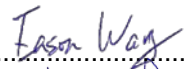
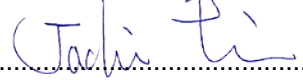





| TEST REPORT IEC 60950-1: 2005 and/or EN 60950-1:2006 Information technology equipment – Safety – Part 1: General requirements | |
|--|--|
| Report Number | T1291512098A |
| Tested by (printed name and signature) | Eason Wang  |
| Approved by (printed name and signature) | Jackie Lin  |
| Date of issue | 2016-01-05 |
| Testing Laboratory | Perfectlink International Corp. |
| Address | 4F., No. 16-1, Sec. 2, Zhongyang S. Rd., Beitou Dist., Taipei City 112, Taiwan |
| Applicant's name | VIVOTEK INC. |
| Address | 6F, No.192, Lien-Cheng Rd., Chung-Ho, New Taipei City, 235, Taiwan, R.O.C. |
| Test specification: | |
| Standard | IEC 60950-1:2005 + A1:2009 + A2:2013 and/or EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 |
| Test procedure | Service of CE Marking in LVD |
| Non-standard test method | N/A |
| Test item description | Network Camera |
| Trade Mark |  |
| Manufacturer | VIVOTEK INC. 5F, No.168, Lien-Cheng Rd., Chung-Ho, New Taipei City, 235, Taiwan, R.O.C. |
| Model/Type reference | IP9171-HP, IP9181-H |
| Ratings | DC 12V, 0.72A or AC 24V, 0.80A, 50-60Hz or PoE 36~57V, 0.30~0.20A |



Copy of marking plate

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

(Representative)

| | | | |
|---|-----------------|----------------|--|
| IP9171-HP Network Camera | | | |
| MAC:0002D1XXXXXX | | | |
| | | | |
| 12V=0.72A 24V~0.80A, 50-60Hz PoE 36-57V=0.30-0.20A | | | |
| This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. | | | |
| Pat.6, 930, 709 | www.vivotek.com | Made in Taiwan | |

| | | | |
|---|-----------------|----------------|--|
| IP9181-H Network Camera | | | |
| MAC:0002D1XXXXXX | | | |
| | | | |
| 12V=0.72A 24V~0.80A, 50-60Hz PoE 36-57V=0.30-0.20A | | | |
| This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. | | | |
| Pat.6, 930, 709 | www.vivotek.com | Made in Taiwan | |



| | |
|---|--|
| Test item particulars | See below |
| Equipment mobility..... | <input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input checked="" type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input checked="" type="checkbox"/> fixed |
| Connection to the mains | <input type="checkbox"/> pluggable equipment <input type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input checked="" type="checkbox"/> not directly connected to the mains |
| Operating condition | <input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time: |
| Access location | <input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location |
| Over voltage category (OVC) | <input type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input checked="" type="checkbox"/> other: Not directly connected to AC or DC mains |
| Mains supply tolerance (%) or absolute mains supply values | No direct mains connection |
| Tested for IT power systems | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| IT testing, phase-phase voltage (V) | N/A |
| Class of equipment | <input type="checkbox"/> Class I <input type="checkbox"/> Class II <input checked="" type="checkbox"/> Class III <input type="checkbox"/> Not classified |
| Considered current rating of protective device as part of the building installation (A) | N/A |
| Pollution degree (PD) | <input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3 |
| IP protection class | IPX0 |
| Altitude during operation (m) | ≤ 2000 m |
| Altitude of test laboratory (m) | ≤ 2000 m |
| Mass of equipment (kg) | Approx. 0.6 |
| Possible test case verdicts: | |
| - test case does not apply to the test object | N/A (or N) |
| - test object does meet the requirement..... | P (Pass) |
| - test object does not meet the requirement..... | F (Fail) |
| Testing: | |
| Date of receipt of test item | 2015-07-01; 2015-12-10 |
| Date(s) of performance of tests..... | 2015-07-01 to 2015-08-13; 2015-12-10 |



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 or point is used as the decimal separator.

Name and address of factory (ies) : VIVOTEK INC.
 5F, No.168, Lien-Cheng Rd., Chung-Ho, New Taipei
 City, 235, Taiwan, R.O.C.

General product information:

General description:

This equipment, models IP9171-HP and IP9181-H, is a Network Camera which is intended to use within information technology equipment.

Model Differences

Model IP9181-H is similar to Model IP9171-HP except for Lens module and model designation.

The equipment is power supplied from the external power adaptor or PoE device which is complied with the requirement of Limited Power Source. Otherwise, the adaptor which is intended to be used with this equipment in the regional market should be stated in the specified manufacturer and models in the instruction by suitable regional languages.

The external power adaptor is approved products which were CB-scheme evaluated according to IEC 60950-1:2005, IEC 60950-1:2005+A1:2009 or IEC 60950-1:2005+A1:2009+A2:2013, for detail information see appended table 1.5.1.

The label is a draft of an artwork for marking plate pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.

According to manufacturer's declaration on installation instruction, this equipment is to be connected only to PoE networks without routing to the outside plant.

Other comments:

The product was submitted and tested for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50°C.

Unless otherwise indicated, All tests were conducted on model IP9171-HP as representative

Abbreviations used in the report:

| | | | |
|--------------------------------------|------|----------------------------|-------|
| - normal conditions | N.C. | - single fault conditions | S.F.C |
| - functional insulation | OP | - basic insulation | BI |
| - double insulation | DI | - supplementary insulation | SI |
| - between parts of opposite polarity | BOP | - reinforced insulation | RI |

Indicate used abbreviations (if any)







| IEC/EN 60950-1 | | | |
|----------------|--|---|----------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 1 | GENERAL | | P |
| 1.5 | Components | | P |
| 1.5.1 | General | See below. | P |
| | Comply with IEC 60950-1 or relevant component standard | Components which were found to affect safety aspects comply with the requirements of this standard or with the safety aspects of the relevant IEC/EN component standards. See appended table 1.5.1. | P |
| 1.5.2 | Evaluation and testing of components | Components that are certified to IEC and /or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment. | P |
| 1.5.3 | Thermal controls | No thermal control. | N/A |
| 1.5.4 | Transformers | Evaluated in approved power adaptor. | N/A |
| 1.5.5 | Interconnecting cables | Interconnecting cables comply with the relevant requirements of this standard. | P |
| 1.5.6 | Capacitors bridging insulation | Equipment is not directly connected to the AC mains supply. | N/A |
| 1.5.7 | Resistors bridging insulation | No such components. | N/A |
| 1.5.7.1 | Resistors bridging functional, basic or supplementary insulation | Same as above. | N/A |
| 1.5.7.2 | Resistors bridging double or reinforced insulation between a.c. mains and other circuits | Same as above. | N/A |
| 1.5.7.3 | Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable | Same as above. | N/A |
| 1.5.8 | Components in equipment for IT power systems | Equipment is not directly connected to the AC mains supply. | N/A |
| 1.5.9 | Surge suppressors | No such components. | N/A |
| 1.5.9.1 | General | Same as above. | N/A |
| 1.5.9.2 | Protection of VDRs | Same as above. | N/A |
| 1.5.9.3 | Bridging of functional insulation by a VDR | Same as above. | N/A |



| IEC/EN 60950-1 | | | |
|----------------|---|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 1.5.9.4 | Bridging of basic insulation by a VDR | Same as above. | N/A |
| 1.5.9.5 | Bridging of supplementary, double or reinforced insulation by a VDR | Same as above. | N/A |

| 1.6 | Power interface | | P |
|-------|--------------------------------------|---|-----|
| 1.6.1 | AC power distribution systems | Equipment is not directly connected to the AC mains supply. | N/A |
| 1.6.2 | Input current | Highest load according to 1.2.2.1 for this equipment is operated in data-link continually. See appended table 1.6.2. | P |
| 1.6.3 | Voltage limit of hand-held equipment | This appliance is not hand-held equipment. | N/A |
| 1.6.4 | Neutral conductor | Equipment is not directly connected to the AC mains supply. | N/A |

| 1.7 | Marking and instructions | | P |
|---------|--|--|-----|
| 1.7.1 | Power rating and identification markings | See below. | P |
| 1.7.1.1 | Power rating marking | All relevant markings are provided on equipment. | P |
| | Multiple mains supply connections.....: | Class III equipment. No multiple mains power sources provided. | N/A |
| | Rated voltage(s) or voltage range(s) (V) | PoE 36V~57V or DC 12V or AC 24V | P |
| | Symbol for nature of supply, for d.c. only..... : |  for DC input | P |
| | Rated frequency or rated frequency range (Hz) ... : | 50-60 for AC input | P |
| | Rated current (mA or A) | DC12V / 0.72A ; AC24V / 0.80A ; PoE 36~57V / 0.3~0.2A | P |
| 1.7.1.2 | Identification markings | See below. | P |
| | Manufacturer's name or trade-mark or identification mark |  | P |
| | Model identification or type reference | IP9171-HP, IP9181-H | P |
| | Symbol for Class II equipment only | Class III equipment. | N/A |



| IEC/EN 60950-1 | | | |
|----------------|--|--|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Other markings and symbols | Additional symbols or markings do not give rise to misunderstanding. | P |
| 1.7.1.3 | Use of graphical symbols | Complied. | P |
| 1.7.2 | Safety instructions and marking | See below. | P |
| 1.7.2.1 | General | The user's manual contains information for operation, installation, servicing, transport, storage and technical data. The operation guide is provided to the user. | P |
| 1.7.2.2 | Disconnect devices | Equipment is not directly connected to the AC mains supply. | N/A |
| 1.7.2.3 | Overcurrent protective device | Class III equipment. | N/A |
| 1.7.2.4 | IT power distribution systems | Equipment is not directly connected to the AC mains supply. | N/A |
| 1.7.2.5 | Operator access with a tool | No operator access areas require the use of a tool. | N/A |
| 1.7.2.6 | Ozone | No ozone produces within this equipment. | N/A |
| 1.7.3 | Short duty cycles | Equipment is designed for continuous operation. | N/A |
| 1.7.4 | Supply voltage adjustment | No voltage adjustment device provided. | N/A |
| | Methods and means of adjustment; reference to installation instructions | Same as above. | N/A |
| 1.7.5 | Power outlets on the equipment | No outlet provided. | N/A |
| 1.7.6 | Fuse identification (marking, special fusing characteristics, cross-reference) | Evaluated in approved power adaptor. | N/A |
| 1.7.7 | Wiring terminals | See below. | N/A |
| 1.7.7.1 | Protective earthing and bonding terminals | No direct connection to mains supply. | N/A |
| 1.7.7.2 | Terminals for a.c. mains supply conductors | Same as above. | N/A |
| 1.7.7.3 | Terminals for d.c. mains supply conductors | Same as above. | N/A |
| 1.7.8 | Controls and indicators | See below. | P |
| 1.7.8.1 | Identification, location and marking | The marking and indication is located that indication of function clearly. | P |
| 1.7.8.2 | Colours | No safety relevant controls or indicators. | N/A |



| IEC/EN 60950-1 | | | |
|----------------|---|---|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 1.7.8.3 | Symbols according to IEC 60417.....: | No safety switch used. | N/A |
| 1.7.8.4 | Markings using figures | No indicators for different positions. | N/A |
| 1.7.9 | Isolation of multiple power sources | No connection supplying hazardous voltages or hazardous energy levels to equipment. | N/A |
| 1.7.10 | Thermostats and other regulating devices | No thermostats and similar regulating devices intended to be adjusted during installation or in normal use. | N/A |
| 1.7.11 | Durability | The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 s and then again for 15 s with the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was neither curling nor lifting of the label edge. | P |
| 1.7.12 | Removable parts | No removable part provided. | N/A |
| 1.7.13 | Replaceable batteries | No batteries provided. | N/A |
| | Language(s) | Same as above. | — |
| 1.7.14 | Equipment for restricted access locations | No restricted access location. | 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 | Class III equipment. | N/A |
| 2.1.1.1 | Access to energized parts | Only SELV inside. | N/A |
| | Test by inspection | Same as above. | N/A |
| | Test with test finger (Figure 2A) | Same as above. | N/A |
| | Test with test pin (Figure 2B) | Same as above. | N/A |
| | Test with test probe (Figure 2C) | No TNV circuits. | N/A |
| 2.1.1.2 | Battery compartments | No battery compartments and TNV circuits. | N/A |
| 2.1.1.3 | Access to ELV wiring | No ELV wiring in operator accessible area. | N/A |



| IEC/EN 60950-1 | | | |
|----------------|--|--|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Working voltage (V _{peak} or V _{rms}); minimum distance through insulation (mm) | Same as above. | — |
| 2.1.1.4 | Access to hazardous voltage circuit wiring | No hazardous voltage wiring in operator accessible area. | N/A |
| 2.1.1.5 | Energy hazards : | No energy hazard in operator access area. | P |
| 2.1.1.6 | Manual controls | No conductive shafts of operating knobs and handles. | N/A |
| 2.1.1.7 | Discharge of capacitors in equipment | No direct connection to mains supply. | N/A |
| | Measured voltage (V); time-constant (s)..... : | Same as above. | — |
| 2.1.1.8 | Energy hazards – d.c. mains supply | Class III equipment. | N/A |
| | a) Capacitor connected to the d.c. mains supply .. : | Same as above. | N/A |
| | b) Internal battery connected to the d.c. mains supply : | Same as above. | N/A |
| 2.1.1.9 | Audio amplifiers : | No audio amplifier provided. | N/A |
| 2.1.2 | Protection in service access areas | No maintenance work in operation mode necessary. | N/A |
| 2.1.3 | Protection in restricted access locations | It is not intended to use 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) : | Between any SELV circuits 42.4V peak or 60VDC are not exceeded. | P |
| 2.2.3 | Voltages under fault conditions (V) : | Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71V peak and 120V DC were not exceed and SELV limits not for longer than 0.2 seconds. | P |
| 2.2.4 | Connection of SELV circuits to other circuits: | See 2.2.2 and 2.2.3. No direct connection between SELV and any primary circuits. | N/A |

| | | | |
|------------|------------------------------|--|-----|
| 2.3 | TNV circuits | | N/A |
| 2.3.1 | Limits | | N/A |
| | Type of TNV circuits : | | — |



| IEC/EN 60950-1 | | | |
|----------------|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 2.3.2 | Separation from other circuits and from accessible parts | | N/A |
| 2.3.2.1 | General requirements | | N/A |
| 2.3.2.2 | Protection by basic insulation | | N/A |
| 2.3.2.3 | Protection by earthing | | N/A |
| 2.3.2.4 | Protection by other constructions : | | N/A |
| 2.3.3 | Separation from hazardous voltages | | N/A |
| | Insulation employed : | | — |
| 2.3.4 | Connection of TNV circuits to other circuits | | N/A |
| | Insulation employed : | | — |
| 2.3.5 | Test for operating voltages generated externally | | N/A |
| 2.4 | Limited current circuits | | N/A |
| 2.4.1 | General requirements | | N/A |
| 2.4.2 | Limit values | | N/A |
| | Frequency (Hz) : | | — |
| | Measured current (mA)..... : | | — |
| | Measured voltage (V)..... : | | — |
| | Measured circuit capacitance (nF or μ F) : | | — |
| 2.4.3 | Connection of limited current circuits to other circuits | | N/A |
| 2.5 | Limited power sources | | N/A |
| | a) Inherently limited output | | N/A |
| | b) Impedance limited output | | N/A |
| | c) Regulating network limited output under normal operating and single fault condition | | N/A |
| | d) Overcurrent protective device limited output | | N/A |
| | Max. output voltage (V), max. output current (A), max. apparent power (VA)..... : | | — |
| | Current rating of overcurrent protective device (A) .: | | — |
| | Use of integrated circuit (IC) current limiters | | — |
| 2.6 | Provisions for earthing and bonding | | N/A |
| 2.6.1 | Protective earthing | | N/A |
| 2.6.2 | Functional earthing | | N/A |
| | Use of symbol for functional earthing: | | N/A |



| IEC/EN 60950-1 | | | |
|----------------|---|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 2.6.3 | Protective earthing and protective bonding conductors | | N/A |
| 2.6.3.1 | General | | N/A |
| 2.6.3.2 | Size of protective earthing conductors | | N/A |
| | Rated current (A), cross-sectional area (mm ²), AWG : | | — |
| 2.6.3.3 | Size of protective bonding conductors | | N/A |
| | Rated current (A), cross-sectional area (mm ²), AWG : | | — |
| | 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)..... : | | N/A |
| 2.6.3.5 | Colour of insulation : | | N/A |
| 2.6.4 | Terminals | | N/A |
| 2.6.4.1 | General | | N/A |
| 2.6.4.2 | Protective earthing and bonding terminals | | N/A |
| | Rated current (A), type, nominal thread diameter (mm) : | | — |
| 2.6.4.3 | Separation of the protective earthing conductor from protective bonding conductors | | N/A |
| 2.6.5 | Integrity of protective earthing | | N/A |
| 2.6.5.1 | Interconnection of equipment | | N/A |
| 2.6.5.2 | Components in protective earthing conductors and protective bonding conductors | | N/A |
| 2.6.5.3 | Disconnection of protective earth | | N/A |
| 2.6.5.4 | Parts that can be removed by an operator | | N/A |
| 2.6.5.5 | Parts removed during servicing | | N/A |
| 2.6.5.6 | Corrosion resistance | | N/A |
| 2.6.5.7 | Screws for protective bonding | | N/A |
| 2.6.5.8 | Reliance on telecommunication network or cable distribution system | | N/A |

| | | | |
|------------|---|--|-----|
| 2.7 | Overcurrent and earth fault protection in primary circuits | | N/A |
| 2.7.1 | Basic requirements | | N/A |
| | Instructions when protection relies on building installation | | N/A |
| 2.7.2 | Faults not simulated in 5.3.7 | | N/A |
| 2.7.3 | Short-circuit backup protection | | N/A |



| IEC/EN 60950-1 | | | |
|----------------|---|--|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 2.7.4 | Number and location of protective devices | | N/A |
| 2.7.5 | Protection by several devices | | N/A |
| 2.7.6 | Warning to service personnel | | N/A |
| 2.8 | Safety interlocks | | N/A |
| 2.8.1 | General principles | | N/A |
| 2.8.2 | Protection requirements | | N/A |
| 2.8.3 | Inadvertent reactivation | | N/A |
| 2.8.4 | Fail-safe operation | | N/A |
| | Protection against extreme hazard | | N/A |
| 2.8.5 | Moving parts | | N/A |
| 2.8.6 | Overriding | | N/A |
| 2.8.7 | Switches, relays and their related circuits | | N/A |
| 2.8.7.1 | Separation distances for contact gaps and their related circuits (mm) | | N/A |
| 2.8.7.2 | Overload test | | N/A |
| 2.8.7.3 | Endurance test | | N/A |
| 2.8.7.4 | Electric strength test | | N/A |
| 2.8.8 | Mechanical actuators | | N/A |
| 2.9 | Electrical insulation | | P |
| 2.9.1 | Properties of insulating materials | Natural rubber, asbestos or hygroscopic materials are not used. | P |
| 2.9.2 | Humidity conditioning | Class III equipment, only functional insulation requirements. | N/A |
| | Relative humidity (%), temperature (°C) | | — |
| 2.9.3 | Grade of insulation | Functional Insulation. The adequate levels of safety insulation is provided and maintained to comply with the requirements of this standard. | P |
| 2.9.4 | Separation from hazardous voltages | See below. | P |
| | Method(s) used | Class III equipment, which is separated from hazardous voltage by double/reinforced insulation through external power source. | — |



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

| | | | |
|-------------|---|--|-----|
| 2.10 | Clearances, creepage distances and distances through insulation | | P |
| 2.10.1 | General | Functional insulation only. See 5.3.4 c). | P |
| 2.10.1.1 | Frequency | | N/A |
| 2.10.1.2 | Pollution degrees | | N/A |
| 2.10.1.3 | Reduced values for functional insulation | | N/A |
| 2.10.1.4 | Intervening unconnected conductive parts | | N/A |
| 2.10.1.5 | Insulation with varying dimensions | | N/A |
| 2.10.1.6 | Special separation requirements | | N/A |
| 2.10.1.7 | Insulation in circuits generating starting pulses | | N/A |
| 2.10.2 | Determination of working voltage | | N/A |
| 2.10.2.1 | General | | N/A |
| 2.10.2.2 | RMS working voltage | | N/A |
| 2.10.2.3 | Peak working voltage | | N/A |
| 2.10.3 | Clearances | | N/A |
| 2.10.3.1 | General | | N/A |
| 2.10.3.2 | Mains transient voltages | | N/A |
| | a) AC mains supply | | N/A |
| | b) Earthed d.c. mains supplies | | N/A |
| | c) Unearthed d.c. mains supplies | | N/A |
| | d) Battery operation | | N/A |
| 2.10.3.3 | Clearances in primary circuits | | N/A |
| 2.10.3.4 | Clearances in secondary circuits | | N/A |
| 2.10.3.5 | Clearances in circuits having starting pulses | | N/A |
| 2.10.3.6 | Transients from a.c. mains supply | | N/A |
| 2.10.3.7 | Transients from d.c. mains supply | | N/A |
| 2.10.3.8 | Transients from telecommunication networks and cable distribution systems | | N/A |
| 2.10.3.9 | Measurement of transient voltage levels | | 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 |
| 2.10.4 | Creepage distances | | N/A |



| IEC/EN 60950-1 | | | |
|----------------|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 2.10.4.1 | General | | N/A |
| 2.10.4.2 | Material group and comparative tracking index | | N/A |
| | CTI tests | | — |
| 2.10.4.3 | Minimum creepage distances | | N/A |
| 2.10.5 | Solid insulation | | N/A |
| 2.10.5.1 | General | | N/A |
| 2.10.5.2 | Distances through insulation | | N/A |
| 2.10.5.3 | Insulating compound as solid insulation | | N/A |
| 2.10.5.4 | Semiconductor devices | | N/A |
| 2.10.5.5 | Cemented joints | | N/A |
| 2.10.5.6 | Thin sheet material – General | | N/A |
| 2.10.5.7 | Separable thin sheet material | | N/A |
| | Number of layers (pcs) | | — |
| 2.10.5.8 | Non-separable thin sheet material | | N/A |
| 2.10.5.9 | Thin sheet material – standard test procedure | | N/A |
| | Electric strength test | | — |
| 2.10.5.10 | Thin sheet material – alternative test procedure | | N/A |
| | Electric strength test | | — |
| 2.10.5.11 | Insulation in wound components | | N/A |
| 2.10.5.12 | Wire in wound components | | N/A |
| | Working voltage | | N/A |
| | a) Basic insulation not under stress | | N/A |
| | b) Basic, supplementary, reinforced insulation | | N/A |
| | c) Compliance with Annex U | | N/A |
| | Two wires in contact inside wound component; angle between 45° and 90° | | N/A |
| 2.10.5.13 | Wire with solvent-based enamel in wound components | | N/A |
| | Electric strength test | | — |
| | Routine test | | N/A |
| 2.10.5.14 | Additional insulation in wound components | | N/A |
| | Working voltage | | N/A |
| | - Basic insulation not under stress | | N/A |
| | - Supplementary, reinforced insulation | | N/A |
| 2.10.6 | Construction of printed boards | | N/A |
| 2.10.6.1 | Uncoated printed boards | | N/A |



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|----------------|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 2.10.6.2 | Coated printed boards | | N/A |
| 2.10.6.3 | Insulation between conductors on the same inner surface of a printed board | | N/A |
| 2.10.6.4 | Insulation between conductors on different layers of a printed board | | N/A |
| | Distance through insulation | | N/A |
| | Number of insulation layers (pcs) | | N/A |
| 2.10.7 | Component external terminations | | N/A |
| 2.10.8 | Tests on coated printed boards and coated components | | N/A |
| 2.10.8.1 | Sample preparation and preliminary inspection | | N/A |
| 2.10.8.2 | Thermal conditioning | | N/A |
| 2.10.8.3 | Electric strength test | | N/A |
| 2.10.8.4 | Abrasion resistance test | | N/A |
| 2.10.9 | Thermal cycling | | N/A |
| 2.10.10 | Test for Pollution Degree 1 environment and insulating compound | | N/A |
| 2.10.11 | Tests for semiconductor devices and cemented joints | | N/A |
| 2.10.12 | Enclosed and sealed parts | | N/A |

| | | | |
|------------|---|---|-----|
| 3 | WIRING, CONNECTIONS AND SUPPLY | | P |
| 3.1 | General | | P |
| 3.1.1 | Current rating and overcurrent protection | All internal wires are UL recognized. Cross-sectional area of internal wiring is suitable for current intended to be carried. | P |
| 3.1.2 | Protection against mechanical damage | Wires do not touch sharp edges which could damage the insulation and cause hazard. | P |
| 3.1.3 | Securing of internal wiring | The wires are secured by soldering and glue so that a loosening of the terminal connection is unlikely. | P |
| 3.1.4 | Insulation of conductors | The insulation of the individual conductors is suitable for the application and the working voltage. For the insulation material see 3.1.1. | P |
| 3.1.5 | Beads and ceramic insulators | Not used. | N/A |



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|----------------|--|--|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 3.1.6 | Screws for electrical contact pressure | No screw used for electrical connection. | N/A |
| 3.1.7 | Insulating materials in electrical connections | All current carrying connections are metal to metal. | N/A |
| 3.1.8 | Self-tapping and spaced thread screws | No self-tapping or spaced thread screws used. | N/A |
| 3.1.9 | Termination of conductors | All conductors are reliably secured. | P |
| | 10 N pull test | Applied and passed. | P |
| 3.1.10 | Sleeving on wiring | No sleeving used as supplementary insulation. | N/A |

| | | | |
|------------|---|--|-----|
| 3.2 | Connection to a mains supply | | N/A |
| 3.2.1 | Means of connection | | N/A |
| 3.2.1.1 | Connection to an a.c. mains supply | | N/A |
| 3.2.1.2 | Connection to a d.c. mains supply | | N/A |
| 3.2.2 | Multiple supply connections | | N/A |
| 3.2.3 | Permanently connected equipment | | N/A |
| | Number of conductors, diameter of cable and conduits (mm) | | — |
| 3.2.4 | Appliance inlets | | N/A |
| 3.2.5 | Power supply cords | | N/A |
| 3.2.5.1 | AC power supply cords | | N/A |
| | Type | | — |
| | Rated current (A), cross-sectional area (mm ²), AWG | | — |
| 3.2.5.2 | DC power supply cords | | N/A |
| 3.2.6 | Cord anchorages and strain relief | | N/A |
| | Mass of equipment (kg), pull (N) | | — |
| | Longitudinal displacement (mm) | | — |
| 3.2.7 | Protection against mechanical damage | | N/A |
| 3.2.8 | Cord guards | | N/A |
| | Diameter or minor dimension D (mm); test mass (g) : | | — |
| | Radius of curvature of cord (mm) | | — |
| 3.2.9 | Supply wiring space | | N/A |



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|----------------|---|---|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 3.3 | Wiring terminals for connection of external conductors | | N/A |
| 3.3.1 | Wiring terminals | | N/A |
| 3.3.2 | Connection of non-detachable power supply cords | | N/A |
| 3.3.3 | Screw terminals | | N/A |
| 3.3.4 | Conductor sizes to be connected | | N/A |
| | Rated current (A), cord/cable type, cross-sectional area (mm ²) | | — |
| 3.3.5 | Wiring terminal sizes | | N/A |
| | Rated current (A), type, nominal thread diameter (mm) | | — |
| 3.3.6 | Wiring terminal design | | N/A |
| 3.3.7 | Grouping of wiring terminals | | N/A |
| 3.3.8 | Stranded wire | | N/A |
| 3.4 | Disconnection from the mains supply | | N/A |
| 3.4.1 | General requirement | | N/A |
| 3.4.2 | Disconnect devices | | N/A |
| 3.4.3 | Permanently connected equipment | | N/A |
| 3.4.4 | Parts which remain energized | | N/A |
| 3.4.5 | Switches in flexible cords | | N/A |
| 3.4.6 | Number of poles - single-phase and d.c. equipment | | N/A |
| 3.4.7 | Number of poles - three-phase equipment | | N/A |
| 3.4.8 | Switches as disconnect devices | | N/A |
| 3.4.9 | Plugs as disconnect devices | | N/A |
| 3.4.10 | Interconnected equipment | | N/A |
| 3.4.11 | Multiple power sources | | N/A |
| 3.5 | Interconnection of equipment | | P |
| 3.5.1 | General requirements | See below. | P |
| 3.5.2 | Types of interconnection circuits | Interconnection circuits of SELV via secondary output connector. | P |
| 3.5.3 | ELV circuits as interconnection circuits | No ELV interconnection. | N/A |
| 3.5.4 | Data ports for additional equipment | Supplied from the external power source which is complied with LPS. | P |



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|----------------|--|--|------------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 4 | PHYSICAL REQUIREMENTS | | P |
| 4.1 | Stability | | N/A |
| | Angle of 10° | The weight of the unit does not more than 7 kg. | N/A |
| | Test force (N) | Equipment is not a floor-standing unit. | N/A |
| 4.2 | Mechanical strength | | P |
| 4.2.1 | General | | N/A |
| | Rack-mounted equipment. | | N/A |
| 4.2.2 | Steady force test, 10 N | | N/A |
| 4.2.3 | Steady force test, 30 N | | N/A |
| 4.2.4 | Steady force test, 250 N | | N/A |
| 4.2.5 | Impact test | | N/A |
| | Fall test | | N/A |
| | Swing test | | N/A |
| 4.2.6 | Drop test; height (mm) | | N/A |
| 4.2.7 | Stress relief test | | N/A |
| 4.2.8 | Cathode ray tubes | No CRT. | N/A |
| | Picture tube separately certified | Same as above. | N/A |
| 4.2.9 | High pressure lamps | No high pressure lamp. | N/A |
| 4.2.10 | Wall or ceiling mounted equipment; force (N) | Applied 50N. | P |
| 4.3 | Design and construction | | P |
| 4.3.1 | Edges and corners | Edges and corners of the enclosure are rounded. | P |
| 4.3.2 | Handles and manual controls; force (N) | No handles or controls used. | N/A |
| 4.3.3 | Adjustable controls | No hazardous adjustable controls. | N/A |
| 4.3.4 | Securing of parts | Mechanical fixings are reliable designed to withstand mechanical stress occurring during normal use. | P |
| 4.3.5 | Connection by plugs and sockets | No misconnection of plugs, connections or sockets possible. | P |
| 4.3.6 | Direct plug-in equipment | Not direct plug-in type. | N/A |
| | Torque | Same as above. | — |



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|----------------|---|---|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Compliance with the relevant mains plug standard | : Same as above. | N/A |
| 4.3.7 | Heating elements in earthed equipment | No heating elements. | N/A |
| 4.3.8 | Batteries | No battery provided. | N/A |
| | - Overcharging of a rechargeable battery | Same as above. | N/A |
| | - Unintentional charging of a non-rechargeable battery | Same as above. | N/A |
| | - Reverse charging of a rechargeable battery | Same as above. | N/A |
| | - Excessive discharging rate for any battery | Same as above. | N/A |
| 4.3.9 | Oil and grease | Insulation in intended use not considered to be exposed to oil and grease. | N/A |
| 4.3.10 | Dust, powders, liquids and gases | EUT in intended use does not produce dust or use powders, liquids or gases. | N/A |
| 4.3.11 | Containers for liquids or gases | No such containers provided. | N/A |
| 4.3.12 | Flammable liquids | No flammable liquids used. | N/A |
| | Quantity of liquid (l) | Same as above. | N/A |
| | Flash point (°C) | Same as above. | N/A |
| 4.3.13 | Radiation | No concerned radiation within this equipment. | N/A |
| 4.3.13.1 | General | Same as above. | N/A |
| 4.3.13.2 | Ionizing radiation | No ionizing radiation or flammable liquids present. | N/A |
| | Measured radiation (pA/kg) | Same as above. | — |
| | Measured high-voltage (kV) | Same as above. | — |
| | Measured focus voltage (kV) | Same as above. | — |
| | CRT markings | Same as above. | — |
| 4.3.13.3 | Effect of ultraviolet (UV) radiation on materials | No UV presents. | N/A |
| | Part, property, retention after test, flammability classification | Same as above. | N/A |
| 4.3.13.4 | Human exposure to ultraviolet (UV) radiation | Same as above. | N/A |
| 4.3.13.5 | Lasers (including laser diodes) and LEDs | See sub-clause 4.3.13.5.1 and 4.3.13.5.2 for details. | P |
| 4.3.13.5.1 | Lasers (including laser diodes) | No laser provided. | — |
| | Laser class | Same as above. | — |
| 4.3.13.5.2 | Light emitting diodes (LEDs) | The LED was used as indicating light. | P |
| 4.3.13.6 | Other types | No other type. | N/A |



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

| 4.4 | Protection against hazardous moving parts | | N/A |
|---------|--|--|-----|
| 4.4.1 | General | | N/A |
| 4.4.2 | Protection in operator access areas | | N/A |
| | Household and home/office document/media shredders | | N/A |
| 4.4.3 | Protection in restricted access locations | | N/A |
| 4.4.4 | Protection in service access areas | | N/A |
| 4.4.5 | Protection against moving fan blades | | N/A |
| 4.4.5.1 | General | | 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 | | N/A |
| | Use of symbol or warning | | N/A |
| 4.4.5.3 | Protection for service persons | | N/A |
| | Use of symbol or warning | | N/A |

| 4.5 | Thermal requirements | | P |
|-------|---|---------------------------|-----|
| 4.5.1 | General | See below. | P |
| 4.5.2 | Temperature tests | See appended table 4.5. | P |
| | Normal load condition per Annex L | See appended table 1.6.2. | — |
| 4.5.3 | Temperature limits for materials | See appended table 4.5. | P |
| 4.5.4 | Touch temperature limits | See appended table 4.5. | P |
| 4.5.5 | Resistance to abnormal heat | Class III equipment. | N/A |

| 4.6 | Openings in enclosures | | P |
|---------|--|----------------------------------|-----|
| 4.6.1 | Top and side openings | See below. | P |
| | Dimensions (mm) | See appended table 4.6.1, 4.6.2. | — |
| 4.6.2 | Bottoms of fire enclosures | See below. | P |
| | Construction of the bottom, dimensions (mm) .. : | See appended table 4.6.1, 4.6.2. | — |
| 4.6.3 | Doors or covers in fire enclosures | No doors or covers provided. | N/A |
| 4.6.4 | Openings in transportable equipment | Not a transportable equipment. | N/A |
| 4.6.4.1 | Constructional design measures | Same as above. | N/A |



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|----------------|---|------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Dimensions (mm) | Same as above. | — |
| 4.6.4.2 | Evaluation measures for larger openings | Same as above. | N/A |
| 4.6.4.3 | Use of metallized parts | Same as above. | N/A |
| 4.6.5 | Adhesives for constructional purposes | No such consideration. | N/A |
| | Conditioning temperature (°C), time (weeks) | Same as above. | — |

| | | | |
|------------|--|---|----------|
| 4.7 | Resistance to fire | | P |
| 4.7.1 | Reducing the risk of ignition and spread of flame | Use of materials with the required flammability classes. | P |
| | Method 1, selection and application of components wiring and materials | Method 1 used. | P |
| | Method 2, application of all of simulated fault condition tests | Same as above. | N/A |
| 4.7.2 | Conditions for a fire enclosure | See below. | P |
| 4.7.2.1 | Parts requiring a fire enclosure | See below. | N/A |
| 4.7.2.2 | Parts not requiring a fire enclosure | The appliance with: Supply of components in the secondary circuit by a limited power source adaptor. The components are mounted on PCB material of flammability rating V-1 min., the fire enclosure construction is not required. | P |
| 4.7.3 | Materials | | P |
| 4.7.3.1 | General | PCB rated accordingly. For details see table 1.5.1. | P |
| 4.7.3.2 | Materials for fire enclosures | See sub-clause 4.7.2. | N/A |
| 4.7.3.3 | Materials for components and other parts outside fire enclosures | Same as above. | N/A |
| 4.7.3.4 | Materials for components and other parts inside fire enclosures | Same as above. | N/A |
| 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 components provided. | N/A |

| | | | |
|------------|--|--|------------|
| 5 | ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS | | P |
| 5.1 | Touch current and protective conductor current | | N/A |
| 5.1.1 | General | | N/A |
| 5.1.2 | Configuration of equipment under test (EUT) | | N/A |



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|----------------|---|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 5.1.2.1 | Single connection to an a.c. mains supply | | N/A |
| 5.1.2.2 | Redundant multiple connections to an a.c. mains supply | | N/A |
| 5.1.2.3 | Simultaneous multiple connections to an a.c. mains supply | | N/A |
| 5.1.3 | Test circuit | | N/A |
| 5.1.4 | Application of measuring instrument | | N/A |
| 5.1.5 | Test procedure | | N/A |
| 5.1.6 | Test measurements | | 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 | | N/A |
| 5.1.7.1 | General | | N/A |
| 5.1.7.2 | Simultaneous multiple connections to the supply | | N/A |
| 5.1.8 | Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks | | N/A |
| 5.1.8.1 | Limitation of the touch current to a telecommunication network or to a cable distribution system | | N/A |
| | Supply voltage (V) | | — |
| | Measured touch current (mA) | | — |
| | Max. allowed touch current (mA) | | — |
| 5.1.8.2 | Summation of touch currents from telecommunication networks | | N/A |
| | a) EUT with earthed telecommunication ports | | N/A |
| | b) EUT whose telecommunication ports have no reference to protective earth | | N/A |

| | | | |
|------------|--------------------------|--|-----|
| 5.2 | Electric strength | | N/A |
| 5.2.1 | General | | N/A |
| 5.2.2 | Test procedure | | N/A |

| | | | |
|------------|--|-----------------------|---|
| 5.3 | Abnormal operating and fault conditions | | P |
| 5.3.1 | Protection against overload and abnormal operation | See sub-clause 5.3.4. | P |



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| Clause | Requirement + Test | Result - Remark | Verdict |
| 5.3.2 | Motors | Stepper motor used, see appended table 1.5.1. | N/A |
| 5.3.3 | Transformers | No safety isolation transformer in this equipment. | N/A |
| 5.3.4 | Functional insulation | Method c). Test results see appended table 5.3 and table 2.2. | P |
| 5.3.5 | Electromechanical components | No electromechanical components provided. | N/A |
| 5.3.6 | Audio amplifiers in ITE | No audio amplifier within this equipment. | N/A |
| 5.3.7 | Simulation of faults | See sub-clause 5.3.4. | N/A |
| 5.3.8 | Unattended equipment | None of the listed components provided. | N/A |
| 5.3.9 | Compliance criteria for abnormal operating and fault conditions | See below. | P |
| 5.3.9.1 | During the tests | No fire occurred beyond the equipment, no molten metal emitted and no deformation of enclosure. | P |
| 5.3.9.2 | After the tests | Same as above. | N/A |

| | | | |
|------------|--|--|-----|
| 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 | | N/A |
| | Supply voltage (V) | | — |
| | Current in the test circuit (mA) | | — |
| 6.1.2.2 | Exclusions | | N/A |

| | | | |
|------------|--|--|-----|
| 6.2 | Protection of equipment users from overvoltages on telecommunication networks | | N/A |
| 6.2.1 | Separation requirements | | N/A |
| 6.2.2 | Electric strength test procedure | | N/A |
| 6.2.2.1 | Impulse test | | N/A |
| 6.2.2.2 | Steady-state test | | N/A |
| 6.2.2.3 | Compliance criteria | | N/A |



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| Clause | Requirement + Test | Result - Remark | Verdict |
| 6.3 | Protection of the telecommunication wiring system from overheating | | N/A |
| | Max. output current (A) | | — |
| | Current limiting method | | — |
| 7 | CONNECTION TO CABLE DISTRIBUTION SYSTEMS | | N/A |
| 7.1 | General | | 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 | | N/A |
| 7.3 | Protection of equipment users from overvoltages on the cable distribution system | | N/A |
| 7.4 | Insulation between primary circuits and cable distribution systems | | N/A |
| 7.4.1 | General | | N/A |
| 7.4.2 | Voltage surge test | | N/A |
| 7.4.3 | Impulse test | | 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) | | 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) | | — |



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|----------------|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 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 |
| | 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 | Stepper motor used, see appended table 1.5.1. | N/A |
| | Position | | — |
| | Manufacturer | | — |
| | Type | | — |
| | Rated values | | — |
| B.2 | Test conditions | | N/A |
| B.3 | Maximum temperatures | | N/A |
| B.4 | Running overload test | | N/A |
| B.5 | Locked-rotor overload test | | N/A |
| | Test duration (days) | | — |
| | Electric strength test: test voltage (V) | | — |
| B.6 | Running overload test for d.c. motors in secondary circuits | | N/A |
| B.6.1 | General | | N/A |
| B.6.2 | Test procedure | | N/A |



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|----------------|---|--------------------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| B.6.3 | Alternative test procedure | | N/A |
| B.6.4 | Electric strength test; test voltage (V) | | N/A |
| B.7 | Locked-rotor overload test for d.c. motors in secondary circuits | | N/A |
| B.7.1 | General | | N/A |
| B.7.2 | Test procedure | | N/A |
| B.7.3 | Alternative test procedure | | N/A |
| B.7.4 | Electric strength test; test voltage (V) | | N/A |
| B.8 | Test for motors with capacitors | | N/A |
| B.9 | Test for three-phase motors | | N/A |
| B.10 | Test for series motors | | N/A |
| | Operating voltage (V) | | — |
| C | ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3) | | N/A |
| | Position | Evaluated in approved power adaptor. | — |
| | Manufacturer | | — |
| | Type | | — |
| | Rated values | | — |
| | Method of protection | | — |
| C.1 | Overload test | | N/A |
| C.2 | Insulation | | N/A |
| | Protection from displacement of windings | | N/A |
| D | ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4) | | N/A |
| D.1 | Measuring instrument | | N/A |
| D.2 | Alternative measuring instrument | | 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 | | N/A |



| IEC/EN 60950-1 | | | |
|----------------|---|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| G.1.1 | General | | N/A |
| G.1.2 | Summary of the procedure for determining minimum clearances | | N/A |
| G.2 | Determination of mains transient voltage (V) | | 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 |
| G.2.4 | Battery operation | | N/A |
| G.3 | Determination of telecommunication network transient voltage (V) | | N/A |
| G.4 | Determination of required withstand voltage (V) | | 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) | | 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 | | 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 | | N/A |
| K.2 | Thermostat reliability; operating voltage (V) | | N/A |
| K.3 | Thermostat endurance test; operating voltage (V) | | N/A |
| K.4 | Temperature limiter endurance; operating voltage (V) | | N/A |
| K.5 | Thermal cut-out reliability | | N/A |
| K.6 | Stability of operation | | N/A |



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

| L | ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2) | | P |
|----------|--|-----------------------|----------|
| L.1 | Typewriters | | N/A |
| L.2 | Adding machines and cash registers | | N/A |
| L.3 | Erasers | | N/A |
| L.4 | Pencil sharpeners | | N/A |
| L.5 | Duplicators and copy machines | | N/A |
| L.6 | Motor-operated files | | N/A |
| L.7 | Other business equipment | See sub-clause 1.6.2. | P |

| M | ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1) | | N/A |
|----------|--|--|------------|
| M.1 | Introduction | | N/A |
| M.2 | Method A | | N/A |
| M.3 | Method B | | N/A |
| M.3.1 | Ringling signal | | 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 | | N/A |
| M.3.2.1 | Conditions for use of a tripping device or a monitoring voltage | | N/A |
| M.3.2.2 | Tripping device | | N/A |
| M.3.2.3 | Monitoring voltage (V) | | 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 | | N/A |
| N.2 | IEC 60065 impulse test generator | | N/A |

| P | ANNEX P, NORMATIVE REFERENCES | | — |
|----------|--------------------------------------|--|----------|
|----------|--------------------------------------|--|----------|

| Q | ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1) | | N/A |
|----------|--|--|------------|
| | - Preferred climatic categories | | N/A |



| IEC/EN 60950-1 | | | |
|----------------|---|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | - Maximum continuous voltage | | N/A |
| | - Combination pulse current | | N/A |
| | Body of the VDR Test according to IEC60695-11-5..... | | N/A |
| | Body of the VDR. Flammability class of material (min V-1)..... | | 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 | | N/A |
| S.2 | Test procedure | | N/A |
| S.3 | Examples of waveforms during impulse testing | | |
| T | ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2) | | N/A |
| | | | — |
| 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 | | N/A |
| V.2 | TN power distribution systems | | N/A |
| W | ANNEX W, SUMMATION OF TOUCH CURRENTS | | N/A |
| W.1 | Touch current from electronic circuits | | N/A |
| W.1.1 | Floating circuits | | N/A |
| W.1.2 | Earthed circuits | | N/A |
| W.2 | Interconnection of several equipments | | N/A |
| W.2.1 | Isolation | | N/A |
| W.2.2 | Common return, isolated from earth | | N/A |



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|----------------|--|-----------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| W.2.3 | Common return, connected to protective earth | | N/A |
| X | ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1) | | N/A |
| X.1 | Determination of maximum input current | | N/A |
| X.2 | Overload test procedure | | N/A |
| Y | ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3) | | N/A |
| Y.1 | Test apparatus | | N/A |
| Y.2 | Mounting of test samples | | N/A |
| Y.3 | Carbon-arc light-exposure apparatus | | N/A |
| Y.4 | Xenon-arc light exposure apparatus | | 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 | No such component provided. | 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 |
| DD | ANNEX DD, Requirements for the mounting means of rack-mounted equipment | | N/A |
| DD.1 | General | | N/A |
| DD.2 | Mechanical strength test, variable N..... | | N/A |
| DD.3 | Mechanical strength test, 250N, including end stops..... | | N/A |
| DD.4 | Compliance..... | | N/A |
| EE | ANNEX EE, Household and home/office document/media shredders | | N/A |
| EE.1 | General | No such device provided. | N/A |



| IEC/EN 60950-1 | | | |
|----------------|---|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| EE.2 | Markings and instructions | | N/A |
| | Use of markings or symbols.....: | | N/A |
| | Information of user instructions, maintenance and/or servicing instructions.....: | | N/A |
| EE.3 | Inadvertent reactivation test.....: | | N/A |
| EE.4 | Disconnection of power to hazardous moving parts: | | N/A |
| | Use of markings or symbols.....: | | N/A |
| EE.5 | Protection against hazardous moving parts | | N/A |
| | Test with test finger (Figure 2A) | | N/A |
| | Test with wedge probe (Figure EE1 and EE2) | | N/A |



| 1.5.1 | TABLE: List of critical components | | | | | P |
|--|------------------------------------|-----------------|--|--|---|---|
| Object/part No. | Manufacturer/ trademark | Type/model | Technical data | Standard | Mark(s) of conformity ¹⁾ | |
| External Power Adaptor | Interchangeable | Interchangeable | O/P: 12Vdc, 0.72A min., 50°C min., LPS | IEC 60950- 1:2005 or IEC 60950- 1:2005+A1:2009 or IEC 60950- 1:2005+A1:2009 +A2:2013 | CB (issued by National Certification Body) | |
| | Interchangeable | Interchangeable | O/P: 24Vac, 0.80A min., 50°C min., LPS | IEC 60950- 1:2005 or IEC 60950- 1:2005+A1:2009 or IEC 60950- 1:2005+A1:2009 +A2:2013 | CB (issued by National Certification Body) | |
| | Interchangeable | Interchangeable | O/P: 36~57Vdc, 0.3~0.2A min., 50°C min., LPS | IEC 60950- 1:2005 or IEC 60950- 1:2005+A1:2009 or IEC 60950- 1:2005+A1:2009 +A2:2013 | CB (issued by National Certification Body) | |
| Metal Enclosure | Interchangeable | Interchangeable | Aluminum., 2.0mm thickness min. | -- | -- | |
| Stepper Motor | Interchangeable | Interchangeable | 12Vdc, 0.25A | -- | -- | |
| PCB | Interchangeable | Interchangeable | V-1 min., 105°C min. | ANSI/UL 796 | UL | |
| Supplementary information: | | | | | | |
| 1) Provided evidence ensures the agreed level of compliance. | | | | | | |

| 1.5.1 | TABLE: Opto Electronic Devices | | | | | N/A |
|-------------------------|--------------------------------|--|--|--|--|-----|
| Manufacturer.....: | | | | | | |
| Type.....: | | | | | | |
| Separately tested.....: | | | | | | |



| |
|---|
| Bridging insulation.....: |
| External creepage distance |
| Internal creepage distance.....: |
| Distance through insulation.....: |
| Tested under the following conditions.....: |
| Input.....: |
| Output |
| Supplementary information |
| |

| | | | | | | | |
|--|--|------------------------|-------|--------|-----------------------|----------------------|----------|
| 1.6.2 | TABLE: Electrical data (in normal conditions) | | | | | | P |
| U (V) | I (A) | I _{rated} (A) | P (W) | Fuse # | I _{fuse} (A) | Condition/status | |
| 12Vdc | 0.27 | 0.72 | 3.24 | -- | -- | Maximum normal load. | |
| 24Vac/50Hz | 0.12 | 0.8 | 3.64 | -- | -- | Maximum normal load. | |
| 24Vac/60Hz | 0.12 | 0.8 | 3.64 | -- | -- | Maximum normal load. | |
| PoE 36Vdc | 0.12 | 0.3 | 4.32 | -- | -- | Maximum normal load. | |
| PoE 57Vdc | 0.08 | 0.2 | 4.56 | -- | -- | Maximum normal load. | |
| Supplementary information: | | | | | | | |
| EUT was operated continuously with data-link mode. | | | | | | | |

| | | | | | |
|----------------------------|----------------------------------|-----------------------|-----------------------|-------------------|------------|
| 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) | $t_{u \rightarrow 0V}$ (s) | Comments |
|----------------------------|-----------------------|---------------------|----------------------------|----------|
| | | | | |
| Supplementary information: | | | | |
| Test voltage: | | | | |
| Overall capacity: | | | | |
| Discharge resistor: | | | | |

| 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. | | |
| T1 pin 1,2 to pin 5,6 | 5.2 | -- | -- | |
| T1 pin 1,2 to pin 7,8 | 24.0 | -- | -- | |
| T1 pin 3 to pin 5,6 | 4.6 | -- | -- | |
| T1 pin 3 to pin 7,8 | 26.4 | -- | -- | |
| T1 pin 10 to pin 5,6 | 26.4 | -- | -- | |
| T1 pin 10 to pin 7,8 | 6.8 | -- | -- | |
| T1 pin 11, 12 to pin 5,6 | 63.2 | -- | -- | |
| T1 pin 11, 12 to pin 7,8 | 46.4 | -- | -- | |
| Fault test performed on voltage limiting components | Voltage measured (V) in SELV circuits (V peak or V d.c.) | | | |
| T1 pin11,12 to pin5,6, short | T1 after D2 to GND: 12Vdc to 0Vdc | | | |
| Supplementary information: | | | | |
| Test voltage: PoE 57Vdc | | | | |

| 2.4.2 | TABLE: Limited current circuit measurement | | | | | N/A |
|----------------------------|--|--------------|------------|------------|----------|-----|
| Location | Voltage (V) | Current (mA) | Freq. (Hz) | Limit (mA) | Comments | |
| | | | | | | |
| Supplementary information: | | | | | | |
| | | | | | | |

| 2.5 | TABLE: limited power sources | | | | N/A |
|--|------------------------------|---------|---------------------|----|-----|
| Components | Test condition | Uoc (V) | I _{sc} (A) | VA | |
| Circuit output tested: See below. | | | | | |
| Note: Measured Uoc (V) with all load circuits disconnected: See below. | | | | | |



| | (Single fault) | | Meas. | Limit | Meas. | Limit |
|-----------------------------------|----------------|--|-------|-------|-------|-------|
| | | | | | | |
| Supplementary information: | | | | | | |
| Sc=Short circuit, Oc=Open circuit | | | | | | |

| 2.6.3.4 | TABLE: Resistance of earthing measurement | | | N/A |
|----------------------------|---|----------|--|-----|
| Location | Resistance measured (mΩ) | Comments | | |
| | | | | |
| Supplementary information: | | | | |
| | | | | |

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

| 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) | |
| 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 | N/A |
|-------|------------------|-----|
| | | |



| | | | | | | | | | |
|---|----------------------------|---------------|-------------------------|------------------------|---------------|---------------|---------------|-------------------|---------------|
| The tests of 4.3.8 are applicable only when appropriate battery data is not available | | | | | | | | | |
| Is it possible to install the battery in a reverse polarity position? | | | | | | | | | |
| | Non-rechargeable batteries | | | Rechargeable batteries | | | | | |
| | Discharging | | Un-intentional charging | Charging | | Discharging | | Reversed charging | |
| | Meas. current | Manuf. Specs. | | Meas. current | Manuf. Specs. | Meas. current | Manuf. Specs. | Meas. current | Manuf. Specs. |
| Max. current during normal condition | | | | | | | | | |
| Max. current during fault condition | | | | | | | | | |
| Test results: | | | | | | | | | |
| - Chemical leaks | | | | | | | Verdict | | |
| - Explosion of the battery | | | | | | | | | |
| - Emission of flame or expulsion of molten metal | | | | | | | | | |
| - Electric strength tests of equipment after completion of tests | | | | | | | | | |
| Supplementary information: | | | | | | | | | |

| | | |
|---|-------------------------|-----|
| 4.3.8 | TABLE: Batteries | N/A |
| Battery category: (Lithium, NiMh, NiCad, Lithium Ion ...) | | |
| Manufacturer | | |
| Type / model | | |
| Voltage | | |
| Capacity: mAh | | |
| Tested and Certified by (incl. Ref. No.) | | |
| Circuit protection diagram: | | |

| | |
|---|-----|
| MARKINGS AND INSTRUCTIONS (1.7.13) | |
| Location of replaceable battery | N/A |
| Language(s) | N/A |
| Close to the battery | N/A |
| In the servicing instructions | N/A |
| In the operating instructions | N/A |



| 4.5 | TABLE: Thermal requirements | | | P |
|---|-------------------------------|----------------|----------------|-------------------------|
| | Supply voltage (V) | See below | See below | — |
| | Ambient T_{\min} (°C) | -- | -- | — |
| | Ambient T_{\max} (°C) | -- | -- | — |
| Maximum measured temperature T of part/at:: | | T (°C) | | Allowed T_{\max} (°C) |
| Test voltage: | | PoE 57Vdc | PoE 57Vdc | -- |
| Test position: | | Label downward | Label upward | -- |
| T1 coil (I/O board) | | 73.2 | 72.3 | 105 |
| PCB near D23 (I/O board) | | 67.4 | 66.4 | 105 |
| PCB near Q1 (I/O board) | | 71.3 | 70.7 | 105 |
| BT3 body (Mainboard) | | 59.8 | 59.9 | -- |
| PCB near U4 (Mainboard) | | 59.7 | 59.7 | 105 |
| Motor body (Connect to J10 of mainboard) | | 59.1 | 57.9 | -- |
| Motor body (On LENS module) | | 51.8 | 52.4 | -- |
| External enclosure near U4 | | 54.8 | 56.2 | 70 |
| External enclosure near I/O port | | 55.3 | 55.6 | 70 |
| Label surface | | 56.0 | 55.6 | 70 |
| T _{ma} | | 50 | 50 | -- |
| T _{amb} | | 23.1 | 22.6 | -- |
| Test voltage: | | PoE 36Vdc | 12Vdc | -- |
| Test position: | | Label downward | Label downward | -- |
| T1 coil (I/O board) | | 72.3 | 62.5 | 105 |
| PCB near D23 (I/O board) | | 67.2 | 66.8 | 105 |
| PCB near Q1 (I/O board) | | 70.5 | 61.9 | 105 |
| BT3 body (Mainboard) | | 59.8 | 60.0 | -- |
| PCB near U4 (Mainboard) | | 59.9 | 60.1 | 105 |
| Motor body (Connect to J10 of mainboard) | | 59.2 | 58.7 | 105 |
| Motor body (On LENS module) | | 52.0 | 51.9 | 105 |
| External enclosure near U4 | | 55.0 | 55.7 | 105 |
| External enclosure near I/O port | | 55.4 | 56.2 | 70 |
| Label surface | | 56.2 | 56.5 | 70 |
| T _{ma} | | 50 | 50 | -- |
| T _{amb} | | 22.9 | 21.6 | -- |
| Test voltage: | | 24Vac/60Hz | -- | -- |
| Test position: | | Label downward | -- | -- |
| T1 coil (I/O board) | | 61.6 | -- | 105 |



| | | | |
|--|------|----|-----|
| PCB near D23 (/O board) | 64.4 | -- | 105 |
| PCB near Q1 (I/O board) | 60.9 | -- | 105 |
| BT3 body (Mainboard) | 58.6 | -- | -- |
| PCB near U4 (Mainboard) | 58.5 | -- | 105 |
| Motor body (Connect to J10 of mainboard) | 57.4 | -- | 105 |
| Motor body (On LENS module) | 51.0 | -- | 105 |
| External enclosure near U4 | 53.9 | -- | 105 |
| External enclosure near I/O port | 54.3 | -- | 70 |
| Label surface | 55.1 | -- | 70 |
| T _{ma} | 50 | -- | -- |
| T _{amb} | 23.0 | -- | -- |

Supplementary information:

| Temperature T of winding: | t ₁ (°C) | R ₁ (Ω) | t ₂ (°C) | R ₂ (Ω) | T (°C) | Allowed T _{max} (°C) | Insulation class |
|---------------------------|---------------------|--------------------|---------------------|--------------------|--------|-------------------------------|------------------|
| | | | | | | | |

Supplementary information:

- 1) The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in 1.6.2 at voltages as above.
- 2) The maximum ambient temperature (T_{ma}) permitted by the manufacturer's specification is 50°C.
- 3) All values for T (°C) are re-calculated from T_{amb} respectively.

| 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: | | |
| | | |

| 4.6.1, 4.6.2 | Table: Enclosure opening measurements | P |
|---|--|----------------------|
| Location | Size (mm) | Comments |
| For All models (Label downward) | | |
| Top / Bottom / Front / Right / Left Rear | -- | No opening provided. |
| Supplementary information: | | |
| | | |

| | | |
|------------|----------------------------------|---|
| 4.7 | TABLE: Resistance to fire | P |
|------------|----------------------------------|---|



| Part | Manufacturer of material | Type of material | Thickness (mm) | Flammability class | Evidence |
|--|--------------------------|------------------|----------------|--------------------|----------|
| Metal enclosure | Interchangeable | Interchangeable | 2.0 | -- | 1) |
| PCB | Interchangeable | Interchangeable | -- | V-1 min. | 1) |
| Supplementary information: | | | | | |
| 1) See appended table 1.5.1 for details. | | | | | |

| 5.1 | TABLE: touch current measurement | | | N/A |
|----------------------------|----------------------------------|------------|---------------------|-----|
| Measured between: | Measured (mA) | Limit (mA) | Comments/conditions | |
| | | | | |
| Supplementary information: | | | | |
| Test voltage: | | | | |

| 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 | |
| Basic / supplementary: | | | | |
| Reinforced: | | | | |
| Supplementary information: | | | | |

| 5.3 | TABLE: Fault condition tests | | | | | P |
|---|---|--------------------|-----------|--------|---------------------------|---|
| | Ambient temperature (°C) | | | | 25°C, if no others states | — |
| | Power source for EUT: Manufacturer, model/type, output rating | | | | See appended table 1.5.1. | — |
| Component No. | Fault | Supply voltage (V) | Test time | Fuse # | Fuse current (A) | Observation |
| D12 (1-3) | Short | PoE 57 | 30 mins | -- | -- | Normal operation, No damage, no hazard. |
| Supplementary information: | | | | | | |
| In fault column: s-c=short-circuited, o-c=open-circuited, o-l= overload | | | | | | |

| 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) |
|----------------------------|-------------------|--------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---|--|
| | | | | | | | |
| 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 |
|--|---------------------|-----|
| | | |
| Transformer Mfr.: | | |
| Transformer Type: | | |
| Bobbin: | | |
| Primary/input pins.....: | | |
| Secondary/output pins | | |
| Material (manufacturer, type, ratings) | | |
| Thickness (mm) | | |

| M.2 | TABLE: Criteria for telephone ringing signals (European method) | | | | | | | | N/A |
|----------------------------|---|------------------------|-------------------------|------------------------|------------------------|--------------------------|---------------|--------------------------|---------------|
| Condition | I _{DC} (mA) | I _P (mA) | I _{PP} (mA) | t ₁ (ms) | t ₂ (ms) | I _{TS1} (mA) | Limit (mA) | I _{TS2} (mA) | Limit (mA) |
| | | | | | | | | | |
| Supplementary information: | | | | | | | | | |
| | | | | | | | | | |



**ATTACHMENT TO TEST REPORT
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

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" | | |
| Contents (A2:2013) | Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions 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: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1 Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2 | | P |
| General (A1:2010) | Delete all the "country" notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note | | P |
| General (A2:2013) | Delete all the "country" notes in the reference document (IEC 60950-1:2005/A2:2013) according to the following list: 2.7.1 Note * 2.10.3.1 Note 2 6.2.2. Note * Note of secretary: Text of Common Modification remains unchanged. | | P |



| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|---|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 1.7.2.1 (A12.2011) | In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments. | Same as above. | N/A |
| | Zx Protection against excessive sound pressure from personal music players | | N/A |



| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|---|--|------------------------|----------------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | <p>Zx.1 General</p> <p>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.</p> <p>A personal music player is a portable equipment for personal use, that:</p> <ul style="list-style-type: none"> – is designed to allow the user to listen to recorded or broadcast sound or video; and – primarily uses headphones or earphones that can be worn in or on or around the ears; and – allows the user to walk around while in use. <p>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.</p> <p>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.</p> <p>The requirements in this sub-clause are valid for music or video mode only.</p> <p>The requirements do not apply:</p> <ul style="list-style-type: none"> – while the personal music player is connected to an external amplifier; or – while the headphones or earphones are not used. <p>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.</p> <p>The requirements do not apply to:</p> <ul style="list-style-type: none"> – hearing aid equipment and professional equipment; <p>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.</p> | Not such equipment. | N/A |




| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|---|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | <p>– 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.</p> <p>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.</p> <p>For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.</p> | | |
| | <p>Zx.2 Equipment requirements</p> <p>No safety provision is required for equipment that complies with the following:</p> <p>– 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</p> <p>– 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.</p> <p>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.</p> <p>All other equipment shall:</p> <p>a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and</p> <p>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</p> | Same as above. | N/A |



| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|--|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | <p>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</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.</p> <p>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.</p> <p>d) have a warning as specified in Zx.3; and</p> <p>e) not exceed the following:</p> <p>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</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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 an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.</p> | | |



| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|---|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | <p>Zx.3 Warning</p> <p>The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:</p> <ul style="list-style-type: none"> – the symbol of Figure 1 with a minimum height of 5 mm; and – the following wording, or similar: <p>“To prevent possible hearing damage, do not listen at high volume levels for long periods.”</p> <div style="text-align: center;">  </div> <p>Figure 1 – Warning label (IEC 60417-6044)</p> <p>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.</p> | Same as above. | N/A |
| | Zx.4 Requirements for listening devices (headphones and earphones) | | N/A |
| | <p>Zx.4.1 Wired listening devices with analogue input</p> <p>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.</p> <p>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).</p> <p>NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.</p> | Same as above. | N/A |



| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|---|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | <p>Zx.4.2 Wired listening devices with digital input</p> <p>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.</p> <p>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.).</p> <p>NOTE An example of a wired listening device with digital input is a USB headphone.</p> | Same as above. | N/A |
| | <p>Zx.4.3 Wireless listening devices</p> <p>In wireless mode:</p> <ul style="list-style-type: none"> – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – 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. <p>NOTE An example of a wireless listening device is a Bluetooth headphone.</p> | Same as above. | N/A |
| | <p>Zx.5 Measurement methods</p> <p>Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s.</p> <p>NOTE Test method for wireless equipment provided without listening device should be defined.</p> | Same as above. | N/A |



| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|---|--|----------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 2.7.1 | <p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>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):</p> <p>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;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p> | Replaced. | N/A |
| | <p>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.</p> <p>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.</p> | Replaced. | N/A |
| 2.7.2 | This subclause has been declared 'void'. | Void. | N/A |
| 3.2.3 | Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses. | Class III equipment. | N/A |



| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | | | | | | | |
|---|--|--------------------------------|--------------------|-------------------------------|--------------------------|--------------------------------|-------------------------|----------------|-----|
| Clause | Requirement + Test | Result - Remark | Verdict | | | | | | |
| 3.2.5.1 | <p>Replace “60245 IEC 53” by “H05 RR-F”; “60227 IEC 52” by “H03 VV-F or H03 VVH2-F”; “60227 IEC 53” by “H05 VV-F or H05 VVH2-F”.</p> <p>In Table 3B, replace the first four lines by the following:</p> <table style="margin-left: 40px;"> <tr> <td>Up to and including 6 </td> <td>0,75^{a)} </td> </tr> <tr> <td>Over 6 up to and including 10 </td> <td>(0,75)^{b)} 1,0 </td> </tr> <tr> <td>Over 10 up to and including 16 </td> <td>(1,0)^{c)} 1,5 </td> </tr> </table> <p>In the conditions applicable to Table 3B delete the words “in some countries” in condition^{a)}.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p> | Up to and including 6 | 0,75 ^{a)} | Over 6 up to and including 10 | (0,75) ^{b)} 1,0 | Over 10 up to and including 16 | (1,0) ^{c)} 1,5 | Same as above. | N/A |
| Up to and including 6 | 0,75 ^{a)} | | | | | | | | |
| Over 6 up to and including 10 | (0,75) ^{b)} 1,0 | | | | | | | | |
| Over 10 up to and including 16 | (1,0) ^{c)} 1,5 | | | | | | | | |
| 3.2.5.1 (A2:2013) | NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD | Same as above. | N/A | | | | | | |
| 3.3.4 | <p>In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following:</p> <table style="margin-left: 40px;"> <tr> <td>Over 10 up to and including 16 </td> <td>1,5 to 2,5 </td> <td>1,5 to 4 </td> </tr> </table> <p>Delete the fifth line: conductor sizes for 13 to 16 A</p> | Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4 | Same as above. | N/A | | | |
| Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4 | | | | | | | |
| 4.3.13.6 (A1:2010) | <p>Replace the existing NOTE by the following:</p> <p>NOTE Z1 Attention is drawn to:</p> <p>1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and</p> <p>2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation).</p> | No such consideration. | N/A | | | | | | |
| | Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC. | Same as above. | N/A | | | | | | |
| Annex H | <p>Replace the last paragraph of this annex by:</p> <p>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.</p> <p>Replace the notes as follows:</p> <p>NOTE These values appear in Directive 96/29/Euratom.</p> <p>Delete NOTE 2.</p> | No ionizing radiation | N/A | | | | | | |
| Bibliography | Additional EN standards. | | — | | | | | | |



| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|--|--------------------|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |

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

| ZB ANNEX (normative) 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. | Not applied for. | 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. | Not applied for. | N/A |



| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|--|---|----------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 1.7.2.1 | <p>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.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p> | Class III equipment. | N/A |
| 1.7.2.1 (A11:2009) | <p>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.</p> <p>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.</p> <p>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:</p> <p>"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 therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."</p> | | |



| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|--|--|----------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | <p>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.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“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.”</p> <p>Translation to Swedish:</p> <p>”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.”</p> | | |
| 1.7.2.1 (A2:2013) | <p>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.</p> <p>The marking text in Denmark shall be as follows: In Denmark: “Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.”</p> | Class III equipment. | N/A |
| 1.7.5 1.7.5 (A11:2009) | <p>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.</p> <p>For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.</p> | Class III equipment. | N/A |



| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|--|--|--------------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 1.7.5 (A2:2013) | <p>In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011.</p> <p>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.</p> <p>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.</p> <p>Justification the Heavy Current Regulations, 6c</p> | Same as above. | 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. | Not applied for. | 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. | Not applied for. | 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. | Not applied for. | 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 |
| 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. | 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. | Not applied for. | N/A |
| 3.2.1.1 | <p>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:</p> <p>SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A</p> | No power supply cord provided. | N/A |



| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|--|---|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | <p>SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A</p> <p>SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A</p> <p>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:</p> <p>SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A</p> <p>SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A</p> <p>SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A</p> | | |
| 3.2.1.1 | <p>In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>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.</p> <p>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.</p> | Same as above. | N/A |



| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|--|---|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 3.2.1.1 (A2:2013) | <p>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.</p> <p>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.</p> <p>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.</p> <p>Justification the Heavy Current Regulations, 6c</p> | Same as above. | N/A |
| 3.2.1.1 | <p>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.</p> <p>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.</p> <p>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.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p> | Same as above. | N/A |
| 3.2.1.1 | <p>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.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p> | Same as above. | N/A |



| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|--|--|-------------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 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. | Same as above. | N/A |
| 3.2.4 | In Switzerland , for requirements see 3.2.1.1 of this annex. | Same as above. | N/A |
| 3.2.5.1 | In the United Kingdom , a power supply cord with conductor of 1,25 mm ² is allowed for equipment with a rated current over 10 A and up to and including 13 A. | Same as above. | 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: <ul style="list-style-type: none"> • 1,25 mm² to 1,5 mm² nominal cross-sectional area. | Same as above. | 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. | Not direct plug-in 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. | Same as above. | N/A |



| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|--|---|------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 5.1.7.1 | <p>In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:</p> <ul style="list-style-type: none"> • STATIONARY PLUGGABLE EQUIPMENT TYPE A that <ul style="list-style-type: none"> is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT. | Not applied for. | N/A |
| 6.1.2.1 (A1:2010) | <p>In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <p>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</p> <ul style="list-style-type: none"> - 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 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. | Not applied for. | N/A |



| IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN) | | | |
|---|--|---------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | <p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> - 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; - the additional testing shall be performed on all the test specimens as described in EN 60384-14: - 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. | | |
| 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 applied for. | N/A |
| 7.2 | In Finland, Norway and Sweden , for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM. | Not such equipment. | N/A |
| 7.3 (A11:2009) | In Norway and Sweden , for requirements see 1.2.13.14 and 1.7.2.1 of this annex. | Same as above. | 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 H03VVH2-F |
| Ordinary polyvinyl chloride sheathed flexible cord | 60277 IEC 53 | H05VV-F 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 |



Photo(s)

(For model IP9171-HP)



(For model IP9171-HP)





Photo(s)

(For model IP9181-H)



(For model IP9181-H)



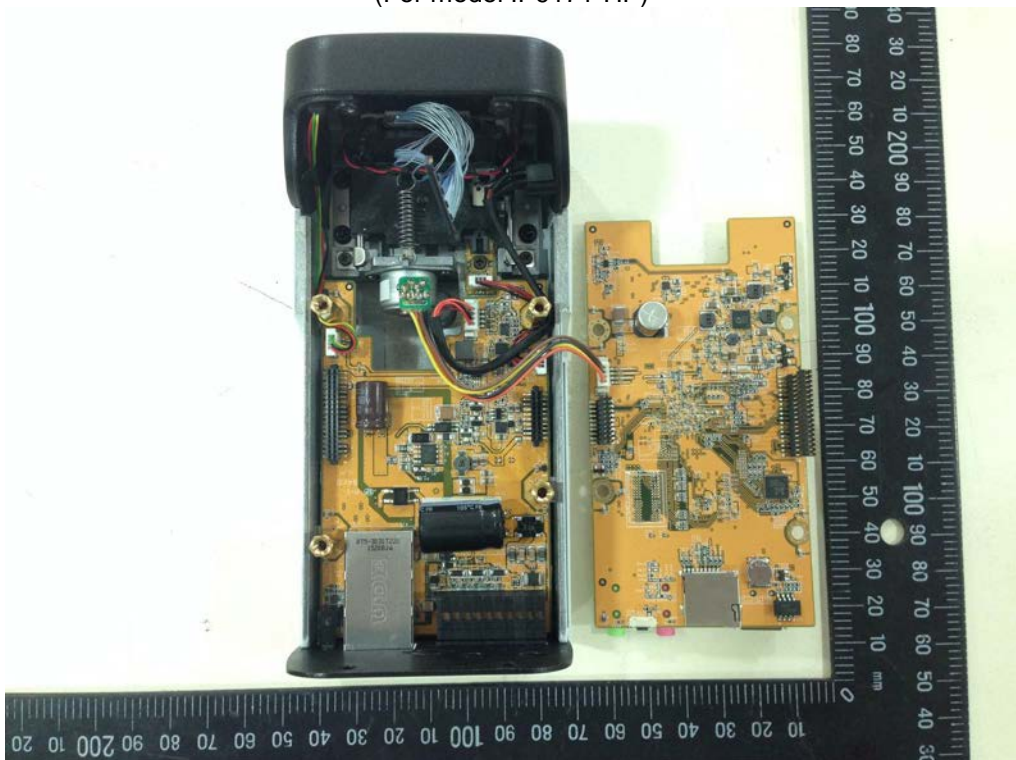


Photo(s)

(For models IP9171-HP and IP9181-H)



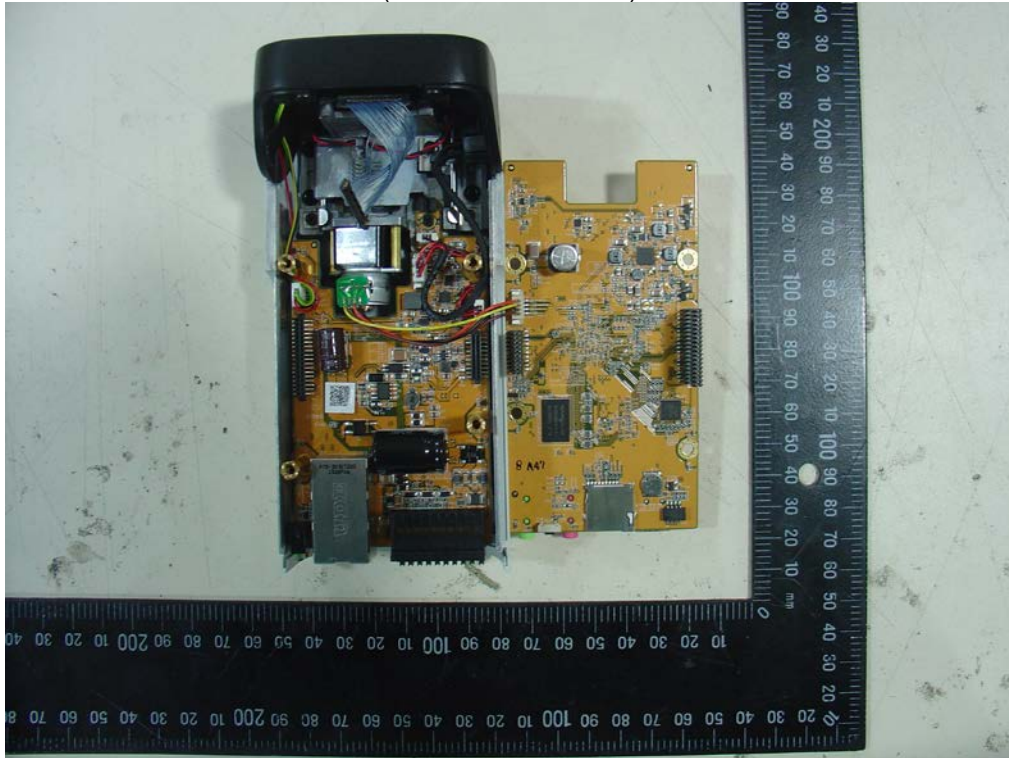
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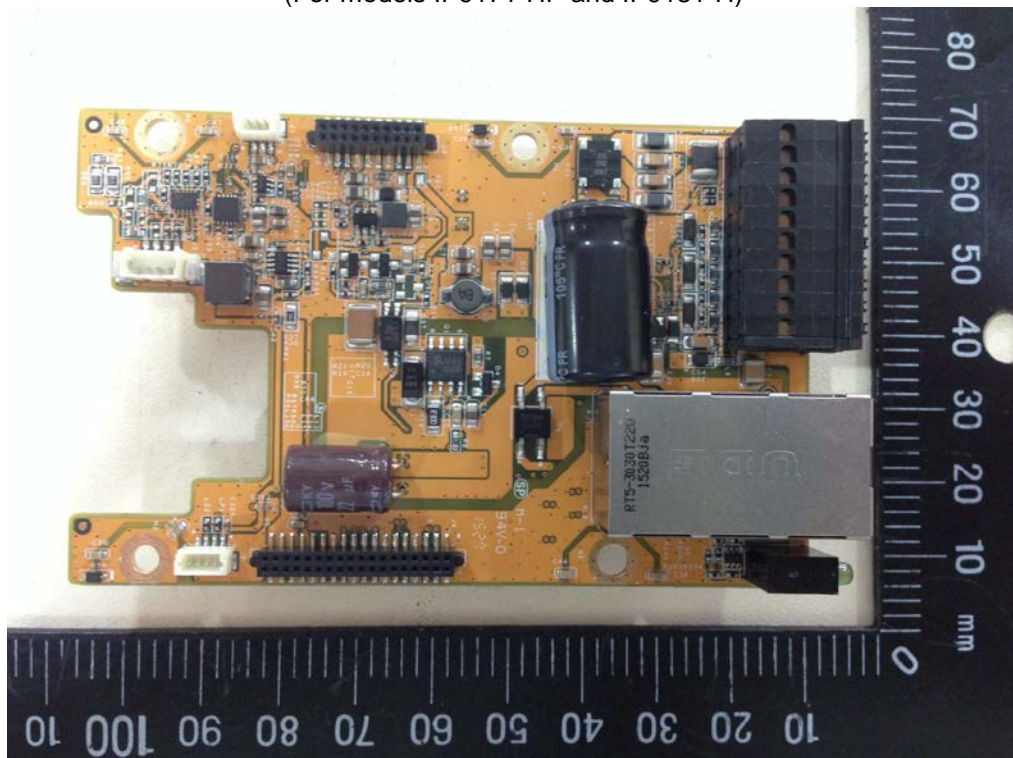


Photo(s)

(For model IP9181-H)



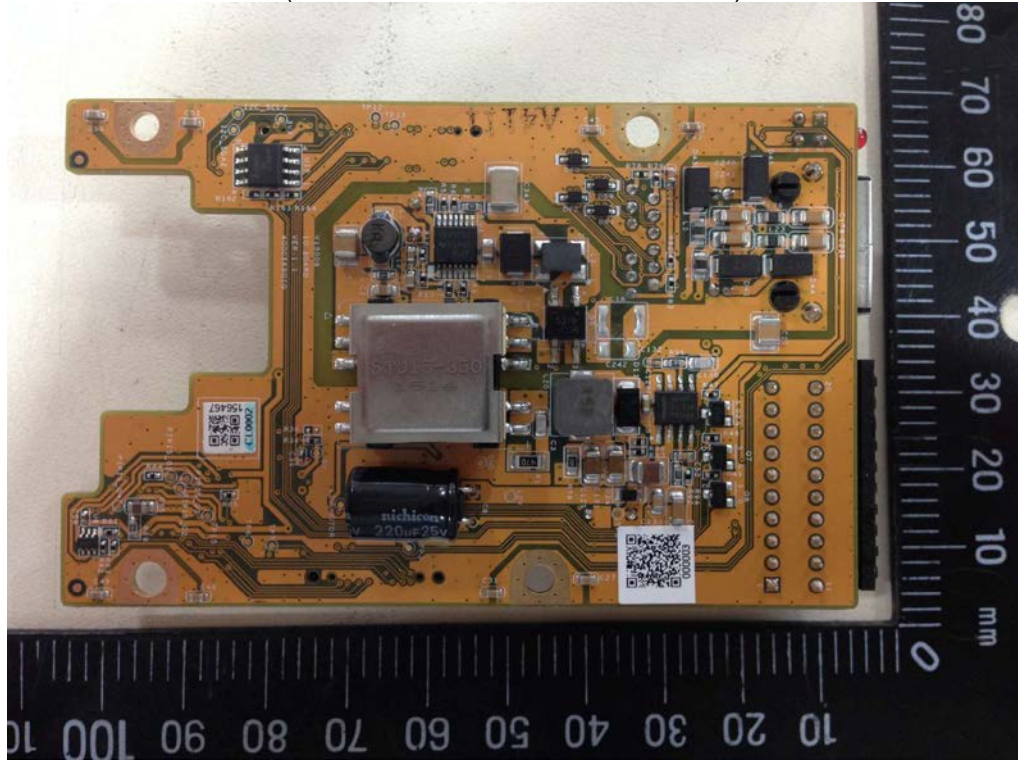
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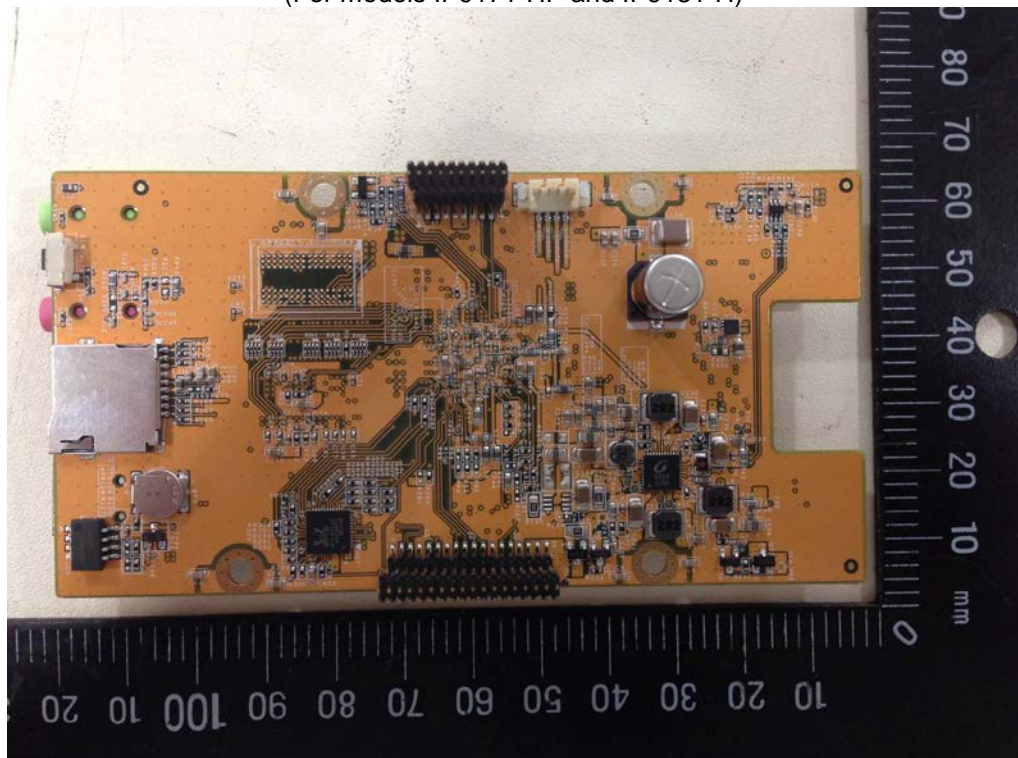


Photo(s)

(For models IP9171-HP and IP9181-H)



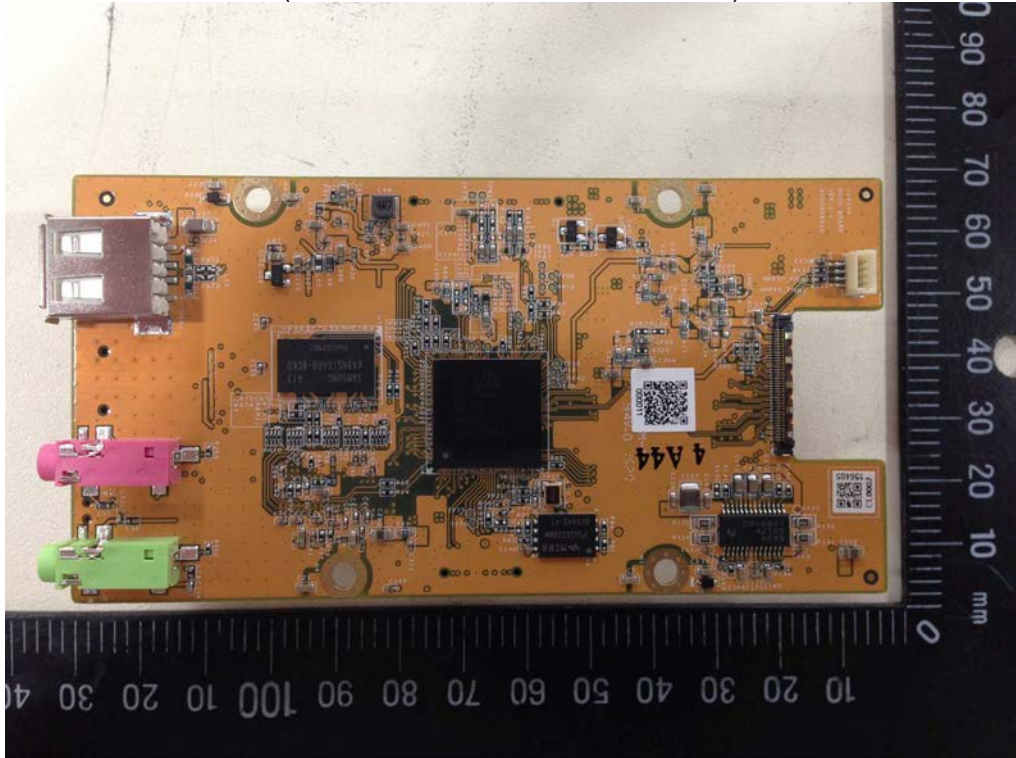
(For models IP9171-HP and IP9181-H)





Photo(s)

(For models IP9171-HP and IP9181-H)



(Lens module view 1 for model IP9181-H used)





Photo(s)

(Lens module view 1 for model IP9181-H used)

