| | |
|---|---|
| **Test Report No.:** | **RD171129N016** |
| **Applicant's name :** | Particle Industries,Inc |
| **Address :** | 126 Post St, 4th floor, San Francisco, CA 94108, USA 415-316-1024 |
| **Test Item description:** | E31M |
| **Model/Type reference :** | U201 |
| **Testing laboratory** | |
| **Name :** | **Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch** |
| **Address :** | No. 34, Chenwulu Section, Guantai Rd., Houjie Town, Dongguan City, Guangdong 523942, China |
| **Test specification** | |
| **Standard :** | ☐ IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013<br>☒ EN 60950-1:2006 + A11: 2009 + A1: 2010 + A12: 2011 + A2: 2013 |
| **Test Result :** | **The sample satisfies to the clauses examined.** |
| **Prepared By :** | Winter<br>_____<br>Winter Liu<br>Engineer / Safety Department<br>2018-01-15<br>Date |
| **Approved By:** | Storm<br>_____<br>Storm Xiong<br>Senior Engineer / Safety Department<br>2018-01-15<br>Date |

# TEST REPORT

| | |
|---|---|
| **Report Number. ..... :** | RD171129N016 |
| **Date of issue ..... :** | 2018-01-15 |
| **Total number of pages..... :** | 73 |
| **Testing laboratory.....:** | **Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch** |
| **Test location/Address.....:** | No. 34, Chenwulu Section, Guantai Rd., Houjie Town, Dongguan City, Guangdong 523942, China |
| **Applicant's name.....:** | Particle Industries,Inc |
| **Address .....:** | 126 Post St, 4th floor, San Francisco, CA 94108, USA 415-316-1024 |
| **Test specification:** | |
| **Standard.....:** | ☐ IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013<br>☒ EN 60950-1:2006 + A11: 2009 + A1: 2010 + A12: 2011 + A2: 2013 |
| **Non-standard test method .....:** | N/A |
| **Test Report Form No. .....:** | IEC/EN 60950-1_VER.4 |
| **Test Report Form(s) Originator .....:** | BV_DG |
| **Master TRF.....:** | Dated 2017-01 |
| **Manufacturer .....:** | Particle Industries,Inc |
| **Address .....:** | 126 Post St, 4th floor, San Francisco, CA 94108, USA 415-316-1024 |
| **Factory .....:** | ABO ELECTRONICS (SHEN ZHEN) CO., LTD. |
| **Address .....:** | Unit 201~202, Wang Rong Ind Park, 99 Ind Zone, Minzhu, Shajing, Baoan, Shenzhen, PRC |
| **Test item description .....:** | E31M |
| **Trade Mark .....:** | Particle |
| **Model/Type reference .....:** | U201 |
| **Ratings .....:** | 5 Vdc, 2 A |

**Copy of marking plate (representative)**

Need to check in the end product

| Test item particulars | |
|---|---|
| Equipment mobility | [] movable []hand-held [] transportable<br>[] stationary [X] for building-in [] direct plug-in |
| Connection to the mains | [] pluggable equipment [] type A [] type B<br>[] permanent connection<br>[] detachable power supply cord<br>[] non-detachable power supply cord<br>[X] not directly connected to the mains |
| Operating condition | [X] continuous<br>[] rated operating / resting time: |
| Access location | [X] operator accessible<br>[] restricted access location |
| Over voltage category (OVC) | [] OVC I [] OVC II [] OVC III [] OVC IV<br>[X] other: supplied by lithium battery or external DC source |
| Mains supply tolerance (%) or absolute mains supply values | N/A |
| Tested for IT power systems | [] Yes [X] No |
| IT testing, phase-phase voltage (V) | N/A |
| Class of equipment | [] Class I [] Class II [X] Class III<br>[] Not classified |
| Considered current rating (A) | N/A |
| Pollution degree (PD) | [] PD 1 [X] PD 2 [] PD 3 |
| IP protection class | IPX0 |
| Altitude during operation (m) | Below 2000 m |
| Altitude of test laboratory (m) | Below 2000 m |
| Mass of equipment (kg) | Approx: 0.010 Kg |
| **Possible test case verdicts:** | |
| - test case does not apply to the test object | N/A |
| - test object does meet the requirement | P (Pass) |
| - test object does not meet the requirement | F (Fail) |
| **Testing** | |
| Date of receipt of test item | December 04, 2017 |
| Date(s) of performance of tests | December 25, 2017 to December 29, 2017 |

**General remarks:**

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.

**Throughout this report a ☐ comma / ☒ point is used as the decimal separator.**

**General product information:**

1.The equipment under test (EUT) has been evaluated at maximum ambient (Tma) of +85°C according to the manufacturer's declaration.

2.The equipment named "E31M" is tiny development kit which used for building-in equipment in information technology equipment.

3.The equipment could be supplied by lithium battery or external DC source.

**Summary of testing:**

All tests were measured under the worst case and the load conditions used during testing are:

- Supplied by DC source, the fully discharged lithium battery was charging;

- Supplied by DC source, the EUT was transmissed data continuously under wireless mode with fully discharged lithium battery on charging;

- Supplied by internal fully charged lithium battery, the EUT was transmissed data continuously under wireless mode.

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| **1** | **GENERAL** | | P |
| **1.5** | **Components** | | P |
| 1.5.1 | General | Components, which were found to affect safety aspects, are conformed to the relevant IEC component standards and/or comply with the requirements of this standard. | P |
| | Comply with IEC 60950-1 or relevant component standard | (See appended table 1.5.1) | P |
| 1.5.2 | Evaluation and testing of components | Components which are certified to IEC and/or national standards are used correctly within their ratings.<br>Components not covered by IEC standards are tested under the conditions presented in the equipment. | P |
| 1.5.3 | Thermal controls | No thermal controls used. | N/A |
| 1.5.4 | Transformers | No such part used | N/A |
| 1.5.5 | Interconnecting cables | Interconnecting cables does not carry voltage higher than SELV and no higher energy level than 240VA. | P |
| 1.5.6 | Capacitors bridging insulation | No such components used | N/A |
| 1.5.7 | Resistors bridging insulation | No such components used | N/A |
| 1.5.7.1 | Resistors bridging functional, basic or supplementary insulation | No such components used | N/A |
| 1.5.7.2 | Resistors bridging double or reinforced insulation between a.c. mains and other circuits | No such components used | N/A |
| 1.5.7.3 | Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable | No such components used | N/A |
| 1.5.8 | Components in equipment for IT power systems | The EUT is not directly connected to the mains. | N/A |
| 1.5.9 | Surge suppressors | No such components used | N/A |
| 1.5.9.1 | General | No such components used | N/A |
| 1.5.9.2 | Protection of VDRs | No such components used | N/A |
| 1.5.9.3 | Bridging of functional insulation by a VDR | No such components used | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| 1.5.9.4 | Bridging of basic insulation by a VDR | No such components used | N/A |
| 1.5.9.5 | Bridging of supplementary, double or reinforced insulation by a VDR | No such components used | N/A |
| **1.6** | **Power interface** | | P |
| 1.6.1 | AC power distribution systems | The EUT is not directly connected to the mains. | N/A |
| 1.6.2 | Input current | (See appended table 1.6.2) | P |
| 1.6.3 | Voltage limit of hand-held equipment | No such equipment. | N/A |
| 1.6.4 | Neutral conductor | The EUT is not directly connected to the mains. | N/A |
| **1.7** | **Marking and instructions** | | N/A |
| 1.7.1 | Power rating and identification markings | Evaluate in end product. | N/A |
| 1.7.1.1 | Power rating marking | | N/A |
| | Multiple mains supply connections.....: | | N/A |
| | Rated voltage(s) or voltage range(s) (V) .....: | | N/A |
| | Symbol for nature of supply, for d.c. only.....: | | N/A |
| | Rated frequency or rated frequency range (Hz) ....: | | N/A |
| | Rated current (mA or A) .....: | | N/A |
| 1.7.1.2 | Identification markings | | N/A |
| | Manufacturer's name or trade-mark or identification mark .....: | | N/A |
| | Model identification or type reference .....: | | N/A |
| | Symbol for Class II equipment only .....: | | N/A |
| | Other markings and symbols .....: | | N/A |
| 1.7.1.3 | Use of graphical symbols | | N/A |
| 1.7.2 | Safety instructions and marking | Evaluate in end product. | N/A |
| 1.7.2.1 | General | | N/A |
| 1.7.2.2 | Disconnect devices | | N/A |
| 1.7.2.3 | Overcurrent protective device | | N/A |
| 1.7.2.4 | IT power distribution systems | | N/A |
| 1.7.2.5 | Operator access with a tool | | N/A |
| 1.7.2.6 | Ozone | | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| 1.7.3 | Short duty cycles | Evaluate in end product. | N/A |
| 1.7.4 | Supply voltage adjustment ..... : | Evaluate in end product. | N/A |
| | Methods and means of adjustment; reference to installation instructions ..... : | | N/A |
| 1.7.5 | Power outlets on the equipment ..... : | Evaluate in end product. | N/A |
| 1.7.6 | Fuse identification (marking, special fusing characteristics, cross-reference) ..... : | Evaluate in end product. | N/A |
| 1.7.7 | Wiring terminals | Evaluate in end product. | N/A |
| 1.7.7.1 | Protective earthing and bonding terminals ..... : | | N/A |
| 1.7.7.2 | Terminals for a.c. mains supply conductors | | N/A |
| 1.7.7.3 | Terminals for d.c. mains supply conductors | | N/A |
| 1.7.8 | Controls and indicators | Evaluate in end product. | N/A |
| 1.7.8.1 | Identification, location and marking ..... : | | N/A |
| 1.7.8.2 | Colours ..... : | | N/A |
| 1.7.8.3 | Symbols according to IEC 60417..... : | | N/A |
| 1.7.8.4 | Markings using figures ..... : | | N/A |
| 1.7.9 | Isolation of multiple power sources..... : | | N/A |
| 1.7.10 | Thermostats and other regulating devices ..... : | | N/A |
| 1.7.11 | Durability | | N/A |
| 1.7.12 | Removable parts | | N/A |
| 1.7.13 | Replaceable batteries ..... : | | N/A |
| | Language(s) ..... : | | — |
| 1.7.14 | Equipment for restricted access locations ..... : | | N/A |

| | | | |
|---|---|---|---|
| **2** | **PROTECTION FROM HAZARDS** | | P |
| **2.1** | **Protection from electric shock and energy hazards** | | P |
| 2.1.1 | Protection in operator access areas | See below. | N/A |
| 2.1.1.1 | Access to energized parts | Class III equipment, supplied by SELV and there is no hazardous voltage generated inside the EUT. | N/A |
| | Test by inspection ..... : | See below. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| | Test with test finger (Figure 2A) ..... : | Class III equipment, supplied by SELV and there is no hazardous voltage generated inside the EUT. | N/A |
| | Test with test pin (Figure 2B) ..... : | Class III equipment, supplied by SELV and there is no hazardous voltage generated inside the EUT. | N/A |
| | Test with test probe (Figure 2C) ..... : | Class III equipment, supplied by SELV and there is no hazardous voltage generated inside the EUT. | N/A |
| 2.1.1.2 | Battery compartments | Class III equipment, supplied by SELV and there is no hazardous voltage generated inside the EUT. | N/A |
| 2.1.1.3 | Access to ELV wiring | No ELV wiring in operator accessible area. | N/A |
| | Working voltage (Vpeak or Vrms); minimum distance through insulation (mm) | | — |
| 2.1.1.4 | Access to hazardous voltage circuit wiring | Class III equipment, supplied by SELV and there is no hazardous voltage generated inside the EUT. | N/A |
| 2.1.1.5 | Energy hazards ..... : | No energy hazards part in the operator access area | N/A |
| 2.1.1.6 | Manual controls | No such device. | N/A |
| 2.1.1.7 | Discharge of capacitors in equipment | No such capacitor | N/A |
| | Measured voltage (V); time-constant (s) ..... : | | — |
| 2.1.1.8 | Energy hazards – d.c. mains supply | This product is not intended to be connected to d.c. mains supply. | N/A |
| | a) Capacitor connected to the d.c. mains supply ... : | This product is not intended to be connected to d.c. mains supply. | N/A |
| | b) Internal battery connected to the d.c. mains supply ..... : | This product is not intended to be connected to d.c. mains supply. | N/A |
| 2.1.1.9 | Audio amplifiers ..... : | No audio amplifiers | N/A |
| 2.1.2 | Protection in service access areas | | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| 2.1.3 | Protection in restricted access locations | It is not intended to be used in restricted locations. | N/A |
| **2.2** | **SELV circuits** | | P |
| 2.2.1 | General requirements | See below. | P |
| 2.2.2 | Voltages under normal conditions (V) ..... : | Class III equipment, supplied by SELV and there is no hazardous voltage generated inside the EUT. | P |
| 2.2.3 | Voltages under fault conditions (V) ..... : | Class III equipment, supplied by SELV and there is no hazardous voltage generated inside the EUT. | P |
| 2.2.4 | Connection of SELV circuits to other circuits ..... : | SELV circuit is only connected to SELV circuit | P |
| **2.3** | **TNV circuits** | | N/A |
| 2.3.1 | Limits | No TNV circuit. | N/A |
| | Type of TNV circuits ..... : | | — |
| 2.3.2 | Separation from other circuits and from accessible parts | No TNV circuit. | N/A |
| 2.3.2.1 | General requirements | No TNV circuit. | N/A |
| 2.3.2.2 | Protection by basic insulation | No TNV circuit. | N/A |
| 2.3.2.3 | Protection by earthing | No TNV circuit. | N/A |
| 2.3.2.4 | Protection by other constructions ..... : | No TNV circuit. | N/A |
| 2.3.3 | Separation from hazardous voltages | No TNV circuit. | N/A |
| | Insulation employed ..... : | No TNV circuit. | N/A |
| 2.3.4 | Connection of TNV circuits to other circuits | No TNV circuit. | N/A |
| | Insulation employed ..... : | No TNV circuit. | — |
| 2.3.5 | Test for operating voltages generated externally | No TNV circuit. | N/A |
| **2.4** | **Limited current circuits** | | N/A |
| 2.4.1 | General requirements | No limited current circuits. | N/A |
| 2.4.2 | Limit values | No limited current circuits. | N/A |
| | Frequency (Hz)..... : | -- | — |
| | Measured current (mA) ..... : | -- | — |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| | Measured voltage (V) ..... : | -- | — |
| | Measured circuit capacitance (nF or µF) ..... : | -- | — |
| 2.4.3 | Connection of limited current circuits to other circuits | No limited current circuits. | N/A |

| | | | |
|---|---|---|---|
| **2.5** | **Limited power sources** | | **N/A** |
| | a) Inherently limited output | No such circuit | N/A |
| | b) Impedance limited output | No such circuit | N/A |
| | c) Regulating network or IC current limiter, limits output under normal operating and single fault condition | (See appended table 2.5) | N/A |
| | Use of integrated circuit (IC) current limiters | No such component. | N/A |
| | d) Overcurrent protective device limited output | No such circuit | N/A |
| | Max. output voltage (V), max. output current (A), max. apparent power (VA) ..... : | (See appended table 2.5) | — |
| | Current rating of overcurrent protective device (A) .: | No such component. | N/A |

| | | | |
|---|---|---|---|
| **2.6** | **Provisions for earthing and bonding** | | N/A |
| 2.6.1 | Protective earthing | Class III equipment, no protective earthing. | N/A |
| 2.6.2 | Functional earthing | Class III equipment, no protective earthing. | N/A |
| | Use of symbol for functional earthing .....: | Class III equipment, no protective earthing. | N/A |
| 2.6.3 | Protective earthing and protective bonding conductors | Class III equipment, no protective earthing. | N/A |
| 2.6.3.1 | General | Class III equipment, no protective earthing. | N/A |
| 2.6.3.2 | Size of protective earthing conductors | Class III equipment, no protective earthing. | N/A |
| | Rated current (A), cross-sectional area ($mm^2$), AWG ..... : | | — |
| 2.6.3.3 | Size of protective bonding conductors | Class III equipment, no protective earthing. | N/A |
| | Rated current (A), cross-sectional area ($mm^2$), AWG ..... : | | — |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| | Protective current rating (A), cross-sectional area ($mm^2$), AWG..... : | | — |
| 2.6.3.4 | Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min) ..... : | Class III equipment, no protective earthing. | N/A |
| 2.6.3.5 | Colour of insulation..... : | Class III equipment, no protective earthing. | N/A |
| 2.6.4 | Terminals | Class III equipment, no protective earthing. | N/A |
| 2.6.4.1 | General | Class III equipment, no protective earthing. | N/A |
| 2.6.4.2 | Protective earthing and bonding terminals | Class III equipment, no protective earthing. | N/A |
| | Rated current (A), type, nominal thread diameter (mm) ..... : | | — |
| 2.6.4.3 | Separation of the protective earthing conductor from protective bonding conductors | Class III equipment, no protective earthing. | N/A |
| 2.6.5 | Integrity of protective earthing | Class III equipment, no protective earthing. | N/A |
| 2.6.5.1 | Interconnection of equipment | Class III equipment, no protective earthing. | N/A |
| 2.6.5.2 | Components in protective earthing conductors and protective bonding conductors | Class III equipment, no protective earthing. | N/A |
| 2.6.5.3 | Disconnection of protective earth | Class III equipment, no protective earthing. | N/A |
| 2.6.5.4 | Parts that can be removed by an operator | Class III equipment, no protective earthing. | N/A |
| 2.6.5.5 | Parts removed during servicing | Class III equipment, no protective earthing. | N/A |
| 2.6.5.6 | Corrosion resistance | Class III equipment, no protective earthing. | N/A |
| 2.6.5.7 | Screws for protective bonding | Class III equipment, no protective earthing. | N/A |
| 2.6.5.8 | Reliance on telecommunication network or cable distribution system | Class III equipment, no protective earthing. | N/A |
| **2.7** | **Overcurrent and earth fault protection in primary circuits** | | N/A |
| 2.7.1 | Basic requirements | Class III equipment. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| | Instructions when protection relies on building installation | Class III equipment. | N/A |
| 2.7.2 | Faults not simulated in 5.3.7 | Class III equipment. | N/A |
| 2.7.3 | Short-circuit backup protection | Class III equipment. | N/A |
| 2.7.4 | Number and location of protective devices .....: | Class III equipment. | N/A |
| 2.7.5 | Protection by several devices | Class III equipment. | N/A |
| 2.7.6 | Warning to service personnel.....: | Class III equipment. | N/A |
| **2.8** | **Safety interlocks** | | N/A |
| 2.8.1 | General principles | No hazards in the meaning of this standard at operator access involves areas. | N/A |
| 2.8.2 | Protection requirements | There is no safety interlock in the equipment. | N/A |
| 2.8.3 | Inadvertent reactivation | There is no safety interlock in the equipment. | N/A |
| 2.8.4 | Fail-safe operation | There is no safety interlock in the equipment. | N/A |
| | Protection against extreme hazard | There is no safety interlock in the equipment. | N/A |
| 2.8.5 | Moving parts | There is no safety interlock in the equipment. | N/A |
| 2.8.6 | Overriding | There is no safety interlock in the equipment. | N/A |
| 2.8.7 | Switches, relays and their related circuits | There is no safety interlock in the equipment. | N/A |
| 2.8.7.1 | Separation distances for contact gaps and their related circuits (mm) .....: | There is no safety interlock in the equipment. | N/A |
| 2.8.7.2 | Overload test | There is no safety interlock in the equipment. | N/A |
| 2.8.7.3 | Endurance test | There is no safety interlock in the equipment. | N/A |
| 2.8.7.4 | Electric strength test | There is no safety interlock in the equipment. | N/A |
| 2.8.8 | Mechanical actuators | There is no safety interlock in the equipment. | N/A |
| **2.9** | **Electrical insulation** | | P |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| 2.9.1 | Properties of insulating materials | Class III equipment, no critical insulation in the EUT. | N/A |
| 2.9.2 | Humidity conditioning | Class III equipment, no critical insulation in the EUT. | N/A |
| | Relative humidity (%), temperature (°C) .....: | -- | — |
| 2.9.3 | Grade of insulation | Only the functional insulation inside the EUT. | P |
| 2.9.4 | Separation from hazardous voltages | Class III equipment, no critical insulation in the EUT. | N/A |
| | Method(s) used .....: | -- | — |

| | | | |
|---|---|---|---|
| **2.10** | **Clearances, creepage distances and distances through insulation** | | P |
| 2.10.1 | General | Class III equipment, supplied by SELV and no critical insulation inside the EUT. | P |
| 2.10.1.1 | Frequency .....: | Class III equipment | N/A |
| 2.10.1.2 | Pollution degrees .....: | This report considered the pollution degree II. | P |
| 2.10.1.3 | Reduced values for functional insulation | The functional insulation comply with 5.3.4 c) | P |
| 2.10.1.4 | Intervening unconnected conductive parts | Class III equipment, supplied by SELV and no critical insulation inside the EUT. | N/A |
| 2.10.1.5 | Insulation with varying dimensions | Class III equipment, supplied by SELV and no critical insulation inside the EUT. | N/A |
| 2.10.1.6 | Special separation requirements | Class III equipment, supplied by SELV and no critical insulation inside the EUT. | N/A |
| 2.10.1.7 | Insulation in circuits generating starting pulses | No such circuit in the equipment. | N/A |
| 2.10.2 | Determination of working voltage | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the fuctional insulation inside the EUT. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| 2.10.2.1 | General | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the fuctional insulation inside the EUT. | N/A |
| 2.10.2.2 | RMS working voltage | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the fuctional insulation inside the EUT. | N/A |
| 2.10.2.3 | Peak working voltage | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the fuctional insulation inside the EUT. | N/A |
| 2.10.3 | Clearances | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the fuctional insulation inside the EUT. | N/A |
| 2.10.3.1 | General | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the fuctional insulation inside the EUT. | N/A |
| 2.10.3.2 | Mains transient voltages | Class III equipment. Not connected to a.c. mains directly. | N/A |
| | a) AC mains supply ..... : | Class III equipment. Not connected to a.c. mains directly. | N/A |
| | b) Earthed d.c. mains supplies ..... : | The equipment is not intended to be supplied by d.c. mains. | N/A |
| | c) Unearthed d.c. mains supplies ..... : | The equipment is not intended to be supplied by d.c. mains. | N/A |
| | d) Battery operation ..... : | The equipment is not intended to be supplied by such dedicated battery | N/A |
| 2.10.3.3 | Clearances in primary circuits | Class III equipment, supplied by SELV and no critical insulation inside the EUT. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| 2.10.3.4 | Clearances in secondary circuits | Class III equipment, supplied by SELV and no critical insulation inside the EUT. | N/A |
| 2.10.3.5 | Clearances in circuits having starting pulses | No such circuit | N/A |
| 2.10.3.6 | Transients from a.c. mains supply ..... : | Class III equipment. Not connected to a.c. mains directly. | N/A |
| 2.10.3.7 | Transients from d.c. mains supply ..... : | The EUT is not intended to be connected to the d.c. mains. | N/A |
| 2.10.3.8 | Transients from telecommunication networks and cable distribution systems ..... : | Not connected to the telecommunication network and cable distribution systems. | N/A |
| 2.10.3.9 | Measurement of transient voltage levels | See below. | N/A |
| | a) Transients from a mains supply | Class III equipment. Not connected to mains directly. | N/A |
| | For an a.c. mains supply ..... : | Class III equipment. Not connected to a.c. mains directly. | N/A |
| | For a d.c. mains supply ..... : | The EUT is not intended to be connected to the d.c. mains. | N/A |
| | b) Transients from a telecommunication network : | Not connected to telecommunication network. | N/A |
| 2.10.4 | Creepage distances | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the fuctional insulation inside the EUT. | N/A |
| 2.10.4.1 | General | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.4.2 | Material group and comparative tracking index | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| | CTI tests ..... : | -- | — |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| 2.10.4.3 | Minimum creepage distances | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.5 | Solid insulation | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.5.1 | General | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.5.2 | Distances through insulation | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.5.3 | Insulating compound as solid insulation | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.5.4 | Semiconductor devices | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.5.5. | Cemented joints | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.5.6 | Thin sheet material – General | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.5.7 | Separable thin sheet material | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| | Number of layers (pcs)..... : | -- | — |
| 2.10.5.8 | Non-separable thin sheet material | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.5.9 | Thin sheet material – standard test procedure | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| | Electric strength test | -- | — |
| 2.10.5.10 | Thin sheet material – alternative test procedure | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| | Electric strength test | -- | — |
| 2.10.5.11 | Insulation in wound components | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.5.12 | Wire in wound components | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| | Working voltage ..... : | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| | a) Basic insulation not under stress ..... : | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| | b) Basic, supplementary, reinforced insulation ..... : | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| | c) Compliance with Annex U ..... : | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| | Two wires in contact inside wound component; angle between 45° and 90° ..... : | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.5.13 | Wire with solvent-based enamel in wound components | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| | Electric strength test | -- | — |
| | Routine test | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.5.14 | Additional insulation in wound components | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| | Working voltage ..... : | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| | - Basic insulation not under stress ..... : | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| | - Supplementary, reinforced insulation ..... : | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| 2.10.6 | Construction of printed boards | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.6.1 | Uncoated printed boards | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.6.2 | Coated printed boards | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.6.3 | Insulation between conductors on the same inner surface of a printed board | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.6.4 | Insulation between conductors on different layers of a printed board | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| | Distance through insulation | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| | Number of insulation layers (pcs) ..... : | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.7 | Component external terminations | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 2.10.8 | Tests on coated printed boards and coated components | No such construction. | N/A |
| 2.10.8.1 | Sample preparation and preliminary inspection | No such construction. | N/A |
| 2.10.8.2 | Thermal conditioning | No such construction. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| 2.10.8.3 | Electric strength test | No such construction. | N/A |
| 2.10.8.4 | Abrasion resistance test | No such construction. | N/A |
| 2.10.9 | Thermal cycling | No such construction. | N/A |
| 2.10.10 | Test for Pollution Degree 1 environment and insulating compound | Pollution degree 2 is considered. | N/A |
| 2.10.11 | Tests for semiconductor devices and cemented joints | No such construction. | N/A |
| 2.10.12 | Enclosed and sealed parts | No hermetically sealed component. | N/A |
| **3** | **WIRING, CONNECTIONS AND SUPPLY** | | P |
| **3.1** | **General** | | P |
| 3.1.1 | Current rating and overcurrent protection | The internal wiring can be shown that creation of hazards is unlikely | P |
| 3.1.2 | Protection against mechanical damage | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 3.1.3 | Securing of internal wiring | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 3.1.4 | Insulation of conductors | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 3.1.5 | Beads and ceramic insulators | No such part | N/A |
| 3.1.6 | Screws for electrical contact pressure | No such screws used | N/A |
| 3.1.7 | Insulating materials in electrical connections | No non-metallic materials used in electrical connections. | N/A |
| 3.1.8 | Self-tapping and spaced thread screws | No self-tapping screws used in electrical connections. | N/A |
| 3.1.9 | Termination of conductors | No such terminal | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| | 10 N pull test | Class III equipment, supplied by SELV and no critical insulation inside the EUT. Only the functional insulation inside the EUT. | N/A |
| 3.1.10 | Sleeving on wiring | No such part | N/A |
| **3.2** | **Connection to a mains supply** | | N/A |
| 3.2.1 | Means of connection | See below. | N/A |
| 3.2.1.1 | Connection to an a.c. mains supply | Class III equipment. Not connected to a.c. mains directly. | N/A |
| 3.2.1.2 | Connection to a d.c. mains supply | The equipment is not connected to a d.c. mains supply. | N/A |
| 3.2.2 | Multiple supply connections | Single supply connection | N/A |
| 3.2.3 | Permanently connected equipment | No permanently connected equipment. | N/A |
| | Number of conductors, diameter of cable and conduits (mm) .....: | -- | — |
| 3.2.4 | Appliance inlets | No such parts | N/A |
| 3.2.5 | Power supply cords | See below. | N/A |
| 3.2.5.1 | AC power supply cords | Class III equipment. Not connected to the mains directly. | N/A |
| | Type .....: | -- | — |
| | Rated current (A), cross-sectional area ($mm^2$), AWG .....: | -- | — |
| 3.2.5.2 | DC power supply cords | The equipment is not connected to d.c. mains supply. | N/A |
| 3.2.6 | Cord anchorages and strain relief | No such construction | N/A |
| | Mass of equipment (kg), pull (N) .....: | -- | — |
| | Longitudinal displacement (mm) .....: | -- | — |
| 3.2.7 | Protection against mechanical damage | No such construction | N/A |
| 3.2.8 | Cord guards | No such construction. | N/A |
| | Diameter or minor dimension D (mm); test mass (g) .....: | -- | — |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| | Radius of curvature of cord (mm) .....: | -- | — |
| 3.2.9 | Supply wiring space | No such construction | N/A |
| **3.3** | **Wiring terminals for connection of external conductors** | | N/A |
| 3.3.1 | Wiring terminals | The equipment is not connected to mains supply. | N/A |
| 3.3.2 | Connection of non-detachable power supply cords | The equipment is not connected to mains supply. | N/A |
| 3.3.3 | Screw terminals | The equipment is not connected to mains supply. | N/A |
| 3.3.4 | Conductor sizes to be connected | The equipment is not connected to mains supply. | N/A |
| | Rated current (A), cord/cable type, cross-sectional area ($mm^2$) .....: | | — |
| 3.3.5 | Wiring terminal sizes | The equipment is not connected to mains supply. | N/A |
| | Rated current (A), type, nominal thread diameter (mm) .....: | | — |
| 3.3.6 | Wiring terminal design | The equipment is not connected to mains supply. | N/A |
| 3.3.7 | Grouping of wiring terminals | | N/A |
| 3.3.8 | Stranded wire | The equipment is not connected to mains supply. | N/A |
| **3.4** | **Disconnection from the mains supply** | | N/A |
| 3.4.1 | General requirement | Class III equipment. Not connected to the mains directly. | N/A |
| 3.4.2 | Disconnect devices | Class III equipment. Not connected to the mains directly. | N/A |
| 3.4.3 | Permanently connected equipment | The EUT is not permanently connected equipment. | N/A |
| 3.4.4 | Parts which remain energized | Class III equipment. Not connected to the mains directly. | N/A |
| 3.4.5 | Switches in flexible cords | No such flexible cords provided. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| 3.4.6 | Number of poles - single-phase and d.c. equipment | Class III equipment. Not connected to the mains directly. | N/A |
| 3.4.7 | Number of poles - three-phase equipment | Class III equipment. Not connected to the mains directly. | N/A |
| 3.4.8 | Switches as disconnect devices | No such switch used | N/A |
| 3.4.9 | Plugs as disconnect devices | Class III equipment. Not connected to the mains directly. | N/A |
| 3.4.10 | Interconnected equipment | Interconnection to other devices by secondary SELV output only. | N/A |
| 3.4.11 | Multiple power sources | Class III equipment. Not connected to the mains directly. | N/A |
| **3.5** | **Interconnection of equipment** | | P |
| 3.5.1 | General requirements | See below | P |
| 3.5.2 | Types of interconnection circuits .....: | Interconnection circuit of SELV via secondary output connector. | P |
| 3.5.3 | ELV circuits as interconnection circuits | No ELV interconnection circuits. | N/A |
| 3.5.4 | Data ports for additional equipment | No such ports | N/A |
| **4** | **PHYSICAL REQUIREMENTS** | | N/A |
| **4.1** | **Stability** | | N/A |
| | Angle of 10° | Building-in equipment | N/A |
| | Test force (N) .....: | | N/A |
| **4.2** | **Mechanical strength** | | N/A |
| 4.2.1 | General | See below. | N/A |
| | Rack-mounted equipment. | Evaluate in end product. | N/A |
| 4.2.2 | Steady force test, 10 N | Evaluate in end product. | N/A |
| 4.2.3 | Steady force test, 30 N | Evaluate in end product. | N/A |
| 4.2.4 | Steady force test, 250 N | Evaluated in end product. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| 4.2.5 | Impact test | Evaluate in end product. | N/A |
| | Fall test | Evaluate in end product. | N/A |
| | Swing test | Evaluate in end product. | N/A |
| 4.2.6 | Drop test; height (mm) ..... : | Evaluate in end product. | N/A |
| 4.2.7 | Stress relief test | Evaluated in end product. | N/A |
| 4.2.8 | Cathode ray tubes | No CRT inside the EUT. | N/A |
| | Picture tube separately certified ..... : | No CRT inside the EUT. | N/A |
| 4.2.9 | High pressure lamps | No high pressure lamps. | N/A |
| 4.2.10 | Wall or ceiling mounted equipment; force (N) ..... : | | N/A |
| **4.3** | **Design and construction** | | P |
| 4.3.1 | Edges and corners | Evaluate in end product. | N/A |
| 4.3.2 | Handles and manual controls; force (N) .....: | No such device. | N/A |
| 4.3.3 | Adjustable controls | No such device. | N/A |
| 4.3.4 | Securing of parts | No such part | N/A |
| 4.3.5 | Connection by plugs and sockets | Evaluate in end product. | N/A |
| 4.3.6 | Direct plug-in equipment | No such equipment | N/A |
| | Torque ..... : | -- | — |
| | Compliance with the relevant mains plug standard ..... : | No such equipment | N/A |
| 4.3.7 | Heating elements in earthed equipment | No heating element. | N/A |
| 4.3.8 | Batteries | See below. | P |
| | - Overcharging of a rechargeable battery | See table 4.3.8 | P |
| | - Unintentional charging of a non-rechargeable battery | Rechargeable battery used. | N/A |
| | - Reverse charging of a rechargeable battery | Not be reverse charged | N/A |
| | - Excessive discharging rate for any battery | See table 4.3.8 | P |
| 4.3.9 | Oil and grease | No oil and grease inside the equipment. | N/A |
| 4.3.10 | Dust, powders, liquids and gases | The equipment is not intended to be exposed to dust, powers, liquids and gases. | N/A |
| 4.3.11 | Containers for liquids or gases | No container for liquids or gases provided. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| 4.3.12 | Flammable liquids ..... : | No flammable liquids in the equipment. | N/A |
| | Quantity of liquid (l) ..... : | No flammable liquids in the equipment. | N/A |
| | Flash point (°C) ..... : | No flammable liquids in the equipment. | N/A |
| 4.3.13 | Radiation | See clause 4.3.13.5. | P |
| 4.3.13.1 | General | No risk of harmful effects of radiation | P |
| 4.3.13.2 | Ionizing radiation | No ionizing radiation. | N/A |
| | Measured radiation (pA/kg) ..... : | -- | — |
| | Measured high-voltage (kV) ..... : | -- | — |
| | Measured focus voltage (kV) ..... : | -- | — |
| | CRT markings ..... : | -- | — |
| 4.3.13.3 | Effect of ultraviolet (UV) radiation on materials | No UV radiation. | N/A |
| | Part, property, retention after test, flammability classification ..... : | No UV radiation. | N/A |
| 4.3.13.4 | Human exposure to ultraviolet (UV) radiation ..... : | No UV radiation. | N/A |
| 4.3.13.5 | Lasers (including laser diodes) and LEDs | See below | P |
| 4.3.13.5.1 | Lasers (including laser diodes) | No such devices. | N/A |
| | Laser class ..... : | -- | — |
| 4.3.13.5.2 | Light emitting diodes (LEDs) | The LED only used for indicating, which are considered as low power and no need to comply with IEC 62471 | P |
| 4.3.13.6 | Other types ..... : | No other type of source inside the EUT. | N/A |

| | | | |
|---|---|---|---|
| **4.4** | **Protection against hazardous moving parts** | | N/A |
| 4.4.1 | General | No moving parts | N/A |
| 4.4.2 | Protection in operator access areas ..... : | No moving parts | N/A |
| | Household and home/office document/media shredders | No moving parts | N/A |
| 4.4.3 | Protection in restricted access locations ..... : | No moving parts | N/A |
| 4.4.4 | Protection in service access areas | No moving parts | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| 4.4.5 | Protection against moving fan blades | No moving fan blades used. | N/A |
| 4.4.5.1 | General | No moving fan blades used. | N/A |
| | Not considered to cause pain or injury. a)……..: | | N/A |
| | Is considered to cause pain, not injury. b) ……..: | | N/A |
| | Considered to cause injury. c) ……..: | | N/A |
| 4.4.5.2 | Protection for users | No moving fan blades used. | N/A |
| | Use of symbol or warning ……..: | No moving fan blades used. | N/A |
| 4.4.5.3 | Protection for service persons | No moving fan blades used. | N/A |
| | Use of symbol or warning ……..: | | N/A |
| **4.5** | **Thermal requirements** | | P |
| 4.5.1 | General | Considered | P |
| 4.5.2 | Temperature tests | (see appended table 4.5) | P |
| | Normal load condition per Annex L .....: | See operation condition under “Summary of testing”. | — |
| 4.5.3 | Temperature limits for materials | (see appended table 4.5) | P |
| 4.5.4 | Touch temperature limits | Evaluated in the end system. | N/A |
| 4.5.5 | Resistance to abnormal heat .....: | No such part | N/A |
| **4.6** | **Openings in enclosures** | | N/A |
| 4.6.1 | Top and side openings | Evaluate in end product. | N/A |
| | Dimensions (mm) .....: | | — |
| 4.6.2 | Bottoms of fire enclosures | | N/A |
| | Construction of the bottomm, dimensions (mm) ..: | | — |
| 4.6.3 | Doors or covers in fire enclosures | | N/A |
| 4.6.4 | Openings in transportable equipment | | N/A |
| 4.6.4.1 | Constructional design measures | | N/A |
| | Dimensions (mm) .....: | | — |
| 4.6.4.2 | Evaluation measures for larger openings | | N/A |
| 4.6.4.3 | Use of metallized parts | | N/A |
| 4.6.5 | Adhesives for constructional purposes | No adhesives for construction purposes. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| | Conditioning temperature (°C), time (weeks)..... : | | — |
| **4.7** | **Resistance to fire** | | P |
| 4.7.1 | Reducing the risk of ignition and spread of flame | See below. | P |
| | Method 1, selection and application of components wiring and materials | Selection of components for the simulation of faults with acceptable results, and use of materials with the required flammability class. | P |
| | Method 2, application of all of simulated fault condition tests | Method 1 used. | N/A |
| 4.7.2 | Conditions for a fire enclosure | See below. | N/A |
| 4.7.2.1 | Parts requiring a fire enclosure | The fire enclosure should be used in end product | N/A |
| 4.7.2.2 | Parts not requiring a fire enclosure | Fire enclosure is necessary | N/A |
| 4.7.3 | Materials | | P |
| 4.7.3.1 | General | Component and material had adequate flammability classification, see table 1.5.1 for details. | P |
| 4.7.3.2 | Materials for fire enclosures | Evaluate in end product, the min. V-1 fire enclosure should be used in end product | N/A |
| 4.7.3.3 | Materials for components and other parts outside fire enclosures | No such parts | N/A |
| 4.7.3.4 | Materials for components and other parts inside fire enclosures | Rated min.V-1 PCB material used | P |
| 4.7.3.5 | Materials for air filter assemblies | No air filter provided. | N/A |
| 4.7.3.6 | Materials used in high-voltage components | No high-voltage component inside the equipment. | N/A |
| **5** | **ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS** | | P |
| **5.1** | **Touch current and protective conductor current** | | N/A |
| 5.1.1 | General | Class III equipment. Supplied by SELV and not connected to the mains directly. | N/A |
| 5.1.2 | Configuration of equipment under test (EUT) | Class III equipment. Supplied by SELV and not connected to the mains directly. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| 5.1.2.1 | Single connection to an a.c. mains supply | Class III equipment. Supplied by SELV and not connected to the mains directly. | N/A |
| 5.1.2.2 | Redundant multiple connections to an a.c. mains supply | Class III equipment. Supplied by SELV and not connected to the mains directly. | N/A |
| 5.1.2.3 | Simultaneous multiple connections to an a.c. mains supply | Class III equipment. Supplied by SELV and not connected to the mains directly. | N/A |
| 5.1.3 | Test circuit | Class III equipment. Supplied by SELV and not connected to the mains directly. | N/A |
| 5.1.4 | Application of measuring instrument | Class III equipment. Supplied by SELV and not connected to the mains directly. | N/A |
| 5.1.5 | Test procedure | Class III equipment. Supplied by SELV and not connected to the mains directly. | N/A |
| 5.1.6 | Test measurements | Class III equipment. Supplied by SELV and not connected to the mains directly. | N/A |
| | Supply voltage (V) ..... : | -- | — |
| | Measured touch current (mA) ..... : | -- | — |
| | Max. allowed touch current (mA) ..... : | -- | — |
| | Measured protective conductor current (mA) ..... : | -- | — |
| | Max. allowed protective conductor current (mA)... : | -- | — |
| 5.1.7 | Equipment with touch current exceeding 3,5 mA | Class III equipment. Supplied by SELV and not connected to the mains directly. | N/A |
| 5.1.7.1 | General ..... : | Class III equipment. Supplied by SELV and not connected to the mains directly. | N/A |
| 5.1.7.2 | Simultaneous multiple connections to the supply | No such construction. | N/A |
| 5.1.8 | Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks | Not connected to the telecommunication network and cable distribution systems. | N/A |
| 5.1.8.1 | Limitation of the touch current to a telecommunication network or to a cable distribution system | Not connected to the telecommunication network and cable distribution systems. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| | Supply voltage (V) ..... : | -- | — |
| | Measured touch current (mA) ..... : | -- | — |
| | Max. allowed touch current (mA) ..... : | -- | — |
| 5.1.8.2 | Summation of touch currents from telecommunication networks | Not connected to the telecommunication network. | N/A |
| | a) EUT with earthed telecommunication ports ..... : | Not connected to the telecommunication network. | N/A |
| | b) EUT whose telecommunication ports have no reference to protective earth | Not connected to the telecommunication network. | N/A |
| **5.2** | **Electric strength** | | N/A |
| 5.2.1 | General | Class III equipment. Supplied by SELV and not connected to the mains directly. | N/A |
| 5.2.2 | Test procedure | Class III equipment. Supplied by SELV and not connected to the mains directly. | N/A |
| **5.3** | **Abnormal operating and fault conditions** | | P |
| 5.3.1 | Protection against overload and abnormal operation | (see appended table 5.3) | P |
| 5.3.2 | Motors | The equipment does not have any motors. | N/A |
| 5.3.3 | Transformers | No such device | N/A |
| 5.3.4 | Functional insulation..... : | Method c) used. Result see appended table 5.3 | P |
| 5.3.5 | Electromechanical components | No electromechanical component. | N/A |
| 5.3.6 | Audio amplifiers in ITE ..... : | | N/A |
| 5.3.7 | Simulation of faults | (See appended table 5.3) | P |
| 5.3.8 | Unattended equipment | Not such equipment. | N/A |
| 5.3.9 | Compliance criteria for abnormal operating and fault conditions | No flame in the equipment. No molten metal was emitted. | P |
| 5.3.9.1 | During the tests | No flame in the equipment. No molten metal was emitted. | P |
| 5.3.9.2 | After the tests | Class III equipment. Supplied by SELV and there are no hazardous voltage | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| **6** | **CONNECTION TO TELECOMMUNICATION NETWORKS** | | N/A |
| **6.1** | **Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment** | | N/A |
| 6.1.1 | Protection from hazardous voltages | | N/A |
| 6.1.2 | Separation of the telecommunication network from earth | | N/A |
| 6.1.2.1 | Requirements | No TNV circuit. | N/A |
| | Supply voltage (V) ..... : | — | — |
| | Current in the test circuit (mA) ..... : | — | — |
| 6.1.2.2 | Exclusions ..... : | No TNV circuit. | N/A |
| **6.2** | **Protection of equipment users from overvoltages on telecommunication networks** | | N/A |
| 6.2.1 | Separation requirements | No TNV circuit. | N/A |
| 6.2.2 | Electric strength test procedure | No TNV circuit. | N/A |
| 6.2.2.1 | Impulse test | No TNV circuit. | N/A |
| 6.2.2.2 | Steady-state test | No TNV circuit. | N/A |
| 6.2.2.3 | Compliance criteria | No TNV circuit. | N/A |
| **6.3** | **Protection of the telecommunication wiring system from overheating** | | N/A |
| | Max. output current (A) ..... : | No TNV circuit. | — |
| | Current limiting method ..... : | No TNV circuit. | — |
| **7** | **CONNECTION TO CABLE DISTRIBUTION SYSTEMS** | | N/A |
| **7.1** | **General** | Not connected to the cable distribution system. | N/A |
| 7.2 | Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment | Not connected to the cable distribution system. | N/A |
| 7.3 | Protection of equipment users from overvoltages on the cable distribution system | Not connected to the cable distribution system. | N/A |
| 7.4 | Insulation between primary circuits and cable distribution systems | Not connected to the cable distribution system. | N/A |
| 7.4.1 | General | Not connected to the cable distribution system. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| 7.4.2 | Voltage surge test | Not connected to the cable distribution system. | N/A |
| 7.4.3 | Impulse test | Not connected to the cable distribution system. | N/A |

| | | | |
|---|---|---|---|
| **A** | **ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE** | | N/A |
| **A.1** | **Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)** | The mass of the EUT is less than 18 kg. | N/A |
| A.1.1 | Samples ..... : | | — |
| | Wall thickness (mm) ..... : | | — |
| A.1.2 | Conditioning of samples; temperature (°C) ..... : | | N/A |
| A.1.3 | Mounting of samples ..... : | | N/A |
| A.1.4 | Test flame (see IEC 60695-11-3) | | N/A |
| | Flame A, B, C or D ..... : | | — |
| A.1.5 | Test procedure | | N/A |
| A.1.6 | Compliance criteria | | N/A |
| | Sample 1 burning time (s) ..... : | | — |
| | Sample 2 burning time (s) ..... : | | — |
| | Sample 3 burning time (s) ..... : | | — |
| **A.2** | **Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)** | | N/A |
| A.2.1 | Samples, material ..... : | | — |
| | Wall thickness (mm) ..... : | | — |
| A.2.2 | Conditioning of samples; temperature (°C) ..... : | | N/A |
| A.2.3 | Mounting of samples ..... : | | N/A |
| A.2.4 | Test flame (see IEC 60695-11-4) | | N/A |
| | Flame A, B or C ..... : | | — |
| A.2.5 | Test procedure | | N/A |
| A.2.6 | Compliance criteria | | N/A |
| | Sample 1 burning time (s) ..... : | | — |
| | Sample 2 burning time (s) ..... : | | — |
| | Sample 3 burning time (s) ..... : | | — |
| A.2.7 | Alternative test acc. to IEC 60695-11-5, cl. 5 and 9 | | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| | Sample 1 burning time (s) ..... : | | — |
| | Sample 2 burning time (s) ..... : | | — |
| | Sample 3 burning time (s) ..... : | | — |
| **A.3** | **Hot flaming oil test (see 4.6.2)** | | N/A |
| A.3.1 | Mounting of samples | | N/A |
| A.3.2 | Test procedure | | N/A |
| A.3.3 | Compliance criterion | | N/A |
| **B** | **ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)** | | N/A |
| **B.1** | **General requirements** | No motor used. | N/A |
| | Position ..... : | | — |
| | Manufacturer ..... : | | — |
| | Type ..... : | | — |
| | Rated values ..... : | | — |
| **B.2** | **Test conditions** | No motor used. | N/A |
| **B.3** | **Maximum temperatures** | No motor used. | N/A |
| **B.4** | **Running overload test** | No motor used. | N/A |
| **B.5** | **Locked-rotor overload test** | No motor used. | N/A |
| | Test duration (days) ..... : | | — |
| | Electric strength test: test voltage (V) ..... : | | — |
| **B.6** | **Running overload test for d.c. motors in secondary circuits** | No motor used. | N/A |
| B.6.1 | General | No motor used. | N/A |
| B.6.2 | Test procedure | No motor used. | N/A |
| B.6.3 | Alternative test procedure | No motor used. | N/A |
| B.6.4 | Electric strength test; test voltage (V) ..... : | No motor used. | N/A |
| **B.7** | **Locked-rotor overload test for d.c. motors in secondary circuits** | No motor used. | N/A |
| B.7.1 | General | No motor used. | N/A |
| B.7.2 | Test procedure | No motor used. | N/A |
| B.7.3 | Alternative test procedure | No motor used. | N/A |
| B.7.4 | Electric strength test; test voltage (V) ..... : | No motor used. | N/A |
| **B.8** | **Test for motors with capacitors** | No motor used. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| **B.9** | **Test for three-phase motors** | No motor used. | N/A |
| **B.10** | **Test for series motors** | No motor used. | N/A |
| | Operating voltage (V) ..... : | | — |
| **C** | **ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)** | | N/A |
| | Position ..... : | No such device | — |
| | Manufacturer ..... : | No such device | — |
| | Type ..... : | No such device | — |
| | Rated values ..... : | No such device | — |
| | Method of protection ..... : | No such device | — |
| **C.1** | **Overload test** | No such device | N/A |
| **C.2** | **Insulation** | No such device | N/A |
| | Protection from displacement of windings ..... : | No such device | N/A |
| **D** | **ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)** | | N/A |
| **D.1** | **Measuring instrument** | Class III equipment. | N/A |
| **D.2** | **Alternative measuring instrument** | Class III equipment. | N/A |
| **E** | **ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)** | | N/A |
| **F** | **ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)** | | N/A |
| **G** | **ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES** | | N/A |
| **G.1** | **Clearances** | Not used. | N/A |
| G.1.1 | General | Not used. | N/A |
| G.1.2 | Summary of the procedure for determining minimum clearances | Not used. | N/A |
| **G.2** | **Determination of mains transient voltage (V)** | Not used. | N/A |
| G.2.1 | AC mains supply ..... : | | N/A |
| G.2.2 | Earthed d.c. mains supplies ..... : | | N/A |
| G.2.3 | Unearthed d.c. mains supplies ..... : | | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| G.2.4 | Battery operation ..... : | | N/A |
| **G.3** | **Determination of telecommunication network transient voltage (V) .....:** | Not used. | N/A |
| **G.4** | **Determination of required withstand voltage (V)** | Not used. | N/A |
| G.4.1 | Mains transients and internal repetitive peaks ..... : | | N/A |
| G.4.2 | Transients from telecommunication networks ..... : | | N/A |
| G.4.3 | Combination of transients | | N/A |
| G.4.4 | Transients from cable distribution systems | | N/A |
| **G.5** | **Measurement of transient voltages (V)** | Not used. | N/A |
| | a) Transients from a mains supply | | N/A |
| | For an a.c. mains supply | | N/A |
| | For a d.c. mains supply | | N/A |
| | b) Transients from a telecommunication network | | N/A |
| **G.6** | **Determination of minimum clearances .....:** | Not used. | N/A |
| **H** | **ANNEX H, IONIZING RADIATION (see 4.3.13)** | | N/A |
| **J** | **ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)** | | N/A |
| | Metal(s) used ..... : | | — |
| **K** | **ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)** | | N/A |
| K.1 | Making and breaking capacity | No thermal control in the EUT. | N/A |
| K.2 | Thermostat reliability; operating voltage (V) ..... : | No thermal control in the EUT. | N/A |
| K.3 | Thermostat endurance test; operating voltage (V) ..... : | No thermal control in the EUT. | N/A |
| K.4 | Temperature limiter endurance; operating voltage (V) ..... : | No thermal control in the EUT. | N/A |
| K.5 | Thermal cut-out reliability | No thermal control in the EUT. | N/A |
| K.6 | Stability of operation | No thermal control in the EUT. | N/A |
| **L** | **ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)** | | N/A |
| L.1 | Typewriters | No such device in the EUT. | N/A |
| L.2 | Adding machines and cash registers | No such device in the EUT. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| L.3 | Erasers | No such device in the EUT. | N/A |
| L.4 | Pencil sharpeners | No such device in the EUT. | N/A |
| L.5 | Duplicators and copy machines | No such device in the EUT. | N/A |
| L.6 | Motor-operated files | No such device in the EUT. | N/A |
| L.7 | Other business equipment | Considered, see operation condition under “Summary of testing”. | P |
| **M** | **ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)** | | N/A |
| M.1 | Introduction | No phone ringing was generated in the EUT. | N/A |
| M.2 | Method A | No phone ringing was generated in the EUT. | N/A |
| M.3 | Method B | No phone ringing was generated in the EUT. | N/A |
| M.3.1 | Ringing signal | No phone ringing was generated in the EUT. | N/A |
| M.3.1.1 | Frequency (Hz) ..... : | | — |
| M.3.1.2 | Voltage (V) ..... : | | — |
| M.3.1.3 | Cadence; time (s), voltage (V) ..... : | | — |
| M.3.1.4 | Single fault current (mA) ..... : | | — |
| M.3.2 | Tripping device and monitoring voltage ..... : | No phone ringing was generated in the EUT. | N/A |
| M.3.2.1 | Conditions for use of a tripping device or a monitoring voltage | No phone ringing was generated in the EUT. | N/A |
| M.3.2.2 | Tripping device | No phone ringing was generated in the EUT. | N/A |
| M.3.2.3 | Monitoring voltage (V) ..... : | No phone ringing was generated in the EUT. | N/A |
| **N** | **ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)** | | N/A |
| N.1 | ITU-T impulse test generators | Not used. | N/A |
| N.2 | IEC 60065 impulse test generator | Not used. | N/A |
| **P** | **ANNEX P, NORMATIVE REFERENCES** | | — |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| | | | |
|---|---|---|---|
| **Q** | **ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)** | | N/A |
| | - Preferred climatic categories .....: | No such component | N/A |
| | - Maximum continuous voltage .....: | No such component | N/A |
| | - Combination pulse current .....: | No such component | N/A |
| | Body of the VDR<br>Test according to IEC60695-11-5.....: | No such component | N/A |
| | Body of the VDR.<br>Flammability class of material ( min V-1).....: | No such component | N/A |

| | | | |
|---|---|---|---|
| **R** | **ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES** | | N/A |
| R.1 | Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2) | | N/A |
| R.2 | Reduced clearances (see 2.10.3) | | N/A |

| | | | |
|---|---|---|---|
| **S** | **ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)** | | N/A |
| S.1 | Test equipment | Not used. | N/A |
| S.2 | Test procedure | Not used. | N/A |
| S.3 | Examples of waveforms during impulse testing | Not used. | N/A |

| | | | |
|---|---|---|---|
| **T** | **ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)** | | N/A |
| | Degree of protection | IPX0 | — |

| | | | |
|---|---|---|---|
| **U** | **ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)** | | N/A |
| | | | — |

| | | | |
|---|---|---|---|
| **V** | **ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)** | | N/A |
| V.1 | Introduction | Class III equipment. Supplied by SELV and not connected to the mains directly. | N/A |
| V.2 | TN power distribution systems | Class III equipment. Supplied by SELV and not connected to the mains directly. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| | | | |
|---|---|---|---|
| **W** | **ANNEX W, SUMMATION OF TOUCH CURRENTS** | | N/A |
| W.1 | Touch current from electronic circuits | Class III equipment | N/A |
| W.1.1 | Floating circuits | Class III equipment | N/A |
| W.1.2 | Earthed circuits | Class III equipment | N/A |
| W.2 | Interconnection of several equipments | Class III equipment | N/A |
| W.2.1 | Isolation | Class III equipment | N/A |
| W.2.2 | Common return, isolated from earth | Class III equipment | N/A |
| W.2.3 | Common return, connected to protective earth | Class III equipment | N/A |

| | | | |
|---|---|---|---|
| **X** | **ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)** | | N/A |
| X.1 | Determination of maximum input current | No transformer used | N/A |
| X.2 | Overload test procedure | No transformer used | N/A |

| | | | |
|---|---|---|---|
| **Y** | **ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)** | | N/A |
| Y.1 | Test apparatus ..... : | Not used. | N/A |
| Y.2 | Mounting of test samples ..... : | Not used. | N/A |
| Y.3 | Carbon-arc light-exposure apparatus ..... : | Not used. | N/A |
| Y.4 | Xenon-arc light exposure apparatus ..... : | Not used. | N/A |

| | | |
|---|---|---|
| **Z** | **ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)** | N/A |

| | | |
|---|---|---|
| **AA** | **ANNEX AA, MANDREL TEST (see 2.10.5.8)** | N/A |

| | | |
|---|---|---|
| **BB** | **ANNEX BB, CHANGES IN THE SECOND EDITION** | — |

| | | | |
|---|---|---|---|
| **CC** | **ANNEX CC, Evaluation of integrated circuit (IC) current limiters** | | N/A |
| CC.1 | General | | N/A |
| CC.2 | Test program 1……: | | N/A |
| CC.3 | Test program 2……: | | N/A |
| CC.4 | Test program 3.....: | | N/A |
| CC.5 | Compliance.....: | | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |
| **DD** | **ANNEX DD, Requirements for the mounting means of rack-mounted equipment** | | N/A |
| DD.1 | General | No such construction. | N/A |
| DD.2 | Mechanical strength test, variable N……..: | No such construction. | N/A |
| DD.3 | Mechanical strength test, 250N, including end stops……..: | No such construction. | N/A |
| DD.4 | Compliance…….. : | No such construction. | N/A |
| **EE** | **ANNEX EE, Household and home/office document/media shredders** | | N/A |
| EE.1 | General | No such device. | N/A |
| EE.2 | Markings and instructions | No such device. | N/A |
| | Use of markings or symbols……..: | No such device. | N/A |
| | Information of user instructions, maintenance and/or servicing instructions……..: | No such device. | N/A |
| EE.3 | Inadvertent reactivation test……..: | No such device. | N/A |
| EE.4 | Disconnection of power to hazardous moving parts: | No such device. | N/A |
| | Use of markings or symbols……..: | No such device. | N/A |
| EE.5 | Protection against hazardous moving parts | No such device. | N/A |
| | Test with test finger (Figure 2A) ……..: | No such device. | N/A |
| | Test with wedge probe (Figure EE1 and EE2) ……: | No such device. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

# ATTACHMENT TO TEST REPORT IEC 60950-1
# EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Information technology equipment – Safety –

Part 1: General requirements

| | |
|---|---|
| **Differences according to**.....: | EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013 |
| **Attachment Form No**. .....: | EU_GD_IEC60950_1F |
| **Attachment Originator** .....: | SGS Fimko Ltd |
| **Master Attachment** .....: | Date 2014-02 |



**EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013 – CENELEC COMMON MODIFICATIONS**

| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Clauses, subclauses, notes, tables and figures which are additional to those in IEC60950-1 and it´s amendmets are prefixed “Z” | | P |
| Contents<br><br><br><br><br>(A2:2013) | Add the following annexes:<br>Annex ZA (normative) Normative references to international publications with their corresponding European publications<br>Annex ZB (normative) Special national conditions<br>Annex ZD (informative) IEC and CENELEC code designations for flexible cords | | P |
| General | Delete all the “country” notes in the reference document (IEC 60950-1:2005) according to the following list:<br>1.4.8 Note 2; 1.5.1 Note 2 & 3; 1.5.7.1 Note<br>1.5.8 Note 2; 1.5.9.4 Note; 1.7.2.1 Note 4, 5 & 6<br>2.2.3 Note; 2.2.4 Note; 2.3.2 Note<br>2.3.2.1 Note 2; 2.3.4 Note 2; 2.6.3.3 Note 2 & 3<br>2.7.1 Note; 2.10.3.2 Note 2; 2.10.5.13 Note 3<br>3.2.1.1 Note; 3.2.4 Note 3.; 2.5.1 Note 2<br>4.3.6 Note 1 & 2; 4.7 Note 4; 4.7.2.2 Note<br>4.7.3.1 Note 2; 5.1.7.1 Note 3 & 4; 5.3.7 Note 1<br>6 Note 2 & 5; 6.1.2.1 Note 2; 6.1.2.2 Note<br>6.2.2 Note; 6.2.2.1 Note 2; 6.2.2.2 Note<br>7.1 Note 3; 7.2 Note; 7.3 Note 1 & 2<br>G.2.1 Note 2; Annex H Note 2 | | P |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| General<br>(A1:2010) | Delete all the "country" notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list:<br>1.5.7.1 Note 6.1.2.1 Note 2<br>6.2.2.1 Note 2 EE.3 Note | | N/A |
| General<br>(A2:2013) | Delete all the "country" notes in the reference document (IEC 60950-1:2005/A2:2013) according to the following list:<br>2.7.1 Note * 2.10.3.1 Note 2 6.2.2. Note<br>* Note of secretary: Text of Common Modification remains unchanged. | | P |
| 1.1.1<br>(A1:2010) | **Replace** the text of NOTE 3 by the following.<br>NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies. | | P |
| 1.3.Z1 | Add the following subclause:<br>1.3.Z1 Exposure to excessive sound pressure<br>The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones.<br>NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers. | Not such equipment. | N/A |
| (A12:2011) | In EN 60950-1:2006/A12:2011<br>Delete the addition of 1.3.Z1 / EN 60950-1:2006<br>Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010 | | P |
| 1.5.1<br><br><br>(Added info*) | Add the following NOTE:<br>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC.<br>New Directive 2011/65/11 * | | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 1.7.2.1 (A1:2010) | In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss. | Not such equipment. | N/A |
| 1.7.2.1 (A12.2011) | In EN 60950-1:2006/A12:2011<br>Delete NOTE Z1 and the addition for Portable Sound System.<br>Add the following clause and annex to the existing standard and amendments. | Not such equipment. | N/A |
| | **Zx Protection against excessive sound pressure from personal music players** | | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | **Zx.1 General**<br>This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players.<br><br>A personal music player is a portable equipment for personal use, that:<br>– is designed to allow the user to listen to recorded or broadcast sound or video; and<br>– primarily uses headphones or earphones that can be worn in or on or around the ears; and<br>– allows the user to walk around while in use.<br>NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment.<br><br>A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause.<br><br>The requirements in this sub-clause are valid for music or video mode only.<br><br>The requirements do not apply:<br>– while the personal music player is connected to an external amplifier; or<br>– while the headphones or earphones are not used.<br>NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player.<br><br>The requirements do not apply to:<br>– hearing aid equipment and professional equipment;<br><br>NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment. | Not such equipment. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| **IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)** | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | – analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015.<br>NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.<br><br>For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply. | Not such equipment. | N/A |
| | **Zx.2 Equipment requirements**<br>No safety provision is required for equipment that complies with the following:<br>– equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is ≤ 85 dBA measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and<br>– a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" as described in EN 50332-1.<br>NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx.<br><br>All other equipment shall:<br>a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and<br>b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and | Not such equipment. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and<br>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.<br>NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off.<br>d) have a warning as specified in Zx.3; and<br>e) not exceed the following:<br>1) equipment provided as a package (player with Its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and<br>2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1.<br><br>For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song.<br>NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA.<br>For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask | Not such equipment. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA. | Not such equipment. | N/A |
| | **Zx.3 Warning**<br>The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:<br>– the symbol of Figure 1 with a minimum height of 5 mm; and<br>– the following wording, or similar:<br><br>"To prevent possible hearing damage, do not listen at high volume levels for long periods."<br><br>  <br>**Figure 1 – Warning label (IEC 60417-6044)**<br><br>Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level. | Not such equipment. | N/A |
| | **Zx.4 Requirements for listening devices (headphones and earphones)** | | N/A |
| | **Zx.4.1 Wired listening devices with analogue input**<br>With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed "programme simulation noise" described in EN 50332-2 shall be ≥ 75 mV.<br><br>This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control).<br><br>NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV. | Not such equipment. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | **Zx.4.2 Wired listening devices with digital input**<br>With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA.<br>This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.).<br>NOTE An example of a wired listening device with digital input is a USB headphone. | Not such equipment. | N/A |
| | **Zx.4.3 Wireless listening devices**<br>In wireless mode:<br>– with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and<br>– respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and<br>– with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA.<br>NOTE An example of a wireless listening device is a Bluetooth headphone. | Not such equipment. | N/A |
| | **Zx.5 Measurement methods**<br>Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.<br>Unless stated otherwise, the time interval T shall be 30 s.<br>NOTE Test method for wireless equipment provided without listening device should be defined. | Not such equipment. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 2.7.1 | Replace the subclause as follows:<br>Basic requirements<br>To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):<br>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment;<br>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; | Class III equipment. Supplied by SELV and not connected to the mains directly. | N/A |
| | c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.<br>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet. | Class III equipment. Supplied by SELV and not connected to the mains directly. | N/A |
| 2.7.2 | This subclause has been declared ‘void’. | | N/A |
| 3.2.3 | Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses. | Deleted | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 3.2.5.1 | Replace "60245 IEC 53" by "H05 RR-F";<br>"60227 IEC 52" by "H03 VV-F or H03 VVH2-F";<br>"60227 IEC 53" by "H05 VV-F or H05 VVH2-F2".<br><br>In Table 3B, replace the first four lines by the following:<br><br>Up to and including 6 \| 0,75 [a] \|<br>Over 6 up to and including 10\| (0,75) [b] 1,0 \|<br>Over 10 up to and including 16\| (1,0) [c] 1,5 \|<br><br>In the conditions applicable to Table 3B delete the words "in some countries" in condition [a].<br><br>In NOTE 1, applicable to Table 3B, delete the second sentence. | Class III equipment. No power cord used | N/A |
| 3.2.5.1 (A2:2013) | NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD | Class III equipment. No power cord used | N/A |
| 3.3.4 | In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following:<br><br>Over 10 up to and including 16 \| 1,5 to 2,5 \| 1,5 to 4 \|<br><br>Delete the fifth line: conductor sizes for 13 to 16 A | No such components. | N/A |
| 4.3.13.6 (A1:2010) | Replace the existing NOTE by the following:<br><br>NOTE Z1 Attention is drawn to:<br><br>1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and<br><br>2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artifical optical radiation).<br><br>Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC. | Added. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| **IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)** | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| Annex H | Replace the last paragraph of this annex by:<br>At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level.<br>Replace the notes as follows:<br>NOTE These values appear in Directive 96/29/Euratom.<br>Delete NOTE 2. | Replaced | N/A |
| Bibliography | Additional EN standards. | | P |

| **ZA** | **NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS** | — |
|---|---|---|

| **ZB ANNEX (normative)<br>SPECIAL NATIONAL CONDITIONS (EN)** | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 1.2.4.1 | In **Denmark**, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets. | Class III equipment. | N/A |
| 1.2.13.14 (A11:2009) | In **Norway** and **Sweden**, for requirements see 1.7.2.1 and 7.3 of this annex. | No such construction | N/A |
| 1.5.7.1 (A11:2009) | In **Finland, Norway** and **Sweden**, resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2. | Class III equipment. | N/A |
| 1.5.8 | In **Norway**, due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V). | Class III equipment. | N/A |
| 1.5.9.4 | In **Finland**, **Norway** and **Sweden**, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex. | Class III equipment. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| **ZB ANNEX (normative)<br>SPECIAL NATIONAL CONDITIONS (EN)** | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 1.7.2.1 | In **Finland**, **Norway** and **Sweden**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.<br>The marking text in the applicable countries shall be as follows:<br>In **Finland**: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"<br>In **Norway**: “Apparatet må tilkoples jordet stikkontakt”<br>In **Sweden**: “Apparaten skall anslutas till jordat uttag” | Class III equipment. | N/A |
| 1.7.2.1<br>(A11:2009) | In **Norway** and **Sweden**, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system.<br>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer.<br>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:<br>“Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has | | |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| ZB ANNEX (normative)<br>SPECIAL NATIONAL CONDITIONS (EN) | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."<br>NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.<br>Translation to Norwegian (the Swedish text will also be accepted in Norway):<br>"Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet."<br>Translation to Swedish:<br>"Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet." | Class III equipment. | N/A |
| 1.7.2.1<br>(A2:2013) | In **Denmark**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.<br>The marking text in **Denmark** shall be as follows:<br>In **Denmark**: "Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord." | Class III equipment. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| **ZB ANNEX (normative)<br>SPECIAL NATIONAL CONDITIONS (EN)** | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 1.7.5<br><br><br><br><br><br>1.7.5<br>(A11:2009) | In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.<br>For **CLASS II EQUIPMENT** the socket outlet shall be in accordance with Standard Sheet DKA 1-4a. | Class III equipment. | N/A |
| 1.7.5<br>(A2:2013) | In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011.<br>For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c, DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b, DK 1-1c, DK 1-1d or DK 1-5a.<br><br>Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-3b.<br>Justification<br>the Heavy Current Regulations, 6c | Class III equipment. | N/A |
| 2.2.4 | In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex. | No TNV | N/A |
| 2.3.2 | In **Finland**, **Norway** and **Sweden** there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex. | No TNV | N/A |
| 2.3.4 | In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex. | No TNV | N/A |
| 2.6.3.3 | In the **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16 A. | Class III equipment | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| ZB ANNEX (normative)<br>SPECIAL NATIONAL CONDITIONS (EN) | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 2.7.1 | In the **United Kingdom**, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met. | The EUT is not direct plug-in equipment. | N/A |
| 2.10.5.13 | In **Finland**, **Norway** and **Sweden**, there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex. | Class III equipment | N/A |
| 3.2.1.1 | In **Switzerland**, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:<br>SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A<br>SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A<br>SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A<br>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:<br>SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A<br>SEV 5933-2.1998:Plug Type 21, L+N, 250 V, 16A<br>SEV 5934-2.1998: Plug Type 23, L+N+PE .250 V, 16 A | Class III equipment | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| ZB ANNEX (normative)<br>SPECIAL NATIONAL CONDITIONS (EN) | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 3.2.1.1 | In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.<br><br>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.<br><br>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2. | Class III equipment | N/A |
| 3.2.1.1<br>(A2:2013) | In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1.<br>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.<br>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.<br>Justification<br>the Heavy Current Regulations, 6c | Class III equipment | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| ZB ANNEX (normative)<br>SPECIAL NATIONAL CONDITIONS (EN) | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 3.2.1.1 | In **Spain**, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.<br>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.<br>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.<br>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2. | Class III equipment | N/A |
| 3.2.1.1 | In the **United Kingdom**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.<br>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug. | Class III equipment | N/A |
| 3.2.1.1 | In **Ireland**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997. | Class III equipment | N/A |
| 3.2.4 | In **Switzerland**, for requirements see 3.2.1.1 of this annex. | Class III equipment | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| ZB ANNEX (normative)<br>SPECIAL NATIONAL CONDITIONS (EN) | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 3.2.5.1 | In the **United Kingdom**, a power supply cord with conductor of 1,25 mm2 is allowed for equipment with a rated current over 10 A and up to and including 13 A. | Class III equipment | N/A |
| 3.3.4 | In the **United Kingdom**, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is:<br>• 1,25 $mm^2$ to 1,5 $mm^2$ nominal cross-sectional area. | Class III equipment | N/A |
| 4.3.6 | In the **United Kingdom**, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply. | Class III equipment | N/A |
| 4.3.6 | In **Ireland**, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997. | Class III equipment | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| **ZB ANNEX (normative)<br>SPECIAL NATIONAL CONDITIONS (EN)** | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 5.1.7.1 | In **Finland**, **Norway** and **Sweden** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:<br>• STATIONARY PLUGGABLE EQUIPMENT TYPE A that<br>is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and<br>has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and<br>is provided with instructions for the installation of that conductor by a SERVICE PERSON;<br>• STATIONARY PLUGGABLE EQUIPMENT TYPE B;<br>• STATIONARY PERMANENTLY CONNECTED EQUIPMENT. | Not such equipment | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| **ZB ANNEX (normative)<br>SPECIAL NATIONAL CONDITIONS (EN)** | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 6.1.2.1<br>(A1:2010) | In **Finland**, **Norway** and **Sweden**, add the following text between the first and second paragraph of the compliance clause:<br><br>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either<br><br>- two layers of thin sheet material, each of which shall pass the electric strength test below, or<br><br>- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.<br><br>Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition<br><br>- passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of<br><br>2.10.10 shall be performed using 1,5 kV), and<br><br>- is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. | Not connected to the telecommunication network. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| ZB ANNEX (normative)<br>SPECIAL NATIONAL CONDITIONS (EN) | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).<br><br>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.<br>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:<br>- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1;<br>- the additional testing shall be performed on all the test specimens as described in EN 60384-14:<br>- the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14. | Not connected to the telecommunication network. | N/A |
| 6.1.2.2 | In **Finland**, **Norway** and **Sweden**, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON. | Not connected to the telecommunication network. | N/A |
| 7.2 | In **Finland**, **Norway** and **Sweden**, for requirements see 6.1.2.1 and 6.1.2.2 of this annex.<br>The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM. | Not connected to cable distribution system. | N/A |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| ZB ANNEX (normative)<br>SPECIAL NATIONAL CONDITIONS (EN) | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 7.3<br>(A11:2009) | In **Norway** and **Sweden**, for requirements see 1.2.13.14 and 1.7.2.1 of this annex. | Not connected to cable distribution system. | N/A |

**Annex ZD**
**(informative)**

**IEC and CENELEC code designations for flexible cords**

| Type of flexible cord | Code designations | |
|---|---|---|
| | IEC | CENELEC |
| **PVC insulated cords** | | |
| Flat twin tinsel cord | 60227 IEC 41 | H03VH-Y |
| Light polyvinyl chloride sheathed flexible cord | 60227 IEC 52 | H03VV-F<br>H03VVH2-F |
| Ordinary polyvinyl chloride sheathed flexible cord | 60277 IEC 53 | H05VV-F<br>H05VVH2-F |
| **Rubber insulated cords** | | |
| Braided cord | 60245 IEC 51 | H03RT-F |
| Ordinary tough rubber sheathed flexible cord | 60245 IEC 53 | H05RR-F |
| Ordinary polychloroprene sheathed flexible cord | 60245 IEC 57 | H05RN-F |
| Heavy polychloroprene sheathed flexible cord | 60245 IEC 66 | H07RN-F |
| **Cords having high flexibility** | | |
| Rubber insulated and sheathed cord | 60245 IEC 86 | H03RR-H |
| Rubber insulated, crosslinked PVC sheathed cord | 60245 IEC 87 | H03RV4-H |
| Crosslinked PVC insulated and sheathed cord | 60245 IEC 88 | H03V4V4-H |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| 1.5.1 | TABLE: List of critical components | | | | P |
|---|---|---|---|---|---|
| Object/part No. | Manufacturer/ trademark | Type/model | Technical data | Standard (Edition / year) | Mark(s) of conformity[1]) |
| PCB material | SUNKING CIRCUITS ELECTRONICS CO LTD | SK-02 | V-0, 130°C | UL 796 | UL |
| Or | Interchangeable | -- | V-1 or better, min.130°C | UL 796 or UL 746 | UL |
| - Description: Interchangeability based on specified rating. | | | | | |
| Battery pack | SHENZHEN PKCELL BATTERY CO., LTD. | LP103450 | 3.7 V, 2000 mAh, max. charging current 2000mA, max. discharging current 3000mA | IEC 62133: 2012 | Test report issued by Bureau Veritas with report No. IC151223N025 |
| - Battery cell | SHENZHEN PKCELL BATTERY CO., LTD. | 103450 | 2000mAh, 3.7Vdc | IEC 62133: 2012 | Test report issued by Bureau Veritas with report No. IC151223N025 |
| Supplementary information:<br>[1]) An asterisk indicates a mark which assures the agreed level of surveillance | | | | | |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| 1.6.2 | TABLE: Electrical data (in normal conditions) | | | | | P |
|---|---|---|---|---|---|---|
| U (V) | I (mA) | Irated (A) | P (W) | Fuse # | Ifuse (A) | Condition/status |
| 5.0 Vdc | 0.50 | 2.0 | 2.50 | -- | -- | **A.** Supplied by DC source, the fully discharged lithium battery was charging;<br>(The battery max. Charging current was 503mA) |
| 5.0Vdc | 0.82 | 2.0 | 4.10 | -- | -- | **B.** Supplied by DC source, the EUT was transmissed data continuously under wireless mode with fully discharged lithium battery on charging;<br>(The battery max. Charging current was 386mA) |
| 3.7Vdc | 0.53 | -- | 1.96 | -- | -- | **C.** Supplied by internal fully charged lithium battery, the EUT was transmissed data continuously under wireless mode. |
| Supplementary information: -- | | | | | | |

| 2.1.1.5 c) 1) | TABLE: max. V, A, VA test | | | | N/A |
|---|---|---|---|---|---|
| Voltage (rated) (V) | Current (rated) (A) | Voltage (max.) (V) | Current (max.) (A) | VA (max.) (VA) | |
| -- | -- | -- | -- | -- | |
| supplementary information:-- | | | | | |

| 2.1.1.5 c) 2) | TABLE: stored energy | | N/A |
|---|---|---|---|
| Capacitance C (µF) | Voltage U (V) | Energy E (J) | |
| -- | -- | -- | |
| supplementary information: -- | | | |

| 2.1.1.7 | TABLE: discharge test | | | | N/A |
|---|---|---|---|---|---|
| Condition | τ calculated (s) | τ measured (s) | t u→0V | Comments | |
| -- | -- | -- | -- | -- | |
| supplementary information:-- | | | | | |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| 2.2 | TABLE: evaluation of voltage limiting components in SELV circuits | | N/A |
|---|---|---|---|
| Component (measured between) | max. voltage (V) (normal operation) | | Voltage Limiting Components |
| | V peak | V d.c. | |
| -- | -- | -- | -- |
| Fault test performed on voltage limiting components | Voltage measured (V) in SELV circuits (V peak or V d.c.) | | |
| -- | -- | | |
| supplementary information:-- | | | |

| 2.4 | TABLE: limited current circuit measurement | | N/A |
|---|---|---|---|
| Location | Voltage (V) | Current (mA) | Comments |
| -- | -- | -- | -- |
| supplementary information: | | | |

| 2.5 | TABLE: limited power sources | | | | N/A |
|---|---|---|---|---|---|
| Test conditions | Isc (A) | | VA | | |
| | Meas. | Limit | Meas. | Limit | |
| -- | -- | ≤ 8 | -- | ≤ 100 | |
| supplementary information: | | | | | |
| Sc=Short circuit, Oc=Open circuit | | | | | |

| 2.6.3.4 and 2.6.1 | TABLE: ground continue test | | N/A |
|---|---|---|---|
| Location | resistant measures ( Ω ) | comments | |
| -- | -- | -- | |
| supplementary information:-- | | | |

| 2.10.2 | Table: working voltage measurement | | | N/A |
|---|---|---|---|---|
| Location | RMS voltage (V) | Peak voltage (V) | Comments | |
| -- | -- | -- | -- | |
| supplementary information:-- | | | | |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| 2.10.3 and 2.10.4 | TABLE: Clearance and creepage distance measurements | | | | | N/A |
|---|---|---|---|---|---|---|
| Clearance (cl) and creepage distance (cr) at/of/between: | U peak (V) | U r.m.s. (V) | Required cl (mm) | cl (mm) | Required cr (mm) | cr (mm) |
| Functional: | | | | | | |
| -- | -- | -- | -- | -- | -- | -- |
| Basic/supplementary: | | | | | | |
| -- | -- | -- | -- | -- | -- | -- |
| Reinforced: | | | | | | |
| -- | -- | -- | -- | -- | -- | -- |
| Supplementary information: | | | | | | |

| 2.10.5 | TABLE: Distance through insulation measurements | | | | N/A |
|---|---|---|---|---|---|
| Distance through insulation (DTI) at/of: | U peak (V) | U rms (V) | Test voltage (V) | Required DTI (mm) | DTI (mm) |
| -- | -- | -- | -- | -- | -- |
| Supplementary information:-- | | | | | |

| 4.3.8 | TABLE: Batteries | | P |
|---|---|---|---|
| The tests of 4.3.8 are applicable only when appropriate battery data is not available | -- | | P |
| Is it possible to install the battery in a reverse polarity position? | No | | P |

| | 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. |
| Normal conditon | -- | -- | -- | 0.503A | 2.0A | 0.530A | 3.0A | -- | -- |
| Max. current during fault condition (Battery B- to P- shorted) | -- | -- | -- | Max. 0.505 A | -- | 0.540A | -- | -- | -- |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Max. current during fault condition (U11 pin 1 to 13 shorted) | -- | -- | -- | Max. 2.022 A | -- | -- | -- | -- | -- |

| Test results: | | Verdict |
|---|---|---|
| - Chemical leaks | No chemical leaks. | P |
| - Explosion of the battery | No explosion. | P |
| - Emission of flame or expulsion of molten metal | No emission of flame or expulsion of molten metal | P |
| - Electric strength tests of equipment after completion of tests | No isolation requirement. | N/A |
| Supplementary information: | | |

| 4.3.8 | TABLE: Batteries | P |
|---|---|---|

Battery category.....: Lithium Iion

Manufacturer.....: SHENZHEN PKCELL BATTERY CO., LTD.

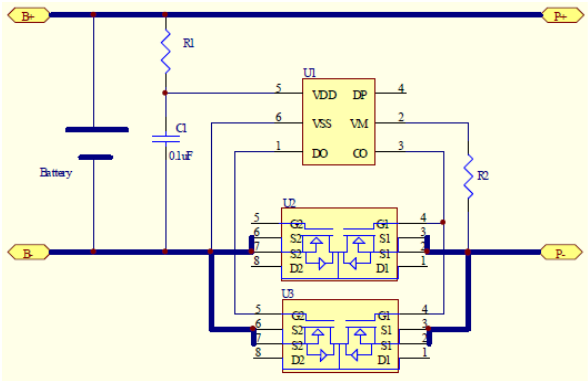
Type / model.....: LP103450

Voltage.....: 3.7 Vdc

Capacity.....: 2000mAh

Tested and Certified by (incl. Ref. No.).....: Test report issued by Bureau Veritas with report No. IC151223N025

Circuit protection diagram:




MARKINGS AND INSTRUCTIONS (1.7.13 )

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| | |
|---|---|
| Location of replaceable battery | -- |
| Language(s) ……..: | -- |
| Close to the battery ……..: | -- |
| In the servicing instructions ……..……: | -- |
| In the operating instructions ……..: | -- |

| 4.5 | TABLE: Thermal requirements | | | | | | | P |
|---|---|---|---|---|---|---|---|---|
| | Test conditions | **A** | | **B** | | **C** | | — |
| | Supply voltage (V) ..... | 5.0 Vdc | | 5.0 Vdc | | 3.7 Vdc | | |
| | Ambient $T_{min}$ (°C) ..... | -- | -- | -- | -- | -- | | — |
| | Ambient $T_{max}$ (°C)..... | -- | -- | -- | -- | -- | | — |
| Maximum measured temperature T of part/at:: | | T (°C) | | | | | | Allowed Tmax (°C) |
| Calculated value for Tma(°C): | | -- | Shift to 85.0 | -- | Shift to 85.0 | -- | Shift to 85.0 | -- |
| PCB near U7 | | 35.6 | 97.3 | 67.1 | 128.5 | 56.0 | 117.3 | 130 |
| PCB near U10 | | 30.9 | 92.6 | 65.7 | 127.1 | 60.9 | 122.2 | 130 |
| PCB near U11 | | 34.9 | 96.6 | 60.4 | 121.8 | 56.0 | 117.3 | 130 |
| L1 body | | 34.1 | 95.8 | 66.3 | 127.7 | 56.6 | 117.9 | 130 |
| Battery body | | 23.4 | 85.1 | 24.8 | 86.2 | 30.1 | 91.4 | Ref. |
| Ambient | | 23.3 | 85.0 | 23.6 | 85.0 | 23.7 | 85.0 | -- |
| Supplementary information: | | | | | | | | |

| Temperature T of winding: | $t_1$ (°C) | $R_1$ (Ω) | $t_2$ (°C) | $R_2$ (Ω) | T (°C) | Allowed Tmax (°C) | Insulation class |
|---|---|---|---|---|---|---|---|
| -- | -- | -- | -- | -- | -- | -- | -- |
| Supplementary information: Test conditions, refer to table 1.6.2 for detail. | | | | | | | |

| 4.5.5 | TABLE: Ball pressure test of thermoplastic parts | | N/A |
|---|---|---|---|
| | Allowed impression diameter (mm) ..... : | ≤ 2 mm | — |

| Part | Test temperature (°C) | Impression diameter (mm) |
|---|---|---|
| -- | -- | -- |
| Supplementary information:-- | | |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| 4.6 | TABLE: Openings in enclosures | | N/A |
|---|---|---|---|
| Location | dimensions | Comments | |
| -- | -- | -- | |
| Supplementary information: see clause 4.6 | | | |

| 4.7 | TABLE: Resistance to fire | | | | | N/A |
|---|---|---|---|---|---|---|
| Part | Manufacturer of material | Type of material | Thickness (mm) | Flammability class | Evidence | |
| -- | -- | -- | -- | -- | -- | |
| Supplementary information:-- | | | | | | |

| 5.1 | TABLE: touch current measurement | | | N/A |
|---|---|---|---|---|
| Measured between: | Measured (Ma) | Limit (Ma) | Comments/conditions | |
| -- | -- | -- | -- | |
| supplementary information: -- | | | | |

| 5.2 | TABLE: Electric strength tests, impulse tests and voltage surge tests | | | N/A |
|---|---|---|---|---|
| Test voltage applied between: | Voltage shape (AC, DC, impulse, surge) | Test voltage (V) | Breakdown Yes / No | |
| Functional: | | | | |
| -- | -- | -- | -- | |
| Basic/supplementary: | | | | |
| -- | -- | -- | -- | |
| Reinforced: | | | | |
| -- | -- | -- | -- | |
| Supplementary information:-- | | | | |

| 5.3 | TABLE: Fault condition tests | | P |
|---|---|---|---|
| | Ambient temperature (°C) ..... : | 25.0 °C, if not separately specified | — |
| | Power source for EUT: Manufacturer, model/type, output rating : | -- | — |

| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

| Component No. | Fault | Supply voltage (V) | Test time | Fuse # | Fuse current (A) | Observation |
|---|---|---|---|---|---|---|
| Supplied by DC source, the fully discharged battery was charging. | | | | | | |
| Battery B- P- | Shorted | 5.0 Vdc | 7 h | -- | -- | The unit was charging as normally. Battery charged current was max. 505mA. After testing, no damaged, no hazards. |
| U11 pin 1- 13 | Shorted | 5.0 Vdc | 7 h | -- | -- | The unit was charging as normally. Battery charged current was max. 2022mA. After testing, no damaged, no hazards. |
| Supplied by DC source, the EUT was transmissed data continuously under wireless mode with fully discharged lithium battery on charging. | | | | | | |
| Battery B- P- | Shorted | 5.0 Vdc | 7 h | -- | -- | The unit was working as normally. Battery charged current was max. 388mA. After testing, no damaged, no hazards. |
| U11 pin 1- 13 | Shorted | 5.0 Vdc | 7 h | -- | -- | The unit shut down. Battery charged current was max. 1621mA. After testing, no damaged, no hazards. |
| Supplied by internal fully charged lithium battery, the EUT was transmissed data continuously under wireless mode. | | | | | | |
| Battery B- and P- | Shorted | 3.7 Vdc | 2 h | -- | -- | The unit was working as normally. Battery discharged current was max. 540mA. After testing, no damaged, no hazards. |
| Supplementary information: -- | | | | | | |

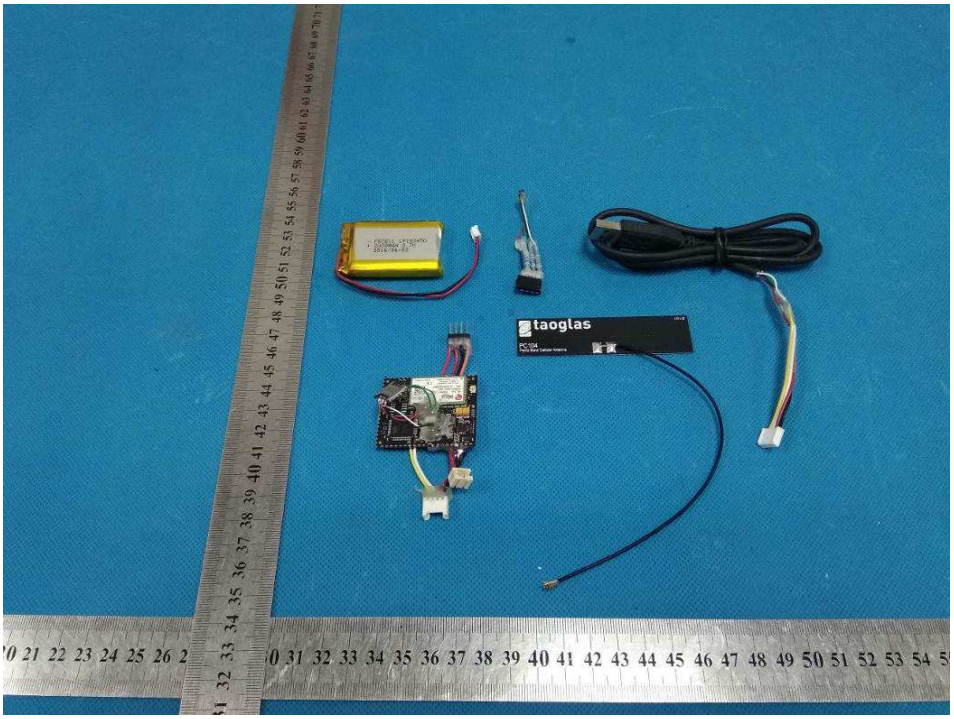
| C.2 | TABLE: transformers | | | | | | N/A |
|---|---|---|---|---|---|---|---|
| Loc. | Tested insulation | Working voltage peak / V (2.10.2) | Working voltage rms / V (2.10.2) | Required electric strength (5.2) | Required clearance / mm (2.10.3) | Required creepage distance / mm (2.10.4) | Required distance thr. insul. (2.10.5) |
| -- | -- | -- | -- | -- | -- | -- | -- |

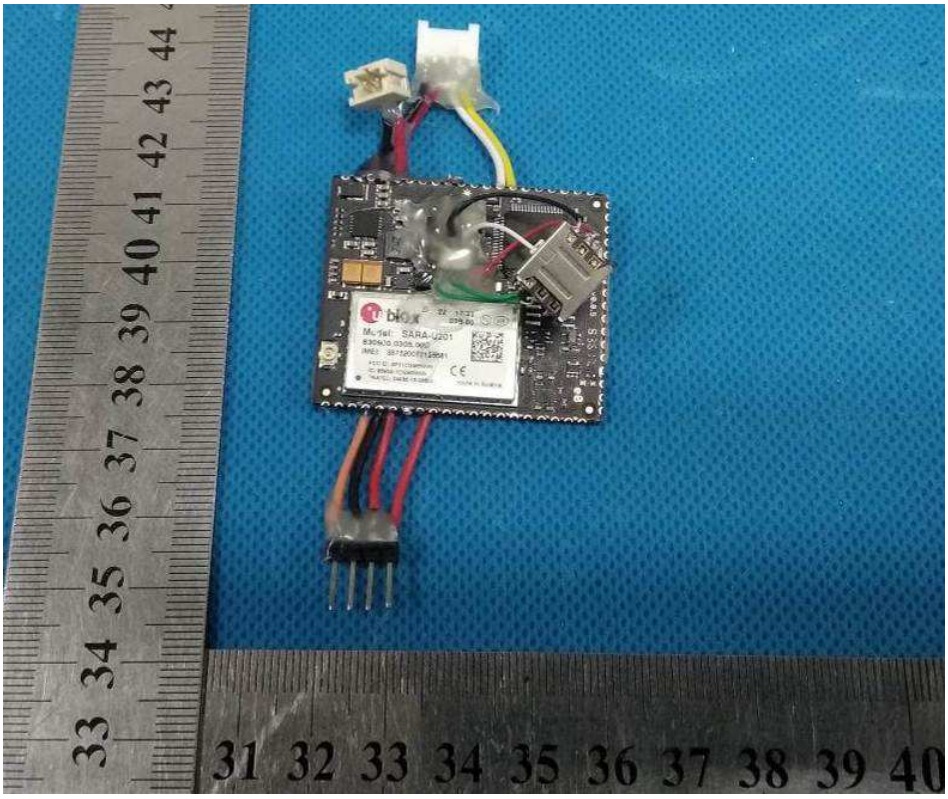
| IEC/EN 60950-1 | | | |
|---|---|---|---|
| Clause | Requirement – Test | Result - Remark | Verdict |

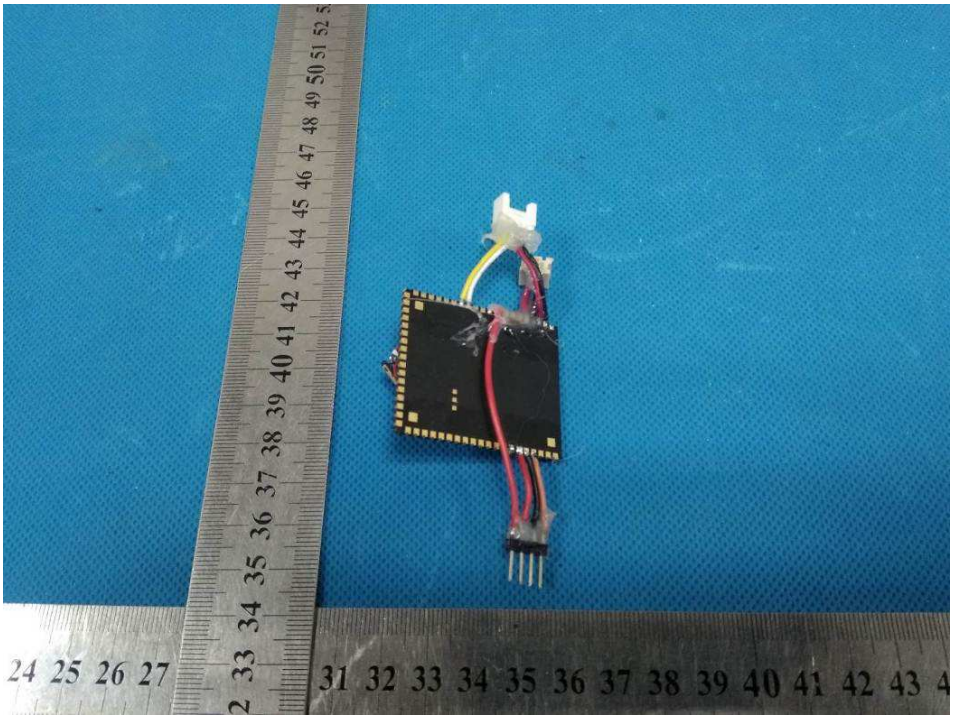
| Loc. | Tested insulation | Test voltage/ V | Measured clearance / mm | Measured creepage dist./ mm | Measured distance thr. insul. / mm; number of layers |
|---|---|---|---|---|---|
| -- | -- | -- | -- | -- | -- |
| supplementary information: | | | | | |
| | | | | | |

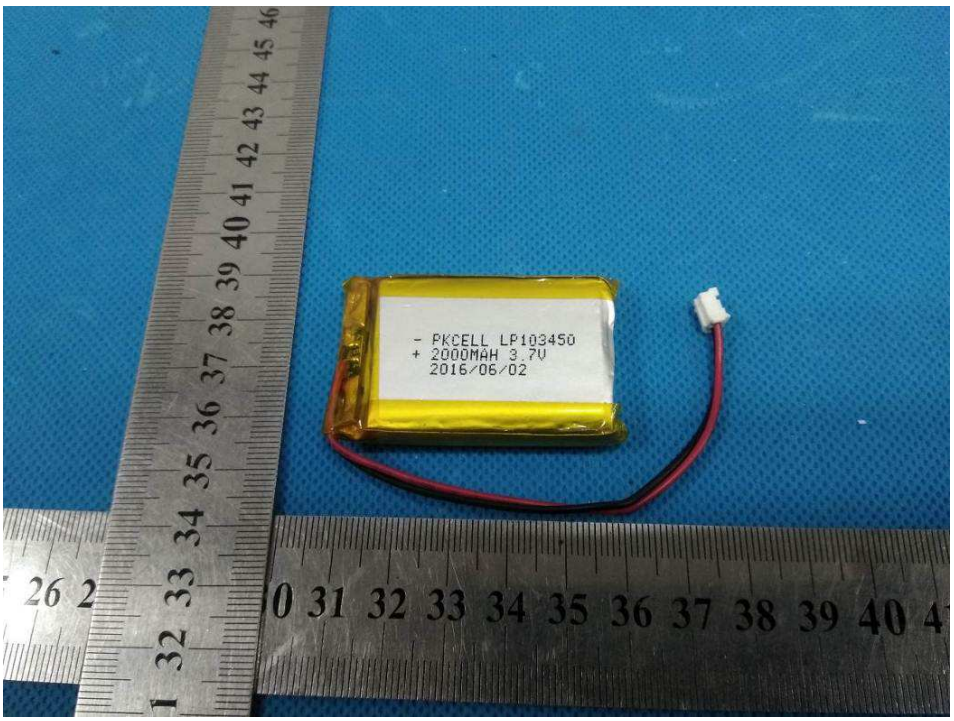
| C.2 | TABLE: transformers | N/A |
|---|---|---|
| -- | | |

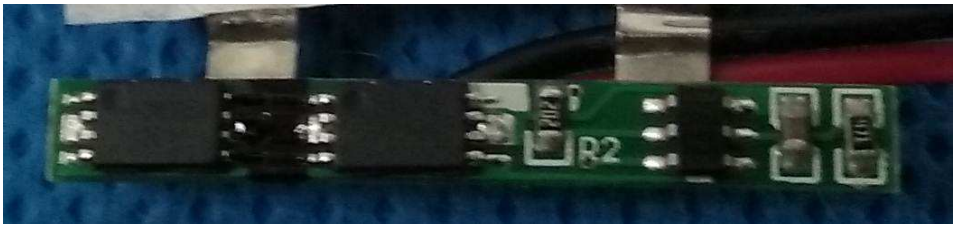
# Product photos

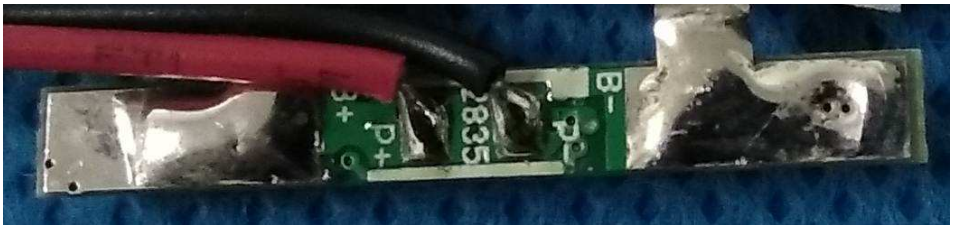





- PKCELL LP103450
+ 2000MAH 3.7V
2016/06/02




Battery pack protective cirucit board