

Test Report issued under the responsibility of:

GTS

| | |
|--|--|
| TEST REPORT IEC 62368-1 Audio/video, information and communication technology equipment Part 1: Safety requirements | |
| Report Number | GTS202003000170S01 |
| Date of issue..... | 2020-03-27 |
| Total number of pages | 52 pages |
| Applicant's name..... | |
| Address | |
| Test specification: | |
| Standard | IEC 62368-1:2014 EN 62368-1:2014/A11:2017 |
| Test procedure | LVD |
| Non-standard test method..... | N/A |
| Test Report Form No..... IEC62368_1B | |
| Test Report Form(s) Originator UL(US) | |
| Master TRF..... 2014-03 | |
| | |
| Test Item description | 5W wireless charging cork mousepad and stand |
| Trade Mark | -- |
| Manufacturer | Same as applicant |
| Model/Type reference..... | P308.089 |
| Rating | Input: 5V $\overline{=}$ 2A |

*Steven Yan*Steven yan
Project EngineerRobinson Luo
Technical Director
Safety Laboratory

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

- European group differences and national differences of EN 62368-1: 2014/A1:2017
- Photos of the product

Summary of testing:

--

Tests performed (name of test and test clause):

EN 62368-1:2014/A11:2017

The submitted samples were found to comply with the requirements of above specification.

Testing location:

Global United Technology Services Co., Ltd.

No.123-128, Tower A, Jinyuan Business Building,
No. 2, Laodong Industrial Zone, Xixiang Road,
Baoan District, Shenzhen, Guangdong, China

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

5W wireless charging cork mousepad and stand

Model No: P308.089

Input: 5V ===2A



S/N: XXXXXX

Importer: XXXXXXXX Address: XXXXXXXX

| TEST ITEM PARTICULARS: | |
|--|---|
| Classification of use by | <input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input type="checkbox"/> Children likely to be present |
| Supply Connection..... | <input type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input checked="" type="checkbox"/> External Circuit - not Mains connected - <input checked="" type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3 |
| Supply % Tolerance | <input type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> +____%/ -____% <input checked="" type="checkbox"/> None |
| Supply Connection – Type | <input type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input checked="" type="checkbox"/> other: _not Mains connected _____ |
| Considered current rating of protective device as part of building or equipment installation | N/A; 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 <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted |
| Over voltage category (OVC) | <input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: _____ |
| Class of equipment | <input type="checkbox"/> Class I <input 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 |
| IP protection class | <input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP____ |
| Power Systems | <input checked="" type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - ____ V _{L-L} |
| Altitude during operation (m) | <input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m |
| Altitude of test laboratory (m) | <input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m |
| Mass of equipment (kg) | <input checked="" type="checkbox"/> <7kg |
| | |
| POSSIBLE TEST CASE VERDICTS: | |
| - test case does not apply to the test object..... | N/A |
| - test object does meet the requirement | P (Pass) |
| - test object does not meet the requirement | F (Fail) |

| | |
|---|--------------------------|
| TESTING: | |
| Date of receipt of test item..... : | 2020-03-24 |
| Date (s) of performance of tests..... : | 2020-03-24 to 2020-03-27 |
| | |
| GENERAL REMARKS: | |
| <p>The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report a point is used as the decimal separator.</p> <p>This document is issued by the company under its General Conditions of Service accessible at www.gtstest.com Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.</p> <p>Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.</p> <p>Unless otherwise stated: (a) the results shown in this document refer only to the sample(s) tested and (b) such sample(s) are retained for 1 month. This document cannot be reproduced except in full, without prior approval of the company.</p> | |
| GENERAL PRODUCT INFORMATION: | |
| <p>Product Description – 5W wireless charging cork mousepad and stand , is powered by the external power supply.</p> <p>Instructions and equipment marking related to safety is applied in the language that is acceptable in the country in which the equipment is to be sold.</p> | |

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:

(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.)

(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.

Electrically-caused injury (Clause 5):

(Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification)

Example: +5 V dc input

ES1

Source of electrical energy**Corresponding classification (ES)**

All circuits inside the equipment enclosure

ES1

Electrically-caused fire (Clause 6):

(Note: List sub-assembly or circuit designation and corresponding energy source classification)

Example: Battery pack (maximum 85 watts):

PS2

Source of power or PIS**Corresponding classification (PS)**

All circuits inside the equipment enclosure

PS2

Injury caused by hazardous substances (Clause 7)

(Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.)

Example: Liquid in filled component

Glycol

Source of hazardous substances**Corresponding chemical**

N/A

N/A

Mechanically-caused injury (Clause 8)

(Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.)

Example: Wall mount unit

MS2

Source of kinetic/mechanical energy**Corresponding classification (MS)**

Sharp edges and corners

MS1

Equipment mass

MS1

Thermal burn injury (Clause 9)

(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.)

Example: Hand-held scanner – thermoplastic enclosure

TS1

Source of thermal energy**Corresponding classification (TS)**

Accessible surfaces

TS1

Radiation (Clause 10)

(Note: List the types of radiation present in the product and the corresponding energy source classification.)

Example: DVD – Class 1 Laser Product

RS1

Type of radiation**Corresponding classification (RS)**

N/A

N/A

ENERGY SOURCE DIAGRAM

Indicate which energy sources are included in the energy source diagram. Insert diagram below

☒ **ES**☒ **PS**☒ **MS**☒ **TS**☐ **RS**

| OVERVIEW OF EMPLOYED SAFEGUARDS | | | | |
|--|--|--|---|---------------------------|
| Clause | Possible Hazard | | | |
| 5.1 | Electrically-caused injury | | | |
| Body Part (e.g. Ordinary) | Energy Source (ES3: Primary Filter circuit) | Safeguards | | |
| | | Basic | Supplementary | Reinforced (Enclosure) |
| Ordinary | ES1: All circuits inside the equipment enclosure | N/A | N/A | N/A |
| 6.1 | Electrically-caused fire | | | |
| Material part (e.g. mouse enclosure) | Energy Source (PS2: 100 Watt circuit) | Safeguards | | |
| | | Basic | Supplementary | Reinforced |
| Combustible materials | PS2 | No parts exceeding 90% of its spontaneous Ignition temperature | 1. PCBs (Main board and battery pack unit) are complied with V-0 material. 2. Provided fire enclosure: V-0 material. | N/A |
| 7.1 | Injury caused by hazardous substances | | | |
| Body Part (e.g., skilled) | Energy Source (hazardous material) | Safeguards | | |
| | | Basic | Supplementary | Reinforced |
| N/A | N/A | N/A | N/A | N/A |
| 8.1 | Mechanically-caused injury | | | |
| Body Part (e.g. Ordinary) | Energy Source (MS3:High Pressure Lamp) | Safeguards | | |
| | | Basic | Supplementary | Reinforced (Enclosure) |
| Ordinary | MS1: Sharp edges and corners | N/A | N/A | N/A |
| Ordinary | MS1: Equipment mass | N/A | N/A | N/A |
| 9.1 | Thermal Burn | | | |
| Body Part (e.g., Ordinary) | Energy Source (TS2) | Safeguards | | |
| | | Basic | Supplementary | Reinforced |
| Ordinary | TS1: Accessible surfaces | N/A | N/A | N/A |
| 10.1 | Radiation | | | |
| Body Part (e.g., Ordinary) | Energy Source (Output from audio port) | Safeguards | | |
| | | Basic | Supplementary | Reinforced |
| N/A | N/A | N/A | N/A | N/A |
| Supplementary Information: | | | | |
| (1) See attached energy source diagram for additional details. | | | | |
| (2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault | | | | |

IEC 62368-1

| Clause | Requirement + Test | Result - Remark | Verdict |
|----------|--|---|----------|
| 4 | GENERAL REQUIREMENTS | | P |
| 4.1.1 | Acceptance of materials, components and subassemblies | | P |
| 4.1.2 | Use of components | | P |
| 4.1.3 | Equipment design and construction | | P |
| 4.1.15 | Markings and instructions.....: | (See Annex F) | P |
| 4.4.4 | Safeguard robustness | | P |
| 4.4.4.2 | Steady force tests.....: | (See Annex T.4) | P |
| 4.4.4.3 | Drop tests | (See Annex T.7) | P |
| 4.4.4.4 | Impact tests | Transportable equipment | N/A |
| 4.4.4.5 | Internal accessible safeguard enclosure and barrier tests.....: | No such enclosure and barrier | N/A |
| 4.4.4.6 | Glass Impact tests | No glass used | N/A |
| 4.4.4.74 | Thermoplastic material tests | (See Annex T.8) | P |
| 4.4.4.8 | Air comprising a safeguard.....: | No such safeguard used | N/A |
| 4.4.4.9 | Accessibility and safeguard effectiveness | | P |
| 4.5 | Explosion | | P |
| 4.6 | Fixing of conductors | supplied apparatus, no safeguard can be defeated after displacement of internal wires | N/A |
| 4.6.1 | Fix conductors not to defeat a safeguard | | N/A |
| 4.6.2 | 10 N force test applied to | | N/A |
| 4.7 | Equipment for direct insertion into mains socket - outlets | Not such equipment | N/A |
| 4.7.2 | Mains plug part complies with the relevant standard.....: | | N/A |
| 4.7.3 | Torque (Nm) | | N/A |
| 4.8 | Products containing coin/button cell batteries | | N/A |
| 4.8.2 | Instructional safeguard | | N/A |
| 4.8.3 | Battery Compartment Construction | | N/A |
| | Means to reduce the possibility of children removing the battery | | — |
| 4.8.4 | Battery Compartment Mechanical Tests | | N/A |
| 4.8.5 | Battery Accessibility | | N/A |
| 4.9 | Likelihood of fire or shock due to entry of conductive object.....: | | P |
| 5 | ELECTRICALLY-CAUSED INJURY | | P |
| 5.2.1 | Electrical energy source classifications.....: | supplied apparatus, only ES1 existed | P |

IEC 62368-1

| Clause | Requirement + Test | Result - Remark | Verdict |
|------------|---|---|---------|
| 5.2.2 | ES1, ES2 and ES3 limits | supplied apparatus, and no boost circuit inside | P |
| 5.2.2.2 | Steady-state voltage and current..... : | | N/A |
| 5.2.2.3 | Capacitance limits : | | N/A |
| 5.2.2.4 | Single pulse limits : | | N/A |
| 5.2.2.5 | Limits for repetitive pulses : | | N/A |
| 5.2.2.6 | Ringing signals : | | N/A |
| 5.2.2.7 | Audio signals : | No such parts | N/A |
| 5.3 | Protection against electrical energy sources | | N/A |
| 5.3.1 | General Requirements for accessible parts to ordinary, instructed and skilled persons | | N/A |
| 5.3.2.1 | Accessibility to electrical energy sources and safeguards | | N/A |
| 5.3.2.2 | Contact requirements | | 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 | | N/A |
| 5.4 | Insulation materials and requirements | | N/A |
| 5.4.1.2 | Properties of insulating material | | N/A |
| 5.4.1.3 | Humidity conditioning : | | N/A |
| 5.4.1.4 | Maximum operating temperature for insulating materials : | | N/A |
| 5.4.1.5 | Pollution degree : | | — |
| 5.4.1.5.2 | Test for pollution degree 1 environment and for an insulating compound | | N/A |
| 5.4.1.5.3 | Thermal cycling | | N/A |
| 5.4.1.6 | Insulation in transformers with varying dimensions | | N/A |
| 5.4.1.7 | Insulation in circuits generating starting pulses | | N/A |
| 5.4.1.8 | Determination of working voltage | | N/A |
| 5.4.1.9 | Insulating surfaces | | N/A |
| 5.4.1.10 | Thermoplastic parts on which conductive metallic parts are directly mounted | | N/A |
| 5.4.1.10.2 | Vicat softening temperature..... : | | N/A |
| 5.4.1.10.3 | Ball pressure : | | N/A |
| 5.4.2 | Clearances | | N/A |
| 5.4.2.2 | Determining clearance using peak working voltage | | N/A |
| 5.4.2.3 | Determining clearance using required withstand voltage : | | N/A |

IEC 62368-1

| Clause | Requirement + Test | Result - Remark | Verdict |
|-----------|---|-----------------|---------|
| | a) a.c. mains transient voltage | | — |
| | b) d.c. mains transient voltage | | — |
| | c) external circuit transient voltage | | — |
| | d) transient voltage determined by measurement | | — |
| 5.4.2.4 | Determining the adequacy of a clearance using an electric strength test | | N/A |
| 5.4.2.5 | Multiplication factors for clearances and test voltages | | N/A |
| 5.4.3 | Creepage distances | | N/A |
| 5.4.3.1 | General | | N/A |
| 5.4.3.3 | Material Group | | — |
| 5.4.4 | Solid insulation | | N/A |
| 5.4.4.2 | Minimum distance through insulation | | N/A |
| 5.4.4.3 | Insulation compound forming solid insulation | | N/A |
| 5.4.4.4 | Solid insulation in semiconductor devices | | N/A |
| 5.4.4.5 | Cemented joints | | N/A |
| 5.4.4.6 | Thin sheet material | | N/A |
| 5.4.4.6.1 | General requirements | | N/A |
| 5.4.4.6.2 | Separable thin sheet material | | N/A |
| | Number of layers (pcs) | | N/A |
| 5.4.4.6.3 | Non-separable thin sheet material | | N/A |
| 5.4.4.6.4 | Standard test procedure for non-separable thin sheet material | | N/A |
| 5.4.4.6.5 | Mandrel test | | N/A |
| 5.4.4.7 | Solid insulation in wound components | | N/A |
| 5.4.4.9 | Solid insulation at frequencies >30 kHz | | N/A |
| 5.4.5 | Antenna terminal insulation | | N/A |
| 5.4.5.1 | General | | N/A |
| 5.4.5.2 | Voltage surge test | | N/A |
| | Insulation resistance (MΩ)..... | | — |
| 5.4.6 | Insulation of internal wire as part of supplementary safeguard | | N/A |
| 5.4.7 | Tests for semiconductor components and for cemented joints | | N/A |
| 5.4.8 | Humidity conditioning | | N/A |
| | Relative humidity (%)..... | | — |
| | Temperature (°C) | | — |
| | Duration (h) | | — |

| IEC 62368-1 | | | |
|-------------|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 5.4.9 | Electric strength test | | N/A |
| 5.4.9.1 | Test procedure for a solid insulation type test | | N/A |
| 5.4.9.2 | Test procedure for routine tests | | N/A |
| 5.4.10 | Protection against transient voltages between external circuit | | N/A |
| 5.4.10.1 | Parts and circuits separated from external circuits | | N/A |
| 5.4.10.2 | Test methods | | N/A |
| 5.4.10.2.1 | General | | N/A |
| 5.4.10.2.2 | Impulse test | | N/A |
| 5.4.10.2.3 | Steady-state test..... | | N/A |
| 5.4.11 | Insulation between external circuits and earthed circuitry | | N/A |
| 5.4.11.1 | Exceptions to separation between external circuits and earth | | N/A |
| 5.4.11.2 | Requirements | | N/A |
| | Rated operating voltage U_{op} (V)..... | | — |
| | Nominal voltage U_{peak} (V)..... | | — |
| | Max increase due to variation U_{sp} | | — |
| | Max increase due to ageing ΔU_{sa} | | — |
| | $U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ | | — |
| 5.5 | Components as safeguards | | |
| 5.5.1 | General | | N/A |
| 5.5.2 | Capacitors and RC units | | N/A |
| 5.5.2.1 | General requirement | | N/A |
| 5.5.2.2 | Safeguards against capacitor discharge after disconnection of a connector..... | | N/A |
| 5.5.3 | Transformers | | N/A |
| 5.5.4 | Optocouplers | | N/A |
| 5.5.5 | Relays | | N/A |
| 5.5.6 | Resistors | | N/A |
| 5.5.7 | SPD's | | N/A |
| 5.5.7.1 | Use of an SPD connected to reliable earthing | | N/A |
| 5.5.7.2 | Use of an SPD between mains and protective earth | | N/A |
| 5.5.8 | Insulation between the mains and external circuit consisting of a coaxial cable..... | | N/A |
| 5.6 | Protective conductor | | |
| 5.6.2 | Requirement for protective conductors | | N/A |
| 5.6.2.1 | General requirements | | N/A |

IEC 62368-1

| Clause | Requirement + Test | Result - Remark | Verdict |
|---------|--|-----------------|---------|
| 5.6.2.2 | Colour of insulation | | N/A |
| 5.6.3 | Requirement for protective earthing conductors | | N/A |
| | Protective earthing conductor size (mm ²): | | — |
| 5.6.4 | Requirement for protective bonding conductors | | N/A |
| 5.6.4.1 | Protective bonding conductors | | N/A |
| | Protective bonding conductor size (mm ²).: | | — |
| | Protective current rating (A) : | | — |
| 5.6.4.3 | Current limiting and overcurrent protective devices | | N/A |
| 5.6.5 | Terminals for protective conductors | | N/A |
| 5.6.5.1 | Requirement | | N/A |
| | Conductor size (mm ²), nominal thread diameter (mm).: | | N/A |
| 5.6.5.2 | Corrosion | | N/A |
| 5.6.6 | Resistance of the protective system | | N/A |
| 5.6.6.1 | Requirements | | N/A |
| 5.6.6.2 | Test Method Resistance (Ω).....: | | N/A |
| 5.6.7 | Reliable earthing | | N/A |
| 5.7 | Prospective touch voltage, touch current and protective conductor current | | N/A |
| 5.7.2 | Measuring devices and networks | | N/A |
| 5.7.2.1 | Measurement of touch current: | | N/A |
| 5.7.2.2 | Measurement of prospective touch voltage | | N/A |
| 5.7.3 | Equipment set-up, supply connections and earth connections | | N/A |
| | System of interconnected equipment (separate connections/single connection): | | — |
| | Multiple connections to mains (one connection at a time/simultaneous connections): | | — |
| 5.7.4 | Earthed conductive accessible parts.....: | | N/A |
| 5.7.5 | Protective conductor current | | N/A |
| | Supply Voltage (V).....: | | — |
| | Measured current (mA).....: | | — |
| | Instructional Safeguard.....: | | N/A |
| 5.7.6 | Prospective touch voltage and touch current due to external circuits | | N/A |
| 5.7.6.1 | Touch current from coaxial cables | | N/A |
| 5.7.6.2 | Prospective touch voltage and touch current from external circuits | | N/A |
| 5.7.7 | Summation of touch currents from external circuits | | N/A |

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

| | | | |
|--|--|--|-----|
| | a) Equipment with earthed external circuits Measured current (mA).....: | | N/A |
| | b) Equipment whose external circuits are not referenced to earth. Measured current (mA) | | N/A |

| | | | |
|-----------|--|--|------------|
| 6 | ELECTRICALLY- CAUSED FIRE | | P |
| 6.2 | Classification of power sources (PS) and potential ignition sources (PIS) | | P |
| 6.2.2 | Power source circuit classifications | | P |
| 6.2.2.1 | General | | P |
| 6.2.2.2 | Power measurement for worst-case load fault ... : | (See appended table 6.2.2) | P |
| 6.2.2.3 | Power measurement for worst-case power source fault | (See appended table 6.2.2) | P |
| 6.2.2.4 | PS1 | (See appended table 6.2.2) | P |
| 6.2.2.5 | PS2 | (See appended table 6.2.2) | N/A |
| 6.2.2.6 | PS3 | | N/A |
| 6.2.3 | Classification of potential ignition sources | | P |
| 6.2.3.1 | Arcing PIS | No arcing PIS exists | N/A |
| 6.2.3.2 | Resistive PIS | No identification of resistive PIS required due to providing fire enclosure and it complied with requirements of sub-clause 6.4.8 | P |
| 6.3 | Safeguards against fire under normal operating and abnormal operating conditions | | P |
| 6.3.1 (a) | No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials | (See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6) | P |
| 6.3.1 (b) | Combustible materials outside fire enclosure | V-0 enclosure and PCB used | P |
| 6.4 | Safeguards against fire under single fault conditions | | P |
| 6.4.1 | Safeguard Method | Control of fire spread | P |
| 6.4.2 | Reduction of the likelihood of ignition under single fault conditions in PS1 circuits | V-0 enclosure and PCB used | N/A |
| 6.4.3 | Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits | | N/A |
| 6.4.3.1 | General | | N/A |
| 6.4.3.2 | Supplementary Safeguards | | N/A |
| | Special conditions if conductors on printed boards are opened or peeled | | N/A |
| 6.4.3.3 | Single Fault Conditions..... : | | N/A |
| | Special conditions for temperature limited by fuse | | N/A |
| 6.4.4 | Control of fire spread in PS1 circuits | | N/A |
| 6.4.5 | Control of fire spread in PS2 circuits | | P |
| 6.4.5.2 | Supplementary safeguards | (See appended tables 4.1.2) | P |

| IEC 62368-1 | | | |
|-------------|--|---|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 6.4.6 | Control of fire spread in PS3 circuit | No PS3 exist | N/A |
| 6.4.7 | Separation of combustible materials from a PIS | Fire enclosure used | N/A |
| 6.4.7.1 | General..... : | | N/A |
| 6.4.7.2 | Separation by distance | | N/A |
| 6.4.7.3 | Separation by a fire barrier | | N/A |
| 6.4.8 | Fire enclosures and fire barriers | The fire enclosure is the overall enclosure | P |
| 6.4.8.1 | Fire enclosure and fire barrier material properties | V-0 | P |
| 6.4.8.2.1 | Requirements for a fire barrier | | N/A |
| 6.4.8.2.2 | Requirements for a fire enclosure | | P |
| 6.4.8.3 | Constructional requirements for a fire enclosure and a fire barrier | | P |
| 6.4.8.3.1 | Fire enclosure and fire barrier openings | | N/A |
| 6.4.8.3.2 | Fire barrier dimensions | | N/A |
| 6.4.8.3.3 | Top Openings in Fire Enclosure: dimensions (mm) | | N/A |
| | Needle Flame test | | N/A |
| 6.4.8.3.4 | Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) | No openings | N/A |
| | Flammability tests for the bottom of a fire enclosure | | N/A |
| 6.4.8.3.5 | Integrity of the fire enclosure, condition met: a), b) or c) | | N/A |
| 6.4.8.4 | Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating..... | | N/A |
| 6.5 | Internal and external wiring | | N/A |
| 6.5.1 | Requirements | | N/A |
| 6.5.2 | Cross-sectional area (mm ²) | | — |
| 6.5.3 | Requirements for interconnection to building wiring | No such wiring | N/A |
| 6.6 | Safeguards against fire due to connection to additional equipment | The external DC source is assumed to be PS1 | N/A |
| | External port limited to PS2 or complies with Clause Q.1 | | N/A |

| | | | |
|----------|---|--------------------|-----|
| 7 | INJURY CAUSED BY HAZARDOUS SUBSTANCES | | N/A |
| 7.2 | Reduction of exposure to hazardous substances | | N/A |
| 7.3 | Ozone exposure | No ozone produced. | N/A |
| 7.4 | Use of personal safeguards (PPE) | | N/A |
| | Personal safeguards and instructions | | — |

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

| | | | |
|-----|--|--|-----|
| 7.5 | Use of instructional safeguards and instructions | | N/A |
| | Instructional safeguard (ISO 7010) | | — |
| 7.6 | Batteries | | N/A |

| | | | |
|-----------|---|---|----------|
| 8 | MECHANICALLY-CAUSED INJURY | | P |
| 8.1 | General | Enclosure is smooth and no mechanical energy sources | P |
| 8.2 | Mechanical energy source classifications | MS1 | P |
| 8.3 | Safeguards against mechanical energy sources | No additional safeguards is needed to against mechanical energy sources | N/A |
| 8.4 | Safeguards against parts with sharp edges and corners | No sharp edges and corners. | P |
| 8.4.1 | Safeguards | | N/A |
| 8.5 | Safeguards against moving parts | No moving parts within EUT | N/A |
| 8.5.1 | MS2 or MS3 part required to be accessible for the function of the equipment | | N/A |
| 8.5.2 | Instructional Safeguard..... : | | — |
| 8.5.4 | Special categories of equipment comprising moving parts | | N/A |
| 8.5.4.1 | Large data storage equipment | | N/A |
| 8.5.4.2 | Equipment having electromechanical device for destruction of media | | N/A |
| 8.5.4.2.1 | Safeguards and Safety Interlocks | | N/A |
| 8.5.4.2.2 | Instructional safeguards against moving parts | | N/A |
| | Instructional Safeguard..... : | | — |
| 8.5.4.2.3 | Disconnection from the supply | | N/A |
| 8.5.4.2.4 | Probe type and force (N) | | N/A |
| 8.5.5 | High Pressure Lamps | | N/A |
| 8.5.5.1 | Energy Source Classification | | N/A |
| 8.5.5.2 | High Pressure Lamp Explosion Test..... : | | N/A |
| 8.6 | Stability | No stability requirements for MS1 | N/A |
| 8.6.1 | Product classification | | N/A |
| | Instructional Safeguard..... : | | — |
| 8.6.2 | Static stability | | N/A |
| 8.6.2.2 | Static stability test | | N/A |
| | Applied Force | | — |
| 8.6.2.3 | Downward Force Test | | N/A |
| 8.6.3 | Relocation stability test | | N/A |

IEC 62368-1

| 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)..... | | N/A |
| | Position of feet or movable parts | | — |
| 8.7 | Equipment mounted to wall or ceiling | | N/A |
| 8.7.1 | Mounting Means (Length of screws (mm) and mounting surface) | | N/A |
| 8.7.2 | Direction and applied force | | N/A |
| 8.8 | Handles strength | No handle | N/A |
| 8.8.1 | Classification | | N/A |
| 8.8.2 | Applied Force | | N/A |
| 8.9 | Wheels or casters attachment requirements | No wheels within EUT | N/A |
| 8.9.1 | Classification | | N/A |
| 8.9.2 | Applied force | | — |
| 8.10 | Carts, stands and similar carriers | Not such devices | 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)..... | | N/A |
| 8.11 | Mounting means for rack mounted equipment | Not such apparatus | N/A |
| 8.11.1 | General | | N/A |
| 8.11.2 | Product Classification | | N/A |
| 8.11.3 | Mechanical strength test, variable <i>N</i> | | N/A |
| 8.11.4 | Mechanical strength test 250N, including end stops | | N/A |
| 8.12 | Telescoping or rod antennas | No antennas | N/A |
| | Button/Ball diameter (mm) | | — |

| | | | |
|----------|--|--|------------|
| 9 | THERMAL BURN INJURY | | P |
| 9.2 | Thermal energy source classifications | All accessible surfaces are classified as TS1. | P |
| 9.3 | Safeguard against thermal energy sources | No safeguards are required between TS1 and ordinary person | N/A |
| 9.4 | Requirements for safeguards | | N/A |

IEC 62368-1

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

| | | | |
|-------|-------------------------------|-------------------------|-----|
| 9.4.1 | Equipment safeguard | Not required due to TS1 | N/A |
| 9.4.2 | Instructional safeguard | | N/A |

| | | | |
|-----------|--|---------------------------------|-----|
| 10 | RADIATION | | N/A |
| 10.2 | Radiation energy source classification | No such radiation energy source | N/A |
| 10.2.1 | General classification | | N/A |
| 10.3 | Protection against laser radiation | | N/A |
| | Laser radiation that exists equipment: | | — |
| | Normal, abnormal, single-fault | | N/A |
| | Instructional safeguard | | — |
| | Tool..... | | — |
| 10.4 | Protection against visible, infrared, and UV radiation | | N/A |
| 10.4.1 | General | | N/A |
| 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 . : | | N/A |
| 10.4.1.d) | Normal, abnormal, single-fault conditions | | N/A |
| 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 | | N/A |
| 10.4.2 | Instructional safeguard | | N/A |
| 10.5 | Protection against x-radiation | | N/A |
| 10.5.1 | X- radiation energy source that exists equipment : | | N/A |
| | Normal, abnormal, single fault conditions | | N/A |
| | Equipment safeguards..... | | N/A |
| | Instructional safeguard for skilled person | | N/A |
| 10.5.3 | Most unfavourable supply voltage to give maximum radiation | | — |
| | Abnormal and single-fault condition | | N/A |
| | Maximum radiation (pA/kg)..... | | N/A |
| 10.6 | Protection against acoustic energy sources | | N/A |
| 10.6.1 | General | | N/A |

IEC 62368-1

| Clause | Requirement + Test | Result - Remark | Verdict |
|----------|---|-----------------|---------|
| 10.6.2 | Classification | | N/A |
| | Acoustic output, dB(A)..... : | | N/A |
| | Output voltage, unweighted r.m.s..... : | | N/A |
| 10.6.4 | Protection of persons | | N/A |
| | Instructional safeguards : | | N/A |
| | Equipment safeguard prevent ordinary person to RS2..... : | | — |
| | 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 analog input | | N/A |
| | Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output..... : | | — |
| 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 | NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS | | P |
|-------|---|---|-----|
| B.2 | Normal Operating Conditions | | P |
| B.2.1 | General requirements..... : | (See Test Item Particulars and appended test tables) | P |
| | Audio Amplifiers and equipment with audio amplifiers : | | N/A |
| B.2.3 | Supply voltage and tolerances | | P |
| B.2.5 | Input test..... : | (See appended table B.2.5) | P |
| B.3 | Simulated abnormal operating conditions | | P |
| B.3.1 | General requirements..... : | (See appended table B.3) | P |
| B.3.2 | Covering of ventilation openings | No openings within the EUT | N/A |
| B.3.3 | D.C. mains polarity test | 5 Vd.c supplied apparatus via external AC/DC adapter. | P |
| B.3.4 | Setting of voltage selector..... : | No such selector | N/A |
| B.3.5 | Maximum load at output terminals : | No such terminals used | N/A |
| B.3.6 | Reverse battery polarity | Can't replaceable by ordinary person | N/A |

| IEC 62368-1 | | | |
|-------------|---|---|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| B.3.7 | Abnormal operating conditions as specified in Clause E.2. | | N/A |
| B.3.8 | Safeguards functional during and after abnormal operating conditions | | P |
| B.4 | Simulated single fault conditions | | P |
| B.4.2 | Temperature controlling device open or short-circuited | No such controlling device | N/A |
| B.4.3 | Motor tests | No motor used | N/A |
| B.4.3.1 | Motor blocked or rotor locked increasing the internal ambient temperature | | N/A |
| B.4.4 | Short circuit of functional insulation | only ES1 existed | N/A |
| B.4.4.1 | Short circuit of clearances for functional insulation | | N/A |
| B.4.4.2 | Short circuit of creepage distances for functional insulation | | N/A |
| B.4.4.3 | Short circuit of functional insulation on coated printed boards | | N/A |
| B.4.5 | Short circuit and interruption of electrodes in tubes and semiconductors | | N/A |
| B.4.6 | Short circuit or disconnect of passive components | | P |
| B.4.7 | Continuous operation of components | | N/A |
| B.4.8 | Class 1 and Class 2 energy sources within limits during and after single fault conditions | | P |
| B.4.9 | Battery charging under single fault conditions ... : | | N/A |
| C | UV RADIATION | | N/A |
| C.1 | Protection of materials in equipment from UV radiation | General indoor used equipment only | N/A |
| C.1.2 | Requirements | | N/A |
| C.1.3 | Test method | | N/A |
| C.2 | UV light conditioning test | | N/A |
| C.2.1 | Test apparatus | | N/A |
| C.2.2 | Mounting of test samples | | N/A |
| C.2.3 | Carbon-arc light-exposure apparatus | | N/A |
| C.2.4 | Xenon-arc light exposure apparatus | | N/A |
| D | TEST GENERATORS | | N/A |
| D.1 | Impulse test generators | Not such apparatus | N/A |
| D.2 | Antenna interface test generator | | 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 | Equipment does not contain any audio amplifiers | N/A |

| IEC 62368-1 | | | |
|-------------|---|-------------------------------|----------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Audio signal voltage (V) | | — |
| | Rated load impedance (Ω) | | — |
| E.2 | Audio amplifier abnormal operating conditions | | N/A |
| F | EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS | | P |
| F.1 | General requirements | | P |
| | Instructions – Language | English | — |
| F.2 | Letter symbols and graphical symbols | | P |
| F.2.1 | Letter symbols according to IEC60027-1 | | P |
| F.2.2 | Graphic symbols IEC, ISO or manufacturer specific | | P |
| F.3 | Equipment markings | | P |
| F.3.1 | Equipment marking locations | On the rear enclosure | P |
| F.3.2 | Equipment identification markings | | P |
| F.3.2.1 | Manufacturer identification | See page 3 for details | — |
| F.3.2.2 | Model identification | See page 3 for details | — |
| F.3.3 | Equipment rating markings | See page 3 for details | P |
| F.3.3.1 | Equipment with direct connection to mains | | N/A |
| F.3.3.2 | Equipment without direct connection to mains | | P |
| F.3.3.3 | Nature of supply voltage | See page 3 for details | — |
| F.3.3.4 | Rated voltage | See page 3 for details | — |
| F.3.3.4 | Rated frequency | 5 Vd.c supplied apparatus | — |
| F.3.3.6 | Rated current or rated power | See page 3 for details | — |
| F.3.3.7 | Equipment with multiple supply connections | No multiple supply connection | N/A |
| F.3.4 | Voltage setting device | No such device | N/A |
| F.3.5 | Terminals and operating devices | | N/A |
| F.3.5.1 | Mains appliance outlet and socket-outlet markings | | N/A |
| F.3.5.2 | Switch position identification marking | | N/A |
| F.3.5.3 | Replacement fuse identification and rating markings | | N/A |
| F.3.5.4 | Replacement battery identification marking | | N/A |
| F.3.5.5 | Terminal marking location | | N/A |
| F.3.6 | Equipment markings related to equipment classification | Class III apparatus | N/A |
| F.3.6.1 | Class I Equipment | Class III apparatus | N/A |
| F.3.6.1.1 | Protective earthing conductor terminal | | N/A |
| F.3.6.1.2 | Neutral conductor terminal | | N/A |
| F.3.6.1.3 | Protective bonding conductor terminals | | N/A |

| IEC 62368-1 | | | |
|-------------|---|---|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| F.3.6.2 | Class II equipment (IEC60417-5172) | Class III apparatus | N/A |
| F.3.6.2.1 | Class II equipment with or without functional earth | | N/A |
| F.3.6.2.2 | Class II equipment with functional earth terminal marking | | N/A |
| F.3.7 | Equipment IP rating marking : | IPX0 equipment | — |
| F.3.8 | External power supply output marking | Approved External power supply used | P |
| F.3.9 | Durability, legibility and permanence of marking | | P |
| F.3.10 | Test for permanence of markings | After test there was no damage on the label. The marking on the label did not fade. There was no curling and lifting of the label edge. | P |
| F.4 | Instructions | | N/A |
| | a) Equipment for use in locations where children not likely to be present - marking | | N/A |
| | b) Instructions given for installation or initial use | | N/A |
| | 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 |
| | 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) | j) Replaceable components or modules providing safeguard function | | N/A |
| F.5 | Instructional safeguards | | N/A |
| | Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction | | N/A |
| G | COMPONENTS | | N/A |
| G.1 | Switches | | N/A |
| G.1.1 | General requirements | No such device used | N/A |
| G.1.2 | Ratings, endurance, spacing, maximum load | | N/A |
| G.2 | Relays | | N/A |
| G.2.1 | General requirements | No such device used | N/A |
| G.2.2 | Overload test | | N/A |
| G.2.3 | Relay controlling connectors supply power | | N/A |

| IEC 62368-1 | | | |
|---------------|--|--------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| G.2.4 | Mains relay, modified as stated in G.2 | | N/A |
| G.3 | Protection Devices | | N/A |
| G.3.1 | Thermal cut-offs | No such device used | N/A |
| G.3.1.1a) &b) | Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b) | | N/A |
| G.3.1.1c) | Thermal cut-outs tested as part of the equipment as indicated in c) | | N/A |
| G.3.1.2 | Thermal cut-off connections maintained and secure | | N/A |
| G.3.2 | Thermal links | | N/A |
| G.3.2.1a) | Thermal links separately tested with IEC 60691 | No such device used | N/A |
| G.3.2.1b) | Thermal links tested as part of the equipment | | N/A |
| | Aging hours (H) | | — |
| | Single Fault Condition | | — |
| | Test Voltage (V) and Insulation Resistance (Ω) .. | | — |
| G.3.3 | PTC Thermistors | No such device used | N/A |
| G.3.4 | Overcurrent protection devices | | N/A |
| G.3.5 | Safeguards components not mentioned in G.3.1 to G.3.5 | | N/A |
| G.3.5.1 | Non-resettable devices suitably rated and marking provided | | N/A |
| G.3.5.2 | Single faults conditions..... | (See appended Table B.4) | N/A |
| G.4 | Connectors | | N/A |
| G.4.1 | Spacings | No such device used | N/A |
| G.4.2 | Mains connector configuration | | N/A |
| G.4.3 | Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely | | N/A |
| G.5 | Wound Components | | N/A |
| G.5.1 | Wire insulation in wound components..... | No such device used | N/A |
| G.5.1.2 a) | Two wires in contact inside wound component, angle between 45° and 90° | | N/A |
| G.5.1.2 b) | Construction subject to routine testing | | N/A |
| G.5.2 | Endurance test on wound components | | N/A |
| G.5.2.1 | General test requirements | | N/A |
| G.5.2.2 | Heat run test | | N/A |
| | Time (s) | | — |
| | Temperature (°C) | | — |
| G.5.2.3 | Wound Components supplied by mains | | N/A |
| G.5.3 | Transformers | | N/A |

| IEC 62368-1 | | | |
|--------------|---|--------------------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| G.5.3.1 | Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1) | No such device used | N/A |
| | Position..... | | — |
| | Method of protection | | — |
| G.5.3.2 | Insulation | | N/A |
| | Protection from displacement of windings..... | | — |
| G.5.3.3 | Overload test | | N/A |
| G.5.3.3.1 | Test conditions | | N/A |
| G.5.3.3.2 | Winding Temperatures testing in the unit | | N/A |
| G.5.3.3.3 | Winding Temperatures - Alternative test method | | N/A |
| G.5.4 | Motors | | N/A |
| G.5.4.1 | General requirements | No such device used | N/A |
| | Position | | — |
| G.5.4.2 | Test conditions | | N/A |
| G.5.4.3 | Running overload test | | N/A |
| G.5.4.4 | Locked-rotor overload test | | N/A |
| | Test duration (days) | | — |
| G.5.4.5 | Running overload test for d.c. motors in secondary circuits | | N/A |
| G.5.4.5.2 | Tested in the unit | | N/A |
| | Electric strength test (V) | | — |
| G.5.4.5.3 | Tested on the Bench - Alternative test method; test time (h) | | N/A |
| | Electric strength test (V) | | — |
| G.5.4.6 | Locked-rotor overload test for d.c. motors in secondary circuits | | N/A |
| G.5.4.6.2 | Tested in the unit | | N/A |
| | Maximum Temperature | | N/A |
| | Electric strength test (V) | | N/A |
| G.5.4.6.3 | Tested on the bench - Alternative test method; test time (h) | | N/A |
| | Electric strength test (V) | | N/A |
| G.5.4.7 | Motors with capacitors | | N/A |
| G.5.4.8 | Three-phase motors | | N/A |
| G.5.4.9 | Series motors | | N/A |
| | Operating voltage | | — |
| G.6 | Wire Insulation | | P |
| G.6.1 | General | No peak working voltage exceeded ES2 | P |

| IEC 62368-1 | | | |
|-------------|---|----------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| G.6.2 | Solvent-based enamel wiring insulation | | N/A |
| G.7 | Mains supply cords | | N/A |
| G.7.1 | General requirements | No mains supply cords used | N/A |
| | Type.....: | | — |
| | Rated current (A) | | — |
| | Cross-sectional area (mm ²), (AWG) | | — |
| G.7.2 | Compliance and test method | | N/A |
| G.7.3 | Cord anchorages and strain relief for non-detachable power supply cords | | N/A |
| G.7.3.2 | Cord strain relief | | N/A |
| G.7.3.2.1 | Requirements | | N/A |
| | Strain relief test force (N) | | — |
| G.7.3.2.2 | Strain relief mechanism failure | | N/A |
| G.7.3.2.3 | Cord sheath or jacket position, distance (mm)....: | | — |
| G.7.3.2.4 | Strain relief comprised of polymeric material | | N/A |
| G.7.4 | Cord Entry | | N/A |
| G.7.5 | Non-detachable cord bend protection | | N/A |
| G.7.5.1 | Requirements | | N/A |
| G.7.5.2 | Mass (g) | | — |
| | Diameter (m) | | — |
| | Temperature (°C) | | — |
| G.7.6 | Supply wiring space | | N/A |
| G.7.6.2 | Stranded wire | | N/A |
| G.7.6.2.1 | Test with 8 mm strand | | N/A |
| G.8 | Varistors | | N/A |
| G.8.1 | General requirements | No such components used | N/A |
| G.8.2 | Safeguard against shock | | N/A |
| G.8.3 | Safeguard against fire | | N/A |
| G.8.3.2 | Varistor overload test | | N/A |
| G.8.3.3 | Temporary overvoltage | | N/A |
| G.9 | Integrated Circuit (IC) Current Limiters | | N/A |
| G.9.1 a) | Manufacturer defines limit at max. 5A. | No such components used | N/A |
| G.9.1 b) | Limiters do not have manual operator or reset | | N/A |
| G.9.1 c) | Supply source does not exceed 250 VA | | — |
| G.9.1 d) | IC limiter output current (max. 5A) | | — |
| G.9.1 e) | Manufacturers' defined drift | | — |
| G.9.2 | Test Program 1 | | N/A |

| IEC 62368-1 | | | |
|-------------|---|-------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| G.9.3 | Test Program 2 | | N/A |
| G.9.4 | Test Program 3 | | N/A |
| G.10 | Resistors | | N/A |
| G.10.1 | General requirements | No such components used | N/A |
| G.10.2 | Resistor test | | N/A |
| G.10.3 | Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable | | 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 | | N/A |
| G.11 | Capacitor and RC units | | N/A |
| G.11.1 | General requirements | No such components used | N/A |
| G.11.2 | Conditioning of capacitors and RC units | | N/A |
| G.11.3 | Rules for selecting capacitors | | N/A |
| G.12 | Optocouplers | | N/A |
| | Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results) | No such components used | N/A |
| | Type test voltage Vini | | — |
| | Routine test voltage, Vini,b | | — |
| G.13 | Printed boards | | N/A |
| G.13.1 | General requirements | No such components used | N/A |
| G.13.2 | Uncoated printed boards | | N/A |
| G.13.3 | Coated printed boards | | N/A |
| G.13.4 | Insulation between conductors on the same inner surface | | N/A |
| | Compliance with cemented joint requirements (Specify construction) | | — |
| G.13.5 | Insulation between conductors on different surfaces | | N/A |
| | Distance through insulation | | N/A |
| | Number of insulation layers (pcs) | | — |
| G.13.6 | Tests on coated printed boards | | N/A |
| G.13.6.1 | Sample preparation and preliminary inspection | | N/A |
| G.13.6.2a) | Thermal conditioning | | N/A |
| G.13.6.2b) | Electric strength test | | N/A |
| G.13.6.2c) | Abrasion resistance test | | N/A |
| G.14 | Coating on components terminals | | N/A |

| IEC 62368-1 | | | |
|-------------|---|-------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| G.14.1 | Requirements | | N/A |
| G.15 | Liquid filled components | | N/A |
| G.15.1 | General requirements | No such components used | N/A |
| G.15.2 | Requirements | | N/A |
| G.15.3 | Compliance and test methods | | N/A |
| G.15.3.1 | Hydrostatic pressure test | | N/A |
| G.15.3.2 | Creep resistance test | | N/A |
| G.15.3.3 | Tubing and fittings compatibility test | | N/A |
| G.15.3.4 | Vibration test | | N/A |
| G.15.3.5 | Thermal cycling test | | N/A |
| G.15.3.6 | Force test | | N/A |
| G.15.4 | Compliance | | N/A |
| G.16 | IC including capacitor discharge function (ICX) | | N/A |
| a) | Humidity treatment in accordance with sc5.4.8 – 120 hours | No such components used | N/A |
| b) | Impulse test using circuit 2 with $U_c =$ to transient voltage | | N/A |
| C1) | Application of ac voltage at 110% of rated voltage for 2.5 minutes | | N/A |
| C2) | Test voltage | | — |
| D1) | 10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer | | N/A |
| D2) | Capacitance | | — |
| D3) | Resistance | | — |
| H | CRITERIA FOR TELEPHONE RINGING SIGNALS | | N/A |
| H.1 | General | Not such apparatus | N/A |
| H.2 | Method A | | N/A |
| H.3 | Method B | | N/A |
| H.3.1 | Ringling signal | | N/A |
| H.3.1.1 | Frequency (Hz) | | — |
| H.3.1.2 | Voltage (V) | | — |
| H.3.1.3 | Cadence; time (s) and voltage (V) | | — |
| H.3.1.4 | Single fault current (mA):..... | | — |
| H.3.2 | Tripping device and monitoring voltage | | N/A |
| H.3.2.1 | Conditions for use of a tripping device or a monitoring voltage complied with | | N/A |
| H.3.2.2 | Tripping device | | N/A |
| H.3.2.3 | Monitoring voltage (V) | | — |

| IEC 62368-1 | | | |
|-------------|---|---------------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| J | INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION | | N/A |
| | General requirements | No such winding wire used | N/A |
| K | SAFETY INTERLOCKS | | N/A |
| K.1 | General requirements | No safety interlocks in the EUT | N/A |
| K.2 | Components of safety interlock safeguard mechanism | | N/A |
| K.3 | Inadvertent change of operating mode | | N/A |
| K.4 | Interlock safeguard override | | N/A |
| K.5 | Fail-safe | | N/A |
| | Compliance | | N/A |
| K.6 | Mechanically operated safety interlocks | | N/A |
| K.6.1 | Endurance requirement | | N/A |
| K.6.2 | Compliance and Test method | | N/A |
| K.7 | Interlock circuit isolation | | N/A |
| K.7.1 | Separation distance for contact gaps & interlock circuit elements (type and circuit location) | | N/A |
| K.7.2 | Overload test, Current (A) | | N/A |
| K.7.3 | Endurance test | | N/A |
| K.7.4 | Electric strength test | | N/A |
| L | DISCONNECT DEVICES | | N/A |
| L.1 | General requirements | 5 Vd.c supplied apparatus | N/A |
| L.2 | Permanently connected equipment | | N/A |
| L.3 | Parts that remain energized | | N/A |
| L.4 | Single phase equipment | | N/A |
| L.5 | Three-phase equipment | | N/A |
| L.6 | Switches as disconnect devices | | N/A |
| L.7 | Plugs as disconnect devices | | N/A |
| L.8 | Multiple power sources | | N/A |
| M | EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS | | N/A |
| M.1 | General requirements | | N/A |
| M.2 | Safety of batteries and their cells | | N/A |
| M.2.1 | Requirements | | N/A |
| M.2.2 | Compliance and test method (identify method) .. : | | N/A |
| M.3 | Protection circuits | | N/A |
| M.3.1 | Requirements | | N/A |
| M.3.2 | Tests | | N/A |
| | - Overcharging of a rechargeable battery | | N/A |

IEC 62368-1

| Clause | Requirement + Test | Result - Remark | Verdict |
|------------|--|--|---------|
| | - Unintentional charging of a non-rechargeable battery | No such battery used | N/A |
| | - Reverse charging of a rechargeable battery | Battery connector can prevent the battery from being reverse charged | N/A |
| | - Excessive discharging rate for any battery | (See append table Annex M) | N/A |
| M.3.3 | Compliance : | (See append table Annex M) | N/A |
| 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 : | (See append table Annex M.4) | — |
| M.4.2.2 b) | Single faults in charging circuitry : | (See Annex B.4 and append table Annex M.4) | — |
| M.4.3 | Fire Enclosure | V-0 enclosure & PCB used | N/A |
| M.4.4 | Endurance of equipment containing a secondary lithium battery | | N/A |
| M.4.4.2 | Preparation | | N/A |
| M.4.4.3 | Drop and charge/discharge function tests | | 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) : | | N/A |
| M.6.2 | Leakage current (mA) : | | N/A |
| M.7 | Risk of explosion from lead acid and NiCd batteries | No such battery used | N/A |
| M.7.1 | Ventilation preventing explosive gas concentration | | N/A |
| M.7.2 | Compliance and test method | | N/A |

| IEC 62368-1 | | | |
|-------------|---|-----------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| M.8 | Protection against internal ignition from external spark sources of lead acid batteries | No such battery used | N/A |
| M.8.1 | General requirements | | N/A |
| M.8.2 | Test method | | N/A |
| M.8.2.1 | General requirements | | N/A |
| M.8.2.2 | Estimation of hypothetical volume V_z (m ³ /s)..... : | | — |
| M.8.2.3 | Correction factors..... : | | — |
| M.8.2.4 | Calculation of distance d (mm) : | | — |
| M.9 | Preventing electrolyte spillage | No such battery used | 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) : | | N/A |
| N | ELECTROCHEMICAL POTENTIALS | | N/A |
| | Metal(s) used : | Pollution degree considered | — |
| O | MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES | | N/A |
| | Figures O.1 to O.20 of this Annex applied..... : | | — |
| P | SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS | | N/A |
| P.1 | General requirements | | N/A |
| P.2.2 | Safeguards against entry of foreign object | | 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 | | N/A |
| | Openings in transportable equipment | | N/A |
| | Transportable equipment with metalized plastic parts : | | N/A |
| P.2.3.2 | Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) : | | N/A |
| 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 | | N/A |
| | T _c (°C)..... : | | — |

| IEC 62368-1 | | | |
|-------------|--|------------------------------|------------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Tr (°C) | | — |
| | Ta (°C)..... | | — |
| P.4.2 b) | Abrasion testing | | N/A |
| P.4.2 c) | Mechanical strength testing | | N/A |
| Q | CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING | | P |
| Q.1 | Limited power sources | | P |
| Q.1.1 a) | Inherently limited output | | P |
| Q.1.1 b) | Impedance limited output | | 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 | | N/A |
| Q.1.1 d) | IC current limiter complying with G.9 | | N/A |
| Q.1.2 | Compliance and test method | | P |
| Q.2 | Test for external circuits – paired conductor cable | | P |
| | Maximum output current (A) | (See append table Annex Q.1) | — |
| | Current limiting method..... | (See append table Annex Q.1) | — |
| R | LIMITED SHORT CIRCUIT TEST | | N/A |
| R.1 | General requirements | | 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)). | | N/A |
| S | TESTS FOR RESISTANCE TO HEAT AND FIRE | | N/A |
| S.1 | Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W | | N/A |
| | Samples, material | | — |
| | Wall thickness (mm)..... | | — |
| | Conditioning (°C)..... | | — |
| | Test flame according to IEC 60695-11-5 with conditions as set out | | N/A |
| | - Material not consumed completely | | N/A |
| | - Material extinguishes within 30s | | N/A |
| | - No burning of layer or wrapping tissue | | N/A |
| S.2 | Flammability test for fire enclosure and fire barrier integrity | | N/A |
| | Samples, material | | — |
| | Wall thickness (mm)..... | | — |
| | Conditioning (°C)..... | | — |

| IEC 62368-1 | | | |
|-------------|--|-------------------------|----------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Test flame according to IEC 60695-11-5 with conditions as set out | | N/A |
| | Test specimen does not show any additional hole | | N/A |
| S.3 | Flammability test for the bottom of a fire enclosure | | N/A |
| | Samples, material | | — |
| | Wall thickness (mm) | | — |
| | Cheesecloth did not ignite | | N/A |
| S.4 | Flammability classification of materials | | N/A |
| S.5 | Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W | | N/A |
| | Samples, material | | — |
| | Wall thickness (mm) | | — |
| | 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 | | N/A |
| T.3 | Steady force test, 30 N | | N/A |
| T.4 | Steady force test, 100 N | | P |
| T.5 | Steady force test, 250 N | | N/A |
| T.6 | Enclosure impact test | | N/A |
| | Fall test | | P |
| | Swing test | | P |
| T.7 | Drop test | (See appended table T7) | P |
| T.8 | Stress relief test | (See appended table T8) | P |
| T.9 | Impact Test (glass) | | 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 | | N/A |
| T.11 | Test for telescoping or rod antennas | | N/A |

| IEC 62368-1 | | | |
|-------------|---|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Torque value (Nm): | | — |
| U | MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION | | N/A |
| U.1 | General requirements | | N/A |
| U.2 | Compliance and test method for non-intrinsically protected CRTs | | N/A |
| U.3 | Protective Screen.....: | | N/A |
| V | DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES) | | N/A |
| V.1 | Accessible parts of equipment | | N/A |
| V.2 | Accessible part criterion | | N/A |

| | | | | | | |
|---|------------------------------------|--------------|------------------------------|----------|---------------------------------------|---|
| 4.1.2 | TABLE: List of critical components | | | | | P |
| Object / part No. | Manufacturer/ trademark | Type / model | Technical data | Standard | Mark(s) of conformity ¹ | |
| PCB | Various | Various | V-1 or better, min. 130°C | UL 796 | UL | |
| Supplementary information: | | | | | | |
| 1) Provided evidence ensures the agreed level of compliance. | | | | | | |
| 2) Description line content is optional. Main line description needs to clearly detail the component used for testing | | | | | | |

| | | | | |
|---|--|------------------------------------|-----------------------|--------------|
| 4.8.4, 4.8.5 | TABLE: Lithium coin/button cell batteries mechanical tests | | | N/A |
| (The following mechanical tests are conducted in the sequence noted.) | | | | |
| 4.8.4.2 | TABLE: Stress Relief test | | | — |
| Part | | Material | Oven Temperature (°C) | Comments |
| | | | | |
| 4.8.4.3 | TABLE: Battery replacement test | | | — |
| Battery part no.: | | | — | |
| Battery Installation/withdrawal | | Battery Installation/Removal Cycle | Comments | |
| | | 1 | | |
| | | 2 | | |
| | | 3 | | |
| | | 4 | | |
| | | 5 | | |
| | | 6 | | |
| | | 8 | | |
| | | 9 | | |
| | | 10 | | |
| 4.8.4.4 | TABLE: Drop test | | | — |
| Impact Area | | Drop Distance | Drop No. | Observations |
| | | | 1 | |
| | | | 2 | |
| | | | 3 | |
| 4.8.4.5 | TABLE: Impact | | | — |
| Impacts per surface | | Surface tested | Impact energy (Nm) | Comments |
| | | | | |
| | | | | |

| | | | | |
|---|--|----------------|--------------------|----------------------------|
| 4.8.4, 4.8.5 | TABLE: Lithium coin/button cell batteries mechanical tests | | | N/A |
| (The following mechanical tests are conducted in the sequence noted.) | | | | |
| | | | | |
| 4.8.4.6 | TABLE: Crush test | | | — |
| Test position | | Surface tested | Crushing Force (N) | Duration force applied (s) |
| | | | | |
| | | | | |
| Supplementary information: | | | | |

| | | | | |
|----------------------------|--|----------------|-----------|----------------------------|
| 4.8.5 | TABLE: Lithium coin/button cell batteries mechanical test result | | | N/A |
| Test position | | Surface tested | Force (N) | Duration force applied (s) |
| | | | | |
| | | | | |
| Supplementary information: | | | | |

| 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 (Vrms or Vpk) | I (A _{pk} or A _{rms}) | Hz | |
| 1 | | | Normal | | | | |
| | | | Abnormal | | | | |
| | | | Single fault – SC/OC | | | | |
| | | | Normal | | | | |
| | | | 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:

Normal –

Abnormal -

Supplementary information: SC=Short Circuit, OC=Short Circuit

| | | | | | | | | |
|--|-------------------------------------|---------------------|--------------------|---------------------|--------------------|----------------------------------|----------------------------------|---------------------|
| 5.4.1.4, 6.3.2, 9.0, B.2.6 | TABLE: Temperature measurements | | | | | | P | |
| | | | | -- | -- | — | | |
| | Supply voltage (V) | 5.0 | | | | | | |
| | Ambient T _{min} (°C) | 23.8 | | -- | -- | — | | |
| | Ambient T _{max} (°C) | 24.0 | | -- | -- | — | | |
| | Tma (°C) | -- | -- | -- | -- | — | | |
| Maximum measured temperature T of part/at: | | T (°C) | | | | Allowed T _{max} (°C) | | |
| DC terminal | | 37.0 | | -- | -- | Ref. | | |
| PCB near main U21 | | 41.4 | | | | 130 | | |
| PCB near U1 | | 40.6 | | -- | -- | 130- | | |
| Internal lead | | 36.0 | | -- | -- | Ref. | | |
| Enclosure outside | | 33.2 | | | | 60 | | |
| Supplementary information: | | | | | | | | |
| Temperature T of winding: | | t ₁ (°C) | R ₁ (Ω) | t ₂ (°C) | R ₂ (Ω) | T (°C) | Allowed T _{max} (°C) | Insulation class |
| -- | | -- | -- | -- | -- | -- | -- | -- |

Supplementary information:

Test condition:

Note 1: Tma should be considered as directed by applicable requirement

| | | | | |
|----------------------------|--|-------------------------|------------------|-----|
| 5.4.1.10.2 | TABLE: Vicat softening temperature of thermoplastics | | | N/A |
| Penetration (mm)..... : | | | | — |
| Object/ Part No./Material | | Manufacturer/t 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, 5.4.2.4 and 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) | Frequenc y (kHz) ¹ | Required cl (mm) | cl (mm) ² | Required ³ cr (mm) | cr (mm) |
| -- | -- | -- | -- | -- | -- | -- | -- |
| Supplementary information: Note 1: Only for frequency above 30 kHz Note 2: See table 5.4.2.4 if this is based on electric strength test Note 3: Provide Material Group | | | | | | | |

| | | | | | |
|------------------------------|--|----------------------------|------------------|------------------|-----|
| 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) | |
| -- | | -- | -- | -- | |
| Supplementary information: | | | | | |

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

Supplementary information:

| | | |
|--|--|------------|
| 5.4.4.2, 5.4.4.5 c) 5.4.4.9 | TABLE: Distance through insulation measurements | N/A |
|--|--|------------|

| Distance through insulation di at/of: | Peak voltage (V) | Frequency (kHz) | Material | Required DTI (mm) | DTI (mm) |
|---------------------------------------|------------------|-----------------|----------|-------------------|----------|
| -- | -- | -- | -- | -- | -- |

Supplementary information:

| | | |
|--------------|---------------------------------------|------------|
| 5.4.9 | TABLE: Electric strength tests | N/A |
|--------------|---------------------------------------|------------|

| Test voltage applied between: | Voltage shape (AC, DC) | Test voltage (V) | Breakdown Yes / No |
|-------------------------------|------------------------|------------------|--------------------|
|-------------------------------|------------------------|------------------|--------------------|

Functional:

| | | | |
|----|----|----|----|
| -- | -- | -- | -- |
|----|----|----|----|

Basic/supplementary:

| | | | |
|----|----|----|----|
| -- | -- | -- | -- |
|----|----|----|----|

Reinforced:

| | | | |
|----|----|----|----|
| -- | -- | -- | -- |
|----|----|----|----|

Routine Tests:

| | | | |
|----|----|----|----|
| -- | -- | -- | -- |
|----|----|----|----|

Supplementary information:

| | | |
|----------------|--|------------|
| 5.5.2.2 | TABLE: Stored discharge on capacitors | N/A |
|----------------|--|------------|

| Supply Voltage (V), Hz | Test Location | Operating Condition (N, S) | Switch position On or off | Measured Voltage (after 2 seconds) | ES Classification |
|------------------------|---------------|----------------------------|---------------------------|------------------------------------|-------------------|
| -- | -- | -- | -- | -- | -- |

Supplementary information:

X-capacitors installed for testing are:

☐ bleeding resistor rating:

☐ ICX:

Notes:

A. Test Location:

Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth

B. Operating condition abbreviations:

N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition

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

| | | | |
|---|--|---|--------------------|
| 5.7.2.2, 5.7.4 | TABLE: Earthed accessible conductive part | | N/A |
| Supply voltage | | | — |
| Location | | Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7 | Touch current (mA) |
| | | 1 | |
| | | 2* | |
| | | 3 | |
| | | 4 | |
| | | 5 | |
| | | 6 | |
| | | 8 | |
| Supplementary Information: | | | |
| Notes: [1] Supply voltage is the anticipated maximum Touch Voltage [2] Earthed neutral conductor [Voltage differences less than 1% or more] [3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3 [4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable. [5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided. | | | |

| 6.2.2 | Table: Electrical power sources (PS) measurements for classification | | | | | N/A |
|---|--|-------------|---------------------|-----------------------------------|-------------------|-----|
| Source | Description | Measurement | Max Power after 3 s | Max Power after 5 s ^{*)} | PS Classification | |
| -- | -- | Power (W) : | -- | -- | -- | |
| | | VA (V) : | -- | -- | | |
| | | IA (A) : | -- | -- | | |
| -- | -- | Power (W) : | -- | -- | -- | |
| | | VA (V) : | -- | -- | | |
| | | IA (A) : | -- | -- | | |
| -- | -- | Power (W) : | -- | -- | -- | |
| | | VA (V) : | -- | -- | | |
| | | IA (A) : | -- | -- | | |
| Supplementary Information: | | | | | | |
| (*) Measurement taken only when limits at 3 seconds exceed PS1 limits | | | | | | |

| 6.2.3.1 | | Table: Determination of Potential Ignition Sources (Arcing PIS) | | | N/A |
|---|--|---|--|---|----------------------|
| Location | | Open circuit voltage After 3 s (V _p) | Measured r.m.s current (I _{rms}) | Calculated value (V _p x I _{rms}) | Arcing PIS? Yes / No |
| -- | | -- | -- | -- | No |
| Supplementary information: | | | | | |
| An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V _p) and normal operating condition rms current (I _{rms}) is greater than 15. | | | | | |

| 6.2.3.2 | Table: Determination of Potential Ignition Sources (Resistive PIS) | | | | | N/A |
|---|--|--|---|--|-----------------------------|-----|
| Circuit Location (x-y) | Operating Condition (Normal / Describe Single Fault) | Measured wattage or VA During first 30 s (W / VA) | Measured wattage or VA After 30 s (W / VA) | Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment) | Resistive PIS? Yes/No | |
| -- | -- | -- | -- | -- | -- | |
| <p>Supplementary Information:</p> <p>A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.</p> <p>If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.</p> <p>A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, <u>or</u> (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.</p> | | | | | | |

| 8.5.5 | TABLE: High Pressure Lamp | | N/A |
|--|---------------------------|------------------------------|-----|
| Description | Values | Energy Source Classification | |
| Lamp type | -- | — | |
| Manufacturer..... | -- | — | |
| Cat no..... | -- | — | |
| Pressure (cold) (MPa) | -- | MS_ | |
| Pressure (operating) (MPa)..... | -- | MS_ | |
| Operating time (minutes)..... | -- | — | |
| Explosion method | -- | — | |
| Max particle length escaping enclosure (mm) .: | -- | MS_ | |
| Max particle length beyond 1 m (mm) | -- | MS_ | |
| Overall result | -- | | |
| Supplementary information: | | | |

| B.2.5 | | TABLE: Input test | | | | | | P |
|---|--------|-------------------|-------|-------------|---------|------------|------------------|---|
| U (V) | I (mA) | I rated (mA) | P (W) | P rated (W) | Fuse No | I fuse (A) | Condition/status | |
| 5.0 | 1490mA | 2000 | 7.45 | -- | -- | -- | Normal | |
| | | | | | | | | |
| Supplementary information: | | | | | | | | |
| Equipment may be have rated current or rated power or both. Both should be measured | | | | | | | | |

| B.3 | | TABLE: Abnormal operating condition tests | | | | | | N/A |
|---|--------------------|--|----------------|----------|------------------------|----------|------------|-------------|
| Ambient temperature (°C) | | | | | 25 | | | — |
| Power source for EUT: Manufacturer, model/type, output rating . : | | | | | See page 2 for details | | | — |
| Component No. | Abnormal Condition | Supply voltage, (V) | Test time (ms) | Fuse no. | Fuse current, (A) | T-couple | Temp. (°C) | Observation |
| Supplementary information: | | | | | | | | |
| - Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column “Abnormal/Fault.” Specify if test condition by indicating “Abnormal” then the condition for a Clause B.3 test or “Single Fault” then the condition for Clause B.4. | | | | | | | | |

| B.4 | | TABLE: Fault condition tests | | | | | | P |
|---|-----------------|------------------------------|----------------|----------|------------------------|----------|------------|--|
| Ambient temperature (°C) | | | | | 25 | | | — |
| Power source for EUT: Manufacturer, model/type, output rating ...: | | | | | See page 2 for details | | | — |
| Component No. | Fault Condition | Supply voltage, (V) | Test time (ms) | Fuse no. | Fuse current, (A) | T-couple | Temp. (°C) | Observation |
| D11 | Shorted | 5Vdc | 10mins | -- | -- | -- | -- | Unit shut down, recoverable. No damage, no hazard. |
| C7 | Shorted | 5Vdc | 10mins | -- | -- | -- | -- | Unit shut down, recoverable. No damage, no hazard. |
| Supplementary information: Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4. | | | | | | | | |

| Annex M | TABLE: Batteries | | | | | | | | N/A |
|---|----------------------------|---------------|-------------------------|------------------------|---------------|---------------|---------------|-------------------|---------------|
| The tests of Annex M are applicable only when appropriate battery data is not available | | | | | | | | | N/A |
| Is it possible to install the battery in a reverse polarity position? : | | | | | | | N/A | | N/A |
| | Non-rechargeable batteries | | | Rechargeable batteries | | | | | |
| | Discharging | | Un-intentional charging | Charging | | Discharging | | Reversed charging | |
| | Meas. current | Manuf. Specs. | | Meas. current | Manuf. Specs. | Meas. current | Manuf. Specs. | Meas. current | Manuf. Specs. |
| Max. current during normal condition | -- | -- | -- | | | | | -- | -- |
| Max. current during fault condition | -- | -- | -- | | | | | -- | -- |
| Test results: | | | | | | | -- | | Verdict |
| - Chemical leaks | | | | | | | | | N/A |
| - Explosion of the battery | | | | | | | | | N/A |
| - Emission of flame or expulsion of molten metal | | | | | | | | | N/A |
| - Electric strength tests of equipment after completion of tests | | | | | | | -- | | -- |
| Supplementary information: N/A | | | | | | | | | |

| Annex M.4 | Table: Additional safeguards for equipment containing secondary lithium batteries | | | | | N/A |
|----------------------------|---|--------------|-------|----------|-------------|-----|
| Battery/Cell No. | Test conditions | Measurements | | | Observation | |
| | | U | I (A) | Temp (C) | | |
| -- | -- | -- | -- | -- | -- | |
| Supplementary Information: | | | | | | |

| Battery identification | Charging at T _{lowest} (°C) | Observation | Charging at T _{highest} (°C) | Observation |
|----------------------------|--------------------------------------|-------------|---------------------------------------|-------------|
| -- | -- | -- | -- | -- |
| Supplementary Information: | | | | |

| | | | | | | | |
|---|---|---------|---------|-------|--------|-------|--|
| Annex Q.1 | TABLE: Circuits intended for interconnection with building wiring (LPS) | | | | | N/A | |
| Note: Measured UOC (V) with all load circuits disconnected: | | | | | | | |
| Output Circuit | Components | Uoc (V) | Isc (A) | | S (VA) | | |
| | | | Meas. | Limit | Meas. | Limit | |
| | | | | | | | |
| Supplementary Information: | | | | | | | |
| | | | | | | | |

| | | | | | | |
|----------------------------|--------------------------|----------------|-----------|---------------------|---|-----|
| T.2, T.3, T.4, T.5 | TABLE: Steady force test | | | | | N/A |
| Part/Location | Material | Thickness (mm) | Force (N) | Test Duration (sec) | Observation | |
| | | | | | No energy source exceed class 1 can be accessed | |
| Supplementary information: | | | | | | |

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

| T.7 | TABLE: Drop tests | | | | P |
|----------------|--------------------------|----------------|------------------|---|----------|
| Part/Location | Material | Thickness (mm) | Drop Height (mm) | Observation | |
| Enclosure top | - | Min. 1.0 | 1 000 mm | No energy source exceed class 1 can be accessed | |
| Enclosure side | -- | Min. 1.0 | 1 000 mm | No energy source exceed class 1 can be accessed | |

| | | | | |
|----------------------------|----|----------|----------|---|
| Enclosure Bottom | -- | Min. 1.0 | 1 000 mm | No energy source exceed class 1 can be accessed |
| Supplementary information: | | | | |

| | | | | | | |
|----------------------------|---------------------------|----------------|-----------------------|--------------|-------------|-----|
| T.8 | TABLE: Stress relief test | | | | | N/A |
| Part/Location | Material | Thickness (mm) | Oven Temperature (°C) | Duration (h) | Observation | |
| -- | -- | -- | -- | -- | -- | |
| Supplementary information: | | | | | | |

| ATTACHMENT TO TEST REPORT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|----------|--------------|----------------------|-----------------|--------|------|-------|--------------|---------|------|----------------------|--------|-------------|--------------|---------|--------|---------|------|---------|------|-------|------|-----------|--------------|-------|------|---------|--------------|-----------------|-----------------|--------|--------|----------|--------|---------|--------|---|
| IEC 62368-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (Audio/video, information and communication technology equipment - Part 1: Safety requirements) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Differences according to.....: EN 62368-1:2014+A11:2017 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Attachment Form No.....: EU_GD_IEC62368_1B_II | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Master Attachment.....: Date 2017-09-22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Copyright © 2017 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CENELEC COMMON MODIFICATIONS (EN) | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed “Z”. | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CONTENTS | Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Delete all the “country” notes in the reference document (IEC 62368-1:2014) according to the following list: <table><tr><td>0.2.1</td><td>Note</td><td>1</td><td>Note 3</td><td>4.1.15</td><td>Note</td></tr><tr><td>4.7.3</td><td>Note 1 and 2</td><td>5.2.2.2</td><td>Note</td><td>5.4.2.3.2.2 Table 13</td><td>Note c</td></tr><tr><td>5.4.2.3.2.4</td><td>Note 1 and 3</td><td>5.4.2.5</td><td>Note 2</td><td>5.4.5.1</td><td>Note</td></tr><tr><td>5.5.2.1</td><td>Note</td><td>5.5.6</td><td>Note</td><td>5.6.4.2.1</td><td>Note 2 and 3</td></tr><tr><td>5.7.5</td><td>Note</td><td>5.7.6.1</td><td>Note 1 and 2</td><td>10.2.1 Table 39</td><td>Note 2, 3 and 4</td></tr><tr><td>10.5.3</td><td>Note 2</td><td>10.6.2.1</td><td>Note 3</td><td>F.3.3.6</td><td>Note 3</td></tr></table> | 0.2.1 | Note | 1 | Note 3 | 4.1.15 | Note | 4.7.3 | Note 1 and 2 | 5.2.2.2 | Note | 5.4.2.3.2.2 Table 13 | Note c | 5.4.2.3.2.4 | Note 1 and 3 | 5.4.2.5 | Note 2 | 5.4.5.1 | Note | 5.5.2.1 | Note | 5.5.6 | Note | 5.6.4.2.1 | Note 2 and 3 | 5.7.5 | Note | 5.7.6.1 | Note 1 and 2 | 10.2.1 Table 39 | Note 2, 3 and 4 | 10.5.3 | Note 2 | 10.6.2.1 | Note 3 | F.3.3.6 | Note 3 | P |
| 0.2.1 | Note | 1 | Note 3 | 4.1.15 | Note | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.7.3 | Note 1 and 2 | 5.2.2.2 | Note | 5.4.2.3.2.2 Table 13 | Note c | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.4.2.3.2.4 | Note 1 and 3 | 5.4.2.5 | Note 2 | 5.4.5.1 | Note | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.5.2.1 | Note | 5.5.6 | Note | 5.6.4.2.1 | Note 2 and 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.7.5 | Note | 5.7.6.1 | Note 1 and 2 | 10.2.1 Table 39 | Note 2, 3 and 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.5.3 | Note 2 | 10.6.2.1 | Note 3 | F.3.3.6 | Note 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | For special national conditions, see Annex ZB. | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

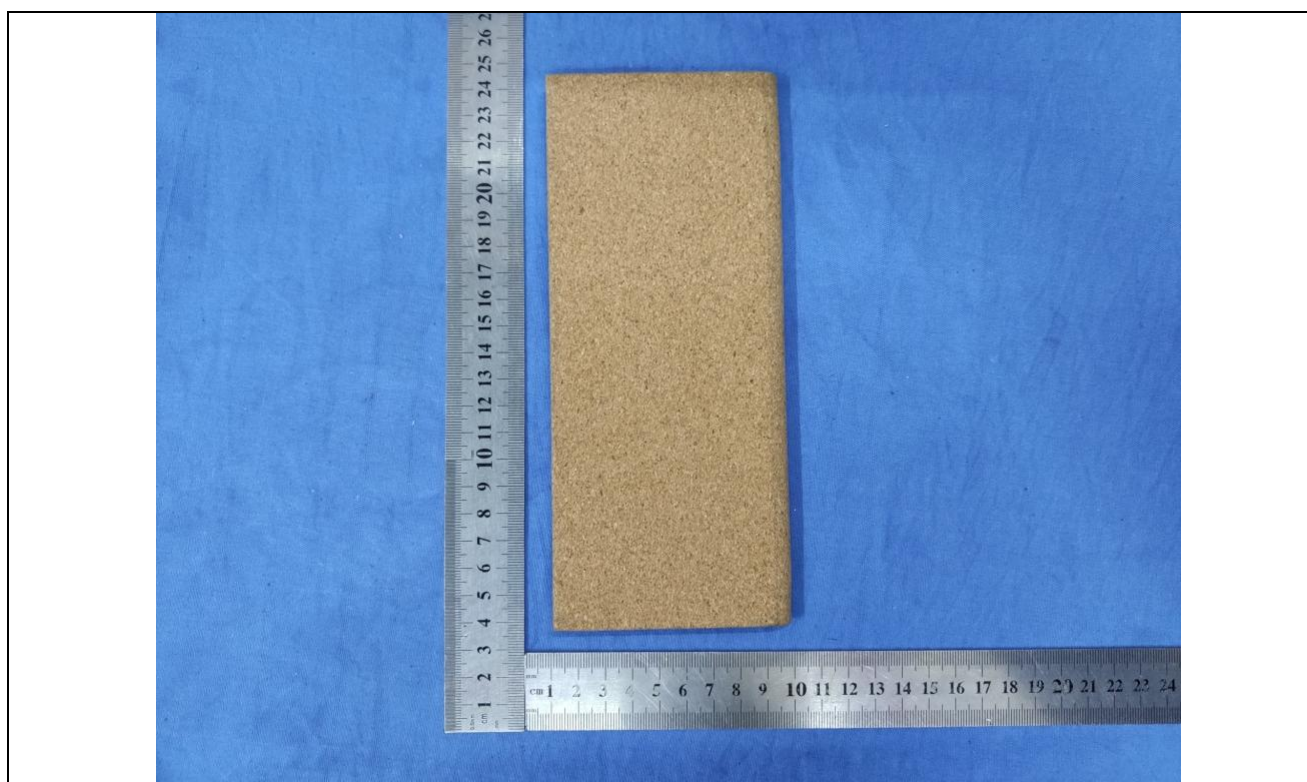
| | CENELEC COMMON MODIFICATIONS (EN) | | |
|-------------|--|--|-----|
| 1 | NOTE Z1 | | N/A |
| 4.Z1 | Protective devices included as integral parts of the equipment or as parts of the building installation: | | P |
| | a) Included as parts of the equipment | | P |
| | b) For components in series with the mains; by devices in the building installation | | N/A |
| | c) For pluggable type B or permanently connected; by devices in the building installation | | N/A |
| 5.4.2.3.2.4 | Interconnection with external circuit | | N/A |
| 10.2.1 | Additional requirements in 10.5.1 | | N/A |
| 10.5.1 | RS1 compliance measurement conditions | | N/A |
| 10.6.2.1 | EN 71-1:2011, 4.20 and methods and distances | | N/A |
| 10.Z1 | Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz | | N/A |
| G.7.1 | NOTE Z1 | | N/A |

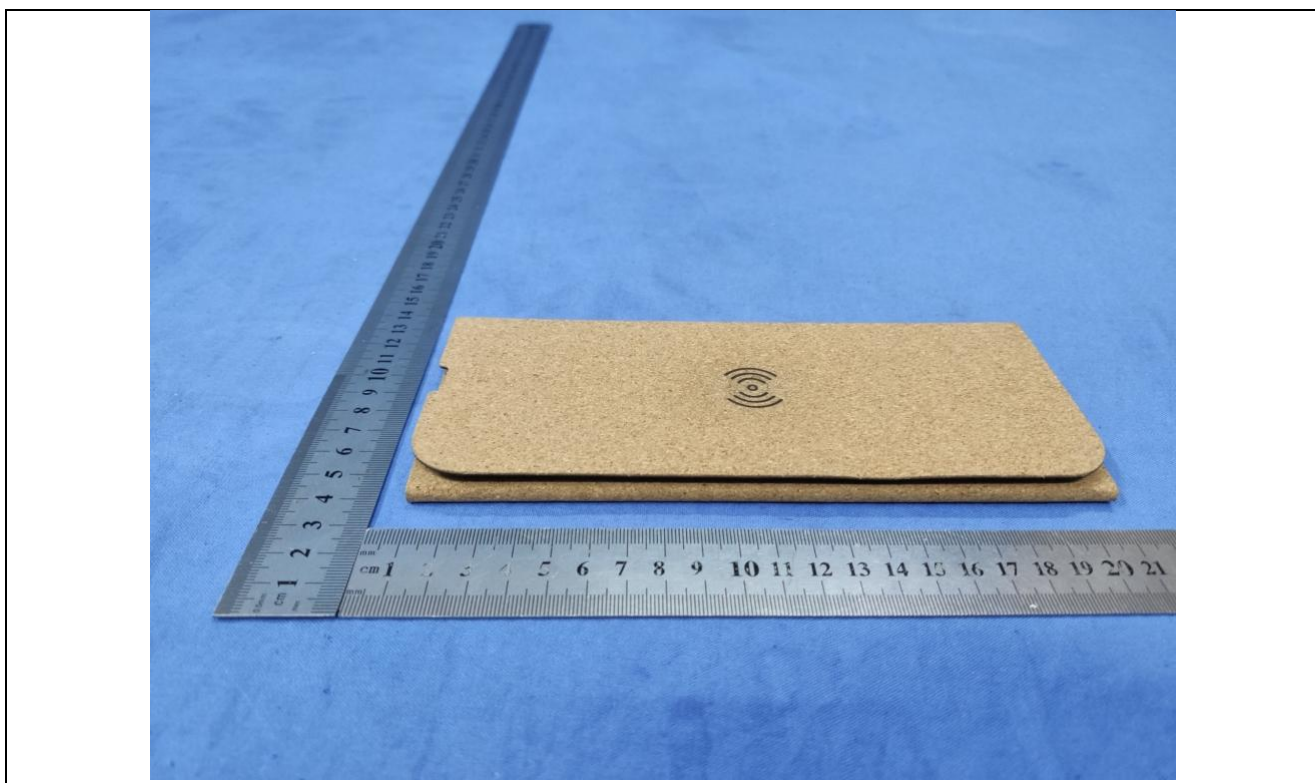
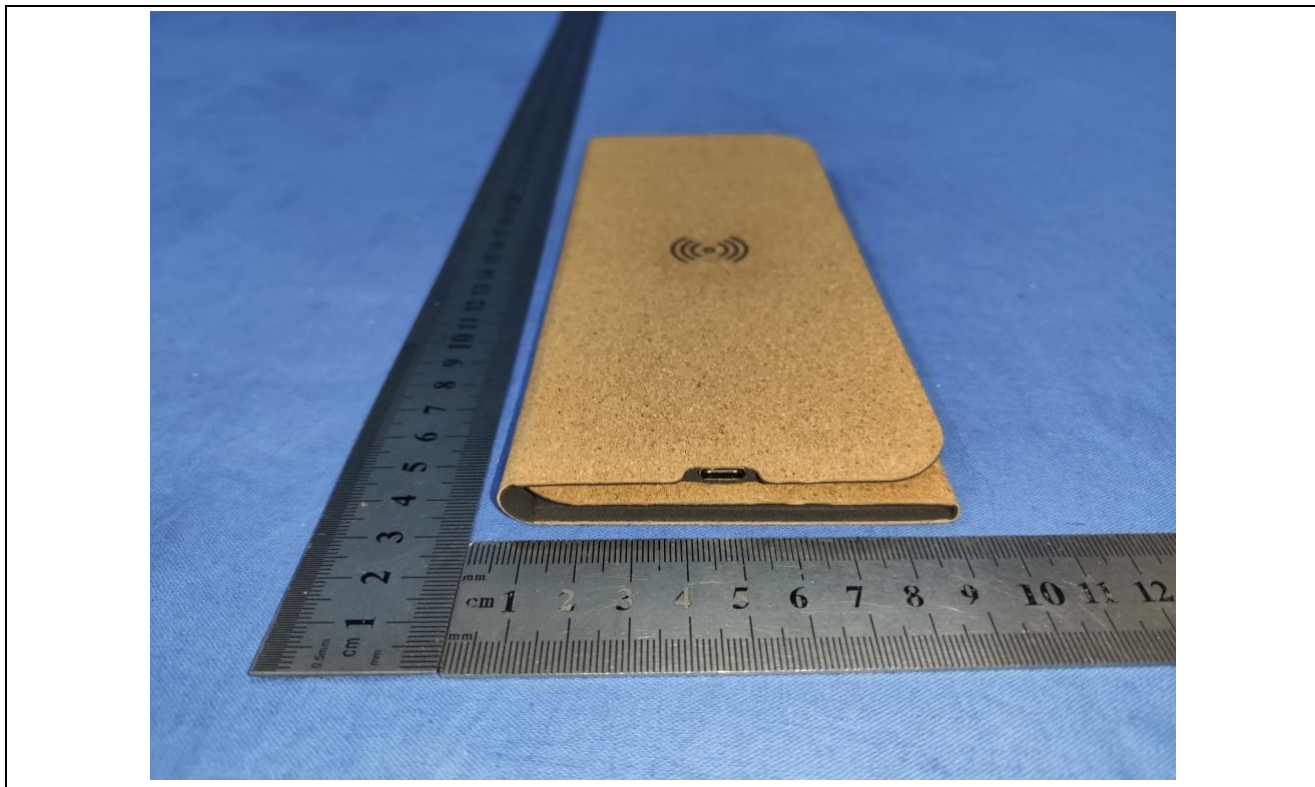
| ZB | ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN) | | |
|----------------------|--|--|-----|
| 4.1.15 | Denmark, Finland, Norway and Sweden: Class I pluggable equipment type A marking | | N/A |
| 4.7.3 | United Kingdom: Torque test socket-outlet BS 1363, and the plug part BS 1363. | | N/A |
| 5.2.2.2 | Denmark: Warning for high touchcurrent | | N/A |
| 5.4.11.1 and Annex G | Finland and Sweden: Separation of the telecommunication network from earth | | N/A |
| 5.5.2.1 | Norway: Capacitors rated for the applicable line-to-line voltage (230 V). | | N/A |
| 5.5.6 | Finland, Norway and Sweden: Resistors used as basic safeguard or bridging basic insulation comply with G.10.1 and G.10.2. | | N/A |
| 5.6.1 | Denmark: Protection for pluggable equipment type A; integral part of the equipment | | N/A |
| 5.6.4.2.1 | Ireland and United Kingdom: The protective current rating is taken to be 13 A | | N/A |
| 5.6.5.1 | Ireland and United Kingdom: Conductor sizes of flexible cords to be accepted by terminals for equipment rated 10 A to 13 A | | N/A |

| | | | |
|---------------|---|--|-----|
| 5.7.5 | Denmark: The installation instruction affixed to the equipment if high protective conductor current | | N/A |
| 5.7.6.1 | Norway and Sweden: Television distribution system isolation text in user manual | | N/A |
| 5.7.6.2 | Denmark: Warning for high touch current | | N/A |
| B.3.1 and B.4 | Ireland and United Kingdom: Tests conducted using an external miniature circuit breaker or protective devices included as an integral part of the direct plug-in equipment | | N/A |
| G.4.2 | Denmark: Appliances rated ≤ 13 A provided with a plug according to DS 60884-2-D1:2011. | | N/A |
| | Class I equipment provided with socket-outlets provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. | | N/A |
| | If a single-phase equipment having rated >13 A or poly-phase equipment provided with a supply cord with a plug, plug in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. | | N/A |
| | Mains socket outlets intended for providing power to Class II apparatus rated 2,5 A in accordance with DS 60884-2-D1:2011 standard sheet DKA 1-4a. | | N/A |
| | Other current rating socket outlets in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. | | N/A |
| | Mains socket-outlets with earth in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a | | N/A |
| G.4.2 | United Kingdom: The plug part of direct plug-in equipment assessed to BS 1363 | | N/A |
| G.7.1 | United Kingdom: Equipment fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768 | | N/A |
| G.7.1 | Ireland: Apparatus provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use | | N/A |

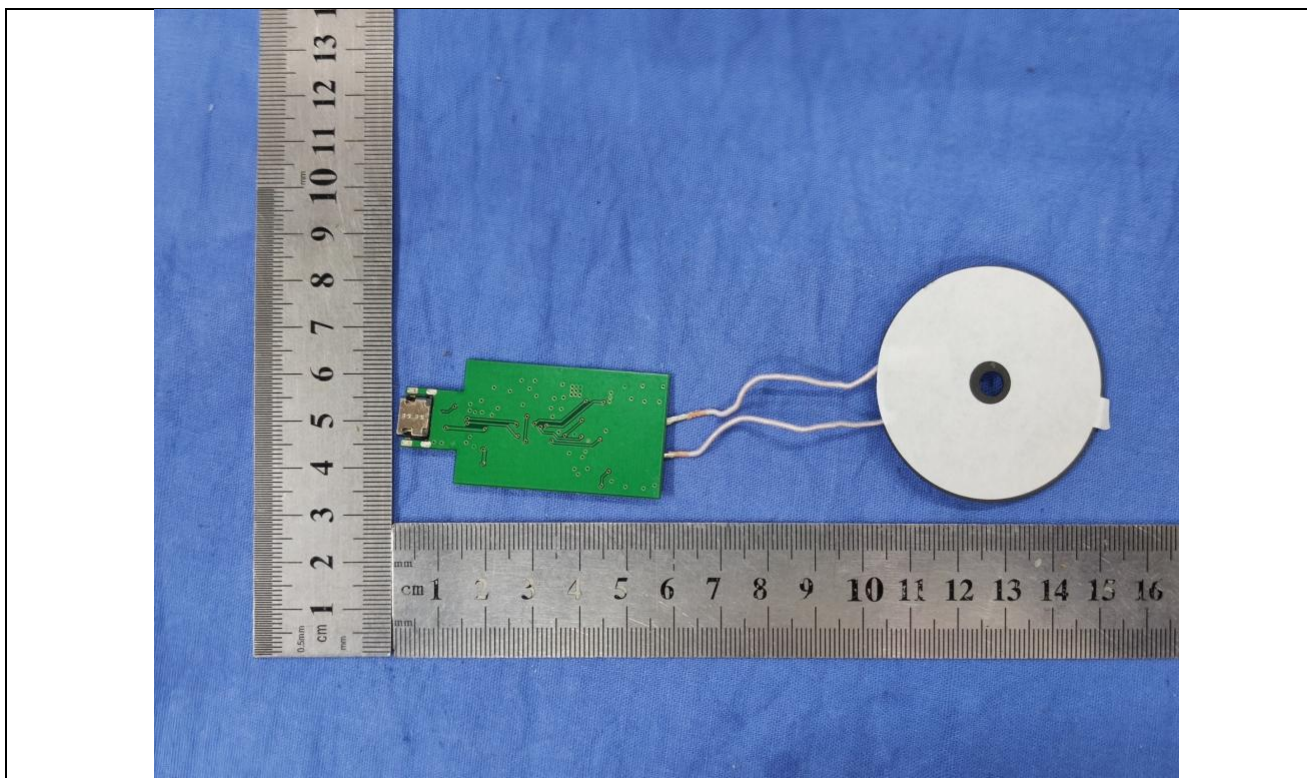
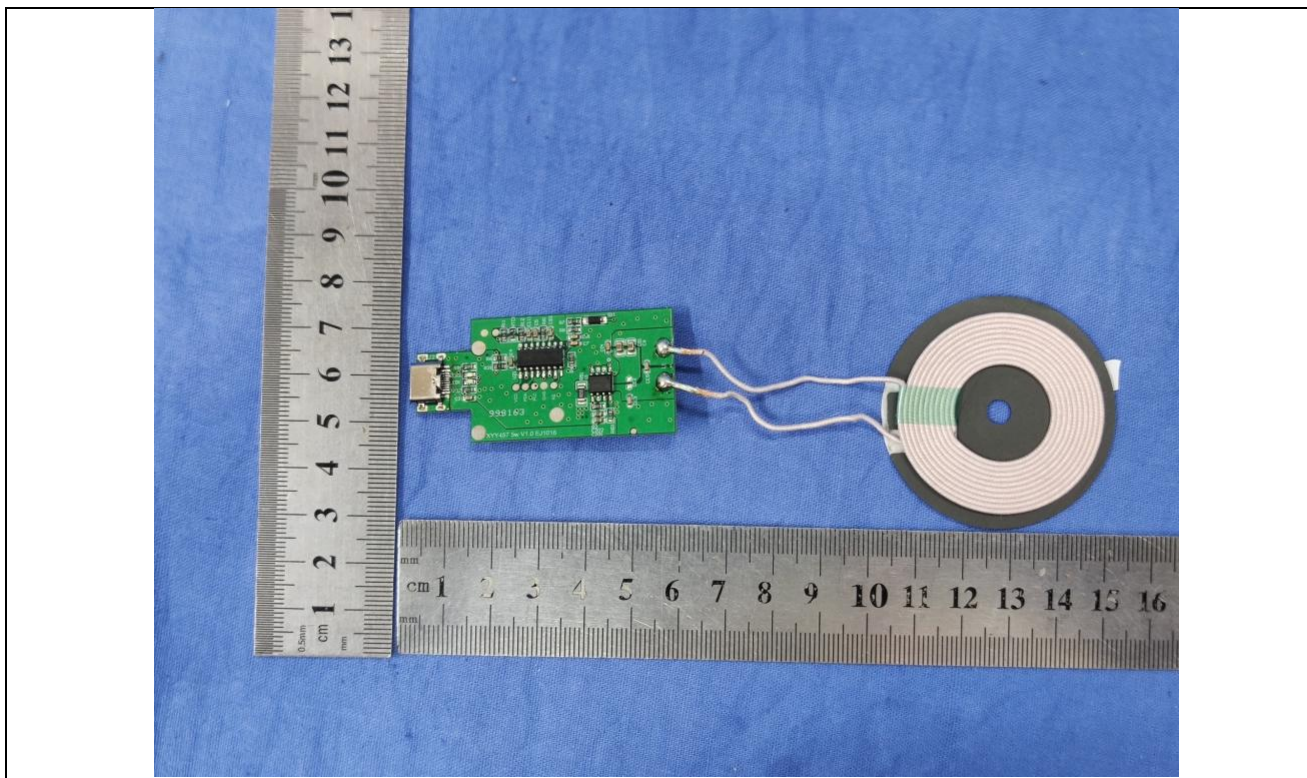
| | | | |
|-------|--|--|-----|
| G.7.2 | Ireland and United Kingdom: A power supply cord for equipment which is rated over 10 A and up to and including 13 A. | | N/A |
|-------|--|--|-----|

| | | | |
|-----------|--|--|-----|
| ZC | ANNEX ZC, NATIONAL DEVIATIONS (EN) | | |
| 10.5.2 | Germany: Cathode ray tube intended for the display of visual images, authorization or application of type approval and marking. | | N/A |
| F.1 | Italy: The power consumption in Watts (W) indicated on TV receiver and in instruction for use | | N/A |
| | TV receivers provided with an instruction for use, schematic diagrams and adjustments procedure in Italian language. | | N/A |
| | Marking for controls and terminals in Italian language. | | N/A |
| | Conformity declaration according to the above requirements in the instruction manual | | N/A |
| | First importers of TV receivers manufactured outside EEC previous conformity certification to the Italian Post Ministry and Certification number on the backcover. | | N/A |

Attachment: Photos of the product







--- End of Report ---