TEST REPORT

Applicant : Hypersen Technologies Co., Ltd.

Applicant Address : A526, Baoan Intelligence Valley, No.4 Yintian Rd., Xixiang Street, Baoan Dist., Shenzhen City, Guangdong Province, China

The following sample was submitted by the client as:

Manufacturer	:	Hypersen Technologies Co., Ltd.
Address	:	A526, Baoan Intelligence Valley, No.4 Yintian Rd., Xixiang Street, Baoan Dist., Shenzhen City, Guangdong Province, China
Sample Description	:	Time-of-Flight (ToF) Sensor
Style/Item No.	:	HPS-166, HPS-161, HPS-162, HPS-163, HPS-165, HPS-167, HPS-168, HPS-169
Brand Name	:	Hypersen
Sample Receiving Date	:	Nov. 14, 2016
Test Period	:	Nov. 14, 2016 to Nov. 18, 2016

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).

Shenzhen SEM.Test Technology Co., Ltd. Approved

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

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 62321:2008 Annex C and/or IEC 62321-7-1:2015 for Cr^{6+}, analyzed by UV-VIS

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

1. XRF results:

No.	Name of the sample	Part name	Sample Description	Results				
				Pb	Cd	Hg	Cr	Br
1-1-1	Time-of-Flight (ToF) Sensor	Camera lens	Black plastic	BL	BL	BL	BL	BL
1-1-2			Glass	BL	BL	BL	BL	BL
1-2-1		Probe	Black plastic	BL	BL	BL	BL	BL
1-2-2			Glass	BL	BL	BL	BL	BL
1-3-1		Screw	Black metal	BL	BL	BL	**IN**	NA
1-4-1		Socket	White plastic	BL	BL	BL	BL	NA
1-4-2			Black plastic	BL	BL	BL	BL	BL
1-4-3			Silvery metal	BL	BL	BL	BL	NA
1-5-1		IC 1623	Black plastic	BL	BL	BL	BL	BL
1-5-2			Silvery metal	BL	BL	BL	BL	NA
1-6-1		IC 29501	Black plastic	BL	BL	BL	BL	BL
1-6-2			Silvery metal	BL	BL	BL	BL	NA
1-7-1		Soldering tin	Silvery metal	BL	BL	BL	BL	NA
1-8-1		PCB	PCB	BL	BL	BL	BL	**IN**

2. Chemical confirm results:

Test Item(s)	Result (mg/kg)					Limit (mg/kg)
	1-3-1	---	---	---	---	
Hexavalent Chroumium (Cr^{6+})	Negative	Negative	Negative	Negative	Negative	--
Comment	PASS	PASS	PASS	PASS	PASS	--

Test Item(s)	Result (mg/kg)					Limit (mg/kg)
	1-8-1	---	---	---	---	
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	--
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 Cr^{6+}; 10mg/kg for PBB and PBDE
7. ND = not detected
8. Negative = The Cr^{6+} concentration is below the limit of quantification. The coating is considered a non-Cr^{6+} based coating.
9. Positive = The Cr^{6+} concentration is above the limit of quantification and the statistical margin of error, The sample coating is considered to contain Cr^{6+}.

Note:

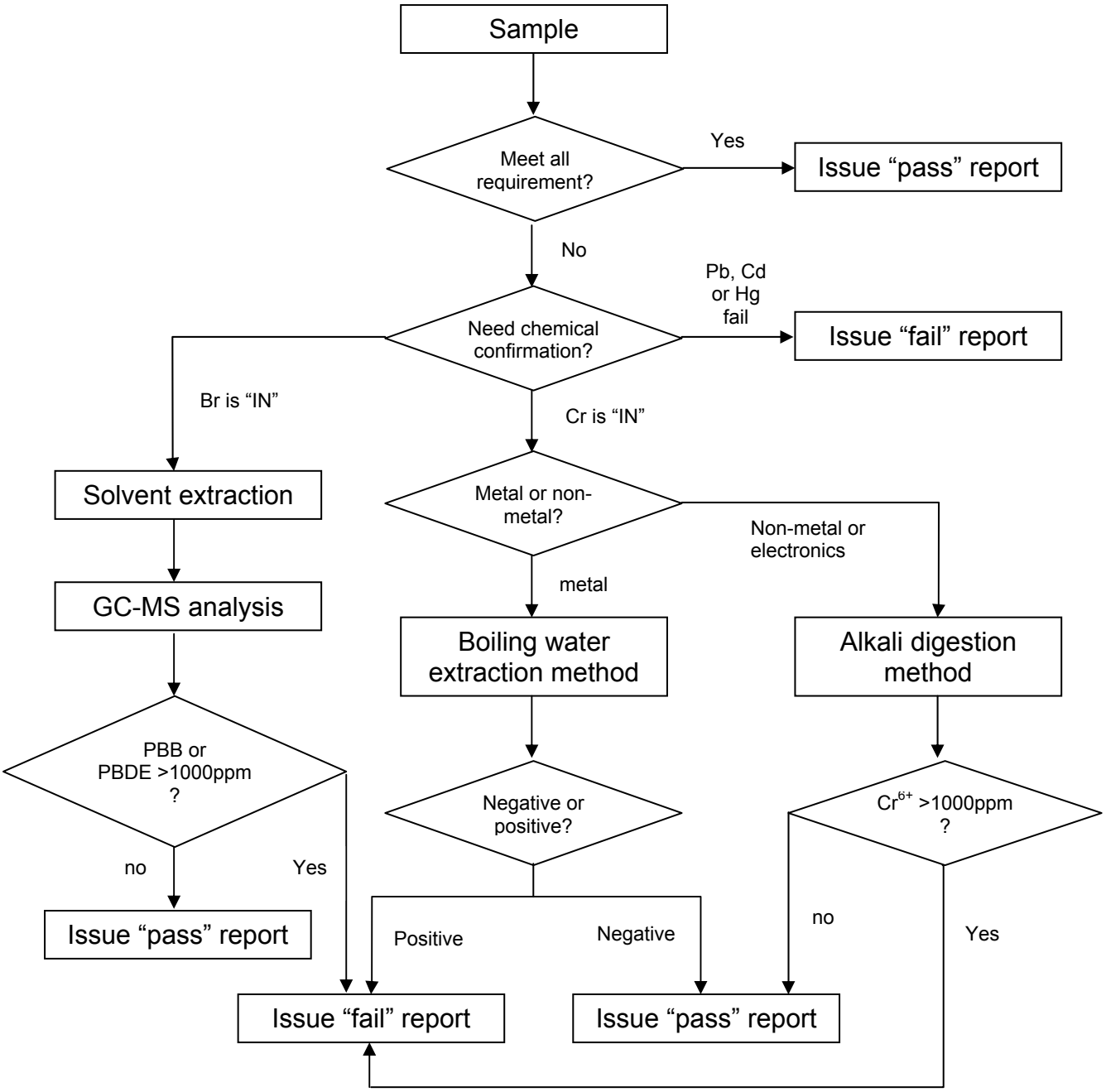
1. When perform screening tests, it is the result on total Br while test item on restricted substances is PBBs/PBDEs, it is the result on total Cr while test item on restricted substances is Cr^{6+}.
2. Results are obtained by EDXRF for primary screening, and further chemical testing by ICP-OES (for Cd, Pb, Hg), UV-VIS (for Cr^{6+}) 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)

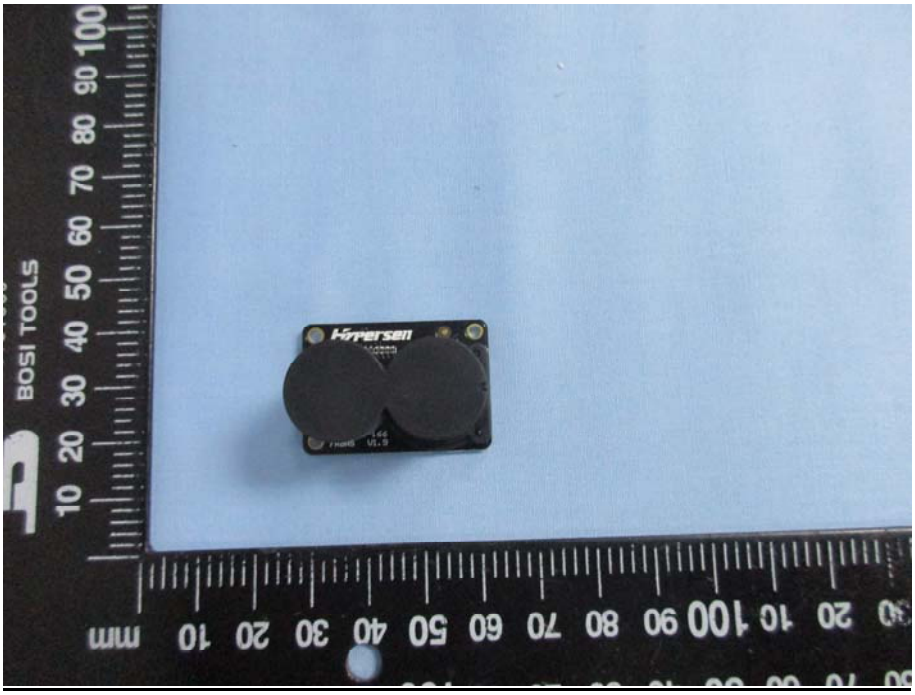
Element	Polymer	Metal	Composite Materials
Cd	BL≤(70-3σ)<X<(130+3σ) ≤OL	BL≤(70-3σ)<X<(130+3σ) ≤OL	LOD<X<(150+3σ) ≤OL
Pb	BL≤(700-3σ) <X<(1300+3σ) ≤OL	BL≤(700-3σ)<X<(1300+3σ) ≤OL	BL≤(500-3σ) <X<(1500+3σ) ≤OL
Hg	BL≤(700-3σ) <X<(1300+3σ) ≤OL	BL≤(700-3σ)<X<(1300+3σ) ≤OL	BL≤(500-3σ) <X<(1500+3σ) ≤OL
Br	BL≤(300-3σ)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

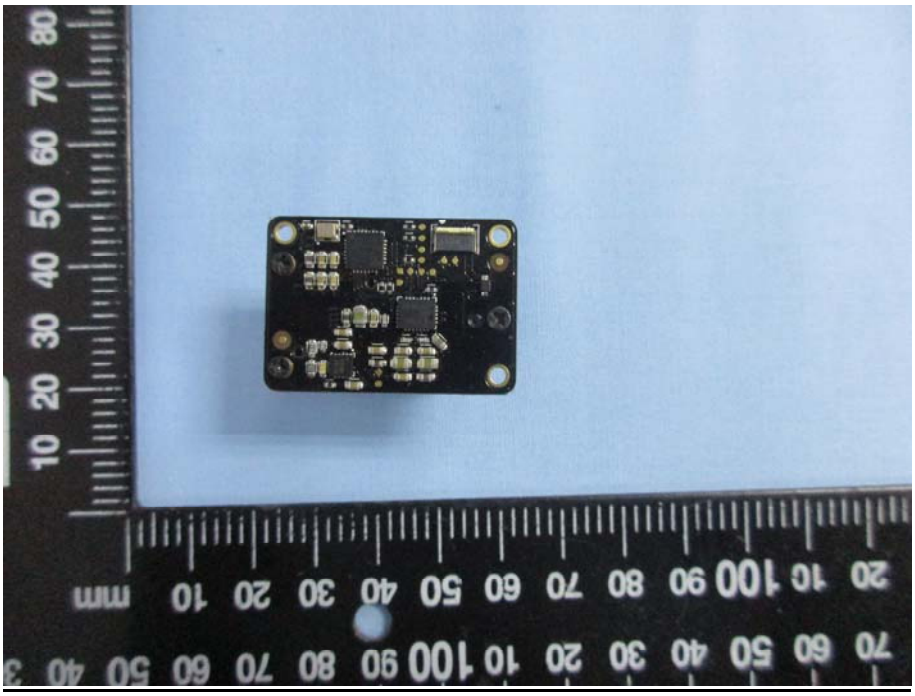
3. The XRF screening test for RoHS elements. The reading may be different to the actual content in the sample be of non-uniformity composition.

Test flow:


Sample
Meet all requirement?
Yes
Issue “pass” report
No
Need chemical confirmation?
Pb, Cd or Hg fail
Issue “fail” report
Br is “IN”
Cr is “IN”
Solvent extraction
Metal or non-metal?
Non-metal or electronics
GC-MS analysis
metal
Boiling water extraction method
Alkali digestion method
PBB or PBDE >1000ppm ?
Negative or positive?
Cr6+ >1000ppm ?
no
Yes
Issue “pass” report
Positive
Negative
no
Yes
Issue “fail” report
Issue “pass” report

Tested sample photo:





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