Ref. Certif. No.
US/4216/ITS-A1/M1

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	OnDemand Switch- LS XL series
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 aleurs nominales et caractéristiques principales	100-240VAC, 60-50Hz, 8-5A (for models with single AC power supply); 100-240VAC, 47-63Hz, 5.5-2.5A (for models with dual AC power supply); -36- -72VDC, 17A (for models with single DC power supply) -36- -72VDC, 15-7A (for models with dual DC power supply)
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 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)	M1: 3 fans on front panel become as an optional. 2 Alternate DC fans were added on internal rear panel. A1: Deleted Radware China as a factory and updated address for Nexcom. Original certificate dated February 4, 2013.
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	60950-1(ed.2);am1
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	CB110690.02_A1 M1

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

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

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

Intertek

Date: 2014-06-02

Signature: John Quigley

Test Report issued under the responsibility of:

NCB **Intertek** Testing Services NA, Inc

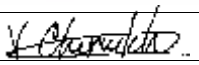
TEST REPORT

IEC 60950-1
Information technology equipment – Safety –
Part 1: General requirements

Report Number. ..... :	CB110690.02
Date of issue..... :	29 January 2013
	Amendment M1: May 19, 2014
Total number of pages	35
CB Testing Laboratory..... :	I.T.L. (PRODUCT TESTING) Ltd.
Address ..... :	1 Bat-Sheva St. POB 87 Lod 71100 ISRAEL
Applicant's name..... :	Radware Ltd.
Address ..... :	22 Raoul Wallenberg Street, Tel-Aviv 69710, Israel
Manufacturer's name……..:	Radware Ltd.
Address ..... :	22 Raoul Wallenberg Street, Tel-Aviv 69710, Israel
Test specification:	
Standard..... :	IEC 60950-1:2005 (Second Edition) + Am 1:2009
Test procedure ..... :	CB Scheme
Non-standard test method…….. :	N/A
Test Report Form No..... :	IEC60950_1C
Test Report Form(s) Originator ..... :	SGS Fimko Ltd
Master TRF..... :	Dated 2012-08

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.

Test item description .....:	OnDemand Switch- LS XL series
Trade Mark .....:	Radware
Manufacturer .....:	Radware Ltd., 22 Raoul Wallenberg Street, Tel-Aviv 69710, Israel
Model/Type reference.....:	See Appendix 3 for models names
Ratings .....:	100-240VAC, 60-50Hz, 8-5A (for models with single AC power supply); 100-240VAC, 47-63Hz, 5.5-2.5A (for models with dual AC power supply); -36- -72VDC, 17A (for models with single DC power supply) -36- -72VDC, 15-7A (for models with dual DC power supply)

Testing procedure and testing location:			
☒	**CB Testing Laboratory**:	I.T.L. (PRODUCT TESTING) Ltd.	
Testing location/ address .....:		1 Bat-Sheva St. POB 87 Lod 71100 ISRAEL	
☐	**Associated CB Laboratory:**		
Testing location/ address .....:			
	Tested by (name + signature) .....:	Yigal Y Cohen	
	Approved by (name + signature) .....:	Vladimir Chernikh	
☐	Testing procedure: **TMP**		
Testing location/ address .....:			
	Tested by (name + signature) .....:		
	Approved by (name + signature) .....:		
☐	Testing procedure: **WMT**		
Testing location/ address .....:			
	Tested by (name + signature) .....:		
	Witnessed by (name + signature) ....:		
	Approved by (name + signature) .....:		
☐	Testing procedure: **SMT**		
Testing location/ address .....:			
	Tested by (name + signature) .....:		
	Approved by (name + signature) .....:		
	Supervised by (name + signature) ...:		
☐	Testing procedure: **RMT**		
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

Summary of testing:	
Tests performed (name of test and test clause): 1.6.2 – Input Test 4.5.1- Heating Test 5.2.2- Electrical strength Test Tests were performed with maximum load on the models represent all AC and DC versions of the units: with single AC PS: ODS-LS XL with single DC PS: ODS-LS XL DC with dual AC PS: ODS-LS XL DUAL with dual DC PS: ODS-LS XL DUAL DC 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.

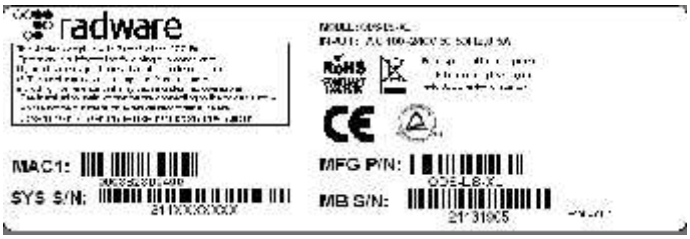
National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Copy of marking plate

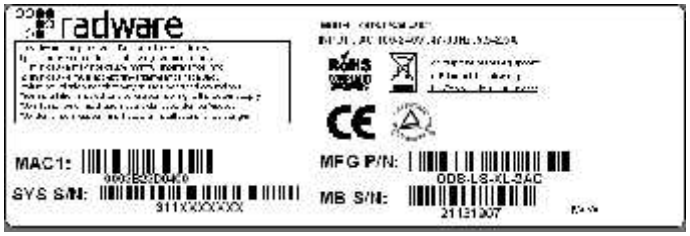
The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

(Additional requirements for markings. See 1.7 NOTE)

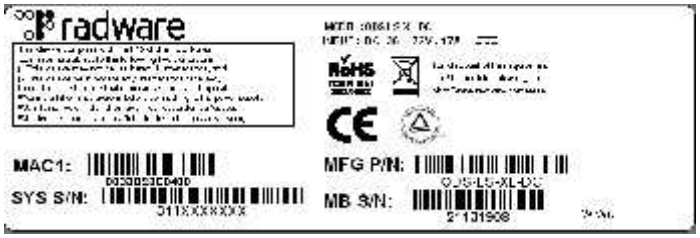
For models AC powered with single power supply



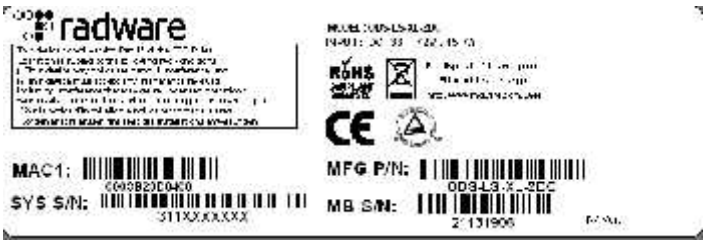
For models AC powered with dual power supply



For models DC powered with single power supply

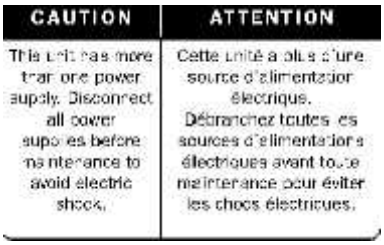


For models DC powered with dual power supply



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

For multi power connection



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Test item particulars.....:	
Equipment mobility.....:	[X] movable [] hand-held [] transportable [x] stationary [] for building-in [] direct plug-in
Connection to the mains .....:	[X] pluggable equipment [x] type A [] type B [x] permanent connection (For DC version) [x] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains
Operating condition.....:	[x] continuous [] rated operating / resting time:
Access location .....:	[x] operator accessible (For AC version) [x] restricted access location (For DC version)
Over voltage category (OVC) .....:	[x] OVC I [x] OVC II [] OVC III [] OVC IV [] other:
Mains supply tolerance (%) or absolute mains supply values .....:	+10%/-10%; for AC powered unit; 36V-72Vdc according to manufacturer requirements
Tested for IT power systems .....:	[x] Yes, for Norway only [] No
IT testing, phase-phase voltage (V) .....:	230V
Class of equipment .....:	[x] Class I [] Class II [] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) .....:	Up to 20A
Pollution degree (PD) .....:	[] PD 1 [x] PD 2 [] PD 3
IP protection class .....:	IPX0
Altitude during operation (m) .....:	Up to 2000m
Altitude of test laboratory (m) .....:	55m
Mass of equipment (kg) .....:	Units: with single PS 8.8kg, with dual PS 9.8kg
Possible test case verdicts:	
- test case does not apply to the test object ..... :	N/A
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)
Testing..... :	
Date of receipt of test item..... :	April 24, 2014
Date(s) of performance of tests..... :	May 6-7, 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 IECEE 02:

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.

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

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.
Four configurations of 2U units were considered:

- AC powered : units with single or dual power supplies
- DC powered : units with single or dual power supplies

All power supplies are certified.

AC powered units are pluggable type A, use detachable power cord. The appliance inlet is part of approved power supply, considered as disconnect device.

DC powered units are permanently connected; use terminal block that is a part of approved power supply, suitable for field wiring.

DC voltages 72V considered as TNV-2.

Power cords are not part of this evaluation.

Units can use laser or copper transceivers. The laser transceivers are certified Class 1 laser complying with EN60825-1 and 21CFR (J).

Model differences – The models are different in software versions and power supplies.

All models have same hardware and mechanical construction and can be AC or DC powered.

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

Report history:
CB110690.01 – original report
CB110690.02 – Updated standard version including testing for china deviation
CB110690.02_A1 - Updated current factory address – Nexcom international Co. Ltd and cancelling Radware China as factory
CB110690.02_M1 – 3 fans on front panel become as an optional
2 Alternate DC fans were added on internal rear panel with better CFM

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

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

	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	Components either comply with the relevant standard or were subjected to the necessary test.	P
1.5.2	Evaluation and testing of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this Standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component Standard. Components, for which no relevant IEC-Standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.	P

1.6	**Power interface**		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

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

2	**PROTECTION FROM HAZARDS**		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	Only SELV circuits and safety earth are accessible to an operator. Protection is achieved by overall equipment basic insulation and earthing of accessible conductive parts. DC powered are for installation in RAL (Restricted access location)	P
2.1.1.1	Access to energized parts	The operator has access to bare parts of SELV circuits only	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) .....:	DC unit is for RAL, no test required	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	DC units comply with requirements for protection in restricted access location.	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

3	**WIRING, CONNECTIONS AND SUPPLY**		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	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

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

4.4	**Protection against hazardous moving parts**		P
4.4.1	General	DC fans provided	P
4.4.2	Protection in operator access areas ..... :	Fans are properly guarded	P
	Household and home/office document/media shredders	(see Annex EE)	N/A
4.4.3	Protection in restricted access locations ..... :	Unintentional contact with hazards 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	Unintentional contact with hazardous moving parts is unlikely.	P
4.4.5.1	General	Unintentional contact with hazards is unlikely.	P
	Not considered to cause pain or injury. a)……..:	Unintentional contact with hazardous moving parts is unlikely.	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	Unintentional contact with hazardous moving parts is unlikely.	P
	Use of symbol or warning ……..:		N/A
4.4.5.3	Protection for service persons	Unintentional contact with hazardous moving parts is unlikely.	P
	Use of symbol or warning ……..:		N/A
4.5	**Thermal requirements**		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 ..... :		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

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

B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		P
B.1	General requirements	Certified DC fans are used	N/A
	Position .....:		—
	Manufacturer .....:		—
	Type .....:		—
	Rated values .....:		—
B.2	Test conditions	Certified DC fans are used	N/A
B.3	Maximum temperatures	Certified DC fans are used	N/A
B.4	Running overload test	Certified DC fans are used	N/A
B.5	Locked-rotor overload test	Certified DC fans are used	N/A
	Test duration (days) .....:		—
	Electric strength test: test voltage (V) .....:		—
B.6	Running overload test for d.c. motors in secondary circuits	Certified DC fans are used	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	Certified DC fans are used	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	Certified DC fans are used	N/A
B.9	Test for three-phase motors	Certified DC fans are used	N/A
B.10	Test for series motors	Certified DC fans are used	N/A
	Operating voltage (V) .....:		—

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

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

1.5.1	**TABLE: List of critical components**	

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
PCB	Interchangeable	Interchangeable	Flame rated min V-1, temperature rated min. 105°C	UL796	UR
Plastic front decorative part	Interchangeable	Interchangeable	Flame rated min. HB	UL94	UR
AC single power supply	Zippy Technology co.	P1H-6350P	Input: 100-240Vac, 60-50Hz, 8-5A; output: +5V, 25A; +12V, 22-28A; +3.3V, 20A; -5V, 0.5A; -12V, 0.5A; +5Vvsb, 2A; +5V and +3.3V 175W max; Total 350W max.	IEC60950-1 2ed UL60950-1 2ed. CSA C22.2 No.60950-1-07 2ed.	cURus, TUV

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

AC dual power supply	Zippy Technology co.	R1S2-5380V4V	Rated: 100-240Vac, 47-63Hz, 5.5-2.5A; output: 380W max., +5V, 0-20A, +12V, 30A; +3.3V, 0-20A, -12V, 0-0.5A, +5VSB, 0-2.5A, +5V and +3.3V, total 140Wmax	IEC60950-1 2ed UL60950-1 2ed. CSA C22.2 No.60950-1-07 2ed.	cURus, TUV
DC single power supply	Zippy Technology co.	DP1H-6350F	Rated: Input: -36 - -72Vdc, 17A; Output: +5V, 35A; +12V, 22A; +3.3V, 0-20A; -5V, 0-0.5A; -12V, 0-0.5A; +5Vsb, 0-2A. +5V and +3.3V Total max.40A, total output power 350W max	IEC60950-1 2ed UL60950-1 2ed. CSA C22.2 No.60950-1-07 2ed.	cURus, TUV
DC dual power supply	Zippy Technology co.	DR1S2-5380V4V	Rated: input: -36 - -72Vdc, 15-7A; output: 380W max., +5V, 0-20A, +12V, 30A; +3.3V, 0-20A, -12V, 0-0.5A, +5VSB, 0-2.5A, +5V and +3.3V, total 140Wmax	IEC60950-1 2ed UL60950-1 2ed. CSA C22.2 No.60950-1-07 2ed.	cURus, TUV
Fan 3 provided on front side (Optional) and 1 on rear side	Everflow	R124028BU	40x40x28mm, Rated: 12V, 0.4A max., 18.03 CFM	UL507, CSA-C22.2 No. 113-M1984	TUV, cURus
Alternate/ Fan 3 provided on front side (Optional) and 1 on rear side	Sanyo Denki	9GV0412P3G03	40x40x28mm, Rated: 12V, 0.52A max., 21.1 CFM ($0.6\ m^3$/min)	UL507, CSA-C22.2 No. 113-M1984	TUV, cURus
Fan 1 provided	Everflow	RB7038BU	Rated : 12V,0.8A Max 66.45CFM	UL507, CSA-C22.2 No. 113-M1984	TUV, cURus

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Alternate Fan 1 provided	Sanyo Denki	9GA0712P1H001	Rated : 12V, 1.1A max., 67.8CFM (1.92m^3/min)	UL507, CSA-C22.2 No. 113-M1984	TUV, cURus
Fan 1 provided on CPU	Everflow	F126025BU	60x60x25mm, Rated: 12V, 0.26A max , 24.49 CFM	UL507, CSA-C22.2 No. 113-M1984	TUV, cURus
Hard disk driver	Interchangeable	Interchangeable	Rated: 5V, 0.7A	UL/CSA60950-1	cURus, TUV
Lithium battery on CPU	Spectrum Brands or equivalent	BR2032	3.0Vdc, max. abnormal charging current 5mA, protected by resistor R1113 1k and diode D59	UL1642	cURus
Lithium battery BAT1 (Alternate)	VIC-DAWN Enterprise co Ltd or equivalent	CR2032	3.0Vdc, max. abnormal charging current 5mA, protected by resistor R1113 1k and diode D59	UL1642	cURus
Lithium battery BAT1 (Alternate)	Panasonic corporation, Panasonic corporation of north America or equivalent	CR2032	3.0Vdc, max. abnormal charging current 5mA, protected by resistor R1113 1k and diode D59	UL1642	cURus
PTC U2F1, U4F1	Polytronics Technology or equivalent	SMD1206P150TFT	Rated Ihold =1.5A, Itrip 3A, 8V max.	UL 1434, IEC 60730-1	cURus, TUV
Laser transceiver Gigabit Ethernet ports 16 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	cURus or CSA, TUV
Laser transceiver Gigabit Ethernet ports 16 provided (Optional) Alternate	Sanoc	SI8512-X5ATO-3C	SFP transceiver - Multimode - 3.3V - 850nm - 1.25Gbps	UL/CSA60950-1, EN60825-1, EN60825-2	cURus or CSA, TUV

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Laser transceiver Gigabit Ethernet ports 16 provided (Optional) Alternate	Sanoc	SI1312-10ATO	SFP transceiver - Singlemode - 3.3V - 1310nm - 1.25Gpbs	UL/CSA60950-1, EN60825-1, EN60825-2	cURus or CSA, TUV
Laser transceiver Gigabit Ethernet ports 16 provided (Optional) Alternate	Sanoc	SI1512-80ATO	SFP transceiver – Single mode - 3.3V - 1550nm	UL/CSA60950-1, EN60825-1, EN60825-2	cURus or CSA, TUV
Copper transceiver Gigabit Ethernet ports 16 provided (Optional) Alternate	Methode	DM7041-R-L	SFP transceiver, 3.3 V, 1000BASE-T - Copper	-	-
Copper transceiver (16 provided (Optional alternate)	Sanoc	SI0012-X1ATO[N]	SFP Copper - 1000 Mbps - 3.3V	-	-
Copper transceiver (16 provided (Optional alternate)	Optech	OP6C-TX1-00-C2	SFP Copper - 1000 Mbps - 3.3V	-	-
Laser transceiver Gigabit Ethernet ports 2 provided (Optional)	Finisar	FTLX1471D3BCL- RW	SFP+ transceiver - Single mode - 3.3 V - 1310nm - 10Gbps	UL/CSA60950-1, EN60825-1, EN60825-2	cURus or CSA, TUV
Laser transceiver Gigabit Ethernet ports 2 provided (Optional) Alternate	Sumitomo Electric Interconnect	SPP5200LR-GL	SFP+ transceiver - Single mode - 3.3 V - 1310nm - 10Gbps	UL/CSA60950-1, EN60825-1, EN60825-2	cURus or CSA, TUV
Laser transceiver Gigabit Ethernet ports 2 provided (Optional) Alternate	Finisar	FTLX8571D3BCL-RW	SFP+ transceiver - Single mode - 3.3 V - 850nm - 10Gbps	UL/CSA60950-1, EN60825-1, EN60825-2	cURus or CSA, TUV

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Laser transceiver Gigabit Ethernet ports 2 provided (Optional) Alternate	Sumitomo Electric Interconnect	SPP5101SR-GL	SFP+ transceiver - Single mode - 3.3 V - 1310nm - 10Gbps	UL/CSA60950-1, EN60825-1, EN60825-2	cURus or CSA, TUV
SELV external connectors	Interchangeable	Interchangeable	Flame rated min. V-1	UL94	cURus
SELV internal connectors	Interchangeable	Interchangeable	Flame rated min. V-2	UL94	cURus
Internal Wiring, (secondary)	Interchangeable	Interchangeable	Rated min. 300V, 60°C, VW-1 or FT-1 or better.	UL758	cURus
Supplementary information:					

National Differences			
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

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	2.2	-	198	-	-	Maximum normal load
100	1.95	8	195	-	-	Maximum normal load
240	0.8	5	185	-	-	Maximum normal load
264	0.71	-	175	-	-	Maximum normal load
Supplementary information: Model: ODS-LS XL with PS P1H-6350P all ports loaded, program running						

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
90	2.40	-	213	-	-	Maximum normal load 2PS
100	2.18	5.5	212	-	-	""
240	1.05	2.5	230	-	-	""
264	1.18	-	234	-	-	""
90	2.05	-	183	-	-	Maximum normal load 1PS
100	1.84	5.5	182	-	-	""
240	0.68	2.5	153	-	-	""
264	0.71	-	178	-	-	""
Supplementary information: Model: ODS-LS-XL DUAL with PS P1S2-5380V4V all ports loaded, program running						

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
36	4.78	17	172	-	-	Maximum normal load
48	3.57	17	171	-	-	Maximum normal load
60	2.85	17	171	-	-	Maximum normal load
72	2.4	17	173	-	-	Maximum normal load
Supplementary information: Model: ODS-LS XL DC with PS DP1H-6350F all ports loaded, program running						

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
36	5.2	15	41.2	-	-	Maximum normal load 2PS
48	3.8	-	51.8	-	-	""
60	2.8	-	62.8	-	-	""
72	2.5	7	74.5	-	-	""
36	4.5	15	40.5	-	-	Maximum normal load 1PS
48	3.6	-	51.6	-	-	""
60	2.9	-	62.9	-	-	""
72	2.4	7	74.4	-	-	""
Supplementary information: Model: ODS-LS-XL-DUAL DC with PS DP1S2-5380V4V all ports loaded, program running						

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: Thermal requirements						P
	Supply voltage (V) .....:	36	72				—
	Ambient T_{min} (°C) .....:	24.5	24.5				—
	Ambient T_{max} (°C) .....:	24.5	24.5				—
Maximum measured temperature T of part/at:		T (°C)					Allowed T_{max} (°C)
Lithium Battery		27.8	27.7				59.5(85-50+24.5)
PCB near CPU 33		40.2	40.2				79.5(105-50+24.5)
PCB near CPU 59		36.5	36.4				79.5 (105-50+24.5)
Hard disk (HDD)		27.4	27.1				79.5 (105-50+24.5)
PCB near U26		45.7	41.5				79.5 (105-50+24.5)
Coil L21		35.2	34.2				64.5(100-10-50+24.5)
PS - mains transformer		51.2	51.2				64.5(100-10-50+24.5)
Enclosure		27.9	27.7				46.5(70-50+24.5)

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: Tested unit ODS-LS XL DC with single PS							
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
	Supply voltage (V) .....:	36	72				—
	Ambient T_{min} (°C) .....:	23.5	23.5				—
	Ambient T_{max} (°C) .....:	23.5	23.5				—
Maximum measured temperature T of part/at:		T (°C)					Allowed T_{max} (°C)
Lithium Battery		27.4	27.5				58.5(85-50+23.5)
PCB near CPU 65		33.5	33.6				78.5(105-50+23.5)
PCB near CPU 33		24.6	27.1				78.5(105-50+23.5)
Hard disk (HDD)		23.9	26.6				78.5(105-50+23.5)
PCB near U26		28.4	28.7				78.5(105-50+23.5)
Coil L21		35.2	35.3				63.5(100-10-50+23.5)
Enclosure		25.3	26.2				45.5(70-50+23.5)
Supplementary information: Tested unit ODS-LS XL dual DC power supply with single PS supply							

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
	Supply voltage (V) .....:	90	264				—
	Ambient T_{min} (°C) .....:	24.5	24.5				—
	Ambient T_{max} (°C) .....:	24.5	24.5				—
Maximum measured temperature T of part/at:		T (°C)					Allowed T_{max} (°C)
Lithium Battery		26.4	27.6				59.5(85-50+24.5)
PCB near CPU 65		38.9	38.7				79.5(105-50+24.5)
PCB near CPU 33		32.4	34.8				79.5 (105-50+24.5)
Hard disk HDD		26.1	26.7				79.5 (105-50+24.5)
Pcb near U26		37.6	38.2				79.5 (105-50+24.5)
On Coil L21		33.8	33.4				64.5(100-10-50+24.5)
PS - coil		49.1	50.1				64.5(100-10-50+24.5)
Enclosure		26.3	26.8				46.5(70-50+24.5)

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: Tested unit ODS-LS XL with single AC PS							
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
	Supply voltage (V) .....:	90	264				—
	Ambient T_{min} (°C) .....:	23.5	23.5				—
	Ambient T_{max} (°C) .....:	23.5	23.5				—
Maximum measured temperature T of part/at:		T (°C)					Allowed T_{max} (°C)
Lithium Battery		24.2	24.2				59.5(85-50+24.5)
PCB near CPU 65		33.3	33.3				79.5(105-50+24.5)
PCB near CPU 33		26	26.1				79.5 (105-50+24.5)
Hard disk HDD		23.9	23.4				79.5 (105-50+24.5)
Pcb near U26		32.1	32.3				79.5 (105-50+24.5)
On Coil L21		35.6	53.6				64.5(100-10-50+24.5)
PS - coil		42	42.1				64.5(100-10-50+24.5)
Enclosure		24.8	25				46.5(70-50+24.5)
Supplementary information: Tested unit ODS-LS-XL DUAL AC							

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

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Functional:				
Basic/supplementary:				
L&N to GND of unit ODS-LS XL		DC	2121	No
L&N to GND of unit ODS-LS XL DUAL		DC	2121	No
Terminal block “+”&”-“ to GND of unit ODS-LS XL DC		DC	1414	No
Terminal block “+”&”-“ to GND of unit ODS-LS XL DUAL DC		DC	1414	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	25/02/2015
1040	DVM	Fluke	87	60370049	03/03/2015
1140	Digital timer	Golf	Timer Count Down/Up		28/02/2015
1323	Power Supply	Lambda	GEN8-180	1323	25/02/2015
1610	Digital Thermometer	Fluke	Hydra 2620A	5929005	03/03/2015
1217	Hipot Tester	Hipotronics	HD 100	390301	28/02//2015

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Appendix 1 – Photographs

Internal view – Modification with an internal DC fans with a single power supply

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Internal view – Modification with an internal DC fans with a dual power supplies

End of the test report

Test Report issued under the responsibility of:

NCB **Intertek** Testing Services NA, Inc

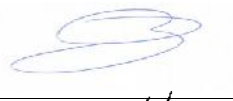
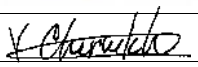
TEST REPORT

IEC 60950-1
Information technology equipment – Safety –
Part 1: General requirements

Report Number. ..... :	CB110690.02
Date of issue..... :	29 January 2013
	Amendment A1: May 16, 2013
Total number of pages	12
CB Testing Laboratory..... :	I.T.L. (PRODUCT TESTING) Ltd.
Address ..... :	1 Bat-Sheva St. POB 87 Lod 71100 ISRAEL
Applicant's name..... :	Radware Ltd.
Address ..... :	22 Raoul Wallenberg Street, Tel-Aviv 69710, Israel
Manufacturer's name……..:	Radware Ltd.
Address ..... :	22 Raoul Wallenberg Street, Tel-Aviv 69710, Israel
Test specification:	
Standard..... :	IEC 60950-1:2005 (Second Edition) + Am 1:2009
Test procedure ..... :	CB Scheme
Non-standard test method…….. :	N/A
Test Report Form No..... :	IEC60950_1C
Test Report Form(s) Originator ..... :	SGS Fimko Ltd
Master TRF..... :	Dated 2012-08

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.

Test item description .....:	OnDemand Switch- LS XL series
Trade Mark .....:	Radware
Manufacturer .....:	Radware Ltd., 22 Raoul Wallenberg Street, Tel-Aviv 69710, Israel
Model/Type reference.....:	See Appendix 3 for models names
Ratings .....:	100-240VAC, 60-50Hz, 8-5A (for models with single AC power supply); 100-240VAC, 47-63Hz, 5.5-2.5A (for models with dual AC power supply); -36- -72VDC, 17A (for models with single DC power supply) -36- -72VDC, 15-7A (for models with dual DC power supply)

Testing procedure and testing location:			
☒	**CB Testing Laboratory**:	I.T.L. (PRODUCT TESTING) Ltd.	
Testing location/ address .....:		1 Bat-Sheva St. POB 87 Lod 71100 ISRAEL	
☐	**Associated CB Laboratory:**		
Testing location/ address .....:			
	Tested by (name + signature) .....:	Yigal Y Cohen	
	Approved by (name + signature).....:	Vladimir Chernikh	
☐	Testing procedure: **TMP**		
Testing location/ address .....:			
	Tested by (name + signature) .....:		
	Approved by (name + signature).....:		
☐	Testing procedure: **WMT**		
Testing location/ address .....:			
	Tested by (name + signature) .....:		
	Witnessed by (name + signature) ....:		
	Approved by (name + signature).....:		
☐	Testing procedure: **SMT**		
Testing location/ address .....:			
	Tested by (name + signature) .....:		
	Approved by (name + signature).....:		
	Supervised by (name + signature) ...:		
☐	Testing procedure: **RMT**		
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):

Summary of testing: **All testing was taken from reports CB110690.01**	
Tests performed (name of test and test clause): **None**	**Testing location:** N/A

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.

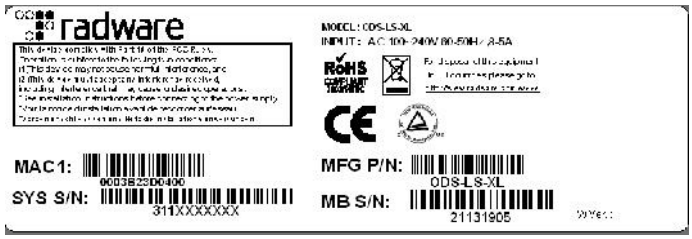
National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Copy of marking plate

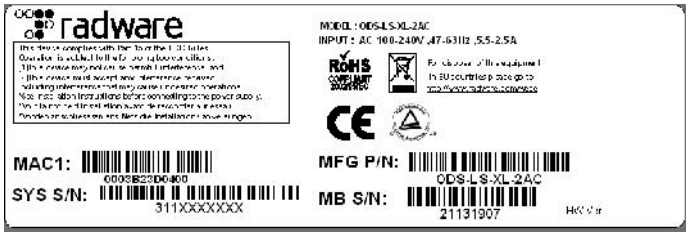
The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

(Additional requirements for markings. See 1.7 NOTE)

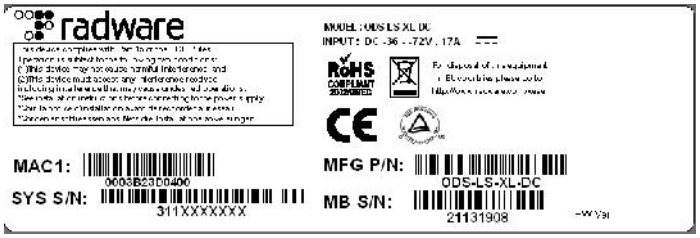
For models AC powered with single power supply



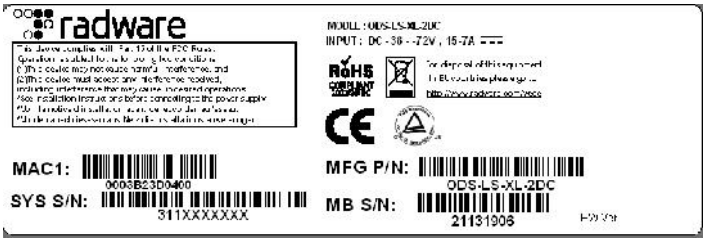
For models AC powered with dual power supply



For models DC powered with single power supply



For models DC powered with dual power supply



National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

For multi power connection

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.

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Test item particulars.....:	
Equipment mobility.....:	[X] movable [] hand-held [] transportable [x] stationary [] for building-in [] direct plug-in
Connection to the mains .....:	[X] pluggable equipment [x] type A [] type B [x] permanent connection (For DC version) [x] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains
Operating condition.....:	[x] continuous [] rated operating / resting time:
Access location .....:	[x] operator accessible (For AC version) [x] restricted access location (For DC version)
Over voltage category (OVC) .....:	[x] OVC I [x] OVC II [] OVC III [] OVC IV [] other:
Mains supply tolerance (%) or absolute mains supply values .....:	+10%/-10%; for AC powered unit; 36V-72Vdc according to manufacturer requirements
Tested for IT power systems .....:	[x] Yes, for Norway only [] No
IT testing, phase-phase voltage (V) .....:	230V
Class of equipment .....:	[x] Class I [] Class II [] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) .....:	Up to 20A
Pollution degree (PD) .....:	[] PD 1 [x] PD 2 [] PD 3
IP protection class .....:	IPX0
Altitude during operation (m) .....:	Up to 2000m
Altitude of test laboratory (m) .....:	55m
Mass of equipment (kg) .....:	Units: with single PS 8.8kg, with dual PS 9.8kg
Possible test case verdicts:	
- test case does not apply to the test object ..... :	N/A
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)
Testing..... :	
Date of receipt of test item..... :	16 May 2013
Date(s) of performance of tests..... :	16 May 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 IECEE 02:

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.

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

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.
Four configurations of 2U units were considered:

- AC powered : units with single or dual power supplies
- DC powered : units with single or dual power supplies

All power supplies are certified.

AC powered units are pluggable type A, uses detachable power cord. The appliance inlet is part of approved power supply, considered as disconnect device.

DC powered units are permanently connected; uses terminal block that is a part of approved power supply, suitable for field wiring.

DC voltages 72V considered as TNV-2.

Power cords are not part of this evaluation.

Units can use laser or copper transceivers. The laser transceivers are certified Class 1 laser complying with EN60825-1 and 21CFR (J).

Model differences – The models are different in software versions and power supplies.

All models have same hardware and mechanical construction and can be AC or DC powered.

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

Report history:
CB110690.01 –original report
CB110690.02 – updated standard version including testing for China deviation
CB110690.02_A1 -updating a current factory address – Nexcom International Co. Ltd and cancelling Radware China as a factory

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

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)

End of test report

Test Report issued under the responsibility of:

NCB **Intertek** Testing Services NA, Inc

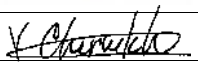
TEST REPORT

IEC 60950-1
Information technology equipment – Safety –
Part 1: General requirements

Report Number. ..... :	CB110690.02
Date of issue..... :	29 January 2013
Total number of pages	156
CB Testing Laboratory..... :	I.T.L. (PRODUCT TESTING) Ltd.
Address ..... :	1 Bat-Sheva St. POB 87 Lod 71100 ISRAEL
Applicant's name..... :	Radware Ltd.
Address ..... :	22 Raoul Wallenberg Street, Tel-Aviv 69710, Israel
Manufacturer's name……..:	Radware Ltd.
Address ..... :	22 Raoul Wallenberg Street, Tel-Aviv 69710, Israel
Test specification:	
Standard..... :	IEC 60950-1:2005 (Second Edition) + Am 1:2009
Test procedure ..... :	CB Scheme
Non-standard test method…….. :	N/A
Test Report Form No..... :	IEC60950_1C
Test Report Form(s) Originator ..... :	SGS Fimko Ltd
Master TRF..... :	Dated 2012-08

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.

Test item description .....:	OnDemand Switch- LS XL series
Trade Mark .....:	Radware
Manufacturer .....:	Radware Ltd., 22 Raoul Wallenberg Street, Tel-Aviv 69710, Israel
Model/Type reference.....:	See Appendix 3 for models names
Ratings .....:	100-240VAC, 60-50Hz, 8-5A (for models with single AC power supply); 100-240VAC, 47-63Hz, 5.5-2.5A (for models with dual AC power supply); -36- -72VDC, 17A (for models with single DC power supply) -36- -72VDC, 15-7A (for models with dual DC power supply)

Testing procedure and testing location:			
☒	**CB Testing Laboratory**:	I.T.L. (PRODUCT TESTING) Ltd.	
Testing location/ address .....:		1 Bat-Sheva St. POB 87 Lod 71100 ISRAEL	
☐	**Associated CB Laboratory:**		
Testing location/ address .....:			
	Tested by (name + signature) .....:	Yigal Y Cohen	
	Approved by (name + signature) .....:	Vladimir Chernikh	
☐	Testing procedure: **TMP**		
Testing location/ address .....:			
	Tested by (name + signature) .....:		
	Approved by (name + signature) .....:		
☐	Testing procedure: **WMT**		
Testing location/ address .....:			
	Tested by (name + signature) .....:		
	Witnessed by (name + signature) ....:		
	Approved by (name + signature) .....:		
☐	Testing procedure: **SMT**		
Testing location/ address .....:			
	Tested by (name + signature) .....:		
	Approved by (name + signature) .....:		
	Supervised by (name + signature) ...:		
☐	Testing procedure: **RMT**		
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 differecnes

Appendix 3 –Model names

Appendix 4 – licences

Summary of testing:

All testing was taken from reports CB110690.01

Tests performed (name of test and test clause):

Original testing from CB110690.01

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
4.1 -Stability Test
4.2 -Mechanical Strength Tests
4.5.1- Heating Test
5.1- Touch Current Test
5.2.2- Electrical strength Test
5.3.1- Abnormal Operation Test

Tests were performed with maximum load on the models represent all AC and DC versions of the units:
with single AC PS: ODS-LS XL
with single DC PS: ODS-LS XL DC
with dual AC PS: ODS-LS XL DUAL
with dual DC PS: ODS-LS XL DUAL DC

Additional testing in this report:

2.9.2 humidity conditioning (For China deviations)

5.2.2 Electric strength

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.

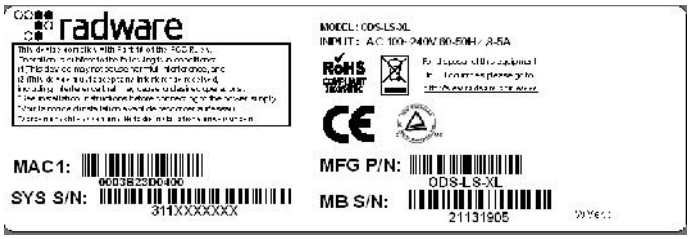
IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Copy of marking plate

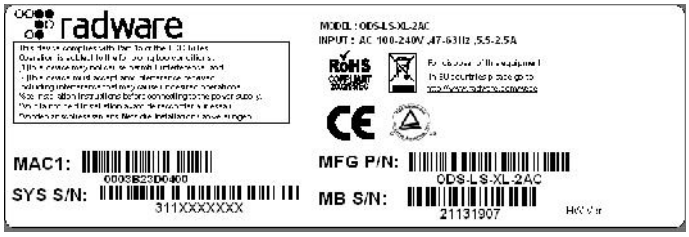
The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

(Additional requirements for markings. See 1.7 NOTE)

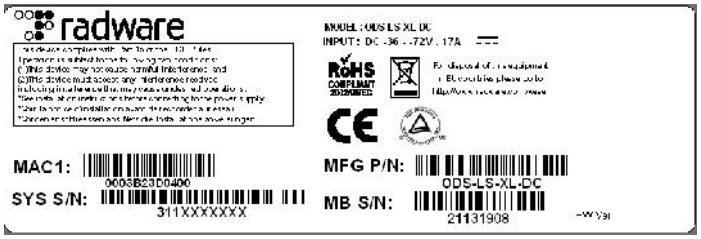
For models AC powered with single power supply



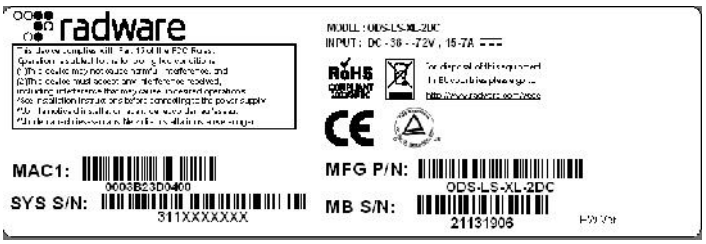
For models AC powered with dual power supply



For models DC powered with single power supply



For models DC powered with dual power supply



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

For multi power connection

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.

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

Test item particulars ..... :	
Equipment mobility ..... :	[X] movable [] hand-held [] transportable [x] stationary [] for building-in [] direct plug-in
Connection to the mains ..... :	[X] pluggable equipment [x] type A [] type B [x] permanent connection (For DC version) [x] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains
Operating condition ..... :	[x] continuous [] rated operating / resting time:
Access location ..... :	[x] operator accessible (For AC version) [x] restricted access location (For DC version)
Over voltage category (OVC) ..... :	[x] OVC I [x] OVC II [] OVC III [] OVC IV [] other:
Mains supply tolerance (%) or absolute mains supply values ..... :	+10%/-10%; for AC powered unit; 36V-72Vdc according to manufacturer requirements
Tested for IT power systems ..... :	[x] Yes, for Norway only [] No
IT testing, phase-phase voltage (V) ..... :	230V
Class of equipment ..... :	[x] Class I [] Class II [] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) ..... :	Up to 20A
Pollution degree (PD) ..... :	[] PD 1 [x] PD 2 [] PD 3
IP protection class ..... :	IPX0
Altitude during operation (m) ..... :	Up to 2000m
Altitude of test laboratory (m) ..... :	55m
Mass of equipment (kg) ..... :	Units: with single PS 8.8kg, with dual PS 9.8kg
Possible test case verdicts:	
- test case does not apply to the test object..... :	N/A
- test object does meet the requirement ..... :	P (Pass)
- test object does not meet the requirement ..... :	F (Fail)
Testing ..... :	
Date of receipt of test item ..... :	CB110690.01: 2 November 2011 CB110690.02: 12 November 2012
Date(s) of performance of tests ..... :	CB110690.01: 2-30 November 2011 CB110690.02: 20 November 2012

IEC 60950-1			
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 IECEE 02:

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.

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

Name and address of factory (ies).....:	1. Nexcom International Co., Ltd 9F,10F&12F,No.63, Sec.1, Sanmin Rd., Banqiao Dist, New Taipei City, Taiwan 2. **Radware China Ltd. (**睿伟网络科技（上海）有限公司) Room 1304 - 1305 the Bund Square, No.858 Long Hua Dong Road, Shanghai, China 200032 (上海市龙华东路858号海外滩中心B办公楼1304-1305室 （近打浦路）

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

General product information:

The units are movable or rack-mountable, Class I, may be AC or DC powered.
Four configurations of 2U units were considered:

- AC powered : units with single or dual power supplies
- DC powered : units with single or dual power supplies

All power supplies are certified.

AC powered units are pluggable type A, uses detachable power cord. The appliance inlet is part of approved power supply, considered as disconnect device.

DC powered units are permanently connected; uses terminal block that is a part of approved power supply, suitable for field wiring.

DC voltages 72V considered as TNV-2.

Power cords are not part of this evaluation.

Units can use laser or copper transceivers. The laser transceivers are certified Class 1 laser complying with EN60825-1 and 21CFR (J).

Model differences – The models are different in software versions and power supplies.

All models have same hardware and mechanical construction and can be AC or DC powered.

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

Report history:
CB110690.01 – original report
CB110690.02 – updated standard version including testing for china deviation

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

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

	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	components either comply with the relevant standard or were subjected to the necessary test.	P
1.5.2	Evaluation and testing of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this Standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component Standard. Components, for which no relevant IEC-Standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.	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	Evaluated as part of approved power supply.	N/A
1.5.7	Resistors bridging insulation	Evaluated as part of approved power supply.	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	Considered and certified as part of the power supplies	N/A
1.5.9.2	Protection of VDRs	Considered and certified as part of the power supplies	N/A
1.5.9.3	Bridging of functional insulation by a VDR	Considered and certified as part of the power supplies	N/A
1.5.9.4	Bridging of basic insulation by a VDR	Considered and certified as part of the power supplies	N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	Considered and certified as part of the power supplies	N/A
1.6	**Power interface**		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	Considered as part of approved power supply	N/A
1.7	**Marking and instructions**		P
1.7.1	Power rating and identification markings	Provided	P
1.7.1.1	Power rating marking	Provided	P
	Multiple mains supply connections.....:	See installation instructions	P
	Rated voltage(s) or voltage range(s) (V) .....:	100-240Vac; 36-72Vdc	P
	Symbol for nature of supply, for d.c. only.....:	Provided (on the DC units)	
	Rated frequency or rated frequency range (Hz) ....:	60-50Hz for AC units with single PS 47-63Hz for AC units with dual PS	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (mA or A) .....:	8A-5A for AC units single PS 5.5A-2.5A for AC units dual PS, 17A for DC units single PS; 15-7A for DC units dual PS	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
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	Clear statement are 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	Safety instructions include a note that specifies connection for IT for Norway only	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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.7.2	Terminals for a.c. mains supply conductors	Unit is not permanently connected to AC mains	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	DC terminal block is marked "+" "-" for DC connection of 1U units.	P
1.7.8	Controls and indicators	No such parts	N/A
1.7.8.1	Identification, location and marking .....:	Only functional indicators are used.	P
1.7.8.2	Colours .....:	No switches	N/A
1.7.8.3	Symbols according to IEC 60417.....:	Earthing screw is marked with symbol 5019 IEC 60417	P
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 of 2U units 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.....:	DC units are intended for RESTRICTED ACCESS LOCATION. Suitable text contains installation instruction.	P
2	**PROTECTION FROM HAZARDS**		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	Only SELV circuits and safety earth are accessible to an operator. Protection is achieved by overall equipment basic insulation and earthing of accessible conductive parts. DC powered are for installation in RAL (Restricted access location)	P
2.1.1.1	Access to energized parts	The operator has access to bare parts of SELV circuits only	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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) .....:	DC unit is for RAL, no test required	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 (Vpeak or Vrms); 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	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
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 after 1 sec.	—
2.1.1.8	Energy hazards – d.c. mains supply	Hazard energy level is removed after 2 s: residual voltage after 0.1 s is 0V.	P
	a) Capacitor connected to the d.c. mains supply ..:	Part of certified power supply	N/A
	b) Internal battery connected to the d.c. mains supply .....:	No such case	N/A
2.1.1.9	Audio amplifiers .....:	No such parts	N/A

IEC 60950-1			
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	DC units comply with requirements for protection in restricted access location.	P

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

2.2	**SELV circuits**		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	N/A
2.2.4	Connection of SELV circuits to other circuits ..... :	The SELV circuits are connected to SELV circuits	P

2.3	**TNV circuits**		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 circuits are classified as TNV circuits	—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions ..... :		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed ..... :		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed ..... :		—
2.3.5	Test for operating voltages generated externally		N/A

2.4	**Limited current circuits**		N/A
2.4.1	General requirements	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) ..... :		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Measured voltage (V) ..... :		—
	Measured circuit capacitance (nF or µF) ..... :		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	**Limited power sources**		P
	a) Inherently limited output	Ethernet and signal/data ports are inherently limited signal/data outputs not associated with power transfer	P
	b) Impedance limited output	USB ports are protected by certified PTC rated 1.5A Ihold, 3A Itrip	P
	c) Regulating network limited output under normal operating and single fault condition	No such outputs	N/A
	d) Overcurrent protective device limited output	No such outputs	N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA) ..... :		—
	Current rating of overcurrent protective device (A) .:		—
	Use of integrated circuit (IC) current limiters	(See Annex CC)	N/A
2.6	**Provisions for earthing and bonding**		P
2.6.1	Protective earthing	Accessible conductive parts are connected to protective earth in accordance with 2.6.1a), b)	P
2.6.2	Functional earthing	Circuits, which provide functional earthing, are electrically connected to protective earthing.	P
2.6.3	Protective earthing and protective bonding conductors	Requirements of 2.6.3.1, 2.6.3.2, 2.6.3.3 applicable	P
2.6.3.1	General	Protective protective bonding conductors comply with 2.6.1 a), b)	P
2.6.3.2	Size of protective earthing conductors	Power cord is not part of investigation	N/A
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.3	Size of protective bonding conductors	Protective bonding conductors passed the test of 2.6.3.4	P
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
	Protective current rating (A), cross-sectional area (mm^2), AWG..... :	Protective bonding conductors passed the test of 2.6.3.4 based on protective current 20A	
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)..... :	Test current 40A for a period of 2 minutes AC unit with single PS: 0.007Ω, voltage drop 0.28V AC unit with dual PS: 0.012Ω, voltage drop 0.48V DC unit with single PS: 0.006Ω, voltage drop 0.24V DC unit with dual PS: 0.009 Ω, voltage drop 0.36V	P
2.6.3.5	Colour of insulation ..... :	Part of certified power supply	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 screw 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 incorporates IEC 60320 type appliance inlet for protective earthing. Bonding is provided with mounting screws. DC unit – External screw terminal is provided as main protective earthing terminal. Protective bonding is provided with mounting screws. External PE terminal provided.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A), type, nominal thread diameter (mm)..... :	PE terminal located on the rear panel: Rated current 17 A. Earthing screw terminals have 5mm thread diameter	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	No such conductors.	P
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
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No protective devices in the earthling 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 distributor system.	N/A
2.7	**Overcurrent and earth fault protection in primary circuits**		P
2.7.1	Basic requirements	AC units: Pluggable equipment 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	AC units are Pluggable Type A.	N/A
2.7.2	Faults not simulated in 5.3.7	Earth fault protection to be provided by buildings installation	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.7.3	Short-circuit backup protection	Building installation provides short-circuit back-up protection for the ac rated units.	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 equipment	N/A
2.7.6	Warning to service personnel ..... :	No protective device provided in the neutral conductor.	N/A
2.8	**Safety interlocks**		N/A
2.8.1	General principles	No interlocks provided	N/A
2.8.2	Protection requirements	No interlocks provided	N/A
2.8.3	Inadvertent reactivation	No interlocks provided	N/A
2.8.4	Fail-safe operation	No interlocks provided	N/A
	Protection against extreme hazard	No interlocks provided	N/A
2.8.5	Moving parts	No interlocks provided	N/A
2.8.6	Overriding	No interlocks provided	N/A
2.8.7	Switches, relays and their related circuits	No interlocks provided	N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) ..... :	No interlocks provided	N/A
2.8.7.2	Overload test	No interlocks provided	N/A
2.8.7.3	Endurance test	No interlocks provided	N/A
2.8.7.4	Electric strength test	No interlocks provided	N/A
2.8.8	Mechanical actuators	No interlocks provided	N/A
2.9	**Electrical insulation**		P
2.9.1	Properties of insulating materials	No natural rubber, asbestos or hygroscopic materials used as insulation	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.9.2	Humidity conditioning	For AC version - Humidity test was conducted 48H hours for China deviation See National Differences China (CH).	P
	Relative humidity (%), temperature (°C) ..... :	93% , 22^0C	—
2.9.3	Grade of insulation	Functional insulation employed in secondary SELV were evaluated to 5.3.4 c) Basic insulation between Primary and earth.(Certified PS) Basic insulation between TNV-2 (DC mains) and SELV.(Certified PS) Reinforced insulation between primary circuits to SELV circuits	
2.9.4	Separation from hazardous voltages	As above	P
	Method(s) used ..... :		—
2.10	**Clearances, creepage distances and distances through insulation**		P
2.10.1	General	Compliance was checked by inspection and by measurements. Mains circuits are parts on certified power supplies	P
2.10.1.1	Frequency ..... :	50-60Hz	P
2.10.1.2	Pollution degrees ..... :	2	P
2.10.1.3	Reduced values for functional insulation	Considerations were considered and schematics were evaluated according with 5.3.4 c) requirements	P
2.10.1.4	Intervening unconnected conductive parts	No such part other than certified power supplies	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

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Clause	Requirement + Test	Result - Remark	Verdict

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. Note- 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 71Vpeak	P
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 .....:	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

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Clause	Requirement + Test	Result - Remark	Verdict

2.10.3.6	Transients from a.c. mains supply .....:	Evaluated as part of closed frame certified power supplies.	P
2.10.3.7	Transients from d.c. mains supply .....:	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
	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
2.10.5	**Solid insulation**	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

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Clause	Requirement + Test	Result - Remark	Verdict
	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
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
2.10.6	**Construction of printed boards**	Evaluated as part of closed frame certified power supplies.	P
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.2	Coated printed boards	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation	(see appended table 2.10.5)	N/A
	Number of insulation layers (pcs).....:		N/A
2.10.7	**Component external terminations**	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

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Clause	Requirement + Test	Result - Remark	Verdict

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

3	**WIRING, CONNECTIONS AND SUPPLY**		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	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 is 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 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

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Clause	Requirement + Test	Result - Remark	Verdict
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
3.2	**Connection to a mains supply**		P
3.2.1	Means of connection	AC units employ an appliance inlet. DC units permanently connected.	P
3.2.1.1	Connection to an a.c. mains supply	Appliance inlet(s) used for connection to mains	P
3.2.1.2	Connection to a d.c. mains supply	Terminal block or power connector provided as part of approved DC power supplies.	P
3.2.2	Multiple supply connections	Two appliance inlets for dual PS connection to AC mains or two terminal blocks for dual DC powered units for connection to DC are provided. Bare parts at hazardous voltage are not operator accessible when one of this connections is disconnected	P
3.2.3	Permanently connected equipment	For DC units terminal block(s) provided.	P
	Number of conductors, diameter of cable and conduits (mm) .....:	No conduits	—
3.2.4	Appliance inlets	Certified inlet provided for AC units (part of certified power supply)	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 .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A), cross-sectional area (mm^2), 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	No sharp edges on equipment which could damage the power supply cord	P
3.2.8	Cord guards	No cord guards required	N/A
	Diameter or minor dimension D (mm); test mass (g) .....:		—
	Radius of curvature of cord (mm) .....:		—
3.2.9	Supply wiring space	For DC units Terminal block(s) for permanent connection to the supply are certified with power supply. There is no wiring compartment or cover as the unit is intended for installation in a Restricted Access Location.	P
3.3	**Wiring terminals for connection of external conductors**		P
3.3.1	Wiring terminals	AC powered units used detachable power cord. DC powered units connect to mains by terminal block.	P
3.3.2	Connection of non-detachable power supply cords	Not used special non-detachable power supply cord	N/A
3.3.3	Screw terminals	Suitable for application	P
3.3.4	Conductor sizes to be connected	Terminal sizes comply with wires suitable with table 3D requirements.	N/A
	Rated current (A), cord/cable type, cross-sectional area (mm^2).....:		—
3.3.5	Wiring terminal sizes	Wiring terminals are part of closed-frame certified power supply	P
	Rated current (A), type, nominal thread diameter (mm) .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
3.3.6	Wiring terminal design	Earthing screw is designed to reliably fix earthing conductor and provided with washer	P
3.3.7	Grouping of wiring terminals	No such terminals	N/A
3.3.8	Stranded wire	No such components	N/A
3.4	**Disconnection from the mains supply**		P
3.4.1	General requirement	Disconnect from mains supply provided for servicing comply with the requirements as disconnect device.	P
3.4.2	Disconnect devices	AC powered units employ an appliance coupler. For DC powered unit disconnect device incorporated in building installation instruction.	P
3.4.3	Permanently connected equipment	Appropriate disconnect device provided as part of the building installation.	P
3.4.4	Parts which remain energized	No accessible parts on the supply side of the disconnect device. DC units are located in RAL location.	P
3.4.5	Switches in flexible cords	No such parts	P
3.4.6	Number of poles - single-phase and d.c. equipment	For DC units the disconnect device is provided as part of building installation. For other units appliance coupler disconnect both supply poles simultaneously	P
3.4.7	Number of poles - three-phase equipment	The AC 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 such parts	N/A
3.4.10	Interconnected equipment	No such connection	N/A
3.4.11	Multiple power sources	Marking provided on the unit and in installation manual.	P
3.5	**Interconnection of equipment**		P
3.5.1	General requirements	SELV connected to SELV	P

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Clause	Requirement + Test	Result - Remark	Verdict
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 comply with limited power sources requirements.	P

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Clause	Requirement + Test	Result - Remark	Verdict
4	**PHYSICAL REQUIREMENTS**		P
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
4.2	**Mechanical strength**		P
4.2.1	General	Rigid metallic enclosure is provided	P
	Rack-mounted equipment.	No slides	N/A
4.2.2	Steady force test, 10 N	Evaluated as part of 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 power supplies are closed frame, located inside a metal mechanical enclosure, so no adverse effect. After the impact test equipment passed Dielectric Strength.	P
	Fall test		P
	Swing test		P
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

4.3	**Design and construction**		P
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 include 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 IEC/EN 60825 and 21CFR(J.) Indicator LEDs are used.	P
4.3.13.1	General	Lasers Class I according to IEC/EN 60825 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 IEC/EN 60825 and 21CFR(J) Low power indicator LEDs.	P
	Laser class ..... :	Class I	—
4.3.13.5.2	Light emitting diodes (LEDs)	Only low power signal LEDs	
4.3.13.6	Other types ..... :	No such components	N/A

4.4	**Protection against hazardous moving parts**		P
4.4.1	General	DC fans provided	P
4.4.2	Protection in operator access areas ..... :	Fans are properly guarded	P
	Household and home/office document/media shredders	(see Annex EE)	N/A
4.4.3	Protection in restricted access locations ..... :	Unintentional contact with hazards 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	Unintentional contact with hazardous moving parts is unlikely.	P
4.4.5.1	General	Unintentional contact with hazards is unlikely.	P
	Not considered to cause pain or injury. a)……:	Unintentional contact with hazardous moving parts is unlikely.	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	Unintentional contact with hazardous moving parts is unlikely.	P
	Use of symbol or warning ……:		N/A
4.4.5.3	Protection for service persons	Unintentional contact with hazardous moving parts is unlikely.	P
	Use of symbol or warning ……:		N/A
4.5	**Thermal requirements**		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 .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

4.6	**Openings in enclosures**		P
4.6.1	Top and side openings	Top side without openings. Side's openings are compliant.	P
	Dimensions (mm) .....:	Rear side contained 5x5mm openings on areas 63 by 63 mm and 37x37mm near fans, and 10x3.5mm near SELV card; Front side contained 4mm diameter openings on area 375x40mm near fans and SELV cards	—
4.6.2	Bottoms of fire enclosures	Bottom without openings.	P
	Construction of the bottomm, dimensions (mm) ..:		—
4.6.3	Doors or covers in fire enclosures	No doors or covers leading to operator access areas	N/A
4.6.4	Openings in transportable equipment	Not transportable equipment	N/A
4.6.4.1	Constructional design measures	No such components	N/A
	Dimensions (mm) .....:		—
4.6.4.2	Evaluation measures for larger openings	No such equipment	N/A
4.6.4.3	Use of metallized parts	No such equipment	N/A
4.6.5	Adhesives for constructional purposes	Not used	N/A
	Conditioning temperature (°C), time (weeks).....:		—

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Clause	Requirement + Test	Result - Remark	Verdict

4.7	**Resistance to fire**		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
4.7.2	Conditions for a fire enclosure	Fire enclosure is provided	P
4.7.2.1	Parts requiring a fire enclosure	All components are regarded requiring fire enclosure except decorative plastic outside fire enclosure	P
4.7.2.2	Parts not requiring a fire enclosure	Decorative 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. The connectors fill openings flame rated V-1 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

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Clause	Requirement + Test	Result - Remark	Verdict
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

5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		**P**
5.1	**Touch current and protective conductor current**		P
5.1.1	General	(see appended Table 5.1)	P
5.1.2	Configuration of equipment under test (EUT)	Single phase Class 1 equipment.	P
5.1.2.1	Single connection to an a.c. mains supply	Considered for single inlet power	P
5.1.2.2	Redundant multiple connections to an a.c. mains supply	For AC units with dual power supply testing was performed for multiple connections to an a.c. mains supply	P
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	AC units with dual power supply tested at both normal and reverse polarity of the supply. Switch “e” was open. 2 power supplies were operated to simulate the worse case. Current from 2 power supplies was measured	P
5.1.3	Test circuit	According to Figure 5A	P
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	P
5.1.5	Test procedure	Touch current from power supply was measured in normal and reverse polarity of the supply, switch “e” was open	P
5.1.6	Test measurements	rms value of U2 was measured and divided by 500 Ohm	P
	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		N/A
5.1.7.1	General .....:		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A

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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
5.2	**Electric strength**		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure	No insulation breakdown detected during the test	P
5.3	**Abnormal operating and fault conditions**		P
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 within SELV considered with 5.3.4 c) requirements All components in SELV are mounted on PCB having flammability rating min. V-1	P
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
5.3.7	Simulation of faults	Refer to Table 5.3	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 do not exceed assumed value	P
5.3.9.2	After the tests	No dielectric breakdown	P

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Clause	Requirement + Test	Result - Remark	Verdict
6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		
6.1.2.1	Requirements	(see appended table 5.2)	
	Supply voltage (V) .....:	No internal circuits connected to telecommunication network	—
	Current in the test circuit (mA) .....:		—
6.1.2.2	Exclusions .....:		N/A
6.2	**Protection of equipment users from overvoltages on telecommunication networks**		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test	(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
6.3	**Protection of the telecommunication wiring system from overheating**		N/A
	Max. output current (A) .....:	No internal circuits connected to cable distribution systems	—
	Current limiting method .....:		—
7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		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

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Clause	Requirement + Test	Result - Remark	Verdict
7.4.3	Impulse test	(see appended table 5.2)	N/A

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

A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)	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)..... :		—
A.3	Hot flaming oil test (see 4.6.2)	Metal enclosure	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A
B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		P
B.1	General requirements	Certified DC fans are used	N/A
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
B.2	Test conditions	Certified DC fans are used	N/A
B.3	Maximum temperatures	Certified DC fans are used	N/A
B.4	Running overload test	Certified DC fans are used	N/A
B.5	Locked-rotor overload test	Certified DC fans are used	N/A
	Test duration (days) ..... :		—
	Electric strength test: test voltage (V) ..... :		—
B.6	Running overload test for d.c. motors in secondary circuits	Certified DC fans are used	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	Certified DC fans are used	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	Certified DC fans are used	N/A
B.9	Test for three-phase motors	Certified DC fans are used	N/A
B.10	Test for series motors	Certified DC fans are used	N/A
	Operating voltage (V) ..... :		—
C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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 ..... :		
D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		P
D.1	Measuring instrument		P
D.2	Alternative measuring instrument		N/A
E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)**		N/A
F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)**		P
G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		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
G.4	Determination of required withstand voltage (V)	Standard methods used	N/A
G.4.1	Mains transients and internal repetitive peaks ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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
H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		N/A
J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		P
	Metal(s) used .....:	Aluminum and stainless steel	—
K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)**		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V) .....:		N/A
K.3	Thermostat endurance test; operating voltage (V) .....:		N/A
K.4	Temperature limiter endurance; operating voltage (V) .....:		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation	(see appended table 5.3)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

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

M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
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	Ringing 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

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

P	**ANNEX P, NORMATIVE REFERENCES**	—

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Clause	Requirement + Test	Result - Remark	Verdict

Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)**		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

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

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

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

U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		P
		Part od certified power supplies	—

V	**ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)**		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

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Clause	Requirement + Test	Result - Remark	Verdict

W	**ANNEX W, SUMMATION OF TOUCH CURRENTS**		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

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

Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)**		N/A
Y.1	Test apparatus .....:	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

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

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

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

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

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Clause	Requirement + Test	Result - Remark	Verdict

DD	**ANNEX DD, Requirements for the mounting means of rack-mounted equipment**		N/A
DD.1	General	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

EE	**ANNEX EE, Household and home/office document/media shredders**		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

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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[1])
PCB	Various	Various	Flame rated min V-1, temperature rated min. 105°C	UL796	UR
Plastic front decorative part	Various	Various	Flame rated min. HB	UL94	UR
AC single power supply	Zippy Technology co.	P1H-6350P	Input: 100-240Vac, 60-50Hz, 8-5A; output: +5V, 25A; +12V, 22-28A; +3.3V, 20A; -5V, 0.5A; -12V, 0.5A; +5Vvsb, 2A; +5V and +3.3V 175W max; Total 350W max.	IEC60950-1 2ed UL60950-1 2ed. CSA C22.2 No.60950-1-07 2ed.	cURus, TUV
AC dual power supply	Zippy Technology co.	R1S2-5380V4V	Rated: 100-240Vac, 47-63Hz, 5.5-2.5A; output: 380W max., +5V, 0-20A, +12V, 30A; +3.3V, 0-20A, -12V, 0-0.5A, +5VSB, 0-2.5A, +5V and +3.3V, total 140Wmax	IEC60950-1 2ed UL60950-1 2ed. CSA C22.2 No.60950-1-07 2ed.	cURus, TUV

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Clause	Requirement + Test	Result - Remark	Verdict

DC single power supply	Zippy Technology co.	DP1H-6350F	Rated: Input: -36 - -72Vdc, 17A; Output: +5V, 35A; +12V, 22A; +3.3V, 0-20A; -5V, 0-0.5A; -12V, 0-0.5A; +5Vsb, 0-2A. +5V and +3.3V Total max.40A, total output power 350W max	IEC60950-1 2ed UL60950-1 2ed. CSA C22.2 No.60950-1-07 2ed.	cURus, TUV
DC dual power supply	Zippy Technology co.	DR1S2-5380V4V	Rated: input: -36 - -72Vdc, 15-7A; output: 380W max., +5V, 0-20A, +12V, 30A; +3.3V, 0-20A, -12V, 0-0.5A, +5VSB, 0-2.5A, +5V and +3.3V, total 140Wmax	IEC60950-1 2ed UL60950-1 2ed. CSA C22.2 No.60950-1-07 2ed.	cURus, TUV
Fan 3 provided on front side and 1 on rear side	Everflow	R124028BU	40x40x28mm, Rated: 12V, 0.4A, 18.03 CFM	UL507, CSA-C22.2 No. 113-M1984	TUV, cURus
Fan 3 provided on front side and 1 on rear side	Any	Any	40x40x28mm, Rated: 12V, max.0.4A, min.18.03 CFM	UL507, CSA-C22.2 No. 113-M1984	TUV, cURus
Fan 1 provided	Everflow	RB7038BU	70x70x38mm, Rated: 12V, 0.8A, 59.89 CFM	UL507, CSA-C22.2 No. 113-M1984	TUV, cURus
Fan 1 provided Alternate	Any	Any	70x70x38mm, Rated: 12V, max. 0.8A, min. 59.89 CFM	UL507, CSA-C22.2 No. 113-M1984	TUV, cURus
Fan 1 provided on CPU	Everflow	F126025BU	60x60x25mm, Rated: 12V, 0.26A, 24.49 CFM	UL507, CSA-C22.2 No. 113-M1984	TUV, cURus

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Clause	Requirement + Test	Result - Remark	Verdict

Fan 1 provided on CPU	Any	Any	60x60x25mm, Rated: 12V, max. 0.26A, min. 24.49 CFM	UL507, CSA-C22.2 No. 113-M1984	TUV, cURus
Hard disk driver	Any	Any	Rated: 5V, 0.7A	UL/CSA60950-1	cURus, TUV
Lithium battery on CPU	Spectrum Brands or equivalent	BR2032	3.0Vdc, max. abnormal charging current 5mA, protected by resistor R1113 1k and diode D59	UL1642	cURus
Lithium battery BAT1 (Alternate)	VIC-DAWN Enterprise co Ltd or equivalent	CR2032	3.0Vdc, max. abnormal charging current 5mA, protected by resistor R1113 1k and diode D59	UL1642	cURus
Lithium battery BAT1 (Alternate)	Panasonic corporation, Panasonic corporation of north America or equivalent	CR2032	3.0Vdc, max. abnormal charging current 5mA, protected by resistor R1113 1k and diode D59	UL1642	cURus
PTC U2F1, U4F1	Polytronics Technology or equivalent	SMD1206P150TFT	Rated Ihold =1.5A, Itrip 3A, 8V max.	UL 1434, IEC 60730-1	cURus, TUV
Laser transceiver Gigabit Ethernet ports 16 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	cURus or CSA, TUV
Laser transceiver Gigabit Ethernet ports 16 provided (Optional) Alternate	Sanoc	SI8512-X5ATO-3C	SFP transceiver - Multimode - 3.3V - 850nm - 1.25Gbps	UL/CSA60950-1, EN60825-1, EN60825-2	cURus or CSA, TUV

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Clause	Requirement + Test	Result - Remark	Verdict

Laser transceiver Gigabit Ethernet ports 16 provided (Optional) Alternate	Sanoc	SI1312-10ATO	SFP transceiver - Singlemode - 3.3V - 1310nm - 1.25Gpbs	UL/CSA60950-1, EN60825-1, EN60825-2	cURus or CSA, TUV
Laser transceiver Gigabit Ethernet ports 16 provided (Optional) Alternate	Sanoc	SI1512-80ATO	SFP transceiver - Singlemode - 3.3V - 1550nm	UL/CSA60950-1, EN60825-1, EN60825-2	cURus or CSA, TUV
Copper transceiver Gigabit Ethernet ports 16 provided (Optional) Alternate	Methode	DM7041-R-L	SFP transceiver, 3.3 V, 1000BASE-T - Copper	-	-
Copper transceiver (16 provided (Optional alternate)	Sanoc	SI0012-X1ATO[N]	SFP Copper - 1000 Mbps - 3.3V	-	-
Copper transceiver (16 provided (Optional alternate)	Optech	OP6C-TX1-00-C2	SFP Copper - 1000 Mbps - 3.3V	-	-
Laser transceiver Gigabit Ethernet ports 2 provided (Optional)	Finisar	FTLX1471D3BCL- RW	SFP+ transceiver - Single mode - 3.3 V - 1310nm - 10Gbps	UL/CSA60950-1, EN60825-1, EN60825-2	cURus or CSA, TUV
Laser transceiver Gigabit Ethernet ports 2 provided (Optional) Alternate	Sumitomo Electric Interconnect	SPP5200LR-GL	SFP+ transceiver - Single mode - 3.3 V - 1310nm - 10Gbps	UL/CSA60950-1, EN60825-1, EN60825-2	cURus or CSA, TUV
Laser transceiver Gigabit Ethernet ports 2 provided (Optional) Alternate	Finisar	FTLX8571D3BCL-RW	SFP+ transceiver - Single mode - 3.3 V - 850nm - 10Gbps	UL/CSA60950-1, EN60825-1, EN60825-2	cURus or CSA, TUV

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Clause	Requirement + Test	Result - Remark	Verdict

Laser transceiver Gigabit Ethernet ports 2 provided (Optional) Alternate	Sumitomo Electric Interconnect	SPP5101SR-GL	SFP+ transceiver - Single mode - 3.3 V - 1310nm - 10Gbps	UL/CSA60950-1, EN60825-1, EN60825-2	cURus or CSA, TUV
SELV external connectors	Any	Any	Flame rated min. V-1	UL94	cURus
SELV internal connectors	Any	Any	Flame rated min. V-2	UL94	cURus
Internal Wiring, (secondary)	Any	Any	Rated min. 300V, 60°C, VW-1 or FT-1 or better.	UL758	cURus
Supplementary information:					

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Clause	Requirement + Test	Result - Remark	Verdict

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

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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	2.36	-	215	-	-	Maximum normal load
100	2.09	8	212	-	-	Maximum normal load
240	0.80	5	181	-	-	Maximum normal load
264	1.15	-	200	-	-	Maximum normal load
Supplementary information: Model: ODS-LS XL with PS P1H-6350P all ports loaded, program running						

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
90	2.27	-	205	-	-	Maximum normal load 2PS
100	2.01	5.5	203	-	-	""
240	0.89	2.5	197	-	-	""
264	0.83	-	196	-	-	""
90	2.08	-	189	-	-	Maximum normal load 1PS
100	1.84	5.5	187	-	-	""
240	0.76	2.5	180	-	-	""
264	0.70	-	179	-	-	""
Supplementary information: Model: ODS-LS-XL DUAL with PS P1S2-5380V4V all ports loaded, program running						

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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
36	5.1	17	183.6	-	-	Maximum normal load
48	3.8	17	182.4	-	-	Maximum normal load
60	3.0	17	180	-	-	Maximum normal load
72	2.5	17	180	-	-	Maximum normal load
Supplementary information: Model: ODS-LS XL DC with PS DP1H-6350F all ports loaded, program running						

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
36	5.1	15	183.6	-	-	Maximum normal load 2PS
48	3.9	-	187.2	-	-	""
60	3.1	-	186	-	-	""
72	2.5	7	180	-	-	""
36	4.9	15	176.4	-	-	Maximum normal load 1PS
48	3.6	-	172.8	-	-	""
60	2.9	-	174	-	-	""
72	2.2	7	158.4	-	-	""
Supplementary information: Model: ODS-LS-XL-DUAL DC with PS DP1S2-5380V4V all ports loaded, program running						

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.)

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

supplementary information:

2.5	TABLE: Limited power sources	N/A

Circuit output tested:

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

Components	Sample No.	Uoc (V)	I_{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit

supplementary information:

Sc=Short circuit, Oc=Open circuit

2.10.2	Table: working voltage measurement	N/A

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

supplementary information: certified closed frame power supplies

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						

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

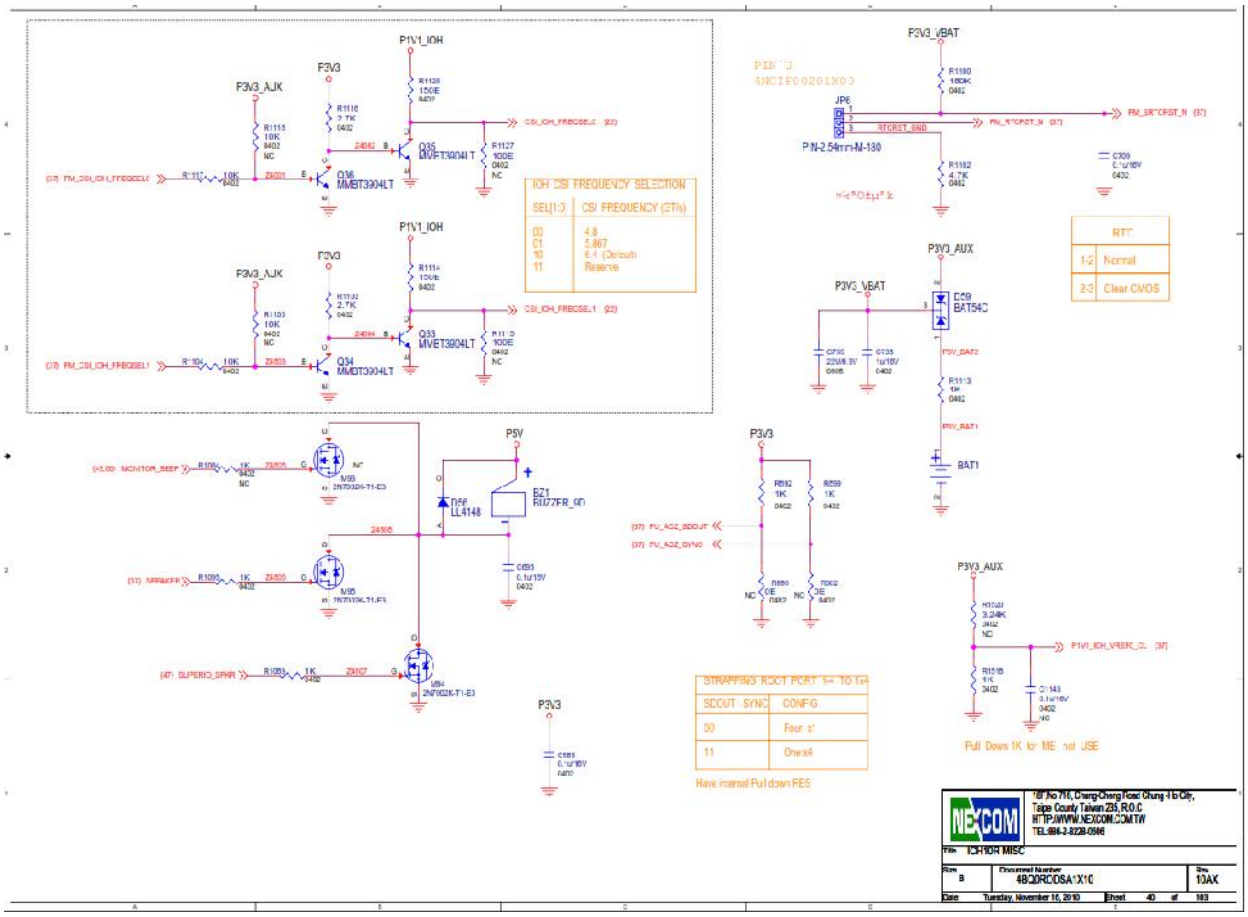
Test results:		Verdict
- Chemical leaks	No	P
- Explosion of the battery	No	P
- Emission of flame or expulsion of molten metal	No	P
- Electric strength tests of equipment after completion of tests		
Supplementary information:		

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

4.3.8	TABLE: Batteries	N/A

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

4.5	TABLE: Thermal requirements						P
	Supply voltage (V) .....:	36	72				—
	Ambient T_{min} (°C) .....:	22.1	22.1				—
	Ambient T_{max} (°C) .....:	22.1	22.1				—
Maximum measured temperature T of part/at:		T (°C)					Allowed T_{max} (°C)
Lithium Battery body		27.2	27.0				57.1(85-50+22.1)
PCB near CPU 71		27.2	26.9				77.1(105-50+22.1)
PCB near U91I		30.5	30.3				77.1(105-50+22.1)
PCB near U64E		30.2	30.0				77.1(105-50+22.1)
On inside laser transceiver		33.0	32.8				57.1(85-50+22.1)
On Coil L19		33.3	33.0				62.1(100-10-50+22.1)
HD cover TT5SAB250		25.1	24.9				57.1(85-50+22.1)
Enclosure		23.7	23.5				44.1(70-50+22.1)
Body L13 of Board CN16XX-NHBX		31.2	30.5				62.1(100-10-50+22.1)
PCB near U5 of Board CN16XX-NHBX		33.5	33.6				77.1(105-50+22.1)
Power Supply		----	---				
PS T3 winding		36.4	36.2				62.1(100-10-50+22.1)
PS Body C420 (105C)		36.4	36.3				77.1(105-50+22.1)
PS LF1 winding		35.4	34.5				62.1(100-10-50+22.1)
PS T4 winding		34.8	35.3				62.1(100-10-50+22.1)

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Clause	Requirement + Test	Result - Remark	Verdict

PS PCB near C42		35.7	36.0				77.1(105-50+22.1)
PS PCB near R67		37.8	39.2				77.1(105-50+22.1)
Supplementary information: Tested unit ODS-LS XL DC							
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:							

4.5	TABLE: Thermal requirements						P
	Supply voltage (V) .....:	36	72				—
	Ambient T_{min} (°C) .....:	21.2	20.8				—
	Ambient T_{max} (°C) .....:	21.2	20.8				—
Maximum measured temperature T of part/at:		T (°C)					Allowed T_{max} (°C)
Lithium Battery body		29.1	29.0				56.2(85-50+21.2)
PCB near CPU 71		27.0	27.0				76.2(105-50+21.2)
PCB near U91I		32.1	31.9				76.2(105-50+21.2)
PCB near U64E		30.4	30.4				76.2(105-50+21.2)
On inside laser transceiver		32.0	31.8				56.2(85-50+21.2)
On Coil L19		33.2	33.0				61.2(100-10-50+21.2)
HD cover TT5SAB250		24.8	24.8				56.2(85-50+21.2)
Enclosure above P.S.		25.7	36.9				41.2(70-50+21.2)
Coil L13 of Board CN16XX-NHBX		37.0	35.8				61.2(100-10-50+21.2)
PCB near U5 of Board CN16XX-NHBX		35.4	35.1				76.2(105-50+21.2)
Power Supply		----	---				

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Clause	Requirement + Test	Result - Remark	Verdict

PS T1 winding	54.6	54.9				61.2(100-10-50+21.2)
PS Body C5 (85C)	49.7	49.4				56.2(85-50+21.2)
PS LF2 winding	48.1	45.8				61.2(100-10-50+21.2)
PS T2 winding	47.2	47.7				61.2(100-10-50+21.2)
PS PCB near IC4	56.1	56.6				76.2(105-50+21.2)
PS PCB near VD1	45.5	44.5				76.2(105-50+21.2)
PS PCB near CN2	43.6	44.6				76.2(105-50+21.2)

Supplementary information: Tested unit ODS-LS XL DUAL DC

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:

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

4.5	TABLE: Thermal requirements						P
	Supply voltage (V) .....:	90	264				—
	Ambient T_{min} (°C) .....:	21.4	21.0				—
	Ambient T_{max} (°C) .....:	21.4	21.0				—
Maximum measured temperature T of part/at:		T (°C)					Allowed T_{max} (°C)
Lithium Battery body		27.6	27.1				56.4(85-50+21.4)
PCB near CPU 71		27.0	26.5				76.4(105-50+21.4)
PCB near U91I		30.3	29.7				76.4(105-50+21.4)
PCB near U64E		29.7	29.2				76.4(105-50+21.4)
On inside laser transceiver		31.7	31.4				56.4(85-50+21.4)
On Coil L19		33.2	32.6				61.4(100-10-50+21.4)
HD cover TT5SAB250		24.8	24.3				56.4(85-50+21.4)
Enclosure above P.S.		24.9	24.3				41.4(70-50+21.4)
coil L13 of Board CN16XX-NHBX		35.5	34.1				61.4(100-10-50+21.4)
PCB near U5 of Board CN16XX-NHBX		37.0	36.3				76.4(105-50+21.4)
Power Supply							
PS T4 winding		41.7	40.6				61.4(100-10-50+21.4)
PS C35 (105C)		38.3	36.9				76.4(105-50+21.4)
PS T3 winding		41.2	40.2				61.4(100-10-50+21.4)
PS LF1 winding		41.3	37.1				61.4(100-10-50+21.4)

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Clause	Requirement + Test	Result - Remark	Verdict

PS PCB near T4	40.6	39.9				76.4(105-50+21.4)
PS PCB near C21	31.6	31.0				76.4(105-50+21.4)
PS inlet	24.9	23.5				56.4(85-50+21.4)

Supplementary information: Tested unit ODS-LS XL with single AC PS

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:

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

4.5	TABLE: Thermal requirements						P
	Supply voltage (V) .....:	90	264				—
	Ambient T_{min} (°C) .....:	24.6	24.7				—
	Ambient T_{max} (°C) .....:	24.6	24.7				—
Maximum measured temperature T of part/at:		T (°C)					Allowed T_{max} (°C)
Lithium Battery body		30.7	30.8				59.6 (85-50+24.6)
PCB near CPU 71		30.0	29.9				79.6 (105-50+24.6)
PCB near U91I		32.9	32.8				79.6 (105-50+24.6)
PCB near U64E		32.3	32.3				79.6 (105-50+24.6)
On inside laser transceiver		30.1	30.0				59.6 (85-50+24.6)
On Coil L19		36.2	36.3				64.6 (100-10-50+24.6)
HD cover TT5SAB250		27.8	27.9				59.6 (85-50+24.6)
Enclosure above P.S.		28.4	28.0				44.6 (70-50+24.6)
Coil L13 of Board CN16XX-NHBX		38.6	38.6				64.6 (100-10-50+24.6)
PCB near U5 of Board CN16XX-NHBX		40.0	39.7				79.6 (105-50+24.6)
Power Supply							
PS T2 winding		47.8	47.6				64.6 (100-10-50+24.6)
PS T1 winding		48.0	47.8				64.6 (100-10-50+24.6)
PS C5 (85C)		43.0	42.0				59.6 (85-50+24.6)
PS LF1 winding		42.3	44.8				64.6 (100-10-50+24.6)

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Clause	Requirement + Test	Result - Remark	Verdict

PS PCB near IC4	44.7	44.6				79.6 (105-50+24.6)
PS PCB near C5	46.0	45.8				79.6 (105-50+24.6)
PS PCB near CN2	49.0	49.1				79.6 (105-50+24.6)
PS inlet	33.5	32.3				59.6 (85-50+24.6)

Supplementary information: Tested unit ODS-LS-XL DUAL DC

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:

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:		

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

5.1	TABLE: touch current measurement		P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions
Between primary and ground	0.9	3.5	Single power supply
Between primary and ground	1.74	3.5	Dual power supply
supplementary information:			

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

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Functional:				
Basic/supplementary:				
L&N to GND of unit ODS-LS XL		DC	2121	No
L&N to GND of unit ODS-LS XL DUAL		DC	2121	No
Terminal block “+”&”-“ to GND of unit ODS-LS XL DC		DC	1414	No
Terminal block “+”&”-“ to GND of unit ODS-LS XL DUAL DC		DC	1414	No
Reinforced:				
Supplementary information: The test on the AC chassis was reconducted after humidity conditioing test per National Differences **China (CH) clause 2.9.2**				

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Clause	Requirement + Test	Result - Remark	Verdict

5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C) .....:	24.1°C to 31.3°C	—
	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 unit ODS-LS XL with single AC PS	Vents blocked	100	1h30m	-	-	Maximum obtained temperature of PS T4 winding is 67.4°C at ambient 22.4°C. No fire, no hazard HV test: 2121VDC , Pass
Complete unit ODS-LS XL with single AC PS	Rear side fan disconnected	100	1h10m	-	-	Maximum obtained temperature of PS T4 winding 40.2C at ambient 22.3C. No fire, no hazard HV test: 2121VDC V, Pass
Complete unit ODS-LS XL with single AC PS	Front side fans disconnected	100	1h10m	-	-	Maximum obtained temperature of PS T4 winding 48.7°C at ambient 22.2°C. No fire, no hazard HV test: 2121VDC V, Pass
Complete unit ODS-LS XL with DUAL AC PS	Vents blocked	100	1h30	-	-	Maximum obtained temperature of PS PCB near CN2 (on P.S. ODS-LS-DUAL) 61.7°C at ambient 24.5°C. No fire, no hazard HV test: 2121VDC V, Pass
Complete unit ODS-LS XL with DUAL AC PS	Rear side fan disconnected	100	1h	-	-	Maximum obtained temperature of PS T1 winding 45.3°C at ambient 24.6°C. No fire, no hazard HV test: 2121VDC V, Pass
Complete unit ODS-LS XL with DUAL AC PS	Front side fans disconnected	100	1h	-	-	Maximum obtained temperature of PS T1 winding 60°C at ambient 24.6°C. No fire, no hazard HV test: 2121VDC V, Pass

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Clause	Requirement + Test	Result - Remark	Verdict

Complete unit ODS-LS XL DC with single DC PS	Vents blocked	48	1h30m	-	-	Maximum obtained temperature on L13 of Board CN16XX-NHBX 72.6°C at ambient 22.6°C. No fire, no hazard HV test: 1414VDC , Pass
Complete unit ODS-LS XL DC with single DC PS	Rear side fan disconnected	48	1h	-	-	Maximum obtained temperature on PCB near R67 of PS 37.4C at ambient 22.3C. No fire, no hazard HV test: 1414VDC , Pass
Complete unit ODS-LS XL DC with single DC PS	Front side fans disconnected	48	1h			Maximum obtained temperature on PCB near R67 of PS 41.9°C at ambient 22.3°C. No fire, no hazard HV test: 1414VDC , Pass
Complete unit ODS-LS XL DUAL DC with dual DC PS	Vents blocked	48	1h30m	-	-	Maximum obtained temperature on L13 of Board CN16XX-NHBX 72.5°C at ambient 21.0°C. No fire, no hazard HV test: 1414VDC , Pass
Complete unit ODS-LS XL DUAL DC with dual DC PS	Rear side fan disconnected	48	1h	-	-	Maximum obtained temperature on PCB near IC4 of PS 42.6°C at ambient 21.0°C. No fire, no hazard HV test: 1414VDC , Pass
Complete unit ODS-LS XL DUAL DC With dual DC PS	Front side fans disconnected	48	1h	-	-	Maximum obtained temperature on PCB near CN2 of PS 50.3°C at ambient 21.0°C. No fire, no hazard HV test: 1414VDC , Pass
Supplementary information:						

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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		

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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	CallDue
1217	Hipot Tester	Hipotronics	HD 100	390301	28/02//2013
1337	Walk-In Chamber	Thermotron	WP-683	22499	23/02/2013

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Appendix 1 – Photographs

Front view for all models

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Rear side of unit with single AC power supply

Internal view of unit with single AC power supply

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Rear side of unit with dual AC power supply

Internal view of unit with dual AC power supply

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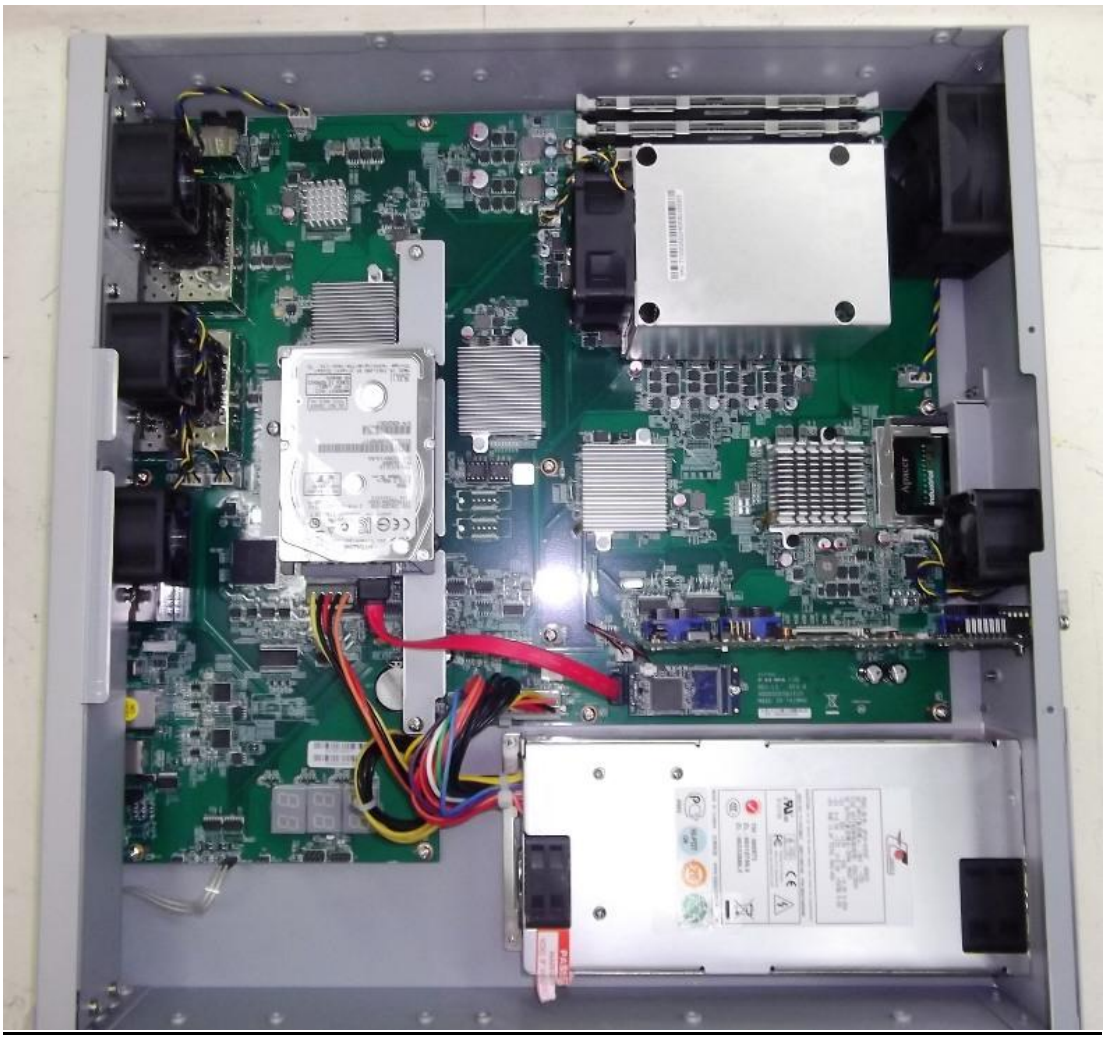
National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Rear side of unit with single DC power supply

Internal view of unit with single DC power supply



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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Rear side of unit with dual DC power supply

Internal view of unit with dual DC power supply

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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

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
Information technology equipment – Safety –
Part 1: General requirements

Differences according to.....:	EN 60950-1:2006/A11:2009/A1:2010
Attachment Form No. .....:	EU_GD_IEC60950_1C
Attachment Originator .....:	SGS Fimko Ltd
Master Attachment .....:	Date (2010-04)

EN 60950-1:2006/A11:2009/A1:2010 – CENELEC COMMON MODIFICATIONS

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 4.7.3.1Note 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

Error! Reference source not found.

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	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;	Replaced	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. 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.		N/A
2.7.2	This subclause has been declared ‘void’.	Void	P
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	Deleted	P

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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	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”. In Table 3B, replace the first four lines by the following: Up to and including 6 | 0,75 [a)] | Over 6 up to and including 10| (0,75) [b)] 1,0 | Over 10 up to and including 16| (1,0) [c)] 1,5 | In the conditions applicable to Table 3B delete the words “in some countries” in condition [a)]. In NOTE 1, applicable to Table 3B, delete the second sentence.	Replaced	N/A
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4 | Delete the fifth line: conductor sizes for 13 to 16 A	Deleted	P
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artifical optical radiation).	Replaced	P
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		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	Replace the last paragraph of this annex by: 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. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.	Replaced	P
Bibliography	Additional EN standards.		—

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

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In **Denmark**, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	Not provided with the unit	N/A
1.2.13.14	In **Norway** and **Sweden**, for requirements see 1.7.2.1 and 7.3 of this annex.		P
1.5.7.1	In **Finland, Norway** and **Sweden**, resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.	Part of certified power supply	N/A
1.5.8	In **Norway**, due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	Capacitors are suitably rated for 230V phase-phase voltage of IT system of Norway	P

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.9.4	In **Finland**, **Norway** and **Sweden**, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	In **Finland**, **Norway** and **Sweden**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: “Apparatet må tilkoples jordet stikkontakt” In Sweden: “Apparaten skall anslutas till jordat uttag” In **Norway** and **Sweden**, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11).”	The unit has own connection to protective earthing , classified as a Class 1 Marking will be provided when distributed in Finland, Norway and Sweden	P

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.” Translation to Swedish: ”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”	No Such connection	N/A
1.7.5	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a. For **CLASS II EQUIPMENT** the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.	No socket outlets	N/A
2.2.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
2.3.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.6.3.3	In the **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16 A.	Considered on the end use installation	P
2.7.1	In the **United Kingdom**, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	No such equipment	N/A
2.10.5.13	In **Finland**, **Norway** and **Sweden**, there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N/A
3.2.1.1	In **Switzerland**, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A	Not supplied with the unit	N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
	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 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: 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, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE .250 V, 16 A	Power cord is not supplied with the unit	N/A
3.2.1.1	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. 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. 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.	Power cord is not supplied with the unit	N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In **Spain**, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. 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. 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. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.	Power cord is not supplied with the unit	N/A
3.2.1.1	In the **United Kingdom**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	Power cord is not supplied with the unit	N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In **Ireland**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.	Power cord is not supplied with the unit	N/A
3.2.4	In **Switzerland**, for requirements see 3.2.1.1 of this annex.		P
3.2.5.1	In the **United Kingdom**, a power supply cord with conductor of 1,25 mm2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.	Power cord is not supplied with the unit	N/A
3.3.4	In the **United Kingdom**, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.	Power cord is not supplied with the unit	N/A
4.3.6	In the **United Kingdom**, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.6	In **Ireland**, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		N/A
5.1.7.1	In **Finland**, **Norway** and **Sweden** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • 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; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.	Complied . Less than 3.5mA	N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	In **Finland**, **Norway** and **Sweden**, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance 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 - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		N/A
6.1.2.2	In **Finland**, **Norway** and **Sweden**, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

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

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
Information technology equipment – Safety –
Part 1: General requirements

Differences according to.....:	EN 60950-1:2006/A11:2009/A1:2010/A12:2011
Attachment Form No. .....:	EU_GD_IEC60950_1C_II
Attachment Originator .....:	SGS Fimko Ltd
Master Attachment .....:	Date 2011-08

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

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 4.7.3.1Note 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

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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	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
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010	Deleted	P
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
1.7.2.1 (A12.2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.	Deleted	N/A
	Zx Protection against excessive sound pressure from personal music players		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
	Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipment for personal use, that: – is designed to allow the user to listen to recorded or broadcast sound or video; and – primarily uses headphones or earphones that can be worn in or on or around the ears; and – allows the user to walk around while in use. 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. 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. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: – while the personal music player is connected to an external amplifier; or – while the headphones or earphones are not used. 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. The requirements do not apply to: – hearing aid equipment and professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional	No such equipment	N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

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

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. 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. d) have a warning as specified in Zx.3; and e) not exceed the following: 1) equipment provided as a package (player with Its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed “programme simulation noise” described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” described in EN 50332-1. For music where the average sound pressure (long term LAeq,T) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term LAeq,T) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. 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.		N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: – the symbol of Figure 1 with a minimum height of 5 mm; and – the following wording, or similar: "To prevent possible hearing damage, do not listen at high volume levels for long periods."  **Figure 1 – Warning label (IEC 60417-6044)** 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.		N/A
	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output LAeq,T, the input voltage of the fixed "programme simulation noise" described in EN 50332-2 shall be ≥ 75 mV. 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). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.		N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output LAeq,T of the listening device shall be ≤ 100 dBA. 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.). NOTE An example of a wired listening device with digital input is a USB headphone.		N/A
	Zx.4.3 Wireless listening devices In wireless mode: – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output LAeq,T of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		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
	Zx.5 Measurement methods 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. NOTE Test method for wireless equipment provided without listening device should be defined.		N/A
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;	Replaced	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. 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.		N/A
2.7.2	This subclause has been declared ‘void’.	Voided	P
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	Deleted	P

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	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”. In Table 3B, replace the first four lines by the following: Up to and including 6 | 0,75 [a] | Over 6 up to and including 10| (0,75) [b] 1,0 | Over 10 up to and including 16| (1,0) [c] 1,5 | In the conditions applicable to Table 3B delete the words “in some countries” in condition [a]. In NOTE 1, applicable to Table 3B, delete the second sentence.	Replaced	N/A
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4 | Delete the fifth line: conductor sizes for 13 to 16 A	Deleted	P
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artifical optical radiation).	Replaced	P
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		P

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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	Replace the last paragraph of this annex by: 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. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.	Replaced	P
Bibliography	Additional EN standards.		—

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

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In **Denmark**, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	Power cord Is not supplied with the unit	N/A
1.2.13.14	In **Norway** and **Sweden**, for requirements see 1.7.2.1 and 7.3 of this annex.		N/A
1.5.7.1	In **Finland, Norway** and **Sweden**, resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.	Part of certified power supplies	N/A
1.5.8	In **Norway**, due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	Capacitors suitably rated for 230V phase-phase voltage of IT system of Norway	P
1.5.9.4	In **Finland**, **Norway** and **Sweden**, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	In **Finland**, **Norway** and **Sweden**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: “Apparatet må tilkoples jordet stikkontakt” In Sweden: “Apparaten skall anslutas till jordat uttag” In **Norway** and **Sweden**, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11).”	The unit has own connection to protective earthing , classified as a class 1 Marking will be provided when distributed in Finland, Norway and Sweden	P

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): "Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet." Translation to Swedish: "Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet."		N/A
1.7.5	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a. For **CLASS II EQUIPMENT** the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.	No socket outlets	N/A
2.2.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.3	In the **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16 A.		P
2.7.1	In the **United Kingdom**, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	No direct plug-in unit	N/A
2.10.5.13	In **Finland**, **Norway** and **Sweden**, there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N/A
3.2.1.1	In **Switzerland**, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: 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 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: 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, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE .250 V, 16 A	Not supplied with the unit	N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. 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. 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.	Not supplied with the unit	N/A
3.2.1.1	In **Spain**, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. 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. 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. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.	Not supplied with the unit	N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In the **United Kingdom**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	Not supplied with the unit	N/A
3.2.1.1	In **Ireland**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.	Not supplied with the unit	N/A
3.2.4	In **Switzerland**, for requirements see 3.2.1.1 of this annex.	Not supplied with the unit	N/A
3.2.5.1	In the **United Kingdom**, a power supply cord with conductor of 1,25 mm2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.	Not supplied with the unit	N/A
3.3.4	In the **United Kingdom**, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.	Not supplied with the unit	N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.6	In the **United Kingdom**, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
4.3.6	In **Ireland**, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		N/A
5.1.7.1	In **Finland**, **Norway** and **Sweden** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • 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; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.	Complied. Less than 3.5mA	N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	In **Finland**, **Norway** and **Sweden**, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance 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 - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.	Added	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14: - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		N/A
6.1.2.2	In **Finland**, **Norway** and **Sweden**, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	In **Finland**, **Norway** and **Sweden**, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.	No CABLE DISTRIBUTION SYSTEM.	N/A
7.3	In **Norway** and **Sweden**, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

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

ATTACHMENT TO TEST REPORT IEC 60950-1
FINLAND NATIONAL DIFFERENCES
Information technology equipment – Safety –
Part 1: General requirements

Differences according to.....:	EN 60950-1:2006/A11:2009/A1:2010
Attachment Form No. .....:	FI_ND_IEC60950_1C
Attachment Originator .....:	SGS Fimko Ltd
Master Attachment .....:	Date (2010-04)

			P
	National Differences		
General	See also Group Differences (EN 60950-1:2006/A11/A1)		P
1.5.7.1	In **Finland** 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 **Finland,** the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	In **Finland**,CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in in Finland shall be as follows: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"	The unit has own connection to protective earthing, Marking will be provided when shipped to Finland	P
2.3.2	In **Finland,** 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 **Finland,** 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	In **Finland,** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • 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; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.	Complied. Less than 3.5mA	N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	In **Finland,** add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance 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 - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.	Added	N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - 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; - the additional testing shall be performed on all the test specimens as described in EN 60384-14:2005; - 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.		N/A
6.1.2.2	In **Finland,** 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.	Instructions are provided	N/A
7.2	In **Finland,** 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 connection to CABLE DISTRIBUTION SYSTEM.	N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1
US NATIONAL DIFFERENCES
Information technology equipment – Safety –
Part 1: General requirements

Differences according to..... :	UL 60950-1-07
Attachment Form No. ..... :	US_ND_IEC60950_1C
Attachment Originator..... :	TÜV SÜD Product Service GmbH
Master Attachment..... :	Date (2012-08)

	Special national conditions		**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

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
	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**
	- 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.	No supply outlets	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 is 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.	No such connection in the unit	N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		**N/A**
3.2.5	Power supply cords are no longer than 4.5 m in length.	Power supply cords are not part of this investigation	N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
	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.	Suitable wiring space is provided on certified DC terminal block	P
3.3	Wiring terminals and associated spacings for field wiring connections comply with CSA C22.2 No. 0.	Certified terminal is used	P
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm2).	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 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

Error! Reference source not found.

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m3 (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 m2 (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 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
	Other National Differences		
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 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 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 applicable for 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

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
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 case	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

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)

	Special national conditions	P

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
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	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 cables	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.	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		P
	- if it is part of a range that extends into the Table 2 "Normal Operating Conditions."		N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
	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
	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, DC terminal block 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.	P
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	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 for permanent connection to AC mains	N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
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.	Suitable wiring space is provided for connection of earthing screw	P
3.3	Wiring terminals and associated spacings for field wiring connections comply with CSA C22.2 No. 0.	DC connection by certified field wiring terminal block	P
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm2).		P
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are suitable for Canadian/US wire gauge sizes, are	M5 earthing screw employed Terminal block is part of certified DC/DC power supply	P
	- 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
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

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
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^3 (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^2 (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
	Other National Differences		**P**
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 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 such internal circuits are connected to telecommunication network	N/A

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
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 case	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
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 **Switzerland (CH)** (EN 60950-1:2006/AC:2011)	P

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
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.		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 batteries	N/A
3.2.1.1	In Switzerland, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: 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 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: 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	No cord	N/A
3.2.4	In Switzerland, for requirements see 3.2.1.1 of this annex.		P

National Differences/EU A-Deviations for **Germany (DE)**	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	According to GPSG, section 2, clause 4: 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.	Instructions in German will be provided when distributed to Germany	P

National Differences for **Korea (KR)**			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
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: **Israel (IL)**			P
1.6	Power interfaces	Cable not supplied with unit	P
1.6.1	AC power distribution system	TN-S	P
1.7	Marking and instruction: Subclause 1.7.201 shall be added	Safety instructions shall be provided in Hebrew.	P
1.7.201	Marking in Hebrew language	Will be provided when shipped to Israel	P
1.7.2	Safety instruction and marking	Will be provided when shipped to Israel	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=IΔ) 7) Reinforced insulation; Double insulation	TN-S Double/ Reinforce insulation part of certified power supplies	P

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
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 Standard SI 32 Part 1.1	Not supplied for testing	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
1.2	Between the definitions for 'Person, service' and 'Range, rated frequency' insert the following: l 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	No cords	N/A

Rated Current of the Equipment A	Minimum Conductor Sizes	
	Nominal cross-sectional area mm^2	AWG or kcmil [cross-sectional area in mm2] see note 2

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Over 0.2 up to and including 3 Over 3 up to and including 7.5 Over 7.5 up to and including 10 Over 10 up to and including 16		0,5 [1)] 0,75 1,00 1,5	18 [0,8] 16 [1,3] 16 [1,3] 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 mm2 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
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

Error! Reference source not found.

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.201	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 mm3, 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. 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. 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. 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.	Added No alternative tests applied	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 ±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
	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. 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. 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		N/A

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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

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
Index	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	Inserted	P

National Differences **China (CN)** GB4943.1-2011Information technology equipment – Safety – Part 1: General requirements Applicable for 60950-1:2005 oldest version			P
1.1.2	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. 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;	For altitudes up to 2000m	N/A
1.4.5	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	Tested at -/+10%	P

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
1.4.12.1	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. 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. Add note 2: For equipment is to be operated at 2000m-5000m above sea leave, its temperature test conditions and temperature limits are under consideration.	Not for tropic climate conditions Added	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. For up to 2000m	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	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. And the RATED FREQUENCY or RATED FREQUENCY RANGE should be 50Hz or include 50Hz.	Covered by EUT rating	P

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	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."  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."  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.	Tested for Max operation up to 2000m, for non-tropical climate Markings will be provided when the product is shipped to China	P
2.7.1	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. Delete note of Clause 2.7.1.	Part of certified power supplies	P

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
2.9.2	First section of Clause 2.9.2 amended as two sections: 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 40±2℃ and a relative humidity of (93±3)%. During this conditioning the component or subassembly is not energized. 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 (93±3) %. The temperature of the air, at all places where samples can be located, is maintained within 2 °C of any convenient value between 20 °C and 30 °C such that condensation does not occur. Due to pretreatment of equipment operated at high altitude area is humidity conditioning withstand hot shock, specific requirements are to be considered. 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.	Humidity conditioning was conducted for 48 Hours at temp. 22^0C with relative humidity 93% See also appended table 5.2 IEC60950-1	P
2.10.3.1	Amend the third paragraph of Clause 2.10.3.1 to be: 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.	Up to 2000m	N/A
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

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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.	Designed to operate up to 2000m altituded	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.	Designed to operate up to 2000m altituded	N/A

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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)	Added annex DD: Instructions for the new safety warning labels. DD.1 Altitude warning label  Meaning of the label: Evaluation for apparatus only based on altitude not exceeding 2000m, therefor 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 . DD.2 Climate warning label  Meaning of the label: Evaluation for apparatus only based on temperate climate condition, therefor 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.	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

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
Quoting standards and reference documents	The principles of quoting and referring to other standards in Annex P and reference documents of IEC 60950-1 are as follows: 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. 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: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted; - If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted; - If the date of the national standard or industry standard is not given, the latest edition of the standard applies; - 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. When quoting several chapters or clauses of the international standard, the principles of quotation are as follows: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted; - If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted. 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

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Appendix 3 – Model names

Single AC models
RODS-LS-DEFAULT
RODS-LS-XL
ODS-LS
Alteon 5224
Alteon 5224 XL
OnDemand Switch LS
OnDemand Switch LS XL
ODS-LS XL
DUAL AC models
RODS-LS-DUAL
RODS-LS-XL-2AC
ODS-LS DUAL
Alteon 5224 DUAL
Alteon 5224 XL DUAL
OnDemand Switch LS DUAL
OnDemand Switch LS XL DUAL
ODS-LS XL DUAL
Single DC models
RODS-LS-DEFDC
RODS-LS-XL-DC
ODS-LS DC
Alteon 5224 DC
Alteon 5224 XL DC
OnDemand Switch LS DC
OnDemand Switch LS XL DC
ODS-LS XL DC
DUAL DC models
RODS-LS-DUALDC
RODS-LS-XL-2DC
ODS-LS DUAL DC
Alteon 5224 DUAL DC
Alteon 5224 XL DUAL DC
OnDemand Switch LS DUAL DC
OnDemand Switch LS XL DUAL DC
RODS-LS-DUALDC
ODS-LS XL DUAL DC

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Appendix 4 – licences

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

IEC IECEE CB SCHEME

Ref. Certif. No.
JPTUV-027530

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

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

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product Produit	Switching Power Supply
Name and address of the applicant Nom et adresse du demandeur	Zippy Technology Corp. 10F., No. 50, Min Chyuan Rd. Shin Tien City, Taipei 231 Taiwan
Name and address of the manufacturer Nom et adresse du fabricant	Zippy Technology Corp. 10F., No. 50, Min Chyuan Rd. Shin Tien City, Taipei 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 City, Taipei Hsien 231 Taiwan
Rating and principal characteristics Valeurs nominales et caractéristiques principales	Input : AC 100-240V; 60-50Hz; 8-5A; Class I Output: refer to the test report
Trade mark (if any) Marque de fabrique (si elle existe)	Trademark of EMACS
Model/type Ref. Ref. de type	P1H-6xxxP, P2H-6xxxP (xxx=400, 350) P1H-6357P
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 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	11017063 001

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

TÜVRheinland®

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: 24.06.2009

Signature: Dipl.-Ing. W. Hsu

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ELECTRICAL RATINGS:

Model	Input V	Input A	Input Hz	Output (dc) V	Output (dc) A
P1H-6400P P2H-6400P	100-240	8-5	60-50	+5 +12 +3.3 -5 -12 +5 Vsb +5 V & +3.3 V max. 175 W +5 V & +3.3 V & +12 V max. 384 W Total output power 400 W max.	25 28 20 0.5 0.5 2
P1H-6350P P2H-6350P P1H-6357P	100-240	8-5	60-50	+5 +12 +3.3 -5 -12 +5 Vsb +5 V & +3.3 V max. 175 W Total output power 350 W max.	25 22-28 20 0.5 0.5 2

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use - For use only in (or with) complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

Special Considerations - The following items are considerations that were used when evaluating this product.

*USR/CNR indicates investigation to the U.S and Canadian (Bi-National) Standard for Safety of Information Technology Equipment, **including Electrical Business Equipment CAN/CSA-C22.2 No. 60950-1-07 * UL60950-1 Second Edition, including revisions through revision date March 27, 2007.**

The component was submitted and tested for a maximum manufacturer's recommended ambient (Trma) of 40°C.

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Issue Date: 2004-06-28 2010-06-22 Page 1 of 19 Report Reference # E143756-A21-UL

UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2007-03-27 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2007-03 (Information Technology Equipment - Safety - Part 1: General Requirements)
Certification Type:	Power Supplies for Information Technology Equipment Including Electrical Business Equipment
CCN:	QQGQ2, QQGQ8
Product:	Power Supply, Built-In DC/DC (PS4)
Model:	DP1H-6350F, DP1H-6400F, DP2H-6350F, DP2H-6400F, SP410-1D
Rating:	Input : -36 to -72 V DC, 17 A (Optional) Output : Model DP1H-6350F and DP2H-6350F: 5V/35 A, +12V/22A, 3.3V/0-20A, -5V/0-0.5A, -12V/0-0.5A, (+5&+3.3V max. 40A; max. power 350W) Model DP1H-6400F and DP2H-6400F: 5V/35 A, +12V/28A, 3.3V/0-20A, -5V/0-0.5A, -12V/0-0.5A, (+5&+3.3V max. 45A; max. power 400W) Model SP410-1D: +5V/35 A, +12V/32A, +3.3V/20A, +5VSB/3A, -12V/0.5A, (+5&+3.3V max. 160W; max. power 410W)
Applicant Name and Address:	ZIPPY TECHNOLOGY CORP 10TH FL 50 MIN CHYUAN RD SHIN-TIEN TAIPEI HSIEN 231 TAIWAN

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National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

IEC IECEE CB SCHEME

Ref. Certif. No.

JPTUV-029049-A1/M1

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

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

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product Produit	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 City, Taipei 231 Taiwan
Name and address of the manufacturer Nom et adresse du fabricant	Zippy Technology Corp. 10F., No. 50, Min Chyuan Rd. Shin Tien City, Taipei 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 City, Taipei Hsien 231 Taiwan
Rating and principal characteristics Valeurs nominales et caractéristiques principales	Input : AC 100-240V; 4.5-2A or 5.5-2.5A(for other models); AC 200-240V; 3.5-2.5A (for P1S-2500V); AC 110-240V; 6.5-3.0A(for P1S-2507V); 47-63Hz; 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	Redundant power supply: R1S2-5300V4H, R1S2-5380V4H, R1S2-6300V4H, R1S2-6380V4H, R1S2-5300V4V, R1S2-5380V4V Power supply: P1S-2300V, P1S-2400V, P1S-2500V, P1S-2507V Power supply module: P1S-2300V-R, P1S-2400V-R
Additional information (if necessary) Information complémentaire (si nécessaire)	For model differences, refer to the test report. Re-issue of JPTUV-029049-M1 dated 23.06.2010, due to non-technical change.
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1:2005 National differences see test report
As shown in the Test Report Ref. No.which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce Certificat	11018041 003

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

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Date: 25.06.2010

Signature: Dipl.-Ing. W. Hsu

End of test report