



三帕认证



中国认可  
国际互认  
检测  
TESTING  
CNAS L11167

# 检测报告

## TEST REPORT

**Name Of Sample:** Rechargeable Cylindrical Li-ion Battery  
**样品名称:** 可充电圆柱形锂离子电池  
**Model:** CL002B-RBA  
**型号:**  
**Applicant:** Grandstream Networks, Inc.  
**申请商:**  
**Report No:** ZHGX20211103UN01  
**报告编号.:**

广州三帕认证技术服务有限公司

Guangzhou CP-UP Certification Technology Service Co., Ltd.



Tel: 86-020 3112 7037 Email: info@cp-up.com Website: www.cp-up.com



| General information<br>基本信息                       |                                                                                                                |                                                                                                                                         |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Name of samples<br>样品名称                           | Rechargeable Cylindrical Li-ion Battery<br>可充电圆柱形锂离子电池                                                         |                                                                                                                                         |
| Model/型号                                          | CL002B-RBA                                                                                                     |                                                                                                                                         |
| Ratings/额定参数                                      | 7.20V, 3300mAh, 23.76Wh                                                                                        |                                                                                                                                         |
| Trade mark/商标                                     | N/A                                                                                                            |                                                                                                                                         |
| Appearance<br>样品外观                                | Prismatic, Blue<br>棱柱形, 蓝色                                                                                     |                                                                                                                                         |
| Dimensions/尺寸                                     | 18.8mm(T) × 36.9mm(W) × 70.1mm(H)                                                                              |                                                                                                                                         |
| Mass/质量                                           | Approx./约 99.5g                                                                                                |                                                                                                                                         |
| Lithium content/锂含量                               | N/A                                                                                                            |                                                                                                                                         |
| Battery type<br>电池类型                              | Lithium ion battery<br>锂离子电池组                                                                                  |                                                                                                                                         |
| Applicant<br>申请商                                  | Grandstream Networks, Inc.                                                                                     |                                                                                                                                         |
| Applicant address<br>申请商地址                        | 126 Brookline Ave., 3rd Floor Boston, MA 02215, USA                                                            |                                                                                                                                         |
| Manufacturer<br>制造商                               | Zhuhai Gushine Electronic Technology Co.,Ltd.<br>珠海市古鑫电子科技有限公司                                                 |                                                                                                                                         |
| Manufacturer address<br>制造商地址                     | No.28, Pingbei1 Road, Nanping Hi-Tech Industrial Zone, Zhuhai City, Guangdong Province<br>广东省珠海市南屏科技园屏北一路 28 号 |                                                                                                                                         |
| Factory<br>生产厂                                    | Zhuhai Gushine Electronic Technology Co.,Ltd.<br>珠海市古鑫电子科技有限公司                                                 |                                                                                                                                         |
| Factory address<br>生产厂地址                          | No.28, Pingbei1 Road, Nanping Hi-Tech Industrial Zone, Zhuhai City, Guangdong Province<br>广东省珠海市南屏科技园屏北一路 28 号 |                                                                                                                                         |
| Receiving date<br>接样日期                            | 2021.08.31                                                                                                     |                                                                                                                                         |
| Test date<br>检测起讫日期                               | 2021.08.31~2021.09.15                                                                                          |                                                                                                                                         |
| Testing type<br>试验类型                              | Entrusted Test<br>委托试验                                                                                         |                                                                                                                                         |
| Testing Laboratory<br>检测单位                        | Guangzhou CP-UP Certification Technology Service Co., Ltd.<br>广州三帕认证技术服务有限公司                                   |                                                                                                                                         |
| Testing Laboratory<br>information<br>检测单位联系<br>信息 | address<br>地址                                                                                                  | No.1, Aigang 7th Lane, Yunxing Zhukeng Village, Shiqiao Street, Panyu District, Guangzhou, Guangdong China<br>广东省广州市番禺区市桥街云星珠坑村矮岗七巷 1 号 |
|                                                   | Tel./电话                                                                                                        | 86-020 3112 7037                                                                                                                        |
|                                                   | Email/邮箱                                                                                                       | info@cp-up.com                                                                                                                          |
|                                                   | Web/网址                                                                                                         | www.cp-up.com                                                                                                                           |



## Test Conclusion

## 检测结论

| Clause<br>条款号                        | Name of test<br>检测项目名称            | Testing standard<br>检测标准                                                                                                                                                                                                                                       | Test result<br>检测结果                                        | Conclusion<br>本项结论                  | Remarks<br>备注 |
|--------------------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|-------------------------------------|---------------|
| 38.3.4.1                             | Altitude simulation<br>高度模拟       | UNITED NATIONS Manual<br>of Tests and Criteria<br>Seventh revised edition<br>(ST/SG/AC.10/11/Rev.7)<br><br>Section 38.3.<br>联合国《试验和标准手册》第<br>七修订版<br>(ST/SG/AC.10/11/Rev.7) 第<br>38.3 节                                                                        | See Appendix 1<br>见附表 1                                    | P<br>通过                             | -             |
| 38.3.4.2                             | Thermal test<br>温度试验              |                                                                                                                                                                                                                                                                | See Appendix 2<br>见附表 2                                    | P<br>通过                             | -             |
| 38.3.4.3                             | Vibration<br>振动                   |                                                                                                                                                                                                                                                                | See Appendix 3<br>见附表 3                                    | P<br>通过                             | -             |
| 38.3.4.4                             | Shock<br>冲击                       |                                                                                                                                                                                                                                                                | See Appendix 4<br>见附表 4                                    | P<br>通过                             | -             |
| 38.3.4.5                             | External<br>Short-circuit<br>外部短路 |                                                                                                                                                                                                                                                                | See Appendix 5<br>见附表 5                                    | P<br>通过                             | -             |
| 38.3.4.6                             | Impact<br>撞击                      |                                                                                                                                                                                                                                                                | See Appendix 6<br>见附表 6                                    | P<br>通过                             | -             |
|                                      | Crush<br>挤压                       |                                                                                                                                                                                                                                                                | -                                                          | N/A<br>不适用                          | -             |
| 38.3.4.7                             | Overcharge<br>过度充电                |                                                                                                                                                                                                                                                                | See Appendix 7<br>见附表 7                                    | P<br>通过                             | -             |
| 38.3.4.8                             | Forced discharge<br>强制放电          | See Appendix 8<br>见附表 8                                                                                                                                                                                                                                        | P<br>通过                                                    | -                                   |               |
| Test environment condition<br>检测环境条件 |                                   | Ambient temperature: 20±5°C<br>环境温度：20±5°C                                                                                                                                                                                                                     |                                                            | Ambient humidity: <75%<br>环境湿度:<75% |               |
| Test conclusion<br>检测结论              |                                   | The sample has passed the test items of UNITED NATIONS Manual of Tests and Criteria Seventh revised edition (ST/SG/AC.10/11/Rev.7) Section 38.3.<br>经检测，该样品符合联合国《试验和标准手册》第七修订版 (ST/SG/AC.10/11/Rev.7) 第 38.3 节的要求。<br><div>Date of issue/签发日期：2021.11.05</div> |                                                            |                                     |               |
| Tested by<br>检测                      |                                   | Tracy Chen                                                                                                                                                                                                                                                     | <div>Tracy Chen</div>                                      |                                     |               |
| Reviewed by<br>审核                    |                                   | Leo Zhi                                                                                                                                                                                                                                                        | <div>Leo Zhi</div>                                         |                                     |               |
| Approved by<br>批准                    |                                   | Leo Zhi                                                                                                                                                                                                                                                        | <div>Leo Zhi</div> <div>Technical director<br/>技术负责人</div> |                                     |               |



## Appendix 1

## 附表 1

| Test Items<br>检测项目                                                                                                                                                                                         | Altitude simulation<br>高度模拟                                                                                                                                                             |                        |                     |                        |                          |                                |                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------|------------------------|--------------------------|--------------------------------|-----------------------|
| 1.1                                                                                                                                                                                                        | Test procedure<br>检测程序                                                                                                                                                                  |                        |                     |                        |                          |                                |                       |
|                                                                                                                                                                                                            | Test cells and batteries shall be stored at a pressure of 11.6kPa or less for at least six hour at ambient temperature (20±5°C).<br>试验电池和电池组应在压力等于或低于 11.6 千帕和环境温度(20 ± 5°C)下存放至少 6 小时。 |                        |                     |                        |                          |                                |                       |
| 1.2                                                                                                                                                                                                        | Sample status<br>样品状态                                                                                                                                                                   |                        |                     |                        |                          |                                |                       |
|                                                                                                                                                                                                            | B1#~B4#, first cycle, fully charged state;B1#~B4#,第 1 个充电周期, 完全充电状态<br>B5#~B8#, 25th cycle, fully charged state;B5#~B8#,第 25 个充电周期, 完全充电状态                                              |                        |                     |                        |                          |                                |                       |
| 1.3                                                                                                                                                                                                        | Result<br>检测结果                                                                                                                                                                          |                        |                     |                        |                          |                                |                       |
| Sample No.<br>样品编号                                                                                                                                                                                         | Before 检测前                                                                                                                                                                              |                        | After 检测后           |                        | Mass loss<br>质量损失<br>(%) | Residual<br>OCV<br>剩余电压<br>(%) | Observatio<br>ns 观察现象 |
|                                                                                                                                                                                                            | Mass<br>样品质量<br>(g)                                                                                                                                                                     | Voltage<br>开路电压<br>(V) | Mass<br>样品质量<br>(g) | Voltage<br>开路电压<br>(V) |                          |                                |                       |
| B1#                                                                                                                                                                                                        | 99.165                                                                                                                                                                                  | 8.361                  | 99.163              | 8.353                  | 0.002                    | 99.90                          | O                     |
| B2#                                                                                                                                                                                                        | 99.113                                                                                                                                                                                  | 8.363                  | 99.112              | 8.356                  | 0.001                    | 99.92                          | O                     |
| B3#                                                                                                                                                                                                        | 99.628                                                                                                                                                                                  | 8.362                  | 99.627              | 8.354                  | 0.001                    | 99.90                          | O                     |
| B4#                                                                                                                                                                                                        | 99.384                                                                                                                                                                                  | 8.361                  | 99.382              | 8.353                  | 0.002                    | 99.90                          | O                     |
| B5#                                                                                                                                                                                                        | 99.571                                                                                                                                                                                  | 8.363                  | 99.570              | 8.356                  | 0.001                    | 99.92                          | O                     |
| B6#                                                                                                                                                                                                        | 99.248                                                                                                                                                                                  | 8.361                  | 99.246              | 8.353                  | 0.002                    | 99.90                          | O                     |
| B7#                                                                                                                                                                                                        | 99.705                                                                                                                                                                                  | 8.363                  | 99.703              | 8.356                  | 0.002                    | 99.92                          | O                     |
| B8#                                                                                                                                                                                                        | 99.324                                                                                                                                                                                  | 8.361                  | 99.323              | 8.354                  | 0.001                    | 99.92                          | O                     |
| <p>Note: L-Leakage, V-Venting, D-Disassembly, R -Rupture, F-Fire, O-No leakage, no venting, no disassembly, no rupture, no fire.</p> <p>注: L- 泄漏; V- 排气; D- 解体; R- 破裂; F - 起火; O- 无泄漏、无排气、无解体、无破裂、无起火。</p> |                                                                                                                                                                                         |                        |                     |                        |                          |                                |                       |



## Appendix 2

## 附表 2

| Test Items<br>检测项目                                                                                                                                                                                         | Thermal test<br>温度试验                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |                     |                        |                          |                                |                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------|------------------------|--------------------------|--------------------------------|-----------------------|
| 1.1                                                                                                                                                                                                        | Test procedure<br>检测程序                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                        |                     |                        |                          |                                |                       |
|                                                                                                                                                                                                            | <p>Test cells and batteries are to be stored for at least six hours at a test temperature equal to <math>72\pm 2^{\circ}\text{C}</math>, followed by storage for at least six hours at a test temperature equal to <math>-40\pm 2^{\circ}\text{C}</math>. The maximum time interval between test temperature extremes is 30 minutes. This procedure is to be repeated until 10 total cycles are complete, after which all test cells and batteries are to be stored for 24 hours at ambient temperature (<math>20\pm 5^{\circ}\text{C}</math>).</p> <p>试验电池和电池组应先在试验温度等于 <math>72\pm 2^{\circ}\text{C}</math> 的条件下存放至少 6 小时，接着再在试验温度等于 <math>-40\pm 2^{\circ}\text{C}</math> 的条件下存放至少 6 小时。两个极端试验温度之间的最大时间间隔为 30 分钟。此程序重复进行，共完成 10 次，接着将所有试验电池和电池组在环境温度 (<math>20\pm 5^{\circ}\text{C}</math>) 下存放 24 小时。</p> |                        |                     |                        |                          |                                |                       |
| 1.2                                                                                                                                                                                                        | Sample status<br>样品状态                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                        |                     |                        |                          |                                |                       |
|                                                                                                                                                                                                            | <p>B1#~B4#, first cycle, fully charged state; B1#~B4#, 第 1 个充电周期，完全充电状态</p> <p>B5#~B8#, 25th cycle, fully charged state; B5#~B8#, 第 25 个充电周期，完全充电状态</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                        |                     |                        |                          |                                |                       |
| 1.3                                                                                                                                                                                                        | Result<br>检测结果                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |                     |                        |                          |                                |                       |
| Sample No.<br>样品编号                                                                                                                                                                                         | Before 检测前                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                        | After 检测后           |                        | Mass loss<br>质量损失<br>(%) | Residual<br>OCV<br>剩余电压<br>(%) | Observation<br>s 观察现象 |
|                                                                                                                                                                                                            | Mass<br>样品质量<br>(g)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Voltage<br>开路电压<br>(V) | Mass<br>样品质量<br>(g) | Voltage<br>开路电压<br>(V) |                          |                                |                       |
| B1#                                                                                                                                                                                                        | 99.163                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 8.353                  | 99.142              | 8.275                  | 0.021                    | 99.07                          | O                     |
| B2#                                                                                                                                                                                                        | 99.112                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 8.356                  | 99.090              | 8.277                  | 0.022                    | 99.06                          | O                     |
| B3#                                                                                                                                                                                                        | 99.627                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 8.354                  | 99.606              | 8.275                  | 0.021                    | 99.05                          | O                     |
| B4#                                                                                                                                                                                                        | 99.382                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 8.353                  | 99.361              | 8.275                  | 0.021                    | 99.07                          | O                     |
| B5#                                                                                                                                                                                                        | 99.570                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 8.356                  | 99.548              | 8.277                  | 0.022                    | 99.06                          | O                     |
| B6#                                                                                                                                                                                                        | 99.246                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 8.353                  | 99.225              | 8.275                  | 0.021                    | 99.07                          | O                     |
| B7#                                                                                                                                                                                                        | 99.703                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 8.356                  | 99.681              | 8.277                  | 0.022                    | 99.06                          | O                     |
| B8#                                                                                                                                                                                                        | 99.323                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 8.354                  | 99.301              | 8.275                  | 0.022                    | 99.05                          | O                     |
| <p>Note: L-Leakage, V-Venting, D-Disassembly, R -Rupture, F-Fire, O-No leakage, no venting, no disassembly, no rupture, no fire.</p> <p>注: L- 泄漏; V- 排气; D- 解体; R- 破裂; F - 起火; O- 无泄漏、无排气、无解体、无破裂、无起火。</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                        |                     |                        |                          |                                |                       |



## Appendix 3

## 附表 3

| Test Items<br>检测项目                                                                                                                                                                                         | Vibration<br>振动                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                        |                     |                        |                          |                             |                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------|------------------------|--------------------------|-----------------------------|----------------------|
| 1.1                                                                                                                                                                                                        | Test procedure<br>检测程序                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                        |                     |                        |                          |                             |                      |
|                                                                                                                                                                                                            | <p>Cells and batteries are firmly secured to the platform of the vibration machine without distorting the cells in such a manner as to faithfully transmit the vibration, The vibration shall be a sinusoidal wave form with a logarithmic sweep between 7Hz and 200Hz and back to 7 Hz traversed in 15 minutes, This cycle shall be repeated 12 times for a total of 3 hours for each of three mutually perpendicular mounting position of the cell. One of the directions of vibration must be perpendicular to the terminal face.</p> <p>电池和电池组紧固于振动机平台，但紧固程度不能造成电池变形以致不能准确传递振动。振动应是正弦波形，对数频率扫描从 7 赫兹到 200 赫兹，再回到 7 赫兹，跨度为 15 分钟。这一振动过程须对三个互相垂直的电池安装方位的每一方向重复进行 12 次，总共为时 3 小时。其中一个振动方向必须与端面垂直。</p> |                        |                     |                        |                          |                             |                      |
| 1.2                                                                                                                                                                                                        | Sample status<br>样品状态                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                        |                     |                        |                          |                             |                      |
|                                                                                                                                                                                                            | <p>B1#~B4#, first cycle, fully charged state; B1#~B4#, 第 1 个充电周期，完全充电状态</p> <p>B5#~B8#, 25th cycle, fully charged state; B5#~B8#, 第 25 个充电周期，完全充电状态</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                        |                     |                        |                          |                             |                      |
| 1.3                                                                                                                                                                                                        | Result<br>检测结果                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                        |                     |                        |                          |                             |                      |
| Sample No.<br>样品编号                                                                                                                                                                                         | Before 检测前                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                        | After 检测后           |                        | Mass loss<br>质量损失<br>(%) | Residual OCV<br>剩余电压<br>(%) | Observations<br>观察现象 |
|                                                                                                                                                                                                            | Mass<br>样品质量<br>(g)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Voltage<br>开路电压<br>(V) | Mass<br>样品质量<br>(g) | Voltage<br>开路电压<br>(V) |                          |                             |                      |
| B1#                                                                                                                                                                                                        | 99.142                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 8.275                  | 99.141              | 8.273                  | 0.001                    | 99.98                       | O                    |
| B2#                                                                                                                                                                                                        | 99.090                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 8.277                  | 99.089              | 8.274                  | 0.001                    | 99.96                       | O                    |
| B3#                                                                                                                                                                                                        | 99.606                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 8.275                  | 99.605              | 8.273                  | 0.001                    | 99.98                       | O                    |
| B4#                                                                                                                                                                                                        | 99.361                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 8.275                  | 99.361              | 8.272                  | 0.000                    | 99.96                       | O                    |
| B5#                                                                                                                                                                                                        | 99.548                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 8.277                  | 99.547              | 8.274                  | 0.001                    | 99.96                       | O                    |
| B6#                                                                                                                                                                                                        | 99.225                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 8.275                  | 99.225              | 8.273                  | 0.000                    | 99.98                       | O                    |
| B7#                                                                                                                                                                                                        | 99.681                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 8.277                  | 99.680              | 8.274                  | 0.001                    | 99.96                       | O                    |
| B8#                                                                                                                                                                                                        | 99.301                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 8.275                  | 99.300              | 8.273                  | 0.001                    | 99.98                       | O                    |
| <p>Note: L-Leakage, V-Venting, D-Disassembly, R -Rupture, F-Fire, O-No leakage, no venting, no disassembly, no rupture, no fire.</p> <p>注: L- 泄漏; V- 排气; D- 解体; R- 破裂; F - 起火; O- 无泄漏、无排气、无解体、无破裂、无起火。</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                        |                     |                        |                          |                             |                      |



## Appendix 4

## 附表 4

| Test Items<br>检测项目                                                                                                                                                                                       | Shock<br>冲击                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                        |                     |                        |                          |                                |                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------|------------------------|--------------------------|--------------------------------|----------------------|
| 1.1                                                                                                                                                                                                      | Test procedure<br>检测程序                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        |                     |                        |                          |                                |                      |
|                                                                                                                                                                                                          | <p>Test cells and batteries shall be secured to the testing machine by means of a rigid mount which will support all mounting surfaces of each battery. Each small battery shall be subjected to a half-sine shock of peak acceleration of <math>150g_n</math> or <math>g_n = \sqrt{100850 / mass}</math> (Whichever is smaller) and pulse duration of 6 milliseconds. Each cell or battery shall be subjected to three shocks in the positive direction and to three shocks in the negative direction in each of three mutually perpendicular mounting positions of the cell or battery for a total of 18 shocks.</p> <p>试验电池和电池组用坚固支架固定在试验机上，支架支撑着每个试验电池组的所有安装面。</p> <p>小型电池组的最低限度最大加速度为 <math>150g_n</math> 或加速度 <math>(g_n) = \sqrt{100850 / mass}</math>，取数值较小者，脉冲持续时间 6 毫秒。</p> <p>每个电池或电池组须在三个互相垂的电池或电池组安装方位的正极方向经受 3 次冲击，接着负极方向经受 3 次冲击，总共经受 18 次冲击。</p> |                        |                     |                        |                          |                                |                      |
| 1.2                                                                                                                                                                                                      | Sample status<br>样品状态                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                        |                     |                        |                          |                                |                      |
|                                                                                                                                                                                                          | <p>B1#~B4#, first cycle, fully charged state; B1#~B4#, 第 1 个充电周期，完全充电状态</p> <p>B5#~B8#, 25th cycle, fully charged state; B5#~B8#, 第 25 个充电周期，完全充电状态</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |                     |                        |                          |                                |                      |
| 1.3                                                                                                                                                                                                      | Result<br>检测结果                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                        |                     |                        |                          |                                |                      |
| Sample No.<br>样品编号                                                                                                                                                                                       | Before 检测前                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                        | After 检测后           |                        | Mass loss<br>质量损失<br>(%) | Residual<br>OCV<br>剩余电压<br>(%) | Observations<br>观察现象 |
|                                                                                                                                                                                                          | Mass<br>样品质量<br>(g)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Voltage<br>开路电压<br>(V) | Mass<br>样品质量<br>(g) | Voltage<br>开路电压<br>(V) |                          |                                |                      |
| B1#                                                                                                                                                                                                      | 99.141                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 8.273                  | 99.141              | 8.272                  | 0.000                    | 99.99                          | O                    |
| B2#                                                                                                                                                                                                      | 99.089                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 8.274                  | 99.088              | 8.273                  | 0.001                    | 99.99                          | O                    |
| B3#                                                                                                                                                                                                      | 99.605                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 8.273                  | 99.604              | 8.273                  | 0.001                    | 100.00                         | O                    |
| B4#                                                                                                                                                                                                      | 99.361                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 8.272                  | 99.361              | 8.271                  | 0.000                    | 99.99                          | O                    |
| B5#                                                                                                                                                                                                      | 99.547                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 8.274                  | 99.547              | 8.273                  | 0.000                    | 99.99                          | O                    |
| B6#                                                                                                                                                                                                      | 99.225                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 8.273                  | 99.224              | 8.272                  | 0.001                    | 99.99                          | O                    |
| B7#                                                                                                                                                                                                      | 99.680                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 8.274                  | 99.680              | 8.273                  | 0.000                    | 99.99                          | O                    |
| B8#                                                                                                                                                                                                      | 99.300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 8.273                  | 99.300              | 8.273                  | 0.000                    | 100.00                         | O                    |
| <p>Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O-No leakage, no venting, no disassembly, no rupture, no fire.</p> <p>注: L- 泄漏; V- 排气; D- 解体; R- 破裂; F- 起火; O- 无泄漏、无排气、无解体、无破裂、无起火。</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                        |                     |                        |                          |                                |                      |



## Appendix 5

## 附表 5

|                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| Test Items<br>检测项目                                                                                                                  | External short circuit<br>外部短路                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                   |
| 1.1                                                                                                                                 | Test procedure<br>检测程序                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   |
|                                                                                                                                     | <p>The cell or battery to be tested shall be heated for a period of time necessary to reach a homogeneous stabilized temperature of <math>57\pm4^{\circ}\text{C}</math>, measured on the external case. This period of time depends on the size of the cell or battery and should be assessed and documented. If this assessment is not feasible the exposure time shall be at least 6 hours for small cells and small batteries. then the cell or battery at <math>57\pm4^{\circ}\text{C}</math> shall be subjected to one short circuit condition with a total external resistance of less than 0.1 ohm. This short circuit condition is continued for at least one hour after the cell or battery external case temperature has returned to <math>57\pm4^{\circ}\text{C}</math>.</p> <p>对于待试电池或电池组，应加温一段必要的时间，使从外壳测量的温度达到均匀的稳定温度 <math>57\pm4^{\circ}\text{C}</math>。这段时间的长短取决于电池或电池组的大小和设计，对于这个持续时间应加以评估和记录。如无法进行这种评估，则小型电池和小型电池组的暴露时间应至少 6 小时。然后，电池或电池组应在 <math>57\pm4^{\circ}\text{C}</math> 条件下经受总外电阻小于 0.1 欧姆的短路条件。这一短路条件应在电池或电池组外壳温度回到 <math>57\pm4^{\circ}\text{C}</math> 后继续至少 1 小时。</p> |                   |
| 1.2                                                                                                                                 | Sample status<br>样品状态                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                   |
|                                                                                                                                     | <p>B1#~B4#, first cycle, fully charged state; B1#~B4#, 第 1 个充电周期，完全充电状态</p> <p>B5#~B8#, 25th cycle, fully charged state; B5#~B8#, 第 25 个充电周期，完全充电状态</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                   |
| 1.3                                                                                                                                 | Result<br>检测结果                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                   |
| Sample No.<br>样品编号                                                                                                                  | Max. External Temperature<br>样品表面最高温度<br>( $^{\circ}\text{C}$ )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Observations 观察现象 |
| B1#                                                                                                                                 | 56.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | O                 |
| B2#                                                                                                                                 | 57.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | O                 |
| B3#                                                                                                                                 | 56.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | O                 |
| B4#                                                                                                                                 | 56.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | O                 |
| B5#                                                                                                                                 | 56.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | O                 |
| B6#                                                                                                                                 | 56.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | O                 |
| B7#                                                                                                                                 | 56.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | O                 |
| B8#                                                                                                                                 | 56.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | O                 |
| <p>Note: D -Disassembly, R -Rupture, F-Fire, O- no disassembly, no rupture, no fire.</p> <p>注：D- 解体；R- 破裂；F - 起火；O-无解体、无破裂、无起火。</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |



## Appendix 6

## 附表 6

|                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                    |                                               |                      |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|-----------------------------------------------|----------------------|
| Test Items<br>检测项目                                                                        | Impact<br>撞击                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                    |                                               |                      |
| 1.1                                                                                       | Test procedure<br>检测程序                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                    |                                               |                      |
|                                                                                           | <p>The sample cell or component cell is to be placed on a flat smooth surface. A 15.8 mm±0.1mm diameter, at least 6 cm long, or the longest dimension of the cell, whichever is greater, Type 316 stainless steel bar is to be placed across the centre of the sample. A 9.1 kg±0.1 kg mass is to be dropped from a height of 61±2.5 cm at the intersection of the bar and sample in a controlled manner using a near frictionless, vertical sliding track or channel with minimal drag on the falling mass.The vertical track or channel used to guide the falling mass shall be oriented 90 degrees from the horizontal supporting surface. The test sample is to be impacted with its longitudinal axis parallel to the flat surface and perpendicular to the longitudinal axis of the 15.8 mm±0.1mm diameter curved surface lying across the centre of the test sample. Each sample is to be subjected to only a single impact.</p> <p>试样电池或元件电池放在平坦光滑的表面上。一根 316 型不锈钢棒横放在试样中心，钢棒直径 15.8 毫米±0.1 毫米，长度至少 6 厘米，或电池最长端的尺寸，取二者之长者。将一块 9.1 千克±0.1 千克的重锤从 61 ± 2.5 厘米高处跌落到钢棒和试样交叉处，使用一个几乎没有摩擦的、对落体重锤阻力最小的垂直轨道或管道加以控制。垂直轨道或管道用于引导落锤沿与水平支撑表面呈 90 度落下。接受撞击的试样，纵轴应与平坦表面平行并与横放在试样中心的直径 15.8 ± 0.1 毫米弯曲表面的纵轴垂直。每一试样只经受一次撞击。</p> |                      |                    |                                               |                      |
| 1.2                                                                                       | Sample status<br>样品状态                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                    |                                               |                      |
|                                                                                           | C1#~C5#, first cycle , 50% charged state ;C1#~C5#,第 1 个充电周期, 50% 充电状态<br>C6#~C10#, 25th cycle , 50% charged state ;C6#~C10#,第 25 个充电周期, 50% 充电状态                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                    |                                               |                      |
| 1.3                                                                                       | Result<br>检测结果                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                    |                                               |                      |
| Sample No.<br>样品编号                                                                        | Max. External Temperature<br>样品表面最高温度<br>(°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Observations<br>观察现象 | Sample No.<br>样品编号 | Max. External Temperature<br>样品表面最高温度<br>(°C) | Observations<br>观察现象 |
| C1#                                                                                       | 51.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | O                    | C6#                | 67.7                                          | O                    |
| C2#                                                                                       | 32.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | O                    | C7#                | 43.1                                          | O                    |
| C3#                                                                                       | 45.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | O                    | C8#                | 58.0                                          | O                    |
| C4#                                                                                       | 81.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | O                    | C9#                | 39.7                                          | O                    |
| C5#                                                                                       | 35.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | O                    | C10#               | 72.4                                          | O                    |
| Note: D -Disassembly, F-Fire, O- no disassembly, no fire.<br>注: D- 解体; F - 起火; O-无解体、无起火。 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                    |                                               |                      |



## Appendix 7

## 附表 7

| Test Items<br>检测项目                                                                                   | Overcharge<br>过度充电                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                          |                      |
|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------|
| 1.1                                                                                                  | Test procedure<br>检测程序                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |                      |
|                                                                                                      | <p>The charge current shall be twice the manufacturer's recommended maximum continuous charge current. The minimum voltage of the test shall be as follows:</p> <p>(a) When the manufacturer's recommended charge voltage is not more than 18V, the minimum voltage of the test shall be the lesser of two times the maximum charge voltage of the or 22V</p> <p>(b) When the manufacturer's recommended charge voltage is more than 18V, the minimum voltage of the test shall be 1.2 times maximum charge voltage</p> <p>充电电流必须是制造商建议的最大持续充电电流的两倍。试验的最小电压如下：</p> <p>(a) 制造商建议的充电电压不大于 18 伏时，试验的最小电压应是电池组最大充电电压的两倍或 22 伏两者中的较小者。</p> <p>(b) 制造商建议的充电电压大于 18 伏时，试验的最小电压应为最大充电电压的 1.2 倍。</p> <p>试验应在环境温度下进行。进行试验的时间应为 24 小时。</p> |                          |                      |
| 1.2                                                                                                  | Sample status<br>样品状态                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |                      |
|                                                                                                      | <p>B9#~B12#, first cycle, fully charged state; B9#~B12#, 第 1 个充电周期，完全充电状态</p> <p>B13#~B16#, 25th cycle, fully charged state; B13#~B16#, 第 25 个充电周期，完全充电状态</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                      |
| 1.3                                                                                                  | Result<br>检测结果                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |                      |
| Sample No.<br>样品编号                                                                                   | Test voltage<br>试验电压(V)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Test current<br>试验电流(mA) | Observations<br>观察现象 |
| B9#                                                                                                  | 16.86                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3300                     | O                    |
| B10#                                                                                                 | 16.86                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3300                     | O                    |
| B11#                                                                                                 | 16.86                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3300                     | O                    |
| B12#                                                                                                 | 16.86                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3300                     | O                    |
| B13#                                                                                                 | 16.86                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3300                     | O                    |
| B14#                                                                                                 | 16.86                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3300                     | O                    |
| B15#                                                                                                 | 16.86                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3300                     | O                    |
| B16#                                                                                                 | 16.86                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3300                     | O                    |
| <p>Note: D -Disassembly, F-Fire, O- no disassembly, no fire.</p> <p>注： D- 解体； F - 起火； O-无解体、无起火。</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                      |



## Appendix 8

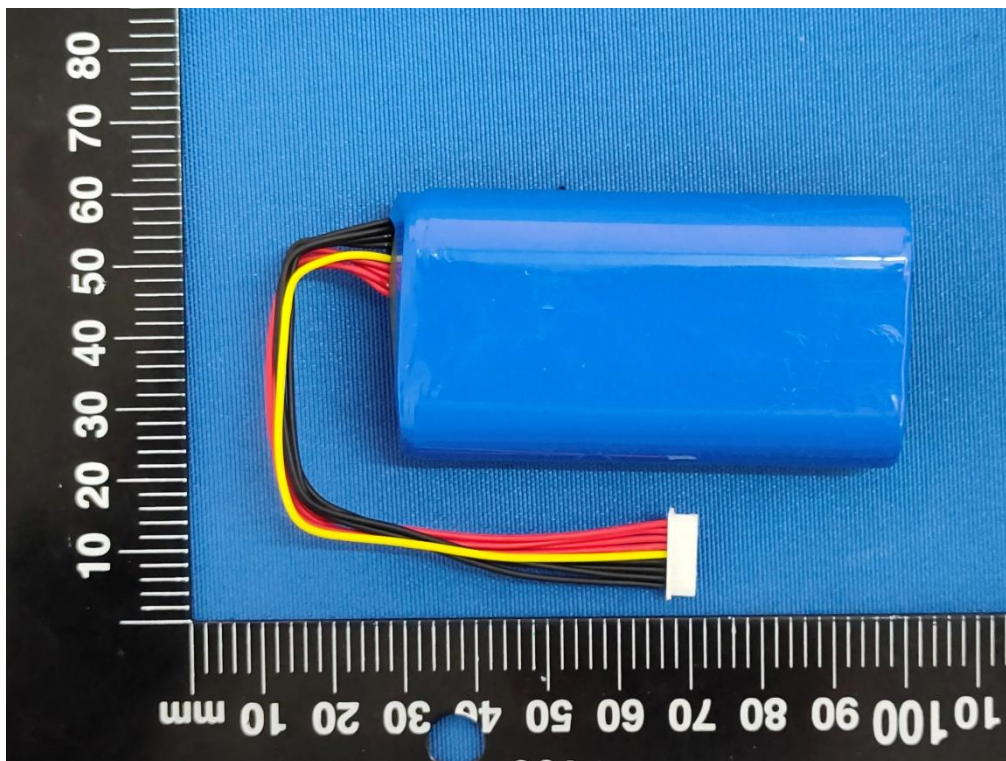
## 附表 8

|                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                          |                    |                                             |                          |
|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------|---------------------------------------------|--------------------------|
| Test Items<br>检测项目                                                                                   | Forced discharge<br>强制放电                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                          |                    |                                             |                          |
| 1.1                                                                                                  | Test procedure<br>检测程序                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |                    |                                             |                          |
|                                                                                                      | <p>Each cell shall be forced discharged at ambient temperature by connecting it in series with a 12V D. C, power supply at an initial current equal to the maximum discharge current specified the manufacturer .The specified discharge current is to be obtained by connecting a resistive load of the appropriate size and rating in series with the test cell, Each cell shall be forced discharged for a time interval (in hours) equal to its rated capacity divided by the initial test current (in ampere).</p> <p>每个电池应在环境温度下与 12 伏直流电源串联在起始电流等于制造商给定的最大放电电流的条件下强制放电。将适当大小和额定值的电阻负荷与试验电池串联，计算得出给定的放电电流。对每个电池进行强制放电，放电时间(小时)应等于其额定容量除以初始试验电流(安培)。</p> |                          |                    |                                             |                          |
| 1.2                                                                                                  | Sample status<br>样品状态                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |                    |                                             |                          |
|                                                                                                      | <p>C11#~C20#, first cycle , fully discharged state ;C11#~C20#,第 1 个充电周期,完全放电状态</p> <p>C21#~C30#, 25th cycle , fully discharged state ;C21#~C30#,第 25 个充电周期,完全放电状态</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |                    |                                             |                          |
| 1.3                                                                                                  | Result<br>检测结果                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                    |                                             |                          |
| Sample No.<br>样品编号                                                                                   | Maximum discharge<br>current 最大放电电流<br>(mA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Observatio<br>ns<br>观察现象 | Sample No.<br>样品编号 | Maximum discharge<br>current 最大放电电流<br>(mA) | Observatio<br>ns<br>观察现象 |
| C11#                                                                                                 | 3300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | O                        | C21#               | 3300                                        | O                        |
| C12#                                                                                                 | 3300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | O                        | C22#               | 3300                                        | O                        |
| C13#                                                                                                 | 3300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | O                        | C23#               | 3300                                        | O                        |
| C14#                                                                                                 | 3300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | O                        | C24#               | 3300                                        | O                        |
| C15#                                                                                                 | 3300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | O                        | C25#               | 3300                                        | O                        |
| C16#                                                                                                 | 3300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | O                        | C26#               | 3300                                        | O                        |
| C17#                                                                                                 | 3300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | O                        | C27#               | 3300                                        | O                        |
| C18#                                                                                                 | 3300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | O                        | C28#               | 3300                                        | O                        |
| C19#                                                                                                 | 3300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | O                        | C29#               | 3300                                        | O                        |
| C20#                                                                                                 | 3300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | O                        | C30#               | 3300                                        | O                        |
| <p>Note: D -Disassembly, F-Fire, O- no disassembly, no fire.</p> <p>注: D- 解体; F - 起火; O-无解体、无起火。</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                          |                    |                                             |                          |



Photos

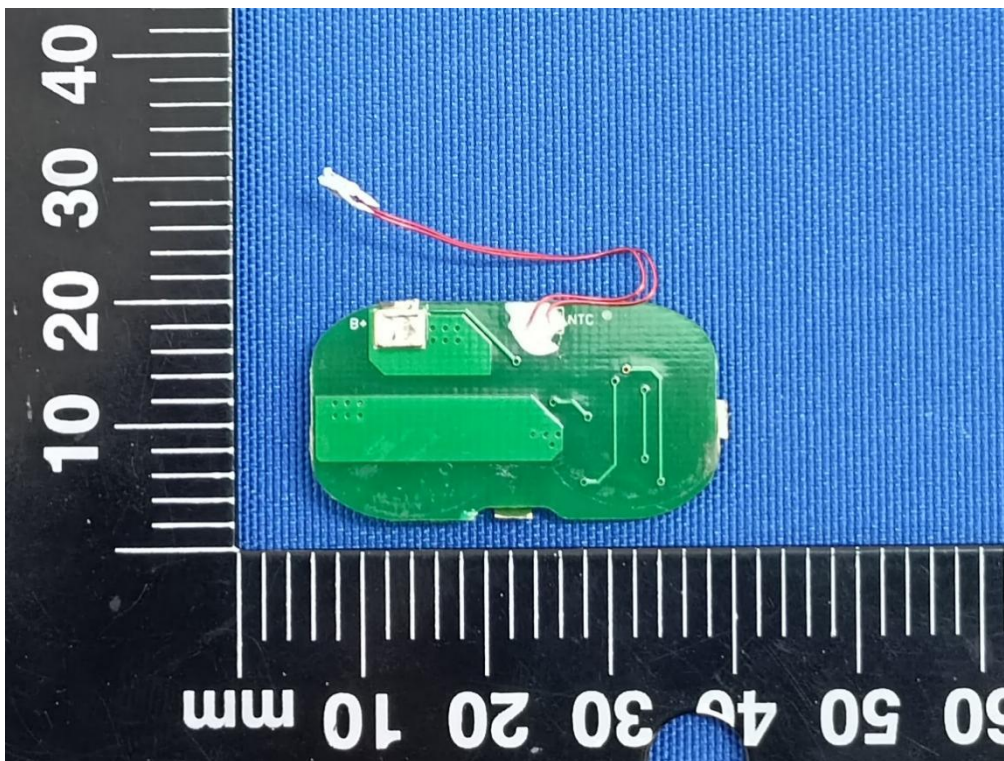
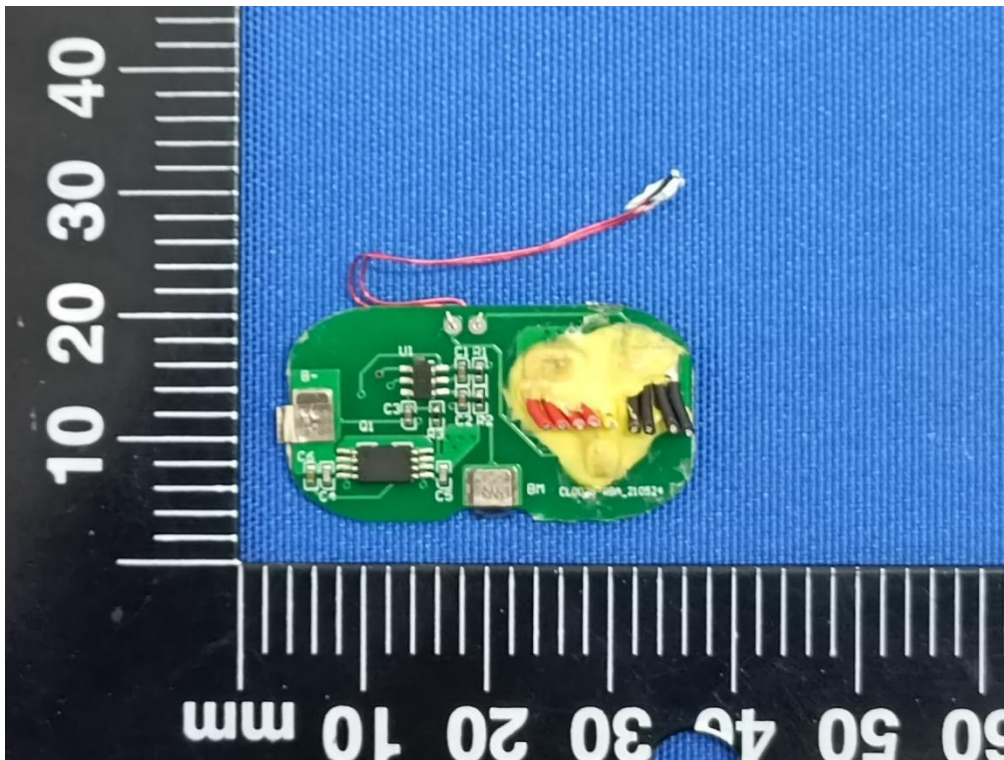
照片





Photos

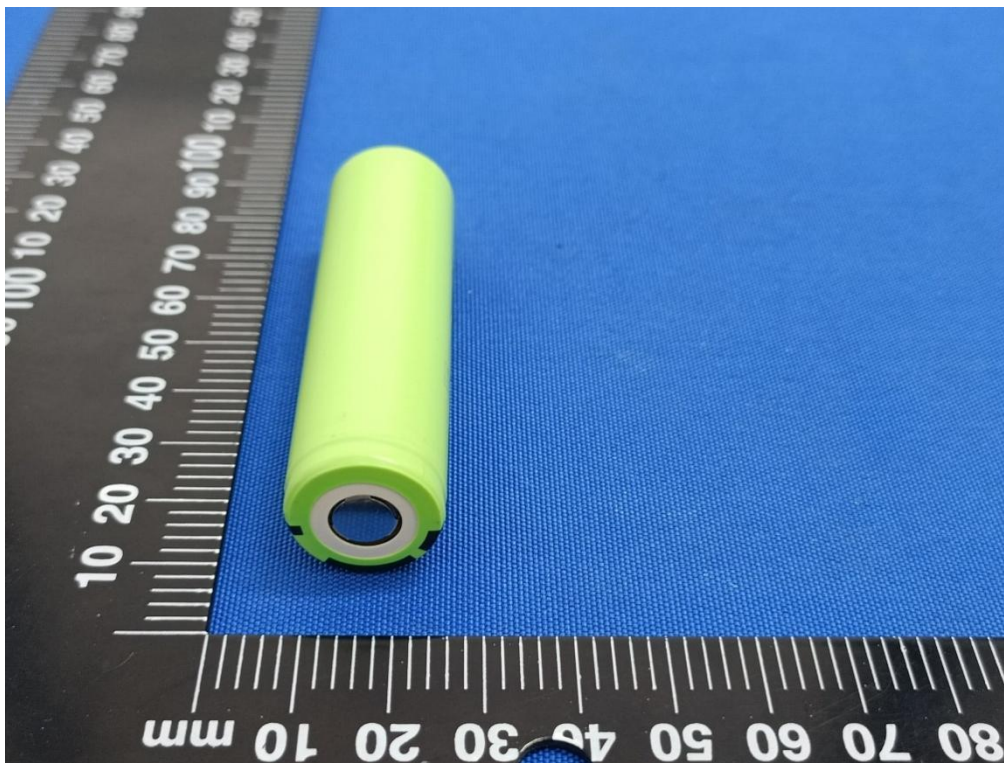
照片





Photos

照片





## 注 意 事 项 Notice

1. 本报告无检测单位检测章无效。

The test report is invalid without the testing stamp of Guangzhou CP-UP Certification Technology Service Co., Ltd..

2. 未经本试验室书面同意，不得部分地复制本报告。

Nobody is allowed to photocopy or partly photocopy this test report without written permission of Guangzhou CP-UP Certification Technology Service Co., Ltd..

3. 本报告无批准人、审核人及检测人签名无效。

The test report is invalid without the signatures of Approver, Checker and Tester.

4. 本报告涂改无效。

The test report is invalid if altered.

5. 对检测报告若有异议，应于收到报告之日起十五天内向检测单位提出。

Objections to the test report must be submitted to Guangzhou CP-UP Certification Technology Service Co., Ltd. Within 15 days.

6. 本报告仅对被测样品负责。

The test report is responsible for the tested samples only.

7. 检测结论中“N/A”表示“不适用”，“P”表示“通过”，“F”表示“不通过”。

As for the test conclusion, “N/A” means “not applicable”, “P” means “pass” and “F” means “fail”.

8. 型号与额定参数来源于申请商提供的资料，若因存在真实性问题而影响检测结果的有效性，本试验室不承担任何相关责任。

The model and rated parameter is from the information provided by the applicant. Our lab shall not take any responsibility if the information is fake and exaggerated, which may influence the validity of the testing result.

9. 与原报告 ZHGX20210831UN01 相比，仅变更了标签内容，对测试项目不影响。

Compared with the original report ZHGX20210831UN01, Only the label content is changed, which does not affect the testing result.

--End of report--

--报告结束--