



## Test Report

Report No.: CX/2012/40210

Date: 2012/05/16

HUAWEI TECHNOLOGIES CO., LTD.  
BANTIAN, LONGGANG, SHENZHEN, GUANGDONG, P. R. CHINA

The following sample(s) was/were submitted and identified by/on behalf of the client as :

Sample Description : HSPA + MODULE  
SGS Ref No. : CP12-016922-SZ  
Style/Item No. : EM820W  
Sample Receiving Date : 2012/04/17  
Testing Period : 2012/04/17 to 2012/05/16

Test Result(s) : Please refer to next page(s).

Conclusion : Based upon the performed tests by submitted samples, the test results comply with the halogen-free limits of HUAWEI TECHNOLOGIES CO., LTD. (The chlorine concentration is less than 900ppm. The bromine concentration is less than 900ppm.)

  
Ellis Wei, Ph.D., Supervisor  
Signed for and on behalf of  
SGS TAIWAN LTD.  
Chemical Laboratory - Taipei

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### 1. Material Fraction Composition

Table 1 The results of XRF screening and chemical test (Unit: mg/kg)

<div><div></div><div></div></div>										
No.	Type of Components	Description		Figure	Material	X-ray Screening		IC		Note
					Type	Element	Data	Br	Cl	
1	PCBA	1.1	PCBA		Composite Material	Br	---	---	---	Refer to Table 2~5
						Cl	---			
		1.2	WHITE LABEL WITH BLACK PRINT		Polymers	Br	n.d.	---	67	
						Cl	80			
		1.3	WHITE LABEL WITH BLACK PRINT		Polymers	Br	n.d.	---	220	
						Cl	853			

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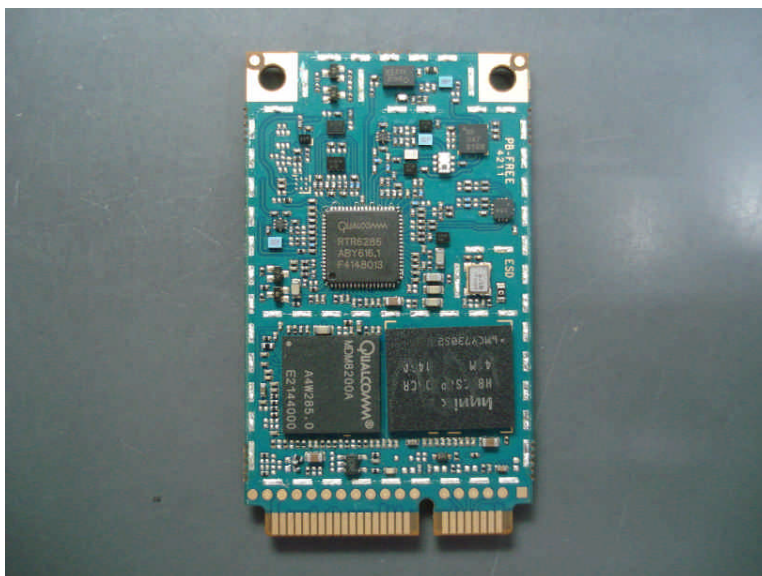
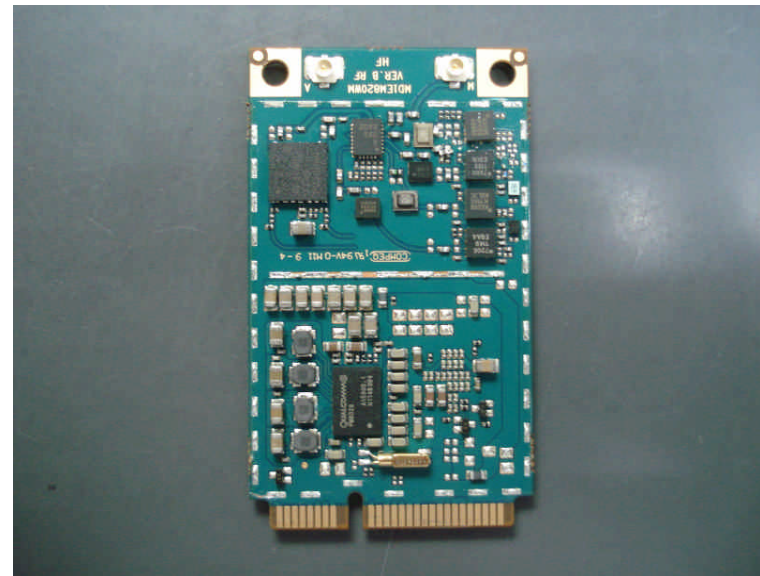
No.	Type of Components	Description		Figure	Material	X-ray Screening		IC		Note
					Type	Element	Data	Br	Cl	
1		1.4	SILVER COLORED METALLIC CAP		Metals	Br	n.d.	---	---	
						Cl	---			
		1.5	SILVER COLORED METALLIC FRAME		Metals	Br	n.d.	---	---	
						Cl	---			

Figure 1 The pictures of the PCB (CX/2012/40210-1.1)



Top side of the PCB (CX/2012/40210-1.1)



Bottom side of the PCB (CX/2012/40210-1.1)

Figure 2 The figure with letter and frame shows the mapping areas on top side of the PCB (CX/2012/40210-1.1)

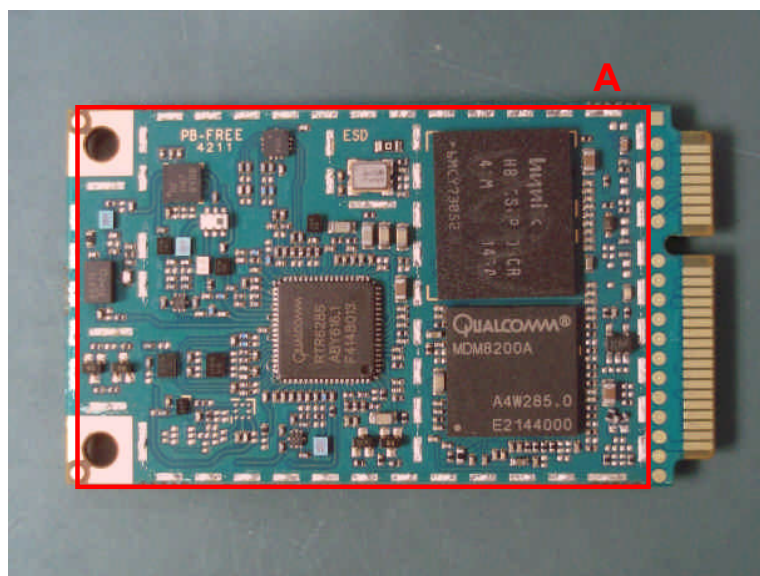


Figure 3 The figure with letter and frame shows the mapping areas on bottom side of the PCB (CX/2012/40210-1.1)

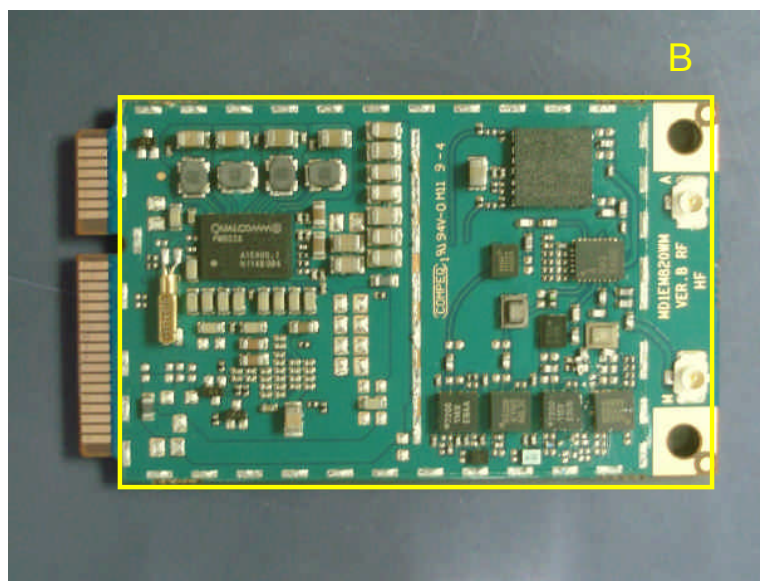




Figure 4 The figure shows the selected positions of the PCB (CX/2012/40210-1.1) for point analysis

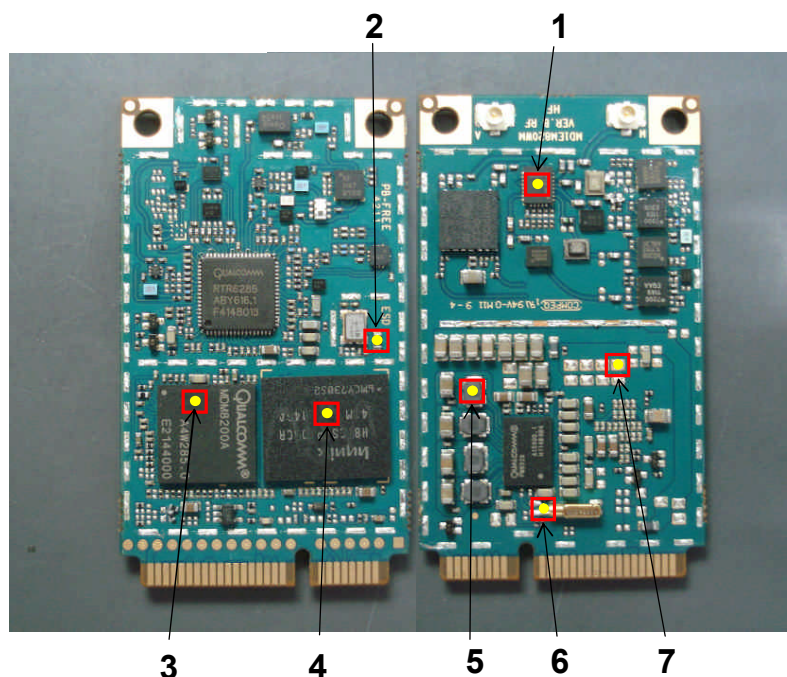


Table 2 Mapping results of area A of the PCB (CX/2012/40210-1.1)

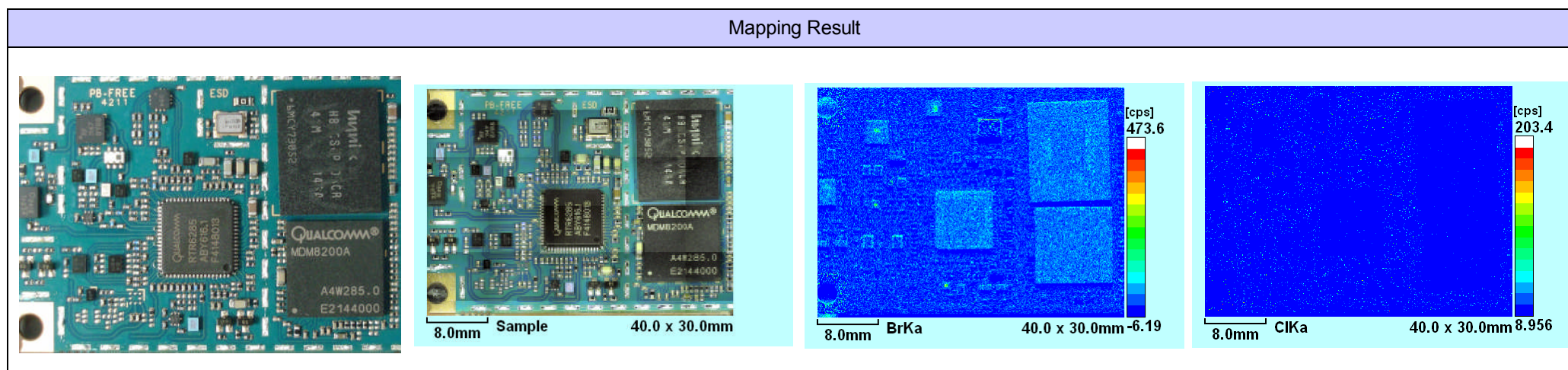




Table 3 Mapping results of area B of the PCB (CX/2012/40210-1.1)

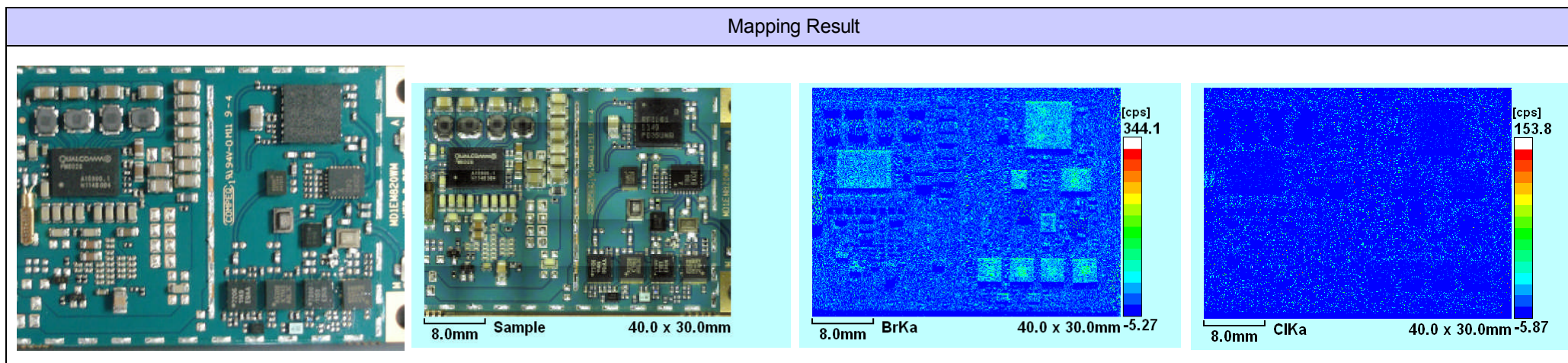


Table 4 The test results of the PCB (CX/2012/40210-1.1) by point analysis

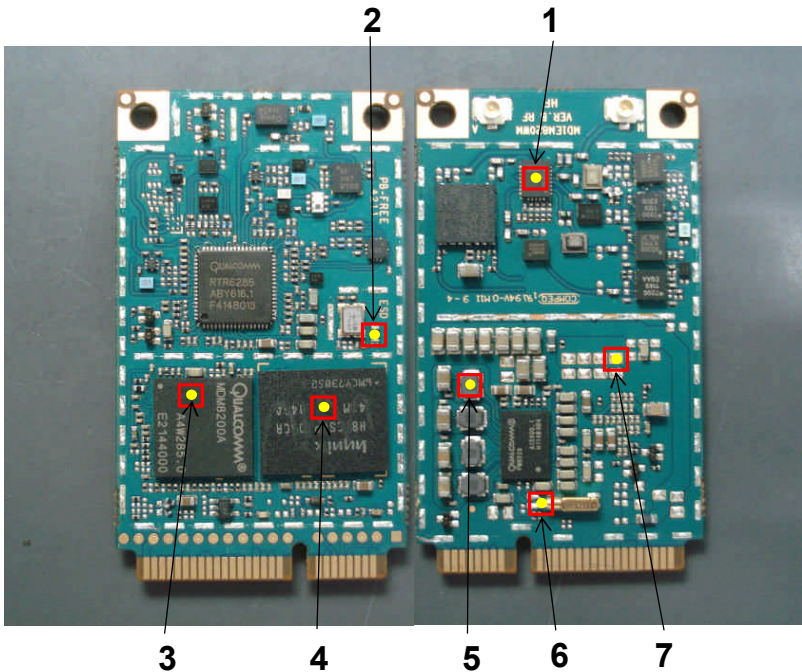
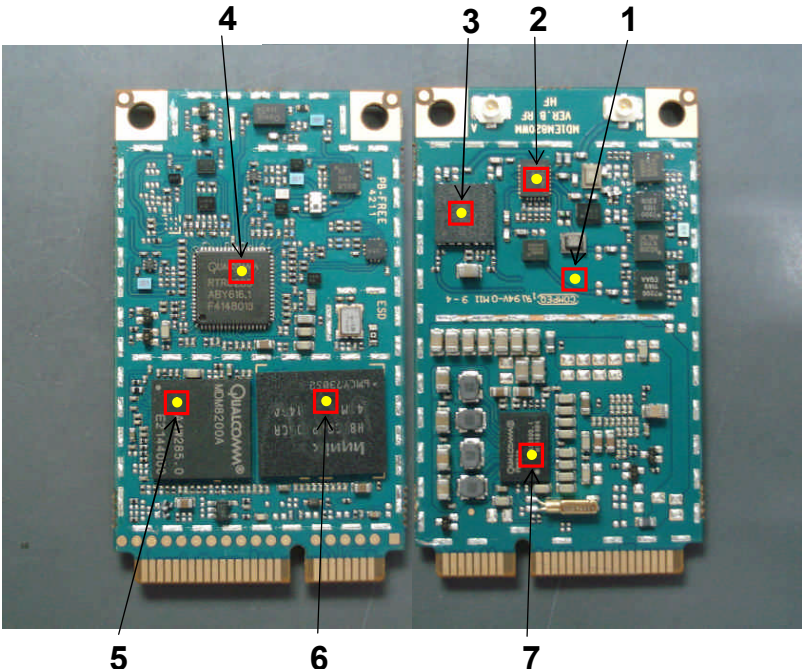
Point Analysis	No.	MDL Category	X-ray Screening		
			Element	Data	Note
	1	Composite Material	Br	n.d.	
	2	Composite Material	Br	n.d.	
	3	Composite Material	Br	n.d.	
	4	Composite Material	Br	n.d.	
	5	Composite Material	Br	n.d.	
	6	Composite Material	Br	n.d.	
	7	Metals	Br	n.d.	

Table 5 The test results of the PCB (CX/2012/40210-1.1) by point analysis

Point Analysis	No.	MDL Category	X-ray Screening		
			Element	Data	Note
	1	Composite Material	Cl	<450	
	2	Composite Material	Cl	<450	
	3	Composite Material	Cl	<450	
	4	Composite Material	Cl	<450	
	5	Composite Material	Cl	<450	
	6	Composite Material	Cl	<450	
	7	Composite Material	Cl	<450	



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Test Item :	MDL (mg/kg)				XRF screening threshold (mg/kg)	Test method
XRF (X-ray fluorescence)	Category	Polymers	Composite Material	Metals	MDL	With reference to IEC 62321: 2008
	Element					
	Br	50	100	n.a.		
	Cl	50	100	n.a.		
	Br+Cl	n.a.	n.a.	n.a.		

Test Item (s):	Test method	MDL (mg/kg)
Cl	With reference to BS EN 14582:2007. Analysis was performed by IC method.	50
Br		

### Note:

1. mg/kg = ppm
2. n.d. = not detected or lower than MDL
3. MDL = Method detection limit
4. "---" = not conducted
5. n.a. = not applicable
6. Magnetic samples can not be located on test position and there are breakdown risks on XRF equipment. Therefore, this kind of sample will be conducted chemical test directly.
7. The XRF result of Br for metal sample is conducted from semi-quantitative method of polymer.
8. " <450 ": The test results of element "Cl" by ED-XRF were below testing limit while the sample was tested by collimator less than 3mm.
9. If the test result by EDXRF analysis is greater than XRF screening threshold, the test sample should be further conducted by chemical test.

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