



# TEST REPORT

REPORT No.: R2SH170814F0383E

Date: August 29, 2017

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Shanghai SIMCom Wireless Solutions Co., Ltd  
Building A, SIM Technology Building, No. 633, Jinzhong Road, Changning District, Shanghai P. R. China

Report on the submitted samples said to be:

Sample Name : Wireless Module  
Style/ Item No. : SIM800C/ SIM800C-DS/ SIM868  
Manufacturer : Shanghai SIMCom Wireless Solutions Co., Ltd  
Sample Receiving Date : August 14, 2017  
Testing Period : From August 14, 2017 to August 29, 2017  
Results : Please refer to next page(s).

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**Summary of Test Results:**

**TEST REQUEST**

**CONCLUSION**

A	RoHS Directive 2011/65/EU and its amendment directives –XRF screening test and Wet Chemical Testing (Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs & PBDEs content)	<b>Pass</b>
	Phthalates(DBP、BBP、DEHP、DIBP)content	<b>Pass</b>

Signed for and on behalf of BACL

Checked by: Jane Xu  
Jane Xu  
Technical Supervisor

Approved by: William Wei  
William Wei  
Laboratory Manager

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**Results:**

**A. RoHS Directive 2011/65/EU and its amendment directives**

**XRF screening test**

Test method: With reference to IEC 62321-3-1:2013 screening by X-ray Fluorescence Spectroscopy (XRF)

Seq. No.	Tested Part(s)	Results				
		Pb	Cd	Hg	Cr	Br
1	White/brown plastic with black/red printing(label, Wireless Module) ① ②③	BL	BL	BL	BL	BL
2	Silvery metal(shield, Wireless Module) ①②③	BL	BL	BL	BL	---
3	Black body(IC, PCB, Wireless Module) ①②③	BL	BL	BL	BL	BL
4	Silvery body(crystal, PCB, Wireless Module) ①②③	BL	BL	BL	BL	BL
5	Brown body(capacitor, PCB, Wireless Module) ①②③	BL	BL	BL	BL	BL
6	Black body(resistor, PCB, Wireless Module) ①②③	BL	BL	BL	BL	BL
7	Black body(diode, PCB, Wireless Module) ①②③	BL	BL	BL	BL	BL
8	Silvery solder(PCB, Wireless Module) ①②③	BL	BL	BL	BL	---
9	Green PCB(PCB"V1.02" , Wireless Module) ①	BL	BL	BL	BL	BL
10	Green PCB(PCB"V1.01" , Wireless Module) ②	BL	BL	BL	BL	BL
11*1	Coffee body with white printing(crystal, PCB, Wireless Module) ③	OL	BL	BL	BL	BL
12	Green PCB(Wireless Module) ③	BL	BL	BL	BL	BL

Remark: ①SIM800C      ②SIM800C-DS      ③SIM868

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Remark:

(1)

- = Not Conducted
- Results were obtained by XRF for primary screening, 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 below warning value according to IEC62321-3-1:2013.
- \* =

Element	Unit	Polymers	Metal	Composite Material
Cd	mg/kg	BL≤70-3σ< X <130+3σ≤OL	BL≤70-3σ< X <130+3σ≤OL	LOD < 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

- BL = Below Limit
- OL = Over Limit
- IN = Inconclusive
- LOD = Limit of Detection

- \*1 = As claimed by the material declaration submitted by the client, the materials of the sample No.11 is ceramic. And according to RoHS directive 2011/65/EU and its amendments, Lead is exempted in electronic ceramic parts (e.g. piezoelectronic devices).

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- (2) The XRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.
- (3) 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
Polybrominate ddiphenylethers (PBDEs)	1000

- (4) As requested by applicant, only components shown in this report were screened by XRF spectroscopy for 2011/65/EU and its amendment directives, other components were not screened included in this report.
- (5) Photo appendix is included.

**Disclaimers:**

This XRF Screening 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 screening 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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**Phthalates(DBP、BBP、DEHP、DIBP)content**

Test method: With reference to IEC 62321-8(111/321/CD), by gas chromatographic-mass spectrometer (GC-MS)

Item	Unit	MDL	Results					Limit
			1	3	4	5	6	
Dibutyl Phthalate (DBP)	%	0.003	N.D.	N.D.	N.D.	N.D.	N.D.	0.1
Benzylbutyl Phthalate (BBP)	%	0.003	N.D.	N.D.	N.D.	N.D.	N.D.	0.1
Bis-(2-ethylhexyl) Phthalate (DEHP)	%	0.003	N.D.	N.D.	N.D.	N.D.	N.D.	0.1
Diisobutyl Phthalate(DIBP)	%	0.003	N.D.	N.D.	N.D.	N.D.	N.D.	0.1
<b>Conclusion</b>	<b>/</b>	<b>/</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	

Item	Unit	MDL	Results					Limit
			7	9	10	11	12	
Dibutyl Phthalate (DBP)	%	0.003	N.D.	N.D.	N.D.	N.D.	N.D.	0.1
Benzylbutyl Phthalate (BBP)	%	0.003	N.D.	N.D.	N.D.	N.D.	N.D.	0.1
Bis-(2-ethylhexyl) Phthalate (DEHP)	%	0.003	N.D.	N.D.	N.D.	N.D.	N.D.	0.1
Diisobutyl Phthalate(DIBP)	%	0.003	N.D.	N.D.	N.D.	N.D.	N.D.	0.1
<b>Conclusion</b>	<b>/</b>	<b>/</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	

Note:

- N.D. = Not Detected or less than MDL
- MDL = Method Detection Limit
- The results less than MDL are not taken into account while calculating the sum contents.
- mg/kg = ppm

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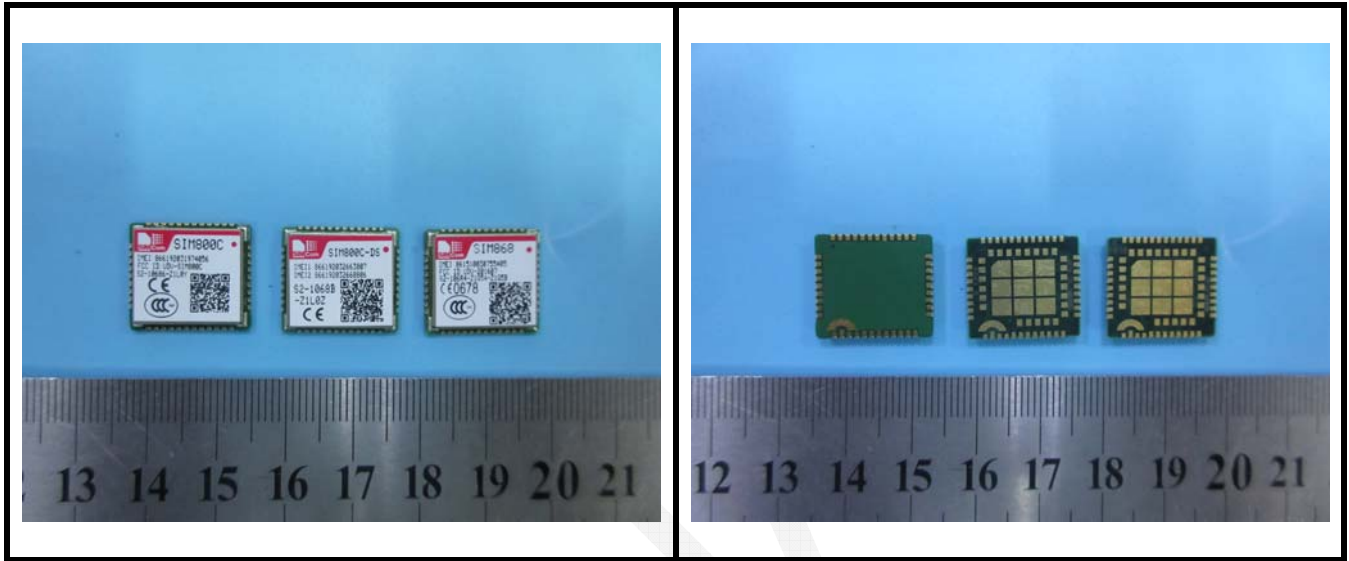
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Photograph of Sample



BACL authenticate the photo on original report only

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

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