Test Report

Report No.: AGC07686190301-004 Date: Apr.30, 2019 Page 1 of 10

Applicant:	Shenzhen Renhotec Technology Electronics Co., Ltd
Address:	No 5, Xinyuan North Fifth Road, Ludong Village, Humen Town, Dongguan,523939, Guangdong, China

Report on the submitted sample(s) said to be:

Sample Name:	Please refer to following page(s).
Test Model:	Please refer to following page(s).
Series model No.:	M series
Difference between test model and series model:	Except for the slight difference in appearance and size, the others are the same.
Supplier:	Renhotec
Manufacturers:	Shenzhen Renhotec Technology Electronics Co., Ltd
Address:	No 5, Xinyuan North Fifth Road, Ludong Village, Humen Town, Dongguan,523939, Guangdong, China
Test site:	1,6/F.,Building 2,No. 1-4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Baoan District, Shenzhen, Guangdong, China
Sample Received Date:	Mar.21, 2019
Testing Period:	Mar.21, 2019 to Apr.30, 2019

Test Requested:	Please refer to following page(s).
Test Method:	Please refer to following page(s).
Test Result:	Please refer to following page(s).

Approved by:

Liulinwen, Lewis

Technical Director

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Test Report

Test Requested:	**Conclusion**
1.As specified by client, to determine the Pb, Cd, Hg, Cr^{6+}, PBBs, PBDEs content in the submitted sample in accordance with EU RoHS Directive 2011/65/EU(RoHS) and its amendment directives on XRF and Chemical Method.	**Pass**
2. As specified by client, to determine the DBP, BBP, DEHP, DIBP content in the submitted sample in accordance with Directive 2011/65/EU (RoHS) and its amendment directive (EU) 2015/863.	**Pass**

No.	Sample name	Test model
1	M8 plug	RHT-M8
2	M12 socket	RHT-M12（Main test model）

Test Methods:

A: Screening by X-ray Fluorescence Spectrometry (XRF) :With reference to IEC 62321-3-1:2013 Ed 1.0 Screening – Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry

B: Chemical test:

Test Item	**Test Method**	**Measuring Instrument**	**MDL**
Cadmium (Cd)	IEC 62321-5:2013 Ed 1.0	ICP-OES	2 mg/kg
Lead (Pb)	IEC 62321-5:2013 Ed 1.0	ICP-OES	2 mg/kg
Mercury (Hg)	IEC 62321-4: 2013+A1:2017 Ed 1.1	ICP-OES	2 mg/kg
Non-metal Hexavalent Chromium (Cr^{6+})	IEC 62321-7-2:2017 Ed 1.0	UV-Vis	1 mg/kg
Metal Hexavalent Chromium (Cr^{6+})	IEC 62321-7-1:2015 Ed 1.0	UV-Vis	/
PBBs/PBDEs	IEC 62321-6:2015 Ed 1.0	GC-MS	5 mg/kg

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Test Results:

A、EU RoHS Directive 2011/65/EU and its amendment directives on XRF

Seq. No.	Tested Part(s)	Results(mg/kg)				
		Cd	Pb	Hg	Cr	Br
RHT-M12						
1	Copper contact pin(Joint)	BL	OL*	BL	BL	-
2	Blue injected plastic(Joint)	BL	BL	BL	BL	BL
3	Silver threaded head(Joint)	BL	OL*	BL	BL	-
4	Silver nut ring (Joint)	BL	OL*	BL	BL	-
5	Green seal ring(Joint)	BL	BL	BL	BL	BL
6	Black plastic contact(Joint)	BL	BL	BL	BL	X*
RHT-M8						
7	Black plastic shell(Joint)	BL	BL	BL	BL	X*
8	White plastic(Joint)	BL	BL	BL	BL	BL
9	Black rubber ring(Joint)	BL	BL	BL	BL	BL
10	Silvery metal ring(Joint)	BL	OL*	BL	BL	-
11	Black seal ring(Joint)	BL	BL	BL	BL	BL
12	Copper contact pin(Joint)	BL	OL*	BL	BL	-
13	Black plastic contact(Joint)	BL	BL	BL	BL	BL
14	Copper terminal(Joint)	BL	OL*	BL	BL	-
15	Silver six angle screw(Joint)	BL	BL	BL	BL	-
16	Black hexagon screw(Joint)	BL	BL	BL	BL	-

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Element	Unit	Non-metal	Metal	Composite Material
Cd	mg/kg	BL≤70-3σ<X <130+3σ≤OL	BL≤70-3σ<X <130+3σ≤OL	BL≤50-3σ<X <150+3σ≤OL
Pb	mg/kg	BL≤700-3σ<X <1300+3σ≤OL	BL≤700-3σ<X <1300+3σ≤OL	BL≤500-3σ<X <1500+3σ≤OL
Hg	mg/kg	BL≤700-3σ<X <1300+3σ≤OL	BL≤700-3σ<X <1300+3σ≤OL	BL≤500-3σ<X <1500+3σ≤OL
Cr	mg/kg	BL≤700-3σ<X	BL≤700-3σ<X	BL≤500-3σ<X
Br	mg/kg	BL≤300-3σ<X	-	BL≤250-3σ<X

Note: BL= Below Limit
OL= Over limited
X= Inconclusive
"-"= Not regulated
*= Scanning by XRF and detected by chemical method. The test results of chemical method please refer to next pages.

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Remark:

i Results were obtained by XRF for primary scanning, and further chemical testing by ICP (for Cd, Pb, Hg), UV-Vis (for Cr(Ⅵ)) and GC-MS (for PBBs, PBDEs) are recommended to be performed, if the concentration exceeds the above warning value according to IEC 62321-3-1:2013 Ed 1.0.

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

iii The maximum permissible limit is quoted from RoHS directive 2011/65/EU:

RoHS Restricted Substances	Maximum Concentration Value (mg/kg) (by weight in homogenous materials)
Cadmium (Cd)	100
Lead (Pb)	1000
Mercury (Hg)	1000
Hexavalent Chromium (Cr(Ⅵ))	1000
Polybrominated biphenyls (PBBs)	1000
Polybrominated diphenylethers (PBDEs)	1000

Disclaimers:

This XRF Scanning report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF screening report is sufficient for its/his/her purposes.

The result shown in this XRF scanning report will differ 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-treatment with relevant chemical equipment analysis are required to obtain quantitative data.

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B、<u>The Test Results of Chemical Method:</u>

1) The Test Results of Pb & Cd

Test Item(s)	Unit	Result(s)					
		1	3	4	10	12	14
Lead(Pb)	mg/kg	25952*	32756*	29547*	15211*	22593*	33728*

Note : N.D. = Not Detected or less than MDL

MDL = Method Detection Limit

* 1= As claimed by the material declaration submitted by the client, the materials of the sample No.1,No.3,No.4,No.10,No.12 and No.14are copper alloy, according to the RoHS 2011/65 / EU, Lead is exempted as an alloying element in Copper containing up to 4% (40000ppm) by weight.

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2) The Test Results of PBBs & PBDEs

Unit: mg/kg

Item(s)	MDL	Result(s)		Limit
		6	7	
Polybrominated Biphenyls (PBBs)				
Monobromobiphenyl	5	N.D.	N.D.	Total PBBs Content <1000
Dibromobiphenyl	5	N.D.	N.D.	
Tribromobiphenyl	5	N.D.	N.D.	
Tetrabromobiphenyl	5	N.D.	N.D.	
Pentabromobiphenyl	5	N.D.	N.D.	
Hexabromobiphenyl	5	N.D.	N.D.	
Heptabromobiphenyl	5	N.D.	N.D.	
Octabromobiphenyl	5	N.D.	N.D.	
Nonabromodiphenyl	5	N.D.	N.D.	
Decabromodiphenyl	5	N.D.	N.D.	
Total content	/	N.D.	N.D.	
Polybrominated Diphenylethers (PBDEs)				
Monobromodiphenyl ether	5	N.D.	N.D.	Total PBDEs Content <1000
Dibromodiphenyl ether	5	N.D.	N.D.	
Tribromodiphenyl ether	5	N.D.	N.D.	
Tetrabromodiphenyl ether	5	N.D.	N.D.	
Pentabromodiphenyl ether	5	N.D.	N.D.	
Hexabromodiphenyl ether	5	N.D.	N.D.	
Heptabromodiphenyl ether	5	N.D.	N.D.	
Octabromodiphenyl ether	5	N.D.	N.D.	
Nonabromodiphenyl ether	5	N.D.	N.D.	
Decabromodiphenyl ether	5	N.D.	N.D.	
Total content	/	N.D.	N.D.	
Conclusion	/	**Pass**	**Pass**	/

Note: N.D. = Not Detected or less than MDL
MDL = Method Detection Limit

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2. Test result of DBP, BBP, DEHP, DIBP content

Unit: mg/kg

Test Item(s)	Test Method/ Equipment	MDL	Result(s)				Limit
			2	5	6	7	
Di-(2-ethylhexyl) Phthalate (DEHP)	Refer to IEC 62321-8:2017 GC-MS	50	N.D.	N.D.	N.D.	N.D.	1000
Dibutyl phthalate (DBP)		50	N.D.	N.D.	N.D.	N.D.	1000
Butylbenzyl phthalate (BBP)		50	N.D.	N.D.	N.D.	N.D.	1000
Di-iso-butyl phthalate (DIBP)		50	N.D.	N.D.	N.D.	N.D.	1000
Conclusion		/	**Pass**	**Pass**	**Pass**	**Pass**	/

Unit: mg/kg

Test Item(s)	Test Method/ Equipment	MDL	Result(s)				Limit
			8	9	11	13	
Di-(2-ethylhexyl) Phthalate (DEHP)	Refer to IEC 62321-8:2017 GC-MS	50	N.D.	N.D.	N.D.	N.D.	1000
Dibutyl phthalate (DBP)		50	N.D.	N.D.	N.D.	N.D.	1000
Butylbenzyl phthalate (BBP)		50	N.D.	N.D.	N.D.	N.D.	1000
Di-iso-butyl phthalate (DIBP)		50	N.D.	N.D.	N.D.	N.D.	1000
Conclusion		/	**Pass**	**Pass**	**Pass**	**Pass**	/

Note: 1. MDL＝Method Detection Limit
2. N.D.=Not Detected(less than method detection limit)

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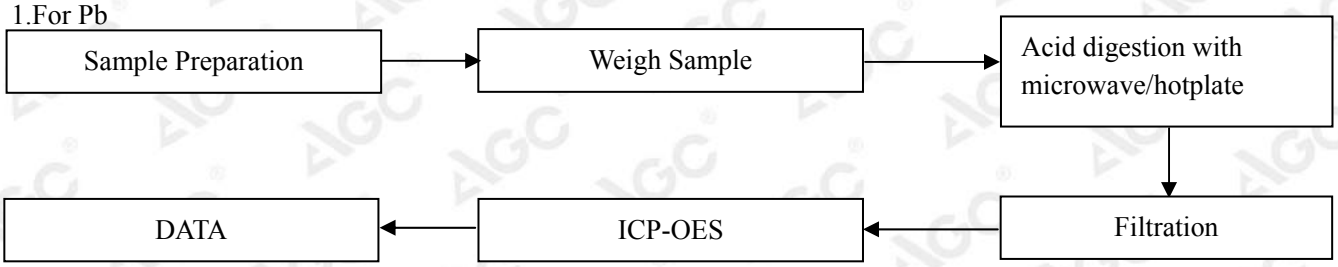
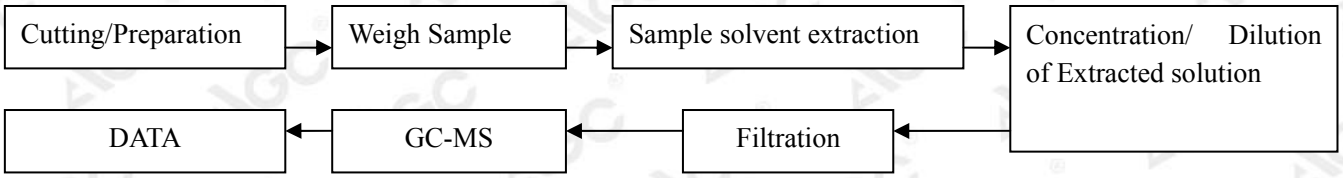
Test Flow Chart

1.For Pb



2.For PBBs & PBDEs, DBP, BBP, DEHP, DIBP



Test result on specimen No.3 and No.5 were resubmitted sample on Apr.24,2019.

The photo of the sample

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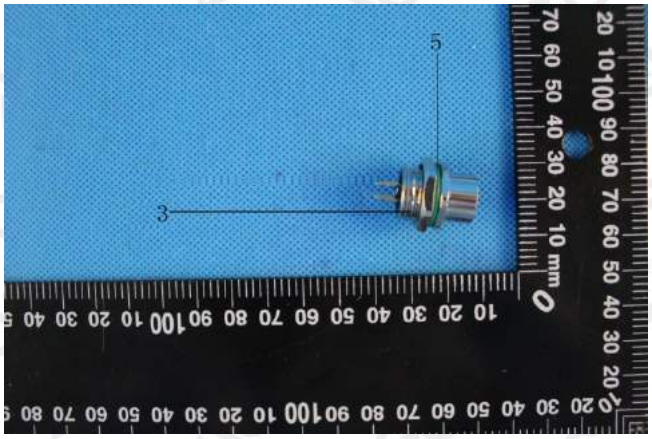
RHT-M8



RHT-M12

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AGC authenticate the photo only on original report

*** End of Report ***

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