TEST REPORT

ST/SG/AC.10/11Rev.4

AMENDMENTS TO THE THIRD REVISED EDITION OF THE RECOMMENDATIONS ON THE TRANSPORT OF DANGEROUS GOODS, MANUAL OF TEST AND CRITERIA

(Section 38.3: Lithium batteries)

Report reference No ,...... STR10098014S

Tested by (name+ signature) Fred zou

Approved by (+ signature) Ailis Ma

Date of issue Sep. 13, 2010

Testing laboratory SEM.Test Compliance Service Co., Ltd.

District, Shenzhen, P.R.C. (518101)

Menzon Mils Ma

Testing location As above

Applicant GlobTek, Inc.

Manufacturer GlobTek (Suzhou) Co., Ltd.

Suzhou, Jiangsu 215021, China

Standard ST/SG/AC.10/11Rev.4 section 38.3

Test procedureType approved

Procedure deviation N.A.

Non-standard test method N.A.

This test report is specially limited to the above client company and product model only, it may not be duplicated without prior written consent of SEM,Test,

Product Name Lithium Polymer Battery

Trademark -

Model/type reference 2G-523450-G2107

Ratings 3.7- 4.2V, 2000mAh(7.4Wh)

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Particulars: test item vs. test requirements	
Classification:	Small Battery
Dimension:	L : 51.9mm
	W: 42.6mm
	T : 14.2mm
Packing Material	ABS
Shape	Prismatic
Mass of apparatus:	50g
Test Item:	7
Test 1: Altitude simulation	P
Test 2: Thermal Test	P
Test 3: Vibration	P
Test 4: Shock	P
Test 5: External short circuit	P
Test 6: Impact	P 💍
Test 7: Overcharge	P
Test 8: Forced Discharge	N (No need for batteries.)
Possible test case verdicts:	
- test case does not apply to the test object	N(.A.)
- test object does meet the requirement	P(ass)
- test object does not meet the requirement	F(ail)
Testing:	
Date of receipt of test item	Sep. 03, 2010
Date(s) of performance of test	Sep. 03, 2010- Sep. 11, 2010

Test Conclusion:

The Lithium Polymer Battery submitted by GlobTek (Suzhou) Co., Ltd. is tested according to Section 38.3 of Amendments to the Fourth Revised Edition of the Recommendations on the Transport of Dangerous Goods, Manual of Test and Criteria (ST/SG/AC.10/11/Rev.4).

Test Result: Pass.

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	ST/SG/AC.10/11Rev.4 section 3		I
Clause	Requirement – Test	Result - Remark	Verdict
38.3	Lithium batteries		Р
38.3.1	Purpose		Р
	This section presents the procedures to be followed for the classification of lithium cells and batteries.		-
38.3.2	Scope		Р
38.3.2.1	Lithium cells or batteries which differ from a tested type by:	A	Р
	a) A Change of more than 0.1g or 20% by mass, whichever is greater, to the cathode, to the anode, or to the electrolyte;	X	<u> </u>
	b) A Change that would materially affect the test results.	2.1	-
38.3.2.2	For the purposes of classification, the following definitions apply:	Co	Р
	NOTE: Units that are commonly referred to as "battery packs" having the primary function of providing a source of power to another piece of equipment are for purposes of these regulations treated as batteries.	, ce	-
38.3.3	When a cell or battery type is to be tested under this sub-section, the number and condition of cells and batteries of each type to be tested are as follows:	Tests 1 to 5 must be conducted in sequence on the same battery,	Р
	a) When testing primary cells and batteries under tests 1 to 5, the following shall be tested:		N
	Ten cells in undischarged states,		N
	Ten cells in fully discharged states,		N
	Four batteries in undischarged states		N
	Four batteries in fully discharged states		N
	b) when testing rechargeable cells and batteries under tests 1 to 5 the following shall be tested:		Р
	Ten cells, at first cycle, in fully charged states.		N
	Ten cells, at first cycle, in fully discharged states.		N
	Four batteries, at first cycle, in fully charged states.		Р
	Four batteries, at first cycle, in fully discharged states.		Р
5	Four batteries after fifty cycles ending in fully charged states.		Р
	Four batteries after fifty cycles ending in fully discharged states.		Р
	c) Testing primary and rechargeable cells under test 6(Impact) tested		Р
	For primary cells, five cells in undischarged states and five cells in fully discharged states		N
	For component cells of primary batteries, Five cells in undischarged states and five cells in fully discharged states.		N

Clause	ST/SG/AC.10/11Rev.4 section 3 Requirement – Test	Result - Remark	Verdict
Clause	for rechargeable cells, five cells at first cycle at 50% of the design rated capacity and firve cells after 50 cycles ending in fully discharged states.	Result - Remark	N
	For components cells of rechargeable batteries, five cells at first cycle at 50% of the design rated capacity and five cells after 50 cycles ending in fully discharged states.		Р
	For prismatic cells, ten test cells are required for each of the states of charge being tested, instead of the five described above, so that the procedure can be carried out on five cells along the longitudinal axes and, separately, five cells along the other axes.	X	P
	d) Testing rechargeable batteries under test 7(Overcharge), the following shall be tested:	¢0°	Р
	Four rechargeable batteries, at first cycle, in fully charged states.		Р
	Four rechargeable batteries, after fifty cycle ending in fully charged states.		Р
	e) testing primary and rechargeable cells under test 8(Forced Discharge)		N
	Ten primary cells in fully discharged states.	This is rechargeable batteries.	N
	Ten rechargeable cells, at first cycle in fully discharged states		N
	Ten rechargeable cells after fifty cycles ending in fully discharged states.		N
Ş	M. Test Comp.		

1			31/3G/AC.	10/11Rev.4 s	section 3	ი.ა			
Clause	Requirement	t – Test					Result -	Remark	Verdict
38.3.4	Procedure								Р
	Test 1 to 5 m and 8 should cells or batter	be condu							Р
	Test 6 and 8 tested cells o			using not ot	herwise				Р
	Test 7 may be previously us on cycled bat	ed in test						, ×	P
38.3.4.1	Test 1: Altitu	ıde Simu	lation				Р		
38.3.4.1.1	Purpose								Р
	This test simulates air transport under low-pressure conditions.					65)•]	-	
38.3.4.1.2	Test procedu	re							Р
	stored at a pr	essure				11	.6 kPa		-
ambient te		erature (20 ± 5 °C).		4	24	°C		-
	Stored times(> 6 hours)				8 h	nours.		-	
38.3.4.1.3	Requirement				SA				Р
	mass loss, no no rupture an each test cell 90% of its vol The requirem test cells and	d no fire or batter tage imment relati	and if the op y after testin nediately prion ng to voltage	pen circuit vo	oltage of than cedure. cable to	dis an tes 90 im	venting, no sassembly, rod no fire. basting is not lew of its volt mediately procedure.	no rupture attery after ess than age	
		~	Mass N	l of Test Ba	ttery (g)			OCV (V)	
Group		No.	M1 (before the test)	M2 (after the test)	Mass Loss lin (0.1%)	nit	OCV1 (before the test)	OCV2 (after the test)	OCV (≥90%)
	\$	01	50.00g	50.00g	0.00%	·	3.932	3.932	100.0%
Group A (at	first cycle, in	02	50.00g	50.00g	0.00%	ò	3.934	3.934	100.0%
fully charged	d states)	03	50.00g	50.00g	0.00%	·	3.933	3.933	100.0%
		04	50.00g	50.00g	0.00%	D	3.934	3.934	100.0%
Group B (after fifty cycles ending in fully		05	50.00g	50.00g	0.00%	5	3.930	3.930	100.0%
		06	50.00g	50.00g	0.00%	5	3.932	3.932	100.0%
charged stat		07	50.00g	50.00g	0.00%	5	3.933	3.933	100.0%
		80	50.00g	50.00g	0.00%	5	3.932	3.932	100.0%
		01	50.00g	50.00g	0.00%	5	-	-	-
	first cycle, in	02	50.00g	50.00g	0.00%	5	-	-	-
fully dischar	ged states)	03	50.00g	50.00g	0.00%	5	-	-	-
		04	50.00g	50.00g	0.00%		_	-	-
Group D (aft	ter fifty	05	50.00g	50.00g	0.00%	5	-	-	-

	ST/SG/AC.10/11Rev.4 section 38.3									
Clause	Clause Requirement – Test Result - Remark Verd							Verdict		
cycles endir	•	06	50.00g	50.00g	0.00%	-	-	-		
discharged	siales)	07	50.00g	50.00g	0.00%	-	-	-		
		08	50.00g	50.00g	0.00%	-	-	-		

Remark

- 1. Mass loss (%)=(M1-M2)/M1*100% (Where M_1 is the mass before the test and M_2 is the mass after the
- 2. When mass loss does not exceed the value in Table: Mass loss limit, it shall be considered as "no mass loss".
- 3. the OCV of each test cell after testing is not less than 90% of its voltage immediately prior to this procedure.
 - 4. Ambient temperature: 24 ℃

Conclusion:

SEM. Test Lithium Polymer Battery had passed altitude simulation test.

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Clause								_
	Requiremen					Result -	Remark	Verdict
38.3.4.2	Test 2: Ther	mal Test						Р
38.3.4.2.1	Purpose							-
	This test asso internal electi using rapid a	rical conr	nections. The	e test is cond	lucted			-
38.3.4.2.2	Test procedu	ıre					Р	
	Test temperta	ature and	stored hour	S		1) 75 °C , ≥6h		-
	- ·	2) -40 °C, ≥6h timum time interval between test tempera						
	The maximur	n time int	erval			extremes is 3		<u> </u>
	Test times					repeated 10 ti	mes	-
	After which a for 24 hours a					24°C	,	-
	For large cell to the test ter hours.					Small battery)	N
38.3.4.2.3	Requirement							Р
	Cells and bat mass loss, no no rupture ar each test cell 90% of its vo The requirem test cells and	leakage d no fire or batter tage imment relati	e, no venting and if the op y after testin nediately prion ng to voltage	, no disassel pen circuit vo ng is not less or to this pro e is not appli	mbly, ltage of than cedure. cable to	No mass loss no venting, no disassembly, and no fire. ba testing is not I 90% of its voli immediately p procedure.	no rupture attery after ess than tage	P
			Mass M	of Test Ba	ttery (g)		OCV (V)	
Group		No.	M1 (before the test)	M2 (after the test)	Mass Loss lim (0.1%)	nit (before the	OCV2 (after the test)	OCV (≥90%)
		01	50.00g	50.00g	0.00%	3.932	3.916	99.59%
Group A (at	first cycle, in	02	50.00g	50.00g	0.00%	3.934	3.916	99.54%
fully charge	d states)	03	50.00g	50.00g	0.00%	3.933	3.918	99.62%
	Ġ.) 04	50.00g	50.00g	0.00%	3.934	3.913	99.47%
		05	50.00g	50.00g	0.00%	3.930	3.908	99.44%
Group B (af		06	50.00g	50.00g	0.00%	3.932	3.905	99.31%
cycles ending in fully charged states)		07	50.00g	50.00g	0.00%	3.933	3.913	99.49%
		80	50.00g	50.00g	0.00%	3.932	3.914	99.54%
$\overline{}$		01	50.00g	50.00g	0.00%	-	-	
	first cycle, in	02	50.00g	50.00g	0.00%	-	-	
fully dischar	ged states)	03	50.00g	50.00g	0.00%	-	-	
		04	50.00g	50.00g	0.00%	-	-	-
		05	50.00g	50.00g	0.00%	-	-	-
Group D (af cycles endir		06	50.00g	50.00g	0.00%	, -	-	
discharged		07	50.00g	50.00g	0.00%	-	-	-
discriaryed .								

Remark

- 1. Mass loss (%)=(M1-M2)/M1*100% (Where M_1 is the mass before the test and M_2 is the mass after the test)
- 2. When mass loss does not exceed the value in Table: Mass loss limit, it shall be considered as "no mass loss".
- 3. the OCV of each test cell after testing is not less than 90% of its voltage immediately prior to this procedure.

Still Test Compliance Service

4. Ambient temperature 24°C

Conclusion:

Lithium Polymer Battery had passed thermal test.

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			ST/SG/AC.	10/11Rev.4	section 3	38.3		
Clause	Requiremen	t – Test				Result -	Verdict	
38.3.4.3	Test 3: Vibra	ition						Р
38.3.4.3.1	Purpose							Р
	This test simu	ulates vib	ration during	g transport.				-
38.3.4.3.2	Test procedu	re						Р
	of the vibration	tteries are firmly secured to the platform on machine without distorting the cells in er as to faithfully transmit the vibration. shall be a sinusoidal waveform with a						-
	logarithmic	Silali be	a siriusoldai	wavelollii w	illi a		X	P
	Duration					15min		-
	Frequency ra	nge				7Hz200Hz	7Hz	-
	Amplitude				0.8mm	· ,	-	
	This cycle sh hours for eac mounting pos	h of three	e mutually pe				-	
38.3.4.3.3	Requirement				•			Р
	Cells and bat mass loss, no no rupture an each test cell 90% of its vo The requirem test cells and	b leakage ad no fire or batter Itage imm aent relati	e, no venting and if the op y after testin nediately prion ng to voltage	mbly, ltage of than cedure. cable to	There is no meleakage, no vertical disassembly, and no fire.	P		
			Mass M	of Test Ba	ttery (g)		OCV (V)	
Group		No.	M1 (before the test)	M2 (after the test)	Mass Loss lim (0.1%)	nit (before the	OCV2 (after the test)	OCV (≥90%)
		01	50.00g	50.00g	0.00%	3.916	3.916	100.0%
Group A (at	first cycle, in	02	50.00g	50.00g	0.00%	3.916	3.916	100.0%
fully charged		03	50.00g	50.00g	0.00%	3.918	3.918	100.0%
	X	04	50.00g	50.00g	0.00%	3.913	OCV1 OCV2 (after the test) 3.916 3.916 3.916 3.918 3.918 103.913 3.908 3.908 10	100.0%
25		05	50.00g	50.00g	0.00%	3.908	3.908	100.0%
Group B (aft		06	50.00g	50.00g	0.00%	3.905	3.905	100.0%
cycles ending in fully charged states)		07	50.00g	50.00g	0.00%	3.913	3.913	100.0%
		80	50.00g	50.00g	0.00%	3.914	3.914	100.0%
Group C (at first cycle, in		01	50.00g	50.00g	0.00%	, -	-	-
		02	50.00g	50.00g	0.00%	, -	-	-
fully discharg	ged states)	03	50.00g	50.00g	0.00%	, -	-	-
		04	50.00g	50.00g	0.00%	-	-	-
		05	50.00g	50.00g	0.00%	, -	-	-
Group D (after fifty cycles ending in fully		06	50.00g	50.00g	0.00%	, -	-	-
		_			0.000/			
	discharged states)		50.00g	50.00g	0.00%	-	-	<u> </u>
		07 08	50.00g 50.00g	50.00g 50.00g	0.00%		-	-

- 1. Mass loss (%)=(M1-M2)/M1*100% (Where M_1 is the mass before the test and M_2 is the mass after the test)
- 2. When mass loss does not exceed the value in Table: Mass loss limit, it shall be considered as "no mass loss".
- 3. the OCV of each test cell after testing is not less than 90% of its voltage immediately prior to this procedure.
 - 4. Ambient temperature: 23°C

Conclusion:

Lithium Polymer Battery had passed vibration test. Still Test Compliance Service

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			51/5G/AC	C.10/Rev.4 s	ection 38	5.3			
Clause	Requiremen						Result -	Remark	Verdict
38.3.4.4	Test 4: Shoo	k							Р
38.3.4.4.1	Purpose								Р
	This test sime	ulates pos	ssible impac	ts during tra	nsport.				-
38.3.4.4.2	Test procedu	ire							Р
	Test cells and machine by rall mounting	neans of	a rigid moun	it which will s	_	Thi	is is small b	atteries.	-
	a half-sine sh	nock of pe	ak accelera	tion		150	O g _n	X	O -
	pulse duratio	n				6m	ıs		-
	the positive of	lirection fo	ollowed			thre	ee times sh	ocks	-
	Each cell or to in the positive negative dire mounting positive as shocks.	e directior ction of th	n followed by aree mutually	y three shocl y perpendicu	ks in the ılar		.e)•]	-
38.3.4.4.3	Requirement				•				Р
	Cells and bat mass loss, r no rupture ar each test ce 90% of its vo The requirem test cells and	no leakag nd no fire Il or batte oltage imn nent relati	e, no venting and if the opery after test nediately pring to voltage	ng, no disas ben circuit vo ting is not le or to this pro e is not appl	ssembly, oltage of ess than ocedure. icable to	lea dis	ere is no ma kage, no ve assembly, i d no fire.		P
			Mass	of Test Ba	ttery (g)			OCV (V)	
Group		No.	M1 (before the test)	M2 (after the test)	Mass Loss lim (0.1%)	nit	OCV1 (before the test)	OCV2 (after the test)	OCV (≥90%)
		01	50.00g	50.00g	0.00%)	3.916	3.916	100.0%
Group A (at	first cycle, in	02	50.00g	50.00g	0.00%)	3.916	3.916	100.0%
fully charge	d states)	0 3	50.00g	50.00g	0.00%)	3.918	3.918	100.0%
	x (2)	04	50.00g	50.00g	0.00%)	3.913	3.913	100.0%
		05	50.00g	50.00g	0.00%	,	3.908	3.908	100.0%
Group B (af		06	50.00g	50.00g	0.00%)	3.905	3.905	100.0%
cycles ending in fully charged states)		07	50.00g	50.00g	0.00%	,	3.913	3.913	100.0%
		08	50.00g	50.00g	0.00%)	3.914	3.914	100.0%
		01	50.00g	50.00g	0.00%)	-	-	-
	t first cycle,in	02	50.00g	50.00g	0.00%)	-	-	-
fully dischar	rged states)	03	50.00g	50.00g	0.00%	,	-	-	-
		04	50.00g	50.00g	0.00%	,	-	-	-
		05	50.00g	50.00g	0.00%)	-	-	-
Group D (at cycles endir		06	50.00g	50.00g	0.00%)	-	-	-
discharged		07	50.00g	50.00g	0.00%)	-	-	-
		80	50.00g	50.00g	0.00%	,	-	-	-

Remark

- 1. Mass loss (%)=(M1-M2)/M1*100% (Where M_1 is the mass before the test and M_2 is the mass after the
- 2. When mass loss does not exceed the value in Table: Mass loss limit, it shall be considered as "no mass loss".
- 3. the OCV of each test cell after testing is not less than 90% of its voltage immediately prior to this procedure.
- 4. Ambient temperature: 24°℃

Conclusion:

Lithium Polymer Battery had passed shock test.

SIM. Test compliance service

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	Ι			11Rev.4 section 3				
Clause	Requireme				Result - Remark	Verdict		
38.3.4.5	Test 5: Ext	ernal Sh	ort Circuit			Р		
38.3.4.5.1	Purpose					Р		
	This test sir	nulates a	an external short c	ircuit.		Р		
38.3.4.5.2	Test proced	lure				Р		
		that its	be tested shall be external case tem			-		
	Short circuit of less than		on with a total Exte	a total External resistance				
			must be observed for a further six o be concluded.					
		ne cell or	battery external c	continued for at least one external case temperature				
38.3.4.5.3	Requiremen	nt				Р		
	Cells and batteries meet this requirement if their external temperature does not exceed 170 °C and there is no disassembly, no rupture and no fire within six hours of this test. Battery external temperature does not exceed 170 °C, and there is no disassembly, no fire and no rupture within six hours of this test				P			
Group		No.	External Highest Temperature (℃)	Criteria		Result		
Group A		01	56.7℃		temperature does not	Р		
(at first cycl		02	56.5℃		and there is no disassembly,	Р		
charged sta	ites)	03	56.3℃	test	upture within six hours of this	Р		
		04	56.4℃	lesi		Р		
Group B		05	56.8℃			Р		
	ycles ending	<u> </u>	56.3℃		Р			
in fully char	ged states)	07	55.4℃		Р			
		80	56.2℃		Р			
Group C	y	01	56.4℃	Battery external temperature does not				
(at first cycl		02	56.1℃	exceed 170 °C,	and there is no disassembly,	Р		
discharged	states)	03	56.5℃	no fire and no rupture within six hours of this test		Р		
♡ ′		04	56.8℃	lesi		Р		
Group D		05	56.3℃			Р		
(after fifty c	ycles ending	06	56.4℃			Р		
in fully discl	narged	07	56.2℃	1		P		
states)		08	56.8℃	1		P		
		•						

Conclusion:

Lithium Polymer Battery had passed external short circuit test.

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			ST/SG/AC.10/	11Rev.4 section 3	38.3	
Clause	Requireme	ent – Tes	t		Result - Remark	Verdict
38.3.4.6	Test 6: Imp	oact			The test sample Component cell of rechargeable batteries.	Р
38.3.4.6.1	Purpose					Р
	This test sir	nulates a	ın impact.			Р
38.3.4.6.2	Test proced	dure			^	Р
	- Dropped h	neight			61±2.5cm,	-
	- mass				9.1Kg	-
	- diameter l	oar			15.8mm	-
	axis paralle	ell is to be I to the fla Iinal axis	e impacted with it at surface and pe of the 15.8 mm d the centre of the	rpendicular to iameter curved	60.	Р
	its longitudi	nal axis s	to be rotated 90 so that both the wed to the impact.			
38.3.4.6.3	Requireme	nt				Р
	their extern	al tempei	nt cells meet this rature does not ex oly and no fire with	xceed 170°C and	After the test, The, component Cells external temperature does not exceed 170℃ and there is	Р
					no disassembly and no fire within six hours of this test.	
Group		No.	Component cells external temperature	Criteria	no disassembly and no fire	Result
Group Group A,		No.	cells external	The component	no disassembly and no fire within six hours of this test. Cells external temperature	Result
Group A, at first cycle			cells external temperature (℃)	The component does not exceed	no disassembly and no fire within six hours of this test. Cells external temperature 170°C and there is no	
Group A,	rated	01	cells external temperature (℃)	The component does not exceed	no disassembly and no fire within six hours of this test. Cells external temperature	Р
Group A, at first cycle the design i	rated	01 02	cells external temperature (℃) 25.6℃ 25.3℃	The component does not exceed disassembly and	no disassembly and no fire within six hours of this test. Cells external temperature 170°C and there is no	P P
Group A, at first cycle the design i	rated	01 02 03	cells external temperature (°C) 25.6 °C 25.3 °C 25.4 °C	The component does not exceed disassembly and	no disassembly and no fire within six hours of this test. Cells external temperature 170°C and there is no	P P P
Group A, at first cycle the design i capacity (H	rated	01 02 03 04	cells external temperature (℃) 25.6 ℃ 25.3 ℃ 25.4 ℃ 25.5 ℃	The component does not exceed disassembly and	no disassembly and no fire within six hours of this test. Cells external temperature 170°C and there is no	P P P
Group A, at first cycle the design i	rated orizontal)	01 02 03 04 05	cells external temperature (℃) 25.6 ℃ 25.3 ℃ 25.4 ℃ 25.5 ℃ 25.8 ℃	The component does not exceed disassembly and	no disassembly and no fire within six hours of this test. Cells external temperature 170°C and there is no	P P P P
Group A, at first cycle the design is capacity (H	rated orizontal) e at 50% of rated	01 02 03 04 05 06	cells external temperature (°C) 25.6 °C 25.3 °C 25.4 °C 25.5 °C 25.8 °C 25.1 °C 26.2 °C	The component does not exceed disassembly and	no disassembly and no fire within six hours of this test. Cells external temperature 170°C and there is no	P P P P
Group A, at first cycle the design is capacity (H	rated orizontal) e at 50% of rated	01 02 03 04 05 06	cells external temperature (°C) 25.6 °C 25.3 °C 25.4 °C 25.5 °C 25.8 °C 25.1 °C	The component does not exceed disassembly and	no disassembly and no fire within six hours of this test. Cells external temperature 170°C and there is no	P P P P P
Group A, at first cycle the design is capacity (H	rated orizontal) e at 50% of rated	01 02 03 04 05 06 07	cells external temperature (°C) 25.6 °C 25.3 °C 25.4 °C 25.5 °C 25.8 °C 25.1 °C 26.2 °C 25.7 °C	The component does not exceed disassembly and	no disassembly and no fire within six hours of this test. Cells external temperature 170°C and there is no	P P P P P
Group A, at first cycle the design is capacity (Horizontal Computer of the design is capacity (Volume of the	rated orizontal) e at 50% of rated	01 02 03 04 05 06 07 08 09	cells external temperature (°C) 25.6 °C 25.3 °C 25.4 °C 25.5 °C 25.8 °C 25.1 °C 26.2 °C 25.7 °C 25.2 °C	The component does not exceed disassembly and this test.	no disassembly and no fire within six hours of this test. Cells external temperature I 170°C and there is no in o fire within six hours of	P P P P P P
Group A, at first cycle the design is capacity (Here) Group B, at first cycle the design is capacity (Very Group C, after 50 cycle)	e at 50% of rated ertical)	01 02 03 04 05 06 07 08 09	cells external temperature (°C) 25.6 °C 25.3 °C 25.4 °C 25.5 °C 25.8 °C 25.1 °C 26.2 °C 25.7 °C 25.2 °C 25.3 °C	The component does not exceed disassembly and this test. The component does not exceed	no disassembly and no fire within six hours of this test. Cells external temperature I 170°C and there is no do no fire within six hours of the control of	P P P P P
Group A, at first cycle the design is capacity (He Group B, at first cycle the design is capacity (Ve Group C, after 50 cyclin fully disclemental)	e at 50% of cated ertical)	01 02 03 04 05 06 07 08 09 10 11	cells external temperature (°C) 25.6 °C 25.3 °C 25.4 °C 25.5 °C 25.1 °C 26.2 °C 25.7 °C 25.2 °C 25.3 °C 25.4 °C 25.5 °C	The component does not exceed disassembly and this test. The component does not exceed	no disassembly and no fire within six hours of this test. Cells external temperature I 170°C and there is no do no fire within six hours of the control of	P P P P P P P P
Group A, at first cycle the design is capacity (Here) Group B, at first cycle the design is capacity (Very Group C, after 50 cycle)	e at 50% of cated ertical)	01 02 03 04 05 06 07 08 09 10	cells external temperature (°C) 25.6 °C 25.3 °C 25.4 °C 25.8 °C 25.1 °C 26.2 °C 25.7 °C 25.2 °C 25.3 °C 25.4 °C	The component does not exceed disassembly and this test. The component does not exceed disassembly and this test.	no disassembly and no fire within six hours of this test. Cells external temperature I 170°C and there is no do no fire within six hours of the control of	P P P P P P P P

Group D, after 50 cycles ending in fully discharged states (Vertical) 17 25.2 °C 18 25.5 °C 19 25.4 °C 20 25.2 °C 20 25.2 °C					
in fully discharged states (Vertical) 18		16	25.7℃		Р
states (Vertical) 18		17	25.2℃		Р
Ambient temperature: 24.0°C Conclusion: Lithium Polymer Battery had passed Impact test.		18	25.5℃		Р
Ambient temperature: 24.0°C Conclusion: Lithium Polymer Battery had passed Impact test.		19	25.4℃		Р
Conclusion: Lithium Polymer Battery had passed Impact test.		20	25.2℃		Р
Lithium Polymer Battery had passed Impact test.	Ambient temperature: 24	.0°C			
Compliance Service		ner Batte	ery had passe	ed Impact test.	>
	CEM.			ice ser	

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Clause	Requirement – Tes	t		Result - Remark	Verdict
38.3.4.7	Test 7: Overcharge				Р
38.3.4.7.1	Purpose				Р
	This test evaluates t battery to withstand				-
38.3.4.7.2	Test procedure				Р
	The charge current			2×1000=2000mA, Twice the manufacturer's recommended maximum continuous charge current	P >
	The minimum voltag	e:		V	Р
	a) the minimum volta manufacturer's reco more than 18V).			2×4.2=8.4V, the lesser of two times the maximum charge voltage of the battery or 22V,	Р
	b) the minimum volta manufacturer's reco than 18V).			CE	N
	Ambient temperature	Э.		24 ℃	-
	The duration of the t	est.	C Q Y	24 hours	-
38.3.4.7.3	Requirement		7		Р
	Rechargeable batter is no disassembly artest.			There is no disassembly and no fire within seven days of the test.	Р
Group		No.	Criteria		Result
Group A	o in fully sharged	01	There is no disassembly and no fire within		Р
states)	e,in fully charged	02	seven days of th	Р	
•		03		Р	
		04			Р
Group B (after fifty c	ycles ending in fully	05			Р
charged sta		06			Р
		07			Р
ン ′		08			Р

Conclusion:

Lithium Polymer Battery had passed overcharge test.

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Clause	Requirement – Test	Result - Remark	Verdict
38.3.4.8	Test 8: Forced discharge	This is rechargeable batteries.	N
38.3.4.8.1	Purpose		N
	This test evealuates the ability of a primary or a rechargeable cell to withstand a forced discharge condition.		-
38.3.4.8.2	Test procedure		N
	Each cell shall be forced discharged at ambient temperature by connecting it in series with a 12 V DC, power supply at an initial current equal to the maximum discharge current specified by the manufacturer.		N
	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)) CE	N
38.3.4.8.3	Requirement		N
	Primary or rechargeable cells meet this requirement if there is no disassembly and no fire within seven day of the test.		N
	omp. Lane		

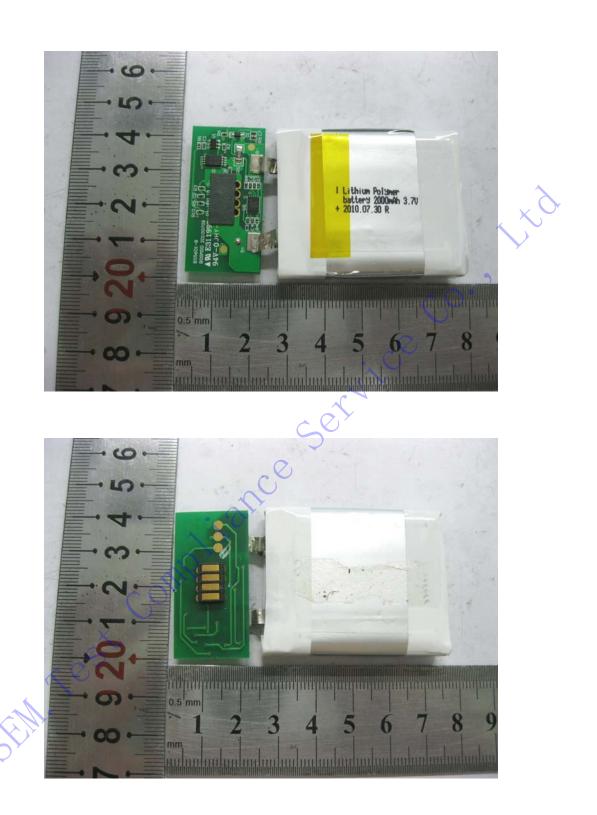
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Photos

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***** End of Report *****

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