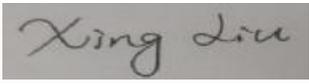


| TEST REPORT IEC 60950-1 Information technology equipment - Safety - Part 1: General requirements | |
|--|---|
| Report Reference No | E234884-A336-IT-1 |
| Date of issue | 2018-09-12 |
| Total number of pages | 50 |
| Applicant's name | ZHEJIANG DAHUA VISION TECHNOLOGY CO LTD NO.1199 BIN'AN RD. BINJIANG DISTRICT |
| Address | HANGZHOU ZHEJIANG 310053 CHINA |
| Test specification: | |
| Standard | IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013 |
| Test procedure | Informative |
| Non-standard test method | N/A |
| Test Report Form No. | IEC60950_1F |
| Test Report Form originator | SGS Fimko Ltd |
| Master TRF | Dated 2014-02 |
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| This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02. | |
| General disclaimer | |
| 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 CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report. | |

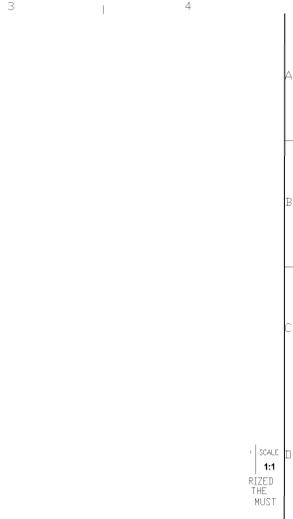
| | |
|------------------------------------|---|
| Test item description | NETWORK VIDEO RECORDER |
| Trade Mark | None |
| Manufacturer | ZHEJIANG DAHUA VISION TECHNOLOGY CO LTD NO.1199 BIN'AN RD. BINJIANG DISTRICT HANGZHOU ZHEJIANG 310053 CHINA |
| Model/Type reference | DHI-NVR5808-I, DHI-NVR5816-I, DHI-NVR5832-I, DHI-NVR5864-I, NVR5808-I, NVR5816-I, NVR5832-I, NVR5864-I, DHI-NVR58xy-ab, NVR58xy-ab("x", "y" can be 08, 16, 32, 64, 128; "a", "b" can be A~Z, 1~9, or blank, which has no impact on safety and EMC) |
| Ratings | 100-240Vac, 50-60Hz, 1.9A |

| Testing procedure and testing location: | | |
|--|--|---|
| Testing location / address | UL-CCIC Company Limited No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, China | |
| Tested by (name + signature) | Kane Ma(T)/ Xing Liu/ Project Handler |  |
| Approved by (+ signature) | Justin Wu/ Reviewer |  |

| List of Attachments | |
|--|------------------------------------|
| National Differences (32 pages) | |
| Enclosures (10 pages) | |
| Summary Of Testing | |
| Unless otherwise indicated, all tests were conducted at UL-CCIC Company Limited No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, China. | |
| Tests performed (name of test and test clause) | Testing location / Comments |
| End Product Reference Page General Guidelines Input: Single-Phase (1.6.2) Limited Power Source Measurements (2.5) Protective Bonding II (2.6.3.4, 2.6.1) Stability (4.1) Steady Force (4.2.1 - 4.2.4) Impact (4.2.5, 4.2.1, Part 22 10.2) Stress Relief (4.2.7, 4.2.1) Lithium Battery Reverse Current Measurement (4.3.8) Heating (4.5.1, 1.4.12, 1.4.13) Touch Current (Single-Phase; TN/TT System) (5.1, Annex D) Electric Strength (5.2.2) Abnormal Operation (5.3.1 - 5.3.9) | |
| Summary of Compliance with National Differences: | |
| Countries outside the CB Scheme membership may also accept this report. | |
| List of countries addressed: AT, BE, BG, BY, CA, CH, CS, CZ, DE, DK, EU, FI, FR, GR, HU, IT, NL, NO, PL, RO, SE, SI, SK, UA, US | |
| The product fulfills the requirements of: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 (which includes all European national differences, including those specified in this test report). | |

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.



Test item particulars :

| | |
|---|-------------------------------------|
| Equipment mobility | movable |
| Connection to the mains | pluggable A |
| Operating condition | continuous |
| Access location | operator accessible |
| Over voltage category (OVC) | OVC II |
| Mains supply tolerance (%) or absolute mains supply values | +10%, -10%(declared by Manufacture) |
| Tested for IT power systems | No |
| IT testing, phase-phase voltage (V) | N/A |
| Class of equipment | Class I (earthed) |
| Considered current rating of protective device as part of the building installation (A) | 20A |
| Pollution degree (PD) | PD 2 |
| IP protection class | IP X0 |
| Altitude of operation (m) | <=5000m |
| Altitude of test laboratory (m) | less than 2000 meters |
| Mass of equipment (kg) | 9.88kg(contains eight HDDs) |

Possible test case verdicts:

| | |
|---|---------|
| - test case does not apply to the test object | N / A |
| - test object does meet the requirement | P(Pass) |
| - test object does not meet the requirement | F(Fail) |

Testing:

| | |
|---------------------------------------|--------------------------|
| Date(s) of receipt of test item | 2018-07-31 |
| Date(s) of Performance of tests | 2018-07-31 to 2018-08-10 |

General remarks:

"(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 point is used as the decimal separator.

Name and address of Factory(ies):

1. ZHEJIANG DAHUA VISION TECHNOLOGY CO LTD
 NO.1199 BIN'AN RD. BINJIANG DISTRICT
 HANGZHOU
 ZHEJIANG 310053 CHINA

2. ZHEJIANG DAHUA ZHILIAN CO.,LTD.
 NO.28, DONGQIAO ROAD, DONGZHOU STREET, FUYANG
 DISTRICT, HANGZHOU,P.R.CHINA.

GENERAL PRODUCT INFORMATION:

Report Summary

Product Description

The product consists of mainboard, system fan , one R/C power supply unit, and eight HDDs. All electronic components were mounted on min. V-1 PWB and housed with metal enclosure and plastic front panel.

Model Differences

All models are identical to each other except for model name for marketing purposes.

Additional Information

The equipment operated normally and continuously, connected to computer, reading and write HDDs, and each USB 2.0 port loaded 2.5W (5Vdc, 0.5A), each USB 3.0 port loaded 4.5W (5Vdc, 0.9A).

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer’s specification of: 55°C,
- The means of connection to the mains supply is: Pluggable A, Detachable power cord
- The product is intended for use on the following power systems: TN
- The equipment disconnect device is considered to be: Appliance inlet
- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 (which includes all European national differences, including those specified in this test report).
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): All data ports
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
- The power supply in this equipment was: Investigated to IEC 60950-1. As part of the investigation of this product, the power supply and its test report were reviewed and found to comply with IEC 60950-1.
- LEDs provided in the product are considered low power devices: Yes

Abbreviations used in the report:

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

Indicate used abbreviations (if any)

| IEC 60950-1 | | | |
|-------------|--|--|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 1 | GENERAL | | Pass |
| 1.5 | Components | | Pass |
| 1.5.1 | General | | Pass |
| | Comply with IEC 60950-1 or relevant component standard | See appended table 1.5.1. | Pass |
| 1.5.2 | Evaluation and testing of components | Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this Standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component Standard. Components, for which no relevant IEC Standard exist, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1. | Pass |
| 1.5.3 | Thermal controls | | N/A |
| 1.5.4 | Transformers | Evaluated as part of approved power supply. | N/A |
| 1.5.5 | Interconnecting cables | Interconnecting cables comply with the relevant requirements of this standard. | Pass |
| 1.5.6 | Capacitors bridging insulation | Evaluated as part of approved power supply. | N/A |
| 1.5.7 | Resistors bridging insulation | | N/A |
| 1.5.7.1 | Resistors bridging functional, basic or supplementary insulation | | N/A |
| 1.5.7.2 | Resistors bridging double or reinforced insulation between a.c. mains and other circuits | | N/A |
| 1.5.7.3 | Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable | | N/A |
| 1.5.8 | Components in equipment for IT power systems | | N/A |
| 1.5.9 | Surge suppressors | | N/A |
| 1.5.9.1 | General | | N/A |
| 1.5.9.2 | Protection of VDRs | | N/A |
| 1.5.9.3 | Bridging of functional insulation by a VDR | | N/A |

| IEC 60950-1 | | | |
|-------------|---|---|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 1.5.9.4 | Bridging of basic insulation by a VDR | | N/A |
| 1.5.9.5 | Bridging of supplementary, double or reinforced insulation by a VDR | | N/A |
| 1.6 | Power interface | | Pass |
| 1.6.1 | AC power distribution systems | AC power distribution systems are classify as TN. | Pass |
| 1.6.2 | Input current | The steady state input current of the equipment did not exceed the RATED CURRENT by more than 10% under NORMAL LOAD. (see appended table 1.6.2) | Pass |
| 1.6.3 | Voltage limit of hand-held equipment | | N/A |
| 1.6.4 | Neutral conductor | Neutral is insulated from earth with basic insulation. | Pass |

| IEC 60950-1 | | | |
|-------------|--|--|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 1.7 | Marking and instructions | | Pass |
| 1.7.1 | Power rating and identification markings | Rating marking readily visible to operator. | Pass |
| 1.7.1.1 | Power rating mark | | Pass |
| | Multiple mains supply connections | | N/A |
| | Rated voltage(s) or voltage range(s) (V) | 100-240Vac | Pass |
| | Symbol for nature of supply, for d.c. only | | N/A |
| | Rated frequency or rated frequency range (Hz) | 50-60Hz | Pass |
| | Rated current (mA or A) | 1.9A | Pass |
| 1.7.1.2 | Identification markings | | Pass |
| | Manufacturer's name or trademark or identification mark..... | ZHEJIANG DAHUA TECHNOLOGY CO LTD or E234884 | Pass |
| | Model identification or type reference | DHI-NVR5808-I, DHI-NVR5816-I, DHI-NVR5832-I, DHI-NVR5864-I, NVR5808-I, NVR5816-I, NVR5832-I, NVR5864-I, DHI-NVR58xy-ab, NVR58xy-ab("x", "y" can be 08, 16, 32, 64, 128; "a", "b" can be A~Z, 1~9, or blank, which has no impact on safety and EMC) | Pass |
| | Symbol for Class II equipment only | | N/A |
| | Other markings and symbols..... | Additional symbols may be provided when submitted for National Approval. | Pass |
| 1.7.1.3 | Use of graphical symbols | | N/A |
| 1.7.2 | Safety instructions and marking | Safety instructions in English. Other languages will be provided when submitted for national approval. | Pass |
| 1.7.2.1 | General | | Pass |
| 1.7.2.2 | Disconnect devices | | N/A |
| 1.7.2.3 | Overcurrent protective device | | N/A |
| 1.7.2.4 | IT Power distribution systems | | N/A |
| 1.7.2.5 | Operator access with a tool | | N/A |
| 1.7.2.6 | Ozone | | N/A |
| 1.7.3 | Short duty cycles | | N/A |

| IEC 60950-1 | | | |
|-------------|--|--|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 1.7.4 | Supply voltage adjustment | | N/A |
| | Method and means of adjustment; reference to installation instructions | | N/A |
| 1.7.5 | Power outlets on the equipment..... | | N/A |
| 1.7.6 | Fuse identification (marking, special fusing characteristics, cross-reference) | Evaluated as part of approved power supply. | N/A |
| 1.7.7 | Wiring terminals | | N/A |
| 1.7.7.1 | Protective earthing and bonding terminals | Evaluated as part of approved power supply. | N/A |
| 1.7.7.2 | Terminals for a.c. mains supply conductors | | N/A |
| 1.7.7.3 | Terminals for d.c. mains supply conductors | | N/A |
| 1.7.8 | Controls and indicators | | Pass |
| 1.7.8.1 | Identification, location and marking..... | The function of controls affecting safety is obvious regardless of language. | Pass |
| 1.7.8.2 | Colours | Only functional indicators use color. No indicators with color affect safety. | Pass |
| 1.7.8.3 | Symbols according to IEC 60417 | The mains switch is marked with the symbols: "I" and "0" (60417-1-IEC-5007 and IEC-5008). The stand-by switch is marked with the correct symbol (60417-1-IEC-5009). | Pass |
| 1.7.8.4 | Markings using figures..... | | N/A |
| 1.7.9 | Isolation of multiple power sources | | N/A |
| 1.7.10 | Thermostats and other regulating devices | | N/A |
| 1.7.11 | Durability | PGDQ2 or PGJI2 UL recognized label was used | Pass |
| 1.7.12 | Removable parts | No marking is located on removable part. | Pass |
| 1.7.13 | Replaceable batteries..... | The required warning is placed in the service manual. | Pass |
| | Language(s) | Only English language reviewed. May be provided in other languages upon request from the manufacturer. | - |
| 1.7.14 | Equipment for restricted access locations..... | | N/A |

| IEC 60950-1 | | | |
|-------------|--|--|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 2 | PROTECTION FROM HAZARDS | | Pass |
| 2.1 | Protection from electric shock and energy hazards | | Pass |
| 2.1.1 | Protection in operator access areas | | Pass |
| 2.1.1.1 | Access to energized parts | | Pass |
| | Test by inspection..... : | All accessible circuits are SELV circuits. | Pass |
| | Test with test finger (Figure 2A) : | The test finger was unable to contact bare hazardous parts, basic insulation, or ELV circuits. | Pass |
| | Test with test pin (Figure 2B)..... : | The test pin was unable to contact bare hazardous parts. | Pass |
| | Test with test probe (Figure 2C) : | No TNV present. | N/A |
| 2.1.1.2 | Battery compartments | | N/A |
| 2.1.1.3 | Access to ELV wiring | | N/A |
| | Working voltage (V _{peak} or V _{rms}); minimum distance through insulation (mm) : | | - |
| 2.1.1.4 | Access to hazardous voltage circuit wiring | No internal wiring accessible to the user. | Pass |
| 2.1.1.5 | Energy hazards : | No energy hazardous parts in operator access area. | N/A |
| 2.1.1.6 | Manual controls | | N/A |
| 2.1.1.7 | Discharge of capacitors in equipment | Evaluated as part of approved power supply. | N/A |
| | Measured voltage (V); time-constant (s) : | | - |
| 2.1.1.8 | Energy hazards - d.c. mains supply | | N/A |
| | a) Capacitor connected to the d.c. mains supply .. : | | N/A |
| | b) Internal battery connected to the mains supply : | | N/A |
| 2.1.1.9 | Audio amplifiers : | | N/A |
| 2.1.2 | Protection in service access areas | Hazardous bare parts are guarded and unintentional contact with such parts is unlikely during servicing operations involving other parts of the equipment. | Pass |
| 2.1.3 | Protection in restricted access locations | | N/A |

| IEC 60950-1 | | | |
|-------------|--|--|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 2.2 | SELV circuits | | Pass |
| 2.2.1 | General requirements | SELV levels are maintained after single fault condition. | Pass |
| 2.2.2 | Voltages under normal conditions (V) | Evaluated as part of approved power supply. | N/A |
| 2.2.3 | Voltages under fault conditions (V) | Evaluated as part of approved power supply. | N/A |
| 2.2.4 | Connection of SELV circuits to other circuits | The SELV circuits are not connected to circuits other than protective earth and other SELV circuits. | Pass |
| 2.3 | TNV circuits | | N/A |
| 2.3.1 | Limits | | N/A |
| | Type of TNV circuits | | - |
| 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 |

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

| | | | |
|-----|--|------------------------------|------|
| 2.5 | Limited power sources | | Pass |
| | a) Inherently limited output | | Pass |
| | b) Impedance limited output | | Pass |
| | c) Regulating network limited output under normal operating and single fault condition | | Pass |
| | Use of integrated circuit (IC) current limiters | see Table 1.5.1 for details. | - |
| | d) Overcurrent protective device limited output | | N/A |
| | Max. output voltage (V), max. output current (A), max. apparent power (VA)..... | See Table 2.5 for details. | - |
| | Current rating of overcurrent protective device (A) : | | - |

| IEC 60950-1 | | | |
|-------------|--|--|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 2.6 | Provisions for earthing and bonding | | Pass |
| 2.6.1 | Protective earthing | Accessible conductive parts are earthed. | Pass |
| 2.6.2 | Functional earthing | The functional earthing (SELV ground) have separated from hazardous part by Double/Reinforce Insulation. | Pass |
| | Use of symbol for functional earthing | | N/A |
| 2.6.3 | Protective earthing and protective bonding conductors | | Pass |
| 2.6.3.1 | General | | Pass |
| 2.6.3.2 | Size of protective earthing conductors | Power supply cord earthing conductor complies with Table 3B. | Pass |
| | Rated current (A), cross-sectional area (mm ²), AWG | 1.9A, 18AWG. | - |
| 2.6.3.3 | Size of protective bonding conductors | Evaluated as part of power supply | N/A |
| | Rated current (A), cross-sectional area (mm ²), AWG | Evaluated as part of power supply | - |
| | Protective current rating (A), cross-sectional area (mm ²), AWG..... | | - |
| 2.6.3.4 | Resistance of earthing conductors and their terminations; resistance (ohm), voltage drop (V), test current (A), duration (min) | Test current = 40 A. Test duration: 2 minutes. Voltage Drop 0.54V. | Pass |
| 2.6.3.5 | Colour of insulation | Evaluated as part of approved power supply. | N/A |
| 2.6.4 | Terminals | | N/A |
| 2.6.4.1 | General | | N/A |
| 2.6.4.2 | Protective earthing and bonding terminals | Evaluated as part of approved power supply. | N/A |
| | Rated current (A), type, nominal thread diameter (mm) | Appliance inlet used and the unit meet the test requirement of 2.6.3.4 | - |
| 2.6.4.3 | Separation of the protective earthing conductor from protective bonding conductors | | N/A |
| 2.6.5 | Integrity of protective earthing | | Pass |
| 2.6.5.1 | Interconnection of equipment | | N/A |
| 2.6.5.2 | Components in protective earthing conductors and protective bonding conductors | No switches or fuses in earthing conductors. | Pass |

| IEC 60950-1 | | | |
|-------------|--|--|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 2.6.5.3 | Disconnection of protective earth | | Pass |
| 2.6.5.4 | Parts that can be removed by an operator | An appliance coupler was used. | Pass |
| 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 | | Pass |
| 2.7.1 | Basic requirements | Protective devices are integrated in the equipment. | Pass |
| | Instructions when protection relies on building installation | | N/A |
| 2.7.2 | Faults not covered in 5.3.7 | | Pass |
| 2.7.3 | Short-circuit backup protection | Pluggable equipment type A. | Pass |
| 2.7.4 | Number and location of protective devices : | Evaluated in UL recognized switch power supply. One protective device in the "LIVE" phase | N/A |
| 2.7.5 | Protection by several devices | | N/A |
| 2.7.6 | Warning to service personnel : | | N/A |

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

| | | | |
|---------|---|--|-----|
| 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 | | Pass |
| 2.9.1 | Properties of insulating materials | Natural rubber, materials containing asbestos and hygroscopic materials are not used as insulation. | Pass |
| 2.9.2 | Humidity conditioning | Electric strength test was conducted after the humidity treatment. | Pass |
| | Relative humidity (%), temperature (°C)..... : | Evaluated as part of approved power supply. | - |
| 2.9.3 | Grade of insulation | | Pass |
| 2.9.4 | Separation from hazardous voltages | | Pass |
| | Method(s) used..... : | method 1 | - |

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

| | | | |
|----------|--|---|------|
| 2.10 | Clearances, creepage distances and distances through insulation | | Pass |
| 2.10.1 | General | Pollution degree 2 applicable. | Pass |
| 2.10.1.1 | Frequency..... : | Evaluated as part of approved power supply. | Pass |
| 2.10.1.2 | Pollution degrees..... : | 2 | Pass |
| 2.10.1.3 | Reduced values for functional insulation | | Pass |
| 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 | Evaluated as part of approved power supply. | 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 | Evaluated as part of approved power supply. | 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 | See 5.3.4 | 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 | Evaluated as part of approved | N/A |

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

| | | | |
|-----------|---|---------------|-----|
| | | power supply. | |
| 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 |

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| Clause | Requirement + Test | Result - Remark | Verdict |
| 2.10.6 | Construction of printed boards | | N/A |
| 2.10.6.1 | Uncoated printed boards | | N/A |
| 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 |

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| Clause | Requirement + Test | Result - Remark | Verdict |
| 3 | WIRING, CONNECTIONS AND SUPPLY | | Pass |
| 3.1 | General | | Pass |
| 3.1.1 | Current rating and overcurrent protection | | Pass |
| 3.1.2 | Protection against mechanical damage | The wires are routed away from sharp edges and parts which could damage insulation. | Pass |
| 3.1.3 | Securing of internal wiring | | Pass |
| 3.1.4 | Insulation of conductors | Insulation on internal conductors is considered to be of adequate quality and suitable for the application and the working voltages involved. | Pass |
| 3.1.5 | Beads and ceramic insulators | | N/A |
| 3.1.6 | Screws for electrical contact pressure | | N/A |
| 3.1.7 | Insulating materials in electrical connections | | Pass |
| 3.1.8 | Self-tapping and spaced thread screws | | N/A |
| 3.1.9 | Termination of conductors | | Pass |
| | 10 N pull test | | Pass |
| 3.1.10 | Sleeving on wiring | | N/A |

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| Clause | Requirement + Test | Result - Remark | Verdict |
| 3.2 | Connection to mains supply | | Pass |
| 3.2.1 | Means of connection | Appliance inlet | Pass |
| 3.2.1.1 | Connection to an a.c. mains supply | Provided with appliance inlet for connection of a Detachable Power Supply Cord. | Pass |
| 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 | | Pass |
| 3.2.5 | Power supply cords | Power supply cord suitable for application and subject to country's national code and regulations to be provided by the manufacturer. | Pass |
| 3.2.5.1 | AC power supply cords | Power supply cord suitable for application and subject to country's national code and regulations to be provided by the manufacturer. | Pass |
| | Type | See Table 1.5.1 for details. | - |
| | Rated current (A), cross-sectional area (mm ²), AWG | See Table 1.5.1 for details. | - |
| 3.2.5.2 | DC power supply cords | | N/A |
| 3.2.6 | Cord anchorages and strain relief | Appliance inlet used. | N/A |
| | Mass of equipment (kg), pull (N) | | - |
| | Longitudinal displacement (mm) | | - |
| 3.2.7 | Protection against mechanical damage | No parts under this unit likely to damage the power supply cord. | Pass |
| 3.2.8 | Cord guards | Appliance inlet used. | N/A |
| | Diameter of 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 |

| | | | |
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| 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 and nominal thread diameter (mm) | | - |
| 3.3.6 | Wiring terminals 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 | | Pass |
| 3.4.1 | General requirement | | Pass |
| 3.4.2 | Disconnect devices | An appliance coupler used. | Pass |
| 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 | The power cord plug or inlet disconnects both poles simultaneously. | Pass |
| 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 |

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| Clause | Requirement + Test | Result - Remark | Verdict |
| 3.5 | Interconnection of equipment | | Pass |
| 3.5.1 | General requirements | This equipment is only considered for connection to SELV. | Pass |
| 3.5.2 | Types of interconnection circuits : | Interconnection circuits are SELV. | Pass |
| 3.5.3 | ELV circuits as interconnection circuits | | N/A |
| 3.5.4 | Data ports for additional equipment | | Pass |
| 4 | PHYSICAL REQUIREMENTS | | Pass |
| 4.1 | Stability | | Pass |
| | Angle of 10° | | Pass |
| | Test force (N)..... : | | N/A |
| 4.2 | Mechanical strength | | Pass |
| 4.2.1 | General | | Pass |
| | Rack-mounted equipment | | N/A |
| 4.2.2 | Steady force test, 10 N | Evaluated as part of approved power supply. | N/A |
| 4.2.3 | Steady force test, 30 N | | N/A |
| 4.2.4 | Steady force test, 250 N | No hazards as a result of the 250 N test. | Pass |
| 4.2.5 | Impact test | 500 g steel sphere ball fall or swing from 1.3 m height onto outer enclosure. | Pass |
| | Fall test | | Pass |
| | Swing test | | N/A |
| 4.2.6 | Drop test; height (mm)..... : | | N/A |
| 4.2.7 | Stress relief test | No indication of shrinkage or distortion on enclosures due to the stress relief test (70Deg.C/7 h). | Pass |
| 4.2.8 | Cathode ray tubes | | N/A |
| | Picture tube separately certified : | | N/A |
| 4.2.9 | High pressure lamps | | N/A |
| 4.2.10 | Wall or ceiling mounted equipment; force (N) : | | N/A |

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| Clause | Requirement + Test | Result - Remark | Verdict |
| 4.3 | Design and construction | | Pass |
| 4.3.1 | Edges and corners | All edges and corners are judged to be sufficiently well rounded so as not to constitute a hazard. | Pass |
| 4.3.2 | Handles and manual controls; force (N) | | N/A |
| 4.3.3 | Adjustable controls | | N/A |
| 4.3.4 | Securing of parts | Electrical and mechanical connections can be expected to withstand usual mechanical stress. For the protection, solder pins, cable ties and heatshink tubing are used. | Pass |
| 4.3.5 | Connection by plugs and sockets | | N/A |
| 4.3.6 | Direct plug-in equipment | | N/A |
| | Torque | | N/A |
| | Compliance with the relevant mains plug standard: | | N/A |
| 4.3.7 | Heating elements in earthed equipment | | N/A |
| 4.3.8 | Batteries | | Pass |
| | - Overcharging of a rechargeable battery | | N/A |
| | - Unintentional charging of a non-rechargeable battery | | N/A |
| | - Reverse charging of a rechargeable battery | | Pass |
| | - Excessive discharging rate for any battery | | N/A |
| 4.3.9 | Oil and grease | | N/A |
| 4.3.10 | Dust, powders, liquids and gases | | N/A |
| 4.3.11 | Containers for liquids or gases | | N/A |
| 4.3.12 | Flammable liquids..... | | N/A |
| | Quantity of liquid (l)..... | | N/A |
| | Flash point (°C)..... | | N/A |
| 4.3.13 | Radiation | | Pass |
| 4.3.13.1 | General | | Pass |
| 4.3.13.2 | Ionizing radiation | | N/A |
| | Measured radiation (pA/kg) | | - |
| | Measured high-voltage (kV) | | - |
| | Measured focus voltage (kV)..... | | - |
| | CRT markings..... | | - |

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| Clause | Requirement + Test | Result - Remark | Verdict |
| 4.3.13.3 | Effect of ultraviolet (UV) radiation on materials | | N/A |
| | Part, property, retention after test, flammability classification | | N/A |
| 4.3.13.4 | Human exposure to ultraviolet (UV) radiation | | N/A |
| 4.3.13.5 | Lasers (including laser diodes) and LEDs | This product contains only visible indicator LEDs (Class 1) operating in the range of 400 - 700 nm wavelength. No IEC60825-1 evaluation was deemed necessary. Additional review may be required at the discretion of the accepting NCB. | Pass |
| 4.3.13.5.1 | Lasers (including laser diodes) | | Pass |
| | Laser class | (For indicator LEDs, see above statement.) | - |
| 4.3.13.5.2 | Light emitting diodes (LEDs) | | Pass |
| 4.3.13.6 | Other types | | N/A |
| 4.4 | Protection against hazardous moving parts | | Pass |
| 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 | Fan is protected by mechanical enclosure. | Pass |
| 4.4.5.1 | General | | Pass |
| | Not considered to cause pain or injury. a) | comply with a). | Pass |
| | 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 |

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

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| 4.5 | Thermal requirements | | Pass |
| 4.5.1 | General | | Pass |
| 4.5.2 | Temperature tests | (see appended table 4.5) | Pass |
| | Normal load condition per Annex L : | Operated in the most unfavorable way of operation given in the operating instructions until steady conditions established. | - |
| 4.5.3 | Temperature limits for materials | | Pass |
| 4.5.4 | Touch temperature limits | | Pass |
| 4.5.5 | Resistance to abnormal heat..... : | | N/A |

| | | | |
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| 4.6 | Openings in enclosures | | Pass |
| 4.6.1 | Top and side openings | No top openings. Foreign objects entering the enclosure will not contact bare parts at hazardous voltage or energy. (No hazardous parts within 5 degree projection). | Pass |
| | Dimensions (mm) : | Openings do not exceed 5mm in any dimensions. | - |
| 4.6.2 | Bottoms of fire enclosures | No openings. | N/A |
| | Construction of the bottom, dimensions (mm)..... : | | - |
| 4.6.3 | Doors or covers in fire enclosures | | N/A |
| 4.6.4 | Openings in transportable equipment | | N/A |
| 4.6.4.1 | Constructional design measures | | N/A |
| | Dimensions (mm) : | | - |
| 4.6.4.2 | Evaluation measures for larger openings | | N/A |
| 4.6.4.3 | Use of metallized parts | | N/A |
| 4.6.5 | Adhesives for constructional purposes | | N/A |
| | Conditioning temperature (°C), time (weeks) : | | - |

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

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| 4.7 | Resistance to fire | | Pass |
| 4.7.1 | Reducing the risk of ignition and spread of flame | Method 1: Selection and application of components and materials which minimize the possibility of ignition and spread of flame. | Pass |
| | Method 1, selection and application of components wiring and materials | (see appended table 4.7) | Pass |
| | Method 2, application of all of simulated fault condition tests | | N/A |
| 4.7.2 | Conditions for a fire enclosure | See appended table 1.5.1 | Pass |
| 4.7.2.1 | Parts requiring a fire enclosure | | Pass |
| 4.7.2.2 | Parts not requiring a fire enclosure | | Pass |
| 4.7.3 | Materials | | Pass |
| 4.7.3.1 | General | | Pass |
| 4.7.3.2 | Materials for fire enclosures | Metallic and V-1 plastic front panel. | Pass |
| 4.7.3.3 | Materials for components and other parts outside fire enclosures | | Pass |
| 4.7.3.4 | Materials for components and other parts inside fire enclosures | All internal materials are rated V-2 or better or are mounted on a PWB rated V-1 or better. Internal wiring is UL Recognized, marked VW-1 and strapped by individual cable ties (where needed). | Pass |
| 4.7.3.5 | Materials for air filter assemblies | | N/A |
| 4.7.3.6 | Materials used in high-voltage components | | N/A |

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

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| 5 | ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS | | Pass |
| 5.1 | Touch current and protective conductor current | | Pass |
| 5.1.1 | General | | Pass |
| 5.1.2 | Configuration of equipment under test (EUT) | EUT has only one mains connection. | Pass |
| 5.1.2.1 | Single connection to an a.c. mains supply | | Pass |
| 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 | Single phase equipment intended only for connection to star TN system. | Pass |
| 5.1.4 | Application of measuring instrument | Tested using D.1 measuring instrument. | Pass |
| 5.1.5 | Test procedure | | Pass |
| 5.1.6 | Test measurements | The touch current was measured from primary to enclosure and secondary output. | Pass |
| | Supply voltage (V) | 264 Vac, 60 Hz | - |
| | Measured touch current (mA) | see appended table 5.1. | - |
| | Max. allowed touch current (mA) | see appended table 5.1. | - |
| | 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 |

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| Clause | Requirement + Test | Result - Remark | Verdict |
| | 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 | | Pass |
| 5.2.1 | General | (see appended table 5.2) | Pass |
| 5.2.2 | Test procedure | | Pass |
| 5.3 | Abnormal operating and fault conditions | | Pass |
| 5.3.1 | Protection against overload and abnormal operation | (see appended table 5.3) | Pass |
| 5.3.2 | Motors | Approved fan was used. | N/A |
| 5.3.3 | Transformers | Evaluated as part of approved power supply. | N/A |
| 5.3.4 | Functional insulation..... : | Functional insulation complies with method (c). | Pass |
| 5.3.5 | Electromechanical components | | N/A |
| 5.3.6 | Audio amplifiers in ITE..... : | | N/A |
| 5.3.7 | Simulation of faults | (see appended table 5.3) | Pass |
| 5.3.8 | Unattended equipment | | N/A |
| 5.3.9 | Compliance criteria for abnormal operating and fault conditions | No fire, emission of molten metal or deformation was noted during the tests. | Pass |
| 5.3.9.1 | During the tests | | Pass |
| 5.3.9.2 | After the tests | | Pass |
| 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 |

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

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| 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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| 6.3 | Protection of the telecommunication wiring system from overheating | | N/A |
| | Max. output current (A) : | | - |
| | Current limiting method : | | - |

| | | | |
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| 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 |

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| Clause | Requirement + Test | Result - Remark | Verdict |
| 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 : | | N/A |
| A.1.5 | Test procedure | | N/A |
| A.1.6 | Compliance criteria | | N/A |
| | Sample 1 burning time (s) : | | - |
| | Sample 2 burning time (s) : | | - |
| | Sample 3 burning time (s) : | | - |
| A.2 | Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4) | | N/A |
| A.2.1 | Samples, material..... : | | - |
| | Wall thickness (mm) : | | - |
| A.2.2 | Conditioning of samples; temperature (°C) : | | N/A |
| A.2.3 | Mounting of samples : | | N/A |
| A.2.4 | Test flame (see IEC 60695-11-4) | | N/A |
| | Flame A, B or C : | | - |
| A.2.5 | Test procedure | | N/A |
| A.2.6 | Compliance criteria | | N/A |
| | Sample 1 burning time (s) : | | - |
| | Sample 2 burning time (s) : | | - |
| | Sample 3 burning time (s) : | | - |
| A.2.7 | Alternative test acc. to IEC 60695-11-5, cl. 5 and 9 | | N/A |
| | 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 |

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

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| A.3.3 | Compliance criterion | | N/A |
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| | | | |
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| B | ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2) | | N/A |
| B.1 | General requirements | Approved dc fan used. | 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 |
| 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) | | - |

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|-------------|---|---|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| C | ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3) | | N/A |
| | Position | Evaluated as part of approved power supply. | - |
| | Manufacturer | Evaluated as part of approved power supply. | - |
| | Type..... | Evaluated as part of approved power supply. | - |
| | Rated values..... | Evaluated as part of approved power supply. | - |
| | Method of protection..... | Evaluated as part of approved power supply. | - |
| 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) | | Pass |
| D.1 | Measuring instrument | | Pass |
| 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 |

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

| | | | |
|-------|---|--|-----|
| G | ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES | | N/A |
| G.1 | Clearances | | N/A |
| 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 supply | | N/A |
| G.2.3 | Unearthed d.c. mains supply | | 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) | | Pass |
| | Metal(s) used | comply with table J.1. | - |

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

| 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 |

| L | ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2) | | Pass |
|-----|--|--|------|
| 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 | | Pass |

| 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 |

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|-------------|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 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 | | Pass |
| Q | ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1) | | N/A |
| | - Preferred climatic categories..... : | | N/A |
| | - 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 | | N/A |
| 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 |

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|-------------|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 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 |
| 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) | | Pass |
| AA | ANNEX AA, MANDREL TEST (see 2.10.5.8) | | N/A |
| BB | ANNEX BB, CHANGES IN THE SECOND EDITION | | N/A |
| CC | ANNEX CC, EVALUATION OF INTEGRATED CIRCUIT (IC) CURRENT LIMITERS | | N/A |
| CC.1 | General | | N/A |
| CC.2 | Test program 1 : | | N/A |
| CC.3 | Test program 2 : | | N/A |
| CC.4 | Test program 3 : | | N/A |
| CC.5 | Compliance..... : | | N/A |

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

| 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, 250 N, 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 | | N/A |
| 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 |

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

| 1.5.1 | TABLE: list of critical components | | | | | Pass |
|---|---|-----------------|--|-------------------------------|-------------------------------------|------|
| object/part or Description | manufacturer/ trademark | type/model | technical data | standard (Edition or year) | mark(s) of conformity ¹⁾ | |
| 01. Metal Enclosure part | - | - | Metal, details see enclosure 4-01 | -- | --, -- | |
| 02. Plastic enclosure part | NINGBO LG YONGXING CHEMICAL CO LTD | FR-500 | V-0 or better, Min.2.0mm thickness. | UL94 UL746C | UL, -- | |
| 03. Internal plastic | Interchangeable | Interchangeable | V-2 or better | UL94 UL746C | UL, -- | |
| 04. Internal power supply | DELTA ELECTRONICS INC | DPS-150AB-3 A | Input: 100-240 Vac, 4 A, 47-63 Hz, Output: +12 Vdc, 12.5 A. 5000 m, 55 degree C | UL/IEC/EN 60950-1 2nd Edition | UL, -- | |
| 05. SELV connector | Interchangeable | Interchangeable | Metal/Plastic | UL 498, UL 1977, | UL, -- | |
| 05a. SELV connector (Alternate) | Interchangeable | Interchangeable | Copper alloy pins housed in bodies of plastic rated V-2 minimum. | UL 94, UL 746C | UL, -- | |
| 06. Interconnecting Cable (Optional) | Interchangeable | Interchangeable | Minimum 80 degree C, 60V, maximum 3.05m long, jacketed, rated VW-1 or FT-1. | UL 758 | UL, -- | |
| 07. Internal Wiring (Secondary, SELV circuit) | Interchangeable | Interchangeable | FEP, PTFE, PVC, TFE, neoprene, polyimide or surface marked "VW-1" or "FT-1". Rated minimum. 80 degree C, 60 V. | UL 758 | UL, -- | |
| 08. Internal metal | - | - | Metal | -- | --, -- | |
| 09. Insulating Tubing / Sleeving (Optional) | Interchangeable | Interchangeable | FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1 or FT-1, 105 degree C, 60V | UL 224, UL 1441 | UL, -- | |

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|--|-------------------------------------|------------------|--|----------------|--------|
| Clause | Requirement + Test | | Result - Remark | Verdict | |
| 10. Label | Interchangeable | Interchangeable | Minimum 65 degree C, suitable for affixed material. | UL 969 | UL, -- |
| 11. PWB | Interchangeable | Interchangeable | V-1 or better, minimum 105 degree C | UL 796 | UL, -- |
| 12.DC Fan | Adda Corp. | AD08012HB257 B04 | 12Vdc,0.18A, MIN. 34.142CFM | UL 507 | UL, -- |
| 13.RTC battery | MAXELL, LTD | CR2032 | Max Abnormal ChargingCurrent: 10mA; Max Abnormal Charging Voltage, 12Vdc | UL1642 | UL, -- |
| 14.PTC (RT2) for +12V and CTRL_12V | CYG WAYON CIRCUIT PROTECTION CO LTD | LP-MSM150/24 | 24 Vdc max., Ih=1.5 A, It=3.0 A, CA=1(111),2.3.4 # | UL1434 | UL, -- |
| 15.IC (U44, U66) for USB 3.0 | SILERGY TECHNOLOGY | SY6288CAAC | 2.5-5.5 Vdc; Continuous Current Rating: 2.0 A; Protection Current Rating: 3.7A | UL2367 | UL, -- |
| 16.IC (U67,U69) for HDMI1, HDMI2 | DIODES INC | AP2331 | 2.7-5.2 Vdc; Continuous Current Rating: 0.2 A; Protection Current Rating: 0.5A | UL2367 | UL, -- |
| 17. H.D.D (Max. 8 provided) (optional) | Interchangeable | Interchangeable | 12Vdc, maximum 0.75A; 5Vdc, maximum 0.75A | UL 60950-1 2nd | UL, -- |
| 18.IC (U1) for USB 2.0 | SILERGY TECHNOLOGY | SY6288CAAC | 2.5-5.5 Vdc; Continuous Current Rating: 2.0 A; Protection Current Rating: 3.7A | UL2367 | UL, -- |
| 19.Heatsink on main board | - | - | Aluminum, See enclosure 4-02 for details. | - | -, - |
| Supplementary information: ¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039. | | | | | |

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

| 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: | | | | |
| Additional devices may be described in Enclosure - Miscellaneous | | | | |

| 1.6.2 | TABLE: Electrical data (in normal conditions) | | | | | | Pass |
|----------------|---|-------------|-------|--------|------------|---------------------|------|
| U (V) | I (A) | I rated (A) | P (W) | Fuse # | I fuse (A) | condition/status | |
| 90Vac/ 50Hz | 0.602 | -- | 53.79 | F1 | 0.602 | Maximum normal load | |
| 90Vac/ 60Hz | 0.538 | -- | 53.46 | F1 | 0.538 | Maximum normal load | |
| 100Vac/ 50Hz | 0.543 | 1.9 | 53.58 | F1 | 0.543 | Maximum normal load | |
| 100Vac/ 60Hz | 0.536 | 1.9 | 53.36 | F1 | 0.536 | Maximum normal load | |
| 240Vac/ 50Hz | 0.263 | 1.9 | 51.51 | F1 | 0.263 | Maximum normal load | |
| 240Vac/ 60Hz | 0.281 | 1.9 | 51.43 | F1 | 0.281 | Maximum normal load | |
| 254.4Vac/ 50Hz | 0.257 | -- | 51.39 | F1 | 0.257 | Maximum normal load | |
| 254.4Vac/ 60Hz | 0.277 | -- | 51.49 | F1 | 0.277 | Maximum normal load | |
| 264Vac/ 50Hz | 0.254 | -- | 51.32 | F1 | 0.254 | Maximum normal load | |
| 264Vac/ 60Hz | 0.273 | -- | 51.12 | F1 | 0.273 | Maximum normal load | |

| 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 (??F) | Voltage U (V) | Energy E (J) | | |
| | | | | |

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

| |
|----------------------------|
| supplementary information: |
|----------------------------|

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

| | | | |
|-----|---|------------|--|
| 2.5 | TABLE: Limited power sources | | Pass |
| | Circuit output tested: | See below | |
| | Note: Measured Uoc (V) with all load circuits disconnected: | See below | |
| | Components | Sample No. | Uoc (V) |
| | | | Isc (A) |
| | | | VA |
| | | | Meas. Limit Meas. Limit |

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|--|--------------------|-----------------|------|------|-------|---------|
| Clause | Requirement + Test | Result - Remark | | | | Verdict |
| POE port (J2A) (Pin A4, A5, B4, B5) | 1686737 | 51.06 | 0.66 | 2.93 | 31.9 | 100 |
| POE port (J3A) (Pin A4, A5, B4, B5) | 1686737 | 51.06 | 0.66 | 2.93 | 31.9 | 100 |
| POE port (J4A) (Pin A4, A5, B4, B5) | 1686737 | 51.06 | 0.66 | 2.93 | 31.9 | 100 |
| POE port (J5A) (Pin A4, A5, B4, B5) | 1686737 | 51.06 | 0.66 | 2.93 | 31.9 | 100 |
| POE port (J2B) (Pin C4, C5, D4, D5) | 1686737 | 51.06 | 0.66 | 2.93 | 31.9 | 100 |
| POE port (J3B) (Pin C4, C5, D4, D5) | 1686737 | 51.06 | 0.66 | 2.93 | 31.9 | 100 |
| POE port (J4B) (Pin C4, C5, D4, D5) | 1686737 | 51.06 | 0.66 | 2.93 | 31.9 | 100 |
| POE port (J5B) (Pin C4, C5, D4, D5) | 1686737 | 51.06 | 0.66 | 2.93 | 31.9 | 100 |
| RJ45 | 1686737 | 0 | 0 | 8 | 0 | 100 |
| eSATA | 1686737 | 0 | 0 | 8 | 0 | 100 |
| USB 2.0 Port (J2) (Pin 1) | 1686737 | 5.0 | 2.95 | 8 | 9.30 | 100 |
| USB 2.0 Port (J2) (Pin 2-4) | 1686737 | 0 | 0 | 8 | 0 | 100 |
| USB 3.0 Port (J27) (Pin A1) | 1686737 | 5.0 | 3.0 | 8 | 11.85 | 100 |
| USB 3.0 Port (J27) (Pin B1) | 1686737 | 5.0 | 3.0 | 8 | 11.55 | 100 |
| USB 3.0 Port (J27) (Other pins) | 1686737 | 0 | 0 | 8 | 0 | 100 |
| HDMI1 (A18) | 1686737 | 5.0 | 0.3 | 8 | 1 | 100 |
| HDMI1 (A1-A17, A19) | 1686737 | 0 | 0 | 8 | 0 | 100 |
| HDMI2 (B18) | 1686737 | 5.0 | 0.3 | 8 | 1 | 100 |
| HDMI2 (B1-B17, B19) | 1686737 | 0 | 0 | 8 | 0 | 100 |
| MIC IN | 1686737 | 1.6 | 0 | 8 | 0 | 100 |
| MIC OUT | 1686737 | 0 | 0 | 8 | 0 | 100 |
| VGA | 1686737 | 0 | 0 | 8 | 0 | 100 |
| RS232 | 1686737 | 0 | 0 | 8 | 0 | 100 |
| Alarm input ports | 1686737 | -- | -- | -- | -- | -- |

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

| | | | | | | |
|--------------------|---------|------|-----|----|-------|-----|
| 1 | 1686737 | 5 | 0 | 8 | 0 | 100 |
| 2 | 1686737 | 5 | 0 | 8 | 0 | 100 |
| 3 | 1686737 | 5 | 0 | 8 | 0 | 100 |
| 4 | 1686737 | 5 | 0 | 8 | 0 | 100 |
| 5 | 1686737 | 5 | 0 | 8 | 0 | 100 |
| 6 | 1686737 | 5 | 0 | 8 | 0 | 100 |
| 7 | 1686737 | 5 | 0 | 8 | 0 | 100 |
| 8 | 1686737 | 5 | 0 | 8 | 0 | 100 |
| 9 | 1686737 | 5 | 0 | 8 | 0 | 100 |
| 10 | 1686737 | 5 | 0 | 8 | 0 | 100 |
| 11 | 1686737 | 5 | 0 | 8 | 0 | 100 |
| 12 | 1686737 | 5 | 0 | 8 | 0 | 100 |
| 13 | 1686737 | 5 | 0 | 8 | 0 | 100 |
| 14 | 1686737 | 5 | 0 | 8 | 0 | 100 |
| 15 | 1686737 | 5 | 0 | 8 | 0 | 100 |
| 16 | 1686737 | 5 | 0 | 8 | 0 | 100 |
| Alarm output ports | 1686737 | -- | -- | -- | -- | -- |
| NO1 | 1686737 | 0 | 0 | 8 | 0 | 100 |
| C1 | 1686737 | 0 | 0 | 8 | 0 | 100 |
| NO2 | 1686737 | 0 | 0 | 8 | 0 | 100 |
| C2 | 1686737 | 0 | 0 | 8 | 0 | 100 |
| NO3 | 1686737 | 0 | 0 | 8 | 0 | 100 |
| C3 | 1686737 | 0 | 0 | 8 | 0 | 100 |
| NO4 | 1686737 | 0 | 0 | 8 | 0 | 100 |
| C4 | 1686737 | 0 | 0 | 8 | 0 | 100 |
| NO5 | 1686737 | 0 | 0 | 8 | 0 | 100 |
| C5 | 1686737 | 0 | 0 | 8 | 0 | 100 |
| NC5 | 1686737 | 0 | 0 | 8 | 0 | 100 |
| CTRL | 1686737 | 0 | 0 | 8 | 0 | 100 |
| +12V | 1686737 | 12 | 1.9 | 8 | 19.71 | 100 |
| A | 1686737 | 4.62 | 0 | 8 | 0 | 100 |
| B | 1686737 | 0 | 0 | 8 | 0 | 100 |

supplementary information:

Sc=short circuit, Oc=Open circuit

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

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

| 2.10.3 and 2.10.4 | TABLE: Clearance and creepage distance measurements | | | | | | N/A |
|---|--|--------------|------------------|---------|------------------|---------|-----|
| Clearance (cl) and creepage distance (cr) at/of/between: | U peak (V) | U r.m.s. (V) | Required cl (mm) | cl (mm) | Required cr (mm) | cr (mm) | |
| - | - | - | - | - | - | - | |
| Functional: | | | | | | | |
| 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: | | | | | | | |
| 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) | |
| - | - | - | - | - | - | - | |
| Reinforced: | | | | | | | |
| 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) | |
| - | - | - | - | - | - | - | |
| supplementary information: | | | | | | | |
| - All clearances and creepages were evaluated during power supply approval. | | | | | | | |

| 2.10.5 | TABLE: Distance through insulation measurements | | | | | N/A |
|--|--|----------|------------------|-------------------|----------|-----|
| Distance through insulation (DTI) at/of: | Upeak (V) | Urms (V) | Test voltage (V) | Required DTI (mm) | DTI (mm) | |
| | | | | | | |
| supplementary information: | | | | | | |
| | | | | | | |

| 4.3.8 | TABLE: Batteries | | | | | | | | Pass |
|---|-------------------------|------------------------|--|------------------------|---------------|---------------|---------------|-------------------|---------------|
| 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 | | Unintentional charging | | Charging | | Discharging | | Reversed charging | |
| Meas. current | Manuf. specs. | | | Meas. current | Manuf. specs. | Meas. current | Manuf. specs. | Meas. current | Manuf. specs. |

| IEC 60950-1 | | | | | | | | | |
|--|--------------------|----|----------------------------------|-----------------|----|----|----|---------|----|
| Clause | Requirement + Test | | | Result - Remark | | | | Verdict | |
| Normal condition | -- | -- | 0mA | -- | -- | -- | -- | -- | -- |
| Single fault condition | -- | -- | 0mA (Shorted R651) | -- | -- | -- | -- | -- | -- |
| Single fault condition | -- | -- | 7mA (Shorted D31 Pin 1 to Pin 2) | -- | -- | -- | -- | -- | -- |
| Test results: | | | | | | | | Verdict | |
| - Chemical leaks | | | | | | | | Pass | |
| - Explosion of the battery | | | | | | | | Pass | |
| - Emission of flame or expulsion of molten metal | | | | | | | | Pass | |
| - Electric strength tests of equipment after completion of tests | | | | | | | | N/A | |
| supplementary information: | | | | | | | | | |

| 4.3.8 | TABLE: Batteries | | | | | | | N/A | |
|---|------------------|--|--|--|--|--|--|-----|--|
| Battery category (lithium, NiMh, NiCad, lithium ion, etc.) | | | | | | | | | |
| Manufacturer | | | | | | | | | |
| Type / model | | | | | | | | | |
| Voltage | | | | | | | | | |
| Capacity (mAh) | | | | | | | | | |
| Tested and Certified by (incl. Ref. No.) | | | | | | | | | |
| Circuit protection diagram (Refer to indicated supplement of Enclosure - Miscellaneous) | | | | | | | | | |
| MARKINGS AND INSTRUCTIONS (1.7.12, 1.7.15) | | | | | | | | | |
| Location of replaceable battery | | | | | | | | | |
| Language(s) | | | | | | | | | |
| Close to the battery | | | | | | | | | |
| In the servicing instructions | | | | | | | | | |
| In the operating instructions | | | | | | | | | |
| In the operating instructions | | | | | | | | | |
| supplementary information: | | | | | | | | | |
| Additional devices may be described in Enclosure - Miscellaneous | | | | | | | | | |

| 4.5 | TABLE: thermal requirements | | | | | | | Pass | |
|---------------------|-----------------------------|-----------|-----------|-----------|-----------|---|-----|------|--|
| Supply voltage (V): | | | | | | | | | |
| | | See below | See below | See below | See below | - | --- | | |
| Ambient Tmin (??C): | | | | | | | | | |
| | | - | - | - | - | - | --- | | |
| Ambient Tmax (??C): | | | | | | | | | |
| | | - | - | - | - | - | --- | | |

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

| Maximum measured temperature T of part/at: | T (??C) #1 | T (??C) #2 | T (??C) #3 | T (??C) #4 | T (??C) #5 | Allowed Tmax (??C) | |
|--|-------------|---------------|-------------|---------------|------------|--------------------|------------------|
| - | 90Vac /50HZ | 90Vac /50HZ | 264Vac/50HZ | 264Vac/50HZ | - | - | |
| AC Inlet | 31.1 | 62.0 | 29.4 | 60.2 | - | 70 | |
| Power switch (SW1) | 26.9 | 57.8 | 26.6 | 57.4 | - | 85 | |
| T501 coil (locate in power supply unit) | 38.7 | 69.6 | 37.7 | 68.5 | - | 110 | |
| T501 core (locate in power supply unit) | 37.3 | 68.2 | 36.2 | 67.0 | - | 110 | |
| T901 coil (locate in power supply unit) | 61.4 | 92.3 | 59.8 | 90.6 | - | 110 | |
| T901 core (locate in power supply unit) | 50.0 | 80.9 | 48.8 | 79.6 | - | 110 | |
| PWB near Q501 (locate in power supply unit) | 40.5 | 71.4 | 34.3 | 65.1 | - | 130 | |
| Electrolytic Capacitor (C802) (locate in power supply unit) | 38.6 | 69.5 | 32.0 | 62.8 | - | 85 | |
| internal wire of power supply unit output | 34.7 | 65.6 | 33.6 | 64.4 | | 80 | |
| T2 transformer (locate in POE board) | 40.1 | 71.0 | 39.7 | 70.5 | | 105 | |
| PWB near U21(locate in POE board) | 47.8 | 78.7 | 46.3 | 77.1 | - | 105 | |
| PWB near heatsink (locate in mainboard) | 42.3 | 73.2 | 41.8 | 72.6 | - | 105 | |
| RTC battery (locate in mainboard) | 34.3 | 65.2 | 33.9 | 64.7 | - | 100 | |
| Top metal enclosure near power supply unit | 27.5 | 58.4 | 26.9 | 57.7 | - | 70 | |
| Bottom metal enclosure near power supply unit | 32.6 | 63.5 | 31.5 | 62.3 | - | 70 | |
| External plastic front panel | 25.1 | 56.0 | 25.0 | 55.8 | | 95 | |
| Ambient | 24.1 | Shift to 55°C | 24.2 | Shift to 55°C | | -- | |
| temperature T of winding: | t1 (??C) | R1 (Ohm) | t2 (??C) | R2 (ohm) | T (??C) | Allowed Tmax (??C) | Insulation class |
| -- | -- | -- | -- | -- | -- | -- | -- |
| supplementary information: | | | | | | | |
| Comments: - Continuous operation, until steady conditions were established. - The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in subclause 1.6.2 and at voltages as described in sub-clause 1.4.5. - With maximum ambient temperature specified as 55 degree C, Therefore the maximum permitted temperature rises are calculated as follows: Winding Components: - Transformer T351,T501, Class B->Tmax:=120- 10=110 degree C. Touch temperature limits per Table 4C. The others per their RTI or MOT. | | | | | | | |

| 4.5.5 | TABLE: Ball pressure test of thermoplastic parts | | | N/A |
|----------------------------|--|--|---------------------------|--------------------------|
| | allowed impression diameter (mm) : | | less than or equal to 2.0 | --- |
| part | | | test temperature (??C) | impression diameter (mm) |
| supplementary information: | | | | |

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

| 4.7 | TABLE: Resistance to fire | | | | Pass |
|---|----------------------------------|------------------|----------------|--------------------|----------|
| Part | Manufacturer of material | Type of material | Thickness (mm) | Flammability class | Evidence |
| - | - | - | - | - | |
| supplementary information: | | | | | |
| Please see critical component table 1.5.1 for detail information. | | | | | |

| 5.1 | TABLE: touch current measurement | | | | Pass |
|---|---|------------|-------------------------------|--|------|
| Measured between | Measured (mA) | Limit (mA) | Comments/conditions | | |
| Metal enclosure | 0.23 | 3.5 | "e" – O; P1 – N; Pri S. - On | | |
| Metal enclosure | 0.22 | 3.5 | "e" – O; P1 – R; Pri S. - On | | |
| Metal enclosure | 0.34 | 3.5 | "e" – O; P1 – N; Pri S. - Off | | |
| Metal enclosure | 0.06 | 3.5 | "e" – O; P1 – R; Pri S. - Off | | |
| Plastic front panel (wrapped with metal foil) | 0 | 0.25 | "e" – C; P1 – N; Pri S. - On | | |
| Plastic front panel (wrapped with metal foil) | 0 | 0.25 | "e" – C; P1 – R; Pri S. - On | | |
| Plastic front panel (wrapped with metal foil) | 0 | 0.25 | "e" – C; P1 – N; Pri S. - Off | | |
| Plastic front panel (wrapped with metal foil) | 0 | 0.25 | "e" – C; P1 – R; Pri S. - Off | | |
| supplementary information: | | | | | |
| N/A | | | | | |

| 5.2 | TABLE: Electric strength tests, impulse tests and voltage surge tests | | | Pass |
|------------------------------|--|------------------|--------------------|------|
| Test voltage applied between | Voltage shape (AC, DC, impulse, surge) | Test voltage (V) | Breakdown Yes / No | |
| | | | | |

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

| | | | |
|---|--|------------------|--------------------|
| Functional: | | | |
| Test voltage applied between | Voltage shape (AC, DC, impulse, surge) | Test voltage (V) | Breakdown Yes / No |
| - | - | - | - |
| Basic/supplementary: | | | |
| Test voltage applied between | Voltage shape (AC, DC, impulse, surge) | Test voltage (V) | Breakdown Yes / No |
| Primary to Metal enclosure | AC | 1979 | No |
| Reinforced: | | | |
| Test voltage applied between | Voltage shape (AC, DC, impulse, surge) | Test voltage (V) | Breakdown Yes / No |
| Primary to plastic front part (wrapped with metal foil) | AC | 3000 | No |
| supplementary information: | | | |
| -All electrical strength tests duration last at least 60 seconds. -All applied test voltages for electric strength (in Table 5B) are based on the original report of power supply. - Unit: Electrical strength test is conducted while the equipment is still in a well-heated condition immediately following the test in 4.5.1. | | | |

| 5.3 | TABLE: Fault conditions tests | | | | | | Pass |
|----------------------|---|--------------------|-----------|--------|------------------|---|------|
| | Ambient temperature (??C) | | | | | See below | --- |
| | Power source for EUT: Manufacturer, model/type, output rating | | | | | - | --- |
| Component No. | Fault | Supply voltage (V) | Test time | Fuse # | Fuse current (A) | Observation | |
| Power supply fan | Stalled | 240Vac / 60Hz | 1h07min | F1 | 0.96 | NB,NC,NT T501 core : 69.2(C, T501 coil: 73.6(C, T901 core :92.6(C, T901 coil :94.4(C, Ambient :24.6(C | |
| System fan | Stalled | 240Vac / 60Hz | 33min | F1 | 0.96 | NB,NC,NT T501 core : 36.8(C, T501 coil : 38.4(C, T901 core : 48.2(C, T901 coil : 60.0(C, Ambient : 24.2(C | |
| Ventilation openings | Blocked | 240Vac / 60Hz | 1h38min | F1 | 0.96 | NB,NC,NT T501 core : 77.8(C, T501 coil : 81.7(C, T901 core : 95.0(C, T901 coil : 106.6(C, Ambient :24.6(C | |

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

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

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

Enclosure **National Differences**

Austria**
Belarus*
Belgium**
Bulgaria**
Czech Republic**
Denmark
Finland
France**
Germany
Greece**
Group
Hungary**
Italy**
Netherlands**
Norway
Poland**
Romania**
Serbia**
Slovakia**
Slovenia**
Sweden
Switzerland
USA / Canada
Ukraine*

* No National Differences Declared

** Only Group Differences

| IEC 60950-1:2005 | | | |
|------------------|-------------------|-----------------|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |

| Denmark - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013 | | | |
|--|--|--|-----|
| 1.2.4.1 | In Denmark, certain types of Class I appliances (see sub-clause 3.2.1.1) may be provided with plug not establishing earthing continuity when inserted into Danish socket-outlets. | | N/A |
| 1.7.2.1 | 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. The marking text in the applicable countries shall be as follows: : "Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord." | | N/A |
| 1.7.5 | 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. | | N/A |
| 1.7.5 | For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a. (Heavy Current Regulations, Section 107-2-D1) | | N/A |
| 3.2.1.1 | Supply cord 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. CLASS I EQUIPMENT provided with socket-outlets with earth contact 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. 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 | | N/A |

| IEC 60950-1:2005 | | | |
|------------------|--|-----------------|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |
| | Regulations, Section 107-2-D1 or EN 60309-2. | | |

| IEC 60950-1:2005 | | | |
|------------------|-------------------|-----------------|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |

| Finland - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013 | | | |
|--|---|--|-----|
| 1.5.7.1 | 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. | | N/A |
| 1.5.9.4 | The third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex. | | N/A |
| 1.7.2.1 | 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. The marking text shall be: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" | | N/A |
| 2.3.2 | Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply. | | N/A |
| 2.10.5.3 | Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply. | | N/A |
| 5.1.7.1 | Touch current measurement results exceeding 3,5 mA r.m.s are permitted only for the following equipment: - STATIONARY PLUGGABLE EQUIPMENT TYPE A that: (1) is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and (2) has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and (3) is provided with instructions for the installation of that conductor by a SERVICE PERSON; - STATIONARY PLUGGABLE EQUIPMENT TYPE B - STATIONARY PERMANENTLY CONNECTED EQUIPMENT | | N/A |
| 6.1.2.1 | Add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist | | N/A |

| IEC 60950-1:2005 | | | |
|------------------|--|-----------------|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |
| | <p>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 requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <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. <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 132400:1994 (EN 60384-14:2005), subclass Y2. A capacitor classified Y3 according to EN 132400 [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 132400 [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 132400 [EN 60384-14]; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400 [EN 60384-14], in the sequence of tests as described in EN 132400 [EN 60384-14]. | | |
| 6.1.2.2 | The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to | | N/A |

| IEC 60950-1:2005 | | | |
|------------------|---|-----------------|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |
| | be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication center, 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. | | |
| 7.2 | Requirements according to this annex 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM. | | N/A |

| Germany - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013 | | | |
|--|---|---|-----|
| 1.7.2.1 | If for the assurance of safety and health certain rules during use, amending or maintenance of a technical labour equipment or readymade consumer product are to be followed, a manual in German language has to be delivered when placing the product on the market. Of this requirement, rules for use even only by SERVICE PERSONS are not exempted. | Reviewed only English markings/instructions. May be provided in other languages upon request from the manufacturer. | N/A |

| IEC 60950-1:2005 | | | |
|------------------|-------------------|-----------------|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |

| Group - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013 | | | |
|--|---|--|------|
| General | Group Differences also includes the requirements in A11:2009 and A12:2011 | | Pass |
| 1.3 | A12:2011 - In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010 | | Pass |
| 1.5.1 | Add the following NOTE Z1: The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC | | Pass |
| 1.7.2.1 | Delete NOTE Z1 and the addition for Portable Sound System Add the following Zx clauses and annex to the existing standard and amendments | | N/A |
| 2.7.1 | Replace the subclause as follows: Basic requirements 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): 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; 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; 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. 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. | | Pass |
| 2.7.2 | Void | | Pass |

| IEC 60950-1:2005 | | | |
|------------------|---|-----------------|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |
| Zx.1 | <p>General - 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> <ul style="list-style-type: none"> - analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before | | N/A |

| IEC 60950-1:2005 | | | |
|------------------|--|-----------------|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |
| | <p>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> | | |
| Zx.2 | <p>Equipment Requirements - No safety provision is required for equipment that complies with the following:</p> <ul style="list-style-type: none"> - equipment provided as a package (personal music player with its listening device), where the acoustic output LAeq,T is ≤ 85 dBA measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and - 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>NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level LAeq,T is meant. See also Zx.5 and Annex Zx.</p> <p>All other equipment shall:</p> <ul style="list-style-type: none"> a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and 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 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 | | N/A |

| IEC 60950-1:2005 | | | |
|------------------|--|-----------------|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |
| | <p>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> <ol style="list-style-type: none"> 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 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. For music where the average sound pressure (long term LAeq,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>NOTE 4 Classical music typically has an average sound pressure (long term LAeq,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> | | |
| Zx.3 | Warning - The warning shall be placed on the | | N/A |

| IEC 60950-1:2005 | | | |
|------------------|---|-----------------|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |
| | <p>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 (IEC 60417-6044) with a minimum height of 5 mm; and - the following wording, or similar: “To prevent possible hearing damage, do not listen at high volume levels for long periods.” <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> | | |
| Zx.4 | Requirements for Listening devices (headphones and earphones) | | N/A |
| Zx.4.1 | <p>Wired listening devices with analogue input With 94 dBA sound pressure output LAeq,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> | | N/A |
| Zx.4.2 | <p>Wired listening devices with digital input 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 LAeq,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> | | N/A |
| Zx.4.3 | <p>Wireless listening devices In wireless mode:</p> <ul style="list-style-type: none"> - with any playing and transmitting device playing the fixed programme simulation noise described in | | N/A |

| IEC 60950-1:2005 | | | |
|------------------|--|-----------------|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |
| | <p>EN 50332-1; and</p> <ul style="list-style-type: none"> - 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 LAeq,T of the listening device shall be ≤ 100 dBA. <p>NOTE An example of a wireless listening device is a Bluetooth headphone.</p> | | |
| Zx.5 | <p>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> | | N/A |

| IEC 60950-1:2005 | | | |
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| SubClause | Difference + Test | Result - Remark | Verdict |

| Norway - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013 | | | |
|---|---|--|------|
| General | Norway has national differences declared for 60950-1:2005, Am 1:2009 (below). | | Pass |
| 1.2.13.14 | For requirements see 1.7.2.1 and 7.3. | | N/A |
| 1.5.7.1 | Resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.2. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2. | | N/A |
| 1.5.8 | 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). | | N/A |
| 1.5.9.4 | The third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex. | | N/A |
| 1.7.2.1 | 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. The marking text shall be: "Apparatet må tilkoples jordet stikkontakt" | | N/A |
| 1.7.2.1 | In Norway, 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. 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. 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: "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 | | N/A |

| IEC 60950-1:2005 | | | |
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| SubClause | Difference + Test | Result - Remark | Verdict |
| | <p>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> <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): "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> | | |
| 2.2.4 | Requirements according to this annex, 1.7.2.1, 6.1.2.1 and 6.1.2.2 apply. | | N/A |
| 2.3.2 | Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply. | | N/A |
| 2.3.4 | Requirements according to this annex, 1.7.2.1, 6.1.2.1 and 6.1.2.2 apply. | | N/A |
| 2.10.5.13 | Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply. | | N/A |
| 5.1.7.1 | <p>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"> (1) is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and (2) has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and (3) is provided with instructions for the installation of that conductor by a SERVICE PERSON; - STATIONARY PLUGGABLE EQUIPMENT TYPE B - STATIONARY PERMANENTLY CONNECTED EQUIPMENT | | N/A |

| IEC 60950-1:2005 | | | |
|------------------|--|-----------------|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |
| 6.1.2.1 | <p>Add the following text between the first and second paragraph of the compliance clause: 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 requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <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. <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 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 123400 [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 132400 [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 132400 [EN 60384-14]; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400 [EN 60384-14], in the sequence of tests as described in EN 132400 [EN 60384-14.] | | N/A |

| IEC 60950-1:2005 | | | |
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| SubClause | Difference + Test | Result - Remark | Verdict |
| 6.1.2.2 | The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and 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. | | N/A |
| 7.2 | Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM. | | N/A |
| 7.3 | Refer to EN 60728-11:2005 for installation conditions | | N/A |
| 7.3 | Requirements according to this annex 1.2.13.14 and 1.7.2.1 apply. | | N/A |

| IEC 60950-1:2005 | | | |
|------------------|-------------------|-----------------|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |

| Sweden - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013 | | | |
|---|--|--|-----|
| 1.2.13.14 | For requirements see 1.7.2.1 and 7.3. | | N/A |
| 1.5.1 | (Ordinance (1990:944)) Add NOTE: Switches containing mercury are not permitted. | | N/A |
| 1.5.7.1 | Resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.2. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2. | | N/A |
| 1.5.9.4 | The third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex. | | N/A |
| 1.7.2.1 | 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. The marking text shall be:"Apparaten skall anslutas till jordat uttag" | | N/A |
| 1.7.2.1 | In 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. 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. 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: "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 | | N/A |

| IEC 60950-1:2005 | | | |
|------------------|---|-----------------|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |
| | (galvanic isolator, see EN 60728-11)." 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. Translation to Swedish: "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." | | |
| 2.3.2 | Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply. | | N/A |
| 2.10.5.13 | Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply. | | N/A |
| 5.1.7.1 | TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s are permitted only for the following equipment: STATIONARY PLUGGABLE EQUIPMENT TYPE A that: (1) is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and (2) has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and (3) is provided with instructions for the installation of that conductor by a SERVICE PERSON; - STATIONARY PLUGGABLE TYPE B - STATIONARY PERMANENTLY CONNECTED EQUIPMENT | | N/A |
| 6.1.2.1 | Add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - 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. Alternatively for components, there is no distance | | N/A |

| IEC 60950-1:2005 | | | |
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| SubClause | Difference + Test | Result - Remark | Verdict |
| | <p>through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <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. <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 132400:1994, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 132400 [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 132400 [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 132400 [EN 60384-14]; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400 [EN 60384-14], in the sequence of tests as described in EN 132400 [EN 60384-14.] | | |
| 6.1.2.2 | <p>The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and 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.</p> | | N/A |
| 7.2 | <p>Requirements according to this annex, 6.1.2.1 and</p> | | N/A |

| IEC 60950-1:2005 | | | |
|------------------|-------------------|-----------------|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |

| | | | |
|-----|--|--|-----|
| | 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM. | | |
| 7.3 | Requirements according to this annex 1.2.13.14 and 1.7.2.1 apply. | | N/A |

| IEC 60950-1:2005 | | | |
|------------------|-------------------|-----------------|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |

| Switzerland - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013 | | | |
|--|--|--|------|
| General | Includes update from 60950-1:2005, AC:2011 | | Pass |
| 1.5.1 | Ordinance on environmentally hazardous substances SR 814.81, Annex 1.7, Mercury - Annex 1.7 of SR 814.81 applies for mercury. Switches containing mercury such as thermostats, relays and level controllers are not allowed. | | N/A |
| 1.7.13 | Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15, Batteries - Annex 2.15 of SR 814.81 applies for batteries containing cadmium and mercury. Note: Ordinance relating to environmentally hazardous substances, SR 814.013 of 1986-06-09 is no longer in force and superseded by SR 814.81 of 2009-02-01 (ChemRRV). | | N/A |
| 3.2.1.1 | <p>Supply cords of portable electrical appliances having a rated current not exceeding 10 A shall be provided with a plug complying with IEC 60884-1 (3rd Ed.) + Amd. 1, SEV 1011 and one of the following dimension sheets:</p> <ul style="list-style-type: none"> - SEV 6533-2:2009, Plug type 11, L+N, 250 V, 10 A - SEV 6534-2:2009, Plug type 12, L+N+PE, 250 V, 10 A - SEV 6532-2:2009, Plug type 15, 3P+N+PE, 250/400 V, 10 A <p>Supply cords of portable electrical appliances having a rated current not exceeding 16 A shall be provided with a plug complying with IEC 60884-1 (3rd Ed.) + Amd. 1, SEV 1011 and one of the following dimension sheets:</p> <ul style="list-style-type: none"> - SEV 5933-2:2009, Plug type 21, L+N, 250 V, 16 A - SEV 5934-2:2009, Plug type 23, L+N+PE, 250 V, 16 A - SEV 5932-2:2009, Plug type 25, 3P+N+PE, 230/400 V, 16 A <p>NOTE: 16 A plugs are not often used in Swiss domestic installation systems.</p> | | N/A |
| 3.2.4 | Requirements according to this annex 3.2.1.1 | | N/A |

| IEC 60950-1:2005 | | | |
|------------------|-------------------|-----------------|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |
| | apply. | | |

| IEC 60950-1:2005 | | | |
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| SubClause | Difference + Test | Result - Remark | Verdict |

| USA / Canada - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013 | | | |
|---|---|--|------|
| 1.1.1 | Equipment able to be installed in accordance with the National Electrical Code ANSI/NFPA 70 and the Canadian Electrical Code, Part1, and when applicable, the National Electrical Safety Code, IEEE C2. | | Pass |
| 1.1.1 | Equipment able to be installed in accordance with ANSI/NFPA 75 and NEC Art. 645 unless intended for use outside of computer room and provided with such instructions. | | Pass |
| 1.1.2 | Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors. | | N/A |
| 1.1.2 | Equipment in wire-line communication facilities serving high-voltage electric power stations operating at greater than 1kV are excluded. | | N/A |
| 1.1.2 | Special requirements apply to equipment intended for use outdoors. | | N/A |
| 1.4.14 | For PLUGGABLE EQUIPMENT TYPE A, the protection in the installation is assumed to be 20 A. | | Pass |
| 1.5.1 | All IEC standards for components identified in Annex P.1 replaced by the relevant requirements of CSA and UL component standards in Annex P.1. | | Pass |
| 1.5.1 | All IEC standards for components identified in Annex P.2 alternatively satisfied by the relevant requirements of CSA and UL component standards in Annex P.2. | | Pass |
| 1.5.5 | Interconnecting cables acceptable for the application regarding voltage, current, temperature, flammability, mechanical serviceability and the like. | | Pass |
| 1.5.5 | For other than limited power and TNV circuits, the type of output circuit identified for output connector. | | Pass |
| 1.5.5 | External cable assemblies that exceed 3.05 m in length to be types specified in the NEC and CEC. | | N/A |
| 1.5.5 | Detachable external interconnecting cables 3.05 m or less in length and provided with equipment marked to identify the responsible organization and the designation for the cable. | | N/A |
| 1.5.5 | Building wiring and cable for use in ducts, plenums and other air handling space subject to special requirements and excluded from scope. | | N/A |

| IEC 60950-1:2005 | | | |
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| SubClause | Difference + Test | Result - Remark | Verdict |
| 1.5.5 | Telephone line and extension cords and the like comply with UL 1863 and CSA C22.2 No. 233. | | N/A |
| 1.6.1.2 | Equipment intended for connection to a d.c. power (mains) distribution system is subject to special circuit classification requirements (e.g., TNV-2) | | N/A |
| 1.6.1.2 | Earthing of d.c. powered equipment provided. | | N/A |
| 1.7 | Lamp replacement information indicated on lampholder in operator access area. | | N/A |
| 1.7.1 | Special marking format for equipment intended for use on a supply system with an earthed neutral and more than one phase conductor. | | N/A |
| 1.7.1 | Equipment voltage rating not higher than rating of the plug except under special conditions. | | Pass |
| 1.7.6 | Special fuse replacement marking for operator accessible fuses. | | N/A |
| 1.7.7 | Identification of terminal connection of the equipment earthing conductor. | | N/A |
| 1.7.7 | Connectors and field wiring terminals for external Class 2 or Class 3 circuits provided with marking indicating minimum Class of wiring to be used. | | N/A |
| 1.7.7 | Marking located adjacent to terminals and visible during wiring. | | N/A |
| 2.1.1.1 | Bare TNV conductive parts in the interior of equipment normally protected against contact by a cover intended for occasional removal are exempt provided instructions include directions for disconnection of TNV prior to removal of the cover. | | N/A |
| 2.3.1.b | Other telecommunication signaling systems (e.g., message waiting) than described in 2.3.1(b) are subject to M.4. | | N/A |
| 2.3.1.b | For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vp or 60 V d.c., the maximum current limit through a 2000 Ohm or greater resistor with loads disconnected is 7.1 mA peak or 30 mA d.c. under normal conditions. | | N/A |
| 2.3.1.b | Limits for measurements across 5000 ohm resistor in the event of a single fault are replaced after 200 ms with the limits of M.3.1.4. | | N/A |
| 2.3.2.1 | In the event of a single fault, the limits of 2.2.3 apply to SELV circuits and accessible conductive parts. | | N/A |

| IEC 60950-1:2005 | | | |
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| SubClause | Difference + Test | Result - Remark | Verdict |
| 2.5 | Overcurrent protection device required for Class 2 and Class 3 limiting in accordance with the NEC, or for a Limited Power Source, not interchangeable with devices of higher ratings if operator replaceable. | | N/A |
| 2.6 | Equipment having receptacles for output a.c. power connectors generated from an internal separately derived source have the earthed (grounded) circuit conductor suitably bonded to earth. | | N/A |
| 2.6.2 | Equipment with functional earthing is required to be marked with the functional earthing symbol (IEC 60417-6092). | | N/A |
| 2.6.3.3 | For PLUGGABLE EQUIPMENT TYPE A, if a) b) or c) are not applicable, the current rating of the circuit is taken as 20 A | | N/A |
| 2.6.3.3 | The first column on Table 2D requirement: "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration." | | Pass |
| 2.6.3.4 | Capacity of connection between earthing terminal and parts required to be earthed subject to special conditions based on the current rating of the circuit. | | N/A |
| 2.6.3.4 | Protective bonding conductors and their terminals of non-standard constructions (e.g. PWB traces) evaluated to limited short-circuit test of CSA C22.2 No.0.4. | | N/A |
| 2.6.4.1 | Field wiring terminals for earthing conductors suitable for wire sizes (gauge) used in US and Canada. | | N/A |
| 2.7.1 | Data for selection of special external branch circuit overcurrent devices marked on the equipment. | | N/A |
| 2.7.1 | Standard supply outlets protected by overcurrent device in accordance with the NEC, and CEC, Part 1. | | N/A |
| 2.7.1 | Overcurrent protection for individual transformers that distribute power to other units over branch circuit wiring. | | N/A |
| 2.7.1 | Additional requirements for overcurrent protection apply to equipment provided with panelboards. | | N/A |
| 2.7.1 | Non-motor-operated equipment requiring special overcurrent protective device marked with device rating. | | N/A |

| IEC 60950-1:2005 | | | |
|------------------|--|--|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |
| 2.10.5.12 | Multi-layer winding wire subject to UL component wire requirements in addition to 2.10.5.12 and Annex U. | | N/A |
| 3.1.1 | Permissible combinations of internal wiring/external cable sizes for overcurrent and short circuit protection. | All wiring combinations are suitable for their intended application. | Pass |
| 3.1.1 | All interconnecting cables protected against overcurrent and short circuit. | | Pass |
| 3.2 | Wiring methods permit connection of equipment to primary power supply in accordance with the NEC and CEC, Part 1. | | Pass |
| 3.2.1 | Permitted use for flexible cords and plugs. | | Pass |
| 3.2.1 | Flexible cords provided with attachment plug rated 125% of equipment current rating. | | Pass |
| 3.2.1 | Any Class II equipment provided with 15 or 20 A standard supply outlets, Edison-base lampholders or single pole disconnect device provided with a polarized type attachment plug. | | N/A |
| 3.2.1.2 | Equipment intended for connection to DC mains supply power systems complies with special wiring requirements (e.g., no permanent connection to supply by flexible cord). | | N/A |
| 3.2.1.2 | Equipment with one pole of the DC mains supply connected to both the equipment mains input terminal and the main protective earthing terminal provided with special instructions and construction provisions for earthing. | | N/A |
| 3.2.1.2 | Equipment with means for connecting supply to earthing electrode conductor has no switches or protective devices between supply connection and earthing electrode connection. | | N/A |
| 3.2.1.2 | Special markings and instructions for equipment with provisions to connect earthed conductor of a DC supply circuit to earthing conductor at the equipment. | | N/A |
| 3.2.1.2 | Special markings and instructions for equipment with earthed conductor of a DC supply circuit connected to the earthing conductor at the equipment. | | N/A |
| 3.2.1.2 | Terminals and leads provided for permanent connection of DC powered equipment to supply marked to indicate polarity if reverse polarity may | | N/A |

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| SubClause | Difference + Test | Result - Remark | Verdict |
| | result in a hazard. | | |
| 3.2.3 | Permanently connected equipment has provision for connecting and securing a field wiring system (i.e. conduit, or leads etc.) per the NEC and CEC, Part 1. | | N/A |
| 3.2.3 | Permanently connected equipment may have terminals or leads not smaller than No. 18 AWG (0.82 mm ²) and not less than 150 mm in length for connection of field installed wiring. | | N/A |
| 3.2.3 | If supply wires exceed 60 °C, marking indicates use of 75 °C or 90 °C wiring for supply connection as appropriate. | | N/A |
| 3.2.3 | Equipment compatible with suitable trade sizes of conduits and cables. | | N/A |
| 3.2.5 | Power supply cords are required to be no longer than 4.5 m in length. Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC. | | Pass |
| 3.2.5 | Conductors in power supply cords sized according to NEC and CEC, Part I. | | Pass |
| 3.2.5 | Power supply cords and cord sets incorporate flexible cords suitable for the particular application. | | Pass |
| 3.2.6 | Strain relief provided for non-detachable interconnecting cables not supplied by a limited power source. | | N/A |
| 3.2.9 | Adequate wire bending space and volume of field wiring compartment required to properly make the field connections. | | N/A |
| 3.2.9 | Equipment intended solely for installation in Restricted Access Locations using low voltage d.c. systems may not need provision for connecting and securing a field wiring system. A method of securing wiring or instructions provided to ensure the wiring is protected from abuse. | | N/A |
| 3.3 | Field wiring terminals provided for interconnection of units for other than LPS or Class 2 circuits also | | N/A |

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| SubClause | Difference + Test | Result - Remark | Verdict |
| | comply with 3.3. | | |
| 3.3 | Interconnection of units by LPS or Class 2 conductors may have field wiring connectors other than those specified in 3.3 if wiring is reliably separated. | | N/A |
| 3.3.1 | Terminals for the connection of neutral conductor identified by a distinctive white marking or other equally effective means. | | N/A |
| 3.3.3 | Wire binding screw terminal permitted for connection of No. 10 AWG (5.3 mm ²) or smaller conductor if provided with upturned lugs, cupped washer or equivalent retention. | | N/A |
| 3.3.4 | Terminals accept wire sizes (gauge) used in the U.S. and Canada. | | N/A |
| 3.3.4 | Terminals accept current-carrying conductors rated 125% of the equipment current rating. | | N/A |
| 3.3.5 | First column of Table 3E revised to require "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration." | | N/A |
| 3.3.6 | Field wiring terminals marked to indicate the material(s) of the conductor appropriate for the terminals used. | | N/A |
| 3.3.6 | Connection of an aluminum conductor not permitted to terminal for equipment earthing conductor. | | N/A |
| 3.3.6 | Field wiring connections made through the use of suitable pressure connectors (including set screw type), solder lugs or splices to flexible leads. | | N/A |
| 3.4.2 | Separate motor control device(s) required for cord-connected equipment rated more than 12 A, or with motor rated more than 1/3 hp or more than 120 V. | | N/A |
| 3.4.8 | Vertically mounted disconnect devices oriented so up position of handle is "on". | | N/A |
| 3.4.11 | For computer-room applications, equipment with battery systems capable of supplying 750 VA for 5 min require battery disconnect means. | | N/A |
| 4.2.8.1 | Special opening restrictions for enclosures around CRTs with face dimension of 160 mm or more. | | N/A |
| 4.2.9 | Compartment housing high-pressure lamp marked to indicate risk of explosion. | | N/A |

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| SubClause | Difference + Test | Result - Remark | Verdict |
| 4.3.2 | Loading test for equipment with handle(s) used to support more than 9 kg tested at four times the weight of the unit. | | N/A |
| 4.3.6 | In addition to the IEC requirements, Direct Plug-in Equipment complies with UL 1310 or CSA 223 mechanical assembly requirements. | | N/A |
| 4.3.8 | Battery packs for both portable and stationary applications are required to comply with special component requirements. | | N/A |
| 4.3.12 | The maximum quantity of flammable liquid stored in equipment complies with ANSI/NFPA 30(Table NAE.6). | | N/A |
| 4.3.12 | Equipment using replenishable liquids marked to indicate type of liquid to be used. | | N/A |
| 4.3.13.2 | Equipment that produces x-radiation and does not comply with 4.3.12 under all conditions of servicing marked to indicate the presence of radiation where readily visible. | | N/A |
| 4.3.13.5.1 | Requirements contained in the applicable national codes and regulations apply to lasers (21 CFR 1040 and REDR C1370). | | N/A |
| 4.7 | Automated information storage equipment intended to contain more than 0.76 m ³ of combustible media requires provision for automatic sprinklers or a gaseous agent extinguishing system. | | N/A |
| 4.7.3.1 | Equipment for use in environmental air space other than ducts or plenums provided with metal enclosure or with non-metallic enclosure having adequate fire-resistance and low smoke producing characteristics. Low smoke-producing characteristics evaluated according to UL 2043. Equipment for installation in space used for environmental air as described in Sec. 300-22(c) of the NEC provided with instructions indicating suitability for installation in such locations. | | N/A |
| 4.7.3.1 | Flame spread rating for external surface of combustible material with exposed area greater than 0.9 m ² or a single dimension greater than 1.8 m; 50 or less for computer room applications or 200 or less for other applications. | | N/A |
| 4.7.3.4 | Wire marked "VW-1" or "FT-1" considered equivalent. | | Pass |
| 5.1.8.2 | Special earthing provisions and instructions for | | N/A |

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|------------------|--|---|---------|
| SubClause | Difference + Test | Result - Remark | Verdict |
| | equipment with high touch current due to telecommunication network connections. | | |
| 5.1.8.3 | Touch current due to ringing voltage for equipment containing telecommunication network leads. | | N/A |
| 5.3.7 | Overloading of SELV connectors and printed wiring board receptacles accessible to the operator. | Signal input connectors and connectors supplied by LPS. | N/A |
| 5.3.7 | Tests interrupted by opening of a component repeated two additional times. | | N/A |
| 5.3.9.1 | Test interrupted by opening of wire or trace subject to certain conditions. | | N/A |
| 6 | Specialized instructions provided for telephones that may be connected to a telecommunications network. | | N/A |
| 6 | Marking identifying function of telecommunication type connectors not used for connection to a telecommunication network. | | N/A |
| 6.3 | Equipment remotely powered over telecommunication wiring systems provided with specialized markings adjacent to the connection. | | N/A |
| 6.3 | Overcurrent protection incorporated into equipment to provide power over telecommunication wiring system not interchangeable with devices of higher ratings if operator replaceable. | | N/A |
| 6.4 | Additional requirements for equipment intended for connection to a telecommunication network using cable subject to overvoltage from power line failures (Fig. 6C). | | N/A |
| 6.4 | Where 26 AWG line cord required by Fig. 6C, either the cord is provided with the equipment or described in the safety instructions. | | N/A |
| 7 | Equipment associated with the cable distribution system may need to be subjected to applicable parts of Chapter 8 of the NEC. | | N/A |
| H | Ionizing radiation measurements made under single fault conditions in accordance with the requirements of the Code of Federal Regulations 21 CFR 1020 and the Canadian Radiation Emitting Devices Act, REDR C1370. | | N/A |
| M.2 | Continuous ringing signals evaluated to Method A subjected to special accessibility considerations. | | N/A |
| M.4 | Special requirements for message waiting and similar telecommunications signals. | | N/A |

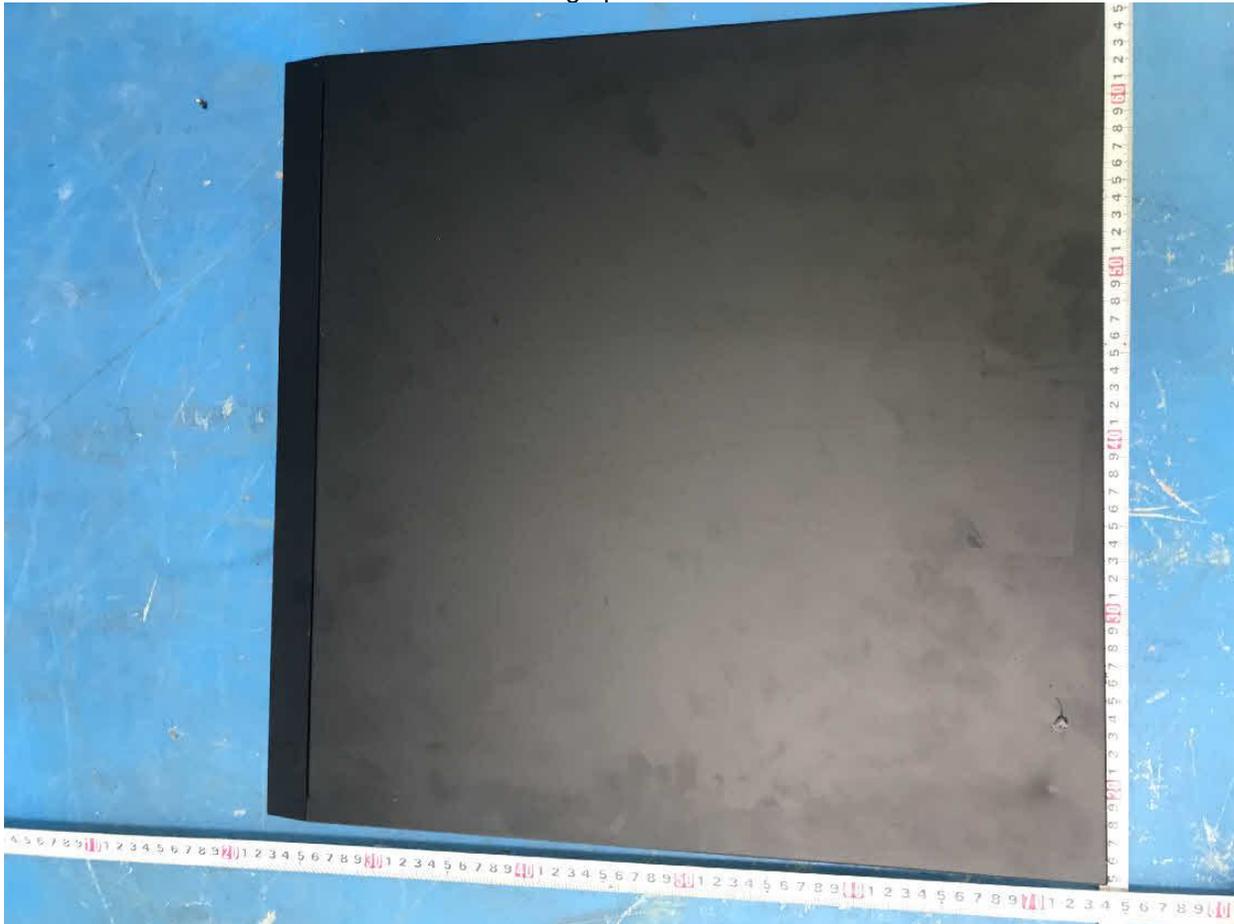
| IEC 60950-1:2005 | | | |
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| SubClause | Difference + Test | Result - Remark | Verdict |
| NAC | Equipment intended for use with a generic secondary protector marked with suitable instructions. | | N/A |
| NAC | Equipment intended for use with a specific primary or secondary protector marked with suitable instructions. | | N/A |
| NAD | Acoustic pressure from an ear piece less than 140 dBA for short duration disturbances, and less than 125 dBA for handsets, 118 dBA for headsets and insert earphones, for long duration disturbances. | | N/A |
| NAD | Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements. | | N/A |
| EE.5 | UL articulated accessibility probe (Fig. EE.3) required for assessing accessibility to document/media shredders, instead of Figure 2A test finger. | | N/A |

Enclosures

Enclosures

| <u>Type</u> | <u>Supplement Id</u> | <u>Description</u> |
|-------------|----------------------|-------------------------|
| Photographs | 3-01 | Top view |
| Photographs | 3-03 | Bottom view |
| Photographs | 3-04 | Overall view |
| Photographs | 3-06 | Internal view |
| Photographs | 3-07 | Front view of mainboard |
| Photographs | 3-08 | Rear view of mainboard |
| Photographs | 3-10 | Data port |
| Diagrams | 4-01 | Enclosure spec |
| Diagrams | 4-02 | Heatsink drawing |

Photographs ID 3-01



Photographs ID 3-03



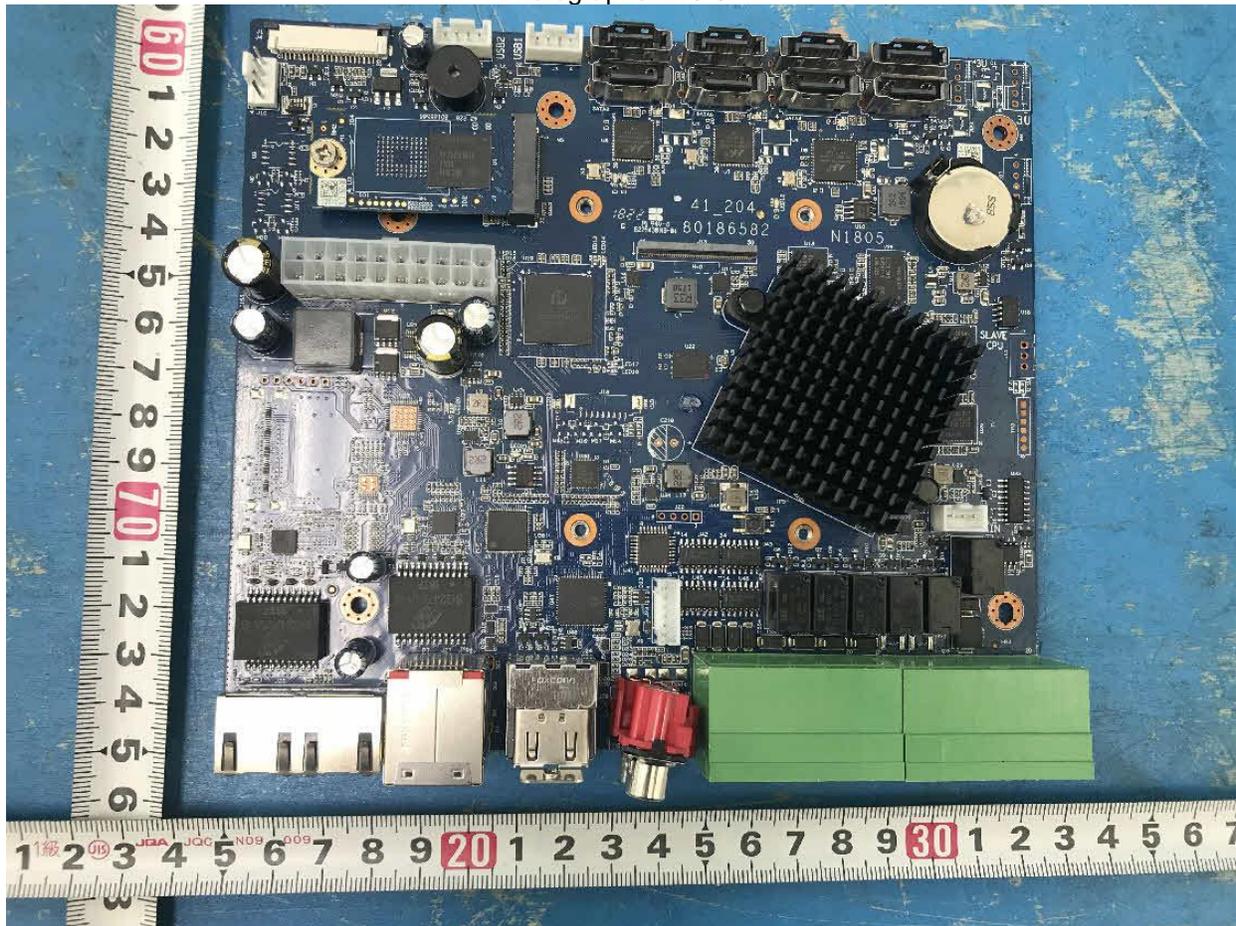
Photographs ID 3-04



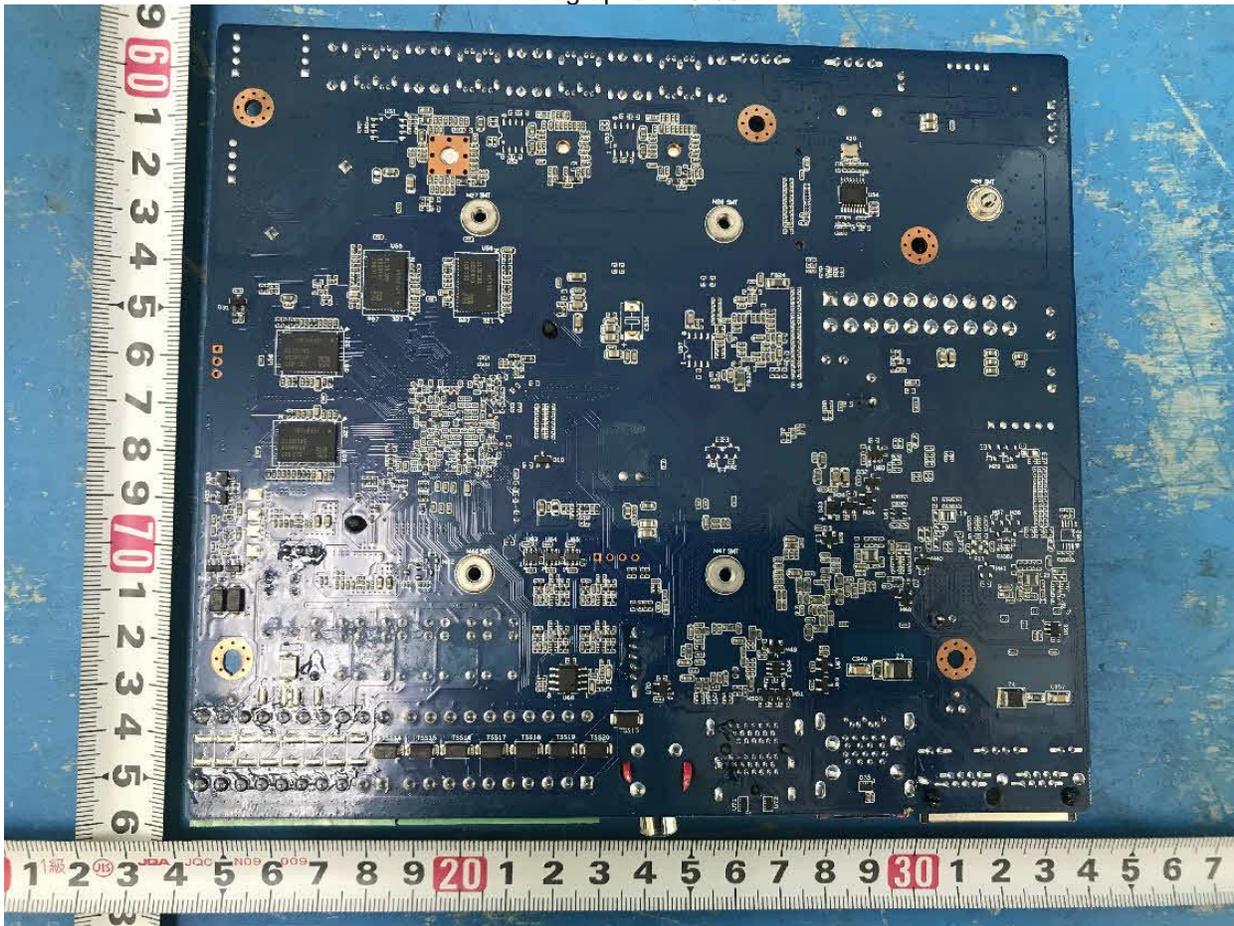
Photographs ID 3-06



Photographs ID 3-07



Photographs ID 3-08



Photographs ID 3-10



Enclosures

Diagrams ID 4-02

