



TEST REPORT

Report No.: STR17076072R

Date: 2017-07-24

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Applicant : ShenZhen HaiLingKe Electronic co., Ltd.

Applicant Address : 3F Caiyue Mansion, No. 24 Liuxian blvd, longHua District, Shenzhen, Guangdong, China

The following sample was submitted by the client as:

Manufacturer : ShenZhen HaiLingKe Electronic co., Ltd.

Address : 3F, 5# Building, Minxing Industrial Park, MinKang Rd. Minzhi, Longhua District, ShenZhen, China

Sample Description : WIFI module

Style/Item No. : HLK-RM08S

Brand Name : HI-LINK

Sample Receiving Date : July 21, 2017





Test Period : July 21, 2017 to July 24, 2017

Test Requested:

As requested by the applicant, test(s) was/were performed as below:

Test Summary		Conclusion
1	European Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (XRF screening and chemical confirm)	PASS

Test Results: Please refer to following page(s).

		
Tested by:  May li	Reviewed by:  Boly Peng	Approved by:  Jandyso

Declaration:

- (1) The report shall not be reproduced partly without the written approval of the laboratory, except in full produced.
- (2) All the results shown in the report apply to the tested sample, any erasion on the report is invalid
- (3) All tested sample will be kept for one month, if there is any doubt about the test result, please inform within this period

Shenzhen SEM.Test Technology Co., Ltd.

1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C. (518101)



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RoHS hazardous substances test

Test method:

IEC 62321-3-1:2013, XRF screening

IEC 62321-4-2013 for Hg, analyzed by ICP-OES

IEC 62321-5-2013 for Cd and Pb, analyzed by ICP-OES

IEC 62321-7-2:2017 method 7.1 and/or IEC 62321-7-1:2015 for Cr⁶⁺, analyzed by UV-VIS

IEC 62321-6-2015 for PBBs and PBDEs, analyzed by GC-MS

1. XRF results:

No.	Sample name	Part name	Sample Description	Results				
				Pb	Cd	Hg	Cr	Br
1	WIFI module	IC K165072	Black plastic	BL	BL	BL	BL	BL
2			Silvery metal	BL	BL	BL	BL	NA
3		IC MT7688KN	Black plastic	BL	BL	BL	BL	BL
4			Silvery metal	BL	BL	BL	BL	NA
5		Crystal oscillator	Silvery metal	BL	BL	BL	BL	NA
6		Socket	Golden metal	BL	BL	BL	BL	NA
7			White plastic	BL	BL	BL	BL	BL
8		Solder	Solder	BL	BL	BL	BL	NA
9		PCB	PCB	BL	BL	BL	BL	IN

2. Chemical confirm results:

Test Item(s)	Result (mg/kg)					Limit (mg/kg)
	9	---	---	---	---	
Mono-PBB	ND	ND	ND	ND	ND	--
Di-PBB	ND	ND	ND	ND	ND	--
Tri-PBB	ND	ND	ND	ND	ND	--
Tetra-PBB	ND	ND	ND	ND	ND	--
Penta-PBB	ND	ND	ND	ND	ND	--
Hexa-PBB	ND	ND	ND	ND	ND	--
Hepta-PBB	ND	ND	ND	ND	ND	--
Octa-PBB	ND	ND	ND	ND	ND	--
Nona-PBB	ND	ND	ND	ND	ND	--
Deca-PBB	ND	ND	ND	ND	ND	--
Sum of PBBs	ND	ND	ND	ND	ND	1000
Mono-PBDE	ND	ND	ND	ND	ND	--
Di- PBDE	ND	ND	ND	ND	ND	--



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Tri- PBDE	ND	ND	ND	ND	ND	--
Tetra- PBDE	ND	ND	ND	ND	ND	--
Penta- PBDE	ND	ND	ND	ND	ND	--
Hexa- PBDE	ND	ND	ND	ND	ND	--
Hepta- PBDE	ND	ND	ND	ND	ND	--
Octa- PBDE	ND	ND	ND	ND	ND	--
Nona- PBDE	ND	ND	ND	ND	ND	--
Deca- PBDE	ND	ND	ND	ND	ND	--
Sum of PBDEs	ND	ND	ND	ND	ND	1000
Comment	PASS	PASS	PASS	PASS	PASS	--

Remark:

1. BL = below limit
2. OL = over limit
3. IN = inconclusive, chemical confirm test is recommended
4. NA = not applicable
5. mg/kg = milligram per kilogram = ppm
6. Method Detection Limit (MDL) : 10mg/kg for Pb, Cd, Hg and Cr⁶⁺; 10mg/kg for PBB and PBDE
7. ND = not detected
8. Negative = The Cr⁶⁺ concentration is below the limit of quantification. The coating is considered a non-Cr⁶⁺ based coating.
9. Positive = The Cr⁶⁺ concentration is above the limit of quantification and the statistical margin of error, The sample coating is considered to contain Cr⁶⁺.

Note:

1. When perform screening tests, 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⁺.
2. Results are obtained by EDXRF for primary screening, and further chemical testing by ICP-OES (for Cd, Pb, Hg), UV-VIS (for Cr⁶⁺) and GC-MS (for PBBs, PBDEs) is recommended to be performed, if the concentration falls into the inconclusive area according to IEC 62321-3-1:2013 (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	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

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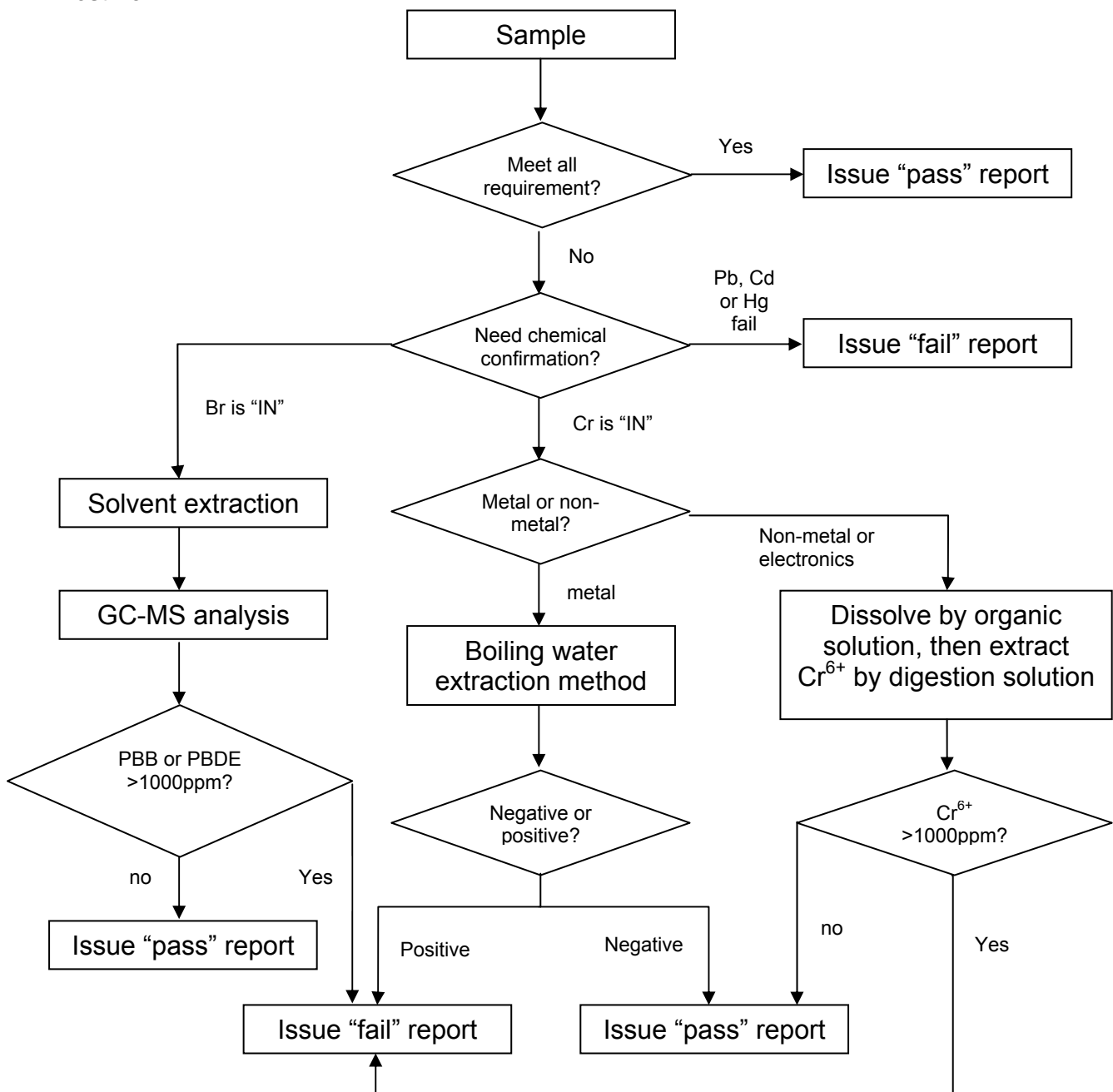
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3. The XRF screening test for RoHS elements. The reading may be different to the actual content in the sample be of non-uniformity composition.

Test flow:



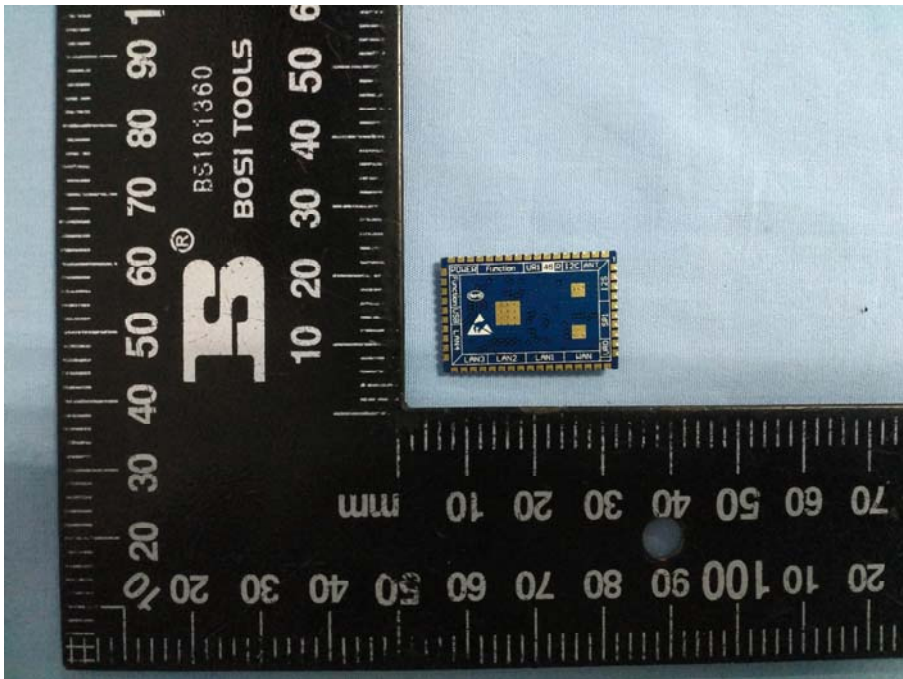
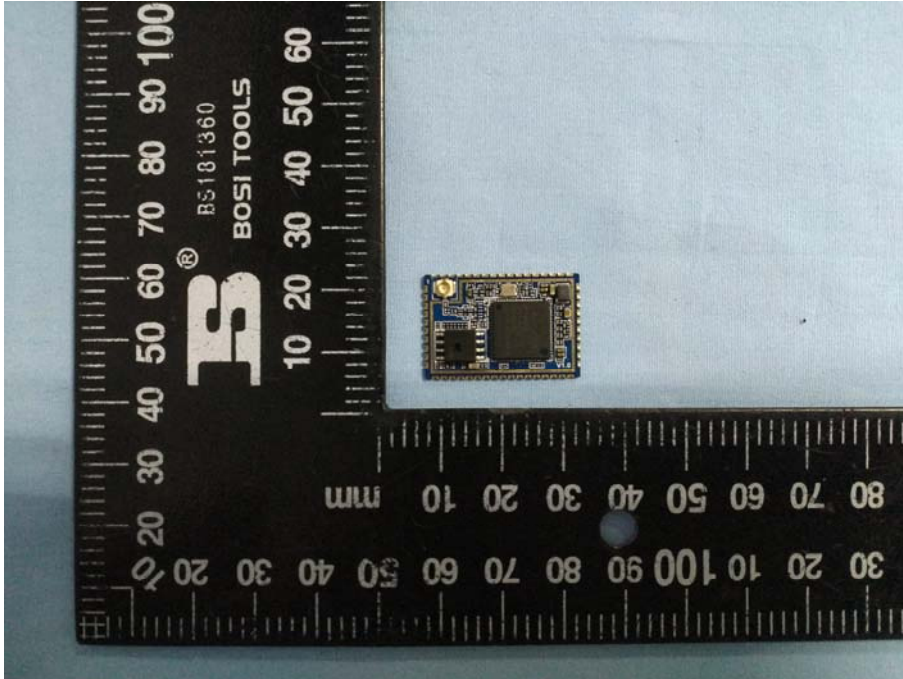
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Tested sample photo:



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