



Ref. Certif. No.

JPTUV-031035

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST  
CERTIFICATES FOR ELECTRICAL EQUIPMENT  
(IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE  
CERTIFICATS D'ESSAIS DES EQUIPEMENTS  
ELECTRIQUES (IECEE) METHODE OC

### CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product  
Produit

Personal Computer

Name and address of the applicant  
Nom et adresse du demandeur

Micro-Star Int'l Co., Ltd.  
69, Li-De St.  
Chung Ho City, Taipei Hsien 235 Taiwan

Name and address of the manufacturer  
Nom et adresse du fabricant

Micro-Star Int'l Co., Ltd.  
69, Li-De St.  
Chung Ho City, Taipei Hsien 235 Taiwan

Name and address of the factory  
Nom et adresse de l'usine

See additional page(s)

Rating and principal characteristics  
Valeurs nominales et caractéristiques principales

DC 19V; 6.32A; Class III

Trade mark (if any)  
Marque de fabrique (si elle existe)

msi

Model/type Ref.  
Ref. de type

MS-6681

Additional information (if necessary)  
Information complémentaire (si nécessaire)

A sample of the product was tested and found  
to be in conformity with  
Un échantillon de ce produit a été essayé et a été  
considéré conforme à la

IEC 60950-1:2005  
National differences see test report

As shown in the Test Report Ref. No. which forms part  
of this Certificate  
Comme indiqué dans le Rapport d'essais numéro de  
référence qui constitue une partie de ce Certificat

11019714 001

This CB Test Certificate is issued by the National Certification Body  
Ce Certificat d'essai OC est établi par l'Organisme National de Certification



TÜV Rheinland Japan Ltd.  
Global Technology Assessment Center  
4-25-2 Kita-Yamata, Tsuzuki-ku  
Yokohama 224-0021 Japan  
Phone + 81 45 914-3888  
Fax + 81 45 914-3354  
Mail: info@jpn.tuv.com  
Web: www.tuv.com

Date: 01.03.2010

Signature:


Dipl.-Ing. W. Hsu

1. Micro-Star Int'l Co., Ltd.  
69, Li-De St.  
Chung Ho City, Taipei Hsien 235  
Taiwan
2. MSI Computer (Shenzhen) Co., Ltd.  
Longma Information Technology  
Industrial Park, Tangtou Village  
Shiyan Town, Baoan District  
Shenzhen, Guangdong 518108, P.R. China
3. MSI ELECTRONICS (KUNSHAN) CO., LTD.  
88E QIANJIN Rd., Kunshan City  
Jiangsu 215300  
P.R. China

**Additional information (if necessary)**  
**Information complémentaire (si nécessaire)**

Date: 01.03.2010

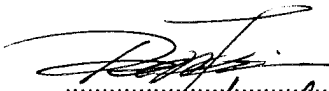
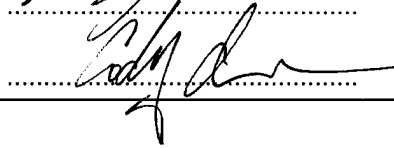
Signature:

  
Dipl.-Ing. W. Hsu



| <b>TEST REPORT</b>   |   |
|--|---|
| <b>IEC 60950-1: 2005 (2nd Edition) and/or EN 60950-1:2006<br/>Information technology equipment – Safety –<br/>Part 1: General requirements</b>   |   |
| <b>Report Reference No.</b> .....  | 11019714 001  |
| <b>Date of issue</b> .....   | February 25 2010  |
| <b>Total number of pages</b> .....   | 65  |
| <b>CB/CCA Testing Laboratory</b> .....   | TÜV Rheinland Taiwan Ltd., Taichung Laboratory  |
| <b>Address</b> .....   | 10F, No. 219, Min Chuan Rd., Taichung 403, Taiwan   |
| <b>Applicant's name</b> .....  | Micro-Star Int'l Co., Ltd.  |
| <b>Address</b> .....   | 69, Li-De St., Chung Ho City, Taipei Hsien 235 Taiwan   |
| <b>Manufacturer's name</b> .....   | Same as applicant.  |
| <b>Address</b> .....   | Same as applicant.  |
| <b>Factory's name</b> .....  | See following page  |
| <b>Address</b> .....   | See following page  |
| <b>Test specification:</b>   |   |
| <b>Standard</b> .....  | <input checked="" type="checkbox"/> IEC 60950-1:2005 (2nd Edition) and/or<br><input checked="" type="checkbox"/> EN 60950-1:2006+A11:2009 |
| <b>Test procedure</b> .....  | CB  |
| <b>Non-standard test method</b> .....  | N/A   |
| <b>Test Report Form No.</b> .....  | IECEN60950_1C   |
| <b>Test Report Form(s) Originator</b> .....  | SGS Fimko Ltd   |
| <b>Master TRF</b> .....  | Dated 2007-06   |
| <b>Copyright © 2006 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.</b>   |   |
| This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context. |   |
| If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.   |   |
| <b>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.</b>   |   |
| If this Test Report Form is used by non-CCA members, the CIG logo and the reference to the CCA Procedure shall be removed.   |   |
| <b>This report is not valid as a CCA Test Report unless signed by an approved CCA Testing Laboratory and appended to a CCA Test Certificate issued by an NCB in accordance with CCA</b>  |   |
| <b>Test item description</b> .....   | Personal Computer   |
| <b>Trade Mark</b> .....  | msi   |
| <b>Manufacturer</b> .....  | Same as applicant   |
| <b>Model/Type reference</b> .....  | MS-6681   |
| <b>Ratings</b> .....   | DC 19V, 6.32A   |



|   |  |
|---|--|
| <b>Testing procedure and testing location:</b>                        |  |
| <input checked="" type="checkbox"/> <b>CB/CCA Testing Laboratory:</b> | TÜV Rheinland Taiwan Ltd., Taichung Laboratory   |
| Testing location/ address..... :                                      | 10F, No. 219, Min Chuan Rd., Taichung 403, Taiwan  |
| <input type="checkbox"/> <b>Associated CB Laboratory:</b>             |  |
| Testing location/ address..... :                                      |  |
| Tested by (name + signature)..... :                                   | Bruce Tsai  |
| Approved by (+ signature)..... :                                      | Cady Chen   |
| <input type="checkbox"/> Testing procedure: TMP                       |  |
| Tested by (name + signature)..... :                                   |  |
| Approved by (+ signature)..... :                                      |  |
| Testing location/ address..... :                                      |  |
| <input type="checkbox"/> Testing procedure: WMT                       |  |
| Tested by (name + signature)..... :                                   |  |
| Witnessed by (+ signature)..... :                                     |  |
| Approved by (+ signature)..... :                                      |  |
| Testing location/ address..... :                                      |  |
| <input type="checkbox"/> Testing procedure: SMT                       |  |
| Tested by (name + signature)..... :                                   |  |
| Approved by (+ signature)..... :                                      |  |
| Supervised by (+ signature)..... :                                    |  |
| Testing location/ address..... :                                      |  |
| <input type="checkbox"/> Testing procedure: RMT                       |  |
| Tested by (name + signature)..... :                                   |  |
| Approved by (+ signature)..... :                                      |  |
| Supervised by (+ signature)..... :                                    |  |
| Testing location/ address..... :                                      |  |

|  |   |
|--|---|
| <p><b>Summary of testing:</b></p>  |   |
| <p><b>Tests performed (name of test and test clause):</b><br/>                 All applicable tests as described in Test Case and Measurement Sections were performed.</p> <ul style="list-style-type: none"> <li>• Pre-production samples without serial number.</li> <li>• All the tests were performed with an external DC power source (not DC mains).</li> <li>• The load conditions used during testing: Highest load according to 1.2.2.1 for this equipment is reading/writing between HDD and memory card, speaker with maximum volume, add dummy loads of 2.5W for each USB port to represent the USB load and continually access internet through the LAN port.</li> <li>• The installation configuration during test:                         <ul style="list-style-type: none"> <li>- CPU: Intel Celeron Dual Core, E5400, 2.7GHz</li> <li>- Memory capacity: DDR3, 2GB x2</li> <li>- Main board type: MS-7472</li> </ul> </li> </ul>   | <p><b>Testing location:</b><br/>                 All tests as described in Test Case and Measurement Sections were performed at the laboratory described on page 2.</p> |
| <p><b>Summary of compliance with National Differences:</b><br/>                 EU Group Differences, EU Special National Conditions, EU A-Deviations, AT, AU, CA, CH, DE, DK, FI, FR, GB, IT, KR, NL, NO, PL, SE, SI, US.</p> <p>Explanation of used codes: AT=Austria, AU=Australia, CA=Canada, CH=Switzerland, DE=Germany, DK=Denmark, FI=Finland, FR=France, GB=United Kingdom, IT=Italy, KR=Korea, NL=The Netherlands, NO=Norway, PL=Poland, SE=Sweden, SI=Slovenia, US=United States of America.</p> <p>For National Differences see corresponding Attachment.</p>   |   |
| <p><b>Copy of marking plate:</b></p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid gray; padding: 5px; width: 45%;"> <p><b>msi 微星科技</b></p> <p>產品名稱 / 個人電腦 / Personal computer<br/>                     型號 / Model name : MS-6681<br/>                     輸入電壓電流 / DC Rating : 19V --- 6.32A ⊕ ⊖ ⊖<br/>                     市場名稱 / Marketing name : DC520</p> <p style="text-align: right;">中國製造 Made in China</p> </div> <div style="border: 1px solid gray; padding: 5px; width: 45%;"> <p><b>msi 微星</b></p> <p>产品名称 / 个人电脑 / Personal computer<br/>                     型号 / Model name : MS-6681<br/>                     输入电压电流 / DC Rating : 19V --- 6.32A ⊕ ⊖ ⊖<br/>                     市场名 / Marketing name : DC520</p> <p style="text-align: right;">微星科技股份有限公司 中国制造 Made in China</p> </div> </div> <p><b>Note: The above labels are draft of artwork for marking plates pending approval by National Certification Bodies and it shall not be affixed to products prior to such approval.</b></p> |   |

|   |   |
|---|---|
| <b>Test item particulars</b> .....  |   |
| Equipment mobility .....  | <input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable<br><input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in   |
| Connection to the mains .....   | <input type="checkbox"/> pluggable equipment <input type="checkbox"/> permanent connection<br><input type="checkbox"/> detachable power supply cord<br><input type="checkbox"/> non-detachable power supply cord<br><input checked="" type="checkbox"/> not directly connected to the mains |
| Operating condition .....   | <input checked="" type="checkbox"/> continuous<br><input type="checkbox"/> rated operating / resting time:  |
| Access location .....   | <input checked="" type="checkbox"/> operator accessible<br><input type="checkbox"/> restricted access location  |
| Over voltage category (OVC) .....   | <input type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV<br><input checked="" type="checkbox"/> other: not directly connected to the mains   |
| Mains supply tolerance (%) or absolute mains supply values .....  | Not directly connected to the mains   |
| Tested for IT power systems .....   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No   |
| IT testing, phase-phase voltage (V) .....   | N/A   |
| Class of equipment .....  | <input type="checkbox"/> Class I <input type="checkbox"/> Class II <input checked="" type="checkbox"/> Class III<br><input type="checkbox"/> Not classified   |
| Considered current rating (A) .....   | N/A   |
| Pollution degree (PD) .....   | <input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3  |
| IP protection class .....   | IPX0  |
| Altitude during operation (m) .....   | Up to 2000 m  |
| Altitude of test laboratory (m) .....   | Not over 2000 m   |
| Mass of equipment (kg) .....  | Approx 3.59 g   |
| <b>Possible test case verdicts:</b>   |   |
| - test case does not apply to the test object.....  | N/A   |
| - test object does meet the requirement.....  | P (Pass)  |
| - test object does not meet the requirement.....  | F (Fail)  |
| <b>Testing</b> .....  |   |
| Date of receipt of test item .....  | January, 2010   |
| Date(s) of performance of tests .....   | January - February, 2010  |
| <b>General remarks:</b>   |   |
| The test results presented in this report relate only to the object tested.<br>This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.<br>“(See Enclosure #)” refers to additional information appended to the report.<br>“(See appended table)” refers to a table appended to the report. |   |
| <b>Note: This TRF includes EN Group Differences together with National Differences and Special National Conditions, if any. All Differences are located in the Appendix to the main body of this TRF.</b><br>Throughout this report a point is used as the decimal separator.   |   |

**General product information:****Product Description**

- The equipment under test (EUT) is Personal Computer with a building-in Wireless LAN card for general office used.
- There is one accessory part (stand base) provide for equipment as optional used, it is intended to be used in the following orientation.
  - Horizontal position: EUT place on desk top
  - Vertical position: EUT with stand base

**Engineering Considerations**

- The equipment is supplied from an approved power adaptor that output is considered as SELV circuit and energy hazards level below 240VA.
- No hazardous voltage generated inside the product, only functional insulation required for the equipment.
- The product was submitted and tested for use at the **maximum ambient temperature (T<sub>ma</sub>)** permitted by the manufacturer's specification of: +35°C.
- The following circuit locations were investigated as a **limited power source** (see subclause 2.5):
  - The output of USB ports, HDMI, DVI port and VGA ports;
  - The circuit of connector (JFP1) which connect to the stand-by switch.
- The following enclosures are provided:
  - Fire enclosure: the metal enclosure of the equipment.
  - Electrical enclosure: the metal enclosure of the equipment.
  - Mechanical enclosure: the metal enclosure of the equipment.
- The fire enclosure is not required for the front bezel of optical disk drive (O.D.D) and plastic cover of stand-by switch, due to:
  - For front bezel of optical disk drive (O.D.D):
    - Components inside the optical disk drive (O.D.D) are covered by a metal plate and a FPC cable insulated with PVC, TFE, PTFE, EPT, polychloroprene or polyimide.
  - For plastic cover of stand-by switch:
    - Components inside the plastic cover of stand-by switch are the wiring terminal insulated with PVC, TFE, PTFE, EPT, polychloroprene or polyimide and
    - Supplied by LPS circuit and mounted on PCB material of flammability rating V-1 or better.

**Additional Information**

- The power supply unit used with the product is a certified product which was investigated according to the standard of same version. The suitability of use has been evaluated in this report.
- This report contains all **national differences** as the class III equipment itself and is subject of this CB report. Destination countries should investigate this matter for external power adaptor while the equipment is submitted for the national approval.


**Markings and Instructions**

- The user's manual in English, information regarding:
  - Installation, operations and main board specifications
  - Maximum operating temperature and safety instruction
- The similar warning marking/statement is provided in user's manual (See subclause 1.7.13) for the non-rechargeable lithium type RTC battery accordingly

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE  
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS

The product also marked with:

-  (IEC 60417-5009) for the stand-by condition. (See subclause 1.7.8.3): it is marked on a push-push type stand-by switch.

Factory:

1. Micro-Star Int'l Co., Ltd.  
69, Li-De St., Chung Ho City, Taipei Hsien 235 Taiwan
2. MSI ELECTRONICS (KUNSHAN) CO., LTD.  
88E QIANJIN Rd., Kunshan City, Jiangsu 215300, P.R. China
3. MSI Computer (Shenzhen) Co., Ltd.  
Longma Information Technology Industrial Park, Tangtou Village, Shiyan Town, Baoan District,  
Shenzhen, Guangdong 518108, P.R. China

The manufacturer's declaration, that the samples tested represent the products from each factory, is available.

Attachments to this Test Report:

- Measurement Section
- National Differences
- Photo Documentation



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

|         |  |  |     |
|---------|--|--|-----|
| 1.5     | Components   |  | P   |
| 1.5.1   | General  | See below.   | P   |
|         | Comply with IEC 60950 or relevant component standard   | See appended table 1.5.1.  | P   |
| 1.5.2   | Evaluation and testing of components   | Components certified to IEC standards and/or their harmonized standards, are used within their ratings and are checked for correct application.<br>Non-certified components are checked for correct application, used within their ratings, tested as part of the equipment and subjected to applicable tests of the component standard. | P   |
| 1.5.3   | Thermal controls   | No thermal controls  | N/A |
| 1.5.4   | Transformers   | No transformers.   | N/A |
| 1.5.5   | Interconnecting cables   | No interconnecting cable.  | N/A |
| 1.5.6   | Capacitors bridging insulation   |  | 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 |
| 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 |  | P |
|-----|-----------------|--|---|

| IEC/EN 60950-1 |                                      |  |         |
|----------------|--------------------------------------|--|---------|
| Clause         | Requirement + Test                   | Result - Remark  | Verdict |
| 1.6.1          | AC power distribution systems        | The equipment is not directly connected to the AC mains supply.                      | N/A     |
| 1.6.2          | Input current                        | See summary of testing for load condition and appended table 1.6.2 for test results. | P       |
| 1.6.3          | Voltage limit of hand-held equipment |  | N/A     |
| 1.6.4          | Neutral conductor                    |  | N/A     |

|         |  |  |     |
|---------|--|--|-----|
| 1.7     | Marking and instructions                                       |  | P   |
| 1.7.1   | Power rating   | The power rating marking is provided on a rating label and is readily visible in operator access area. | P   |
|         | Rated voltage(s) or voltage range(s) (V) .....                 | See copy of marking plate. (No direct connection to mains supply)                                      | N/A |
|         | Symbol for nature of supply, for d.c. only .....               | See copy of marking plate. (No direct connection to mains supply)                                      | P   |
|         | Rated frequency or rated frequency range (Hz) ....             |  | N/A |
|         | Rated current (mA or A) .....                                  | See copy of marking plate. (No direct connection to mains supply)                                      | N/A |
|         | Manufacturer's name or trade-mark or identification mark ..... | See copy of marking plate.   | P   |
|         | Model identification or type reference .....                   | See copy of marking plate.   | P   |
|         | Symbol for Class II equipment only .....                       | Class III equipment.   | N/A |
|         | Other markings and symbols .....                               | Other markings and symbols do not give rise to misunderstanding.                                       | P   |
| 1.7.2   | Safety instructions and marking                                | See below:   | P   |
| 1.7.2.1 | General  | User's manual is available. See General product information - Markings and Instructions                | P   |
| 1.7.2.2 | Disconnect devices   | No direct connection to the mains supply.  | N/A |
| 1.7.2.3 | Overcurrent protective device                                  | The equipment is Class III equipment.  | N/A |

| IEC/EN 60950-1 |  |   |         |
|----------------|--|---|---------|
| Clause         | Requirement + Test   | Result - Remark   | Verdict |
| 1.7.2.4        | IT power distribution systems  | The equipment is not directly connected to the AC mains supply. | N/A     |
| 1.7.2.5        | Operator access with a tool  |   | N/A     |
| 1.7.2.6        | Ozone  | The equipment does not produce ozone.                           | N/A     |
| 1.7.3          | Short duty cycles  | The equipment is designed for continuous operation.             | N/A     |
| 1.7.4          | Supply voltage adjustment .....  | No voltage/frequency setting.                                   | N/A     |
|                | Methods and means of adjustment; reference to installation instructions .....        | See above.  | N/A     |
| 1.7.5          | Power outlets on the equipment .....   | No standard power outlets provided.                             | N/A     |
| 1.7.6          | Fuse identification (marking, special fusing characteristics, cross-reference) ..... |   | N/A     |
| 1.7.7          | Wiring terminals   |   | N/A     |
| 1.7.7.1        | Protective earthing and bonding terminals .....                                      |   | N/A     |
| 1.7.7.2        | Terminals for a.c. mains supply conductors   |   | N/A     |
| 1.7.7.3        | Terminals for d.c. mains supply conductors   |   | N/A     |
| 1.7.8          | Controls and indicators  | No safety relevant controls and indicators.                     | P       |
| 1.7.8.1        | Identification, location and marking .....   | The function of indicators and controls is clearly identified.  | P       |
| 1.7.8.2        | Colours .....  | Colors are used and safety is not involved.                     | N/A     |
| 1.7.8.3        | Symbols according to IEC 60417 .....   | See General product information - Markings and Instructions.    | P       |
| 1.7.8.4        | Markings using figures .....   | No figures used.  | N/A     |
| 1.7.9          | Isolation of multiple power sources .....  | No direct connection to mains supply                            | N/A     |
| 1.7.10         | Thermostats and other regulating devices .....                                       | Neither thermostats nor other regulating devices provided.      | N/A     |
| 1.7.11         | Durability   | Compliance. Marking is durable and legible.                     | P       |
| 1.7.12         | Removable parts  | The required marking is not placed on removable parts.          | P       |
| 1.7.13         | Replaceable batteries .....  | See General product information - Markings and Instructions     | P       |

| IEC/EN 60950-1 |   |                 |         |
|----------------|---|-----------------|---------|
| Clause         | Requirement + Test                              | Result - Remark | Verdict |
|                | Language(s) .....                               | Same as above.  | —       |
| 1.7.14         | Equipment for restricted access locations ..... |                 | N/A     |

|         |   |   |     |
|---------|---|---|-----|
| 2       | PROTECTION FROM HAZARDS   |   | P   |
| 2.1     | Protection from electric shock and energy hazards                                     |   | P   |
| 2.1.1   | Protection in operator access areas   | Unless otherwise indicated in 2.1.1.1, all parts are safe to access by operator.  | P   |
| 2.1.1.1 | Access to energized parts   | The equipment is supplied from an approved power adaptor that provides only SELV circuit and energy level is below 240VA. | N/A |
|         | Test by inspection .....  |   | N/A |
|         | Test with test finger (Figure 2A) .....   |   | N/A |
|         | Test with test pin (Figure 2B) .....  |   | N/A |
|         | Test with test probe (Figure 2C) .....  |   | N/A |
| 2.1.1.2 | Battery compartments  | No TNV circuits.  | 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  |   | N/A |
| 2.1.1.5 | Energy hazards .....  | No energy hazards in operator access area.  | P   |
| 2.1.1.6 | Manual controls   |   | N/A |
| 2.1.1.7 | Discharge of capacitors in equipment  |   | 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 d.c. mains supply .....                          |   | N/A |
| 2.1.1.9 | Audio amplifiers .....  | No audio amplifiers provided.   | N/A |
| 2.1.2   | Protection in service access areas  |   | N/A |
| 2.1.3   | Protection in restricted access locations   |   | N/A |

|     |               |  |   |
|-----|---------------|--|---|
| 2.2 | SELV circuits |  | P |
|-----|---------------|--|---|

| IEC/EN 60950-1 |   |   |         |
|----------------|---|---|---------|
| Clause         | Requirement + Test                                  | Result - Remark   | Verdict |
| 2.2.1          | General requirements                                | See below.  | P       |
| 2.2.2          | Voltages under normal conditions (V) .....          | Equipment is supplied from SELV circuit and no generation of hazardous voltage is possible under normal operating conditions. | P       |
| 2.2.3          | Voltages under fault conditions (V) .....           | No generation of hazardous voltage is possible under fault conditions.  | P       |
| 2.2.4          | Connection of SELV circuits to other circuits ..... | Complied with subclauses 2.2.2 and 2.2.3.<br>SELV circuits are only connected to other SELV circuits.                         | P       |

|         |  |  |     |
|---------|--|--|-----|
| 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 µF)..... |  | —   |

| IEC/EN 60950-1 |  |                 |         |
|----------------|--|-----------------|---------|
| Clause         | Requirement + Test                                       | Result - Remark | Verdict |
| 2.4.3          | Connection of limited current circuits to other circuits |                 | N/A     |

|     |  |   |     |
|-----|--|---|-----|
| 2.5 | Limited power sources  |   | P   |
|     | a) Inherently limited output   |   | N/A |
|     | b) Impedance limited output  | Certified sources of PTC device used for USB ports: Complied with table 2B. | P   |
|     | c) Regulating network limited output under normal operating and single fault condition | See appended table 2.5 in Measurement Section.                              | P   |
|     | d) Overcurrent protective device limited output  |   | N/A |
|     | Max. output voltage (V), max. output current (A), max. apparent power (VA).....:       | See appended table 2.5 in Measurement Section.                              | —   |
|     | Current rating of overcurrent protective device (A)                                    |   | —   |

|         |  |  |     |
|---------|--|--|-----|
| 2.6     | Provisions for earthing and bonding  |  | N/A |
| 2.6.1   | Protective earthing  |  | N/A |
| 2.6.2   | Functional earthing  |  | N/A |
| 2.6.3   | Protective earthing and protective bonding conductors  |  | N/A |
| 2.6.3.1 | General  |  | N/A |
| 2.6.3.2 | Size of protective earthing conductors   |  | N/A |
|         | Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....  |  | —   |
| 2.6.3.3 | Size of protective bonding conductors  |  | N/A |
|         | Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....  |  | —   |
|         | Protective current rating (A), cross-sectional area (mm <sup>2</sup> ), AWG .....  |  | —   |
| 2.6.3.4 | Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min) ..... |  | N/A |
| 2.6.3.5 | Colour of insulation.....:   |  | N/A |
| 2.6.4   | Terminals  |  | N/A |
| 2.6.4.1 | General  |  | N/A |
| 2.6.4.2 | Protective earthing and bonding terminals  |  | N/A |

| IEC/EN 60950-1 |  |                 |         |
|----------------|--|-----------------|---------|
| Clause         | Requirement + Test   | Result - Remark | Verdict |
|                | Rated current (A), type, nominal thread diameter (mm) .....                        |                 | —       |
| 2.6.4.3        | Separation of the protective earthing conductor from protective bonding conductors |                 | N/A     |
| 2.6.5          | Integrity of protective earthing   |                 | N/A     |
| 2.6.5.1        | Interconnection of equipment   |                 | N/A     |
| 2.6.5.2        | Components in protective earthing conductors and protective bonding conductors     |                 | N/A     |
| 2.6.5.3        | Disconnection of protective earth  |                 | N/A     |
| 2.6.5.4        | Parts that can be removed by an operator   |                 | N/A     |
| 2.6.5.5        | Parts removed during servicing   |                 | N/A     |
| 2.6.5.6        | Corrosion resistance   |                 | N/A     |
| 2.6.5.7        | Screws for protective bonding  |                 | N/A     |
| 2.6.5.8        | Reliance on telecommunication network or cable distribution system                 |                 | N/A     |

|       |  |  |     |
|-------|--|--|-----|
| 2.7   | Overcurrent and earth fault protection in primary circuits   |  | N/A |
| 2.7.1 | Basic requirements   |  | N/A |
|       | Instructions when protection relies on building installation |  | N/A |
| 2.7.2 | Faults not simulated in 5.3.7                                |  | N/A |
| 2.7.3 | Short-circuit backup protection                              |  | N/A |
| 2.7.4 | Number and location of protective devices .....              |  | N/A |
| 2.7.5 | Protection by several devices                                |  | N/A |
| 2.7.6 | Warning to service personnel .....                           |  | N/A |

|         |                          |  |     |
|---------|--------------------------|--|-----|
| 2.8     | Safety interlocks        |  | N/A |
| 2.8.1   | General principles       |  | N/A |
| 2.8.2   | Protection requirements  |  | N/A |
| 2.8.3   | Inadvertent reactivation |  | N/A |
| 2.8.4   | Fail-safe operation      |  | N/A |
| 2.8.5   | Moving parts             |  | N/A |
| 2.8.6   | Overriding               |  | N/A |
| 2.8.7   | Switches and relays      |  | N/A |
| 2.8.7.1 | Contact gaps (mm) .....  |  | N/A |

| IEC/EN 60950-1 |                        |                 |         |
|----------------|------------------------|-----------------|---------|
| Clause         | Requirement + Test     | Result - Remark | Verdict |
| 2.8.7.2        | Overload test          |                 | N/A     |
| 2.8.7.3        | Endurance test         |                 | N/A     |
| 2.8.7.4        | Electric strength test |                 | N/A     |
| 2.8.8          | Mechanical actuators   |                 | N/A     |

|       |   |   |     |
|-------|---|---|-----|
| 2.9   | Electrical insulation                         |   | P   |
| 2.9.1 | Properties of insulating materials            | Natural rubber, asbestos or hygroscopic material is not used. | P   |
| 2.9.2 | Humidity conditioning                         |   | N/A |
|       | Relative humidity (%), temperature (°C) ..... |   | —   |
| 2.9.3 | Grade of insulation                           | Functional insulation.  | P   |
| 2.9.4 | Separation from hazardous voltages            |   | N/A |
|       | Method(s) used .....                          |   | —   |

|          |   |   |     |
|----------|---|---|-----|
| 2.10     | Clearances, creepage distances and distances through insulation |   | P   |
| 2.10.1   | General   | See below.                                  | P   |
| 2.10.1.1 | Frequency .....   |   | N/A |
| 2.10.1.2 | Pollution degrees .....   | See Test item particulars                   | P   |
| 2.10.1.3 | Reduced values for functional insulation                        | See subclause 5.3.4 for function insulation | P   |
| 2.10.1.4 | Intervening unconnected conductive parts                        |   | N/A |
| 2.10.1.5 | Insulation with varying dimensions                              |   | N/A |
| 2.10.1.6 | Special separation requirements                                 |   | N/A |
| 2.10.1.7 | Insulation in circuits generating starting pulses               |   | N/A |
| 2.10.2   | Determination of working voltage                                |   | N/A |
| 2.10.2.1 | General   |   | N/A |
| 2.10.2.2 | RMS working voltage   |   | N/A |
| 2.10.2.3 | Peak working voltage  |   | N/A |
| 2.10.3   | Clearances  |   | N/A |
| 2.10.3.1 | General   |   | N/A |
| 2.10.3.2 | Mains transient voltages  |   | N/A |
|          | a) AC mains supply .....  |   | N/A |
|          | b) Earthed d.c. mains supplies .....                            |   | N/A |



| IEC/EN 60950-1 |   |                 |         |
|----------------|---|-----------------|---------|
| Clause         | Requirement + Test  | Result - Remark | Verdict |
|                | c) Unearthed d.c. mains supplies .....  |                 | N/A     |
|                | d) Battery operation .....  |                 | N/A     |
| 2.10.3.3       | Clearances in primary circuits  |                 | N/A     |
| 2.10.3.4       | Clearances in secondary circuits  |                 | N/A     |
| 2.10.3.5       | Clearances in circuits having starting pulses                                   |                 | N/A     |
| 2.10.3.6       | Transients from a.c. mains supply .....   |                 | N/A     |
| 2.10.3.7       | Transients from d.c. mains supply .....   |                 | N/A     |
| 2.10.3.8       | Transients from telecommunication networks and cable distribution systems ..... |                 | N/A     |
| 2.10.3.9       | Measurement of transient voltage levels   |                 | N/A     |
|                | a) Transients from a mains supply   |                 | N/A     |
|                | For an a.c. mains supply .....  |                 | N/A     |
|                | For a d.c. mains supply .....   |                 | N/A     |
|                | b) Transients from a telecommunication network ..                               |                 | N/A     |
| 2.10.4         | Creepage distances  |                 | N/A     |
| 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  |                 | —       |

| IEC/EN 60950-1 |   |                 |         |
|----------------|---|-----------------|---------|
| Clause         | Requirement + Test  | Result - Remark | Verdict |
| 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;<br>angle between 45° and 90° ..... |                 | N/A     |
| 2.10.5.13      | Wire with solvent-based enamel in wound components                              |                 | N/A     |
|                | Electric strength test  |                 | —       |
|                | Routine test  |                 | N/A     |
| 2.10.5.14      | Additional insulation in wound components                                       |                 | N/A     |
|                | Working voltage .....   |                 | N/A     |
|                | - Basic insulation not under stress .....                                       |                 | N/A     |
|                | - Supplementary, reinforced insulation .....                                    |                 | N/A     |
| 2.10.6         | Construction of printed boards  |                 | N/A     |
| 2.10.6.1       | Uncoated printed boards   |                 | N/A     |
| 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     |

| IEC/EN 60950-1 |   |                 |         |
|----------------|---|-----------------|---------|
| Clause         | Requirement + Test                                  | Result - Remark | Verdict |
| 2.10.11        | Tests for semiconductor devices and cemented joints |                 | N/A     |
| 2.10.12        | Enclosed and sealed parts                           |                 | N/A     |

|        |  |  |     |
|--------|--|--|-----|
| 3      | WIRING, CONNECTIONS AND SUPPLY                 |  | P   |
| 3.1    | General  |  | P   |
| 3.1.1  | Current rating and overcurrent protection      | The cross-sectional area of the wires is adequate and complied with the relevant requirements.                                 | P   |
| 3.1.2  | Protection against mechanical damage           | The wireways are smooth and free from sharp edges.   | P   |
| 3.1.3  | Securing of internal wiring                    | No excessive strain on wire and on terminal connections, loosening of terminal connections and damage of conductor insulation. | P   |
| 3.1.4  | Insulation of conductors                       |  | N/A |
| 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 | No electrical pressure required.   | N/A |
| 3.1.8  | Self-tapping and spaced thread screws          |  | N/A |
| 3.1.9  | Termination of conductors                      |  | N/A |
|        | 10 N pull test                                 |  | N/A |
| 3.1.10 | Sleeving on wiring                             |  | N/A |

|         |   |  |     |
|---------|---|--|-----|
| 3.2     | Connection to a mains supply                                    |  | N/A |
| 3.2.1   | Means of connection   |  | N/A |
| 3.2.1.1 | Connection to an a.c. mains supply                              |  | N/A |
| 3.2.1.2 | Connection to a d.c. mains supply                               |  | N/A |
| 3.2.2   | Multiple supply connections                                     |  | N/A |
| 3.2.3   | Permanently connected equipment                                 |  | N/A |
|         | Number of conductors, diameter of cable and conduits (mm) ..... |  | —   |
| 3.2.4   | Appliance inlets  |  | N/A |
| 3.2.5   | Power supply cords  |  | N/A |
| 3.2.5.1 | AC power supply cords   |  | N/A |

| IEC/EN 60950-1 |   |                 |         |
|----------------|---|-----------------|---------|
| Clause         | Requirement + Test  | Result - Remark | Verdict |
|                | Type .....  |                 | —       |
|                | Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG ..... |                 | —       |
| 3.2.5.2        | DC power supply cords   |                 | N/A     |
| 3.2.6          | Cord anchorages and strain relief                                     |                 | N/A     |
|                | Mass of equipment (kg), pull (N) .....                                |                 | —       |
|                | Longitudinal displacement (mm) .....                                  |                 | —       |
| 3.2.7          | Protection against mechanical damage                                  |                 | N/A     |
| 3.2.8          | Cord guards   |                 | N/A     |
|                | Diameter or minor dimension D (mm); test mass (g) .....               |                 | —       |
|                | Radius of curvature of cord (mm).....                                 |                 | —       |
| 3.2.9          | Supply wiring space   |                 | N/A     |

|       |  |  |     |
|-------|--|--|-----|
| 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 <sup>2</sup> )..... |  | —   |
| 3.3.5 | Wiring terminal sizes  |  | N/A |
|       | Rated current (A), type, nominal thread diameter (mm) .....                      |  | —   |
| 3.3.6 | Wiring terminal design   |  | N/A |
| 3.3.7 | Grouping of wiring terminals   |  | N/A |
| 3.3.8 | Stranded wire  |  | N/A |

|       |                                     |  |     |
|-------|-------------------------------------|--|-----|
| 3.4   | Disconnection from the mains supply |  | N/A |
| 3.4.1 | General requirement                 |  | N/A |
| 3.4.2 | Disconnect devices                  |  | N/A |
| 3.4.3 | Permanently connected equipment     |  | N/A |
| 3.4.4 | Parts which remain energized        |  | N/A |
| 3.4.5 | Switches in flexible cords          |  | N/A |

| IEC/EN 60950-1 |   |                 |         |
|----------------|---|-----------------|---------|
| Clause         | Requirement + Test                                | Result - Remark | Verdict |
| 3.4.6          | Number of poles - single-phase and d.c. equipment |                 | N/A     |
| 3.4.7          | Number of poles - three-phase equipment           |                 | N/A     |
| 3.4.8          | Switches as disconnect devices                    |                 | N/A     |
| 3.4.9          | Plugs as disconnect devices                       |                 | N/A     |
| 3.4.10         | Interconnected equipment                          |                 | N/A     |
| 3.4.11         | Multiple power sources                            |                 | N/A     |

|       |  |   |     |
|-------|--|---|-----|
| 3.5   | Interconnection of equipment             |   | P   |
| 3.5.1 | General requirements                     | Conformance to 2.2 is continued.  | P   |
| 3.5.2 | Types of interconnection circuits .....  | SELV circuit.   | P   |
| 3.5.3 | ELV circuits as interconnection circuits | No ELV interconnection circuit.   | N/A |
| 3.5.4 | Data ports for additional equipment      | The SELV circuit of data ports is supplied by a limited power source that complies with subclause 2.5.<br>Result see appended table 2.5 in Measurement Section. | P   |

|     |                       |                                   |     |
|-----|-----------------------|-----------------------------------|-----|
| 4   | PHYSICAL REQUIREMENTS |                                   | P   |
| 4.1 | Stability             |                                   | N/A |
|     | Angle of 10°          | The equipment mass less than 7kg. | N/A |
|     | Test force (N) .....  |                                   | N/A |

|       |                          |  |     |
|-------|--------------------------|--|-----|
| 4.2   | Mechanical strength      |  | P   |
| 4.2.1 | General                  | After following tests, the equipment continues to comply with 2.1.1, 2.10 and 4.4.1. | P   |
| 4.2.2 | Steady force test, 10 N  | Compliance.  | P   |
| 4.2.3 | Steady force test, 30 N  |  | N/A |
| 4.2.4 | Steady force test, 250 N | Compliance.  | P   |
| 4.2.5 | Impact test              | Compliance.  | P   |
|       | Fall test                | Compliance.  | P   |
|       | Swing test               | Compliance.  | P   |

| IEC/EN 60950-1 |  |                 |         |
|----------------|--|-----------------|---------|
| Clause         | Requirement + Test                                 | Result - Remark | Verdict |
| 4.2.6          | Drop test; height (mm) .....                       |                 | N/A     |
| 4.2.7          | Stress relief test                                 |                 | N/A     |
| 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     |

|       |  |   |     |
|-------|--|---|-----|
| 4.3   | Design and construction                                |   | P   |
| 4.3.1 | Edges and corners                                      | All edges or corners accessible to operator are rounded and smoothed.   | P   |
| 4.3.2 | Handles and manual controls; force (N).....            | No handles or controls provided.  | 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.   | P   |
| 4.3.5 | Connection by plugs and sockets                        | Mismatch of connectors were prevented by incompatible form or location.   | P   |
| 4.3.6 | Direct plug-in equipment                               |   | N/A |
|       | Torque .....   |   | —   |
|       | Compliance with the relevant mains plug standard ..... |   | N/A |
| 4.3.7 | Heating elements in earthed equipment                  |   | N/A |
| 4.3.8 | Batteries  | For the approved non-rechargeable lithium type RTC battery: <ul style="list-style-type: none"> <li>Discharging circuit and rate are within its rating</li> <li>Reversed charging are prevented by socket connector design</li> <li>The leakage of the electrolyte from the battery is unlikely.</li> </ul> No hazard as a result after following tests. | P   |
|       | - Overcharging of a rechargeable battery               |   | N/A |

| IEC/EN 60950-1 |   |   |         |
|----------------|---|---|---------|
| Clause         | Requirement + Test  | Result - Remark   | Verdict |
|                | - Unintentional charging of a non-rechargeable battery                  | See appended table 4.3.8 and 5.3.   | P       |
|                | - Reverse charging of a rechargeable battery                            |   | N/A     |
|                | - 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   | See below.  | P       |
| 4.3.13.1       | General   | See below.  | P       |
| 4.3.13.2       | Ionizing radiation  | No ionizing radiation.  | N/A     |
|                | Measured radiation (pA/kg) .....  |   | —       |
|                | Measured high-voltage (kV) .....  |   | —       |
|                | Measured focus voltage (kV) .....                                       |   | —       |
|                | CRT markings .....  |   | —       |
| 4.3.13.3       | Effect of ultraviolet (UV) radiation on materials                       | No ultraviolet (UV) radiation.  | 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       | Laser (including LEDs)  | Diffusive type LEDs are used as indicating lights which are considered complied without tests.<br><br>For optical disk drive (O.D.D) which was approved component and evaluated according to relevant standard for laser product. | P       |
|                | Laser class .....   |   | —       |
| 4.3.13.6       | Other types .....   | No other radiations.  | N/A     |
| 4.4            | Protection against hazardous moving parts                               |   | P       |

| IEC/EN 60950-1 |   |  |         |
|----------------|---|--|---------|
| Clause         | Requirement + Test                              | Result - Remark  | Verdict |
| 4.4.1          | General   | The hazardous moving part (DC fan) has been adequately guarded by a metal enclosure.<br>Other motors used in the appliance are certified hard disk drive (H.D.D) and optical disk drive (O.D.D) and no accessible to the user. | P       |
| 4.4.2          | Protection in operator access areas .....       | See above.   | P       |
| 4.4.3          | Protection in restricted access locations ..... |  | N/A     |
| 4.4.4          | Protection in service access areas              |  | N/A     |

|       |   |                           |     |
|-------|---|---------------------------|-----|
| 4.5   | Thermal requirements                    |                           | P   |
| 4.5.1 | General                                 | No exceeding temperature. | P   |
| 4.5.2 | Temperature tests                       | (see appended table 4.5)  | P   |
|       | Normal load condition per Annex L ..... | (see Annex L)             | —   |
| 4.5.3 | Temperature limits for materials        | (see appended table 4.5)  | P   |
| 4.5.4 | Touch temperature limits                | (see appended table 4.5)  | P   |
| 4.5.5 | Resistance to abnormal heat .....       |                           | N/A |

|         |   |  |     |
|---------|---|--|-----|
| 4.6     | Openings in enclosures                            |  | P   |
| 4.6.1   | Top and side openings                             | Considered.  | P   |
|         | Dimensions (mm) .....                             | Result see appended table 4.6.1, 4.6.2 in Measurement Section. | —   |
| 4.6.2   | Bottoms of fire enclosures                        | Considered.  | P   |
|         | Construction of the bottom, dimensions (mm) ..... | Result see appended table 4.6.1, 4.6.2 in Measurement Section. | —   |
| 4.6.3   | Doors or covers in fire enclosures                | No such doors or covers.                                       | 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) ..... |  | —   |



| IEC/EN 60950-1 |  |   |         |
|----------------|--|---|---------|
| Clause         | Requirement + Test   | Result - Remark   | Verdict |
| 4.7            | Resistance to fire   |   | P       |
| 4.7.1          | Reducing the risk of ignition and spread of flame                      | Used of method 1.   | P       |
|                | Method 1, selection and application of components wiring and materials | Use of components and materials with the required flammability classes.<br>See appended table 4.7.  | P       |
|                | Method 2, application of all of simulated fault condition tests        | Method 2 is used for the components in the current circuit of stand-by switch.<br>See also General product information - Engineering Considerations and appended table 5.3 for details  | P       |
| 4.7.2          | Conditions for a fire enclosure  | See below.  | P       |
| 4.7.2.1        | Parts requiring a fire enclosure                                       | The fire enclosure is required for the following parts inside of the metal enclosure: <ul style="list-style-type: none"> <li>• Components in secondary not supplied by LPS.</li> <li>• Insulated wiring</li> </ul>  | P       |
| 4.7.2.2        | Parts not requiring a fire enclosure                                   | The fire enclosure is not required for the following parts outside the metal enclosure: <ul style="list-style-type: none"> <li>• The components in comply with the method 2 in 4.7.1.</li> <li>• Connectors in secondary circuits supplied by limited power source and</li> <li>• Components are mounted on PCB material of flammability rating V-1 or batter.</li> <li>• Wiring and cables insulated with PVC, TFE, PTFE, EPT, polychoroprene or polyimide.</li> </ul> See also General product information - Engineering Considerations for details | P       |
| 4.7.3          | Materials  |   | P       |
| 4.7.3.1        | General  | See appended table 1.5.1 for the enclosure and PCB material of flammability class.  | P       |

| IEC/EN 60950-1 |  |  |         |
|----------------|--|--|---------|
| Clause         | Requirement + Test   | Result - Remark  | Verdict |
| 4.7.3.2        | Materials for fire enclosures                                    | No fire enclosure required.  | P       |
| 4.7.3.3        | Materials for components and other parts outside fire enclosures | Other parts (front bezel of the equipment, stand base) outside fire enclosures are rated HB or better. | P       |
| 4.7.3.4        | Materials for components and other parts inside fire enclosures  | Internal components except small parts are flammability class V-2, HF-2 or better.                     | P       |
| 4.7.3.5        | Materials for air filter assemblies                              |  | N/A     |
| 4.7.3.6        | Materials used in high-voltage components                        |  | N/A     |

|         |   |  |     |
|---------|---|--|-----|
| 5       | ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS   |  | P   |
| 5.1     | Touch current and protective conductor current  |  | P   |
| 5.1.1   | General   | Equipment with approved SPS power adapter used | P   |
| 5.1.2   | Configuration of equipment under test (EUT)   |  | N/A |
| 5.1.2.1 | Single connection to an a.c. mains supply   |  | N/A |
| 5.1.2.2 | Redundant multiple connections to an a.c. mains supply  |  | N/A |
| 5.1.2.3 | Simultaneous multiple connections to an a.c. mains supply   |  | N/A |
| 5.1.3   | Test circuit  |  | N/A |
| 5.1.4   | Application of measuring instrument   |  | N/A |
| 5.1.5   | Test procedure  |  | N/A |
| 5.1.6   | Test measurements   |  | N/A |
|         | Supply voltage (V) .....  |  | —   |
|         | Measured touch current (mA) .....   |  | —   |
|         | Max. allowed touch current (mA) .....   |  | —   |
|         | Measured protective conductor current (mA) .....  |  | —   |
|         | Max. allowed protective conductor current (mA).....   |  | —   |
| 5.1.7   | Equipment with touch current exceeding 3,5 mA   |  | N/A |
| 5.1.7.1 | General .....   |  | N/A |
| 5.1.7.2 | Simultaneous multiple connections to the supply   |  | N/A |
| 5.1.8   | Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks |  | N/A |

| IEC/EN 60950-1 |  |                 |         |
|----------------|--|-----------------|---------|
| Clause         | Requirement + Test   | Result - Remark | Verdict |
| 5.1.8.1        | Limitation of the touch current to a telecommunication network or to a cable distribution system |                 | N/A     |
|                | Supply voltage (V) .....   |                 | —       |
|                | Measured touch current (mA) .....  |                 | —       |
|                | Max. allowed touch current (mA) .....  |                 | —       |
| 5.1.8.2        | Summation of touch currents from telecommunication networks                                      |                 | N/A     |
|                | a) EUT with earthed telecommunication ports .....  |                 | N/A     |
|                | b) EUT whose telecommunication ports have no reference to protective earth                       |                 | N/A     |

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

|       |  |  |     |
|-------|--|--|-----|
| 5.3   | Abnormal operating and fault conditions            |  | P   |
| 5.3.1 | Protection against overload and abnormal operation | See appended table 5.3.  | P   |
| 5.3.2 | Motors   | Motors used in the equipment are approved components (DC fan, H.D.D and O.D.D). See also appended table 1.5.1 for detail.  | N/A |
| 5.3.3 | Transformers                                       |  | N/A |
| 5.3.4 | Functional insulation .....                        | Functional insulation considered in compliance with the requirements of c), due to: <ul style="list-style-type: none"> <li>All components are mounted on PCB with flammability class V-1 min.</li> <li>No risk of electrical shock therefore, no test has been performed.</li> </ul> | P   |
| 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.  | P   |
| 5.3.8 | Unattended equipment                               |  | N/A |

| IEC/EN 60950-1 |   |  |         |
|----------------|---|--|---------|
| Clause         | Requirement + Test  | Result - Remark  | Verdict |
| 5.3.9          | Compliance criteria for abnormal operating and fault conditions | See below.   | P       |
| 5.3.9.1        | During the tests  | <ul style="list-style-type: none"> <li>No fire propagated beyond the equipment</li> <li>No molten metal emitted</li> <li>No deformation of enclosure.</li> </ul> | P       |
| 5.3.9.2        | After the tests   |  | N/A     |

|         |   |  |     |
|---------|---|--|-----|
| 6       | CONNECTION TO TELECOMMUNICATION NETWORKS  |  | N/A |
| 6.1     | Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment |  | N/A |
| 6.1.1   | Protection from hazardous voltages  |  | N/A |
| 6.1.2   | Separation of the telecommunication network from earth  |  | N/A |
| 6.1.2.1 | Requirements  |  | N/A |
|         | Supply voltage (V) .....  |  | —   |
|         | Current in the test circuit (mA) .....  |  | —   |
| 6.1.2.2 | Exclusions .....  |  | N/A |

|         |   |  |     |
|---------|---|--|-----|
| 6.2     | Protection of equipment users from overvoltages on telecommunication networks |  | N/A |
| 6.2.1   | Separation requirements   |  | N/A |
| 6.2.2   | Electric strength test procedure  |  | N/A |
| 6.2.2.1 | Impulse test  |  | N/A |
| 6.2.2.2 | Steady-state test   |  | N/A |
| 6.2.2.3 | Compliance criteria   |  | N/A |
| 6.3     | Protection of the telecommunication wiring system from overheating            |  | N/A |
|         | Max. output current (A) .....   |  | —   |
|         | Current limiting method .....   |  | —   |

|     |   |  |     |
|-----|---|--|-----|
| 7   | CONNECTION TO CABLE DISTRIBUTION SYSTEMS  |  | N/A |
| 7.1 | General   |  | N/A |
| 7.2 | Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment |  | N/A |

| IEC/EN 60950-1 |  |                 |         |
|----------------|--|-----------------|---------|
| Clause         | Requirement + Test   | Result - Remark | Verdict |
| 7.3            | Protection of equipment users from overvoltages on the cable distribution system |                 | N/A     |
| 7.4            | Insulation between primary circuits and cable distribution systems               |                 | N/A     |
| 7.4.1          | General  |                 | N/A     |
| 7.4.2          | Voltage surge test   |                 | N/A     |
| 7.4.3          | Impulse test   |                 | N/A     |

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

| IEC/EN 60950-1 |  |                 |         |
|----------------|--|-----------------|---------|
| Clause         | Requirement + Test                                   | Result - Remark | Verdict |
|                | Sample 2 burning time (s) .....                      |                 | —       |
|                | Sample 3 burning time (s) .....                      |                 | —       |
| A.2.7          | Alternative test acc. to IEC 60695-11-5, cl. 5 and 9 |                 | N/A     |
|                | Sample 1 burning time (s) .....                      |                 | —       |
|                | Sample 2 burning time (s) .....                      |                 | —       |
|                | Sample 3 burning time (s) .....                      |                 | —       |
| A.3            | Hot flaming oil test (see 4.6.2)                     |                 | N/A     |
| A.3.1          | Mounting of samples                                  |                 | N/A     |
| A.3.2          | Test procedure                                       |                 | N/A     |
| A.3.3          | Compliance criterion                                 |                 | N/A     |

|       |  |                       |     |
|-------|--|-----------------------|-----|
| B     | ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2) |                       | N/A |
| B.1   | General requirements   | 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 |

| IEC/EN 60950-1 |  |                 |         |
|----------------|--|-----------------|---------|
| Clause         | Requirement + Test                             | Result - Remark | Verdict |
| B.7.3          | Alternative test procedure                     |                 | N/A     |
| B.7.4          | Electric strength test; test voltage (V) ..... |                 | N/A     |
| B.8            | Test for motors with capacitors                |                 | N/A     |
| B.9            | Test for three-phase motors                    |                 | N/A     |
| B.10           | Test for series motors                         |                 | N/A     |
|                | Operating voltage (V) .....                    |                 | —       |

|     |   |  |     |
|-----|---|--|-----|
| C   | ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)   |  | N/A |
|     | Position .....                                |  | —   |
|     | Manufacturer .....                            |  | —   |
|     | Type .....                                    |  | —   |
|     | Rated values .....                            |  | —   |
|     | Method of protection .....                    |  | —   |
| C.1 | Overload test                                 |  | N/A |
| C.2 | Insulation                                    |  | N/A |
|     | Protection from displacement of windings..... |  | N/A |

|     |  |  |     |
|-----|--|--|-----|
| D   | ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4) |  | N/A |
| D.1 | Measuring instrument   |  | N/A |
| D.2 | Alternative measuring instrument                                   |  | N/A |

|   |   |  |     |
|---|---|--|-----|
| E | ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13) |  | N/A |
|---|---|--|-----|

|   |  |  |     |
|---|--|--|-----|
| F | ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G) |  | N/A |
|---|--|--|-----|

|       |  |  |     |
|-------|--|--|-----|
| G     | ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES |  | N/A |
| G.1   | Clearances   |  | N/A |
| 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 |

| IEC/EN 60950-1 |   |                 |         |
|----------------|---|-----------------|---------|
| Clause         | Requirement + Test  | Result - Remark | Verdict |
| G.2.1          | AC mains supply .....   |                 | N/A     |
| G.2.2          | Earthed d.c. mains supplies .....   |                 | N/A     |
| G.2.3          | Unearthed d.c. mains supplies .....   |                 | N/A     |
| G.2.4          | Battery operation .....   |                 | N/A     |
| G.3            | Determination of telecommunication network transient voltage (V) .....                                  |                 | N/A     |
| G.4            | Determination of required withstand voltage (V)   |                 | N/A     |
| G.4.1          | Mains transients and internal repetitive peaks .....  |                 | N/A     |
| G.4.2          | Transients from telecommunication networks .....  |                 | N/A     |
| G.4.3          | Combination of transients   |                 | N/A     |
| G.4.4          | Transients from cable distribution systems  |                 | N/A     |
| G.5            | Measurement of transient voltages (V)   |                 | N/A     |
|                | a) Transients from a mains supply   |                 | N/A     |
|                | For an a.c. mains supply  |                 | N/A     |
|                | For a d.c. mains supply   |                 | N/A     |
|                | b) Transients from a telecommunication network  |                 | N/A     |
| G.6            | Determination of minimum clearances .....   |                 | N/A     |
| H              | ANNEX H, IONIZING RADIATION (see 4.3.13)  |                 | N/A     |
| J              | ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)  |                 | N/A     |
|                | Metal(s) used .....   |                 | —       |
| K              | ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)   |                 | N/A     |
| K.1            | Making and breaking capacity  |                 | N/A     |
| K.2            | Thermostat reliability; operating voltage (V) .....   |                 | N/A     |
| K.3            | Thermostat endurance test; operating voltage (V) :  |                 | N/A     |
| K.4            | Temperature limiter endurance; operating voltage (V) .....  |                 | N/A     |
| K.5            | Thermal cut-out reliability   |                 | N/A     |
| K.6            | Stability of operation  |                 | N/A     |
| L              | ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2) |                 | P       |



| IEC/EN 60950-1 |                                    |   |         |
|----------------|------------------------------------|---|---------|
| Clause         | Requirement + Test                 | Result - Remark   | Verdict |
| 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           | The equipment is operated according to the most unfavorable way of operation given in the operating instructions. | P       |

|         |   |  |     |
|---------|---|--|-----|
| M       | ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)     |  | N/A |
| M.1     | Introduction  |  | N/A |
| M.2     | Method A  |  | N/A |
| M.3     | Method B  |  | N/A |
| M.3.1   | Ringling signal   |  | N/A |
| M.3.1.1 | Frequency (Hz) .....  |  | —   |
| M.3.1.2 | Voltage (V) .....   |  | —   |
| M.3.1.3 | Cadence; time (s), voltage (V) .....                            |  | —   |
| M.3.1.4 | Single fault current (mA) .....                                 |  | —   |
| M.3.2   | Tripping device and monitoring voltage .....                    |  | N/A |
| M.3.2.1 | Conditions for use of a tripping device or a monitoring voltage |  | N/A |
| M.3.2.2 | Tripping device   |  | N/A |
| M.3.2.3 | Monitoring voltage (V) .....                                    |  | N/A |

|     |   |  |     |
|-----|---|--|-----|
| N   | ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5) |  | N/A |
| N.1 | ITU-T impulse test generators   |  | N/A |
| N.2 | IEC 60065 impulse test generator  |  | N/A |

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

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

| IEC/EN 60950-1 |  |                 |         |
|----------------|--|-----------------|---------|
| Clause         | Requirement + Test   | Result - Remark | Verdict |
|                | a) Preferred climatic categories .....   |                 | N/A     |
|                | b) Maximum continuous voltage .....  |                 | N/A     |
|                | c) Pulse current .....   |                 | 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     |
| V.3            | TT power distribution systems  |                 | N/A     |
| V.4            | IT power distribution systems  |                 | N/A     |
| W              | ANNEX W, SUMMATION OF TOUCH CURRENTS   |                 | N/A     |
| W.1            | Touch current from electronic circuits   |                 | N/A     |
| W.1.1          | Floating circuits  |                 | N/A     |
| W.1.2          | Earthed circuits   |                 | N/A     |
| W.2            | Interconnection of several equipments  |                 | N/A     |

| IEC/EN 60950-1 |   |                 |         |
|----------------|---|-----------------|---------|
| Clause         | Requirement + Test  | Result - Remark | Verdict |
| 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)         |                 | N/A     |
| AA             | ANNEX AA, MANDREL TEST (see 2.10.5.8)                                 |                 | N/A     |
| BB             | ANNEX BB, CHANGES IN THE SECOND EDITION                               |                 | —       |

| IEC/EN 60950-1                                 |   |                 |         |
|--|---|-----------------|---------|
| Clause   | Requirement + Test  | Result - Remark | Verdict |
| EN 60950-1:2006 – CENELEC COMMON MODIFICATIONS |   |                 |         |
| Contents                                       | Add the following annexes:<br>Annex ZA (normative) Normative references to international publications with their corresponding European publications<br>Annex ZB (normative) Special national conditions<br>Annex ZC (informative) A-deviations   |                 | P       |
| General  | Delete all the "country" notes in the reference document according to the following list:<br>1.4.8 Note 2                      1.5.1 Note 2 & 3                      1.5.7.1 Note<br>1.5.8 Note 2                      1.5.9.4 Note                      1.7.2.1 Note 4, 5 & 6<br>2.2.3 Note                      2.2.4 Note                      2.3.2 Note<br>2.3.2.1 Note 2                      2.3.4 Note 2                      2.6.3.3 Note 2 & 3<br>2.7.1 Note                      2.10.3.2 Note 2                      2.10.5.13 Note 3<br>3.2.1.1 Note                      3.2.4 Note 3.                      2.5.1 Note 2<br>4.3.6 Note 1 & 2                      4.7 Note 4                      4.7.2.2 Note<br>4.7.3.1 Note 2                      5.1.7.1 Note 3 & 4                      5.3.7 Note 1<br>6 Note 2 & 5                      6.1.2.1 Note 2                      6.1.2.2 Note<br>6.2.2 Note 6.                      2.2.1 Note 2                      6.2.2.2 Note<br>7.1 Note 3                      7.2 Note                      7.3 Note 1 & 2<br>G.2.1 Note 2                      Annex H Note 2 |                 | P       |
| 1.3.Z1   | Add the following subclause:<br>1.3.Z1 Exposure to excessive sound pressure<br>The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones.<br>NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment:<br>Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.   |                 | N/A     |
| 1.5.1  | Add the following NOTE:<br>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC   |                 | N/A     |
| 1.7.2.1  | Add the following NOTE:<br>NOTE Z1 In addition, the instructions shall include, as far as applicable, a warning that excessive sound pressure from earphones and headphones can cause hearing loss  |                 | N/A     |

| IEC/EN 60950-1                 |  |                                |            |                    |  |                               |                      |     |  |                                |                     |     |  |  |     |
|--------------------------------|--|--------------------------------|------------|--------------------|--|-------------------------------|----------------------|-----|--|--------------------------------|---------------------|-----|--|--|-----|
| Clause                         | Requirement + Test   | Result - Remark                | Verdict    |                    |  |                               |                      |     |  |                                |                     |     |  |  |     |
| 2.7.1                          | <p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p> <p>c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p> |                                | N/A        |                    |  |                               |                      |     |  |                                |                     |     |  |  |     |
| 2.7.2                          | This subclause has been declared 'void'.   |                                | N/A        |                    |  |                               |                      |     |  |                                |                     |     |  |  |     |
| 3.2.3                          | Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.   |                                | N/A        |                    |  |                               |                      |     |  |                                |                     |     |  |  |     |
| 3.2.5.1                        | <p>Replace "60245 IEC 53" by "H05 RR-F";</p> <p>"60227 IEC 52" by "H03 VV-F or H03 VVH2-F";</p> <p>"60227 IEC 53" by "H05 VV-F or H05 VVH2-F2".</p> <p>In Table 3B, replace the first four lines by the following:</p> <table border="1" data-bbox="383 1299 1260 1411"> <tr> <td>  Up to and including 6</td> <td> </td> <td>0,75<sup>a)</sup></td> <td> </td> </tr> <tr> <td>  Over 6 up to and including 10</td> <td>  (0,75)<sup>b)</sup></td> <td>1,0</td> <td> </td> </tr> <tr> <td>  Over 10 up to and including 16</td> <td>  (1,0)<sup>c)</sup></td> <td>1,5</td> <td> </td> </tr> </table> <p>In the conditions applicable to Table 3B delete the words "in some countries" in condition<sup>a)</sup>.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>   | Up to and including 6          |            | 0,75 <sup>a)</sup> |  | Over 6 up to and including 10 | (0,75) <sup>b)</sup> | 1,0 |  | Over 10 up to and including 16 | (1,0) <sup>c)</sup> | 1,5 |  |  | N/A |
| Up to and including 6          |  | 0,75 <sup>a)</sup>             |            |                    |  |                               |                      |     |  |                                |                     |     |  |  |     |
| Over 6 up to and including 10  | (0,75) <sup>b)</sup>   | 1,0                            |            |                    |  |                               |                      |     |  |                                |                     |     |  |  |     |
| Over 10 up to and including 16 | (1,0) <sup>c)</sup>  | 1,5                            |            |                    |  |                               |                      |     |  |                                |                     |     |  |  |     |
| 3.3.4                          | <p>In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following:</p> <table border="1" data-bbox="383 1568 1356 1635"> <tr> <td>  Over 10 up to and including 16</td> <td>  1,5 to 2,5</td> <td>  1,5 to 4</td> <td> </td> </tr> </table> <p>Delete the fifth line: conductor sizes for 13 to 16 A.</p>   | Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4           |  |                               | N/A                  |     |  |                                |                     |     |  |  |     |
| Over 10 up to and including 16 | 1,5 to 2,5   | 1,5 to 4                       |            |                    |  |                               |                      |     |  |                                |                     |     |  |  |     |
| 4.3.13.6                       | <p>Add the following NOTE:</p> <p>NOTE Z1 Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.</p>  |                                | N/A        |                    |  |                               |                      |     |  |                                |                     |     |  |  |     |

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

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



|         |  |  |     |
|---------|--|--|-----|
| ZB      | SPECIAL NATIONAL CONDITIONS  |  | P   |
| 1.2.4.1 | In <b>Denmark</b> , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.   |  | N/A |
| 1.5.7.1 | In <b>Finland, Norway</b> and <b>Sweden</b> , resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.2.  |  | N/A |
| 1.5.8   | In <b>Norway</b> , 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 | In <b>Finland, Norway</b> and <b>Sweden</b> , 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 | <p>In <b>Finland, Norway</b> and <b>Sweden</b>, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:<br/>In Finland: "Laitte on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan"<br/>In Norway: "Apparatet må tilkoples jordet stikkontakt"<br/>In Sweden: "Apparaten skall anslutas till jordat uttag"</p> |  | N/A |
| 1.7.5   | In <b>Denmark</b> , 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 |
| 2.2.4   | In <b>Norway</b> , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.  |  | N/A |
| 2.3.2   | In <b>Finland, Norway</b> and <b>Sweden</b> there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.   |  | N/A |
| 2.3.4   | In <b>Norway</b> , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.  |  | N/A |

| IEC/EN 60950-1 |  |                 |         |
|----------------|--|-----------------|---------|
| Clause         | Requirement + Test   | Result - Remark | Verdict |
| 2.6.3.3        | In the <b>United Kingdom</b> , the current rating of the circuit shall be taken as 13 A, not 16 A.   |                 | N/A     |
| 2.7.1          | In the <b>United Kingdom</b> , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.  |                 | N/A     |
| 2.10.5.13      | In <b>Finland, Norway and Sweden</b> , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.  |                 | N/A     |
| 3.2.1.1        | In <b>Switzerland</b> , supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:<br>SEV 6532-2.1991      Plug Type 15    3P+N+PE      250/400 V, 10 A<br>SEV 6533-2.1991      Plug Type 11    L+N            250 V, 10 A<br>SEV 6534-2.1991      Plug Type 12    L+N+PE      250 V, 10 A<br><br>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:<br>SEV 5932-2.1998      Plug Type 25    3L+N+PE      230/400 V, 16 A<br>SEV 5933-2.1998      Plug Type 21    L+N            250 V, 16 A<br>SEV 5934-2.1998      Plug Type 23    L+N+PE      250 V, 16 A |                 | N/A     |
| 3.2.1.1        | In <b>Denmark</b> , supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.<br><br>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.<br><br>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.  |                 | N/A     |
| 3.2.1.1        | In <b>Spain</b> , supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.<br><br>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.<br><br>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.<br><br>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.   |                 | N/A     |

| IEC/EN 60950-1 |  |                 |         |
|----------------|--|-----------------|---------|
| Clause         | Requirement + Test   | Result - Remark | Verdict |
| 3.2.1.1        | In the <b>United Kingdom</b> , apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.<br>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.  |                 | N/A     |
| 3.2.1.1        | In <b>Ireland</b> , apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.  |                 | N/A     |
| 3.2.4          | In <b>Switzerland</b> , for requirements see 3.2.1.1 of this annex.  |                 | N/A     |
| 3.2.5.1        | In the <b>United Kingdom</b> , a power supply cord with conductor of 1,25 mm <sup>2</sup> is allowed for equipment with a rated current over 10 A and up to and including 13 A.  |                 | N/A     |
| 3.3.4          | In the <b>United Kingdom</b> , the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is:<br>• 1,25 mm <sup>2</sup> to 1,5 mm <sup>2</sup> nominal cross-sectional area.  |                 | N/A     |
| 4.3.6          | In the <b>United Kingdom</b> , the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.   |                 | N/A     |
| 4.3.6          | In <b>Ireland</b> , DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.  |                 | N/A     |
| 5.1.7.1        | In <b>Finland, Norway and Sweden</b> TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:<br>• STATIONARY PLUGGABLE EQUIPMENT TYPE A that<br>- is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and<br>- has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and<br>- is provided with instructions for the installation of that conductor by a SERVICE PERSON;<br>• STATIONARY PLUGGABLE EQUIPMENT TYPE B;<br>• STATIONARY PERMANENTLY CONNECTED EQUIPMENT. |                 | N/A     |



| IEC/EN 60950-1 |   |                 |         |
|----------------|---|-----------------|---------|
| Clause         | Requirement + Test  | Result - Remark | Verdict |
| 6.1.2.1        | <p>In <b>Finland, Norway and Sweden</b>, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> <li>- two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), 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"> <li>- 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</li> <li>- is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.</li> </ul> <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 132400:1994, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, 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;</li> <li>- the additional testing shall be performed on all the test specimens as described in EN 132400;</li> <li>- the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400.</li> </ul> |                 | N/A     |
| 6.1.2.2        | <p>In <b>Finland, Norway and Sweden</b>, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.</p>  |                 | N/A     |
| 7.2            | <p>In <b>Finland, Norway and Sweden</b>, for requirements see 6.1.2.1 and 6.1.2.2 of this annex.</p> <p>The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>   |                 | N/A     |
| 7.3            | <p>In <b>Norway and Sweden</b>, there are many buildings where the screen of the coaxial cable is normally not connected to the earth in the building installation.</p>   |                 | N/A     |
| 7.3            | <p>In <b>Norway</b>, for installation conditions see EN 60728-11:2005.</p>  |                 | N/A     |
| ZC             | A-DEVIATIONS (informative)  |                 | P       |

| IEC/EN 60950-1 |  |                 |         |
|----------------|--|-----------------|---------|
| Clause         | Requirement + Test   | Result - Remark | Verdict |
| 1.5.1          | <b>Sweden</b> (Ordinance 1990:944)<br>Add the following:<br>NOTE In Sweden, switches containing mercury are not permitted.   |                 | N/A     |
| 1.5.1          | <b>Switzerland</b> (Ordinance on environmentally hazardous substances SR 814.081, Annex 1.7, Mercury - Annex 1.7 of SR 814.81 applies for mercury.)<br>Add the following:<br>NOTE In Switzerland, switches containing mercury such as thermostats, relays and level controllers are not allowed.   |                 | N/A     |
| 1.7.2.1        | <b>Denmark</b> (Heavy Current Regulations)<br>Supply cords of CLASS I EQUIPMENT, which is delivered without a plug, must be provided with a visible tag with the following text:<br><p style="text-align: center;">Vigtigt!<br/>Lederen med grøn/gul isolation<br/>må kun tilsluttes en klemme mærket</p> <p style="text-align: center;"> eller </p><br>If essential for the safety of the equipment, the tag must in addition be provided with a diagram, which shows the connection of the other conductors, or be provided with the following text:<br>"For tilslutning af de øvrige ledere, se medfølgende installationsvejledning." |                 | N/A     |
| 1.7.2.1        | <b>Germany</b> (Gesetz über technische Arbeitsmittel und Verbraucherprodukte (Geräte- und Produktsicherheitsgesetz – GPSG) [Law on technical labour equipment and consumer products], of 6th January 2004, Section 2, Article 4, Clause (4), Item 2).<br>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.<br>Of this requirement, rules for use even only by SERVICE PERSONS are not exempted.  |                 | N/A     |
| 1.7.5          | <b>Denmark</b> (Heavy Current Regulations)<br>With the exception of CLASS II EQUIPMENT provided with a socket outlet in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-4a, CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.  |                 | N/A     |
| 1.7.13         | <b>Switzerland</b> (Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15 Batteries)<br>Annex 2.15 of SR 814.81 applies for batteries.  |                 | N/A     |
| 5.1.7.1        | <b>Denmark</b> (Heavy Current Regulations, Chapter 707, clause 707.4)<br>TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B.  |                 | N/A     |

| IEC/EN 60950-1                                |  |              |   |  |   |
|---|--|--------------|---|--|---|
| Clause  | Requirement + Test   |              |   | Result - Remark  | Verdict                                 |
| 1.5.1   | TABLE: List of critical components   |              |   |  | P                                       |
| Object/part no.                               | Manufacturer/<br>trademark   | Type/model   | Technical data  | Standard   | Mark(s) of<br>conformity <sup>1</sup> . |
| Switching Power Adapter                       | FSP GROUP INC.   | FSP120-AAB   | I/P:<br>100-240 Vac, 2 A,<br>50-60 Hz; Tma =<br>40°C, Class I.<br>O/P:<br>19Vdc, 6.32A.         | IEC 60950-1<br>(ed.2)<br>EN 60950-1:<br>2006+A11<br>UL 60950-1,<br>2nd Edition | UL, CB, TÜV                             |
| Metal Enclosure                               | Various  | Various      | Metal, 1.0 mm thick minimum.  | --   | --                                      |
| Front Bezel                                   | Various  | Various      | HB minimum, 60 degree C minimum, 1.0 thickness minimum. Secured to metal enclosure by snap-fit. | UL 94  | UL                                      |
| Stand Base (Optional)                         | Various  | Various      | HB minimum, measured overall 201 mm by 110 mm by 50 mm, 0.072Kg.                                | UL 94  | UL                                      |
| PCB   | Various  | Various      | V-1 minimum, 105°C minimum.   | UL 796   | UL                                      |
| RTC Battery (JBAT1)<br>Lithium type           | Matsushita Electric Industrial Co. Ltd. (Panasonic Corp. of North America) | CR2032       | 3Vdc, max. abnormal charge current 10mA   | UL 1642  | UL                                      |
|   | VIC-DAWN   | CR2032       | 3Vdc, max. abnormal charge current 10mA   | UL 1642  | UL                                      |
| Polyswitch (FS1) (for DVI, VGA and HDMI port) | TYCO ELECTRONICS CORP (RAYCHEM)  | microSMD110F | 6Vdc, Ih:1.1A   | IEC/EN 60730-1<br>UL 1434  | UL, TÜV                                 |
|   | BOURNS INC   | MF-USMF110   | 6Vdc, Ih:1.1A   | IEC/EN 60730-1<br>UL 1434  | UL, TÜV                                 |

| IEC/EN 60950-1   |  |   |   |   |   |
|--|--|---|---|---|---|
| Clause   | Requirement + Test                           |   |   | Result - Remark   | Verdict                                       |
| Polyswitch (FS2, FS3) (FS2 for USB2, USB3; (FS3 for USB1, LAN_USB1A) | BOURNS                                       | MF-MSMF260  | 6Vdc, Ih:2.6A   | IEC/EN 60730-1<br>UL 1434   | UL, TÜV                                       |
| Hard Disk Drive (H.D.D) (Optional)                                   | Seagate (or equivalent)                      | ST3 series (or equivalent)  | 5Vdc/12Vdc, 1.5A max  | IEC/EN 60950-1:2001 (ed.1)<br>UL 60950-1 1st Edition                      | UL, CB (issued by UL), TÜV NORD               |
| Optical disk drive (O.D.D) (Optional)                                | Hitach-LG Data Storage, Inc. (or equivalent) | For CB:<br>GT3** (Where first "*" = any number 0-9 and second "*" = any alphanumeric character, denoting non safety related differences) (or equivalent)<br>For TUV:<br>GT3xy (x = 0-9 denoting secondary parts, y = N, L, V, A, F, B, C or D according to different media support not related with safety) (or equivalent) | +5Vdc, 1.8A, Laser Class 1, Bezel: flammability class: V-1 min. | IEC 60950-1: 2005<br>EN 60950-1: 2006<br>EN 60825-1+A2:2001<br>UL 60950-1 | UL, CB (issued by Intertek Semko AB), TÜV SÜD |

| IEC/EN 60950-1             |  |   |   |   |   |
|----------------------------|--|---|---|---|---|
| Clause                     | Requirement + Test                           |   |   | Result - Remark   | Verdict                                       |
|                            | Hitach-LG Data Storage, Inc. (or equivalent) | For CB: GT1* (Where "*" = any alphanumeric character according to function denoting not related to safety) (or equivalent)<br>For TUV: GT10y ("y" = A-Z according to the function of "Light scribes", "VCPS", or "Label Flash") (or equivalent) | +5Vdc, 1.8A, Laser Class 1, Bezel: flammability class: V-1 min. | IEC 60950-1: 2001<br>EN 60950-1 +A11:2004<br>EN 60825-1+A2:2001<br>UL 60950-1 | UL, CB (issued by Intertek Semko AB), TÜV SÜD |
| System Fan                 | Act-Rx Technology Corp.                      | FD1260-S3053C   | 12Vdc, 0.12A, (max. 0.13 A), 15.57 CFM, 1.44 W.                 | EN 60950-1 +A11:2004<br>UL 507  | UL, TÜV                                       |
| CPU Fan                    | Asia Vital Components Co Ltd                 | DS08015R12UP 008  | 12Vdc, 0.6A, 50.6 CFM, 7.2 W max.                               | EN 60950-1 +A11:2009<br>UL 507  | UL, TÜV                                       |
|                            |  |   |   |   |   |
| Supplementary information: |  |   |   |   |   |

| 1.6.2                      | TABLE: Electrical data (in normal conditions) |             |       |        |            |                                   | P |
|----------------------------|---|-------------|-------|--------|------------|-----------------------------------|---|
| U (Vdc)                    | I (A)   | I rated (A) | P (W) | Fuse # | I fuse (A) | Condition/status                  |   |
| 19                         | 3.92  | 6.32        | 74.48 | --     | --         | Max. normal load, VGA connection  |   |
| 19                         | 3.66  | 6.32        | 69.54 | --     | --         | Max. normal load, DVI connection  |   |
| 19                         | 3.91  | 6.32        | 74.29 | --     | --         | Max. normal load, HDMI connection |   |
| Supplementary information: |   |             |       |        |            |                                   |   |

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

| IEC/EN 60950-1                           |   |                 |              |                  |                   |
|--|---|-----------------|--------------|------------------|-------------------|
| Clause                                   | Requirement + Test                              | Result - Remark |              |                  | Verdict           |
| 2.10.5                                   | TABLE: Distance through insulation measurements |                 |              |                  | N/A               |
| Distance through insulation (DTI) at/of: |   | U peak (V)      | U r.m.s. (V) | Test voltage (V) | Required DTI (mm) |
|  |   |                 |              |                  |                   |
| Supplementary information:               |   |                 |              |                  |                   |

|   |                  |                         |                        |               |               |               |                   |               |    |
|---|------------------|-------------------------|------------------------|---------------|---------------|---------------|-------------------|---------------|----|
| 4.3.8   | TABLE: Batteries |                         |                        |               |               |               |                   |               | P  |
| The tests of 4.3.8 are applicable only when appropriate battery data is not available |                  |                         |                        | See below.    |               |               |                   | P             |    |
| Is it possible to install the battery in a reverse polarity position?                 |                  |                         |                        | No            |               |               |                   | P             |    |
| Non-rechargeable batteries  |                  |                         | Rechargeable batteries |               |               |               |                   |               |    |
| Discharging   |                  | Un-intentional charging | Charging               |               | Discharging   |               | Reversed charging |               |    |
| Meas. current   | Manuf. Specs.    |                         | Meas. current          | Manuf. Specs. | Meas. current | Manuf. Specs. | Meas. current     | Manuf. Specs. |    |
| For non-rechargeable lithium type RTC battery:  |                  |                         |                        |               |               |               |                   |               |    |
| Max. current during normal condition  | --               | --                      | 1                      | --            | --            | --            | --                | --            | -- |
| Max. current during fault condition   | --               | --                      | 1                      | --            | --            | --            | --                | --            | -- |

Supplementary information:

- The unintentional charging of battery is prevented by circuit design (by a diode and resistor), see appendix table 5.3 for the details of test condition and result.
- Reverse polarity installation is prevented by socket design

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

|     |                             |   |
|-----|-----------------------------|---|
| 4.5 | TABLE: Thermal requirements | P |
|-----|-----------------------------|---|

| IEC/EN 60950-1  |                                     |                       |                                |                               |
|---|-------------------------------------|-----------------------|--------------------------------|-------------------------------|
| Clause  | Requirement + Test                  | Result - Remark       | Verdict                        |                               |
|   | Supply voltage (V) .....            | See below             | See below                      | —                             |
|   | Ambient T <sub>min</sub> (°C) ..... | --                    | --                             | —                             |
|   | Ambient T <sub>max</sub> (°C) ..... | See below             | See below                      | —                             |
| Maximum measured temperature T of part/at:  |                                     | T (°C)                |                                | Allowed T <sub>max</sub> (°C) |
| EUT with VGA connection   |                                     |                       |                                |                               |
| Test voltage / orientation:   |                                     | 19 Vdc,<br>Horizontal | 19 Vdc,<br>Vertical (O.D.D up) | --                            |
| Max. ambient temperature (T <sub>ma</sub> ):  |                                     | 35.0                  | 35.0                           | --                            |
| Note: ambient temperature during test (T <sub>amb</sub> ):  |                                     | 23.6                  | 21.5                           | --                            |
| PCB near CPU1   |                                     | 51.7                  | 49.4                           | 105                           |
| PCB near T13  |                                     | 63.1                  | 63.9                           | 105                           |
| PCB near T14  |                                     | 65.9                  | 67.3                           | 105                           |
| RTC battery body  |                                     | 51.2                  | 46.3                           | 100                           |
| DRAM body   |                                     | 54.2                  | 53.1                           | 105                           |
| HDD body  |                                     | 59.8                  | 54.9                           | --                            |
| CD-ROM body   |                                     | 58.5                  | 55.0                           | --                            |
| CHOCK14 body  |                                     | 65.4                  | 65.6                           | 105                           |
| EC56 body   |                                     | 52.1                  | 51.2                           | 85                            |
| PTC (FS2) body  |                                     | 53.1                  | 51.1                           | --                            |
| Rear side of enclosure near system fan  |                                     | 49.8                  | 46.2                           | 70                            |
| Front bezel inside near power button  |                                     | 43.5                  | 40.7                           | --                            |
| Front bezel outside near power button   |                                     | 41.0                  | 39.4                           | 95                            |
| Enclosure outside near CPU1   |                                     | 35.6                  | 36.4                           | 70                            |
| Enclosure outside near top of CPU fan   |                                     | 45.6                  | 42.1                           | 70                            |
| Enclosure outside near HDD  |                                     | 44.6                  | 40.5                           | 70                            |
| Supplementary information:  |                                     |                       |                                |                               |
| <ol style="list-style-type: none"> <li>The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in summary of testing and at voltages as described above.</li> <li>The equipment under test (EUT) has been evaluated at maximum ambient temperature (T<sub>ma</sub>) of +35°C according to the manufacturer specified.</li> <li>While the T<sub>amb</sub> not exceed T<sub>ma</sub>, the maximum temperatures measured are recalculated as follows:<br/>T + (T<sub>ma</sub> – T<sub>amb</sub>) where T is the maximum temperature measured during test, T<sub>ma</sub> is the maximum ambient temperature permitted by the manufacturer's specification and T<sub>amb</sub> is the ambient temperature during test.</li> </ol> |                                     |                       |                                |                               |

| IEC/EN 60950-1             |                     |                    |                     |                    |        |                               |                  |
|----------------------------|---------------------|--------------------|---------------------|--------------------|--------|-------------------------------|------------------|
| Clause                     | Requirement + Test  |                    |                     |                    |        | Result - Remark               | Verdict          |
| Temperature T of winding:  | t <sub>1</sub> (°C) | R <sub>1</sub> (Ω) | t <sub>2</sub> (°C) | R <sub>2</sub> (Ω) | T (°C) | Allowed T <sub>max</sub> (°C) | Insulation class |
|                            |                     |                    |                     |                    |        |                               |                  |
| Supplementary information: |                     |                    |                     |                    |        |                               |                  |

|                            |  |  |  |                       |                          |        |     |
|----------------------------|--|--|--|-----------------------|--------------------------|--------|-----|
| 4.5.5                      | TABLE: Ball pressure test of thermoplastic parts |  |  |                       |                          |        | N/A |
|                            | Allowed impression diameter (mm) ..... :         |  |  |                       |                          | ≤ 2 mm | —   |
| Part                       |  |  |  | Test temperature (°C) | Impression diameter (mm) |        |     |
|                            |  |  |  |                       |                          |        |     |
| Supplementary information: |  |  |  |                       |                          |        |     |

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

|  |   |                    |              |        |                          |   |   |
|--|---|--------------------|--------------|--------|--------------------------|---|---|
| 5.3  | TABLE: Fault condition tests  |                    |              |        |                          |   | P |
|  | Ambient temperature (°C) ..... :                                      |                    |              |        | See below                |   | — |
|  | Power source for EUT: Manufacturer, model/type, output rating ..... : |                    |              |        | See appended table 1.5.1 |   | — |
| Component No.                                | Fault   | Supply voltage (V) | Test time    | Fuse # | Fuse current (A)         | Observation   |   |
| EUT with VGA connection, Horizontal position |   |                    |              |        |                          |   |   |
| System Fan                                   | Stalled   | DC 19              | 2hrs, 40mins | --     | --                       | Unit normal operation, no damaged, no hazards.<br>Temperature stabled on:<br>Chock14 body = 64.1 °C,<br>PCB near T14 = 62.8 °C,<br>PCB near T13 = 61.2 °C,<br>PCB near CUP1 = 48.3 °C,<br>Ambient = 24.0 °C |   |



| IEC/EN 60950-1   |                    |       |                  |    |                 |   |
|--|--------------------|-------|------------------|----|-----------------|---|
| Clause   | Requirement + Test |       |                  |    | Result - Remark | Verdict   |
| CPU Fan  | Stalled            | DC 19 | 4hrs,<br>20mins  | -- | --              | Unit normal operation, no damaged, no hazards.<br>Temperature stabled on:<br>Chock14 body = 52.6 °C,<br>PCB near T14 = 59.6 °C,<br>PCB near T13 = 53.7 °C,<br>PCB near CUP1 = 56.5 °C,<br>Ambient = 22.7 °C |
| Ventilation openings   | b-o                | DC 19 | 4hrs,<br>22 mins | -- | --              | Unit normal operation, no damaged, no hazards.<br>Temperature stabled on:<br>Chock14 body = 78.4 °C,<br>PCB near T14 = 77.6 °C,<br>PCB near T13 = 75.2 °C,<br>PCB near CUP1 = 70.4 °C,<br>Ambient = 24.6 °C |
| For stand-by switch connector  |                    |       |                  |    |                 |   |
| JFP1 (PWSW+ to PWSW-)  | s-c                | DC 19 | 5 s              | -- | --              | Unit normal operation, no damaged, no hazards.  |
| JFP1 (RESET+ to RESET-)  | s-c                | DC 19 | 5 s              | -- | --              | Unit normal operation, no damaged, no hazards.  |
| JFP1 (HDD+ to HDD-)  | s-c                | DC 19 | 5 s              | -- | --              | Unit normal operation, no damaged, no hazards.  |
| For RTC battery  |                    |       |                  |    |                 |   |
| D29 (pin Z-Y)  | s-c                | DC 19 | --               | -- | --              | Normal reverse charging current = 0 mA, max. abnormal reverse charge current = 3.01 mA, no hazards.   |
| D29 (pin X-Y)  | s-c                | DC 19 | --               | -- | --              | Normal reverse charging current = 0 mA, max. abnormal reverse charge current = 3.26 mA, no hazards.   |
| R592   | s-c                | DC 19 | --               | -- | --              | Normal reverse charging current = 0 mA, max. abnormal reverse charge current = 0 mA, no hazards.  |
| Supplementary information:<br>1. Used abbreviations in fault column: b-o=blocked opening, s-c=short-circuit. |                    |       |                  |    |                 |   |

**List of test equipment used:**

| Clause   | Measurement / testing | Testing / measuring equipment / material used | Range used | Calibration date |
|--|-----------------------|---|------------|------------------|
|  |                       |   |            |                  |
| Supplementary information:<br>No listing of test equipment used necessary for chosen test procedure. |                       |   |            |                  |

| Clause                     | Requirement + Test               | Result - Remark       | Verdict               |                   |
|----------------------------|----------------------------------|-----------------------|-----------------------|-------------------|
| 2.1.1.5                    | TABLE: Energy hazard measurement |                       | N/A                   |                   |
| Voltage (rated)<br>(V)     | Current (rated)<br>(A)           | Voltage (max.)<br>(V) | Current (max.)<br>(A) | VA (max.)<br>(VA) |
|                            |                                  |                       |                       |                   |
| Supplementary information: |                                  |                       |                       |                   |

| 2.1.1.7                    | TABLE: Discharge test    |                        |               | N/A      |
|----------------------------|--------------------------|------------------------|---------------|----------|
| Condition                  | $\tau$ calculated<br>(s) | $\tau$ measured<br>(s) | t u→0V<br>(s) | Comments |
|                            |                          |                        |               |          |
| Supplementary information: |                          |                        |               |          |

| 2.2.2                      | TABLE: SELV measurement (under normal conditions) |                    |        | N/A                             |
|----------------------------|---|--------------------|--------|---------------------------------|
| Transformer                | Location  | Voltage (max.) (V) |        | Voltage Limitation<br>Component |
|                            |   | V peak             | V d.c. |                                 |
|                            |   |                    |        |                                 |
| Supplementary information: |   |                    |        |                                 |

| 2.2.3                      | TABLE: SELV measurement (under fault conditions) |          | N/A |
|----------------------------|--|----------|-----|
| Location                   | Voltage (max.) (V)                               | Comments |     |
|                            |  |          |     |
| Supplementary information: |  |          |     |

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

| 2.5   | TABLE: Limited power source measurement |          |         | P |
|---|---|----------|---------|---|
|   | Limits                                  | Measured | Verdict |   |
| For USB ports <sup>1)</sup>   |   |          |         |   |
| According to Table 2B (normal condition) for USB port (up of LAN_USB1A), Uoc = 5.03 V |   |          |         |   |
| current (in A)  | 8                                       | 4.60     | pass    |   |
| apparent power (in VA)  | 100                                     | 17.20    | pass    |   |

| Clause  | Requirement + Test     | Result - Remark | Verdict |      |
|---|------------------------|-----------------|---------|------|
| According to Table 2B (normal condition) for USB port (down of LAN_USB1A), Uoc = 5.03 V         |                        |                 |         |      |
|   | current (in A)         | 8               | 4.70    | pass |
|   | apparent power (in VA) | 100             | 16.45   | pass |
| According to Table 2B (normal condition) for USB port (up of USB1), Uoc = 5.02 V                |                        |                 |         |      |
|   | current (in A)         | 8               | 4.51    | pass |
|   | apparent power (in VA) | 100             | 15.83   | pass |
| According to Table 2B (normal condition) for USB port (down of USB1), Uoc = 5.03 V              |                        |                 |         |      |
|   | current (in A)         | 8               | 4.73    | pass |
|   | apparent power (in VA) | 100             | 16.27   | pass |
| According to Table 2B (normal condition) for USB port (USB2), Uoc = 5.03 V                      |                        |                 |         |      |
|   | current (in A)         | 8               | 4.33    | pass |
|   | apparent power (in VA) | 100             | 15.16   | pass |
| According to Table 2B (normal condition) for USB port (USB3), Uoc = 5.02 V                      |                        |                 |         |      |
|   | current (in A)         | 8               | 4.31    | pass |
|   | apparent power (in VA) | 100             | 15.30   | pass |
| For DVI port <sup>1)</sup>  |                        |                 |         |      |
| According to Table 2B (normal condition) for DVI port (DVI1), pin 6, 7 to RTN, Uoc = 5.01 V     |                        |                 |         |      |
|   | current (in A)         | 8               | 0       | pass |
|   | apparent power (in VA) | 100             | 0       | pass |
| According to Table 2B (normal condition) for DVI port (DVI1), pin 14 to RTN, Uoc = 5.04 V       |                        |                 |         |      |
|   | current (in A)         | 8               | 2.06    | pass |
|   | apparent power (in VA) | 100             | 6.20    | pass |
| For VGA port <sup>1)</sup>  |                        |                 |         |      |
| According to Table 2B (normal condition) for VGA port (VGA1), pin 9 to RTN, Uoc = 5.03 V        |                        |                 |         |      |
|   | current (in A)         | 8               | 2.04    | pass |
|   | apparent power (in VA) | 100             | 6.28    | pass |
| According to Table 2B (normal condition) for VGA port (VGA1), pin 15 to RTN, Uoc = 5.01 V       |                        |                 |         |      |
|   | current (in A)         | 8               | 0       | pass |
|   | apparent power (in VA) | 100             | 0       | pass |
| For HDMI port <sup>1)</sup>   |                        |                 |         |      |
| According to Table 2B (normal condition) for HDMI port (HDMI1), pin 15, 16 to RTN, Uoc = 4.98 V |                        |                 |         |      |
|   | current (in A)         | 8               | 0       | pass |
|   | apparent power (in VA) | 100             | 0       | pass |

| Clause  | Requirement + Test | Result - Remark | Verdict |
|---|--------------------|-----------------|---------|
| According to Table 2B (normal condition) for HDMI port (HDMI1), pin 18 to RTN, Uoc = 5.0 V  |                    |                 |         |
| current (in A)  | 8                  | 1.8             | pass    |
| apparent power (in VA)  | 100                | 6.93            | pass    |
| For stand-by switch connector   |                    |                 |         |
| According to Table 2B (normal condition), connector (JFP1) pin 1 to RTN, Uoc = 5.06 V (HDD+)  |                    |                 |         |
| current (in A)  | 8                  | 0               | pass    |
| apparent power (in VA)  | 100                | 0               | pass    |
| According to Table 2B (normal condition), connector (JFP1) pin 6 to RTN, Uoc = 3.27 V (PWSW+)   |                    |                 |         |
| current (in A)  | 8                  | 0               | pass    |
| apparent power (in VA)  | 100                | 0               | pass    |
| According to Table 2B (normal condition), connector (JFP1) pin 7 to RTN, Uoc = 5.13 V (RESET+)  |                    |                 |         |
| current (in A)  | 8                  | 0               | pass    |
| apparent power (in VA)  | 100                | 0               | pass    |
| According to Table 2B (fault condition: MOSFET (Q4), pin 3 to 5, short), Uoc = 5.06 V (VCC5)  |                    |                 |         |
| current (in A)  | 8                  | 0               | pass    |
| apparent power (in VA)  | 100                | 0               | pass    |
| According to Table 2B (fault condition: IC (PU11), pin 20 to 16, short), Uoc = 5.07 V (5VSB)  |                    |                 |         |
| current (in A)  | 8                  | Unit shown      | pass    |
| apparent power (in VA)  | 100                | Unit shown      | pass    |
| According to Table 2B (fault condition: IC (PU11), pin 11 to 16, short), Uoc = 3.27 V (3VSB)  |                    |                 |         |
| current (in A)  | 8                  | 0               | pass    |
| apparent power (in VA)  | 100                | 0               | pass    |
| According to Table 2B (fault condition: MOSFET (Q70), pin 3 to 5, short), Uoc = 3.21 V (VCC3)   |                    |                 |         |
| current (in A)  | 8                  | 0               | pass    |
| apparent power (in VA)  | 100                | 0               | pass    |
| Supplementary information:  |                    |                 |         |
| <ol style="list-style-type: none"> <li>The other data pins on above mention ports are provided for the data transmission only, therefore, no further testing to be necessary.</li> <li>The other I/O ports (Audio, LAN and e-SATA ports) are provided for the data transmission only, therefore, no further testing to be necessary.</li> </ol> |                    |                 |         |

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

| Clause                     | Requirement + Test | Result - Remark | Verdict |
|----------------------------|--------------------|-----------------|---------|
|                            |                    |                 |         |
| Supplementary information: |                    |                 |         |

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

| 4.6.1, 4.6.2  | Table: Enclosure opening measurements   |   | P |
|---|---|---|---|
| Location  | Size (mm)   | Comments  |   |
| <b>For the metal enclosure, EUT place on horizontal position</b>          |   |   |   |
| Top   | Ø 2.5   | Numerous circular openings provided.  |   |
| Bottom  | --  | None.   |   |
| Left  | --  | None  |   |
| Right   | Ø 1.9   | Numerous circular openings provided.  |   |
| Front   | a. Ø 3.2<br>b. Ø 5.0 <sup>1 and 2</sup><br>c. Ø 5.2 <sup>1 and 2</sup>                      | The following openings provided above the I/O ports.<br>a. Numerous circular openings<br>b. One circular openings<br>c. One circular openings   |   |
| Rear  | a. Diagonal line: 5.0<br>b. 6.5 x 1.3 <sup>1 and 2</sup><br>c. 1.3 X 4.0 <sup>1 and 2</sup> | a. Numerous hexagon openings provided for the system fan.<br>b. One "+" shape of opening provide for the antenna connection terminal of the optional Wireless LAN module.<br>c. One rectangular opening provided. |   |
| <b>For the metal enclosure, EUT place on vertical position (O.D.D up)</b> |   |   |   |
| Top   | --  | None  |   |
| Bottom  | Ø 1.9   | Numerous circular openings provided.<br>The bottom enclosure thickness: 1.0 min.,<br>minimum spacing of holes centre to centre: 6.0 mm.   |   |
| Left  | --  | None.   |   |
| Right   | Ø 2.5   | Numerous circular openings provided.  |   |

| Clause  | Requirement + Test   | Result - Remark   | Verdict |
|---|--|---|---------|
| Front   | a. $\varnothing$ 3.2<br>b. $\varnothing$ 5.0 <sup>1 and 2</sup><br>c. $\varnothing$ 5.2 <sup>1 and 2</sup> | The following openings provided above the I/O ports.<br>a. Numerous circular openings<br>b. One circular openings<br>c. One circular openings   |         |
| Rear  | a. Diagonal line: 5.0<br>b. 6.5 x 1.3 <sup>1 and 2</sup><br>c. 1.3 X 4.0 <sup>1 and 2</sup>                | a. Numerous hexagon openings provided for the system fan.<br>b. One "+" shape of opening provide for the antenna connection terminal of the optional Wireless LAN module.<br>c. One rectangular opening provided. |         |
| Note(s):<br>1. There's no any hazardous voltage or energy hazards present within 5° projections.<br>2. The portion of the side of fire enclosure is subjected to 4.6.2. |  |   |         |

| 5.1.6                      | TABLE: Touch current and protective conductor current measurement |                     |            | N/A      |
|----------------------------|---|---------------------|------------|----------|
| Condition                  | L → terminal A (mA)   | N → terminal A (mA) | Limit (mA) | Comments |
|                            |   |                     |            |          |
|                            |   |                     |            |          |
| Supplementary information: |   |                     |            |          |

| National Differences |                    |                 |         |
|----------------------|--------------------|-----------------|---------|
| Clause               | Requirement – Test | Result – Remark | Verdict |

### EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Differences according to.....: EN 60950-1:2006+A11:2009

|           | CENELEC COMMON MODIFICATIONS (EN)  | P |
|-----------|--|---|
| <b>ZA</b> | <b>Normative references to international publications with their corresponding European publications</b> | — |

| <b>ZB</b> | <b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)</b>  | <b>P</b>         |
|-----------|--|------------------|
| 1.2.13.14 | In <b>Norway</b> and <b>Sweden</b> , for requirements see 1.7.2.1 and 7.3 of this annex.   | N/A              |
| 1.5.7.1   | <b>Replace</b> the existing SNC by the following:<br>In <b>Finland, Norway</b> and <b>Sweden</b> , 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.   | Replaced.<br>N/A |
| 1.7.2.1   | <b>Add</b> as new SNC:<br>In <b>Norway</b> and <b>Sweden</b> , 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:<br>“Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11).”<br>NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.<br>Translation to Norwegian (the Swedish text will | Added.<br>N/A    |



| National Differences |   |                 |         |
|----------------------|---|-----------------|---------|
| Clause               | Requirement – Test  | Result – Remark | Verdict |
|                      | <p>also be accepted in Norway):<br/>           “Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.”<br/>           Translation to Swedish:<br/>           ”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”</p> |                 |         |
| 1.7.5                | <p><b>Add</b> the following paragraph to the existing SNC for <b>Denmark</b>:<br/>           For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.</p>  | Added.          | N/A     |
| 7.3                  | <p><b>Delete</b> the existing SNC for Norway and Sweden (based on NOTE 1 of IEC 60950-1:2005 + corr. 1).<br/> <b>Add</b> as new SNC (based on future NOTE 3 of IEC 60950-1:200X):<br/>           In <b>Norway</b> and <b>Sweden</b>, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.</p>  | Deleted.        | N/A     |

| ZC      | ANNEX ZC, NATIONAL DEVIATIONS (EN)                        |          | P   |
|---------|---|----------|-----|
| 1.5.1   | <p><b>Sweden</b><br/> <b>Delete</b> the A-deviation.</p>  | Deleted. | N/A |
| 1.7.2.1 | <p><b>Denmark</b><br/> <b>Delete</b> the A-deviation.</p> | Deleted. | N/A |
| 1.7.5   | <p><b>Denmark</b><br/> <b>Delete</b> the A-deviation.</p> | Deleted. | N/A |
| 5.1.7.1 | <p><b>Denmark</b><br/> <b>Delete</b> the A-deviation.</p> | Deleted. | N/A |

| National Differences               |   |   |         |
|------------------------------------|---|---|---------|
| Clause                             | Requirement – Test  | Result – Remark   | Verdict |
|                                    | Canadian National Differences   |   | P       |
| <b>SPECIAL NATIONAL CONDITIONS</b> |   |   |         |
| 1.1.1                              | All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.   | EUT in compliance with requirements of IEC 60950-1. Overall acceptance shall be evaluated during national approval. | N/A     |
| 1.4.14                             | For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.  | Class III equipment.  | N/A     |
| 1.5.5                              | For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the CEC/NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC are required to have special construction features and identification markings.  | No external interconnecting cable provided.   | N/A     |
| 1.7.1                              | Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions." | Class III equipment.  | N/A     |
| 1.7.7                              | Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC shall be marked with the voltage rating and "Class 2" or equivalent. Marking shall be located adjacent to the terminals and shall be visible during wiring.  |   | N/A     |
| 2.5                                | Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.   | No such fuse.   | N/A     |

| National Differences |   |                              |         |
|----------------------|---|------------------------------|---------|
| Clause               | Requirement – Test  | Result – Remark              | Verdict |
| 2.7.1                | Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection. | No such components provided. | N/A     |
| 3.2                  | Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.  |                              | N/A     |
| 3.2.1                | Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.   |                              | N/A     |
| 3.2.1.2              | Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.   |                              | N/A     |
| 3.2.3                | Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.  |                              | N/A     |
| 3.2.5                | Power supply cords are required to be no longer than 4.5 m in length. Flexible power supply cords are required to be compatible with Tables 11 and 12 of the CEC and Article 400 of the NEC.  |                              | N/A     |
| 3.2.9                | Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.   |                              | N/A     |
| 3.3                  | Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.  |                              | N/A     |
| 3.3.3                | Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm <sup>2</sup> ).   |                              | N/A     |
| 3.3.4                | Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for Canadian/US wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).   |                              | N/A     |
| 3.4.2                | Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A, or if the motor has a nominal voltage rating greater than 120 V, or is rated more than 1/3 hp (locked rotor current over 43 A).  |                              | N/A     |
| 3.4.8                | Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.  |                              | N/A     |

| National Differences |  |   |         |
|----------------------|--|---|---------|
| Clause               | Requirement – Test   | Result – Remark                                       | Verdict |
| 3.4.11               | For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.   |   | N/A     |
| 4.3.12               | The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.   |   | N/A     |
| 4.3.13.5             | Equipment with lasers is required to meet the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.   |   | N/A     |
| 4.7                  | For computer room applications, automated information storage systems with combustible media greater than 0.76 m <sup>3</sup> (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.  |   | N/A     |
| 4.7.3.1              | For computer room applications, enclosures with combustible material measuring greater than 0.9 m <sup>2</sup> (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.  |   | N/A     |
| Annex H              | Equipment that produces ionizing radiation is required to comply with the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations, 21 CFR 1020, as applicable.  | No ionizing radiation.                                | N/A     |
| OTHER DIFFERENCES    |  |   |         |
| 11.5.1               | Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include:<br>attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi- | Components are UL approved, see appended table 1.5.1. | P       |

| National Differences |   |                  |         |
|----------------------|---|------------------|---------|
| Clause               | Requirement – Test  | Result – Remark  | Verdict |
|                      | layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.   |                  |         |
| 1.6.1.2              | A circuit for connection to the DC Mains Supply is classified as either a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply. This maximum operating voltage shall include consideration of the battery charging “float voltage” associated with the intended supply system, regardless of the marked power rating of the equipment. |                  | N/A     |
| 2.3.1                | For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V <sub>peak</sub> or 60 V <sub>d.c.</sub> , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.   | No TNV circuits. | N/A     |
| 2.3.2.1              | In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.   | No TNV circuits. | N/A     |
| 2.6.3.4              | Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.   |                  | N/A     |
| 4.2.8.1              | Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.  | No CRT.          | N/A     |
| 4.2.11               | For equipment intended for mounting on racks and provided with slide/rails allowing the equipment to slide away from the rack for installation, service and maintenance, additional construction, performance and marking requirements are applicable to determine the adequacy of the slide/rails.   |                  | N/A     |
| 4.3.2                | Equipment with handles is required to comply with special loading tests.  |                  | N/A     |
| 5.1.8.3              | Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.   |                  | N/A     |
| 5.3.7                | Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded.<br>During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary.                                    |                  | N/A     |

| National Differences |   |                 |         |
|----------------------|---|-----------------|---------|
| Clause               | Requirement – Test  | Result – Remark | Verdict |
| 6.4                  | Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.  |                 | N/A     |
| M.2                  | Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.   |                 | N/A     |
| Annex 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     |
| Annex NAF            | Document (paper) shredders likely to be used in a home or home office (Pluggable Equipment Type A plug configuration) are required to comply with additional requirements, including markings/instructions, protection against inadvertent reactivation of a safety interlock, disconnection from the mains supply (via provision of an isolating switch), and protection against operator access (accessibility determined via new accessibility probe & probe/wedge). |                 | N/A     |

| National Differences |   |   |         |
|----------------------|---|---|---------|
| Clause               | Requirement – Test  | Result – Remark                                       | Verdict |
|                      | Korean National Differences   |   | P       |
|                      | Corresponding National Standard: K 60950-1  |   | P       |
| 1.5.101              | Addition:<br>Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305). | No plug provided.                                     | N/A     |
| 8                    | Addition: EMC<br>The apparatus shall comply with the relevant CISPR standards.  | To be evaluated when submitted for national approval. | N/A     |

| National Differences                                     |   |   |         |
|--|---|---|---------|
| Clause   | Requirement – Test  | Result – Remark   | Verdict |
|  | US National Differences   |   | P       |
| SPECIAL NATIONAL CONDITIONS BASED ON FEDERAL REGULATIONS |   |   |         |
| 1.1.1  | All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.                                | EUT in compliance with requirements of IEC 60950-1. Overall acceptance shall be evaluated during national approval. | N/A     |
| 1.4.14   | For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.  | See above.  | N/A     |
| 1.5.5  | For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type specified in the NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction features and identification markings.                              | No external interconnecting cable provided.   | N/A     |
| 1.7.1  | Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings.   |   | N/A     |
| 2.5  | Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.   |   | N/A     |
| 2.7.1  | Suitable NEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection. |   | N/A     |
| 3.2  | Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC.  | Class III equipment.  | N/A     |
| 3.2.1  | Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.   |   | N/A     |
| 3.2.1.2  | Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.   |   | N/A     |
| 3.2.3  | Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.  |   | N/A     |



| National Differences |   |                        |         |
|----------------------|---|------------------------|---------|
| Clause               | Requirement – Test  | Result – Remark        | Verdict |
| 3.2.5                | Power supply cords are required to be no longer than 4.5 m in length and minimum length shall be 1.5 m. Flexible power supply cords are required to be compatible with Article 400 of the NEC.  |                        | N/A     |
| 3.2.9                | Permanently connected equipment must have a suitable wiring compartment and wire bending space.   |                        | N/A     |
| 3.3.3                | Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm <sup>2</sup> ).   |                        | N/A     |
| 3.3.4                | Terminals for permanent wiring, including protective earthing terminals, must be suitable for U.S wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).  |                        | N/A     |
| 3.4.2                | Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A, or if the motor has a nominal voltage rating greater than 120 V, or is rated more than 1/3 hp (locked rotor current over 43 A).  |                        | N/A     |
| 3.4.8                | Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.  |                        | N/A     |
| 3.4.11               | For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.  | No mains connection.   | N/A     |
| 4.3.12               | The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.  |                        | N/A     |
| 4.3.13.5             | Equipment with lasers is required to meet the Code of Federal Regulations 21 CFR 1040.  |                        | N/A     |
| 4.7                  | For computer room applications, automated information storage systems with combustible media greater than 0.76 m <sup>3</sup> (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.   |                        | N/A     |
| 4.7.3.1              | For computer room applications, enclosures with combustible material measuring greater than 0.9 m <sup>2</sup> (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less. |                        | N/A     |
| Annex H              | Equipment that produces ionizing radiation must comply with Federal Regulations, 21 CFR 1020  | No ionizing radiation. | N/A     |

| National Differences |                    |                 |         |
|----------------------|--------------------|-----------------|---------|
| Clause               | Requirement – Test | Result – Remark | Verdict |

| OTHER NATIONAL DIFFERENCES |  |   |     |
|----------------------------|--|---|-----|
| 1.5.1                      | Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables. | Components are UL approved, see component list 1.5.1. | P   |
| 1.6.1.2                    | A circuit for connection to the DC Mains Supply is classified as either a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply. This maximum operating voltage it to include consideration of the battery charging “float voltage” associated with the intended supply system, regardless of the marked power rating of the equipment.  |   | N/A |
| 2.3.1                      | For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V <sub>peak</sub> or 60 V <sub>d.c.</sub> , the max. acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.   | No TNV.   | N/A |
| 2.3.2.1                    | In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.  |   | N/A |
| 2.6.3.4                    | Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.  |   | N/A |
| 4.2.8.1                    | Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.   |   | N/A |

| National Differences |   |                 |         |
|----------------------|---|-----------------|---------|
| Clause               | Requirement – Test  | Result – Remark | Verdict |
| 4.2.11               | For equipment intended for mounting on racks and provided with slide/rails allowing the equipment to slide away from the rack for installation, service and maintenance, additional construction, performance and marking requirements are applicable to determine the adequacy of the slide/rails.   |                 | N/A     |
| 4.3.2                | Equipment with handles is required to comply with special loading tests.  |                 | N/A     |
| 5.1.8.3              | Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.   |                 | N/A     |
| 5.3.7                | Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded. During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary.   |                 | N/A     |
| 6.4                  | Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.  |                 | N/A     |
| M.2                  | Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.   |                 | N/A     |
| Annex 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     |
| Annex NAF            | Document (paper) shredders likely to be used in a home or home office (Pluggable Equipment Type A plug configuration) are required to comply with additional requirements, including markings/instructions, protection against inadvertent reactivation of a safety interlock, disconnection from the mains supply (via provision of an isolating switch), and protection against operator access (accessibility determined via new accessibility probe & probe/wedge). |                 | N/A     |