



Test Report

No.JQL190923806-4R

Date: Sep. 30, 2019

Page 1 of 10

Applicant: Shenzhen BCZW Technology Co.Ltd
Address: 3F, BlockA3.Silicon Valley Industrial Park.Guanlan, Longhua District, Shenzhen China

Manufacturer: Shenzhen BCZW Technology Co.Ltd
Address: 3F, BlockA3.Silicon Valley Industrial Park.Guanlan, Longhua District, Shenzhen China

The following samples were submitted and identified on behalf of the clients

Sample Name: Industrial Switch

Model No. SP5220-8PGE2GE2GF
 SP5200-4PFE2FE, SP5200-8PFE2FE, SP5200-4PGE1GE1GF, SP5200-8PFE2GE, SP5220-8PFE2GE1GF, SP5220-16PFE2GE2GF, SP5220-24PFE2GE2GF, SP5220-16PGE4GC, SP5220-24PGE4GC, S5220-48GE4GF, SP5220-48PGE4GF, IS3210-4GE2GF-DC, IS3210-8GE2GF-DC, IS3210-8GE4GF-DC, ISP3210-4PGE2GF-DC, ISP3210-8PGE2GF-DC, ISP3210-8PGE4GF-DC, IS7210-5FE-DC, IS7210-8FE-DC, IS7210-16FE-DC, IS7210-2FE1FX-DC, IS7210-4FE1FX-DC, IS7210-6FE2FX-DC, IS7210-8FE2GC-I-DC, IS7210-8FE2GF-L-DC, IS7210-8GE-DC, IS7210-2GE1GF-DC, IS7210-5GE1GF-DC, IS7210-4GE2GF-DC, IS7210-8GE2GF-DC, IS7510-4GE2GF-DC, IS7510-8GE3GF-DC, IS7510-8GE4GF-DC, IS7510-16GE4GF-DC, IS7510-8GE8GF-DC, IS7220-16FE1GE1GF-AC, IS7220-16FE4GC-AC, IS7220-24FE4GC-AC, IS7520-20GE4GC2GF-AC, IS7520-12GE12GF-AC, ISP7210-8PFE2GC-DC, ISP7210-8PFE2GF-L-DC, ISP7210-4PGE1GE1GF-DC, ISP7210-4PGE2GF-DC, ISP7210-4PGE2GF-BT-DC, ISP7210-8PGE2GF-DC, ISP7510-4PGE2GF-DC, ISP7510-4PGE2GF-BT-DC, ISP7510-8PGE4GF-DC, ISP7220-8PFE2GC-AC,ISP7220-16PFE4GC-AC, ISP7220-24PFE4GC-AC, ISP7520-20PGE4GC2GF-AC

Adding Model(s):

Brand Name: BCZW

Sample Received Date: Sep. 24, 2019
Test Period: Sep. 24, 2019 to Sep. 30, 2019
Test Method: Please refer to next pages

Result Summary:

Item	Test parameter	Conclusion
1	RoHS Directive (EU)2015/863 amending Annex II to Directive 2011/65/EU-Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(CrVI), PBBs and PBDEs, DBP, BBP, DEHP, DIBP	PASS

Signed for and on behalf of
 Shenzhen Jialian Testing Consulting Co., Ltd.

Lris Ma
 Approved Signatory

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Test Report

No.JQL190923806-4R

Date: Sep. 30, 2019

Page 2 of 10

Sample Description:

No.	Sample Name	Part Name	Description
1-1	Switch Shell	Outer Box Shell	Black Metal
1-2	Switch Shell	Inner Frame	Silver Metal
2-1	Power Port	Connector	Silver Metal
2-2	Power Port	Insulator Envelop	Black Plastics
3-1	Hub Port	Connect Pin	Silvery Metal
3-2	Hub Port	Port Support	Black Plastics
3-3	Hub Port	Pack Cover	Silvery Metal
3-4	Hub Port	Indicator Light	Plastic
4-1	Switch Board	PCB	Green PCB
4-2	Switch Board	Mixed all IC	Black Chip
4-3	Switch Board	Inductor Coil	Copper
4-4	Switch Board	Mixed all Capacitor	Capacitor
4-5	Switch Board	Mixed all Resistance	Resistance
4-6	Switch Board	Mixed all Metal Part	Metal
5-1	Solder	Solder	Silver Gray Metal
6-1	Screw	Screw	Silvery Metal

Test Methods: with reference to IEC 62321:2013

- (1) Determination of Cadmium by ICP-OES
- (2) Determination of Lead by ICP-OES
- (3) Determination of Mercury by ICP-OES
- (4) Determination of Hexavalent Chromium by Colorimetric Method using UV-Vis
- (5) Determination of PBBs/PBDEs content by GC-MS

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Test Report

No.JQL190923806-4R

Date: Sep. 30, 2019

Page 3 of 10

XRF Results:

No.	Sample Name	Part Name	Pb (ppm)	Cd (ppm)	Hg (ppm)	Cr (ppm)	Br (ppm)
1-1	Switche Shell	Outer Box Shell	BL	BL	BL	BL	BL
1-2	Switche Shell	Inner Frame	BL	BL	BL	BL	BL
2-1	Power Port	Connecter	BL	BL	BL	BL	BL
2-2	Power Port	Insulator Envelop	BL	BL	BL	BL	IN
3-1	Hub Port	Connect Pin	BL	BL	BL	BL	BL
3-2	Hub Port	Port Support	BL	BL	BL	BL	IN
3-3	Hub Port	Pack Cover	BL	BL	BL	BL	BL
3-4	Hub Port	Indicator Light	BL	BL	BL	BL	IN
4-1	Switch Board	PCB	BL	BL	BL	BL	BL
4-2	Switch Board	Mixed all IC	BL	BL	BL	BL	BL
4-3	Switch Board	Inductor Coil	BL	BL	BL	BL	BL
4-4	Switch Board	Mixed all Capacitor	BL	BL	BL	BL	BL
4-5	Switch Board	Mixed all Resistance	BL	BL	BL	BL	BL
4-6	Switch Board	Mixed all Metal Part	BL	BL	BL	BL	BL
5-1	Solder	Solder	BL	BL	BL	BL	BL
6-1	Screw	Screw	BL	BL	BL	BL	BL

NOTE:

- ppm=mg/kg=parts per million -BL=Below Limit - N.A.=Not Analysis

- IN= Inconclusive, chemical analysis necessary

Testing results are only used for reference.

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Test Report

No.JQL190923806-4R

Date: Sep. 30, 2019

Page 4 of 10

Chemical Test Results:

--Summary of PBBs and PBDEs

Flame Retardants	MDL	Law Limit	Result(ppm)					
			2-2	3-2	3-4			
Polybrominated Biphenyls (Mono- Deca)(PBBs)	---	---	---	---	---			
Monobromobiphenyl	5ppm	1000 ppm	N.D.	N.D.	N.D.			
Dibromobiphenyl	5ppm		N.D.	N.D.	N.D.			
Tribromobiphenyl	5ppm		N.D.	N.D.	N.D.			
Tetrabromobiphenyl	5ppm		N.D.	N.D.	N.D.			
Pentabromobiphenyl	5ppm		N.D.	N.D.	N.D.			
Hexabromobiphenyl	5ppm		N.D.	N.D.	N.D.			
Heptabromobiphenyl	5ppm		N.D.	N.D.	N.D.			
Octabromobiphenyl	5ppm		N.D.	N.D.	N.D.			
Nonabromobiphenyl	5ppm		N.D.	N.D.	N.D.			
Decabromobiphenyl	5ppm		N.D.	N.D.	N.D.			
Polybrominated Diphenylethers (Mono - Deca) (PBDEs)	---		---	---	---	---		
Monobromobiphenyl ether	5ppm	1000 ppm	N.D.	N.D.	N.D.			
Dibromobiphenyl ether	5ppm		N.D.	N.D.	N.D.			
Tribromobiphenyl ether	5ppm		N.D.	N.D.	N.D.			
Tetrabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.			
Pentabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.			
Hexabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.			
Heptabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.			
Octabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.			
Nonabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.			
Decabromobiphenyl ether	5ppm		N.D.	N.D.	N.D.			
Dibutyl Phthalate(DBP)	5ppm		N.D.	N.D.	N.D.			
Benzylbutyl Phthalate(BBP)	5ppm		N.D.	N.D.	N.D.			
Bis-(2-ethylhexyl) Phthalate (DEHP)	5ppm		N.D.	N.D.	N.D.			
Diisobutyl Phthalate (DIBP)	5ppm	N.D.	N.D.	N.D.				

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Test Report

No.JQL190923806-4R

Date: Sep. 30, 2019

Page 5 of 10

Note:

1. ppm=mg/kg

2. N.D.=Not Detected (Not detected is reported when the reading is less than detection limit value.)

3. Negative=absence of Cr(VI) in the metallic sample

Positive= presence of Cr(VI) in the metallic sample

(The tested sample should further verify by boiling-water-extraction method if the spot test result cannot be confirmed)

Boiling-water-extraction:

Negative=absence of Cr(VI) in the metallic sample

Positive=presence of Cr(VI) in the metallic sample

Boiling-water-extraction solution is equal or greater than 0.02mg/kg with 50cm² sample surface area.

4. #=Positive indicates the presence of Cr(VI) on the tested areas and result the regarded as not comply with RoHS requirement.

Negative indicates the presence of Cr(VI) on the tested areas and result the regarded as comply with RoHS requirement

5. MDL=Method Detection Limit

Remark:

(1) (a) It is the result on total Br while test item on restricted substances is PBBs/PBDEs. It is the result on total Cr while test item on restricted substances is Cr⁶⁺.

(b) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP(for Cd, Pb, Hg), UV-VIS(for CrVI) and GCMSD (for PBBs, PBDEs) is recommended to be performed. If the concentration exceeds the below warning value according to IEC 62321 Ed.1 111/95/2nd CDV (unit: mg/kg)

Element	Polymer	Metal	Composite Materials
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma)$ $\leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma)$ $\leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma)$ $\leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma)$ $\leq OL$
Br	$BL \leq (300-3\sigma) < X$	---	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

(c) OL=Over Limit, BL=Below Limit. LOD=limit of Detection, ---=not conducted.

(d) The XRF screening test for RoHS elements- The reading may be different to the actual content in the sample be of non-uniformity composition.

(2) (a)mg/kg=ppm=0.0001%, N.D.=not detected(<MDL),

(b)Unit and Method Detection Limit(MDL) in wet chemical test.

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Test Report

No.JQL190923806-4R

Date: Sep. 30, 2019

Page 6 of 10

Test Items	Pb	Cd	Hg
Units	Mg/kg	Mg/kg	Mg/kg
MDL	2	2	2

The MDL for single compound of PBBs & PBDEs is 5mg/kg and MDL of Cr⁶⁺ for polymer & composite sample is 2mg/kg.

(c) According to IEC 62321 Ed.1 111/95/2nd CDV, result on Cr⁶⁺ for metal sample is shown as Positive/Negative.

Negative=Absence of Cr⁶⁺ coating, Positive= Persence of Cr⁶⁺ coating.



Test Report

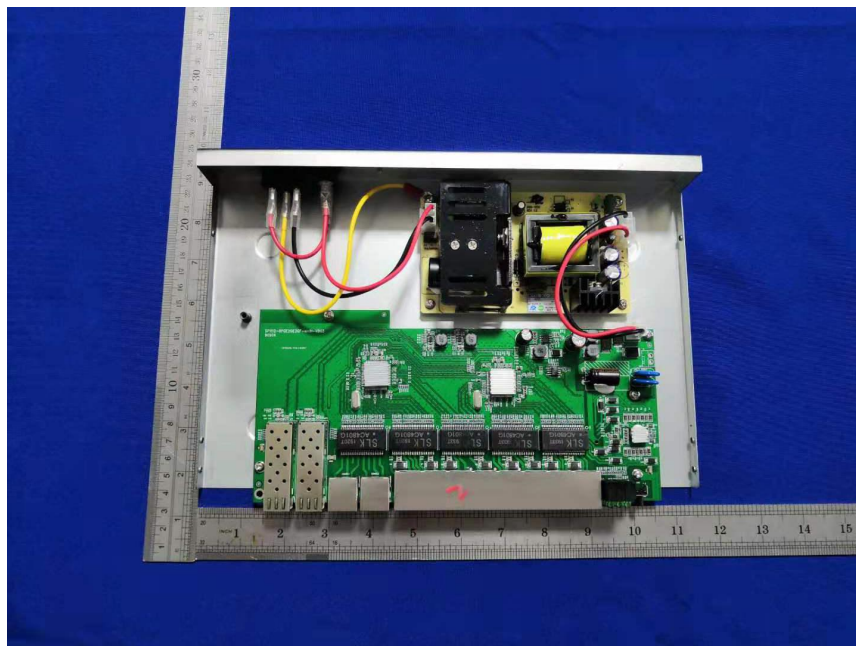
No.JQL190923806-4R

Date: Sep. 30, 2019

Page 7 of 10

Appendix 1:

Photo of Submitted Sample



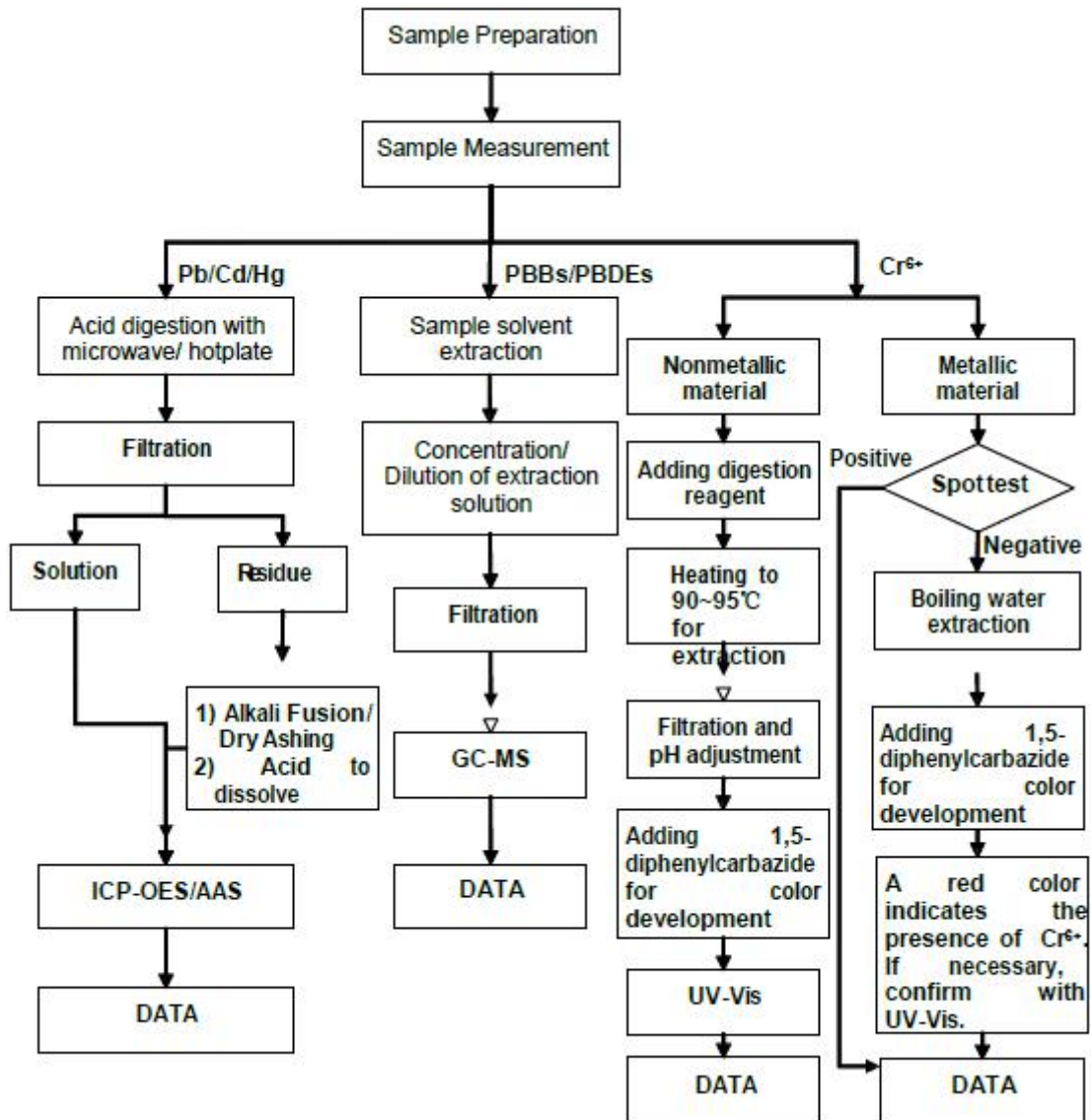
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Appendix 2:

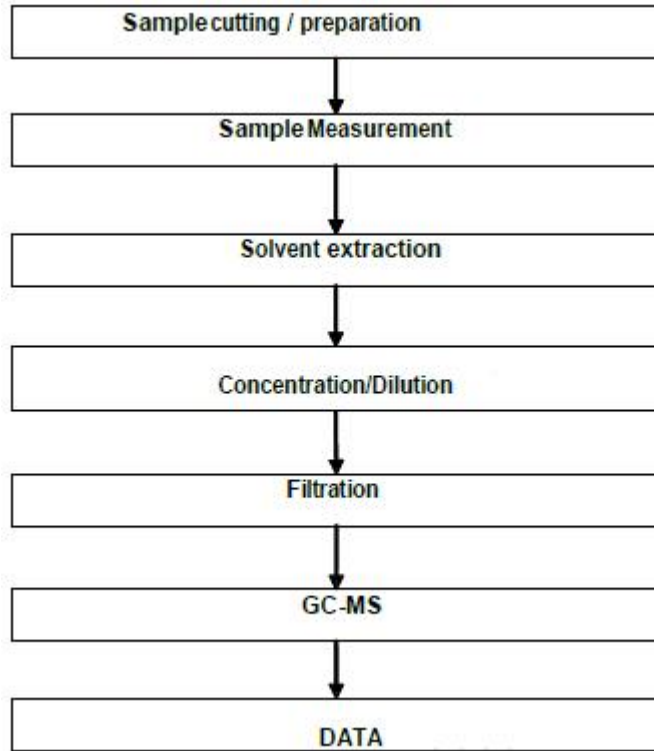
RoHS Testing Flow Chart

These samples were dissolved totally by pre-conditioning method according to below flow chart (Cr6+ and PBBs/PBDEs test method excluded).



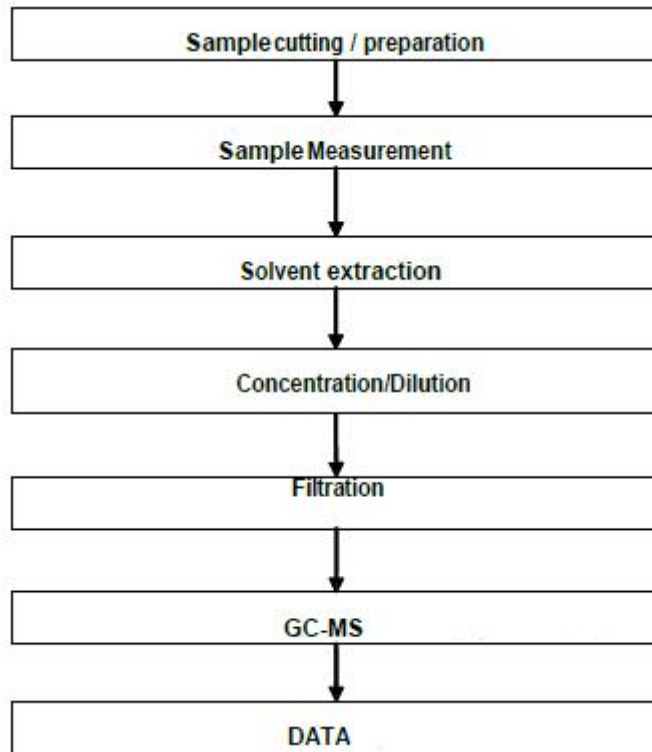


HBCDD Testing Flow Chart





Phthalates Testing Flow Chart



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