

# TEST REPORT

**Product name** .....: LoRa module

**Trademark**.....: RAK

**Model no.** .....: RAK4260(H)

**Applicant**.....: SHENZHEN RAKwireless Technology Co., Ltd.

**Address of applicant**.....: Room 506, Bldg B, New Compark, Pingshan First Road,  
Taoyuan Street, XiLi town Nanshan District, Shenzhen,  
China

**Date of test**.....: 2019-12-16

**Data of issue**.....: 2019-12-16 to 2020-01-15

|                           |        |
|---------------------------|--------|
| <b>Test result</b> .....: | Pass * |
|---------------------------|--------|

\* In the configuration tested, the EUT complied with the standards specified  
EN 62368-1:2014/A11:2017

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# TEST REPORT

EN 62368-1

## Audio/video, information and communication technology equipment

### Part 1: Safety requirements

|  |   |
|--|---|
| Report Number.....   | ATL20191108787S01   |
| Tested by (+ signature) .....  | Mary Zhang                    |
| Compiled by (+ signature) .....  | Xu Peng                       |
| Approved by (+ signature) .....  | Kent Zhang                    |
| Date of issue.....   | Jan. 15, 2020   |
| Testing laboratory .....   | Shenzhen ATL Testing Technology Co., Ltd.   |
| Address .....  | Floor.5,Genesis Zhongye Building, No.22,Puzai Road,Pingdi Street,Longgang District,Shenzhen,Guangdong,China     |
| Testing location .....   | As above  |
| Applicant's name .....   | SHENZHEN RAKwireless Technology Co., Ltd.   |
| Address .....  | Room 506, Bldg B, New Compark, Pingshan First Road, Taoyuan Street, XiLi town Nanshan District, Shenzhen, China |
| <b>Test specification:</b>   |   |
| Standard.....  | EN 62368-1:2014+A11:2017  |
| Test procedure.....  | CE Attestation  |
| Non-standard test method.....  | N/A   |
| Test Report Form No. ....  | IEC62368_1B   |
| Test Report Form(s) Originator....   | UL(US)  |
| Master TRF.....  | 2015-06   |
| <b>This test report is specially limited to the above client company and product model only. It may not be duplicated without prior written consent of ATL.Test.</b> |   |
| Test item description.....   | LoRa module   |
| Trade Mark .....   | RAK   |
| Manufacturer :   | SHENZHEN RAKwireless Technology Co., Ltd.   |
| Model/Type reference .....   | RAK4260(H)  |
| Ratings.....   | See the marking label   |

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

Attachment 1: National differences (14pages)

Attachment 2: Photo Documentation (1 page)

**Summary of testing:****Tests performed (name of test and test clause):**

The submitted samples were tested and found to comply with the requirements of:

EN 62368-1:2014+A11:2017

**Testing location:**Shenzhen ATL Testing Technology Co., Ltd.  
Floor.5,Genesis Zhongye Building,No.22,Puzai  
Road,Pingdi Street,Longgang District,Shenzhen,  
Guangdong,China**Summary of compliance with National Differences:****List of countries addressed: See the attachment No. 2 of National for details.**☒ The product fulfils the requirements of EN 62368-1:2014+A11:2017

**Copy of marking plate:**

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

LoRa module

Trademark: RAK

Model No.: RAK4260(H)

Input: 3.3V---



Manufacturer : SHENZHEN RAKwireless  
Technology Co., Ltd.

Made In China

Importer : XXXXXXXXXXXXXXXX

Address : XXXXXXXXXXXXXXXX

| TEST ITEM PARTICULARS:   |  |
|--|--|
| Classification of use by .....   | <input checked="" type="checkbox"/> Ordinary person<br><input type="checkbox"/> Instructed person<br><input type="checkbox"/> Skilled person<br><input type="checkbox"/> Children likely to be present   |
| Supply Connection.....   | <input type="checkbox"/> AC Mains <input checked="" type="checkbox"/> DC Mains<br><input type="checkbox"/> External Circuit - not Mains connected<br>- <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input checked="" type="checkbox"/> ES3   |
| Supply % Tolerance .....   | <input type="checkbox"/> +10%/-10%<br><input type="checkbox"/> +20%/-15%<br><input type="checkbox"/> + ____ %/ - ____ %<br><input checked="" type="checkbox"/> None  |
| Supply Connection – Type .....   | <input type="checkbox"/> pluggable equipment type A -<br><input type="checkbox"/> non-detachable supply cord<br><input checked="" 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: _____ |
| Considered current rating of protective device as part of building or equipment installation ..... | N/A (Not directly connected to mains);<br>Installation location: <input 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 type="checkbox"/> OVC II <input type="checkbox"/> OVC III<br><input type="checkbox"/> OVC IV <input checked="" type="checkbox"/> other: (Not directly connected to mains)  |
| Class of equipment .....   | <input type="checkbox"/> Class I <input type="checkbox"/> Class II <input checked="" 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.:   | __45__ °C  |
| IP protection class .....  | <input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP____   |
| Power Systems .....  | <input type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - 230____ V L-L  |
| Altitude during operation (m) .....  | <input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> __5000__ m   |
| Altitude of test laboratory (m) .....  | <input type="checkbox"/> 2000 m or less <input checked="" type="checkbox"/> __500__ m  |
| Mass of equipment (kg) .....   | <input checked="" type="checkbox"/> approx. 0.02kg   |
|  |  |
| POSSIBLE TEST CASE VERDICTS:   |  |
| - test case does not apply to the test object.....   | N/A  |
| - test object does meet the requirement .....  | P (Pass)   |

|  |  |
|--|--|
| - test object does not meet the requirement .....  | F (Fail)   |
| <b>TESTING:</b>  |  |
| Date of receipt of test item.....  | 2019-12-16   |
| Date (s) of performance of tests.....  | 2019-12-16 to 2020-01-15   |
| <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>This Test Report covers test results for IEC 62368-1: 2014 (Second Edition), and additional results for IEC 60065: 2014 (Eighth Edition) and/or IEC 60950-1: 2005 (Second Edition) + Am 1: 2009 + Am 2: 2013.</p> <p>Where a requirement in IEC 62368-1 addresses the same requirement/principle in IEC 60065 and/or IEC 60950-1, compliance with the IEC 62368-1 requirements covers compliance with the same requirement/principle in IEC 60065 and/or IEC 6095-1, as indicated.</p> <p>The complete background/rationale behind the considerations in this TRF is outlined in <b>108/575/INF, IEC TC 108 position related to TRFs associated with the transition of IEC 60065 and IEC 60950-1 to IEC 62368-1</b>. Use of this TRF is intended to allow for a smooth transition from the legacy standards, IEC 60065 and IEC 60950-1, to the state-of-art requirements for safety of audio/video, information and communication technology equipment, IEC 62368-1.</p> |  |
| <b>Manufacturer's Declaration per sub-clause 4.2.5 of IEC 62368-1:</b>   |  |
| The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....  | <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Not applicable   |
| <b>When differences exist; they shall be identified in the General product information section.</b>  |  |
| <b>Name and address of factory (ies) .....</b>   | SHENZHEN RAKwireless Technology Co., Ltd.<br>Room 506, Bldg B, New Compark, Pingshan First Road, Taoyuan Street, XiLi town Nanshan District, Shenzhen, China |
| <b>GENERAL PRODUCT INFORMATION:</b>  |  |

| IEC 62368-1  |                    |  |         |
|--|--------------------|--|---------|
| Clause   | Requirement + Test | Result - Remark                          | Verdict |
| <b>ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:</b>  |                    |  |         |
| (Note 1: Identify the following six (6) energy source forms based on the origin of the energy.)<br>(Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3. |                    |  |         |
| <b>Electrically-caused injury (Clause 5):</b><br>(Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification)<br>Example: +5 V dc input ES1  |                    |  |         |
| <b>Source of electrical energy</b>   |                    | <b>Corresponding classification (ES)</b> |         |
| Primary circuit  |                    | ES1                                      |         |
| +12Vdc output circuit  |                    | ES1                                      |         |
| <b>Electrically-caused fire (Clause 6):</b><br>(Note: List sub-assembly or circuit designation and corresponding energy source classification)<br>Example: Battery pack (maximum 85 watts): PS2  |                    |  |         |
| <b>Source of power or PIS</b>  |                    | <b>Corresponding classification (PS)</b> |         |
| Internal circuits  |                    | PS2                                      |         |
| Serial port  |                    | N/A                                      |         |
| <b>Injury caused by hazardous substances (Clause 7)</b><br>(Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.)<br>Example: Liquid in filled component Glycol   |                    |  |         |
| <b>Source of hazardous substances</b>  |                    | <b>Corresponding chemical</b>            |         |
| N/A  |                    | N/A                                      |         |
| <b>Mechanically-caused injury (Clause 8)</b><br>(Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.)<br>Example: Wall mount unit MS2   |                    |  |         |
| <b>Source of kinetic/mechanical energy</b>   |                    | <b>Corresponding classification (MS)</b> |         |
| Sharp edges and corners of accessible parts  |                    | MS1                                      |         |
| Product mass   |                    | MS1                                      |         |
| <b>Thermal burn injury (Clause 9)</b><br>(Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.)<br>Example: Hand-held scanner – thermoplastic enclosure TS1  |                    |  |         |
| <b>Source of thermal energy</b>  |                    | <b>Corresponding classification (TS)</b> |         |
| --   |                    | --                                       |         |
| <b>Radiation (Clause 10)</b><br>(Note: List the types of radiation present in the product and the corresponding energy source classification.)<br>Example: DVD – Class 1 Laser Product RS1   |                    |  |         |
| <b>Type of radiation</b>   |                    | <b>Corresponding classification (RS)</b> |         |
| LED for indicating   |                    | N/A                                      |         |

| IEC 62368-1 |  |   |         |
|-------------|--|---|---------|
| Clause      | Requirement + Test   | Result - Remark   | Verdict |
| <b>4</b>    | <b>GENERAL REQUIREMENTS</b>  |   | P       |
| 4.1.1       | Acceptance of materials, components and subassemblies<br>(IEC 60065, 3.4) & (IEC 60950-1, 1.5.1) | See appended table 4.1.2  | P       |
| 4.1.2       | Use of components<br>(IEC 60065, 3.4, 14.1) & (IEC 60950-1, 1.5.2)                               | 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. See also Annex G   | P       |
| 4.1.3       | Equipment design and construction<br>(IEC 60065, 3.1) & (IEC 60950-1, 1.3.2)                     | No accessible part except side of metal enclosure near inlet of rigid metal, the equipment is building in type so overall evaluation is to be made during the final system approval. Evaluation of safeguards regarding limiting the outputs to fulfill ES1 and protection in regard to risk of fire considered only. | P       |
| 4.1.15      | Markings and instructions..... :<br>(IEC 60065, 5.1) & (IEC 60950-1, 1.7)                        | (See Annex F)   | P       |
| 4.4.4       | Safeguard robustness   | See Annex T.2 and T.4)  | P       |
| 4.4.4.2     | Steady force tests..... :<br>(IEC 60065, 9.1.1.7 c), 13.3.1) & (IEC 60950-1, 4.2.4)              | (See Annex T.4, T.5)  | P       |
| 4.4.4.3     | Drop tests ..... :<br>(IEC 60065, 12.1.5) & (IEC 60950-1, 4.2.6)                                 | (See Annex T.7)   | P       |
| 4.4.4.4     | Impact tests ..... :<br>(IEC 60065, 12.1.4) & (IEC 60950-1, 4.2.5)                               | (See Annex T.6)   | N/A     |
| 4.4.4.5     | Internal accessible safeguard enclosure and barrier tests ..... :<br>(IEC 60950-1, 4.2.3)        | The external enclosure cannot be opened without damaging the product.   | N/A     |
| 4.4.4.6     | Glass Impact tests ..... :<br>(IEC 60065, 19.6) & (IEC 60950-1, 4.2.5)                           | No such glass used.   | N/A     |
| 4.4.4.7     | Thermoplastic material tests ..... :<br>(IEC 60065, 12.1.6) & (IEC 60950-1, 4.2.7)               | (See Annex T.8)   | P       |
| 4.4.4.8     | Air comprising a safeguard..... :<br>(IEC 60065, 9.1.7) & (IEC 60950-1, 4.2)                     | (See Annex T)   | N/A     |
| 4.4.4.9     | Accessibility and safeguard effectiveness<br>(IEC 60065, 9.1.7) & (IEC 60950-1, 4.2.1)           | After tests of 4.4.4.2, 4.4.4.4, 4.4.4.7, no safeguard damaged.   | P       |



| IEC 62368-1 |   |  |         |
|-------------|---|--|---------|
| Clause      | Requirement + Test  | Result - Remark  | Verdict |
| 4.5         | Explosion   | No explosion occurs during normal/abnormal operation and single fault conditions                     | P       |
| 4.6         | Fixing of conductors<br>(IEC 60065, 8.14) & (IEC 60950-1, 3.1.9)  |  | P       |
| 4.6.1       | Fix conductors not to defeat a safeguard<br>(IEC 60065, 8.14) & (IEC 60950-1, 3.1.9)                                      | The conductors will be connected by pluggable connector or wire terminals that connected to the PCB. | P       |
| 4.6.2       | 10 N force test applied to ..... :<br>(IEC 60065, 8.14) & (IEC 60950-1, 3.1.9)  | 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<br>(IEC 60065, 15.4) & (IEC 60950-1, 4.3.6)                    | The EUT is not for direct insertion into mains socket-outlets  | N/A     |
| 4.7.2       | Mains plug part complies with the relevant standard..... :<br>(IEC 60065, 15.4.2) & (IEC 60950-1, 4.3.6)                  |  | N/A     |
| 4.7.3       | Torque (Nm) ..... :<br>(IEC 60065, 15.4.1) & (IEC 60950-1, 4.3.6)   |  | N/A     |
| 4.8         | Products containing coin/button cell batteries<br>(IEC 60065, 12.7)   | No coin/button cell batteries used.  | N/A     |
| 4.8.2       | Instructional safeguard<br>(IEC 60065, 5.4 c), 5.5.2 j))  |  | N/A     |
| 4.8.3       | Battery Compartment Construction<br>(IEC 60065, 12.7.2)   |  | N/A     |
|             | Means to reduce the possibility of children removing the battery..... :<br>(IEC 60065, 12.7.2)                            |  | —       |
| 4.8.4       | Battery Compartment Mechanical Tests ..... :<br>(IEC 60065, 12.7.3)   | (See Table 4.8.4)  | N/A     |
| 4.8.5       | Battery Accessibility<br>(IEC 60065, 12.7.4)  |  | N/A     |
| 4.9         | Likelihood of fire or shock due to entry of conductive object..... :<br>(IEC 60065, 9.1.3, 20.3.2) & (IEC 60950-1, 4.6.1) | No likelihood of conductive  | N/A     |

|          |   |                          |   |
|----------|---|--------------------------|---|
| <b>5</b> | <b>ELECTRICALLY-CAUSED INJURY</b>   |                          | P |
| 5.2.1    | Electrical energy source classifications ..... :<br>(IEC 60065, 9.1.1.2) & (IEC 60950-1, 2.2, 2.3, 2.4) | (See appended table 5.2) | P |
| 5.2.2    | ES1, ES2 and ES3 limits   |                          | P |
| 5.2.2.2  | Steady-state voltage and current ..... :<br>(IEC 60065, 9.1.1.2) & (IEC 60950-1, 2.2, 2.3, 2.4)         | See appended table 5.2)  | P |

| IEC 62368-1 |  |   |         |
|-------------|--|---|---------|
| Clause      | Requirement + Test   | Result - Remark   | Verdict |
| 5.2.2.3     | Capacitance limits ..... :<br>(IEC 60065, 9.1.1.2) & (IEC 60950-1, 2.4)  | (See appended table 5.2)  | N/A     |
| 5.2.2.4     | Single pulse limits ..... :<br>(IEC 60950-1, 2.2)  | No such single pulses generated in the EUT or applied to it.  | N/A     |
| 5.2.2.5     | Limits for repetitive pulses ..... :<br>(IEC 60950-1, 2.2)   | (See appended table 5.2)  | N/A     |
| 5.2.2.6     | Ringing signals ..... :<br>(IEC 60950-1, 2.3, Annex M)   | No such ringing signals within the EUT  | N/A     |
| 5.2.2.7     | Audio signals ..... :<br>(IEC 60065, 9.1.1.2) & (IEC 60950-1, 2.1.1.9)   | (See Clause E.1 )   | N/A     |
| 5.3         | Protection against electrical energy sources<br>(IEC 60065, 9.1.1) & (IEC 60950-1, 2.1)  | See only 4.3 and 5.4 to 5.6 which applies to protection between the accessible output connectors and other hazardous parts or circuits.               | N/A     |
| 5.3.1       | General Requirements for accessible parts to ordinary, instructed and skilled persons<br>(IEC 60065, 9.1.1) & (IEC 60950-1, 2.1)       | The equipment except for the rear side of metal enclosure is for building-in, accessibility of parts shall be evaluated in the final system assembly. | N/A     |
| 5.3.2.1     | Accessibility to electrical energy sources and safeguards<br>(IEC 60065, 9.1.1.3, 9.1.2, 9.1.3, 9.1.4, 9.1.5) & (IEC 60950-1, 2.1.1.1) | Only ES1 circuit can be accessed for this product.  | N/A     |
| 5.3.2.2     | Contact requirements<br>(IEC 60065, 9.1.1.1) & (IEC 60950-1, 2.1.1.1)  | No opening of enclosure, no access with test probe to any ES3 circuit or parts.   | N/A     |
|             | a) Test with test probe from Annex V ..... :   |   | N/A     |
|             | b) Electric strength test potential (V) ..... :  |   | N/A     |
|             | c) Air gap (mm) ..... :  |   | N/A     |
| 5.3.2.4     | Terminals for connecting stripped wire<br>(IEC 60065, 9.1.1.4)   |   | N/A     |
| 5.4         | Insulation materials and requirements  |   | N/A     |
| 5.4.1.2     | Properties of insulating material<br>(IEC 60065, 8.3) & (IEC 60950-1, 2.9.1)   |   | N/A     |
| 5.4.1.3     | Humidity conditioning ..... :<br>(IEC 60065, 10.3)<br>(IEC 60950-1, 2.9.1)   | No hygroscopic material used.   | N/A     |
| 5.4.1.4     | Maximum operating temperature for insulating materials ..... :<br>(IEC 60065, 7.1) & (IEC 60950-1, 4.5)                                | (See appended table 5.4.1.4)  | N/A     |
| 5.4.1.5     | Pollution degree ..... :<br>(IEC 60065, 13.1) & (IEC 60950-1, 2.10.1.2)  | 2   | —       |

| IEC 62368-1 |  |  |         |
|-------------|--|--|---------|
| Clause      | Requirement + Test   | Result - Remark  | Verdict |
| 5.4.1.5.2   | Test for pollution degree 1 environment and for an insulating compound<br>(IEC 60065, 13.6, 13.7) & (IEC 60950-1, 2.10.10) | Pollution degree 2 is applied. No insulating compound ap   | N/A     |
| 5.4.1.5.3   | Thermal cycling<br>(IEC 60065, 13.6) & (IEC 60950-1, 2.10.9)   |  | N/A     |
| 5.4.1.6     | Insulation in transformers with varying dimensions<br>(IEC 60065, 13.2) & (IEC 60950-1, 2.10.1.5)                          | No such transformer within the EUT   | N/A     |
| 5.4.1.7     | Insulation in circuits generating starting pulses<br>(IEC 60950-1, 2.10.3.5)   |  | N/A     |
| 5.4.1.8     | Determination of working voltage<br>(IEC 60065, 13.2) & (IEC 60950-1, 2.10.2)  | (See appended table 5.4.1.8)   | N/A     |
| 5.4.1.9     | Insulating surfaces<br>(IEC 60065, 13.3.1) & (IEC 60950-1, 2.10.3.1)   | No such accessible insulating surfaces within the equipment.   | N/A     |
| 5.4.1.10    | Thermoplastic parts on which conductive metallic parts are directly mounted<br>(IEC 60065, 7.2) & (IEC 60950-1, 4.5.5)     | See only 5.4.10.3 below.   | N/A     |
| 5.4.1.10.2  | Vicat softening temperature..... :<br>(IEC 60065, 7.2)   | (See appended table 5.4.1.10.2)  | N/A     |
| 5.4.1.10.3  | Ball pressure ..... :<br>(IEC 60950-1, 4.5.5)  | The bobbin materials of transformer are phenolic. No other parts need to be tested.  | N/A     |
| 5.4.2       | Clearances<br>(IEC 60065, 13.3, Annex J) & (IEC 60950-1, 2.10.3, Annex G)  |  | N/A     |
| 5.4.2.2     | Determining clearance using peak working voltage   | (See only appended table as below)   | N/A     |
| 5.4.2.3     | Determining clearance using required withstand voltage .....   | (See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)  | N/A     |
|             | a) a.c. mains transient voltage .....  | 2500V for Overvoltage Cat. II  | —       |
|             | b) d.c. mains transient voltage .....  | No such transient  | —       |
|             | c) external circuit transient voltage.....   | No such transient  | —       |
|             | d) transient voltage determined by measurement .....   |  | —       |
| 5.4.2.4     | Determining the adequacy of a clearance using an electric strength test  | Using procedure 2 to determine the clearance according to 5.4.2.3.   | N/A     |
| 5.4.2.5     | Multiplication factors for clearances and test voltages .....  | (See only appended tables)<br>Specified the equipment to be operated up to 5000m above sea level. Factor 1.48 according to table 17. | N/A     |
| 5.4.3       | Creepage distances..... :<br>(IEC 60065, 13.4) & (IEC 60950-1, 2.10.4)   | (See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)  | N/A     |

| IEC 62368-1 |   |  |         |
|-------------|---|--|---------|
| Clause      | Requirement + Test  | Result - Remark                            | Verdict |
| 5.4.3.1     | General   |  | N/A     |
| 5.4.3.3     | Material Group ..... :<br>(IEC 60065, 13.4) & (IEC 60950-1, 2.10.4.2)                                   | IIla&IIlb                                  | —       |
| 5.4.4       | Solid insulation<br>(IEC 60065, 8.8) & (IEC 60950-1, 2.10.5)  | See below                                  | N/A     |
| 5.4.4.2     | Minimum distance through insulation ..... :<br>(IEC 60065, 8.8) & (IEC 60950-1, 2.10.5.2)               |  | N/A     |
| 5.4.4.3     | Insulation compound forming solid insulation<br>(IEC 60065, 13.6, 13.7, 13.8) & (IEC 60950-1, 2.10.5.3) |  | N/A     |
| 5.4.4.4     | Solid insulation in semiconductor devices<br>(IEC 60065, 13.6, 13.8) & (IEC 60950-1, 2.10.5.4)          |  | N/A     |
| 5.4.4.5     | Cemented joints<br>(IEC 60065, 13.6) & (IEC 60950-1, 2.10.5.5)  | No such construction within the EUT        | N/A     |
| 5.4.4.6     | Thin sheet material<br>(IEC 60065, 8.8) & (IEC 60950-1, 2.10.5.6)                                       |  | N/A     |
| 5.4.4.6.1   | General requirements<br>(IEC 60065, 8.8)  |  | N/A     |
| 5.4.4.6.2   | Separable thin sheet material<br>(IEC 60065, 8.8) & (IEC 60950-1, 2.10.5.7)                             |  | N/A     |
|             | Number of layers (pcs) ..... :  |  | N/A     |
| 5.4.4.6.3   | Non-separable thin sheet material<br>(IEC 60065, 8.21) & (IEC 60950-1, 2.10.5.8)                        | No such thin sheet material within the EUT | N/A     |
| 5.4.4.6.4   | Standard test procedure for non-separable thin sheet material..... :<br>(IEC 60950-1, 2.10.5.9)         | (See appended Table 5.4.9)                 | —       |
| 5.4.4.6.5   | Mandrel test<br>(IEC 60065, 8.21) & (IEC 60950-1, Annex AA)   |  | N/A     |
| 5.4.4.7     | Solid insulation in wound components<br>(IEC 60065, 8.16) & (IEC 60950-1, 2.10.5.11)                    | See G.5.1 and G.6.                         | N/A     |
| 5.4.4.9     | Solid insulation at frequencies >30 kHz ..... :   |  | N/A     |
| 5.4.5       | Antenna terminal insulation<br>(IEC 60065, 10.2) & (IEC 60950-1, 7.4)                                   | No such antenna terminal used.             | N/A     |
| 5.4.5.1     | General   |  | N/A     |
| 5.4.5.2     | Voltage surge test<br>(IEC 60065, 10.2) & (IEC 60950-1, 7.4.2)  |  | N/A     |
|             | Insulation resistance (MΩ) ..... :  |  | —       |

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| Clause      | Requirement + Test   | Result - Remark  | Verdict |
| 5.4.6       | Insulation of internal wire as part of supplementary safeguard..... :<br>(IEC 60065, 8.9) & (IEC 60950-1, 2.1.1.3)   | (See appended table 5.4.4.2)   | —       |
| 5.4.7       | Tests for semiconductor components and for cemented joints<br>(IEC 60065, 13.6, 13.7, 13.8) & (IEC 60950-1, 2.10.11) |  | N/A     |
| 5.4.8       | Humidity conditioning<br>(IEC 60065, 10.3) & (IEC 60950-1, 2.9.2)  | No test required however applied by request of the client.                           | N/A     |
|             | Relative humidity (%) ..... :  |  | —       |
|             | Temperature (°C) ..... :   |  | —       |
|             | Duration (h) ..... :   |  | —       |
| 5.4.9       | Electric strength test..... :<br>(IEC 60065, 10.4) & (IEC 60950-1, 5.2)  |  | N/A     |
| 5.4.9.1     | Test procedure for a solid insulation type test<br>(IEC 60065, 10.4) & (IEC 60950-1, 5.2)                            |  | N/A     |
| 5.4.9.2     | Test procedure for routine tests<br>(IEC 60065, N.3.2) & (IEC 60950-1, 5.2.2)  | No routine tests considered. To be considered during the relevant national approval. | N/A     |
| 5.4.10      | Protection against transient voltages between external circuit<br>(IEC 60065, Annex B) & (IEC 60950-1, 6.2)          | No such external circuits  | N/A     |
| 5.4.10.1    | Parts and circuits separated from external circuits<br>(IEC 60950-1, 6.2.1)  | (See appended table 5.4.9)   | N/A     |
| 5.4.10.2    | Test methods<br>(IEC 60950-1, 6.2.2)   |  | N/A     |
| 5.4.10.2.1  | General  |  | N/A     |
| 5.4.10.2.2  | Impulse test ..... :<br>(IEC 60950-1, 6.2.2.1)   |  | N/A     |
| 5.4.10.2.3  | Steady-state test ..... :<br>(IEC 60950-1, 6.2.2.2)  |  | N/A     |
| 5.4.11      | Insulation between external circuits and earthed circuitry ..... :<br>(IEC 60065, Annex B) & (IEC 60950-1, 6.1)      |  | N/A     |
| 5.4.11.1    | Exceptions to separation between external circuits and earth<br>(IEC 60950-1, 6.1.2.2)                               |  | N/A     |
| 5.4.11.2    | Requirements<br>(IEC 60950-1, 6.1.2.1)   |  | N/A     |
|             | Rated operating voltage $U_{op}$ (V) ..... :   |  | N/A     |
|             | Nominal voltage $U_{peak}$ (V) ..... :   |  | N/A     |

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|-------------|---|---|---------|
| Clause      | Requirement + Test  | Result - Remark   | Verdict |
|             | Max increase due to variation $U_{sp}$ .....  |   | N/A     |
|             | Max increase due to ageing $\Delta U_{sa}$ .....  |   | N/A     |
|             | $U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ .....                                       |   | N/A     |
| 5.5         | Components as safeguards  |   | N/A     |
| 5.5.1       | General   | See the following details.  | N/A     |
| 5.5.2       | Capacitors and RC units<br>(IEC 60065, 14.3)  | Approved X2 type and Y1 type capacitors provided. See G.11.1 for compliance and their application.  | N/A     |
| 5.5.2.1     | General requirement<br>(IEC 60065, 14.3) & (IEC 60950-1, 1.5.6)                                 |   | N/A     |
| 5.5.2.2     | Safeguards against capacitor discharge after disconnection of a connector .....                 | (See appended table 5.5.2.2)  | N/A     |
|             | (IEC 60065, 9.1.6) & (IEC 60950-1, 2.1.1.7)   |   |         |
| 5.5.3       | Transformers<br>(IEC 60065, 14.4) & (IEC 60950-1, 1.5.4, Annex C)                               | (See Annex G.5.3)   | N/A     |
| 5.5.4       | Optocouplers<br>(IEC 60065, 14.12) & (IEC 60950-1, 2.10.5.3, 2.10.5.4)                          | (See sub-clause 5.4 or Annex G.12)  | N/A     |
| 5.5.5       | Relays  | No such component provided  | N/A     |
| 5.5.6       | Resistors<br>(IEC 60065, 14.2) & (IEC 60950-1, 1.5.7)   | Discharge resistors (R1, R2, R1A, R2A) used. However test of 5.5.2.2 complied even with fault condition R1 open circuit therefore not relied upon as safeguard. | N/A     |
| 5.5.7       | SPD's<br>(IEC 60065, 14.13) & (IEC 60950-1, 1.5.9)  | Approved varistor (MOV1) used. See also G.8   | N/A     |
| 5.5.7.1     | Use of an SPD connected to reliable earthing<br>(IEC 60065, 14.13) & (IEC 60950-1, 1.5.9.4)     | No such component provided  | N/A     |
| 5.5.7.2     | Use of an SPD between mains and protective earth<br>(IEC 60065, 14.13) & (IEC 60950-1, 1.5.9.4) |   | N/A     |
| 5.5.8       | Insulation between the mains and external circuit consisting of a coaxial cable.....            | (See Annex G.10.3)  | N/A     |
|             | (IEC 60065, 10.2) & (IEC 60950-1, 1.5.7.3, 7.4)   |   |         |
| 5.6         | Protective conductor  | Class III equipment   | N/A     |
| 5.6.2       | Requirement for protective conductors<br>(IEC 60065, 15.2) & (IEC 60950-1, 2.6.3, 2.6.5)        |   | N/A     |
| 5.6.2.1     | General requirements  |   | N/A     |
| 5.6.2.2     | Colour of insulation<br>(IEC 60065, 15.2) & (IEC 60950-1, 2.6.3.5)                              |   | N/A     |

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| Clause      | Requirement + Test   | Result - Remark  | Verdict |
| 5.6.3       | Requirement for protective earthing conductors (IEC 60065, 15.2) & (IEC 60950-1, 2.6.3.2)              |  | N/A     |
|             | Protective earthing conductor size (mm <sup>2</sup> ) .....  |  | —       |
| 5.6.4       | Requirement for protective bonding conductors  |  | N/A     |
| 5.6.4.1     | Protective bonding conductors (IEC 60950-1, 2.6.3.3)   |  | N/A     |
|             | Protective bonding conductor size (mm <sup>2</sup> ). ....:  |  | —       |
|             | Protective current rating (A) .....  |  | —       |
| 5.6.4.3     | Current limiting and overcurrent protective devices (IEC 60950-1, 2.6.5.2)                             |  | N/A     |
| 5.6.5       | Terminals for protective conductors  |  | N/A     |
| 5.6.5.1     | Requirement (IEC 60065, 15.2) & (IEC 60950-1, 2.6.4.2)   |  | N/A     |
|             | Conductor size (mm <sup>2</sup> ), nominal thread diameter (mm). ....:                                 |  | —       |
| 5.6.5.2     | Corrosion (IEC 60065, 15.2) & (IEC 60950-1, 2.6.5.6)   |  | N/A     |
| 5.6.6       | Resistance of the protective system (IEC 60065, 15.2) & (IEC 60950-1, 2.6.3.4)                         |  | N/A     |
| 5.6.6.1     | Requirements (IEC 60065, 15.2) & (IEC 60950-1, 2.6.3.4)  |  | N/A     |
| 5.6.6.2     | Test Method Resistance ( $\Omega$ ) .....  | (See appended table 5.6.6.2)                                       | —       |
| 5.6.7       | Reliable earthing (IEC 60065, 14.13) & (IEC 60950-1, 1.5.9.4, 5.1.7.1)                                 |  | N/A     |
| 5.7         | Prospective touch voltage, touch current and protective conductor current                              |  | —       |
| 5.7.2       | Measuring devices and networks   | Figure 4 of IEC 60990 was used in determining of the limit of ES1. | —       |
| 5.7.2.1     | Measurement of touch current .....   | (See appended table 5.7.2.2, 5.7.4)                                | —       |
| 5.7.2.2     | Measurement of prospective touch voltage (IEC 60065, 9.1.1.2) & (IEC 60950-1, 1.4.9)                   |  | —       |
| 5.7.3       | Equipment set-up, supply connections and earth connections (IEC 60065, 9.1.1.2) & (IEC 60950-1, 5.1.3) | Clause 4, 5.3 and 5.4 of IEC 60990:1999 applied.                   | —       |
|             | System of interconnected equipment (separate connections/single connection) .....                      | Single equipment.  | —       |

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|-------------|---|-----------------------|---------|
| Clause      | Requirement + Test  | Result - Remark       | Verdict |
|             | Multiple connections to mains (one connection at a time/simultaneous connections) .....       | Single equipment.     | —       |
| 5.7.4       | Earthed conductive accessible parts.....<br>(IEC 60065, 9.1.1.2) & (IEC 60950-1, 5.1.6)       | Class II equipment.   | N/A     |
| 5.7.5       | Protective conductor current<br>(IEC 60950-1, 5.1.7)  |                       | N/A     |
|             | Supply Voltage (V) .....  |                       | —       |
|             | Measured current (mA) .....   |                       | —       |
|             | Instructional Safeguard .....   | (See F.4 and F.5)     | —       |
| 5.7.6       | Prospective touch voltage and touch current due to external circuits<br>(IEC 60950-1, 5.1.8)  | 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<br>(IEC 60950-1, 5.1.8.1)  |                       | N/A     |
| 5.7.7       | Summation of touch currents from external circuits<br>(IEC 60950-1, 5.1.8.2)                  | No external circuits. | N/A     |
|             | a) Equipment with earthed external circuits<br>Measured current (mA) .....                    |                       | —       |
|             | b) Equipment whose external circuits are not referenced to earth. Measured current (mA) ..... |                       | —       |

|          |  |   |            |
|----------|--|---|------------|
| <b>6</b> | <b>ELECTRICALLY- CAUSED FIRE</b>   |   | <b>P</b>   |
| 6.2      | Classification of power sources (PS) and potential ignition sources (PIS)                    |   | <b>P</b>   |
| 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. | <b>P</b>   |
| 6.2.2.1  | General  | See the following details.  | <b>P</b>   |
| 6.2.2.2  | Power measurement for worst-case load fault ... :<br>(IEC 60065, 4.3.1) & (IEC 60950-1, 2.5) | (See appended table 6.2.2)  | <b>P</b>   |
| 6.2.2.3  | Power measurement for worst-case power source fault .....                                    | (See appended table 6.2.2)  | <b>P</b>   |
| 6.2.2.4  | PS1 .....  | (See appended table 6.2.2)  | <b>P</b>   |
| 6.2.2.5  | PS2 .....  | (See appended table 6.2.2)  | <b>N/A</b> |
| 6.2.2.6  | PS3 .....  | (See appended table 6.2.2)  | <b>N/A</b> |
| 6.2.3    | Classification of potential ignition sources   |   | <b>P</b>   |



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|-------------|---|--|---------|
| Clause      | Requirement + Test  | Result - Remark  | Verdict |
| 6.2.3.1     | Arcing PIS .....  | (See appended table 6.2.3.1)   | N/A     |
| 6.2.3.2     | Resistive PIS .....   | (See appended table 6.2.3.2)   | —       |
| 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 ..... :<br>(IEC 60065, 7.1) & (IEC 60950-1, 4.5.3) | No ignition and no such temperature attained within the equipment. (See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)   | N/A     |
| 6.3.1 (b)   | Combustible materials outside fire enclosure<br>(IEC 60950-1, 4.7.3.3)  | Only output wire and connector complying with 6.4.5.   | N/A     |
| 6.4         | Safeguards against fire under single fault conditions   |  | P       |
| 6.4.1       | Safeguard Method<br>(IEC 60950-1, 4.7.1)  |  | N/A     |
| 6.4.2       | Reduction of the likelihood of ignition under single fault conditions in PS1 circuits   | See above.   | N/A     |
| 6.4.3       | Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits<br>(IEC 60065, 11.2, 20.2)  |  | N/A     |
| 6.4.3.1     | General   |  | N/A     |
| 6.4.3.2     | Supplementary Safeguards<br>(IEC 60065, 20.2)   |  | N/A     |
|             | Special conditions if conductors on printed boards are opened or peeled   |  | N/A     |
| 6.4.3.3     | Single Fault Conditions..... :<br>(IEC 60065, 11.2)   | (See appended table 6.4.3)   | N/A     |
|             | Special conditions for temperature limited by fuse  |  | N/A     |
| 6.4.4       | Control of fire spread in PS1 circuits  | PS2 and PS3 circuits inside.   | N/A     |
| 6.4.5       | Control of fire spread in PS2 circuits<br>(IEC 60950-1, 4.7.3.4)  | Compliance detailed as follows:<br>– Printed board: rated min. V-1<br>– Wire insulation (tubing): complying with Clause 6 (See Table 4.1.2 for heat shrinkable tube wrapped on primary wires).<br>– All other components: at least V-2 except for mounted on min. V-1 material or small parts of combustible material.<br>– Isolating transformer: complying with G.5.3. | N/A     |
| 6.4.5.2     | Supplementary safeguards ..... :<br>(IEC 60950-1, 4.7.3.4)  | (See appended tables 4.1.2 and Annex G)  | —       |
| 6.4.6       | Control of fire spread in PS3 circuit<br>(IEC 60950-1, 4.7.3.4)   | Compliance detailed as follows:<br>– Parts as in 6.4.5 above including wiring<br>– Fire enclosure rated V-0 used.  | N/A     |

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|-------------|---|----------------------------------|---------|
| Clause      | Requirement + Test  | Result - Remark                  | Verdict |
| 6.4.7       | Separation of combustible materials from a PIS (IEC 60065, 20.2.5) & (IEC 60950-1, 4.7.3.4)   | Fire enclosure to be provided.   | N/A     |
| 6.4.7.1     | General.....:   | (See tables 6.2.3.1 and 6.2.3.2) | —       |
| 6.4.7.2     | Separation by distance (IEC 60065, 20.2.5) & (IEC 60950-1, 4.7.3.4)   |                                  | N/A     |
| 6.4.7.3     | Separation by a fire barrier (IEC 60065, 20.2.5) & (IEC 60950-1, 4.7.3.4)   |                                  | N/A     |
| 6.4.8       | Fire enclosures and fire barriers (IEC 60065, 20.2.5, 20.3) & (IEC 60950-1, 4.7.2, 4.7.3)   |                                  | N/A     |
| 6.4.8.1     | Fire enclosure and fire barrier material properties (IEC 60065, 20.2.5, 20.3) & (IEC 60950-1, 4.7.3.2, 4.7.3.4)   |                                  | N/A     |
| 6.4.8.2.1   | Requirements for a fire barrier (IEC 60065, 20.2.5) & (IEC 60950-1, 4.7.3.4)  | No fire barrier used.            | N/A     |
| 6.4.8.2.2   | Requirements for a fire enclosure (IEC 60065, 20.3) & (IEC 60950-1, 4.7.3.2)  |                                  | N/A     |
| 6.4.8.3     | Constructional requirements for a fire enclosure and a fire barrier   |                                  | N/A     |
| 6.4.8.3.1   | Fire enclosure and fire barrier openings (IEC 60065, 20.3) & (IEC 60950-1, 4.6.1, 4.6.2)  |                                  | N/A     |
| 6.4.8.3.2   | Fire barrier dimensions (IEC 60065, 20.2.5) & (IEC 60950-1, 4.6.2)  |                                  | N/A     |
| 6.4.8.3.3   | Top Openings in Fire Enclosure: dimensions (mm) .....: (IEC 60065, 20.3) & (IEC 60950-1, 4.6.1)   |                                  | —       |
|             | Needle Flame test   |                                  | N/A     |
| 6.4.8.3.4   | Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....: (IEC 60065, 20.3) & (IEC 60950-1, 4.6.2)                       |                                  | N/A     |
|             | Flammability tests for the bottom of a fire enclosure .....:  |                                  | —       |
| 6.4.8.3.5   | Integrity of the fire enclosure, condition met: a), b) or c) .....: (IEC 60950-1, 4.6.3)  |                                  | N/A     |
| 6.4.8.4     | Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....: (IEC 60065, 20.2.5) & (IEC 60950-1, 4.7.3.1, 4.7.3.2) |                                  | —       |
| 6.5         | Internal and external wiring  |                                  | P       |

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|-------------|---|---|---------|
| Clause      | Requirement + Test  | Result - Remark   | Verdict |
| 6.5.1       | Requirements<br>(IEC 60065, 16.3, 20.2.3) & (IEC 60950-1, 4.7.3.3, 4.7.3.4)               | Output cord provided.   | P       |
| 6.5.2       | Cross-sectional area (mm <sup>2</sup> ) .....   | Greater than 0.5 mm <sup>2</sup> cord complied with IEC/TS 60695-11-21. | —       |
| 6.5.3       | Requirements for interconnection to building wiring .....<br>(IEC 60950-1, 2.5, 6.3)      | (See Annex Q.)  | P       |
| 6.6         | Safeguards against fire due to connection to additional equipment<br>(IEC 60950-1, 3.5.4) |   | P       |
|             | External port limited to PS2 or complies with Clause Q.1                                  | Output complies with Clause Q.1.  | P       |

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| <b>7</b> | <b>INJURY CAUSED BY HAZARDOUS SUBSTANCES</b>                 |  | N/A |
| 7.2      | Reduction of exposure to hazardous substances                | No hazardous chemicals within the equipment. | N/A |
| 7.3      | Ozone exposure<br>(IEC 60950-1, 1.7.2.6)                     |  | N/A |
| 7.4      | Use of personal safeguards (PPE)                             |  | N/A |
|          | Personal safeguards and instructions .....                   |  | —   |
| 7.5      | Use of instructional safeguards and instructions             |  | N/A |
|          | Instructional safeguard (ISO 7010) .....                     |  | —   |
| 7.6      | Batteries .....<br>(IEC 60065, 14.10) & (IEC 60950-1, 4.3.8) | (See Annex M)                                | N/A |

|          |   |   |     |
|----------|---|---|-----|
| <b>8</b> | <b>MECHANICALLY-CAUSED INJURY</b>   |   | P   |
| 8.1      | General   | No moving parts in the equipment – see below regarding edges and corners. | P   |
| 8.2      | Mechanical energy source classifications  | PS1   | P   |
| 8.3      | Safeguards against mechanical energy sources  |   | P   |
| 8.4      | Safeguards against parts with sharp edges and corners<br>(IEC 60065, 19.5) & (IEC 60950-1, 4.3.1) | Edges and corners of the enclosure are rounded.                           | P   |
| 8.4.1    | Safeguards<br>(IEC 60950-1, 4.3.1)  |   | N/A |
| 8.5      | Safeguards against moving parts   | No moving parts.  | N/A |

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|-------------|--|-----------------------------|---------|
| Clause      | Requirement + Test   | Result - Remark             | Verdict |
| 8.5.1       | MS2 or MS3 part required to be accessible for the function of the equipment<br>(IEC 60065, 14.10.3) & (IEC 60950-1, 4.4) |                             | N/A     |
| 8.5.2       | Instructional Safeguard ..... :<br>(IEC 60950-1, 4.4.5.2)  |                             | —       |
| 8.5.4       | Special categories of equipment comprising moving parts  |                             | N/A     |
| 8.5.4.1     | Large data storage equipment<br>(IEC 60950-23)   |                             | N/A     |
| 8.5.4.2     | Equipment having electromechanical device for destruction of media<br>(IEC 60950-1, Annex EE)                            |                             | N/A     |
| 8.5.4.2.1   | Safeguards and Safety Interlocks ..... :<br>(IEC 60950-1, EE.3)  | (See Annex F.4 and Annex K) | —       |
| 8.5.4.2.2   | Instructional safeguards against moving parts  |                             | N/A     |
|             | Instructional Safeguard ..... :<br>(IEC 60950-1, EE.2)   |                             | —       |
| 8.5.4.2.3   | Disconnection from the supply<br>(IEC 60950-1, EE.4)   |                             | N/A     |
| 8.5.4.2.4   | Probe type and force (N) ..... :<br>(IEC 60950-1, EE.5)  |                             | —       |
| 8.5.5       | High Pressure Lamps<br>(IEC 60950-1, 4.2.9)  |                             | N/A     |
| 8.5.5.1     | Energy Source Classification   |                             | N/A     |
| 8.5.5.2     | High Pressure Lamp Explosion Test..... :<br>(See appended table 8.5.5.2)   |                             | —       |
| 8.6         | Stability<br>(IEC 60065, 19) & (IEC 60950-1, 4.1)  |                             | N/A     |
| 8.6.1       | Product classification   |                             | N/A     |
|             | Instructional Safeguard ..... :<br>(IEC 60065, 5.5.2)  |                             | —       |
| 8.6.2       | Static stability<br>(IEC 60065, 19.1) & (IEC 60950-1, 4.1)   |                             | N/A     |
| 8.6.2.2     | Static stability test<br>(IEC 60065, 19.2) & (IEC 60950-1, 4.1)  |                             | N/A     |
|             | Applied Force ..... :<br>(IEC 60065, 19.3) & (IEC 60950-1, 4.1)  |                             | —       |
| 8.6.2.3     | Downward Force Test<br>(IEC 60065, 19.3) & (IEC 60950-1, 4.1)  |                             | N/A     |
| 8.6.3       | Relocation stability test<br>(IEC 60065, 19.2)   |                             | N/A     |

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|-------------|--|-----------------|---------|
| Clause      | Requirement + Test   | Result - Remark | Verdict |
|             | Unit configuration during 10° tilt.....:   |                 | —       |
| 8.6.4       | Glass slide test   |                 | N/A     |
| 8.6.5       | Horizontal force test (Applied Force).....:<br>(IEC 60065, 19.4)                           |                 | —       |
|             | Position of feet or movable parts.....:  |                 | —       |
| 8.7         | Equipment mounted to wall or ceiling<br>(IEC 60065, 19.7) & (IEC 60950-1, 4.2.10)          |                 | N/A     |
| 8.7.1       | Mounting Means (Length of screws (mm) and<br>mounting surface) .....:<br>(IEC 60065, 19.7) |                 | —       |
| 8.7.2       | Direction and applied force.....:<br>(IEC 60065, 19.7) & (IEC 60950-1, 4.2.10)             |                 | —       |
| 8.8         | Handles strength   |                 | N/A     |
| 8.8.1       | Classification   |                 | N/A     |
| 8.8.2       | Applied Force .....  |                 | —       |
| 8.9         | Wheels or casters attachment requirements  |                 | N/A     |
| 8.9.1       | Classification   |                 | N/A     |
| 8.9.2       | Applied force .....  |                 | —       |
| 8.10        | Carts, stands and similar carriers   |                 | N/A     |
| 8.10.1      | General  |                 | N/A     |
| 8.10.2      | Marking and instructions   |                 | N/A     |
|             | Instructional Safeguard.....:  |                 | —       |
| 8.10.3      | Cart, stand or carrier loading test and compliance   |                 | N/A     |
|             | Applied force .....  |                 | —       |
| 8.10.4      | Cart, stand or carrier impact test   |                 | N/A     |
| 8.10.5      | Mechanical stability   |                 | N/A     |
|             | Applied horizontal force (N) .....   |                 | —       |
| 8.10.6      | Thermoplastic temperature stability (°C).....:   |                 | —       |
| 8.11        | Mounting means for rack mounted equipment<br>(IEC 60950-1, Annex DD)                       |                 | N/A     |
| 8.11.1      | General<br>(IEC 60950-1, DD.1)   |                 | N/A     |
| 8.11.2      | Product Classification   |                 | N/A     |
| 8.11.3      | Mechanical strength test, variable <i>N</i> .....:<br>(IEC 60950-1, DD.2)                  |                 | N/A     |
| 8.11.4      | Mechanical strength test 250N, including end stops<br>(IEC 60950-1, DD.3)                  |                 |         |

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|-------------|---|-----------------|---------|
| Clause      | Requirement + Test                                      | Result - Remark | Verdict |
| 8.12        | Telescoping or rod antennas .....:<br>(IEC 60065, 12.6) | (See Annex T)   | N/A     |
|             | Button/Ball diameter (mm) .....:                        |                 | N/A     |

|          |   |  |          |
|----------|---|--|----------|
| <b>9</b> | <b>THERMAL BURN INJURY</b>  |  | <b>P</b> |
| 9.2      | Thermal energy source classifications<br>(IEC 60065, 7.1, 11.2) & (IEC 60950-1, 4.5.4)    | No part considered to be accessible other than enclosure. The equipment evaluated by temperature test (see table 5.4.1.4). | P        |
| 9.3      | Safeguard against thermal energy sources<br>(IEC 60065, 7.1, 11.2) & (IEC 60950-1, 4.5.4) | Temperature of enclosure classed as TS1.   | N/A      |
| 9.4      | Requirements for safeguards   |  | N/A      |
| 9.4.1    | Equipment safeguard<br>(IEC 60065, 7.1, 11.2) & (IEC 60950-1, 4.5.4)                      |  | N/A      |
| 9.4.2    | Instructional safeguard .....:<br>(IEC 60065, 7.1, 11.2) & (IEC 60950-1, 4.5.4)           |  | —        |

|           |  |  |          |
|-----------|--|--|----------|
| <b>10</b> | <b>RADIATION</b>   |  | <b>P</b> |
| 10.2      | Radiation energy source classification   | RS1: The LED only used for indicating, which is considered as low power & inherently exempt group according to IEC 62471 | P        |
| 10.2.1    | General classification   | See above  | P        |
| 10.3      | Protection against laser radiation<br>(IEC 60065, 6.2) & (IEC 60950-1, 4.3.13.5.1)                               |  | N/A      |
|           | Laser radiation that exists equipment..... :   |  | —        |
|           | Normal, abnormal, single-fault ..... :   | (See attached laser test report)   | N/A      |
|           | Instructional safeguard ..... :  |  | —        |
|           | Tool..... :  |  | —        |
| 10.4      | Protection against visible, infrared, and UV radiation<br>(IEC 60065, 6.3) & (IEC 60950-1, 4.3.13.4, 4.3.13.5.2) |  | P        |
| 10.4.1    | General  |  | P        |
| 10.4.1.a) | RS3 for Ordinary and instructed persons..... :   |  | N/A      |
| 10.4.1.b) | RS3 accessible to a skilled person..... :  |  | N/A      |
|           | Personal safeguard (PPE) instructional safeguard ..... :   |  | —        |
| 10.4.1.c) | Equipment visible, IR, UV does not exceed RS1:   |  | P        |

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|-------------|--|--------------------------------|---------|
| Clause      | Requirement + Test   | Result - Remark                | Verdict |
| 10.4.1.d)   | Normal, abnormal, single-fault conditions .....                              | (See appended table B.3 & B.4) | P       |
| 10.4.1.e)   | Enclosure material employed as safeguard is opaque.....                      |                                | N/A     |
| 10.4.1.f)   | UV attenuation.....  |                                | N/A     |
| 10.4.1.g)   | Materials resistant to degradation UV .....                                  |                                | N/A     |
| 10.4.1.h)   | Enclosure containment of optical radiation .....                             |                                | N/A     |
| 10.4.1.i)   | Exempt Group under normal operating conditions .....                         |                                | P       |
| 10.4.2      | Instructional safeguard .....  |                                | N/A     |
| 10.5        | Protection against x-radiation<br>(IEC 60065, 6.1) & (IEC 60950-1, 4.3.13.2) |                                | N/A     |
| 10.5.1      | X- radiation energy source that exists equipment :                           | (See appended table B.3 & B.4) | N/A     |
|             | Normal, abnormal, single fault conditions                                    |                                | N/A     |
|             | Equipment safeguards .....   |                                | N/A     |
|             | Instructional safeguard for skilled person.....                              |                                | —       |
| 10.5.3      | Most unfavourable supply voltage to give maximum radiation .....             |                                | N/A     |
|             | (IEC 60950-1, Annex H)   |                                |         |
|             | Abnormal and single-fault condition .....                                    | (See appended table B.3 & B.4) | N/A     |
|             | Maximum radiation (pA/kg) .....  |                                | N/A     |
| 10.6        | Protection against acoustic energy sources                                   |                                | N/A     |
| 10.6.1      | General  |                                | N/A     |
| 10.6.2      | Classification   |                                | N/A     |
|             | Acoustic output, dB(A).....  |                                | —       |
|             | Output voltage, unweighted r.m.s.....  |                                | —       |
| 10.6.4      | Protection of persons  |                                | N/A     |
|             | Instructional safeguards .....   |                                | N/A     |
|             | Equipment safeguard prevent ordinary person to RS2.....                      |                                | N/A     |
|             | Means to actively inform user of increase sound pressure.....                |                                | —       |
|             | Equipment safeguard prevent ordinary person to RS2.....                      |                                | —       |
| 10.6.5      | Requirements for listening devices (headphones, earphones, etc.)             |                                | N/A     |
| 10.6.5.1    | Corded passive listening devices with analogue input                         |                                | N/A     |
|             | Input voltage with 94 dB(A) LAeq acoustic pressure output.....               |                                | —       |

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|-------------|---|-----------------|---------|
| Clause      | Requirement + Test                          | Result - Remark | Verdict |
| 10.6.5.2    | Corded listening devices with digital input |                 | N/A     |
|             | Maximum dB(A)..... :                        |                 | —       |
| 10.6.5.3    | Cordless listening device                   |                 | N/A     |
|             | Maximum dB(A)..... :                        |                 | —       |

|          |  |   |     |
|----------|--|---|-----|
| <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..... :<br>(IEC 60065, 4.2.1) & (IEC 60950-1, 1.4.4)                                       | (See summary of testing and appended table) | P   |
|          | Audio Amplifiers and equipment with audio amplifiers ..... :<br>(IEC 60065, 4.2.5) & (IEC 60950-1, 4.4)        | Not such equipment.                         | N/A |
| B.2.3    | Supply voltage and tolerances<br>(IEC 60065, 4.2.2) & (IEC 60950-1, 1.4.5)                                     | Rated voltage 10 %                          | P   |
| B.2.5    | Input test..... :<br>(IEC 60065, 4.2, 5.2 g), h)) & (IEC 60950-1, 1.6.2)                                       | (See appended table B.2.5)                  | P   |
| B.3      | Simulated abnormal operating conditions  |   | N/A |
| B.3.1    | General requirements..... :<br>(IEC 60065, 4.3) & (IEC 60950-1, 5.3.1)   |   | N/A |
| B.3.2    | Covering of ventilation openings<br>(IEC 60065, 4.3.11) & (IEC 60950-1, 5.3.1)                                 |   | N/A |
| B.3.3    | D.C. mains polarity test<br>(IEC 60065, 4.2.2) & (IEC 60950-1, 5.3.1)  |   | N/A |
| B.3.4    | Setting of voltage selector ..... :<br>(IEC 60065, 4.3.14) & (IEC 60950-1, 5.3.1)                              |   | N/A |
| B.3.5    | Maximum load at output terminals ..... :<br>(IEC 60065, 4.3.10) & (IEC 60950-1, 5.3.7)                         |   | N/A |
| B.3.6    | Reverse battery polarity<br>(IEC 60065, 4.3.12) & (IEC 60950-1, 4.3.8)   | No battery within the EUT                   | N/A |
| B.3.7    | Abnormal operating conditions as specified in Clause E.2.<br>(IEC 60065, 4.3.6) & (IEC 60950-1, 5.3.6)         | Not such equipment.                         | N/A |
| B.3.8    | Safeguards functional during and after abnormal operating conditions<br>(IEC 60065, 11) & (IEC 60950-1, 5.3.9) | All safeguards remained effective.          | N/A |
| B.4      | Simulated single fault conditions<br>(IEC 60065, 4.3) & (IEC 60950-1, 1.4.14)                                  |   | P   |



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|-------------|---|---|---------|
| Clause      | Requirement + Test  | Result - Remark   | Verdict |
| B.4.2       | Temperature controlling device open or short-circuited .....  | No such device used.  | N/A     |
| B.4.3       | Motor tests<br>(IEC 60065, 4.3.7) & (IEC 60950-1, 5.3.2)  | No such device used.  | N/A     |
| B.4.3.1     | Motor blocked or rotor locked increasing the internal ambient temperature .....   | (See Clause G.5)  | —       |
| B.4.4       | Short circuit of functional insulation<br>(IEC 60950-1, 5.3.4)  | See the following details.  | P       |
| B.4.4.1     | Short circuit of clearances for functional insulation   | (See appended table B.3 & B.4)  | P       |
| B.4.4.2     | Short circuit of creepage distances for functional insulation   | (See appended table B.3 & B.4)  | 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<br>(IEC 60065, 4.3.4) & (IEC 60950-1, 5.3.7)               | (See appended table B.3 & B.4 for faults on electronic components)  | P       |
| B.4.6       | Short circuit or disconnect of passive components<br>(IEC 60065, 4.3.5) & (IEC 60950-1, 5.3.7)                                      | (See appended table B.3 & B.4)  | P       |
| B.4.7       | Continuous operation of components<br>(IEC 60065, 4.3.8) & (IEC 60950-1, 5.3.5)   | 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<br>(IEC 60065, 11) & (IEC 60950-1, 5.3.9) | No change to circuits classified in 5.3.  | P       |
| B.4.9       | Battery charging under single fault conditions ... :<br>(IEC 60065, 14.11.3) & (IEC 60950-1, 4.3.8)                                 | No battery involved in the EUT  | N/A     |

| C     | UV RADIATION  |  | N/A |
|-------|---|--|-----|
| C.1   | Protection of materials in equipment from UV radiation<br>(IEC 60950-1, 4.3.13.3) | No such UV generated from the equipment. | N/A |
| C.1.2 | Requirements  |  | N/A |
| C.1.3 | Test method   |  | N/A |
| C.2   | UV light conditioning test<br>(IEC 60950-1, Annex Y)                              |  | N/A |
| C.2.1 | Test apparatus<br>(IEC 60950-1, Y.1)  |  | N/A |
| C.2.2 | Mounting of test samples<br>(IEC 60950-1, Y.2)                                    |  | N/A |

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|-------------|---|-----------------|---------|
| Clause      | Requirement + Test  | Result - Remark | Verdict |
| C.2.3       | Carbon-arc light-exposure apparatus<br>(IEC 60950-1, Y.3) |                 | N/A     |
| C.2.4       | Xenon-arc light exposure apparatus<br>(IEC 60950-1, Y.4)  |                 | N/A     |

| D   | TEST GENERATORS  |                        | N/A |
|-----|--|------------------------|-----|
| D.1 | Impulse test generators<br>(IEC 60065, Annex K) & (IEC 60950-1, N.1) | No such consideration. | N/A |
| D.2 | Antenna interface test generator<br>(IEC 60950-1, N.2)               |                        | N/A |
| D.3 | Electronic pulse generator   |                        | N/A |

| E   | TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS                                  |                     | N/A |
|-----|--|---------------------|-----|
| E.1 | Audio amplifier normal operating conditions<br>(IEC 60065, 4.2.5) & (IEC 60950-1, 4.5.1)   | Not such equipment. | N/A |
|     | Audio signal voltage (V) .....   |                     | —   |
|     | Rated load impedance ( $\Omega$ ) .....  |                     |     |
| E.2 | Audio amplifier abnormal operating conditions<br>(IEC 60065, 4.3.6) & (IEC 60950-1, 5.3.6) |                     | N/A |

| F     | EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS                                 |  | P |
|-------|--|--|---|
| F.1   | General requirements<br>(IEC 60065, 5.1, 5.2, 5.3) & (IEC 60950-1, 1.7.2.1)                    | See the following details.   | P |
|       | Instructions – Language .....  | English  | — |
| F.2   | Letter symbols and graphical symbols<br>(IEC 60065, 5.1)                                       | See the following details.   | P |
| F.2.1 | Letter symbols according to IEC60027-1<br>(IEC 60065, 5.1)                                     | Letter symbols for quantities and units are complied with IEC 60227-1.           | P |
| F.2.2 | Graphic symbols IEC, ISO or manufacturer specific<br>(IEC 60065, 5.1) & (IEC 60950-1, 1.7.1.1) | 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<br>(IEC 60065, 5.1) & (IEC 60950-1, 1.7.1.2)                       | Equipment marking is located on the enclosure surface and is easily visible.     | P |
| F.3.2 | Equipment identification markings<br>(IEC 60065, 5.2) & (IEC 60950-1, 1.7.1.2)                 | See the following details.   | P |

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|-------------|---|--|---------|
| Clause      | Requirement + Test  | Result - Remark  | Verdict |
| F.3.2.1     | Manufacturer identification ..... :<br>(IEC 60065, 5.2 a)) & (IEC 60950-1, 1.7.1.2)                         | See copy of marking on page 4.   | —       |
| F.3.2.2     | Model identification ..... :<br>(IEC 60065, 5.2 b)) & (IEC 60950-1, 1.7.1.2)                                | See copy of marking on page 4.   | —       |
| F.3.3       | Equipment rating markings<br>(IEC 60065, 5.2) & (IEC 60950-1, 1.7.1.1)                                      | See copy of marking on page 4.   | P       |
| F.3.3.1     | Equipment with direct connection to mains<br>(IEC 60065, 5.2 e)) & (IEC 60950-1, 1.7.1.1)                   | The equipment is connected to AC mains supply.   | N/A     |
| F.3.3.2     | Equipment without direct connection to mains<br>(IEC 60065, 5.2 e)) & (IEC 60950-1, 1.7.1.1)                |  | P       |
| F.3.3.3     | Nature of supply voltage..... :<br>(IEC 60065, 5.2 d)) & (IEC 60950-1, 1.7.1.1)                             | ~  | —       |
| F.3.3.4     | Rated voltage ..... :<br>(IEC 60065, 5.2 e)) & (IEC 60950-1, 1.7.1.1)                                       |  | —       |
| F.3.3.4     | Rated frequency ..... :<br>(IEC 60065, 5.2 f)) & (IEC 60950-1, 1.7.1.1)                                     |  | —       |
| F.3.3.6     | Rated current or rated power ..... :<br>(IEC 60065, 5.2 g, h)) & (IEC 60950-1, 1.7.1.1)                     |  | —       |
| F.3.3.7     | Equipment with multiple supply connections<br>(IEC 60950-1, 1.7.1.1)  | Only one supply connection.  | N/A     |
| F.3.4       | Voltage setting device<br>(IEC 60065, 5.2 e)) & (IEC 60950-1, 1.7.4)  | Auto range and no voltage selector provide within the equipment.   | N/A     |
| F.3.5       | Terminals and operating devices   | See below.   | N/A     |
| F.3.5.1     | Mains appliance outlet and socket-outlet markings ..... :<br>(IEC 60065, 5.3 c)) & (IEC 60950-1, 1.7.5)     |  | N/A     |
| F.3.5.2     | Switch position identification marking ..... :<br>(IEC 60065, 5.5.3) & (IEC 60950-1, 1.7.8.3)               | No such switch on the equipment.   | N/A     |
| F.3.5.3     | Replacement fuse identification and rating markings ..... :<br>(IEC 60065, 14.6.3.2) & (IEC 60950-1, 1.7.6) | The fuse is located within the equipment and not replaceable by an ordinary person or an instructed person. The fuse marked with F1 T6.3A/250V | N/A     |
| F.3.5.4     | Replacement battery identification marking ..... :<br>(IEC 60065, 5.5.2 c)) & (IEC 60950-1, 1.7.13)         | No such battery on the equipment. See sub-clause F.5   | N/A     |
| F.3.5.5     | Terminal marking location<br>(IEC 60950-1, 1.7.7.1)   |  | N/A     |
| F.3.6       | Equipment markings related to equipment classification  | See below.   | N/A     |
| F.3.6.1     | Class I Equipment   | Class III equipment.   | N/A     |

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|-------------|--|--|---------|
| Clause      | Requirement + Test   | Result - Remark  | Verdict |
| F.3.6.1.1   | Protective earthing conductor terminal (IEC 60065, 5.3 a)) & (IEC 60950-1, 1.7.7.1)                            |  | N/A     |
| F.3.6.1.2   | Neutral conductor terminal (IEC 60950-1, 1.7.7.2)  |  | N/A     |
| F.3.6.1.3   | Protective bonding conductor terminals (IEC 60950-1, 1.7.7.1)  |  | N/A     |
| F.3.6.2     | Class II equipment (IEC60417-5172)   | Symbol IEC60417-5172 used.   | N/A     |
| F.3.6.2.1   | Class II equipment with or without functional earth (IEC 60065, 5.2 c)) & (IEC 60950-1, 1.7.7.2)               |  | N/A     |
| F.3.6.2.2   | Class II equipment with functional earth terminal marking (IEC 60950-1, 2.6.2)                                 |  | N/A     |
| F.3.7       | Equipment IP rating marking .....: (IEC 60065, A.5)  | IPX0.  | —       |
| F.3.8       | External power supply output marking (IEC 60065, 5.3 c))   | See copy of marking plate.   | N/A     |
| F.3.9       | Durability, legibility and permanence of marking (IEC 60065, 5.1) & (IEC 60950-1, 1.7.11)                      | Marking is considered to be legible and easily discernible. See also the following details.  | P       |
| F.3.10      | Test for permanence of markings (IEC 60065, 5.1) & (IEC 60950-1, 1.7.11)                                       | The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 sec. And then again for 15 sec. With the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was no curling and lifting of the label edge. After each test, the marking remained legible. | P       |
| F.4         | Instructions (IEC 60065, 5.4, 5.5.2) & (IEC 60950-1, 1.7.2.1, 1.7.14, 5.1.7, 3,4,3)                            |  | P       |
|             | a) Equipment for use in locations where children not likely to be present – marking                            |  | N/A     |
|             | b) Instructions given for installation or initial use  |  | P       |
|             | c) Equipment intended to be fastened in place  |  | N/A     |
|             | d) Equipment intended for use only in restricted access area   |  | N/A     |
|             | e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1 |  | N/A     |
|             | f) Protective earthing employed as safeguard   |  | N/A     |

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|-------------|---|---|---------|
| Clause      | Requirement + Test  | Result - Remark                                       | Verdict |
|             | g) Protective earthing conductor current exceeding ES 2 limits  |   | N/A     |
|             | h) Symbols used on equipment  |   | N/A     |
|             | i) Permanently connected equipment not provided with all-pole mains switch  |   | N/A     |
|             | j) Replaceable components or modules providing safeguard function   |   | N/A     |
| F.5         | Instructional safeguards (IEC 60065, 5.4, 5.5)  | No instructional safeguard required in the equipment. | P       |
|             | 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><br>(IEC 60950-1, 2.8.7)  |  | N/A |
| G.1.1         | General requirements<br>(IEC 60065, 14.7)  |  | N/A |
| G.1.2         | Ratings, endurance, spacing, maximum load<br>(IEC 60065, 14.7)   |  | N/A |
| <b>G.2</b>    | <b>Relays</b><br>(IEC 60065, 14.4.3) & (IEC 60950-1, 2.8.7)  |  | N/A |
| G.2.1         | General requirements   | No such relay provided within the equipment. | N/A |
| G.2.2         | Overload test<br>(IEC 60950-1, 2.8.7.2)  |  | 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>  |  | P   |
| G.3.1         | Thermal cut-offs<br>(IEC 60065, 14.6.2.2)  |  | N/A |
| G.3.1.1a) &b) | Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)<br>(IEC 60065, 14.6.2.2 a)) |  | N/A |
| G.3.1.1c)     | Thermal cut-outs tested as part of the equipment as indicated in c)<br>(IEC 60065, 14.6.2.2 b))                              |  | N/A |
| G.3.1.2       | Thermal cut-off connections maintained and secure  |  | N/A |

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|-------------|--|--|---------|
| Clause      | Requirement + Test   | Result - Remark  | Verdict |
| G.3.2       | Thermal links<br>(IEC 60065, 14.6.2.3)   |  | N/A     |
| G.3.2.1a)   | Thermal links separately tested with IEC 60691<br>(IEC 60065, 14.6.2.3 a))   |  | N/A     |
| G.3.2.1b)   | Thermal links tested as part of the equipment<br>(IEC 60065, 14.6.2.3 b))  |  | N/A     |
|             | Aging hours (H) .....  |  | —       |
|             | Single Fault Condition .....   |  | —       |
|             | Test Voltage (V) and Insulation Resistance ( $\Omega$ ). :   |  | —       |
| G.3.3       | PTC Thermistors<br>(IEC 60065, 14.6.4) & (IEC 60950-1, 2.5)  |  | N/A     |
| G.3.4       | Overcurrent protection devices<br>(IEC 60065, 14.6.3) & (IEC 60950-1, 2.7)   |  | N/A     |
| G.3.5       | Safeguards components not mentioned in G.3.1 to G.3.5<br>(IEC 60065, 14.6.5)   |  | N/A     |
| G.3.5.1     | Non-resettable devices suitably rated and marking provided<br>(IEC 60065, 14.6.5)  |  | N/A     |
| G.3.5.2     | Single faults conditions.....<br>(IEC 60065, 14.6.5)   |  | N/A     |
| <b>G.4</b>  | <b>Connectors</b>  |  | N/A     |
| G.4.1       | Spacings<br>(IEC 60950-1, 2.10.3.1, 2.10.4.3)  | No such connector with insulated surfaces accessible within the EUT                    | N/A     |
| G.4.2       | Mains connector configuration .....  | IEC 60320 approved appliance inlet used  | N/A     |
| G.4.3       | Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely<br>(IEC 60065, 15.1.2) & (IEC 60950-1, 4.3.5) | Output connector with a shape that insert into a mains connector is unlikely to occur. | N/A     |
| <b>G.5</b>  | <b>Wound Components</b>  |  | N/A     |
| G.5.1       | Wire insulation in wound components.....   | No such component relying on insulation of winding wire used.                          | N/A     |
| G.5.1.2 a)  | Two wires in contact inside wound component, angle between 45° and 90°<br>(IEC 60065, 8.16) & (IEC 60950-1, 2.10.5.12)                 |  | N/A     |
| G.5.1.2 b)  | Construction subject to routine testing<br>(IEC 60950-1, 2.10.5.11)  |  | N/A     |
| G.5.2       | Endurance test on wound components<br>(IEC 60065, 8.17)  |  | N/A     |
| G.5.2.1     | General test requirements  |  | N/A     |

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|--------------|---|---|---------|
| Clause       | Requirement + Test  | Result - Remark   | Verdict |
| G.5.2.2      | Heat run test<br>(IEC 60065, 8.17 a))   |   | N/A     |
|              | Time (s) .....  |   | —       |
|              | Temperature (°C) .....  |   | —       |
| G.5.2.3      | Wound Components supplied by mains<br>(IEC 60065, 8.17 d))                                      |   | N/A     |
| <b>G.5.3</b> | <b>Transformers</b><br>(IEC 60950-1, 1.5.4)   |   | N/A     |
| G.5.3.1      | Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....<br>(IEC 60065, 14.4.3) | The transformers meet the requirements given in G.5.3.2 and G.5.3.3.  | —       |
|              | Position.....   | T1  | —       |
|              | Method of protection .....  | See G.5.3.3.  | —       |
| G.5.3.2      | Insulation  | Primary windings and secondary windings are separated by Reinforced insulation<br>(The core is considered as primary part as it is not isolated from Primary) | N/A     |
|              | Protection from displacement of windings.....<br>(IEC 60065, 14.4) & (IEC 60950-1, C.2)         | The end-turn of each winding is fixed by insulating tape  | —       |
| G.5.3.3      | Overload test .....   | (See appended table B.3)  | —       |
| G.5.3.3.1    | Test conditions<br>(IEC 60950-1, C.1)   | Tested in the complete equipment as an SMPS.  | N/A     |
| G.5.3.3.2    | Winding Temperatures testing in the unit<br>(IEC 60065, 11.2) & (IEC 60950-1, C.1)              | (See appended table B.3&B.4)  | N/A     |
| G.5.3.3.3    | Winding Temperatures - Alternative test method  | Alternative test method was not considered.   | N/A     |
| <b>G.5.4</b> | <b>Motors</b>   |   | N/A     |
| G.5.4.1      | General requirements<br>(IEC 60065, 4.3.7, 14.10) & (IEC 60950-1, B.1)                          | No motors used.   | N/A     |
|              | Position .....  |   | —       |
| G.5.4.2      | Test conditions<br>(IEC 60065, 4.3.7, 14.10) & (IEC 60950-1, B.2)                               |   | N/A     |
| G.5.4.3      | Running overload test<br>(IEC 60950-1, B.4)   |   | N/A     |
| G.5.4.4      | Locked-rotor overload test<br>(IEC 60065, 4.3.7) & (IEC 60950-1, B.5)                           |   | N/A     |
|              | Test duration (days) .....  |   | —       |

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|-------------|---|-------------------------|---------|
| Clause      | Requirement + Test  | Result - Remark         | Verdict |
| G.5.4.5     | Running overload test for d.c. motors in secondary circuits<br>(IEC 60950-1, B.6)                           |                         | N/A     |
| G.5.4.5.2   | Tested in the unit<br>(IEC 60950-1, B.6.2)  |                         | N/A     |
|             | Electric strength test (V) .....  |                         | —       |
| G.5.4.5.3   | Tested on the Bench - Alternative test method;<br>test time (h) .....<br>(IEC 60950-1, B.6.3)               |                         | —       |
|             | Electric strength test (V) .....  |                         | —       |
| G.5.4.6     | Locked-rotor overload test for d.c. motors in secondary circuits<br>(IEC 60065, 4.3.7) & (IEC 60950-1, B.7) |                         | N/A     |
| G.5.4.6.2   | Tested in the unit<br>(IEC 60950-1, B.7.2)  |                         | N/A     |
|             | Maximum Temperature .....   |                         | —       |
|             | Electric strength test (V) .....  |                         | —       |
| G.5.4.6.3   | Tested on the bench - Alternative test method;<br>test time (h) .....<br>(IEC 60950-1, B.7.3)               |                         | —       |
|             | Electric strength test (V) .....  |                         | —       |
| G.5.4.7     | Motors with capacitors<br>(IEC 60950-1, B.8)  |                         | N/A     |
| G.5.4.8     | Three-phase motors<br>(IEC 60950-1, B.9)  |                         | N/A     |
| G.5.4.9     | Series motors<br>(IEC 60950-1, B.10)  |                         | N/A     |
|             | Operating voltage .....   |                         | —       |
| <b>G.6</b>  | <b>Wire Insulation</b>  |                         | N/A     |
| G.6.1       | General<br>(IEC 60065, 8.16) & (IEC 60950-1, 2.10.5.12)   |                         | N/A     |
| G.6.2       | Solvent-based enamel wiring insulation<br>(IEC 60065, 8.1) & (IEC 60950-1, 2.10.5.13)                       |                         | N/A     |
| <b>G.7</b>  | <b>Mains supply cords</b>   |                         | N/A     |
| G.7.1       | General requirements<br>(IEC 60065, 16.1, 16.2) & (IEC 60950-1, 3.2.5.1)                                    | No mains cord provided. | N/A     |
|             | Type.....   |                         | —       |
|             | Rated current (A) .....   |                         | —       |
|             | Cross-sectional area (mm <sup>2</sup> ), (AWG).....   |                         | —       |



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|-------------|--|--|---------|
| Clause      | Requirement + Test   | Result - Remark  | Verdict |
| G.7.2       | Compliance and test method<br>(IEC 60065, 16.2) & (IEC 60950-1, 3.2.5.1)                         |  | 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<br>(IEC 60065, 16.5) & (IEC 60950-1, 3.2.6)   |  | N/A     |
|             | Strain relief test force (N) .....   |  | —       |
| G.7.3.2.2   | Strain relief mechanism failure<br>(IEC 60950-1, 3.2.6)  |  | N/A     |
| G.7.3.2.3   | Cord sheath or jacket position, distance (mm).....<br>(IEC 60065, 16.5) & (IEC 60950-1, 3.2.7)   |  | —       |
| G.7.3.2.4   | Strain relief comprised of polymeric material<br>(IEC 60065, 16.5) & (IEC 60950-1, 3.2.6, 3.2.7) |  | N/A     |
| G.7.4       | Cord Entry .....<br>(IEC 60950-1, 3.1.4, 3.2.7)  | (See appended table 5.4.11.1)  | —       |
| G.7.5       | Non-detachable cord bend protection  |  | N/A     |
| G.7.5.1     | Requirements<br>(IEC 60950-1, 3.2.8)   |  | N/A     |
| G.7.5.2     | Mass (g) .....   |  | —       |
|             | Diameter (m) .....   |  | —       |
|             | Temperature (°C) .....   |  | —       |
| G.7.6       | Supply wiring space<br>(IEC 60950-1, 3.2.9)  |  | N/A     |
| G.7.6.2     | Stranded wire<br>(IEC 60950-1, 3.3.8)  |  | N/A     |
| G.7.6.2.1   | Test with 8 mm strand<br>(IEC 60950-1, 3.3.8)  |  | N/A     |
| <b>G.8</b>  | <b>Varistors</b>   |  | N/A     |
| G.8.1       | General requirements   | MOV1 used in primary (mains)<br>between L and N  | N/A     |
| G.8.2       | Safeguard against shock<br>(IEC 60065, 14.13) & (IEC 60950-1, Annex Q)                           | Approved MOV1 used, see table<br>4.1.2 for details.  | N/A     |
| G.8.3       | Safeguard against fire   |  | N/A     |
| G.8.3.2     | Varistor overload test .....<br>(IEC 60065, 14.13)   | The method of control fire spread<br>used, fire enclosure will be<br>provided in end system. | N/A     |
| G.8.3.3     | Temporary overvoltage .....  | (See appended table B.3)   | N/A     |

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|-------------|--|--|---------|
| Clause      | Requirement + Test   | Result - Remark                                      | Verdict |
| <b>G.9</b>  | <b>Integrated Circuit (IC) Current Limiters</b><br>(IEC 60950-1, Annex CC)   |  | N/A     |
| G.9.1 a)    | Manufacturer defines limit at max. 5A.<br>(IEC 60950-1, CC.1)  | No IC current limiter provided within the equipment. | N/A     |
| G.9.1 b)    | Limiters do not have manual operator or reset<br>(IEC 60950-1, CC.1)   |  | N/A     |
| G.9.1 c)    | Supply source does not exceed 250 VA .....:<br>(IEC 60950-1, CC.1)   |  | —       |
| G.9.1 d)    | IC limiter output current (max. 5A) .....:<br>(IEC 60950-1, CC.1)  |  | —       |
| G.9.1 e)    | Manufacturers' defined drift .....:<br>(IEC 60950-1, CC.1)   |  | —       |
| G.9.2       | Test Program 1<br>(IEC 60950-1, CC.2)  |  | N/A     |
| G.9.3       | Test Program 2<br>(IEC 60950-1, CC.3)  |  | N/A     |
| G.9.4       | Test Program 3<br>(IEC 60950-1, CC.4)  |  | N/A     |
| <b>G.10</b> | <b>Resistors</b><br>(IEC 60065, 14.2) & (IEC 60950-1, 1.5.7)   |  | N/A     |
| G.10.1      | General requirements<br>(IEC 60065, 14.2) & (IEC 60950-1, 1.5.7.1)   |  | N/A     |
| G.10.2      | Resistor test<br>(IEC 60065, 14.2) & (IEC 60950-1, 1.5.7.2)  |  | N/A     |
| G.10.3      | Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable<br>(IEC 60065, 14.2) & (IEC 60950-1, 1.5.7.3) | No such resistors                                    | N/A     |
| G.10.3.1    | General requirements   |  | N/A     |
| G.10.3.2    | Voltage surge test   |  | N/A     |
| G.10.3.3    | Impulse test<br>(IEC 60950-1, 1.5.7.3)   |  | N/A     |
| <b>G.11</b> | <b>Capacitor and RC units</b><br>(IEC 60065, 14.3) & (IEC 60950-1, 1.5.6)  |  | N/A     |
| G.11.1      | General requirements<br>(IEC 60065, 14.3.1) & (IEC 60950-1, 1.5.6)   |  | N/A     |
| G.11.2      | Conditioning of capacitors and RC units<br>(IEC 60065, 14.3.1) & (IEC 60950-1, 1.5.6)  |  | N/A     |

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|-------------|--|---|---------|
| Clause      | Requirement + Test   | Result - Remark   | Verdict |
| G.11.3      | Rules for selecting capacitors<br>(IEC 60065, 14.3.2) & (IEC 60950-1, 1.5.6)   |   | N/A     |
| <b>G.12</b> | <b>Optocouplers</b>  |   | N/A     |
|             | Optocouplers comply with IEC 60747-5-5:2007<br>Spacing or Electric Strength Test (specify option<br>and test results) .....:<br>(IEC 60065, 14.12) & (IEC 60950-1, 2.10.5.4) |   | N/A     |
|             | Type test voltage Vini .....:  | >4000Vpk  | —       |
|             | Routine test voltage, Vini,b .....:  | >4000Vpk  | —       |
| <b>G.13</b> | <b>Printed boards</b><br>(IEC 60065, 13.5) & (IEC 60950-1, 2.10.6)   |   | P       |
| G.13.1      | General requirements   | See the following details.  | P       |
| G.13.2      | Uncoated printed boards<br>(IEC 60065, 13.5.1) & (IEC 60950-1, 2.10.6.1)   | The insulation between conductors<br>on the outer surfaces of an<br>uncoated printed board or over the<br>outer surface of coated printed<br>boards complied with the minimum<br>clearance and creepage<br>requirements of 5.4.2 and 5.4.3. | P       |
| G.13.3      | Coated printed boards<br>(IEC 60065, 13.5.2) & (IEC 60950-1, 2.10.6.2)   | No coated printed board or<br>multilayer board applied for within<br>the equipment.   | N/A     |
| G.13.4      | Insulation between conductors on the same inner<br>surface<br>(IEC 60950-1, 2.10.6.3)  | N/A   | N/A     |
|             | Compliance with cemented joint requirements<br>(Specify construction) .....:<br>(IEC 60065, 13.5.2, 13.6, 13.7) & (IEC 60950-1,<br>2.10.5.5)                                 |   | —       |
| G.13.5      | Insulation between conductors on different<br>surfaces<br>(IEC 60065, 13.5.1) & (IEC 60950-1, 2.10.6.4)  |   | N/A     |
|             | Distance through insulation .....:   | (See appended table 5.4.4.5)  | —       |
|             | Number of insulation layers (pcs) .....:   |   | —       |
| G.13.6      | Tests on coated printed boards<br>(IEC 60065, 13.5.2) & (IEC 60950-1, 2.10.8)  |   | N/A     |
| G.13.6.1    | Sample preparation and preliminary inspection<br>(IEC 60950-1, 2.10.8.1)   |   | N/A     |
| G.13.6.2a)  | Thermal conditioning<br>(IEC 60950-1, 2.10.8.2)  |   | N/A     |
| G.13.6.2b)  | Electric strength test<br>(IEC 60950-1, 2.10.8.3)  |   | N/A     |

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| Clause      | Requirement + Test  | Result - Remark  | Verdict |
| G.13.6.2c)  | Abrasion resistance test<br>(IEC 60950-1, 2.10.8.4)   |  | N/A     |
| <b>G.14</b> | <b>Coating on components terminals</b>  |  | N/A     |
| G.14.1      | Requirements ..... :<br>(IEC 60950-1, 2.10.7)   | No coating on component terminals considered to affect creepage or clearances. | —       |
| <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 ICX provided within the equipment.                                     | N/A     |
| b)          | Impulse test using circuit 2 with $U_c =$ to transient voltage ..... :  |  | —       |
| 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 ..... :  |  | —       |

| <b>H</b> | <b>CRITERIA FOR TELEPHONE RINGING SIGNALS</b> |   | N/A |
|----------|---|---|-----|
| H.1      | General<br>(IEC 60950-1, M.1)                 | No telephone ringing signal generated within the equipment. | N/A |
| H.2      | Method A<br>(IEC 60950-1, M.2)                |   | N/A |
| H.3      | Method B<br>(IEC 60950-1, M.3)                |   | N/A |

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|-------------|--|-----------------|---------|
| Clause      | Requirement + Test   | Result - Remark | Verdict |
| H.3.1       | Ringling signal<br>(IEC 60950-1, M.3.1)  |                 | N/A     |
| H.3.1.1     | Frequency (Hz) .....:<br>(IEC 60950-1, M.3.1.1)  |                 | —       |
| H.3.1.2     | Voltage (V) .....:<br>(IEC 60950-1, M.3.1.2)   |                 | —       |
| H.3.1.3     | Cadence; time (s) and voltage (V) .....:<br>(IEC 60950-1, M.3.1.3)   |                 | —       |
| H.3.1.4     | Single fault current (mA):.....:<br>(IEC 60950-1, M.3.1.4)   |                 | —       |
| H.3.2       | Tripping device and monitoring voltage .....:<br>(IEC 60950-1, M.3.2)                                      |                 | —       |
| H.3.2.1     | Conditions for use of a tripping device or a<br>monitoring voltage complied with<br>(IEC 60950-1, M.3.2.1) |                 | N/A     |
| H.3.2.2     | Tripping device<br>(IEC 60950-1, M.3.2.2)  |                 | N/A     |
| H.3.2.3     | Monitoring voltage (V) .....:<br>(IEC 60950-1, M.3.2.3)  |                 | —       |

|          |   |  |     |
|----------|---|--|-----|
| <b>J</b> | <b>INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION</b> |  | N/A |
|          | General requirements<br>(IEC 60065, Annex H) & (IEC 60950-1, Annex U) | Triple insulated winding wiring<br>used<br>as reinforced safeguard in the<br>isolating transformer that has been<br>evaluated to Annex J as follows:<br>Requirements of Annex U of IEC<br>60950-1/A2 are identical to Annex<br>J<br>of this standard (for wires providing<br>Reinforced insulation). See Table<br>4.1.2. | N/A |

|          |  |   |     |
|----------|--|---|-----|
| <b>K</b> | <b>SAFETY INTERLOCKS</b>   |   | N/A |
| K.1      | General requirements<br>(IEC 60065, 14.8) & (IEC 60950-1, 2.8.1, 2.8.2)              | No safety interlock provided within<br>the equipment. | N/A |
| K.2      | Components of safety interlock safeguard<br>mechanism .....:<br>(IEC 60950-1, 2.8.7) | (See Annex G)   | —   |
| K.3      | Inadvertent change of operating mode<br>(IEC 60950-1, 2.8.3)                         |   | N/A |

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|-------------|--|-----------------------------|---------|
| Clause      | Requirement + Test   | Result - Remark             | Verdict |
| K.4         | Interlock safeguard override<br>(IEC 60950-1, 2.8.6)   |                             | N/A     |
| K.5         | Fail-safe<br>(IEC 60950-1, 2.8.4)  |                             | N/A     |
|             | Compliance .....:  | (See appended table B.4)    | —       |
| K.6         | Mechanically operated safety interlocks<br>(IEC 60950-1, 2.8.5)  |                             | N/A     |
| K.6.1       | Endurance requirement<br>(IEC 60950-1, 2.8.5)  |                             | N/A     |
| K.6.2       | Compliance and Test method .....:<br>(IEC 60950-1, 2.8.5)  |                             | —       |
| K.7         | Interlock circuit isolation<br>(IEC 60950-1, 2.8.7)  |                             | N/A     |
| K.7.1       | Separation distance for contact gaps & interlock<br>circuit elements (type and circuit location) .....:<br>(IEC 60950-1, 2.8.7.1, 2.8.7.3) |                             | —       |
| K.7.2       | Overload test, Current (A) .....:<br>(IEC 60950-1, 2.8.7.2)  |                             | —       |
| K.7.3       | Endurance test<br>(IEC 60950-1, 2.8.7.3)   |                             | N/A     |
| K.7.4       | Electric strength test .....:<br>(IEC 60950-1, 2.8.7.4)  | (See appended table 5.4.11) | —       |

| L   | DISCONNECT DEVICES   |                                  | N/A |
|-----|--|----------------------------------|-----|
| L.1 | General requirements<br>(IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.1, 3.4.2)     |                                  | N/A |
| L.2 | Permanently connected equipment<br>(IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.3) | No such parts when coupler used. | N/A |
| L.3 | Parts that remain energized<br>(IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.4)     |                                  | N/A |
| L.4 | Single phase equipment<br>(IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.6)          |                                  | P   |
| L.5 | Three-phase equipment<br>(IEC 60065, 8.18) & (IEC 60950-1, 3.4.7)            |                                  | N/A |
| L.6 | Switches as disconnect devices<br>(IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.8)  |                                  | N/A |
| L.7 | Plugs as disconnect devices<br>(IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.9)     |                                  | N/A |

| IEC 62368-1 |   |                                 |         |
|-------------|---|---------------------------------|---------|
| Clause      | Requirement + Test                              | Result - Remark                 | Verdict |
| L.8         | Multiple power sources<br>(IEC 60950-1, 3.4.11) | Only one a.c. mains connection. | N/A     |

| M          | EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS                       |   | N/A |
|------------|--|---|-----|
| M.1        | General requirements<br>(IEC 60065, 5.5.2 c) & (IEC 60950-1, 1.7.13)               | No battery used.                          | N/A |
| M.2        | Safety of batteries and their cells<br>(IEC 60065, 14.11.1) & (IEC 60950-1, 4.3.8) |   | N/A |
| M.2.1      | Requirements<br>(IEC 60950-1, 4.3.8)   |   | N/A |
| M.2.2      | Compliance and test method (identify method) .. :<br>(IEC 60950-1, 4.3.8)          |   | —   |
| M.3        | Protection circuits<br>(IEC 60950-1, 4.3.8)  |   | N/A |
| M.3.1      | Requirements<br>(IEC 60950-1, 4.3.8)   |   | N/A |
| M.3.2      | Tests<br>(IEC 60950-1, 4.3.8)  |   | N/A |
|            | - Overcharging of a rechargeable battery   |   | N/A |
|            | - 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 ..... :<br>(IEC 60950-1, 4.3.8)   | (See appended Tables and Annex M and M.4) | —   |
| M.4        | Additional safeguards for equipment containing secondary lithium battery           |   | N/A |
| M.4.1      | General  |   | N/A |
| M.4.2      | Charging safeguards  |   | N/A |
| M.4.2.1    | Charging operating limits  |   | N/A |
| M.4.2.2a)  | Charging voltage, current and temperature ..... :<br>(IEC 60065, 14.11.3)          | (See Table M.4)                           | —   |
| M.4.2.2 b) | Single faults in charging circuitry ..... :<br>(IEC 60065, 14.11.3)                | (See Annex B.4)                           | —   |
| M.4.3      | Fire Enclosure   |   | N/A |
| M.4.4      | Endurance of equipment containing a secondary lithium battery                      |   | N/A |
| M.4.4.2    | Preparation  |   | N/A |

| IEC 62368-1 |   |                 |         |
|-------------|---|-----------------|---------|
| Clause      | Requirement + Test  | Result - Remark | Verdict |
| M.4.4.3     | Drop and charge/discharge function tests (IEC 60065, 14.11.5)   |                 | N/A     |
|             | Drop  |                 | N/A     |
|             | Charge  |                 | N/A     |
|             | Discharge   |                 | N/A     |
| M.4.4.4     | Charge-discharge cycle test   |                 | N/A     |
| M.4.4.5     | Result of charge-discharge cycle test   |                 | N/A     |
| 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  |                 | N/A     |
| M.6.1       | Short circuits  |                 | N/A     |
| M.6.1.1     | General requirements  |                 | N/A     |
| 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) .....  |                 | —       |
| M.6.2       | Leakage current (mA) .....  |                 | —       |
| 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) .....<br>(IEC 60065, 5.5.1) |                 | —       |



| IEC 62368-1 |                    |                 |         |
|-------------|--------------------|-----------------|---------|
| Clause      | Requirement + Test | Result - Remark | Verdict |

|          |  |                             |     |
|----------|--|-----------------------------|-----|
| <b>N</b> | <b>ELECTROCHEMICAL POTENTIALS</b>                                      |                             | N/A |
|          | Metal(s) used ..... :<br>(IEC 60065, Annex F) & (IEC 60950-1, Annex J) | Pollution degree considered | —   |

|          |  |             |     |
|----------|--|-------------|-----|
| <b>O</b> | <b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>  |             | N/A |
|          | Figures O.1 to O.20 of this Annex applied ..... :<br>(IEC 60065, Annex E) & (IEC 60950-1, Annex F) | Considered. | —   |

|          |  |                           |     |
|----------|--|---------------------------|-----|
| <b>P</b> | <b>SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS</b>  |                           | P   |
| P.1      | General requirements   | No openings of enclosure. | P   |
| P.2.2    | Safeguards against entry of foreign object<br>(IEC 60065, 9.1.3) & (IEC 60950-1, 4.6.1)  |                           | N/A |
|          | Location and Dimensions (mm) ..... :   |                           | —   |
| P.2.3    | Safeguard against the consequences of entry of foreign object  |                           | N/A |
| P.2.3.1  | Safeguards against the entry of a foreign object<br>(IEC 60950-1, 4.6.1, 4.6.4.3)  |                           | N/A |
|          | Openings in transportable equipment  |                           | N/A |
|          | Transportable equipment with metalized plastic parts ..... :   |                           | —   |
| P.2.3.2  | Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) ..... :<br>(IEC 60950-1, 4.6.4.2, 4.6.4.3) |                           | —   |
| P.3      | Safeguards against spillage of internal liquids  |                           | N/A |
| P.3.1    | General requirements   |                           | N/A |
| P.3.2    | Determination of spillage consequences   |                           | N/A |
| P.3.3    | Spillage safeguards  |                           | N/A |
| P.3.4    | Safeguards effectiveness   |                           | N/A |
| P.4      | Metallized coatings and adhesive securing parts  |                           | N/A |
| P.4.2 a) | Conditioning testing<br>(IEC 60950-1, 4.6.5)   |                           | N/A |
|          | Tc (°C) ..... :  |                           | —   |
|          | Tr (°C) ..... :  |                           | —   |
|          | Ta (°C) ..... :  |                           | —   |
| P.4.2 b) | Abrasion testing ..... :   | (See G.13.6.2)            | —   |

| IEC 62368-1 |                                   |                 |         |
|-------------|-----------------------------------|-----------------|---------|
| Clause      | Requirement + Test                | Result - Remark | Verdict |
| P.4.2 c)    | Mechanical strength testing ..... | (See Annex T)   | —       |

| Q        | CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING                                      |                              | N/A |
|----------|---|------------------------------|-----|
| Q.1      | Limited power sources<br>(IEC 60950-1, 2.5)   | See appended table Annex Q.1 | N/A |
| Q.1.1 a) | Inherently limited output<br>(IEC 60950-1, 2.5)   |                              | N/A |
| Q.1.1 b) | Impedance limited output<br>(IEC 60950-1, 2.5)  |                              | N/A |
|          | - Regulating network limited output under normal operating and simulated single fault condition |                              | N/A |
| Q.1.1 c) | Overcurrent protective device limited output<br>(IEC 60950-1, 2.5)                              |                              | N/A |
| Q.1.1 d) | IC current limiter complying with G.9<br>(IEC 60950-1, 2.5)                                     |                              | N/A |
| Q.1.2    | Compliance and test method<br>(IEC 60950-1, 2.5)  |                              | N/A |
| Q.2      | Test for external circuits – paired conductor cable<br>(IEC 60950-1, 6.3)                       |                              | N/A |
|          | Maximum output current (A) .....  |                              | —   |
|          | Current limiting method.....  |                              | —   |

| R   | LIMITED SHORT CIRCUIT TEST   |                        | N/A |
|-----|--|------------------------|-----|
| R.1 | General requirements   | No such consideration. | N/A |
| R.2 | Determination of the overcurrent protective device and circuit       |                        | N/A |
| R.3 | Test method Supply voltage (V) and short-circuit current (A)). ..... |                        | —   |

| S   | TESTS FOR RESISTANCE TO HEAT AND FIRE  |  | N/A |
|-----|--|--|-----|
| S.1 | Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W | Approved fire enclosure with V-0 used. | N/A |
|     | Samples, material .....  |  | —   |
|     | Wall thickness (mm) .....  |  | —   |
|     | Conditioning (°C) .....  |  | —   |
|     | Test flame according to IEC 60695-11-5 with conditions as set out  |  | N/A |

| IEC 62368-1 |  |                 |         |
|-------------|--|-----------------|---------|
| Clause      | Requirement + Test   | Result - Remark | Verdict |
|             | - 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 (IEC 60950-1, A.3)  |                 | 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) .....  |                 | —       |
|             | Conditioning (test condition), (°C) .....  |                 | —       |
|             | Test flame according to IEC 60695-11-20 with conditions as set out   |                 | N/A     |
|             | After every test specimen was not consumed completely  |                 | N/A     |
|             | After fifth flame application, flame extinguished within 1 min   |                 | N/A     |

| T   | MECHANICAL STRENGTH TESTS   | P   |
|-----|---|-----|
| T.1 | General requirements  | P   |
| T.2 | Steady force test, 10 N .....<br>(IEC 60065, 13.3.1) & (IEC 60950-1, 4.2.2) | N/A |
| T.3 | Steady force test, 30 N .....<br>(IEC 60065, 13.3.1) & (IEC 60950-1, 4.2.3) | N/A |
| T.4 | Steady force test, 100 N .....<br>(IEC 60065, 9.1.7)                        | N/A |

| IEC 62368-1 |  |                          |         |
|-------------|--|--------------------------|---------|
| Clause      | Requirement + Test   | Result - Remark          | Verdict |
| T.5         | Steady force test, 250 N .....:<br>(IEC 60065, 9.1.7) & (IEC 60950-1, 4.2.4) |                          | P       |
| T.6         | Enclosure impact test<br>(IEC 60065, 12.1.4) & (IEC 60950-1, 4.2.5)          |                          | N/A     |
|             | Fall test  | See above.               | N/A     |
|             | Swing test   | See above.               | N/A     |
| T.7         | Drop test .....:<br>(IEC 60065, 12.1.5) & (IEC 60950-1, 4.2.6)               |                          | P       |
| T.8         | Stress relief test .....:<br>(IEC 60065, 12.1.6) & (IEC 60950-1, 4.2.7)      | (See appended table T8)  | P       |
| T.9         | Impact Test (glass)<br>(IEC 60065, 19.6.1) & (IEC 60950-1, 4.2.5)            |                          | N/A     |
| T.9.1       | General requirements   |                          | N/A     |
| T.9.2       | Impact test and compliance   |                          | N/A     |
|             | Impact energy (J).....:  |                          | —       |
|             | Height (m) .....:  |                          | —       |
| T.10        | Glass fragmentation test .....:<br>(IEC 60065, 19.6.2)                       | (See sub-clause 4.4.4.9) | N/A     |
| T.11        | Test for telescoping or rod antennas<br>(IEC 60065, 12.6)                    |                          | N/A     |
|             | Torque value (Nm) .....:   |                          | —       |

|          |   |                                       |     |
|----------|---|---------------------------------------|-----|
| <b>U</b> | <b>MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION</b> |                                       | N/A |
| U.1      | General requirements<br>(IEC 60065, 18.1) & (IEC 60950-1, 4.2.8)                                      | No CRT provided within the equipment. | N/A |
| U.2      | Compliance and test method for non-intrinsically protected CRTs<br>(IEC 60065, 18.2)                  |                                       | N/A |
| U.3      | Protective Screen.....:   | (See Annex T)                         | —   |

|          |   |   |     |
|----------|---|---|-----|
| <b>V</b> | <b>DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)</b>                                       |   | P   |
| V.1      | Accessible parts of equipment<br>(IEC 60065, 9.1.1.3, 9.1.3, 9.1.4) & (IEC 60950-1, 1.7.2.5, 2.1.1.1, EE.5) | No access with test probes to any hazardous parts | P   |
| V.2      | Accessible part criterion   | See above.  | N/A |

|       |                                    |  |
|-------|------------------------------------|--|
| 4.1.2 | TABLE: List of critical components |  |
|-------|------------------------------------|--|

| Object/part No. | Manufacturer/<br>trademark | Type/model      | Technical data           | Standard<br>(Edition / year) | Mark(s) of<br>conformity <sup>1)</sup> |
|-----------------|----------------------------|-----------------|--------------------------|------------------------------|--|
| PCB             | Interchangeable            | Interchangeable | V-1 or better,<br>130°C. | UL796                        | UL                                     |

**Supplementary information:**

1)an asterisk indicates a mark which assures the agreed level of surveillance.

| 5.2   |                | TABLE: Classification of electrical energy sources |                      |                    |                    |          | N/A      |
|---|----------------|--|----------------------|--------------------|--------------------|----------|----------|
| 5.2.2.2 – Steady State Voltage and Current conditions   |                |  |                      |                    |                    |          |          |
| No.   | Supply Voltage | Location (e.g. circuit designation)                | Test conditions      | Parameters         |                    |          | ES Class |
|   |                |  |                      | U<br>(Vrms or Vpk) | I<br>(Apk or Arms) | Hz       |          |
| 1   | 3.0VDC         | Primary circuits supplied by a.c. mains supply     | Normal               | 1.5Vrms            | --                 | --       | ES1      |
|   |                |  | Abnormal             | --                 | --                 | --       |          |
|   |                |  | Single fault – SC/OC | --                 | --                 | --       |          |
| 5.2.2.3 - Capacitance Limits  |                |  |                      |                    |                    |          |          |
| No.   | Supply Voltage | Location (e.g. circuit designation)                | Test conditions      | Parameters         |                    | ES Class |          |
|   |                |  |                      | Capacitance, nF    | Upk (V)            |          |          |
| --  | --             | --   | Normal               | --                 | --                 | --       |          |
|   |                |  | Abnormal             | --                 | --                 | --       |          |
|   |                |  | Single fault – SC/OC | --                 | --                 | --       |          |
| 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 |
|   |                |  |                      | Off time (ms)      | Upk (V)            | Ipk (mA) |          |
| --  | --             | --   | Normal               | --                 | --                 | --       | --       |
|   |                |  | Abnormal             | --                 | --                 | --       |          |
|   |                |  | Single fault – SC/OC | --                 | --                 | --       |          |
| Test Conditions:<br>Normal –<br>Abnormal -<br>Supplementary information: SC=Short Circuit, OC=Short Circuit |                |  |                      |                    |                    |          |          |

|  |                                     |                     |                    |                     |                    |          |                               |                  |
|--|-------------------------------------|---------------------|--------------------|---------------------|--------------------|----------|-------------------------------|------------------|
| 5.4.1.4,<br>6.3.2, 9.0,<br>B.2.6           | TABLE: Temperature measurements     |                     |                    |                     |                    |          |                               | P                |
|  | Supply voltage (V) .....            | 3.0VDC              |                    | --                  |                    | —        |                               |                  |
|  | Ambient T <sub>min</sub> (°C) ..... | 45.0                |                    | --                  |                    | —        |                               |                  |
|  | Ambient T <sub>max</sub> (°C) ..... | 45.0                |                    | --                  |                    | —        |                               |                  |
|  | T <sub>ma</sub> (°C) .....          | 45.0                |                    | --                  |                    | —        |                               |                  |
| Maximum measured temperature T of part/at: |                                     | T (°C)              |                    |                     |                    |          | Allowed T <sub>max</sub> (°C) |                  |
| --   |                                     | Label down          | Label up           |                     | Label down         | Label up |                               | --               |
| --   |                                     | --                  | --                 |                     | --                 | --       |                               | --               |
| Temperature T of winding:                  |                                     | 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 |
| --   |                                     | --                  | --                 | --                  | --                 | --       | --                            | --               |

|                            |  |                  |     |
|----------------------------|--|------------------|-----|
| 5.4.1.10.2                 | TABLE: Vicat softening temperature of thermoplastics |                  | N/A |
| Penetration (mm)..... :    |  |                  | —   |
| Object/ Part No./Material  | Manufacturer/t<br>rademark                           | T softening (°C) |     |
| --                         | --   | --               |     |
| Supplementary information: |  |                  |     |

|  |   |                       |                          |     |
|--|---|-----------------------|--------------------------|-----|
| 5.4.1.10.3                             | TABLE: Ball pressure test of thermoplastics |                       |                          | N/A |
| Allowed impression diameter (mm) ..... |   |                       | ≤ 2 mm                   | —   |
| Object/Part No./Material               | Manufacturer/trademark                      | Test temperature (°C) | Impression diameter (mm) |     |
| --                                     | --  | --                    |                          |     |
| Supplementary information:             |   |                       |                          |     |



|  |   |        |              |                              |                  |                      |                               |         |
|--|---|--------|--------------|------------------------------|------------------|----------------------|-------------------------------|---------|
| 5.4.2.2,<br>5.4.2.4 and<br>5.4.3   | TABLE: Minimum Clearances/Creepage distance |        |              |                              |                  |                      |                               | N/A     |
| 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/supplementary insulation   |   |        |              |                              |                  |                      |                               |         |
| --   |   | --     | --           | --                           | --               | --                   | --                            | --      |
| Reinforced insulation  |   |        |              |                              |                  |                      |                               |         |
| --   |   | --     | --           | --                           | --               | --                   | --                            | --      |
| Supplementary information: BI: Basic insulation; SI: Supplementary insulation; RI: Reinforced insulation.<br>(#) Frequencies above and below 30 kHz<br>Note 2: BI: basic insulation; SI: supplementary insulation; DI: double insulation; RI: reinforced insulation.<br>*: According to 5.4.1.8.1 i), the working voltage to determine minimum creepage distances was measured after the ignition of the lamp. |   |        |              |                              |                  |                      |                               |         |

|   |  |                            |                  |                  |
|---|--|----------------------------|------------------|------------------|
| 5.4.2.3                                     | TABLE: Minimum Clearances distances using required withstand voltage |                            |                  | N/A              |
|   | Overvoltage Category (OV)..... :                                     |                            |                  | --               |
|   | Pollution Degree..... :  |                            |                  | --               |
| 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. |  | --                         | --               | --               |
| Supplementary information:                  |  |                            |                  |                  |

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

|  |   |                    |          |                      |             |     |
|--|---|--------------------|----------|----------------------|-------------|-----|
| 5.4.4.2,<br>5.4.4.5 c)<br>5.4.4.9        | TABLE: Distance through insulation measurements |                    |          |                      |             | N/A |
| Distance through<br>insulation di at/of: | Peak voltage<br>(V)                             | Frequency<br>(kHz) | Material | Required DTI<br>(mm) | DTI<br>(mm) |     |
| --                                       | --  | --                 | --       | --                   | --          |     |
| Supplementary information:               |   |                    |          |                      |             |     |

|                               |                                       |                           |                  |                       |
|-------------------------------|---------------------------------------|---------------------------|------------------|-----------------------|
| <b>5.4.9</b>                  | <b>TABLE: Electric strength tests</b> |                           |                  | <b>N/A</b>            |
| Test voltage applied between: |                                       | Voltage shape<br>(AC, DC) | Test voltage (V) | Breakdown<br>Yes / No |
| Routine Tests:                |                                       |                           |                  |                       |
| --                            |                                       | --                        | --               | --                    |
| Supplementary information:    |                                       |                           |                  |                       |

|  |  |                               |                              |                                       |                   |
|--|--|-------------------------------|------------------------------|---------------------------------------|-------------------|
| <b>5.5.2.2</b>   | <b>TABLE: Stored discharge on capacitors</b> |                               |                              |                                       | <b>P</b>          |
| Supply Voltage (V), Hz   | Test Location                                | Operating Condition<br>(N, S) | Switch position<br>On or off | Measured Voltage<br>(after 2 seconds) | ES Classification |
| --   | --   | --                            | --                           | --                                    | --                |
| Supplementary information:<br>X-capacitors installed for testing are:<br><input checked="" type="checkbox"/> bleeding resistor rating:<br><input type="checkbox"/> ICX:<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 |  |                               |                              |                                       |                   |

| <b>5.6.6.2</b>             | <b>TABLE: Resistance of protective conductors and terminations</b> |                |                  |                         | N/A |
|----------------------------|--|----------------|------------------|-------------------------|-----|
| Accessible part            | Test current (A)   | Duration (min) | Voltage drop (V) | Resistance ( $\Omega$ ) |     |
| --                         | --   | --             | --               | --                      |     |
| 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   | N/A                |     |
|   | 2*  | N/A                |     |
|   | 3   | N/A                |     |
|   | 4   | N/A                |     |
|   | 5   | N/A                |     |
|   | 6   | N/A                |     |
|   | 8   | N/A                |     |
| Supplementary Information:  |   |                    |     |
| Notes:  |   |                    |     |
| [1] Supply voltage is the anticipated maximum Touch Voltage   |   |                    |     |
| [2] Earthed neutral conductor [Voltage differences less than 1% or more]  |   |                    |     |
| [3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3  |   |                    |     |
| [4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.   |   |                    |     |
| [5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided. |   |                    |     |

| 6.2.2   | TABLE: Electrical power sources (PS) measurements for classification |             |                     |                                   |                   | P |
|---|--|-------------|---------------------|-----------------------------------|-------------------|---|
| Source  | Description  | Measurement | Max Power after 3 s | Max Power after 5 s <sup>*)</sup> | PS Classification |   |
| --  | --   | --          | --                  | --                                | --                |   |
| Supplementary Information:<br>(*) Measurement taken only when limits at 3 seconds exceed PS1 limits.<br>(&) Power measurement for worst-case fault.<br>(#) Power measurement for worst-case power source fault. |  |             |                     |                                   |                   |   |

| 6.2.3.1   | TABLE: Determination of Potential Ignition Sources (Arcing PIS) |                                     |                                 |                         | N/A |
|---|---|-------------------------------------|---------------------------------|-------------------------|-----|
| Location  | Open circuit voltage<br>After 3 s<br>(Vp)                       | Measured r.m.s<br>current<br>(Irms) | Calculated value<br>(Vp x Irms) | Arcing PIS?<br>Yes / No |     |
| See below   | --  | --                                  | --                              | --                      |     |
| Supplementary information:<br>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 (Vp) and normal operating condition rms current (Irms) 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 |   |
| See below              | --   | --   | --  | --   |                             |   |

Supplementary Information:

All power dissipating components in primary and secondary circuit 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   |   |
| 3.0VDC | 0.124             | 0.8         | --    | --          | --      | -          | Only charging with unlimited current source input voltage 5V |   |

Supplementary information:

| <b>B.3 &amp; B.4</b>   |                    | <b>TABLE: Abnormal operating and fault condition tests</b> |                |          |                        |          |            | N/A         |
|--|--------------------|--|----------------|----------|------------------------|----------|------------|-------------|
| 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 |
| --   | --                 | --   | --             | --       | --                     | --       | --         | --          |

| <b>G.5.3</b> | <b>TABLE: transformers</b> |                                    |                                   |                                    |                                   |   | <b>N/A</b>                              |
|--------------|----------------------------|------------------------------------|-----------------------------------|------------------------------------|-----------------------------------|---|---|
| Loc.         | Tested insulation          | Working voltage peak / V (5.4.1.8) | Working voltage rms / V (5.4.1.8) | Required electric strength (5.4.9) | Required clearance / mm (5.4.2.2) | Required creepage distance / mm (5.4.3) | Required distance thr. insul. (5.4.4.6) |
| --           | --                         | --                                 | --                                | --                                 | --                                | --                                      | --                                      |

| Annex Q.1   | TABLE: Circuits intended for interconnection with building wiring (LPS) |                     |                     |       |        | N/A   |
|---|---|---------------------|---------------------|-------|--------|-------|
| Note: Measured UOC (V) with all load circuits disconnected: |   |                     |                     |       |        |       |
| Output<br>Circuit   | Components  | U <sub>oc</sub> (V) | I <sub>sc</sub> (A) |       | S (VA) |       |
|   |   |                     | Meas.               | Limit | Meas.  | Limit |
| --  | --  | --                  | --                  | --    | --     | --    |
| Supplementary Information:                                  |   |                     |                     |       |        |       |



| T.2, T.3,<br>T.4, T.5      | TABLE: Steady force test |          |                   |              |                        | P |
|----------------------------|--------------------------|----------|-------------------|--------------|------------------------|---|
|                            | Part/Location            | Material | Thickness<br>(mm) | Force<br>(N) | Test Duration<br>(sec) |   |
|                            | Top of enclosure         | --       | --                | 100N         | 5                      |   |
|                            | Bottom of enclosure      | --       | --                | 100N         | 5                      |   |
|                            | Side of enclosure        | --       | --                | 100N         | 5                      |   |
| Supplementary information: |                          |          |                   |              |                        |   |

| T.6, T.9                   | TABLE: Impact tests |                |                        |             | P |
|----------------------------|---------------------|----------------|------------------------|-------------|---|
| Part/Location              | Material            | Thickness (mm) | Vertical distance (mm) | Observation |   |
| --                         | --                  | --             | --                     | --          |   |
| Supplementary information: |                     |                |                        |             |   |

| T.7                        | TABLE: Drop tests |                |                  |                       | N/A |
|----------------------------|-------------------|----------------|------------------|-----------------------|-----|
| Part/Location              | Material          | Thickness (mm) | Drop Height (mm) | Observation           |     |
| Top                        | Plastic           | --             | 1000             | No damage, no hazard. |     |
| Side                       | Plastic           | --             | 1000             | No damage, no hazard. |     |
| Bottom                     | Plastic           | --             | 1000             | No damage, no hazard. |     |
| Supplementary information: |                   |                |                  |                       |     |

| T.8                        | TABLE: Stress relief test |                |                       |              |                        | P |
|----------------------------|---------------------------|----------------|-----------------------|--------------|------------------------|---|
| Part/Location              | Material                  | Thickness (mm) | Oven Temperature (°C) | Duration (h) | Observation            |   |
| Plastic enclosure          | Plastics                  | --             | 70                    | 7            | No damaged, no hazard. |   |
| Supplementary information: |                           |                |                       |              |                        |   |

## Photo-documentation

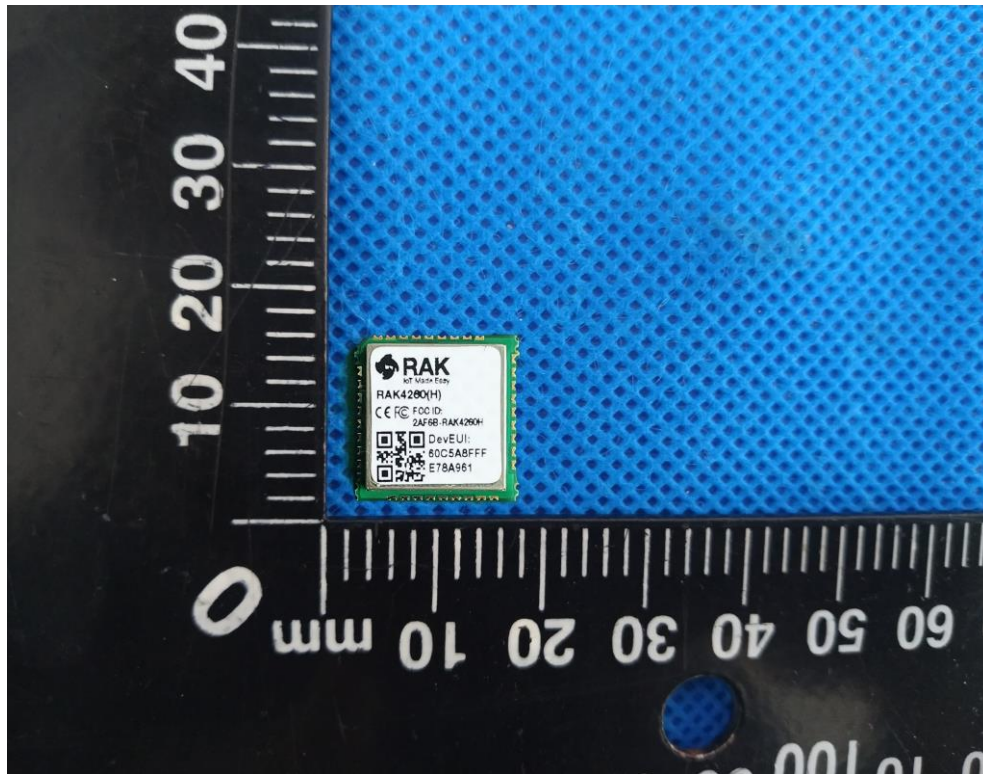


Fig.1

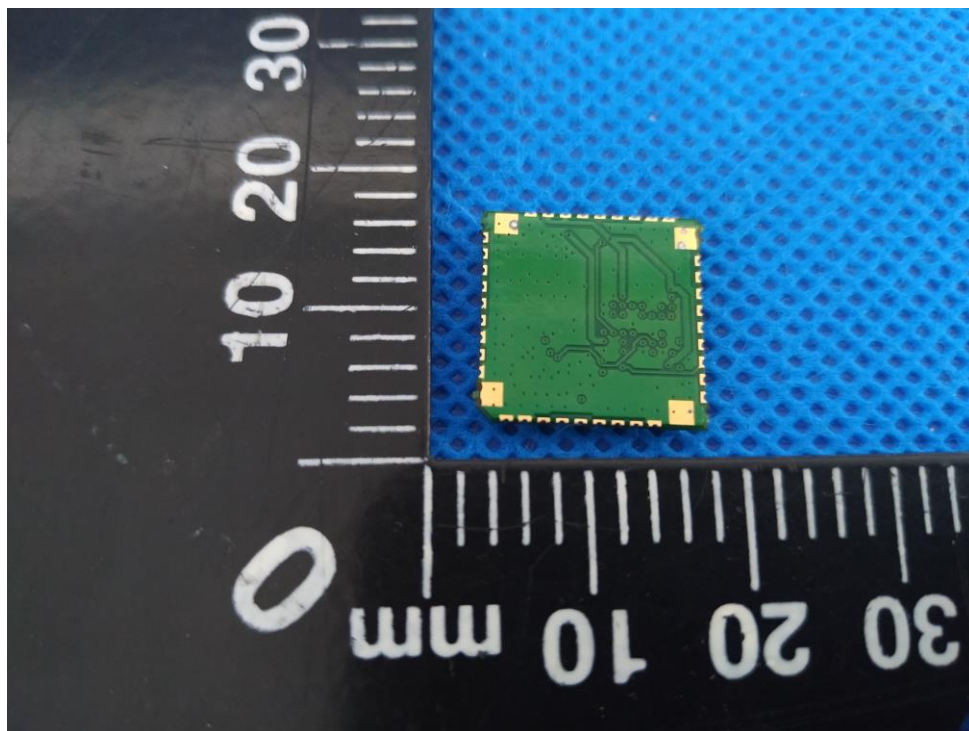


Fig.2

\*\*\*\*\* END OF REPORT \*\*\*\*\*