



# RoHS TEST REPORT

**APPLICANT** : Shanghai Simcom Limited  
**PRODUCT NAME** : SIM39EA  
**MODEL NAME** : N/A  
**BRAND NAME** : N/A  
**TEST REQUEST** : Test as requested by client  
**TEST DATE** : 2018-03-21 to 2018-03-28  
**ISSUE DATE** : 2018-04-08  
**CONCLUSION** : Based on the verification results of the submitted samples, the results of Lead,Mercury,Cadmium,Hexavalent chromium, Polybrominated biphenyls (PBBs),Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis (2-ethylhexyl) phthalate (DEHP), Dibutyl phthalate (DBP), Butyl benzyl Phthalate (BBP), Diisobutyl phthalate (DIBP)comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Tested by : Liu Rui  
Liu Rui(Test engineer)  
Approved by : Xiaoshan Ni  
Xiaoshan Ni (Supervisor)

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# DIRECTORY

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# 1. Technical Information

Note: Provided by applicant

## 1.1 Applicant Information

<b>Applicant</b>	Shanghai Simcom Limited
<b>Applicant Address</b>	Building A, SIM Technology Building, No.633, Jinzhong Road, Changning District, Shanghai P.R.China 200335
<b>Manufacturer</b>	N/A
<b>Manufacturer Address</b>	N/A

## 2. Component Description

Part No.	Sample No.	Sample Description	Sample Material
1	A	SIM39EA	
2	A-1	X00012100211	COMPOSITE
3	A-2	X00012100149	COMPOSITE
4	A-3	X00012100305	COMPOSITE
5	A-4	X00012100229	COMPOSITE
6	A-5	X00012100153	COMPOSITE
7	A-6	X00012020789	COMPOSITE
8	A-7	X00012100088	COMPOSITE
9	A-8	X00012100120	COMPOSITE
10	A-9	X00012100152	COMPOSITE
11	A-10	X00012100214	COMPOSITE
12	A-11	X00012020001	COMPOSITE
13	A-12	X00011000335	COMPOSITE
14	A-13	X00011000336	COMPOSITE
15	A-14	X00014100232	COMPOSITE
16	A-15	X00014100395	COMPOSITE



Part No.	Sample No.	Sample Description	Sample Material
17	A-16	X00014120072	COMPOSITE
18	A-17	X00014100484	COMPOSITE
19	A-18	X00014200098	COMPOSITE
20	A-19	X00014220054	COMPOSITE
21	A-20	X00015100030	COMPOSITE
22	A-21	X00015100036	COMPOSITE
23	A-22	X00015120214	COMPOSITE
24	A-23	X00013000243	COMPOSITE
25	A-24	X00013600031	COMPOSITE
26	A-25	X00013020047	COMPOSITE
27	A-26	X00021121321	COMPOSITE
28	A-27	X00021122447	COMPOSITE
29	A-28	X00012100426	COMPOSITE
30	A-29	X00014100431	COMPOSITE
31	A-30	X00014120068	COMPOSITE
32	A-31	X00027220624	METAL
33	A-32	X00024022356	COMPOSITE

### 3. Test Methods

#### 3.1. Screening test by XRF spectroscopy

Element	Polymer	Metal	Composite Materials
Cd	$P \leq 70 - 3\sigma < D < 130 + 3\sigma \leq F$	$P \leq 70 - 3\sigma < D < 130 + 3\sigma \leq F$	$P \leq 50 - 3\sigma < D < 150 + 3\sigma \leq F$
Pb	$P \leq 700 - 3\sigma < D < 1300 + 3\sigma \leq F$	$P \leq 700 - 3\sigma < D < 1300 + 3\sigma \leq F$	$P \leq 500 - 3\sigma < D < 1500 + 3\sigma \leq F$
Hg	$P \leq 700 - 3\sigma < D < 1300 + 3\sigma \leq F$	$P \leq 700 - 3\sigma < D < 1300 + 3\sigma \leq F$	$P \leq 500 - 3\sigma < D < 1500 + 3\sigma \leq F$
Br	$P \leq 300 - 3\sigma < D$	----	$P \leq 250 - 3\sigma < D$
Cr	$P \leq 700 - 3\sigma < D$	$P \leq 700 - 3\sigma < D$	$P \leq 500 - 3\sigma < D$

Note: P = PASS

F = FAIL

The symbol "D" marks the region where further investigation is necessary.





XRF testing results are only used for reference.





#### 3.2. Chemical Test





Test item	Procedure	Apparatus	MDL(mg/kg)
Hg	With reference to IEC 62321-4-2013	ICP-OES	2
Cd & Pb	With reference to IEC 62321-5-2013	CV-AAS or ICP-OES	2
Cr <sup>6+</sup>	With reference to IEC 62321-7-2:2017 (For Polymer and Electronics)	UV-VIS	2
	With reference to IEC 62321-7-1:2015 <sup>▲</sup> (For Plating on Metals)		0.1ug/cm <sup>2</sup>
PBBs & PBDEs	With reference to IEC 62321-6:2015	GC-MS	5
Phthalates (DBP,BBP,DEHP,DIBP)	With reference to IEC 62321-8:2017	GC-MS	10

## 4. Test Results and Photographs of Sample




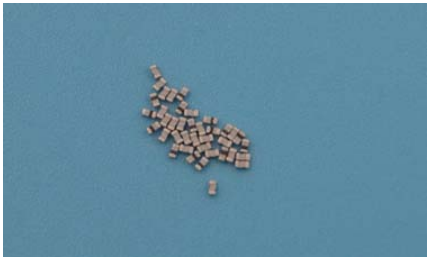
The results of XRF screening and chemical test (Unit: mg/kg)





No.	Sample No.	Figure	X-ray Screening		chemical test		
			Element	Data	UV-Vis	ICP-OES	GC-MS
1	A-1		Pb	N.D.	/	/	/
			Cd	N.D.			
			Hg	N.D.			
			Cr	N.D.			
			Br	N.D.			
			Cr <sup>6+</sup>				N.D.
			PBBs				N.D.
			PBDEs				N.D.
			DBP				N.D.
			BBP				N.D.
			DEHP				N.D.
DIBP		N.D.					
2	A-2		Pb	N.D.	/	/	/
			Cd	N.D.			
			Hg	N.D.			
			Cr	N.D.			
			Br	N.D.			
			Cr <sup>6+</sup>				N.D.
			PBBs				N.D.
			PBDEs				N.D.
			DBP				N.D.
			BBP				N.D.
			DEHP				N.D.
DIBP		N.D.					
3	A-3		Pb	N.D.	/	/	/
			Cd	N.D.			
			Hg	N.D.			
			Cr	N.D.			
			Br	N.D.			
			Cr <sup>6+</sup>				N.D.
			PBBs				N.D.
			PBDEs				N.D.
			DBP				N.D.
			BBP				N.D.
			DEHP				N.D.
DIBP		N.D.					
4	A-4		Pb	N.D.	/	/	/
			Cd	N.D.			
			Hg	N.D.			
			Cr	N.D.			
			Br	N.D.			
			Cr <sup>6+</sup>				N.D.
			PBBs				N.D.
			PBDEs				N.D.
			DBP				N.D.
			BBP				N.D.
			DEHP				N.D.
DIBP		N.D.					


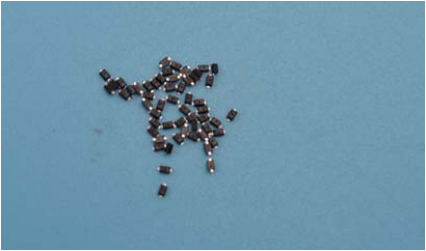
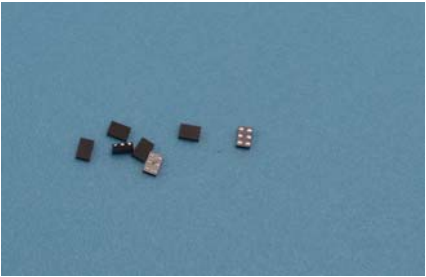

No.	Sample No.	Figure	X-ray Screening		chemical test			
			Element	Data	UV-Vis	ICP-OES	GC-MS	
5	A-5		Pb	N.D.	/	/	/	
			Cd	N.D.				
			Hg	N.D.				
			Cr	N.D.				
			Br	N.D.				
			Cr <sup>6+</sup>					
			PBBs					
			PBDEs					
			DBP					N.D.
			BBP					N.D.
			DEHP					N.D.
DIBP		N.D.						
6	A-6		Pb	N.D.	/	/	/	
			Cd	N.D.				
			Hg	N.D.				
			Cr	N.D.				
			Br	N.D.				
			Cr <sup>6+</sup>					
			PBBs					
			PBDEs					
			DBP					N.D.
			BBP					N.D.
			DEHP					N.D.
DIBP		N.D.						
7	A-7		Pb	N.D.	/	/	/	
			Cd	N.D.				
			Hg	N.D.				
			Cr	N.D.				
			Br	N.D.				
			Cr <sup>6+</sup>					
			PBBs					
			PBDEs					
			DBP					N.D.
			BBP					N.D.
			DEHP					N.D.
DIBP		N.D.						
8	A-8		Pb	N.D.	/	/	/	
			Cd	N.D.				
			Hg	N.D.				
			Cr	N.D.				
			Br	N.D.				
			Cr <sup>6+</sup>					
			PBBs					
			PBDEs					
			DBP					N.D.
			BBP					N.D.
			DEHP					N.D.
DIBP		N.D.						

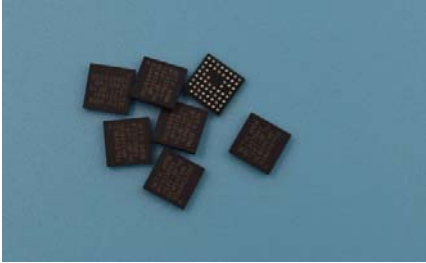
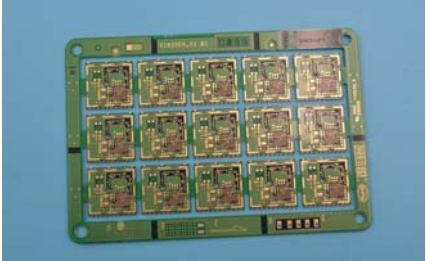
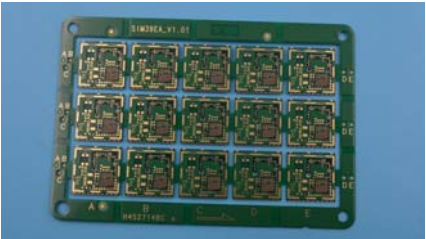

No.	Sample No.	Figure	X-ray Screening		chemical test		
			Element	Data	UV-Vis	ICP-OES	GC-MS
9	A-9		Pb	N.D.	/	/	/
			Cd	N.D.			
			Hg	N.D.			
			Cr	N.D.			
			Br	N.D.			
			Cr <sup>6+</sup>				
			PBBs				N.D.
			PBDEs				N.D.
			DBP				N.D.
			BBP				N.D.
DEHP		N.D.					
DIBP		N.D.					
10	A-10		Pb	N.D.	/	/	/
			Cd	N.D.			
			Hg	N.D.			
			Cr	N.D.			
			Br	N.D.			
			Cr <sup>6+</sup>				
			PBBs				N.D.
			PBDEs				N.D.
			DBP				N.D.
			BBP				N.D.
DEHP		N.D.					
DIBP		N.D.					
11	A-11		Pb	N.D.	/	/	/
			Cd	N.D.			
			Hg	N.D.			
			Cr	N.D.			
			Br	N.D.			
			Cr <sup>6+</sup>				
			PBBs				N.D.
			PBDEs				N.D.
			DBP				N.D.
			BBP				N.D.
DEHP		N.D.					
DIBP		N.D.					
12	A-12		Pb	N.D.	/	/	/
			Cd	N.D.			
			Hg	N.D.			
			Cr	N.D.			
			Br	N.D.			
			Cr <sup>6+</sup>				
			PBBs				N.D.
			PBDEs				N.D.
			DBP				N.D.
			BBP				N.D.
DEHP		N.D.					
DIBP		N.D.					



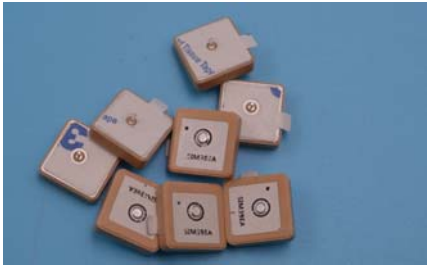
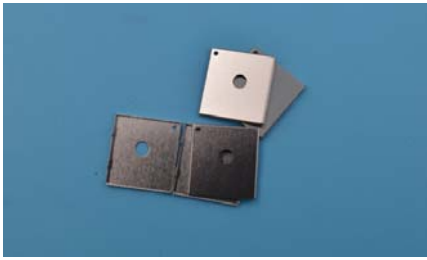


No.	Sample No.	Figure	X-ray Screening		chemical test					
			Element	Data	UV-Vis	ICP-OES	GC-MS			
13	A-13		Pb	N.D.	/	/	/			
			Cd	N.D.						
			Hg	N.D.						
			Cr	N.D.						
			Br	N.D.						
			Cr <sup>6+</sup>							
			PBBs							N.D.
			PBDEs							N.D.
			DBP							N.D.
			BBP							N.D.
DEHP					N.D.					
DIBP					N.D.					
14	A-14		Pb	N.D.	/	/	/			
			Cd	N.D.						
			Hg	N.D.						
			Cr	N.D.						
			Br	N.D.						
			Cr <sup>6+</sup>							
			PBBs							N.D.
			PBDEs							N.D.
			DBP							N.D.
			BBP							N.D.
DEHP					N.D.					
DIBP					N.D.					
15	A-15		Pb	N.D.	/	/	/			
			Cd	N.D.						
			Hg	N.D.						
			Cr	N.D.						
			Br	N.D.						
			Cr <sup>6+</sup>							
			PBBs							N.D.
			PBDEs							N.D.
			DBP							N.D.
			BBP							N.D.
DEHP					N.D.					
DIBP					N.D.					
16	A-16		Pb	N.D.	/	/	/			
			Cd	N.D.						
			Hg	N.D.						
			Cr	N.D.						
			Br	N.D.						
			Cr <sup>6+</sup>							
			PBBs							N.D.
			PBDEs							N.D.
			DBP							N.D.
			BBP							N.D.
DEHP					N.D.					
DIBP					N.D.					

No.	Sample No.	Figure	X-ray Screening		chemical test		
			Element	Data	UV-Vis	ICP-OES	GC-MS
17	A-17		Pb	N.D.	/	/	/
			Cd	N.D.			
			Hg	N.D.			
			Cr	N.D.			
			Br	N.D.			
			Cr <sup>6+</sup>				
			PBBs				
			PBDEs				
			DBP				
			BBP				
			DEHP				
DIBP							
18	A-18		Pb	2.5×10 <sup>3</sup>	/	/	/
			Cd	N.D.			
			Hg	N.D.			
			Cr	N.D.			
			Br	N.D.			
			Cr <sup>6+</sup>				
			PBBs				
			PBDEs				
			DBP				
			BBP				
			DEHP				
DIBP							
19	A-19		Pb	N.D.	/	/	/
			Cd	N.D.			
			Hg	N.D.			
			Cr	N.D.			
			Br	943.4			
			Cr <sup>6+</sup>				
			PBBs				
			PBDEs				
			DBP				
			BBP				
			DEHP				
DIBP							
20	A-20		Pb	N.D.	/	/	/
			Cd	N.D.			
			Hg	N.D.			
			Cr	N.D.			
			Br	N.D.			
			Cr <sup>6+</sup>				
			PBBs				
			PBDEs				
			DBP				
			BBP				
			DEHP				
DIBP							

No.	Sample No.	Figure	X-ray Screening		chemical test			
			Element	Data	UV-Vis	ICP-OES	GC-MS	
21	A-21		Pb	N.D.	/	/	/	
			Cd	N.D.				
			Hg	N.D.				
			Cr	N.D.				
			Br	N.D.				
			Cr <sup>6+</sup>					
			PBBs					
			PBDEs					
			DBP					N.D.
			BBP					N.D.
			DEHP					N.D.
DIBP		N.D.						
22	A-22		Pb	N.D.	/	/	/	
			Cd	N.D.				
			Hg	N.D.				
			Cr	N.D.				
			Br	N.D.				
			Cr <sup>6+</sup>					
			PBBs					
			PBDEs					
			DBP					N.D.
			BBP					N.D.
			DEHP					N.D.
DIBP		N.D.						
23	A-23		Pb	N.D.	/	/	/	
			Cd	N.D.				
			Hg	N.D.				
			Cr	N.D.				
			Br	N.D.				
			Cr <sup>6+</sup>					
			PBBs					
			PBDEs					
			DBP					N.D.
			BBP					N.D.
			DEHP					N.D.
DIBP		N.D.						
24	A-24		Pb	N.D.	/	/	/	
			Cd	N.D.				
			Hg	N.D.				
			Cr	N.D.				
			Br	N.D.				
			Cr <sup>6+</sup>					
			PBBs					
			PBDEs					
			DBP					N.D.
			BBP					N.D.
			DEHP					N.D.
DIBP		N.D.						

No.	Sample No.	Figure	X-ray Screening		chemical test			
			Element	Data	UV-Vis	ICP-OES	GC-MS	
25	A-25		Pb	N.D.	/	/	/	
			Cd	N.D.				
			Hg	N.D.				
			Cr	N.D.				
			Br	N.D.				
			Cr <sup>6+</sup>					
			PBBs					
			PBDEs					
			DBP					N.D.
			BBP					N.D.
			DEHP					N.D.
DIBP		N.D.						
26	A-26		Pb	N.D.	/	/	/	
			Cd	N.D.				
			Hg	N.D.				
			Cr	N.D.				
			Br	968.13				
			Cr <sup>6+</sup>					
			PBBs					
			PBDEs					
			DBP					N.D.
			BBP					N.D.
			DEHP					N.D.
DIBP		N.D.						
27	A-27		Pb	N.D.	/	/	/	
			Cd	N.D.				
			Hg	N.D.				
			Cr	N.D.				
			Br	N.D.				
			Cr <sup>6+</sup>					
			PBBs					
			PBDEs					
			DBP					N.D.
			BBP					N.D.
			DEHP					N.D.
DIBP		N.D.						
28	A-28		Pb	N.D.	/	/	/	
			Cd	N.D.				
			Hg	N.D.				
			Cr	N.D.				
			Br	N.D.				
			Cr <sup>6+</sup>					
			PBBs					
			PBDEs					
			DBP					N.D.
			BBP					N.D.
			DEHP					N.D.
DIBP		N.D.						

No.	Sample No.	Figure	X-ray Screening		chemical test		
			Element	Data	UV-Vis	ICP-OES	GC-MS
29	A-29		Pb	N.D.	/	/	/
			Cd	N.D.			
			Hg	N.D.			
			Cr	N.D.			
			Br	N.D.			
			Cr <sup>6+</sup>				
			PBBs				
			PBDEs				
			DBP				
			BBP				
			DEHP				
DIBP							
						N.D.	
						N.D.	
						N.D.	
						N.D.	
30	A-30		Pb	N.D.	/	/	/
			Cd	N.D.			
			Hg	N.D.			
			Cr	N.D.			
			Br	N.D.			
			Cr <sup>6+</sup>				
			PBBs				
			PBDEs				
			DBP				
			BBP				
			DEHP				
DIBP							
						N.D.	
						N.D.	
						N.D.	
						N.D.	
31	A-31		Pb	N.D.	/	/	/
			Cd	N.D.			
			Hg	N.D.			
			Cr	N.D.			
			Br	N.D.			
			Cr <sup>6+</sup>				
			PBBs				
			PBDEs				
			DBP				
			BBP				
			DEHP				
DIBP							
						N.D.	
						N.D.	
						N.D.	
						N.D.	
32	A-32		Pb	N.D.	/	/	/
			Cd	N.D.			
			Hg	N.D.			
			Cr	N.D.			
			Br	/			
			Cr <sup>6+</sup>				
			PBBs				
			PBDEs				
			DBP				
			BBP				
			DEHP				
DIBP							
						N.D.	

**Remark:**

(1) mg/kg=ppm

(2) N.D. = Not Detected (< MDL);

(3)"/"= Not Conducted

(4)MDL = Method Detection Limit

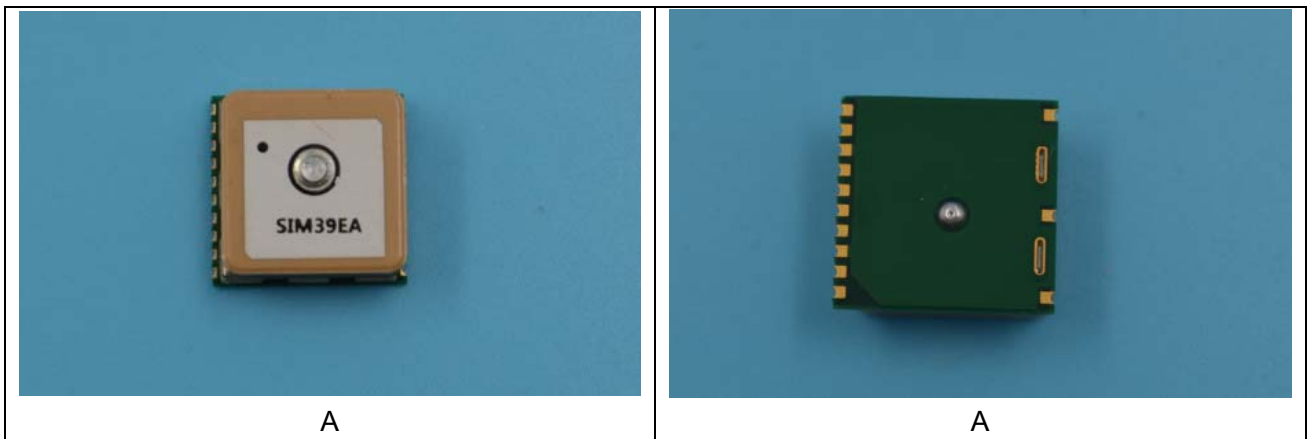
(5) <sup>▲</sup>= a. The sample is negative for Cr<sup>6+</sup> - the Cr<sup>6+</sup> concentration is below the limit 0.10ug/cm<sup>2</sup>. The coating is considered a non-Cr<sup>6+</sup> based coating.

b. The sample positive for Cr<sup>6+</sup> if the Cr<sup>6+</sup> concentration is greater than 0.13ug/cm<sup>2</sup>. The sample coating is considered to contain Cr<sup>6+</sup>.

c. The result between 0.10ug/cm<sup>2</sup> and 0.13ug/cm<sup>2</sup> is considered to be inconclusive unavoidable coating variations may influence the determination.

(6)& = Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectric devices, or in a glass or ceramic matrix compound. The item is exempted from the requirements of the item 7(c)- I in ANNEX III, (Directive 2011/65/EU).

## Annex A Photographs of the EUT





## Annex B General Information

### 1.1 Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Responsible Test Lab Manager:	Mr. Su Feng
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### 1.2 Test Equipment Utilized

No.	Equipment Name	Serial No.	Type	Manufacturer	Cal.Date	Cal.Due Date
1	X-Ray Fluorescence Spectroscopy(XRF)	0102	EDX-1800B	Skyray	2017.05.23	2018.05.23
2	gas chromatograph-mass spectrometer (GC-MS)	CN10617090	6890-5975I	Agilent	2017.05.23	2018.05.23
3	ultraviolet-visible spectrophotometer(UV-Vis)	0153	UV-1100	Labtech	2017.05.23	2018.05.23
4	IPC-OES	842320072001	iCAP7200	Thermo	2017.05.23	2018.05.23

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