



Ref. Certif. No.

**SG ITS-22256**

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

**CB TEST CERTIFICATE**

Product

Network Switch

Name and address of the applicant

Radware Ltd.  
22 Raoul Wallenberg St, Tel Aviv 6971917, Israel

Name and address of the manufacturer

Radware Ltd.  
22 Raoul Wallenberg St, Tel Aviv 6971917, Israel

Name and address of the factory

*Note: When more than one factory, please report on page 2*

NEXCOM International Co., Ltd.  
5F, 7F, 8F, 9F, 10F&12F, No.63, Sec.1, Sanmin Rd., Banqiao Dist.,  
New Taipei City, Taiwan

☒ Additional Information on page 2

Ratings and principal characteristics

See page 2

Trademark (if any)

RADWARE,  radware

Customer's Testing Facility (CTF) Stage used

-

Model / Type Ref.

See page 2

Additional information (if necessary may also be reported on page 2)

Group and National differences for CENELEC countries (EN 62368-1:2014 + A11:2017) and national differences of Australia, Canada, Japan, New Zealand and United States of America have been considered.

A sample of the product was tested and found to be in conformity with

IEC 62368-1:2014

As shown in the Test Report Ref. No. which forms part of this Certificate

200700354TWN-001

This CB Test Certificate is issued by the National Certification Body

Intertek Testing Services (Singapore) Pte Ltd  
5, Pereira Road, #06-01  
Asiawide Industrial Building  
Singapore 368025

**intertek**

Date: 18 September 2020

Signature:

Ong Keng Chuan



Ref. Certif. No.

**SG ITS-22256**

**Name and address of the factory**

NEXCOM International Co., Ltd. (Hua-Ya Factory)  
2F., No.50, Huaya 3rd Rd., Guishan Dist., Taoyuan City 333, Taiwan

**Ratings and principal characteristics**

- 1) 100-240Vac, 47-63Hz, 8-4A, Class I
- 2) 100-240Vac, 47-63Hz, 8-4A x 2, Class I
- 3) -42 - -72Vdc, 12A, Class I
- 4) -42 - -72Vdc, 12A x 2, Class I

**Model / Type Ref.**

- 1) ODS-HTQ
- 2) ODS-HTQ DUAL
- 3) ODS-HTQ DC
- 4) ODS-HTQ Dual DC

Date: 18 September 2020

Signature:

Ong Keng Chuan



Test Report issued under the responsibility of:



## TEST REPORT

IEC 62368-1

Audio/video, information and communication technology equipment

### Part 1: Safety requirements

Report Number ..... : 200700354TWN-001

Date of issue ..... : September 17, 2020

Total number of pages ..... : 61 pages, other attachments refer to List of Attachments

Applicant's name ..... : Radware Ltd.

Address ..... : 22 Raoul Wallenberg St, Tel Aviv 6971917, Israel

#### Test specification:

Standard ..... : IEC 62368-1:2014 (Second Edition)

Test procedure ..... : CB Scheme

Non-standard test method ..... : N/A

Test Report Form No. .... : IEC62368\_1B

Test Report Form(s) Originator ..... : UL(US)

Master TRF ..... : 2014-03

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**This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.**




#### General disclaimer:

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Test Item description .....	Network Switch	
Trade Mark .....	RADWARE,  radware	
Manufacturer .....	Same as applicant	
Model/Type reference .....	1) ODS-HTQ 2) ODS-HTQ DUAL 3) ODS-HTQ DC 4) ODS-HTQ Dual DC	
Ratings .....	1) 100-240Vac 47-63Hz, 8-4A, class I 2) 100-240Vac 47-63Hz, 8-4A x 2, class I 3) -42 - -72Vdc, 12A, class I 4) -42 - -72Vdc, 12A x 2, class I	
Testing procedure and testing location:		
<input checked="" type="checkbox"/> CB Testing Laboratory:	Intertek Testing Services Taiwan Ltd.	
Testing location/ address .....	5F, No. 423, Ruiguang Rd., Neihu District, Taipei 114, Taiwan	
<input type="checkbox"/> Associated CB Testing Laboratory:		
Testing location/ address .....		
Tested by (name + function + signature).....	Andrew Lin, Project handler	
Approved by (name + function + signature).....	Viper Lai, Reviewer	
Testing procedure: TMP/CTF Stage 1		
Testing location/ address .....		
Tested by (name + signature) .....		
Approved by (name + signature) .....		
Testing procedure: WMT/CTF Stage 2		
Testing location/ address .....		
Tested by (name + signature) .....		
Witnessed by (name + signature) .....		
Approved by (name + signature) .....		
Testing procedure: SMT/CTF Stage 3 or 4		
Testing location/ address .....		
Tested by (name + signature) .....		
Approved by (name + signature) .....		
Supervised by (name + signature) .....		

<b>List of Attachments (including a total number of pages in each attachment):</b> Appendix 1 (61 pages) – National Differences Appendix 2 (1 Page) – Dimension of openings Photos (8 pages)	
<b>Summary of testing:</b> Maximum normal load: USB 2.0 outputs loaded at rated load (5V, 0.5A), fiber transceiver modules connected in Plug-in Laser Device Module with data transmission, all the other ports transmission signals to other PC and operated continuously and add other extra dummy load to 80 % output power of building-in power supply.	
<b>Tests performed (name of test and test clause):</b> 5.2 Classification of electrical energy sources 5.4.1.4, 6.3.2, 9.0, B.2.6 Temperature measurements 5.4.8 Humidity conditioning test 5.4.9 Electric strength test 5.6.6 Resistance of protective conductors and their terminations test 5.7.2.2, 5.7.4 Earthed accessible conductive part 6.2.2 Electrical power sources (PS) measurements for classification 6.2.3.2 Determination of potential ignition sources (resistive PIS) 8.6.2.2 Static stability test B.2.5 Input test B.3 Simulated abnormal operating conditions B.4 Simulated single fault conditions F.3.10 Marking durability test M.3.2 Batteries charging circuit test Q.1 Limited power source test T.3 Steady force test – 30 N T.5 Steady force test – 250 N T.6 Enclosure impact test V.1 Determination of accessible parts test	<b>Testing location:</b> Intertek Testing Services Taiwan Ltd. 5F, No. 423, Ruiguang Rd., Neihu District, Taipei 114, Taiwan
<b>Summary of compliance with National Differences:</b> <b>List of countries addressed:</b> Group differences, special national deviations of all CENELEC countries, Australia (AU), Canada (CA), Japan (JP), New Zealand (NZ) and United States of America (US) Explanation of CENELEC countries: Austria (AT), Belgium (BE), Bulgaria (BG), Croatia (HR), Cyprus (CY), Czech Republic (CZ), Denmark (DK), Estonia (EE), Finland (FI), France (FR), Germany (DE), Greece (GR), Hungary (HU), Iceland (IS), Ireland (IE), Italy (IT), Latvia (LV), Lithuania (LT), Luxembourg (LU), Malta (MT), Netherlands (NL), Norway (NO), Poland (PL), Portugal (PT), Romania (RO), Spain (ES), Slovakia (SK), Slovenia (SI), Sweden (SE), Switzerland (CH) and United Kingdom (GB) The requirements for these countries have also been checked and found no national differences from the IEC 62368-1:2014 standard: Argentina (AR), Austria (AT), Bahrain (BH), Belarus (BY), Belgium (BE), Brazil (BR), Bulgaria (BG), China (CN), Colombia (CO), Croatia (HR), Czech Republic (CZ), France (FR), Greece (GR), Hungary (HU), India (IN), Indonesia (ID), Israel (IL), Kenya (KE), Korea (KR), Libyan Arab Jamahiriya (LY), Mexico (MX), Malaysia (MY), Netherlands (NL), Pakistan (PK), Poland (PL), Portugal (PT), Romania (RO), Russian Federation (RU), Saudi Arabia (SA), Serbia (RS), Singapore (SG), Slovakia (SK), Slovenia (SI), South Africa (ZA), Spain (ES), Thailand (TH), Turkey (TR), United Arab Emirates (AE), Ukraine (UA) <input checked="" type="checkbox"/> <b>The product fulfils the requirements of EN 62368-1:2014+A11:2017.</b>	

### Copy of marking plate:

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

(Representative)

**MODEL:** ODS-HTQ DC

**PN:** **RODS-HTQ-D-2AC** **HW VER:** D.D40

**DESCRIPTION:** RODS-HTQ-D-2AC HTQp-2U, Intel E5-2658x2, 2.5" 500GB, 128GB(8GBx8+8GBx8), 16GB, AC-1000Wx2, non-NEBS (D325)

35 U.S.C. § 287(a) Patent notice: Patent: [www.radware.com/LegalNotice](http://www.radware.com/LegalNotice)

**Also embedded:**  
OnDemand Switch™, DefensePro™, StringMatch Engine™, Fireproof™, SecureFlow™, DefenseFlow™, DefensePipe™, AppWall™, Inflight™

**SYS S/N:** **31509996**

**MB S/N:** **09005178**

**MAC :** **2CB6931F1A00**

**-42- -72V ---, 12A**

**Network Switch**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:  
(1) This device may not cause harmful interference, and  
(2) This device must accept any interference received, including interference that may cause undesired operations.

\* See installation instructions before connecting to the power supply.  
\* Voir la notice d'installation avant de reccorder au reseau.  
\* Vorden anschliesssen ans Netz die Installations anweisungen beachten.

\* Warning: Downgrading the device software from currently installed version is not supported and might cause an irreversible malfunction

For disposal of this equipment in EU countries please go to: [www.radware.com/weee](http://www.radware.com/weee)

**MODEL:** ODS-HTQ Dual DC

**PN:** **RODS-HTQ-D-2AC** **HW VER:** D.D40

**DESCRIPTION:** RODS-HTQ-D-2AC HTQp-2U, Intel E5-2658x2, 2.5" 500GB, 128GB(8GBx8+8GBx8), 16GB, AC-1000Wx2, non-NEBS (D325)

35 U.S.C. § 287(a) Patent notice: Patent: [www.radware.com/LegalNotice](http://www.radware.com/LegalNotice)

**Also embedded:**  
OnDemand Switch™, DefensePro™, StringMatch Engine™, Fireproof™, SecureFlow™, DefenseFlow™, DefensePipe™, AppWall™, Inflight™

**SYS S/N:** **31509996**

**MB S/N:** **09005178**

**MAC :** **2CB6931F1A00**

**-42- -72V ---, 12A x 2**

**Network Switch**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:  
(1) This device may not cause harmful interference, and  
(2) This device must accept any interference received, including interference that may cause undesired operations.

\* See installation instructions before connecting to the power supply.  
\* Voir la notice d'installation avant de reccorder au reseau.  
\* Vorden anschliesssen ans Netz die Installations anweisungen beachten.

\* Warning: Downgrading the device software from currently installed version is not supported and might cause an irreversible malfunction

For disposal of this equipment in EU countries please go to: [www.radware.com/weee](http://www.radware.com/weee)





MODEL: OD S-HTQ

PN:

RODS-HTQ-D-2AC

HW VER: D.D40

DESCRIPTION: RODS-HTQ-D-2AC HTQp-2U, Intel E5-2658x2, 2.5"  
500GB, 128GB(8GBx8+8GBx8), 16GB, AC-1000Wx2, non-NEBS (D325)

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SYS S/N:   
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MB S/N:   
09005178

MAC :   
2CB6931F1A00


100-240Vac,  
47-63Hz, 8-4A

Network Switch

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:  
(1) This device may not cause harmful interference, and  
(2) This device must accept any interference received, including interference that may cause undesired operations.

\* See installation instructions before connecting to the power supply.

\* Voir la notice d'installation avant de reccorder au reseau.

\* Vorden anschliessen ans Netz die Installations anweisungen beachten.

\* Warning: Downgrading the device software from currently installed version is not supported and might cause an irreversible malfunction



MODEL: OD S-HTQ DUAL

PN:

RODS-HTQ-D-2AC

HW VER: D.D40

DESCRIPTION: RODS-HTQ-D-2AC HTQp-2U, Intel E5-2658x2, 2.5"  
500GB, 128GB(8GBx8+8GBx8), 16GB, AC-1000Wx2, non-NEBS (D325)

35 U.S.C. § 287(a) Patent notice: Patent: [www.radware.com/LegalNotice](http://www.radware.com/LegalNotice)

Also embedded:

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SYS S/N:   
31509996

MB S/N:   
09005178

MAC :   
2CB6931F1A00


100-240Vac,  
47-63Hz, 8-4A x 2

Network Switch

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:  
(1) This device may not cause harmful interference, and  
(2) This device must accept any interference received, including interference that may cause undesired operations.

\* See installation instructions before connecting to the power supply.

\* Voir la notice d'installation avant de reccorder au reseau.

\* Vorden anschliessen ans Netz die Installations anweisungen beachten.

\* Warning: Downgrading the device software from currently installed version is not supported and might cause an irreversible malfunction

#### Note:

1. The above markings are the minimum requirements required by the safety standard. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.
2. When the equipment is vended to EUROPE, manufacturers and importers shall indicate on the electrical equipment their name, registered trade name or registered trade mark and the postal address at which they can be contacted or, where that is not possible, on its packaging or in a document accompanying the electrical equipment.

TEST ITEM PARTICULARS:	
Classification of use by .....	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input type="checkbox"/> Children likely to be present
Supply Connection.....	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit - not mains connected - <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance .....	<input checked="" type="checkbox"/> +10 % / -10 % <input type="checkbox"/> +20 % / -15 % <input type="checkbox"/> +____ % / - ____ % <input type="checkbox"/> None
Supply Connection – Type .....	<input checked="" type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input checked="" type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input type="checkbox"/> other: No connection to mains
Considered current rating of protective device as part of building or equipment installation .....	16 A and 20 A (for US and Canada) Installation location: <input checked="" type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility .....	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC) .....	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: No connection to mains
Class of equipment .....	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III
Access location .....	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD) .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maximum operating ambient:	40 °C
IP protection class .....	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP__
Power Systems .....	<input checked="" type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - ____ V L-L
Altitude during operation (m) .....	<input type="checkbox"/> 2000 m or less <input checked="" type="checkbox"/> Up to 3100 m
Altitude of test laboratory (m) .....	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> _____ m
Mass of equipment (kg) .....	<input checked="" type="checkbox"/> Approx. 15.39 kg for unit Approx. 1.2 kg for building-in power supply
<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.....	July 27, 2020
Date (s) of performance of tests .....	August 17, 2020 – September 10, 2020
<b>GENERAL REMARKS:</b>	
<p>"(See Enclosure #)" refers to additional information appended to the report.          "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p> <p>This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.</p> <p>When determining the test conclusion, the Measurement Uncertainty of test has been considered.</p>	
<b>Manufacturer's Declaration per sub-clause 4.2.5 of IEC60068-2-1:</b>	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....	<input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>Not applicable</b>
<b>When differences exist; they shall be identified in the General product information section.</b>	
<b>Name and address of factory (ies) .....</b>	1. NEXCOM International Co., Ltd. 5F, 7F, 8F, 9F, 10F&12F, No.63, Sec.1, Sanmin Rd., Banqiao Dist., New Taipei City, Taiwan 2. NEXCOM International Co., Ltd. (Hua-Ya Factory) 2F., No.50, Huaya 3rd Rd., Guishan Dist., Taoyuan City 333, Taiwan

**GENERAL PRODUCT INFORMATION:**
**Product Description –**

The equipment is a Network Switch for use in audio/video, information and communication technology equipment (ITAV) and for indoor use only.

The equipment is supplied by one or two approved building-in power supply units and accompanied with one HDD (optional), eleven system fans, two CPU fans, also provided twenty fiber optical ports, four transceiver ports, two RJ45 ports one console port and an USB2.0 port.

During servicing conditions, an instruction shall be provided to disconnect the power source prior to defeating or bypassing the equipment protection means, and to restore the equipment protection means before restoring power.

The enclosures are fixed together by screws and mechanical fixing.

Overall approx. 566.0 mm by 427.0 mm by 89.0 mm.

**Technical Considerations:**

N/A

**Model Differences:**

Explanation of models ODS-HTQ, ODS-HTQ DUAL, ODS-HTQ DC, ODS-HTQ Dual DC:

Models ODS-HTQ, ODS-HTQ DUAL, ODS-HTQ DC, ODS-HTQ Dual DC are identical except for model designation and use AC or DC power supply.

Model ODS-HTQ: One AC build-in power supply unit.

Model ODS-HTQ DUAL: Two AC build-in power supply unit.

Model ODS-HTQ DC: One DC build-in power supply unit.

Model ODS-HTQ Dual DC: Two DC build-in power supply unit.

**Additional application considerations – (Considerations used to test a component or sub-assembly) –**

- normal conditions	<b>N.C.</b>	- single fault conditions	<b>S.F.C</b>
- functional insulation	<b>FI</b>	- basic insulation	<b>BI</b>
- double insulation	<b>DI</b>	- supplementary insulation	<b>SI</b>
- between parts of opposite polarity	<b>BOP</b>	- reinforced insulation	<b>RI</b>

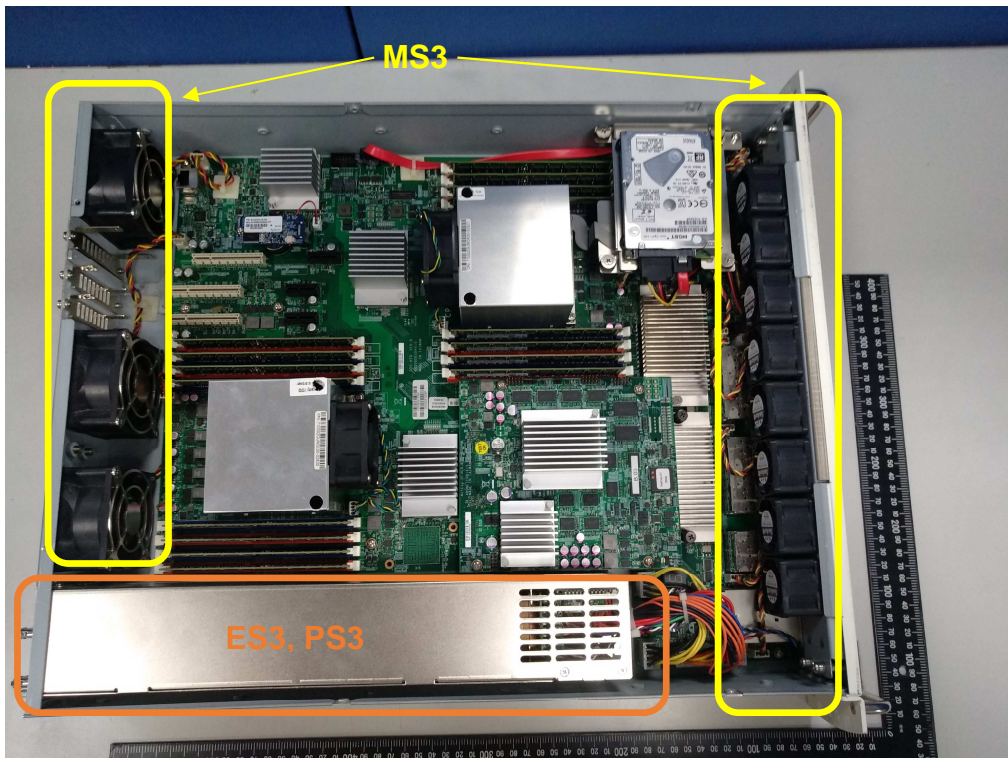
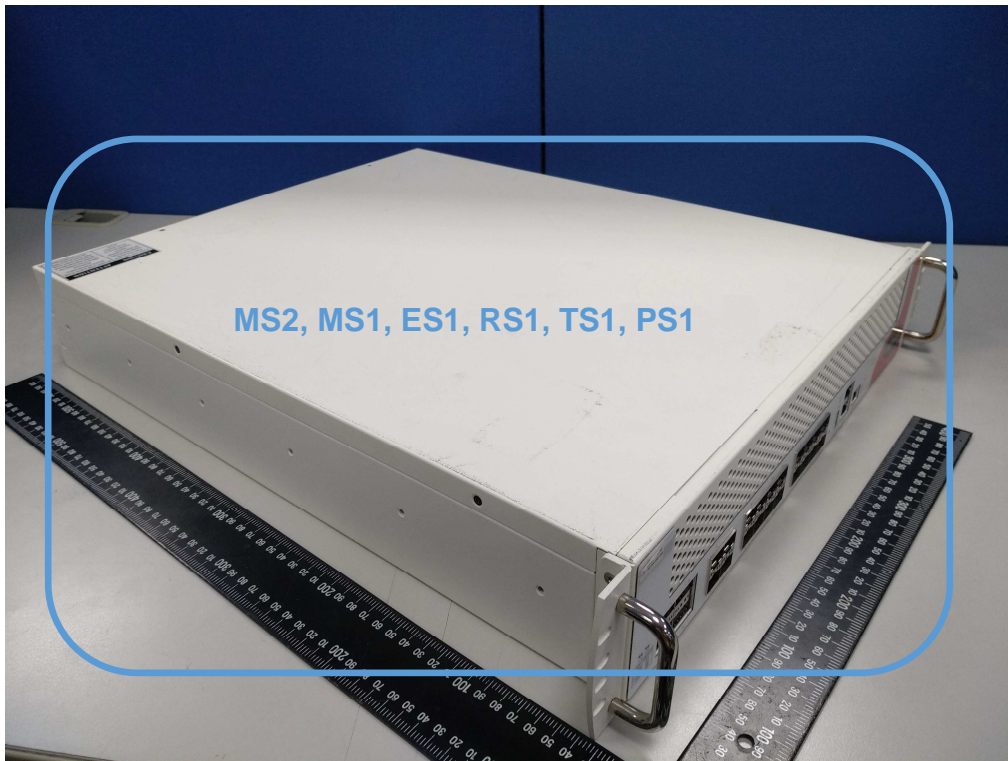
**Indicate used abbreviations (if any)**

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.)	
<b>Electrically-caused injury (Clause 5):</b> (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input	
ES1	
Source of electrical energy	Corresponding classification (ES)
Input and internal primary circuits of power supply	ES3
All circuits after power supply output	ES1
All output port	ES1
<b>Electrically-caused fire (Clause 6):</b> (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts):	
PS2	
Source of power or PIS	Corresponding classification (PS)
Primary circuits	PS3
All circuits after power supply output	PS3
All output ports	PS1
<b>Injury caused by hazardous substances (Clause 7)</b> (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component	
Glycol	
Source of hazardous substances	Corresponding chemical
RTC battery	Electrolyte
<b>Mechanically-caused injury (Clause 8)</b> (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit	
MS2	
Source of kinetic/mechanical energy	Corresponding classification (MS)
Shape edges and corners	MS1
Plastic fan blade (DC Fan)	MS3
The mass of the equipment 7 kg < mass < 25 kg	MS2
<b>Thermal burn injury (Clause 9)</b> (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure	
TS1	
Source of thermal energy	Corresponding classification (TS)
Accessible parts	TS1
<b>Radiation (Clause 10)</b> (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product	
RS1	
Type of radiation	Corresponding classification (RS)
Indicating lights – LEDs	RS1
Optical fiber transceiver	RS1

# ENERGY SOURCE DIAGRAM

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

☒ ES    ☒ PS    ☒ MS    ☒ TS    ☒ RS



OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	ES3: Evaluated in approved SPS	N/A	N/A	Enclosure, See 5.4.2, 5.4.3, 5.5.3
Ordinary	ES1: Output port(s)	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Enclosure	PS3 circuit	Comply with Clause 6.3	Comply with Clause 6.4.5, 6.4.6	N/A
PCB	PS3 circuit	Comply with Clause 6.3	Comply with Clause 6.4.5, 6.4.6	N/A
Other combustible materials / components	PS3 circuit	Comply with Clause 6.3	Comply with Clause 6.4.5, 6.4.6	N/A
Internal wiring	PS3 circuit	N/A	N/A	Comply with Clause 6.5
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	RTC battery	N/A	N/A	Comply with Annex M.3
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3: High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	MS2: 7 kg < mass < 25 kg	Comply with Clause 8.6	N/A	N/A
Ordinary person	MS1: Sharp edges and corners	N/A	N/A	N/A
Ordinary person	MS3: Plastic fan blade (DC Fan)	N/A	N/A	Enclosure
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS1: Accessible parts	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	RS1: LED indicating lights	N/A	N/A	N/A
Ordinary	RS1: Optical fiber transceiver	N/A	N/A	N/A
Supplementary Information:				
(1) See attached energy source diagram for additional details.				
(2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				



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Clause	Requirement + Test	Result - Remark	Verdict
<b>4</b>	<b>GENERAL REQUIREMENTS</b>		P
4.1.1	Acceptance of materials, components and subassemblies	(see appended Table 4.1.2)	P
4.1.2	Use of components	Components, which are certified to IEC and/or national standards, are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment	P
4.1.3	Equipment design and construction		P
4.1.15	Markings and instructions .....	(See Annex F)	P
4.4.4	Safeguard robustness	All safeguards comply with the relevant robustness tests and requirement	P
4.4.4.2	Steady force tests .....	(See Annex T.3 and T.5)	P
4.4.4.3	Drop tests .....		N/A
4.4.4.4	Impact tests .....	(See Annex T.6)	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests .....		N/A
4.4.4.6	Glass Impact tests.....		N/A
4.4.4.7	Thermoplastic material tests .....		N/A
4.4.4.8	Air comprising a safeguard .....	No such type safeguard provided	N/A
4.4.4.9	Accessibility and safeguard effectiveness	During and after the tests, the EUT still complies with the relevant requirement of this standard	P
4.5	Explosion	No explosion occurs	P
4.6	Fixing of conductors	See below	P
4.6.1	Fix conductors not to defeat a safeguard	No conductors defeat a safeguard	P
4.6.2	10 N force test applied to .....	Internal wirings	P
4.7	Equipment for direct insertion into mains socket - outlets	Not this type equipment	N/A
4.7.2	Mains plug part complies with the relevant standard .....		N/A
4.7.3	Torque (Nm) .....		N/A
4.8	Products containing coin/button cell batteries	The coin/button cell battery is not likely to be accessible to children	P
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery .....		—



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Clause	Requirement + Test	Result - Remark	Verdict
4.8.4	Battery Compartment Mechanical Tests..... :		N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object ..... :	(See Annex P)	P

<b>5</b>	<b>ELECTRICALLY-CAUSED INJURY</b>		P
5.2.1	Electrical energy source classifications .....:	See Energy source identification and classification table	P
5.2.2	ES1, ES2 and ES3 limits	Considered	P
5.2.2.2	Steady-state voltage and current.....:	EUT is supplied by approved SPS that output is considered as ES1	P
5.2.2.3	Capacitance limits .....:	Evaluated in approved SPS.	N/A
5.2.2.4	Single pulse limits .....:		N/A
5.2.2.5	Limits for repetitive pulses.....:		N/A
5.2.2.6	Ringing signals .....:	No such ringing signals	N/A
5.2.2.7	Audio signals .....:	No such audio signals	N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	EUT is supplied by approved SPS that output is considered as ES1	P
5.3.2.1	Accessibility to electrical energy sources and safeguards	Considered	P
5.3.2.2	Contact requirements	See below	P
	a) Test with test probe from Annex V .....:	Figure V.2.	P
	b) Electric strength test potential (V).....:		N/A
	c) Air gap (mm) .....:	> 1.0 mm	P
5.3.2.4	Terminals for connecting stripped wire	No such construction	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	No hygroscopic materials used as insulation	P
5.4.1.3	Humidity conditioning..... :	See clause 5.4.8 conducted.	P
5.4.1.4	Maximum operating temperature for insulating materials .....:	(See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
5.4.1.5	Pollution degree.....:	2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions	Evaluated in approved SPS.	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such generator	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.8	Determination of working voltage	Evaluated at approved power supply	P
5.4.1.9	Insulating surfaces	Considered	P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	Evaluated at approved power supply	P
5.4.1.10.2	Vicat softening temperature .....		N/A
5.4.1.10.3	Ball pressure .....		N/A
5.4.2	Clearances	Evaluated at approved power supply	P
5.4.2.2	Determining clearance using peak working voltage	See above	P
5.4.2.3	Determining clearance using required withstand voltage .....	See above	P
	a) a.c. mains transient voltage.....		—
	b) d.c. mains transient voltage .....		—
	c) external circuit transient voltage .....		—
	d) transient voltage determined by measurement .....		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A
5.4.2.5	Multiplication factors for clearances and test voltages.....		N/A
5.4.3	Creepage distances.....	Evaluated at approved power supply	P
5.4.3.1	General		N/A
5.4.3.3	Material Group .....		—
5.4.4	Solid insulation	Evaluated in approved SPS.	N/A
5.4.4.2	Minimum distance through insulation .....		N/A
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material	Evaluated at approved power supply	P
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) .....		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material..... :		N/A
5.4.4.6.5	Mandrel test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies > 30 kHz..... :		N/A
5.4.5	Antenna terminal insulation	No such terminal insulation	N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
	Insulation resistance (MΩ) ..... :		—
5.4.6	Insulation of internal wire as part of supplementary safeguard ..... :	No such supplementary safeguard	N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%) ..... :	93%	—
	Temperature (°C) ..... :	40°C	—
	Duration (h) ..... :	120 h	—
5.4.9	Electric strength test ..... :	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test	Evaluated in approved SPS.	N/A
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit		N/A
5.4.10.1	Parts and circuits separated from external circuits	No such external circuits	N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test..... :		N/A
5.4.10.2.3	Steady-state test ..... :		N/A
5.4.11	Insulation between external circuits and earthed circuitry ..... :		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage $U_{op}$ (V) ..... :		—
	Nominal voltage $U_{peak}$ (V) ..... :		—
	Max increase due to variation $U_{sp}$ ..... :		—
	Max increase due to ageing $\Delta U_{sa}$ ..... :		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ ..... :		—
5.5	Components as safeguards		
5.5.1	General	Evaluated at approved power supply	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.2	Capacitors and RC units	Evaluated at approved power supply	P
5.5.2.1	General requirement	Evaluated at approved power supply	P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector ..... :	Evaluated at approved power supply	P
5.5.3	Transformers	Evaluated at approved power supply	P
5.5.4	Optocouplers	Evaluated at approved power supply	P
5.5.5	Relays	No such component within the EUT	N/A
5.5.6	Resistors	No such resistor used as safeguard or bridge basic/ supplementary/reinforced insulation	N/A
5.5.7	SPD's	No such component within the EUT	N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable ..... :	No antenna terminal within the EUT	N/A
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors	See below	P
5.6.2.1	General requirements	Evaluated at approved power supply	P
5.6.2.2	Colour of insulation	See above	P
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm <sup>2</sup> ) ..... :		—
5.6.4	Requirement for protective bonding conductors	See below	P
5.6.4.1	Protective bonding conductors	From Earthing pin of AC Inlet of Power module to PCB Earthed trace is reliable, comply with the requirements of sub-clause 5.6.6	P
	Protective bonding conductor size (mm <sup>2</sup> )..... :		—
	Protective current rating (A) ..... :		—
5.6.4.3	Current limiting and overcurrent protective devices	No such construction	N/A
5.6.5	Terminals for protective conductors	See below	P
5.6.5.1	Requirement	The earthing terminal in the AC inlet of building-in power supply unit is considered as protective earthing terminal	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Conductor size (mm <sup>2</sup> ), nominal thread diameter (mm)..... :	Evaluated at approved power supply	P
5.6.5.2	Corrosion	No risk of corrosion	P
5.6.6	Resistance of the protective system		P
5.6.6.1	Requirements	See below	P
5.6.6.2	Test Method Resistance ( $\Omega$ ) ..... :	(See appended table 5.6.6.2)	P
5.6.7	Reliable earthing	The equipment is not permanently connected equipment	N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks	Figure 5 of IEC 60990 applied	P
5.7.2.1	Measurement of touch current ..... :	(See appended table 5.2.2.2)	P
5.7.2.2	Measurement of prospective touch voltage	(See appended table 5.7.2.2, 5.7.4)	P
5.7.3	Equipment set-up, supply connections and earth connections	Considered	P
	System of interconnected equipment (separate connections/single connection) ..... :	See below	—
	Multiple connections to mains (one connection at a time/simultaneous connections)..... :	Simultaneous connections	—
5.7.4	Earthed conductive accessible parts ..... :	(See appended Table 5.7.2.2, 5.7.4)	P
5.7.5	Protective conductor current	The ES2 limits were not exceeded under normal operating conditions and single fault conditions	P
	Supply Voltage (V) ..... :		—
	Measured current (mA) ..... :		—
	Instructional Safeguard ..... :		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits	Not this type	N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current to external circuits		N/A
5.7.7	Summation of touch currents from external circuits	Not this type	N/A
	a) Equipment with earthed external circuits Measured current (mA) ..... :		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA) ..... :		N/A
<b>6</b>	<b>ELECTRICALLY- CAUSED FIRE</b>		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.2	Power source circuit classifications	See Energy Source Identification and Classification Table.	P
6.2.2.1	General	See below	P
6.2.2.2	Power measurement for worst-case load fault.....:	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault.....:	(See appended table 6.2.2)	P
6.2.2.4	PS1 .....	(See appended table 6.2.2)	P
6.2.2.5	PS2 .....	(See appended table 6.2.2)	P
6.2.2.6	PS3 .....	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources	All conductors and devices are considered as PIS.	P
6.2.3.1	Arcing PIS .....		N/A
6.2.3.2	Resistive PIS .....	The available power exceeding 15 W and no further test is considered necessary (See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials.....:	See appended Table 5.4.1.5, 6.3.2, 9.0, B.2.6	P
6.3.1 (b)	Combustible materials outside fire enclosure		P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Control fire spread (also see sub-clause 6.4.4, 6.4.5, 6.4.6)	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions .....		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits	No supplementary safeguards are needed	P
6.4.5	Control of fire spread in PS2 circuits	See below	P
6.4.5.2	Supplementary safeguards .....	See appended tables 4.1.2 and Annex G.	P
6.4.6	Control of fire spread in PS3 circuit	Metal chassis as fire enclosure is provided and PCB is rated min. V-1	P



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Clause	Requirement + Test	Result - Remark	Verdict
6.4.7	Separation of combustible materials from a PIS	No such combustible materials	N/A
6.4.7.1	General .....		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	The fire enclosure is the overall enclosure	P
6.4.8.1	Fire enclosure and fire barrier material properties	See below	P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	Provided with sheet metal for fire enclosure	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	See below	P
6.4.8.3.1	Fire enclosure and fire barrier openings	Considered	P
6.4.8.3.2	Fire barrier dimensions	No fire barrier	N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....	All front side openings do not exceed 5 mm in any dimension The PIS was not any openings within the Figure 41 of the rear side.	P
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....	No openings	P
	Flammability tests for the bottom of a fire enclosure .....		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) .....		N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating .....		N/A
6.5	Internal and external wiring		P
6.5.1	Requirements	VW-1 or FT-1 wires used, which considered to equivalent to IEC/TS 60695-11-21.	P
6.5.2	Cross-sectional area (mm <sup>2</sup> ) .....	See above	—
6.5.3	Requirements for interconnection to building wiring .....	No interconnection to building wiring	N/A
6.6	Safeguards against fire due to connection to additional equipment	(See table Annex Q.1)	P
	External port limited to PS2 or complies with Clause Q.1	(See table Annex Q.1)	P
<b>7</b>	<b>INJURY CAUSED BY HAZARDOUS SUBSTANCES</b>		<b>P</b>
7.2	Reduction of exposure to hazardous substances	Hazardous chemicals are not	P

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Clause	Requirement + Test	Result - Remark	Verdict
		used	
7.3	Ozone exposure	No ozone produced	N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions.....:		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010) .....		—
7.6	Batteries .....	See Annex M.3	P

<b>8</b>	<b>MECHANICALLY-CAUSED INJURY</b>		P
8.1	General	See below	P
8.2	Mechanical energy source classifications	Sharp edges and corners: MS1; Equipment mass: MS2 Plastic fan blade (DC Fan): MS3	P
8.3	Safeguards against mechanical energy sources	See below	P
8.4	Safeguards against parts with sharp edges and corners	The edges and corners are sufficiently well rounded and smoothed so as not cause pain or injury	P
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts	Metal enclosure as safeguard is provided	P
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment	Plastic fan blade (DC Fan) classified MS3 are not accessible for ordinary person	P
8.5.2	Instructional Safeguard .....		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks.....:		N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard .....		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N) .....		N/A
8.5.5	High Pressure Lamps		N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test .....		N/A
8.6	Stability	The mass of EUT is MS2	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.6.1	Product classification		N/A
	Instructional Safeguard .....		—
8.6.2	Static stability		P
8.6.2.2	Static stability test		P
	Applied Force .....		—
8.6.2.3	Downward Force Test	Not floor standing type	N/A
8.6.3	Relocation stability test	Not floor standing type	N/A
	Unit configuration during 10° tilt .....		—
8.6.4	Glass slide test	No such controls or display	N/A
8.6.5	Horizontal force test (Applied Force) .....	No such controls or display	N/A
	Position of feet or movable parts .....		—
8.7	Equipment mounted to wall or ceiling	Not this type	N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....		N/A
8.7.2	Direction and applied force .....		N/A
8.8	Handles strength	No such handles	N/A
8.8.1	Classification		N/A
8.8.2	Applied Force .....		N/A
8.9	Wheels or casters attachment requirements	No such wheels or casters	N/A
8.9.1	Classification		N/A
8.9.2	Applied force .....		—
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard .....		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force .....		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N) .....		—
8.10.6	Thermoplastic temperature stability (°C) .....		N/A
8.11	Mounting means for rack mounted equipment		N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable <i>N</i> .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.11.4	Mechanical strength test 250 N, including end stops		N/A
8.12	Telescoping or rod antennas.....		N/A
	Button/Ball diameter (mm) .....		—


<b>9</b>	<b>THERMAL BURN INJURY</b>		P
9.2	Thermal energy source classifications	See Energy Source Identification and Classification Table	P
9.3	Safeguard against thermal energy sources	See appended Table 5.4.1.4, 6.3.2, 9.0, B.2.6	P
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard	Not required due to TS1	N/A
9.4.2	Instructional safeguard .....		N/A

<b>10</b>	<b>RADIATION</b>		P
10.2	Radiation energy source classification	See below	P
10.2.1	General classification	Indicating LEDs	P
10.3	Protection against laser radiation	The EUT does not produce laser radiation	N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault .....		N/A
	Instructional safeguard .....		—
	Tool .....		—
10.4	Protection against visible, infrared, and UV radiation	Indicating LEDs used is classified as Exempt Group of IEC 62471	N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons..... :		N/A
10.4.1.b)	RS3 accessible to a skilled person .....		N/A
	Personal safeguard (PPE) instructional safeguard .....		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 .....		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions .....		N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque .....		N/A
10.4.1.f)	UV attenuation..... :		N/A
10.4.1.g)	Materials resistant to degradation UV .....		N/A
10.4.1.h)	Enclosure containment of optical radiation .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.4.1.i)	Exempt Group under normal operating conditions .....		N/A
10.4.2	Instructional safeguard .....		N/A
10.5	Protection against x-radiation		N/A
10.5.1	X- radiation energy source that exists equipment:		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards .....		N/A
	Instructional safeguard for skilled person .....		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation .....		—
	Abnormal and single-fault condition .....		N/A
	Maximum radiation (pA/kg) .....		N/A
10.6	Protection against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A) .....		N/A
	Output voltage, unweighted r.m.s. ....		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards .....		N/A
	Equipment safeguard prevent ordinary person to RS2 .....		—
	Means to actively inform user of increase sound pressure .....		—
	Equipment safeguard prevent ordinary person to RS2 .....		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) $L_{Aeq}$ acoustic pressure output .....		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A).....		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A).....		—
<b>B</b>	<b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b>		<b>P</b>
B.2	Normal Operating Conditions	See below	P

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Clause	Requirement + Test	Result - Remark	Verdict
B.2.1	General requirements .....	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers .....		N/A
B.2.3	Supply voltage and tolerances	+10 % and -10 %	P
B.2.5	Input test .....	(See appended Table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements .....	(See appended table B.3)	P
B.3.2	Covering of ventilation openings		P
B.3.3	D.C. mains polarity test		N/A
B.3.4	Setting of voltage selector.....	No voltage selector.	N/A
B.3.5	Maximum load at output terminals .....	(See appended table B.3)	P
B.3.6	Reverse battery polarity		N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.	Not this type	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions	All safeguards remained effective	P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited .....	No temperature controlling device.	N/A
B.4.3	Motor tests		P
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature .....	(See appended table B.4)	P
B.4.4	Short circuit of functional insulation	See below	P
B.4.4.1	Short circuit of clearances for functional insulation	Evaluated at approved power supply board	P
B.4.4.2	Short circuit of creepage distances for functional insulation	Evaluated at approved power supply board	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards within the EUT	N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	Evaluated at approved power supply board	P
B.4.6	Short circuit or disconnect of passive components	Evaluated at approved power supply board	P
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	(See appended table B.4)	P
B.4.9	Battery charging under single fault conditions .....	(See Annex M.3)	P
<b>C</b>	<b>UV RADIATION</b>		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
C.1	Protection of materials in equipment from UV radiation	The EUT does not produce UV radiation	N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
<b>D</b>	<b>TEST GENERATORS</b>		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
<b>E</b>	<b>TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS</b>		N/A
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V) .....		—
	Rated load impedance ( $\Omega$ ) .....		—
E.2	Audio amplifier abnormal operating conditions		N/A
<b>F</b>	<b>EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS</b>		P
F.1	General requirements		P
	Instructions – Language .....	Review in English. However, the local language for each country shall be provided	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1	Letter symbols are used according to IEC 60027-1	P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Graphic symbols are used according to IEC 60417-1, ISO 3864-2, ISO 7000 or ISO 7010	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Marking is on enclosure which is not removable part	P
F.3.2	Equipment identification markings	See below	P
F.3.2.1	Manufacturer identification .....	RADWARE,  radware	—
F.3.2.2	Model identification .....	See page 2	—
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.3.3	Nature of supply voltage .....	See page 2	—
F.3.3.4	Rated voltage .....	See page 2	—
F.3.3.4	Rated frequency .....	See page 2	—
F.3.3.6	Rated current or rated power .....	See page 2	—
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device	No voltage setting device.	N/A
F.3.5	Terminals and operating devices	See below	P
F.3.5.1	Mains appliance outlet and socket-outlet markings .....	No such appliance outlet and socket-outlet.	N/A
F.3.5.2	Switch position identification marking .....	No such main switch	N/A
F.3.5.3	Replacement fuse identification and rating markings .....	Evaluated at approved power supply board	P
F.3.5.4	Replacement battery identification marking .....	Not intend to be replaced by ordinary person	N/A
F.3.5.5	Terminal marking location	Not for permanently connected	N/A
F.3.6	Equipment markings related to equipment classification	Evaluated in approved building-in power supply unit	N/A
F.3.6.1	Class I Equipment	The EUT is a Class I equipment	P
F.3.6.1.1	Protective earthing conductor terminal	Evaluated at approved power supply board	P
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals	Evaluated at approved power supply board	P
F.3.6.2	Class II equipment (IEC60417-5172)	Not this type equipment	N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking .....	IPX0	—
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking	The marking on the EUT is durable and legible	P
F.3.10	Test for permanence of markings	After rubbing test by water and petroleum spirit, the marking is still legible; it is not easily removed and show no sign of curling	P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use	Relevant safety caution texts and installation instruction are available to the user in user's manual	P

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Clause	Requirement + Test	Result - Remark	Verdict
	c) Equipment intended to be fastened in place	The EUT is not such type equipment	N/A
	d) Equipment intended for use only in restricted access area	The EUT is not such type equipment	N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1	No such terminals	N/A
	f) Protective earthing employed as safeguard	Class I equipment	P
	g) Protective earthing conductor current exceeding ES2 limits	Not exceed ES2 limited	N/A
	h) Symbols used on equipment	Symbols explained	P
	i) Permanently connected equipment not provided with all-pole mains switch	The EUT is not a permanently connected equipment	N/A
	j) Replaceable components or modules providing safeguard function	No replaceable components or modules within EUT	N/A
F.5	Instructional safeguards		P
	Where "instructional safeguard" is referenced in the test report it specifies the required elements, location of marking and/or instruction	The relative symbol or warning is provided on product, and the complete instructional safeguard is provided on the instruction	P
<b>G</b>	<b>COMPONENTS</b>		P
<b>G.1</b>	<b>Switches</b>		N/A
G.1.1	General requirements	No such devices	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
<b>G.2</b>	<b>Relays</b>		N/A
G.2.1	General requirements	No such devices	N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
<b>G.3</b>	<b>Protection Devices</b>		P
G.3.1	Thermal cut-offs		N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)	No such devices	N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691	No such devices	N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Aging hours (H) .....		—
	Single Fault Condition .....		—
	Test Voltage (V) and Insulation Resistance ( $\Omega$ )...		—
G.3.3	PTC Thermistors	Approved Polyswitch used	P
G.3.4	Overcurrent protection devices	Evaluated at approved power supply	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions .....		N/A
<b>G.4</b>	<b>Connectors</b>		P
G.4.1	Spacings	Evaluated at approved power supply	P
G.4.2	Mains connector configuration .....	Evaluated at AC inlet of approved power supply	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
<b>G.5</b>	<b>Wound Components</b>		P
G.5.1	Wire insulation in wound components .....	Evaluated at approved power supply	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) .....		—
	Temperature (°C) .....		—
G.5.2.3	Wound Components supplied by mains		N/A
<b>G.5.3</b>	<b>Transformers</b>		P
G.5.3.1	Requirements applied (IEC 61204-7, IEC 61558-1 /-2, and/or IEC 62368-1) .....	Evaluated at approved power supply	P
	Position.....		—
	Method of protection .....		—
G.5.3.2	Insulation		N/A
	Protection from displacement of windings .....		—
G.5.3.3	Overload test.....	Evaluated at approved power supply	P
G.5.3.3.1	Test conditions	See above	P

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.3.3.2	Winding Temperatures testing in the unit	See above	P
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
<b>G.5.4</b>	<b>Motors</b>		P
G.5.4.1	General requirements	Certified DC fan only See appended Table 4.1.2	P
	Position .....	Installed in EUT	—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) .....		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V) .....		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....		N/A
	Electric strength test (V) .....		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature .....		N/A
	Electric strength test (V) .....		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) .....		N/A
	Electric strength test (V) .....		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage .....		—
<b>G.6</b>	<b>Wire Insulation</b>		N/A
G.6.1	General	Evaluated in approved SPS.	N/A
G.6.2	Solvent-based enamel wiring insulation		N/A
<b>G.7</b>	<b>Mains supply cords</b>		N/A
G.7.1	General requirements	No power supply cord provided.	N/A
	Type .....		—
	Rated current (A) .....		—
	Cross-sectional area (mm <sup>2</sup> ), (AWG) .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) ..... :		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm) ... :		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry ..... :		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) ..... :		—
	Diameter (mm) ..... :		—
	Temperature (°C) ..... :		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
<b>G.8</b>	<b>Varistors</b>		P
G.8.1	General requirements	Evaluated at approved power supply	P
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test ..... :		N/A
G.8.3.3	Temporary overvoltage ..... :		N/A
<b>G.9</b>	<b>Integrated Circuit (IC) Current Limiters</b>		N/A
G.9.1 a)	Manufacturer defines limit at max. 5 A.		N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA ..... :		—
G.9.1 d)	IC limiter output current (max. 5 A) ..... :		—
G.9.1 e)	Manufacturers' defined drift ..... :		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
<b>G.10</b>	<b>Resistors</b>		P
G.10.1	General requirements	Evaluated at approved power supply	P



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Clause	Requirement + Test	Result - Remark	Verdict
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
<b>G.11</b>	<b>Capacitor and RC units</b>		N/A
G.11.1	General requirements		N/A
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
<b>G.12</b>	<b>Optocouplers</b>		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....:	Evaluated at approved power supply	P
	Type test voltage Vini .....		—
	Routine test voltage, Vini,b .....		—
<b>G.13</b>	<b>Printed boards</b>		P
G.13.1	General requirements	No requirement of insulation on printed boards within the EUT	P
G.13.2	Uncoated printed boards		N/A
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction).....:		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation.....:		N/A
	Number of insulation layers (pcs) .....		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
<b>G.14</b>	<b>Coating on components terminals</b>		N/A
G.14.1	Requirements .....		N/A
<b>G.15</b>	<b>Liquid filled components</b>		N/A
G.15.1	General requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
<b>G.16</b>	<b>IC including capacitor discharge function (ICX)</b>		N/A
a)	Humidity treatment in accordance with sc 5.4.8 – 120 hours	No such devices	N/A
b)	Impulse test using circuit 2 with $U_c$ = to transient voltage .....		N/A
c1)	Application of ac voltage at 110 % of rated voltage for 2.5 minutes		N/A
c2)	Test voltage .....		—
d1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
d2)	Capacitance .....		—
d3)	Resistance .....		—
<b>H</b>	<b>CRITERIA FOR TELEPHONE RINGING SIGNALS</b>		N/A
H.1	General	No such circuits	N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringling signal		N/A
H.3.1.1	Frequency (Hz) .....		—
H.3.1.2	Voltage (V) .....		—
H.3.1.3	Cadence; time (s) and voltage (V) .....		—
H.3.1.4	Single fault current (mA): .....		—
H.3.2	Tripping device and monitoring voltage .....		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) .....		—
<b>J</b>	<b>INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION</b>		N/A
	General requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
<b>K</b>	<b>SAFETY INTERLOCKS</b>		N/A
K.1	General requirements	No such devices	N/A
K.2	Components of safety interlock safeguard mechanism .....		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance .....		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method .....		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) .....		N/A
K.7.2	Overload test, Current (A) .....		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test .....		N/A
<b>L</b>	<b>DISCONNECT DEVICES</b>		P
L.1	General requirements	Appliance inlet is considered as disconnected device.	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized	No such parts	N/A
L.4	Single phase equipment	Single phase equipment	P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		P
<b>M</b>	<b>EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS</b>		P
M.1	General requirements	RTC battery	P
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements	Cells are approved	P
M.2.2	Compliance and test method (identify method) .. :	Checked by inspection and evaluation based on the relevant documents of cells	P
M.3	Protection circuits	See below	P
M.3.1	Requirements	Considered	P
M.3.2	Tests	Appropriate cell data is available	P
	- Overcharging of a rechargeable battery		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Unintentional charging of a non-rechargeable battery	Considered	P
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance ..... :	See appended Table Annex M	P
M.4	Additional safeguards for equipment containing secondary lithium battery	No such secondary lithium battery	N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2 a)	Charging voltage, current and temperature ..... :		—
M.4.2.2 b)	Single faults in charging circuitry ..... :		—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) ..... :		N/A
M.6.2	Leakage current (mA) ..... :		N/A
M.7	Risk of explosion from lead acid and NiCd batteries	No such type batteries	N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume $V_z$ (m <sup>3</sup> /s) .....		—
M.8.2.3	Correction factors.....		—
M.8.2.4	Calculation of distance $d$ (mm) .....		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) .....	Not intend to be replaced by ordinary person	N/A
<b>N</b>	<b>ELECTROCHEMICAL POTENTIALS</b>		P
	Metal(s) used .....		—
<b>O</b>	<b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>		N/A
	Figures O.1 to O.20 of this Annex applied.....		—
<b>P</b>	<b>SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS</b>		P
P.1	General requirements		P
P.2.2	Safeguards against entry of foreign object	See below	P
	Location and Dimensions (mm) .....	All front side openings do not exceed 5 mm in any dimension	—
P.2.3	Safeguard against the consequences of entry of foreign object		P
P.2.3.1	Safeguards against the entry of a foreign object	Be not located vertically or within 5° vertical projection up to the size of each openings, above bare conductive parts at PIS, ES3 and PS3	P
	Openings in transportable equipment	Not this type equipment	N/A
	Transportable equipment with metalized plastic parts .....	Not this type equipment	N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) .....	Not this type equipment	N/A
P.3	Safeguards against spillage of internal liquids	No such internal liquids	N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts	No such coatings and adhesives	N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C)..... :		—
	Tr (°C) ..... :		—
	Ta (°C) ..... :		—
P.4.2 b)	Abrasion testing ..... :		N/A
P.4.2 c)	Mechanical strength testing ..... :		N/A
<b>Q</b>	<b>CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING</b>		<b>P</b>
Q.1	Limited power sources	See below	P
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output	Approved poly-switch provided for USB2.0	P
	- Regulating network limited output under normal operating and simulated single fault condition		N/A
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method	(See appended table Annex Q.1)	P
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) ..... :		—
	Current limiting method..... :		—
<b>R</b>	<b>LIMITED SHORT CIRCUIT TEST</b>		<b>N/A</b>
R.1	General requirements	No such circuits	N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A). ..... :		N/A
<b>S</b>	<b>TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		<b>N/A</b>
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material ..... :		—
	Wall thickness (mm)..... :		—
	Conditioning (°C)..... :		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- Material extinguishes within 30 s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material .....		—
	Wall thickness (mm).....		—
	Conditioning (°C).....		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material .....		—
	Wall thickness (mm).....		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material .....		—
	Wall thickness (mm).....		—
	Conditioning (test condition), (°C).....		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
<b>T</b>	<b>MECHANICAL STRENGTH TESTS</b>		<b>P</b>
T.1	General requirements	See below	P
T.2	Steady force test, 10 N .....		P
T.3	Steady force test, 30 N .....	(See appended table T.3)	P
T.4	Steady force test, 100 N .....		N/A
T.5	Steady force test, 250 N .....	(See appended table T.5)	P
T.6	Enclosure impact test	See below	P
	Fall test	(See appended table T.6)	P
	Swing test		N/A
T.7	Drop test .....		N/A
T.8	Stress relief test .....		N/A



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
T.9	Impact Test (glass)	No glass parts	N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J)..... :		—
	Height (m) ..... :		—
T.10	Glass fragmentation test ..... :		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm) ..... :		—
<b>U</b>	<b>MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION</b>		N/A
U.1	General requirements	No such CRT device	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen ..... :		N/A
<b>V</b>	<b>DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)</b>		P
V.1	Accessible parts of equipment	The surfaces are evaluated by the test probe of Figure V.1 and V.2	P
V.2	Accessible part criterion	No internal conductive parts can be accessible	P

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

4.1.2	TABLE: List of critical components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1</sup>	
Building-in power supply unit (for AC powered units with single power supply) (for model ODS-HTQ)	Zippy Technology Corp.	PSS-2A00V	I/P: 100-240 Vac, 47-63 Hz, 15-7.5 A; O/P: +12 V/83 A, +5 VSB/0-4 A, Total output: 1000 W; Class I, 3100 m, Tma: 48 °C.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by TUV, UL recognized	
Building-in power supply unit (for AC powered units with dual power supplies) (for model ODS-HTQ DUAL)	Zippy Technology Corp.	PSS2-5A00V3V (redundant power supply with two PSS-2A00V power modules)	I/P: 100-240 Vac, 47-63 Hz, 15-7.5 A; O/P: +5 Vdc/0-22A, +3.3 Vdc/0-22 A, +12 Vdc/83 A, +5 VSB/0-4 A, -12 Vdc/0-0.5 A; Max. output power: +5 Vdc and +3.3 Vdc Max. = 150 W, Total output:1000 W; Class I, 3100 m, Tma: 48 °C.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by TUV, UL recognized	
Building-in power supply unit (for DC powered units with single power supply) (for model ODS-HTQ DC)	Zippy Technology Corp.	DPSS-2A00V	I/P: -42 Vdc to -72 Vdc, 30-17 A; O/P: +12 Vdc/83 A, +5 VSB/0-4 A, Total output:1000 W, Class I, 3100 m, Tma: 45 °C.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by TUV, UL recognized	
Building-in power supply unit (for DC powered units with dual power supply) (for model ODS-HTQ Dual DC)	Zippy Technology Corp.	DPSS2-5A00V3V (redundant power supply with two DPSS-2A00V power modules)	I/P: -42 Vdc to -72 Vdc, 30-17 A; O/P: +5 Vdc/0-22 A; +12 Vdc/83 A, +3.3 Vdc/0-22 A, -12 Vdc/0-0.5 A, +5 VSB/0-4 A, +5 Vdc and +3.3 Vdc Max. = 150W, Total output:1000 W, Class I, 3100 m, Tma: 45 °C.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, UL 60950-1	CB by TUV, UL recognized	
System fan (front panel) (eight provided)	Everflow Precision Electronic (Dong Guan) Co., Ltd.	R124028BU	12 Vdc, 0.4 A max. 18.03 CFM min.	EN 60950-1: 2006+A11+A1+A12+A2, UL 507	CB by TUV, UL recognized	
Alt.	Sanyo Denki Co., Ltd.	9GV0412P3G03	12 Vdc, 0.52 A max., 0.6 m³/min min.	EN 60950-1: 2006+A11+A1+A12+A2, UL 507	CB by TUV, UL recognized	

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
System fan (rear side) (three provided)	Everflow Precision Electronic (Dong Guan) Co., Ltd.	RB7038BU	12 Vdc, 0.8 A max., 66.45 CFM min.	EN 60950-1: 2006+A11+A1+A12+A2, UL 507	CB by TUV, UL recognized
Alt.	Sanyo Denki Co., Ltd.	9GA0712P1H001	12 Vdc, 1.1A max., 1.92 m <sup>3</sup> /min min.	EN 60950-1: 2006+A11+A1+A12+A2, UL 507	CB by TUV, UL recognized
CPU fan (two provided max.)	Everflow Precision Electronic (Dong Guan) Co., Ltd.	F126025BU	12 Vdc, 0.26 A max., 24.49 CFM min.	EN 60950-1: 2006+A11+A1+A12+A2, UL 507	CB by TUV, UL recognized
HDD (Optional)	Western Digital Technologies Inc.	WD5000AAKX-22ERMA0	5 Vdc, max. 1.5 A; 12 Vdc, max. 1.0 A	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2	CB by TUV, UL recognized
Alt.	Interchangeable	—	5 Vdc or 12 Vdc, max. 1.5 A	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2	S, VDE or other EU certification marks
RTC Battery	SPECTRUM BRANDS INC	CR2032, BR2032	Max. abnormal charge current: 5 mA	Applicable parts of IEC 60950-1, UL 1642	UL recognized
Alt.	VIC-DAWN ENTERPRISE CO LTD	BR2032, CR2032	Max. abnormal charge current: 10 mA	Applicable parts of IEC 60950-1, UL 1642	UL recognized
Alt.	VARTA MICROBATTERY GMBH	CR2032	Max. abnormal charge current: 10 mA	Applicable parts of IEC 60950-1, UL 1642	UL recognized
Alt.	PANASONIC CORPORATION OF NORTH AMERICA	CR2032* CR-2032*	Max. abnormal charge current: 10 mA	Applicable parts of IEC 60950-1, UL 1642	UL recognized
Alt.	PANASONIC CORPORATION OF NORTH AMERICA	BR2032* BR-2032*	Max. abnormal charge current: 5 mA	Applicable parts of IEC 60950-1, UL 1642	UL recognized
Alt.	Tohoku Murata Manufacturing Co., Ltd.	CR2032* CR2032X*	Max. abnormal charge current: 10 mA	Applicable parts of IEC 60950-1, UL 1642	UL recognized
Alt.	EVE ENERGY CO LTD	CR2032, CR2032HT	Max. abnormal charge current: 10 mA	Applicable parts of IEC 60950-1, UL 1642	UL recognized
Polyswitch (UF1 for USB2.0 port)	Polytronics Technology Corp.	SMD1206P150T FT	8 Vdc, I <sub>h</sub> = 1.5 A, I <sub>t</sub> = 3 A	IEC/EN 60730-1, 1, UL 1434	TUV, UL recognized
Alt.	Interchangeable	—	8 Vdc, I <sub>h</sub> = max. 1.5 A, I <sub>t</sub> = max. 3 A	IEC/EN 60730-1	S, VDE or other EU certification marks
Metal enclosure	Interchangeable	—	Metal alloy, min.0.8 mm thick	IEC 60950-1: 2005+A1+A2	—

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Fiber Optical Transceivers (Optional)	Interchangeable	—	3.3Vdc, max. 1W, Laser class 1 with metal enclosure	UL 60950-1, IEC 60950-1, IEC 60825-1, EN 60825-1	TUV, UL recognized
<b>Plastic Material List:</b>					
PCB	ALLIED CIRCUITS CO LTD	M-1	V-0, 130 °C	Applicable parts of IEC 60950-1, UL 94, UL 796	UL recognized
Alt.	Interchangeable	—	Min. V-1, min. 105 °C	Applicable parts of IEC 62368-1, UL 94, UL 796	UL recognized
I/O connectors	Interchangeable	—	Min. V-2	IEC 60950-1: 2005+A1+A2	—
supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. 2) Description line content is optional. Main line description needs to clearly detail the component used for testing.					

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

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

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

4.8.4.6	TABLE: Crush test			—
Test position		Surface tested	Crushing Force (N)	Duration force applied (s)
supplementary information:				

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

5.2	TABLE: Classification of electrical energy sources						P
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
1	100-240 Vac	AC Input	Normal	Rated 100-240 Vac	Rated 8 A / 4 A	47-63 Hz	ES3 (supplied by build in power unit)
2	--	All output	Normal	--	--	--	ES1
5.2.2.3 - Capacitance Limits							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class	
				Capacitance, nF	Upk (V)		
			Normal				
			Abnormal				
			Single fault – SC/OC				

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

#### 5.2.2.4 - Single Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
			Normal				
			Abnormal				
			Single fault – SC/OC				

#### 5.2.2.5 - Repetitive Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Off time (ms)	Upk (V)	Ipk (mA)	
			Normal				
			Abnormal				
			Single fault – SC/OC				

Test Conditions:

Normal –

Abnormal -

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



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

5.4.1.4, 6.3.2, 9.0, B.2.6		TABLE: Temperature measurements					P
	Supply voltage (V) .....	90V, 63Hz	264V, 63Hz	--	--	—	
	Ambient Tmin (°C) .....	--	--	--	--	—	
	Ambient Tmax (°C) .....	--	--	--	--	—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)	
Tested on EUT with build-in power supply (mfr. EMACS, model PSS-2A00V (Used one module))							
Actual ambient		23.6	24.7	--	--	--	
Below values for T (°C) are re-calculated to 40 °C from actual ambient respectively:							
01. T2 coil (power)		85.4	83.8	--	--	110	
02. T4 coil (power)		55.9	54.5	--	--	110	
03. T1 coil (power)		62.5	59.3	--	--	105	
04. PWB near CPU0 (mother board)		45.8	44.8	--	--	105	
05. PWB near CPU1 (mother board)		46.3	45.2	--	--	105	
06. PWB near U29 (control board)		47.9	45.8	--	--	105	
07. PWB near U1 (control board)		51.3	49.9	--	--	105	
08. PWB near BU (control board)		48.4	47.2	--	--	105	
09. Body of RAM (control board)		42.9	42.7	--	--	105	
10. Body of SSD (control board)		46.9	45.8	--	--	105	
11. Body of HDD (control board)		41.4	40.3	--	--	105	
12. Body of RTC (control board)		44.9	43.8	--	--	100	
13. Inlet near L(power)		46.6	43.3	--	--	70	
Below values for T (°C) are re-calculated to 25 °C from actual ambient respectively:							
14. Metal enclosure outside near power supply		27.1	25.5	--	--	48	
Test condition:		35.7 Vdc	86.4 Vdc	--	--	--	
Tested on EUT with build-in power supply (mfr. EMACS, model DPSS-2A00V (Used one module))							
Actual ambient		22.9	23.1	--	--	--	
Below values for T (°C) are re-calculated to 40 °C from actual ambient respectively:							
01. T2 coil (power)		76.8	76.7	--	--	110	
02. T4 coil (power)		54.6	53.5	--	--	110	
03. T1 coil (power)		72.8	70.7	--	--	105	
04. PWB near CPU0 (mother board)		46.1	45.3	--	--	105	
05. PWB near CPU1 (mother board)		46.7	45.9	--	--	105	

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
06. PWB near U29 (control board)	47.2	46.5	--	--	105
07. PWB near U1 (control board)	51.2	50.5	--	--	105
08. PWB near BU (control board)	48.4	47.7	--	--	105
09. Body of RAM (control board)	43.4	42.4	--	--	105
10. Body of SSD (control board)	47.0	46.5	--	--	105
11. Body of HDD (control board)	41.7	41.2	--	--	105
12. Body of RTC (control board)	45.0	44.7	--	--	100
13. Inlet near L(power)	41.5	41.2	--	--	70
Below values for T (°C) are re-calculated to 25 °C from actual ambient respectively:					
14. Metal enclosure outside near power supply	26.1	26.4	--	--	48
<b>Test condition:</b>	<b>CPU Fan locked (90V, 63Hz)</b>	<b>Power Fan locked (90V, 63Hz)</b>	<b>All I/O port overload (90V, 63Hz)</b>	<b>Opening blocked (90V, 63Hz)</b>	--
Tested on EUT with build-in power supply (mfr. EMACS, model PSS-2A00V (Used one module))					
Actual ambient	22.9	23.0	23.7	23.2	--
Below values for T (°C) are re-calculated to 40 °C from actual ambient respectively:					
01. T2 coil (power)	86.4	190.4	69.9	148.8	225 *)
02. T4 coil (power)	56.6	130.6	56.2	105.9	175
03. T1 coil (power)	63.0	145.9	63.2	121.2	150
04. PWB near CPU0 (mother board)	47.8	46.5	45.2	75.1	300
05. PWB near CPU1 (mother board)	46.8	47.2	45.2	77.2	300
06. PWB near U29 (control board)	48.2	49.5	46.5	83.8	300
07. PWB near U1 (control board)	51.2	52.0	50.4	87.3	300
08. PWB near BU (control board)	47.9	48.5	47.6	76.3	300
09. Body of RAM (control board)	43.4	47.3	43.4	75.4	300
10. Body of SSD (control board)	48.4	47.6	46.4	75.0	300
11. Body of HDD (control board)	41.7	42.6	41.2	67.6	300
12. Body of RTC (control board)	47.0	46.7	45.0	74.0	300
13. Inlet near L(power)	56.1	67.3	48.5	87.0	300
Below values for T (°C) are re-calculated to 25 °C from actual ambient respectively:					
14. Metal enclosure outside near power supply	26.9	36.2	26.1	50.3	58

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Test condition:	Front all fans locked (90V, 63Hz)	Rear all fans locked (90V, 63Hz)	--	--	--
Tested on EUT with build-in power supply (mfr. EMACS, model PSS-2A00V (Used one module))					
Actual ambient	24.4	23.2	--	--	--
Below values for T (°C) are re-calculated to 40 °C from actual ambient respectively:					
01. T2 coil (power)	96.7	80.0	--	--	225 *)
02. T4 coil (power)	65.0	53.7	--	--	175
03. T1 coil (power)	73.8	59.0	--	--	150
04. PWB near CPU0 (mother board)	45.5	48.0	--	--	300
05. PWB near CPU1 (mother board)	46.7	50.2	--	--	300
06. PWB near U29 (control board)	50.6	50.4	--	--	300
07. PWB near U1 (control board)	53.8	56.2	--	--	300
08. PWB near BU (control board)	48.1	53.1	--	--	300
09. Body of RAM (control board)	44.5	45.7	--	--	300
10. Body of SSD (control board)	45.6	50.6	--	--	300
11. Body of HDD (control board)	40.2	42.4	--	--	300
12. Body of RTC (control board)	43.9	48.4	--	--	300
13. Inlet near L(power)	56.8	49.6	--	--	300
Below values for T (°C) are re-calculated to 25 °C from actual ambient respectively:					
14. Metal enclosure outside near power supply	29.0	26.8	--	--	58
Test condition:	Power Fan locked (35.7 Vdc)	Opening blocked (35.7 Vdc)	--	--	--
Tested on EUT with build-in power supply (mfr. EMACS, model DPSS-2A00V (Used one module))					
Actual ambient	25.6	24.0	--	--	--
Below values for T (°C) are re-calculated to 40 °C from actual ambient respectively:					
01. T2 coil (power)	124.2	112.1	--	--	225 *)
02. T4 coil (power)	95.5	86.9	--	--	175
03. T1 coil (power)	146.8	116.2	--	--	150
04. PWB near CPU0 (mother board)	44.9	72.1	--	--	300
05. PWB near CPU1 (mother board)	45.5	75.3	--	--	300

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
06. PWB near U29 (control board)	47.2	79.9	--	--			300
07. PWB near U1 (control board)	50.0	83.6	--	--			300
08. PWB near BU (control board)	46.9	73.9	--	--			300
09. Body of RAM (control board)	44.3	73.1	--	--			300
10. Body of SSD (control board)	46.2	72.0	--	--			300
11. Body of HDD (control board)	41.0	62.7	--	--			300
12. Body of RTC (control board)	44.3	70.7	--	--			300
13. Inlet near L(power)	55.1	83.8	--	--			300
Below values for T (°C) are re-calculated to 25 °C from actual ambient respectively:							
14. Metal enclosure outside near power supply	31.3	50.1	--	--			58
supplementary information:							
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:							
Note 1: Tma should be considered as directed by applicable requirement							
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							
* Protection by protective device of power supply.							

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

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics		N/A
Penetration (mm).....:			—
Object/ Part No./Material		Manufacturer / trademark	T softening (°C)
supplementary information:			

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics			N/A
Allowed impression diameter (mm) .....		≤ 2 mm		—
Object / Part No. / Material	Manufacturer / trademark	Test temperature (°C)	Impression diameter (mm)	
supplementary information:				

<b>5.4.2.2, 5.4.2.4 and 5.4.3</b>	<b>TABLE: Minimum Clearances/Creepage distance</b>						N/A
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz) <sup>1</sup>	Required cl (mm)	cl (mm) <sup>2</sup>	Required cr (mm) <sup>3</sup>	cr (mm)
Evaluated in approved SPS	--	--	--	--	--	--	--
supplementary information:							
Note 1: Only for frequency above 30 kHz							
Note 2: See table 5.4.2.4 if this is based on electric strength test							
Note 3: Provide Material Group							
Note 4: Evaluated in approved building-in power supply unit.							

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage			N/A
	Overvoltage Category (OV):			
	Pollution Degree:			
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Measured cl (mm)
--		--	--	--
supplementary information:				

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Clause	Requirement + Test	Result - Remark	Verdict

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

<b>5.4.4.2, 5.4.4.5 c) 5.4.4.9</b>	<b>TABLE: Distance through insulation measurements</b>					N/A
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)	
supplementary information:						

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Tested on EUT with build-in power supply (mfr. EMACS, model PSS-2A00V (Used one module))				
Line / Neutral and secondary circuits		DC	4000	No
Line/neutral and earth (metal enclosure)		DC	2500	No
Tested on EUT with build-in power supply (mfr. EMACS, model DPSS-2A00V (Used one module))				
Line / Neutral and secondary circuits		DC	4000	No
Line/neutral and earth (metal enclosure)		DC	2000	No
supplementary information:				
Multiplication factor: 1.14				

<b>5.5.2.2</b>	<b>TABLE: Stored discharge on capacitors</b>					N/A
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification	
supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

X-capacitors installed for testing are:

☐ bleeding resistor rating:

☐ ICX:

Notes:

A. Test Location:

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

B. Operating condition abbreviations:

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



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Clause	Requirement + Test	Result - Remark	Verdict

<b>5.6.6.2</b>	<b>TABLE: Resistance of protective conductors and terminations</b>				<b>P</b>
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance ( $\Omega$ )	
Inlet Earth Pin to Chassis	32	2	0.61	0.019	
Inlet Earth Pin to Chassis	40	2	0.80	0.020	
supplementary information:					

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part		P
Supply voltage .....	264	—	
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)	
Tested on EUT with build-in power supply (mfr. EMACS, model PSS-2A00V (Used two module))			
L/N to Earthed enclosure	1	1.46/ 2.63	
	2*	--	
	3	--	
	4	--	
	5	--	
	6	--	
	8	--	
supplementary Information:			
Notes: [1] Supply voltage is the anticipated maximum Touch Voltage (test with two Power module) [2] Earthed neutral conductor [Voltage differences less than 1 % or more] [3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3 [4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable. [5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.			

<b>6.2.2</b>	<b>TABLE: Electrical power sources (PS) measurements for classification</b>				<b>P</b>
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s *)	PS Classification
A	Input and output of building-in power supply	Power (W) :	—	—	PS3 (Connected to AC mains)
		V <sub>A</sub> (V) :	—	—	
		I <sub>A</sub> (A) :	—	—	
B	All circuits and	Power (W) :	—	—	PS1 (See Annex

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
	output ports	V <sub>A</sub> (V) :	—	—	Q.1)
		I <sub>A</sub> (A) :	—	—	
supplementary Information:					
(*) Measurement taken only when limits at 3 seconds exceed PS1 limits, See Annex Q.1					

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

<b>6.2.3.2</b>	<b>Table: Determination of Potential Ignition Sources (Resistive PIS)</b>				P
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No
All circuit within equipment	--	--	--	--	YES
supplementary Information:					
A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter. If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification. A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, <u>or</u> (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.					

<b>8.5.5</b>	<b>TABLE: High Pressure Lamp</b>		N/A
Description	Values	Energy Source Classification	
Lamp type.....:		—	
Manufacturer .....		—	
Cat no. ....:		—	
Pressure (cold) (MPa).....:		MS_	
Pressure (operating) (MPa) .....		MS_	
Operating time (minutes) .....		—	
Explosion method .....		—	

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Clause	Requirement + Test	Result - Remark	Verdict
Max particle length escaping enclosure (mm) ::			
Max particle length beyond 1 m (mm).....:			
Overall result .....			
Supplementary information:			

B.2.5	TABLE: Input test							P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition / status	
Tested on EUT with build-in power supply (mfr. EMACS, model PSS-2A00V (Used one module))								
90V, 47Hz	9.66	--	860	--	F1	9.66	Max. normal operation	
90V, 63Hz	9.66	--	860	--	F1	9.66	Max. normal operation	
100V, 47Hz	8.63	15	851	--	F1	8.63	Max. normal operation	
100V, 63Hz	8.64	15	851	--	F1	8.64	Max. normal operation	
240V, 47Hz	3.46	7.5	820	--	F1	3.46	Max. normal operation	
240V, 63Hz	3.46	7.5	820	--	F1	3.46	Max. normal operation	
254V, 47Hz	3.27	--	819	--	F1	3.27	Max. normal operation	
254V, 63Hz	3.28	--	820	--	F1	3.28	Max. normal operation	
264V, 47Hz	3.15	--	819	--	F1	3.15	Max. normal operation	
264V, 63Hz	3.16	--	819	--	F1	3.16	Max. normal operation	
Tested on EUT with build-in power supply (mfr. EMACS, model PSS-2A00V (Used two module))								
90V, 47Hz	9.66	--	864	--	F1	9.66	Max. normal operation	
90V, 63Hz	9.69	--	865	--	F1	9.69	Max. normal operation	
100V, 47Hz	8.67	15	856	--	F1	8.67	Max. normal operation	
100V, 63Hz	8.69	15	857	--	F1	8.69	Max. normal operation	
240V, 47Hz	3.49	7.5	827	--	F1	3.49	Max. normal operation	
240V, 63Hz	3.50	7.5	827	--	F1	3.50	Max. normal operation	
254V, 47Hz	3.31	--	826	--	F1	3.31	Max. normal operation	
254V, 63Hz	3.31	--	826	--	F1	3.31	Max. normal operation	
264V, 47Hz	3.19	--	824	--	F1	3.19	Max. normal operation	
264V, 63Hz	3.19	--	825	--	F1	3.19	Max. normal operation	
Tested on EUT with build-in power supply (mfr. EMACS, model DPSS-2A00V (Used one module))								
35.7 Vdc	23.4	--	835.4	--	F1	23.4	Max. normal operation	
42 Vdc	20.8	30	873.6	--	F1	20.8	Max. normal operation	

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Clause	Requirement + Test	Result - Remark	Verdict

B.2.5	TABLE: Input test						P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition / status
72 Vdc	11.4	17	820.8	--	F1	11.4	Max. normal operation
86.4 Vdc	9.82	--	848.5	--	F1	9.82	Max. normal operation
Tested on EUT with build-in power supply (mfr. EMACS, model DPSS-2A00V (Used two module))							
35.7 Vdc	23.2	--	828.2	--	F1	23.2	Max. normal operation
42 Vdc	20.1	30	844.2	--	F1	20.1	Max. normal operation
72 Vdc	11.2	17	806.4	--	F1	11.2	Max. normal operation
86.4 Vdc	9.72	--	839.8	--	F1	9.72	Max. normal operation
supplementary information:							
Supplementary information:							
Equipment may be have rated current or rated power or both. Both should be measured							
1) Maximum normal load: USB 2.0 outputs loaded at rated load (5V, 0.5A), fiber transceiver modules connected in Plug-in Laser Device Module with data transmission, all the other ports transmission signals to other PC and operated continuously and add other extra dummy load to 80 % output power of building-in power supply.							

B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) .....					25, if no specified			—
Power source for EUT: Manufacturer, model/type, output rating :					See appended Table 4.1.2			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Tested on EUT with build-in power supply (mfr. EMACS, model PSS-2A00V (Used one module))								
System Fan (Front)	Locked	90	1.5hr	--	9.24	K-type	See table (5.4.1.4, 6.3.2, 9.0, B.2.6)	<b>Observation:</b> Unit operated normally. <b>Damaged:</b> No damage, no hazards.
System Fan (Back)	Locked	90	1hr	--	9.35	K-type	See table (5.4.1.4, 6.3.2, 9.0, B.2.6)	<b>Observation:</b> Unit operated normally. <b>Damaged:</b> No damage, no hazards.

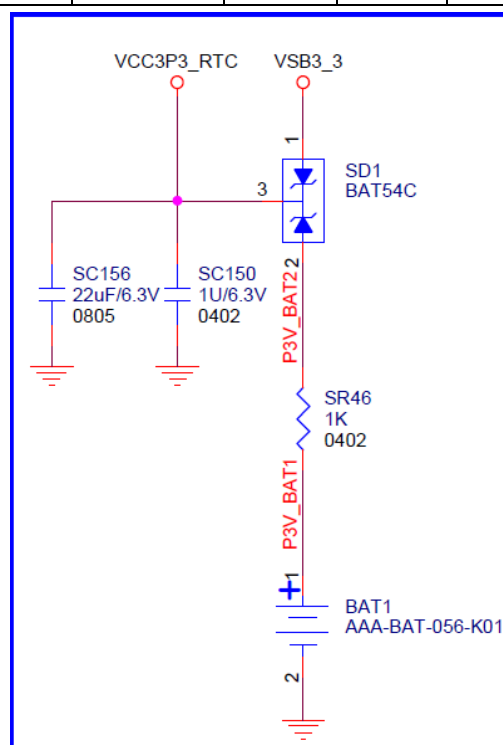
IEC 62368-1								
Clause	Requirement + Test					Result - Remark		Verdict
Power Fan	Locked	90	1.5hr	--	--	K-type	See table (5.4.1.4, 6.3.2, 9.0, B.2.6)	<b>Observation:</b> Unit operated normally, shut down after 20min. Input current: 9.60A, Shutdown current: 0A, <b>Damaged:</b> PSS-2A00V
All I/O port	overload	90	2.5hr	--	--	K-type	See table (5.4.1.4, 6.3.2, 9.0, B.2.6)	<b>Operation:</b> USB port output at max load is 2.5 A on steady, 2.7 A USB port shut down, operated until steady state. Input current: 9.58 A. Input current after shutdown: 9.43 A. <b>Damaged:</b> No damage. No hazards.
Tested on EUT with build-in power supply (mfr. EMACS, model DPSS-2A00V (Used one module))								
Power Fan	Locked	35.7 Vdc	2hr	--	--	K-type	See table (5.4.1.4, 6.3.2, 9.0, B.2.6)	<b>Observation:</b> Unit operated normally, shut down after 6min. Input current: 23.3A, Shutdown current: 0.1A, <b>Damaged:</b> No damage, no hazards.
Ventilation hole	Blocked	35.7 Vdc	2hr	--	--	K-type	See table (5.4.1.4, 6.3.2, 9.0, B.2.6)	<b>Observation:</b> Unit operated normally. Input current: 23.7A. <b>Damaged:</b> No damage, no hazards.
supplementary information:								
1) S: Short-circuited; O: Open-circuited; O/L: Overloaded; B: Blocked; L: Locked. 2) Observation: The observations during and after fault condition tests. 3) Damaged: Which component (components) damaged during the fault condition test. 4) Temp: The maximum temperature of relevant components. 5) Max. Voltage: The maximum accessible voltage during the fault condition test.								

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Clause	Requirement + Test	Result - Remark	Verdict

<b>B.4</b>	<b>TABLE: Fault condition tests</b>							<b>P</b>
Ambient temperature (°C) .....						25, if no specified		—
Power source for EUT: Manufacturer, model/type, output rating :						See appended Table 4.1.2		—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Tested on EUT with build-in power supply (mfr. EMACS, model PSS-2A00V (Used one module))								
System Fan (CPU)	Locked	90	1hr	--	9.52	K-type	See table (5.4.1.4, 6.3.2, 9.0, B.2.6)	<b>Observation:</b> Unit operated normally. <b>Damaged:</b> No damage, no hazards.
RTC battery								
SD1 pin 1-2	Short	264	10 min	--	--	--	--	Observation: Abnormal charging current flowing to RTC was nearly 3.28 mA. Damaged: No damage, no hazards. Temp: -- Max. Voltage: --
SD1 pin 2-3	Short	264	10 min	--	--	--	--	Observation: Abnormal charging current flowing to RTC was nearly 3.03 mA. Damaged: No damage, no hazards. Temp: -- Max. Voltage: --
SR46	Short	264	10 min	--	--	--	--	Observation: Abnormal charging current flowing to RTC was nearly 0 mA. Damaged: No damage, no hazards. Temp: -- Max. Voltage: --
supplementary information:								
1) S: Short-circuited; O: Open-circuited; O/L: Overloaded; B: Blocked; L: Locked. 2) Observation: The observations during and after fault condition tests. 3) Damaged: Which component (components) damaged during the fault condition test. 4) Temp: The maximum temperature of relevant components. 5) Max. Voltage: The maximum accessible voltage during the fault condition test.								

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Clause	Requirement + Test	Result - Remark	Verdict

<b>Annex M</b>	<b>TABLE: Batteries</b>								<b>P</b>
The tests of Annex M are applicable only when appropriate battery data is not available									—
Is it possible to install the battery in a reverse polarity position? .....									—
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition	-	-	0 A	-	-	-	-	-	-
Max. current during fault condition SD1 pin 1-2 shorted	-	-	3.28 mA	-	-	-	-	-	-
Max. current during fault condition: SD1 pin 2-3 shorted	-	-	3.03 mA	-	-	-	-	-	-
Max. current during fault condition: SR46 shorted	-	-	0 A	-	-	-	-	-	-



Test results:	Appropriate battery date is available	Verdict
- Chemical leaks	No chemical leaks	P
- Explosion of the battery	No explosion of the battery	P
- Emission of flame or expulsion of molten metal	No emission of flame or expulsion	P



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Clause	Requirement + Test	Result - Remark	Verdict

- Electric strength tests of equipment after completion of tests		N/A
supplementary information:		

<b>Annex M.4</b>	<b>TABLE: Additional safeguards for equipment containing secondary lithium batteries</b>				N/A
Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp (C)	

<b>Annex M.4</b>	<b>TABLE: Additional safeguards for equipment containing secondary lithium batteries</b>				N/A
Battery identification	Charging at $T_{lowest}$ (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation	
supplementary Information:					

Annex Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)					P
Note: Measured UOC (V) with all load circuits disconnected: see below						
Output Circuit	Components	U <sub>oc</sub> (V)	I <sub>sc</sub> (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
USB 2.0 Pin1 to GND	Normal	4.99	2.5	≤ 8.0	10.8	≤ 100
supplementary Information:						
Sc=Short circuit, Oc=Open circuit.						

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Clause	Requirement + Test	Result - Remark	Verdict

T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation	
Top side enclosure of power supply	1)	0.8	30N	5 s	Intact	
Right side enclosure of power supply	1)	0.8	30N	5 s	Intact	
Left side enclosure of power supply	1)	0.8	30N	5 s	Intact	
Top side enclosure near power supply	1)	0.8	250 N	5 s	Intact	
Right side enclosure near power supply	1)	0.8	250 N	5 s	Intact	
Rear side enclosure near power supply	1)	0.8	250 N	5 s	Intact	
supplementary information:						
1) See appended table 4.1.2.						

T.6, T.9	TABLE: Impact tests				P
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
Top side enclosure near power supply	1)	0.8	1300	Intact	
Right side enclosure near power supply	1)	0.8	1300	Intact	
Rear side enclosure near power supply	1)	0.8	1300	Intact	
supplementary information:					
1) See appended table 4.1.2.					

T.7	TABLE: Drop tests				N/A
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
supplementary information:					

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

**List of test equipment used:**

A completed list of used test equipment shall be provided in the Test Reports when a Manufacturer Testing Laboratory according to TMP/CTF stage 1 or WMT/CTF stage 2 procedure has been used.

Clause	Measurement / testing	Testing / measuring equipment / material used	Range used	Calibration date
N/A				

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<b>ATTACHMENT TO TEST REPORT IEC 62368-1</b> <b>EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</b> <b>(Audio/video, information and communication technology equipment Part 1: Safety requirements)</b>	
Differences according to.....:	EN 62368-1:2014+A11:2017
Attachment Form No.....:	EU_GD_IEC62368_1B_II
Attachment Originator .....	Nemko AS
Master Attachment .....	Date 2017-09-22
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	<b>CENELEC COMMON MODIFICATIONS (EN)</b>					—																																				
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed “Z”.					P																																				
CONTENTS	<b>Add</b> the following annexes:  Annex ZA (normative)      Normative references to international publications with their corresponding European publications  Annex ZB (normative)      Special national conditions  Annex ZC (informative)    A-deviations  Annex ZD (informative)    IEC and CENELEC code designations for flexible cords					P																																				
	<b>Delete</b> all the “country” notes in the reference document (IEC 62368-1:2014) according to the following list: <table><tr><td>0.2.1</td><td>Note</td><td>1</td><td>Note 3</td><td>4.1.15</td><td>Note</td></tr><tr><td>4.7.3</td><td>Note 1 and 2</td><td>5.2.2.2</td><td>Note</td><td>5.4.2.3.2.2 Table 13</td><td>Note c</td></tr><tr><td>5.4.2.3.2.4</td><td>Note 1 and 3</td><td>5.4.2.5</td><td>Note 2</td><td>5.4.5.1</td><td>Note</td></tr><tr><td>5.5.2.1</td><td>Note</td><td>5.5.6</td><td>Note</td><td>5.6.4.2.1</td><td>Note 2 and 3</td></tr><tr><td>5.7.5</td><td>Note</td><td>5.7.6.1</td><td>Note 1 and 2</td><td>10.2.1 Table 39</td><td>Note 2, 3 and 4</td></tr><tr><td>10.5.3</td><td>Note 2</td><td>10.6.2.1</td><td>Note 3</td><td>F.3.3.6</td><td>Note 3</td></tr></table>					0.2.1	Note	1	Note 3	4.1.15	Note	4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c	5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3	5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4	10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3	P
0.2.1	Note	1	Note 3	4.1.15	Note																																					
4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c																																					
5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note																																					
5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3																																					
5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4																																					
10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3																																					
	For special national conditions, see Annex ZB.					P																																				
1	<b>Add</b> the following note:  NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.					P																																				

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	<p><b>Add</b> the following new subclause after 4.9:</p> <p>To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. <b>mains</b>, 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 B.3.1 and B.4 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 <b>pluggable equipment type B</b> or <b>permanently connected equipment</b>, 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 <b>pluggable equipment type A</b> the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>		N/A
5.4.2.3.2.4	<p><b>Add</b> the following to the end of this subclause:</p> <p>The requirement for interconnection with <b>external circuit</b> is in addition given in EN 50491-3:2009.</p>		N/A
10.2.1	<p>Add the following to c) and d) in table 39:</p> <p>For additional requirements, see 10.5.1.</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	<p><b>Add</b> the following after the first paragraph:</p> <p>For RS 1 compliance is checked by measurement under the following conditions:</p> <p>In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or presets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.</p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p>The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm<sup>2</sup>, at any point 10 cm from the outer surface of the apparatus.</p> <p>Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.</p> <p>For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.</p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>	No such radiation generated from the equipment.	N/A
10.6.1	<p><b>Add</b> the following paragraph to the end of the subclause:</p> <p>EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.</p>		N/A
10.Z1	<p><b>Add</b> the following new subclause after 10.6.5.</p> <p><b>10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</b></p> <p>The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz).</p> <p>For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566</p>		N/A
G.7.1	<p><b>Add</b> the following note:</p> <p>NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>		P

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Bibliography	<p><b>Add</b> the following standards:</p> <p><b>Add</b> the following notes for the standards indicated:</p> <p>IEC 60130-9      NOTE Harmonized as EN 60130-9.</p> <p>IEC 60269-2      NOTE Harmonized as HD 60269-2.</p> <p>IEC 60309-1      NOTE Harmonized as EN 60309-1.</p> <p>IEC 60364      NOTE some parts harmonized in HD 384/HD 60364 series.</p> <p>IEC 60601-2-4      NOTE Harmonized as EN 60601-2-4.</p> <p>IEC 60664-5      NOTE Harmonized as EN 60664-5.</p> <p>IEC 61032:1997      NOTE Harmonized as EN 61032:1998 (not modified).</p> <p>IEC 61508-1      NOTE Harmonized as EN 61508-1.</p> <p>IEC 61558-2-1      NOTE Harmonized as EN 61558-2-1.</p> <p>IEC 61558-2-4      NOTE Harmonized as EN 61558-2-4.</p> <p>IEC 61558-2-6      NOTE Harmonized as EN 61558-2-6.</p> <p>IEC 61643-1      NOTE Harmonized as EN 61643-1.</p> <p>IEC 61643-21      NOTE Harmonized as EN 61643-21.</p> <p>IEC 61643-311      NOTE Harmonized as EN 61643-311.</p> <p>IEC 61643-321      NOTE Harmonized as EN 61643-321.</p> <p>IEC 61643-331      NOTE Harmonized as EN 61643-331.</p>		P
<b>ZB</b>	<b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)</b>		P

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.1.15	<p><b>Denmark, Finland, Norway and Sweden</b></p> <p>To the end of the subclause the following is added:</p> <p><b>Class I pluggable equipment type A</b> intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and <b>accessible</b> parts, have a marking stating that the equipment shall be connected to an earthed <b>mains</b> socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In <b>Denmark</b>: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord."</p> <p>In <b>Finland</b>: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In <b>Norway</b>: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In <b>Sweden</b>: "Apparaten skall anslutas till jordat uttag"</p>		N/A
4.7.3	<p><b>United Kingdom</b></p> <p>To the end of the subclause the following is added:</p> <p>The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex</p>		N/A
5.2.2.2	<p><b>Denmark</b></p> <p>After the 2nd paragraph add the following:</p> <p>A warning (marking <b>safeguard</b>) for high <b>touch current</b> is required if the <b>touch current</b> exceeds the limits of 3,5 mA a.c. or 10 mA d.c.</p>		N/A



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.11.1 and Annex G	<p><b>Finland and Sweden</b></p> <p>To the end of the subclause the following is added:</p> <p>For separation of the telecommunication network from earth the following is applicable:</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 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 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 1,5kV.</li> </ul> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>• the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11;</li> <li>• the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.</li> </ul>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.2.1	<b>Norway</b> After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
5.5.6	<b>Finland, Norway and Sweden</b> To the end of the subclause the following is added: Resistors used as <b>basic safeguard</b> or bridging <b>basic insulation</b> in <b>class I pluggable equipment type A</b> shall comply with G.10.1 and the test of G.10.2.		N/A
5.6.1	<b>Denmark</b> <b>Add</b> to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.		N/A
5.6.4.2.1	<b>Ireland and United Kingdom</b> After the indent for <b>pluggable equipment type A</b> , the following is added: – the <b>protective current rating</b> is taken to be 13 A, this being the largest rating of fuse used in the <b>mains</b> plug.		N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm <sup>2</sup> to 1,5 mm <sup>2</sup> in cross-sectional area.		N/A
5.7.5	<b>Denmark</b> To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the <b>protective conductor current</b> exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5.7.6.1	<p><b>Norway and Sweden</b></p> <p>To the end of the subclause the following is added:</p> <p>The screen of the television 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 needs to be isolated from the screen of a cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>“Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)”</p> <p>NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.”</p> <p>Translation to Swedish:</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	"Apparater 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 apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet."		N/A
5.7.6.2	<b>Denmark</b> To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA		N/A
B.3.1 and B.4	<b>Ireland and United Kingdom</b> The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of <b>direct plug-in equipment</b> , tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the <b>direct plug-in equipment</b> , until the requirements of Annexes B.3.1 and B.4 are met		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	<p><b>Denmark</b></p> <p>To the end of the subclause the following is added:</p> <p>Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug-in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a.</p> <p>Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.</p> <p>Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a</p> <p><i>Justification:</i> Heavy Current Regulations, Section 6c</p>		N/A
G.4.2	<p><b>United Kingdom</b></p> <p>To the end of the subclause the following is added:</p> <p>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.</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	<b>United Kingdom</b> To the first paragraph the following is added: Equipment 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 shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. 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
G.7.1	<b>Ireland</b> To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	<b>Ireland and United Kingdom</b> To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm <sup>2</sup> is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A
<b>ZC</b>	<b>ANNEX ZC, NATIONAL DEVIATIONS (EN)</b>		<b>P</b>
10.5.2	<b>Germany</b> The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. <i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. <b>NOTE</b> Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int +49-531-592-6320, Internet: <a href="http://www.ptb.de">http://www.ptb.de</a>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
F.1	<p><b>Italy</b></p> <p>The following requirements shall be fulfilled:</p> <ul style="list-style-type: none"> <li>• The power consumption in Watts (W) shall be indicated on TV receivers and in their instruction for use (Measurement according to EN 60555-2).</li> </ul> <p>Note: <i>EN 60555-2 has since been replaced by IEC 60107-1:1997.</i></p> <ul style="list-style-type: none"> <li>• TV receivers shall be provided with an instruction for use, schematic diagrams and adjustments procedure in Italian language.</li> <li>• Marking for controls and terminals shall be in Italian language. Abbreviation and international symbols are allowed provided that they are explained in the instruction for use.</li> <li>• The ECC manufacturers are bound to issue a conformity declaration according to the above requirements in the instruction manual. The correct statement for conformity to be written in the instruction manual, shall be:</li> </ul> <p><i>Questo apparecchio è fabbricato nella CEE nel rispetto delle disposizioni del D.M. marzo 1992 ed è in particolare conforme alle prescrizioni dell'art. 1 dello stesso D.M.</i></p> <ul style="list-style-type: none"> <li>• The first importers of TV receivers manufactured outside EEC are bound to submit the TV receivers for previous conformity certification to the Italian Post Ministry (PP.TT). The TV receivers shall have on the backcover the certification number in the following form:</li> </ul> <p>D.M. 26/03/1992 xxxxx/xxxxx/S or T or pT</p> <p>S for stereo</p> <p>T for Teletext</p> <p>pT for retrofittable teletext</p> <p><i>Justification:</i></p> <p>Ministerial Decree of 26 March 1992 : National rules for television receivers trade.</p> <p>NOTE/: <i>Ministerial decree above contains additional, but not safety relevant requirements</i></p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

<b>National Differences Canada (CA)</b> <b>IEC 62368-1 (ed.2)</b> (CAN/CSA C22.2 No. 62368-1-14) Last modification 2015-07-13			
1DV.1	Battery backup systems that are not an integral part of stationary equipment, such as provided in separate cabinets, are subject to the appropriate standard for battery backup systems, such as UL 1973, Batteries for Use in Light Electric Rail (LER) Applications and Stationary Applications.	No such part.	N/A
1DV.2	For equipment intended for outdoor installation, additional requirements for Information and communication technology equipment are covered by CSA/UL 60950-22 and for Audio/video equipment are covered by the relevant requirements in CSA C22.2 No. 60065 or UL 60065.	Not such equipment	N/A
1DV.3.1	Standard is applicable to equipment designed to be installed in accordance with the Canadian Electrical Code, Part I, C22.1-12; Canadian Electrical Code, Part II, General Requirements, CAN/CSA C22.2 No. 0-10; the National Electrical Code, NFPA 70-2014; and the National Electrical Safety Code, IEEE C2-2012.		N/A
1DV.3.2	For equipment designed to be installed in accordance with Article 645 of the National Electrical Code, NFPA 70-2014, and the Standard for the Protection of Information Technology Equipment, NFPA 75-2013, identification by a marking or instruction [see Annex DVK (Annex DVA, Clause 1)] is required.		N/A
1DV.3.3	Additional regulatory requirements that apply to this equipment per Annex DVA, as applicable.		N/A
1DV.4.1	Additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities per Annex DVB.	Not such equipment	N/A
1DV.4.2	This standard includes additional requirements for equipment intended for mounting under kitchen cabinets. See Annex DVC.	Not such equipment	N/A



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Clause	Requirement + Test	Result - Remark	Verdict
1DV.4.3	This standard does not apply to equipment having Remote Feeding Telecommunication (RFT) circuits. Equipment having RFT circuits is covered by CSA/UL 60950-21.	Not such equipment	N/A
1DV.4.4	Additional requirements may apply to large data storage equipment. Refer to CSA/UL 60950-23.	Not such equipment	N/A
1DV.4.5	Does not cover Modular Data Centers (MDCs) but only the information and communication technology equipment contained within.	Not such equipment	N/A
1DV.5.1	Power Distribution Equipment and Sub-Assemblies	Not such equipment	N/A
1DV.5.1.1	Power distribution sub-assemblies connected to a mains used to distribute power entirely within a system of equipment, such as power distribution units (PDUs), cord-connected power strips, shelves with multiple power outlets (receptacles) etc., and intended to be installed in system racks, cabinets, home entertainment centers, etc. are covered by this standard	Not such equipment	N/A
1DV.5.1.2	For equipment covered by this standard that incorporates components and sub-assemblies that perform a power distribution and control function covered by other standards, such as panelboards, load transfer equipment, or uninterruptible power systems utilized in power conditioners and computer power centers, this standard only may be used for investigation of safety for those aspects not covered by the other standards.	Not such equipment	N/A
1DV.5.1.3	This standard also does not apply to stand-alone equipment used for distribution of mains power that is covered by individual power distribution equipment standards.	Not such equipment	N/A
1DV.5.1.4	Based on the specific function, the following requirements are applicable to the stand-alone distribution equipment, or apply additionally to power distribution sub-assemblies and components of equipment covered by this standard, as described in 1DV.5.1.2 and 1DV.5.1.3:	Not such equipment	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	– For Industrial Control Equipment, see CSA C22.2 No. 14 and UL 508.	Not such equipment	N/A
	– For Panelboards, see CSA C22.2 No. 29 and UL 67.	Not such equipment	N/A
	– For Switchboards, see CSA C22.2 No 244 and UL 891.	Not such equipment	N/A
	– For Transfer Switch Equipment, see CSA C22.2 No 178.1 and UL 1008.	Not such equipment	N/A
	– For Uninterruptible Power Systems, see CSA C22.2 No. 107.3 and UL 1778.	Not such equipment	N/A
	– For Power Distribution Centers for Communications Equipment, see UL Subject 1801.	Not such equipment	N/A
	– Other forms of power distribution units for general applications, such as, • Relocatable Power Taps, CSA-C22.2 No. 21, Cord Sets and Power Supply Cords, and UL 1363, Relocatable Power Taps. • Cord connected Surge Protective Devices, CSA Technical Information Letter No. A-24, Interim Certification Requirements for AC Line Connected Wiring Devices with Varistors, and UL 1449, Surge Protective Devices. • Furniture Power Distribution Units, CSA-C22.2 No. 21, Cord Sets and Power Supply Cords and UL 962A, Furniture Power Distribution Units.	Not such equipment	N/A
3.3.1.2DV D2	For additional information regarding low voltage d.c. mains (centralized d.c. power systems) equipment, refer to Annex DVD. This standard covers high voltage d.c. mains up to 600 Vdc.	Not such equipment	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.3.1.3DV.1	New definition: telecommunication network – metallicallly terminated transmission medium intended for communication between equipment that may be located in separate buildings, excluding: – the mains system for supply, transmission and distribution of electrical power, if used as a telecommunication transmission medium; – cable distribution systems; – ES1 circuits connecting units of audio/video, information and communication technology equipment.	Not such equipment	N/A
4.1.1DV.1 D2	In the U.S. and Canada, components and subassemblies that comply with the standards referenced in Annex DVE are required in addition to or as a replacement for the requirements in this standard. Components complying with these standards are considered acceptable as part of equipment covered by this standard without further evaluation other than to give consideration to the appropriate use of the component or subassembly in the end product.	The manufacturer commits to fulfill the requirement when the product will be sold in Canada.	P
4.1.1DV.2 DC	In the U.S. and Canada, components and subassemblies that comply with the standards referenced in Annex DVG are acceptable as an alternative to requirements as part of equipment covered by this standard without further evaluation other than to give consideration to the appropriate use of the component or subassembly in the end product.	The manufacturer commits to fulfill the requirement when the product will be sold in Canada.	P
4.1.2DV DC	In the U.S. and Canada, some UL/CSA component standards may be used as alternatives to referenced IEC standards for the purposes of North America certifications or surveillance programs. Components and subassemblies that comply with the standards referenced in Annex DVF are acceptable as part of equipment covered by this standard without further evaluation other than to give consideration to the appropriate use of the component or subassembly in the end product.	The manufacturer commits to fulfill the requirement when the product will be sold in Canada.	P
4.1.16DV.1	Mains connections		N/A
4.1.16DV.1.1 DE, 4.1.16DV.1.2 DR	Requirements for Mains Supply Cords for Pluggable (Cord Connected) Equipment (Canadian and U.S. regulatory-based requirements) - Annex G.7 and G.7ADV		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.1.16DV.1.3 D2, 4.1.16DV.1.4 DR	Requirements for Permanently Connected Equipment. (Canadian and U.S. regulatory-based requirements) – Annex DVH	Not such equipment	N/A
4.1.17DV.1	External interconnecting cable and wiring		N/A
4.1.17DV.1.1	General External interconnecting cable and wiring are investigated to the requirements of 6.5 and either 4.1.17DV.1.2 or 4.1.17DV.1.3, as appropriate.		N/A
	– External interconnecting cable and wiring 3,05 m or less may be investigated as part of the equipment (system) to the requirements of this standard. See 4.1.17DV.1.2.		N/A
	– External interconnect cable and wiring longer than 3,05 m are regulated by the Canadian Electrical Code, C22.1, and the National Electrical Code, NFPA 70, and are subject to associated requirements. See 4.1.17DV.1.3.		N/A
	– External interconnect cable longer than 3,05 m designed to carry audio and/or video signals only, and that is not specified by the manufacturer to be routed inside the building structure (e.g., walls, ceilings, etc.), is subject to the applicable requirements of 4.1.17DV.1.2. For purposes of 4.1.17DV.1.2, it is assumed such cables are connected to PS1 circuits.		N/A
	Alternatively, detachable external interconnecting cable and wiring (with terminations) may be excluded from the equipment evaluation if specified by the manufacturer.		N/A
4.1.17DV.1.2	Equipment (system) interconnecting cable and wiring		N/A
	The following requirements apply to detachable and nondetachable external interconnecting cable and wiring investigated as part of the equipment (system).		N/A
	– The length of the external interconnecting cable or wiring shall not exceed 3,05 m;		N/A
	– For external interconnecting cable and wiring connected to PS2 and PS3 circuits, see 6.5 for fire (flammability) considerations;		N/A
	– There are no fire (flammability) considerations for external interconnecting cable and wiring specified by the manufacturer for connection to circuits that are PS1.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	– External interconnecting cable and wiring intended to be connected to an ES3 or PS3 circuit require a jacket for mechanical protection in accordance with Table G.7ADV.2, or equivalent;		N/A
	– Detachable external interconnecting cable and wiring (with terminations) intended to be connected to a PS2, PS3, ES2 or ES3 circuit and furnished as part of the equipment shall be either marked, or similarly identified in the installation instructions with (a) the name, trademark or trade name of the organization that is responsible for the equipment, and (b) the organization's identifying number or equivalent designation for the cable. See Annex DVK. – The marking may be applied on the cable and wiring at any location – This marking is not required to comply with the test for permanence of markings, F.3.9		N/A
	Optical fiber interconnecting cables 3,05 m or less are not subject to the above requirements		N/A
4.1.17DV.1.3	External interconnecting cable and wiring considered part of the building installation.		N/A
	External interconnecting cables and wiring longer than 3,05 m are regulated by the Canadian Electrical Code, C22.1, and the National Electrical Code, NFPA 70. See Annex DVA(Annex Q entry).		N/A
4.6.2DV D2	Additional examples of compliance: - wire-wrap terminals used for the connection of ES1 and ES2 that are: • provided on equipment that forms part of the telecommunication network, up to and including the demarcation point, and are located in service access areas only. (This equipment is generally considered Central Office Equipment, although it may be deployed elsewhere in similarly controlled environments.) and • provided with a guard or cover that prevents unintentional contact during normal operation. are tested with a steady force of 2,5 N ± 0,25 N.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.8.3DV D2	If screws or similar fasteners are used to secure the door/cover providing access to the battery compartment, the fasteners shall be captive to ensure that they remain with the door/cover. This does not apply to side panel doors on larger devices which are necessary for the functioning of the equipment and which are not likely to be discarded or left off the equipment		N/A
4.8.4.5DV D2	0,5 J impact test deleted.		N/A
4.8.5DV.1 D2	Replace 30 N battery compartment door/cover test with 45 N		N/A
4.8.5DV.2 D2	Additional compliance criteria replaced with: - the battery compartment door/cover shall not open; and - the battery shall not become accessible.		N/A
5.4.4.1DV D1	For printed boards, see Clause G.13		N/A
	For antenna terminals, see Clause 5.4.5		N/A
	For solid insulation on internal and external wiring, see Clause G.6.		N/A
	Additionally, for internal wiring accessible to an ordinary person, see Clause 5.4.6.		N/A
5.6.3DV.1 DR to 5.6.3DV.3 DR	Protective earthing conductors shall comply with the minimum conductor sizes in Table G.5, except as required by • Table G.7ADV.1 for cord connected equipment; or • Annex DVH for permanently connected equipment.		N/A
5.6.4.1DV DR	Minimum conductor size alternative compliance to Table G.5 or Table G.7ADV.1 as applicable , or Table 31 Minimum protective bonding conductor size of copper conductors		N/A
5.6.4.4DV DR	Protective bonding conductor sizes alternative compliance to Table G.7ADV.1 in addition to Table 31 or Table G.5		N/A
Table 32 DV DR	Include alternative conductor size compliance with Table G.7ADV.1 in the first column heading for protective conductor terminals.		N/A
5.6.6.1 DV DR	Protective bonding conductors that meet the minimum conductor sizes in Table G.5 or Table G.7ADV.1 as applicable, throughout their length and whose terminals all meet the minimum sizes in Table 32 are considered to comply without test.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2DV DE	Clause title modified to read "Prospective touch voltage and touch current to external circuits"		N/A
5.7.7DV.1 D2	Clause 5.7.7 to apply to stationary pluggable equipment type A or pluggable equipment type B		N/A
5.7.7DV.2 D2	Summation of touch currents not exceeding the limits of ES2 exception per Clause 5.7.7(a)(1)		N/A
5.7.7DV.3 D2	Clause 5.7.7(a)(2) replaced with: Such equipment shall comply with Clause 5.7.5. The value of S(1) shall be added to the measured protective conductor current to determine compliance with the 5 % input current limit per phase specified in Clause 5.7.5.		N/A
5.7.7.1DV D2	Limitation of touch current due to ringing signals		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	<p>1 Limitation of touch current due to ringing signals</p> <p>Equipment containing input telecommunication network leads over which ringing voltages are applied to the equipment shall be tested using the circuit of Figure 5.7.7.1DV.1 for mains-connected equipment or Figure 5.7.7.1DV.2 for other equipment. For any position of the selector switches, the total touch current including consideration of 5.7.7 shall not exceed the relevant limits for ES2 specified in Table 4, unless the equipment complies with 5.7.7(a) with the protective conductor current due to ringing signal taken into account.</p> <p>An EUT that receives ringing voltages on up to three telecommunication network connection ports shall have simulated ringing applied to each network connection.</p> <p>For four or more ports receiving ringing, simulated ringing shall be applied to three ports and an additional 3 % (rounding down) of the remaining ports.</p> <p>Compliance is checked by the following tests, which are conducted using the measuring network described in IEC 60990, Figure 4. Simulated ringing at 120 V, 50 to 60 Hz, shall be applied to ringing input telecommunication network leads, either one lead at a time or connected together. Other telecommunication network leads shall be left disconnected. Equipment shall be evaluated in each operating state, including ground start. The general test methods of 5.7 shall apply, checking touch current for all positions of switches S1, S2, and S3 in Figure 5.7.7.1DV.1. In case the total touch current exceeds the ES2 limits, the protective conductor current is measured using the test set up of Figure 5.7.7.1DV.1 or Figure 5.7.7.1DV.2 with the measuring instrument replaced with an ammeter having negligible impedance.</p>		N/A
6.5.1DV.1 DC	<p>Add the following text to the end of the second, third and fourth paragraphs:</p> <p>or the insulation of the conductor or cable assembly shall be rated VW-1 or FT-1.</p>		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
6.5.1DV.2 D2	Add the following after the third paragraph: PS3 wiring outside a fire enclosure shall comply with single fault testing in B.4. Alternatively, the following constructions are considered to comply: – conductors provided with overcurrent protection in accordance with Article 240 of the National Electrical Code, NFPA 70, and the Canadian Electrical Code, Part I, C22.1, Section 14; – internal conductors supplied by a power source that is limited to the output voltage and current values specified in Table Q.1 or is limited to the output voltage values and provided with an overcurrent protective device with a rated current value as specified in Table Q.2; – interconnecting cables supplied by a limited power source (see Q.1); – a 20-A protective device used with any size wire in the primary.		N/A
6.7DV.1	Safeguards against electrically-caused fire due to overvoltage from power line crosses		N/A
6.7DV.1.1	Equipment with external circuits intended for connection to a telecommunication network that uses outside cable subject to overvoltage from power line failures shall comply with Annex DVI.		N/A
10.6.1DV D2	For telecommunication-network connected equipment, see Annex DVJ.		N/A
F.1DV DR	F.1DV.1 See Annex DVK for U.S. and Canadian markings and instructions.		N/A
F.3.3.9DV.1	Equipment with output terminals Output terminals provided for supply of other equipment except mains supply shall be marked with the nominal output voltage and frequency, and, in addition, the maximum output current or power, unless the terminals are marked with the type references of the equipment which are permitted to be connected. When intended to be installed or interconnected in the field by a skilled person, the Class of wiring shall be marked adjacent to the terminals.		N/A
G.4.3DV D2	Delete the 2 <sup>nd</sup> sentence reference to “banana plug” of the EXAMPLE.		N/A
G.7.2DV DR	In the second paragraph, replace the reference to Table G.4 with a reference to Table G.7ADV.1.		N/A
G.7ADV DR	Additional requirements: Power supply cords – detachable and non-detachable		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.7ADV.1	General Flexible cords and plugs are permitted for movable equipment, hand-held equipment, stationary equipment and transportable equipment, and for fixed equipment where the fastening means and mechanical connections of the equipment are designed to permit removal for maintenance and repair.		N/A
G.7ADV.2	Methods of connection Flexible cords shall be provided with an attachment plug for connection to the branch circuit.		N/A
G.7ADV.3	Sizing and ratings The attachment plug configuration shall be one that is rated not less than 125 percent of the current rating of the equipment.		N/A
	Power supply cords shall have conductors with cross-sectional areas sufficient for the rated current of the equipment. Conductors shall be sized based on the requirements in the National Electrical Code (NEC), NFPA 70, and the Canadian Electrical Code, Part I, C22.1.		N/A
	Table G.7ADV.1 provides allowable ampacity for flexible cords and cables based on Table 400.5(a)(1) of the NEC. See Table 400.5(a)(2) of the NEC for ampacity information on portable power cables.		N/A
	For equipment with a rated current up to and including 2 A, 20 AWG is acceptable provided that the mains plug is provided with a 2 A fuse maximum and the equipment is not provided with a socket outlet.		N/A
G.7ADV.4	Serviceability Power supply cords and cord sets shall incorporate flexible cords suitable for the particular application or shall be of a type at least as serviceable for the particular application. Table G.7ADV.2 lists common applications and associated suitable cord types.		N/A
G.7ADV.5.1	Minimum length The minimum length of a power supply cord shall be 1,5 m unless it is intended for a special installation, such as dedicated equipment intended to be mounted near a mains socket-outlet.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	For equipment provided with an external power supply, the minimum length of the power supply cord shall be 0,5 m, provided that the total length of the conductive path from the receptacle to the equipment is 1,5 m or greater.		N/A
G.7ADV.5.2	Maximum length For equipment intended for installation in ITE Rooms, the length of a power supply cord shall not exceed 4,5 m. For other intended installations, see Table G.7ADV.2.		N/A
H.2DV D2	item a: Continuous ringing signals shall: <ul style="list-style-type: none"> <li>• be located only in areas where a skilled person has access during servicing;</li> <li>• be so located and guarded that unintentional contact with such parts is unlikely during servicing by a skilled person, or be provided with a marking to warn a skilled person of the presence of continuous ringing signals; and</li> <li>• not become accessible to an ordinary person under single fault conditions.</li> </ul>		N/A
H.4DV.1	Other telecommunication signals: Telecommunication signaling systems (e.g., some message waiting systems) using voltages or current, or both, greater than those specified in 5.2.1.1 and 5.2.1.2 shall be permitted if they comply with the following:		N/A
	– continuous signal: For a signal of duration greater than 5 s, the current through the relevant measuring instrument described in IEC 60990:1999, Figure 4, shall be not greater than 7.1 mA peak a.c., or 30 mA d.c., or the limit shown in Figure H.4DV.1 for combinations of a.c. and d.c., when measured in accordance with 5.7.		N/A
	– intermittent signal: For a signal of duration less than 5 s, the current through the relevant measuring instrument described in IEC 60990:1999, Figure 4, shall be not greater than the limit specified in Figure H.4DV.2. The signal shall be followed by a quiet interval of at least 1 s before the next intermittent signal. During the quiet interval, either the voltage is less than 56,6 V d.c., or the current measured is less than 0,5 mA.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.2.1DV DC	Battery packs with sealed secondary cells and batteries (other than button) containing alkaline or other non-acid electrolyte and used in stationary equipment shall comply with either IEC 62133, UL 2054 or UL 1973.		N/A
	Additionally, such battery packs that rely on solid-state circuits and software controls as safeguards shall comply with either the requirements in UL 1973 for System Safety Analysis (5.7) and Protective Circuit and Controls (5.8), or similar requirements in an appropriate standard for electronic safety-related controls that are suitable for investigation of such protection of secondary cells and batteries.		N/A
P.4.1DV DE	Additional text added to correct for editing error: For metalized coatings, clearances and creepage distances for pollution degree 3 shall be maintained instead of the tests of P.4.2DV.1.		N/A
P.4.2DV DE	Added test requirements text from Clause P.5 as new Clause P.4.2DV DE to correct for editing error.		N/A
P.5DV DE	Clause P.5 relocated to P.4.1 and P.4.2		N/A
U.1DV D1	Added the following text: The outer enclosure housing a CRT shall have no opening that exceeds 130 mm <sup>2</sup> unless the minor dimension of the opening is 10 mm or less.		N/A
Table W.3DV DE	Modify Table W.3 by replacing the entry for 1.2.8.14 in the first column with the following to correct a typographical error: <b>TNV-3 CIRCUIT</b> <b>TNV CIRCUIT</b> – whose normal operating voltages exceed the limits for an SELV circuit under normal operating conditions and – on which overvoltages from telecommunication networks and cable distribution systems are possible		N/A
Annex DVA	(normative) Canadian and U.S. regulatory-based requirements		N/A
Annex DVB	(normative) Equipment used in health care facilities		N/A
Annex DVC	(normative) Under kitchen cabinet equipment		N/A
Annex DVD	(informative) D.C. powered equipment and centralized d.c. power systems (DC mains)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Annex DVE	(normative) UL and CSA component requirements (mandatory)	The manufacturer commits to fulfill the requirement when the product will be sold in Canada.	P
Annex DVF	(normative) UL and CSA component requirements (alternative to IEC standards)	The manufacturer commits to fulfill the requirement when the product will be sold in Canada.	P
Annex DVG	(normative) UL and CSA component requirements (alternative)	The manufacturer commits to fulfill the requirement when the product will be sold in Canada.	P
Annex DVH	(normative) Permanently connected equipment – mains connections		N/A
Annex DVI	(normative) Safeguards against electrically-caused fire due to overvoltage from power line crosses		N/A
Annex DVJ	(normative) Acoustic tests for telecommunications equipment		N/A
Annex DVK	(normative) Canadian and U.S. marking and instructions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

<b>ATTACHMENT TO TEST REPORT</b> IEC 62368-1 (AUSTRALIAN / NEW ZEALAND) NATIONAL DIFFERENCES <b>(Audio/video, information and communication technology equipment)</b>			
<b>Differences according to.....:</b> AS/NZS 62368.1:2018			
<b>Attachment Form No.....:</b> AU_NZ_ND_IEC 62368_1B			
<b>Attachment Originator .....</b> JAS-ANZ			
<b>Master Attachment .....</b> 2018-02			
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	<b>National Differences</b>		P
<b>Appendix ZZ</b>	Variations to IEC 62368-1:2014 (ED. 2.0) for Australia and New Zealand		P
<b>ZZ1 Scope</b>	This Appendix lists the normative variations to IEC 62368-1:2014 (ED. 2.0)		P
<b>ZZ2 Variations</b>	The following modifications are required for Australian/New Zealand conditions:		P
<b>2</b>	Add the following to the list of normative references: The following normative documents are referenced in Appendix ZZ: -AS/NZS 3112, <i>Approval and test specification—Plugs and socket-outlets</i> -AS/NZS 3123, <i>Approval and test specification—Plugs, socket-outlets and couplers for general industrial application</i> -AS/NZS 3191, <i>Electric flexible cords</i> -AS/NZS 60065, <i>Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)</i> -AS/NZS 60320.1, <i>Appliance couplers for household and similar general purposes, Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)</i> -AS/NZS 60320.2.2, <i>Appliance couplers for household and similar general purposes Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD)</i> -AS/NZS 60695.2.11, <i>Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-</i>		P

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Clause	Requirement + Test	Result - Remark	Verdict
	<p><i>products</i></p> <p>-AS/NZS 60695.11.5, <i>Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance</i></p> <p>-AS/NZS 60695.11.10, <i>Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods</i></p> <p>-AS/NZS 60884.1, <i>Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</i></p> <p>-AS/NZS 60950.1:2015, <i>Information technology equipment—Safety, Part 1: General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)</i></p> <p>-IEC 61032:1997, <i>Protection of persons and equipment by enclosures—Probes for verification</i></p> <p>-AS/NZS 61558.1:2008 (including Amendment 2:2015), <i>Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 2.1, MOD)</i></p> <p>-AS/NZS 61558.2.16, <i>Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.</i></p>		
4.1.1	<p><i>Application of requirements and acceptance of materials, components and subassemblies</i></p> <p>1 Replace the text 'IEC 60950-1' with 'AS/NZS 60950.1:2015'.</p> <p>2 Replace the text 'IEC 60065' with 'AS/NZS 60065'.</p>		P
4.7	<b>Equipment for direct insertion into mains socket-outlets</b>		N/A
4.7.2	<p><b>Requirements</b></p> <p>Delete the text of the second paragraph and replace with the following:</p> <p>Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.</p>		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	<b>Compliance Criteria</b> Delete the first paragraph and Note 1 and Note 2 and <i>replace</i> with the following: <i>Compliance is checked by inspection and, if necessary, by the tests in AS/NZS 3112.</i>		N/A
4.8	Delete existing clause title and <i>replace</i> with the following: <b>4.8 Products containing coin/button cell batteries</b>		N/A
4.8.1	<b>General</b> 1 Second dashed point, <i>delete</i> the text and <i>replace</i> with the following: – include coin/button cell batteries with a diameter of 32 mm or less. 2 After the second dashed point, <i>insert</i> the following Note: NOTE 1: Batteries are specified in IEC 60086-2. 3 After the third dashed point, <i>renumber</i> the existing Note as 'NOTE 2'. 4 Fifth dashed point, <i>delete</i> the word 'lithium'.		N/A
4.8.2	<b>Instructional Safeguard</b> First line, <i>delete</i> the word 'lithium'.		N/A
4.8.3	<b>Construction</b> First line, after the word 'Equipment' <i>insert</i> the words 'containing one or more coin/button batteries and'		N/A
4.8.5	<b>Compliance criteria</b> Delete the first paragraph and <i>replace</i> with the following: <i>Compliance is checked by applying a force of 30 N +/- 1 N for 10 s to the battery compartment door/cover by a rigid test finger according to test probe 11 of IEC 61032:1997 at the most unfavourable place and in the most unfavourable direction. The force shall be applied in one direction at a time.</i>		N/A
5.4.10.2	<b>Test methods</b>		N/A
5.4.10.2.1	<b>General</b> Delete the first paragraph and <i>replace</i> with the following: In Australia only, the separation is checked by the test of both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test of either Clause 5.4.10.2.2 or Clause 5.4.10.2.3.		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
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Table 29	Replace the table with the following:				N/A
	Parts	Impulse test		Steady state test	
		New Zealand	Australia	New Zealand	Australia
	Parts indicated in Clause 5.4.10.1 a) <sup>a</sup>	2.5 kV 10/700 μs	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment. 10/700 μs	1.5 kV	3 kV
	Parts indicated in Clause 5.4.10.1 b) and c) <sup>b</sup>	1.5 kV 10/700 μs <sup>c</sup>		1.0 kV	1.5 kV
	<sup>a</sup> Surge suppressors shall not be removed. <sup>b</sup> Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment. <sup>c</sup> During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.				
5.4.10.2.2	After the first paragraph, <i>insert</i> new Notes 201 and 202 as follows: NOTE 201 For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.			N/A	
5.4.10.2.3	After the first paragraph, <i>insert</i> new Notes 201 and 202 as follows: NOTE 201 For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.			N/A	
6	Electrically-caused fire			N/A	
6.1	General After the first paragraph, insert the following new paragraph: Alternatively, the requirements of Clauses 6.2 to 6.5.2 are considered to be fulfilled if the equipment complies with the requirements of Clause 6.202			N/A	

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Clause	Requirement + Test	Result - Remark	Verdict
<b>6.6</b>	After Clause 6.6, <i>add</i> the new Clauses 6.201 and 6.202 as follows: <b>6.201 External power supplies, docking stations and other similar devices</b> and <b>6.202 Resistance to fire—Alternative tests</b> (see special national conditions)		N/A
<b>8.5.4</b>	<b>Special categories of equipment comprising moving parts</b>		N/A
<b>8.5.4.1</b>	<b>Large data storage equipment</b> In the first dashed row and the second dashed rows <i>replace</i> 'IEC 60950-1:2005' with 'AS/NZS 60950.1:2015'.		N/A
<b>8.6</b>	<b>Stability of equipment</b>		N/A
<b>8.6.1 and Table 36</b>	<b>Requirements</b> 1. Table 36, <i>insert</i> Footnote c at the end of the 'Glass slide' heading, and <i>add</i> a new Footnote c after the text of Footnote b in the last row of Table 36 as follows: ° The glass slide test is not applicable to floor standing equipment, even though the equipment may have controls or a display. 2. Table 36, fifth row, <i>insert</i> '201' at the end of 'No stability requirements' 3. Table 36, ninth row, <i>insert</i> '201' at the end of 'No stability requirements' 4. Table 36, <i>add</i> the following new footnote: 201 MS2 and MS3 television sets and display devices, designed only for fixing to a wall, ceiling or equipment rack, are not subjected to stability requirements only if the instructional safeguard of Clause 8.6.1.201 is provided. Otherwise, the glass slide requirements of Clause 8.6.4 and horizontal force requirements of Clause 8.6.5 apply. 5. Second paragraph beneath Table 36, <i>delete</i> the words 'MS2 and MS3 television sets' and <i>replace</i> with 'MS2 and MS3 television sets and display devices'		N/A
<b>8.6.1</b>	After Clause 8.6.1 <i>add</i> the following new clauses: <b>8.6.1.201 Instructional safeguard for fixed-mount television sets</b> (see special national conditions)		N/A
<b>Annex F Paragraph F.3.5.1</b>	<b>Mains appliance outlet and socket-outlet markings</b> <i>Replace</i> 'IEC 60320-2-2' with 'AS/NZS 60320.2.2'.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
<b>Annex G</b> <b>Paragraph G.4.2</b>	<b>Mains connectors</b> 1 In the second line <i>insert</i> 'or AS/NZS 3123' after 'IEC 60906-1'. 2 In the second line <i>insert</i> 'or AS/NZS 60320 series' after 'IEC 60320 series' 3 <i>Add</i> the following new paragraph: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.		N/A
<b>Paragraph G.5.3.1</b>	<b>Transformers, General</b> 1 In the third dashed point <i>replace</i> 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 In the fourth dashed point <i>replace</i> 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.		N/A
<b>Paragraph G.7.1</b>	<b>Mains supply cords, General</b> In the fourth dashed paragraph, <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A
<b>Table G.5</b>	<b>Sizes of conductors</b> 1 In the second row, first column, <i>delete</i> '6' and <i>replace</i> with '7.5' 2 In the second row, second column, <i>delete</i> '0,75' and <i>replace</i> with '0.75 <sup>b</sup> 3 <i>Delete</i> Note 1. 4 <i>Replace</i> 'NOTE 2' with 'NOTE:'. 5 <i>Delete</i> the text of 'Footnote b' and <i>replace</i> with the following: <sup>b</sup> This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm <sup>2</sup> three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 In Footnote c <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1' 7 In Footnote d <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<b>Annex M Paragraph M.3.2</b>	<b>Protection circuits for batteries provided within the equipment, Test method</b> After the first dashed point <i>add</i> the following Note: NOTE 201: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown, then it should be assumed that the maximum limit of SELV may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.		N/A
	<b>Special national conditions (if any)</b>		P
6.201	External power supplies, docking stations and other similar devices for external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage— – at all ES1 outlets or connectors shall not increase by more than 10% of its rated output voltage under normal operating condition; and – of a USB outlet or connector shall not increase by more than 3 V or 10% of its rated output voltage under normal operating conditions, whichever is higher. For equipment with multiple rated output voltages, the requirements apply with the equipment configured for each rated output voltage in turn. NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries. Compliance shall be checked by measurement, taking into account the abnormal operating conditions of Annex B.3 and the simulated single-fault conditions of Annex B.4		P
6.202	Resistance to fire—Alternative tests		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.202.1	<p>General</p> <p>Parts of non-metallic material shall be resistant to ignition and spread of fire.</p> <p>This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the equipment, or the following:</p> <p>a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length.</p> <p>b) The following parts which would contribute negligible fuel to a fire:</p> <ul style="list-style-type: none"> <li>– small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings;</li> <li>– small electrical components, such as capacitors with a volume not exceeding 1 750 mm<sup>3</sup>, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10.</li> </ul> <p>NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to another.</p> <p>Compliance shall be checked by the tests of Clauses 6.202.2, 6.202.3 and 6.202.4.</p> <p>For the base material of printed boards, compliance shall be checked by the test of Clause 6.202.5.</p> <p>The tests shall be carried out on parts of non-metallic material which have been removed from the equipment. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use.</p> <p>These tests are not carried out on internal wiring.</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.202.2	<p>Testing of non-metallic materials parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C.</p> <p>Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the relevant part is not thinner than the sample tested.</p>		N/A
6.202.3	<p>Testing of insulating materials parts of insulating material supporting Potential Ignition Sources shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C.</p> <p>The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection.</p> <p>NOTE: Contacts in components such as switch contacts are considered to be connections</p>		N/A
	<p>For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test.</p> <p>However, parts shielded by a barrier which meets the needle-flame test need not be tested</p>		N/A

## IEC62368\_1B - ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
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	The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:		N/A										
	<table><tr><th>Clause of AS/NZS 60695.11.5</th><th>Change</th></tr><tr><td>9 Test procedure</td><td></td></tr><tr><td>9.2 Application of needle-flame</td><td><i>Delete</i> the first and second paragraphs and <i>replace</i> with the following:  The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner. The duration of application of the test flame shall be 30 s -1 s.</td></tr><tr><td>9.3 Number of test specimens</td><td><i>Replace</i> with the following:  The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.</td></tr><tr><td>11 Evaluation of test results</td><td><i>Replace</i> with the following:  The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.</td></tr></table>	Clause of AS/NZS 60695.11.5	Change	9 Test procedure		9.2 Application of needle-flame	<i>Delete</i> the first and second paragraphs and <i>replace</i> with the following:  The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner. The duration of application of the test flame shall be 30 s -1 s.	9.3 Number of test specimens	<i>Replace</i> with the following:  The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.	11 Evaluation of test results	<i>Replace</i> with the following:  The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.		
Clause of AS/NZS 60695.11.5	Change												
9 Test procedure													
9.2 Application of needle-flame	<i>Delete</i> the first and second paragraphs and <i>replace</i> with the following:  The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner. The duration of application of the test flame shall be 30 s -1 s.												
9.3 Number of test specimens	<i>Replace</i> with the following:  The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.												
11 Evaluation of test results	<i>Replace</i> with the following:  The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.												

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the relevant part is not thinner than the sample tested.		
6.202.4	<p>Testing in the event of non-extinguishing material If parts, other than enclosures, do not withstand the glow wire tests of Clause 6.202.3, by failure to extinguish within 30 s after the removal of the glowwire tip, the needle-flame test detailed in Clause 6.202.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of Clause 6.202.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested.</p> <p>NOTE 1: If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing.</p> <p>NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing.</p> <p>NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.</p>		N/A



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.202.5	<p>Testing of printed boards</p> <p>The base material of printed boards shall be subjected to the needle-flame test of Clause 6.202.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a potential ignition source.</p> <p>The test is not carried out if—</p> <ul style="list-style-type: none"> <li>– the printed board does not carry any potential ignition source;</li> <li>– the base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or</li> <li>– the base material of printed boards, on which the available equipment power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely.</li> </ul> <p>Conformance shall be determined using the smallest thickness of the material.</p> <p>NOTE: Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximize the apparent power for more than 2 min when the circuit supplied is disconnected.</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.202.6	For open circuit voltages greater than 4 K V Potential ignition sources with open circuit voltages exceeding 4 kV (peak) a.c. or d.c. under normal operating conditions shall be contained in a FIRE ENCLOSURE which shall comply with flammability category V-1 or better according to AS/NZS 60695.11.10.		N/A
8.6.1.201	8.6.1.201 Instructional safeguard for fixed-mount television sets  MS2 and MS3 television sets and display devices designed only for fixed mounting to a wall of ceiling or equipment rack shall, where required in Table 36, footnote 201, have an instructional safeguard in accordance with Clause F.5 which may be on the equipment or included in the installation instructions or equivalent document accompanying the equipment.  The elements of the instructional safeguard shall be as follows: – element 1a: not available; – element 2: 'Stability Hazard' or equivalent wording; – element 3: 'The television set may fall, causing serious personal injury or death' or equivalent text; – element 4: the following or equivalent text: To prevent injury, this television set must be securely attached to the floor/wall in accordance with the installation instructions		N/A
8.6.1.202	Restraining device  MS2 and MS3 television sets and display devices that are not solely fixed-mounted should be provided with a restraining device such as a fixing point to facilitate restraining the equipment from toppling forward. The restraining device shall be capable of withstanding a pull of 100 N in all directions without damage.  Where a restraining device is provided, instructions shall be provided in the instructions for installation or instructions for use to ensure correct and safe installation.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 2 <sup>th</sup> Ed.	
U.S.A. NATIONAL DIFFERENCES	
Audio/video, information and communication technology equipment – Part 1: Safety requirements	
Differences according to.....:	CSA/UL 62368-1:2014
Attachment Form No.....:	US&CA_ND_IEC623681B
Attachment Originator .....	UL(US)
Master Attachment .....	Date 2015-06
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IEC 62368-1 - US and Canadian National Differences			
Special National Conditions based on Regulations and Other National Differences			
1.1	All equipment is to be designed to allow installation according to 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, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.		P
1.4	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.	Added.	N/A
4.1.17	<i>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 NEC.</i>		N/A
	<i>For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC generally are required to have special</i>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<i>construction features and identification markings.</i>		
4.8	Lithium coin / button cell batteries have modified special construction and performance requirements.	No such batteries.	N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.5, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment		N/A
5.7.7	Equipment intended to receive telecommunication ringing signals complies with a special touch current measurement tests.		N/A
6.5.1	PS3 wiring outside a fire enclosure complies with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A
Annex F (F.3.3.8)	Output terminals provided for supply of other equipment, except mains, supply are marked with a maximum rating or references to which equipment it is permitted to be connected.		N/A
Annex G (G.7.1)	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
Annex G (G.7.3)	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
Annex G (G.7.5)	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special		N/A

## IEC62368\_1B - ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
	installation and performance restrictions.		
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V <sub>peak</sub> or 60 V d.c., 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.		N/A
Annex M	Battery packs for stationary applications comply with special component requirements.		N/A
Annex DVA (1)	Equipment intended for use in spaces used for environmental air are subjected to special flammability requirements for heat and visible smoke release.		N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m <sup>3</sup> (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. & Canadian Regulations.		N/A
	Baby monitors additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
Annex DVA (5.6.3)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		N/A
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE 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) have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a min. flammability classification of V-1.		N/A

## IEC62368\_1B - ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (10.3.1)	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (10.5.1)	Equipment that produces ionizing radiation complies with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (F.3.3.3)	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. Additional considerations apply for voltage ratings that exceed the attachment cap rating or are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."		N/A
Annex DVA (F.3.3.5)	Equipment identified for ITE (computer) room installation is marked with the rated current		N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position		N/A
Annex DVA (G.3.4)	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.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles complies with NEC 250.146(D) and CEC 10-112 and 10-906(8).		N/A
Annex DVA (G.4.3)	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.		N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more		N/A

## IEC62368\_1B - ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
	than 1/3 hp (locked rotor current over 43 A).		
Annex DVA (Annex M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A
Annex DVA (Q)	Wiring terminals intended to supply Class 2 outputs according to the NEC or CEC Part 1 are marked with the voltage rating and "Class 2" or equivalent; marking is located adjacent to the terminals and visible during wiring.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. Components required to comply include: appliance couplers, attachment plugs, battery back-up systems, battery packs, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultra-capacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, data storage equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.	UL approved components used. Refer to table 4.1.2 of IEC 62368-1 test report for details.	P
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.		N/A
Annex DVH	Wiring methods (terminals, leads, etc.) used for		N/A



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
(DVH.1)	the connection of the equipment to the mains are in accordance with the NEC/CEC.		
Annex DVH (DVH.3.2)	Terminals for permanent wiring, including protective earthing terminals, are suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and are specially marked when specified.		N/A
Annex DVH (DVH.3.2)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm <sup>2</sup> ).		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
Annex DVH (DVH 5.5)	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, complies with special earthing, wiring, marking and installation instruction requirements.		N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.		N/A
Annex DVJ (10.6.1)	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



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict



ATTACHMENT TO TEST REPORT IEC 62368-1 (JAPAN) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to:		J62368-1 (H30)	
Attachment Form No. :		JP_ND_IEC62368_1B	
Attachment Originator :		UL (JP)	
Master Attachment :		Date 2018-11-22	
Copyright © 2018 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		—
3.3.15.1	Add the following new note after Note 2 to entry. Note 3 to entry: See 3.3.15.4A for class I equipment, when 2-pin adaptor with earthing lead wire or cord set having 2-pin plug with earthing lead wire is provided or recommended.	Class III equipment	N/A
3.3.15.4A	Add the following new clause after 3.3.15.4. 3.3.15.4A Class 0I equipment Equipment having attachment plug without earthing blade, where protection against electric shock is achieved by using basic insulation and providing the protective earthing terminal or earthing lead wire in order to connect accessible conductive parts to the protective earthing conductor in the building wiring as supplementary safeguard.  The above includes the equipment provided with, or recommend user to use the accessory of 2-pin plug adaptor with protective earthing lead wire that adapts class I (earthed) plug into 2-pin plug or power supply cord set having 2-pin plug with earthing lead wire.  Note 1 to entry: Class 0I equipment may have a part constructed with Class II.	Class III equipment	N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.1.2	<p>Modify the first paragraph as follows:</p> <p>Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this standard or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.</p> <p>Add the following Note before Note 1</p> <p>NOTE 0A Components complying with the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better properties.</p>		P
4.1.3	<p>Add the following Note before the compliance statement:</p> <p>NOTE Considering the wiring circumstance in Japan, transportable or similar type of equipment that is frequently moved for intended usage, or equipment intended to be installed where the provision for earthing connection is unlikely should not be designed as class I or class 0I equipment unless it is intended to be installed by skilled persons or instructed persons.</p>	Class III equipment	N/A
5.4.1.4.3	<p>Add the following as a note to Table 10:</p> <p>NOTE In case no data for the material is available, Appendix 4, 1.(1).b. 3 of the Interpretation on the Ministerial Ordinance stipulating Technical Specifications for Electrical Appliances is regarded as maximum temperature limit of the material.</p>		N/A
5.4.9.2	<p>Add the following text to the NOTE:</p> <p>Alternatively, routine test in production-line may be in accordance with 5.2 (electric strength test) of IEC 62911.</p>		N/A
5.6.1	<p>Add the following:</p> <p>Mains socket-outlet and appliance outlet shall comply with Clause G.4.2A if they are incorporated as part of the equipment.</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.2.1	<p>Add the following to the third paragraph:</p> <p>Mains connection of class 0I equipment provided with instructional safeguard in accordance with Clause F.3.6.1A is considered to meet this requirement.</p> <p>Add the following at the end of the subclause:</p> <p>Mains plug having a lead wire for protective earthing connection of class 0I equipment shall comply with all of the following:</p> <ul style="list-style-type: none"> <li>– Not to be used for equipment having a rated voltage of 150 V or more</li> <li>– The lead wire for earthing is not connected to the earth by means of clip</li> <li>– The lead wire for earthing is at least 10 cm long</li> </ul> <p>If class 0I equipment provides an independent main protective earthing terminal and is intended to be installed by ordinary person, earthing wire shall be provided within the package for the equipment.</p>		N/A
5.6.2.2	<p>Add the following after the first sentence.</p> <p>However, this requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.</p>		N/A
5.6.3	<p>Add the following after NOTE 2.</p> <p>In addition, for class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall also comply with either of the following:</p> <ul style="list-style-type: none"> <li>– use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire</li> <li>– single core cord or single core cable with 1.25 mm<sup>2</sup> or more cross-sectional area</li> </ul> <p>Replace NOTE 3 with the following</p> <p>NOTE 3 Heavy duty is defined in IEC 62440.</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.3	<p>Change present NOTE to NOTE 1, and add the following paragraph after the NOTE 1:</p> <p>For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series or JIS C 8303, or otherwise being considered to comply with relevant regulations, or that is provided with mains appliance outlet as specified in JIS C 8283-2-2 for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.</p> <p>NOTE 2 Limits for class 0I equipment is specified in 5.7.4</p> <p>NOTE 3 It is regarded as being in compliance with the relevant regulations if a connector complies with Appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliances.</p>		N/A
5.7.4	<p>Add the following paragraph at the end of the first paragraph:</p> <p>In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990.</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.3.3	<p>Replace the first dash paragraph with following:</p> <p>– a fuse complying with JIS C 6575 series or a fuse having equivalent characteristics shall open within 1 s; or</p> <p>NOTE 3 A fuse is considered to have equivalent characteristics to those complying with JIS C 6575 series if it complies with appendix 3 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance and Material.</p> <p>Add the following before the last paragraph:</p> <p>A fuse having time/current characteristics other than those specified in IEC 60127 shall be tested with the characteristics taken into account. In case of Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”.</p> <p>NOTE 4 The above replacements apply also to fuses having equivalent characteristics to those specified in JIS C 6575 series.</p>		N/A
8.5.4.2.1	<p>Add the following before NOTE 2:</p> <p>However, only stationary equipment that is directly connected to the three-phase supply rated more than 200 V ac can be considered for use in locations where children are not likely to be present, when complying with Clause F.4.</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.2.2	<p>Replace the first paragraph with the following: For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.</p> <p>Replace the first dash with the following:</p> <p>– element 1a and element 2:  IEC 60417-6057 (2011-05) or  (JIS S 0101:2000, 6.2.1) and the following precautions</p> <ul style="list-style-type: none"> <li>• “The use by infants/children may cause a hazard of injury.” or equivalent</li> </ul> <p>Example in Japanese: 子供が使用することによって、傷害などの危害が発生するおそれがある。</p> <ul style="list-style-type: none"> <li>• “A hand can be drawn into the mechanical section for shredding when touching the document-slot.” or equivalent</li> </ul> <p>Example in Japanese: 文書投入口に手を触れることによって、細断機構に引き込まれるおそれがある。</p> <ul style="list-style-type: none"> <li>• “Clothing can be drawn into the mechanical section for shredding when touching the document-slot.” or equivalent</li> </ul> <p>Example in Japanese: 文書投入口に衣類が触れることによって、細断機構に引き込まれるおそれがある。</p> <ul style="list-style-type: none"> <li>• “Hairs can be drawn into the mechanical section for shredding when touching the document-slot.” or equivalent</li> </ul> <p>Example in Japanese: 文書投入口に髪の毛が触れることによって、細断機構に引き込まれるおそれがある。</p> <p>In case of equipment incorporating a commutator motor:</p> <ul style="list-style-type: none"> <li>• “The equipment may catch fire or explode by spraying of flammable gas.” or equivalent</li> </ul> <p>Example in Japanese: 可燃性ガスを噴射することによって引火又は爆発するおそれがある。</p> <p>Delete the second dash.</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.2.4	<p>Replace the first statement with the following:</p> <p>The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then, tested with the wedge probe of Figure V.4 applied in any direction relative to the opening:</p>		N/A
8.5.4.2.5	<p>Replace the second sentence in the first paragraph with the following:</p> <p>The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part.</p> <p>Add the following after the second paragraph:</p> <p>Instructional safeguard shall not substitute an equipment safeguard for preventing access to hazardous moving parts.</p>		N/A
9.2.6, Table 38	<p>Replace the top row of TS2 in column of "Accessible parts" with the following:</p> <p>Handles, Knobs, grips, etc. and external surfaces either held, touched or worn against the body in normal use (&gt; 1 min) <sup>b,c</sup></p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex F F.3.5.1	<p>Add the following after the second paragraph.</p> <p>Class 0I equipment shall be provided with an instructional safeguard in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8303 or relevant regulation to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.</p> <p>NOTE Appendix 4 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is an example of the relevant regulation.</p> <p>The elements of the instructional safeguard shall be as follows:</p> <ul style="list-style-type: none"> <li>– element 1a: not applicable</li> <li>– element 2: “Only for (equipment name)” or equivalent text</li> </ul> <p>Example in Japanese:</p> <p>(equipment name)専用コンセント</p> <ul style="list-style-type: none"> <li>– element 4: “This socket-outlet is for use only with (manufacturer's name), (model number or series), (equipment name)” or equivalent text</li> </ul> <p>Example in Japanese:</p> <p>このコンセントは, (manufacturer's name), (model number or series), (equipment name)だけが接続することを意図しています。</p> <ul style="list-style-type: none"> <li>– element 3: “Use with other equipment may result in electric shock” or equivalent text</li> </ul> <p>Example in Japanese:</p> <p>その他の機器を接続すると感電の危険があります。</p> <p>The elements shall be in the order 2, 4, and 3.</p> <p>The element 2 shall be marked adjacent to the mains socket-outlet.</p> <p>The rated voltage and assigned current or power of a mains socket-outlet need not be marked on the equipment provided with this instructional safeguard.</p>		N/A



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex F F.3.5.3	<p>Replace the third dashed paragraph with the following.</p> <p>– if the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic.</p> <p>Example</p> <p>F: Fast blow</p> <p>T: Time-delay</p> <p>Ⓐ: Class A</p> <p>Ⓑ: Class B</p>		N/A
Annex F F.3.6.1A	<p>Add the following new clause after F.3.6.1.3.</p> <p>F.3.6.1A Marking for class 0I equipment</p> <p>The requirements of Clauses F.3.6.1.1 and F.3.6.1.3 also apply to class 0I equipment.</p> <p>For class 0I equipment, the following or equivalent instructions shall be marked on the mains plug or on the visible place of the main body.</p> <p>“Provide an earthing connection”</p> <p>Example in Japanese:</p> <p>“必ず接地接続を行ってください。”</p> <p>In addition to the above, for class 0I equipment, the following instructional safeguard shall be marked on the visible place of the main body or shall be in the text of an accompanying document.</p> <p>“Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains.”</p> <p>Example in Japanese:</p> <p>接地接続は必ず、電源プラグを電源につなぐ前に行ってください。 また、接地接続を外す場合は、必ず電源プラグを電源から切り離してから行ってください。</p>		N/A
Annex F F.3.6.2.1	<p>Replace the third paragraph with the following:</p> <p>The above symbols shall not be used for class I equipment or class 0I equipment.</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex F F.4	<p>Replace the fourth dashed paragraph with the following:</p> <ul style="list-style-type: none"> <li>– For audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A, the instructions shall require that the external wiring connected to these terminals shall be installed by a skilled person, or shall be connected by means of ready-made leads or cords that are constructed in a way that would prevent contact with any ES3 circuit.</li> </ul> <p>Add the following after the ninth dashed paragraph.</p> <ul style="list-style-type: none"> <li>– For class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided within the package for the equipment, if the protective earthing connection is made by instructed person or skilled person, the suitable installation instruction for the protective earthing connection shall be provided.</li> </ul>		N/A
Annex G G.3.2.1	<p>Replace the paragraph a) with the following.</p> <p>a) The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.</p> <p>NOTE Thermal links complying with appendix 3 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance and Material are considered to have equivalent or better properties.</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex G G.3.4	<p>Replace the first paragraph by the following.</p> <p>Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the relevant JIS harmonizing with IEC standard, or shall have equivalent or better properties. If there are no applicable JIS, they shall comply with relevant IEC standard.</p> <p>NOTE Fuses complying with appendix 3, or circuit breakers or residual current circuit breakers complying with appendix 4 of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance and Material are considered to have equivalent or better properties.</p>		N/A
Annex G G.4.1	<p>Add the following sentence at the end of this clause.</p> <p>This requirement is not applicable to Clauses G.4.2 and G.4.2A.</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex G G.4.2	<p>Replace with the following.</p> <p>G.4.2 Mains connectors (including mains plug and socket-outlet)</p> <p>Mains connector shall comply with JIS C 8282 series, JIS C 8283 series, JIS C 8285, JIS C 8303 or IEC 60309 series.</p> <p>Mains plugs and socket-outlets shall comply with JIS C 8282 series, JIS C 8303, IEC 60309 series, or have equivalent or better properties.</p> <p>NOTE Mains plug complying with appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent or better properties.</p> <p>A power supply cord set provided with appliance connector that can fit appliance inlet complying with JIS C 8283-1 shall comply with JIS C 8286.</p> <p>Equipment shall be constructed so that mechanical stress does not transmit to the soldering part of inlet terminal during insertion or removal of the connector. Construction that the body of the inlet is secured and the securement not relied on soldering only is considered to comply.</p> <p>When an equipment is rated not more than 125 V and complies with all the following requirements, Type C14 and C18 appliance coupler complying with JIS C 8283 series can be considered as rated 15 A</p> <ul style="list-style-type: none"> <li>– The temperature of appliance coupler does not exceed the value specified in JIS C 8283-1 under the most unfavorable normal operating condition.</li> <li>– " Use only designated cord set attached in this equipment " or equivalent text is described in the operating instruction. If the cord set is not provided within the package for the equipment, suitable information regarding to the cord set is described in the operating instruction.</li> </ul> <p>Example in Japanese:</p> <p>“この機器に同こん(相)した指定の電源コードセットだけを使用して下さい。”</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex G G.4.2A	<p>Add the following new clause after G.4.2.</p> <p>G.4.2A Mains socket-outlet and interconnection coupler provided with the equipment</p> <p>The equipment provided with mains socket-outlet configured in accordance with JIS C 8282 series, JIS C 8303 or relevant standards or with interconnection coupler configured in accordance with JIS C 8283-2-2 shall comply with the following:</p> <ul style="list-style-type: none"> <li>– Socket-outlet and interconnection coupler provided in class II equipment can connect other class II equipment only.</li> <li>– Socket-outlet and interconnection coupler provided in class I equipment can connect other class II equipment only, or is provided with protective earthing pole that is reliably connected to protective earthing terminal or point of the equipment.</li> <li>– Interconnection coupler provided in class 0I equipment can connect other class II equipment only. If the all the followings are met, class I equipment can be connected.</li> <li>• The interconnection coupler is provided with a protective earthing pole that is reliably connected to the protective earthing point or terminal of the equipment.</li> <li>• Touch current measured according to 5.7.3 as a system of interconnected equipment with one connection to the mains does not exceed the limit for class 0I equipment specified in 5.7.4.</li> <li>– Socket-outlet provided in class 0I equipment can connect other class II equipment only. If the socket-outlet is provided for interconnection and the all the followings are met, class I equipment can be connected.</li> <li>• Socket-outlet is provided with protective earthing pole that is reliably connected to protective earthing point or terminal of the equipment.</li> <li>• Except for socket-outlet which only skilled person can access, instructional safeguard specified in Clause F.3.5.1 is provided so that only equipment intended by the manufacturer is connected.</li> </ul>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<ul style="list-style-type: none"> <li>• Touch current measured according to 5.7.3 as a system of interconnected equipment with one connection to the mains does not exceed the limited for class 0I equipment specified in 5.7.4.</li> <li>– Cord set for interconnection provided within the package for the equipment providing the interconnection coupler complying with JIS C 8283-2-2 complies with JIS C 8286.</li> </ul> <p>NOTE 1 Considering the wiring circumstance in Japan, transportable or similar type of equipment that is frequently moved for intended usage, class 0I equipment should not be provided with mains socket-outlet configured in accordance with JIS C 8282 series, JIS C 8303 or relevant regulation unless it is intended to be installed by skilled person.</p> <p>NOTE 2 Acceptable configuration of relevant regulation refers to appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance.</p>		N/A
Annex G G.4.3	<p>Add following NOTE after EXAMPLE.</p> <p>NOTE The statement, “An example of a connector not meeting the requirements of this subclause is the so called “banana” plug” is deleted from above EXAMPLE.</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex G G.7.1	<p>Replace the third dashed paragraph with the following.</p> <p>– other types of cords may be used if they have equivalent electro-mechanical and fire safety properties as above.</p> <p>Add the following after NOTE 3.</p> <p>NOTE 3A Sheathed mains cords complying with appendix 1 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance are considered to have equivalent or better electro-mechanical and fire safety properties.</p> <p>Add the following after the first sentence in the paragraph after present NOTE 3:</p> <p>However, a mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.</p>		N/A
Annex G G.7.2	<p>Add the following new NOTE 0A after the first sentence.</p> <p>NOTE 0A The cross-sectional area of mains cords may comply with relevant Japanese wiring regulation if it complies with appendix 1 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance that is referenced in Clause G.7.1 as having equivalent or better electro-mechanical and safety properties.</p>		N/A
Annex G G.7.6.1	<p>Add the following new NOTE 0A to end of this sub-clause.</p> <p>NOTE 0A The cross-sectional area of mains cords may comply with relevant Japanese wiring regulation if it complies with appendix 1 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance that is referenced in Clause G.7.1 as having equivalent or better electro-mechanical and safety properties.</p>		N/A

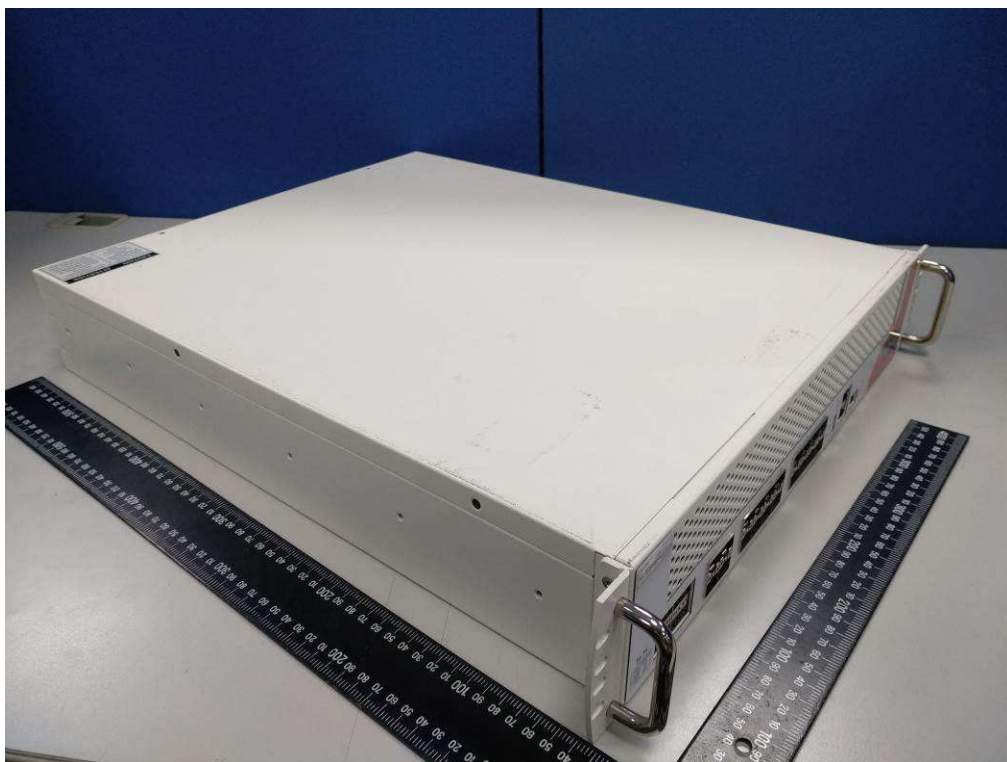
IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Annex G G.8.3.3	<p>Replace the first dotted paragraph in the first dashed paragraph with the following:</p> <ul style="list-style-type: none"> <li>• withstand <math>1,71 \times 1.1 \times U_0</math> for 5 s.</li> </ul> <p>Replace the NOTE 2 with the following.</p> <p>NOTE 2 For different power distribution systems, the temporary overvoltages are defined in Table B.3 of JIS C 5381-11 (TOV test parameters for Japanese systems)</p>		N/A
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6.4.8.3.3, 6.4.8.3.4	TABLE: Enclosure opening measurements		P
location	size (mm)	comments	
Front	Each circle opening measured diameter max. 4.10 mm	Several hexagon openings provided, covering an area of approx. 356.0 mm by 401.0 mm. (No hazardous voltage/energy are within 5° projective area)	
Rear	1. Each square opening is 4.96mm by 4.96mm 2. Each rectangular opening is 10.02mm by 3.4mm	1. Three blocks with an area of 63mm by 63mm. 2. Two blocks with an area of 10.02mm by 45.5mm.	
Top/ Bottom	—	No openings	
Supplementary information:			

External view of EUT



External view of EUT

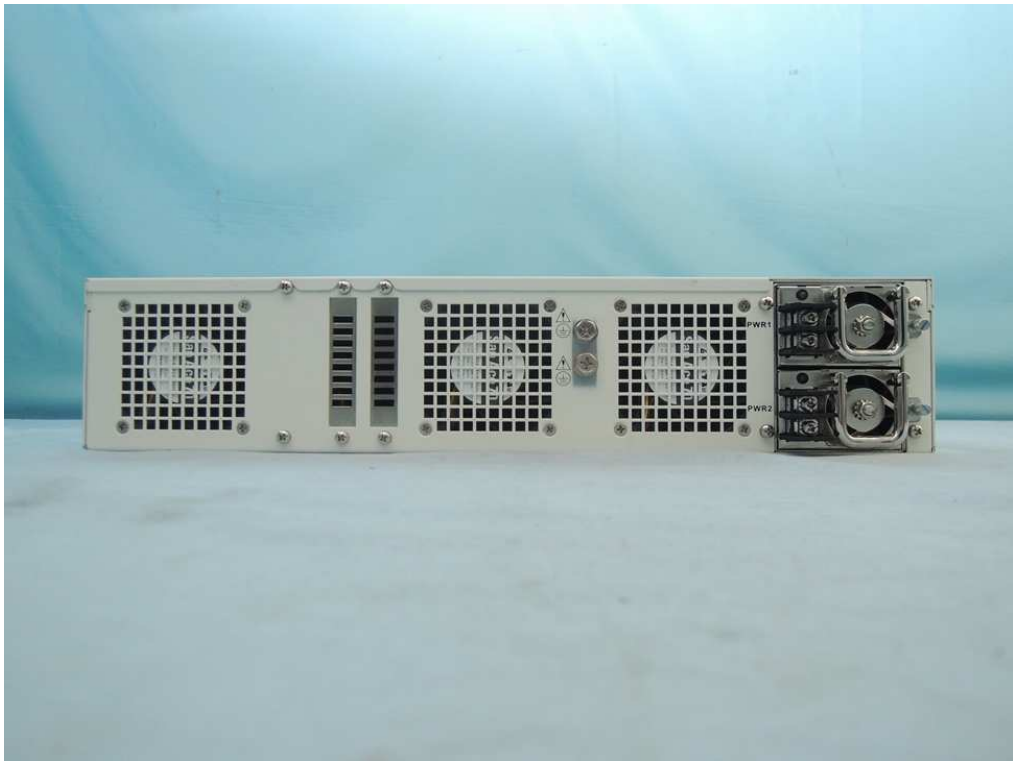


Front view of EUT



Rear view of EUT





Rear view of EUT



Rear view of EUT





Internal view of EUT



Internal view of EUT





Top view of mother board



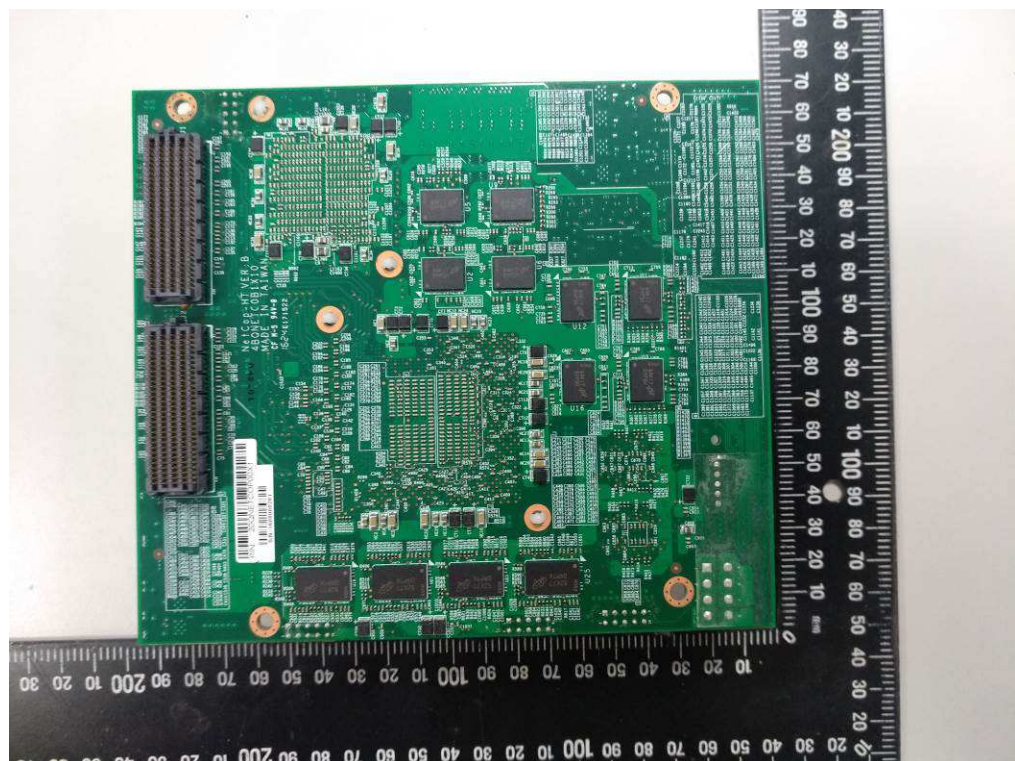
bottom view of mother board







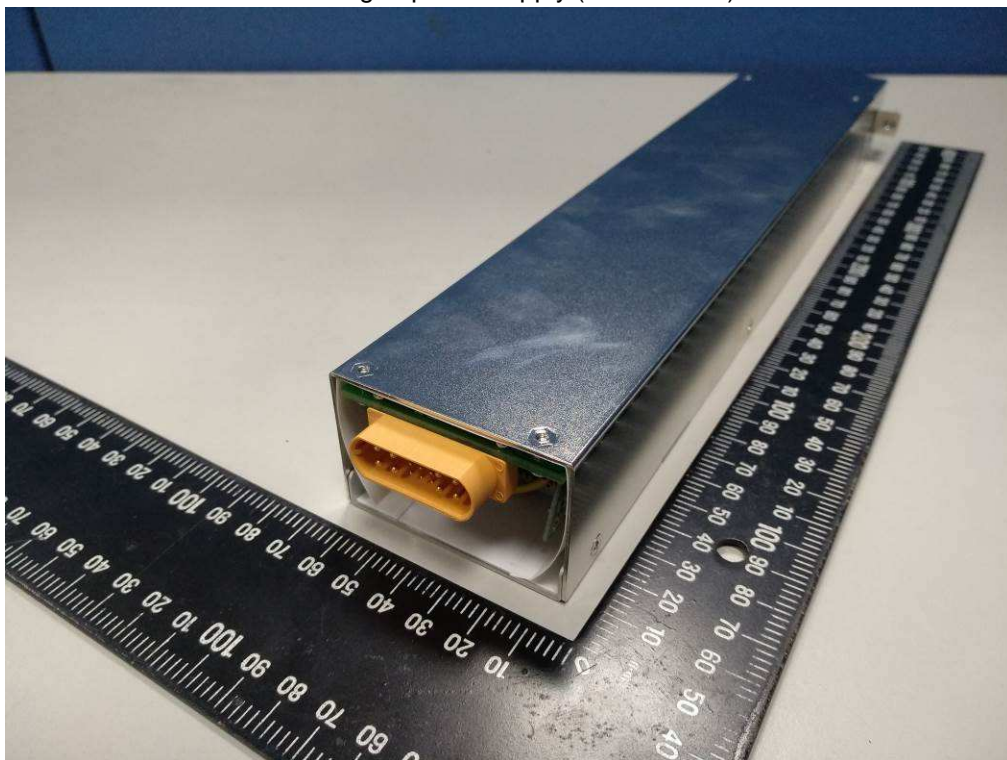
bottom view of sub-board



building-in power supply (PSS-2A00V)



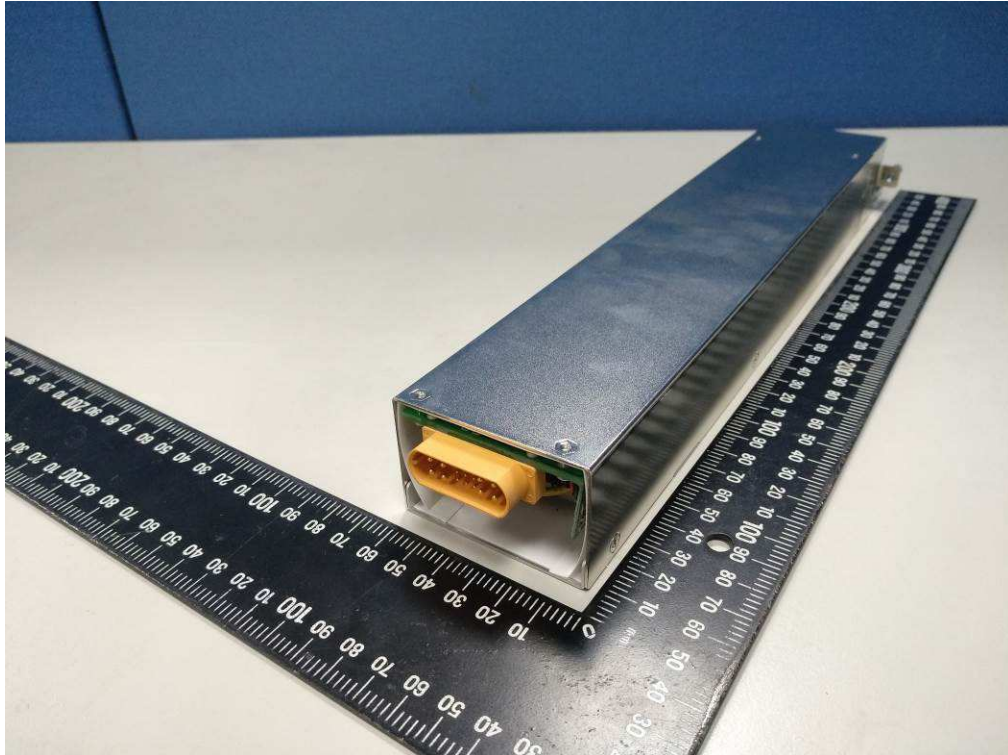
building-in power supply (PSS-2A00V)







building-in power supply (DPSS-2A00V)



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

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

CB TEST CERTIFICATE

CERTIFICAT D'ESSAI OC

Product  
Produit

Network Switch

Name and address of the Applicant  
Nom et adresse du demandeur

Radware Ltd.  
22 Raoul Wallenberg Street, Tel-Aviv 69710  
Israel

Name and address of the manufacturer  
Nom et adresse du fabricant

Radware Ltd.  
22 Raoul Wallenberg Street, Tel-Aviv 69710  
Israel

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

Nexcom International Co., Ltd  
5F,7F,8F,9F,10F&12F,No.63, Sec.1, Sanmin Rd., Banqiao Dist, New Taipei  
City  
Taiwan

Rating and principal characteristics  
leurs nominales et caractéristiques principales

100-240VAC, 47-63Hz, 8-4A  
-42 to -72VDC, 12A

Trademark (if any)  
Marque de fabrique (si elle existe)

Radware

Type of manufacturer's Testing Laboratories used  
Type de programme de laboratoire d'essais constructeur

Model / Type Ref.  
Réf. de type

See Appendix 3 of report for models names

Additional information (if necessary may also be reported on page 2)  
Les informations complémentaires (si nécessaire, peuvent être indiquées sur  
la 2ème page)

M2: Additional option ,AC dual power supplies was configured to a single  
power supply. Additional option,DC power supplies was configured to a  
single power supply. Main board was modified with 2 CPUs, 6 cores each. 32  
GB memory,size: 8 x 4GB. M1: Added two models to AC version and four  
models to DC version. Alternate DC fans with Highest CFM than the current  
DC fans. Openings on rear panel were modified. Updated changes in "Sanoc"  
(laser transceivers). Original certificate dated July 1, 2013.

60950-1(ed.2);am1

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

National differences / Comments  
Les différences nationales / Commentaires

EU Group Differences, EU Special National Conditions, EU A-Deviations, AT,  
AU, BE, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, FR, GB, HU, IL, IN, IT, JP,  
KR, MY, NL, NO, PL, SE, SG, SI, SK, UA, US

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  
partie de ce certificat

CB121560.01\_M2

This CB Test Certificate is issued by the National Certification Body:

Ce Certificat d'essai OC est établi par l'Organisme National de Certification

Intertek Testing Services, N.A.  
165 Main Street, Cortland, NY 13045, USA




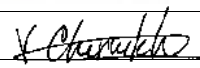


Test Report issued under the responsibility of:

**NCB Intertek Testing Services NA, Inc**

<b>TEST REPORT</b> <b>IEC 60950-1</b> <b>Information technology equipment – Safety –</b> <b>Part 1: General requirements</b>	
<b>Report Number</b> .....	CB121560.01
<b>Date of issue</b> .....	24/06/2013
	Amendment M2: February 25, 2014
<b>Total number of pages</b> .....	32
<b>CB Testing Laboratory</b> .....	I.T.L. (PRODUCT TESTING) Ltd.
<b>Address</b> .....	1 Bat-Sheva St. POB 87 Lod 71100 ISRAEL
<b>Applicant's name</b> .....	Radware Ltd.
<b>Address</b> .....	22 Raoul Wallenberg Street, Tel-Aviv 69710, Israel
<b>Manufacturer's name</b> .....	Radware Ltd.
<b>Address</b> .....	22 Raoul Wallenberg Street, Tel-Aviv 69710, Israel
<b>Test specification:</b>	
<b>Standard</b> .....	IEC 60950-1:2005 (Second Edition) + Am 1:2009
<b>Test procedure</b> .....	CB Scheme
<b>Non-standard test method</b> .....	N/A
<b>Test Report Form No</b> .....	IEC60950_1C
<b>Test Report Form(s) Originator</b> .....	SGS Fimko Ltd
<b>Master TRF</b> .....	Dated 2012-08
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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>	

<b>Test item description .....</b>	Network Switch
Trade Mark .....	Radware
Manufacturer .....	Radware Ltd.
Model/Type reference.....	See Appendix 3 for models names
Ratings .....	100-240VAC, 47-63Hz, 8-4A -42 to -72VDC, 12A

<b>Testing procedure and testing location:</b>		
<input checked="" type="checkbox"/>	<b>CB Testing Laboratory:</b>	I.T.L. (PRODUCT TESTING) Ltd.
Testing location/ address .....		1 Bat-Sheva St. POB 87 Lod 71100 ISRAEL
<input type="checkbox"/>	<b>Associated CB Laboratory:</b>	
Testing location/ address .....		
Tested by (name + signature) .....		Yigal Y Cohen 
Approved by (name + signature) .....		Vladimir Chernikh 
<input type="checkbox"/>	<b>Testing procedure: TMP</b>	
Testing location/ address .....		
Tested by (name + signature) .....		
Approved by (name + signature) .....		
<input type="checkbox"/>	<b>Testing procedure: WMT</b>	
Testing location/ address .....		
Tested by (name + signature) .....		
Witnessed by (name + signature) .....		
Approved by (name + signature) .....		
<input type="checkbox"/>	<b>Testing procedure: SMT</b>	
Testing location/ address .....		
Tested by (name + signature) .....		
Approved by (name + signature) .....		
Supervised by (name + signature) ...		
<input type="checkbox"/>	<b>Testing procedure: RMT</b>	
Testing location/ address .....		
Tested by (name + signature) .....		
Approved by (name + signature) .....		
Supervised by (name + signature) ...		

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

Appendix 1 – Photographs

Appendix 3 –Model names

**Summary of testing:****Tests performed (name of test and test clause):****CB121560.01 Amendment M2:**

1.6.2 –Input test

4.5.1 –Heating test

5.2.2- Electrical strength Test

Units tested for Ambient of up to 50°C.

The tests were performed on model Alteon 6420

**Testing location:**

I.T.L. (PRODUCT TESTING) Ltd.

1 Bat-Sheva St. POB 87 Lod 71100 ISRAEL

**Summary of compliance with National Differences****Summary of compliance with National Differences to IEC 60950-1:2005 (2nd Edition)+Am 1:2009.**

List of countries addressed:

EU Group Differences, EU Special National Conditions, AT, BE, BY, CA, CH, CZ, DE, DK, ES, FI, FR, HU, IN, IL, IT, JP, KR, MY, NL, NO, SG, SE, SI, PL, SK, UA, UK, US

**Summary of compliance with National Differences to IEC 60950-1:2005 (2nd Edition).**

List of countries addressed: AU, BR, CN

Explanation of used codes: AU=Australia, AT=Austria, BE=Belgium, BY=Belarus, BR=Brazil, CA=Canada, CH=Switzerland, CZ=Czech Republic, CN=China, DE=Germany, DK=Denmark, ES=Spain, FI=Finland, FR=France, HU=Hungary, IN=India, IL=Israel, IT=Italy, JP=Japan, KR=Korea, MY=Malaysia, NL=The Netherlands, NO=Norway, SG=Singapore, SE=Sweden, SI=Slovenia, PL=Poland, SK=Slovakia, UA=Ukraine, UK= United Kingdom, US=United States of America

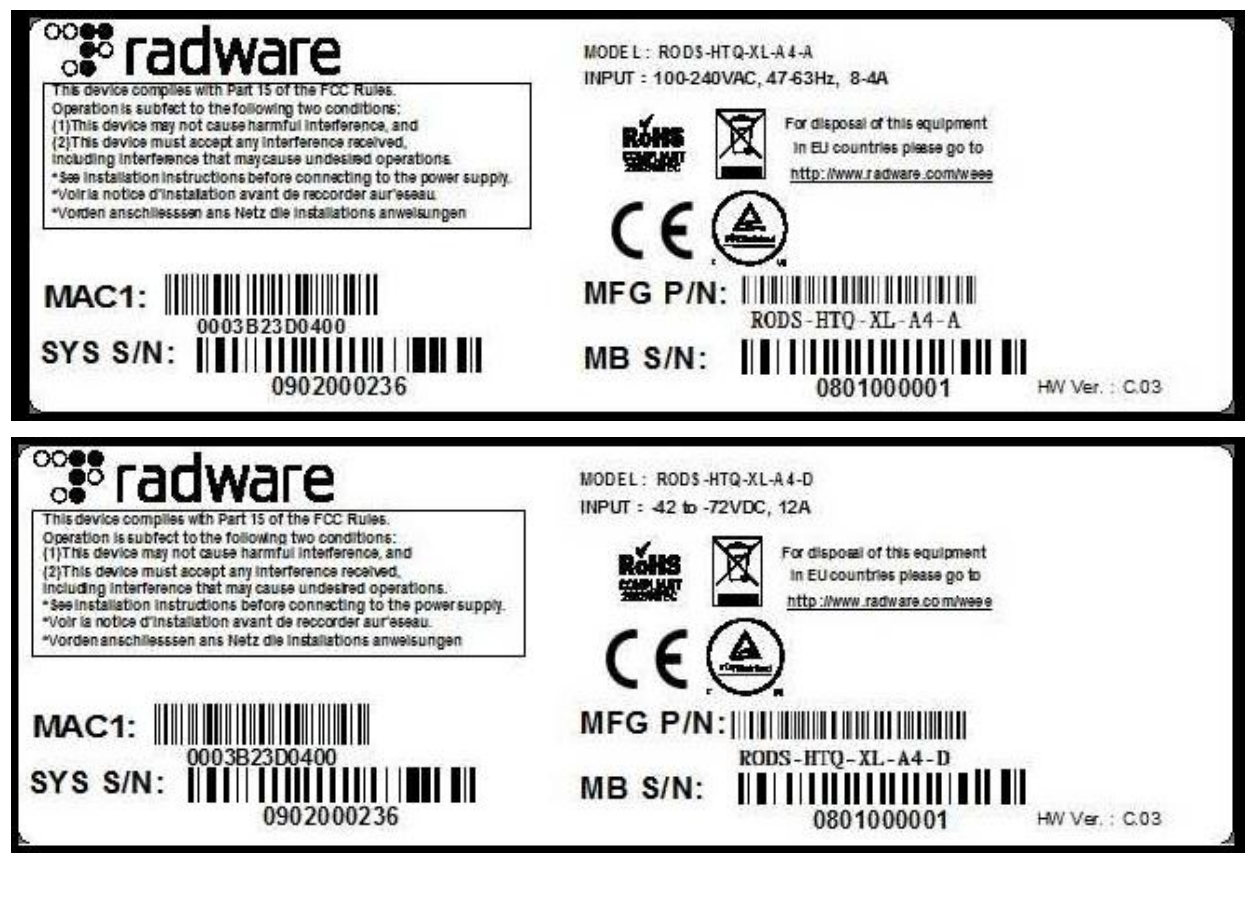
☒ The product fulfils the requirements of IEC 60950-1:2005 (Second Edition), Am 1: 2009, EN 60950-1:2006+A11:2009+A1:2010, EN 60950-1:2006+A11:2009+A1:2010+A12:2011 and EN 60950-1:2006+A11:2009.



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

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

(Additional requirements for markings. See 1.7 NOTE)





National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

<b>Test item particulars</b> .....:	
Equipment mobility.....:	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input checked="" type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains .....	<input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input checked="" type="checkbox"/> permanent connection <input checked="" type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains
Operating condition.....:	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location .....	<input checked="" type="checkbox"/> operator accessible <input checked="" type="checkbox"/> restricted access location
Over voltage category (OVC) .....	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input checked="" type="checkbox"/> other: DC Mains
Mains supply tolerance (%) or absolute mains supply values .....	+10%/-10%; for AC powered unit; -42V to -72Vdc according to manufacturer requirements
Tested for IT power systems .....	<input checked="" type="checkbox"/> Yes for Norway only <input type="checkbox"/> No
IT testing, phase-phase voltage (V) .....	230V Ph-Ph
Class of equipment .....	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A) .....	Up to 20A
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 3100m
Altitude of test laboratory (m) .....	55m
Mass of equipment (kg) .....	~ 15Kg
<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 29 , 2014
Date(s) of performance of tests.....	February 6 ,2014

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

**General remarks:**

The test results presented in this report relate only to the object tested.  
 This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

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

**Manufacturer's Declaration per sub-clause 6.2.5 of IEC60950-1:**

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....: ☐ Yes ☒ Not applicable

When differences exist; they shall be identified in the General product information section.

**Name and address of factory (ies) ..... : 1. Nexcom International Co., Ltd**

5F,7F,8F,9F,10F&12F,No.63, Sec.1, Sanmin Rd.,  
 Banqiao Dist, New Taipei City, Taiwan

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

**General product information:**

. The units are movable or rack-mountable, Class I, may be AC or DC powered.

The AC version is pluggable type A, uses detachable power cord

The DC version has a permanent power connection to a building installation should be installed only in restricted area location

All interfaces are SELV circuitry.

The DC voltage is classified as a DC mains, considered as a TNV-2 up to -72Vdc, where the positive pole should be earthed in the building installation.

Power cords are not part of this evaluation.

Units contain certified optical transceivers, Class 1 complying with EN60825-1 and 21CFR (J).

Model differences - all Models have the same hardware and mechanical construction. Models are different in software versions and use AC or DC power supplies- see appendix 3.

The products were submitted and tested for use at the maximum ambient temperature 50°C.

**Report history :**Amendment M2 CB121560.01

- Additional option, AC dual power supplies was configured to a single power supply
- Additional option, DC power supplies was configured to a single power supply
- Main board was modified with 2 CPUs, 6 cores each. (less components as was tested in Amendment M1 and as was tested in original report)
- 32 GB memory, size: 8 x 4GB, (instead of 16 x 8GB)

Amendment M1 CB121560.01:

- Additional two models to AC version
- Additional four models to DC version
- Alternate DC fans with Highest CFM than the current DC fans
- Openings on rear panel were modified
- Updating changes in "Sanoc" (laser transceivers)

CB121560.01— original report

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<b>Abbreviations used in the report:</b>			
- normal conditions	N.C.	- single fault conditions	S.F.C
- functional insulation	OP	- basic insulation	BI
- double insulation	DI	- supplementary insulation SI	
- between parts of opposite polarity	BOP	- reinforced insulation	RI
Indicate used abbreviations (if any)			

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<b>1</b>	<b>GENERAL</b>		P
<b>1.5</b>	<b>Components</b>		P
1.5.1	General	See appended table 1.5.1	P
	Comply with IEC 60950-1 or relevant component standard	All components either comply with the relevant standard or were subjected to the necessary test.	P
1.5.2	Evaluation and testing of components	<p>Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this Standard.</p> <p>Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component Standard.</p> <p>Components, for which no relevant IEC-Standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.</p>	P
<b>1.6</b>	<b>Power interface</b>		P
1.6.1	AC power distribution systems	AC Unit was evaluated for use with TN power system. However it may be connected to IT power system of Norway only	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	No hand-held equipment	N/A
1.6.4	Neutral conductor	Part of approved power supply	N/A
<b>1.7</b>	<b>Marking and instructions</b>		P
1.7.1	Power rating and identification markings	Provided	P
1.7.1.1	Power rating marking	Provided	P
	Multiple mains supply connections.....:	Current is stated per each inlet	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated voltage(s) or voltage range(s) (V) .....	Provided	P
	Symbol for nature of supply, for d.c. only.....	Marked	P
	Rated frequency or rated frequency range (Hz) ...	47-63Hz	P
	Rated current (mA or A) .....	Provided	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark .....	Radware Ltd	P
	Model identification or type reference .....	See Appendix 3 for model names	P
	Symbol for Class II equipment only .....	Class I equipment	N/A
	Other markings and symbols .....	No other symbols	N/A

<b>2</b>	<b>PROTECTION FROM HAZARDS</b>		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	AC unit. Only parts of SELV circuits and earthed metal enclosure are accessible to an operator. Protection is achieved by overall equipment basic insulation and earthing of accessible conductive parts. DC unit- located in RAL	P
2.1.1.1	Access to energized parts	The operator has access only to bare parts of SELV circuits	P
	Test by inspection .....	No hazards	P
	Test with test finger (Figure 2A) .....	The test finger was unable to touch hazardous parts	P
	Test with test pin (Figure 2B) .....	The test pin was unable to contact bare parts at hazardous voltage	P
	Test with test probe (Figure 2C) .....	No internal TNV circuits	N/A
2.1.1.4	Access to hazardous voltage circuit wiring	No operator access to internal wire	P
2.1.1.5	Energy hazards .....	There are no energy hazards in operator access area	P
2.1.1.6	Manual controls	The equipment does not contain any knobs, handles or levers.	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.2	Protection in service access areas	Bare parts operating at hazardous voltages are located such that unintentional contact with such parts is unlikely during servicing operations involving other parts of the equipment.	P
2.1.3	Protection in restricted access locations	For DC unit. Appropriate instructions are provided. Parts at hazardous energy/voltage (DC mains) guarded so that un-international contact is unlikely	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

<b>3</b>	<b>WIRING, CONNECTIONS AND SUPPLY</b>		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	All internal wiring is rated for the application and has adequate cross-sectional areas depending on the circuits.	P

<b>4.4</b>	<b>Protection against hazardous moving parts</b>		P
4.4.1	General	DC fans provided	P
4.4.2	Protection in operator access areas .....	DC Fans are properly guarded	P
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations .....	Unintentional contact with hazardous moving parts is unlikely.	P
4.4.4	Protection in service access areas	Unintentional contact with hazardous moving parts is unlikely.	P



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
4.4.5	Protection against moving fan blades	Internal DC fans are used Unintentional contact with hazardous moving parts is unlikely.	P
4.4.5.1	General		P
	Not considered to cause pain or injury. a).....:		P
	Is considered to cause pain, not injury. b) .....		N/A
	Considered to cause injury. c) .....		N/A
4.4.5.2	Protection for users	The fans are suitably guarded from user access	P
	Use of symbol or warning .....		N/A
4.4.5.3	Protection for service persons	Unintentional contact is unlikely	P
	Use of symbol or warning .....		N/A

<b>4.5</b>	<b>Thermal requirements</b>		P
4.5.1	General	Temperatures do not exceed safe values under normal load operation. Refer to Table 4.5.	P
4.5.2	Temperature tests	Equipment was tested under the most adverse actual and simulated condition permitted in the installation instruction. Power supply evaluated in separate certification and tested in this evaluation.	P
	Normal load condition per Annex L .....	Unit operated per it's maximum normal load configuration. Data ports and laser transceivers were looped to simulate normal load, application was running	—
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 .....	Part of certified power supply	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4.6</b>	<b>Openings in enclosures</b>		<b>P</b>
4.6.1	Top and side openings	<p>Top side -without openings. Left/right Sides- without openings</p> <p>Front side – circles openings are provided</p> <p>Rear side – openings (x 3) for DC fans are guarded with net brackets -SELV side</p>	<b>P</b>
	Dimensions (mm) .....	<p>Front side – SELV sides one set ,rectangle shape 4.5x 36.5cm ,contains circule openings 4mm in dimeter each.</p> <p>Rear side- each net bracket contains square openings , with max diagonal 6mm each SELV side.</p>	—
4.6.2	Bottoms of fire enclosures	Bottom without openings.	<b>P</b>
	Construction of the bottommm, dimensions (mm) . :		—

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4.7</b>	<b>Resistance to fire</b>		P
4.7.1	Reducing the risk of ignition and spread of flame	The maximum working temperature of electrical components used in single fault conditions is less than that necessary to cause ignition of materials with which they are likely to come into contact.	P
	Method 1, selection and application of components wiring and materials	Method 1: Selection and application of components and materials, which minimize the possibility of ignition and spread of flame.	P
	Method 2, application of all of simulated fault condition tests	Method 1 used	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

<b>B</b>	<b>ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)</b>		<b>P</b>
B.1	General requirements	Certified DC fans are used	N/A
	Position .....		—
	Manufacturer .....		—
	Type .....		—
	Rated values .....		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) .....		—
	Electric strength test: test voltage (V) .....		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) .....		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V) .....		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V) .....		—

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

<b>L</b>	<b>ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)</b>		<b>P</b>
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	Maximum normal load was used	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1)</sup>	
AC/DC power supply- Closed frame including AC inlet and DC fan- Frame with up to 2 power supplies	Zippy Tech	PSS-2A00V	Rated- 100-240V,47-63Hz, 15-7.5A  DC output-max.1000W 12V,83A , 5VSB ,0-4A two provide max.	UL60950-1 IEC60950-1	UL(E143756) TUV	
Dual Closed frame case for DC/DC power supply (2 x (DPSS-2A00V) Including power circuit and wiring for additional output voltages 3.3V, -12V and 5V	Zippy Tech	DPSS2-5A00V3V	Rated: -42 to -72Vdc, 30-17A DC Output:1000W max; +5V,0-22A; +12V,83A; +3.3V,0-22A; -12V,0-0.5A; +5VSB,0-4A; +5V&+3.3V 150W max. Output wiring- Rated min. 300V, 18AWG 80°C, VW-1 or FT-1 or better	UL60950-1 IEC60950-1	UL(E143756) TUV	
Alternate DC power supply	Zippy Tech	DPSS-2A00V	Rated: -42 to -72Vdc , 30-17A Output: 1000W Max; +12V,83A; +5VSB , 0-4A	UL60950-1 IEC 60950-1	UL (E143756) TUV	
SELV internal connectors	interchangeable	interchangeable	Flame rated min. V-2	UL94	UR	
Internal Wiring, (secondary)	interchangeable	interchangeable	Rated min. 300V, 60°C, VW-1 or FT-1 or better.	UL758	UR	
SELV external connectors	interchangeable	interchangeable	Flame rated min. V-1	UL94	UR	
DC fans (x8) Front panel	Everflow	R124028BU	Rated – 12V,0.4A max. 18.03CFM	UL507, CSA-C22.2 No. 113-M1984	UR (E236658)	

National Differences					
Clause	Requirement + Test		Result - Remark		Verdict
Alternate DC Fans	Sanyo Denki	9GV0412P3G03	Sized- 40mm Material – V-0 Rated 12Vdc Max 0.52A Max CFM -21.1 (0.6 m <sup>3</sup> /min)	UL 94 UL507, CSA- C22.2 No. 113- M1984	UL CSA
DC fans (x3) Rear side	Everflow	RB7038BU	Rated- 12V,0.8A max. 66.45 CFM	UL507, CSA- C22.2 No. 113- M1984	UR (E236658)
Alternate DC Fans	Sanyo Denki	9GA0712P1H00 1	Sized- 70mm Material – V-0 Rated 12Vdc Max 1.1A Max CFM -67.8 (1.92m <sup>3</sup> /min)	UL 94 UL507, CSA- C22.2 No. 113- M1984	UL CSA
DC fans (x2) Vertical on the mother board	Everflow	F126025BU	Rated:12Vdc, max.0.26A, max. 24.49CFM	UL507, CSA- C22.2 No. 113- M1984	UR (E236658) TUV
HDD	Western digital / Interchangeable	WD5000AAKX- 22ERMA0/ interchangeable	Rated- 5Vdc, 0.55A	UL60950-1	UL(E101559)
Lithium battery BAT1	SPECTRUM BRANDS INC	BR2032	Rated: 3.0V, protected by resistor 1k and diode SD1	UL1642	UR
Alternate Lithium battery BAT1	Vic-dawn enterprise Co., Ltd	CR2032	Rated: 3.0V, protected by resistor 1k and diode SD1	UL1642	UR
Alternate Lithium battery BAT1	Panasonic Corp	CR2032	Rated: 3.0V, protected by resistor 1k and diode SD1	UL1642	UR
PCB -16 memory Cards -Small board above the main board -Main board	interchangeable	interchangeable	Flame rated min V-1, temperature rated min. 105°C	UL796, CAN/CSA-C22.2 No. 0.17	UR

National Differences					
Clause	Requirement + Test		Result - Remark		Verdict
Decorative plastic on front panel of enclosure	interchangeable	interchangeable	Flame rated min. HB	UL94	UR
40Gbps Pluggable Optics Multimode SR-Optional	Finisar	FTL410QE2C-RW	QFP transceiver – Multimode – Rated 3.3V 850nm Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UR or CSA, TUV
40Gbps Pluggable Optics Multimode LR-Optional	Finisar	FTL4C1QE1C-RW	QFP transceiver – Multimode – Rated 3.3V 850nm Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UR or CSA, TUV
Laser transceiver Gigabit Ethernet ports 4 provided-Optional	Optech	OP6C-MX5-85-C4	SFP transceiver – Multimode – 3.3V – 850nm – 1.25Gbps Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UR or CSA, TUV
Optional-1 Gbps pluggable copper 1000 base –T	Optech	OP6C-TX1-00-C2	SFP Copper – 1000Base-TX 3.3V	--	--
Optional-Laser transceiver Gigabit Ethernet ports 2 provided	Sanoc	SI1312-10ATO	SFP transceiver - Singlemode - 3.3V - 1310nm - 1.25Gpbs Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UL or CSA, TUV
Optional - 1Gbps pluggable Optic Multimode SX	Sanoc	SI8512-X5ATO-3C	SFP transceiver – Multimode – 3.3V – 850nm – 1.25Gbps Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UL or CSA, TUV
Optional - 1Gbps pluggable Optic Single mode LX	Sanoc	SI1312-10ATO	SFP transceiver - Singlemode - 3.3V - 1310nm - 1.25Gpbs Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UL or CSA, TUV
Optional - Laser transceiver Gigabit Ethernet ports 2 provided	Sanoc	SI1512-80ATO	SFP transceiver - Singlemode - 3.3V - 1550nm Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UL or CSA, TUV



National Differences					
Clause	Requirement + Test		Result - Remark		Verdict
Optional - 1 Gbps Pluggable copper 1000 Base -T	Methode	DM7041-R-L	SFP Copper – 1000Base-TX 3.3V	--	--
Optional-Copper transceiver Gigabit Ethernet ports 2 provided	Sanoc	SI0012-X1ATO[N]	SFP Copper – 1000Base-TX 3.3V	-	-
SELV external connectors	Interchangeable	Interchangeable	Flame rated min. V-0	UL94	UL
UF1 USB PTTC protector	Ploytronics Technology Corp.	SMD1206P150T FT	Ih-1.5A Itrip-3A Vdc-8V	UL1434 IEC60730-1	UL(E201431) TUV(R5009912 1)
SELV internal connectors	Interchangeable	Interchangeable	Flame rated min. UL94V-2	UL94	UL
Internal Wiring, (secondary)	Interchangeable	Interchangeable	Rated min. 300V, 80°C, VW-1 or FT-1 or better.	UL758	UL
Supplementary information:					

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
90/60	3.78	-	--	-	-	Maximum normal load with 1 AC PS
100/60	3.4	8	--	-	-	
240/60	1.4	4	--	-	-	
264/60	1.28	-	--	-	-	
90/50	3.84	-	--	-	-	
100/50	3.37	8	--	-	-	
240/50	1.4	4	--	-	-	
264/50	1.25	-	--	-	-	
Supplementary information:						

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
42	8.10	12	-	-	-	Maximum normal load with 1 DC PS
48	6.7	12	-	-	-	
60	5.2	12	-	-	-	
72	4.3	12	-	-	-	
Supplementary information:						

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: Thermal requirements						P
	Mode operation .....						—
	Supply voltage (V) .....	90/60	264/50				—
	Ambient $T_{min}$ (°C) .....	23.1	23.1				—
	Ambient $T_{max}$ (°C) .....						—
Maximum measured temperature T of part/at::		T (°C)					Allowed $T_{max}$ (°C)
Primary wiring (Black)		31.2	30.1				58.1(85+ 23.1-50)
Coil (PS)		33.2	32				73.1(100+ 23.1-50)
Storage capacitor (PS)		36.1	35.3				58.1(85+ 23.1-50)
T4 transformer (PS)		32.8	31.6				63.1(100- 10+23.1- 50)
Transformer near C19 (PS)		36.3	35.8				63.1(100- 10+23.1- 50)
Temperature T of winding:	$t_1$ (°C)	$R_1$ (Ω)	$t_2$ (°C)	$R_2$ (Ω)	T (°C)	Allowed $T_{max}$ (°C)	Insulation class
Supplementary information:							

National Differences							
Clause	Requirement + Test			Result - Remark			Verdict
4.5	TABLE: Thermal requirements						P
	Mode operation						
	Supply voltage (V) .....:	42	72				—
	Ambient T <sub>min</sub> (°C) .....:	22.2	22.3				—
	Ambient T <sub>max</sub> (°C) .....:						—
Maximum measured temperature T of part/at:		T (°C)					Allowed T <sub>max</sub> (°C)
Input terminal block - outer plastic		22.9	23.1				67.3(95+22.3-50)
Black wiring DC mains		31.8	30.4				57.3((85+22.3-50)
Coil (PS)		36.6	34.9				77.3(105+22.3-50)
Storage capacitor (PS)		33.9	32.7				57.3((85+22.3-50)
T4 (PS)		28.8	28.6				62.3(100-10+22.3-50)
Transformer near C19 (PS)		29.4	29.2				62.3(100-10+22.3-50)
Supplementary information:							
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)
Supplementary information:							

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

<b>5.2</b>	<b>TABLE: Electric strength tests, impulse tests and voltage surge tests</b>			<b>P</b>
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Functional:				
Basic/supplementary:				
Equipment (primary to PE)		DC	2979	No
Equipment (DC mains to PE)		DC	1294	No
Reinforced:				
Supplementary information:				

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

**List of test equipment used:**

**(Note: This is an example of the required attachment. Other forms with a different layout but containing similar information are also acceptable.)**

ITL	Instrument	Manufacturer	Model	Serial	Cal Due
1002	Digital Power Analyzer	Valhalla Scientific	2101	37437	25/02/2014
1040	DVM	Fluke	87	60370049	03/03/2014
1140	Digital timer	Golf	Timer Count Down/Up		28/02/2014
1323	Power Supply	Lambda	GEN8-180	1323	25/02/2014
1610	Digital Thermometer	Fluke	Hydra 2620A	5929005	03/03/2014
1217	Hipot Tester	Hipotronics	HD 100	390301	28/02//2014

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Appendix 1 – Photographs

Rear side view – DC version



Rear side View – AC Version



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Internal view –





National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

## Appendix 3 – Model names



Jan. 30, 2014

**Declaration of Similarity**

I HEREBY DECLARE THAT THE FOLLOWING PRODUCTS:

RODS-HTQ-A4-AC
RODS-HTQ-XL-A4-A
Alteon 6420
Alteon 6420 XL
ODS-HTQ
DefensePro x420
ODS-HTQ XL
OnDemand Switch HTQ
OnDemand Switch HTQ XL
Alteon-NG 6420
Alteon-NG 6420 XL

ARE IDENTICAL ELECTRONICALLY, PHYSICALLY, AND MECHANICALLY TO:

**Alteon 6420 XL with Extreme SSL**

Please relate to them all (from an EMC &amp; safety point of view) as the same product.

Thank You,

Yaniv Ben-Dor  
 Engineering Manager  
 Radware Ltd.

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict



Jan. 30, 2014

### Declaration of Similarity

I HEREBY DECLARE THAT THE FOLLOWING PRODUCTS:

RODS-HTQ-A4-DC
RODS-HTQ-XL-A4-D
RODS-HTQ-A4-NEBS
RODS-HTQS-X-NEBS
Alteon 6420 NEBS
Alteon 6420 DC
Alteon 6420 XL DC
Alteon 6420 XL NEBS
ODS-HTQ DC
DefensePro x420 DC
ODS-HTQ XL DC
OnDemand Switch HTQ DC
OnDemand Switch HTQ XL DC

ARE IDENTICAL ELECTRONICALLY, PHYSICALLY, AND MECHANICALLY TO:

**Alteon 6420 XL with Extreme SSL -DC**

Please relate to them all (from an EMC & safety point of view) as the same product.

Thank You,  
Yaniv Ben-Dor  
Engineering Manager  
Radware Ltd.

 Legal Representative  
RADWARE Ltd.  
22 Raoul Wallenberg  
Tel-Aviv 69710

**End of test report**


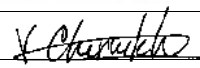


Test Report issued under the responsibility of:

**NCB Intertek Testing Services NA, Inc**

<b>TEST REPORT</b> <b>IEC 60950-1</b> <b>Information technology equipment – Safety –</b> <b>Part 1: General requirements</b>	
<b>Report Number</b> .....	CB121560.01
<b>Date of issue</b> .....	24/06/2013
	Amendment M1: January 06, 2014
<b>Total number of pages</b> .....	36
<b>CB Testing Laboratory</b> .....	I.T.L. (PRODUCT TESTING) Ltd.
<b>Address</b> .....	1 Bat-Sheva St. POB 87 Lod 71100 ISRAEL
<b>Applicant's name</b> .....	Radware Ltd.
<b>Address</b> .....	22 Raoul Wallenberg Street, Tel-Aviv 69710, Israel
<b>Manufacturer's name</b> .....	Radware Ltd.
<b>Address</b> .....	22 Raoul Wallenberg Street, Tel-Aviv 69710, Israel
<b>Test specification:</b>	
<b>Standard</b> .....	IEC 60950-1:2005 (Second Edition) + Am 1:2009
<b>Test procedure</b> .....	CB Scheme
<b>Non-standard test method</b> .....	N/A
<b>Test Report Form No</b> .....	IEC60950_1C
<b>Test Report Form(s) Originator</b> .....	SGS Fimko Ltd
<b>Master TRF</b> .....	Dated 2012-08
<b>Copyright © 2012 Worldwide System for Conformity Testing and Certification of Electrotechnical Equipment and Components (IECEE), Geneva, Switzerland. All rights reserved.</b>	
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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>	

<b>Test item description .....</b>	Network Switch
Trade Mark .....	Radware
Manufacturer .....	Radware Ltd.
Model/Type reference.....	See Appendix 3 for models names
Ratings .....	100-240VAC, 47-63Hz, 8-4A (for AC powered models x 2 ); -42 to -72VDC, 12A (for DC powered models x 2 )

<b>Testing procedure and testing location:</b>		
<input checked="" type="checkbox"/>	<b>CB Testing Laboratory:</b>	I.T.L. (PRODUCT TESTING) Ltd.
Testing location/ address .....		1 Bat-Sheva St. POB 87 Lod 71100 ISRAEL
<input type="checkbox"/>	<b>Associated CB Laboratory:</b>	
Testing location/ address .....		
Tested by (name + signature) .....		Yigal Y Cohen 
Approved by (name + signature) .....		Vladimir Chernikh 
<input type="checkbox"/>	<b>Testing procedure: TMP</b>	
Testing location/ address .....		
Tested by (name + signature) .....		
Approved by (name + signature) .....		
<input type="checkbox"/>	<b>Testing procedure: WMT</b>	
Testing location/ address .....		
Tested by (name + signature) .....		
Witnessed by (name + signature) .....		
Approved by (name + signature) .....		
<input type="checkbox"/>	<b>Testing procedure: SMT</b>	
Testing location/ address .....		
Tested by (name + signature) .....		
Approved by (name + signature) .....		
Supervised by (name + signature) ...		
<input type="checkbox"/>	<b>Testing procedure: RMT</b>	
Testing location/ address .....		
Tested by (name + signature) .....		
Approved by (name + signature) .....		
Supervised by (name + signature) ...		

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

Appendix 1 – Photographs

Appendix 3 –Model names

**Summary of testing:****Tests performed (name of test and test clause):****CB121560.01 Amendment M1:**

1.6.2 –Input test

4.5.1 –Heating test

5.2.2- Electrical strength Test

Units tested for Ambient of up to 50°C.

**Testing location:**

I.T.L. (PRODUCT TESTING) Ltd.

1 Bat-Sheva St. POB 87 Lod 71100 ISRAEL

**Summary of compliance with National Differences****Summary of compliance with National Differences to IEC 60950-1:2005 (2nd Edition)+Am 1:2009.**

List of countries addressed:

EU Group Differences, EU Special National Conditions, AT, BE, BY, CA, CH, CZ, DE, DK, ES, FI, FR, HU, IN, IL, IT, JP, KR, MY, NL, NO, SG, SE, SI, PL, SK, UA, UK, US

**Summary of compliance with National Differences to IEC 60950-1:2005 (2nd Edition).**

List of countries addressed: AU, BR, CN

Explanation of used codes: AU=Australia, AT=Austria, BE=Belgium, BY=Belarus, BR=Brazil, CA=Canada, CH=Switzerland, CZ=Czech Republic, CN=China, DE=Germany, DK=Denmark, ES=Spain, FI=Finland, FR=France, HU=Hungary, IN=India, IL=Israel, IT=Italy, JP=Japan, KR=Korea, MY=Malaysia, NL=The Netherlands, NO=Norway, SG=Singapore, SE=Sweden, SI=Slovenia, PL=Poland, SK=Slovakia, UA=Ukraine, UK= United Kingdom, US=United States of America


☒ The product fulfils the requirements of IEC 60950-1:2005 (Second Edition), Am 1: 2009, EN 60950-1:2006+A11:2009+A1:2010, EN 60950-1:2006+A11:2009+A1:2010+A12:2011 and EN 60950-1:2006+A11:2009.

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

### Copy of marking plate



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



(Additional requirements for markings. See 1.7 NOTE)





This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:  
(1) This device may not cause harmful interference, and  
(2) This device must accept any interference received, including interference that may cause undesired operations.  
\*See installation instructions before connecting to the power supply.  
\*Voir la notice d'installation avant de reconnector au réseau.  
\*Vorden anschliessen ans Netz die Installations anweisungen


MODEL : RODS-HTQ-A-2AC  
INPUT : 100-240VAC, 47-63Hz, 8-4A x 2




For disposal of this equipment  
In EU countries please go to  
<http://www.radware.com/weee>


MAC1:   
0003B23D0400

SYS S/N:   
0902000236

MFG P/N:   
RODS-HTQ-A-2AC



MB S/N:   
0801000001



HW Ver. : C.07





This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:  
(1) This device may not cause harmful interference, and  
(2) This device must accept any interference received, including interference that may cause undesired operations.  
\*See installation instructions before connecting to the power supply.  
\*Voir la notice d'installation avant de reconnector au réseau.  
\*Vorden anschliessen ans Netz die Installations anweisungen


MODEL : RODS-HTQ-A-2DC  
INPUT : -42 to -72VDC, 12A x 2




For disposal of this equipment  
In EU countries please go to  
<http://www.radware.com/weee>


MAC1:   
0003B23D0400

SYS S/N:   
0902000236

MFG P/N:   
RODS-HTQ-A-2DC



MB S/N:   
0801000001



HW Ver. : C.07





This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:  
(1) This device may not cause harmful interference, and  
(2) This device must accept any interference received, including interference that may cause undesired operations.  
\*See installation instructions before connecting to the power supply.  
\*Voir la notice d'installation avant de reconnector au réseau.  
\*Vorden anschliessen ans Netz die Installations anweisungen


MODEL : RODS-HTQ-A-NEBS  
INPUT : -42 to -72VDC, 12A x 2




For disposal of this equipment  
In EU countries please go to  
<http://www.radware.com/weee>

MAC1:   
0003B23D0400

SYS S/N:   
0902000236







MFG P/N:   
RODS-HTQ-A-NEBS







MB S/N:   
0801000001

HW Ver. : C.07



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

 <p>MODEL : RODS-HTQ-D-2AC INPUT : 100-240VAC, 47-63Hz, 8-4A x 2</p> <p>This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operations. *See installation instructions before connecting to the power supply. *Voir la notice d'installation avant de reconnector au réseau. *Vorord anschliessen ans Netz die Installations anweisungen</p>		<p>For disposal of this equipment In EU countries please go to <a href="http://www.radware.com/weee">http://www.radware.com/weee</a></p> <p>CE </p>	
<p>MAC1:  0003B23D0400</p> <p>SYS S/N:  0902000236</p>	<p>MFG P/N:  RODS-HTQ-D-2AC</p> <p>MB S/N:  0801000001</p>	<p>HW Ver.: C.07</p>	

 <p>MODEL : RODS-HTQ-D-2DC INPUT : -42 to -72VDC, 12A x 2</p> <p>This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operations. *See installation instructions before connecting to the power supply. *Voir la notice d'installation avant de reconnector au réseau. *Vorord anschliessen ans Netz die Installations anweisungen</p>		<p>For disposal of this equipment In EU countries please go to <a href="http://www.radware.com/weee">http://www.radware.com/weee</a></p> <p>CE </p>	
<p>MAC1:  0003B23D0400</p> <p>SYS S/N:  0902000236</p>	<p>MFG P/N:  RODS-HTQ-D-2DC</p> <p>MB S/N:  0801000001</p>	<p>HW Ver.: C.07</p>	

CAUTION	ATTENTION
This unit has more than one power supply. Disconnect all power supplies before maintenance to avoid electric shock.	Cette unité a plus d'une source d'alimentation électrique. Débranchez toutes les sources d'alimentation électriques avant toute maintenance pour éviter les chocs électriques.

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

<b>Test item particulars</b> .....:	
Equipment mobility.....:	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input checked="" type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains .....	<input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input checked="" type="checkbox"/> permanent connection <input checked="" type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains
Operating condition.....:	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location .....	<input checked="" type="checkbox"/> operator accessible <input checked="" type="checkbox"/> restricted access location
Over voltage category (OVC) .....	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input checked="" type="checkbox"/> other: DC Mains
Mains supply tolerance (%) or absolute mains supply values .....	+10%/-10%; for AC powered unit; -42V to -72Vdc according to manufacturer requirements
Tested for IT power systems .....	<input checked="" type="checkbox"/> Yes for Norway only <input type="checkbox"/> No
IT testing, phase-phase voltage (V) .....	230V Ph-Ph
Class of equipment .....	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A) .....	Up to 20A
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 3100m
Altitude of test laboratory (m) .....	55m
Mass of equipment (kg) .....	15Kg
<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 .....	December 8, 2013
Date(s) of performance of tests.....	December 17 ,2013

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

**General remarks:**

The test results presented in this report relate only to the object tested.  
 This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

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

**Manufacturer's Declaration per sub-clause 6.2.5 of IEC60950-1:**

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....: ☐ Yes ☒ Not applicable

When differences exist; they shall be identified in the General product information section.

**Name and address of factory (ies) ..... : 1. Nexcom International Co., Ltd**

5F,7F,8F,9F,10F&12F,No.63, Sec.1, Sanmin Rd.,  
 Banqiao Dist, New Taipei City, Taiwan

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

**General product information:**

. The units are movable or rack-mountable, Class I, may be AC or DC powered.

The AC version is pluggable type A, uses detachable power cord

The DC version has a permanent power connection to a building installation should be installed only in restricted area location

All interfaces are SELV circuitry.

The DC voltage is classified as a DC mains, considered as a TNV-2 up to -72Vdc, where the positive pole should be earthed in the building installation.

Power cords are not part of this evaluation.

Units contain certified optical transceivers, Class 1 complying with EN60825-1 and 21CFR (J).

Model differences - all Models have the same hardware and mechanical construction. Models are different in software versions and use AC or DC power supplies- see appendix 3.

The products were submitted and tested for use at the maximum ambient temperature 50°C.

**Report history :****Amendment M1 CB121560.01:**

- Additional two models to AC version
- Additional four models to DC version
- Alternate DC fans with Highest CFM than the current DC fans
- Openings on rear panel were modified
- Updating changes in "Sanoc" (laser transceivers)

CB121560.01– original report

**Abbreviations used in the report:**

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

Indicate used abbreviations (if any)

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<b>1</b>	<b>GENERAL</b>		P
<b>1.5</b>	<b>Components</b>		P
1.5.1	General	See appended table 1.5.1	P
	Comply with IEC 60950-1 or relevant component standard	All components either comply with the relevant standard or were subjected to the necessary test.	P
1.5.2	Evaluation and testing of components	<p>Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this Standard.</p> <p>Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component Standard.</p> <p>Components, for which no relevant IEC-Standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.</p>	P
<b>1.6</b>	<b>Power interface</b>		P
1.6.1	AC power distribution systems	AC Unit was evaluated for use with TN power system. However it may be connected to IT power system of Norway only	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	No hand-held equipment	N/A
1.6.4	Neutral conductor	Part of approved power supply	N/A
<b>1.7</b>	<b>Marking and instructions</b>		P
1.7.1	Power rating and identification markings	Provided	P
1.7.1.1	Power rating marking	Provided	P
	Multiple mains supply connections.....:	Current is stated per each inlet	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated voltage(s) or voltage range(s) (V) ..... :	100-240Vac; -42 to -72Vdc	P
	Symbol for nature of supply, for d.c. only..... :	Marked	P
	Rated frequency or rated frequency range (Hz) ... :	47-63Hz	P
	Rated current (mA or A) ..... :	8-4A (for AC units), 12A (for DC units)	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark ..... :	Radware Ltd	P
	Model identification or type reference ..... :	See Appendix 3 for model names	P
	Symbol for Class II equipment only ..... :	Class I equipment	N/A
	Other markings and symbols ..... :	No other symbols	N/A

<b>2</b>	<b>PROTECTION FROM HAZARDS</b>		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	AC unit. Only parts of SELV circuits and earthed metal enclosure are accessible to an operator. Protection is achieved by overall equipment basic insulation and earthing of accessible conductive parts. DC unit- located in RAL	P
2.1.1.1	Access to energized parts	The operator has access only to bare parts of SELV circuits	P
	Test by inspection .....:	No hazards	P
	Test with test finger (Figure 2A) .....:	The test finger was unable to touch hazardous parts	P
	Test with test pin (Figure 2B) .....:	The test pin was unable to contact bare parts at hazardous voltage	P
	Test with test probe (Figure 2C) .....:	No internal TNV circuits	N/A
2.1.1.4	Access to hazardous voltage circuit wiring	No operator access to internal wire	P
2.1.1.5	Energy hazards .....:	There are no energy hazards in operator access area	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.6	Manual controls	The equipment does not contain any knobs, handles or levers.	N/A
2.1.2	Protection in service access areas	Bare parts operating at hazardous voltages are located such that unintentional contact with such parts is unlikely during servicing operations involving other parts of the equipment.	P
2.1.3	Protection in restricted access locations	For DC unit. Appropriate instructions are provided. Parts at hazardous energy/voltage (DC mains) guarded so that unintentional contact is unlikely	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

<b>3</b>	<b>WIRING, CONNECTIONS AND SUPPLY</b>		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	All internal wiring is rated for the application and has adequate cross-sectional areas depending on the circuits.	P

<b>4.4</b>	<b>Protection against hazardous moving parts</b>		P
4.4.1	General	DC fans provided	P
4.4.2	Protection in operator access areas .....	DC Fans are properly guarded	P
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations .....	Unintentional contact with hazardous moving parts is unlikely.	P
4.4.4	Protection in service access areas	Unintentional contact with hazardous moving parts is unlikely.	P



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
4.4.5	Protection against moving fan blades	Internal DC fans are used Unintentional contact with hazardous moving parts is unlikely.	P
4.4.5.1	General		P
	Not considered to cause pain or injury. a).....:		P
	Is considered to cause pain, not injury. b) .....		N/A
	Considered to cause injury. c) .....		N/A
4.4.5.2	Protection for users	The fans are suitably guarded from user access	P
	Use of symbol or warning .....		N/A
4.4.5.3	Protection for service persons	Unintentional contact is unlikely	P
	Use of symbol or warning .....		N/A

<b>4.5</b>	<b>Thermal requirements</b>		P
4.5.1	General	Temperatures do not exceed safe values under normal load operation. Refer to Table 4.5.	P
4.5.2	Temperature tests	Equipment was tested under the most adverse actual and simulated condition permitted in the installation instruction. Power supply evaluated in separate certification and tested in this evaluation.	P
	Normal load condition per Annex L .....	Unit operated per it's maximum normal load configuration. Data ports and laser transceivers were looped to simulate normal load, application was running	—
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 .....	Part of certified power supply	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4.6</b>	<b>Openings in enclosures</b>		<b>P</b>
4.6.1	Top and side openings	<p>Top side -without openings. Left/right Sides- without openings</p> <p>Front side – circles openings are provided</p> <p>Rear side – openings (x 3) for DC fans are guarded with net brackets -SELV side</p>	<b>P</b>
	Dimensions (mm) .....	<p>Front side – SELV sides one set ,rectangle shape 4.5x 36.5cm ,contains circule openings 4mm in dimeter each.</p> <p>Rear side- each net bracket contains square openings , with max diagonal 6mm each SELV side.</p>	—
4.6.2	Bottoms of fire enclosures	Bottom without openings.	<b>P</b>
	Construction of the bottomm, dimensions (mm) . :		—

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4.7</b>	<b>Resistance to fire</b>		P
4.7.1	Reducing the risk of ignition and spread of flame	The maximum working temperature of electrical components used in single fault conditions is less than that necessary to cause ignition of materials with which they are likely to come into contact.	P
	Method 1, selection and application of components wiring and materials	Method 1: Selection and application of components and materials, which minimize the possibility of ignition and spread of flame.	P
	Method 2, application of all of simulated fault condition tests	Method 1 used	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

<b>B</b>	<b>ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)</b>		<b>P</b>
B.1	General requirements	Certified DC fans are used	N/A
	Position .....		—
	Manufacturer .....		—
	Type .....		—
	Rated values .....		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) .....		—
	Electric strength test: test voltage (V) .....		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) .....		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V) .....		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V) .....		—

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

<b>L</b>	<b>ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)</b>		<b>P</b>
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	Maximum normal load was used	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1</sup>	
AC/DC power supply- Closed frame including AC inlet and DC fan	Zippy Tech	PSS-2A00V	Rated- 100-240V,47-63Hz, 15-7.5A  DC output-max.1000W 12V,83A , 5VSB ,0-4A two provide max.	UL60950-1 IEC60950-1	UL(E143756) TUV	
Dual Closed frame case for DC/DC power supply (2 x (DPSS-2A00V) Including power circuit and wiring for additional output voltages 3.3V, -12V and 5V	Zippy Tech	DPSS2-5A00V3V	Rated: -42 to -72Vdc, 30-17A DC Output:1000W max; +5V,0-22A; +12V,83A; +3.3V,0-22A; -12V,0-0.5A; +5VSB,0-4A; +5V&+3.3V 150W max. Output wiring- Rated min. 300V, 18AWG 80°C, VW-1 or FT-1 or better	UL60950-1 IEC60950-1	UL(E143756) TUV	
SELV internal connectors	interchangeable	interchangeable	Flame rated min. V-2	UL94	UR	
Internal Wiring, (secondary)	interchangeable	interchangeable	Rated min. 300V, 60°C, VW-1 or FT-1 or better.	UL758	UR	
SELV external connectors	interchangeable	interchangeable	Flame rated min. V-1	UL94	UR	
DC fans (x8) Front panel	Everflow	R124028BU	Rated – 12V,0.4A max. 18.03CFM	UL507, CSA-C22.2 No. 113-M1984	UR (E236658)	

National Differences					
Clause	Requirement + Test		Result - Remark		Verdict
Alternate DC Fans	Sanyo Denki	9GV0412P3G03	Sized- 40mm Material – V-0 Rated 12Vdc Max 0.52A Max CFM -21.1 (0.6 m <sup>3</sup> /min)	UL 94 UL507, CSA- C22.2 No. 113- M1984	UL CSA
DC fans (x3) Rear side	Everflow	RB7038BU	Rated- 12V,0.8A max. 66.45 CFM	UL507, CSA- C22.2 No. 113- M1984	UR (E236658)
Alternate DC Fans	Sanyo Denki	9GA0712P1H00 1	Sized- 70mm Material – V-0 Rated 12Vdc Max 1.1A Max CFM -67.8 (1.92m <sup>3</sup> /min)	UL 94 UL507, CSA- C22.2 No. 113- M1984	UL CSA
DC fans (x2) Vertical on the mother board	Everflow	F126025BU	Rated:12Vdc, max.0.26A, max. 24.49CFM	UL507, CSA- C22.2 No. 113- M1984	UR (E236658) TUV
HDD	Western digital / Interchangeable	WD5000AAKX- 22ERMA0/ interchangeable	Rated- 5Vdc, 0.55A	UL60950-1	UL(E101559)
Lithium battery BAT1	SPECTRUM BRANDS INC	BR2032	Rated: 3.0V, protected by resistor 1k and diode SD1	UL1642	UR
Alternate Lithium battery BAT1	Vic-dawn enterprise Co., Ltd	CR2032	Rated: 3.0V, protected by resistor 1k and diode SD1	UL1642	UR
Alternate Lithium battery BAT1	Panasonic Corp	CR2032	Rated: 3.0V, protected by resistor 1k and diode SD1	UL1642	UR
PCB -16 memory Cards -Small board above the main board -Main board	interchangeable	interchangeable	Flame rated min V-1, temperature rated min. 105°C	UL796, CAN/CSA-C22.2 No. 0.17	UR

National Differences					
Clause	Requirement + Test		Result - Remark		Verdict
Decorative plastic on front panel of enclosure	interchangeable	interchangeable	Flame rated min. HB	UL94	UR
40Gbps Pluggable Optics Multimode SR-Optional	Finisar	FTL410QE2C-RW	QFP transceiver – Multimode – Rated 3.3V 850nm Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UR or CSA, TUV
40Gbps Pluggable Optics Multimode LR-Optional	Finisar	FTL4C1QE1C-RW	QFP transceiver – Multimode – Rated 3.3V 850nm Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UR or CSA, TUV
Laser transceiver Gigabit Ethernet ports 4 provided-Optional	Optech	OP6C-MX5-85-C4	SFP transceiver – Multimode – 3.3V – 850nm – 1.25Gbps Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UR or CSA, TUV
Optional-1 Gbps pluggable copper 1000 base –T	Optech	OP6C-TX1-00-C2	SFP Copper – 1000Base-TX 3.3V	--	--
Optional-Laser transceiver Gigabit Ethernet ports 2 provided	Sanoc	SI1312-10ATO	SFP transceiver - Singlemode - 3.3V - 1310nm - 1.25Gpbs Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UL or CSA, TUV
Optional - 1Gbps pluggable Optic Multimode SX	Sanoc	SI8512-X5ATO-3C	SFP transceiver – Multimode – 3.3V – 850nm – 1.25Gbps Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UL or CSA, TUV
Optional - 1Gbps pluggable Optic Single mode LX	Sanoc	SI1312-10ATO	SFP transceiver - Singlemode - 3.3V - 1310nm - 1.25Gpbs Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UL or CSA, TUV
Optional - Laser transceiver Gigabit Ethernet ports 2 provided	Sanoc	SI1512-80ATO	SFP transceiver - Singlemode - 3.3V - 1550nm Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UL or CSA, TUV



National Differences					
Clause	Requirement + Test		Result - Remark		Verdict
Optional - 1 Gbps Pluggable copper 1000 Base -T	Methode	DM7041-R-L	SFP Copper – 1000Base-TX 3.3V	--	--
Optional-Copper transceiver Gigabit Ethernet ports 2 provided	Sanoc	SI0012-X1ATO[N]	SFP Copper – 1000Base-TX 3.3V	-	-
SELV external connectors	Interchangeable	Interchangeable	Flame rated min. V-0	UL94	UL
UF1 USB PTTC protector	Ploytronics Technology Corp.	SMD1206P150T FT	Ih-1.5A Itrip-3A Vdc-8V	UL1434 IEC60730-1	UL(E201431) TUV(R50099121)
SELV internal connectors	Interchangeable	Interchangeable	Flame rated min. UL94V-2	UL94	UL
Internal Wiring, (secondary)	Interchangeable	Interchangeable	Rated min. 300V, 80°C, VW-1 or FT-1 or better.	UL758	UL
Supplementary information:					

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
90/60	3.81	-	352	-	-	Maximum normal load with 2 AC PS
100/60	3.43	8	349	-	-	
240/50	1.42	4	320	-	-	
264/50	1.31	-	315	-	-	
90/60	3.64	-	329	-	-	Maximum normal load with 1 AC PS
100/60	3.24	8	324	-	-	
240/50	1.33	4	296	-	-	
264/50	1.22	-	300	-	-	
Supplementary information: Related to CB121560.01						

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	I <sub>rated</sub> (A)	P (W)	Fuse #	I <sub>fuse</sub> (A)	Condition/status
90/60	4.25	-	384	-	-	Maximum normal load with 2 AC PS
100/60	3.5	8	350	-	-	
240/50	1.27	4	295	-	-	
264/50	1.5	-	375	-	-	
90/60	4.15	-	375	-	-	Maximum normal load with 1 AC PS
100/60	3.80	8	385	-	-	
240/50	1.58	4	375	-	-	
264/50	1.43	-	377	-	-	
Supplementary information: Related to CB121560.01 Amendment M1						

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
42	7.50	12	-	-	-	Maximum normal load with 2 DC PS
48	6.54	12	-	-	-	
60	5.19	12	-	-	-	
72	4.40	12	-	-	-	
42	7.33	12	-	-	-	Maximum normal load with 1 DC PS
48	6.38	12	-	-	-	
60	5.07	12	-	-	-	
72	4.28	12	-	-	-	
Supplementary information: Related to CB121560.01						

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	I <sub>rated</sub> (A)	P (W)	Fuse #	I <sub>fuse</sub> (A)	Condition/status
42	7.77	12	-	-	-	Maximum normal load with 2 DC PS
48	6.82	12	-	-	-	
60	5.74	12	-	-	-	
72	4.96	12	-	-	-	
42	8.60	12	-	-	-	Maximum normal load with 1 DC PS
48	7.42	12	-	-	-	
60	5.74	12	-	-	-	
72	5.06	12	-	-	-	
Supplementary information: Related to CB121560.01 Amendment M1						

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: Thermal requirements							P
	Mode operation .....	:	A	B	C			—
	Supply voltage (V) .....	:	90/60	264/50	264/50			—
	Ambient T <sub>min</sub> (°C) .....	:	22.8	22.6	22.8			—
	Ambient T <sub>max</sub> (°C) .....	:						—
Maximum measured temperature T of part/at::			T (°C)					Allowed T <sub>max</sub> (°C)
Primary wiring (Black)			32.4	32.6	31.2			57.8(85+2 2.8-50)
Coil (PS)			32.4	31.5	30.8			72.8(100+ 228-50)
Storage capacitor (PS)			31.5	31.8	31.1			57.8(85+2 2.8-50)
T4 transformer (PS )			33.8	34.1	33.5			62.8(100- 10+22.8- 50)
Transformer near C19 (PS)			45	45	44.4			62.8(100- 10+22.8- 50)
SSD enclosure			24.6	24.6	24.5			32.8(60+2 2.8-50)
Main board			31.7	31.6	31.5			77.8(105+ 22.8-50)
Lithium Battery on Main Board			31.7	31.7	31.6			57.8(85+2 2.8-50)
Pigi board			31.7	30.9	31.4			77.8(105+ 22.8-50)
Enclosure			24.7	24.5	24.6			42.8(70+2 2.8-50)
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

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information: Related to CB 121560.01			
Mode A ,B – One power supply is in work			
Mode C - two power supplies are in work			

National Differences							
Clause	Requirement + Test			Result - Remark			Verdict
4.5	TABLE: Thermal requirements						P
	Mode operation .....	A	B				—
	Supply voltage (V) .....	90/60	264/50				—
	Ambient T <sub>min</sub> (°C) .....	22.8	22.6				—
	Ambient T <sub>max</sub> (°C) .....						—
Maximum measured temperature T of part/at::		T (°C)					Allowed T <sub>max</sub> (°C)
Primary wiring (Black)		35.4	33.8				57.8(85+2.8-50)
Coil (PS)		38.7	37				72.8(100+228-50)
Storage capacitor (PS)		36.8	36.1				57.8(85+2.8-50)
T4 transformer (PS)		36.8	37.2				62.8(100-10+22.8-50)
Transformer near C19 (PS)		37.5	38.3				62.8(100-10+22.8-50)
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)
Supplementary information: Related to CB 121560.01 Amendment M1							
Mode A ,B – One power supply is in work							

National Differences							
Clause	Requirement + Test			Result - Remark			Verdict
4.5	TABLE: Thermal requirements						P
	Mode operation	A	B	C			
	Supply voltage (V) .....:	42	72	72			—
	Ambient T <sub>min</sub> (°C) .....:	22.2	22.3	22.1			—
	Ambient T <sub>max</sub> (°C) .....:						—
Maximum measured temperature T of part/at:		T (°C)					Allowed T <sub>max</sub> (°C)
Input terminal block - outer plastic		22.4	22.5	22.4			67.3(95+22.3-50)
Black wiring DC mains		26.6	26.8	26.5			57.3((85+22.3-50)
Coil (PS)		34.2	32.8	30.9			77.3(105+22.3-50)
Storage capacitor (PS)		30.3	30.3	29.8			57.3((85+22.3-50)
T4 (PS)		33.5	33.6	33.2			62.3(100-10+22.3-50)
Transformer near C19 (PS)		48.6	48.8	48.4			62.3(100-10+22.3-50)
Supplementary information:							
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)
Supplementary information: Related to CB 121560.01							
Mode A ,B – One power supply is in work							
Mode C - Two power supplies are in work							

National Differences							
Clause	Requirement + Test			Result - Remark			Verdict
4.5	TABLE: Thermal requirements						P
	Mode operation	A	B				
	Supply voltage (V) .....:	42	72				—
	Ambient T <sub>min</sub> (°C) .....:	22.2	22.3				—
	Ambient T <sub>max</sub> (°C) .....:						—
Maximum measured temperature T of part/at:		T (°C)					Allowed T <sub>max</sub> (°C)
Input terminal block - outer plastic		22.9	23.1				67.3(95+22.3-50)
Black wiring DC mains		31.8	30.4				57.3((85+22.3-50)
Coil (PS)		36.6	34.9				77.3(105+22.3-50)
Storage capacitor (PS)		33.9	32.7				57.3((85+22.3-50)
T4 (PS)		28.8	28.6				62.3(100-10+22.3-50)
Transformer near C19 (PS)		29.4	29.2				62.3(100-10+22.3-50)
Supplementary information:							
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)
Supplementary information: Related to CB 121560.01 Amendment M1							
Mode A ,B – One power supply is in work							



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

<b>5.2</b>	<b>TABLE: Electric strength tests, impulse tests and voltage surge tests</b>			<b>P</b>
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdo wn Yes / No
Functional:				
Basic/supplementary:				
Equipment (primary to PE)		DC	2979	No
Equipment (DC mains to PE)		DC	1294	No
Reinforced:				
Supplementary information:				

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

**List of test equipment used:**

**(Note: This is an example of the required attachment. Other forms with a different layout but containing similar information are also acceptable.)**

ITL	Instrument	Manufacturer	Model	Serial	Cal Due
1002	Digital Power Analyzer	Valhalla Scientific	2101	37437	25/02/2014
1040	DVM	Fluke	87	60370049	03/03/2014
1140	Digital timer	Golf	Timer Count Down/Up		28/02/2014
1147	Oscilloscope	Tektronix	TDS3012	B015205	25/02/2014
1323	Power Supply	Lambda	GEN8-180	1323	25/02/2014
1610	Digital Thermometer	Fluke	Hydra 2620A	5929005	03/03/2014
1336	Digital Force Indicator	ED&D	PFI-200	43001001	28/02/2015
1338	Humidity	Thermotron	SM-32C	251030	23/02/2014
1217	Hipot Tester	Hipotronics	HD 100	390301	28/02/2014
1135	Leakage Current - 1950	Custom	Custom	1085	23/02/2014

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Appendix 1 – Photographs

Rear side view – DC version



Rear side View – AC Version



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

## Appendix 3 – Model names

Dec. 22, 2013



## Declaration of Similarity

I HEREBY DECLARE THAT THE FOLLOWING PRODUCTS:

RODS-HTQ-A-2AC
RODS-HTQ-XL-A-2A
Alteon 6420
Alteon 6420 XL
ODS-HTQ
DefensePro x420
ODS-HTQ XL
OnDemand Switch HTQ DUAL
OnDemand Switch HTQ XL DUAL
RODS-HTQ-A4-2AC
Alteon 6420p
Alteon 6420p XL
ODS-HTQq
ODS-HTQq XL

**ARE IDENTICAL ELECTRONICALLY, PHYSICALLY, AND  
MECHANICALLY TO:  
RODS-HTQ-D-2AC**

Please relate to them all (from an EMC & safety point of view) as the same product.

Thank You,

Yaniv Ben-Dor ,Engineering Manager

Radware Ltd.

  
Legal Signature

**RADWARE Ltd.**  
22 Raoul Wallenberg  
Tel-Aviv 69710  
ISRAEL

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict



Dec. 22, 2013

## Declaration of Similarity

I HEREBY DECLARE THAT THE FOLLOWING PRODUCTS:

RODS-HTQ-A-2DC
RODS-HTQ-XL-A-2D
RODS-HTQ-A-NEBS
RODS-HTQ-XL-NEBS
Alteon 6420 Dual DC NEBS
Alteon 6420 Dual DC
Alteon 6420 XL Dual DC
Alteon 6420 XL Dual DC NEBS
ODS-HTQ Dual DC
DefensePro x420 Dual DC
ODS-HTQ XL Dual DC
OnDemand Switch HTQ DUAL DC
OnDemand Switch HTQ XL DUAL DC
RODS-HTQ-A4-2DC
ODS-HTQq Dual DC
ODS-HTQq XL Dual DC
Alteon 6420p Dual DC
Alteon 6420p XL Dual DC
Alteon 6420p Dual DC NEBS
Alteon 6420p XL Dual DC NEBS

**ARE IDENTICAL ELECTRONICALLY, PHYSICALLY, AND MECHANICALLY TO:**

### RODS-HTQ-D-2DC

Please relate to them all (from an EMC & safety point of view) as the same product.

Thank You,

Yaniv Ben-Dor, Engineering Manager

Radware Ltd.

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

**End of test report**




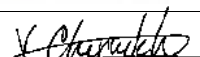
Test Report issued under the responsibility of:

**NCB Intertek Testing Services NA, Inc**

<b>TEST REPORT</b> <b>IEC 60950-1</b> <b>Information technology equipment – Safety –</b> <b>Part 1: General requirements</b>	
<b>Report Number</b> .....	CB121560.01
<b>Date of issue</b> .....	24/06/2013
<b>Total number of pages</b> .....	143
<b>CB Testing Laboratory</b> .....	I.T.L. (PRODUCT TESTING) Ltd.
<b>Address</b> .....	1 Bat-Sheva St. POB 87 Lod 71100 ISRAEL
<b>Applicant's name</b> .....	Radware Ltd.
<b>Address</b> .....	22 Raoul Wallenberg Street, Tel-Aviv 69710, Israel
<b>Manufacturer's name</b> .....	Radware Ltd.
<b>Address</b> .....	22 Raoul Wallenberg Street, Tel-Aviv 69710, Israel
<b>Test specification:</b>	
<b>Standard</b> .....	IEC 60950-1:2005 (Second Edition) + Am 1:2009
<b>Test procedure</b> .....	CB Scheme
<b>Non-standard test method</b> .....	N/A
<b>Test Report Form No</b> .....	IEC60950_1C
<b>Test Report Form(s) Originator</b> .....	SGS Fimko Ltd
<b>Master TRF</b> .....	Dated 2012-08
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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>	

<b>Test item description .....</b>	Network Switch
Trade Mark .....	Radware
Manufacturer .....	Radware Ltd.
Model/Type reference.....	See Appendix 3 for models names
Ratings .....	100-240VAC, 47-63Hz, 8-4A (for AC powered models x 2 ); -42 to -72VDC, 12A (for DC powered models x 2 )



<b>Testing procedure and testing location:</b>		
<input checked="" type="checkbox"/>	<b>CB Testing Laboratory:</b>	I.T.L. (PRODUCT TESTING) Ltd.
Testing location/ address .....		1 Bat-Sheva St. POB 87 Lod 71100 ISRAEL
<input type="checkbox"/>	<b>Associated CB Laboratory:</b>	
Testing location/ address .....		
Tested by (name + signature) .....		Yigal Y Cohen 
Approved by (name + signature) .....		Vladimir Chernikh 
<input type="checkbox"/>	<b>Testing procedure: TMP</b>	
Testing location/ address .....		
Tested by (name + signature) .....		
Approved by (name + signature) .....		
<input type="checkbox"/>	<b>Testing procedure: WMT</b>	
Testing location/ address .....		
Tested by (name + signature) .....		
Witnessed by (name + signature) .....		
Approved by (name + signature) .....		
<input type="checkbox"/>	<b>Testing procedure: SMT</b>	
Testing location/ address .....		
Tested by (name + signature) .....		
Approved by (name + signature) .....		
Supervised by (name + signature) ...		
<input type="checkbox"/>	<b>Testing procedure: RMT</b>	
Testing location/ address .....		
Tested by (name + signature) .....		
Approved by (name + signature) .....		
Supervised by (name + signature) ...		

**List of Attachments (including a total number of pages in each attachment):****Appendix 1 – Photographs****Appendix 2 – National differences****Appendix 3 – Model names****Appendix 4 – licences****Summary of testing:****Tests performed (name of test and test clause):**

1.6.2 – Input Test  
 1.7.13- Durability test  
 2.1.1.1- Access to energized parts  
 2.1.1.7- Capacitance Discharge Test  
 2.6.3.3 - Earthing Test  
 2.9.2 - Humidity  
 4.2 - Mechanical Strength Test  
 4.5.1- Heating Test  
 5.1- Touch Current Test  
 5.2.2- Electrical strength Test  
 5.3.1- Abnormal Operation Tests

Tests were performed with maximum load on the models RODS-HTQ-D-2AC and RODS-HTQ-D-2DC represent AC and DC version of units.

Units tested for Ambient of up to 50°C.

**Testing location:**

I.T.L. (PRODUCT TESTING) Ltd.  
 1 Bat-Sheva St. POB 87 Lod 71100 ISRAEL

**Summary of compliance with National Differences****Summary of compliance with National Differences to IEC 60950-1:2005 (2nd Edition)+Am 1:2009.**

List of countries addressed:

EU Group Differences, EU Special National Conditions, AT, BE, BY, CA, CH, CZ, DE, DK, ES, FI, FR, HU, IN, IL, IT, JP, KR, MY, NL, NO, SG, SE, SI, PL, SK, UA, UK, US

**Summary of compliance with National Differences to IEC 60950-1:2005 (2nd Edition).**

List of countries addressed: AU, BR, CN

Explanation of used codes: AU=Australia, AT=Austria, BE=Belgium, BY=Belarus, BR=Brazil, CA=Canada, CH=Switzerland, CZ=Czech Republic, CN=China, DE=Germany, DK=Denmark, ES=Spain, FI=Finland, FR=France, HU=Hungary, IN=India, IL=Israel, IT=Italy, JP=Japan, KR=Korea, MY=Malaysia, NL=The Netherlands, NO=Norway, SG=Singapore, SE=Sweden, SI=Slovenia, PL=Poland, SK=Slovakia, UA=Ukraine, UK= United Kingdom, US=United States of America

☒ The product fulfils the requirements of IEC 60950-1:2005 (Second Edition), Am 1: 2009, EN 60950-1:2006+A11:2009+A1:2010, EN 60950-1:2006+A11:2009+A1:2010+A12:2011 and EN 60950-1:2006+A11:2009.

**Copy of marking plate**

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

(Additional requirements for markings. See 1.7 NOTE)


 <p>This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operations. *See installation instructions before connecting to the power supply. *Voir la notice d'installation avant de reconnector au réseau. *Vorden anschliessen ans Netz die Installations anweisungen</p>		<p>MODEL : RODS-HTQ-A-2AC INPUT : 100-240VAC, 47-63Hz, 8-4A x 2</p>	
<p>MAC1:  0003B23D0400</p> <p>SYS S/N:  0902000236</p>		<p>   For disposal of this equipment In EU countries please go to <a href="http://www.radware.com/weee">http://www.radware.com/weee</a> </p> <p>   </p> <p>MFG P/N:  RODS-HTQ-A-2AC</p> <p>MB S/N:  0801000001</p> <p>HW Ver. : C.07</p>	

 <p>This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operations. *See installation instructions before connecting to the power supply. *Voir la notice d'installation avant de reconnector au réseau. *Vorden anschliessen ans Netz die Installations anweisungen</p>		<p>MODEL : RODS-HTQ-A-2DC INPUT : -42 to -72VDC, 12A x 2</p>	
<p>MAC1:  0003B23D0400</p> <p>SYS S/N:  0902000236</p>		<p>   For disposal of this equipment In EU countries please go to <a href="http://www.radware.com/weee">http://www.radware.com/weee</a> </p> <p>   </p> <p>MFG P/N:  RODS-HTQ-A-2DC</p> <p>MB S/N:  0801000001</p> <p>HW Ver. : C.07</p>	



  

 <p>This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operations. *See installation instructions before connecting to the power supply. *Voir la notice d'installation avant de reconnector au réseau. *Vorden anschliessen ans Netz die Installations anweisungen</p>		<p>MODEL : RODS-HTQ-A-NEBS INPUT : -42 to -72VDC, 12A x 2</p>	
<p>MAC1:  0003B23D0400</p> <p>SYS S/N:  0902000236</p>		<p>   For disposal of this equipment In EU countries please go to <a href="http://www.radware.com/weee">http://www.radware.com/weee</a> </p> <p>   </p> <p>MFG P/N:  RODS-HTQ-A-NEBS</p> <p>MB S/N:  0801000001</p> <p>HW Ver. : C.07</p>	






This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:  
(1) This device may not cause harmful interference, and  
(2) This device must accept any interference received, including interference that may cause undesired operations.  
\*See installation instructions before connecting to the power supply.  
\*Voir la notice d'installation avant de reconnector au réseau.  
\*Vor dem anschliessen ans Netz die Installations anweisungen


MODEL : RODS-HTQ-D-2AC  
INPUT : 100-240VAC, 47-63Hz, 8-4A x 2





For disposal of this equipment  
In EU countries please go to  
<http://www.radware.com/weee>




MAC1:   
0003B23D0400

SYS S/N:   
0902000236

MFG P/N:   
RODS-HTQ-D-2AC



MB S/N:   
0801000001

HW Ver.: C.07






This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:  
(1) This device may not cause harmful interference, and  
(2) This device must accept any interference received, including interference that may cause undesired operations.  
\*See installation instructions before connecting to the power supply.  
\*Voir la notice d'installation avant de reconnector au réseau.  
\*Vor dem anschliessen ans Netz die Installations anweisungen


MODEL : RODS-HTQ-D-2DC  
INPUT : -42 to -72VDC, 12A x 2





For disposal of this equipment  
In EU countries please go to  
<http://www.radware.com/weee>



MAC1:   
0003B23D0400

SYS S/N:   
0902000236

MFG P/N:   
RODS-HTQ-D-2DC

MB S/N:   
0801000001

HW Ver.: C.07

CAUTION	ATTENTION
This unit has more than one power supply. Disconnect all power supplies before maintenance to avoid electric shock.	Cette unité a plus d'une source d'alimentation électrique. Débranchez toutes les sources d'alimentations électriques avant toute maintenance pour éviter les chocs électriques.

<b>Test item particulars</b> .....:	
Equipment mobility.....:	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input checked="" type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains .....	<input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input checked="" type="checkbox"/> permanent connection <input checked="" type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains
Operating condition.....:	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location .....	<input checked="" type="checkbox"/> operator accessible <input checked="" type="checkbox"/> restricted access location
Over voltage category (OVC) .....	<input checked="" type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
Mains supply tolerance (%) or absolute mains supply values .....	+10%/-10%; for AC powered unit; -42V to -72Vdc according to manufacturer requirements
Tested for IT power systems .....	<input checked="" type="checkbox"/> Yes for Norway only <input type="checkbox"/> No
IT testing, phase-phase voltage (V) .....	230V Ph-Ph
Class of equipment .....	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A) .....	Up to 20A
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 3100m
Altitude of test laboratory (m) .....	55m
Mass of equipment (kg) .....	15Kg
<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 .....	March 4, 2013
Date(s) of performance of tests.....	March 5 -8 , 2013 , May 1-6 , 2013

**General remarks:**

The test results presented in this report relate only to the object tested.  
 This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

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

**Manufacturer's Declaration per sub-clause 6.2.5 of IEC60950-1:**

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:

☐ Yes

☒ Not applicable

When differences exist; they shall be identified in the General product information section.

**Name and address of factory (ies) ..... : 1. Nexcom International Co., Ltd**

5F,7F,8F,9F,10F&12F,No.63, Sec.1, Sanmin Rd.,  
 Banqiao Dist, New Taipei City, Taiwan

**General product information:**

. The units are movable or rack-mountable, Class I, may be AC or DC powered.

The AC version is pluggable type A, uses detachable power cord

The DC version has a permanent power connection to a building installation should be installed only in restricted area location

All interfaces are SELV circuitry.

The DC voltage is classified as a DC mains, considered as a TNV-2 up to -72Vdc, where the positive pole should be earthed in the building installation.

Power cords are not part of this evaluation.

Units contain certified optical transceivers, Class 1 complying with EN60825-1 and 21CFR (J).

Model differences - all Models have the same hardware and mechanical construction. Models are different in software versions and use AC or DC power supplies- see appendix 3.

The products were submitted and tested for use at the maximum ambient temperature 50°C.

Report history :

CB121560.01– original report

**Abbreviations used in the report:**

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

Indicate used abbreviations (if any)



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	General	See appended table 1.5.1	P
	Comply with IEC 60950-1 or relevant component standard	All components either comply with the relevant standard or were subjected to the necessary test.	P
1.5.2	Evaluation and testing of components	<p>Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this Standard.</p> <p>Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component Standard.</p> <p>Components, for which no relevant IEC-Standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.</p>	P
1.5.3	Thermal controls	No such components	N/A
1.5.4	Transformers	Evaluated as part of approved power supply.	N/A
1.5.5	Interconnecting cables	Interconnecting cables are not part of this evaluation.	N/A
1.5.6	Capacitors bridging insulation	Capacitors are evaluated as part of approved power supply.	N/A
1.5.7	Resistors bridging insulation	<p>Evaluated as part of approved power supply.</p> <p>All the other circuits are considered as SELV circuits</p>	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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.8	Components in equipment for IT power systems	Components are suitably rated to withstand 230Vac line-to-line voltages of Norway IT power system	P
1.5.9	Surge suppressors	Considered and certified as part of the power supplies	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

<b>1.6</b>	<b>Power interface</b>		<b>P</b>
1.6.1	AC power distribution systems	AC Unit was evaluated for use with TN power system. However it may be connected to IT power system of Norway only	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	No hand-held equipment	N/A
1.6.4	Neutral conductor	Part of approved power supply	N/A

<b>1.7</b>	<b>Marking and instructions</b>		<b>P</b>
1.7.1	Power rating and identification markings	Provided	P
1.7.1.1	Power rating marking	Provided	P
	Multiple mains supply connections.....:	Current is stated per each inlet	P
	Rated voltage(s) or voltage range(s) (V) .....	100-240Vac; -42 to -72Vdc	P
	Symbol for nature of supply, for d.c. only .....	Marked	P
	Rated frequency or rated frequency range (Hz) ....:	47-63Hz	P
	Rated current (mA or A) .....	8-4A (for AC units), 12A (for DC units)	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark .....	Radware Ltd	P
	Model identification or type reference .....	See Appendix 3 for model names	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Symbol for Class II equipment only .....	Class I equipment	N/A
	Other markings and symbols .....	No other symbols	N/A
1.7.2	Safety instructions and marking	Operating instructions made available to the user.	P
1.7.2.1	General	Operating instructions made available to the user.	P
1.7.2.2	Disconnect devices	Statement is provided in the installation instruction	P
1.7.2.3	Overcurrent protective device	No such equipment	N/A
1.7.2.4	IT power distribution systems	Relevant safety instructions are provided	P
1.7.2.5	Operator access with a tool	Only SELV circuits and safety earth are accessible to an operator	P
1.2.7.6	Ozone	No such equipment	N/A
1.7.3	Short duty cycles	Continuous operation equipment	N/A
1.7.4	Supply voltage adjustment .....	Equipment is automatically selectable	N/A
	Methods and means of adjustment; reference to installation instructions .....	Equipment is automatically selectable	N/A
1.7.5	Power outlets on the equipment .....	No such outlets	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....	Part of certified power supply. No other fuses employed	N/A
1.7.7	Wiring terminals		P
1.7.7.1	Protective earthing and bonding terminals .....	Earthing screw is marked with symbol 5019 IEC 60417	P
1.7.7.2	Terminals for a.c. mains supply conductors	AC unit employs 2 appliance inlets for mains connection	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	DC unit employs 2 terminal blocks (connectors) for mains connection , marked in accordance	P
1.7.8	Controls and indicators	Only functional indicators use colour.	P
1.7.8.1	Identification, location and marking .....	Only functional indicators are used.	P
1.7.8.2	Colours .....	Only functional indicators are used.	P
1.7.8.3	Symbols according to IEC 60417 .....	No switches	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.8.4	Markings using figures .....	Figures are not used	N/A
1.7.9	Isolation of multiple power sources .....	Marking near power connection to power supply are provided. Markings are visible.	P
1.7.10	Thermostats and other regulating devices .....	No such devices	N/A
1.7.11	Durability	The marking(s) withstood the required test	P
1.7.12	Removable parts	No removable parts	N/A
1.7.13	Replaceable batteries .....	Statement provided in user manual	P
	Language(s) .....	English, French	—
1.7.14	Equipment for restricted access locations.....	Provided for DC unit	P
<b>2</b>	<b>PROTECTION FROM HAZARDS</b>		<b>P</b>
2.1	Protection from electric shock and energy hazards		<b>P</b>
2.1.1	Protection in operator access areas	AC unit. Only parts of SELV circuits and earthed metal enclosure are accessible to an operator. Protection is achieved by overall equipment basic insulation and earthing of accessible conductive parts. DC unit- located in RAL	<b>P</b>
2.1.1.1	Access to energized parts	The operator has access only to bare parts of SELV circuits	<b>P</b>
	Test by inspection .....	No hazards	<b>P</b>
	Test with test finger (Figure 2A) .....	The test finger was unable to touch hazardous parts	<b>P</b>
	Test with test pin (Figure 2B) .....	The test pin was unable to contact bare parts at hazardous voltage	<b>P</b>
	Test with test probe (Figure 2C) .....	No internal TNV circuits	N/A
2.1.1.2	Battery compartments	No such parts	N/A
2.1.1.3	Access to ELV wiring	There are no ELV circuits.	N/A
	Working voltage ( $V_{peak}$ or $V_{rms}$ ); minimum distance through insulation (mm)	(see appended tables 2.10.2 and 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring	No operator access to internal wire	<b>P</b>

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.5	Energy hazards .....	There are no energy hazards in operator access area	P
2.1.1.6	Manual controls	The equipment does not contain any knobs, handles or levers.	N/A
2.1.1.7	Discharge of capacitors in equipment	The voltage across-line capacitors decayed to less than 37% of its original value in 1sec. for AC unit	P
	Measured voltage (V); time-constant (s) .....	0V within 1s	—
2.1.1.8	Energy hazards – d.c. mains supply	The DC unit is intended to be installed in RAL	N/A
	a) Capacitor connected to the d.c. mains supply ..		N/A
	b) Internal battery connected to the d.c. mains supply .....	No such parts	N/A
2.1.1.9	Audio amplifiers .....	No such parts	N/A
2.1.2	Protection in service access areas	Bare parts operating at hazardous voltages are located such that unintentional contact with such parts is unlikely during servicing operations involving other parts of the equipment.	P
2.1.3	Protection in restricted access locations	For DC unit. Appropriate instructions are provided. Parts at hazardous energy/voltage (DC mains) guarded so that un-international contact is unlikely	P

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

<b>2.2</b>	<b>SELV circuits</b>		P
2.2.1	General requirements	Compliance checked by inspection and relevant tests.	P
2.2.2	Voltages under normal conditions (V) .....	Maximum 12VDC	P
2.2.3	Voltages under fault conditions (V) .....	Part of certified power supply evaluation	N/A
2.2.4	Connection of SELV circuits to other circuits .....	The SELV circuits are connected to SELV circuits	P

<b>2.3</b>	<b>TNV circuits</b>		N/A
2.3.1	Limits	DC units are connected to a maximum 72V DC mains, regarded as TNV-2 for the purpose of application of insulation requirements	N/A
	Type of TNV circuits .....	No internal 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

<b>2.4</b>	<b>Limited current circuits</b>		N/A
2.4.1	General requirements	Unit was not evaluated for limited current circuits.	N/A
2.4.2	Limit values	Unit was not evaluated for limited current circuits.	N/A
	Frequency (Hz) .....		—
	Measured current (mA) .....		—
	Measured voltage (V) .....		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Measured circuit capacitance (nF or $\mu$ F) .....		—
2.4.3	Connection of limited current circuits to other circuits		N/A

<b>2.5</b>	<b>Limited power sources</b>	(see appended table 2.5)	<b>P</b>
	a) Inherently limited output	Schematics evaluation - ports (Ethernet and signal/data ports) are inherently limited signal/data outputs not associated with power transfer	<b>P</b>
	b) Impedance limited output	USB port powered by 5VDC is protected by certified PTC UF1 having Ihold 1.5A, Itrip 3A, less than 8A, less than 100VA	<b>P</b>
	c) Regulating network limited output under normal operating and single fault condition	No such outputs	<b>N/A</b>
	d) Overcurrent protective device limited output		<b>N/A</b>
	Max. output voltage (V), max. output current (A), max. apparent power (VA) .....		—
	Current rating of overcurrent protective device (A) ..		—
	Use of integrated circuit (IC) current limiters		

<b>2.6</b>	<b>Provisions for earthing and bonding</b>		<b>P</b>
2.6.1	Protective earthing	Accessible conductive parts are connected to protective earth in accordance with 2.6.1a)	<b>P</b>
2.6.2	Functional earthing	Circuits, which provide functional earthing, are connected to protective earthing and are separated from primary circuits by reinforced /double insulation in certified power supply	<b>P</b>
2.6.3	Protective earthing and protective bonding conductors	Requirements of 2.6.3.1, 2.6.3.2, 2.6.3.3 applicable	<b>P</b>
2.6.3.1	General	Protective bonding conductors comply with 2.6.1 a) and part of power supply certification	<b>P</b>
2.6.3.2	Size of protective earthing conductors	Power cord is not part of investigation	<b>N/A</b>

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		—
2.6.3.3	Size of protective bonding conductors	Part of certified closed frame power supplies	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 ( $\Omega$ ), voltage drop (V), test current (A), duration (min) .....	Test current 40A for a period of 2 minutes 20.3m $\Omega$ , voltage drop less than 2.5V	P
2.6.3.5	Colour of insulation .....	Protective earthing conductor is part of power supply cord. Power supply cord not part of this evaluation.	N/A
2.6.4	Terminals	Requirements of 2.6.4.1, 2.6.4.2 apply	P
2.6.4.1	General	AC unit: Appliance inlet(s) used as protective earthing terminal(s). DC unit: GND screws (2 provided) used as protective earthing terminal	P
2.6.4.2	Protective earthing and bonding terminals	Construction of protective earthing terminal is suitable for application. AC unit: Appliance inlet(s) used as protective earthing terminal(s). DC unit: GND screws (2 provided) used as protective earthing terminal. Bonding is provided with mounting screws.	P
	Rated current (A), type, nominal thread diameter (mm).....	PE terminal located on the rear panel: Rated current 12A. Earthing screw terminals have 4mm thread diameter	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	Part of close frame power supply	N/A
2.6.5	Integrity of protective earthing		P
2.6.5.1	Interconnection of equipment	Equipment does not provide earthing to other equipment	N/A



IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No protective devices in the earthing conductors	P
2.6.5.3	Disconnection of protective earth	Disconnection of protective earthing at one point in the unit does not break the protective earthing to the other parts of the unit.	P
2.6.5.4	Parts that can be removed by an operator	No such parts	N/A
2.6.5.5	Parts removed during servicing	Earth does not have to be removed during service	P
2.6.5.6	Corrosion resistance	No risk of corrosion. Complies with Annex J.	P
2.6.5.7	Screws for protective bonding	Self-trapping or space thread screws are not used.	P
2.6.5.8	Reliance on telecommunication network or cable distribution system	Protective earthing does not rely on a telecommunication network or a cable distribution system.	N/A

<b>2.7</b>	<b>Overcurrent and earth fault protection in primary circuits</b>		<b>P</b>
2.7.1	Basic requirements	Pluggable Type A. Protection against overcurrent, short-circuit and earth faults in Primary provided as part of EUT. Additional protection provided as part of building installation.	P
	Instructions when protection relies on building installation	Not Type B pluggable equipment or permanently connected equipment	N/A
2.7.2	Faults not simulated in 5.3.7	Earth fault protection to be provided by buildings installation	P
2.7.3	Short-circuit backup protection	Unit is Pluggable type A. Building installation is considered as providing short-circuit backup protection.	P
2.7.4	Number and location of protective devices ..... :	Protective device provided as part of approved power supply.	P
2.7.5	Protection by several devices	No such protection	N/A
2.7.6	Warning to service personnel ..... :	No protective device provided in the neutral conductor.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

<b>2.8</b>	<b>Safety interlocks</b>		N/A
2.8.1	General principles	No interlocks provided	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) ..... :		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A

<b>2.9</b>	<b>Electrical insulation</b>		P
2.9.1	Properties of insulating materials	No natural rubber, asbestos or hygroscopic materials used as insulation . Certified power supplies are used	P
2.9.2	Humidity conditioning	For AC version - Humidity test was conducted 120H hours for China deviation See National Differences China (CH).	P
	Relative humidity (%), temperature (°C) ..... :	93% , 40°C	—

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Clause	Requirement + Test	Result - Remark	Verdict
2.9.3	Grade of insulation	Functional insulation employed in secondary SELV evaluated to 5.3.4 c)  Basic insulation between Primary and earth.(Certified PS)  Minimum Basic insulation between TNV-2 and SELV. (Certified PS)  Reinforced insulation between primary circuits to SELV circuits	
2.9.4	Separation from hazardous voltages	Part of certified power supply having outputs defined as SELV .(Certified PS)	P
	Method(s) used .....	Part of certified power supply	—

<b>2.10</b>	<b>Clearances, creepage distances and distances through insulation</b>		<b>P</b>
2.10.1	General	Compliance was checked by inspection and by measurements.	P
2.10.1.1	Frequency .....	47-63Hz	P
2.10.1.2	Pollution degrees .....	2	P
2.10.1.3	Reduced values for functional insulation	Considerations were considered by schematic evaluated according with 5.3.4 c) requirements	P
2.10.1.4	Intervening unconnected conductive parts	No such part	N/A
2.10.1.5	Insulation with varying dimensions	Part of certified power supplies	N/A
2.10.1.6	Special separation requirements	No such case	N/A
2.10.1.7	Insulation in circuits generating starting pulses	No such part	N/A
2.10.2	Determination of working voltage	Evaluated as part of closed frame certified power supplies.  For the DC version, the DC mains input voltage, its positive pole shall be connected electrically to ground from the building installation side, so the max transient peak working voltage is assumed to be 71V <sub>peak</sub>	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.2.1	General	Evaluated as part of closed frame certified power supplies.	P
2.10.2.2	RMS working voltage	Evaluated as part of closed frame certified power supplies.	P
2.10.2.3	Peak working voltage	Evaluated as part of closed frame certified power supplies.	P
2.10.3	Clearances	Evaluated as part of closed frame certified power supplies.	P
2.10.3.1	General	Evaluated as part of closed frame certified power supplies.	P
2.10.3.2	Mains transient voltages		P
	a) AC mains supply .....	2500Vp , OCII Evaluated as part of closed frame certified power supplies.	P
	b) Earthed d.c. mains supplies .....	Assumed 71Vpeak	P
	c) Unearthed d.c. mains supplies .....		N/A
	d) Battery operation .....		
2.10.3.3	Clearances in primary circuits	Evaluated as part of closed frame certified power supplies.	N/A
2.10.3.4	Clearances in secondary circuits	Considered through 5.3.4c	N/A
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply .....	Assumed 1500V Evaluated as part of closed frame certified power supplies.	P
2.10.3.7	Transients from d.c. mains supply .....	Assumed 71Vpk Evaluated as part of closed frame certified power supplies.	P
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....		N/A
2.10.3.9	Measurement of transient voltage levels	Evaluated as part of closed frame certified power supplies.	P
	a) Transients from a mains supply		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	For an a.c. mains supply .....		N/A
	For a d.c. mains supply .....		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances	Evaluated as part of closed frame certified power supplies.	P
2.10.4.1	General		N/A
2.10.4.2	Material group and comparative tracking index		N/A
	CTI tests .....	Material group IIIb is assumed to be used	—
2.10.4.3	Minimum creepage distances	Evaluated as part of closed frame certified power supplies.	N/A
<b>2.10.5</b>	<b>Solid insulation</b>	Evaluated as part of closed frame certified power supplies.	P
2.10.5.1	General		N/A
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	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	(see appended table 2.10.3 and 2.10.4)	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	(see appended table 2.10.5)	—
2.10.5.10	Thin sheet material – alternative test procedure		N/A
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.11	Insulation in wound components		N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage .....		N/A
	a) Basic insulation not under stress .....		N/A
	b) Basic, supplementary, reinforced insulation .....		N/A
	c) Compliance with Annex U .....		N/A
	Two wires in contact inside wound component; angle between 45° and 90° .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test	(see appended table 2.10.5)	—
	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
<b>2.10.6</b>	<b>Construction of printed boards</b>	Evaluated as part of closed frame certified power supplies.	P
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
<b>2.10.7</b>	<b>Component external terminations</b>	No Such components	N/A
2.10.8	Tests on coated printed boards and coated components	Evaluated as part of closed frame certified power supplies.	P
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	(see appended table 5.2)	N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A

<b>3</b>	<b>WIRING, CONNECTIONS AND SUPPLY</b>	P
3.1	General	P

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Clause	Requirement + Test	Result - Remark	Verdict
3.1.1	Current rating and overcurrent protection	All internal wiring is rated for the application and has adequate cross-sectional areas depending on the circuits.	P
3.1.2	Protection against mechanical damage	The wires are well routed away from sharp edges, etc. and are adequately fixed to prevent excessive strain on wire and terminals	P
3.1.3	Securing of internal wiring	All wiring are reliably routed or separated and are adequately fixed to prevent excessive strain on wire and terminals	P
3.1.4	Insulation of conductors	Insulation on internal conductors are considered to be of adequate quality and suitable for the application and the working voltages involved	P
3.1.5	Beads and ceramic insulators	No such components	N/A
3.1.6	Screws for electrical contact pressure	PCBs are connected to earth via screws to chassis. Screws are engaged with at least two turns into metal.	P
3.1.7	Insulating materials in electrical connections	The equipment does not have such components	N/A
3.1.8	Self-tapping and spaced thread screws	Self-tapping and spaced thread screws not used in this equipment	N/A
3.1.9	Termination of conductors	All internal wiring is properly terminated and fixed	P
	10 N pull test	Not considered necessary	N/A
3.1.10	Sleeving on wiring	Sleeving is not used as supplementary insulation	N/A

<b>3.2</b>	<b>Connection to a mains supply</b>		P
3.2.1	Means of connection	Provided	P
3.2.1.1	Connection to an a.c. mains supply	Power inlet provided as part of approved power supplies.	P
3.2.1.2	Connection to a d.c. mains supply	Terminal for permanent connection to supply	P

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Clause	Requirement + Test	Result - Remark	Verdict
3.2.2	Multiple supply connections	Two supply connections with the same voltage rating are provided with separate means of connection	P
3.2.3	Permanently connected equipment	Certified terminal complies with clause 3.3	P
	Number of conductors, diameter of cable and conduits (mm) .....	No part of this investigation	—
3.2.4	Appliance inlets	Part of certified power supplies	P
3.2.5	Power supply cords	Units not provided with power supply cord. When detachable power supply cord is supplied with unit, it shall comply with the requirements of the destination country.	N/A
3.2.5.1	AC power supply cords	Detachable power supply cord set not supplied with the equipment and not evaluated as part of this investigation.	N/A
	Type .....		—
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		—
3.2.5.2	DC power supply cords	Not provided as part of the unit	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		P
3.2.8	Cord guards	No non-detachable cords	N/A
	Diameter or minor dimension D (mm); test mass (g) .....		—
	Radius of curvature of cord (mm) .....		—
3.2.9	Supply wiring space	Complies	P



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Clause	Requirement + Test	Result - Remark	Verdict

<b>3.3</b>	<b>Wiring terminals for connection of external conductors</b>		<b>P</b>
3.3.1	Wiring terminals	Complies	P
3.3.2	Connection of non-detachable power supply cords	No non-detachable power supply cords	N/A
3.3.3	Screw terminals	Certified terminal block is provided	P
3.3.4	Conductor sizes to be connected	Not supplied with the unit	N/A
	Rated current (A), cord/cable type, cross-sectional area (mm <sup>2</sup> ) .....		—
3.3.5	Wiring terminal sizes	Earthing screws complies with Table 3E	P
	Rated current (A), type, nominal thread diameter (mm) .....	Rated current 12A, thread diameter min. 3.5 for each stud (2 Provided)	—
3.3.6	Wiring terminal design	Earthing stud s designed to reliably fix earthing conductor and provided with washer	P
3.3.7	Grouping of wiring terminals	Complies for AC and DC version	P
3.3.8	Stranded wire	Certified DC terminal block is used	P

<b>3.4</b>	<b>Disconnection from the mains supply</b>		<b>P</b>
3.4.1	General requirement	Provided	P
3.4.2	Disconnect devices	For AC – an appliance inlet For DC- a circuit breaker in the building installation	P
3.4.3	Permanently connected equipment	Instructions are provided in the installation instructions	P
3.4.4	Parts which remain energized	No such parts	N/A
3.4.5	Switches in flexible cords	No switches in flexible cords	N/A
3.4.6	Number of poles - single-phase and d.c. equipment	AC version- Appliance coupler disconnect both supply poles simultaneously  DC version- The positive pole in connected to ground in the building installation.  Instructions are provided	P

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Clause	Requirement + Test	Result - Remark	Verdict
3.4.7	Number of poles - three-phase equipment	The unit is a single-phase equipment	N/A
3.4.8	Switches as disconnect devices	No such switches	N/A
3.4.9	Plugs as disconnect devices	No considered as a disconnecting device	N/A
3.4.10	Interconnected equipment	No such connection	N/A
3.4.11	Multiple power sources	Marking is provided , instructions are provided in installation manual.	P

<b>3.5</b>	<b>Interconnection of equipment</b>		<b>P</b>
3.5.1	General requirements	SELV connected to SELV	P
3.5.2	Types of interconnection circuits ..... :	SELV circuits	P
3.5.3	ELV circuits as interconnection circuits	No ELV circuits	N/A
3.5.4	Data ports for additional equipment	Ports complied with limited power sources requirements.	P

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Clause	Requirement + Test	Result - Remark	Verdict

<b>4</b>	<b>PHYSICAL REQUIREMENTS</b>		<b>P</b>
4.1	Stability		P
	Angle of 10°	Unit designed and constructed so as not to overbalance when tilted to an angle of 10° from its normal upright position	P
	Test force (N) .....	Equipment is not intended for floor standing.	N/A

<b>4.2</b>	<b>Mechanical strength</b>		<b>P</b>
4.2.1	General	Rigid metal enclosure is provided	P
	Rack-mounted equipment.	No slides	N/A
4.2.2	Steady force test, 10 N	Evaluated as part of closed frame certified power supply	N/A
4.2.3	Steady force test, 30 N	The equipment does not have covers or doors in operator access area	N/A
4.2.4	Steady force test, 250 N	No adverse effect	P
4.2.5	Impact test	The test was waived. The power supplies are closed frame, located inside a rigid metal mechanical enclosure,	P
	Fall test	Not required	N/A
	Swing test	Not required	N/A
4.2.6	Drop test; height (mm) .....	Not required	N/A
4.2.7	Stress relief test	Metal enclosure	N/A
4.2.8	Cathode ray tubes	No such components	N/A
	Picture tube separately certified .....	No such components	N/A
4.2.9	High pressure lamps	No such components	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) .....	Not wall or ceiling mounted device	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

<b>4.3</b>	<b>Design and construction</b>		<b>P</b>
4.3.1	Edges and corners	All edges and corners are well rounded and smoothed so as not to constitute a hazard	P
4.3.2	Handles and manual controls; force (N) .....	No such parts	N/A
4.3.3	Adjustable controls	No operator adjustable controls	N/A
4.3.4	Securing of parts	No loosening of parts impairing creepage distances or clearances is likely to occur. Screwed connections are reliably secured	P
4.3.5	Connection by plugs and sockets	No possibility of misconnection that may cause a hazard	P
4.3.6	Direct plug-in equipment	Unit is not direct plug-in type	N/A
	Torque .....		—
	Compliance with the relevant mains plug standard .....		N/A
4.3.7	Heating elements in earthed equipment	No heating elements in this unit	N/A
4.3.8	Batteries	Lithium battery is protected against charging current by resistor and diode. See Critical Components List. Marking in installation guide includes the suitable text	P
	- Overcharging of a rechargeable battery	No rechargeable batteries	N/A
	- Unintentional charging of a non-rechargeable battery	Lithium battery is protected against charging current by resistor and diode. See Critical Components List.	P
	- Reverse charging of a rechargeable battery	No rechargeable battery	N/A
	- Excessive discharging rate for any battery	Part of battery certification per UL1642	P
4.3.9	Oil and grease	No oil and grease	N/A
4.3.10	Dust, powders, liquids and gases	No such components	N/A
4.3.11	Containers for liquids or gases	No such components	N/A
4.3.12	Flammable liquids .....	No such components	N/A
	Quantity of liquid (l) .....	No such components	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Flash point (°C) .....	No such components	N/A
4.3.13	Radiation	Equipment using lasers Class I according to EN/IEC 60825 and 21CFR(J). Indicator LEDs are used.	P
4.3.13.1	General	Lasers Class I according to EN/IEC 60825-1 and 21CFR(J) and indicator LEDs are used.	P
4.3.13.2	Ionizing radiation	No such components	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 such components	N/A
	Part, property, retention after test, flammability classification .....	No such components	N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....	No such components	N/A
4.3.13.5	Lasers (including laser diodes) and LEDs		P
4.3.13.5.1	Lasers (including laser diodes)	Equipment using lasers Class I according to EN/IEC 60825-1 and 21CFR(J) Low power indicator LEDs.	P
	Laser class .....	Class I	—
4.3.13.5.2	Light emitting diodes (LEDs)	Low power indicator LEDs regarded inherently within Class I AEL	
4.3.13.6	Other types .....	No such components	N/A

<b>4.4</b>	<b>Protection against hazardous moving parts</b>		<b>P</b>
4.4.1	General	DC fans provided	P
4.4.2	Protection in operator access areas .....	DC Fans are properly guarded	P
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations .....	Unintentional contact with hazardous moving parts is unlikely.	P
4.4.4	Protection in service access areas	Unintentional contact with hazardous moving parts is unlikely.	P

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Clause	Requirement + Test	Result - Remark	Verdict

4.4.5	Protection against moving fan blades	Internal DC fans are used Unintentional contact with hazardous moving parts is unlikely.	P
4.4.5.1	General		P
	Not considered to cause pain or injury. a).....:		P
	Is considered to cause pain, not injury. b) .....		N/A
	Considered to cause injury. c) .....		N/A
4.4.5.2	Protection for users	The fans are suitably guarded from user access	P
	Use of symbol or warning .....		N/A
4.4.5.3	Protection for service persons	Unintentional contact is unlikely	P
	Use of symbol or warning .....		N/A

<b>4.5</b>	<b>Thermal requirements</b>		P
4.5.1	General	Temperatures do not exceed safe values under normal load operation. Refer to Table 4.5.	P
4.5.2	Temperature tests	Equipment was tested under the most adverse actual and simulated condition permitted in the installation instruction. Power supply evaluated in separate certification and tested in this evaluation.	P
	Normal load condition per Annex L .....	Unit operated per it's maximum normal load configuration. Data ports and laser transceivers were looped to simulate normal load, application was running	—
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 .....	Part of certified power supply	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

<b>4.6</b>	<b>Openings in enclosures</b>		<b>P</b>
4.6.1	Top and side openings	Top side -without openings. Left/right Sides- without openings  Front side – circles openings are provided  Rear side – openings (x 3) for DC fans are guarded with net brackets -SELV side	<b>P</b>
	Dimensions (mm) .....	Front side – SELV sides one set ,rectangle shape 4.5x 36.5cm ,contains circule openings 4mm in dimeter each.  Rear side- each net bracket contains square openings , with max diagonal 5mm each SELV side.	—
4.6.2	Bottoms of fire enclosures	Bottom without openings.	<b>P</b>
	Construction of the bottomm, dimensions (mm) .. :		—
4.6.3	Doors or covers in fire enclosures	No doors or covers leading to operator access areas	<b>N/A</b>
4.6.4	Openings in transportable equipment	Not transportable equipment	<b>N/A</b>
4.6.4.1	Constructional design measures	No such components	<b>N/A</b>
	Dimensions (mm) .....		—
4.6.4.2	Evaluation measures for larger openings	No such equipment	<b>N/A</b>
4.6.4.3	Use of metallized parts	No such equipment	<b>N/A</b>
4.6.5	Adhesives for constructional purposes	Not used	<b>N/A</b>
	Conditioning temperature (°C), time (weeks)..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
<b>4.7</b>	<b>Resistance to fire</b>		<b>P</b>
4.7.1	Reducing the risk of ignition and spread of flame	The maximum working temperature of electrical components used in single fault conditions is less than that necessary to cause ignition of materials with which they are likely to come into contact.	P
	Method 1, selection and application of components wiring and materials	Method 1: Selection and application of components and materials, which minimize the possibility of ignition and spread of flame.	P
	Method 2, application of all of simulated fault condition tests	Method 1 used	N/A
4.7.2	Conditions for a fire enclosure	Fire enclosure is provided	P
4.7.2.1	Parts requiring a fire enclosure	Components are covered by fire enclosure except decorative HB plastic outside fire enclosure	P
4.7.2.2	Parts not requiring a fire enclosure	Decorative HB plastic outside fire enclosure	P
4.7.3	Materials		P
4.7.3.1	General	Enclosure and other components so constructed and such materials used, that the propagation of fire is limited.	P
4.7.3.2	Materials for fire enclosures	The fire enclosure is metal.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	The fire enclosure is only metal. Decorative parts are flame rated HB min.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal materials are rated V-2 or better or are mounted on a PWB rated V-1 or better. Integrated circuits, capacitors, etc. mounted on V-1 PWBs. Wiring is PVC, TFE, PTFE, FEP or neoprene. Connectors are flame rated min. V-2.	P
4.7.3.5	Materials for air filter assemblies	No such components	N/A
4.7.3.6	Materials used in high-voltage components	No such components	N/A



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Clause	Requirement + Test	Result - Remark	Verdict

<b>5</b>	<b>ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS</b>		<b>P</b>
5.1	<b>Touch current and protective conductor current</b>		<b>P</b>
5.1.1	General	(see appended Table 5.1)	<b>P</b>
5.1.2	Configuration of equipment under test (EUT)	Single phase Class 1 equipment.	<b>P</b>
5.1.2.1	Single connection to an a.c. mains supply	No treated as a system Tested as a single connections to mains .	<b>P</b>
5.1.2.2	Redundant multiple connections to an a.c. mains supply	Testing was performed for multiple connections to an a.c. mains supply	<b>P</b>
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	Tested at both normal and reverse polarity of the supply. Switch "e" was open.  2 power supplies were operated to simulate the worst case. Current from 2 power supplies was measured	<b>P</b>
5.1.3	Test circuit	According to Figure 5A	<b>P</b>
5.1.4	Application of measuring instrument	Test instrument of Annex D.1 was used. Application of measuring device according to Fig. 5A, terminal A connected to unit PE terminal	<b>P</b>
5.1.5	Test procedure	Touch current from power supply was measured in normal and reverse polarity of the supply, switch "e" was open	<b>P</b>
5.1.6	Test measurements	rms value of U2 was measured and divided by 500 Ohm	<b>P</b>
	Supply voltage (V) .....	264V	—
	Measured touch current (mA) .....	See appended table 5.1	—
	Max. allowed touch current (mA) .....	3.5mA	—
	Measured protective conductor current (mA) .....		—
	Max. allowed protective conductor current (mA)....		—
5.1.7	Equipment with touch current exceeding 3,5 mA		<b>N/A</b>
5.1.7.1	General .....		<b>N/A</b>
5.1.7.2	Simultaneous multiple connections to the supply		<b>N/A</b>

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	No connection to telecommunication network or cable distribution system	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system	No connection to telecommunication network or 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

<b>5.2</b>	<b>Electric strength</b>		<b>P</b>
5.2.1	General	(see appended table 5.2)	<b>P</b>
5.2.2	Test procedure	No insulation breakdown detected during the test	<b>P</b>

<b>5.3</b>	<b>Abnormal operating and fault conditions</b>		<b>P</b>
5.3.1	Protection against overload and abnormal operation		N/A
5.3.2	Motors	No motors except for certified fans	N/A
5.3.3	Transformers	Evaluated as part of approved power supply.	N/A
5.3.4	Functional insulation.....	Functional insulation in primary circuits were evaluated as part of the certified power supply .  Functional insulation in SELV circuits evaluated acc. To 5.3.4 c) clause .  All components in SELV are mounted on PCB having flammability rating min. V-1	<b>P</b>
5.3.5	Electromechanical components	No electromechanical components except for certified fans.	N/A
5.3.6	Audio amplifiers in ITE .....	No such parts	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.3.7	Simulation of faults	Refer to Table 5.3	P
5.3.8	Unattended equipment	No thermostats, temperature limiters and thermal cut-outs which operated during the test of 4.5.1	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	See appended table 5.3 for results. No excessive temperatures, dielectric breakdown, fire, emission of molten parts or deformation was noted during the tests	P
5.3.9.1	During the tests	Temperatures did not exceed allowed value	P
5.3.9.2	After the tests	No dielectric breakdown	P

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

<b>6</b>	<b>CONNECTION TO TELECOMMUNICATION NETWORKS</b>		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	(see appended table 5.2)	N/A
	Supply voltage (V) .....	No internal circuits connected to telecommunication network	—
	Current in the test circuit (mA) .....		—
6.1.2.2	Exclusions .....		N/A

<b>6.2</b>	<b>Protection of equipment users from overvoltages on telecommunication networks</b>		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test	(see appended table 5.2)	N/A
6.2.2.2	Steady-state test	(see appended table 5.2)	N/A
6.2.2.3	Compliance criteria		N/A

<b>6.3</b>	<b>Protection of the telecommunication wiring system from overheating</b>		N/A
	Max. output current (A) .....	No internal circuits connected to telecommunication network	—
	Current limiting method .....		—

<b>7</b>	<b>CONNECTION TO CABLE DISTRIBUTION SYSTEMS</b>		N/A
7.1	General	No connected to cable distribution systems	N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test	(see appended table 5.2)	N/A
7.4.3	Impulse test	(see appended table 5.2)	N/A

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

<b>A</b>	<b>ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		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)	Metal enclosure	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 .....	Metal enclosure	—
	Wall thickness (mm) .....		—
A.2.2	Conditioning of samples; temperature (°C) .....		N/A
A.2.3	Mounting of samples .....		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C .....		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s) .....		—
	Sample 2 burning time (s) .....		—
	Sample 3 burning time (s) .....		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s) .....		—
	Sample 2 burning time (s) .....		—
	Sample 3 burning time (s) .....		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
A.3	Hot flaming oil test (see 4.6.2)	Metal enclosure	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>B</b>	<b>ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)</b>		<b>P</b>
B.1	General requirements	Certified DC fans are used	N/A
	Position .....		—
	Manufacturer .....		—
	Type .....		—
	Rated values .....		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) .....		—
	Electric strength test: test voltage (V) .....		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) .....		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V) .....		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V) .....		—

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

<b>C</b>	<b>ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)</b>		N/A
	Position .....	Transformer(s) part of certified power supply	—
	Manufacturer .....		—
	Type .....		—
	Rated values .....		—
	Method of protection .....		—
C.1	Overload test	Transformer(s) part of certified power supply	N/A
C.2	Insulation	(Transformer(s) part of certified power supply	N/A
	Protection from displacement of windings .....		

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

<b>E</b>	<b>ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)</b>		N/A
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<b>F</b>	<b>ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)</b>		P
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<b>G</b>	<b>ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES</b>		N/A
G.1	Clearances	Standard methods used	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)	Standard methods used	N/A
G.2.1	AC mains supply .....		N/A
G.2.2	Earthed d.c. mains supplies .....		N/A
G.2.3	Unearthed d.c. mains supplies .....		N/A
G.2.4	Battery operation .....		N/A
G.3	Determination of telecommunication network transient voltage (V) .....	Standard methods used	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.4	Determination of required withstand voltage (V)	Standard methods used	N/A
G.4.1	Mains transients and internal repetitive peaks .....		N/A
G.4.2	Transients from telecommunication networks .....		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)	Standard methods used	N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances .....	Standard methods used	N/A
<b>H</b>	<b>ANNEX H, IONIZING RADIATION (see 4.3.13)</b>		N/A
<b>J</b>	<b>ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)</b>		P
	Metal(s) used .....	Aluminium and stainless steel	—
<b>K</b>	<b>ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)</b>		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	(see appended table 5.3)	N/A



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

<b>L</b>	<b>ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)</b>		<b>P</b>
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	Maximum normal load was used	P

<b>M</b>	<b>ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)</b>		<b>N/A</b>
M.1	Introduction	No telephone ringing signals	N/A
M.2	Method A	No telephone ringing signals	N/A
M.3	Method B	No telephone ringing signals	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 .....	No telephone ringing signals	N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		
M.3.2.2	Tripping device		
M.3.2.3	Monitoring voltage (V) .....	No telephone ringing signals	N/A

<b>N</b>	<b>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)</b>		<b>N/A</b>
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A

<b>P</b>	<b>ANNEX P, NORMATIVE REFERENCES</b>		—
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

<b>Q</b>	<b>ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)</b>		N/A
	a) Preferred climatic categories .....	Part of certified power supply	N/A
	b) Maximum continuous voltage .....	Part of certified power supply	N/A
	c) Pulse current .....	Part of certified power supply	N/A

<b>R</b>	<b>ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES</b>		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

<b>S</b>	<b>ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)</b>		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A

<b>T</b>	<b>ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)</b>		N/A
		IPX0	—

<b>U</b>	<b>ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)</b>		P
		Part of certified power supplies	—

<b>V</b>	<b>ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)</b>		P
V.1	Introduction	Intended for TN power distribution system and IT for Norway only, single phase, 3 wire	P
V.2	TN power distribution systems	Separate neutral and protective conductors used	P

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

<b>W</b>	<b>ANNEX W, SUMMATION OF TOUCH CURRENTS</b>		P
W.1	Touch current from electronic circuits	Only SELV accessibility circuits	P
W.1.1	Floating circuits	No such case	N/A
W.1.2	Earthed circuits	Only SELV accessibility circuits	P
W.2	Interconnection of several equipments	No such case.	N/A
W.2.1	Isolation	No such case.	N/A
W.2.2	Common return, isolated from earth	No such case.	N/A
W.2.3	Common return, connected to protective earth	No such case.	N/A

<b>X</b>	<b>ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)</b>		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A

<b>Y</b>	<b>ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)</b>		N/A
Y.1	Test apparatus .....	No UV	N/A
Y.2	Mounting of test samples .....	No UV	N/A
Y.3	Carbon-arc light-exposure apparatus .....	No UV	N/A
Y.4	Xenon-arc light exposure apparatus .....	No UV	N/A

<b>Z</b>	<b>ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)</b>		N/A
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<b>AA</b>	<b>ANNEX AA, MANDREL TEST (see 2.10.5.8)</b>		N/A
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<b>BB</b>	<b>ANNEX BB, CHANGES IN THE SECOND EDITION</b>		—
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<b>CC</b>	<b>ANNEX CC, Evaluation of integrated circuit (IC) current limiters</b>		N/A
CC.1	General		N/A
CC.2	Test program 1.....		N/A
CC.3	Test program 2.....		N/A

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

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

1.5.1	TABLE: List of critical components				
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1)</sup>
AC/DC power supply- Closed frame including AC inlet and DC fan	Zippy Tech	PSS-2A00V	Rated- 100-240V,47-63Hz, 15-7.5A  DC output-max.1000W 12V,83A , 5VSB ,0-4A two provide max.	UL60950-1 IEC60950-1	UL(E143756) TUV
Dual Closed frame case for DC/DC power supply (2 x (DPSS-2A00V) Including power circuit and wiring for additional output voltages 3.3V, -12V and 5V	Zippy Tech	DPSS2-5A00V3V	Rated: -42 to -72Vdc, 30-17A DC Output:1000W max; +5V,0-22A; +12V,83A; +3.3V,0-22A; -12V,0-0.5A; +5VSB,0-4A; +5V&+3.3V 150W max. Output wiring- Rated min. 300V, 18AWG 80°C, VW-1 or FT-1 or better	UL60950-1 IEC60950-1	UL(E143756) TUV
SELV internal connectors	interchangeable	interchangeable	Flame rated min. V-2	UL94	UR
Internal Wiring, (secondary)	interchangeable	interchangeable	Rated min. 300V, 60°C, VW-1 or FT-1 or better.	UL758	UR
SELV external connectors	interchangeable	interchangeable	Flame rated min. V-1	UL94	UR
DC fans (x8) Front panel	Everflow	R124028BU	Rated – 12V,0.4A max. 18.03CFM	UL507, CSA-C22.2 No. 113-M1984	UR (E236658)
DC fans (x3) Rear side	Everflow	RB7038BU	Rated- 12V,0.8A max. 59.89 CFM	UL507, CSA-C22.2 No. 113-M1984	UR (E236658)

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
DC fans (x2) Vertical on the mother board	Everflow	F126025BU	Rated:12Vdc, max.0.26A, max. 24.49CFM	UL507, CSA-C22.2 No. 113-M1984	UR (E236658) TUV
HDD	Western digital / Interchangeable	WD5000BUCT / interchangeable	Rated- 5Vdc, 0.55A	UL60950-1	UL(E101559)
Lithium battery BAT1	SPECTRUM BRANDS INC	BR2032	Rated: 3.0V, protected by resistor 1k and diode SD1	UL1642	UR
Alternate Lithium battery BAT1	Vic-dawn enterprise Co., Ltd	CR2032	Rated: 3.0V, protected by resistor 1k and diode SD1	UL1642	UR
Alternate Lithium battery BAT1	Panasonic Corp	CR2032	Rated: 3.0V, protected by resistor 1k and diode SD1	UL1642	UR
PCB -16 memory Cards -Small board above the main board -Main board	interchangeable	interchangeable	Flame rated min V-1, temperature rated min. 105°C	UL796, CAN/CSA-C22.2 No. 0.17	UR
Decorative plastic on front panel of enclosure	interchangeable	interchangeable	Flame rated min. HB	UL94	UR
40Gbps Pluggable Optics Multimode SR-Optional	Finisar	FTL410QE2C-RW	QFP transceiver – Multimode – Rated 3.3V 850nm Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UR or CSA, TUV
40Gbps Pluggable Optics Multimode LR-Optional	Finisar	FTL4C1QE1C-RW	QFP transceiver – Multimode – Rated 3.3V 850nm Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UR or CSA, TUV

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Laser transceiver Gigabit Ethernet ports 4 provided- Optional	Optech	OP6C-MX5-85-C4	SFP transceiver – Multimode – 3.3V – 850nm – 1.25Gbps Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UR or CSA, TUV
Optional- 1 Gbps pluggable copper 1000 base –T	Optech	OP6C-TX1-00-C2	SFP Copper – 1000Base-TX 3.3V	--	--
Optional- Laser transceiver Gigabit Ethernet ports 2 provided	Sanoc	SI1312-10ATO	SFP transceiver - Singlemode - 3.3V - 1310nm - 1.25Gbps Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UL or CSA, TUV
Optional - 1Gbps pluggable Optic Multimode SX	Sanoc	SI8512-X5ATO-3C	SFP transceiver – Multimode – 3.3V – 850nm – 1.25Gbps Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UL or CSA, TUV
Optional - 1Gbps pluggable Optic Single mode LX	Sanoc	SI1312-10ATO	SFP transceiver - Singlemode - 3.3V - 1310nm - 1.25Gbps Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UL or CSA, TUV
Optional - 1Gbps pluggable Optic Single mode ZX	Sanoc	SI1512-80ATO	SFP transceiver - Singlemode - 3.3V - 1310nm - 1.25Gbps Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UL or CSA, TUV
Optional - Laser transceiver Gigabit Ethernet ports 2 provided	Sanoc	SI1512-80ATO	SFP transceiver - Singlemode - 3.3V - 1550nm Class 1 laser	UL/CSA60950-1, EN60825-1, EN60825-2	UL or CSA, TUV
Optional - 1 Gbps Pluggable copper 1000 Base –T	Methode	DM7041-R-L	SFP Copper – 1000Base-TX 3.3V	--	--
Optional- Copper transceiver Gigabit Ethernet ports 2 provided	Sanoc	SI0012-X1ATO[N]	SFP Copper – 1000Base-TX 3.3V	-	-
SELV external connectors	Interchangeable	Interchangeable	Flame rated min. V-0	UL94	UL

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
UF1 USB PTTC protector	Ploytronics Technology Corp.	SMD1206P150T FT	Ih-1.5A Itrip-3A Vdc-8V	UL1434 IEC60730-1	UL(E201431) TUV(R5009912 1)
SELV internal connectors	Interchangeable	Interchangeable	Flame rated min. UL94V-2	UL94	UL
Internal Wiring, (secondary)	Interchangeable	Interchangeable	Rated min. 300V, 80°C, VW-1 or FT-1 or better.	UL758	UL
Supplementary information:					



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

1.5.1	TABLE: Opto Electronic Devices	N/A
Manufacturer ..... :		
Type..... :		
Separately tested..... :		
Bridging insulation ..... :		
External creepage distance ..... :		
Internal creepage distance ..... :		
Distance through insulation ..... :		
Tested under the following conditions ..... :		
Input..... :		
Output..... :		
supplementary information		

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

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
90/60	3.81	-	352	-	-	Maximum normal load with 2 AC PS
100/60	3.43	8	349	-	-	
240/50	1.42	4	320	-	-	
264/50	1.31	-	315	-	-	
90/60	3.64	-	329	-	-	Maximum normal load with 1 AC PS
100/60	3.24	8	324	-	-	
240/50	1.33	4	296	-	-	
264/50	1.22	-	300	-	-	
Supplementary information:						

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
42	7.50	12	-	-	-	Maximum normal load with 2 DC PS
48	6.54	12	-	-	-	
60	5.19	12	-	-	-	
72	4.40	12	-	-	-	
42	7.33	12	-	-	-	Maximum normal load with 1 DC PS
48	6.38	12	-	-	-	
60	5.07	12	-	-	-	
72	4.28	12	-	-	-	
Supplementary information:						

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

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

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

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

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

<b>2.5</b>	<b>TABLE: Limited power sources</b>	N/A
------------	-------------------------------------	-----

Circuit output tested:

Note: Measured Uoc (V) with all load circuits disconnected:

Components	Sample No.	Uoc (V)	I <sub>sc</sub> (A)		VA	
			Meas.	Limit	Meas.	Limit

supplementary information:

Sc=Short circuit, Oc=Open circuit

<b>2.10.2</b>	<b>Table: working voltage measurement</b>	N/A
---------------	---	-----

Location	RMS voltage (V)	Peak voltage (V)	Comments

supplementary information:

IEC 60950-1						
Clause	Requirement + Test			Result - Remark		Verdict
2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					N/A
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Functional:						
Basic/supplementary:						
Reinforced:						
Supplementary information:certified closed frame power supplies						

<b>2.10.5</b>	<b>TABLE: Distance through insulation measurements</b>					N/A
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)	
Supplementary information: certified closed frame power supplies						

IEC 60950-1									
Clause	Requirement + Test					Result - Remark			Verdict
4.3.8	TABLE: Batteries								P
The tests of 4.3.8 are applicable only when appropriate battery data is not available						Certified batteries see apended table 1.5.1			N/A
Is it possible to install the battery in a reverse polarity position?						The battery shape prevents reverse polarity			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.
Max. current during normal condition									
Max. current during fault condition									
Test results:									Verdict
- Chemical leaks						No			P
- Explosion of the battery						No			P
- Emission of flame or expulsion of molten metal						No			P
- Electric strength tests of equipment after completion of tests									
Supplementary information:									

## IEC 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
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4.3.8	TABLE: Batteries
-------	------------------

P

Battery category.....: (Lithium, NiMh, NiCad, Lithium Ion ...)

Manufacturer .....: See appended table 1.5.1

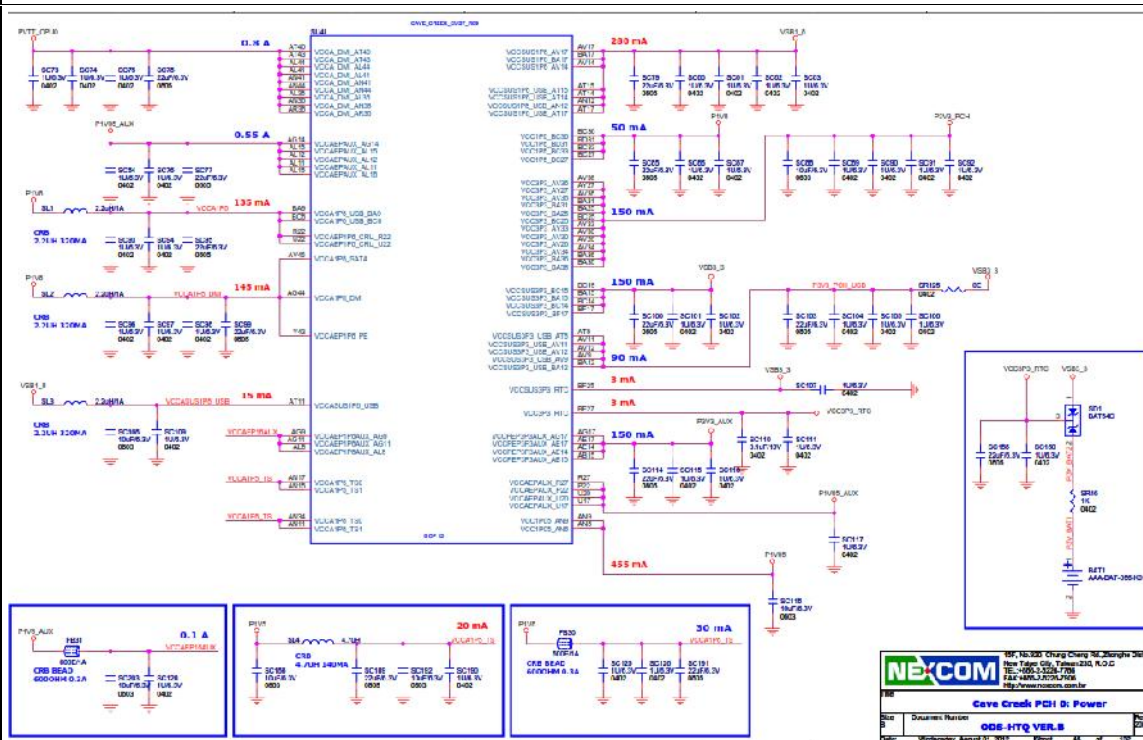
Type / model.....: See appended table 1.5.1

Voltage .....: See appended table 1.5.1

Capacity.....: See appended table 1.5.1

Tested and Certified by (incl. Ref. No.) ..... : See appended table 1.5.1

Circuit protection diagram:



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

**MARKINGS AND INSTRUCTIONS (1.7.13 )**

Location of replaceable battery	Service access area
Language(s) .....:	English and French
Close to the battery .....:	--
In the servicing instructions .....:	Provided
In the operating instructions .....:	Provided



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

<b>4.5</b>	<b>TABLE: Thermal requirements</b>						<b>P</b>
	Mode operation .....	A	B	C			—
	Supply voltage (V) .....	90/60	264/50	264/50			—
	Ambient $T_{min}$ (°C) .....	22.8	22.6	22.8			—
	Ambient $T_{max}$ (°C) .....						—
Maximum measured temperature T of part/at::		T (°C)					Allowed $T_{max}$ (°C)
Primary wiring (Black)		32.4	32.6	31.2			57.8(85+2 2.8-50)
Coil (PS)		32.4	31.5	30.8			72.8(100+ 22.8-50)
Storage capacitor (PS)		31.5	31.8	31.1			57.8(85+2 2.8-50)
T4 transformer (PS )		33.8	34.1	33.5			62.8(100- 10+22.8- 50)
Transformer near C19 (PS)		45	45	44.4			62.8(100- 10+22.8- 50)
SSD enclosure		24.6	24.6	24.5			32.8(60+2 2.8-50)
Main board		31.7	31.6	31.5			77.8(105+ 22.8-50)
Lithium Battery on Main Board		31.7	31.7	31.6			57.8(85+2 2.8-50)
Pigi board		31.7	30.9	31.4			77.8(105+ 22.8-50)
Enclosure		24.7	24.5	24.6			42.8(70+2 2.8-50)
Temperature T of winding:		$t_1$ (°C)	$R_1$ (Ω)	$t_2$ (°C)	$R_2$ (Ω)	T (°C)	Allowed $T_{max}$ (°C)
Supplementary information:							
Mode A ,B – One power supply is in work							
Mode C - two power supplies are in work							

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

4.5	TABLE: Thermal requirements						P
	Mode operation	A	B	C			
	Supply voltage (V) .....	42	72	72			—
	Ambient $T_{min}$ (°C) .....	22.2	22.3	22.1			—
	Ambient $T_{max}$ (°C) .....						—
Maximum measured temperature T of part/at:		T (°C)					Allowed $T_{max}$ (°C)
Input terminal block - outer plastic		22.4	22.5	22.4			67.3(95+22.3-50)
Black wiring DC mains		26.6	26.8	26.5			57.3((85+22.3-50)
Coil (PS)		34.2	32.8	30.9			77.3(105+22.3-50)
Storage capacitor (PS)		30.3	30.3	29.8			57.3((85+22.3-50)
T4 (PS)		33.5	33.6	33.2			62.3(100-10+22.3-50)
Transformer near C19 (PS)		48.6	48.8	48.4			62.3(100-10+22.3-50)
Supplementary information:							
Temperature T of winding:		$t_1$ (°C)	$R_1$ (Ω)	$t_2$ (°C)	$R_2$ (Ω)	T (°C)	Allowed $T_{max}$ (°C)
Supplementary information:							
Mode A ,B – One power supply is in work							
Mode C - Two power supplies are in work							

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

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:evalauted as part of power supplies				

<b>4.7</b>	<b>TABLE: Resistance to fire</b>					N/A
	Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
Supplementary information: evalauted as part of power supplies						

5.1	TABLE: touch current measurement			P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
Between primary and ground (Both power supplies)	1.72	3.5		
supplementary information:				

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.2	<b>TABLE: Electric strength tests, impulse tests and voltage surge tests</b>		P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)
Functional:			Breakdown Yes / No
Basic/supplementary:			
Equipment (primary to PE)		DC	2979
Equipment (DC mains to PE)		DC	1294
Reinforced:			
Supplementary information:			
		The test on the AC chassis was conducted before and after humidity conditioning test per National Differences <b>China (CH) clause 2.9.2</b>	

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

<b>5.3</b>	<b>TABLE: Fault condition tests</b>					<b>P</b>
	Ambient temperature (°C) .....		23.6-25.7		—	
	Power source for EUT: Manufacturer, model/type, output rating .....		See Table 1.5.1		—	
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Complete AC	Front side - Vents blocked	264Vac	2H	-	-	Maximum obtained temperature were recorded : Mains transformer near C19- 55.3 <sup>0</sup> C Pigi board – 46.4 <sup>0</sup> C Ambient 22.4°C. No fire, no hazard
Complete AC	Rear side – Vents blocked	264Vac	2H			Maximum obtained temperature were recorded : Mains transformer near C19- 51 <sup>0</sup> C Pigi board – 50 <sup>0</sup> C Ambient 22.3°C. No fire, no hazard
Complete AC	Front side- Unit Fans disconnected	264Vac	2H			Maximum obtained temperature were recorded : Mains transformer near C19- 48 <sup>0</sup> C Pigi board – 34.9 <sup>0</sup> C Ambient 22.6°C. No fire, no hazard
Complete AC	Rear side – Unit Fans disconnected	264Vac	2H			Maximum obtained temperature were recorded : Mains transformer near C19- 43.3 <sup>0</sup> C Pigi board – 34.9 <sup>0</sup> C Ambient 22.8°C. No fire, no hazard

IEC 60950-1						
Clause	Requirement + Test			Result - Remark		Verdict
Complete DC	Front side - Vents blocked	72Vdc	2H			Maximum obtained temperature were recorded : Transformer near C19 (PS) - 95.9°C T4 (PS) – 63.6°C Ambient 23.3°C. No fire, no hazard
Complete DC	Rear side - Vents blocked	72Vdc	2H			Maximum obtained temperature were recorded : Transformer near C19 (PS) -54°C T4 (PS) – 35°C Ambient 23.4°C. No fire, no hazard
Supplementary information:						

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

C.2	TABLE: transformers						N/A
Loc.	Tested insulation	Working voltage peak / V  (2.10.2)	Working voltage rms / V  (2.10.2)	Required electric strength  (5.2)	Required clearance / mm  (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul.  (2.10.5)
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
supplementary information: certified power supplies							

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

C.2	TABLE: transformers	N/A
Transformer		



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

**List of test equipment used:**

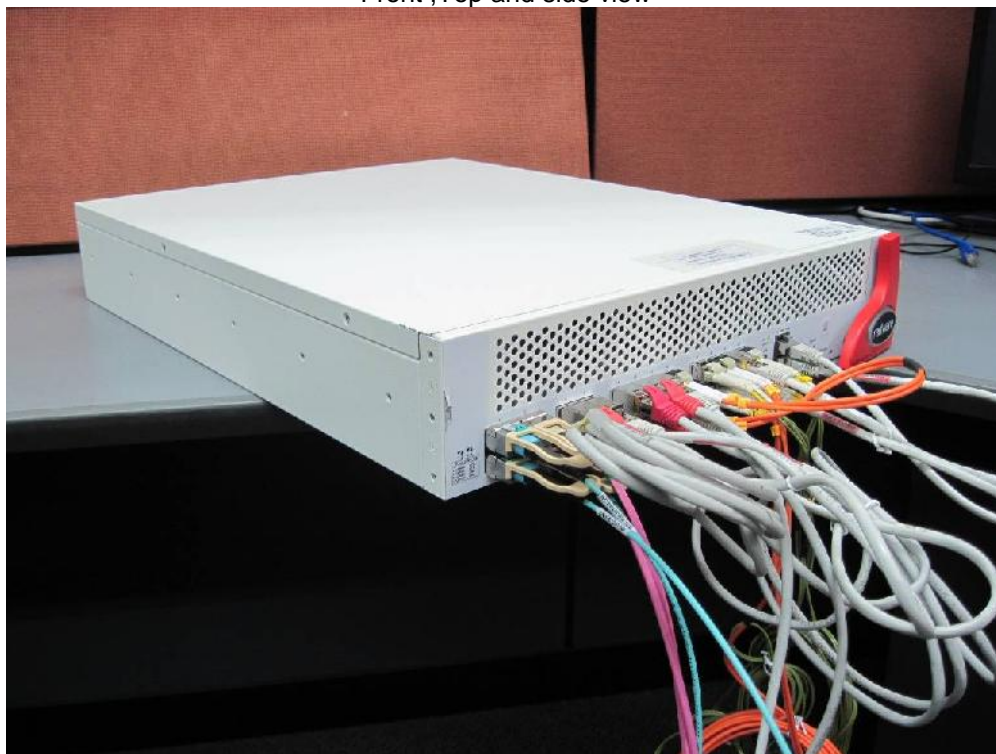
(Note: This is an example of the required attachment. Other forms with a different layout but containing similar information are also acceptable.)

ITL	Instrument	Manufacturer	Model	Serial	Cal Due
1002	Digital Power Analyzer	Valhalla Scientific	2101	37437	25/02/2014
1040	DVM	Fluke	87	60370049	03/03/2014
1140	Digital timer	Golf	Timer Count Down/Up		28/02/2014
1147	Oscilloscope	Tektronix	TDS3012	B015205	25/02/2014
1323	Power Supply	Lambda	GEN8-180	1323	25/02/2014
1610	Digital Thermometer	Fluke	Hydra 2620A	5929005	03/03/2014
1336	Digital Force Indicator	ED&D	PFI-200	43001001	28/02/2015
1338	Humidity	Thermotron	SM-32C	251030	23/02/2014
1217	Hipot Tester	Hipotronics	HD 100	390301	28/02/2014
1135	Leakage Current - 1950	Custom	Custom	1085	23/02/2014

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

### Appendix 1 – Photographs

Front ,Top and side view



Rear, bottom and other side view



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Rear side DC unit



Rear side AC unit





National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Internal view 1



Internal view 2



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

## Appendix 2 - National Differences CB Bulletin

### IEC 60950-1:2006, Amendment 1 :2009

EU Group Differences

AT=Austria (issuing/recognizing)

BE=Belgium (issuing/recognizing)

BY=Belarus (issuing/recognizing)

CA=Canada

CH=Switzerland (issuing/recognizing)

CZ=Czech Republic (issuing/recognizing)

DE=Germany

DK=Denmark

ES=Spain (issuing/recognizing)

FI=Finland

FR=France (issuing/recognizing)

HU=Hungary (issuing/recognizing)

IN=India (issuing/recognizing)

IL=Israel

IT=Italy (issuing/recognizing)

JP=Japan (issuing/recognizing)

KR=Korea

MY=Malaysia (issuing/recognizing)

NL=The Netherlands (issuing/recognizing)

NO=Norway (issuing/recognizing)

SG=Singapore (issuing/recognizing)

SE=Sweden

SI=Slovenia

PL=Poland (recognizing only)

SK=Slovakia (issuing/recognizing)

UA=Ukraine (issuing/recognizing)

UK= United Kingdom

US=United States of America

### IEC 60950-1:2005

AU=Australia

BR=Brazil

CN=China

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<b>ATTACHMENT TO TEST REPORT IEC 60950-1</b> <b>EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</b> Information technology equipment – Safety – Part 1: General requirements			
<b>Differences according to</b> .....: EN 60950-1:2006/A11:2009/A1:2010			
<b>Attachment Form No.</b> .....: EU_GD_IEC60950_1C			
<b>Attachment Originator</b> .....: SGS Fimko Ltd			
<b>Master Attachment</b> .....: Date (2010-04)			
<b>Copyright © 2010 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.</b>			

<b>EN 60950-1:2006/A11:2009/A1:2010 – CENELEC COMMON MODIFICATIONS</b>
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IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)					
Clause	Requirement + Test				Verdict
Contents	Add the following annexes:  Annex ZA (normative)      Normative references to international publications with their corresponding European publications  Annex ZB (normative)      Special national conditions				P
General	Delete all the “country” notes in the reference document (IEC 60950-1:2005) according to the following list:  1.4.8 Note 2      1.5.1 Note 2 & 3      1.5.7.1 Note 1.5.8 Note 2      1.5.9.4 Note      1.7.2.1 Note 4, 5 & 6 2.2.3 Note      2.2.4 Note      2.3.2 Note 2.3.2.1 Note 2      2.3.4 Note 2      2.6.3.3 Note 2 & 3 2.7.1 Note      2.10.3.2 Note 2      2.10.5.13 Note 3 3.2.1.1 Note      3.2.4 Note 3.      2.5.1 Note 2 4.3.6 Note 1 & 2      4.7 Note 4      4.7.2.2 Note 4.7.3.1 Note 2      5.1.7.1 Note 3 & 4      5.3.7 Note 1 6 Note 2 & 5      6.1.2.1 Note 2      6.1.2.2 Note 6.2.2 Note      6.2.2.1 Note 2      6.2.2.2 Note 7.1 Note 3      7.2 Note      7.3 Note 1 & 2 G.2.1 Note 2      Annex H Note 2				P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
General (A1:2010)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list:  1.5.7.1      Note                      6.1.2.1      Note 2 6.2.2.1      Note 2                      EE.3      Note		P
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure  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.  NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.	Added	N/A
1.5.1	Add the following NOTE:  NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC	Added	P
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	<p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p>	Replaced	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>		P
2.7.2	This subclause has been declared 'void'.	Void	N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	Deleted	N/A



National Differences									
Clause	Requirement + Test	Result - Remark	Verdict						
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)									
Clause	Requirement + Test	Result - Remark	Verdict						
3.2.5.1	<p>Replace “60245 IEC 53” by “H05 RR-F”; “60227 IEC 52” by “H03 VV-F or H03 VVH2-F”; “60227 IEC 53” by “H05 VV-F or H05 VVH2-F2”.</p> <p>In Table 3B, replace the first four lines by the following:</p> <table><tr><td>Up to and including 6  </td><td>0,75 <sup>a)</sup>  </td></tr><tr><td>Over 6 up to and including 10  </td><td>(0,75) <sup>b)</sup> 1,0  </td></tr><tr><td>Over 10 up to and including 16  </td><td>(1,0) <sup>c)</sup> 1,5  </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	Replaced	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><tr><td>Over 10 up to and including 16  </td><td>1,5 to 2,5  </td><td>1,5 to 4  </td></tr></table> <p>Delete the fifth line: conductor sizes for 13 to 16 A</p>	Over 10 up to and including 16	1,5 to 2,5	1,5 to 4	Deleted	N/A			
Over 10 up to and including 16	1,5 to 2,5	1,5 to 4							
4.3.13.6 (A1:2010)	<p>Replace the existing NOTE by the following:</p> <p>NOTE Z1 Attention is drawn to:</p> <p>1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and</p> <p>2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation).</p>	Replaced	P						
	<p>Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.</p>		P						

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
Annex H	<p>Replace the last paragraph of this annex by:</p> <p>At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 <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:</p> <p>NOTE These values appear in Directive 96/29/Euratom.</p> <p>Delete NOTE 2.</p>	Replaced	P
Bibliography	Additional EN standards.		—

<b>ZA</b>	<b>NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS</b>	—
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<b>ZB ANNEX (normative)</b> <b>SPECIAL NATIONAL CONDITIONS (EN)</b>			
Clause	Requirement + Test	Result - Remark	Verdict
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.	Not provided with the unit	N/A
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	In <b>Finland</b> , <b>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.	Part of certified power supply	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).	Capacitors are suitably rated for 230V phase-phase voltage of IT system of Norway	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p style="text-align: center;"><b><i>ZB ANNEX (normative)</i></b></p> <p style="text-align: center;"><b><i>SPECIAL NATIONAL CONDITIONS (EN)</i></b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
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.	Part of certified power supply	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ZB ANNEX (normative)</b></p> <p align="center"><b>SPECIAL NATIONAL CONDITIONS (EN)</b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	<p>In <b>Finland</b>, <b>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:</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p> <p>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.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>"Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."</p>	<p>The unit has own connection to protective earthing</p> <p>Marking will be provided when distributed in Finland, Norway and Sweden</p>	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ZB ANNEX (normative)</b></p> <p align="center"><b>SPECIAL NATIONAL CONDITIONS (EN)</b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.”</p> <p>Translation to Swedish:</p> <p>”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”</p>		P
1.7.5	<p>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.</p> <p>For <b>CLASS II EQUIPMENT</b> the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.</p>	No socket outlet	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.	No TNV circuits	N/A
2.3.2	In <b>Finland</b> , <b>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

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ZB ANNEX (normative)</b></p> <p align="center"><b>SPECIAL NATIONAL CONDITIONS (EN)</b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
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
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.	Considered	P
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.	No direct plug-in	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:  SEV 6532-2.1991    Plug Type 15            3P+N+PE 250/400 V, 10 A	Not supplied with the unit	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ZB ANNEX (normative)</b></p> <p align="center"><b>SPECIAL NATIONAL CONDITIONS (EN)</b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A</p> <p>SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <p>SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A</p> <p>SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A</p> <p>SEV 5934-2.1998: Plug Type 23, L+N+PE .250 V, 16 A</p>	Power cord is not supplied with the unit	N/A
3.2.1.1	<p>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.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>	Power cord is not supplied with the unit	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ZB ANNEX (normative)</b></p> <p align="center"><b>SPECIAL NATIONAL CONDITIONS (EN)</b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>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.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>	Power cord is not supplied with the unit	N/A
3.2.1.1	<p>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.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>	Power cord is not supplied with the unit	N/A
3.2.1.1	<p>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.</p>	Power cord is not supplied with the unit	N/A



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ZB ANNEX (normative)</b></p> <p align="center"><b>SPECIAL NATIONAL CONDITIONS (EN)</b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.4	In <b>Switzerland</b> , for requirements see 3.2.1.1 of this annex.		P
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.	Power cord is not supplied with the unit	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:  • 1,25 mm <sup>2</sup> to 1,5 mm <sup>2</sup> nominal cross-sectional area.	Power cord is not supplied with the unit	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

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ZB ANNEX (normative)</b></p> <p align="center"><b>SPECIAL NATIONAL CONDITIONS (EN)</b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	<p>In <b>Finland, Norway</b> and <b>Sweden</b> TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:</p> <ul style="list-style-type: none"> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON;</li> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE B;</li> <li>• STATIONARY PERMANENTLY CONNECTED EQUIPMENT.</li> </ul>	<p>Complied- Less than 3.5mA</p>	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ZB ANNEX (normative)</b></p> <p align="center"><b>SPECIAL NATIONAL CONDITIONS (EN)</b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	<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>Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> <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>	Added	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ZB ANNEX (normative)</b></p> <p align="center"><b>SPECIAL NATIONAL CONDITIONS (EN)</b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1;</li> <li>- the additional testing shall be performed on all the test specimens as described in EN 60384-14;</li> <li>- the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.</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

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ZB ANNEX (normative)</b></p> <p align="center"><b>SPECIAL NATIONAL CONDITIONS (EN)</b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
7.2	In <b>Finland, Norway</b> and <b>Sweden</b> , for requirements see 6.1.2.1 and 6.1.2.2 of this annex.  The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.	No CABLE DISTRIBUTION SYSTEM.	N/A
7.3	In <b>Norway</b> and <b>Sweden</b> , for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A
7.3	In <b>Norway</b> , for installation conditions see EN 60728-11:2005.		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

<b>ATTACHMENT TO TEST REPORT IEC 60950-1</b> <b>EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</b> Information technology equipment – Safety –
Part 1: General requirements
<b>Differences according to</b> .....: EN 60950-1:2006/A11:2009/A1:2010/A12:2011
<b>Attachment Form No.</b> .....: EU_GD_IEC60950_1C_II
<b>Attachment Originator</b> .....: SGS Fimko Ltd
<b>Master Attachment</b> .....: Date 2011-08
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<b>EN 60950-1:2006/A11:2009/A1:2010/A12:2011 – CENELEC COMMON MODIFICATIONS</b>
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IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
Contents	Add the following annexes: Annex ZA (normative)      Normative references to international publications with their corresponding European publications Annex ZB (normative)      Special national conditions		P
General	Delete all the “country” notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2      1.5.1 Note 2 & 3      1.5.7.1 Note 1.5.8 Note 2      1.5.9.4 Note      1.7.2.1 Note 4, 5 & 6 2.2.3 Note      2.2.4 Note      2.3.2 Note 2.3.2.1 Note 2      2.3.4 Note 2      2.6.3.3 Note 2 & 3 2.7.1 Note      2.10.3.2 Note 2      2.10.5.13 Note 3 3.2.1.1 Note      3.2.4 Note 3.      2.5.1 Note 2 4.3.6 Note 1 & 2      4.7 Note 4      4.7.2.2 Note 4.7.3.1 Note 2      5.1.7.1 Note 3 & 4      5.3.7 Note 1 6 Note 2 & 5      6.1.2.1 Note 2      6.1.2.2 Note 6.2.2 Note      6.2.2.1 Note 2      6.2.2.2 Note 7.1 Note 3      7.2 Note      7.3 Note 1 & 2 G.2.1 Note 2      Annex H Note 2		P
General (A1:2010)	Delete all the “country” notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note      6.1.2.1 Note 2 6.2.2.1 Note 2      EE.3 Note		P


National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.3.Z1	<p>Add the following subclause:</p> <p>1.3.Z1 Exposure to excessive sound pressure</p> <p>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.</p> <p>NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.</p>	Added	N/A
(A12:2011)	<p>In EN 60950-1:2006/A12:2011</p> <p>Delete the addition of 1.3.Z1 / EN 60950-1:2006</p> <p>Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010</p>	Deleted	N/A
1.5.1	<p>Add the following NOTE:</p> <p>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC</p>	Added	P
1.7.2.1 (A1:2010)	<p>In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.</p>		N/A
1.7.2.1 (A12:2011)	<p>In EN 60950-1:2006/A12:2011</p> <p>Delete NOTE Z1 and the addition for Portable Sound System.</p> <p>Add the following clause and annex to the existing standard and amendments.</p>	Deleted	N/A
	<b>Zx Protection against excessive sound pressure from personal music players</b>		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p><b>Zx.1 General</b></p> <p>This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players.</p> <p>A personal music player is a portable equipment for personal use, that:</p> <ul style="list-style-type: none"> <li>– is designed to allow the user to listen to recorded or broadcast sound or video; and</li> <li>– primarily uses headphones or earphones that can be worn in or on or around the ears; and</li> <li>– allows the user to walk around while in use.</li> </ul> <p>NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment.</p> <p>A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause.</p> <p>The requirements in this sub-clause are valid for music or video mode only.</p> <p>The requirements do not apply:</p> <ul style="list-style-type: none"> <li>– while the personal music player is connected to an external amplifier; or</li> <li>– while the headphones or earphones are not used.</li> </ul> <p>NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player.</p> <p>The requirements do not apply to:</p> <ul style="list-style-type: none"> <li>– hearing aid equipment and professional equipment;</li> </ul> <p>NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional</p>		N/A



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

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off.</p> <p>d) have a warning as specified in Zx.3; and</p> <p>e) not exceed the following:</p> <ol style="list-style-type: none"> <li>1) equipment provided as a package (player with its listening device), the acoustic output shall be 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and</li> <li>2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be 150 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1.</li> </ol> <p>For music where the average sound pressure (long term <math>L_{Aeq,T}</math>) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song.</p> <p>NOTE 4 Classical music typically has an average sound pressure (long term <math>L_{Aeq,T}</math>) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA.</p> <p>For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.</p>		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p><b>Zx.3 Warning</b>  The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:</p> <ul style="list-style-type: none"> <li>– the symbol of Figure 1 with a minimum height of 5 mm; and</li> <li>– the following wording, or similar:</li> </ul> <p>“To prevent possible hearing damage, do not listen at high volume levels for long periods.”</p>  <p><b>Figure 1 – Warning label (IEC 60417-6044)</b></p> <p>Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.</p>		N/A
	<b>Zx.4 Requirements for listening devices (headphones and earphones)</b>		N/A
	<p><b>Zx.4.1 Wired listening devices with analogue input</b>  With 94 dBA sound pressure output <math>L_{Aeq,T}</math>, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be 75 mV.</p> <p>This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control).</p> <p>NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.</p>		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p><b>Zx.4.2 Wired listening devices with digital input</b></p> <p>With any playing device playing the fixed “programme simulation noise” described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output <math>L_{Aeq,T}</math> of the listening device shall be 100 dBA.</p> <p>This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.).</p> <p>NOTE An example of a wired listening device with digital input is a USB headphone.</p>		N/A
	<p><b>Zx.4.3 Wireless listening devices</b></p> <p>In wireless mode:</p> <ul style="list-style-type: none"> <li>– with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and</li> <li>– respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and</li> <li>– with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output <math>L_{Aeq,T}</math> of the listening device shall be 100 dBA.</li> </ul> <p>NOTE An example of a wireless listening device is a Bluetooth headphone.</p>		N/A
	<p><b>Zx.5 Measurement methods</b></p> <p>Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s.</p> <p>NOTE Test method for wireless equipment provided without listening device should be defined.</p>		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	<p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p>	Replaced	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>	Pluggable equipment type A	N/A
2.7.2	This subclause has been declared 'void'.	Void	N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	Deleted	N/A

National Differences									
Clause	Requirement + Test	Result - Remark	Verdict						
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)									
Clause	Requirement + Test	Result - Remark	Verdict						
3.2.5.1	<p>Replace “60245 IEC 53” by “H05 RR-F”; “60227 IEC 52” by “H03 VV-F or H03 VVH2-F”; “60227 IEC 53” by “H05 VV-F or H05 VVH2-F2”.</p> <p>In Table 3B, replace the first four lines by the following:</p> <table><tr><td>Up to and including 6  </td><td>0,75 <sup>a)</sup>  </td></tr><tr><td>Over 6 up to and including 10  </td><td>(0,75) <sup>b)</sup> 1,0  </td></tr><tr><td>Over 10 up to and including 16  </td><td>(1,0) <sup>c)</sup> 1,5  </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	Replaced	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><tr><td>Over 10 up to and including 16  </td><td>1,5 to 2,5  </td><td>1,5 to 4  </td></tr></table> <p>Delete the fifth line: conductor sizes for 13 to 16 A</p>	Over 10 up to and including 16	1,5 to 2,5	1,5 to 4	Deleted	N/A			
Over 10 up to and including 16	1,5 to 2,5	1,5 to 4							
4.3.13.6 (A1:2010)	<p>Replace the existing NOTE by the following:</p> <p>NOTE Z1 Attention is drawn to:</p> <p>1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and</p> <p>2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation).</p>	Replaced	P						
	<p>Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.</p>		P						
Annex H	<p>Replace the last paragraph of this annex by:</p> <p>At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level.</p> <p>Replace the notes as follows:</p> <p>NOTE These values appear in Directive 96/29/Euratom.</p> <p>Delete NOTE 2.</p>	Replaced	N/A						
Bibliography	<p>Additional EN standards.</p>		—						

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

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

<b>ZA</b>	<b>NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS</b>	—
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<b>ZB ANNEX (normative)</b> <b>SPECIAL NATIONAL CONDITIONS (EN)</b>			
Clause	Requirement + Test	Result - Remark	Verdict
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.	Power cord is not supplied with the unit	N/A
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	In <b>Finland</b> , <b>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.	Part of certified power supplies	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).	Capacitors suitably rated for 230V phase-phase voltage of IT system of Norway	P
1.5.9.4	In <b>Finland</b> , <b>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

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ZB ANNEX (normative)</b></p> <p align="center"><b>SPECIAL NATIONAL CONDITIONS (EN)</b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	<p>In <b>Finland, Norway and 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:</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p> <p>In <b>Norway and 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.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>"Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."</p>	<p>The unit has own connection to protective earthing</p> <p>Marking will be provided when distributed in Finland, Norway and Sweden</p>	P



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ZB ANNEX (normative)</b></p> <p align="center"><b>SPECIAL NATIONAL CONDITIONS (EN)</b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.”</p> <p>Translation to Swedish:</p> <p>”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”</p>		P
1.7.5	<p>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.</p> <p>For <b>CLASS II EQUIPMENT</b> the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.</p>	No socket outlets	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 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
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
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.		P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ZB ANNEX (normative)</b></p> <p align="center"><b>SPECIAL NATIONAL CONDITIONS (EN)</b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
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.	No direct plug-in unit	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	<p>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:</p> <p>SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A</p> <p>SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A</p> <p>SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <p>SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A</p> <p>SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A</p> <p>SEV 5934-2.1998: Plug Type 23, L+N+PE .250 V, 16 A</p>	Not supplied with the unit	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ZB ANNEX (normative)</b></p> <p align="center"><b>SPECIAL NATIONAL CONDITIONS (EN)</b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>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.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>	Not supplied with the unit	N/A
3.2.1.1	<p>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.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>	Not supplied with the unit	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ZB ANNEX (normative)</b></p> <p align="center"><b>SPECIAL NATIONAL CONDITIONS (EN)</b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>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.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>	Not supplied with the unit	N/A
3.2.1.1	<p>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.</p>	Not supplied with the unit	N/A
3.2.4	In <b>Switzerland</b> , for requirements see 3.2.1.1 of this annex.	Not supplied with the unit	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.	Not supplied with the unit	N/A
3.3.4	<p>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:</p> <ul style="list-style-type: none"> <li>• 1,25 mm<sup>2</sup> to 1,5 mm<sup>2</sup> nominal cross-sectional area.</li> </ul>	Not supplied with the unit	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ZB ANNEX (normative)</b></p> <p align="center"><b>SPECIAL NATIONAL CONDITIONS (EN)</b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
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: <ul style="list-style-type: none"> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE A that <ul style="list-style-type: none"> <li>is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and</li> <li>has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and</li> <li>is provided with instructions for the installation of that conductor by a SERVICE PERSON;</li> </ul> </li> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE B;</li> <li>• STATIONARY PERMANENTLY CONNECTED EQUIPMENT.</li> </ul>	Complied Less than 3.5mA	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p style="text-align: center;"><b><i>ZB ANNEX (normative)</i></b></p> <p style="text-align: center;"><b><i>SPECIAL NATIONAL CONDITIONS (EN)</i></b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	<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>Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> <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>	Added	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ZB ANNEX (normative)</b></p> <p align="center"><b>SPECIAL NATIONAL CONDITIONS (EN)</b></p>			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1;</li> <li>- the additional testing shall be performed on all the test specimens as described in EN 60384-14:</li> <li>- the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.</li> </ul>	Part of certified power supplies	N/A
6.1.2.2	In <b>Finland, Norway</b> and <b>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.	No TNV circuits	N/A
7.2	<p>In <b>Finland, Norway</b> and <b>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>	No CABLE DISTRIBUTION SYSTEM.	N/A
7.3	In <b>Norway</b> and <b>Sweden</b> , for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

<b>ZB ANNEX (normative)</b> <b>SPECIAL NATIONAL CONDITIONS (EN)</b>			
Clause	Requirement + Test	Result - Remark	Verdict
7.3	In <b>Norway</b> , for installation conditions see EN 60728-11:2005.		N/A

<b>ATTACHMENT TO TEST REPORT IEC 60950-1</b> <b>FINLAND NATIONAL DIFFERENCES</b> Information technology equipment – Safety – Part 1: General requirements	
<b>Differences according to</b> .....	EN 60950-1:2006/A11:2009/A1:2010
<b>Attachment Form No.</b> .....	FI_ND_IEC60950_1C
<b>Attachment Originator</b> .....	SGS Fimko Ltd
<b>Master Attachment</b> .....	Date (2010-04)
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	National Differences	P
<b>General</b>	See also Group Differences (EN 60950-1:2006/A11/A1)	P
1.5.7.1	In <b>Finland</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.	Part of certified power supplies N/A
1.5.9.4	In <b>Finland</b> , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	N/A



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	<p>In <b>Finland</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 in Finland shall be as follows: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p>	The unit has own connection to protective earthing Marking will be provided when distributed in Finland	P
2.3.2	In <b>Finland</b> , there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.10.5.13	In <b>Finland</b> , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N/A
5.1.7.1	<p>In <b>Finland</b>, TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:</p> <ul style="list-style-type: none"> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE A that <ul style="list-style-type: none"> <li>- is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and</li> <li>- has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and</li> <li>- is provided with instructions for the installation of that conductor by a SERVICE PERSON;</li> </ul> </li> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE B;</li> <li>• STATIONARY PERMANENTLY CONNECTED EQUIPMENT.</li> </ul>	Complied . Less than 3.5mA	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	<p>In <b>Finland</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>Alternatively for components, there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> <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>	No TNV circuits Added	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14:2005 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 60384-14:2005;</li> <li>- the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14:2005, in the sequence of tests as described in EN 60384-14:2005.</li> </ul>		N/A
6.1.2.2	<p>In <b>Finland</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>	No TNV circuits	N/A
7.2	<p>In <b>Finland</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>	No connection to CABLE DISTRIBUTION SYSTEM.	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

<p align="center"><b>ATTACHMENT TO TEST REPORT IEC 60950-1</b>  <b>US NATIONAL DIFFERENCES</b>  Information technology equipment – Safety –  Part 1: General requirements</p>			
<b>Differences according to.....:</b> UL 60950-1-07			
<b>Attachment Form No. ....:</b> US_ND_IEC60950_1C			
<b>Attachment Originator.....:</b> TÜV SÜD Product Service GmbH			
<b>Master Attachment.....:</b> Date (2012-08)			
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	<b><i>Special national conditions</i></b>		P
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.	In accordance with the National Electrical Code (NEC) and the Canadian Electrical Code (CEC) part 1 CAN/CSA C22.1, ANSI/NFPA 70, and unless marked or otherwise identified, the Standard for Electronic Computer/Data-Processing Equipment, ANSI/NFPA	P
	Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.		P
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Considered	P
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.	No interconnecting cords	N/A
	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.		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.	No such equipment	N/A
	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		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
	- if it is part of a range that extends into the Table 2 "Normal Operating Conditions."		N/A
	A voltage rating is not to be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."		N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC are marked with the voltage rating and "Class 2" or equivalent.	No such equipment	N/A
	- Marking is located adjacent to the terminals		N/A
	- Marking is visible during wiring		N/A
2.5	Fuse providing Class 2, Limited Power Source, or TNV current limiting is not operator-accessible unless it is not interchangeable.	No such equipment	N/A
2.6.3.3	Modify first column on Table 2D to "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."	Modified	P
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is provided for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, provided with special transformer overcurrent protection.		N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains is in accordance with the NEC/CEC.	Complied	P
3.2.1	Attachment plugs of power supply cords are rated not less than 125 per cent of the rated current of the equipment.	Power supply cords not provided.	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 comply with special earthing, wiring, marking and installation instruction requirements.	Poles of the DC mains input terminal are not connected to the main protective earthing terminal in the equipment only to a building installation	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.	Not provided as part of the unit	N/A
3.2.5	Power supply cords are no longer than 4.5 m in length.	Not provided as part of the unit	N/A
	Minimum cord length is 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement.		N/A
	Flexible power supply cords are compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.9	Permanently connected equipment have a suitable wiring compartment and wire bending space.	Not provided as part of the unit	N/A
3.3	Wiring terminals and associated spacings for field wiring connections comply with CSA C22.2 No. 0.	Earthing screws comply with CSA C22.2 No. 0	P
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm <sup>2</sup> ).	No such screws	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are suitable for Canadian/US wire gauge sizes, are	Certified DC terminal is used	P
	- rated 125 per cent of the equipment rating, and		P
	- are specially marked when specified (1.7.7).		P
3.3.5	Revise first column of Table 3E to "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."	Revised	P
3.4.2	Motor control devices are provided for cord-connected equipment with a motor if the equipment is rated more than 12 A,	No motor control devices	N/A
	- or if the motor has a nominal voltage rating greater than 120 V		N/A
	- 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 have the "on" position indicated by the handle in the up position.	No such switches	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the computer room remote power-off circuit.	No battery system of this type	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.	No flammable liquids	N/A
4.3.13.5	Equipment with lasers meet the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.	Lasers to meet the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.	P
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m <sup>3</sup> (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	Not this type of equipment	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) have a flame spread rating of 50 or less.	Not this type of equipment	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
	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 complies with U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No ionizing radiation	N/A
<b><i>Other National Differences</i></b>			
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements.	Considered. See component list.	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.	Maximum operated voltages of dc mains supply is up to 72Vdc, classified as TNV-2.	P
	This maximum operating voltage includes consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.		P
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.	Not relevant to DC mains	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.	Not applied	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.	No such conductors	N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more reduce the risk of injury due to the implosion of the CRT.	No such components	N/A
4.3.2	Equipment with handles complies with special loading tests.	No handles	N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals comply with a special touch current measurement tests.	Not intended to receive ringing signals	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 overloaded.	No such parts	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
	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	No such condition occurred	N/A
6.4	Equipment intended for connection to telecommunication network outside plant cable is protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	Not for connection to telecommunications network	N/A
Annex EE	Articulated accessibility probe (Fig EE.3) is used for assessing accessibility to document/media shredders instead of the Figure 2A test finger.		N/A
Annex M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	Does not produce ringing signals	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 comply with special acoustic pressure requirements.	Not for connection to telecommunications and cable distribution networks	N/A



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

## ATTACHMENT TO TEST REPORT IEC 60950-1 CANADA NATIONAL DIFFERENCES

Information technology equipment – Safety –

Part 1: General requirements

**Differences according to** ..... : CAN/CSA-C22.2 NO. 60950-1A-07

**Attachment Form No.** ..... : CA\_ND\_IEC60950\_1C

**Attachment Originator** ..... : TÜV SÜD Product Service GmbH

**Master Attachment** ..... : Date (2012-08)

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	<i>Special national conditions</i>		P
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.	Equipment is 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	P
	Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.		P
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Considered	P
1.5.5	<i>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.</i>	No interconnecting cables	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
	<i>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.</i>		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.	Single phase unit	N/A
	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	Not part of the unit	N/A
	- if it is part of a range that extends into the Table 2 "Normal Operating Conditions."		N/A
	A voltage rating is not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."	Not lower than specified	P
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC are marked with the voltage rating and "Class 2" or equivalent.		N/A
	- Marking is located adjacent to the terminals		N/A
	- Marking is visible during wiring		N/A
2.5	Fuse providing Class 2, Limited Power Source, or TNV current limiting is not operator-accessible unless it is not interchangeable.	No fuse used to provide Class 2, Limited Power Source, or TNV current limiting	N/A
2.6.3.3	Modify first column on Table 2D to "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."	Modified	P
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is provided for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No standard supply outlets, receptacles and medium-base or smaller lampholders, power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, provided with special transformer overcurrent protection.		N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains is in accordance with the NEC/CEC.	Appliance inlet and earthing screw is in accordance with the NEC/CEC	P
3.2.1	Attachment plugs of power supply cords are rated not less than 125 percent of the rated current of the equipment.	Power cord is not provided with 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 comply with special earthing, wiring, marking and installation instruction requirements.	The pole of the DC mains input terminal unit is not connected to the main protective earthing terminal in the equipment only in the building installation	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.	Not supplied with the unit	N/A
3.2.5	Power supply cords are no longer than 4.5 m in length.	Not supplied with the unit	N/A
	Minimum cord length is 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement.		N/A
	Flexible power supply cords are compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
3.2.9	Permanently connected equipment have a suitable wiring compartment and wire bending space.	Not supplied with the unit	N/A
3.3	Wiring terminals and associated spacings for field wiring connections comply with CSA C22.2 No. 0.	Earthing screws comply with CSA C22.2 No. 0	P
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm <sup>2</sup> ).	No such screws	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are suitable for Canadian/US wire gauge sizes, are		N/A
	- rated 125 percent of the equipment rating, and		P
	- are specially marked when specified (1.7.7).		P
3.3.5	Revise first column of Table 3E to "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."	Revised	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
3.4.2	Motor control devices are provided for cord-connected equipment with a motor if the equipment is rated more than 12 A,		N/A
	- or if the motor has a nominal voltage rating greater than 120 V		N/A
	- 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 have the "on" position indicated by the handle in the up position.	No vertically mounted disconnect switched	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the computer room remote power-off circuit.	No battery system of this type	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.	No flammable liquids	N/A
4.3.13.5	Equipment with lasers meet the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.	Lasers meet the Code of Federal Regulations 21 CFR 1040.	P
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m <sup>3</sup> (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	Not this type of equipment	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) have a flame spread rating of 50 or less.	Not this type of equipment	N/A
	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 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
	<b>Other National Differences</b>		<b>P</b>
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements.	Considered. See component list.	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
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.	Maximum operated voltages of dc mains supply up to 72Vdc, classified as TNV-2.	P
	This maximum operating voltage includes consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.	Includes	P
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., 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.	Not relevant to DC mains	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.	Not applied	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.	No such conductors	N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more reduce the risk of injury due to the implosion of the CRT.	No such components	N/A
4.3.2	Equipment with handles complies with special loading tests.	No handles	N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals comply with a special touch current measurement tests.	Not intended to receive ringing signals	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 overloaded.	No such parts	N/A
	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	No such condition	N/A
6.4	Equipment intended for connection to telecommunication network outside plant cable is protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	Not for connection to telecommunications network	N/A
Annex EE	Articulated accessibility probe (Fig EE.3) is used for assessing accessibility to document/media shredders instead of the Figure 2A test finger.		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	Does not produce ringing signals	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 comply with special acoustic pressure requirements.	Not for connection to telecommunications and cable distribution networks	N/A

National Differences/EU Special National Conditions/EU A-Deviations for <b>Switzerland (CH)</b> (EN 60950-1:2006/AC:2011)			P
1.5.1	Switzerland (Ordinance on environmentally hazardous substances SR 814.081, Annex 1.7, Mercury - Annex 1.7 of SR 814.81 applies for mercury.) Add the following: NOTE In Switzerland, switches containing mercury such as thermostats, relays and level controllers are not allowed.	Switches containing mercury such as thermostats, relays and level controllers are not used.	P
1.7.13	Switzerland (Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15 Batteries) Annex 2.15 of SR 814.81 applies for batteries.	No hazardous materials	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>In Switzerland, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:</p> <p>SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <p>SEV 5932-2.1998 Plug Type 25 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998 Plug Type 21 L+N 250 V, 16 A SEV 5934-2.1998 Plug Type 23 L+N+PE 250 V, 16 A</p>	No cord supplied with the equipment	N/A
3.2.4	In Switzerland, for requirements see 3.2.1.1 of this annex.		P

National Differences/EU A-Deviations for <b>Germany (DE)</b>			P
1.7.2.1	<p>According to GPSG, section 2, clause 4:</p> <p>If certain rules on the use, supplementation or maintenance of an item of technical work equipment or ready-to-use commodity must be observed in order to guarantee safety and health, instructions for use in German must be supplied when it is brought into circulation.</p>	Instructions in German will be provided when distributed to Germany	P

National Differences for <b>Korea (KR)</b>			P
1.5.101	Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305)	Power supply cord not shipped with the product	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
8	EMC, The apparatus shall comply with the relevant CISPR standards	Compliance with relevant CISPR standards will be demonstrated when distributed to Korea	P

National Differences: <b>Israel (IL)</b>			P
1.6	Power interfaces		P
1.6.1	AC power distribution system		P
1.7	Marking and instruction: Subclause 1.7.201 shall be added		P
1.7.201	Marking in Hebrew language	Will be provided when shipped to Israel	P
1.7.2	Safety instruction and marking		P
1.7.2.1	The following shall be added to the clause: All the instructions and warning related to safety shall also be written in the Hebrew language	Will be provided when shipped to Israel	P
2	Protection from hazards The clause is applicable with the following additions		P
2.9.4	Seven means of protection against electrocution are permitted as follows : 1) TN-S, TN-C-S 2) TT 3) IT 4) Isolated transformer 5) Safety extra low voltage 6) Residual current breaker (30mA=I ) 7) Reinforced insulation; Double insulation	TN-S  Double/ Reinforce insulation part of certified power supplies	P
2.201	The apparatus shall meet the requirements in the appropriate parts of the Standard series SI 961	Compliance with SI 961 standard will be demonstrated when distributed to Israel	P
3	Wiring connection and supply		P
3.2	Connection to a mains supply		P
3.2.1	Means of connection		P
3.2.1.1	Connection to an a.c. mains supply In Israel, the feed plug shall comply, with the requirements of Isrek Standard SI 32 Part 1.1		N/A
3.2.1.2	Connection to a d.c. mains At the time of issue this Standard, there is no Israel Standard for connection accessories to d.c.		N/A

National Differences for Australia (AU) and New Zealand – IEC 60950-1: ED. 2.0 (2005)	P
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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
1.2	Between the definitions for 'Person, service' and 'Range, rated frequency' insert the following: Ignition source 1.2.12.201	Inserted	P
1.2.12.201	After the definition of 1.2.12.15, add the following: 1.2.12.201 potential ignition source: Possible fault which can start a fire if the open-circuit voltage measured across an interruption or faulty contact exceeds a value of 50 V (peak) a.c. or d.c. and the product of the peak value of this voltage and the measured r.m.s current under normal operating conditions exceeds 15 VA. Such a faulty contact or interruption in an electrical connection includes those which may occur in conductive patterns on printed boards. NOTE 201 An electronic protection circuit may be used to prevent such a fault from becoming a POTENTIAL IGNITION SOURCE. NOTE 202 This definition is from AS/NZS 60065:2003.	Added	P
1.5.1	Add the following to the end of first paragraph: 'or the relevant Australian/New Zealand Standard'.	Added	P
1.5.2	Add the following to the end of first and third dash items: 'or the relevant Australian/New Zealand Standard'.	Added	P
3.2.5.1	Modify Table 3B as follows: Delete the first four rows and replace with		N/A
Rated Current of the Equipment A		Minimum Conductor Sizes	
		Nominal cross-sectional area mm <sup>2</sup>	AWG or kcmil [cross-sectional area in mm <sup>2</sup> ] see note 2
Over 0.2 up to and including 3		0,5 <sup>1)</sup>	18 [0,8]
Over 3 up to and including 7.5		0,75	16 [1,3]
Over 7.5 up to and including 10		(0,75) <sup>2)</sup>	16 [1,3]
Over 10 up to and including 16		(1,0) <sup>3)</sup>	14 [2]
Replace footnote 1) with the following: 1) This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm <sup>2</sup> three-core supply flexible cords are not permitted; see AS/NZS 3191). Delete Note 1			
4.1.201	Insert a new Clause 4.1.201 after Clause 4.10 as followings: 4.1.201 Display devices which may be used for television purposes, with a mass of 7 kg or more, shall comply with the requirements for stability and mechanical hazards, including the additional stability requirements for television receivers, specified in AS/NZS 60065.	Inserted	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.6	Delete the third paragraph and replace with the following: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flatpin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.	Deleted	N/A
4.3.13.5	Add the following to the end of the first paragraph: ‘, or AS/NZS 2211.1’.	Added	P
4.7	Add the following paragraph: For alternative tests refer to Clause 4.7.201.	Added	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.201	<p>Add the following after Clause 4.7.3.6. 4.7.201 Resistance to fire – Alternative tests 4.7.201.1 General Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames originating from inside the apparatus, or the following: Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length. The following parts which would contribute negligible fuel to a fire: small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; small electrical components, such as capacitors with a volume not exceeding 1 750 mm<sup>3</sup>, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10.</p> <p>NOTE In considering how to minimize propagation of fire and what ‘small parts’ are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating fire from one part to another. Compliance shall be checked by the tests of 4.7.201.2, 4.7.201.3, 4.7.201.4 and 4.7.201.5. For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5. The tests shall be carried out on parts of non-metallic material which have been removed from the apparatus. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring.</p> <p>4.7.201.2 Testing of non-metallic materials Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the sample tested was not thicker than the relevant part.</p> <p>4.7.201.3 Testing of insulating materials Parts of insulating material supporting POTENTIAL IGNITION SOURCES shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C.</p>	<p>Added</p> <p>No alternative tests applied</p>	N/A

National Differences				
Clause	Requirement + Test		Result - Remark	Verdict
	The test shall be also carried out on other parts of insulating material which are within a distance of 3mm of the connection. NOTE Contacts in components such as switch contacts are considered to be connections. For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test shall not be tested. The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:		No alternative tests applied	N/A
	Clause of AS/NZS 60695.11.5	Change		N/A
	9 Test procedure			N/A
	9.2 Application of needleflame	Replace the first paragraph with: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1. If possible the flame shall be applied at least 10 mm from a corner Replace the second paragraph with: The duration of application of the test flame shall be 30 s $\pm$ 1 s.	Replaced	N/A
	9.3 Number of test specimens	Replace with: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.	Replaced	N/A
	11 Evaluation of test results	Replace with: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.	Replaced	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to IEC 60695-11-10, provided that the sample tested was not thicker than the relevant part.</p> <p>4.7.201.4 Testing in the event of non-extinguishing material If parts, other than enclosures, do not withstand the glow wire tests of 4.7.201.3, by failure to extinguish within 30 s after the removal of the glow-wire tip, the needle-flame test detailed in 4.7.201.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of 4.7.201.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested. NOTE 1 - If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing. NOTE 2 - If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing. NOTE 3 - Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.</p> <p>4.7.201.5 Testing of printed boards The base material of printed boards shall be subjected to the needle-flame test of Clause 4.7.201.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a POTENTIAL IGNITION SOURCE. The test is not carried out if the — Printed board does not carry any POTENTIAL IGNITION SOURCE; Base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or Base material of printed boards, on which the available apparatus power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting</p>		N/A



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
6.2.2	For Australia only, delete the first paragraph and Note, and replace with the following: In Australia only, compliance with 6.2.2 shall be checked by the tests of both 6.2.2.1 and 6.2.2.2.	No connection to telecommunication networks	N/A
6.2.2.1	For Australia only, delete the first paragraph including the Notes, and replace with the following: In Australia only, the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator reference 1 of Table N.1. The interval between successive impulses is 60 s and the initial voltage, $U$ , is: (i) for 6.2.1 a): 7.0 kV for hand-held telephones and for headsets and 2.5 kV for other equipment; and (ii) for 6.2.1 b) and 6.2.1 c): 1.5 kV. NOTE 201 – The 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 – The value of 2.5 kV for 6.2.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.	No connection to telecommunication networks	N/A
6.2.2.2	For Australia only, delete the second paragraph including the Note, and replace with the following: In Australia only, the a.c. test voltage is: (i) for 6.2.1 a): 3 kV; and (ii) for 6.2.1 b) and 6.2.1 c): 1.5 kV. NOTE 201 Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.	No connection to telecommunication networks	N/A
7.3	Add the following before the first paragraph: Equipment providing functions that fall only within the scope of AS/NZS 60065 and that incorporate a PSTN interface, are not required to comply with this Clause where the only ports provided on the equipment, in addition to a coaxial cable connection and a PSTN interface, are audio or video ports and analogue or data ports not intended to be used for telecommunications purposes.	No such equipment	N/A
Annex P	Add the following Normative References: AS/NZS 3191, Electric flexible cords AS/NZS 3112, Approval and test specification—Plugs and socket-outlets		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
Index	<p>1. Insert the following between 'asbestos, not to be used as insulation' and 'attitude see orientation': AS/NZS 2211.1.....4.3.13.5 AS/NZS3112..... .....4.3.6 AS/NZS3191..... 3.2.5.1 (Table 3B) AS/NZS60064..... 4.1.201 AS/NZS60695.2.11..... 4.7.201.2, 4.7.201.3 AS/NZS60695.11.10..... 4.7.201.1, 4.7.201.5 AS/NZS60695.11.5.....4. 7.201.3 2. Insert the following between 'positive temperature coefficient (PTC) device' and 'powder': potential ignition source 1.2.201, 4.7.201.3, 4.7.201.5</p>	Inserted	P

National Differences <b>China (CN)</b> GB4943.1-2011 Information technology equipment – Safety – Part 1: General requirements Applicable for 60950-1:2005 oldest version			P
1.1.2	<p>GB 4943.1-2011 applies to equipment for use at altitudes not exceeding 5000m above sea level, primarily in regions with moderate or tropical climates.</p> <p>Amend the third dashed paragraph of 1.1.2 as: ——equipment intended to be used in vehicles, on board ships or aircraft, at altitudes greater than 5000m;</p>	For altitudes up to 3100m	N/A
1.4.5	<p>After the third paragraph, add a paragraph: If the equipment is intended for direct connection to an AC mains supply, the tolerances on RATED VOLTAGE shall be taken as +10%,-10% unless a wider tolerance is declared by the manufacturer. The first dash paragraph "-the RATED VOLTAGE is 230V single -phase or 400V three-phase, in which case the tolerance shall be taken as +10% and -10%" of IEC 60950-1:2005 is deleted in GB 4943.1-2011</p>	Tested at -/+10%	P



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
1.4.12.1	<p>Tma in clause 1.4.12.1 amended as: Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 35 °C, whichever is greater.</p> <p>Add note 1: For equipment not to be operated at tropical climatic conditions, Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 25 °C, whichever is greater.</p> <p>Add note 2: For equipment is to be operated at 2000m-5000m above sea level, its temperature test conditions and temperature limits are under consideration.</p>	<p>Not for tropic climate conditions</p> <p>Added</p>	N/A
1.5. 2	Add a note behind the first break off section in Clause 1.5.2: A component used shall comply with related requirements corresponding altitude of 5000m.	Added	N/A
1.7	Add one paragraph before the last paragraph: The required marking and instruction should be given in normative Chinese unless otherwise specified.	Instructions will be given in normative Chinese	P
1.7.1	<p>Based on the AC mains supply of China, the RATED VOLTAGE should be 220V (single phase) or 380V (three-phases) for single rated voltage, for RATED VOLTAGE RANGE, it should cover 220V or 380V (three-phases), for multiple RATED VOLTAGES, one of them should be 220V or 380V (three-phases) and set on 220V or 380V (three-phases) when manufactured.</p> <p>And the RATED FREQUENCY or RATED FREQUENCY RANGE should be 50Hz or include 50Hz.</p>	Covered by EUT rating	P



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	<p>Add requirements of warning for equipment intended to be used at altitudes not exceeding 2000m or at non-tropical climate regions: For equipment intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used at altitude not exceeding 2000m."</p>  <p>For equipment intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used in not-tropical climate regions."</p>  <p>If only the symbol used, the explanation of the symbol shall be contained in the instruction manual. The above statements shall be given in a language acceptable to the regions where the apparatus is intended to be used.</p>	<p>Tested for Max operation up to 3100m, for non-tropical climate</p> <p>Markings will be provided when the product is shipped to China</p>	P
2.7.1	<p>Amended the first paragraph as: Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall be provided as an integral part of the equipment except special provisions. And the protective device shall meet the requirement of Clause 5.3.</p> <p>Delete note of Clause 2.7.1.</p>	Part of certified power supplies	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
2.9.2	<p>First section of Clause 2.9.2 amended as two sections:</p> <p>Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature <math>40\pm 2^{\circ}\text{C}</math> and a relative humidity of <math>(93\pm 3)\%</math>. During this conditioning the component or subassembly is not energized.</p> <p>For equipment not to be operated at tropical climatic conditions, Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 48 h in a cabinet or room containing air with a relative humidity of <math>(93\pm 3)\%</math>. The temperature of the air, at all places where samples can be located, is maintained within <math>2^{\circ}\text{C}</math> of any convenient value between <math>20^{\circ}\text{C}</math> and <math>30^{\circ}\text{C}</math> such that condensation does not occur.</p> <p>Due to pretreatment of equipment operated at high altitude area is humidity conditioning withstand hot shock, specific requirements are to be considered.</p> <p>Add note: For equipment to be operated at 2000 m - 5000m above sea level, assessment and requirement of humidity conditioning for Insulation material properties are considered.</p>	<p>Humidity conditioning was conducted for 120 Hours at temp. <math>40^{\circ}\text{C}</math> with relative humidity 93%</p> <p>See also appended table 5.2 IEC60950-1</p>	P
2.10.3.1	<p>Amend the third paragraph of Clause 2.10.3.1 to be:</p> <p>These requirements apply for equipment to be operated up to 2000 m above sea level. For equipment to be operated at more than 2000 m above sea level and up to 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of IEC 60664-1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.</p>	Closed frame AC power supply was certified to 3100m above the sea level	P
2.10.3.3& 2.10.3.4	Add "(applicable for altitude up to 2000m)" in header of Table 2K, 2L and 2M.	Added	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.4	Add a new section above Table 2K and in Clause 2.10.3.4: Minimum CLEARANCES determined by above rules apply for equipment to be operated up to 2000m above sea level. For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1 ( IEC 60664-1 ) . For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of GB/T16935.1.	Closed frame AC power supply was certified to 3100m above the sea level	P
3.2.1.1	Add a paragraph before the last paragraph:  Plugs connected to AC mains supply shall comply with GB 1002 or GB 1003 or GB/T 11918 as applicable.	Not shipped with the product	N/A
4.2.8	Clause 4.2.8 cathode ray tubes quoted Clause 18 of GB8898-2011.  Delete note of Clause 4.2.8.	No CRT's	N/A
Annex E	Last section of Annex E amended as: For comparison of winding temperatures determined by the resistance method of this annex with the temperature limits of Table 4B, 35 °C shall be added to the calculated temperature rise. And add note: for equipment not to be operated at tropical climatic conditions, 25 °C shall be added to the calculated temperature rise to compare with the temperature of Table 4B.	Resistance method not applied	N/A
Annex G.6	Change the second section of Clause G.6 to be: For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.	Closed frame AC power supply was certified to 3100m above the sea level	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
Annex BB (informative)	Amended as : The differences between Chinese national standards GB 4943.1-2011 and GB 4943-2001.		P
Annex DD (normative)	<p>Added annex DD: Instructions for the new safety warning labels.</p> <p>DD.1 Altitude warning label</p>  <p>Meaning of the label: Evaluation for apparatus only based on altitude not exceeding 2000m, therefore it's the only operating condition applied for the equipment. There may be some potential safety hazard if the equipment is used at altitude above 2000m.</p> <p>DD.2 Climate warning label</p>  <p>Meaning of the label: Evaluation for apparatus only based on temperate climate condition, therefore it's the only operating condition applied for the equipment. There may be some potential safety hazard if the equipment is used in tropical climate region.</p>	Will be provided on EUT label when shipped to China	P
Annex EE (informative)	Added annex EE: Illustration relative to safety explanation in normative Chinese, Tibetan, Mongolian, Zhuang Language and Uighu.		P
Other amendments	In accordance with the relevant CTL decisions and the amendments of IEC 60950-1, the specific requirements or mistakes in IEC standard are corrected or editorially modified in this part, including clause 1.7, 2.1.1.7, 2.9.2, Table 2H, Figure 2H, F.8, F.9, M.3 and Annex U.		P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
Quoting standards and reference documents	<p>The principles of quoting and referring to other standards in Annex P and reference documents of IEC 60950-1 are as follows:</p> <p>If the date of the reference document is given, only that edition applies, excluding any subsequent corrigenda and amendments. However, parties to agreements based on this part are encouraged to investigate the possibility of applying the most recent editions of the reference documents. For undated references, the latest edition of the referenced document applies, including any corrigenda and amendments.</p> <p>For the usage of international standards in Chinese national standards and industry standards is various, in the aim of achieving easy operation and based on the requirements of GB/T 1.1 and GB/T 20000.2, when quoting an entire international standard in the normative quoting files and reference documents of Annex P of this part, the principles of quotation are as follows:</p> <ul style="list-style-type: none"> <li>- If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted;</li> <li>- If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted;</li> <li>- If the date of the national standard or industry standard is not given, the latest edition of the standard applies;</li> <li>- The national standard or industry standard number, corresponding international standard number and the consistency level code should be identified in parentheses behind the listed national standard or industry standard.</li> </ul> <p>When quoting several chapters or clauses of the international standard, the principles of quotation are as follows:</p> <ul style="list-style-type: none"> <li>- If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted;</li> <li>- If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted.</li> </ul> <p>Meanwhile, in order to retain the relevant information on international standards, informative annex CC is increased, which gives the table about the comparison of the normative quoting files and reference documents in IEC 60950-1: 2005 and GB 4943.1-2011.</p>		P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

### Appendix 3 – Model names



May 28, 2013

#### Declaration of Similarity

I HEREBY DECLARE THAT THE FOLLOWING PRODUCTS:

RODS-HTQ-A-2AC
RODS-HTQ-XL-A-2A
Alecon 6420
Alecon 6420 XL
ODS-HTQ
DefensePro x420
ODS-HTQ XL
OnDemand Switch HTQ DUAL
OnDemand Switch HTQ XL DUAL
Alecon 4420
RODS-HTQ-A4-2AC
Alecon 4420 XL
RODS-HTQ-XL-A4-A
Alecon 5420
RODS-HTQ-A5-2AC
Alecon 5420 XL
RODS-HTQ-XL-A5-A

ARE IDENTICAL ELECTRONICALLY, PHYSICALLY, AND MECHANICALLY TO:

**RODS-HTQ-D-2AC**

Please relate to them all (from an EMC &amp; safety point of view) as the same product.

Thank You,

Yaniv Ben-Dor  
Engineering Manager  
Radware Ltd.

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict



May 28, 2013

## Declaration of Similarity

I HEREBY DECLARE THAT THE FOLLOWING PRODUCTS:

RODS-HTQ-A-2DC
RODS-HTQ-XL-A-2D
RODS-HTQ-A-NEBS
RODS-HTQ-XL-NEBS
Alteon 6420 Dual DC NEBS
Alteon 6420 Dual DC
Alteon 6420 XL Dual DC
Alteon 6420 XL Dual DC NEBS
ODS-HTQ Dual DC
DefensePro x420 Dual DC
ODS-HTQ XL Dual DC
OnDemand Switch HTQ DUAL DC
OnDemand Switch HTQ XL DUAL DC
Alteon 4420 DC
RODS-HTQ-A4-2DC
Alteon 4420 XL DC
RODS-HTQ-XL-A4-D
Alteon 5420 DC
RODS-HTQ-A5-2DC
Alteon 5420 XL DC
RODS-HTQ-XL-A5-D

ARE IDENTICAL  
ELECTRONICALLY,  
PHYSICALLY, AND  
MECHANICALLY TO:

**RODS-HTQ-D-2DC**

Please relate to them all (from  
an EMC & safety point of  
view) as the same product.

Thank You,




Yaniv Ben-Dor  
Engineering Manager

Radware Ltd.



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

## Appendix 4 – licences


		<b>Ref. Certif. No.</b> JPTUV-045215
<b>IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME</b>		
<b>SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC</b>		
<b>CB TEST CERTIFICATE</b> <b>CERTIFICAT D'ESSAI OC</b>		
Product Produit	Redundant Power Supply and Power Module	
Name and address of the applicant Nom et adresse du demandeur	Zippy Technology Corp. 10F., No. 50, Min Chyuan Rd. Shin Tien District, New Taipei City, 231 Taiwan	
Name and address of the manufacturer Nom et adresse du fabricant	Zippy Technology Corp. 10F., No. 50, Min Chyuan Rd. Shin Tien District, New Taipei City, 231 Taiwan	
Name and address of the factory Nom et adresse de l'usine	Zippy Technology Corp. 2F, No. 123, Lane 235 Pao-Chiao Rd., Shin Tien District, New Taipei City, 231 Taiwan	
Rating and principal characteristics Valeurs nominales et caractéristiques principales	Input : DC -42V to -72V; 30-17A; Class I Output: refer to the test report	
Trade mark (if any) Marque de fabrique (si elle existe)	EMACS	
Model/type Ref. Ref. de type	DPSG2-5A00V3H, DSPG2-5A00V3H, DPSS2-5A00V3H, DPSS2-5A00V3V, DPSG-2A00V, DSPG-2A00V, DPSS-2A00V	
Additional information (if necessary) Information complémentaire (si nécessaire)	For model differences, refer to the test report.	
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 + A1 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	11029165 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		
 <b>TÜVRheinland®</b>		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: 08.08.2012	Signature:	 Dipl.-Ing. F. Müller



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

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Report No. 11029152 001

Test item description.....	Redundant Power Supply and Power Module
Trade Mark .....	1).  , 2). AIC, 3). t-win
Manufacturer.....	Same as applicant
Model/Type reference .....	1). Redundant Power Supply: SPH2-5A00V4H, SPH2-5C00V4H, PSG2-5A00V3H(S), PSG2-5C00V3H(S), SPG2-5A00V3H, SPG2-5C00V3H, PSS2-5A00V3H, PSS2-5C00V3H, PSG2-5B07V4H.  Power Module: SPH-2A00V, SPH-2C00V, PSG-2A00V(S), PSG-2C00V(S), SPG-2A00V, SPG-2C00V, PSS-2A00V, PSS-2C00V, PSG-2B07V.  2). Redundant Power Supply: PSU2-PSG2-5A00V(S), PSU2-PSG2-5B07V.  Power Module: PSM2-PSG-2A00V(S), PSM2-PSG-2B07V.  3). Redundant Power Supply: PSU2-PSG2-5A00V(S), PSU2-PSG2-5B07V.  Power Module: PSM2-PSG-2A00V(S), PSM2-PSG-2B07V.
Ratings.....	See pages 14-15




National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

		<b>Ref. Certif. No.</b> JPTUV-045278
<b>IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME</b>		<b>SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC</b>
<b>CB TEST CERTIFICATE</b> <b>CERTIFICAT D'ESSAI OC</b>		
<b>Product</b> Produit	Redundant Power Supply and Power Module	
<b>Name and address of the applicant</b> Nom et adresse du demandeur	Zipy Technology Corp. 10F., No. 93, Min Chyuan Rd. Shin-Tien District, New Taipei City, 231 Taiwan	
<b>Name and address of the manufacturer</b> Nom et adresse du fabricant	Zipy Technology Corp. 10F., No. 93, Min Chyuan Rd. Shin-Tien District, New Taipei City, 231 Taiwan	
<b>Name and address of the factory</b> Nom et adresse de l'usine	Zipy Technology Corp. 2F., No. 123, Lane 235 Pao-Chiao Rd., Shin-Tien District, New Taipei City, 231 Taiwan	
<b>Rating and principal characteristics</b> Valeurs nominales et caractéristiques principales	Input : AC 100-240V or 110-240V; 15-7.5A or 15-7A; 47-63Hz Class I; for details, refer to the test report Output: refer to the test report	
<b>Trade mark (if any)</b> Marque de fabrique (si elle existe)	EMACS	
<b>Model/type Ref.</b> Ref. de type	SPH2-5A00V4H, SPH2-5C00V4H, PS02-5A00V3HSL, SP02-5A00V3H, PS02-5C00V3HSL, SP02-5C00V3H, PS02-5A00V3H, PS02-5C00V3H, PS02-5B01V4H, SPH-2A00V, SPH-2C00V, PS0-2A00VSL, PS0-2C00VSL; for other models, refer to the test report	
<b>Additional information (if necessary)</b> Information complémentaire (si nécessaire)	For model differences, refer to the test report.	
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 60950-1:2006 + A1 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'essai numéro de référence qui constitue une partie de ce Certificat	11029152-001	
This CB Test Certificate is issued by the National Certification Body Ce Certificat d'essai OC est établi par l'Organisme National de Certification		
 <b>TÜVRheinland</b>		TÜV Rheinland Japan Ltd. Global Technology Assessment Center 4-25-2 Kita-Yamato, Tama-Ku Yokohama 224-0021 Japan Phone + 81 45 914-3888 Fax + 81 45 914-3254 Mail info@gn.tuv.com Web www.tuv.com
Date: 13.08.2012	Signature:	 Dipl.-Ing. J. Pfeiffer

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

		<b>Ref. Certif. No.</b> JPTUV-045279
<b>IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME</b>		<b>SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC</b>
<b>CB TEST CERTIFICATE</b> <b>CERTIFICAT D'ESSAI OC</b>		
Product Produit	Redundant Power Supply and Power Module	
Name and address of the applicant Nom et adresse du demandeur	Zippy Technology Corp. 10F, No. 60, Min Chyuan Rd. Shin Tsai District, New Taipei City, 221 Taiwan	
Name and address of the manufacturer Nom et adresse du fabricant	Zippy Technology Corp. 10F, No. 60, Min Chyuan Rd. Shin Tsai District, New Taipei City, 221 Taiwan	
Name and address of the factory Nom et adresse de l'usine	Zippy Technology Corp. 5F, No. 123, Lane 229 Pao-Chiao Rd., Shin Tien District, New Taipei City, 221 Taiwan	
Rating and principal characteristics Valeurs nominales et caractéristiques principales	Input : 1) AC 100-240V; 47-63Hz; 15-7.5A; Class I 2) AC 100-240V; 47-63Hz; 15-7A; Class I Output: refer to the test report	
Trademark (if any) Marque de fabrique (s'il y a lieu)	LWH	
Model/type Ref. Ref. de type	Redundant Power Supply: 1) PSU2-PS02-5A00V(S), 2) PSU2-PS02-5B07V Power Module: 1) PSM2-PS0-2A00V(S), 2) PSM2-PS0-2B07V	
Additional information (if necessary) Information complémentaire (si nécessaire)	For model differences, refer to the test report.	
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+A1 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'essai numéro de référence qui constitue une partie de ce Certificat	15029152-001	
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-Yamato, Tsurumi-Ku Yokohama 224-0021 Japan Phone +81 45 914-3088 Fax +81 45 914-3354 Mail: info@jp.tuv.com Web: www.tuv.com
Date: 13.08.2012	Signature: 	

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

		<b>Ref. Certif. No.</b> JPTUV-045260
<b>IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME</b>		
<b>SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC</b>		
<b>CB TEST CERTIFICATE</b> <b>CERTIFICAT D'ESSAI OC</b>		
<b>Product</b> Produit	Redundant Power Supply and Power Module	
<b>Name and address of the applicant</b> Nom et adresse du demandeur	Jiggy Technology Corp. 12F., No. 50, Min Chyuan Rd. Shin-Tien District, New Taipei City, 231 Taiwan	
<b>Name and address of the manufacturer</b> Nom et adresse du fabricant	Jiggy Technology Corp. 12F., No. 50, Min Chyuan Rd. Shin-Tien District, New Taipei City, 231 Taiwan	
<b>Name and address of the factory</b> Nom et adresse de l'usine	Jiggy Technology Corp. 12F., No. 123, Lane 235 Pao-Chiao Rd., Shin-Tien District, New Taipei City, 231 Taiwan	
<b>Rating and principal characteristics</b> Valeurs nominales et caractéristiques principales	Input : 1) AC 100-240V; 47-63Hz; 15-7.5A; Class I 2) AC 100-240V; 47-63Hz; 15-7A; Class I Output: refer to the test report	
<b>Trade mark (if any)</b> Marque de fabrique (s'il en existe)	AIC	
<b>Model type Ref.</b> Ref. de type	Redundant Power Supply: 1) PSU2-PSG2-5A00V(S), 2) PSU2-PSG2-5B00V Power Module: 1) PSM2-PSG-2A00V(S), 2) PSM2-PSG-2B00V	
<b>Additional information (if necessary)</b> Informations complémentaires (si nécessaire)	For model differences, refer to the test report.	
<b>A sample of the product was tested and found to be in conformity with</b> Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1:2005 + A1 National differences and test report	
<b>As shown in the Test Report Ref. No. which forms part of this Certificate</b> Comme indiqué dans le Rapport d'essai numéro de référence qui constitue une partie de ce Certificat	11029152-001	
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-Yamate, Tama-Ku Yokohama 224-0021 Japan Phone : +81 45 914 3888 Fax : +81 45 914 3354 Mail: info@tvr.co.jp Web: www.tvr.co.jp
<b>Date:</b> 13.05.2012	<b>Signature:</b>	

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

**End of test report**