

## TEST REPORT


### EN IEC 62368-1

## Audio/video, information and communication technology equipment

### Part 1: Safety requirements

|   |  |
|---|--|
| <b>Report Number</b> .....:                 | KEYS23080915001LD-01   |
| <b>Tested by (name + signature)</b> .....:  | Sunny Li   |
| <b>Approved by (name + signature)</b> ....: | Jason Zhan   |
| <b>Date of issue</b> .....:                 | August 18, 2023  |
| <b>Total number of pages</b> .....:         | 59 pages   |
| <b>Testing Laboratory</b> .....:            | Guangdong KEYS Testing Technology Co.,Ltd.   |
| <b>Address</b> .....:                       | 6/F, Building B, Chuangyizhigu Industrial Park, No.5, Hehe Street, Songxi Road, Hengkeng, Liaobu, Dongguan, Guangdong, China   |
| <b>Applicant's name</b> .....:              | Zhejiang Zhenneng Technology Co.,Ltd   |
| <b>Address</b> .....:                       | Floor 1, No. 1818-1, South Taihu Avenue, Balidian Town, Wuxing District, Huzhou City, Zhejiang Province  |
| <b>Test specification:</b>                  |  |
| <b>Standard</b> .....:                      | EN IEC 62368-1:2020/A11:2020   |
| <b>Test procedure</b> .....                 | Safety Scheme  |
| <b>Non-standard test method</b> .....:      | N/A  |
| <b>General disclaimer:</b>                  | The test results presented in this report relate only to the object tested.<br>This report shall not be reproduced, except in full, without the written approval of the Issuing KEYS Testing Laboratory. |
| <b>Test item description</b> .....:         | Portable power station   |
| <b>Trade Mark</b> .....:                    | N/A  |
| <b>Manufacturer</b> .....:                  | Zhejiang Zhenneng Technology Co.,Ltd   |
| <b>Address</b> .....:                       | Floor 1, No. 1818-1, South Taihu Avenue, Balidian Town, Wuxing District, Huzhou City, Zhejiang Province  |
| <b>Model/Type reference</b> .....:          | Apower1000, Apower2000, Apower1000Pro, Apower2000Pro,BS041   |
| <b>Ratings</b> .....:                       | See page 2   |



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| <p><b>List of Attachments (including a total number of pages in each attachment):</b></p> <ul style="list-style-type: none"> <li>- Photo Documentation</li> <li>- Measurement Section</li> </ul>  |  |
| <p><b>Tests performed (name of test and test clause):</b></p> <p>All applicable tests as described in Test Case and Measurement Sections were performed.</p> <ul style="list-style-type: none"> <li>• The test samples are pre-production without serial numbers.</li> <li>• Specified maximum ambient temperature is +25°C.</li> <li>• Maximum normal load: Full load for output.</li> <li>• Unless otherwise specified, all tests were performed on model Apower1000.</li> </ul>  | <p><b>Testing location:</b></p> <p>Guangdong KEYS Testing Technology Co.,Ltd.<br/>6/F, Building B, Chuangyizhigu Industrial Park,<br/>No.5, Hehe Street, Songxi Road, Hengkeng,<br/>Liaobu, Dongguan, Guangdong, China</p> |
| <p><b>Summary of compliance with National Differences:</b></p> <p><b>List of countries addressed:</b></p> <p><u>Summary of compliance with National Differences (for explanation of codes see below):</u></p> <p>DK, CA, US.</p> <p>Explanation of used codes: DK=Demko, CA = Canada, US = United States of America</p> <p><input checked="" type="checkbox"/> <b>The product fulfils the requirements of EN IEC 62368-1</b></p>  |  |
| <p><b>Copy of marking plate:</b></p> <p>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.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>Portable power station<br/>Model No.: Apower1000<br/>DC Input: DC12-48V;<br/>AC Input: AC110-230V, 50/60Hz<br/>Capacity :32V,320000mAh, 1024Wh;<br/>AC Output: 110V/230V, 50Hz/60 Hz;<br/>DC Output*2: DC13V, 18A;<br/>Car charger outlet : DC 12~24V, 18A;<br/>USB-C 1 Output: 5-12V/2.4A, 22.5W Max;<br/>USB-C 2 Output: 5-20V/5A, 100W Max;<br/>USB Output*4: 5V/2.4A, 9V/2A, 12V/1.5A;</p> <div style="text-align: center;">  <p>Zhejiang Zhenneng Technology Co.,Ltd<br/>Made in China</p> </div> <p style="text-align: right;">Importer: xxx<br/>Address: yyy</p> </div> <p>Note:</p> <ol style="list-style-type: none"> <li>1. These are representative labels, the others are identical to them except for the model number.</li> <li>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.</li> </ol> |  |

| TEST ITEM PARTICULARS:   |  |
|--|--|
| Classification of use by.....:   | <input checked="" type="checkbox"/> Ordinary person<br><input checked="" type="checkbox"/> Instructed person<br><input checked="" type="checkbox"/> Skilled person<br><input checked="" type="checkbox"/> Children likely to be present  |
| Supply Connection.....:  | <input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains<br><input checked="" type="checkbox"/> External Circuit - not Mains connected<br>- <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input checked="" type="checkbox"/> ES3  |
| Supply % Tolerance .....   | <input checked="" type="checkbox"/> +10%/-10%<br><input type="checkbox"/> +20%/-15%<br><input type="checkbox"/> +15 %/ -15 %<br><input type="checkbox"/> None  |
| Supply Connection – Type .....   | <input type="checkbox"/> pluggable equipment type A -<br><input type="checkbox"/> non-detachable supply cord<br><input type="checkbox"/> appliance coupler<br><input type="checkbox"/> direct plug-in<br><input type="checkbox"/> mating connector<br><input type="checkbox"/> pluggable equipment type B -<br><input type="checkbox"/> non-detachable supply cord<br><input type="checkbox"/> appliance coupler<br><input type="checkbox"/> permanent connection<br><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)<br>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<br><input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in<br><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<br><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 <sub>L-L</sub>   |
| 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) .....   | -  |
| <b>POSSIBLE TEST CASE VERDICTS:</b>  |  |
| - 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)   |
| <b>TESTING:</b>  |  |
| Date of receipt of test item..... :  | August 9, 2023   |
| Date (s) of performance of tests..... :  | August 9, 2023 to August 18, 2023  |
| <b>GENERAL REMARKS:</b>  |  |
| <p>"(See Enclosure #)" refers to additional information appended to the report.<br/>                 "(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<br>Floor 1, No. 1818-1, South Taihu Avenue, Balidian Town, WuxingDistrict, Huzhou City, Zhejiang Province |
| <b>GENERAL PRODUCT INFORMATION:</b>  |  |
| <b>Product Description</b>   |  |
| <ol style="list-style-type: none"> <li>1. Specified maximum ambient temperature is 25°C.</li> <li>2. The test items are pre-production samples without serial numbers.</li> <li>3. all tests were tested on model: Apower1000</li> <li>4. The equipment was evaluated for a maximum operating altitude up to 2000m.</li> <li>5. The user manual specified the relevant information for installation instruction.</li> <li>6. Rear Plastic enclosure and equipment body is sealed together by screw.</li> <li>7. Note :<br/>The report is based on previous report with no.: KEYS23052902001LD-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.<br/>-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".<br/>-Add model "BS041"</li> </ol> |  |

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|----------------|--------------------|-----------------|---------|
| Clause         | Requirement + Test | Result - Remark | Verdict |

| 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                         | No coin/button batteries used.   | 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       |
| <b>5</b>       | <b>ELECTRICALLY-CAUSED INJURY</b>   |  | 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 " <b>OVERVIEW OF EMPLOYED SAFEGUARDS</b> "  | 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.<br>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 $\Delta U_{sa}$ .....                    |   | —       |
|                | $U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ .....           |   | —       |
| 5.5            | Components as safeguards  |   |         |
| 5.5.1          | General   | See the following details.  | P       |



| EN IEC 62368-1 |  |   |         |
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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 <sup>2</sup> ) ..... :                          | 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 <sup>2</sup> )..... :                            | 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 <sup>2</sup> ), 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 ( $\Omega$ )..... :   | 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     |

|          |   |   |     |
|----------|---|---|-----|
| <b>6</b> | <b>ELECTRICALLY- CAUSED FIRE</b>  |   | 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:<br><ul style="list-style-type: none"> <li>- <u>Printed board</u>: rated min. V-1</li> <li>- <u>Wire insulation and tubing</u>: complying with Clause 6.</li> <li>- <u>All other components</u>: at least V-2 except for mounted on min. V-1 material or small parts of combustible material.</li> <li>- <u>Isolating transformer</u>: complying with G.5.3.</li> </ul> | 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 <sup>2</sup> ) .....  | Primary lead wire: 0.5mm <sup>2</sup>  | —       |
| 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     |

|          |   |  |     |
|----------|---|--|-----|
| <b>7</b> | <b>INJURY CAUSED BY HAZARDOUS SUBSTANCES</b>  |  | 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     |

|           |   |  |     |
|-----------|---|--|-----|
| <b>8</b>  | <b>MECHANICALLY-CAUSED INJURY</b>   |  | P   |
| 8.1       | General   | See the following details.   | P   |
| 8.2       | Mechanical energy source classifications                                    | Sharp edges and corners, classified as MS1<br>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 <i>N</i> .....                 | 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 |
| <b>9</b>       | <b>THERMAL BURN INJURY</b>                              |  | 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     |
| <b>10</b>      | <b>RADIATION</b>  |  | 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.   | —       |

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| <b>B</b> | <b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b> |  | 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     |
| <b>C</b>       | <b>UV RADIATION</b>   |   | 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     |
| <b>D</b>       | <b>TEST GENERATORS</b>  |  | 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     |
| <b>E</b>       | <b>TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS</b>      |  | N/A     |
| E.1            | Audio amplifier normal operating conditions                           |  | N/A     |
|                | Audio signal voltage (V).....:  |  | —       |
|                | Rated load impedance ( $\Omega$ ) .....                               |  | —       |
| E.2            | Audio amplifier abnormal operating conditions                         |  | N/A     |
| <b>F</b>       | <b>EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS</b> |  | 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.<br>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     |
| <b>G</b>       | <b>COMPONENTS</b>   |   | P       |
| <b>G.1</b>     | <b>Switches</b>   |   | P       |
| G.1.1          | General requirements  |   | P       |
| G.1.2          | Ratings, endurance, spacing, maximum load   |   | P       |
| <b>G.2</b>     | <b>Relays</b>   |   | 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     |
| <b>G.3</b>     | <b>Protection Devices</b>   |   | 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 ( $\Omega$ )..:                               | 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     |
| <b>G.4</b>     | <b>Connectors</b>  |  | 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     |
| <b>G.5</b>     | <b>Wound Components</b>  |  | 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     |
| <b>G.5.3</b>   | <b>Transformers</b>  |  | 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<br>(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     |
| <b>G.5.4</b>   | <b>Motors</b>   |   | 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 .....   |   | —       |
| <b>G.6</b>     | <b>Wire Insulation</b>  |   | 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     |
| <b>G.7</b>     | <b>Mains supply cords</b>   |  | N/A     |
| G.7.1          | General requirements  |  | N/A     |
|                | Type.....:  |  | —       |
|                | Rated current (A).....:   |  | —       |
|                | Cross-sectional area (mm <sup>2</sup> ), (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     |
| <b>G.8</b>     | <b>Varistors</b>  |  | 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     |
| <b>G.9</b>     | <b>Integrated Circuit (IC) Current Limiters</b>                         |  | 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     |
| <b>G.10</b>    | <b>Resistors</b>   |  | 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     |
| <b>G.11</b>    | <b>Capacitor and RC units</b>  |  | N/A     |
| G.11.1         | General requirements   | (see appended table 4.1.2)<br>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     |
| <b>G.12</b>    | <b>Optocouplers</b>  |  | 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, $V_{ini,b}$ .....  |  | —       |
| <b>G.13</b>    | <b>Printed boards</b>  |  | 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     |
| <b>G.14</b>    | <b>Coating on components terminals</b>  |   | N/A     |
| G.14.1         | Requirements .....  | No coating on component terminals.            | N/A     |
| <b>G.15</b>    | <b>Liquid filled components</b>   |   | 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     |
| <b>G.16</b>    | <b>IC including capacitor discharge function (ICX)</b>  |   | 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 |
| <b>H</b>       | <b>CRITERIA FOR TELEPHONE RINGING SIGNALS</b>   |   | 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).....   |   | —       |
| <b>J</b>       | <b>INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION</b>                               |   | P       |
|                | General requirements  | Triple-insulated winding wiring used as reinforced safeguard in the isolating transformer that had been evaluated with Annex J. | P       |
| <b>K</b>       | <b>SAFETY INTERLOCKS</b>  |   | 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  |
| <b>L</b>       | <b>DISCONNECT DEVICES</b>  |  | <b>P</b> |
| 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      |
| <b>M</b>       | <b>EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS</b>      |  | <b>P</b> |
| 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 <sup>3</sup> /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       |
| <b>N</b>       | <b>ELECTROCHEMICAL POTENTIALS</b>   |                               | N/A     |
|                | Metal(s) used.....  | The EUT is Class II equipment | —       |

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|----------------|---|--------------------------------|---------|
| Clause         | Requirement + Test  | Result - Remark                | Verdict |
| <b>O</b>       | <b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>   |                                | P       |
|                | Figures O.1 to O.20 of this Annex applied.....:   | Considered.                    | —       |
| <b>P</b>       | <b>SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS</b>   |                                | 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     |
| <b>Q</b>       | <b>CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING</b>   |                                | 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.  | —       |
| <b>R</b>       | <b>LIMITED SHORT CIRCUIT TEST</b>  |   | 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     |
| <b>S</b>       | <b>TESTS FOR RESISTANCE TO HEAT AND FIRE</b>   |   | 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        |
| <b>T</b>       | <b>MECHANICAL STRENGTH TESTS</b>  |   | <b>P</b>   |
| 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.  | —          |
| <b>U</b>       | <b>MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION</b> |   | <b>N/A</b> |
| 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 |
|----------|---|-----------------|---------|
| <b>V</b> | <b>DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)</b> |                 | N/A     |
| V.1      | Accessible parts of equipment   |                 | N/A     |
| V.2      | Accessible part criterion   |                 | N/A     |



## Measurement Section

Report No.: KEYS23080915001LD-01

| Clause | Requirement + Test | Result - Remark | Verdict |
|--------|--------------------|-----------------|---------|
|--------|--------------------|-----------------|---------|

| 4.1.2  | TABLE: List of critical components                 |                 |                |                      |                                       | P |
|--|--|-----------------|----------------|----------------------|---------------------------------------|---|
| Object / part No.                              | Manufacturer/<br>trademark                         | Type / model    | Technical data | Standard             | Mark(s) of<br>conformity <sup>1</sup> |   |
| Plastic enclosure                              | Interchangeable                                    | Interchangeable | V-0            | UL 94                | UL                                    |   |
| PCB  | Dongguan Jingmei<br>Circuit Technology<br>Co., Ltd | MYD-2A          | V-0 130°C      | UL 796               | UL E348865                            |   |
| Rechargeable<br>Lithium Iron<br>Phosphate Cell | Interchangeable                                    | 847MOC          | 31000mAh, 31Ah | IEC 62133-<br>2:2017 | Tested<br>with<br>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 <sup>1)</sup> | Parameters         |                    |    | ES Class |
|   |  |                                     |                               | U<br>(Vrms or Vpk) | I<br>(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–<br>Overload | --              | --      |          |  |
|                              |                |                                     | Singlefault–<br>SC/OC | --              | --      |          |  |
|                              |                |                                     | Abnormal–<br>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 <sub>min</sub> (°C) ..... | --                       | --                  | --                     | --     |                               | ---                           |     |
|  | Ambient T <sub>max</sub> (°C) ..... | --                       | --                  | --                     | --     |                               | ---                           |     |
|  | T <sub>ma</sub> (°C) .....          | --                       | --                  | --                     | --     |                               | ---                           |     |
| Maximum measured temperature T of part/at: |                                     | T(°C)                    |                     | T(°C)                  |        |                               | Allowed T <sub>max</sub> (°C) |     |
| <b>Test condition</b>                      |                                     | <b>A:<br/>horizontal</b> | --                  | <b>B:<br/>vertical</b> | --     |                               | --                            |     |
| 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 <sub>1</sub> (°C)                 | R <sub>1</sub> (Ω)       | t <sub>2</sub> (°C) | R <sub>2</sub> (Ω)     | T (°C) | Allowed T <sub>max</sub> (°C) | Insulation class              |     |

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

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

|  |  |                       |                          |   |
|--|--|-----------------------|--------------------------|---|
| <b>5.4.1.10.3</b>                      | <b>TABLE: Ball pressure test of thermoplastics</b> |                       |                          | 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:             |  |                       |                          |   |

|   |  |   |
|---|--|---|
| <b>5.4.2.2,<br/>5.4.2.4 and<br/>5.4.3</b> | <b>TABLE: Minimum Clearances/Creepage distance</b> | P |
|---|--|---|

| Clearance (cl) and creepage distance (cr) at/of/between:   | Up (V) | U r.m.s. (V) | Frequency (kHz) <sup>1</sup> | Required cl (mm) | cl (mm) <sup>2</sup> | Required <sup>3</sup> 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:<br>Note 1: Only for frequency above 30 kHz<br>Note 2: See table 5.4.2.4 if this is based on electric strength test<br>Note 3: Provide Material Group<br>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,<br>5.4.4.5 c)<br>5.4.4.9   | TABLE: Distance through insulation measurements |                 |                 |                   |          | P |
|---|---|-----------------|-----------------|-------------------|----------|---|
| 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:<br>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:<br>1) Sources of insulation tape see appended table 4.1.2 for details.<br>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:<br>Notes:<br>A. Test Location:<br>Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth<br>B. Operating condition abbreviations:<br>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,<br>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:<br>Notes:<br>[1] Supply voltage is the anticipated maximum Touch Voltage<br>[2] Earthed neutral conductor [Voltage differences less than 1% or more]<br>[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3<br>[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.<br>[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 <sup>*)</sup> | PS Classification |
| AC output    | Normal condition   | Power (W) :          | --                  | --                                | PS3               |
|              |  | V <sub>A</sub> (V) : | --                  | --                                |                   |
|              |  | I <sub>A</sub> (A) : | --                  | --                                |                   |
| USB 1 output | Normal condition   | Power (W) :          | 17.70               | --                                | PS2               |
|              |  | V <sub>A</sub> (V) : | 11.80               | --                                |                   |
|              |  | I <sub>A</sub> (A) : | 1.50                | --                                |                   |
| USB 2 output | Normal condition   | Power (W) :          | 17.50               | --                                | PS2               |
|              |  | V <sub>A</sub> (V) : | 11.68               | --                                |                   |
|              |  | I <sub>A</sub> (A) : | 1.50                | --                                |                   |
| USB 3 output | Normal condition   | Power (W) :          | 17.60               | --                                | PS2               |
|              |  | V <sub>A</sub> (V) : | 11.71               | --                                |                   |
|              |  | I <sub>A</sub> (A) : | 1.50                | --                                |                   |
| USB 4 output | Normal condition   | Power (W) :          | 17.55               | --                                | PS2               |
|              |  | V <sub>A</sub> (V) : | 11.70               | --                                |                   |

|                            |                     |                      |        |    |     |
|----------------------------|---------------------|----------------------|--------|----|-----|
|                            |                     | I <sub>A</sub> (A) : | 1.50   | -- |     |
| Type -C<br>22.5W<br>output | Normal<br>condition | Power (W) :          | 26.20  | -- | PS2 |
|                            |                     | V <sub>A</sub> (V) : | 11.64  | -- |     |
|                            |                     | I <sub>A</sub> (A) : | 2.25   | -- |     |
| Type -C<br>100W output     | Normal<br>condition | Power (W) :          | 95.50  | -- | PS2 |
|                            |                     | V <sub>A</sub> (V) : | 19.11  | -- |     |
|                            |                     | I <sub>A</sub> (A) : | 5.00   | -- |     |
| Car charging<br>output     | Normal<br>condition | Power (W) :          | 99.50  | -- | PS2 |
|                            |                     | V <sub>A</sub> (V) : | 17.15  | -- |     |
|                            |                     | I <sub>A</sub> (A) : | 5.80   | -- |     |
| DC port 1<br>output        | Normal<br>condition | Power (W) :          | 196.86 | -- | PS3 |
|                            |                     | V <sub>A</sub> (V) : | 11.29  | -- |     |
|                            |                     | I <sub>A</sub> (A) : | 18.00  | -- |     |
| DC port 2<br>output        | Normal<br>condition | Power (W) :          | 195.9  | -- | PS3 |
|                            |                     | V <sub>A</sub> (V) : | 11.25  | -- |     |
|                            |                     | I <sub>A</sub> (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<br>voltage<br>After 3 s<br>(V <sub>p</sub> )       | Measured r.m.s<br>current<br>(I <sub>rms</sub> ) | Calculated value<br>(V <sub>p</sub> x I <sub>rms</sub> ) | Arcing PIS?<br>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<sub>p</sub>) and normal operating condition rms current (I<sub>rms</sub>) is greater than 15.

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

**Supplementary Information:**

All components located within the EUT are considered as resistive PIS

A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.

If a separate voltmeter and ammeter are used, the product of (VA x IA) 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.       |



| 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   |
| USB 4 output   | SC                 | DC12V               | 30mins         | /        | 0.15                   | --       | --         | Unit normal operation, the USB cannot work normally, no damage, no hazard.          |
| 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.      |

| 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 |
| Supplementary information:<br>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.<br>1) SC: Short-circuited; OC: Open-circuited; OL: Overloaded.<br>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.<br>3) The test result shown no Class 1 or 2 energy source become Class 3 level during and after single fault condition.<br>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 <sub>oc</sub> (V)                                 | I <sub>sc</sub> (A) |          | S (VA)            |          |            |             |
|  |   |   | Meas.               | Limit    | Meas.             | Limit    |            |             |
|  |   |   |                     |          |                   |          |            |             |
| Supplementary Information:<br>SC=Short circuit, OC=Open circuit<br>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. |          |                           |                       |              |  |

## Attachment No.1

| IEC62368_1D - ATTACHMENT |                    |                 |         |
|--------------------------|--------------------|-----------------|---------|
| Clause                   | Requirement + Test | Result - Remark | Verdict |

| ATTACHMENT TO TEST REPORT  |  |              |          |              |                         |                 |
|--|--|--------------|----------|--------------|-------------------------|-----------------|
| IEC 62368-1  |  |              |          |              |                         |                 |
| EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES  |  |              |          |              |                         |                 |
| (Audio/video, information and communication technology equipment - Part 1: Safety requirements)  |  |              |          |              |                         |                 |
| <b>Differences according to</b> ..... : EN IEC 62368-1: 2020/A11:2020  |  |              |          |              |                         |                 |
| <b>Attachment Form No.</b> ..... : EU_GD_IEC62368_1B_II  |  |              |          |              |                         |                 |
| <b>Attachment Originator</b> ..... : Nemko AS  |  |              |          |              |                         |                 |
| <b>Master Attachment</b> ..... : Date 2021-02-04   |  |              |          |              |                         |                 |
| <b>Copyright © 2021 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.</b> |  |              |          |              |                         |                 |
| <b>CENELEC COMMON MODIFICATIONS (EN)</b>   |  |              |          |              |                         |                 |
|  | Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2018+A11:2020. All other clause numbers in that column, except for those in the paragraph below, refers to IEC 62368-1:2018. Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2018 are prefixed "Z" |              |          |              |                         | P               |
| CONTENTS   | <b>Add the following annexes:</b><br>Annex ZA (normative) Normative references to international publications with their corresponding European publications<br>Annex ZB (normative) Special national conditions<br>Annex ZC (informative) A-deviations<br>Annex ZD (informative) IEC and CENELEC code designations for flexible cords                  |              |          |              | P                       |                 |
|  | Delete all the "country" notes in the reference document (IEC 62368:2018) according to the following list:   |              |          |              |                         | P               |
|  | 0.2.1  | Note         | 1        | Note 3       | 4.1.15                  | Note            |
|  | 4.7.3  | Note 1 and 2 | 5.2.2.2  | Note         | 5.4.2.3.2.2<br>Table 13 | Note c          |
|  | 5.4.2.3.2.4  | Note 1 and 3 | 5.4.2.5  | Note 2       | 5.4.5.1                 | Note            |
|  | 5.5.2.1  | Note         | 5.5.6    | Note         | 5.6.4.2.1               | Note 2 and 3    |
|  | 5.7.5  | Note         | 5.7.6.1  | Note 1 and 2 | 10.2.1<br>Table 39      | Note 2, 3 and 4 |
|  | 10.5.3   | Note 2       | 10.6.2.1 | Note 3       | F.3.3.6                 | Note 3          |
|  | For special national conditions, see Annex ZB.   |              |          |              |                         | P               |

|             |   |  |     |
|-------------|---|--|-----|
| 1           | <p><b>Add</b> the following note:</p> <p>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.</p>  |  | P   |
| 4.Z1        | <p><b>Add</b> the following new subclause after 4.9:</p> <p>To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. <b>mains</b>, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p> <p>c) it is permitted for <b>pluggable equipment type B</b> or <b>permanently connected equipment</b>, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for <b>pluggable equipment type A</b> the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p> |  | P   |
| 5.4.2.3.2.4 | <p><b>Add</b> the following to the end of this subclause:</p> <p>The requirement for interconnection with <b>external circuit</b> is in addition given in EN 50491-3:2009.</p>  |  | N/A |
| 10.2.1      | <p>Add the following to <sup>c)</sup> and <sup>d)</sup> in table 39:</p> <p>For additional requirements, see 10.5.1.</p>  |  | N/A |
| 10.5.1      | <p>Add the following after the first paragraph:</p> <p>For RS 1 compliance is checked by measurement under the following conditions:</p> <p>In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or presets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.</p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p>The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm<sup>2</sup>, at any point 10 cm from the outer surface of the apparatus.</p> <p>Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is</p>   |  | N/A |

|              |   |  |     |
|--------------|---|--|-----|
|              | <p>maintained for 1 h, at the end of which the measurement is made.</p> <p>For RS1, the dose-rate shall not exceed 1 <math>\mu</math>Sv/h taking account of the background level.</p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>   |  |     |
| 10.6.1       | <p>Add the following paragraph to the end of the subclause:</p> <p>EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.</p>  |  | N/A |
| 10.Z1        | <p>Add the following new subclause after 10.6.5.</p> <p>10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</p> <p>The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz).</p> <p>For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566</p>   |  | N/A |
| G.7.1        | <p>Add the following note:</p> <p>NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>   |  | N/A |
| Bibliography | <p><b>Add</b> the following standards:</p> <p><b>Add</b> the following notes for the standards indicated:</p> <p>IEC 60130-9 NOTE Harmonized as EN 60130-9.</p> <p>IEC 60269-2 NOTE Harmonized as HD 60269-2.</p> <p>IEC 60309-1 NOTE Harmonized as EN 60309-1.</p> <p>IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series.</p> <p>IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4.</p> <p>IEC 60664-5 NOTE Harmonized as EN 60664-5.</p> <p>IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified).</p> <p>IEC 61508-1 NOTE Harmonized as EN 61508-1.</p> <p>IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1.</p> <p>IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4.</p> <p>IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6.</p> <p>IEC 61643-1 NOTE Harmonized as EN 61643-1.</p> <p>IEC 61643-21 NOTE Harmonized as EN 61643-21.</p> <p>IEC 61643-311 NOTE Harmonized as EN 61643-311.</p> <p>IEC 61643-321 NOTE Harmonized as EN 61643-321.</p> <p>IEC 61643-331 NOTE Harmonized as EN 61643-331.</p> |  | N/A |
| <b>ZB</b>    | <b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)</b>   |  | N/A |

|                      |   |  |     |
|----------------------|---|--|-----|
| 4.1.15               | <p><b>Denmark, Finland, Norway and Sweden</b></p> <p>To the end of the subclause the following is added:</p> <p><b>Class I pluggable equipment type A</b> intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In <b>Denmark</b>: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.¶"</p> <p>In <b>Finland</b>: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In <b>Norway</b>: "Apparatet må tilkoples jordet stikkontakt¶"</p> <p>In <b>Sweden</b>: "Apparaten skall anslutas till jordat uttag¶"</p>                                     | Build-in component, considered in end-system | N/A |
| 4.7.3                | <p><b>United Kingdom</b></p> <p>To the end of the subclause the following is added:</p> <p>The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex</p>  |  | N/A |
| 5.2.2.2              | <p><b>Denmark</b></p> <p>After the 2nd paragraph add the following:</p> <p>A warning (marking <b>safeguard</b>) for high touch <b>current</b> is required if the <b>touch current</b> exceeds the limits of 3,5 mA a.c. or 10 mA d.c.</p>   |  | N/A |
| 5.4.11.1 and Annex G | <p><b>Finland and Sweden</b></p> <p>To the end of the subclause the following is added:</p> <p>For separation of the telecommunication network from earth the following is applicable:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <p>two layers of thin sheet material, each of which shall pass the electric strength test below, or</p> <p>one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</p> <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> |  | N/A |

|           |   |  |     |
|-----------|---|--|-----|
|           | <p>passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5kV.</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384- 14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>• the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384- 14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11;</li> <li>• the additional testing shall be performed on all the test specimens as described in EN 60384-14;</li> </ul> <p>the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.</p> |  |     |
| 5.5.2.1   | <p><b>Norway</b></p> <p>After the 3rd paragraph the following is added:<br/>Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).</p>   |  | N/A |
| 5.5.6     | <p><b>Finland, Norway and Sweden</b></p> <p>To the end of the subclause the following is added:<br/>Resistors used as <b>basic safeguard</b> or bridging <b>basic insulation in class I pluggable equipment type A</b> shall comply with G.10.1 and the test of G.10.2.</p>   |  | N/A |
| 5.6.1     | <p><b>Denmark</b></p> <p>Add to the end of the subclause<br/>Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment.<br/>Justification:<br/>In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.</p>   |  | N/A |
| 5.6.4.2.1 | <p><b>Ireland and United Kingdom</b></p> <p>After the indent for <b>pluggable equipment type A</b>, the following is added:<br/>- the <b>protective current rating</b> is taken to be 13 A, this being the largest rating of fuse used in the mains plug.</p>   |  | N/A |



|         |   |  |     |
|---------|---|--|-----|
| 5.6.5.1 | <p>To the second paragraph the following is added:<br/> The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is:<br/> 1,25 mm<sup>2</sup> to 1,5 mm<sup>2</sup> in cross-sectional area.</p>  |  | N/A |
| 5.7.5   | <p><b>Denmark</b><br/> To the end of the subclause the following is added:<br/> The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.</p>  |  | N/A |
| 5.7.6.1 | <p><b>Norway and Sweden</b><br/> To the end of the subclause the following is added:<br/> The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system.<br/> It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example.<br/> The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:<br/> —Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing - and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)  <br/> NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.<br/> <br/> Translation to Norwegian (the Swedish text will also be accepted in Norway):<br/> —Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr - og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.  <br/> Translation to Swedish:<br/>   Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät</p> |  | N/A |

|               |   |  |     |
|---------------|---|--|-----|
|               | 2galvanisk isolator finnas mellan apparaten och k3a6b8e_11-TBV nätet.}}   |  |     |
| 5.7.6.2       | <p><b>Denmark</b></p> <p>To the end of the subclause the following is added:<br/>The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .</p>  |  | N/A |
| B.3.1 and B.4 | <p><b>Ireland and United Kingdom</b></p> <p>The following is applicable:<br/>To protect against excessive currents and short-circuits in the primary circuit of <b>direct plug-in equipment</b>, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the <b>direct plug-in equipment</b>, until the requirements of Annexes B.3.1 and B.4 are met</p>  |  | N/A |
| G.4.2         | <p><b>Denmark</b></p> <p>To the end of the subclause the following is added:<br/>Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011.<br/>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.<br/>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.<br/>Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a.<br/>Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.<br/>Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a<br/>Justification:<br/>Heavy Current Regulations, Section 6c</p> |  | N/A |

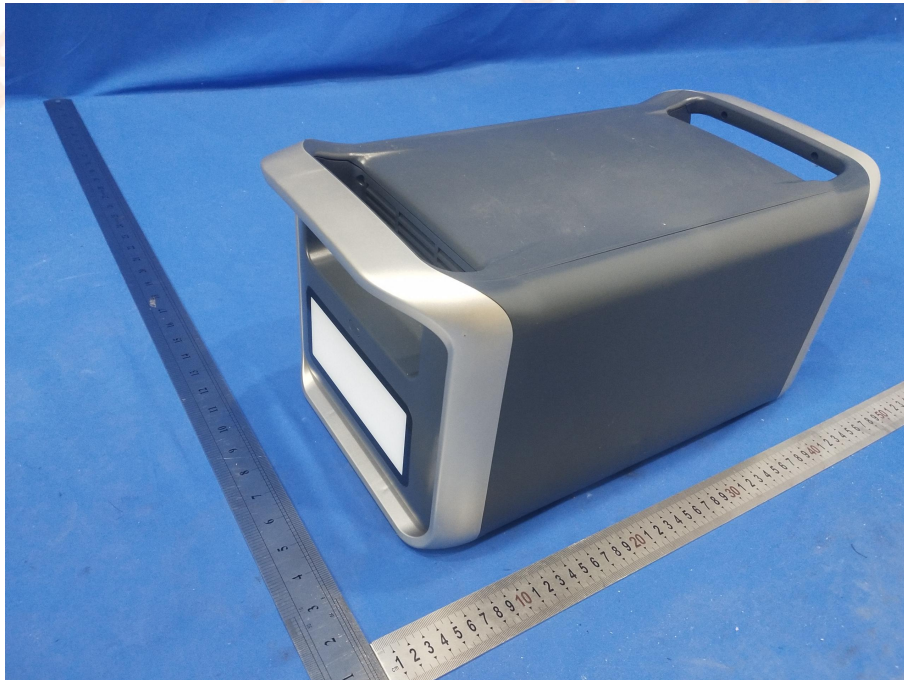
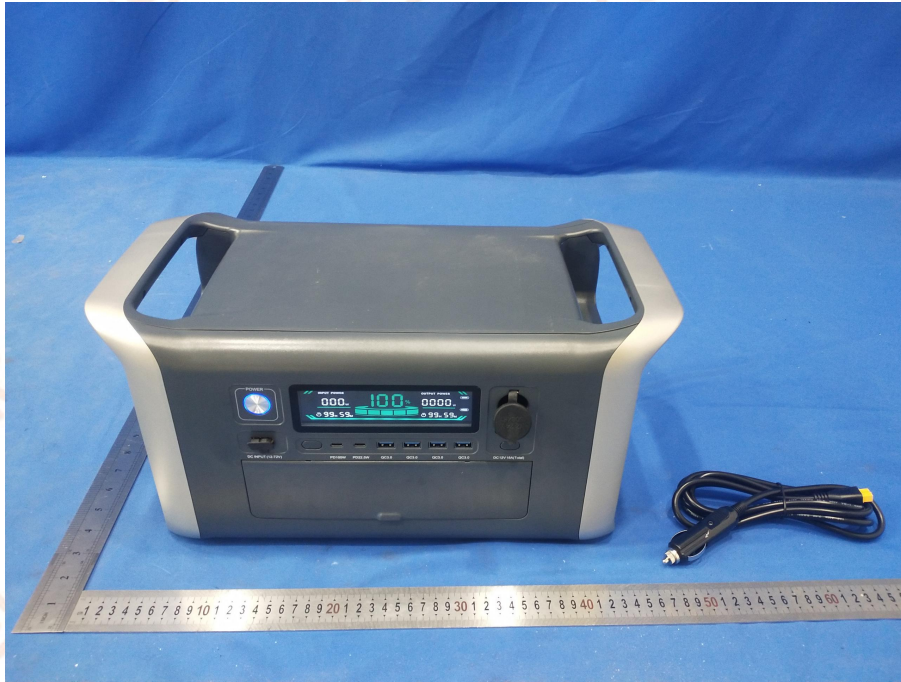
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| G.4.2 | <p><b>United Kingdom</b></p> <p>To the end of the subclause the following is added:<br/>The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.</p>  |  | N/A |
| G.7.1 | <p><b>United Kingdom</b></p> <p>To the first paragraph the following is added:<br/>Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations.<br/>NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p> |  | N/A |
| G.7.1 | <p><b>Ireland</b></p> <p>To the first paragraph the following is added:<br/>Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard</p>  |  | N/A |
| G.7.2 | <p><b>Ireland and United Kingdom</b></p> <p>To the first paragraph the following is added:<br/>A power supply cord with a conductor of 1,25 mm<sup>2</sup> is allowed for equipment which is rated over 10 A and up to and including 13 A.</p>   |  | N/A |
| ZC    | ANNEX ZC, NATIONAL DEVIATIONS (EN)   |  |     |

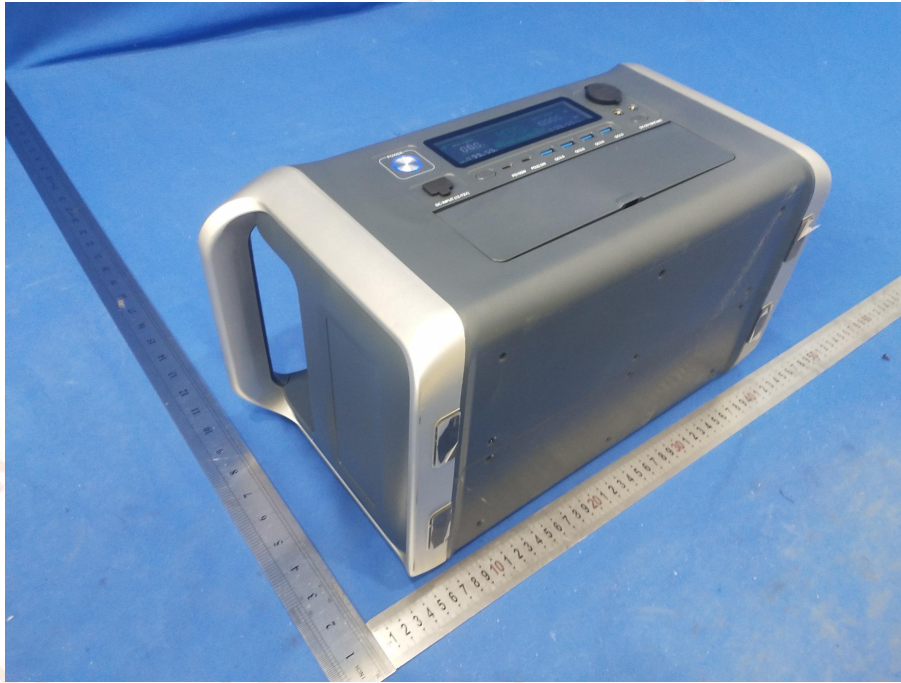
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| 10.5.2 | <p><b>Germany</b></p> <p>The following requirement applies:<br/> For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking.</p> <p>Justification:<br/> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM.</p> <p>NOTE Contact address:<br/> Physikalisch-Technische Bundesanstalt,<br/> Bundesallee 100,<br/> D-38116 Braunschweig, Tel.: Int +49-531-592-6320,<br/> Internet: <a href="http://www.ptb.de">http://www.ptb.de</a></p> |  | N/A |
|--------|--|--|-----|

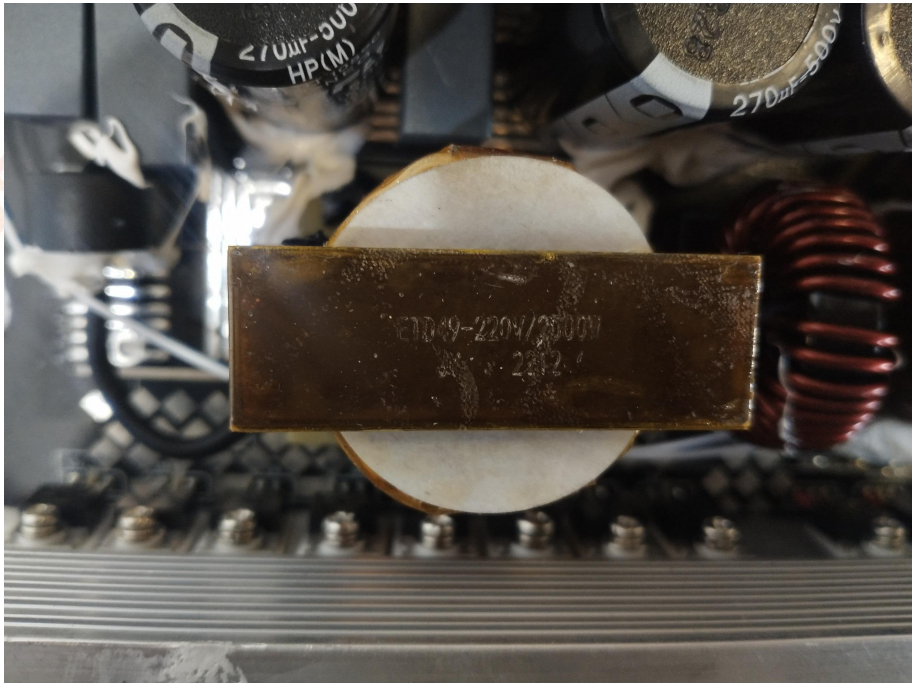
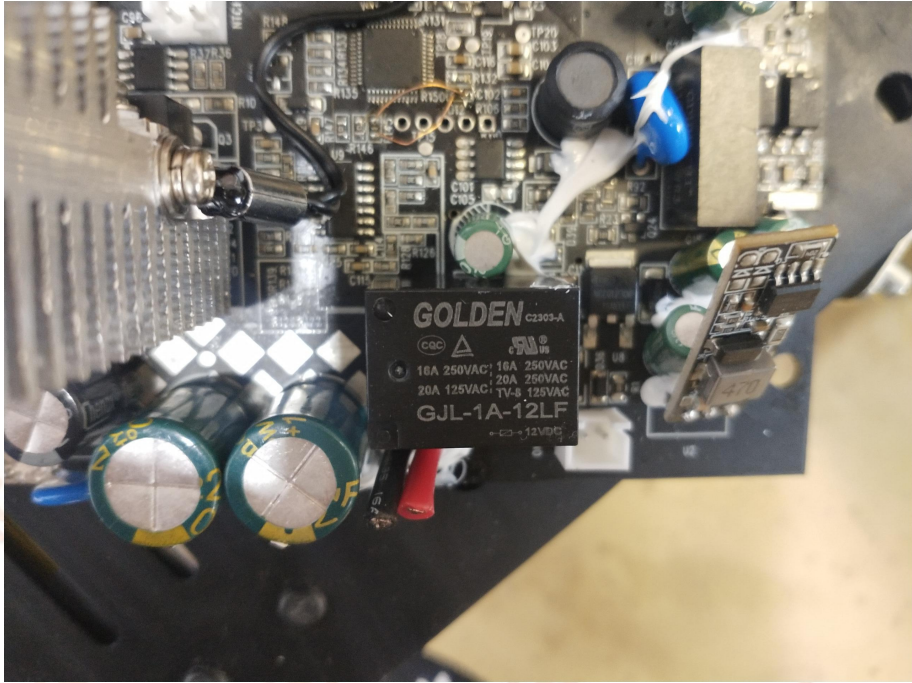
Note: Before placing the products in the different countries, the manufacturer must ensure that:

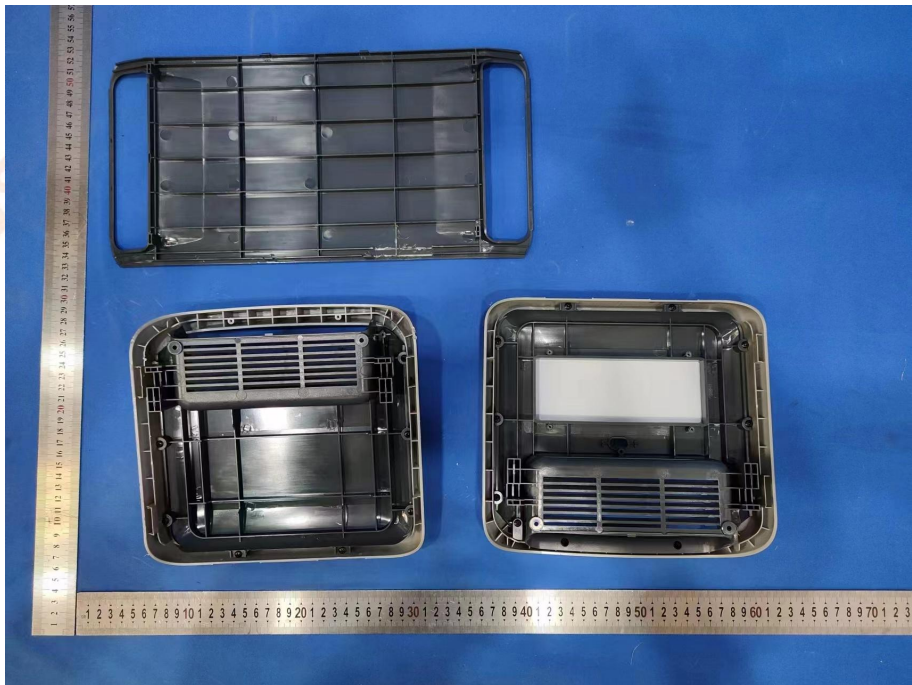
1. Operating Instructions, Ratings Labels and Warnings Labels written in an Accepted or Official Language of the country in question.
2. The equipment complies with the National Standards and/or Electrical Codes of the country in question.
3. Mains plugs and power cordset should be assessed to the national standard.

ATTACHMENT  
Photos

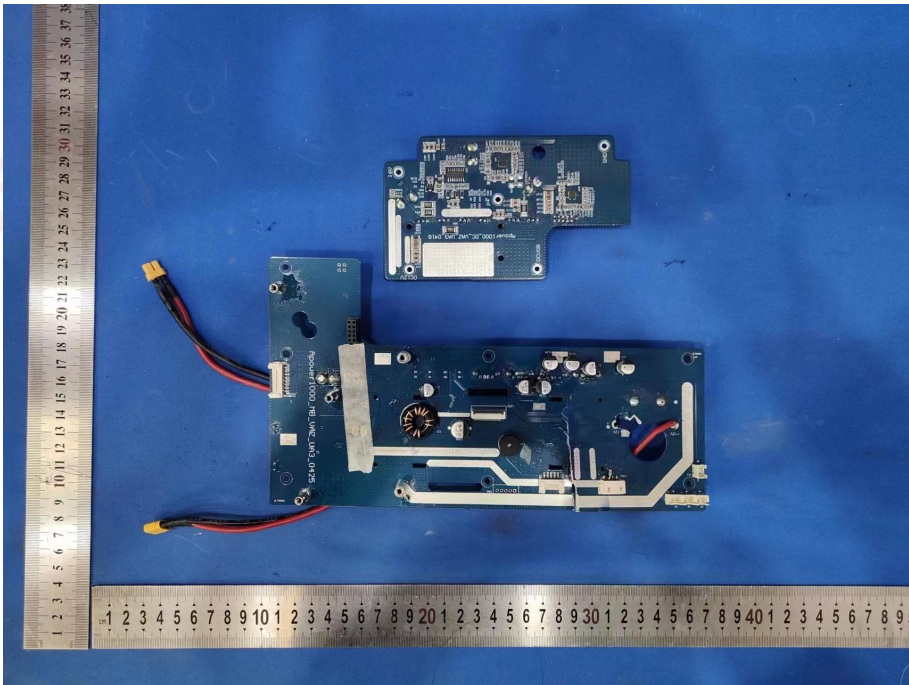
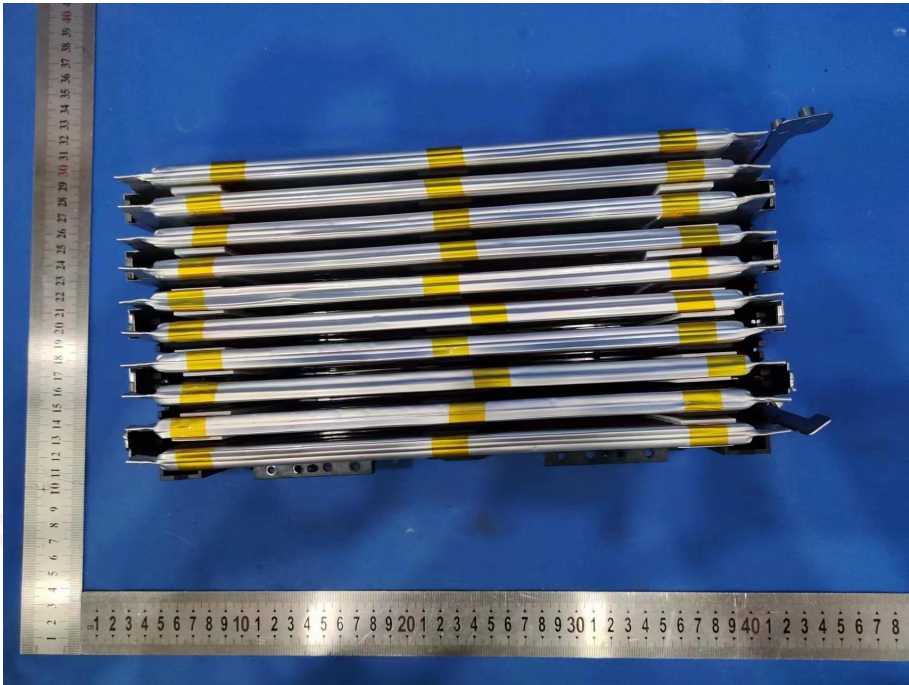


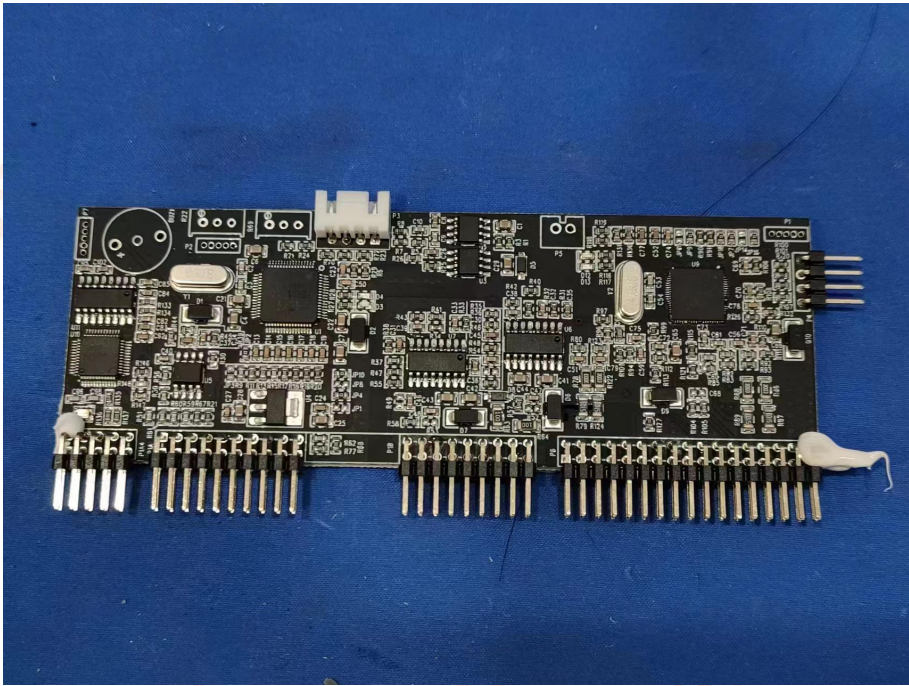
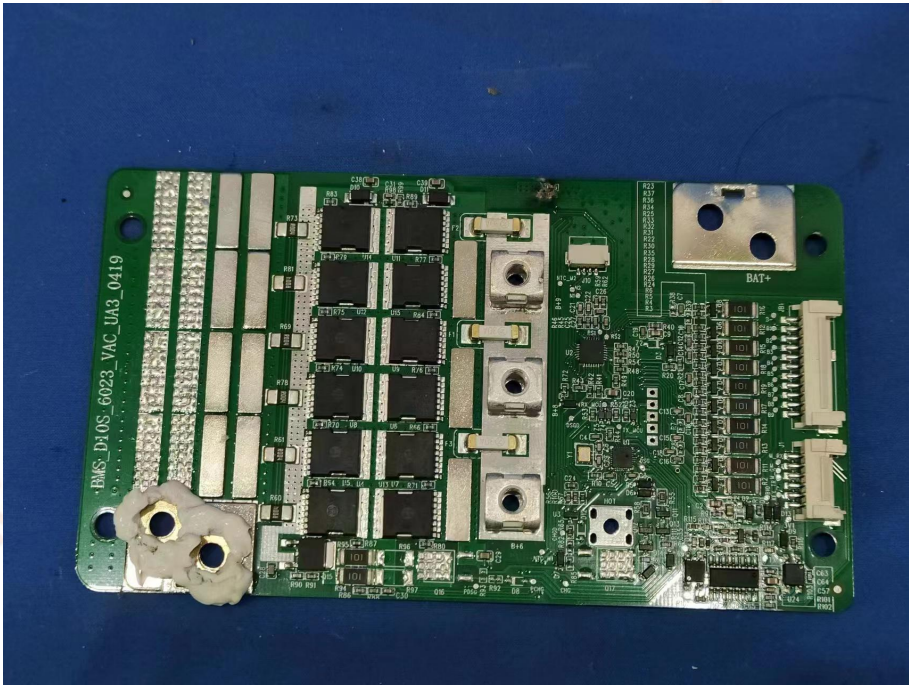


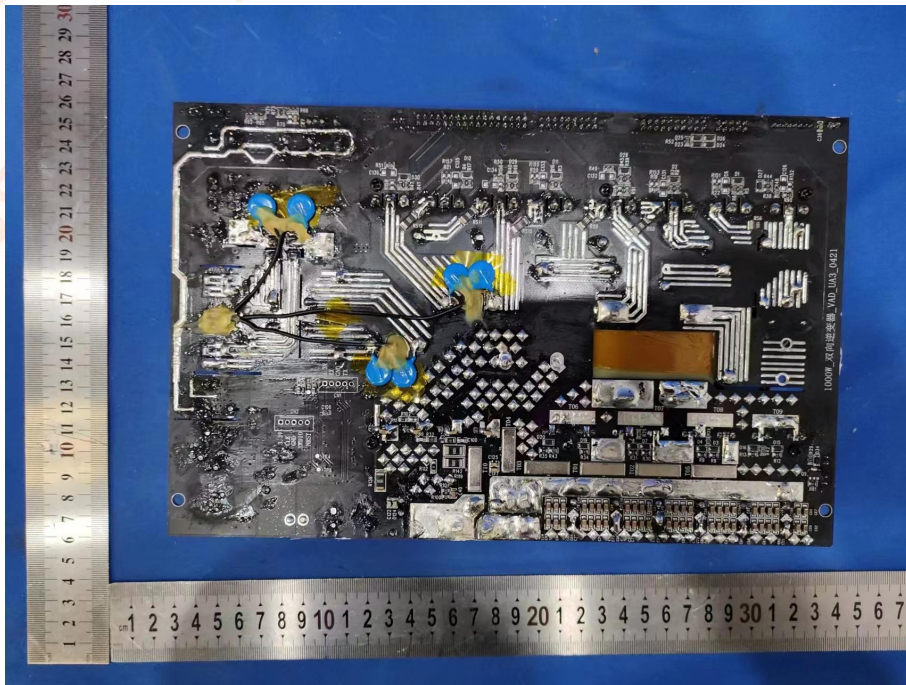
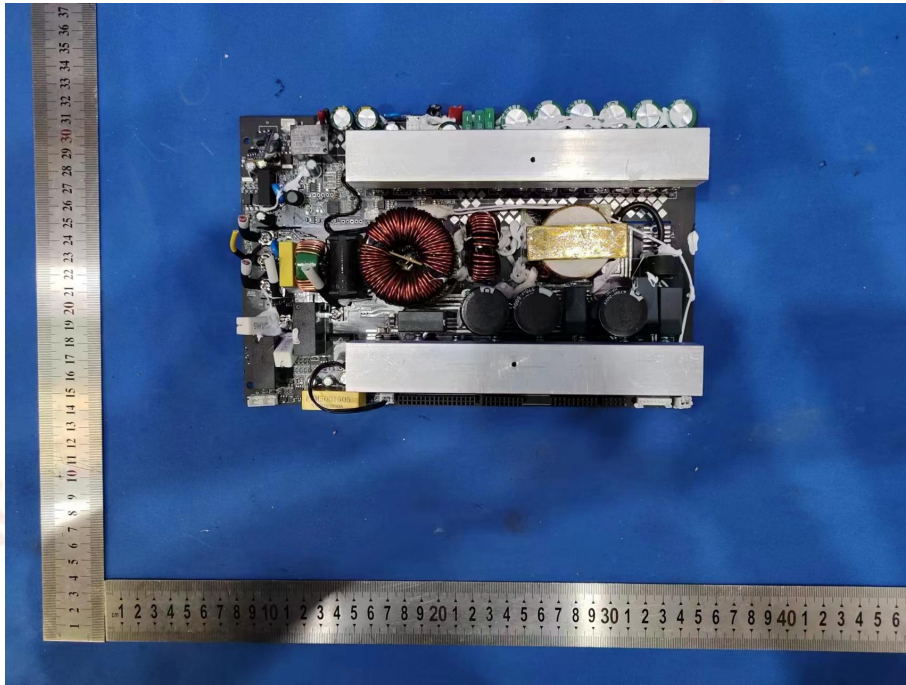












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