



UN38.3 测试报告

UN38.3 Test Report

申请商 : 烟台艾睿光电科技有限公司
APPLICANT : YanTai IRay Technology Co.,Ltd
产品名称 : 锂离子电池
PRODUCT NAME : Rechargeable Li-ion Battery
型号/MODEL NAME : IBP-1
商标/TRADE NAME : N/A
品牌/BRAND NAME : N/A
标称/RATING : 3.6 V/ 4.4 Ah, 15.84 Wh
接收日期 : 2020/05/20
RECEIPT DATE : 2020/05/20
测试日期 : 2020/05/21-2020/06/19
TEST DATE : 2020/05/21-2020/06/19
签发日期 : 2020/06/24
ISSUE DATE : 2020/06/24

编制 : 陈行
Edited by: 陈行

签发 : 李冬
Approved by: 李冬

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测试报告声明

Test Report Declaration

申请商/Applicant	烟台艾睿光电科技有限公司 YanTai IRay Technology Co.,Ltd	
申请商地址 Applicant Address	山东省烟台市贵阳大街 11 号 11th Guiyang Street, Yantai 264006, Shandong Province, China	
产品名称/ Product Name	锂离子电池 Rechargeable Li-ion Battery	
型号/ Model Name	IBP-1	
标称/ Rating	3.6 V/ 4.4 Ah, 15.84 Wh	
制造商信息 Manufacturer information	制造商 Manufacturer	津衢新能源（浙江）有限公司 JinQu New Energy (Zhejiang) Co.,Ltd.
	制造商地址 Manufacturer Address	浙江省嘉兴市嘉善县魏塘街道振华路 68 号 4 幢 2-3 楼 2/F-3/F, Building 4, No.68, Zhenhua Road, Weitang Street, Jiashan County, Jiaxing City, Zhejiang Province, 314100, China
	联系人/Contact Person	Zhenfen Cheng
	电话/Tel.	15221992646
	邮箱/ E-mail	chengzhenfen@jinqudz.com
	网址/ Website	www.jinqudz.com
尺寸/Size	56.4×50.5×25.5 mm	
电池信息 Battery information	内含电芯数量/Cells number	2pcs(1S2P)
	电芯型号/Cell model	NCA103450
	物理特性/Physical description	棱形、黑色/ Prismatic Black
检验方法及判定标准 Test Method and Criterion	联合国《关于危险货物运输的建议书试验和标准手册》第六版修正1第38.3节 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS, Manual of Tests and Criteria"ST/SG/AC.10/11/Rev.6/Amend.1, section 38.3	
测试项目 Test Items	高度模拟试验；温度试验；振动试验；冲击试验；外短路试验；挤压试验；过充电试验；强制放电 Altitude simulation, Thermal test, Vibration, Shock, External short circuit, Crush, Overcharge, Force discharge	
测试结论 Conclusion	受检样品通过 UN 38.3 各项检测，检测结果合格 The sample has passed the test items of UN38.3	
备注/ Remarks	无/ None	



摩尔实验室检验报告

Morlab Test Report

序号 No.	检验项目名称 Name of test items	标准要求或标准款号 Standard Requirement or the Clause Number of Standard	检测结果 Test Result	本项结论 Test Conclusion	备注 Remarks
1	高度模拟试验 Altitude simulation	联合国《关于危险货物运输的建议书 试验和标准手册》(以下简称:试验和标准手册)UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1, 38.3 试验 T.1 Test T.1	见附表 1 See Appendix 1	合格 Passed	/
2	温度试验 Thermal Test	试验和标准手册 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1, 38.3 试验 T.2 Test T.2	见附表 2 See Appendix 2	合格 Passed	/
3	振动试验 Vibration	试验和标准手册 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1, 38.3 试验 T.3 Test T.3	见附表 3 See Appendix 3	合格 Passed	/
4	冲击试验 Shock	试验和标准手册 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6, 38.3 试验 T.4 Test T.4	见附表 4 See Appendix 4	合格 Passed	/
5	外短路试验 External short circuit	试验和标准手册 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1, 38.3 试验 T.5 Test T.5	见附表 5 See Appendix 5	合格 Passed	/
6	挤压试验 Crush	试验和标准手册 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1, 38.3 试验 T.6 Test T.6	见附表 6 See Appendix 6	合格 Passed	/
7	过充电试验 Overcharge	试验和标准手册 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1, 38.3 试验 T.7 Test T.7	见附表 7 See Appendix 7	合格 Passed	/
8	强制放电 Force discharge	试验和标准手册 UN Manual of Tests and Criteria ST/SG/AC.10/11/Rev.6/Amend.1, 38.3 试验 T.8 Test T.8	见附表 8 See Appendix 8	合格 Passed	/
检验环境条件 Test Environment Condition		环境温度: 15~25℃ Ambient Temperature: 15~25℃			



Change History		
Version	Date	Reason for change
1.0	2020/06/24	First edition



检验报告-附件 1

Test Report-Appendix 1

序号 No.	1	检测项目名称 Name of test items		高度模拟试验 Altitude simulation				
		试验前 Before		试验后 After		质量损 失 Mass Loss/%	剩余 电压 Residual OCV/%	其他 现象 Other Event
样品 编号 Sample No	样品状态 Sample Status	质量 Weight/g	开路 电压 OCV/V	质量 Weight/g	开路 电压 OCV/V			
1	首次充满 Fully charged at first cycle	117.5069	4.167	117.5068	4.165	0.0001	99.95	O
2	首次充满 Fully charged at first cycle	117.3784	4.168	117.3782	4.166	0.0002	99.95	O
3	首次充满 Fully charged at first cycle	117.4651	4.169	117.4650	4.168	0.0001	99.98	O
4	首次充满 Fully charged at first cycle	117.7694	4.169	117.7691	4.168	0.0003	99.98	O
5	25 次循环后充满 Fully charged after 25 cycles	117.7374	4.163	117.7371	4.161	0.0003	99.95	O
6	25 次循环后充满 Fully charged after 25 cycles	117.8433	4.165	117.8431	4.162	0.0002	99.93	O
7	25 次循环后充满 Fully charged after 25 cycles	118.0036	4.168	118.0033	4.166	0.0003	99.95	O
8	25 次循环后充满 Fully charged after 25 cycles	117.4349	4.166	117.4325	4.166	0.0020	100.00	O

备注: L-漏液, V-漏气, D-解体, R-破裂, F-起火, O-无漏液, 无解体, 无破裂, 无起火;
Remark: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O-No Leakage, No Venting, No Disassembly, No Rupture, No Fire



检验报告-附件 2

Test Report-Appendix 2

序号 No.	2	检测项目名称 Name of test items		热测试 Thermal Test				
样品 编号 Sample No	样品状态 Sample Status	试验前 Before		试验后 After		质量损 失 Mass Loss/%	剩余 电压 Residual OCV/%	其他 现象 Other Event
		质量 Weight/g	开路 电压 OCV/V	质量 Weight/g	开路 电压 OCV/V			
1	首次充满 Fully charged at first cycle	117.5068	4.165	117.5045	4.066	0.0020	97.62	O
2	首次充满 Fully charged at first cycle	117.3782	4.166	117.3761	4.067	0.0018	97.62	O
3	首次充满 Fully charged at first cycle	117.4650	4.168	117.4631	4.065	0.0016	97.53	O
4	首次充满 Fully charged at first cycle	117.7691	4.168	117.7672	4.066	0.0016	97.55	O
5	25次循环后充满 Fully charged after 25 cycles	117.7371	4.161	117.7345	4.062	0.0022	97.62	O
6	25次循环后充满 Fully charged after 25 cycles	117.8431	4.162	117.8412	4.063	0.0016	97.62	O
7	25次循环后充满 Fully charged after 25 cycles	118.0033	4.166	118.0012	4.065	0.0018	97.58	O
8	25次循环后充满 Fully charged after 25 cycles	117.4325	4.166	117.4306	4.064	0.0016	97.55	O

备注: L-漏液, V-漏气, D-解体, R-破裂, F-起火, O-无漏液, 无解体, 无破裂, 无起火;
Remark: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O-No Leakage, No Venting, No Disassembly, No Rupture, No Fire



检验报告-附件 3

Test Report-Appendix 3

序号 No.	3	检测项目名称 Name of test items		振动试验 Vibration				
样品 编号 Sample No	样品状态 Sample Status	试验前 Before		试验后 After		质量损 失 Mass Loss/%	剩余 电压 Residual OCV/%	其他 现象 Other Event
		质量 Weight/g	开路 电压 OCV/V	质量 Weight/g	开路 电压 OCV/V			
1	首次充满 Fully charged at first cycle	117.5045	4.066	117.5043	4.064	0.0002	99.95	O
2	首次充满 Fully charged at first cycle	117.3761	4.067	117.3758	4.065	0.0003	99.95	O
3	首次充满 Fully charged at first cycle	117.4631	4.065	117.4628	4.063	0.0003	99.95	O
4	首次充满 Fully charged at first cycle	117.7672	4.066	117.7668	4.064	0.0003	99.95	O
5	25次循环后充满 Fully charged after 25 cycles	117.7345	4.062	117.7342	4.061	0.0003	99.98	O
6	25次循环后充满 Fully charged after 25 cycles	117.8412	4.063	117.8410	4.062	0.0002	99.98	O
7	25次循环后充满 Fully charged after 25 cycles	118.0012	4.065	118.0011	4.064	0.0001	99.98	O
8	25次循环后充满 Fully charged after 25 cycles	117.4306	4.064	117.4304	4.062	0.0002	99.95	O

备注: L-漏液, V-漏气, D-解体, R-破裂, F-起火, O-无漏液, 无解体, 无破裂, 无起火;
Remark: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O-No Leakage, No Venting, No Disassembly, No Rupture, No Fire



检验报告-附件 4

Test Report-Appendix 4

序号 No.	4	检测项目名称 Name of test items		冲击试验 Shock				
样品 编号 Sample No	样品状态 Sample Status	试验前 Before		试验后 After		质量损 失 Mass Loss/%	剩余 电压 Residual OCV/%	其他 现象 Other Event
		质量 Weight/g	开路 电压 OCV/V	质量 Weight/g	开路 电压 OCV/V			
1	首次充满 Fully charged at first cycle	117.5043	4.064	117.5041	4.062	0.0002	99.95	O
2	首次充满 Fully charged at first cycle	117.3758	4.065	117.3755	4.064	0.0003	99.98	O
3	首次充满 Fully charged at first cycle	117.4628	4.063	117.4625	4.062	0.0003	99.98	O
4	首次充满 Fully charged at first cycle	117.7668	4.064	117.7665	4.062	0.0003	99.95	O
5	25 次循环后充满 Fully charged after 25 cycles	117.7342	4.061	117.7341	4.060	0.0001	99.98	O
6	25 次循环后充满 Fully charged after 25 cycles	117.8410	4.062	117.8408	4.061	0.0002	99.98	O
7	25 次循环后充满 Fully charged after 25 cycles	118.0011	4.064	118.0009	4.062	0.0002	99.95	O
8	25 次循环后充满 Fully charged after 25 cycles	117.4304	4.062	117.4302	4.060	0.0002	99.95	O

备注: L-漏液, V-漏气, D-解体, R-破裂, F-起火, O-无漏液, 无解体, 无破裂, 无起火;
Remark: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O-No Leakage, No Venting, No Disassembly, No Rupture, No Fire



检验报告-附件 5

Test Report-Appendix 5

序号 No.	5	检测项目名称 Name of test items	外短路试验 External short circuit
样品编号 Sample No.	样品状态 Sample status	样品表面最高温度 Max. External Test Items / °C	其他现象 Other Event
1	首次充满 Fully charged at first cycle	57.3	O
2	首次充满 Fully charged at first cycle	57.2	O
3	首次充满 Fully charged at first cycle	57.2	O
4	首次充满 Fully charged at first cycle	57.3	O
5	25 次循环后充满 Fully charged after 25 cycles	57.2	O
6	25 次循环后充满 Fully charged after 25 cycles	57.4	O
7	25 次循环后充满 Fully charged after 25 cycles	57.2	O
8	25 次循环后充满 Fully charged after 25 cycles	57.3	O

备注: D-解体, R-破裂, F-起火, O-无解体, 无破裂, 无起火;
Remark: D-Disassembly, R-Rupture, F-Fire, O-No Disassembly, No Rupture, No Fire



检验报告-附件 6

Test Report-Appendix 6

序号 No.	6	检测项目名称 Name of test items	挤压试验 Crush
样品编号 Sample No.	样品状态 Sample status	样品表面最高温度 Max. External Test Items / °C	其他现象 Other Event
9	首次 50%容量 50% of capacity at first cycle	24.1	O
10	首次 50%容量 50% of capacity at first cycle	24.3	O
11	首次 50%容量 50% of capacity at first cycle	23.7	O
12	首次 50%容量 50% of capacity at first cycle	23.4	O
13	首次 50%容量 50% of capacity at first cycle	23.9	O
14	25 次循环后 50%容量 50% of capacity after 25 cycles	23.6	O
15	25 次循环后 50%容量 50% of capacity after 25 cycles	23.8	O
16	25 次循环后 50%容量 50% of capacity after 25 cycles	23.5	O
17	25 次循环后 50%容量 50% of capacity after 25 cycles	24.2	O
18	25 次循环后 50%容量 50% of capacity after 25 cycles	24.4	O

备注: D-解体, F-起火, O-无解体, 无起火;

Remark: D-Disassembly, F-Fire, O-No Disassembly, No Fire



检验报告-附件 7

Test Report-Appendix 7

序号 No.	7	检测项目名称 Name of test items	过充电试验 Overcharge
样品编号 Sample No.	样品状态 Sample status	其他现象 Other Event	
19	首次充满 Fully charged at first cycle		O
20	首次充满 Fully charged at first cycle		O
21	首次充满 Fully charged at first cycle		O
22	首次充满 Fully charged at first cycle		O
23	25 次循环后充满 Fully charged after 25 cycles		O
24	25 次循环后充满 Fully charged after 25 cycles		O
25	25 次循环后充满 Fully charged after 25 cycles		O
26	25 次循环后充满 Fully charged after 25 cycles		O

备注: D-解体, F-起火, O-无解体, 无起火;
Remark: D-Disassembly, F-Fire, O-No Disassembly, No Fire



检验报告-附件 8

Test Report-Appendix 8

序号 No.	8	检测项目名称 Name of test items	强制放电 Force discharge
样品编号 Sample No.	样品状态 Sample status	其他现象 Other Event	
27	首次完全放电 Fully discharged at first cycle		○
28	首次完全放电 Fully discharged at first cycle		○
29	首次完全放电 Fully discharged at first cycle		○
30	首次完全放电 Fully discharged at first cycle		○
31	首次完全放电 Fully discharged at first cycle		○
32	首次完全放电 Fully discharged at first cycle		○
33	首次完全放电 Fully discharged at first cycle		○
34	首次完全放电 Fully discharged at first cycle		○
35	首次完全放电 Fully discharged at first cycle		○
36	首次完全放电 Fully discharged at first cycle		○
37	25 次循环后完全放电 Fully discharged after 25 cycles		○
38	25 次循环后完全放电 Fully discharged after 25 cycles		○



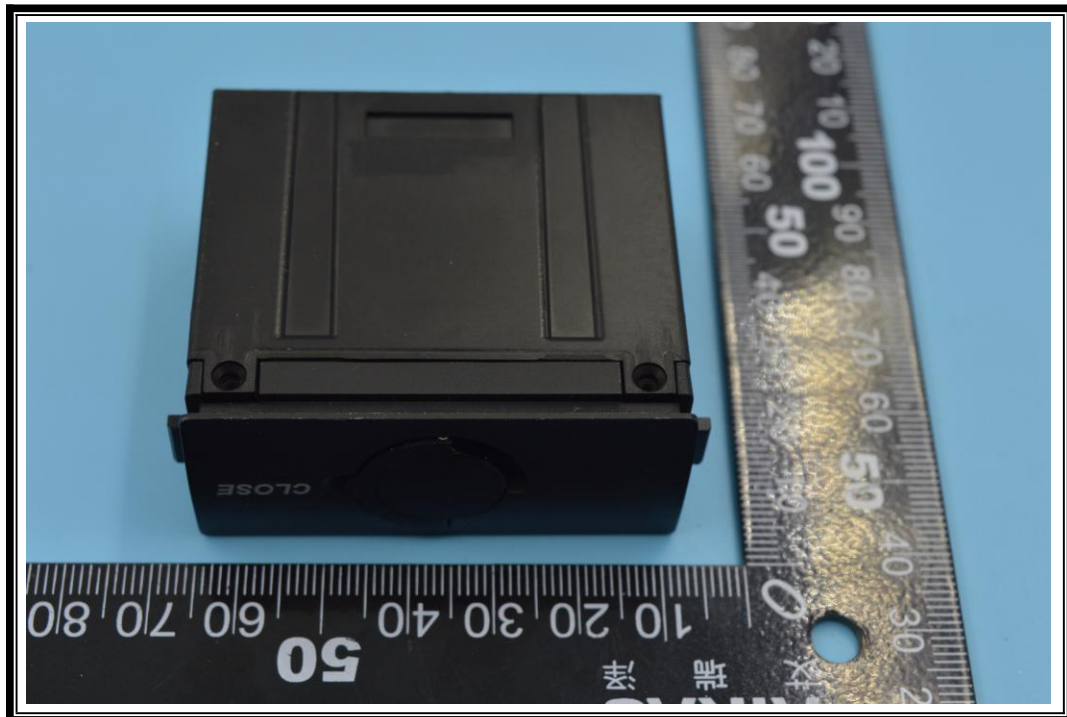
39	25 次循环后完全放电 Fully discharged after 25 cycles	O
40	25 次循环后完全放电 Fully discharged after 25 cycles	O
41	25 次循环后完全放电 Fully discharged after 25 cycles	O
42	25 次循环后完全放电 Fully discharged after 25 cycles	O
43	25 次循环后完全放电 Fully discharged after 25 cycles	O
44	25 次循环后完全放电 Fully discharged after 25 cycles	O
45	25 次循环后完全放电 Fully discharged after 25 cycles	O
46	25 次循环后完全放电 Fully discharged after 25 cycles	O
备注: D-解体, F-起火, O-无解体, 无起火; Remark: D-Disassembly, F-Fire, O-No Disassembly, No Fire		

样品图片 Photographs of the EUT

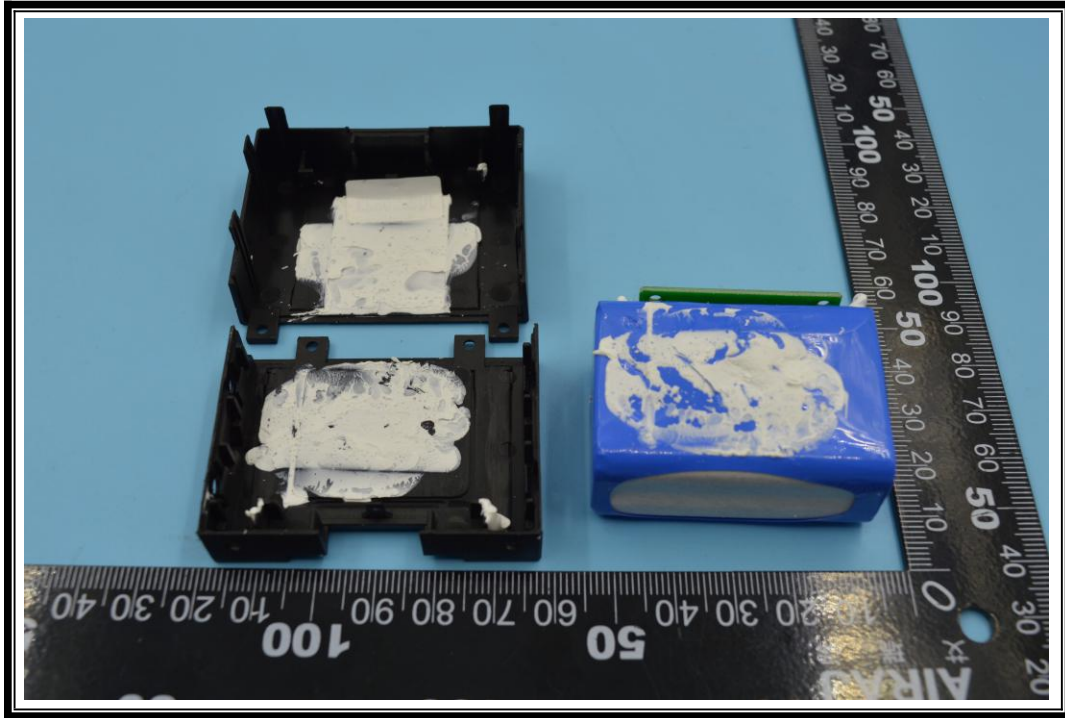
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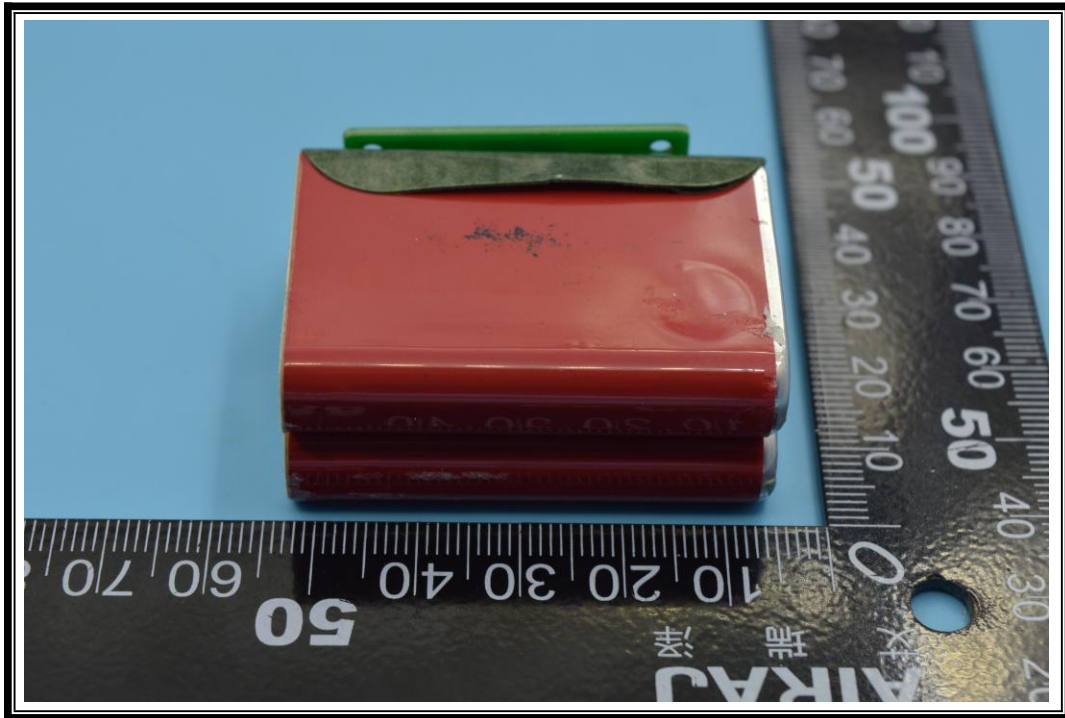
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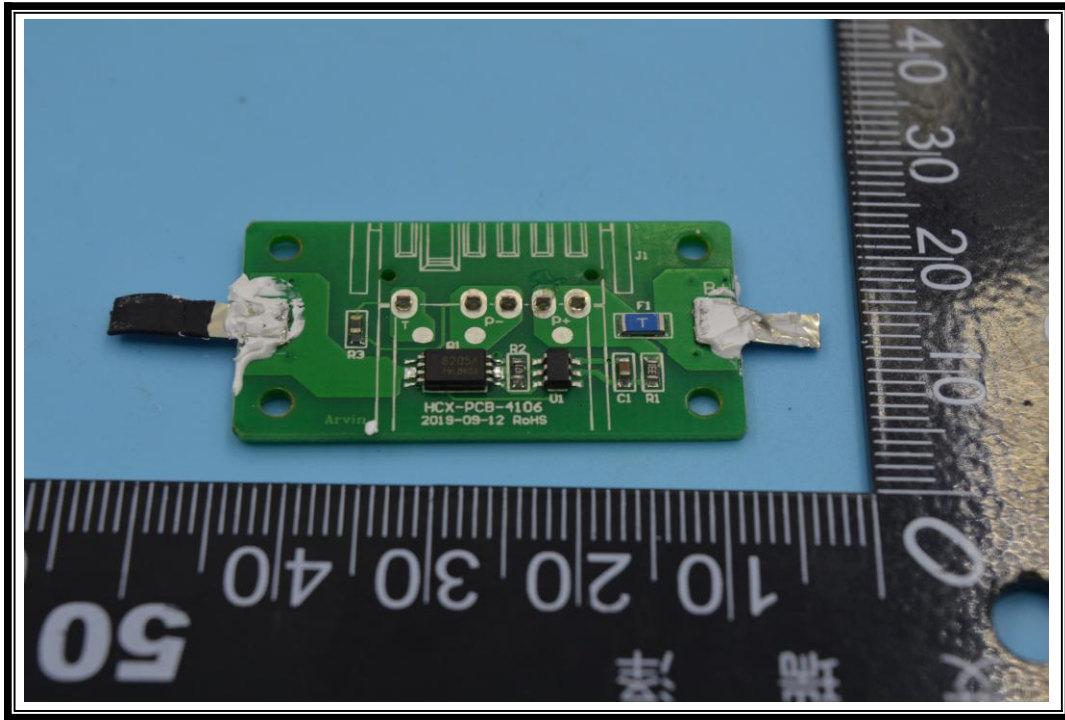
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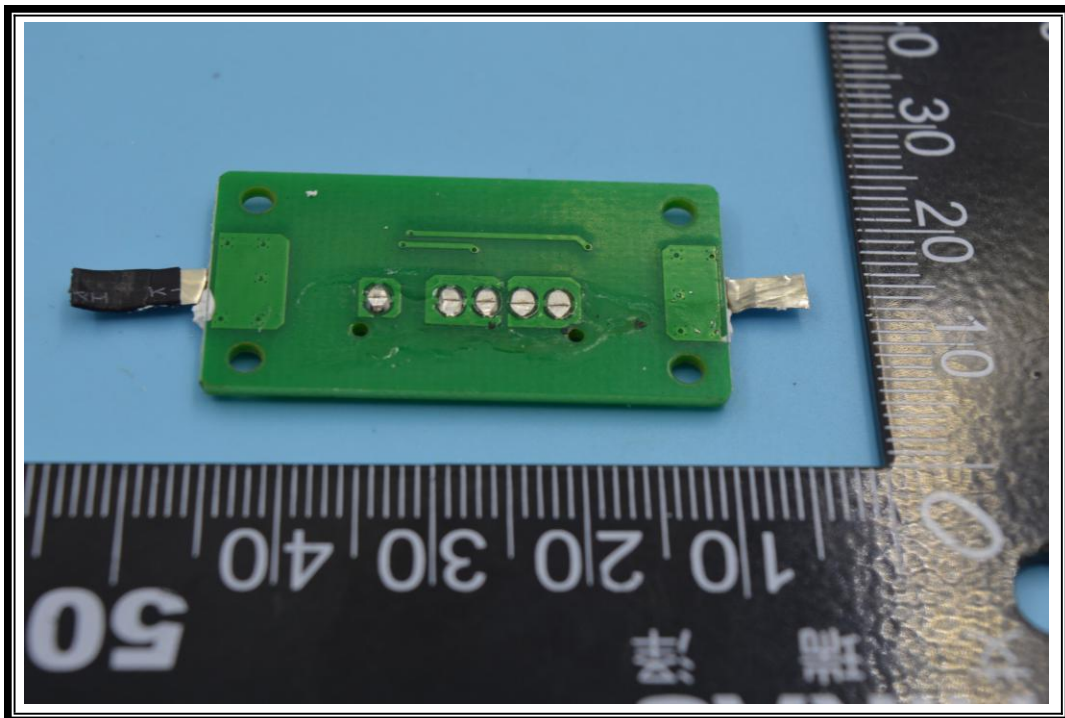
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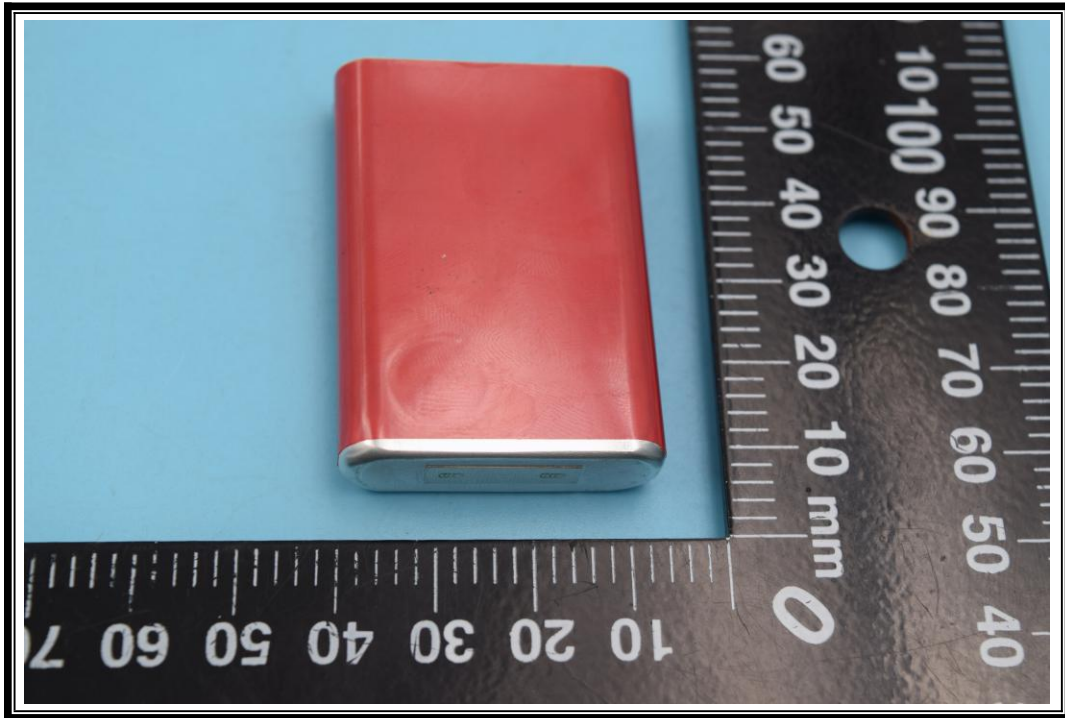
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Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Laboratory Address:	FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China
Telephone:	+86 755 36698555
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E-mail:	service@morlab.cn
Website	Http://www.morlab.cn

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

***** END OF REPORT *****