TEST REPORT

JIS C 62133-2:2020

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Address	2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Testing location	As above
Applicant's name	TRADE WORKS CO., LTD
Address	7F, 3-28-13, Shibuya, Shibuya-ku, Tokyo, Japan

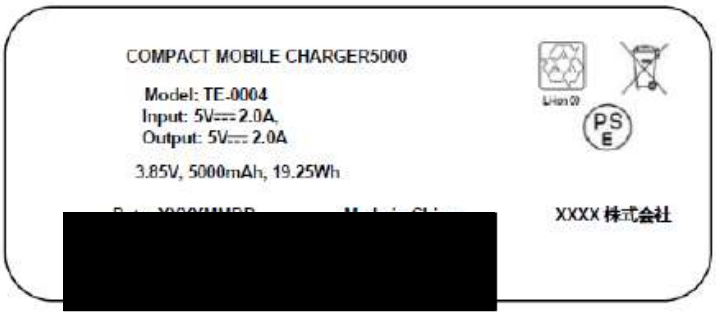
[redacted]

Test specification:	
Standard	JIS C 62133-2:2020
Test procedure	Type approved
Test result	Pass
Non-standard test method	N/A

Test item description	:	COMPACT MOBILE CHARGER5000
Model/Type reference.....	:	TE-0004
[redacted]		
Trade mark	:	N/A
Ratings	:	Input: 5V⎓2.0A, Output: 5V⎓2.0A Battery Capacity: 3.85V, 5000mAh, 19.25Wh

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



Remark:

Date code: YYYYMMDD

YYYY-Year, MM-Month, DD-Day

XXXX 株式会社: Here represents the Japanese importer.

List of Attachments (including a total number of pages in each attachment):
Attachment 1: Critical components information (page 21)
Attachment 2: Photo documentation (page 28-31)

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
cl.5.6.2 Design recommendation; cl.7.2.1 Continuous charging at constant voltage (cell) 7.2.2 Moulded case stress at high ambient temperature (battery) 7.2.2A Temperature cycling (cell and battery) 7.3.1 External short (cells) 7.3.2 External short (battery) 7.3.3 Free fall (cell and battery) 7.3.4 Thermal abuse (cell) 7.3.5 Crush (cell) 7.3.6 Overcharge (battery) 7.3.7 Forced discharge (cell) 7.3.8.1 Vibration (battery) 7.3.8.2 Mechanical shock (battery) 7.3.8A Low pressure (cell) 7.3.8B High rate charge (cell) 7.3.8C Free fall of batteries installed in the device 7.3.8D Overcharge protection (battery) 7.3.9 Forced internal short circuit (cell)	**Shenzhen TCT Testing Technology Co., Ltd.** 2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

Test item particulars.....:	
Classification of installation and use.....:	To be defined in final product
Supply connection.....:	USB-C port
Recommend charging method declared by the manufacturer.....:	Charging the battery with 2000mA constant current and 5.25V constant voltage until the current reduces to 100mA at ambient 20°C±5°C.
Discharge current (0,2 I_t A).....:	1000mA
Specified final voltage.....:	3.0V
Upper limit charging voltage per cell.....:	4.4V

Maximum charging current.....:	2000mA
Charging temperature upper limit.....:	45°C
Charging temperature lower limit.....:	10°C
Polymer cell electrolyte type .....:	☐ gel polymer ☐ solid polymer ☒ N/A

Possible test case verdicts:

- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)

Testing.....:	
Date of receipt of test item .....:	2023-12-21
Date (s) of performance of tests.....:	2023-12-21 to 2024-01-30

General product information:

This battery is constructed with single lithium-ion cell, and has overcharge, over-discharge, over current and short-circuits proof circuit.

For the cell, the specified charging temperature is 10-45°C and the specified discharging temperature is -10~60°C.

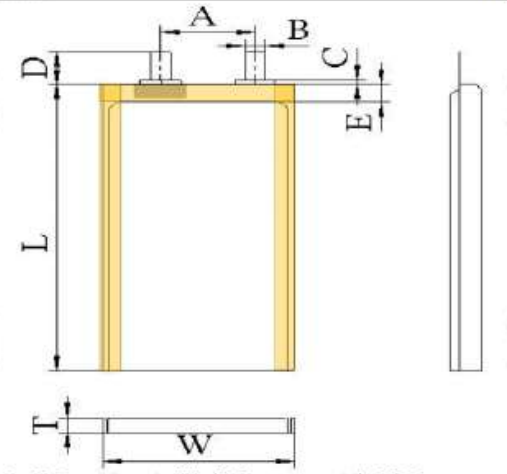
The main features of this model are shown as below:

Model (Battery)	Nominal capacity	Nominal voltage	Nominal Charge Current	Nominal Discharge Current	Maximum Charge Current	Maximum Discharge Current	Maximum Charge Voltage	Cut-off Voltage
TE-0004	5000mAh	5.0V	5V/2A	5V/2A	5V/2A	5V/2A	5.25	3.0V

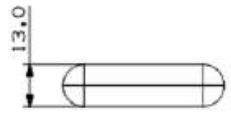
The main features of this cell within the battery pack shown as below:

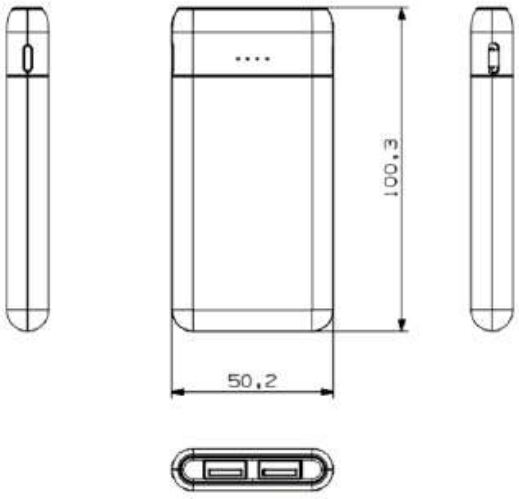
Model (Cell)	Nominal capacity	Nominal voltage	Nominal Charge Current	Nominal Discharge Current	Maximum Charge Current	Maximum Discharge Current	Maximum Charge Voltage	Cut-off Voltage
104373	5000mAh	3.85V	1000mA	1000mA	5000mA	5000mA	4.4V	3.0V

Construction:



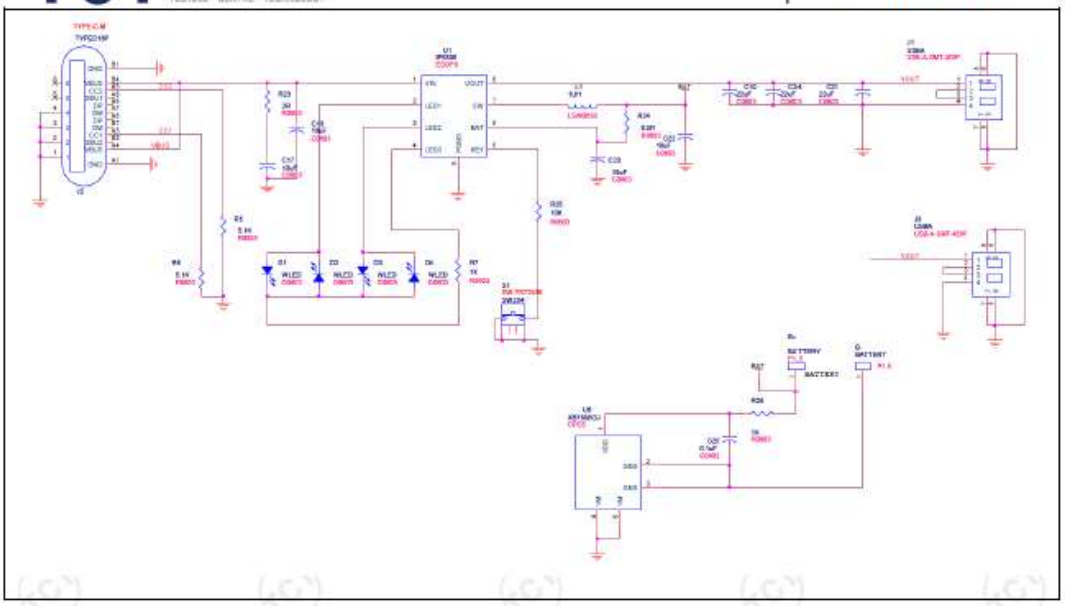
T: 10.0mm max W: 43.2mm max L: 73.7mm max
Cell





Battery (Unit:mm)

Circuit diagram:



Interpretation for METI Ordinance of Technical Requirements, Appendix 12, J62133-2 (JISC 62133-2:2020)			
Clause	Requirement + Test	Result - Remark	Verdict
4	**PARAMETER MEASUREMENT TOLERANCES**		P
	Parameter measurement tolerances		P
5	**GENERAL SAFETY CONSIDERATIONS**		P
5.1	**General**		P
	Cells and batteries so designed and constructed that they are safe under conditions of both intended use and reasonably foreseeable misuse		P
5.2	**Insulation and wiring**		P
	The insulation resistance between the positive terminal and externally exposed metal surfaces of the battery (excluding electrical contact surfaces) is not less than 5 MΩ	No metal surface exists.	N/A
	Insulation resistance (MΩ) ..... :		—
	Internal wiring and insulation are sufficient to withstand maximum anticipated current, voltage and temperature requirements		P
	Orientation of wiring maintains adequate clearances and creepage distances between conductors		P
	Mechanical integrity of internal connections accommodates reasonably foreseeable misuse		P
5.3	**Venting**		P
	Battery cases and cells incorporate a pressure relief mechanism or are constructed so that they relieve excessive internal pressure at a value and rate that will preclude rupture, explosion and self-ignition	Venting mechanism exists on the narrow side of pouch cell.	P
	Encapsulation used to support cells within an outer casing does not cause the battery to overheat during normal operation nor inhibit pressure relief		P
5.4	**Temperature, voltage and current management**		P
	Batteries are designed such that abnormal temperature rise conditions are prevented	Overcharge, over discharge, over current and short-circuit proof circuit used in this battery. See tests of clause 7.	P
	Batteries are designed to be within temperature, voltage and current limits specified by the cell manufacturer	See above.	P
	Batteries are provided with specifications and charging instructions for equipment manufacturers so that specified chargers are designed to maintain charging within the temperature, voltage and current limits specified	The charging limits specified in the manufacturer's specification.	P

Interpretation for METI Ordinance of Technical Requirements, Appendix 12, J62133-2 (JISC 62133-2:2020)			
Clause	Requirement + Test	Result - Remark	Verdict
5.5	**Terminal contacts**		P
	The size and shape of the terminal contacts ensure that they can carry the maximum anticipated current	USB-C port and USBcontacts complied with the requirements.	P
	External terminal contact surfaces are formed from conductive materials with good mechanical strength and corrosion resistance		P
	Terminal contacts are arranged to minimize the risk of short circuits		P
5.6	**Assembly of cells into batteries**		P
5.6.1	General		P
	Each battery has an independent control and protection for current, voltage, temperature and any other parameter required for safety and to maintain the cells within their operating region	Protective circuit equipped on battery.	P
	This protection may be provided external to the battery such as within the charger or the end devices		N/A
	If protection is external to the battery, the manufacturer of the battery provide this safety relevant information to the external device manufacturer for implementation		N/A
	If there is more than one battery housed in a single battery case, each battery has protective circuitry that can maintain the cells within their operating regions		N/A
	Manufacturers of cells specify current, voltage and temperature limits so that the battery manufacturer/designer may ensure proper design and assembly	Current, voltage and temperature limits specified by cell manufacturer.	P
	Batteries that are designed for the selective discharge of a portion of their series connected cells incorporate circuitry to prevent operation of cells outside the limits specified by the cell manufacturer		N/A
	Protective circuit components are added as appropriate and consideration given to the end-device application		P
	The manufacturer of the battery provide a safety analysis of the battery safety circuitry with a test report including a fault analysis of the protection circuit under both charging and discharging conditions confirming the compliance	Safety analysis report provided by manufacturer.	P
5.6.2	Design recommendation		P

Interpretation for METI Ordinance of Technical Requirements, Appendix 12, J62133-2 (JISC 62133-2:2020)			
Clause	Requirement + Test	Result - Remark	Verdict
	For the battery consisting of a single cell or a single cellblock, it is recommended that the charging voltage of the cell does not exceed the upper limit of the charging voltage specified in Table 2	Single cell battery Max. Charging voltage of cell: 4.4V.	P
	For the battery consisting of series-connected plural single cells or series-connected plural cellblocks, it is recommended that the voltages of any one of the single cells or single cellblocks does not exceed the upper limit of the charging voltage, specified in Table 2, by monitoring the voltage of every single cell or the single cellblocks		N/A
	For the battery consisting of series-connected plural single cells or series-connected plural cellblocks, it is recommended that charging is stopped when the upper limit of the charging voltage is exceeded for any one of the single cells or single cellblocks by measuring the voltage of every single cell or the single cellblocks		N/A
	For batteries consisting of series-connected cells or cell blocks, nominal charge voltage are not counted as an overcharge protection		N/A
	For batteries consisting of series-connected cells or cell blocks, cells have closely matched capacities, be of the same design, be of the same chemistry and be from the same manufacturer		N/A
	It is recommended that the cells and cell blocks are not discharged beyond the cell manufacturer's specified final voltage	Final voltage of cell: 3.0V, not exceed the final voltage specified by cell manufacturer.	P
	For batteries consisting of series-connected cells or cell blocks, cell balancing circuitry are incorporated into the battery management system		N/A
5.6.3	Mechanical protection for cells and components of batteries		P
	Mechanical protection for cells, cell connections and control circuits within the battery are provided to prevent damage as a result of intended use and reasonably foreseeable misuse	Mechanical protection for cell connections and control circuits provided.	P
	The mechanical protection can be provided by the battery case or it can be provided by the end product enclosure for those batteries intended for building into an end product	The mechanical protection can be provided by the battery case.	P
	The battery case and compartments housing cells are designed to accommodate cell dimensional tolerances during charging and discharging as recommended by the cell manufacturer		P

Interpretation for METI Ordinance of Technical Requirements, Appendix 12, J62133-2 (JISC 62133-2:2020)			
Clause	Requirement + Test	Result - Remark	Verdict
	For batteries intended for building into a portable end product, testing with the battery installed within the end product is considered when conducting mechanical tests		N/A
5.6.3A	Prevention for sharp corner hazard		P
	Except in the case of necessary function, concavo-convex or sharp corner not exist to cause hazards for cell or battery.		P
	When the corner exist on the cell or battery enclosure or connection parts, mechanical protection provided to prevent user contact.		P
	For cell or battery not intended to be handled by end user, the protection applied can be decided by agreement between the cell manufacturer and the battery and/or end product manufacturer, Conformity is checked by inspection.		P
5.7	**Quality plan**		P
	The manufacturer prepares and implements a quality plan that defines procedures for the inspection of materials, components, cells and batteries and which covers the whole process of producing each type of cell or battery	Complied. Quality plan provided.	P
5.8	**Battery safety components**		N/A
6	**TYPE TEST AND SAMPLE SIZE**		P
	Tests are made with the number of cells or batteries specified in Table 1 using cells or batteries that are not more than six months old		P
	The internal resistance of coin cells are measured in accordance with Annex D. Coin cells with internal resistance less than or equal to 3 Ω are tested in accordance with Table 1	Not coin cells	N/A
	Unless otherwise specified, tests are carried out in an ambient temperature of 20 °C ± 5 °C		P
	The safety analysis of 5.6.1 identify those components of the protection circuit that are critical for short-circuit, overcharge and over discharge protection		P
	When conducting the short-circuit test, consideration is given to the simulation of any single fault condition that is likely to occur in the protecting circuit that would affect the short-circuit test	See clause 7.3.2.	P

Interpretation for METI Ordinance of Technical Requirements, Appendix 12, J62133-2 (JISC 62133-2:2020)			
Clause	Requirement + Test	Result - Remark	Verdict
7	**Specific requirements and tests (lithium systems)**		P
7.0A	**General**		P
7.1	**Charging procedure for test purposes**		P
7.1.0A	The charging procedure specified in below first procedure and second procedure. However, the procedures not applicable to 7.3.6, 7.3.7, 7.3.8B and 7.3.8D, for which charging is the test purpose.		P
7.1.1	First procedure		P
	This charging procedure applies to subclauses other than those specified in 7.1.2		P
	Unless otherwise stated in this document, the charging procedure for test purposes is carried out in an ambient temperature of 20 °C ± 5 °C, using the method declared by the manufacturer	See page 4.	P
	Prior to charging, the battery has been discharged at 20 °C ± 5 °C at a constant current of 0,2 It A down to a specified final voltage	See page 4.	P
	The procedure applicable to 7.2.1, 7.2.2, 7.2.2A, 7.3.2, 7.3.3, 7.3.8.1, 7.3.8.2, 7.3.8A and 7.3.8C.		P
7.1.2	Second procedure		P
	After stabilization for 1 h to 4 h, at an ambient temperature of the highest test temperature and the lowest test temperature, respectively, as specified in Table 2, cells are charged by using the upper limit charging voltage and maximum charging current, until the charging current is reduced to 0,05 It A, using a constant current to constant voltage charging method	Charge temperature specified by manufacturer: 10-45°C. 5°C used for lower limit tests. 50°C used for upper limit tests.	P
	This charging procedure applies only to 7.3.1, 7.3.4, 7.3.5, and 7.3.9		
7.2	Intended use		P
7.2.1	Continuous charging at constant voltage (cells)	Tested complied.	P
	Fully charged cells according to 7.1.1 are subjected for 28 days to a charge with upper limit charging voltage at upper limit test temperature.		P
	Results: No fire. No explosion. No leakage. ..... :	(See Table 7.2.1)	P
7.2.2	Moulded case stress at high ambient temperature (battery)	Tested complied.	P
	Fully charged batteries, according to 7.1.1, are exposed to high temperature. The battery is placed in an air circulating oven at a temperature of 70 °C ± 2 °C for 7 h, after which they are removed and return to 20 ± 5 °C.		P

Interpretation for METI Ordinance of Technical Requirements, Appendix 12, J62133-2 (JISC 62133-2:2020)			
Clause	Requirement + Test	Result - Remark	Verdict
	Oven temperature (°C)..... :	70	—
	Results: No physical distortion of the battery casing resulting in exposure if internal components	No physical distortion of the battery casing resulting in exposure if internal components	P
7.2.2A	Temperature cycling	Tested complied.	P
	Fully charged cells or batteries according to 8.1.1. are subjected to temperature cycling in according to the following procedure. Step 1: Place the cells or batteries in an ambient temperature of 75 °C ± 2 °C for 4 h. Step 2: Change the ambient temperature to 20 °C ± 5 °C within 30 min and maintain at this temperature for a minimum of 2 h. Step 3: Change the ambient temperature to –20 °C ± 2 °C within 30 min and maintain at this temperature for 4 h. Step 4: Change the ambient temperature to 20 °C ± 5 °C within 30 min and maintain at this temperature for a minimum of 2 h. Step 5: Repeat steps 1 to 4 for a further four cycles. Step 6: After the fifth cycle, store the cells or batteries for seven days at 20 ± 5 °C prior to examination.		P
	Results: No fire. No explosion. No leakage	No fire. No explosion. No leakage	P
7.3	Reasonably foreseeable misuse		P
7.3.1	External short circuit (cell)	Tested complied.	P
	Charging procedure: 7.1.2		P
	Ambient temperature: 55 ± 5 °C	(See Table 7.3.1)	P
	Resistance of circuit (mΩ): 80 ± 20 mΩ	(See Table 7.3.1)	P
	The cells were tested until one of the following occurred: - 24 hours elapsed; or		N/A
	- The case temperature declined by 20% of the maximum temperature rise		P
	Results: No fire. No explosion..... :	(See Table 7.3.1)	P
7.3.2	External short-circuit (battery)	Tested complied.	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		N/A

Interpretation for METI Ordinance of Technical Requirements, Appendix 12, J62133-2 (JISC 62133-2:2020)			
Clause	Requirement + Test	Result - Remark	Verdict
	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
	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	Single fault conducted on four samples.	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	Single fault applies on Protect IC U1 or IC U6.	P
	Results: no fire, no explosion ..... :	(See appended table 7.3.2)	
7.3.3	Free fall	Tested complied.	P
	Each fully charged cell or battery according to 8.1.1. is dropped three times from a height of 1000 ± 10mm onto a concrete floor. The cells or batteries are dropped so as to obtain impacts in random orientations.		P
	Exception: Not applicable to the batteries more than 7 kg and the batteries with special construction.		N/A
	Results: No fire. No explosion.	No fire. No explosion.	P
7.3.4	Thermal abuse (cells)	Tested complied.	P
	Charging procedure: 8.1.2		P
	The oven temperature is raised at a rate of 5 °C/min ± 2 °C/min to a temperature of 130 °C ± 2 °C.		P
	The cells were held at 130°C ± 2°C for: - 30 minutes		P
	Oven temperature (°C) ..... :	130	—
	Results: No fire. No explosion.	No fire. No explosion.	P
7.3.5	Crush (cells)	Tested complied.	P
	Charging procedure: 7.1.2		P
	Cells are crushed between 2 flat plates.		P
	The crushing force was released upon: - The maximum force of 13 kN ± 0.78 kN has been applied; or		P
	- An abrupt voltage drop of one-third of the original voltage has been obtained; or		N/A

Interpretation for METI Ordinance of Technical Requirements, Appendix 12, J62133-2 (JISC 62133-2:2020)			
Clause	Requirement + Test	Result - Remark	Verdict
	A cylindrical or prismatic cell is crushed with its longitudinal axis parallel to the flat surfaces of the crushing apparatus. Test only the wide side of prismatic cells. A coin cell shall be crushed by applying the force on its flat surface.	Prismatic cell.	P
	Results: No fire. No explosion.....:	(See Table 7.3.5)	P
7.3.6	Over-charging of battery	Tested complied.	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	6.0V applied.	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
7.3.7	Forced discharge (cells)	Tested complied.	P
	Discharge a single cell to the lower limit discharge voltage specified by the cell manufacturer	Lower limit discharge voltage 3.0V	P
	The discharged cell is then subjected to a forced discharge at 1 It A to the negative value of the upper limit charging voltage		P
	- The discharge voltage reaches the negative value of upper limit charging voltage within the testing duration. The voltage is maintained at the negative value of the upper limit charging voltage by reducing the current for the remainder of the testing duration		N/A
	- The discharge voltage does not reach the negative value of upper limit charging voltage within the testing duration. The test is terminated at the end of the testing duration		P
	Results: no fire, no explosion.....:	(See appended table 7.3.7)	P
7.3.8	Mechanical tests (batteries)		P
7.3.8.1	Vibration		P

Interpretation for METI Ordinance of Technical Requirements, Appendix 12, J62133-2 (JISC 62133-2:2020)			
Clause	Requirement + Test	Result - Remark	Verdict
	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
7.3.8A	Low pressure (cells)	Tested complied.	P
	Charging procedure: 7.1.1		P
	Ambient temperature: 20 °C±5 °C.		P
	Air pressure : equal to or less than 11,6 kPa (simulates an altitude of 15 240 m)		P
	Duration: 6 h.		P
	Results: No fire. No explosion. No leakage	No fire. No explosion. No leakage	P
7.3.8B	High rate charge (cells)	Tested complied.	P
	Cells discharged to the final voltage specified by manufacturer is tested.		P
	Charged at three times the max charging current specified by the manufacturer, until the cell is fully charged or an internal safety device cuts off the charge current before the cell is fully charged.	Charged until the cell is fully charged.	P
	Results: no fire, no explosion	No fire, no explosion.	P
7.3.8C	Free fall of batteries installed in the device		P
	Battery equipped with Device is tested.		P
	The battery that is charged according to 7.1.1 is installed in the portable electronic application to be used, or subjected to the condition , simulating the actual use. Then, it is dropped once in the direction most likely to affect in a negative manner from the height, which is specified in JIS C 6950 or JIS C6065, according to the portable electronic applications, in which there batteries are assumed to be installed, on to a concrete floor. An iron plate may be used in place of the concrete floor.		P
	Requirement: External short circuit shall not be caused inside of the battery, and internal short circuit shall not be caused in cells contained in the battery.	No external short circuit or internal short circuit occurs.	P
7.3.8D	Overcharge protection of batteries	Tested complied.	P
	Ambient temperature: 20±5°C		P
	One of the following test is conducted		P

Interpretation for METI Ordinance of Technical Requirements, Appendix 12, J62133-2 (JISC 62133-2:2020)			
Clause	Requirement + Test	Result - Remark	Verdict
	1) When the battery is made of a cell or one cellblock, voltage, which is applied to the cell or one cell block during charging is measured.	Single cell battery	P
	2)When the battery is consists of a series connection of over two pieces of cells or cell blocks, charging is conducted while measuring the voltage of each cell or each cellblock. At the same time, one of the cells or cellblocks is forcibly discharged gradually, and voltages of the other cells and cellblocks are measured.		N/A
	3)When the battery consists of a series connection of over two pieces of cells or cellblocks, voltage exceeding upper limited charging voltage, as specified in table 4 is applied to the cell or cellblock, while measuring the voltage of each cell or each cellblock. The voltage is measured, when charging is stopped.		N/A
	Requirement: cells or cellblocks shall not exceed upper limit voltage.	Not exceed upper limit voltage.	P
7.3.9	Forced internal short circuit (cells)	Tested complied.	P
	Charging procedure: 7.1.2 .....:		—
	Press speed: 0.1 mm/sec		P
	The pressing was stopped upon: - A voltage drop of 50 mV has been detected; or		N/A
	- The pressing force of 800 N (cylindrical cells) or 400 N (prismatic cells) has been reached	400N for prismatic cell.	P
	Results: No fire .....:	(See Table 7.3.9)	P

8	**Information for safety**		P
8.1	General		P
	Manufacturers of secondary cells provides information about current, voltage and temperature limits of their products	Information for safety mentioned in manufacturer's specifications.	P
	Manufacturers of batteries provides information regarding how to minimize and mitigate hazards to equipment manufacturers or end-users	Information for safety mentioned in manufacturer's specifications.	P
	Systems analyses are performed by device manufacturers to ensure that a particular battery design prevents hazards from occurring during use of a product		N/A
	As appropriate, any information relating to hazard avoidance resulting from a system analysis is provided to the end user		N/A

Interpretation for METI Ordinance of Technical Requirements, Appendix 12, J62133-2 (JISC 62133-2:2020)			
Clause	Requirement + Test	Result - Remark	Verdict
8.2	**Small cell and battery safety information**	Not small cells and batteries.	N/A
	The following warning language is to be provided with the information packaged with the small cells and batteries or equipment using them:		N/A
	- Keep small cells and batteries which are considered swallowable out of the reach of children		N/A
	- Swallowing may lead to burns, perforation of soft tissue, and death. Severe burns can occur within 2 h of ingestion		N/A
	- In case of ingestion of a cell or battery, seek medical assistance promptly		N/A
9	**Marking**		P
9.1	**Cell marking**	The final product is battery	N/A
	Cells are marked as specified in JIS C 8711, except coin cells		N/A
	Coin cells whose external surface area is too small to accommodate the markings on the cells show the designation and polarity		N/A
	By agreement between the cell manufacturer and the battery and/or end product manufacturer, component cells used in the manufacture of a battery need not be marked		N/A
9.2	**Battery marking**		P
	Batteries are marked as specified in JIS C 8711, except for coin batteries	See marking plate on page 2.	P
	Coin batteries whose external surface area is too small to accommodate the markings on the batteries show the designation and polarity	Not coin batteries.	N/A
	Batteries are marked with an appropriate caution statement		P
	- Terminals have clear polarity marking on the external surface of the battery, or		N/A
	- Not be marked with polarity markings if the design of the external connector prevents reverse polarity connections	USB-C port used.	P
9.3	**Caution for ingestion of small cells and batteries**	Not small cells and batteries.	N/A
	Coin cells and batteries identified as small batteries include a caution statement regarding the hazards of ingestion in accordance with 8.2		N/A

Interpretation for METI Ordinance of Technical Requirements, Appendix 12, J62133-2 (JISC 62133-2:2020)			
Clause	Requirement + Test	Result - Remark	Verdict
	Small cells and batteries are intended for direct sale in consumer-replaceable applications, caution for ingestion is given on the immediate package	Not intended for direct sale.	N/A
9.4	**Other information**		P
	The following information are marked on or supplied with the battery:		P
	- Storage and disposal instructions	Information for storage and disposal instructions mentioned in manufacturer's specifications.	P
	- Recommended charging instructions	Information for recommended charging instructions mentioned in manufacturer's specifications.	P
10	**Packaging**		N/A
	The materials and packaging design are chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of environmental contaminants.		N/A
ANNEX A	**CHARGING AND DISCHARGING RANGE OF SECONDARY LITHIUM ION CELLS FOR SAFE USE**		P
A.1	**General**		P
A.2	**Safety of lithium ion secondary battery**	Complied.	P
A.3	**Consideration on charging voltage**	Complied.	P
A.3.1	General		P
A.3.2	Upper limit charging voltage	4.4V applied.	P
A.3.2.1	General		P
A.3.2.2	Explanation of safety viewpoint		P
A.3.2.3	Safety requirements, when different upper limit charging voltage is applied	4.4V applied.	P
A.4	**Consideration of temperature and charging current**		P
A.4.1	General		P
A.4.2	Recommended temperature range	See A.4.2.2.	P
A.4.2.1	General		P
A.4.2.2	Safety consideration when a different recommended temperature range is applied	Charging temperature range declared by client is: 10-45°C	P

Interpretation for METI Ordinance of Technical Requirements, Appendix 12, J62133-2 (JISC 62133-2:2020)			
Clause	Requirement + Test	Result - Remark	Verdict
A.4.3	High temperature range	Charging high temperature declared by client is: 45°C	P
A.4.3.1	General		P
A.4.3.2	Explanation of safety viewpoint		P
A.4.3.3	Safety considerations when specifying charging conditions in the high temperature range		P
A.4.3.4	Safety considerations when specifying a new upper limit in the high temperature range	50°C applied for testing in this report for safety considerations.	P
A.4.4	Low temperature range	Charging lower temperature declared by client is: 10°C	P
A.4.4.1	General		P
A.4.4.2	Explanation of safety viewpoint		P
A.4.4.3	Safety considerations, when specifying charging conditions in the low temperature range		P
A.4.4.4	Safety considerations when specifying a new lower limit in the low temperature range	5°C applied for testing in this report for safety considerations.	P
A.4.5	Scope of the application of charging current		P
A.4.5.A	Model acceptance decision		P
A.4.6	Consideration of discharge		P
A.4.6.1	General		P
A.4.6.2	Final discharge voltage and explanation of safety viewpoint	Cell specified final voltage 3.0V, not exceed 3.0V specified by cell manufacturer.	P
A.4.6.3	Discharge current and temperature range		P
A.4.6.4	Scope of application of the discharging current		P
A.5	**Sample preparation**		P
A.5.1	General		P
A.5.2	Insertion procedure for nickel particle to generate internal short		P
A.5.3	Disassembly of charged cell		P
A.5.4	Shape of nickel particle		P
A.5.5	Insertion of nickel particle in cylindrical cell		N/A
A.5.5.1	Insertion of nickel particle in winding core		N/A
A.5.5.2	Marking the position of the nickel particle on both ends of the winding core of the separator		N/A
A.5.6	Insertion of nickel particle in prismatic cell		P

Interpretation for METI Ordinance of Technical Requirements, Appendix 12, J62133-2 (JISC 62133-2:2020)			
Clause	Requirement + Test	Result - Remark	Verdict
A.6	**Experimental procedure of the forced internal short-circuit test**		P
A.6.1	Material and tools for preparation of nickel particle		P
A.6.2	Example of a nickel particle preparation procedure		P
A.6.3	Positioning (or placement) of a nickel particle		P
A.6.4	Damaged separator precaution		P
A.6.5	Caution for rewinding separator and electrode		P
A.6.6	Insulation film for preventing short-circuit		P
A.6.7	Caution when disassembling a cell		P
A.6.8	Protective equipment for safety		P
A.6.9	Caution in the case of fire during disassembling		P
A.6.10	Caution for the disassembling process and pressing the electrode core		P
A.6.11	Recommended specifications for the pressing device		P
ANNEX B	**RECOMMENDATIONS TO EQUIPMENT MANUFACTURERS AND BATTERY ASSEMBLERS**		N/A
ANNEX C	**RECOMMENDATIONS TO THE END-USERS**		N/A
ANNEX D	**MEASUREMENT OF THE INTERNAL AC RESISTANCE FOR COIN CELLS**		N/A
D.1	**General**	Not coin cells.	N/A
D.2	**Method**		N/A
	A sample size of three coin cells is required for this measurement	(See appended table D.2)	N/A
	Coin cells with an internal resistance greater than 3 Ω require no further testing .....:		N/A
	Coin cells with an internal resistance less than or equal to 3 Ω are subjected to the testing according to Clause 6 and Table 1		N/A
ANNEX E	**PACKAGING AND TRANSPORT**		N/A
ANNEX F	**COMPONENT STANDARDS REFERENCES**		N/A

Attachment 1: Critical components information					P
Object / part No.	**Manufacturer / trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
Cell	[redacted]	04373	3.7V, 5000mAh	JIS C 62133-2:2020	Tested with appliance
Positive electrode	Ningxia Hanyao Graphene Storage Materials Technology Co., LTD	YHF-6M	$Li(Ni_{0.2}Co_{05}Mn_{0.3})O_2$, NMP, PVDF, Carbon Black, Conductive Additive	--	--
Negative electrode	Ganzhou RFT Technology Co., LTD	RFT-013	Graphite, CMC, SBR, Distilled Water, Conductive Additive	--	--
Electrolyte	Hunan Hangsheng New Material Co., LTD.	HS19095	$LiPF_6$+EMC+EC+DEC+VC+PS	--	--
Separator	Jiangxi Bolien New Material Co., LTD.	12+2+2μm	PE+Ceramic, Shutdown temperature: 135°C, thickness: 16μm	--	--
Breaker	Bourns KK	NR77AB0	Trip Temperature: 77°C±5°C, Reset Temperature: 40°C min	UL 873	UL E215638
PCB	Interchangeable	Interchangeable	V-0, 130°C	UL 796	UL approved
IC (U1)	Injoinic Technology Corp	IP5306	V_{OCP}: 4.30±0.05V, V_{ODP}: 2.45±0.1V	--	Tested with appliance
IC (U6)	XYSEMI	XB7608GJ	V_{CU}: 4.30±0.05V, V_{DL}: 2.4±0.1V	--	Tested with appliance
Plastic enclosure	Interchangeable	Interchangeable	V-0, 150°C	UL 746A	UL approved
Lead wire	Interchangeable	Interchangeable	22AWG, 80°C, 300V	UL 758	UL approved

Supplementary information:

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

7.2.1	TABLE: Continuous charge (cells)			P
Sample No.	Charging voltage V_{cr} (Vdc)	Charging current I, (mA)	OCV at start of test, (Vdc)	Results
Cell1#	4.4	1000	4.38	P
Cell2#	4.4	1000	4.37	P
Cell3#	4.4	1000	4.38	P
Cell4#	4.4	1000	4.38	P
Cell5#	4.4	1000	4.37	P
Supplementary information: - No fire or explosion - No leakage				

7.3.1	TABLE: External short circuit (cell)				P
Sample No.	Ambient, (°C)	OCV at start of test, (Vdc)	Resistance of circuit, (mΩ)	Maximum case temperature ~~rise ΔT~~, (°C)	Results
Samples charged at upper limit test temperature (50°C)					
Cell1#	55.2	4.36	84	57.6	P
Cell2#	55.2	4.37	78	58.6	P
Cell3#	55.2	4.36	85	56.9	P
Cell4#	55.2	4.36	81	57.2	P
Cell5#	55.2	4.36	83	58.1	P
Samples charged at lower limit test temperature (5°C)					
Cell6#	55.2	4.34	84	56.4	P
Cell7#	55.2	4.33	82	55.9	P
Cell8#	55.2	4.34	86	56.2	P
Cell9#	55.2	4.34	79	57.1	P
Cell10#	55.2	4.34	82	56.8	P
Supplementary information: - No fire or explosion					

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~~ (°C)**	**Component single fault condition**	**Results**
Battery1#	23.1	5.12	85	23.5	Short circuit IC U1	P
Battery2#	23.1	5.11	84	23.6	Short circuit IC U1	P
Battery2#	23.1	5.11	83	23.4	Short circuit IC U6	P
Battery3#	23.1	5.11	83	23.4	Short circuit IC U6	P
Battery5#	23.1	5.12	84	23.3	--	P
Supplementary information: - No fire or explosion						

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~~ (°C)**	**Component single fault condition**	**Results**
Battery1#	23.1	5.11	78	23.6	Short circuit Protect IC U4	P
Battery2#	23.1	5.12	84	23.9	Short circuit Protect IC U4	P
Battery2#	23.1	5.11	79	23.5	Short circuit MOSFET Q4	P
Battery3#	23.1	5.11	82	23.6	Short circuit MOSFET Q4	P
Battery5#	23.1	5.12	83	23.4	--	P
Supplementary information: - No fire or explosion						

7.3.5	TABLE: Crush (cells)			P
Sample no.	OCV before test (Vdc)	OCV at removal of crushing force (Vdc)	Maximum force applied to the cell during crush (kN)	Results
Samples charged at upper limit test temperature (50°C)				
Cell 1#	4.36	4.36	13.03	P
Cell2#	4.37	4.37	13.02	P
Cell3#	4.36	4.36	13.02	P
Cell4#	4.36	4.36	13.01	P
Cell5#	4.37	4.37	13.03	P
Samples charged at lower limit test temperature (5°C)				
Cell6#	4.33	4.33	13.03	P
Cell7#	4.34	4.34	13.03	P
Cell8#	4.33	4.33	13.01	P
Cell9#	4.34	4.34	13.03	P
Cell10#	4.33	4.33	13.02	P
Note: A 13kN force applied at the wide side of prismatic cells. No voltage abrupt occurred. **Supplementary information:** - No fire or explosion				

7.3.6	TABLE: Over-charging of battery			P
Constant charging current (A) .....:	10.0			—
Supply voltage (Vdc) .....:	6.0			—
Sample No.	OCV before charging, (Vdc)	Total charging time (minute)	Maximum outer casing temperature, (°C)	Results
Battery1#	3.43	120	30.8	P
Battery2#	3.42	120	31.5	P
Battery3#	3.43	120	30.9	P
Battery4#	3.43	120	30.7	P
Battery5#	3.42	120	30.5	P
Supplementary information: - No fire or explosion				

7.3.7	TABLE: Forced discharge (cells)			P
Sample No.	OCV before application of reverse charge (Vdc)	Measured reverse charge I_t (mA)	Lower limit discharge voltage (Vdc)	Results
Cell1#	3.33	5000	3.0	P
Cell2#	3.32	5000	3.0	P
Cell3#	3.34	5000	3.0	P
Cell4#	3.33	5000	3.0	P
Cell5#	3.33	5000	3.0	P
Supplementary information: - No fire or explosion				

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
Battery1#	5.12	5.12	93.331	93.331	P
Battery2#	5.12	5.12	93.687	93.687	P
Battery3#	5.11	5.11	93.724	93.724	P
Battery4#	5.11	5.11	93.982	93.982	P
Battery5#	5.12	5.12	93.665	93.665	P
Supplementary information: No fire, no explosion, no rupture, no leakage or venting.					

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
Battery1#	5.12	5.12	93.289	93.289	P
Battery2#	5.11	5.11	93.373	93.373	P
Battery3#	5.11	5.11	93.134	93.134	P
Battery4#	5.11	5.11	93.331	93.331	P
Battery5#	5.12	5.12	93.687	93.687	P
Supplementary information: No fire, no explosion, no rupture, no leakage or venting.					

7.3.8B	TABLE: High rate charge			P
Sample No.	**OCV at start of test, Vdc**	**Maximum Charging Current, mA**	**Maximum Charging Voltage, Vdc**	**Results**
Samples charged at upper limit test temperature (50°C)				
Cell1#	3.32	15000	4.4	P
Cell2#	3.33	15000	4.4	P
Cell3#	3.32	15000	4.4	P
Cell4#	3.33	15000	4.4	P
Cell5#	3.32	15000	4.4	P
Samples charged at upper limit test temperature (5°C)				
Cell6#	3.32	15000	4.4	P
Cell7#	3.33	15000	4.4	P
Cell8#	3.32	15000	4.4	P
Cell9#	3.32	15000	4.4	P
Cell10#	3.32	15000	4.4	P
Supplementary information: - No fire or explosion				

7.3.8D	Overcharge protection			P
Sample No.	OCV at start of test, Vdc	OCV at End of test, Vdc (≤4.4V)	CHARGING VOLTAGE, VDC (≥ 5.25V)	Results
C1#	3.38	4.38	5.25	P
Supplementary information: the cell block in the battery shall not exceed the upper limited charging voltage of cell.				

7.3.9	TABLE: Forced internal short circuit (cells)				P
Sample No.	**Chamber ambient, (°C)**	**OCV at start of test, (Vdc)**	**Particle location [1)]**	**Maximum applied pressure, (N)**	**Results**
Cell1#	50	4.36	1	400	P
Cell2#	50	4.37	1	400	P
Cell3#	50	4.36	1	400	P
Cell4#	50	4.36	1	400	P
Cell5#	50	4.37	1	400	P
Cell6#	50	4.36	1	400	P
Cell7#	50	4.36	1	400	P
Cell8#	50	4.37	1	400	P
Cell9#	50	4.36	1	400	P
Cell10#	50	4.36	1	400	P
Cell11#	5	4.33	1	400	P
Cell12#	5	4.34	1	400	P
Cell13#	5	4.33	1	400	P
Cell14#	5	4.34	1	400	P
Cell15#	5	4.33	1	400	P
Cell16#	5	4.35	1	400	P
Cell17#	5	4.33	1	400	P
Cell18#	5	4.33	1	400	P
Cell19#	5	4.34	1	400	P
Cell20#	5	4.33	1	400	P

Supplementary information:

[1)] Identify one of the following:

1: Nickel particle inserted between positive and negative (active material) coated area.

2: Nickel particle inserted between positive aluminium foil and negative active material coated area.

- No fire

D.2	TABLE: Internal AC resistance for coin cells			N/A
Sample no.	**Ambient T (°C)**	**Store time (h)**	**Resistance Rac (Ω)**	**Results [1)]**

Supplementary information:

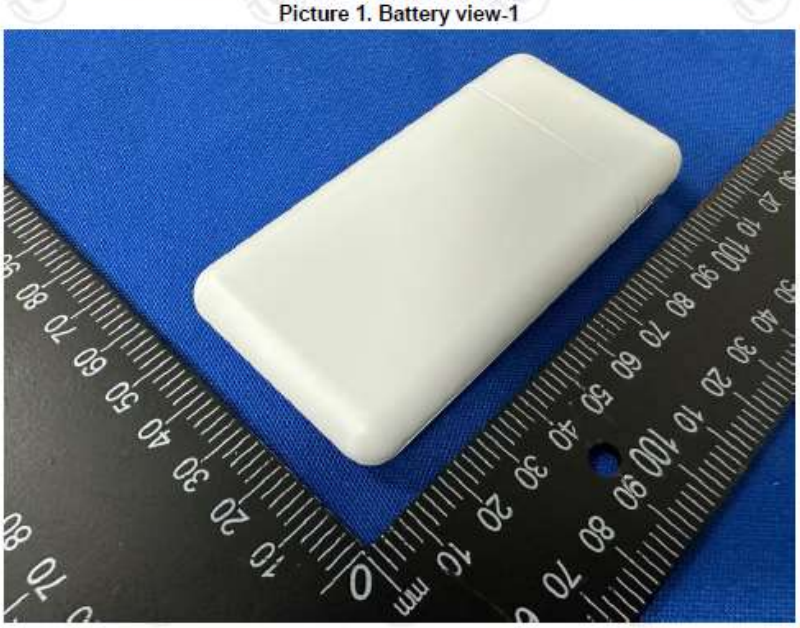
[1)] Coin cells with an internal resistance less than or equal to 3 Ω, see test result on corresponding tables according to Clause 6 and Table 1.

Attachment 2

Photo Documentation

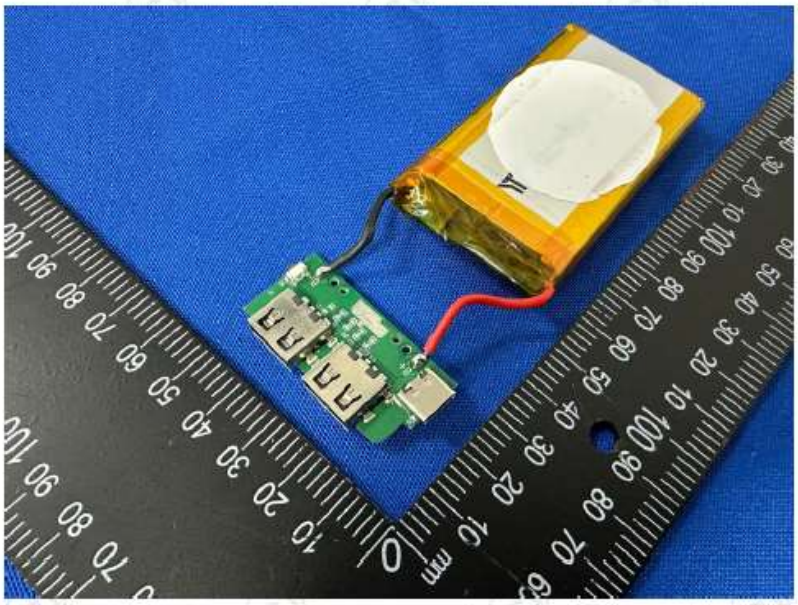
Product: COMPACT MOBILE CHARGER5000
Type Designation: TE-0004

Picture 1. Battery view-1

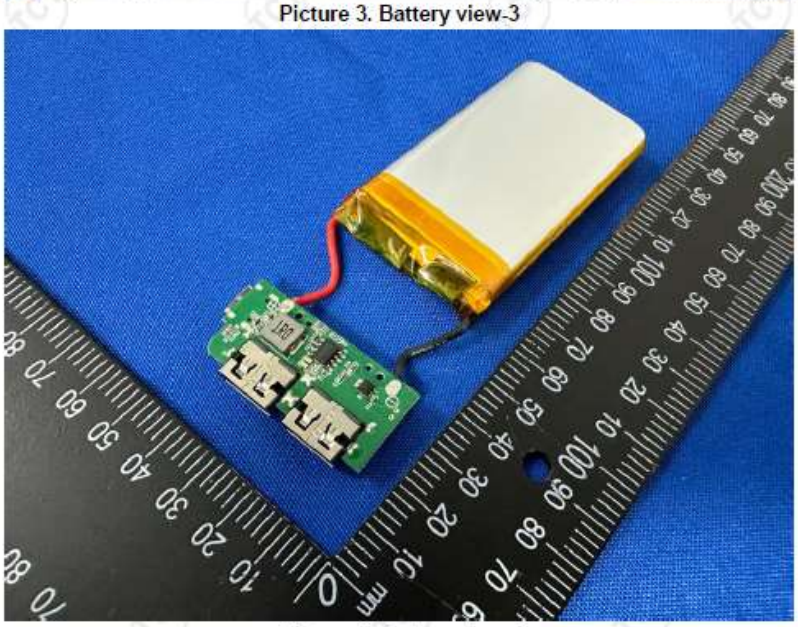


Picture 2. Battery view-2

Photo Documentation

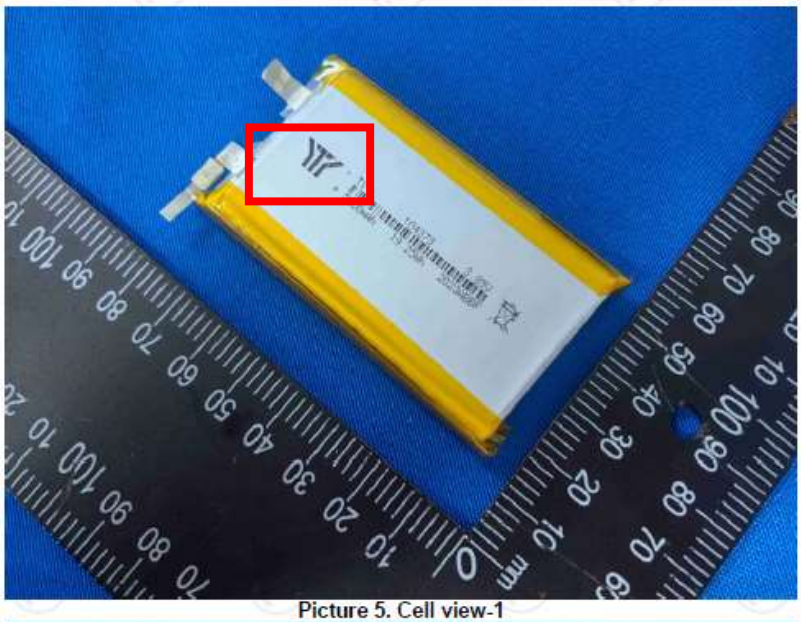


Picture 3. Battery view-3

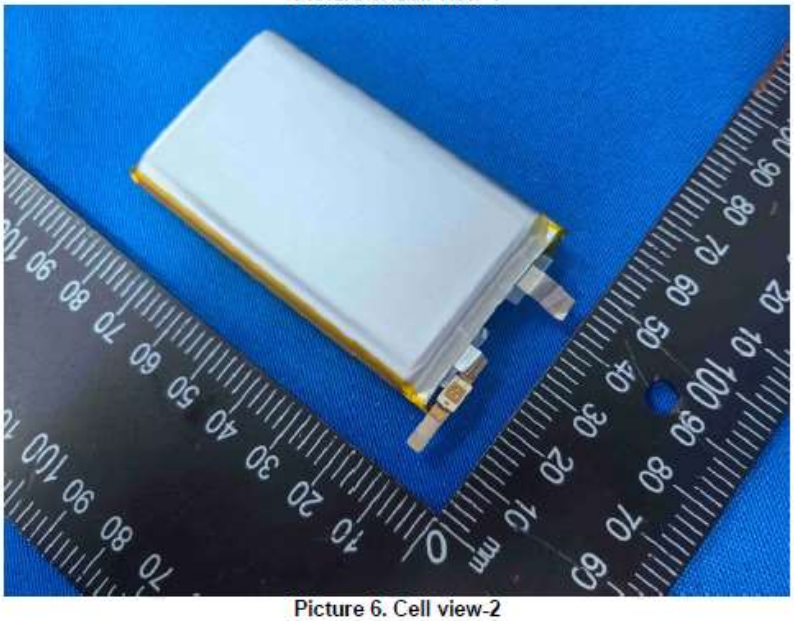


Picture 4. Battery view-4

Photo Documentation

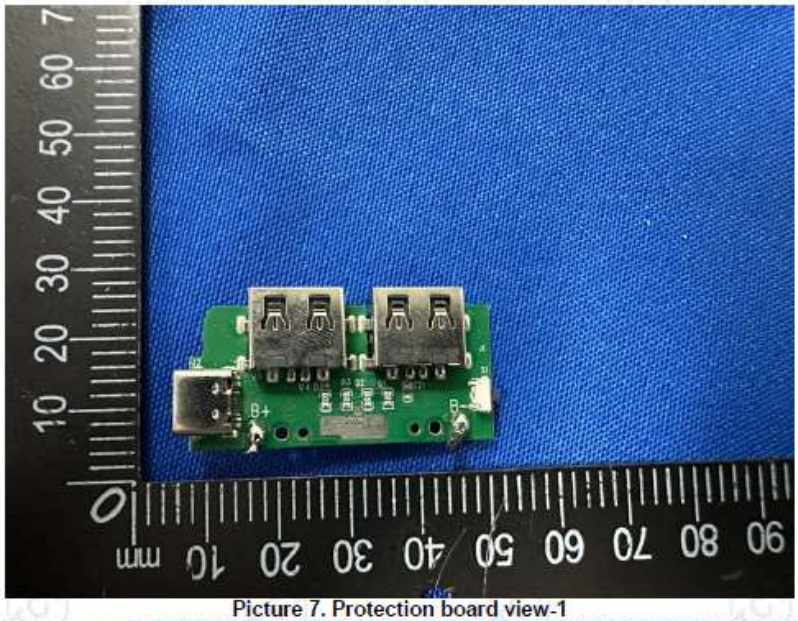


Picture 5. Cell view-1

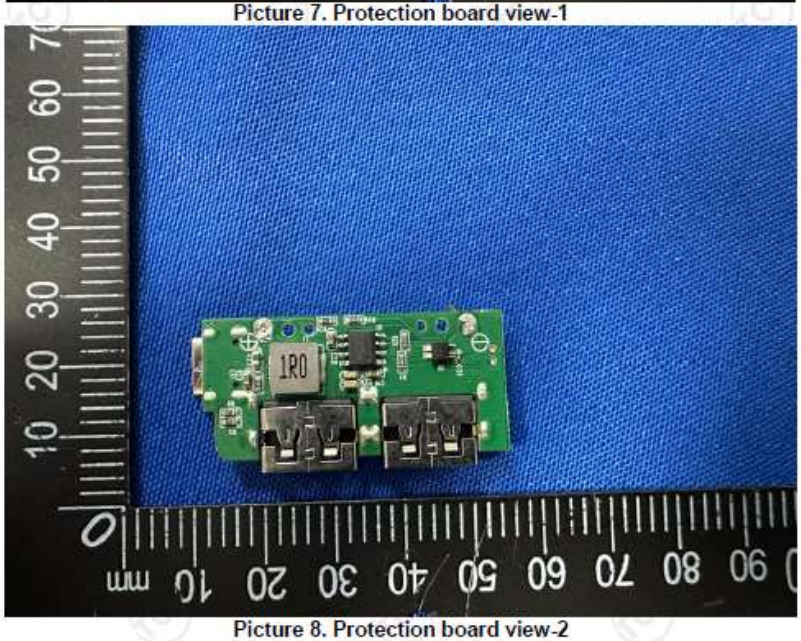


Picture 6. Cell view-2

Photo Documentation



Picture 7. Protection board view-1



Picture 8. Protection board view-2

-- End of Report --