



# Test Report



**Report No.:MTi220727008-01C1**



**Date of Issue:August 05, 2022**



**Client:Wireless-Tag Technology Co., Ltd**

**Product:WIFI Module**

**Test Type: Commissioned Inspection**



**Shenzhen Microtest Co., Ltd.**

<http://www.mtitest.com>





# Instructions



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<b>Basic Information</b>			
Client	Wireless-Tag Technology Co., Ltd		
Client Address	801, Block A, Building 6, Shenzhen International Innovation Valley, Dashi Road, Xili Community, Xili Street, Nanshan District, Shenzhen		
Manufacturer	Wireless-Tag Technology Co., Ltd		
Manufacturer Address	801, Block A, Building 6, Shenzhen International Innovation Valley, Dashi Road, Xili Community, Xili Street, Nanshan District, Shenzhen		
<b>Sample Information</b>			
Product	WIFI Module	Model	WT8266-S1
Serial Model	WT8266-S2, WT8266-S3, WT8266-S5, WT8266-S6, WT8266-C1.0	Brand/ Trademark	Wireless-tag
Sample Number	1	Sample Description	/
<b>Testing Information</b>			
Sample Receive Date	July 30, 2022	Sample Source	Customer provided
Test Specification	With reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU(RoHS 2.0) .		
Date of Tests	July 30, 2022- August 04, 2022		
Test Address	Chemistry lab		
Test Results:	Please refer to next page(s).		
Conclusion:	The submitted sample(s) complied with the Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), PBBs, PBDEs, DBP, BBP, DEHP, DIBP content requirement according to RoHS Directive (EU) 2015/863 amending 2011/65/EU(RoHS 2.0).		
Compiled:	<i>Noak Zhang</i>	Reviewed:	<i>Lyna chen</i> Approved: <i>olima. Feng</i>



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## Test Method:

1. With reference to IEC 62321-3-1:2013, screening by XRF spectroscopy.
2. Wet chemical test method.
  - a. With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.
  - b. With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.
  - c. With reference to IEC 62321-4:2017, determination of Mercury by ICP-OES.
  - d. With reference to IEC 62321-7-1:2015 & IEC 62321-7-2:2017, determination of Hexavalent chromium by Colorimetric method using UV-Vis.
  - e. With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.
3. With reference to IEC 62321-8: 2017, determination of phthalates by GC-MS.



**Testing Result:**

Part No.	Sample Description	Test item	XRF Result	Chemical Test (mg/kg)	Conclusion
1	Blue PCB	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		Phthalate(DBP\BBP \DEHP\DIBP)	--	N.D.	
2	Crystal oscillator	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		Phthalate(DBP\BBP \DEHP\DIBP)	--	N.D.	
3	White capacitance	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		Phthalate(DBP\BBP \DEHP\DIBP)	--	N.D.	
4	Black IC	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		Phthalate(DBP\BBP \DEHP\DIBP)	--	N.D.	

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Part No.	Sample Description	Test item	XRF Result	Chemical Test (mg/kg)	Conclusion
5	Black capacitance	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		Phthalate(DBP\BBP \DEHP\DIBP)	--	N.D.	
6	Black IC	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		Phthalate(DBP\BBP \DEHP\DIBP)	--	N.D.	
7	Yellow capacitance	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		Phthalate(DBP\BBP \DEHP\DIBP)	--	N.D.	
8	Red capacitance	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		Phthalate(DBP\BBP \DEHP\DIBP)	--	N.D.	
9	Yellow LED	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		Phthalate(DBP\BBP \DEHP\DIBP)	--	N.D.	

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Part No.	Sample Description	Test item	XRF Result	Chemical Test (mg/kg)	Conclusion
10	Silvery metal	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	--	--	
		Phthalate(DBP\BBP \DEHP\DIBP)	--	--	
11	Silvery metal	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	--	--	
		Phthalate(DBP\BBP \DEHP\DIBP)	--	--	

**Remark:**

- (1) (a) It is the result on total Br while test item on restricted substances is PBBs/PBDEs. It is the result on total Cr while test item on restricted substances is Cr<sup>6+</sup>.
- (b) Results are obtained by XRF for primary screening, and further chemical testing by ICP-OES (for Cd, Pb, Hg), UV-Vis (for Cr(VI)) and GC-MS (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC62321-3-1:2013 (unit: mg/kg).

Element	Polymers	Metals	Composite Material
Cd	$BL \leq (70-3\sigma) < X \leq (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$
Br	$BL \leq (300-3\sigma) < X$	NA	$BL \leq (250-3\sigma) < X$

(c) OL=Over Limit, BL=Below Limit, X=inconclusive, LOD=Limit of Detection, NA=not applicable, -- = No Testing

(d) The XRF screening test for RoHS elements-The reading may be different to the actual content in the sample be of non-uniformity composition

(2) (a) mg/kg=ppm=0.0001%, N.D.=not detected (<MDL)

(b) Unit and Method Detection Limit(MDL) in wet chemical test

Test Items	Unit	MDL	Limit
Pb	mg/kg	2	1000
Cd	mg/kg	2	100
Hg	mg/kg	2	1000
Cr <sup>6+</sup>	mg/kg	See below	1000
PBBs	mg/kg	See below	1000
PBDEs	mg/kg	See below	1000
DBP	mg/kg	50	1000
BBP	mg/kg	50	1000
DEHP	mg/kg	50	1000
DIBP	mg/kg	50	1000



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The MDL for single compound of PBBs & PBDEs is 20mg/kg, MDL of Cr<sup>6+</sup> for metal sample is 0.10µg/cm<sup>2</sup>. and MDL of Cr<sup>6+</sup> for polymer & composite sample is 8 mg/kg.

(c) Metal sample:

-The sample is positive for Cr<sup>6+</sup> if the Cr<sup>6+</sup> concentration is greater than 0.13 µg/cm<sup>2</sup>.

The sample coating is considered to contain Cr<sup>6+</sup>.

-The sample is negative for Cr<sup>6+</sup> if Cr<sup>6+</sup> is ND (concentration less than 0.10 µg/cm<sup>2</sup>).

The coating is considered a non- Cr<sup>6+</sup> based coating

-The result between 0.10 µg/cm<sup>2</sup> and 0.13 µg/cm<sup>2</sup> is considered to be inconclusive,

unavoidable coating variations may influence the determination

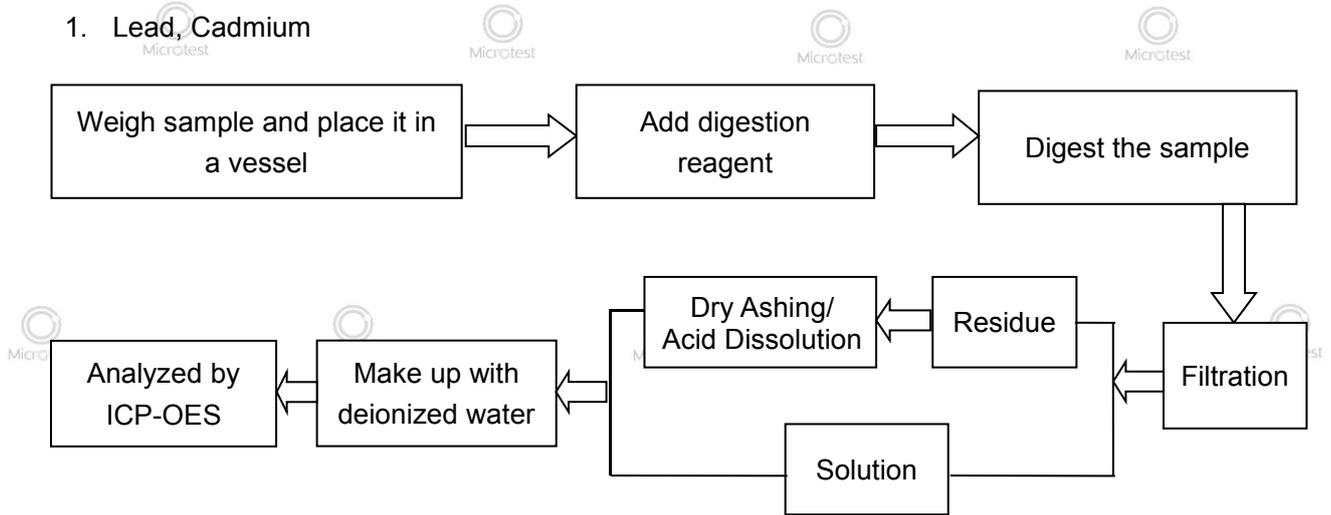
Information on storage conditions and production date of the tested sample is unavailable and thus Cr<sup>6+</sup> results represent status of the sample at the time of testing.

(3) As specified by client to test the specified materials only.

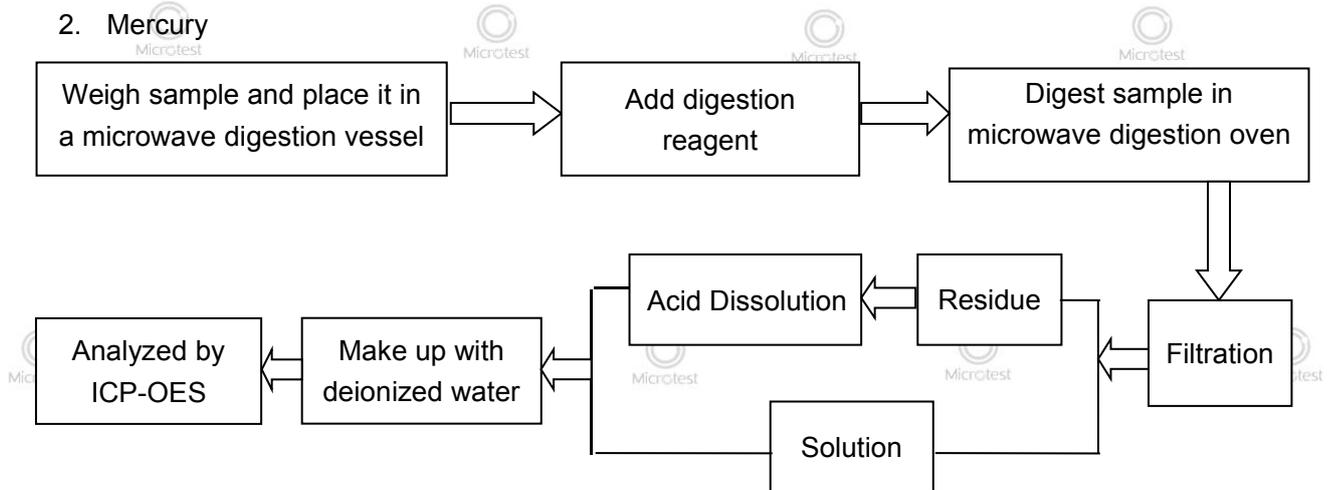


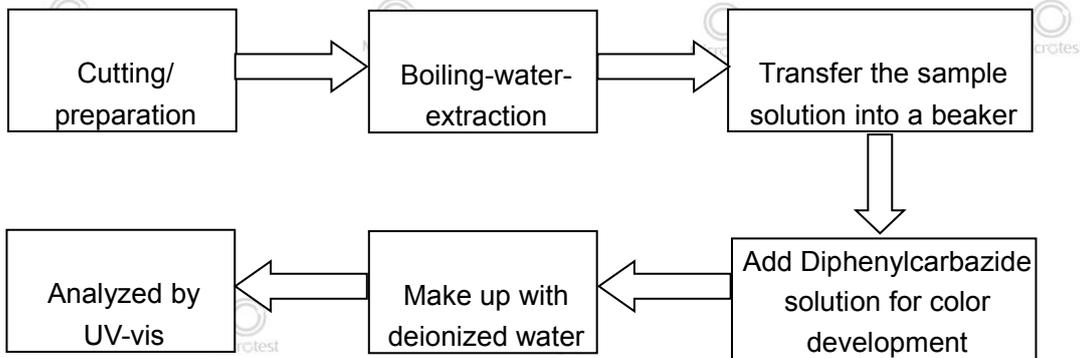
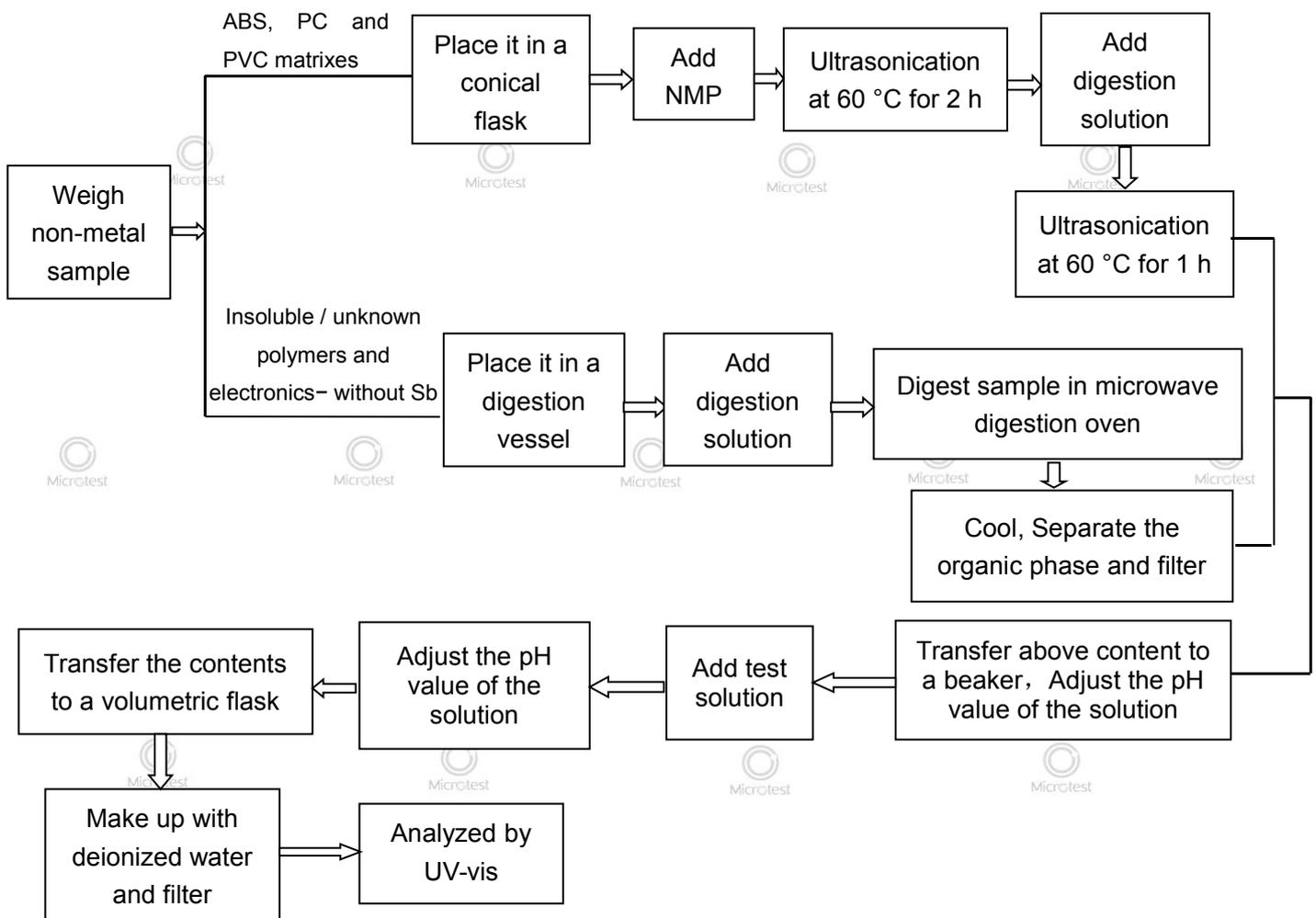
**Testing flow chart:**

1. Lead, Cadmium

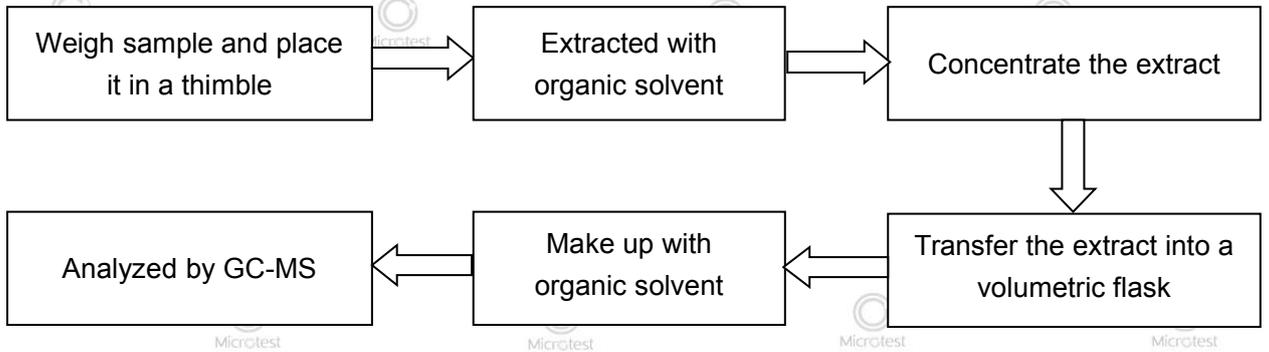


2. Mercury

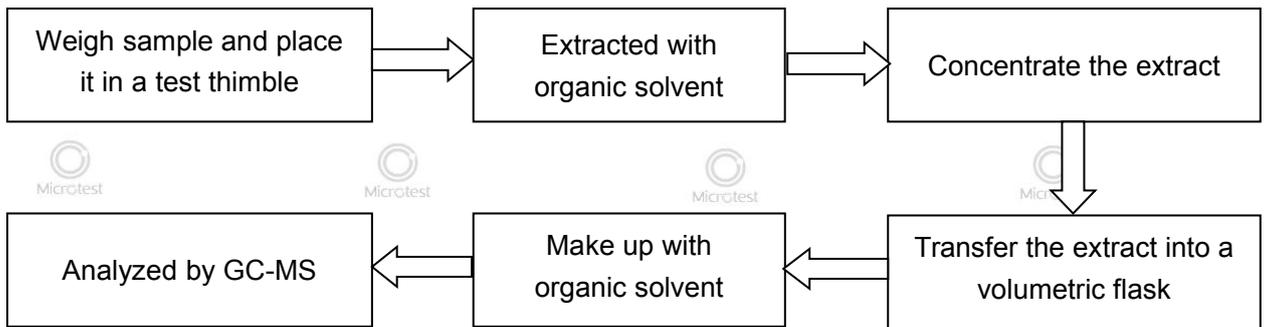


**3. Hexavalent Chromium (For metal material)**

**4. Hexavalent Chromium(For non-metal material):**


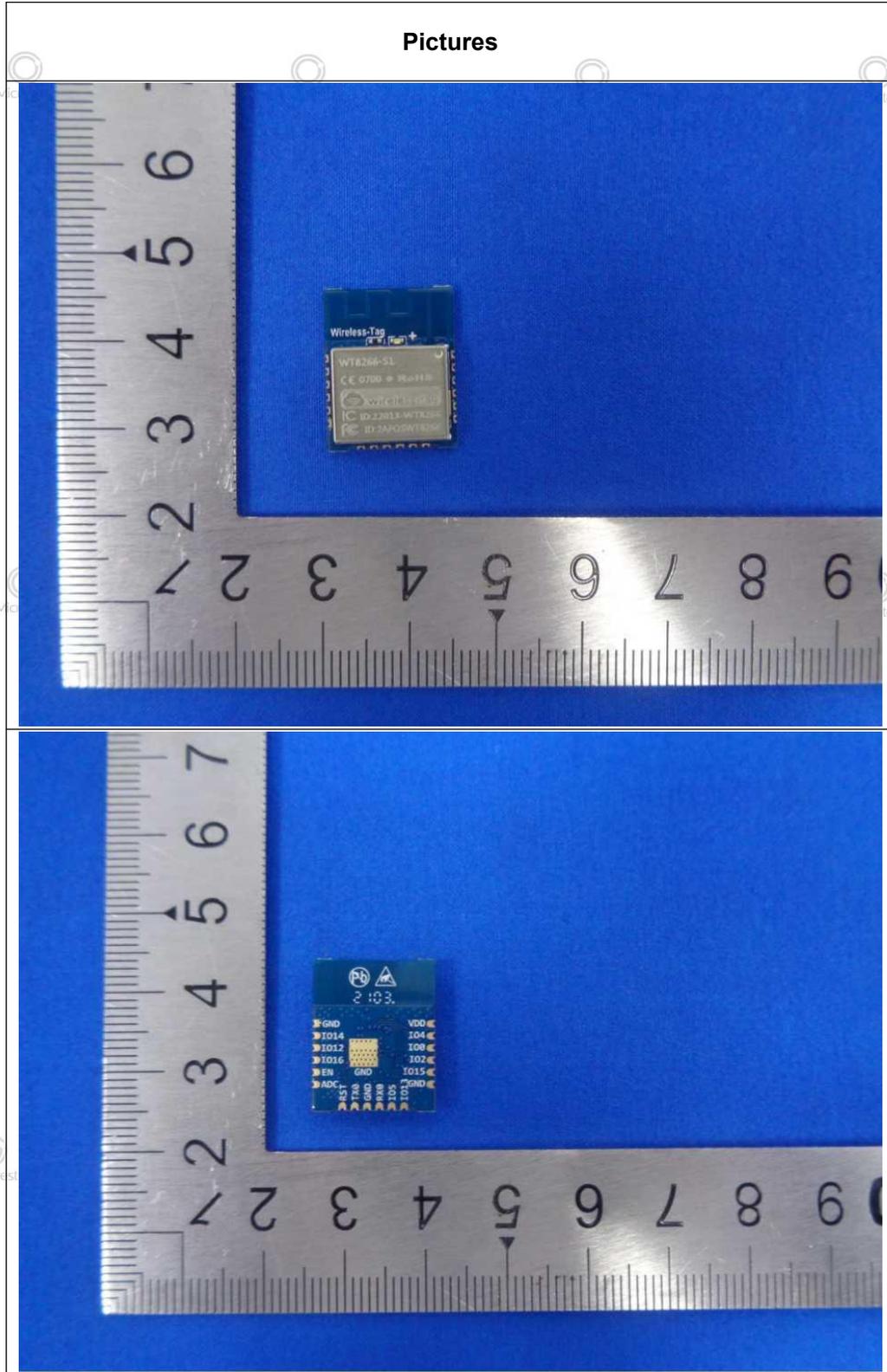
5. Polybromobiphenyls (PBBs), Polybromodiphenyl ethers (PBDEs)

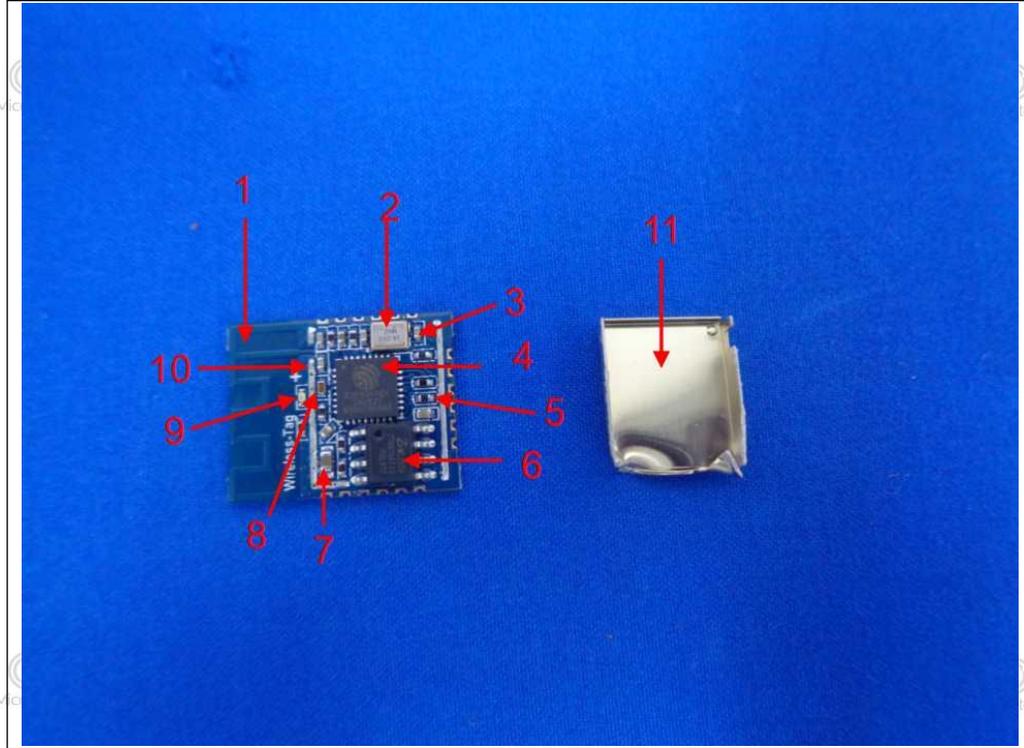


6. Phthalates(DBP, BBP, DEHP, DIBP)



**Pictures**





\*\*\*\*\* END \*\*\*\*\*