

TEST REPORT

检测报告

CheckCode 校验码: 182128

Report No. 报告编号:

C202310197836-1

Company Name 单位名称: Shanghai MXCHIP Information Technology Co., Ltd.

上海庆科信息技术有限公司

Address 单位地址:

9F, Building B, Lane 2145, Jinshajiang Road, Putuo District, Shanghai,
China (200333) 上海市普陀区金沙江路 2145 弄 B 幢 9 楼

The following sample information was submitted and identified by/on the behalf of the client

以下样品信息由委托方提供并负责其真实性

Name 名称: 1-11. Embedded Wi-Fi/BLE Module 嵌入式 Wi-Fi/BLE 模组
12-14.ipex seat ipex 座子

Type/Model 规格/型号: EMC3020

Reference Type/Model 参考规格/型号: EMC3020-P、EMC3020-E

Material 材料: Circuit board 电路板

Sample description 样品描述: Wireless communication module 无线通信模块

Supplier 供应商: Shanghai MXCHIP Information Technology Co., Ltd.
上海庆科信息技术有限公司

Date of Receipt 接收日期: 2023-10-24 **Test Period 检测周期:** 2023-10-24 – 2023-10-30

Test Request 检测要求: As specified by client, to determine the Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium [Cr(VI)], Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP), Diisobutyl phthalate (DIBP) content in the submitted sample(s). 根据客户要求, 检测样品中铅(Pb)、镉(Cd)、汞(Hg)、六价铬[Cr(VI)]、多溴联苯(PBBs)、多溴二苯醚(PBDEs)、邻苯二甲酸二(2-乙基己基)酯(DEHP)、邻苯二甲酸丁苄酯(BBP)、邻苯二甲酸二丁酯(DBP)、邻苯二甲酸二异丁酯(DIBP)的含量。

Edited by

编制

苏慧莹

Reviewed by

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吴燕艳

Approved by

批准

丁



扫一扫 验真伪

Issue date 签发日期: 2023-10-30

The result(s) shown in this report refer(s) only to the sample(s) tested. This report is considered invalid without approved signature, special seal and the seal on the perforation. Without written approval of GRGTTEST, this report can't be reproduced except in full. Any disagreements of the test report should be fed back to us within 15 workdays upon receiving the report.

本报告结果仅对受测样品负责, 报告无批准人签字、“专用章”及报告骑缝章无效, 未经 GRGTTEST 书面同意, 不得部分复制本报告。对报告若有异议, 应于收到报告之日起十五天内向检测单位提出。注: 检测报告中的数据仅用于科研、教学、内部质量控制等目的。

GRG METROLOGY & TEST (WUXI) CO., LTD.

广电计量检测(无锡)有限公司

Address: No.200, Linghu Road, Taihu International Science and Technology Park, Wuxi Xinwu District, Wuxi, Jiangsu, China

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Judge Standard 判定标准: RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU. RoHS 指令 2011/65/EU 附录 II 的修正指令(EU) 2015/863.

Test Result 检测结果: Please refer to following page(s). 见以下各页。 .

Conclusion 检测结论: Based on the performed test on submitted sample, the result(s) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU. 基于对送检样品进行的检测, 所检测项目的检测结果符合 RoHS 指令 2011/65/EU 附录 II 的修正指令(EU) 2015/863 的限值要求。

Test result(s) 检测结果:

Test Methods 检测方法:

Test Item(s) 检测项目	Test method 检测方法	Measuring instrument 检测仪器	MDL 方法检出限	Limit 限值
Pb, Cd, Hg, Total Cr, Total Br 铅, 镉, 汞, 总铬, 总溴	IEC 62321-3-1:2013	XRF	20 mg/kg	---
Lead 铅 (Pb)	IEC 62321-5:2013	ICP-OES	2 mg/kg	1000mg/kg
Cadmium 镉 (Cd)	IEC 62321-5:2013	ICP-OES	2 mg/kg	100mg/kg
Mercury 汞 (Hg)	IEC 62321-4:2013 +AMD1:2017	ICP-OES	2 mg/kg	1000mg/kg
Hexavalent Chromium 六价铬 [Cr (VI)]	IEC 62321-7-2:2017	UV-Vis	8 mg/kg	1000mg/kg
	IEC 62321-7-1:2015	UV-Vis	0.10 µg/cm ²	---
Polybrominated Biphenyls 多溴联苯(PBBs)	IEC 62321-6:2015	GC-MS	50 mg/kg	1000mg/kg
Polybrominated Diphenyl Ethers 多溴二苯醚(PBDEs)	IEC 62321-6:2015	GC-MS	50 mg/kg	1000mg/kg

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Bis(2-ethylhexyl) phthalate 邻苯二甲酸二(2-乙基己基)酯 (DEHP)	IEC 62321-8:2017	GC-MS	50 mg/kg	1000mg/kg
Butyl benzyl phthalate 邻苯二甲酸丁苄酯(BBP)	IEC 62321-8:2017	GC-MS	50 mg/kg	1000mg/kg
Dibutyl phthalate 邻苯二甲酸二丁酯(DBP)	IEC 62321-8:2017	GC-MS	50 mg/kg	1000mg/kg
Diisobutyl phthalate 邻苯二甲酸二异丁酯 (DIBP)	IEC 62321-8:2017	GC-MS	50 mg/kg	1000mg/kg

No. 编号	Sample Description 样品描述	Restricted Substances 限用物质	Results of XRF 扫描结果 (mg/kg)	Result of Wet Chemical Testing 化学检测结果(mg/kg)	Conclusion 结论
1	White label with black lettering 带黑色印字的白色标签	Pb	BL	/	Comply 符合
		Cd	BL	/	Comply 符合
		Hg	BL	/	Comply 符合
		Cr(VI)	BL	/	Comply 符合
		PBBs	BL	/	Comply 符合
		PBDEs		/	Comply 符合
		DEHP	/	N.D.	Comply 符合
		BBP	/	N.D.	Comply 符合
		DBP	/	N.D.	Comply 符合
		DIBP	/	N.D.	Comply 符合

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2	Silvery-grey metal part 银 灰色金属件	Pb	BL	/	Comply 符合
		Cd	BL	/	Comply 符合
		Hg	BL	/	Comply 符合
		Cr(VI)	BL	/	Comply 符合
		PBBs	/	/	/
		PBDEs	/	/	/
		DEHP	/	/	/
		BBP	/	/	/
		DBP	/	/	/
		DIBP	/	/	/
3	Dark brown body 深棕色 本体	Pb	BL	/	Comply 符合
		Cd	BL	/	Comply 符合
		Hg	BL	/	Comply 符合
		Cr(VI)	BL	/	Comply 符合
		PBBs	BL	/	Comply 符合
		PBDEs	/	/	Comply 符合
		DEHP	/	N.D.	Comply 符合
		BBP	/	N.D.	Comply 符合
		DBP	/	N.D.	Comply 符合
		DIBP	/	N.D.	Comply 符合
4	Black body 黑色本体	Pb	BL	/	Comply 符合
		Cd	BL	/	Comply 符合
		Hg	BL	/	Comply 符合
		Cr(VI)	BL	/	Comply 符合
		PBBs	BL	/	Comply 符合
		PBDEs	/	/	Comply 符合
		DEHP	/	N.D.	Comply 符合
		BBP	/	N.D.	Comply 符合
		DBP	/	N.D.	Comply 符合
		DIBP	/	N.D.	Comply 符合

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5	Dark brown body 深棕色 本体	Pb	BL	/	Comply 符合
		Cd	BL	/	Comply 符合
		Hg	BL	/	Comply 符合
		Cr(VI)	IN	N.D.	Comply 符合
		PBBs	BL	/	Comply 符合
		PBDEs		/	Comply 符合
		DEHP	/	N.D.	Comply 符合
		BBP	/	N.D.	Comply 符合
		DBP	/	N.D.	Comply 符合
		DIBP	/	N.D.	Comply 符合
6	Black body 黑色本体	Pb	BL	/	Comply 符合
		Cd	BL	/	Comply 符合
		Hg	BL	/	Comply 符合
		Cr(VI)	BL	/	Comply 符合
		PBBs	BL	/	Comply 符合
		PBDEs		/	Comply 符合
		DEHP	/	N.D.	Comply 符合
		BBP	/	N.D.	Comply 符合
		DBP	/	N.D.	Comply 符合
		DIBP	/	N.D.	Comply 符合
7	Silvery-copper crystal oscillator 银铜色晶振	Pb	BL	/	Comply 符合
		Cd	BL	/	Comply 符合
		Hg	BL	/	Comply 符合
		Cr(VI)	BL	/	Comply 符合
		PBBs	BL	/	Comply 符合
		PBDEs		/	Comply 符合
		DEHP	/	N.D.	Comply 符合
		BBP	/	N.D.	Comply 符合
		DBP	/	N.D.	Comply 符合
		DIBP	/	N.D.	Comply 符合

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8	Black body 黑色本体	Pb	BL	/	Comply 符合
		Cd	BL	/	Comply 符合
		Hg	BL	/	Comply 符合
		Cr(VI)	BL	/	Comply 符合
		PBBs	BL	/	Comply 符合
		PBDEs		/	Comply 符合
		DEHP	/	N.D.	Comply 符合
		BBP	/	N.D.	Comply 符合
		DBP	/	N.D.	Comply 符合
		DIBP	/	N.D.	Comply 符合
9	White/black body 白/黑色 本体	Pb	BL	/	Comply 符合
		Cd	BL	/	Comply 符合
		Hg	BL	/	Comply 符合
		Cr(VI)	BL	/	Comply 符合
		PBBs	BL	/	Comply 符合
		PBDEs		/	Comply 符合
		DEHP	/	N.D.	Comply 符合
		BBP	/	N.D.	Comply 符合
		DBP	/	N.D.	Comply 符合
		DIBP	/	N.D.	Comply 符合
10	Silvery-grey metal solder 银灰色金属焊锡	Pb	BL	/	Comply 符合
		Cd	BL	/	Comply 符合
		Hg	BL	/	Comply 符合
		Cr(VI)	BL	/	Comply 符合
		PBBs	/	/	/
		PBDEs		/	/
		DEHP	/	/	/
		BBP	/	/	/
		DBP	/	/	/
		DIBP	/	/	/

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11	Blue PCB board 蓝色 PCB 板	Pb	BL	/	Comply 符合
		Cd	BL	/	Comply 符合
		Hg	BL	/	Comply 符合
		Cr(VI)	BL	/	Comply 符合
		PBBs	IN	N.D.	Comply 符合
		PBDEs		N.D.	Comply 符合
		DEHP	/	N.D.	Comply 符合
		BBP	/	N.D.	Comply 符合
		DBP	/	N.D.	Comply 符合
		DIBP	/	N.D.	Comply 符合
12	Silvery-grey metal part 银 灰色金属件	Pb	BL	/	Comply 符合
		Cd	BL	/	Comply 符合
		Hg	BL	/	Comply 符合
		Cr(VI)	BL	/	Comply 符合
		PBBs	/	/	/
		PBDEs		/	/
		DEHP	/	/	/
		BBP	/	/	/
		DBP	/	/	/
		DIBP	/	/	/
13	Gold metal part 金色金属 件	Pb	BL	/	Comply 符合
		Cd	BL	/	Comply 符合
		Hg	BL	/	Comply 符合
		Cr(VI)	BL	/	Comply 符合
		PBBs	/	/	/
		PBDEs		/	/
		DEHP	/	/	/
		BBP	/	/	/
		DBP	/	/	/
		DIBP	/	/	/

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14	Off white plastic part 米白色塑料件	Pb	BL	/	Comply 符合
		Cd	BL	/	Comply 符合
		Hg	BL	/	Comply 符合
		Cr(VI)	BL	/	Comply 符合
		PBBs	BL	/	Comply 符合
		PBDEs		/	Comply 符合
		DEHP	/	N.D.	Comply 符合
		BBP	/	N.D.	Comply 符合
		DBP	/	N.D.	Comply 符合
		DIBP	/	N.D.	Comply 符合

说明:

- (1) XRF result is on total Br while test item on restricted substances is PBBs/PBDEs. XRF result is on total Cr while test item on restricted substances is Cr(VI).

XRF 结果显示的是总 Br 含量, 而限用物质是 PBBs/PBDEs; XRF 结果显示的是总 Cr 含量, 而限用物质是六价铬 [Cr(VI)]。

- (2) The XRF result is 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 IEC 62321-3-1: 2013. (unit: mg/kg)

XRF 所得的测试结果只作初步筛选, 如果 XRF 结果超出 IEC 62321-3-1: 2013 所规定的警戒范围, 我们建议客户用更精确的化学测试方法测试样品, 如用 ICP-OES 测试 Cd, Pb, Hg; 用 UV-VIS 测试六价铬 [Cr(VI)], 用 GC/MS 测试多溴联苯和多溴二苯醚。(单位: mg/kg)

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Element 元素	Polymer 聚合物	Metal 金属	Composite Materials 复合材料
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
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	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Br	$BL \leq (300-3\sigma) < X$	--	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

(3) BL=Below limit ,IN = Inconclusive, OL=Over limit, LOD=Limit of Detection;

BL=低于限度,IN = 不确定,OL=超出限度,LOD=检测限;

(4) mg/kg = ppm =毫克每千克 = 百万分之一 = 0.0001%;

(5) “/”= Not Conducted;

“/”= 未检测;

(6) “N.D.”= Not Detected (Below Method Detection Limit);

“N.D.”=未检出 (小于方法检出限);

(7) For metal sample

在金属样品中

a. The sample is negative for Cr(VI) if Cr(VI) is N.D.(concentration less than $0.10 \mu\text{g}/\text{cm}^2$).The sample coating is considered a non- Cr(VI) based coating.

a.当六价铬的浓度为 N.D.(低于 $0.10\mu\text{g}/\text{cm}^2$ 时), 样品为阴性, 即不含有六价铬;

b. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than $0.13 \mu\text{g}/\text{cm}^2$.The sample coating is considered to contain Cr(VI).

b.当六价铬的浓度高于 $0.13\mu\text{g}/\text{cm}^2$ 时, 样品为阳性, 即含有六价铬;

c. The result between $0.10 \mu\text{g}/\text{cm}^2$ and $0.13 \mu\text{g}/\text{cm}^2$ is considered to be inconclusive. unavoidable coating variations may influence the determination.

c.当六价铬的浓度介于 $0.10\mu\text{g}/\text{cm}^2$ 与 $0.13\mu\text{g}/\text{cm}^2$ 之间时, 无法直接判定是否含有六价铬, 因不同个体的样品表面差异可能会影响到测定结果。

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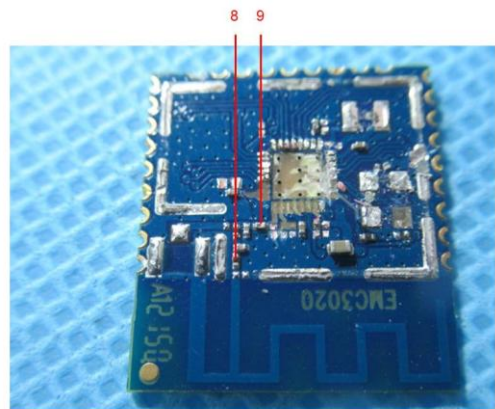
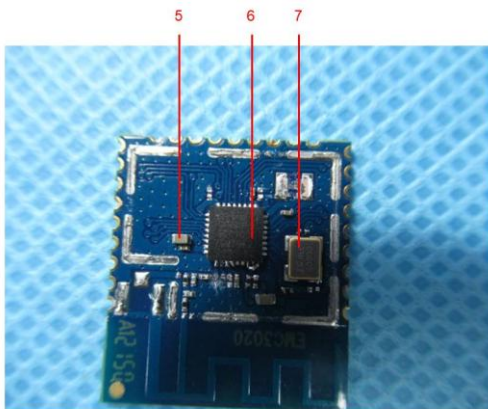
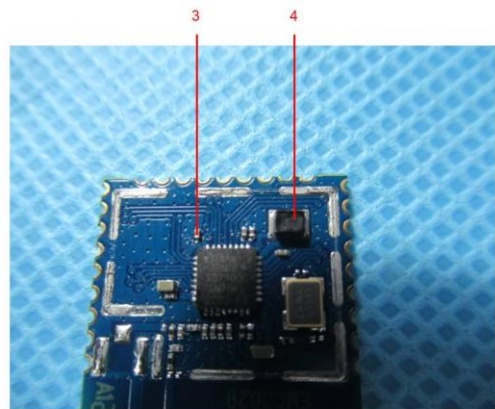
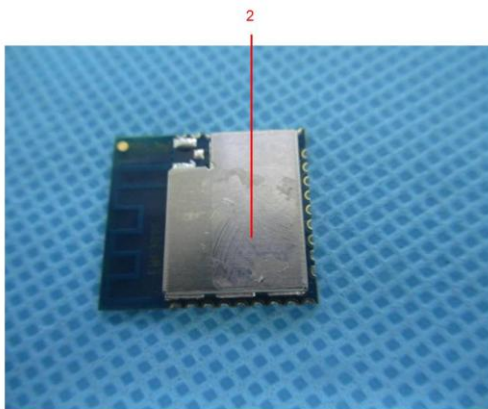
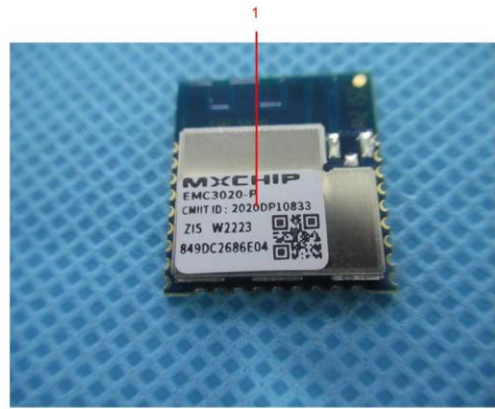
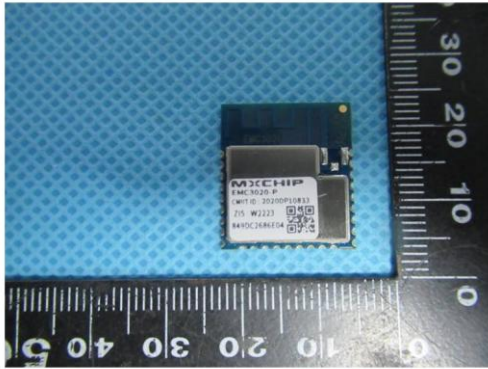
Tel: 4006020999 Fax: +86-0510-68002628 Website: <http://www.grgtest.com>

TEST REPORT

检测报告

CheckCode 校验码: 182128
Report No. 报告编号:
C202310197836-1

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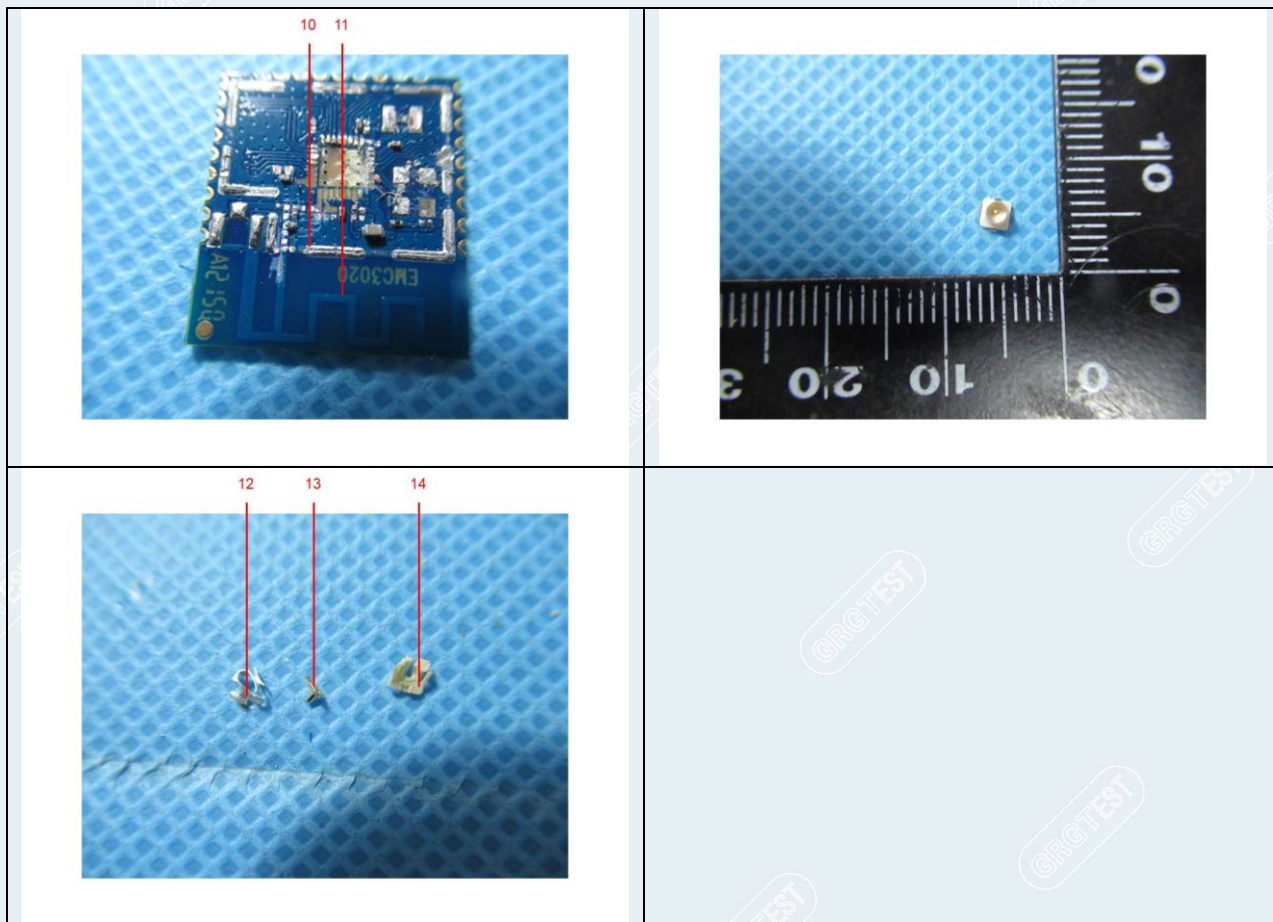
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地址: 江苏省无锡市新吴区太湖国际科技园菱湖大道 200 号
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----- End of Report 报告结束 -----

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