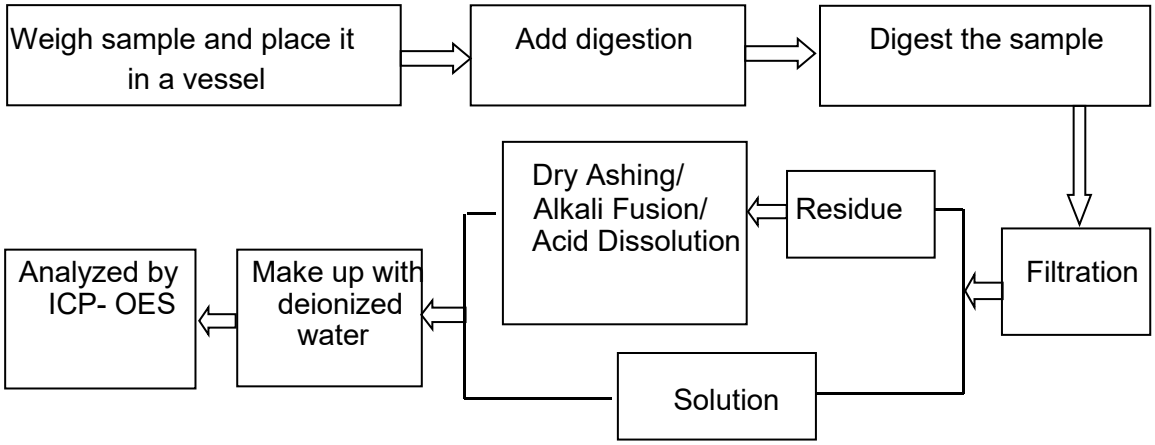
(c) Test Method for Chemical Confirmation

Test Item	Test Method	Test Instrument	MDL (mg/kg)	EU RoHS Limit (mg/kg)
Cadmium (Cd)	IEC 62321-5:2013	ICP-OES	10	100
Lead (Pb)	IEC 62321-5:2013	ICP-OES	10	1000
Mercury (Hg)	IEC 62321-4:2013	ICP-OES	10	1000
Hexavalent Chromium (Cr(VI))	IEC 62321-7-2:2017 (non-metal)	UV-Vis	10	1000
	IEC 62321-7-1:2015 (metal)	UV-Vis	0.1(μg/cm^2)	1000
Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS	10	1000
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS	10	1000
Phthalates(DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS	50	1000

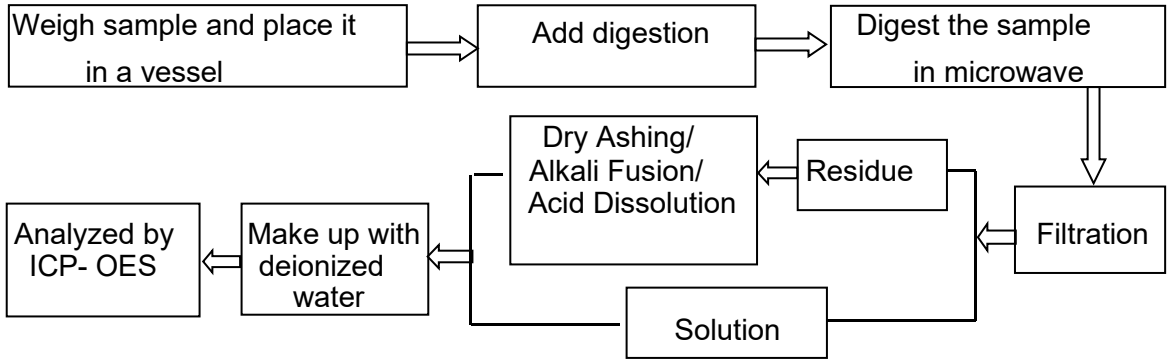
Remark: MDL = Method Detection Limit
N.D. = Not Detected (<MDL)
mg/kg = ppm = parts per million

Test Process

1. Lead(Pb), Cadmium(Cd), Chromium(Cr)

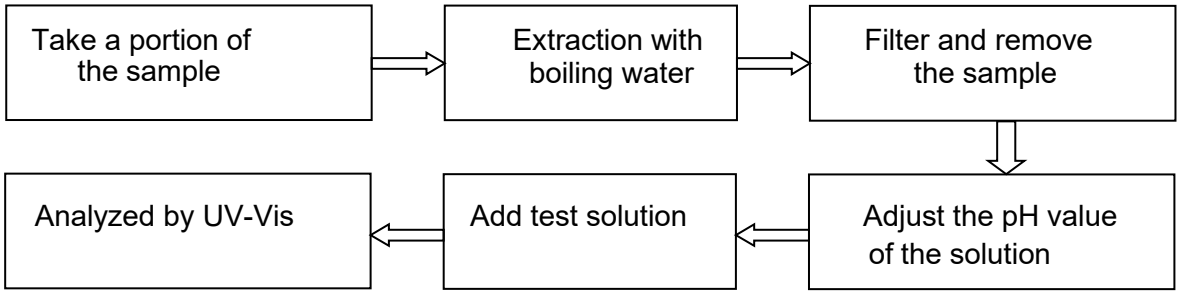


2. Mercury(Hg)

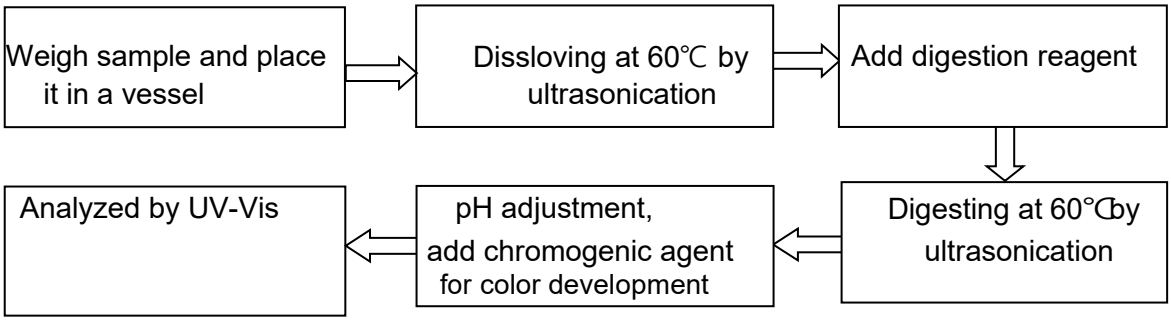


3. Hexavalent Chromium (Cr (VI))

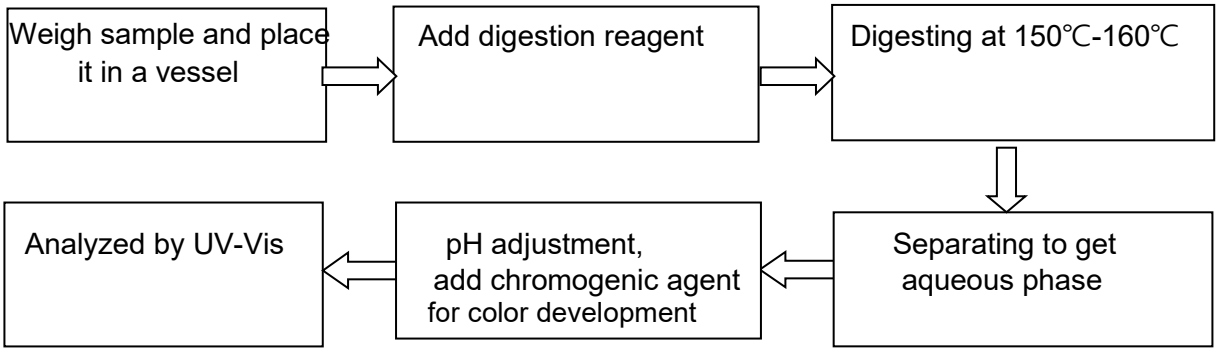
(1) IEC 62321-7-1:2015
Plating/Metal sample(s)



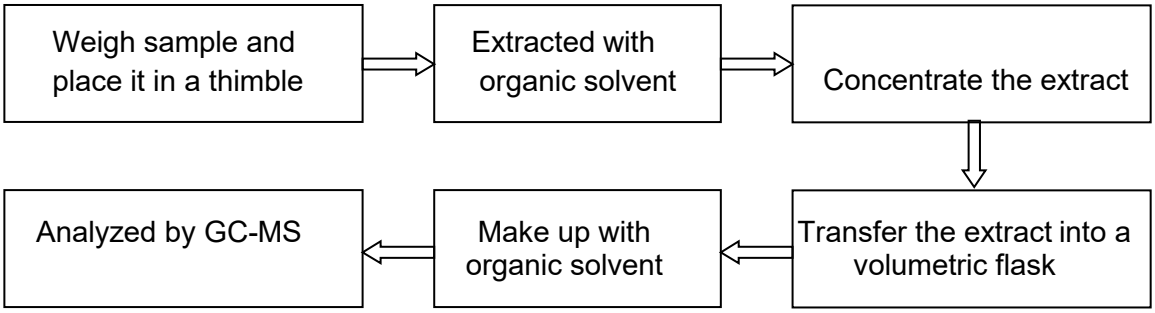
(2) IEC 62321-7-2:2017
Non-metal sample(s) (Material ABS/PC/PVC)



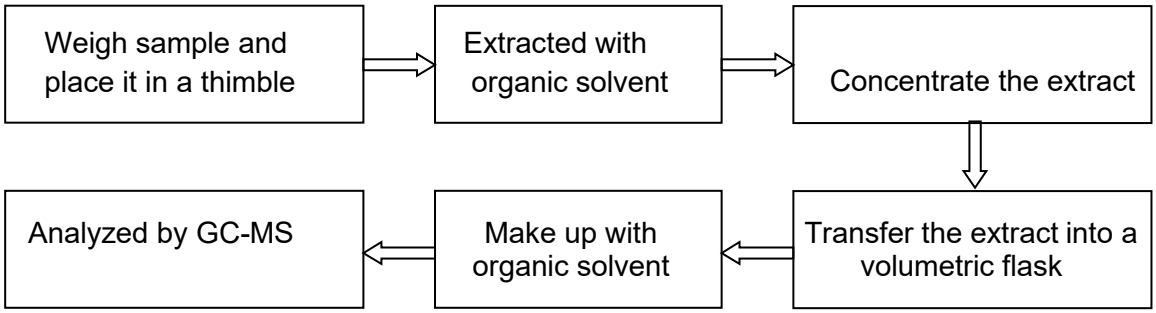
(3) IEC 62321-7-2:2017
Non-metal sample(s) (Others)



4. Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)



5. Phthalates(DBP/BBP/DEHP/DIBP)



Remark:

-Chemical confirmation tests were conducted to verify the inconclusive, Chromium (VI) (Cr^{6+}), Polybrominated biphenyls (PBBS) and Polybrominated included in this report.

-As requested by the applicant, only components shown in this report were screened by XFR spectroscopy for 2011/65/EU & (EU) 2015/863, other components were not screened included in this report.

Disclaimers:

This XRF Screening Report tests were reference purposes only. The applicant shall make its/his/her purposes.

The results shown in this XRF screening Report will 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-treament with relevant chemical equipment analysis are required to obtain quantitative data.

-Photo is included.

Photograph of Sample

Photo 1 Appearance of EUT

Photo 2 Appearance of EUT

Photo 3 Appearance of EUT

Photo 4 inside of EUT

Photo 5 Appearance of PCB

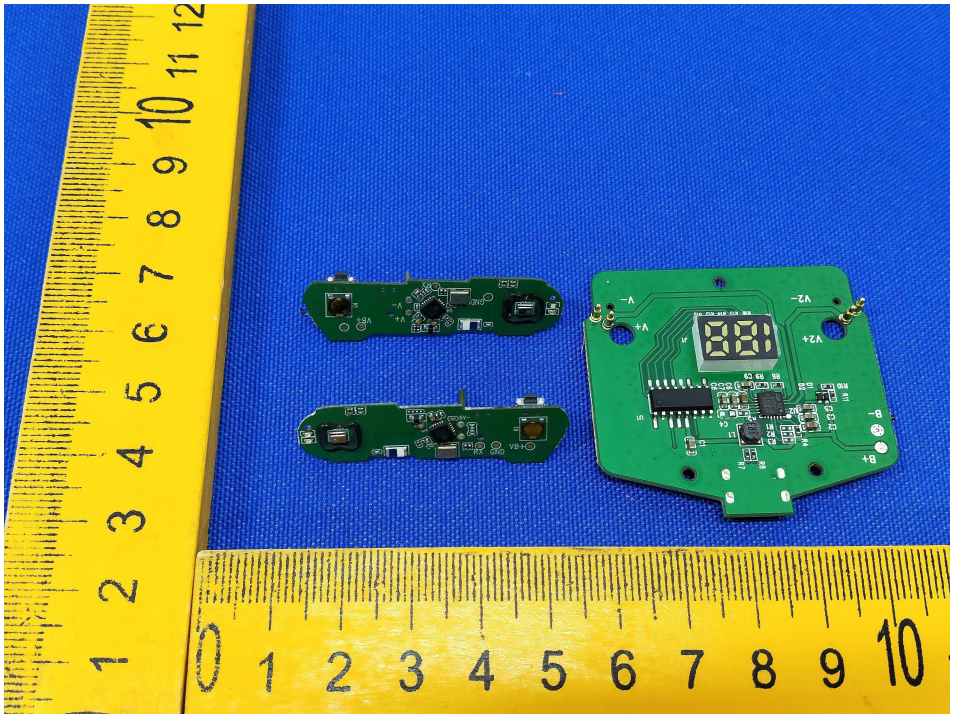


Photo 6 Appearance of PCB

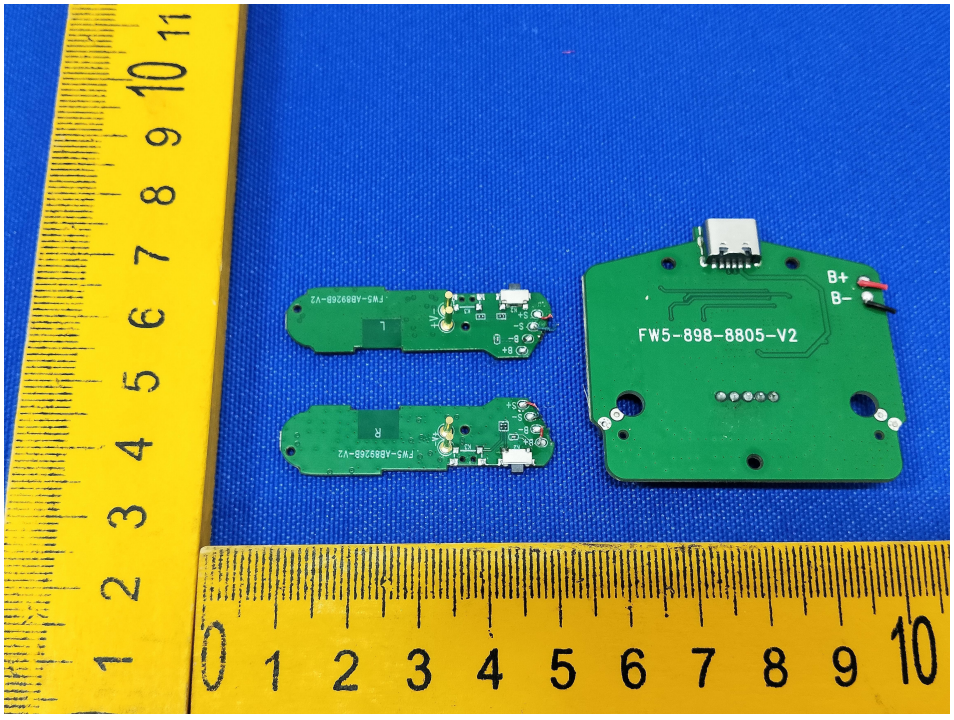
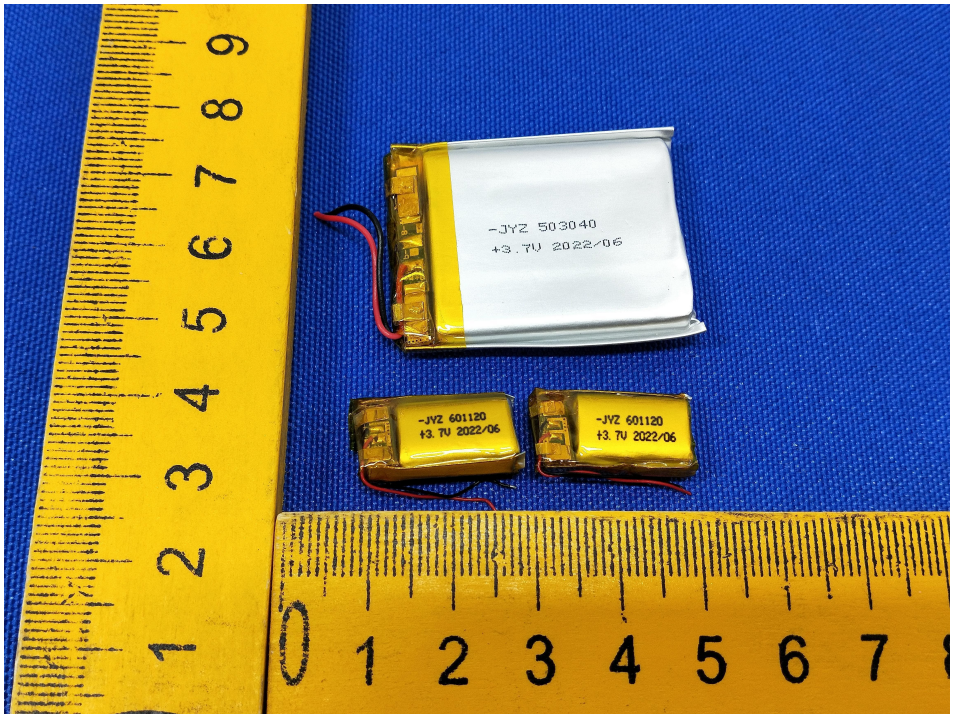


Photo 7 Appearance of Battery



********* End of Report *********