UN38.3 测试报告

UN38.3 Test Report

申请商 APPLICANT	:	深圳市天珑移动技术有限公司 Shenzhen Tinno Mobile Technology Corp.
产品名称 PRODUCT NAME	:	可充电锂离子电池 Rechargeable Li-ion battery
型号/MODEL NAME	:	Horizon008
商标/TRADE NAME	:	N/A
品牌/BRAND NAME	:	N/A
额定值/RATING	:	3.8 V, 600 mAh, 2.28 Wh
接收日期 RECEIPT DATE	:	2022-12-02
测试日期 TEST DATE	:	2022-12-02 to 2022-12-21
签发日期 ISSUE DATE	:	2023-01-03

编制
Edited by: 陶青

签发
Approved by: 李冬

此报告不具有对社会的证明作用，仅作为科研、教学或内部质量控制之用。

备注：此报告由深圳市摩尔环宇通信技术有限公司签发，未经深圳市摩尔环宇通信技术有限公司的书面许可不得复制。本报告的测试结果只适用于特定的样品和具体测试，此报告的信息可在我们的网站进行验证和确认。

MORLAB
深圳市摩尔环宇通信技术有限公司
中国 · 深圳 · 宝安区宝城 67 区
隆昌路 8 号飞扬科技园 A 栋 1-3 层
电话： 86-755-36698555 传真： 86-755-36698525
网站：Http://www.morlab.cn 邮箱：service@morlab.cn

测试报告声明
Test Report Declaration

申请商/Applicant	深圳市天珑移动技术有限公司 Shenzhen Tinno Mobile Technology Corp.	
申请商地址 Applicant Address	深圳市南山区西丽街道西丽社区同发南路天珑移动总部大厦南侧 27-001 27-001, South Side of Tianlong Mobile Headquarters Building, Tongfa South Road, Xili Community, Xili Street, Nanshan District, Shenzhen, Guangdong, PRC	
产品名称/ Product Name	可充电锂离子电池 Rechargeable Li-ion battery	
型号/ Model Name	Horizon008	
额定值/ Rating	3.8 V, 600 mAh, 2.28 Wh	
制造商信息 Manufacturer information	制造商 Manufacturer	深圳市优特利能源股份有限公司 SHENZHEN UTILITY ENERGY CO., LTD.
	制造商地址 Manufacturer Address	中国广东省深圳市光明区凤凰街道塘家社区观光路汇业科技园厂房 3 栋 A 区三层 3rd Floor, Area A, Block 3, Huiye Science And Technology Park, Guanguang Road, Tangjia Community, Fenghuang Street, Guangming District, Shenzhen City, Guangdong Province, China
工厂信息 Factory information	工厂 Factory	深圳市优特利能源股份有限公司 SHENZHEN UTILITY ENERGY CO., LTD.
	工厂地址 Factory Address	中国广东省深圳市光明区凤凰街道塘家社区观光路汇业科技园厂房 3 栋 A 区三层 3rd Floor, Area A, Block 3, Huiye Science And Technology Park, Guanguang Road, Tangjia Community, Fenghuang Street, Guangming District, Shenzhen City, Guangdong Province, China
尺寸/Size	47×32×4.4mm	
电池信息 Battery information	内含电芯数量/Cells number	1pcs(1S1P)
	电芯型号/Cell model	U383246PV
	物理特性/Physical description	棱形固体/ Prismatic solid
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》第七版修正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.7/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	测试结果为临限值时，我司将出具测量不确定度,并依据 95%的置信区间，给出判定结果。 When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% Confidence intervals.	

深圳市摩尔环宇通信技术有限公司检验报告

Shenzhen Morlab Communications Technology Co., Ltd. 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.7/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.7/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.7/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.7/Amend.1, 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.7/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.7/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.7/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.7/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	2023-01-03	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				
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	12.0592	4.331	12.0583	4.328	0.0075	99.93	O
2	首次充满 Fully charged at first cycle	12.1141	4.332	12.1133	4.328	0.0066	99.91	O
3	首次充满 Fully charged at first cycle	12.0398	4.331	12.0387	4.327	0.0091	99.91	O
4	首次充满 Fully charged at first cycle	12.0713	4.332	12.0706	4.329	0.0058	99.93	O
5	首次充满 Fully charged at first cycle	12.0631	4.333	12.0625	4.329	0.0050	99.91	O
6	25 次循环后充满 Fully charged after 25 cycles	11.9900	4.331	11.9892	4.327	0.0067	99.91	O
7	25 次循环后充满 Fully charged after 25 cycles	11.9520	4.333	11.9514	4.329	0.0050	99.91	O
8	25 次循环后充满 Fully charged after 25 cycles	12.0262	4.332	12.0252	4.328	0.0083	99.91	O
9	25 次循环后充满 Fully charged after 25 cycles	12.1457	4.333	12.1448	4.330	0.0074	99.93	O
10	25 次循环后充满 Fully charged after 25 cycles	11.9647	4.332	11.9640	4.328	0.0059	99.91	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		温度试验 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	12.0583	4.328	12.0515	4.258	0.0564	98.38	O
2	首次充满 Fully charged at first cycle	12.1133	4.328	12.1063	4.256	0.0578	98.34	O
3	首次充满 Fully charged at first cycle	12.0387	4.327	12.0316	4.253	0.0590	98.29	O
4	首次充满 Fully charged at first cycle	12.0706	4.329	12.0634	4.256	0.0596	98.31	O
5	首次充满 Fully charged at first cycle	12.0625	4.329	12.0552	4.257	0.0605	98.34	O
6	25 次循环后充满 Fully charged after 25 cycles	11.9892	4.327	11.9822	4.256	0.0584	98.36	O
7	25 次循环后充满 Fully charged after 25 cycles	11.9514	4.329	11.9443	4.259	0.0594	98.38	O
8	25 次循环后充满 Fully charged after 25 cycles	12.0252	4.328	12.0181	4.258	0.0590	98.38	O
9	25 次循环后充满 Fully charged after 25 cycles	12.1448	4.330	12.1376	4.256	0.0593	98.29	O
10	25 次循环后充满 Fully charged after 25 cycles	11.9640	4.328	11.9570	4.258	0.0585	98.38	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	12.0515	4.258	12.0508	4.257	0.0058	99.98	O
2	首次充满 Fully charged at first cycle	12.1063	4.256	12.1055	4.255	0.0066	99.98	O
3	首次充满 Fully charged at first cycle	12.0316	4.253	12.0308	4.252	0.0066	99.98	O
4	首次充满 Fully charged at first cycle	12.0634	4.256	12.0626	4.254	0.0066	99.95	O
5	首次充满 Fully charged at first cycle	12.0552	4.257	12.0543	4.255	0.0075	99.95	O
6	25 次循环后充满 Fully charged after 25 cycles	11.9822	4.256	11.9815	4.255	0.0058	99.98	O
7	25 次循环后充满 Fully charged after 25 cycles	11.9443	4.259	11.9434	4.257	0.0075	99.95	O
8	25 次循环后充满 Fully charged after 25 cycles	12.0181	4.258	12.0173	4.257	0.0067	99.98	O
9	25 次循环后充满 Fully charged after 25 cycles	12.1376	4.256	12.1368	4.255	0.0066	99.98	O
10	25 次循环后充满 Fully charged after 25 cycles	11.9570	4.258	11.9561	4.257	0.0075	99.98	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	12.0508	4.257	12.0499	4.255	0.0075	99.95	O
2	首次充满 Fully charged at first cycle	12.1055	4.255	12.1045	4.254	0.0083	99.98	O
3	首次充满 Fully charged at first cycle	12.0308	4.252	12.0297	4.251	0.0091	99.98	O
4	首次充满 Fully charged at first cycle	12.0626	4.254	12.0616	4.252	0.0083	99.95	O
5	首次充满 Fully charged at first cycle	12.0543	4.255	12.0533	4.254	0.0083	99.98	O
6	25 次循环后充满 Fully charged after 25 cycles	11.9815	4.255	11.9804	4.254	0.0092	99.98	O
7	25 次循环后充满 Fully charged after 25 cycles	11.9434	4.257	11.9423	4.256	0.0092	99.98	O
8	25 次循环后充满 Fully charged after 25 cycles	12.0173	4.257	12.0164	4.255	0.0075	99.95	O
9	25 次循环后充满 Fully charged after 25 cycles	12.1368	4.255	12.1359	4.254	0.0074	99.98	O
10	25 次循环后充满 Fully charged after 25 cycles	11.9561	4.257	11.9550	4.256	0.0092	99.98	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	56.2	O
2	首次充满 Fully charged at first cycle	56.9	O
3	首次充满 Fully charged at first cycle	56.3	O
4	首次充满 Fully charged at first cycle	56.4	O
5	首次充满 Fully charged at first cycle	56.8	O
6	25 次循环后充满 Fully charged after 25 cycles	56.3	O
7	25 次循环后充满 Fully charged after 25 cycles	56.3	O
8	25 次循环后充满 Fully charged after 25 cycles	56.7	O
9	25 次循环后充满 Fully charged after 25 cycles	56.8	O
10	25 次循环后充满 Fully charged after 25 cycles	57.2	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/ ℃	其他现象 Other Event
11	首次 50%容量 50% of capacity at first cycle	21.6	O
12	首次 50%容量 50% of capacity at first cycle	21.4	O
13	首次 50%容量 50% of capacity at first cycle	21.6	O
14	首次 50%容量 50% of capacity at first cycle	21.2	O
15	首次 50%容量 50% of capacity at first cycle	21.5	O
16	25 次循环后 50%容量 50% of capacity after25 cycles	22.1	O
17	25 次循环后 50%容量 50% of capacity after25 cycles	22.0	O
18	25 次循环后 50%容量 50% of capacity after25 cycles	22.0	O
19	25 次循环后 50%容量 50% of capacity after25 cycles	21.9	O
20	25 次循环后 50%容量 50% of capacity after25 cycles	21.9	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	
21	首次充满 Fully charged at first cycle	O	
22	首次充满 Fully charged at first cycle	O	
23	首次充满 Fully charged at first cycle	O	
24	首次充满 Fully charged at first cycle	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	
27	25 次循环后充满 Fully charged after 25 cycles	O	
28	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

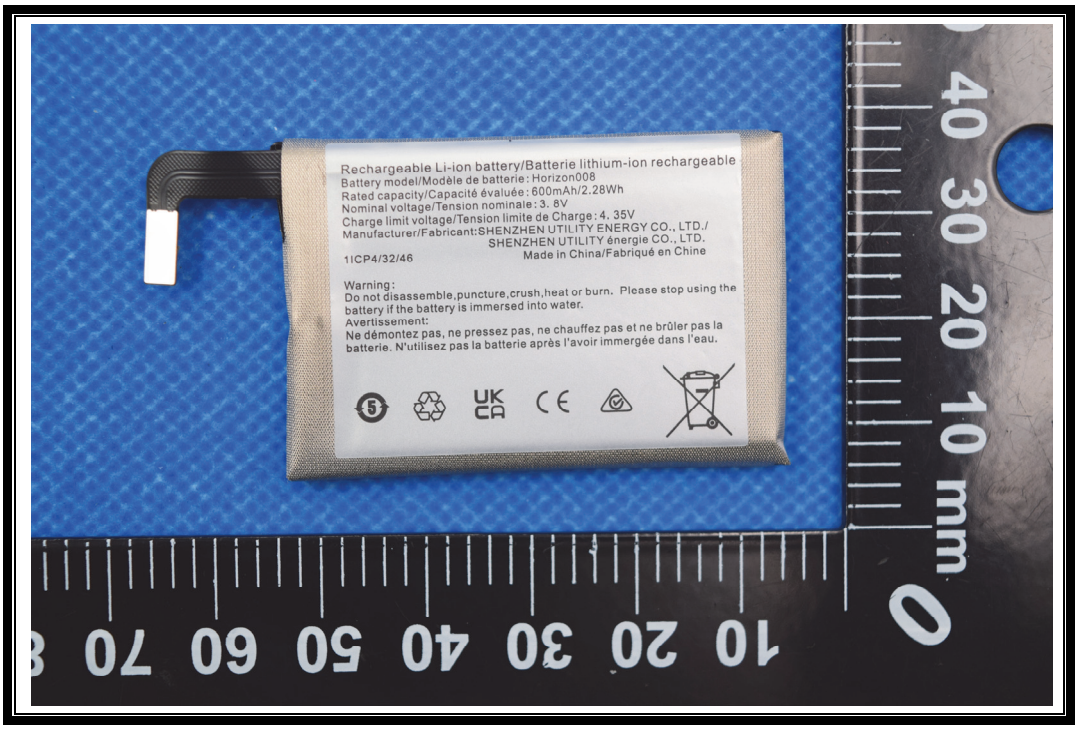
序号 No.	8	检测项目名称 Name of test items	强制放电 Force discharge
样品编号 Sample No.	样品状态 Sample status	放电时间（H） Discharge time	其他现象 Other Event
29	首次完全放电 Fully discharged at first cycle	1.5	O
30	首次完全放电 Fully discharged at first cycle	1.5	O
31	首次完全放电 Fully discharged at first cycle	1.5	O
32	首次完全放电 Fully discharged at first cycle	1.5	O
33	首次完全放电 Fully discharged at first cycle	1.5	O
34	首次完全放电 Fully discharged at first cycle	1.5	O
35	首次完全放电 Fully discharged at first cycle	1.5	O
36	首次完全放电 Fully discharged at first cycle	1.5	O
37	首次完全放电 Fully discharged at first cycle	1.5	O
38	首次完全放电 Fully discharged at first cycle	1.5	O
39	25 次循环后完全放电 Fully discharged after 25 cycles	1.5	O
40	25 次循环后完全放电 Fully discharged after 25 cycles	1.5	O

41	25 次循环后完全放电 Fully discharged after 25 cycles	1.5	O
42	25 次循环后完全放电 Fully discharged after 25 cycles	1.5	O
43	25 次循环后完全放电 Fully discharged after 25 cycles	1.5	O
44	25 次循环后完全放电 Fully discharged after 25 cycles	1.5	O
45	25 次循环后完全放电 Fully discharged after 25 cycles	1.5	O
46	25 次循环后完全放电 Fully discharged after 25 cycles	1.5	O
47	25 次循环后完全放电 Fully discharged after 25 cycles	1.5	O
48	25 次循环后完全放电 Fully discharged after 25 cycles	1.5	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
最大放电电流/ Max Continuous Discharge Current: 400 mA

样品图片 Photographs of the EUT

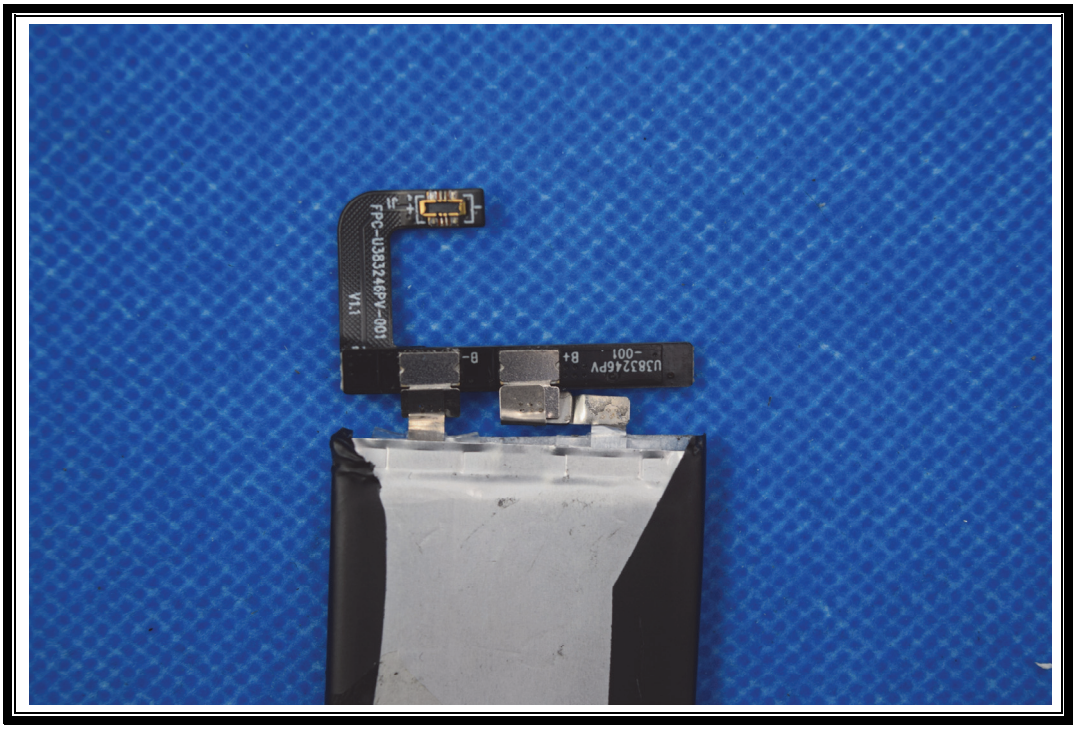
1



2



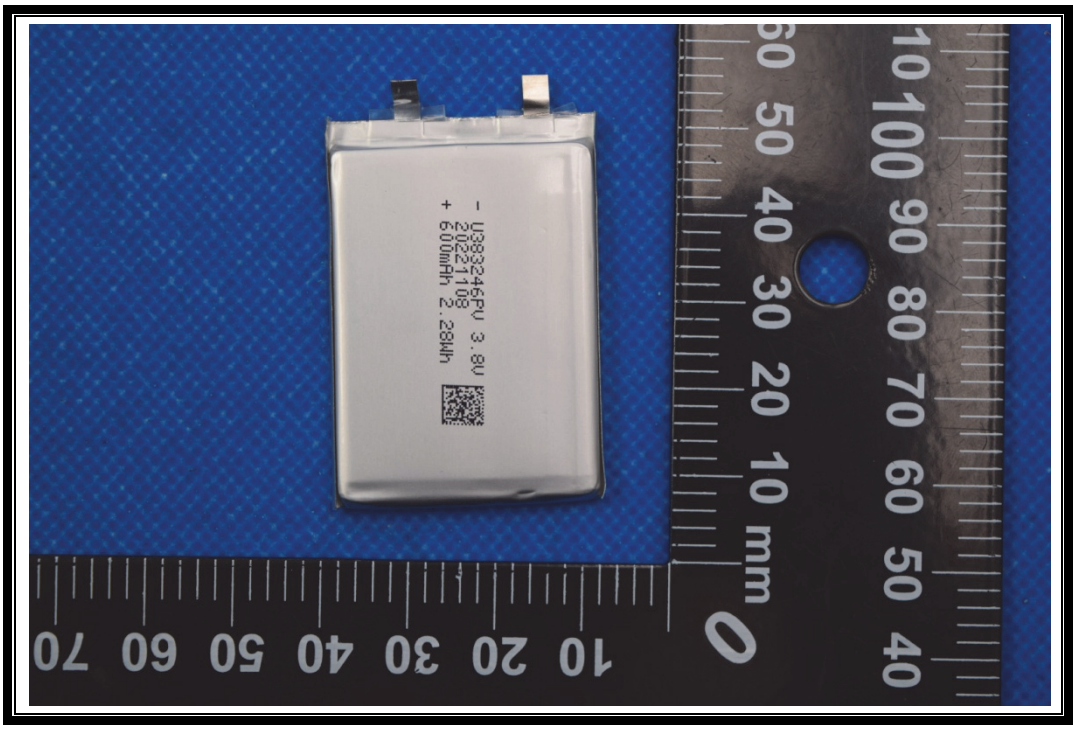
3



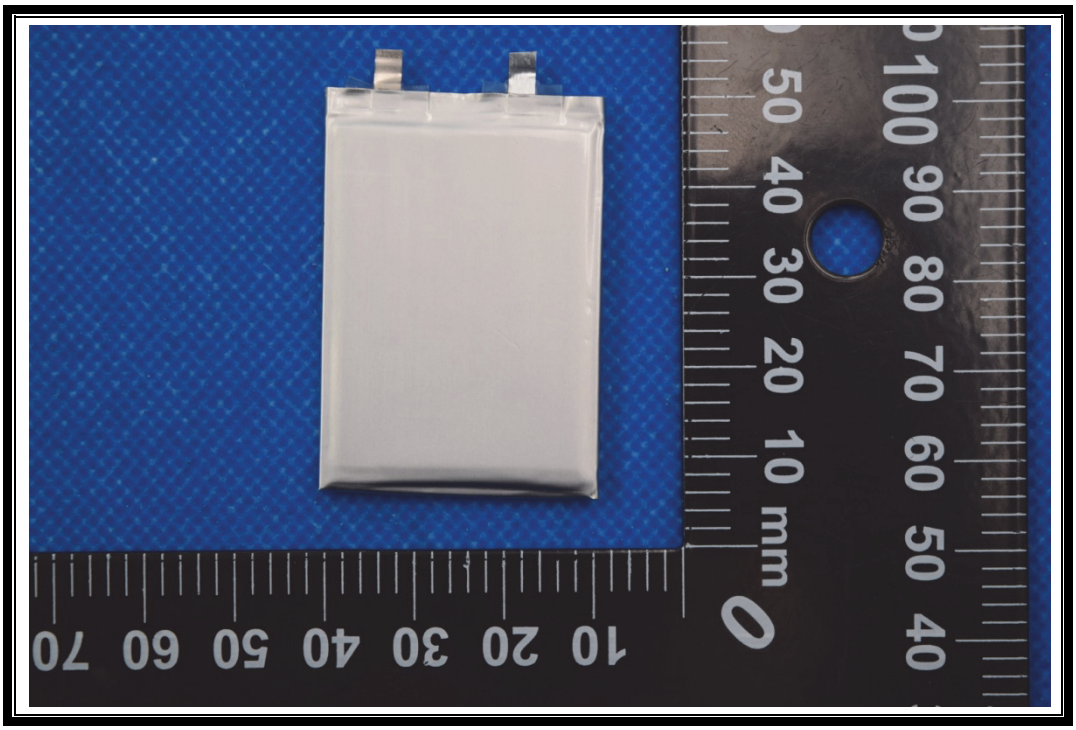
4



5



6



仪器设备清单/ List of test equipment used:

条款 Clause	仪器设备名称 equipment	型号 model	系列号 Serial No.	厂商 Manufacturer	校准日期 Calibration date	失效日期 Expiration date
样品预处理 Sample pretreatment	高性能电池检测系统 High-performance battery detection system	CT-4008-5V 6A-S1	T1806-167 542~T1806 -167548	newaretechno logy	2022-07-06	2023-07-05
	电子天平 Electronic scale	JM-B30002	370	Zhuji Chaoze Weighing	2022-10-10	2023-10-09
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2022-10-10	2023-10-09
高度模拟试验 Altitude simulation	低气压箱 Vacuum chamber	CHKX-125	110711	gzgongwen	2022-03-04	2023-03-03
	电子天平 Electronic scale	JM-B30002	370	Zhuji Chaoze Weighing	2022-10-10	2023-10-09
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2022-10-10	2023-10-09
温度试验 Thermal Test	快速温变箱 Rapid temperature change box	QW1070P6 W15	12174318	ESPEC	2022-03-04	2023-03-03
	电子天平 Electronic scale	JM-B30002	370	Zhuji Chaoze Weighing	2022-10-10	2023-10-09
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2022-10-10	2023-10-09

振动试验 Vibration	振动试验台 Vibration test bench	ES-30-370	D1203045	donglingtech	2022-10-10	2023-10-09
	电子天平 Electronic scale	JM-B30002	370	Zhuji Chaoze Weighing	2022-10-10	2023-10-09
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2022-10-10	2023-10-09
冲击试验 Shock	冲击碰撞试验台 Shock Test System	SY11-50	5120315/J120315	donglingtech	2022-03-04	2023-03-03
	电子天平 Electronic scale	JM-B30002	370	Zhuji Chaoze Weighing	2022-10-10	2023-10-09
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2022-10-10	2023-10-09
外短路试验 External short circuit	防爆温箱 explosion-proof oven	DE207C	A08351	Chongqing Hanba	2022-06-02	2023-06-01
	微电阻测试仪 Milliohm-meter	TOS8010	TM200445	TOSSTAR	2022-03-04	2023-03-03
	短路器 Short circuit	MORLAB-B01	/	/	2022-09-30	2023-03-29
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2022-10-10	2023-10-09

☒挤压试验 Crush □撞击试验 Impact	☒挤压试验机 Crush Apparatus	BE-6045-2T	20181113001	DongGuan Bell	2022-10-10	2023-10-09
	□电池冲击试验机 Battery impact Apparatus	BE-5066	20080910346	DongGuan Bell	2022-03-04	2023-03-03
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2022-10-10	2023-10-09
过充电试验 Overcharge	电池充放电系统 Battery Testing System	BTS-30V20A-8CH	19ME190408006	BETTATEQ	2022-07-06	2023-07-05
	防爆温箱 explosion-proof oven	DE207C	A08351	Chongqing Hanba	2022-06-02	2023-06-01
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2022-10-10	2023-10-09
强制放电 Force discharge	直流电源 DC power supply	KXN-6050D	18K6050D040094	zhaoxinpower	2022-10-10	2023-10-09
	电子负载 Electronic load	IT8512A+	802143010737010063	ITECH	2022-07-06	2023-07-05
	数据采集仪 Data recorder apparatus (Temperature and Voltage recorder)	GM90PS	S5C08022	YOKOGAWA	2022-10-10	2023-10-09

Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
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
Facsimile:	+86 755 36698525
E-mail:	service@morlab.cn
Website	www.morlab.cn

2. Identification of the Responsible Testing Location

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

—— END OF REPORT ——