






TEST REPORT

Report No.:	DGCTL201909200007A
Product:	Solar power bank
Model No.:	i26w
Applicant:	ORYTO
Issued by:	Dongguan CTL Electromagnetic Technology Co., Ltd.
Lab Location:	Room 107, No.2, Block 1, Area 1, Headquarters Road No.2, Songshanhu Hi-tech Development Zone, Dongguan, Guangdong, P.R. China.
Tel:	(86)-0769-22893710 Fax (86)-0769-22893710

This test report consists of 21 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by DGCTL. The test results in the report only apply to the tested sample. The test report shall be invalid without all the signatures of testing engineers, reviewer and approver. Any objections must be raised to DGCTL within 15 days since the date when the report is received. It will not be taken into consideration beyond this limit.

TEST REPORT UL 2056 Outline of Investigation for Safety of Power Banks	
Report Number	DGCTL201909200007A
Date of issue	2019-10-19
Total number of pages	21 pages
Applicant's name	ORYTO
Address	Fuming Industrial Zone, No.41 ,Minzhi Road, MINGCHUN Community, Guanlan Street, Longhua, Sheznzhen, P.R. China
Test specification:	
Standard	UL 2056 No. 2 (11-03-2015)
Test procedure	Test report
Non-standard test method	N/A
Testing Laboratory	Dongguan CTL Electromagnetic Technology Co., Ltd.
Testing location/ address	Room 107, No.2, Block 1, Area 1, Headquarters Road No.2, Songshanhu Hi-tech Development Zone, Dongguan, Guangdong, P.R. China.
List of Attachments (including a total number of pages in each attachment):	
Attachment NO.1: 3 pages of Photo Documentation	
Tested by (name + signature)	Vigny wang 
Reviewed by (name + signature)	Cantic peng 
Approved by (name + signature)	Richard chen 



Test item particulars:

Information about the product needed to establish a correct test program, such as product mobility, type of power connections and similar. (Test item particulars are selected by the TRF Originator base on the requirements in the standard)

Designation : i26w

Trade mark..... : N/A

Nominal voltage : 5.0Vdc

Rated capacity : 13000mAh

Output capacity..... : 18000mAh for 1.0A USB port;
13000mAh for 3.1A USB port;
13000mAh for 3.1A total USB port

Maximum charge voltage..... : 5.25Vdc

Maximum charge current : 2.0A

Final voltage..... : 3.0V

Max Ambient Temperature : 45°C

Manufacturer's charge method : Charging via USB port: 5V, 2.0A until four lights turn on.

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 : 2019-09-20

Date(s) of performance of tests : 2019-09-20 to 2019-10-19

General remarks:

This report shall not be reproduced, except in full, without the written approval of the testing laboratory.

The test results presented in this report relate only to the object tested.

"(see remark #)" refers to a remark appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

Summary of testing:

<u>Clause(s)</u>	<u>Test(s)</u>
8	General
8.4	TABLE: Abnormal Charging Test for model (battery)
8.5	TABLE: Abusive Overcharge Test for model (battery)
8.7/8.8	TABLE: Battery Pack Component Temperature Test and Battery Pack Surface Temperature Test for model (battery)
8.9	TABLE: Limited power sources
9	Power Input Test
10	Overload of Output Ports Test
12	Capacity Verification Test

General information:

The product covered in this report is a Solar power bank which consists of two li-ion cell inside (1S2P), the cells inside the Solar power bank is UL1642 approved, see component list table for details and protection circuit provided in the Solar power bank.

See below table for the Solar power bank's parameter.

Model	Nominal capacity	Nominal voltage	Nominal Charge Current	Nominal Discharge Current	Maximum Charge Current	Maximum Discharge Current	Maximum Charge Voltage	Cut-off Voltage
i26w	13000mAh	5V	2.0A	1.0A	2.0A	3.1A	5.25V	3.0V

Marking label:

Solar power bank
 Model: i26w
 Li-ion Battery 3.7V 26800mAh 99.16Wh
 Input: DC5V/2A(max)
 Output ①/②: DC5V/1.0A 18000mAh 90Wh
 Output ①/②: DC5V/3.1A(max) 13000mAh 65Wh
 Output Total: DC5V/3.1A(max) 13000mAh 65Wh

CAUTION: Risk of fire and burns. Do not open, crush, heat about 40°C or incinerate. Follow manufacturer's instructions.

Date code: YYYYMMDD

Made in China

Shenzhen Mingliansheng Electronic Technology Co., Ltd.

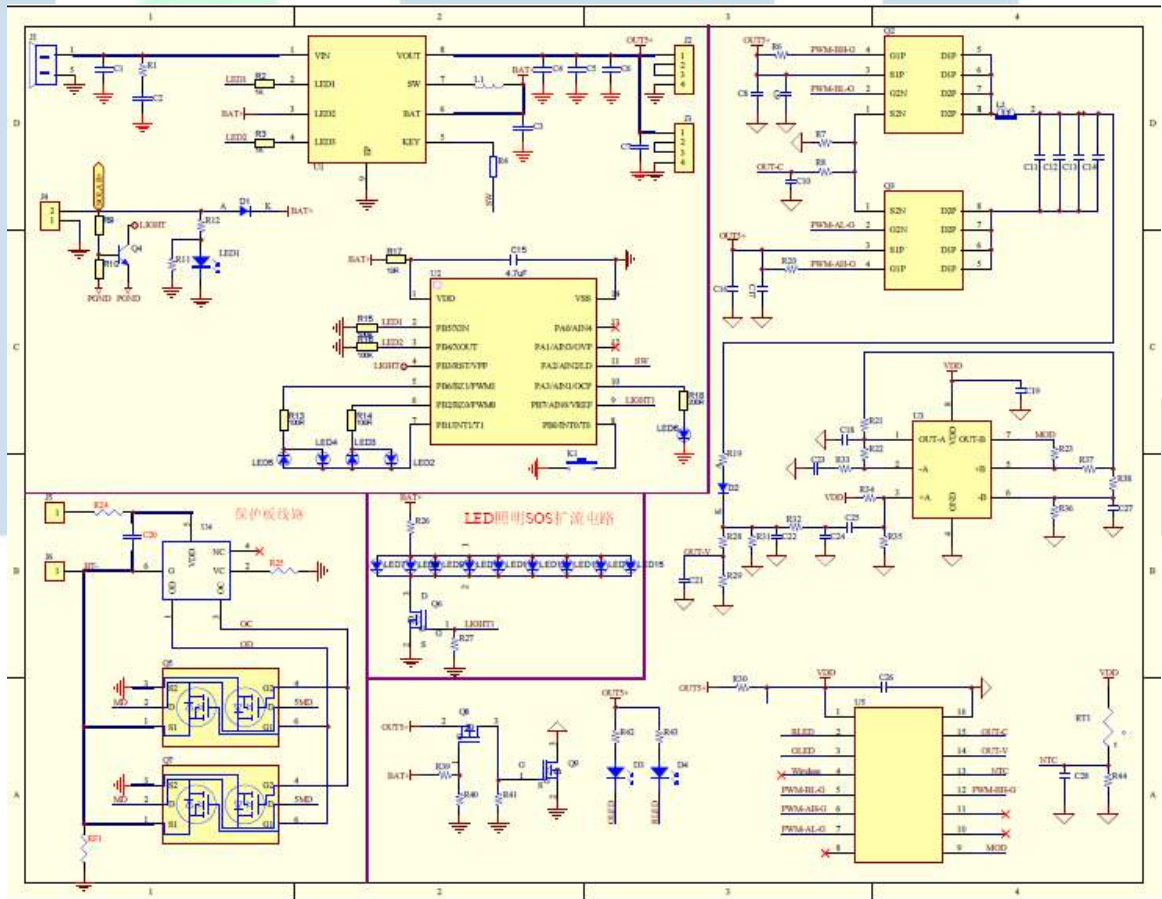
**Construction:**



Size: 28mm×94mm×178.5mm

Circuit diagram:

Power bank:



Name and address of factory (ies) : Shenzhen Mingliansheng Electronic Technology Co., Ltd.
 4F, Bldg 3, Taiming Industrial Park, Yousong Road, Minzhi Street, Longhua New District, Shenzhen, P.R. China

UL 2056			
Clause	Requirement + Test	Result - Remark	Verdict

CONSTRUCTION			P
7	Non-Metallic Materials		P
7.1	Power banks shall comply with the requirements in the Standard for Household and Commercial Batteries, UL 2054.	Tested and complied.	P
7.2	The input port from external power supply is in general dc jack or USB port, and shall not be of the types described in 1.3.	USB port used.	P
7.3	If the built-in dc/dc converter circuitry generates voltage exceeding 42.4 Vac or 60 Vdc, this circuitry shall comply with the applicable requirements of the Standard for Information Technology Equipment – Safety – Part 1: General Requirements, UL 60950-1.	No such convertor which can generates such high voltage.	N/A

PERFORMANCE			P
8	General		P
8.1	Unless otherwise superseded by a requirement in this Outline, power banks shall comply with the requirements of battery packs in the Standard for Household and Commercial Batteries, UL 2054.	Tested and complied.	P
8.2	For the Abnormal Charging Test and Abusive Overcharge Test in the Standard for Household and Commercial Batteries, UL 2054, 8.3 – 8.5 shall be followed.		P
8.3	The tests shall be conducted at the input point of battery protecting circuit. Note – This means dc/dc converter circuitry will be bypassed to result in battery overcharging, which is required for the evaluation of protecting circuit.		P
8.4	For the Abnormal Charging Test in the Standard for Household and Commercial Batteries, UL 2054, the following shall be taken as maximum current I _c : Rated maximum charging current of the built-in battery (rather than the power bank).	See appended table 8.4	P
8.5	For the Abusive Overcharge Test in the Standard for Household and Commercial Batteries, UL 2054, the C5 amp rate of the built-in battery (rather than the power bank) shall be taken for the purpose of this test.	See appended table 8.5	P
8.6	For the Battery Pack Component Temperature Test and Battery Pack Surface Temperature Test in the Standard for Household and Commercial Batteries, UL 2054, 8.7 and 8.8 shall be followed.		P

UL 2056			
Clause	Requirement + Test	Result - Remark	Verdict
8.7	For output loading temperature test, a fully charged power bank shall be discharged. Any load of the output ports that can be operated at the same time shall be considered to result in maximum temperature rise.	See appended table 8.7/8.8	P
8.8	For input loading temperature test, a fully discharged power bank shall be charged in accordance with manufacturer's specifications. Any load of the output ports that can be operated at the same time shall be considered to result in maximum temperature rise.	See appended table 8.7/8.8	P
8.9	Each output port shall be a limited power source in accordance with Standard for Household and Commercial Batteries, UL 2054 or the Standard for Information Technology Equipment – Safety – Part 1: General Requirements, UL 60950-1, or a Class 2 power source in accordance with the Standard for Class 2 Power Units, UL 1310.	See appended table 8.9	P
8.10	Each output port shall be a SELV circuit in accordance with the Standard for Information Technology Equipment – Safety – Part 1: General Requirements, UL 60950-1.		P
9	Power Input Test		P
9.1	The current input to a power bank shall not exceed 110% of the marked input current rating of the power bank, when the power bank is operated under the conditions of maximum normal load.	See appended table 9	P
9.2	Maximum normal load shall consist of the maximum current draw while the power bank is operating in all possible modes. This may include charging the built-in battery, and output ports unloaded or loaded at the rated maximum normal load. Any load that can be operated at the same time shall be considered in order to obtain the maximum normal load.		P
10	Overload of Output Ports Test		P
10.1	Each power output pin of output port shall be overloaded in accordance with 10.2 – 10.5.		P
10.2	In accordance with manufacturer's specifications, fully charge the built-in battery of power bank.		P
10.3	The power bank is covered with one layer of cheesecloth and placed on a softwood board covered with one layer of tissue paper.		P

UL 2056			
Clause	Requirement + Test	Result - Remark	Verdict
10.4	Each power output pin of output port shall then be loaded to draw the maximum current, for at least 1 h. The maximum current shall be just below the trip point of any protective device, which is considered to be 110% of its current rating.		P
10.5	After this test, the cheesecloth and tissue paper shall remain intact.	See table 10	P
11	Flammability of Photovoltaic Cells Test		N/A
11.1	This test shall be conducted if the power bank is provided with integral photovoltaic cells as a power source.		N/A
11.2	In accordance with manufacturer's specifications, fully charge the built-in battery of the power bank.		N/A
11.3	The power bank is covered with one layer of cheesecloth and placed on a softwood board covered with one layer of tissue paper.		N/A
11.4	The power bank is subjected to single component fault that is likely to occur and which would result in flammability issue of the photovoltaic cells, such as back-feed of battery power, and is kept in this state for 1 h.		N/A
11.5	After this test, the cheesecloth and tissue paper shall remain intact.		N/A
12	Capacity Verification Test		P
12.1	The marked electrical capacity of power bank, measured at the power output pin of output port, shall comply with the Standard for Secondary Cells and Batteries Containing Alkaline or Other Non-Acid Electrolytes – Secondary Lithium Cells and Batteries for Portable Applications, IEC 61960, Clause 7.3.1, Discharge Performance at 20 °C (Rated Capacity), and the modified test method in 12.2.	See table 12	P
12.2	The power bank is discharged at a constant current equals to rated current of the output port, until its voltage is equal to the end-of-discharge voltage of the output port, specified by the manufacturer.		P
	MARKINGS		P
13	General		P
13.1	Unless otherwise superseded by a requirement in this Outline, power banks shall comply with the requirements in the Standard for Household and Commercial Batteries, UL 2054.	See marking plate on page 4	P

UL 2056			
Clause	Requirement + Test	Result - Remark	Verdict
13.2	<p>For electrical ratings, the following information shall be provided:</p> <p>a) Input rating in Vdc and A. If there are more than one input ports, the rating of each port shall be provided;</p> <p>b) Output rating in Vdc and A. If there are more than one output ports, it shall include rating of each port and the combined rating (if it is not equal to the summation of all ports); and</p> <p>c) Electrical capacity in Ah or mAh. If there are more than one output ports/output ratings, either the capacity of each port/rating shall be provided, or the minimum capacity of these ports/ratings shall be provided.</p>	See marking plate on page 4	P

	INSTRUCTIONS		P
14	General		P
14.1	Power banks shall be provided with legible instructions pertaining to the proper selection and replacement of its power supply or charger.		P
14.2	Power banks shall be provided with legible instructions pertaining to a risk of fire or injury to persons associated with the use of the product.		P
14.3	An illustration is allowed with a required instruction to clarify the intent but shall not replace the written instruction.		P

15	Instructions Pertaining to Risk of Fire or Injury to Persons		P
15.1	Instructions pertaining to a risk of fire or injury to persons shall warn the user of reasonably foreseeable risks and state the precautions to be taken to reduce such risks. Such instructions shall be preceded by the heading "INSTRUCTIONS PERTAINING TO RISK OF FIRE OR INJURY TO PERSONS" or the equivalent.		P
15.2	Unless otherwise indicated, the text of the instructions in 15.4 shall be in the words specified or words that are equivalent, clear, and understandable. Substitution of the signal word "DANGER" for "WARNING" is allowed when the risk associated with the product is such that a situation exists which, if not avoided, will result in death or serious injury.		P
15.3	Numbering of the items in the list in 15.4 and including other instructions pertaining to a risk of fire or injury to persons that the manufacturer determines to be necessary and that do not conflict with the intent of the instructions are acceptable.		P

UL 2056			
Clause	Requirement + Test	Result - Remark	Verdict
15.4	<p>The instructions pertaining to a risk of fire or injury to persons shall include those items in the following list that are applicable to the product. The statement "IMPORTANT SAFETY INSTRUCTIONS" or the equivalent shall precede the list, and the statement "SAVE THESE INSTRUCTIONS" or the equivalent shall either precede or follow the list. The word "WARNING" shall be entirely in upper case letters or shall be emphasized to distinguish it from the rest of the text.</p> <p>IMPORTANT SAFETY INSTRUCTIONS</p> <p>WARNING – When using this product, basic precautions should always be followed, including the following:</p> <ul style="list-style-type: none"> a) Read all the instructions before using the product. b) To reduce the risk of injury, close supervision is necessary when the product is used near children. c) Do not put fingers or hands into the product. d) Do not expose power bank to rain or snow. e) Use of a power supply or charger not recommended or sold by power pack manufacturer may result in a risk of fire or injury to persons. f) Do not use the power bank in excess of its output rating. Overload outputs above rating may result in a risk of fire or injury to persons. g) Do not use the power bank that is damaged or modified. Damaged or modified batteries may exhibit unpredictable behavior resulting in fire, explosion or risk of injury. h) Do not disassemble the power bank. Take it to a qualified service person when service or repair is required. Incorrect reassembly may result in a risk of fire or injury to persons. i) Do not expose a power pack to fire or excessive temperature. Exposure to fire or temperature above 100°C may cause explosion. The temperature of 100°C can be replaced by the temperature of 212°F. j) Have servicing performed by a qualified repair person using only identical replacement parts. This will ensure that the safety of the product is maintained. k) Switch off the power bank when not in use. <p>SAVE THESE INSTRUCTIONS</p>		P

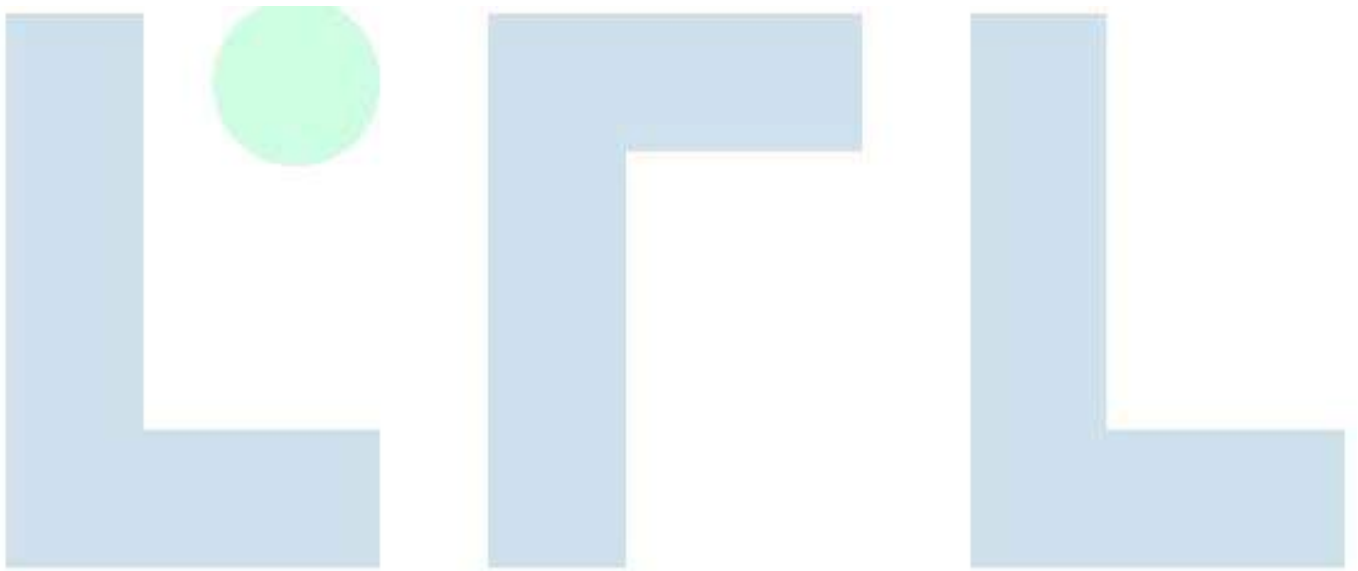
UL 2056			
Clause	Requirement + Test	Result - Remark	Verdict

APPENDIX A			P
	<p>Standards for Components</p> <p>Standards under which components of the products covered by this outline of investigation are evaluated include the following:</p> <p>Title of Standard – UL Standard Designation</p> <p>Automatic Electrical Controls for Household and Similar Use, Part 1: General Requirements – UL 60730-1</p> <p>Low-Voltage Fuses – Part 1: General Requirements – UL 248-1</p> <p>Low-Voltage Fuses – Part 14: Supplemental Fuses – UL 248-14</p> <p>Marking and Labeling Systems – UL 969</p> <p>Polymeric Materials – Use in Electrical Equipment Evaluations – UL 746C</p> <p>Printed-Wiring Boards – UL 796</p> <p>Tests for Flammability of Plastic Materials for Parts in Devices and Appliances – UL 94</p> <p>Thermal-Links – Requirements and Application Guide – UL 60691</p> <p>Thermistor-Type Devices – UL 1434</p>		P

TABLE: Critical components information					P
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹⁾
Plastic enclosure	SABIC INNOVATIVE PLASTICS US L L C	C6200(GG)	min. 1.5mm thickness, V-0, 85°C	UL 94	UL E121562
Plastic enclosure (Alternate)	Interchangeable	Interchangeable	min. 1.5mm thickness, V-0, 85°C	UL 94	UL approved
PCB	GOLDENMAX INTERNATIONA L TECHNOLOGY (ZHUHAI) LTD	GDM-R1	min.1.40mm thickness, V-0, 130°C	UL 94 UL 796	UL E330731
PCB (Alternate)	Interchangeable	Interchangeable	min.1.40mm thickness, V-0, 130°C	UL 94 UL 796	UL Approved
IC(U1)	 英集芯科技 INJOINIC TECHNOLOGY	IP5310	Input voltage: 4.65- 5.5V, Max charging current: 3.1A, Output current: 3.1A, Tstg: - 60~150°C	--	Tested with appliance
IC(U2)	 芯海科技 CHIPSEA	CSU8RP3119B	12*14 ADC, 4K*14 Flash ROM, 256*8 RAM, Topr: - 40~85°C	--	Tested with appliance
IC(U4)	(FoShan) BlueRocket Electronics Co., Ltd	DW01	Over charge detection voltage: 4.3V, Over discharge detection voltage: 2.5V, Topr: -40~85°C	--	Tested with appliance
IC(U3)	 芯海科技 CHIPSEA	CSU9620	5*12 ADC, 1K*14 ROM, 64RAM, Topr: -40~85°C	--	Tested with appliance
MOSEFET(Q1)	 南麟 NATLINEAR	NP2002	VDS: 20V, VGS: ±12V, ID: 3A, Tstg: - 55~150°C	--	Tested with appliance
MOSEFET (Q2,Q3,Q5,Q7)	ShenZhenHome TownChipmicro Technology Co., Ltd	8205	VDSS: 20V, VGSS: 10V, ID: 5.5A, Tstg: - 55~150°C	--	Tested with appliance
Wiring	SHEN ZHEN HENGDIAN ELECTRIC CO LTD	1007	24AWG, 80°C, 300Vac	UL 758	UL E252861
Wring (Alternate)	Interchangeable	Interchangeable	24AWG, 80°C, 300Vac	UL 758	UL approved
Cell	JIANGXI DBK CO LTD	8873129	3.7Vdc, 13400mAh	UL 1642	UL MH60939

Supplementary information:

¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.



8.4	TABLE: Abnormal Charging Test for model (battery)					P
USB: Ambient temperature: 21.9°C						
Id	5.36			A		
Ue	3.0			V		
Ic	80.4			A		
Uc	4.2			V		
Sample No.	001	002	003	004	005	
Cell Case temp. (°C)	26.9	26.7	26.4	26.4	27.0	
Power bank surface temp. (°C)	24.2	23.9	24.0	24.4	24.3	
Failure Mode	Short circuit	Short circuit	Short circuit	Short circuit	Short circuit	
Faulted Protective Device	U1 pin 1 to pin 6+Q5,Q7 pin 2 to pin 3					
Supplementary information: The Charge Circuit is bypassed (i.e. test is conducted at the input point of Battery) Ic for testing is 26.8Ax3=80.4A (Ic max for battery is 80.4A)						

8.5	TABLE: Abusive Overcharge Test for model (battery)					P
USB: Ambient temperature: 22.5°C						
Sample No.	006	007	008	009	010	
Ic(A)	40	40	40	20	20	
Cell Case temp. (°C)	65.9	66.4	63.7	60.9	61.1	
Power bank surface temp. (°C)	42.2	43.8	41.1	40.7	40.2	
Failure Mode	Short circuit	Short circuit	Short circuit	Short circuit	Short circuit	
Faulted Protective Device	U1 pin 1 to pin 6+Q5,Q7 pin 2 to pin 3					
Supplementary information: The Charge Circuit is bypassed (i.e. test is conducted at the input point of Battery). Test current is 10 times C5 for 3pcs and 5xC5 for 2pcs. The supply voltage need have the ability to maintain the 10 times and 5 times C5 rate.						

8.7/8.8	TABLE: Battery Pack Component Temperature Test and Battery Pack Surface Temperature Test for model (battery)						P
USB: Battery Pack Component Temperature Test							
Sample No.	011		012		Limited T		
Testing Process	Charging	Discharging	Charging	Discharging	Charging	Discharging	
Inside surface of internal plastic enclosure (Bottom of cell)	47.1	50.4	47.3	51.8	115	115	
Inside surface of internal plastic enclosure (Side of USB port)	47.3	71.3	47.6	78.9	85	85	
Internal cell Case , Tmax	43.6	54.7	43.9	60.4	100	100	
Printed wiring board near U1	53.0	83.5	53.3	85.9	125	125	
Printed wiring board near Q5	52.8	82.4	53.0	84.2	125	125	
Printed wiring board near Q7	49.9	81.9	49.8	82.7	125	125	
Internal wiring	49.9	67.3	49.7	65.2	105	105	
Ambient	44.0	44.5	44.1	44.3	--	--	
Supplementary information: Charging: 5.25V, 2.0A; Discharge: 5V, 3.1A							

Battery Pack Surface Temperature Test (battery)						
Sample No.	011		012		Limited T	
Testing Process	Charging	Discharging	Charging	Discharging	Charging	Discharging
External accessible plastic surface of the power bank (Top)	44.7	49.3	44.8	49.9	75	75
External accessible plastic surface of the power bank (Bottom)	46.9	47.4	47.0	47.9	75	75
External accessible plastic surface of the power bank (Side of USB port)	47.2	49.7	47.3	60.2	75	75
Ambient	44.0	44.5	44.1	44.3	--	--
Supplementary information: Charging: 5.25V, 2.0A; Discharge: 5V, 3.1A						

8.9	TABLE: Limited power sources					P
USB: Circuit output tested:						
Note: Measured Uoc (V) with all load circuits disconnected:						
Components	Sample No.	Uoc (V)	I _{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
Normal	013	5.14	5.0	8.0	17.89	100
U1 pin 1 to pin 6	015	4.17	5.5	8.0	16.91	100
Q5, Q7 pin 2 to pin 3	016	5.14	5.0	8.0	17.87	100
supplementary information:						
Sc=Short circuit						

8.10	TABLE: evaluation of voltage limiting components in SELV circuits			N/A
Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components	
	V peak	V d.c.		

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)
supplementary information:	

9	TABLE: Power Input Test			P
U (V)	I (A)	I _{rated} (A)	P (W)	Condition/status
5.14 (USB)	1.8	2.0	--	Charging with internal cells discharged to end-of voltage
Supplementary information:				

10	TABLE: Overload of Output Ports Test				P
	Ambient temperature (°C)			23.2	—
	Power source for EUT: Manufacturer, model/type, output rating			USB 1: 5V 3.1A USB 2: 5V 3.1A	—
Component No.	Fault	Supply voltage (V)	Test time	Current drawn (A)	Observation
3.1A USB output	Overload	5.14	1h	5.0	NC, NT
3.1A USB output	Overload	5.15	1h	5.0	NC, NT
Test results:					Verdict
- Chemical leaks				No	P
- Explosion of the battery				No	P
- Emission of flame or expulsion of molten metal				No	P
- Electric strength tests of equipment after completion of tests					P
- cheesecloth and tissue paper shall remain intact				NC, NT	P
Supplementary information: NC = Cheesecloth remain intact YC = Cheesecloth charred or flamed NT = Tissue paper remained intact YT = Tissue paper charred or flamed * Voltage when power bank fully charged					

11	TABLE: Flammability of Photovoltaic Cells Test		N/A
	Ambient temperature (°C)		—
	Power source for EUT: Manufacturer, model/type, output rating		—

Component No.	Fault	Supply voltage (V)	Test time	Current drawn (A)		Observation
Test results:						Verdict
- Chemical leaks						
- Explosion of the battery						
- Emission of flame or expulsion of molten metal						
- Electric strength tests of equipment after completion of tests						
- cheesecloth and tissue paper shall remain intact						
Supplementary information:						

12	Capacity Verification Test	According to cl 7.3.1 (IEC 61960)	P
	Discharge performance at 20 °C (rated capacity)	The power bank is discharged at a constant current equals to rated current of each output port, until its voltage is equal to the end-of-discharge voltage of the output port, specified by the manufacturer.	P
	Cell or battery charged in accordance with 7.2 (IEC 61960), and stored in an ambient of 20 °C ± 5 °C for 1 h to 4 h (h)..... :		P
	Cell or battery discharged in an ambient of 20 °C ± 5 °C, at a constant current of 0,2 I _t A until its voltage increased to specified end-of-discharge voltage (A) (V)		P
	The capacity (Ah) delivered above was not less than 100 % of the rated capacity declared by the manufacturer (Ah)	Capacity declared by manufacturer: - 1800mAh for 1.0A black USB port -13000mAh for 3.1A blue USB port - 13000mAh for 3.1A total USB port	P
	The above two steps repeated up to four additional times, as necessary to meet this requirement (No. of tests)..... :		N/A

ttachment 1: Photo documentation

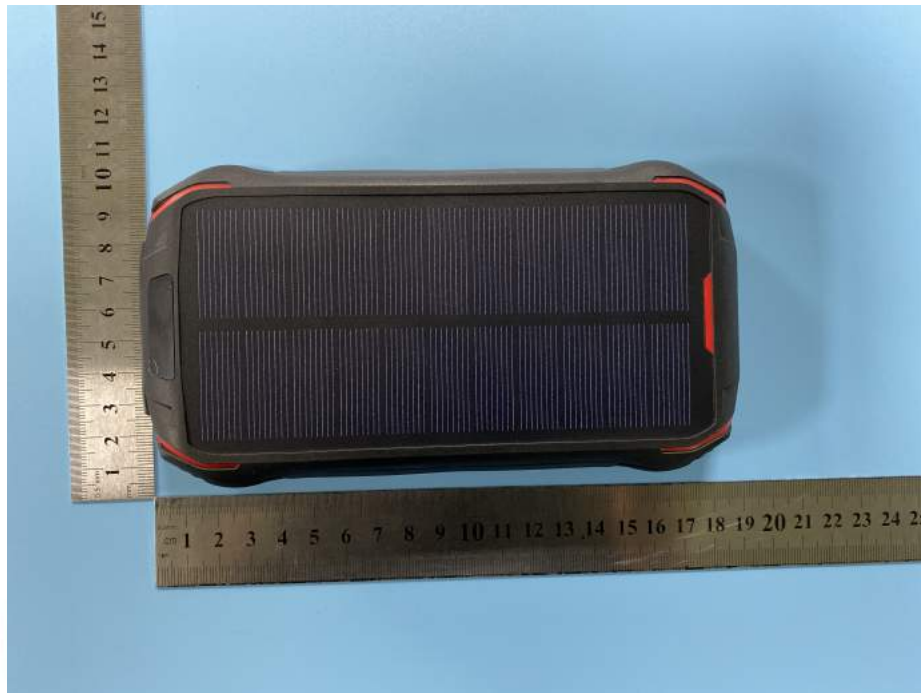


Fig.1- Front overview of battery



Fig.2- Back overview of battery

Attachment 1: Photo documentation

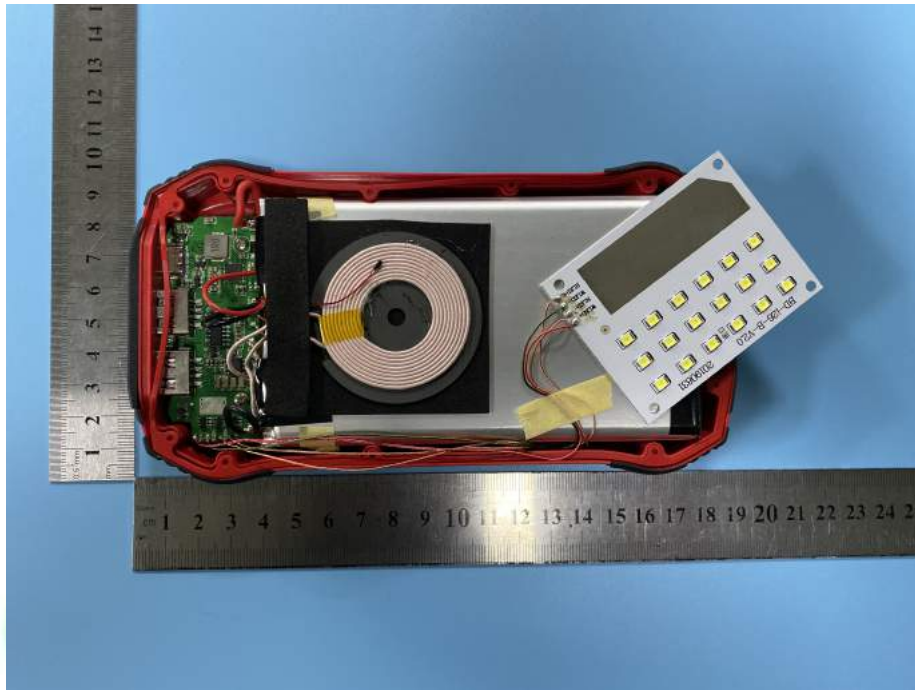


Fig.3- Inside view of battery

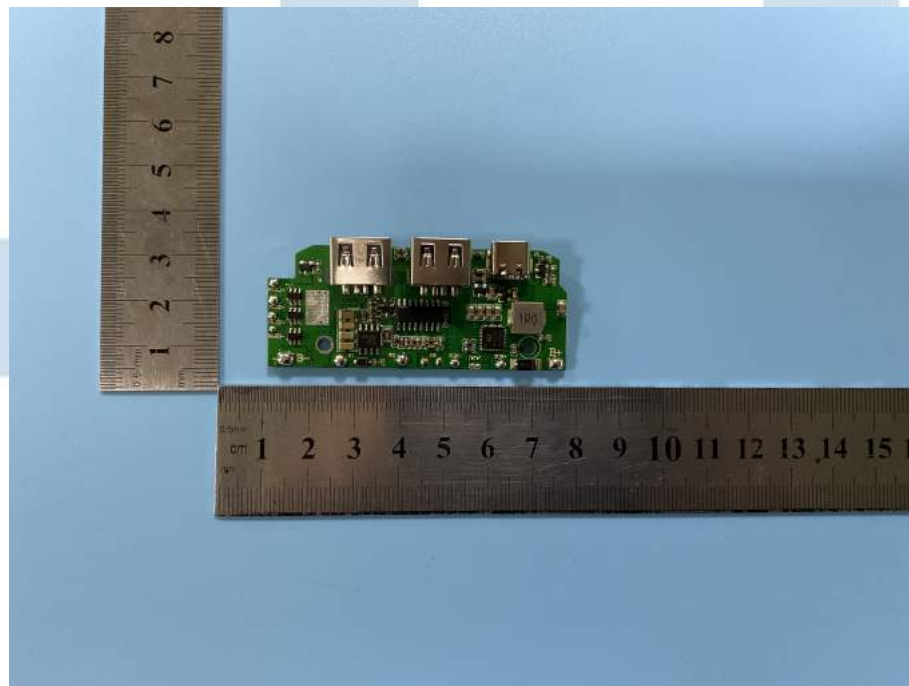


Fig.4-Front view of PCM

ttachment 1: Photo documentation

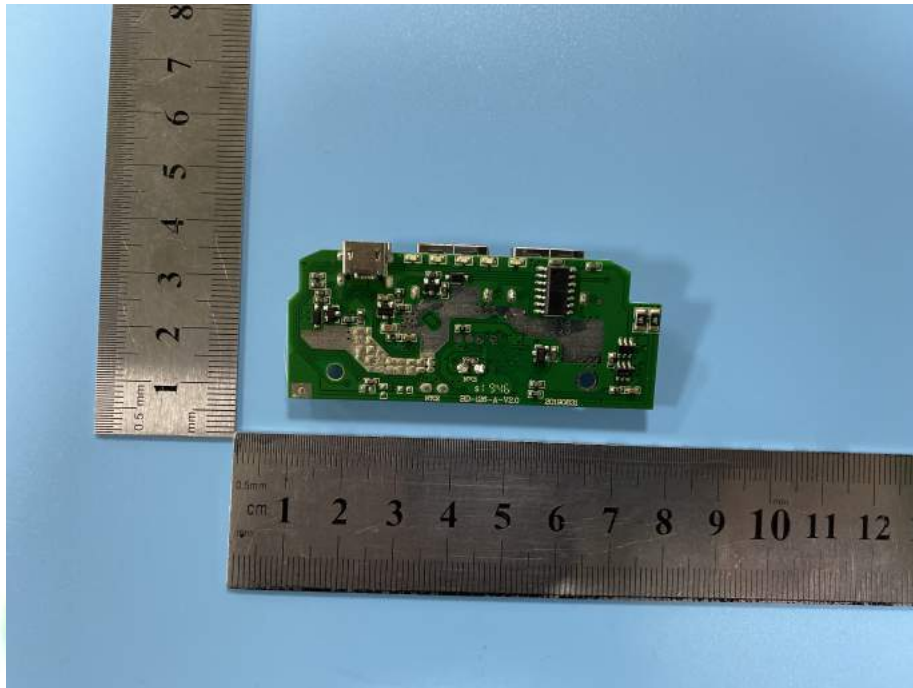


Fig.5-Back view of PCM

--End of Test Report--