

TEST REPORT

J62368-1(2020)

Audio/video, information and communication technology equipment

Part 1: Safety requirements

Report Number:	KEYS23080915002PE-01
Tested by (name + signature):	Sunny Li 
Approved by (name + signature):	Jason Zhan
Date of issue:	August 18, 2023
Total number of pages:	49 pages
Testing Laboratory:	Guangdong KEYS Testing Technology Co.,Ltd.
Address:	6/F, Building B, Chuangyizhigu Industrial Park, No.5, Hehe Street, Songxi Road, Hengkeng, Liaobu, Dongguan, Guangdong, China
Applicant's name:	Zhejiang Zhenneng Technology Co.,Ltd
Address:	Floor 1, No. 1818-1, South Taihu Avenue, Balidian Town, Wuxing District, Huzhou City, Zhejiang Province
Test specification:	
Standard:	<input type="checkbox"/> IEC 62368-1: 2020/A11:2020 <input checked="" type="checkbox"/> オーディオ・ビデオ、情報及び通信技術機器第1部:安全性要求事項 J62368-1(2020)
Test procedure	Safety Scheme
Non-standard test method:	N/A
General disclaimer:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing KEYS Testing Laboratory.	
Test item description:	Portable power station
Trade Mark:	N/A
Manufacturer:	Zhejiang Zhenneng Technology Co.,Ltd
Address:	Floor 1, No. 1818-1, South Taihu Avenue, Balidian Town, Wuxing District, Huzhou City, Zhejiang Province
Model/Type reference:	Apower1000, Apower2000, Apower1000Pro, Apower2000Pro,BS041
Ratings:	See page 2

List of Attachments (including a total number of pages in each attachment):

Attachment : 5 pages of Japan national differences

Attachment : 2 pages of photos.

Tests performed (name of test and test clause):

All applicable tests as described in Test Case and Measurement Sections were performed.

- The test samples are pre-production without serial numbers.
- Specified maximum ambient temperature is +25°C.
- Maximum normal load: Full load for output.
- Unless otherwise specified, all tests were performed on model Apower1000.

Testing location:

Guangdong KEYS Testing Technology Co.,Ltd.
6/F, Building B, Chuangyizhigu Industrial Park,
No.5, Hehe Street, Songxi Road, Hengkeng,
Liaobu, Dongguan, Guangdong, China

Summary of testing:

The test samples complied with IEC 62368-1:2020/A11:2020 and the standards listed in the Summary of compliance with Japan differences.

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.

Portable power station
Model No.: Apower1000
DC Input: DC12-48V;
AC Input: AC110-230V, 50/60Hz
Capacity :32V,320000mAh, 1024Wh;
AC Output: 110V/230V, 50Hz/60 Hz;
DC Output*2: DC13V,18A;
Car charger outlet : DC 12~24V,18A;
USB-C 1 Output: 5-12V/2.4A,22.5W Max;
USB-C 2 Output: 5-20V/5A,100W Max;
USB Output*4: 5V/2.4A, 9V/2A,12V/1.5A;



Zhejiang Zhenneng Technology Co.,Ltd
Made in China

Importer: xxx
Address: yyy

Note:

1. These are representative labels, the others are identical to them except for the model number.
2. The above marking are the minimum requirements by the safety standard. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.

TEST ITEM PARTICULARS:	
Classification of use by.....:	<input checked="" type="checkbox"/> Ordinary person <input checked="" type="checkbox"/> Instructed person <input checked="" type="checkbox"/> Skilled person <input checked="" type="checkbox"/> Children likely to be present
Supply Connection.....:	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input checked="" type="checkbox"/> External Circuit - not Mains connected - <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input checked="" type="checkbox"/> ES3
Supply % Tolerance	<input checked="" type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> +15 %/ -15 % <input type="checkbox"/> None
Supply Connection – Type	<input type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input checked="" type="checkbox"/> other: __DC input__
Considered current rating of protective device as part of building or equipment installation.....:	16 A or 20A (US and Canada) Installation location: <input checked="" type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility.....:	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: _____
Class of equipment	<input type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III
Access location	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maximum operating ambient.....:	25 °C
IP protection class	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP__
Power Systems	<input checked="" type="checkbox"/> TN <input type="checkbox"/> TT <input checked="" type="checkbox"/> IT - 230 V _{L-L}
Altitude during operation (m)	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> _____ m
Altitude of test laboratory (m)	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> _____ m
Mass of equipment (kg)	-
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..... :	August 9, 2023
Date (s) of performance of tests..... :	August 9, 2023 to August 18, 2023
GENERAL REMARKS:	
<p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p> <p>When differences exist; they shall be identified in the General product information section.</p>	
Name and address of factory (ies)..... :	Zhejiang Zhenneng Technology Co.,Ltd Floor 1, No. 1818-1, South Taihu Avenue, Balidian Town, WuxingDistrict, Huzhou City, Zhejiang Province
GENERAL PRODUCT INFORMATION:	
Product Description	
<ol style="list-style-type: none"> Specified maximum ambient temperature is 25°C. The test items are pre-production samples without serial numbers. all tests were tested on model: Apower1000 The equipment was evaluated for a maximum operating altitude up to 2000m. The user manual specified the relevant information for installation instruction. Rear Plastic enclosure and equipment body is sealed together by screw. Note : The report is based on previous report with no.: KEYS23052902002PE-01 dated on June 5, 2023 issued by KEYS lab to do below amendment. Except as specified below. Others do not any change and not need to do any testing. -Change application and manufacturer information from "Shenzhen Uapow Co.,Limited / 4th Floor, Building B5B, Yingzhan Industrial Park, Longtian Street,Pingshan District, Shenzhen" to "Zhejiang Zhenneng Technology Co.,Ltd / Floor 1, No. 1818-1, South Taihu Avenue, Balidian Town, WuxingDistrict, Huzhou City, Zhejiang Province". -Add model "BS041" 	

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Clause	Requirement + Test	Result - Remark	Verdict
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4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
4.1.3	Equipment design and construction	No accessible part which could cause injury	P
4.1.15	Markings and instructions.....:	(See Annex F)	P
4.4.4	Safeguard robustness	See below	P
4.4.4.2	Steady force tests.....:	(See Annex T.5)	P
4.4.4.3	Drop tests.....:	(See Annex T.7)	P
4.4.4.4	Impact tests.....:	(See Annex T.6)	N/A
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....:	No internal enclosure.	N/A
4.4.4.6	Glass Impact tests.....:	No such glass used.	N/A
4.4.4.7	Thermoplastic material tests.....:	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard.....:	(See Annex T)	P
4.4.4.9	Accessibility and safeguard effectiveness	No damaged	P
4.5	Explosion	No explosion occurs during normal/abnormal operation and single fault conditions	P
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard		P
4.6.2	10 N force test applied to	See appended table 5.4.2.2, 5.4.2.4 and 5.4.3	P
4.7	Equipment for direct insertion into mains socket - outlets	The EUT is not for direct insertion into mains socket-outlets	N/A
4.7.2	Mains plug part complies with the relevant standard.....:	See above	N/A
4.7.3	Torque (Nm).....:	See above	N/A
4.8	Products containing coin/button cell batteries		N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery.....:		—
4.8.4	Battery Compartment Mechanical Tests.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object..... :	(See Annex P)	P
5	ELECTRICALLY-CAUSED INJURY		P
5.2.1	Electrical energy source classifications..... :	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current..... :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits..... :		N/A
5.2.2.4	Single pulse limits..... :		N/A
5.2.2.5	Limits for repetitive pulses..... :		N/A
5.2.2.6	Ringing signals :		N/A
5.2.2.7	Audio signals :		N/A
5.3	Protection against electrical energy sources	See appended table " OVERVIEW OF EMPLOYED SAFEGUARDS "	P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	See above.	P
5.3.2.1	Accessibility to electrical energy sources and safeguards	ES3 source cannot access by ordinary persons and ES3 source cannot accessed by instructed persons. Double or reinforced safeguard is provided between ES3 and ordinary persons or instructed persons.	P
5.3.2.2	Contact requirements		P
	a) Test with test probe from Annex V..... :	The test probe cannot accessed the hazardous live part	P
	b) Electric strength test potential (V)..... :	See below.	P
	c) Air gap (mm) :	No openings.	P
5.3.2.4	Terminals for connecting stripped wire	No such terminals intended to be used by ordinary person.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	The choice and application have taken into account as specified in this Clause 5 and Annex T except natural rubber, hygroscopic materials or asbestos are not used as insulation.	P
5.4.1.3	Humidity conditioning..... :	(See sub-clause 5.4.8)	P
5.4.1.4	Maximum operating temperature for insulating materials :	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree..... :	2	—

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2 is applied	N/A
5.4.1.5.3	Thermal cycling	See above	N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such transformer within the EUT	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such transformer within the EUT	N/A
5.4.1.8	Determination of working voltage	See appended table 5.4.2.2, 5.4.2.4 and 5.4.3.	P
5.4.1.9	Insulating surfaces	Without openings.	N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	See below	P
5.4.1.10.2	Vicat softening temperature..... :		N/A
5.4.1.10.3	Ball pressure :	See above.	P
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2)	P
5.4.2.3	Determining clearance using required withstand voltage :	(See appended table 5.4.2.3)	P
	a) a.c. mains transient voltage..... :	2500V	—
	b) d.c. mains transient voltage :		—
	c) external circuit transient voltage..... :		—
	d) transient voltage determined by measurement :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		P
5.4.2.5	Multiplication factors for clearances and test voltages..... :		N/A
5.4.3	Creepage distances..... :	(See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group :	IIIa&IIIb	—
5.4.4	Solid insulation	See below	P
5.4.4.2	Minimum distance through insulation :	(See appended table 5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation		P
5.4.4.4	Solid insulation in semiconductor devices		P
5.4.4.5	Cemented joints	No such device within the EUT	N/A
5.4.4.6	Thin sheet material	See below	P
5.4.4.6.1	General requirements	Two layers of insulation sheets around T1 body are used for double insulation and not subjected to handling or abrasion during ordinary or instructed person servicing.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6.2	Separable thin sheet material	Two layers insulating tapes provides as double insulation and one layer passed the electric strength test for reinforced insulation	P
	Number of layers (pcs)	2	P
5.4.4.6.4	Standard test procedure for non-separable thin sheet material.....	See above	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		P
5.4.4.9	Solid insulation at frequencies >30 kHz.....		P
5.4.5	Antenna terminal insulation		P
5.4.5.1	General		P
5.4.6	Insulation of internal wire as part of supplementary safeguard.....	No such insulation of internal wire as part of supplementary insulation	N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.9	Electric strength test.....	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test	Compliance was checked immediately following temperature test in 5.4.1.4.	P
5.4.9.2	Test procedure for routine tests	No routine test under consideration this time	N/A
5.4.10	Protection against transient voltages between external circuit	No such external circuits	N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.3	Steady-state test.....		N/A
5.4.11	Insulation between external circuits and earthed circuitry.....	No such external circuit within the EUT	N/A
5.4.11.1	Exceptions to separation between external circuits and earth	No such external circuit within the EUT	N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V).....		—
	Nominal voltage U_{peak} (V).....		—
	Max increase due to variation U_{sp}		—
	Max increase due to ageing ΔU_{sa}		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$		—
5.5	Components as safeguards		
5.5.1	General	See the following details.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.2	Capacitors and RC units		N/A
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector..... :		N/A
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	No such component provided	N/A
5.5.5	Relays	No such component provided	N/A
5.5.6	Resistors	Bleeder resistors are serve as safeguard but not across basic, supplementary or reinforce insulations, no energy hazards between inlet access terminal and ordinary person, see clause 5.2.2.3.	N/A
5.5.7	SPD's	No such component provided	N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable..... :	No such external circuits.	N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors	The EUT is Class II equipment	N/A
5.6.2.1	General requirements	See above.	N/A
5.6.2.2	Colour of insulation	See above.	N/A
5.6.3	Requirement for protective earthing conductors	See above.	N/A
	Protective earthing conductor size (mm ²) :	See above.	—
5.6.4	Requirement for protective bonding conductors	See above.	N/A
5.6.4.1	Protective bonding conductors	See above.	N/A
	Protective bonding conductor size (mm ²)..... :	See above.	—
	Protective current rating (A) :	See above.	—
5.6.4.3	Current limiting and over current protective devices	No current limiting and over current protective devices in parallel with any other components.	P
5.6.5	Terminals for protective conductors	The EUT is Class II equipment	N/A
5.6.5.1	Requirement	See above.	N/A
	Conductor size (mm ²), nominal thread diameter (mm)..... :	See above.	N/A
5.6.6	Resistance of the protective system	See above.	N/A
5.6.6.1	Requirements	See above.	N/A
5.6.6.2	Test Method Resistance (Ω)..... :	See above.	N/A
5.6.7	Reliable earthing	See above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks	Figure 4 of IEC 60990 was used in determining of the limit of ES1.	P
5.7.2.1	Measurement of touch current.....:	(See appended table 5.7.4)	P
5.7.2.2	Measurement of prospective touch voltage	Class II equipment.	N/A
5.7.3	Equipment set-up, supply connections and earth connections	Class II equipment.	N/A
	System of interconnected equipment (separate connections/single connection).....:	Single equipment.	—
	Multiple connections to mains (one connection at a time/simultaneous connections).....:	Single connection.	—
5.7.4	Earthed conductive accessible parts.....:	Class II equipment.-	N/A
5.7.5	Protective conductor current	Class II equipment	N/A
	Supply Voltage (V).....:		—
	Measured current (mA).....:		—
	Instructional Safeguard.....:		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits	No external circuits.	N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits	No external circuits.	N/A
	a) Equipment with earthed external circuits Measured current (mA).....:		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		N/A

6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications	PS (power source) classification determined by measuring the maximum power in Figures 34 and 35 for load and power source circuits.	P
6.2.2.1	General	See the following details.	P
6.2.2.2	Power measurement for worst-case load fault....:	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault.....:	(See appended table 6.2.2)	P
6.2.2.4	PS1		N/A
6.2.2.5	PS2		P

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.6	PS3	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources	See the following details.	P
6.2.3.1	Arcing PIS	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS	(See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials.....	(See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure	No such materials used.	P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method by control fire spread.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		P
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions.....		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits	Compliance detailed as follows: - <u>Printed board</u> : rated min. V-1 - <u>Wire insulation and tubing</u> : complying with Clause 6. - <u>All other components</u> : at least V-2 except for mounted on min. V-1 material or small parts of combustible material. - <u>Isolating transformer</u> : complying with G.5.3.	P
6.4.5.2	Supplementary safeguards	(See appended tables 4.1.2 and Annex G)	N/A
6.4.6	Control of fire spread in PS3 circuit		P
6.4.7	Separation of combustible materials from a PIS	See the following details.	N/A
6.4.7.1	General.....	(See tables 6.2.3.1 and 6.2.3.2)	N/A
6.4.7.2	Separation by distance	All components and combustible materials other than small parts are mounted on material with rated min. V-1.	N/A
6.4.7.3	Separation by a fire barrier	See above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8	Fire enclosures and fire barriers	Equipment enclosure was evaluated as a fire enclosure.	P
6.4.8.1	Fire enclosure and fire barrier material properties	See the following details.	P
6.4.8.2.1	Requirements for a fire barrier	No such construction.	N/A
6.4.8.2.2	Requirements for a fire enclosure	Equipment fire enclosure was made of min. V-0 material.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	See the following details.	P
6.4.8.3.1	Fire enclosure and fire barrier openings	No openings.	P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm)	No openings.	P
	Needle Flame test	Equipment fire enclosure was made of min. V-0 material.	N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm)	No bottom opening provided	N/A
	Flammability tests for the bottom of a fire enclosure	No such consideration.	N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c).....	No such door or cover can be opened by ordinary.	N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....	The plastic enclosure rated min. min. V-0 is considered as fire enclosure.	P
6.5	Internal and external wiring		P
6.5.1	Requirements	The material of VW-1 on internal or external wiring were considered compliance equivalent to IEC 60332 or IEC/TS 60695-11-21 relevant standards.	P
6.5.2	Cross-sectional area (mm ²)	Primary lead wire: 0.5mm ²	—
6.5.3	Requirements for interconnection to building wiring.....		P
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1		N/A

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		P
7.2	Reduction of exposure to hazardous substances	No hazardous chemicals within the equipment.	P
7.3	Ozone exposure	No ozone production within the equipment.	N/A
7.4	Use of personal safeguards (PPE)	No such consideration.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Personal safeguards and instructions.....:	See above.	—
7.5	Use of instructional safeguards and instructions	No chemical-caused injuries, the instruction safeguard was not required.	N/A
	Instructional safeguard (ISO 7010).....:	(See Annex F)	—
7.6	Batteries.....:		N/A

8	MECHANICALLY-CAUSED INJURY		P
8.1	General	See the following details.	P
8.2	Mechanical energy source classifications	Sharp edges and corners, classified as MS1 Equipment mass < 7 kg, classified as MS1	P
8.3	Safeguards against mechanical energy sources	See above.	N/A
8.4	Safeguards against parts with sharp edges and corners	Accessible edges and corners of the equipment are rounded and are classified as MS1.	P
8.4.1	Safeguards	See above.	N/A
8.5	Safeguards against moving parts	No moving parts within the equipment.	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard.....:	See above.	—
8.5.4	Special categories of equipment comprising moving parts	See above.	N/A
8.5.4.1	Large data storage equipment	See above.	N/A
8.5.4.2	Equipment having electromechanical device for destruction of media	See above.	N/A
8.5.4.2.1	Safeguards and Safety Interlocks.....:	See above.	N/A
8.5.4.2.2	Instructional safeguards against moving parts	See above.	N/A
	Instructional Safeguard.....:	See above.	—
8.5.4.2.3	Disconnection from the supply	See above.	N/A
8.5.4.2.4	Probe type and force (N).....:	See above.	N/A
8.6	Stability	See the following details.	P
8.6.1	Product classification	MS2	P
	Instructional Safeguard.....:	Instructional safeguard provided	—
8.6.2	Static stability		P
8.6.2.2	Static stability test	Tipped at 10°, the equipment did not tip over	P
	Applied Force.....:	250N	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt.....:		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force)..... :		N/A
	Position of feet or movable parts.....:		—
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface)		N/A
8.7.2	Direction and applied force..... :		N/A
8.8	Handles strength	No such handles.	N/A
8.8.1	Classification	See above.	N/A
8.8.2	Applied Force	See above.	N/A
8.9	Wheels or casters attachment requirements	No such wheels or casters within the EUT	N/A
8.9.1	Classification	See above.	N/A
8.9.2	Applied force.....:	See above.	—
8.10	Carts, stands and similar carriers	No such device provided within the EUT.	N/A
8.10.1	General	See above.	N/A
8.10.2	Marking and instructions	See above.	N/A
	Instructional Safeguard.....:	See above.	—
8.10.3	Cart, stand or carrier loading test and compliance	See above.	N/A
	Applied force.....:	See above.	—
8.10.4	Cart, stand or carrier impact test	See above.	N/A
8.10.5	Mechanical stability	See above.	N/A
	Applied horizontal force (N).....:	See above.	—
8.10.6	Thermoplastic temperature stability (°C).....:	See above.	N/A
8.11	Mounting means for rack mounted equipment	The equipment is not intended to be rack-mounted.	N/A
8.11.1	General	See above.	N/A
8.11.2	Product Classification	See above.	N/A
8.11.3	Mechanical strength test, variable N	See above.	N/A
8.11.4	Mechanical strength test 250N, including end stops	See above.	N/A
8.12	Telescoping or rod antennas.....	No such device provided within the EUT.	N/A
	Button/Ball diameter (mm).....:	See above.	—


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Clause	Requirement + Test	Result - Remark	Verdict
9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications	All accessible surfaces are classified as TS1	P
9.3	Safeguard against thermal energy sources		N/A
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard	See above.	N/A
9.4.2	Instructional safeguard	See above.	N/A
10	RADIATION		N/A
10.2	Radiation energy source classification	No such radiation from the equipment.	N/A
10.2.1	General classification	See the following details.	N/A
10.3	Protection against laser radiation	No such radiation generated from the equipment.	N/A
	Laser radiation that exists equipment:	See above.	—
	Normal, abnormal, single-fault..... :	See above.	
	Instructional safeguard..... :	See above.	—
	Tool..... :	See above.	—
10.4	Protection against visible, infrared, and UV radiation	No such radiation generated from the equipment.	N/A
10.4.1	General	See above.	N/A
10.4.1.a)	RS3 for Ordinary and instructed persons..... :	See above.	N/A
10.4.1.b)	RS3 accessible to a skilled person..... :	See above.	N/A
	Personal safeguard (PPE) instructional safeguard..... :	See above.	—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1... :	See above.	N/A
10.4.1.d)	Normal, abnormal, single-fault conditions	See above.	N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque..... :	See above.	N/A
10.4.1.f)	UV attenuation..... :	See above.	N/A
10.4.1.g)	Materials resistant to degradation UV..... :	See above.	N/A
10.4.1.h)	Enclosure containment of optical radiation..... :	See above.	N/A
10.4.1.i)	Exempt Group under normal operating conditions..... :	See above.	N/A
10.4.2	Instructional safeguard..... :	See above.	N/A
10.5	Protection against x-radiation	No such x-radiation generated from the equipment	N/A
10.5.1	X- radiation energy source that exists equipment :	See above.	N/A
	Normal, abnormal, single fault conditions	See above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Equipment safeguards..... :	See above.	N/A
	Instructional safeguard for skilled person..... :	See above.	N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation..... :	See above.	—
	Abnormal and single-fault condition..... :	See above.	N/A
	Maximum radiation (pA/kg)..... :	See above.	N/A
10.6	Protection against acoustic energy sources	No such consideration for the purpose of personal music players.	N/A
10.6.1	General	See above.	N/A
10.6.2	Classification	See above.	N/A
	Acoustic output, dB(A)..... :	See above.	N/A
	Output voltage, unweighted r.m.s..... :	See above.	N/A
10.6.4	Protection of persons	See above.	N/A
	Instructional safeguards..... :	See above.	N/A
	Equipment safeguard prevent ordinary person to RS2..... :	See above.	—
	Means to actively inform user of increase sound pressure..... :	See above.	—
	Equipment safeguard prevent ordinary person to RS2..... :	See above.	—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)	See above.	N/A
10.6.5.1	Corded passive listening devices with analog input	See above.	N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output..... :	See above.	—
10.6.5.2	Corded listening devices with digital input	See above.	N/A
	Maximum dB(A)..... :	See above.	—
10.6.5.3	Cordless listening device	See above.	N/A
	Maximum dB(A)..... :	See above.	—

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.2	Normal Operating Conditions	See the following details.	P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers..... :		P
B.2.3	Supply voltage and tolerances	Rated voltage \pm 10 %	P

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Clause	Requirement + Test	Result - Remark	Verdict
B.2.5	Input test.....:	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements.....:	(See appended table B.3&B.4)	P
B.3.2	Covering of ventilation openings	(See appended table B.3&B.4)	P
B.3.3	D.C. mains polarity test	The EUT is not connected to a D.C. mains	N/A
B.3.4	Setting of voltage selector.....:	No setting of voltage selector within the EUT	N/A
B.3.5	Maximum load at output terminals.....:	(See appended table B.3&B.4)	P
B.3.6	Reverse battery polarity		N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.	(See appended table B.3&B.4)	P
B.3.8	Safeguards functional during and after abnormal operating conditions	All safeguards remained effectively.	P
B.4	Simulated single fault conditions 错误! 未指定书签。		N/A
B.4.2	Temperature controlling device open or short-circuited.....:		N/A
B.4.3	Motor tests	No motor within the EUT	N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature		N/A
B.4.4	Short circuit of functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation		P
B.4.4.2	Short circuit of creepage distances for functional insulation		P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards within the EUT	N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnect of passive components		P
B.4.7	Continuous operation of components	The EUT is continuous operating type and no such components intended for short time operation or intermittent operation	N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		N/A
B.4.9	Battery charging under single fault conditions.....:		N/A
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation	No such UV generated from the equipment.	N/A
C.1.2	Requirements	See above.	N/A
C.1.3	Test method	See above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
C.2	UV light conditioning test	See above.	N/A
C.2.1	Test apparatus	See above.	N/A
C.2.2	Mounting of test samples	See above.	N/A
C.2.3	Carbon-arc light-exposure apparatus	See above.	N/A
C.2.4	Xenon-arc light exposure apparatus	See above.	N/A
D	TEST GENERATORS		N/A
D.1	Impulse test generators	No such consideration.	N/A
D.2	Antenna interface test generator	See above.	N/A
D.3	Electronic pulse generator	See above.	N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V).....:		—
	Rated load impedance (Ω)		—
E.2	Audio amplifier abnormal operating conditions		N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General requirements	See the following details.	P
	Instructions – Language	English	—
F.2	Letter symbols and graphical symbols	See the following details.	P
F.2.1	Letter symbols according to IEC60027-1	Letter symbols for quantities and units are complied with IEC 60027-1.	P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Graphical symbols are complied with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010.	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Equipment marking is located on the exterior surface and is easily visible.	P
F.3.2	Equipment identification markings	See the following details.	P
F.3.2.1	Manufacturer identification	See copy of marking plate.	—
F.3.2.2	Model identification	See copy of marking plate.	—
F.3.3	Equipment rating markings	See the following details.	P
F.3.3.1	Equipment with direct connection to mains	The equipment is connected to AC mains supply.	P
F.3.3.2	Equipment without direct connection to mains	See above.	N/A
F.3.3.3	Nature of supply voltage.....:	~	—
F.3.3.4	Rated voltage.....:	See copy of marking plate.	—
F.3.3.4	Rated frequency.....:	See copy of marking plate	—

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.3.6	Rated current or rated power.....:	See copy of marking plate.	—
F.3.3.7	Equipment with multiple supply connections	Only one supply connection.	N/A
F.3.4	Voltage setting device	No such device on the equipment.	N/A
F.3.5	Terminals and operating devices	See below	P
F.3.5.1	Mains appliance outlet and socket-outlet markings.....:	No such devices on the equipment.	N/A
F.3.5.2	Switch position identification marking.....:	No such switch on the equipment.	N/A
F.3.5.3	Replacement fuse identification and rating markings.....:	The fuse is located within the equipment and not replaceable by an ordinary person or an instructed person.	P
F.3.5.4	Replacement battery identification marking.....:		N/A
F.3.5.5	Terminal marking location	See markings specified in F.3.6.1 and F.3.6.2.2 is not placed on removable parts such as screws.	P
F.3.6	Equipment markings related to equipment classification	See the following details.	P
F.3.6.1	Class I Equipment	The equipment is a Class II type.	N/A
F.3.6.1.1	Protective earthing conductor terminal	See above.	N/A
F.3.6.1.2	Neutral conductor terminal	The equipment is not permanently connected equipment.	N/A
F.3.6.1.3	Protective bonding conductor terminals	See above.	N/A
F.3.6.2	Class II equipment (IEC60417-5172)	See the following details.	P
F.3.6.2.1	Class II equipment with or without functional earth	The symbol “  ” provided.	P
F.3.6.2.2	Class II equipment with functional earth terminal marking	No such earth terminal marking used	N/A
F.3.7	Equipment IP rating marking	This equipment is classified as IPX0.	—
F.3.8	External power supply output marking	See copy of marking plate.	P
F.3.9	Durability, legibility and permanence of marking	See the following details.	P
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test, 15 sec. for water and 15 sec. for petroleum spirit. After each test, the marking remained legible.	P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking	The accessibility of equipment was evaluated by using test probe of Figure V.1.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	b) Instructions given for installation or initial use	Relevant safety caution texts and installation instruction are available.	P
	c) Equipment intended to be fastened in place	See above.	P
	d) Equipment intended for use only in restricted access area	The EUT is not such type equipment	N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1	No such terminals provided.	N/A
	f) Protective earthing employed as safeguard	The EUT is a class II equipment and no protective earth within the EUT	N/A
	g) Protective earthing conductor current exceeding ES2 limits	See above.	N/A
	h) Symbols used on equipment	No such consideration.	N/A
	i) Permanently connected equipment not provided with all-pole mains switch	The EUT is not a permanently connected equipment	N/A
j)	j) Replaceable components or modules providing safeguard function	The required information for fuse are marked adjacent to the fuse (see F.3.5.3 for details)	P
F.5	Instructional safeguards	No instructional safeguard is considered as necessary.	N/A
	Where "instructional safeguard" is referenced in the test report it specifies the required elements, location of marking and/or instruction	No instructional safeguard required in the equipment.	N/A
G	COMPONENTS		P
G.1	Switches		P
G.1.1	General requirements		P
G.1.2	Ratings, endurance, spacing, maximum load		P
G.2	Relays		N/A
G.2.1	General requirements	No such relay provided within the equipment.	N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	Protection Devices		N/A
G.3.1	Thermal cut-offs	No thermal cut-off provided within the equipment.	N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691	No thermal link provided within the equipment.	N/A
G.3.2.1b)	Thermal links tested as part of the equipment	See above.	N/A
	Aging hours (H)..... :	See above.	—
	Single Fault Condition..... :	See above.	—
	Test Voltage (V) and Insulation Resistance (Ω)..:	See above.	—
G.3.3	PTC Thermistors	No PTC thermistor provided within the equipment.	N/A
G.3.4	Overcurrent protection devices		N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions..... :		N/A
G.4	Connectors		N/A
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	Wound Components		N/A
G.5.1	Wire insulation in wound components.....		N/A
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s)..... :		—
	Temperature (°C)..... :		—
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	Transformers		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....		P
	Position..... :	T1	—
	Method of protection	See above and appended table B.3 & B.4.	—

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.3.2	Insulation	Primary windings and secondary windings are isolated by double insulation (The core is considered as primary part)	P
	Protection from displacement of windings..... :	By bobbin, margin tape and Insulation tapes	—
G.5.3.3	Overload test..... :	(See appended table B.3)	P
G.5.3.3.1	Test conditions		P
G.5.3.3.2	Winding Temperatures testing in the unit		P
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	Motors		N/A
G.5.4.1	General requirements	No such devices within the EUT	N/A
	Position		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days)		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V)..... :		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h)		N/A
	Electric strength test (V)..... :		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature		N/A
	Electric strength test (V)		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h)..... :		N/A
	Electric strength test (V)..... :		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage		—
G.6	Wire Insulation		P
G.6.1	General	Approved internal wire provided	P

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Clause	Requirement + Test	Result - Remark	Verdict
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	Mains supply cords		N/A
G.7.1	General requirements		N/A
	Type.....:		—
	Rated current (A).....:		—
	Cross-sectional area (mm ²), (AWG).....:		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N).....:		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm).....:		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry.....:		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g)		—
	Diameter (m).....:		—
	Temperature (°C).....:		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	Varistors		N/A
G.8.1	General requirements	No VDR.	N/A
G.8.2	Safeguard against shock	See above.	N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test.....:	See above.	N/A
G.8.3.3	Temporary overvoltage.....:	See above.	N/A
G.9	Integrated Circuit (IC) Current Limiters		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.	No IC current limiter provided within the equipment.	N/A
G.9.1 b)	Limiters do not have manual operator or reset	See above.	N/A
G.9.1 c)	Supply source does not exceed 250 VA	See above.	—
G.9.1 d)	IC limiter output current (max. 5A).....:	See above.	—

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Clause	Requirement + Test	Result - Remark	Verdict
G.9.1 e)	Manufacturers' defined drift	See above.	—
G.9.2	Test Program 1	See above.	N/A
G.9.3	Test Program 2	See above.	N/A
G.9.4	Test Program 3	See above.	N/A
G.10	Resistors		N/A
G.10.1	General requirements	No such device provided within the equipment.	N/A
G.10.2	Resistor test	See above.	N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable	See above.	N/A
G.10.3.1	General requirements	See above.	N/A
G.10.3.2	Voltage surge test	See above.	N/A
G.10.3.3	Impulse test	See above.	N/A
G.11	Capacitor and RC units		N/A
G.11.1	General requirements	(see appended table 4.1.2) Y-capacitor used as safeguard and complied with IEC/EN 60384-14.	N/A
G.11.2	Conditioning of capacitors and RC units	At least 21 days at $40 \pm 2^\circ\text{C}$ and $93 \pm 3\% \text{ RH}$.	N/A
G.11.3	Rules for selecting capacitors	The selection followed with tables G.9 and G.12.	N/A
G.12	Optocouplers		N/A
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....	No such device provided within the equipment.	N/A
	Type test voltage V_{ini}		—
	Routine test voltage, $V_{ini,b}$		—
G.13	Printed boards		P
G.13.1	General requirements	See the following details.	P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board complied with the minimum clearance and creepage requirements	P
G.13.3	Coated printed boards	No coated printed board provided within the equipment.	N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction).....		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation.....:		N/A
	Number of insulation layers (pcs) :		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements	No coating on component terminals.	N/A
G.15	Liquid filled components		N/A
G.15.1	General requirements	No such device provided within the equipment.	N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours	No such device provided within the equipment.	N/A
b)	Impulse test using circuit 2 with $U_c =$ to transient voltage		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance		—
D3)	Resistance		—

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Clause	Requirement + Test	Result - Remark	Verdict
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General	No telephone ringing signal generated within the equipment.	N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringling signal		N/A
H.3.1.1	Frequency (Hz)		—
H.3.1.2	Voltage (V)		—
H.3.1.3	Cadence; time (s) and voltage (V)		—
H.3.1.4	Single fault current (mA):.....		—
H.3.2	Tripping device and monitoring voltage.....		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V).....		—
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		P
	General requirements	Triple-insulated winding wiring used as reinforced safeguard in the isolating transformer that had been evaluated with Annex J.	P
K	SAFETY INTERLOCKS		N/A
K.1	General requirements	No safety interlock provided within the equipment.	N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance.....		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method.....		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location)		N/A
K.7.2	Overload test, Current (A).....		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
L	DISCONNECT DEVICES		P
L.1	General requirements	The switch is considered as disconnect device.	P
L.2	Permanently connected equipment	The EUT is not permanently connected equipment	N/A
L.3	Parts that remain energized	No parts remain energized	N/A
L.4	Single phase equipment	The disconnect device disconnects both poles simultanrously.	P
L.5	Three-phase equipment	The EUT is a Single phase equipment	N/A
L.6	Switches as disconnect devices		P
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources	Only one a.c. mains connection.	N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		P
M.1	General requirements		P
M.2	Safety of batteries and their cells		P
M.2.1	Requirements	Comply with IEC62133-2	P
M.2.2	Compliance and test method (identify method)... :		P
M.3	Protection circuits		P
M.3.1	Requirements		P
M.3.2	Tests		P
	- Overcharging of a rechargeable battery		P
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance		P
M.4	Additional safeguards for equipment containing secondary lithium battery		P
M.4.1	General		P
M.4.2	Charging safeguards		P
M.4.2.1	Charging operating limits		P
M.4.2.2a)	Charging voltage, current and temperature..... :		—
M.4.2.2 b)	Single faults in charging circuitry..... :		—
M.4.3	Fire Enclosure		P
M.4.4	Endurance of equipment containing a secondary lithium battery		P
M.4.4.2	Preparation		P

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Clause	Requirement + Test	Result - Remark	Verdict
M.4.4.3	Drop and charge/discharge function tests		P
	Drop		P
	Charge		P
	Discharge		P
M.4.4.4	Charge-discharge cycle test		P
M.4.4.5	Result of charge-discharge cycle test		P
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		P
M.6.1	Short circuits		P
M.6.1.1	General requirements		P
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method)		N/A
M.6.2	Leakage current (mA)		P
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s).....		—
M.8.2.3	Correction factors.....		—
M.8.2.4	Calculation of distance d (mm)		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing)		P
N	ELECTROCHEMICAL POTENTIALS		N/A
	Metal(s) used.....	The EUT is Class II equipment	—

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Clause	Requirement + Test	Result - Remark	Verdict
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Figures O.1 to O.20 of this Annex applied.....:	Considered.	—
P	SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS		P
P.1	General requirements	See the following details.	P
P.2.2	Safeguards against entry of foreign object	See below.	P
	Location and Dimensions (mm)	No openings.	—
P.2.3	Safeguard against the consequences of entry of foreign object	See above.	N/A
P.2.3.1	Safeguards against the entry of a foreign object	See above.	N/A
	Openings in transportable equipment	No openings.	P
	Transportable equipment with metalized plastic parts.....:	See above.	N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard)	See above.	N/A
P.3	Safeguards against spillage of internal liquids	No such consideration.	N/A
P.3.1	General requirements	See above.	N/A
P.3.2	Determination of spillage consequences	See above.	N/A
P.3.3	Spillage safeguards	See above.	N/A
P.3.4	Safeguards effectiveness	See above.	N/A
P.4	Metallized coatings and adhesive securing parts	No such construction.	N/A
P.4.2 a)	Conditioning testing	See above.	N/A
	Tc (°C).....:	See above.	—
	Tr (°C).....:	See above.	—
	Ta (°C).....:	See above.	—
P.4.2 b)	Abrasion testing	See above.	N/A
P.4.2 c)	Mechanical strength testing.....:	See above.	N/A
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		N/A
Q.1	Limited power sources		N/A
Q.1.1 a)	Inherently limited output	See below.	N/A
Q.1.1 b)	Impedance limited output	See below.	N/A
	- Regulating network limited output under normal operating and simulated single fault condition	Complied	N/A
Q.1.1 c)	Overcurrent protective device limited output	See above.	N/A
Q.1.1 d)	IC current limiter complying with G.9	See above.	N/A
Q.1.2	Compliance and test method	See above.	N/A
Q.2	Test for external circuits – paired conductor cable	No such circuit within the EUT	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Maximum output current (A)	See above.	—
	Current limiting method.....	See above.	—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General requirements	No such consideration.	N/A
R.2	Determination of the overcurrent protective device and circuit	See above.	N/A
R.3	Test method Supply voltage (V) and short-circuit current (A).	See above.	N/A
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	The fire enclosure was made of rated min. V-0 material.	N/A
	Samples, material.....		—
	Wall thickness (mm).....		—
	Conditioning (°C).....		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material.....		—
	Wall thickness (mm).....		—
	Conditioning (°C).....		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material.....		—
	Wall thickness (mm).....		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material.....		—
	Wall thickness (mm).....		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Conditioning (test condition), (°C).....:		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
T	MECHANICAL STRENGTH TESTS		P
T.1	General requirements	See the following details.	P
T.2	Steady force test, 10 N	(See appended table T.2)	P
T.3	Steady force test, 30 N		N/A
T.4	Steady force test, 100 N		N/A
T.5	Steady force test, 250 N	(See appended table T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	N/A
	Fall test	A 500 g steel sphere ball fell freely from rest through a vertical distance of 1300 mm onto the sample.	N/A
	Swing test	By fall test above.	N/A
T.7	Drop test	Complete equipment was dropped onto a horizontal surface from the height of 1000 mm for three times.	P
T.8	Stress relief test.....:	(See appended table T.8)	N/A
T.9	Impact Test (glass)	No such glass provided within the equipment.	N/A
T.9.1	General requirements	See above.	N/A
T.9.2	Impact test and compliance	See above.	N/A
	Impact energy (J).....:	See above.	—
	Height (m).....:	See above.	—
T.10	Glass fragmentation test.....:	(See sub-clause 4.4.4.9)	N/A
T.11	Test for telescoping or rod antennas	No such antennas provided within the equipment.	N/A
	Torque value (Nm)	See above.	—
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General requirements	No CRT provided within the equipment.	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs	See above.	N/A
U.3	Protective Screen.....:	See above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
V	DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)		N/A
V.1	Accessible parts of equipment		N/A
V.2	Accessible part criterion		N/A

Clause	Requirement + Test	Result - Remark	Verdict
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4.1.2	TABLE: List of critical components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹	
Plastic enclosure	Interchangeable	Interchangeable	V-0	UL 94	UL	
PCB	Dongguan Jingmei Circuit Technology Co., Ltd	MYD-2A	V-0 130°C	UL 796	UL E348865	
Rechargeable Lithium Iron Phosphate Cell	Interchangeable	847MOC	31000mAh, 31Ah	IEC 62133- 2:2017	Tested with appliance	

Supplementary information:

- 1) Provided evidence ensures the agreed level of compliance.
- 2) For photocoupler, Dti = inside distance through insulation, Int. dcr = internal creepage distance, Ext. dcr = external creepage distance.

5.2	Table: Classification of electrical energy sources						P
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions ¹⁾	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
1	48Vd.c.	AC output	Normal	230Vrms	--	50	ES3
			Abnormal	230Vrms	--	50	
			Single fault – SC/OC	230Vrms	--	50	
2	48Vd.c.	USB port	Normal	12.12Vrms	--	--	ES1
			Abnormal	12.00Vrms	--	--	
			Single fault – SC/OC	12.00Vrms	--	--	

5.2.2.3 - Capacitance Limits							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class	
				Capacitance, nF	Upk (V)		
			Abnormal– Overload	--	--		
			Singlefault– SC/OC	--	--		
			Abnormal– Overload	--	--		

5.2.2.4 - Single Pulses							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

5.2.2.5 - Repetitive Pulses							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

5.4.1.4, 6.3.2, 9.0, B.2.6		TABLE: Temperature measurements						P
Supply voltage (V)		Output full load				---		
Ambient T _{min} (°C)		--	--	--	--	---		
Ambient T _{max} (°C)		--	--	--	--	---		
T _{ma} (°C)		--	--	--	--	---		
Maximum measured temperature T of part/at:		T(°C)		T(°C)		Allowed T _{max} (°C)		
Test condition		A: horizontal	--	B: vertical	--	--		
Internal ports of power cables		38.6	--	43.8	--	70		
Internal wire		33.2	--	33.8	--	70		
Transformer T1 bobbin		55.8	--	58.7	--	150		
Transformer T1 winding		57.6	--	60.5	--	110		
PCB near T 1		55.8	--	56.7	--	130		
Y capacitance CY1 body		44.8	--	43.0	--	105		
C-capacitor C5 body		43.8	--	42.8	--	105		
PCB near U1 (main board)		35.6	--	35.8	--	130		
Enclosure inside		40.5	--	45.8	--	For reference		
screen		29.0	--	29.1	--	--		
Ambient		25.0	--	25.1	--	--		
Ambient	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class	

--	--	--	--	--	--	--	--
Supplementary information: Note 1: Tma should be considered as directed by applicable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics			N/A
Penetration (mm).....	1.0			—
Object/ Part No./Material	Manufacturer/trademark		T softening (°C)	
--	--		--	
supplementary information:				

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics			P
Allowed impression diameter (mm)	≤ 2 mm			—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)	
plastic enclosure	--	125	1.2	
Transformer T1 bobbin	--	125	0.6	
Supplementary information:				

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance	P
-------------------------------------------	----------------------------------------------------	---

Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz) ¹	Required cl (mm)	cl (mm) ²	Required ³ cr (mm)	cr (mm)
Basic:							
L and N before	420	250	0.06	1.5	>3.0	2.5	>3.0
Reinforced:							
Transformer T1 primary winding to secondary winding	562	263	53.7	3.0	>6.0	5.0	>6.0
Transformer T1 primary winding to secondary winding on PCB	562	263	53.7	3.0	>6.0	5.0	>6.0
Transformer T1 primary winding to secondary winding and core	562	263	53.7	3.0	>6.0	5.0	>6.0
Y-capacitor primary to Secondary (CY1)	562	263	53.7	3.0	>6.0	5.0	>6.0
Supplementary information: Note 1: Only for frequency above 30 kHz Note 2: See table 5.4.2.4 if this is based on electric strength test Note 3: Provide Material Group FI: Functional insulation; BI: Basic insulation; SI: Supplementary insulation; RI: Reinforced insulation.							

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage			P
	Overvoltage Category (OV):			II
	Pollution Degree:			2
Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)	
See table 5.4.2.2, 5.4.2.4 and 5.4.3 above.	2500Vp	2500Vp	See 5.4.2.2, 5.4.2.4 and 5.4.3 above	
Supplementary information:				

5.4.2.4	TABLE: Clearances based on electric strength test			N/A
Test voltage applied between:	Required cl (mm)	Test voltage (kV) peak/ r.m.s. / d.c.	Breakdown Yes / No	
--	--	--	--	
Supplementary information:				

5.4.4.2, 5.4.4.5 c)	TABLE: Distance through insulation measurements			P
Supplementary information:				

5.4.4.9					
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
Transformer T1 bobbin	562	53.7	See table 4.1.2	0.4	0.80
PCB	420	--	See table 4.1.2	0.4	1.6

Supplementary information:
1) For details refer to appended table 4.1.2.

5.4.9 TABLE: Electric strength tests				P
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No	
L and N	DC	2500	No	
L and N to plastic enclosure	DC	4000	No	

Supplementary information:
1) Sources of insulation tape see appended table 4.1.2 for details.
2) Triple insulation wire used as secondary winding, the core is considered as primary part.

5.5.2.2 TABLE: Stored discharge on capacitors						N/A
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification	

Supplementary information:
Notes:
A. Test Location:
Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth
B. Operating condition abbreviations:
N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition (Bleeder Resistor R11 open circuit)

5.6.6.2 TABLE: Resistance of protective conductors and terminations					N/A
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	
--	--	--	--	--	

Supplementary information:

5.7.2.2, 5.7.4 TABLE: Earthed accessible conductive part				N/A
----------------------------------------------------------	--	--	--	-----

Supply voltage.....:		—
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)
--	1	--
	2*	--
	3	--
	4	--
	5	--
	6	--
	8	--
Supplementary Information: Notes: [1] Supply voltage is the anticipated maximum Touch Voltage [2] Earthed neutral conductor [Voltage differences less than 1% or more] [3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3 [4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable. [5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.		

6.2.2		Table: Electrical power sources (PS) measurements for classification				P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s*)	PS Classification	
AC output	Normal condition	Power (W) :	--	--	PS3	
		V _A (V) :	--	--		
		I _A (A) :	--	--		
USB 1 output	Normal condition	Power (W) :	17.70	--	PS2	
		V _A (V) :	11.80	--		
		I _A (A) :	1.50	--		
USB 2 output	Normal condition	Power (W) :	17.50	--	PS2	
		V _A (V) :	11.68	--		
		I _A (A) :	1.50	--		
USB 3 output	Normal condition	Power (W) :	17.60	--	PS2	
		V _A (V) :	11.71	--		
		I _A (A) :	1.50	--		
USB 4 output	Normal condition	Power (W) :	17.55	--	PS2	
		V _A (V) :	11.70	--		
		I _A (A) :	1.50	--		
Type -C 22.5W	Normal condition	Power (W) :	26.20	--	PS2	
		V _A (V) :	11.64	--		

output		I _A (A) :	2.25	--	
Type -C 100W output	Normal condition	Power (W) :	95.50	--	PS2
		V _A (V) :	19.11	--	
		I _A (A) :	5.00	--	
Car charging output	Normal condition	Power (W) :	99.50	--	PS2
		V _A (V) :	17.15	--	
		I _A (A) :	5.80	--	
DC port 1 output	Normal condition	Power (W) :	196.86	--	PS3
		V _A (V) :	11.29	--	
		I _A (A) :	18.00	--	
DC port 2 output	Normal condition	Power (W) :	195.9	--	PS3
		V _A (V) :	11.25	--	
		I _A (A) :	18.00	--	

Supplementary Information:

(*) Measurement taken only when limits at 3 seconds exceed PS1 limits

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)				P
Location	Open circuit voltage After 3 s (V _p)	Measured r.m.s current (I _{rms})	Calculated value (V _p x I _{rms})	Arcing PIS? Yes / No	
All primary circuits/components	--	--	--	Yes	

Supplementary information:

All components located within the EUT are considered as arcing PIS

An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15.

6.2.3.2	Table: Determination of Potential Ignition Sources (Resistive PIS)				P
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No
All internal circuits/components	--	--	--	No	Yes

Supplementary Information:

All components located within the EUT are considered as resistive PIS

A combination of voltmeter, V_A and ammeter I_A may be used instead of a wattmeter.

If a separate voltmeter and ammeter are used, the product of (V_A x I_A) is used to determine Resistive PIS classification.

A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.

B.2.5	TABLE: Input test							P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
230	1.5	2.0	316	--	F1	--	Max. Normal load.	

B.3 & B.4 TABLE: Abnormal operating and fault condition tests								P
Ambient temperature (°C)					25°C, if not specified			—
Power source for EUT: Manufacturer, model/type, output rating ...					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
AC output	SC	AC230V	30mins	/	0.35	--	--	Unit normal operation, the AC output cannot work normally, no damage, no hazard.
USB 1 output	SC	DC12V	30mins	/	0.15	--	--	Unit normal operation, the USB cannot work normally, no damage, no hazard.
USB 2 output	SC	DC12V	30mins	/	0.15	--	--	Unit normal operation, the USB cannot work normally, no damage, no hazard.
USB 3 output	SC	DC12V	30mins	/	0.15	--	--	Unit normal operation, the USB cannot work normally, no damage, no hazard.
USB 4 output	SC	DC12V	30mins	/	0.15	--	--	Unit normal operation, the USB cannot work normally, no damage, no hazard.

B.3 & B.4 TABLE: Abnormal operating and fault condition tests								P
Ambient temperature (°C)					25°C, if not specified			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Type -C 22.5W output	SC	DC12V	30mins	/	0.11	--	--	Unit normal operation, the Type -C cannot work normally, no damage, no hazard.
Type -C 100W output	SC	DC20V	30mins	/	0.11	--	--	Unit normal operation, the Type -C cannot work normally, no damage, no hazard.
Car charging output	SC	DC24V	30mins	/	0.45	--	--	Unit normal operation, the Car charging cannot work normally, no damage, no hazard.
DC port 1 output	SC	DC13V	30mins	/	0.55	--	--	Unit normal operation, the DC port cannot work normally, no damage, no hazard.
DC port 2 output	SC	DC13V	30mins	/	0.55	--	--	Unit normal operation, the DC port cannot work normally, no damage, no hazard.
<p>Supplementary information:</p> <p>Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4.</p> <ol style="list-style-type: none"> 1) SC: Short-circuited; OC: Open-circuited; OL: Overloaded. 2) The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; besides, all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions. 3) The test result shown no Class 1 or 2 energy source become Class 3 level during and after single fault condition. 4) The overloaded condition is according to annex G.5.3.3. 								

Annex Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)					N/A
Note: Measured UOC (V) with all load circuits disconnected:						
Output Circuit	Components	U _{oc} (V)	I _{sc} (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
Supplementary Information: SC=Short circuit, OC=Open circuit I/P=264V, 60Hz.						

T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation	
Internal components	/	/	10	5	No insulation breakdown. No Reduction the Clearances and Creepage distances	
Plastic enclosure	Plastic	See table 4.1.2	250	5	Enclosure remained intact, no crack/opening developed. No insulation breakdown.	
Supplementary information:						

T.6, T.9	TABLE: Impact tests				N/A
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
Plastic enclosure	Plastic	--	1300	Enclosure remained intact, no Crack / opening developed. No insulation breakdown.	
Supplementary information:					

T.7	TABLE: Drop tests				P
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Plastic enclosure	Plastic	--	1000	Enclosure remained intact, no Crack / opening developed. No insulation breakdown.	
--	--	--	--	--	
--	--	--	--	--	

Supplementary information:

T.8 TABLE: Stress relief test					N/A
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Plastic enclosure	Plastic	--	70	7.0	No obvious distortion and deformation.
Supplementary information: For details refer to appended table 4.1.2.					

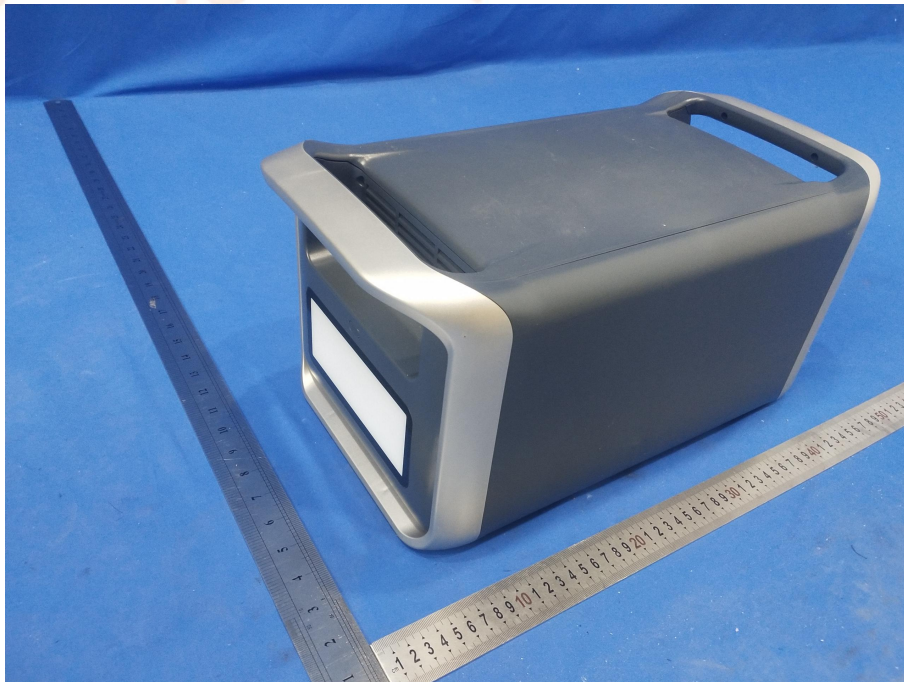
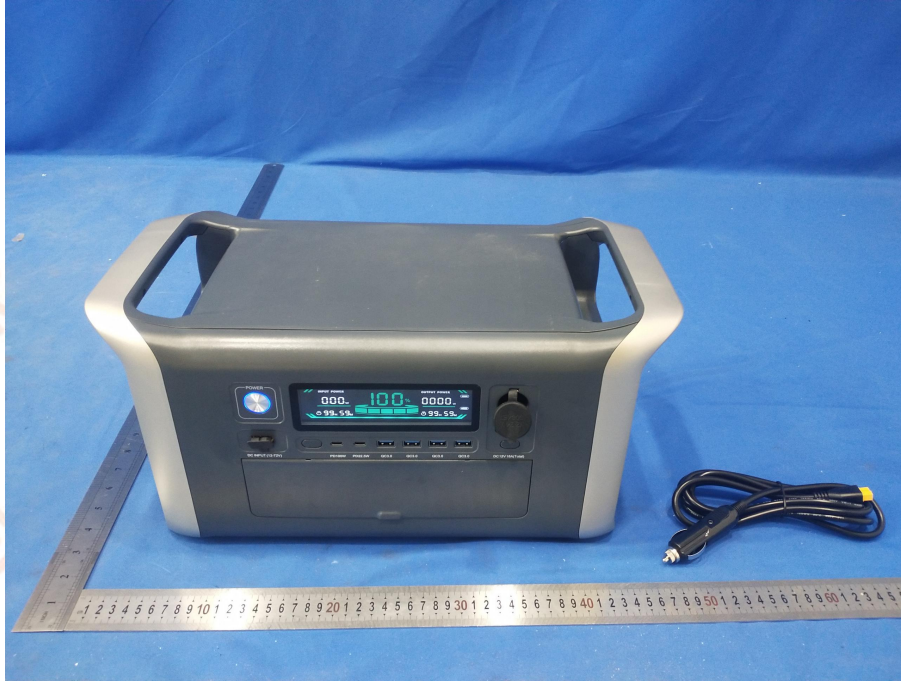
IEC 62368-1 ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 (JAPAN) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to: J62368-1 (2020)			
TRF template used: IEC EE OD-2020-F3, Ed. 1.1			
Attachment Form No: JP_ND_IEC62368_1B			
Attachment Originator: UL (JP)			
Master Attachment: Date 2020-11-06			
Copyright © 2020 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		—
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this standard or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.		N/A
5.6.1	Mains socket-outlet and appliance outlet shall comply with Clause G.4.2A if they are incorporated as part of the equipment.		P
5.6.2.1	Mains connection of class 0I equipment: Instructional safeguard in accordance with Clause F.3.6.1A; Mains plug having a lead wire for protective earthing connection of class 0I equipment; Independent main protective earthing terminal installed by ordinary person.		N/A
5.6.2.2	This requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.		N/A

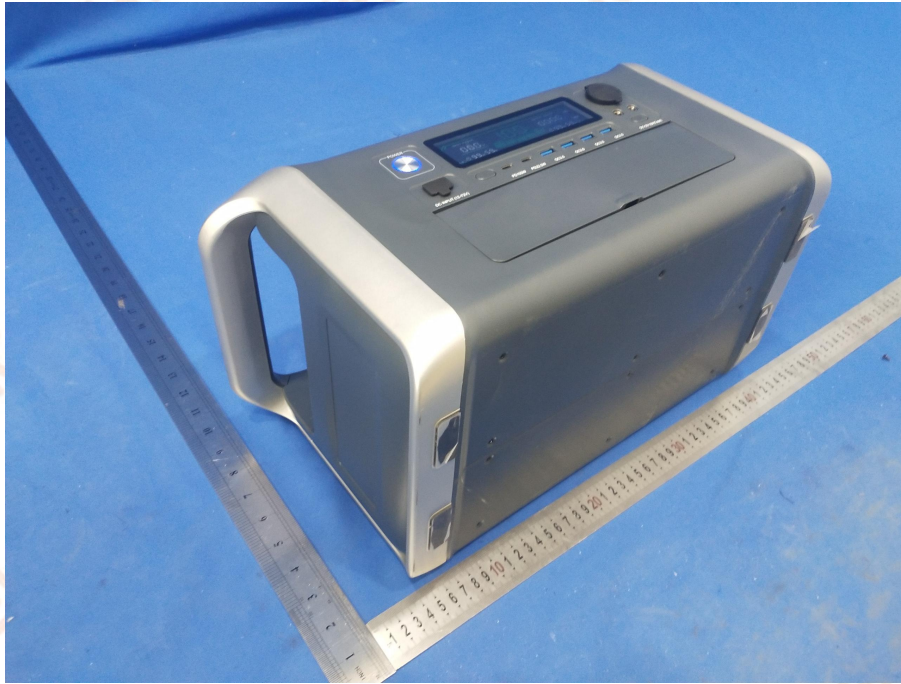
IEC 62368-1 ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.3	<p>In case of class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall comply with either of the following:</p> <ul style="list-style-type: none"> – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cable with 1.25 mm² or more cross-sectional area 		N/A
5.7.3	<p>For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series or JIS C 8303, or otherwise being considered to comply with relevant regulations, or that is provided with mains appliance outlet as specified in JIS C 8283-2-2 for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.</p>		N/A
5.7.4	<p>In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990.</p>		N/A
6.4.3.3	<p>A fuse complying with JIS C 6575 series or a fuse having equivalent characteristics shall open within 1 s.</p> <p>For Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”.</p> <p>A fuse not complying with JIS C 6575 series shall be tested with the breaking capacity taken into account.</p>		P
8.5.4.2.1	<p>Only three-phase stationary equipment rated more than 200 V ac can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.</p>		N/A
8.5.4.2.2	<p>For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.</p>		N/A
8.5.4.2.4	<p>The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.</p>		N/A

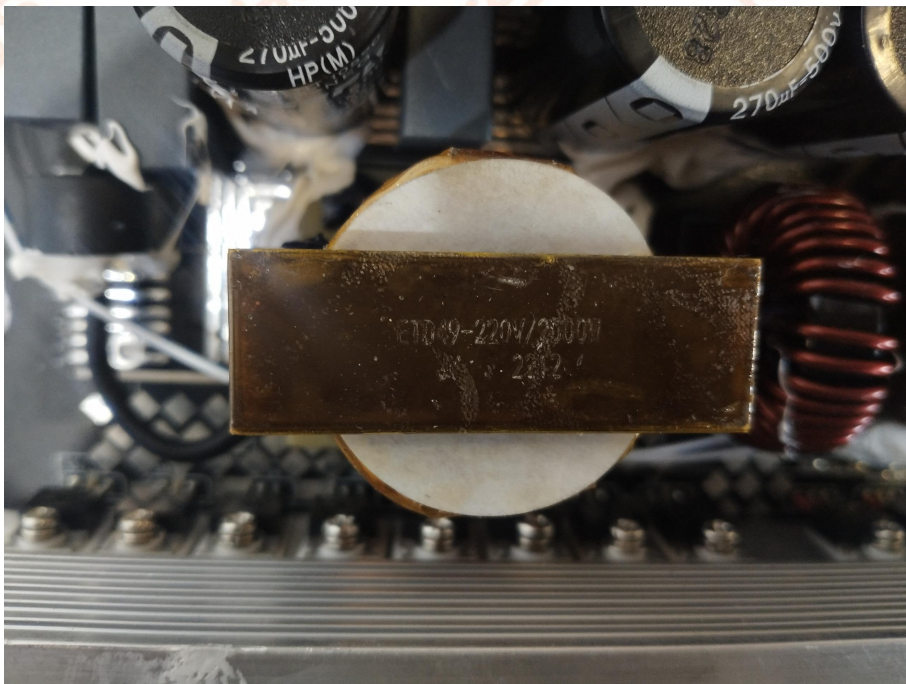
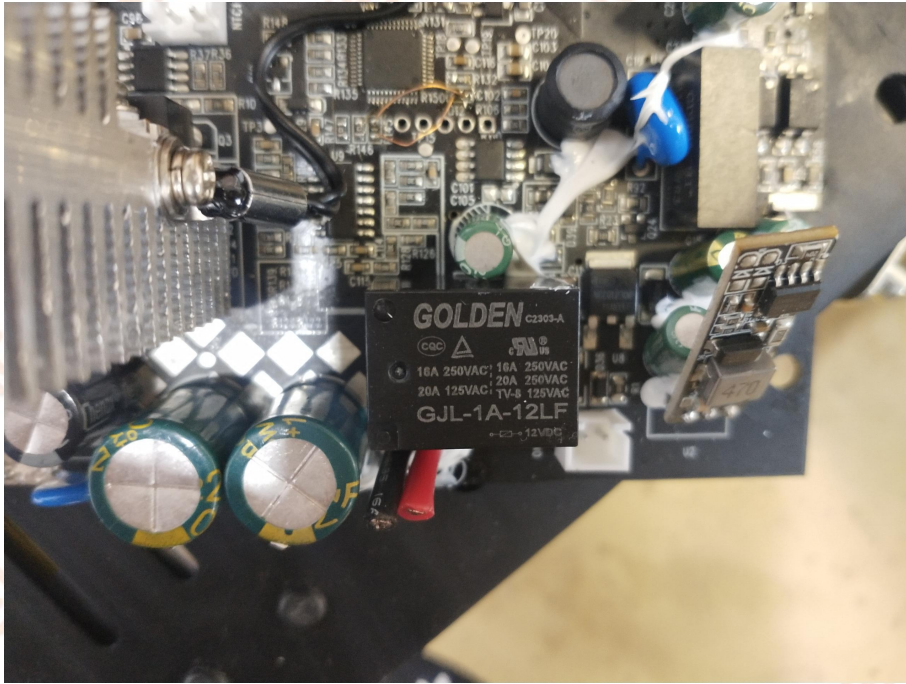
IEC 62368-1 ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.2.5	<p>The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part.</p> <p>Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.</p>		N/A
9.2.6, Table 38	Handles, Knobs, grips, etc. and external surfaces either held, touched or worn against the body in normal use (> 1 min) b,c		N/A
F.3.5.1	Instructional safeguard of class 0I equipment in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8303 or relevant regulation to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.		N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic.		N/A
F.3.6.1A	<p>Marking for class 0I equipment</p> <p>The requirements of Clauses F.3.6.1.1 and F.3.6.1.3 shall be applied to class 0I equipment.</p> <p>For class 0I equipment, a marking of instructions and instructional safeguard shall be provided regarding the earthing connection.</p>		N/A
F.3.6.2.1	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.		P
F.4	<p>Instruction for audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A.</p> <p>Installation instruction for the protective earthing connection for class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided within the package for the equipment.</p>		N/A
G.3.2.1	The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.		P

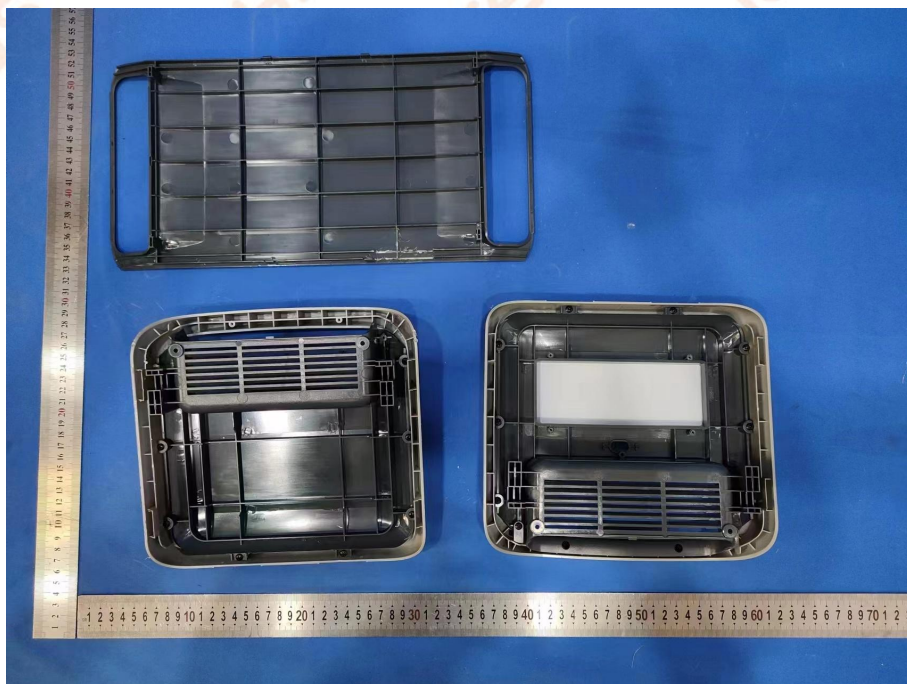
IEC 62368-1 ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.3.4	<p>Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the relevant part of JIS C 6575 (corresponding to IEC60127) or shall have equivalent characteristics.</p> <p>If there are no applicable IEC standards, overcurrent protective devices used as a safeguard shall comply with their applicable IEC standards.</p>		N/A
G.4.1	This requirement is not applicable to Clauses G.4.2 and G.4.2A.		N/A
G.4.2	<p>Mains connector shall comply with JIS C 8282 series, JIS C 8283 series, JIS C 8285, JIS C 8303 or IEC 60309 series.</p> <p>Mains plugs and socket-outlets shall comply with JIS C 8282 series, JIS C 8303, IEC 60309 series, or have equivalent or better performance.</p> <p>A power supply cord set provided with appliance connector that can fit appliance inlet complying with JIS C 8283-1 shall comply with JIS C 8286.</p> <p>Construction preventing mechanical stress not to transmit to the soldering part of inlet terminal. Consideration for an equipment rated not more than 125 V provided with Type C14 and C18 appliance coupler complying with JIS C 8283 series.</p>		N/A
G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively.	class I equipment	P
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.		N/A
G.8.3.3	Withstand $1,71 \times 1.1 \times U_0$ for 5 s.		N/A

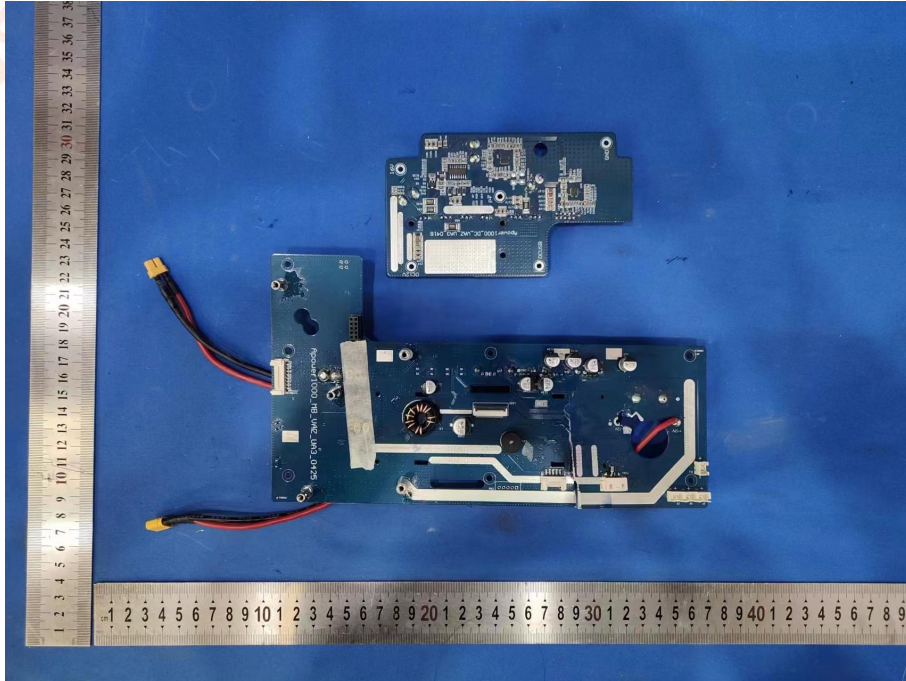
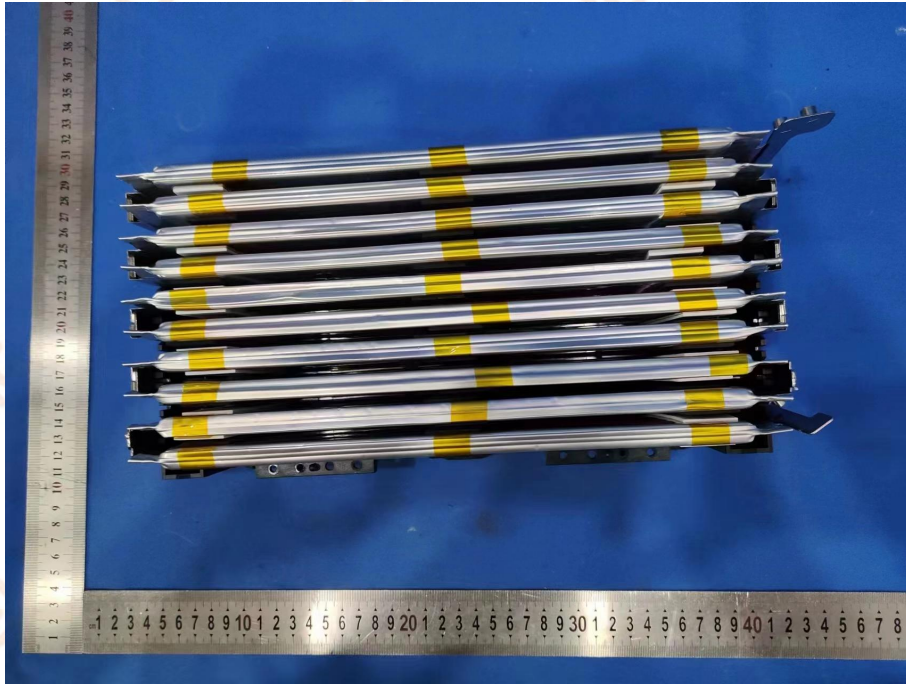
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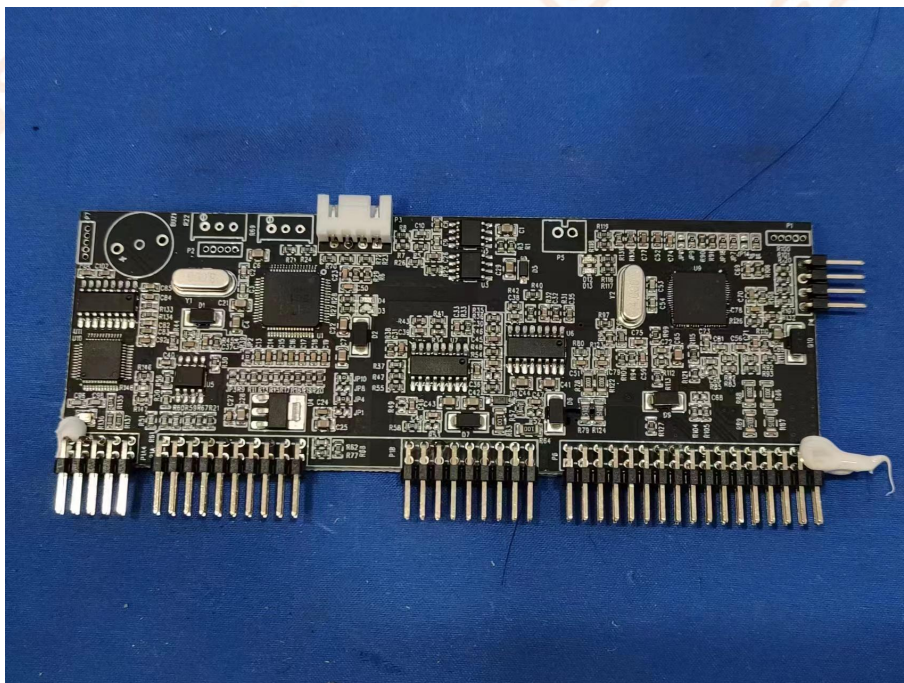
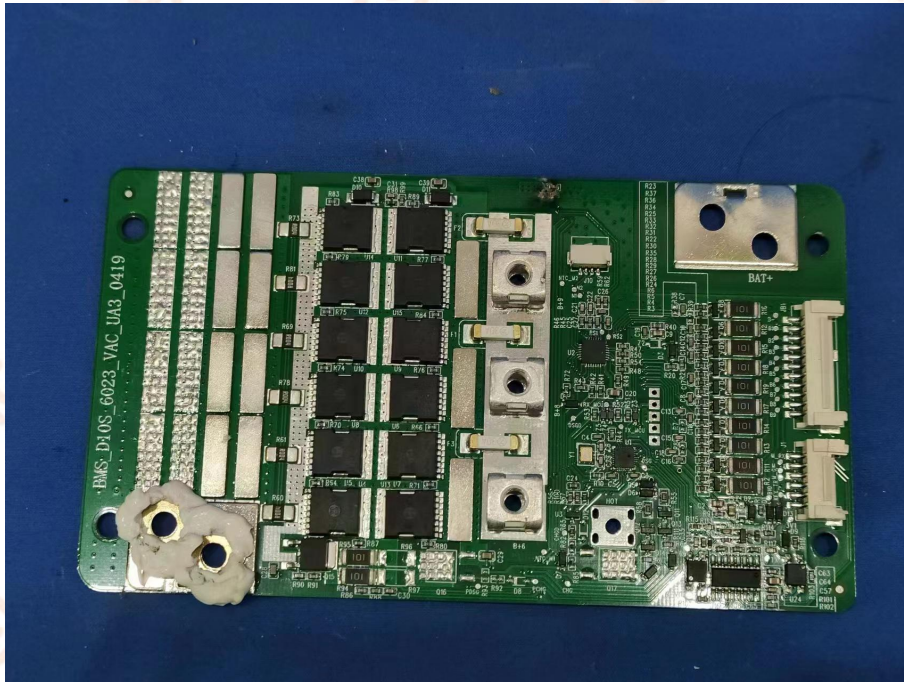


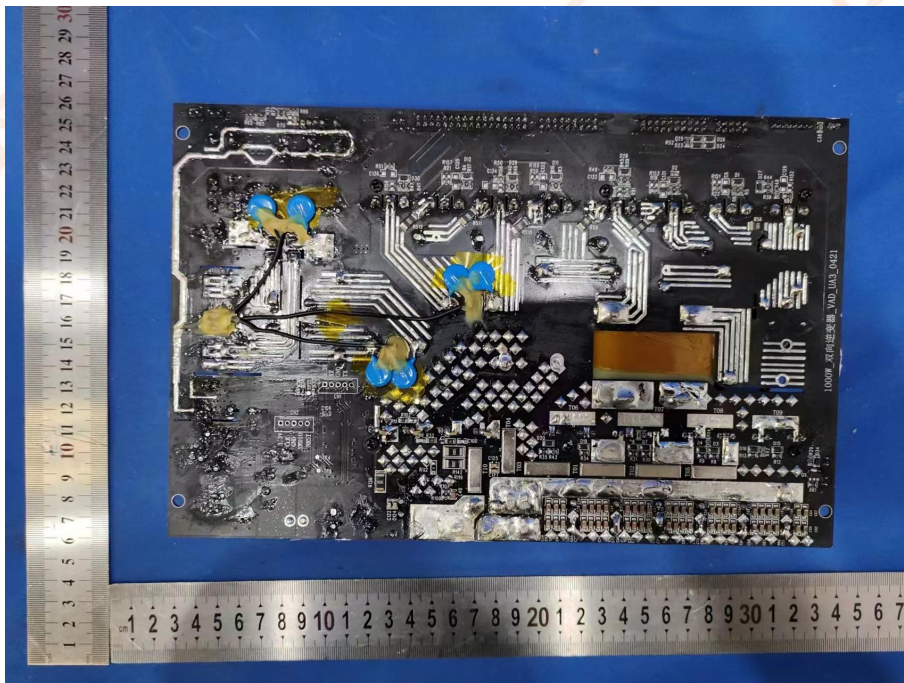
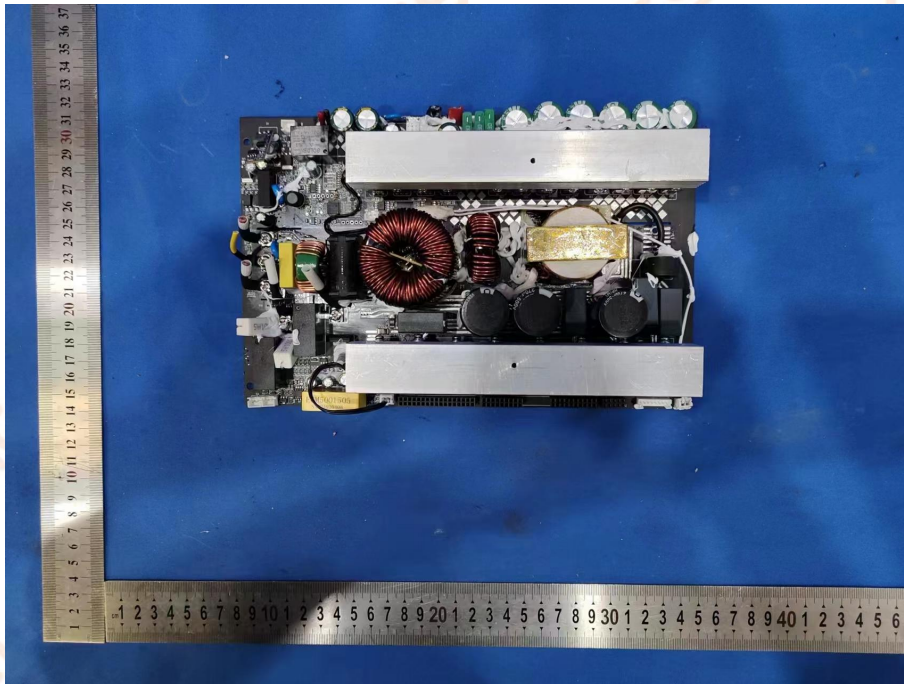












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