TEST – REPORT

23P-001940

Client:	*Name:*	Polyconcept GBS
	Street:	4/F., Hongqiao Rongguang Bldg., 11 Changshun Road
	Place:	Shanghai, 200051
	Country:	P.R. China

Device:	*Test item:*	Kano 5000mAh wireless PB-BK
	Vender code:	#11748
	Factory code:	#13757
	Type:	12414990
	PO No.:	657857
	Condition of sample at delivery:	Non-defect (only batteries)
	Date of receipt:	2023-05-06
	Sample No.:	23P001940-S01

Test:	*Description:*	Partial Test as the request from the client Clause 7.3.2, 7.3.3, 7.3.6, 7.3.8.1 and 7.3.8.2 (See detailed information on page 3)		
	Standard:	IEC 62133-2:2017+A1:2021 EN 62133-2:2017+A1:2021		
	Notes:	All test items were performed by an external laboratory with required accreditation.		
	Testing Period:	2023-05-17 to 2023-05-26		
	Date of report:	2023-05-30	*Pages of report:*	10

Final result: **PASS**	
Greg Yang Project Engineer Drafted by	Andy Li Project Supervisor Reviewed by

The test result(s) and conclusion(s) in this report relate only to the sample(s) as received and method / regulation section(s) tested as described herein. If it is not further specified in the report, the decision rule for stating conformity is based on the QIMA decision rule (https://www.qima.com/conditions-of-service#decisionRule).This test report may not be reproduced in whole or in part, without written approval of Hansecontrol Technical Testing Service (Shanghai) Company Limited.

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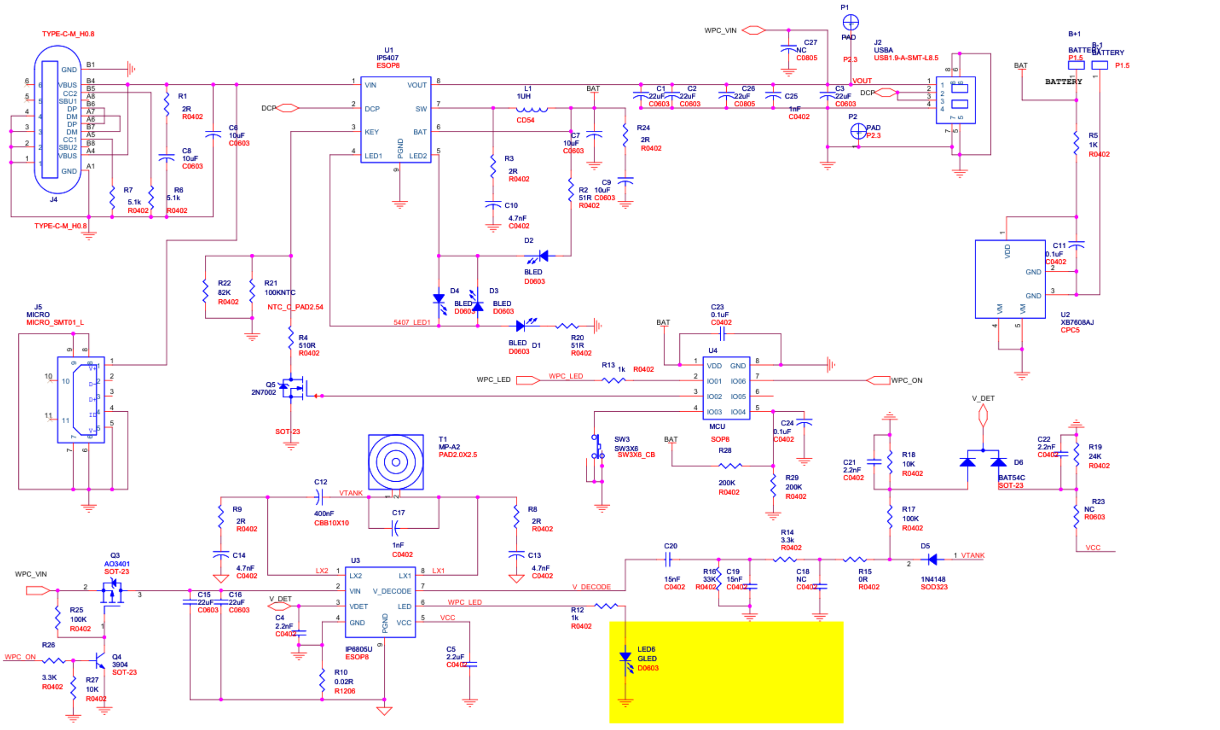
Possible test case verdicts		
-	Test case does not apply to the test object	N/A (Not applicable)
-	Test object does meet the requirement	P (PASS)
-	Test object does not meet the requirement	F (FAIL)
-	Test case not tested by requirement	N/T (Not tested)
-	Test case only for information	I (Informative)
Note: Throughout this report a point is used as the decimal separator.		

1. Specification of sample	
Product Description:	Kano 5000mAh wireless PB-BK
Model No. / Article No.:	12414990
Battery No.:	955465
Rated Electrical Parameter:	3.7 V, 5000 mAh, 18.5 Wh
Supply connection:	DC connector
Recommend charging method declared by the manufacturer:	2000 mA constant current charge to 5.0 V, then constant voltage 5.0 V charge till charging current declines to 100 mA
Discharge current (0.2 I_t A):	1000 mA
Specified final voltage:	3.0 V
Upper limit charging voltage per cell:	4.2 V
Maximum charging current:	2100 mA
Charging temperature upper limit:	40°C
Charging temperature lower limit:	-10°C
Polymer cell electrolyte type:	☐ gel polymer ☐ solid polymer ☒ N/A
Other information:	-

2. Summary of testing		
Test Clause	**Test Name**	**Test Result**
7.3.2	External short-circuit (battery)	P
7.3.3	Free fall	P
7.3.6	Over-charging of battery	P
7.3.8.1	Vibration	P
7.3.8.2	Mechanical shock	P

3. Circuit diagram



4. Purpose of examination

Selected sub-clauses	*Requirements*	*Remark*	*Verdict*
7	Charging procedure for test purposes		P
7.3	Reasonably foreseeable misuse		P
7.3.1	External short-circuit (cell)	Battery	N/A
	The cells were tested until one of the following occurred:		N/A
	- 24 hours elapsed; or		N/A
	- The case temperature declined by 20 % of the maximum temperature rise		N/A
	Results: no fire, no explosion .... :	(See appended table 7.3.1)	N/A
7.3.2	External short-circuit (battery)		P
	The batteries were tested until one of the following occurred:		P
	- 24 hours elapsed; or		N/A
	- The case temperature declined by 20 % of the maximum temperature rise		P
	In case of rapid decline in short circuit current, the battery pack remained on test for an additional one hour after the current reached a low end steady state condition		P

4. Purpose of examination			
Selected sub-clauses	***Requirements***	***Remark***	***Verdict***
	A single fault in the discharge protection circuit is conducted on one to four (depending upon the protection circuit) of the five samples before conducting the short-circuit test		P
	A single fault applies to protective component parts such as MOSFET (metal oxide semiconductor field-effect transistor), fuse, thermostat or positive temperature coefficient (PTC) thermistor		P
	Results: no fire, no explosion .... :	(See appended table 7.3.2)	P
7.3.3	Free fall		P
	Results: no fire, no explosion		P
7.3.6	Over-charging of battery		P
	The supply voltage which is:		P
	- 1,4 times the upper limit charging voltage presented in Table A.1 (but not to exceed 6,0 V) for single cell/cell block batteries or		P
	- 1,2 times the upper limit charging voltage resented in Table A.1 per cell for series connected multi-cell batteries, and		N/A
	- Sufficient to maintain a current of 2,0 It A throughout the duration of the test or until the supply voltage is reached		P
	Test was continued until the temperature of the outer casing:		P
	- Reached steady state conditions (less than 10 °C change in 30-minute period); or		N/A
	- Returned to ambient		P
	Results: no fire, no explosion .... :	(See appended table 7.3.6)	P
7.3.8	Mechanical tests (batteries)		P
7.3.8.1	Vibration		P
	Results: no fire, no explosion, no rupture, no leakage or venting.. :	(See appended table 7.3.8.1)	P
7.3.8.2	Mechanical shock		P
	Results: no leakage, no venting, no rupture, no explosion and no fire.. :	(See appended table 7.3.8.2)	P
	Carrie or clips of insulation material or with insulating lining		P

7.3.2	TABLE: External short circuit (battery)					P
Sample No.	Ambient T (°C)	OCV before test (Vdc)	Resistance of circuit (mΩ)	Maximum case temperature ~~rise ΔT (K)~~ (°C)	Component single fault condition	Results
#B01	21.9	5.10	84	23.2	MOSFET U2 Pin 3-5 SC	NF, NE
#B02	21.9	5.10	82	22.5	MOSFET U2 Pin 3-5 SC	NF, NE
#B03	21.9	5.09	84	23.1	MOSFET U2 Pin 3-5 SC	NF, NE
#B04	21.9	5.10	83	23.1	MOSFET U2 Pin 3-5 SC	NF, NE
#B05	21.9	5.09	84	22.7	Normal	NF, NE
Supplementary information: - Abbreviation: SC= Short circuit, OC= Open circuit, NF= No fire, NE= No explosion - Others (please explain)						

7.3.6	TABLE: Over-charging of battery			P
Constant charging current (A)........................:	10.0			—
Supply voltage (Vdc).......................................:	5.88			—
Sample No.	**OCV before charging (Vdc)**	**Total charging time (minute)**	**Maximum outer case temperature (°C)**	**Results**
#B06	5.08	60	23.2	NF, NE
#B07	5.08	60	23.4	NF, NE
#B08	5.09	60	23.2	NF, NE
#B09	5.08	60	23.6	NF, NE
#B10	5.08	60	24.4	NF, NE
Supplementary information: - Abbreviation: NF= No fire, NE= No explosion - Others (please explain)				

7.3.8.1	TABLE: Vibration				P
Sample No.	OCV before test (Vdc)	OCV after test (Vdc)	Mass before test (g)	Mass after test (g)	Results
#B11	5.10	5.09	93.834	93.833	NF, NE, NR, NL, NV
#B12	5.10	5.09	93.457	93.456	NF, NE, NR, NL, NV
#B13	5.09	5.08	93.273	93.272	NF, NE, NR, NL, NV
Supplementary information: - Abbreviation: NF= No fire, NE= No explosion, NR= No rupture, NL= No leakage, NV= No venting - Others (please explain)					

7.3.8.2	TABLE: Mechanical shock				P
Sample No.	OCV before test (Vdc)	OCV after test (Vdc)	Mass before test (g)	Mass after test (g)	Results
#B14	5.10	5.09	93.274	93.273	NF, NE, NR, NL, NV
#B15	5.10	5.09	94.182	94.181	NF, NE, NR, NL, NV
#B16	5.09	5.08	93.841	93.840	NF, NE, NR, NL, NV
Supplementary information: - Abbreviation: NF= No fire, NE= No explosion, NR= No rupture, NL= No leakage, NV= No venting - Others (please explain)					

- To Be Continued -

5. Picture documentation

Photo 1: Overview of end product (12414990)

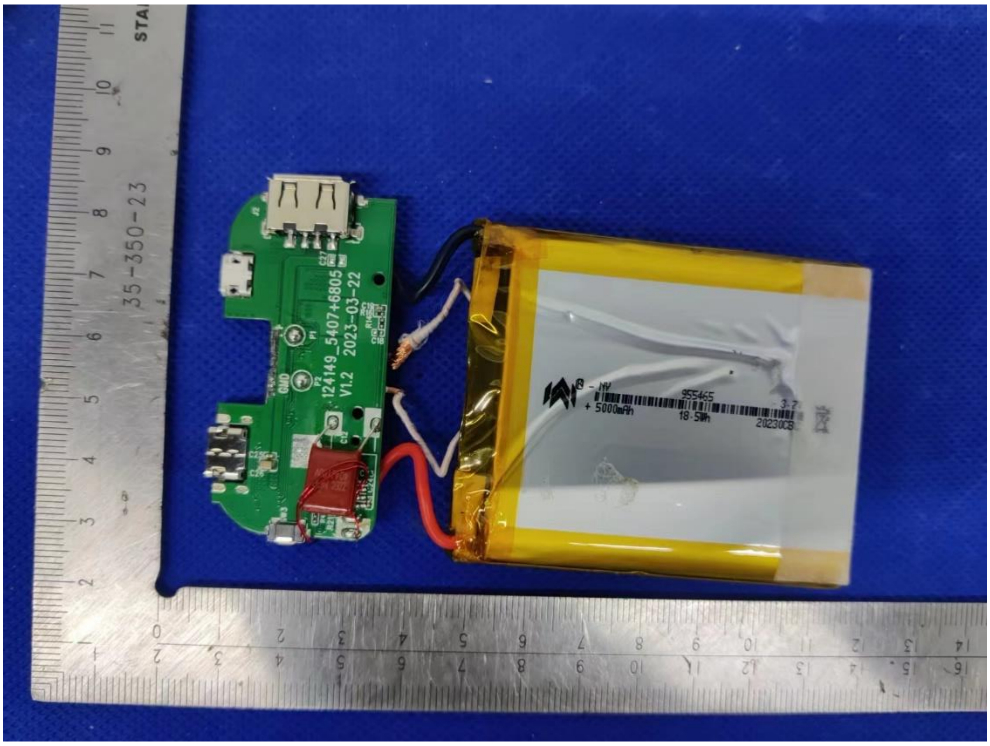


Photo 2: Overview of battery

5. Picture documentation

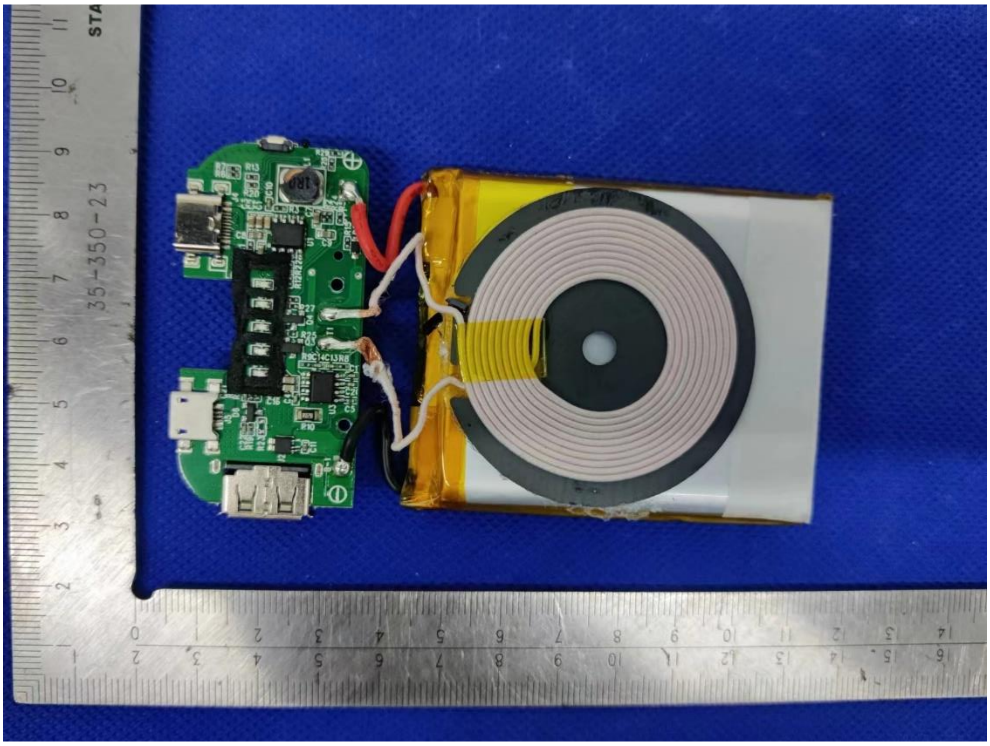


Photo 3: Overview of battery

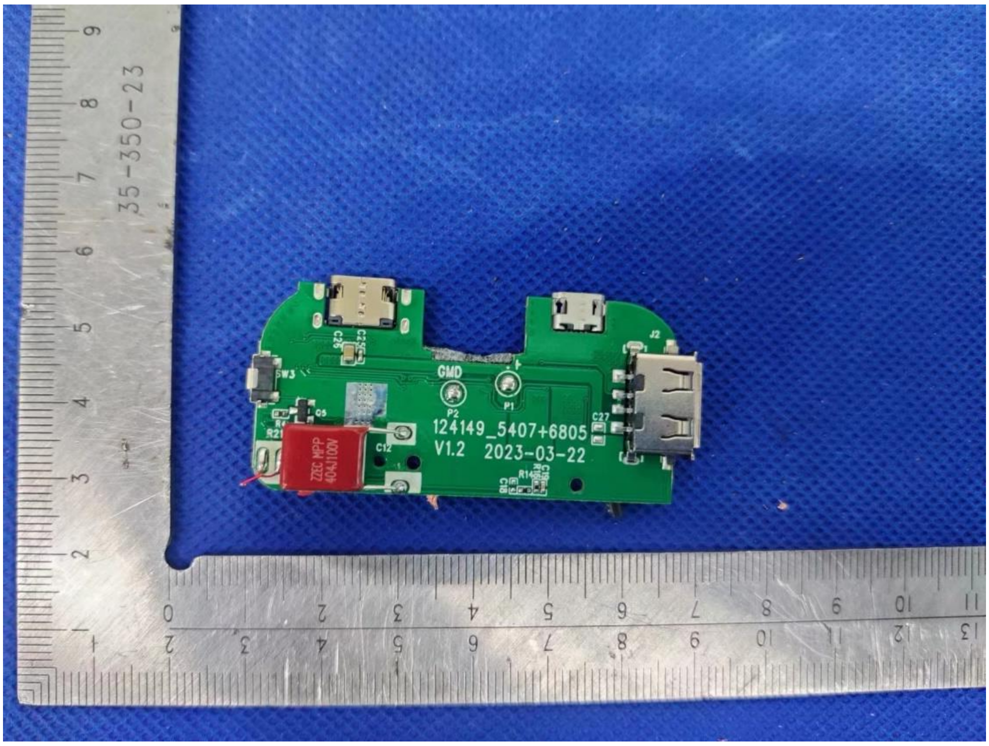


Photo 4: PCB

5. Picture documentation

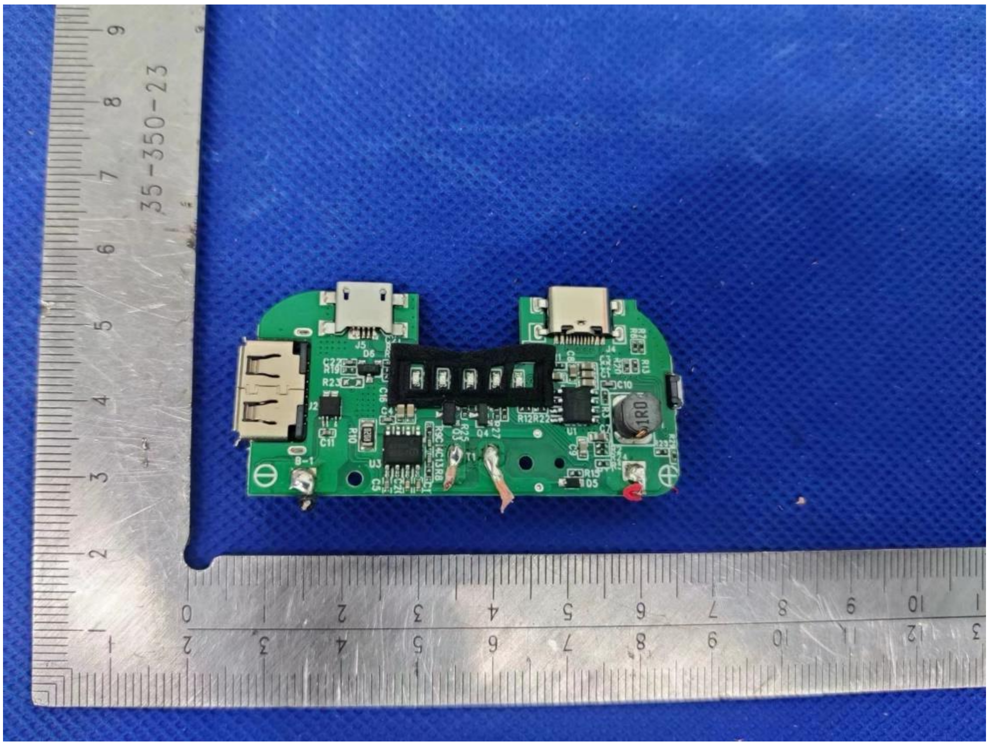


Photo 5: PCB

- End of Report -