

UN 38.3 Test Report

Lithium cell or battery test summary in accordance with
sub-section 38.3 of Manual of Tests and Criteria.

Test Report Number	UN-C31N2509-CAWJ
Customer Name	ASUS
Product Name	LI-ION BATTERY PACK
Model Name	C31N2509
Test specification	ST/SG/AC.10/11/Rev.8
UN38.3 Test Item	T.1, T.2, T.3, T.4, T.5, T.6, T.7, T.8 (Note that T.6 and T.8 are for Cell)
Test sample No	1~38
Test Date	2026/1/5 ~ 2026/1/30
Date of Test Report	2026/1/30
Product Manufacturer & Test Laboratory	Dynapack Electronic Technology (Suzhou) Co., Ltd
Manufacturer & Test Laboratory information	Address: No. 8 Hua-Gang Road, WuJiang Economical and Technological Development Zone, Suzhou city, JiangSu. PRC. Tel: 0086-051263408688 E-mail: Cathy.Xu@dynapack.com.cn ZIP: 215200 Website: http://www.dynapack.com.tw

Description of Battery	
Model Name	C31N2509
Battery Type	Small LI-ION BATTERY PACK
Pack Configuration	3 Series / 1 Parallel
Nominal Voltage	11.25 V
Capacity/Energy	Typical:4454mAh 50Wh Rated:4324mAh 49Wh
Mass	0.195 kg
Pack Dimension(mm)	272.00*72.50*5.30
Cell Brand	CosMX
Cell model	CA436981G-M

Performed Tests		Results
UN38.3 T1	Altitude simulation	☒ PASS ☐ FAIL
UN38.3 T2	Thermal test	☒ PASS ☐ FAIL
UN38.3 T3	Vibration	☒ PASS ☐ FAIL
UN38.3 T4	Shock	☒ PASS ☐ FAIL
UN38.3 T5	External short circuit	☒ PASS ☐ FAIL
UN38.3 T6	Crush	☒ PASS ☐ FAIL
UN38.3 T7	Overcharge	☒ PASS ☐ FAIL
UN38.3 T8	Forced discharge	☒ PASS ☐ FAIL
Reference to assembled battery testing requirements:		
☒ Not Applicable ☐ UN38.3.3(f) ☐ UN38.3.3(g)		

Prepared By :

Checked By :

Approved By :



 Engineer
Cathy.Xu



 Senior Engineer
Sky.Jiang



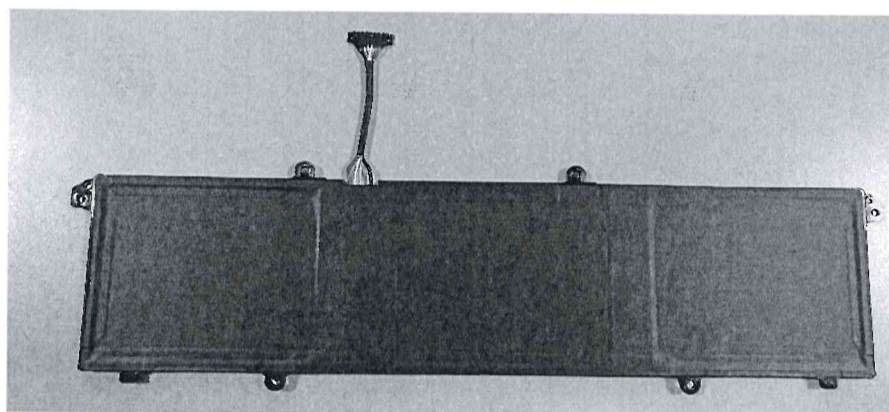
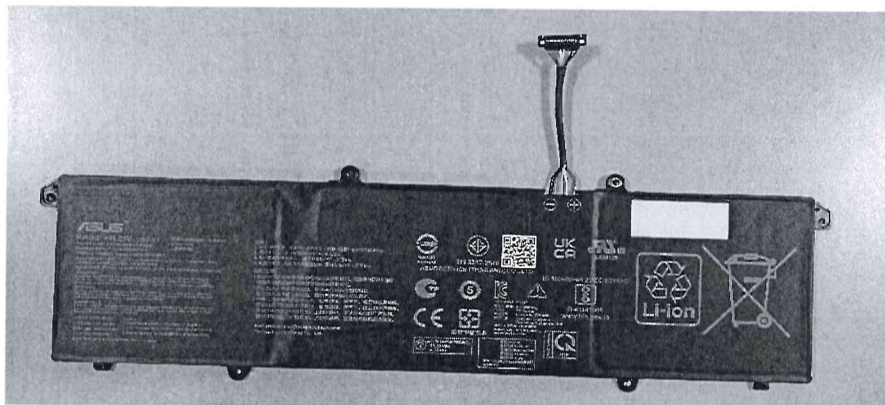
 Associate Vice President
Michael.Cheng

1. Test Equipment

Inst. No.	Description	Series No	Function/Range
WJ6014	Learning Machine	D14106-2	20 V / 10 A
WJ6015	Chamber	6609K	-40~150°C
WJ9004	Learning Machine	D20131-7	20V / 15A
WJ9005	Chamber	MEA1504-010	0~100°C, 10%~98%RH
WJ6103	Electronic Scales	0929016	0.2~600g, Accuracy 0.01g
WJ6108	3560 AC mΩMeter	051139050	0~5/50 V / 30mΩ-3kΩ
WJ6105	Vacuum Machine	GS55-221	-76~0cmHg
WJ6189	Thermal shock2	9811K	200°C ~ -80°C
WJ6073	Vibration Machine	D1202031	5~2000Hz Level/5~1500Hz Vertical; Max. acceleration: 100gVertical;
WJ2401	Shock	D2312665	MAX 1600G
WJ6115	Chamber	6514K	0-150°C / 20%RH~98%RH
WJ6104	34970 data recorder	MY44039623	-100~+400°C
WJ4035	Digital Caliper	05565311	0~200mm
WJ2501	Crush	LG4620	0~20KN
WJ8037	34970 data recorder	MY44039446	-100~+400°C
WJ6106	POWER SUPPLY	006103176669002004	0~30V; 0~18A
WJ6107	POWER SUPPLY	006103176670001002	0~30V; 0~18A
WJ7006	34970 data recorder	MY44042480	-100~+400°C
WJ7008	POWER SUPPLY	006103156267001009	0~30V; 0~18A
WJ7009	POWER SUPPLY	006103156273001007	0~30V; 0~18A
WJ6197	DC E-LOAD	002022506570001023	3~120 V / 0~60 A
WJ8001	Digital T-H-Meter	2045240566	0 to +50°C / 10 to 95%HR
WJ8002	Digital T-H-Meter	2045240692	0 to +50°C / 10 to 95%HR

2. Detail records as below :

2.1 Photograph



Rating: +11.25V $\equiv$ 50Wh

Questions? Please visit www.asus.com

Rechargeable Li-Polymer Battery Pack

Capacity: 4454mAh(Typical) / 4324mAh(Rated)

MODEL(型號/型号): C31N2509

3INP5/70/82

二次鋰電池組

鋰離子電池組

額定容量: 4324mAh

充電限制電壓: 13.2V $\equiv$

標稱電壓: 11.25V $\equiv$

額定能量: 49Wh

2.2 Test Data:

2.2.1 T.1 Altitude

Sample No.	Sample	OCV(V)		Voltage Residual (%)	Mass(g)		Mass Loss (%)	Result
	Status	Before	After		Before	After		
1	1CYC , Fully charge	13.061	13.051	99.92%	194.55	194.60	0.00%	PASS
2	1CYC , Fully charge	13.060	13.052	99.94%	193.27	193.32	0.00%	PASS
3	1CYC , Fully charge	13.064	13.055	99.93%	193.17	193.19	0.00%	PASS
4	1CYC , Fully charge	13.075	13.066	99.93%	193.24	193.21	0.02%	PASS
5	25CYC , Fully charge	13.063	13.054	99.93%	193.50	193.45	0.03%	PASS
6	25CYC , Fully charge	13.073	13.064	99.93%	192.96	193.00	0.00%	PASS
7	25CYC , Fully charge	13.081	13.071	99.92%	194.61	194.60	0.01%	PASS
8	25CYC , Fully charge	13.066	13.058	99.94%	192.11	192.15	0.00%	PASS
Temperature, °C		22.1			Humidity, %RH		46.3	

Criteria:

*Batteries meet requirement regard mass loss was less than (0.5% , $M < 1g$; 0.2%, $1g \leq M \leq 75g$; 0.1%, $M > 75g$) and voltage after testing is not less than 90% of its voltage immediately prior to this procedure.

*No leakage, No venting, No disassembly, No rupture and no fire.

2.2.2 T.2 Thermal shock

Sample No.	Sample	OCV(V)		Voltage Residual (%)	Mass(g)		Mass Loss (%)	Result
	Status	Before	After		Before	After		
1	1CYC , Fully charge	13.051	12.785	97.96%	194.60	194.61	0.00%	PASS
2	1CYC , Fully charge	13.052	12.777	97.89%	193.32	193.32	0.00%	PASS
3	1CYC , Fully charge	13.055	12.780	97.89%	193.19	193.14	0.03%	PASS
4	1CYC , Fully charge	13.066	12.792	97.90%	193.21	193.26	0.00%	PASS
5	25CYC , Fully charge	13.054	12.789	97.97%	193.45	193.41	0.02%	PASS
6	25CYC , Fully charge	13.064	12.791	97.91%	193.00	193.03	0.00%	PASS
7	25CYC , Fully charge	13.071	12.802	97.94%	194.60	194.56	0.02%	PASS
8	25CYC , Fully charge	13.058	12.782	97.89%	192.15	192.18	0.00%	PASS
Temperature, °C		21.0			Humidity, %RH		45.9	

Criteria:

*Batteries meet requirement regard mass loss was less than (0.5% , $M < 1g$; 0.2%, $1g \leq M \leq 75g$; 0.1%, $M > 75g$) and voltage after testing is not less than 90% of its voltage immediately prior to this procedure.

*No leakage, No venting, No disassembly, No rupture and no fire.

2.2.3 T.3 Vibration

Sample No.	Sample	OCV(V)	OCV(V)	Voltage Residual (%)	Mass(g)	Mass(g)	Mass Loss (%)	Result
	Status	Before	After		Before	After		
1	1CYC , Fully charge	12.785	12.765	99.84%	194.61	194.57	0.02%	PASS
2	1CYC , Fully charge	12.777	12.746	99.76%	193.32	193.35	0.00%	PASS
3	1CYC , Fully charge	12.780	12.751	99.77%	193.14	193.19	0.00%	PASS
4	1CYC , Fully charge	12.792	12.763	99.77%	193.26	193.24	0.01%	PASS
5	25CYC , Fully charge	12.789	12.758	99.76%	193.41	193.41	0.00%	PASS
6	25CYC , Fully charge	12.791	12.763	99.78%	193.03	192.99	0.02%	PASS
7	25CYC , Fully charge	12.802	12.773	99.77%	194.56	194.58	0.00%	PASS
8	25CYC , Fully charge	12.782	12.751	99.76%	192.18	192.20	0.00%	PASS
Temperature, °C		21.3			Humidity, %RH		46.9	

Criteria:

*Batteries meet requirement regard mass loss was less than (0.5% ,M<1g;0.2%, 1g ≤ M ≤ 75 g; 0.1%,M > 75 g) and voltage after testing is not less than 90% of its voltage immediately prior to this procedure.

*No leakage, No venting, No disassembly, No rupture and no fire.

2.2.4 T.4 shock

Sample No.	Sample	OCV(V)	OCV(V)	Voltage Residual (%)	Mass(g)	Mass(g)	Mass Loss (%)	Result
	Status	Before	After		Before	After		
1	1CYC , Fully charge	12.765	12.741	99.81%	194.57	194.52	0.03%	PASS
2	1CYC , Fully charge	12.746	12.726	99.84%	193.35	193.30	0.03%	PASS
3	1CYC , Fully charge	12.751	12.724	99.79%	193.19	193.16	0.02%	PASS
4	1CYC , Fully charge	12.763	12.740	99.82%	193.24	193.21	0.02%	PASS
5	25CYC , Fully charge	12.758	12.736	99.83%	193.41	193.38	0.02%	PASS
6	25CYC , Fully charge	12.763	12.732	99.76%	192.99	193.02	0.00%	PASS
7	25CYC , Fully charge	12.773	12.742	99.76%	194.58	194.60	0.00%	PASS
8	25CYC , Fully charge	12.751	12.725	99.80%	192.20	192.21	0.00%	PASS
Temperature, °C		21.0			Humidity, %RH		46.5	

Criteria:

*Batteries meet requirement regard mass loss was less than (0.5% ,M<1g;0.2%, 1g ≤ M ≤ 75 g; 0.1%,M > 75 g) and voltage after testing is not less than 90% of its voltage immediately prior to this procedure.

*No leakage, No venting, No disassembly, No rupture and no fire.

2.2.5 T.5 External Short circuit

Sample NO.	Sample Status	Max Battery Temperature(°C)	Result
1	1CYC , Fully charge	57.37	PASS
2	1CYC , Fully charge	57.25	PASS
3	1CYC , Fully charge	57.54	PASS
4	1CYC , Fully charge	57.00	PASS
5	25CYC , Fully charge	57.43	PASS
6	25CYC , Fully charge	57.43	PASS
7	25CYC , Fully charge	57.47	PASS
8	25CYC , Fully charge	57.43	PASS
Temperature, °C		21.0	Humidity, %RH
			46.7

Criteria:

- *All Batteries can meet requirement subjected external temperature does not exceed 170 °C.
- *All Batteries no disassembly, no rupture and no fire during the test and within six hours of this test.

2.2.6 T.6 Crush

Sample NO.	Sample Status	Max Cell Temperature (°C)	Result
9	1CYC,50% Capacity	21.50	PASS
10	1CYC,50% Capacity	21.42	PASS
11	1CYC,50% Capacity	21.41	PASS
12	1CYC,50% Capacity	21.33	PASS
13	1CYC,50% Capacity	21.30	PASS
14	25CYC,50% Capacity	21.37	PASS
15	25CYC,50% Capacity	21.41	PASS
16	25CYC,50% Capacity	21.40	PASS
17	25CYC,50% Capacity	21.36	PASS
18	25CYC,50% Capacity	21.37	PASS
Temperature, °C		21.3	Humidity, %RH
			45.9

Criteria:

- *All cells can meet requirement subjected external temperature does not exceed 170°C.
- *All cells no disassembly and no fire during the test and within six hours of this test.

2.2.7 T.7 Over Charge

Sample NO.	Sample Status	Result
1	1CYC, Fully charge	PASS
2	1CYC, Fully charge	PASS
3	1CYC, Fully charge	PASS
4	1CYC, Fully charge	PASS
5	25CYC, Fully charge	PASS
6	25CYC, Fully charge	PASS
7	25CYC, Fully charge	PASS
8	25CYC, Fully charge	PASS
Temperature, °C		20.9
Humidity, %RH		46.2

Criteria:

*All batteries can meet no disassembly and no fire during the test and within seven days after the test.

2.2.8 T.8 Forced Discharge

Sample NO.	Sample Status	Result	Sample NO.	Sample Status	Result
19	1CYC, Fully discharge	PASS	29	25CYC, Fully discharge	PASS
20	1CYC, Fully discharge	PASS	30	25CYC, Fully discharge	PASS
21	1CYC, Fully discharge	PASS	31	25CYC, Fully discharge	PASS
22	1CYC, Fully discharge	PASS	32	25CYC, Fully discharge	PASS
23	1CYC, Fully discharge	PASS	33	25CYC, Fully discharge	PASS
24	1CYC, Fully discharge	PASS	34	25CYC, Fully discharge	PASS
25	1CYC, Fully discharge	PASS	35	25CYC, Fully discharge	PASS
26	1CYC, Fully discharge	PASS	36	25CYC, Fully discharge	PASS
27	1CYC, Fully discharge	PASS	37	25CYC, Fully discharge	PASS
28	1CYC, Fully discharge	PASS	38	25CYC, Fully discharge	PASS
Temperature, °C		20.7	Humidity, %RH		45.8

Criteria:

*All cells no disassembly and no fire during the test and within seven days after the test.

--- End of Test report ---