

RoHS TEST REPORT

European Directive 2011/65/EU

Evaluation of RoHS Requirements for Electrical and Electronic Equipment

Test report No..... : ETLRD160531.0086

Date of receipt: May 31, 2016

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Test of period: May 31 ~ Jul 13, 2016

Applicant's name: Suprema HQ Inc.

Address..... : 16F Parkview Office Tower, Jeongjail-ro, Bundang-gu, Seongnam-si,
Gyeonggi-do 248 Korea

Manufacturer's name: FPchip

Address.....: 201102, Dushi Road, Shanghai, China

Product name: BioMini Plus2

Basic Model.....: BioMini Plus2

Multiple Model(s).....: N.A.

Test Specifications :

Directive.....: 2011/65/EU

Test Standard(s).....: EN 50581 : 2012, IEC 62321-3-1 : 2013

Type of Category.....: Category 3. IT and telecommunications equipment.

Test Result : The equipment which was evaluated has fulfilled with requirement of

2011/65/EU Directive for the materials : Pb, Cd, Hg, Cr(VI), PBBs and PBDEs

Final test result ; PASS

RoHS TEST REPORT

European Directive 2011/65/EU

Evaluation of RoHS Requirements for Electrical and Electronic Equipment

Trade mark : N.A.

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Also this publication represent for the evaluation results of the issued test item only - any type of EEE, i.e. full product, module assembly, component or material including RoHS test result.

The evaluation results means only the tested item is complied with RoHS requirement according to the evaluation procedures which is described in this publication.

Tested by : Jeong Ryeol Baik



Reviewed By : Kyung Jun Choi



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Clause	Requirement - Test	Result	Verdict
1	RoHS Compliance based on test reports		
1.1	Review of component's test reports according to BOM		P
1.1.1	Dose evaluated product is composed by components which is listed in BOM?	Checked	P
1.1.2	Dose each components is complied with the requirement of employed directive or manufacturer declared limits?	Checked	P
1.2	Review of verification test reports according to sampling		P
1.2.1	If it was performed the item 1.1, did sampling was performed in appropriate?	Refer to Appendix III	P
1.2.2	If it was not performed the item 1.1, did it was fully considered the materials of component and does it was performed the sampling which is enough to represent the characteristics of population?		N/A
1.2.3	Is it complied with the requirements of employed directive or manufacturer declares limits for sample tested?		P
1.3	Requirements of test report		P
1.3.1	Is it included the information of manufacturer, sample, test lab or etc?	Refer to Appendix II	P
1.3.2	Is it clearly specified the test object as the port of components or product?		P
1.3.3	Is it described the information of directive or standards of test methods?		P
1.3.4	Is it described the results with accurately for interpretation, using or etc?		P
1.3.5	Is it confirmed the validity of test equipment and information of calibration?		P
1.4	Other information		
	Directive 2011/65/EU EN 50581 : 2012 IEC 62321 : 2013 EN 62474 : 2012 IEC/TR 62476 : 2010		

Appendix I

Photos of product



Front view



Rear view

Appendix I

Photos of product



Inner view



Packaging view

Appendix II

Test method & Lab information

1. General

1.1 Employed standard : EN 50581 : 2012, IEC 62321-3-1 : 2013

1.2 Applied sampling criteria

- Kind of components could be disassembled mechanically by using disassembly tools
- High risk components

2. Laboratory Information

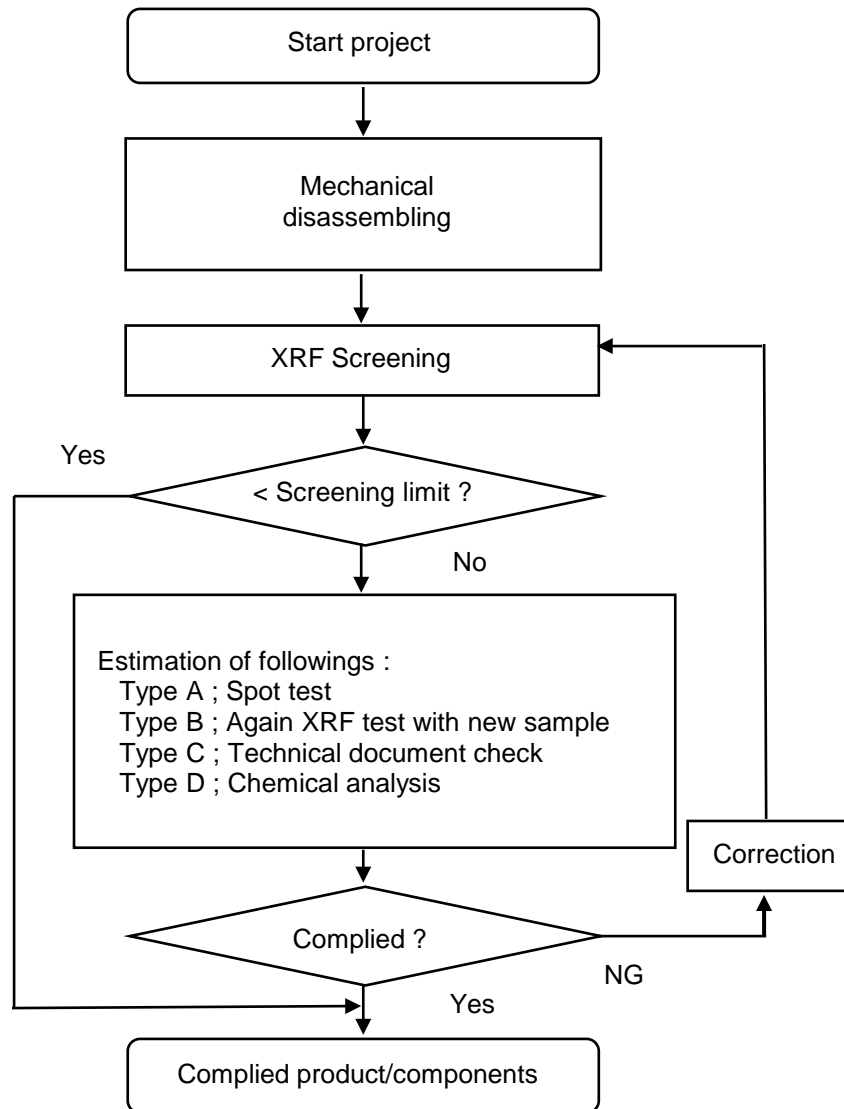
- Laboratory's Name : ETL Inc.
- Address : # 114 Gasan digital 2-ro, Geumcheon-gu, Seoul, 153-803 Korea
- Facilities used : ED-XRF SEA-1000A/Seiko

3. Product Remark

- ETL Inc tested the BioMini Plus2 which was selected by applicant.
- The model BioMini Plus2 is the basic model that was tested.

Appendix III

Verification XRF Test Results



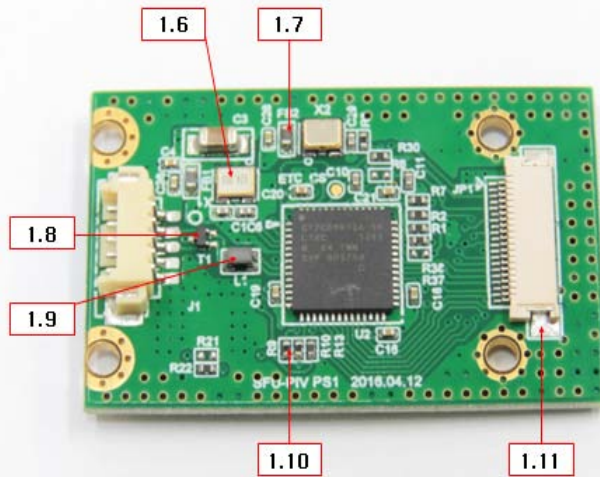
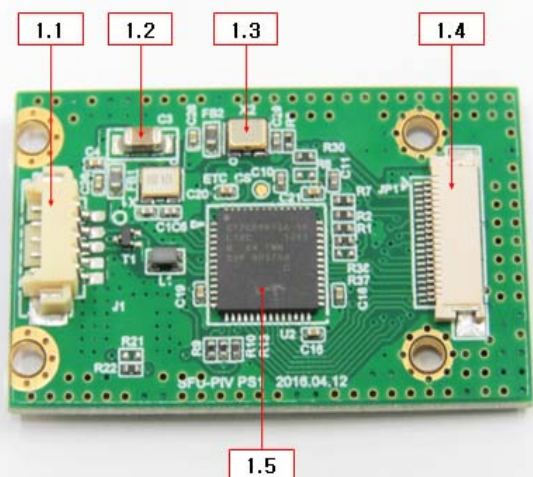
Note : - Basic acceptance criteria of XRF screening is IEC 62321-3-1 ; 2013 Annex A
(Screening limit refer to Appendix IV, 3 clause)

- The additional investigation procedures are taken where doubtful test result for XRF screening
- For maintaining product quality, the comparison and verification are required between analytical test reports and XRF screening results if possible

Appendix III

Verification XRF test results

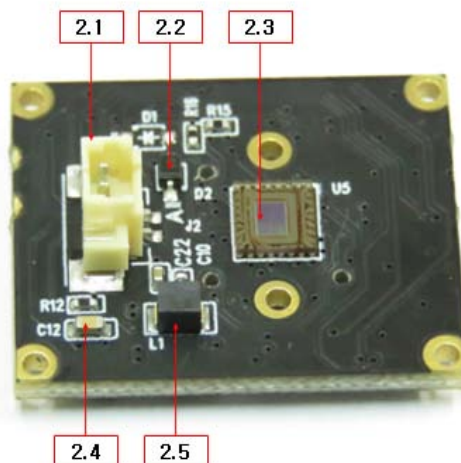
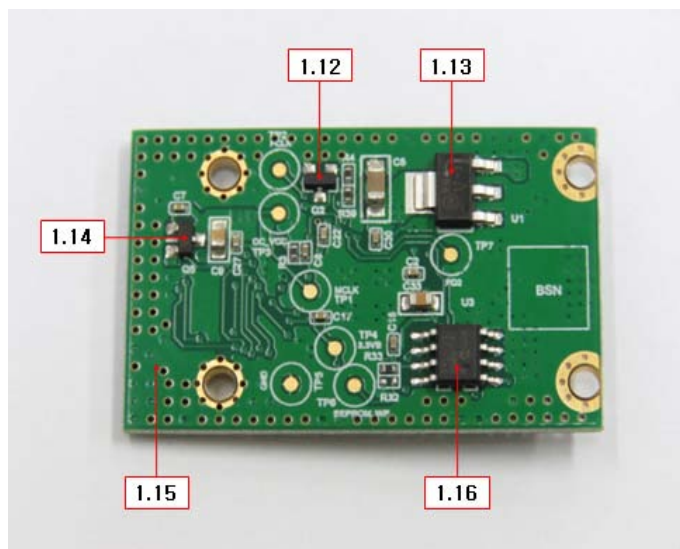
No	Part name	Supplier	XRF Data (mg/kg)					Estimation	Result
			Cd	Pb	Hg	Br	Cr		
1.1	CON-WTB	ZHEJIANG JINDA	BL	BL	BL	112909	BL	Br - Type D	Pass
1.2	C-MLCC	SAMSUNG	BL	BL	BL	BL	BL	N.A.	Pass
1.3	OSCILLAT	XGH CRYSTAL	BL	BL	BL	N.A.	4718	Cr - Type A (Negative)	Pass
1.4	CON-SOCKET	ZHEJIANG JINDA	BL	BL	BL	BL	BL	N.A.	Pass
1.5	IC-INTERFACE	CYPRESS	BL	BL	BL	BL	BL	N.A.	Pass
1.6	CRYSTAL	XGH CRYSTAL	BL	BL	BL	N.A.	998	Cr - Type A (Negative)	Pass
1.7	BEAD-CHIP	FENGHUA	BL	BL	BL	BL	BL	N.A.	Pass
1.8	DIODE-TVS	SEMTECH	BL	BL	BL	BL	BL	N.A.	Pass
1.9	BEAD-COMMON MOD FILTER	EROCORE	BL	BL	BL	N.A.	BL	N.A.	Pass
1.10	R-CHIP	SAMSUNG	BL	BL	BL	BL	BL	N.A.	Pass
1.11	Soldering	Alpha	BL	BL	BL	N.A.	BL	N.A.	Pass



Appendix III

Verification XRF test results

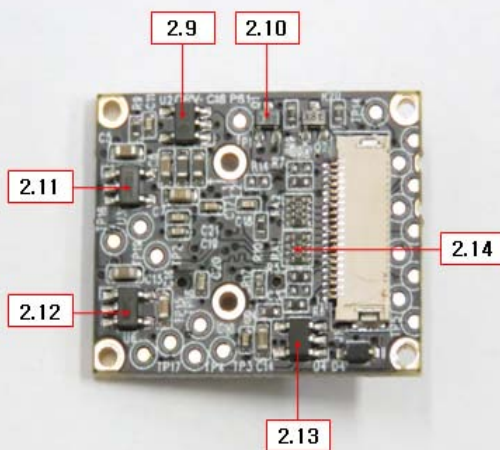
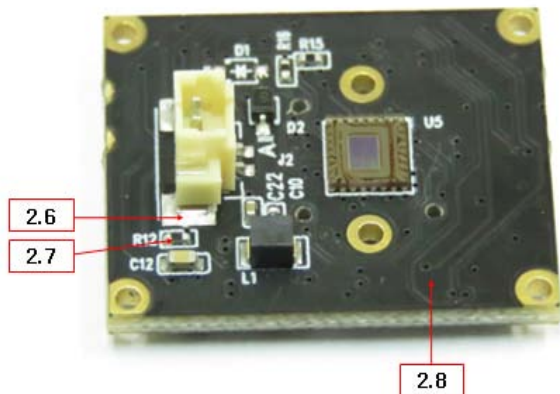
No	Part name	Supplier	XRF Data (mg/kg)					Estimation	Result
			Cd	Pb	Hg	Br	Cr		
1.12	IC-TR	ONSEMI	BL	BL	BL	BL	BL	N.A.	Pass
1.13	IC-PMIC	ONSEMI	BL	BL	BL	5889	BL	Br - Type D	Pass
1.14	IC-FET	IRF	BL	BL	BL	BL	BL	N.A.	Pass
1.15	PCB	FPChip	BL	BL	BL	11985	BL	Br - Type C	Pass
1.16	IC-MEMORY	MICROCHIP	BL	BL	BL	BL	BL	N.A.	Pass
2.1	CON-SOCKET	YEONHO	BL	BL	BL	112341	BL	Br - Type D	Pass
2.2	DIODE-SCHOTTKY	KEC	BL	BL	BL	BL	BL	N.A.	Pass
2.3	IC-SENSOR	SETI	BL	BL	BL	BL	BL	N.A.	Pass
2.4	C-MLCC	SAMSUNG	BL	BL	BL	BL	BL	N.A.	Pass
2.5	IND-CHIP	TDK	BL	BL	BL	BL	BL	N.A.	Pass



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Verification XRF test results

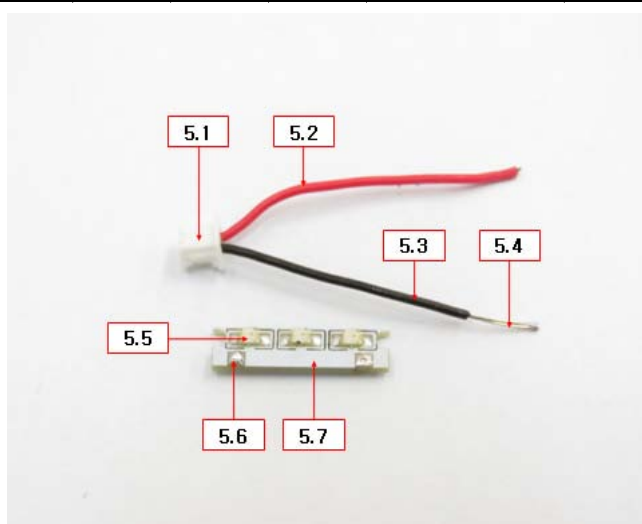
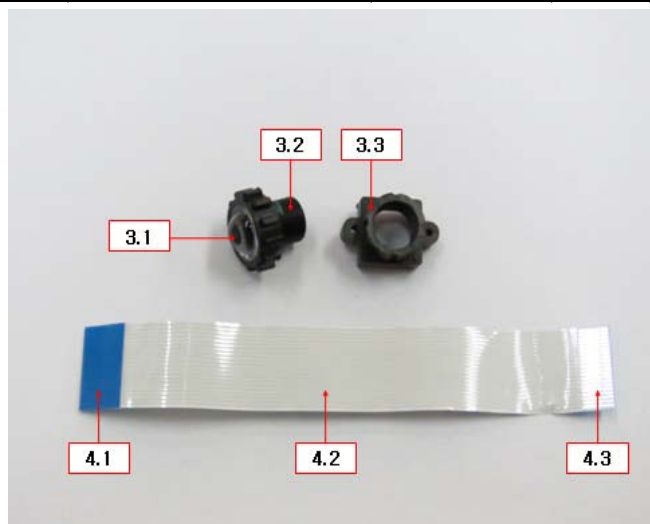
No	Part name	Supplier	XRF Data (mg/kg)					Estimation	Result
			Cd	Pb	Hg	Br	Cr		
2.6	Soldering	Alpha	BL	BL	BL	N.A.	BL	N.A.	Pass
2.7	R-CHIP	SAMSUNG	BL	BL	BL	BL	BL	N.A.	Pass
2.8	PCB	FPChip	BL	BL	BL	31269	BL	Br - Type C	Pass
2.9	IC-MEMORY	Bestow Mascot	BL	BL	BL	4788	BL	Br - Type C	Pass
2.10	IC-FET	NXP	BL	BL	BL	BL	BL	N.A.	Pass
2.11	IC-PMIC	MICROCHIP	BL	BL	BL	BL	BL	N.A.	Pass
2.12	IC-PMIC	MICROCHIP	BL	BL	BL	BL	BL	N.A.	Pass
2.13	IC-PMIC	MinHw YanXiang	BL	BL	BL	BL	BL	N.A.	Pass
2.14	R-ARRAY	SAMSUNG	BL	BL	BL	BL	780	Cr - Type A (Negative)	Pass



Appendix III

Verification XRF test results

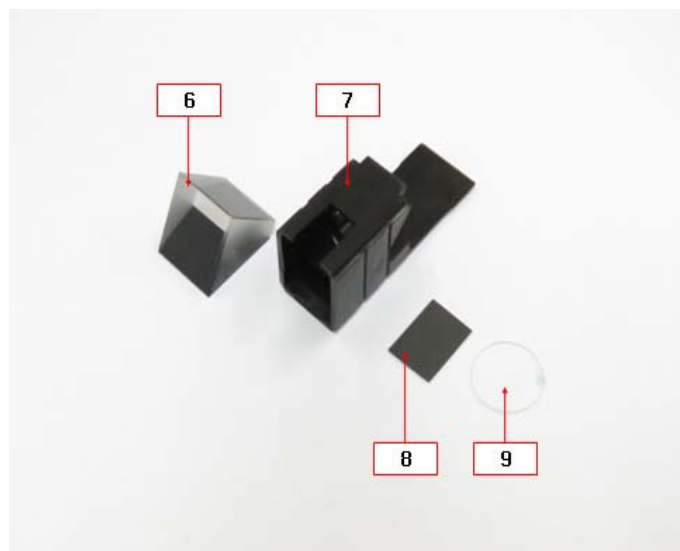
No	Part name	Supplier	XRF Data (mg/kg)					Estimation	Result
			Cd	Pb	Hg	Br	Cr		
3.1	P1 Lens	FPChip	BL	BL	BL	BL	BL	N.A.	Pass
3.2	Barrel		BL	BL	BL	BL	BL	N.A.	Pass
3.3	Holder		BL	BL	BL	BL	BL	N.A.	Pass
4.1	CABLE-FFC: 20PIN,70MM	FPChip	BL	BL	BL	BL	BL	N.A.	Pass
4.2			BL	BL	BL	40705	BL	Br - Type C	Pass
4.3			BL	BL	BL	N.A.	BL	N.A.	Pass
5.1	LED BOARD	FPChip	BL	BL	BL	BL	BL	N.A.	Pass
5.2			BL	BL	BL	BL	BL	N.A.	Pass
5.3			BL	BL	BL	BL	BL	N.A.	Pass
5.4			BL	BL	BL	N.A.	BL	N.A.	Pass
5.5			BL	BL	BL	BL	BL	N.A.	Pass
5.6			BL	BL	BL	N.A.	BL	N.A.	Pass
5.7			BL	BL	BL	43239	BL	Br - Type C	Pass



Appendix III

Verification XRF test results

No	Part name	Supplier	XRF Data (mg/kg)					Estimation	Result
			Cd	Pb	Hg	Br	Cr		
6	PRISM	FPChip	BL	BL	BL	BL	BL	N.A.	Pass
7	SENSOR HOLDER	FPChip	BL	BL	BL	BL	BL	N.A.	Pass
8	PC SHEET	FPChip	BL	BL	BL	70791	BL	Br - Type C	Pass
9	G1 LENS	FPChip	BL	BL	BL	BL	BL	N.A.	Pass
10	WEIGHT	ZJ Metal	BL	BL	BL	N.A.	1452	Cr - Type A (Negative)	Pass
11	FOOT	FPChip	BL	BL	BL	BL	BL	N.A.	Pass
12	DECO	FPChip	BL	BL	BL	BL	BL	N.A.	Pass
13	COVER	FPChip	BL	BL	BL	BL	BL	N.A.	Pass



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Verification XRF test results

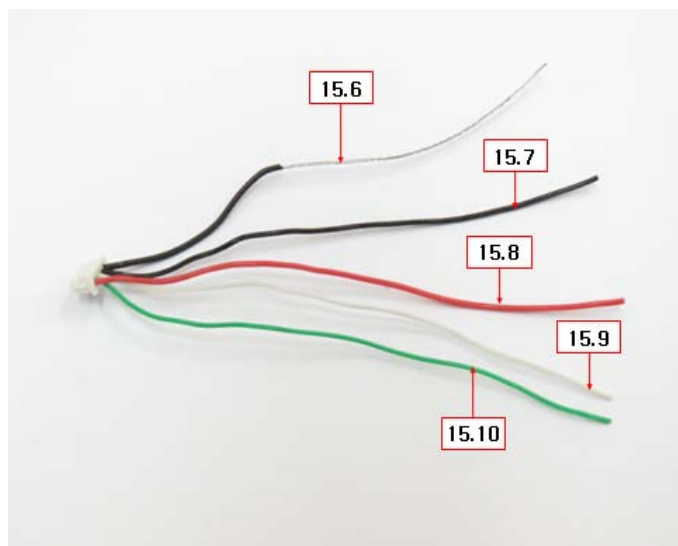
No	Part name	Supplier	XRF Data (mg/kg)					Estimation	Result
			Cd	Pb	Hg	Br	Cr		
14.1	SCREW	ZJ Metal	BL	BL	BL	N.A.	BL	N.A.	Pass
14.2			BL	BL	BL	N.A.	BL	N.A.	Pass
14.3			BL	BL	BL	N.A.	BL	N.A.	Pass
14.4			BL	BL	BL	N.A.	BL	N.A.	Pass
15.1	CABLE-USB: BIOMINI,USB A TYPE, BLACK,STOPPER, SP-390,V03	Koratech	BL	BL	BL	BL	BL	N.A.	Pass
15.2			BL	BL	BL	BL	BL	N.A.	Pass
15.3			BL	BL	BL	BL	BL	N.A.	Pass
15.4			BL	BL	BL	N.A.	1396	Cr - Type A (Negative)	Pass
15.5			BL	BL	BL	65561	BL	Br - Type D	Pass



Appendix III

Verification XRF test results

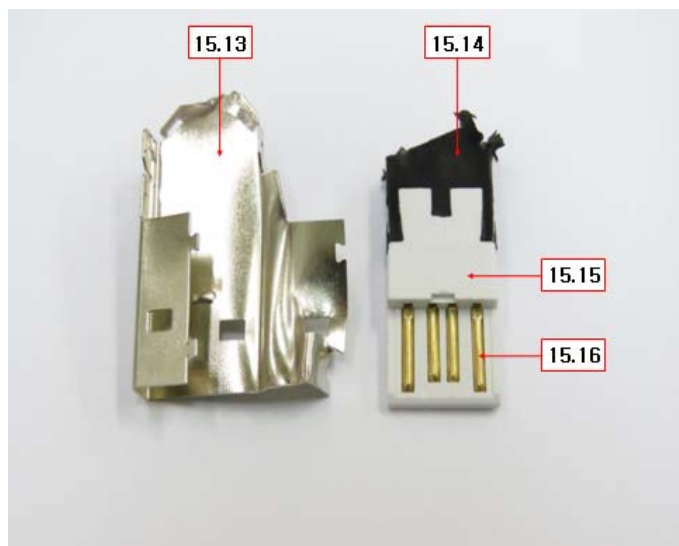
No	Part name	Supplier	XRF Data (mg/kg)					Estimation	Result
			Cd	Pb	Hg	Br	Cr		
15.6	CABLE-USB: BIOMINI,USB A TYPE, BLACK,STOPPER, SP-390,V03	Koratech	BL	BL	BL	N.A.	BL	N.A.	Pass
15.7			BL	BL	BL	BL	BL	N.A.	Pass
15.8			BL	BL	BL	BL	BL	N.A.	Pass
15.9			BL	BL	BL	BL	BL	N.A.	Pass
15.10			BL	BL	BL	BL	BL	N.A.	Pass
15.11			BL	BL	BL	BL	BL	N.A.	Pass
15.12			BL	BL	BL	BL	BL	N.A.	Pass



Appendix III

Verification XRF test results

No	Part name	Supplier	XRF Data (mg/kg)					Estimation	Result
			Cd	Pb	Hg	Br	Cr		
15.13	CABLE-USB: BIOMINI,USB A TYPE, BLACK,STOPPER, SP-390,V03	Koratech	BL	BL	BL	N.A.	BL	N.A.	Pass
15.14			BL	BL	BL	BL	BL	N.A.	Pass
15.15			BL	BL	BL	BL	BL	N.A.	Pass
15.16			BL	BL	BL	N.A.	BL	N.A.	Pass
16	BOX	Sinhan Design	BL	BL	BL	BL	BL	N.A.	Pass
17	LABEL-SERIAL	Sunggen	BL	BL	BL	BL	BL	N.A.	Pass
18	PE-BAG	Sinhan Design	BL	BL	BL	BL	BL	N.A.	Pass



Appendix IV Remark

- Results are obtained by ED XRF in regulated substances according to IEC 62321-3-1 ; 2013 Annex A.
- It is the result on total Br while test item on restricted substances is PBBs & PBDEs.
Also, it is the result on total Cr while test item on restricted substance is hexavalent chromium.
- Screening limits in mg/kg for regulated elements in various matrices

Element	Polymers	Metals	Composite material
Cd	$BL \leq 57 < X < 143 \leq OL$	$BL \leq 57 < X < 143 \leq OL$	$BL \leq 37 < X < 163 \leq OL$
Pb	$BL \leq 690 < X < 1310 \leq OL$	$BL \leq 690 < X < 1310 \leq OL$	$BL \leq 490 < X < 1510 \leq OL$
Hg	$BL \leq 688 < X < 1312 \leq OL$	$BL \leq 688 < X < 1312 \leq OL$	$BL \leq 488 < X < 1512 \leq OL$
Br	$BL \leq 276 < X$	N.A.	$BL \leq 226 < X$
Cr	$BL \leq 666 < X$	$BL \leq 666 < X$	$BL \leq 466 < X$

4. Abbreviation :
- | | |
|--|-----------------------|
| Pb = Lead | N.A. = Not Applicable |
| Cd = Cadmium | N.D. = Not Detected |
| Hg = Mercury | BL = Below limit |
| Cr = Chromium | OL = Over limit |
| Cr (VI) = Chromium (VI) | X = Inconclusive |
| PBBs = Total Polybrominated Biphenyls | |
| PBDEs = Total Polybrominated Diphenyl Ethers | |

5. The type of estimation

Type A	Detected more than screening limits on total Cr and confirmed absence of Cr^{6+} by diphenylcarbazide reagent.
Type B	Primary test result failed and replaced new sample. Finally confirmed through again XRF test.
Type C	Detected more than screening limits on total Br and confirmed absence PBBs/PBDEs through technical document of detected parts or material.
Type D	Detected parts or material was conducted by chemical analysis

Appendix V

Reference document

1. Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.
2. EN 50581 : 2012
Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.
3. IEC 62321-3-1 : 2013
Determination of certain substances in electrotechnical products - Part 3-1 : Screening - Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry.
4. EN 62474 : 2012
Material declaration for products of and for the electrotechnical industry.
5. IEC/TR 62476 : 2010
Guidance for evaluation of products with respect to substance use restrictions in electrical and electronic products.

~~ THE END ~~