

# Test Report

No. R011407006R

Date: Aug. 08, 2014

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Applicant : Jinan USR IOT Technology Limited  
Address : #1-724~729, Huizhan Guoji Cheng, Gaoxin District, Jinan City,  
Shandong Province, 250101, China

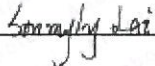
Report on the submitted sample said to be

Sample name : Embedded WIFI Module  
Type /model : USR-WIFI232-D2a, USR-WIFI232-D2b, USR-WIFI232-A,  
USR-WIFI232-B, USR-WIFI232-Ca, USR-WIFI232-Cb  
Manufacturer : Jinan USR IOT Technology Limited  
Sample received date : Jul. 01, 2014  
Testing period : Jul. 01, 2014 to Aug. 08, 2014  
Test requested : As specified by client, according to the ROHS directive 2011/65/EU, to  
screen Lead(Pb), Cadmium(Cd), Mercury(Hg), Chromium(Cr) and  
Bromine(Br) in the submitted sample(s) by XRF.

**Test Result(s):** Please refer to the following page(s).

Signed for and on behalf of Shenzhen Anbotek Compliance Laboratory Limited

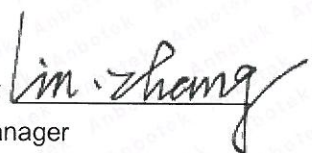
Written by



Inspected by



Approved by



Technical Manager



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## Test Results(s):

Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Conclusion
1	Black plastic	Pb	BL	PASS
		Cd	BL	
		Hg	BL	
		Cr	BL	
		Br	BL	
2	Glass diode	Pb	BL	PASS
		Cd	LOD	
		Hg	BL	
		Cr	BL	
		Br	BL	
3	Button	Pb	BL	PASS
		Cd	LOD	
		Hg	BL	
		Cr	BL	
		Br	BL	
4	Green plastic	Pb	BL	PASS
		Cd	BL	
		Hg	BL	
		Cr	BL	
		Br	BL	
5	Black inductor	Pb	BL	PASS
		Cd	LOD	
		Hg	BL	
		Cr	BL	
		Br	BL	
6	Blue plastic	Pb	BL	PASS
		Cd	BL	
		Hg	BL	
		Cr	BL	
		Br	BL	

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Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Conclusion
7	Silver metal	Pb	BL	PASS
		Cd	BL	
		Hg	BL	
		Cr	BL	
		Br	/	
8	Silver screw	Pb	BL	PASS
		Cd	BL	
		Hg	BL	
		Cr	BL	
		Br	/	
9	Green PCB board	Pb	BL	PASS
		Cd	LOD	
		Hg	BL	
		Cr	BL	
		Br	BL	
10	Silver metal	Pb	BL	PASS
		Cd	BL	
		Hg	BL	
		Cr	BL	
		Br	/	
11	Black IC	Pb	BL	PASS
		Cd	LOD	
		Hg	BL	
		Cr	BL	
		Br	BL	
12	Silver crystal oscillator	Pb	BL	PASS
		Cd	LOD	
		Hg	BL	
		Cr	BL	
		Br	BL	

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Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Conclusion
13	Brown chip capacitor	Pb	BL	PASS
		Cd	LOD	
		Hg	BL	
		Cr	BL	
		Br	BL	
14	Black PCB board	Pb	BL	PASS
		Cd	LOD	
		Hg	BL	
		Cr	BL	
		Br	BL	
15	Black IC	Pb	BL	PASS
		Cd	LOD	
		Hg	BL	
		Cr	BL	
		Br	BL	
16	Black plastic	Pb	BL	PASS
		Cd	BL	
		Hg	BL	
		Cr	BL	
		Br	BL	
17	Silver metal	Pb	BL	PASS
		Cd	BL	
		Hg	BL	
		Cr	BL	
		Br	/	
18	White plastic	Pb	BL	PASS
		Cd	BL	
		Hg	BL	
		Cr	BL	
		Br	BL	

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Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Conclusion
19	White PVC jacket	Pb	BL	PASS
		Cd	BL	
		Hg	BL	
		Cr	BL	
		Br	BL	
20	Silver metal	Pb	BL	PASS
		Cd	BL	
		Hg	BL	
		Cr	BL	
		Br	/	
21	Silver screw	Pb	BL	PASS
		Cd	BL	
		Hg	BL	
		Cr	BL	
		Br	/	
22	Blue PVC jacket	Pb	BL	PASS
		Cd	BL	
		Hg	BL	
		Cr	BL	
		Br	BL	
23	Transparent plastic	Pb	BL	PASS
		Cd	BL	
		Hg	BL	
		Cr	BL	
		Br	BL	

**Note:**

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

-BL = Under the XRF screening limit

-X= The symbol "X" marks the region where further investigation is necessary.

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-OL = Further chemical test will be conducted while the result is above the screening limit.

-Negative = Absence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.02 mg/kg with 50cm<sup>2</sup> sample surface area used.

## Remark:

- The screening results are only used for reference.
- When conducting the test for PBBs&PBDEs, XRF was introduced to screen Br Exclusively; When conducting the test for Hexavalent Chromium, XRF was introduced to screen Chromium exclusively.

## Test Method:

### Screening test by XRF spectroscopy

XRF screening limits in mg/kg for regulated elements according to IEC 62321-3-1:2013.

Element	Limit of IEC IEC 62321-3-1:2013 (unit: mg/kg)		MDL	
	Polymers and metals	Composite material	Polymers	Other material
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma)$ $\leq OL$	10 mg/kg	50 mg/kg
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma)$ $\leq OL$	$LOD \leq (50-3\sigma) < X < (150+3\sigma)$ $\leq OL$	10 mg/kg	50 mg/kg
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma)$ $\leq OL$	10 mg/kg	50 mg/kg
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$	10 mg/kg	50 mg/kg
Br	$BL \leq (300-3\sigma) < X$	$BL \leq (250-3\sigma) < X$	10 mg/kg	50 mg/kg

## Note:

- BL = Under the XRF screening limit.
- OL = Further chemical test will be conducted while result is above the screening limit.
- X= The symbol "X" marks the region where further investigation is necessary.
- 3 σ = The reproducibility of analytical instruments.
- LOD= Detection limit.

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## Photograph of Sample



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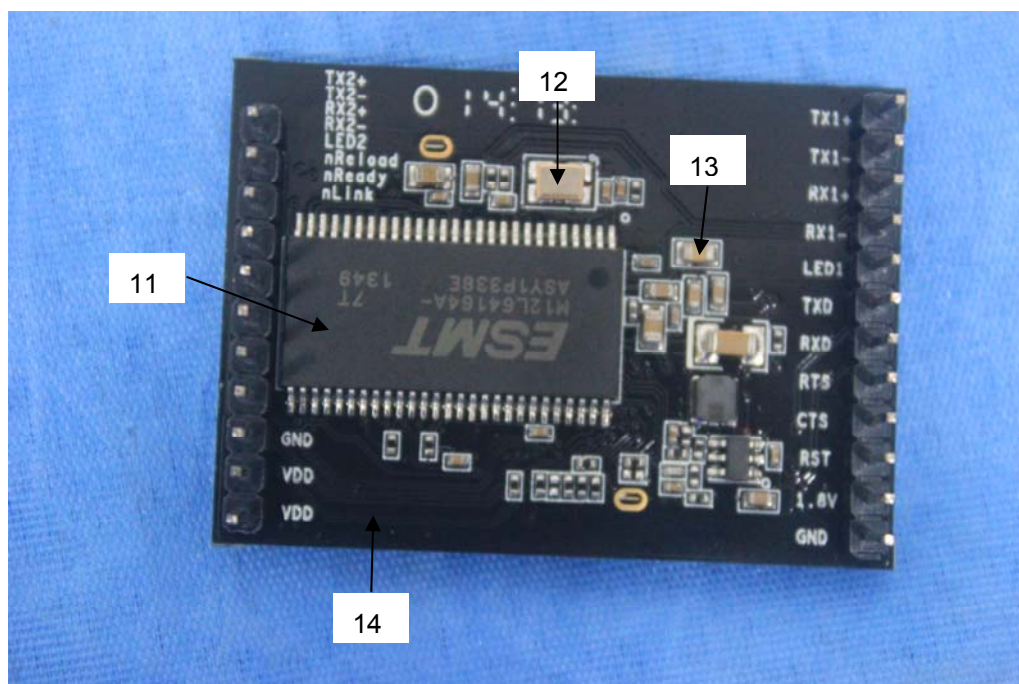
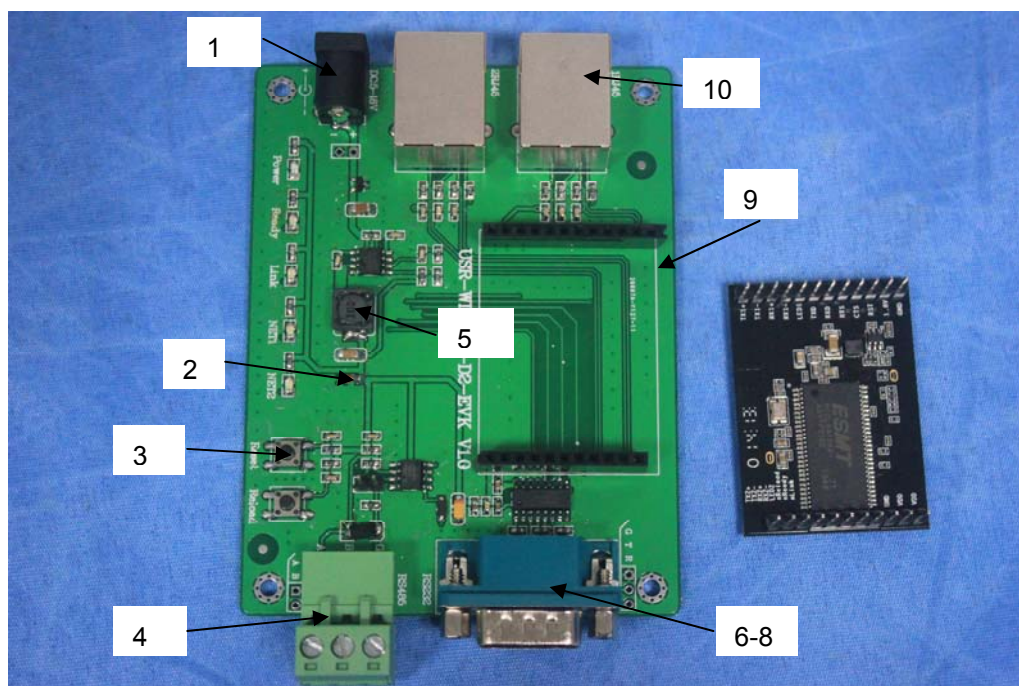
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## Photo(s) of the tested component(s)



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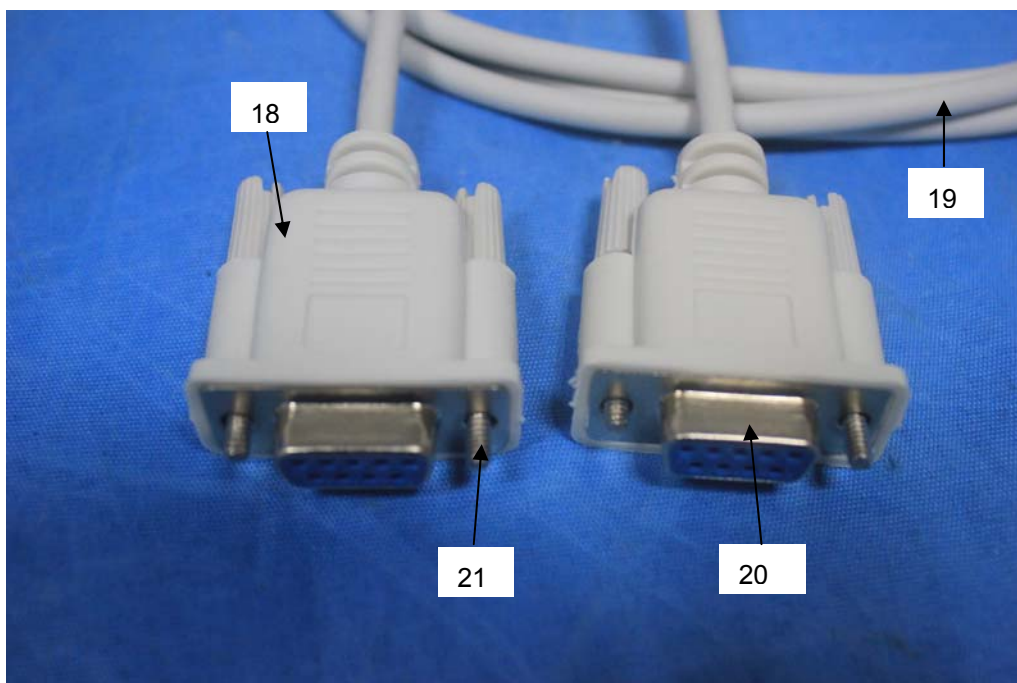
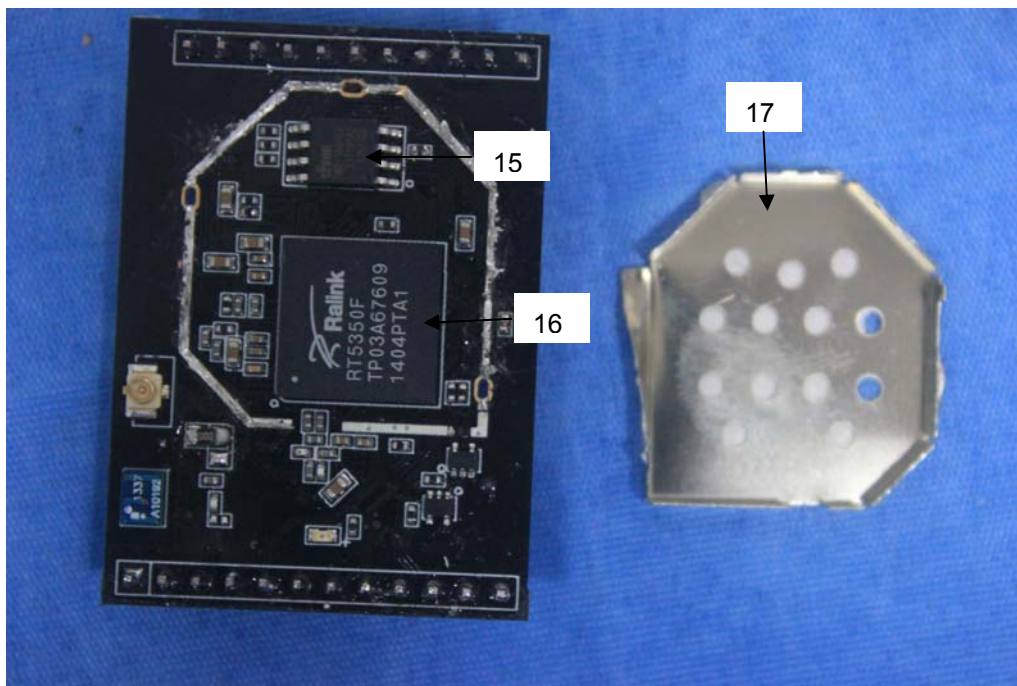


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\*\*\*\* End of Report \*\*\*\*

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