



Ref. Certif. No.

JPTUV-042073

**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

LCD Monitor

Name and address of the applicant
Nom et adresse du demandeur

Compal Electronics, Inc.
No.581, Ruiguang Rd.,
Neihu District, Taipei City 11492 Taiwan

Name and address of the manufacturer
Nom et adresse du fabricant

NEC Display Solutions, Ltd.
4-28, Mita 1-chome, Minato-ku
Tokyo, 108-0073 JAPAN

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

See additional page(s)

Rating and principal characteristics
Valeurs nominales et caractéristiques principales

AC 100-240V; 50/60Hz; 0.75A-0.4A (1.3A for Mexico); Class I

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

NEC

Model/type Ref.
Ref. de type

L221V3, EA223WM(C), EA223WM-BK(C)

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

For model differences, refer to the test report.

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

IEC 60950-1:2005+A1
National differences see test report

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

11027458 001

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



TÜVRheinland®

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Global Technology Assessment Center
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Date: 17.01.2012

Signature:

Dipl.-Ing. A. Klinker

1. Compal Electronics (China)
Co., Ltd.
No. 988, Tong Feng East Road
Kunshan Economic Technical
Development Zone, Kunshan, Jiangsu 215335, P.R. China
2. Compal Optoelectronics (Kunshan)
Co., Ltd.
988, Tong Feng East Road
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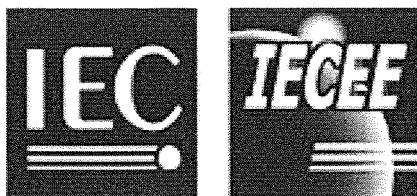
Additional information (if necessary)
Information complémentaire (si nécessaire)

Date: 17.01.2012

Signature:



Dipl.-Ing. A. Klinker



Test Report issued under the responsibility of:



TEST REPORT IEC 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report Number.....	11027458 001
Date of issue.....	January 16, 2012
Total number of pages.....	57
CB Testing Laboratory	TÜV Rheinland Taiwan Ltd., Taichung Laboratory
Address.....	No. 9, Ln. 36, Sec. 3, Minsheng Rd., Daya District, Taichung City 428, Taiwan
Applicant's name	Compal Electronics, Inc.
Address.....	No.581, Ruiguang Rd., Neihu District, Taipei City 11492 Tawian
Manufacturer's name.....	NEC Display Solutions, Ltd.
Address.....	4-28, Mita 1-chome, Minato-ku, Tokyo, 108-0073 JAPAN
Test specification:	
Standard	IEC 60950-1:2005 (2nd Edition); Am 1:2009
Test procedure.....	CB Scheme
Non-standard test method.....	N/A
Test Report Form No.....	IEC60950_1B
Test Report Form(s) Originator	SGS Fimko Ltd
Master TRF	Dated 2010-04
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Test item description.....	LCD Monitor
Trade Mark	NEC
Manufacturer.....	See above manufacturer
Model/Type reference.....	L221V3, EA223WM(C), EA223WM-BK(C)
Ratings.....	100-240Vac, 50/60Hz, 0.75A-0.4A(1.3A for Mexico)

Testing procedure and testing location:		
☒	CB Testing Laboratory:	See cover page.
Testing location/ address..... :		See cover page.
☐	Associated CB Laboratory:	
Testing location/ address..... :		
Tested by (name + signature).....:		Jacky Chen
Approved by (name + signature)		Carol Huang
☐	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):

- Photo documentation (7 pages)
- National Differences (30 pages)

Summary of testing:**Tests performed (name of test and test clause):**

All applicable tests as described in Test Case and Measurement Sections were performed.

The maximum operating ambient is 40°C.

The load conditions used during testing as below:

- video signal provided
- maximum brightness and contrast
- continuous operation
- 1kHz sin wave signal with maximum volume for speakers.
- 0.5A load for each USB ports.

Testing location:

All tests as described in Test Case and Measurement Sections were performed at the laboratory described on page 2.

Summary of compliance with National Differences

List of countries addressed:

EU Group Differences, EU Special National Conditions, CA, DE, FI, KR US*.

Explanation of used codes: CA = Canada, DE = Germany, FI = Finland, IL = Israel, KR = Republic of Korea, US = United States.

* National differences to IEC 60950-1:2005 evaluated.

☒ The product fulfils the requirements of A11:2009, A1:2010 and A12:2011 of EN 60950-1:2006.

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)



The label for models EA223WM(C), EA223WM-BK(C) were identical with model L221V3 above except for model designation only.

Test item particulars:	
Equipment mobility.....:	☒ movable ☐ hand-held ☐ transportable ☐ stationary ☐ for building-in ☐ direct plug-in
Connection to the mains	☐ pluggable equipment ☒ type A ☐ type B ☐ permanent connection ☒ detachable power supply cord ☐ non-detachable power supply cord ☐ not directly connected to the mains
Operating condition.....:	☒ continuous ☐ rated operating / resting time:
Access location	☒ operator accessible ☐ restricted access location
Over voltage category (OVC)	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other:
Mains supply tolerance (%) or absolute mains supply values	+10%, -10%
Tested for IT power systems	☒ Yes ☐ No
IT testing, phase-phase voltage (V)	230
Class of equipment	☒ Class I ☐ Class II ☐ Class III ☐ Not classified
Considered current rating of protective device as part of the building installation (A)	20 (for North America)
Pollution degree (PD)	☐ PD 1 ☒ PD 2 ☐ PD 3
IP protection class	IPX0
Altitude during operation (m)	Up to 2000
Altitude of test laboratory (m)	200
Mass of equipment (kg)	5.34 (With base), 3.06 (Without base)
Possible test case verdicts:	
- test case does not apply to the test object	: N/A (or N)
- test object does meet the requirement.....	: P (Pass)
- test object does not meet the requirement.....	: F (Fail)
Testing:	
Date of receipt of test item	: December, 2011
Date(s) of performance of tests	: December, 2011 – January, 2012
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 IEC 60950-1:

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

☒ Yes
☐ Not applicable

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

Name and address of factory (ies) : 1. Compal Electronics (China) Co., Ltd.
No. 988. Tong Feng East Road Kunshan
Economic Technical Development Zone,
Kunshan, Jiangsu 215335, P.R. China

2. Compal Optoelectronics (Kunshan) Co., Ltd.
988. Tong Feng East Road Kunshan Economic
Technical Development Zone, Kunshan,
Jiangsu 215335, P.R. China

General product information:

The equipment is Class I LCD monitor for use in scope of information technology equipment.

Model Differences

Models EA223WM(C), EA223WM-BK(C) were identical with model L221V3 above except for model designation only

Engineering Considerations

- The product was submitted and tested for use at the **maximum ambient temperature (T_{ma})** permitted by the manufacturer's specification of: 40°C
- The means of connection to the mains supply is **Pluggable Type A**.
- The product is wall mountable (see subclause 4.2.10): Wall mounted equipment.
- The product is intended for use on the following **power systems**: TN / IT.
- The equipment **disconnect device** is considered to be: Appliance Inlet.
- The following accessible locations are within a **limited current circuit** (see subclause 2.4): The bridging capacitor SC800.
- Following circuit locations were investigated as a **limited power source** (see subclause 2.5): Output data ports.
- The following **transformers** are provided (See subclause 1.5.4):
 - Double/Reinforced insulation: ST801.
 - Functional insulation: other than above mentioned.
- The following **capacitors** bridging insulation (See subclause 1.5.6):
 - Double/Reinforced insulation: SC800.
 - Basic insulation: SC801, SC802, SC804, SC808.
 - Supplementary insulation: None
 - Across mains conductors: SC803, SC807
 - Functional insulation: other than above mentioned.
- The following **solid insulation** are provided (See subclause 2.10.5):
 - Reinforced insulation: Photo Coupler (SU800), bobbin of ST801 and external plastic enclosure.
 - Basic insulation: None
 - Supplementary insulation: None
 - Functional insulation: other than above mentioned.
- The following parts consist of the protective earthing (see subclause 2.6):
 - Protective earthing conductor: In power supply cord.
 - Protective bonding conductor: connections of the earthing pin of inlet, the copper track on

PCB and the metal chassis.

- The following parts are **protective earthing terminals** (See subclause 2.6.4): the earthing terminal in the appliance inlet.
- The following enclosures are provided:
 - Fire enclosure: External plastic enclosure and internal metal enclosure.
 - Mechanical / Electrical enclosure: External plastic enclosure.

Additional Information:

- The equipment is for use in **multimedia systems** and was investigated additionally to IEC GUIDE 112.
- The Label in Copy of marking plate is a draft of an artwork pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.
- Some components are **pre-certified**, which have been evaluated according to the relevant requirements of IEC 60950-1, are employed in this product. Their suitability of use has been checked according to subclauses 1.5.1 and 1.5.2.
- Tests were repeated with each alternative source of components with identical results unless otherwise specified.
- Building-in type switching power supply, evaluated within the equipment, refer to appended table 1.5.1 for the source details.
- The stand base provided with rotate function.
- The test samples were pre-production sample without serial numbers.

MARKINGS AND INSTRUCTIONS

- Fuse Identification (See subclause 1.7.6): SF801 T3.15AL/250V
-  (IEC 60417-5009) for the stand-by condition. (See subclause 1.7.8.3)

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
- distance through insulation	Di		
- External creepage distance	Ext. dcr		
- Internal creepage distance	Int. dcr		
Indicate used abbreviations (if any)			

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	General	See below.	P
	Comply with IEC 60950-1 or relevant component standard	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components	Components certified to IEC standards and/or their harmonized standards, are used within their ratings and are checked for correct application. Non-certified components are checked for correct application, used within their ratings, tested as part of the equipment and subjected to applicable tests of the component standard.	P
1.5.3	Thermal controls		N/A
1.5.4	Transformers	Transformers complied with the relevant requirements.	P
1.5.5	Interconnecting cables		N/A
1.5.6	Capacitors bridging insulation	Capacitors used in accordance with their rating and complied with subclasses of IEC 60384-14 with at least 21 days damp heat test.	P
1.5.7	Resistors bridging insulation	See below.	P
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	Resistor bridging functional insulation only.	P
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N/A
1.5.8	Components in equipment for IT power systems	(see appended table 1.5.1.)	P
1.5.9	Surge suppressors	See below.	P
1.5.9.1	General	See Annex Q.	P
1.5.9.2	Protection of VDRs	A fuse is connected in series with the VDR.	P
1.5.9.3	Bridging of functional insulation by a VDR	Complied.	P
1.5.9.4	Bridging of basic insulation by a VDR		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A
1.6	Power interface		P
1.6.1	AC power distribution systems	Considered.	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment		N/A
1.6.4	Neutral conductor	Neutral is insulated from earth and body throughout the equipment and components rated accordingly. (see also 1.5.8).	P
1.7	Marking and instructions		P
1.7.1	Power rating and identification markings	The power rating marking is visible after the equipment has been installed as in normal use.	P
1.7.1.1	Power rating marking	See below	P
	Multiple mains supply connections.....:		N/A
	Rated voltage(s) or voltage range(s) (V)	See copy of marking plate.	P
	Symbol for nature of supply, for d.c. only		N/A
	Rated frequency or rated frequency range (Hz)	See copy of marking plate.	P
	Rated current (mA or A)	See copy of marking plate.	P
1.7.1.2	Identification markings	See below	P
	Manufacturer's name or trade-mark or identification mark	See copy of marking plate.	P
	Model identification or type reference	See copy of marking plate.	P
	Symbol for Class II equipment only	Class I equipment	N/A
	Other markings and symbols	Other markings and symbols do not give rise to misunderstanding.	P
1.7.2	Safety instructions and marking	See below:	P
1.7.2.1	General	Instructions are available.	P
1.7.2.2	Disconnect devices	Appliance Inlet.	P
1.7.2.3	Overcurrent protective device		N/A
1.7.2.4	IT power distribution systems	For Norway compliance has to be evaluated during the national approved.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.5	Operator access with a tool		N/A
1.2.7.6	Ozone		N/A
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment		N/A
	Methods and means of adjustment; reference to installation instructions		N/A
1.7.5	Power outlets on the equipment		N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	See General product information - Markings and Instructions	P
1.7.7	Wiring terminals	See below.	P
1.7.7.1	Protective earthing and bonding terminals	Appliance inlet is provided.	P
1.7.7.2	Terminals for a.c. mains supply conductors	Appliance inlet is provided.	P
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators	See below.	P
1.7.8.1	Identification, location and marking	The function of indicators and controls is clearly identified.	P
1.7.8.2	Colours		N/A
1.7.8.3	Symbols according to IEC 60417	See General product information - Markings and Instructions	P
1.7.8.4	Markings using figures		N/A
1.7.9	Isolation of multiple power sources		N/A
1.7.10	Thermostats and other regulating devices		N/A
1.7.11	Durability	The marking plate has no curling and is not able to be removed easily.	P
1.7.12	Removable parts	The required marking is not placed on removable parts.	P
1.7.13	Replaceable batteries		N/A
	Language(s)		—
1.7.14	Equipment for restricted access locations.....		N/A
2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	Unless otherwise indicated in 2.1.1.1, all parts are safe to access by operator.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.1	Access to energized parts	Compliance of protection against contact with hazardous energized parts checked.	P
	Test by inspection	Complied.	P
	Test with test finger (Figure 2A)	No contact.	P
	Test with test pin (Figure 2B)	No contact when applied to openings in external electrical enclosure.	P
	Test with test probe (Figure 2C)		N/A
2.1.1.2	Battery compartments		N/A
2.1.1.3	Access to ELV wiring		N/A
	Working voltage (V_{peak} or V_{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring		N/A
2.1.1.5	Energy hazards	No parts at hazardous energy level in operator access area.	P
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment	Voltage decay measurement was conducted with an oscilloscope having an input impedance of 100 M Ω .	P
	Measured voltage (V); time-constant (s)	See appended table 2.1.1.7.	—
2.1.1.8	Energy hazards – d.c. mains supply		N/A
	a) Capacitor connected to the d.c. mains supply ..		N/A
	b) Internal battery connected to the d.c. mains supply		N/A
2.1.1.9	Audio amplifiers	See cl. 2.1.1.1 Tested according to 4.2.4 of IEC 60065.	P
2.1.2	Protection in service access areas		N/A
2.1.3	Protection in restricted access locations		N/A

2.2	SELV circuits		P
2.2.1	General requirements	See below.	P
2.2.2	Voltages under normal conditions (V)	See appended table 2.2.2.	P
2.2.3	Voltages under fault conditions (V)	See appended table 2.2.3.	P
2.2.4	Connection of SELV circuits to other circuits	In compliance with 2.2.2, 2.2.3, 1.5.6 and 2.4.3.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.3	TNV circuits		N/A
2.3.1	Limits		N/A
	Type of TNV circuits..... :		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions :		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed :		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed :		—
2.3.5	Test for operating voltages generated externally		N/A
2.4	Limited current circuits		P
2.4.1	General requirements	The limits of 2.4.2 were not exceeded under normal operating conditions. (for bridging capacitor only)	P
2.4.2	Limit values	See below.	P
	Frequency (Hz)..... :	See appended table 2.4.2	—
	Measured current (mA) :	See appended table 2.4.2	—
	Measured voltage (V) :	See appended table 2.4.2	—
	Measured circuit capacitance (nF or μ F) :	2200pF	—
2.4.3	Connection of limited current circuits to other circuits	Complied.	P
2.5	Limited power sources		P
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition	See appended table.	P
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA) :	See appended table.	—
	Current rating of overcurrent protective device (A) .:		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Use of integrated circuit (IC) current limiters		N/A
2.6	Provisions for earthing and bonding		P
2.6.1	Protective earthing	The relevant parts connected to the main protective earthing terminal reliably. Complied with 2.6.3.	P
2.6.2	Functional earthing	Functional earthing circuit is separated from parts at hazardous voltages by double (or reinforced) insulation. Green-and-yellow color combination was not used for functional earthing conductors. The equipment was not marked with the symbol of double square (IEC 60417-5172).	P
2.6.3	Protective earthing and protective bonding conductors	See below.	P
2.6.3.1	General	See below.	P
2.6.3.2	Size of protective earthing conductors	Complied with the minimum sizes in table 3B.	P
	Rated current (A), cross-sectional area (mm ²), AWG	0.75A-0.4A(1.3A for Mexico), 0.75 mm ² , 18AWG	—
2.6.3.3	Size of protective bonding conductors	See 2.6.3.4	P
	Rated current (A), cross-sectional area (mm ²), AWG		—
	Protective current rating (A), cross-sectional area (mm ²), AWG.....		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min).....	See appended table 2.6.3.4.	P
2.6.3.5	Colour of insulation		N/A
2.6.4	Terminals	See General product information.	P
2.6.4.1	General	See below.	P
2.6.4.2	Protective earthing and bonding terminals	The earthing terminal in the appliance inlet is regarded as the main protective earthing terminal.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A), type, nominal thread diameter (mm)..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing	See below.	P
2.6.5.1	Interconnection of equipment	The symbol (IEC 60417-5172) was not marked. See also 2.6.5.3.	P
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switch or overcurrent protective device provided in earthing conductors and protective bonding conductors.	P
2.6.5.3	Disconnection of protective earth	Complied.	P
2.6.5.4	Parts that can be removed by an operator	The protective earthing connection is made earlier and broken later than the supply connection.	P
2.6.5.5	Parts removed during servicing	The relevant hazard is removed at the same time the protective earthing connections is removed for servicing.	P
2.6.5.6	Corrosion resistance	No combination above the line in annex J is used.	P
2.6.5.7	Screws for protective bonding	Self-tapping and spaced thread screws are not used to provide protective bonding. At least two screws are used for each connection.	P
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A

2.7	Overcurrent and earth fault protection in primary circuits		P
2.7.1	Basic requirements	Protection against overcurrents and short-circuits is provided as an integral part of the equipment. Protection against earth faults is provided as part of the building installation.	P
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not simulated in 5.3.7	Considered.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.3	Short-circuit backup protection	The building installation is considered as providing short-circuit backup protection.	P
2.7.4	Number and location of protective devices :	The protective device is located adequately therefore able to interrupt the overcurrent flowing in any possible fault current path.	P
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel :		N/A

2.8	Safety interlocks		N/A
2.8.1	General principles		N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) :		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A

2.9	Electrical insulation		P
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used.	P
2.9.2	Humidity conditioning	Tested for 120 hrs.	P
	Relative humidity (%), temperature (°C) :	95%, 40°C	—
2.9.3	Grade of insulation	Basic, supplementary, double insulation, reinforced or functional insulation.	P
2.9.4	Separation from hazardous voltages	See below.	P
	Method(s) used :	Method 1.	—

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Clause	Requirement + Test	Result - Remark	Verdict
2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General	See below.	P
2.10.1.1	Frequency		P
2.10.1.2	Pollution degrees	See Test item particulars	P
2.10.1.3	Reduced values for functional insulation	See 5.3.4.	P
2.10.1.4	Intervening unconnected conductive parts	Complied.	P
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements	Considered.	P
2.10.1.7	Insulation in circuits generating starting pulses	See 2.10.3.5.	P
2.10.2	Determination of working voltage	See below.	P
2.10.2.1	General	Considered.	P
2.10.2.2	RMS working voltage	See appended table 2.10.2.	P
2.10.2.3	Peak working voltage	See appended table 2.10.2.	P
2.10.3	Clearances	See below.	P
2.10.3.1	General	Annex F considered.	P
2.10.3.2	Mains transient voltages	See below.	P
	a) AC mains supply	2500Vpk considered.	P
	b) Earthed d.c. mains supplies		N/A
	c) Unearthed d.c. mains supplies		N/A
	d) Battery operation		N/A
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits	See 5.3.4.	N/A
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply		N/A
2.10.3.7	Transients from d.c. mains supply		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems		N/A
2.10.3.9	Measurement of transient voltage levels		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances	See below.	P
2.10.4.1	General	Considered.	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.4.2	Material group and comparative tracking index	Material group IIIb assumed.	P
	CTI tests	See above.	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation	Complied with 2.10.5.2 to 2.10.5.14 and 5.2.	P
2.10.5.1	General	See below.	P
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices	The pre-certified optocoupler complied with the relevant requirements of IEC 60950-1.	P
2.10.5.5.	Cemented joints	(see appended table 2.10.3 and 2.10.4)	P
2.10.5.6	Thin sheet material – General	Considered.	P
2.10.5.7	Separable thin sheet material	Reinforced insulation.	P
	Number of layers (pcs)	2 or 3 layers.	—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure	Electric strength test applied to each combination of two layers together or one layer only.	P
	Electric strength test	(see appended table 5.2)	—
2.10.5.11	Insulation in wound components		N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage		N/A
	a) Basic insulation not under stress		N/A
	b) Basic, supplementary, reinforced insulation		N/A
	c) Compliance with Annex U		N/A
	Two wires in contact inside wound component; angle between 45° and 90°		N/A
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Basic insulation not under stress		N/A
	- Supplementary, reinforced insulation		N/A
2.10.6	Construction of printed boards	See below.	P
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	P
2.10.6.2	Coated printed boards		N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs).....		N/A
2.10.7	Component external terminations	(see appended table 2.10.3 and 2.10.4)	P
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A

3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	All internal wires are UL recognized wiring which is PVC insulated, rated VW-1, minimum 80°C. Internal wiring gauge is suitable for current intended to be carried.	P
3.1.2	Protection against mechanical damage	The wireways (including holes) are smooth and free from sharp edges.	P

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Clause	Requirement + Test	Result - Remark	Verdict
3.1.3	Securing of internal wiring	No excessive strain on wire and on terminal connections, loosening of terminal connections and damage of conductor insulation.	P
3.1.4	Insulation of conductors	(see appended table 5.2)	P
3.1.5	Beads and ceramic insulators		N/A
3.1.6	Screws for electrical contact pressure	The screws are not made of insulating material. They engage at least two complete threads into the metal part.	P
3.1.7	Insulating materials in electrical connections	Sufficient resilience is provided.	P
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors	See below.	P
	10 N pull test	The clearances and creepages are not reduced below required in 2.10.	P
3.1.10	Sleeving on wiring	Not used.	N/A

3.2	Connection to a mains supply		P
3.2.1	Means of connection	See below.	P
3.2.1.1	Connection to an a.c. mains supply	An appliance inlet provided.	P
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter of cable and conduits (mm)		—
3.2.4	Appliance inlets	The appliance inlet complied with IEC 60320-1; the connector inserted without difficulty and not supporting the equipment on a flat surface.	P
3.2.5	Power supply cords	See below.	P
3.2.5.1	AC power supply cords	The power supply cord is approved components and has conductors with adequate cross-sectional areas.	P
	Type	(see appended table 1.5.1)	—
	Rated current (A), cross-sectional area (mm ²), AWG	0.75A-0.4A(1.3A for Mexico), 0.75 mm ² , 18AWG	—

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Clause	Requirement + Test	Result - Remark	Verdict
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N)		—
	Longitudinal displacement (mm)		—
3.2.7	Protection against mechanical damage	No sharp points or cutting edges within or on the surface of the equipment or at the inlet opening or inlet bushing.	P
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g)		—
	Radius of curvature of cord (mm)		—
3.2.9	Supply wiring space		N/A

3.3	Wiring terminals for connection of external conductors		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm ²)		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm)		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

3.4	Disconnection from the mains supply		P
3.4.1	General requirement	Disconnect device provided.	P
3.4.2	Disconnect devices	The disconnect device is close to the incoming supply. See General product information.	P
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.4.5	Switches in flexible cords	No isolating switches fitted in flexible cords.	P
3.4.6	Number of poles - single-phase and d.c. equipment	The disconnect device disconnects both poles simultaneously.	P
3.4.7	Number of poles - three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A

3.5	Interconnection of equipment		P
3.5.1	General requirements	See below.	P
3.5.2	Types of interconnection circuits	SELV circuit and Limited current circuit.	P
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment	The all data ports are supplied by power supply module which complied with 2.5.	P

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		P
	Angle of 10°	The equipment does not fall over. Tested as client's request.	P
	Test force (N)		N/A

4.2	Mechanical strength		P
4.2.1	General	After following tests, the sample continues to comply relevant requirements.	P
	Rack-mounted equipment.		N/A
4.2.2	Steady force test, 10 N	Applied to parts other than in 4.2.3 and 4.2.4.	P
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N	Applied to outer enclosure. .	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.5	Impact test	Applied to all external surfaces of enclosure except following parts: The flat panel display.	P
	Fall test		P
	Swing test		P
4.2.6	Drop test; height (mm)		N/A
4.2.7	Stress relief test	At 70°C.	P
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified		N/A
4.2.9	High pressure lamps		N/A
4.2.10	Wall or ceiling mounted equipment; force (N)	The unit was subjected to the load test. An additional force of 90N (3 times the mass of the unit without stand base) was applied to the unit plus the wall-mounting accessory and sustained for 1 min. The unit withstood the load test without damages or breaks.	P
4.2.11	Rotating solid media		N/A
	Test to cover on the door.....		N/A

4.3	Design and construction		P
4.3.1	Edges and corners	All edges or corners accessible to operator are rounded and smoothed.	P
4.3.2	Handles and manual controls; force (N).....		N/A
4.3.3	Adjustable controls		N/A
4.3.4	Securing of parts	No loosen.	P
4.3.5	Connection by plugs and sockets	No misconnection likely to create a hazard.	P
4.3.6	Direct plug-in equipment		N/A
	Torque		—
	Compliance with the relevant mains plug standard		N/A
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries		N/A
	- Overcharging of a rechargeable battery		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease		N/A
4.3.10	Dust, powders, liquids and gases		N/A
4.3.11	Containers for liquids or gases		N/A
4.3.12	Flammable liquids		N/A
	Quantity of liquid (l)		N/A
	Flash point (°C)		N/A
4.3.13	Radiation	See below.	P
4.3.13.1	General	See below.	P
4.3.13.2	Ionizing radiation		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		N/A
	Part, property, retention after test, flammability classification		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation		N/A
4.3.13.5	Lasers (including laser diodes) and LEDs		N/A
4.3.13.5.1	Lasers (including laser laser diodes)		N/A
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)	The following parts are considered complied without tests: Indicating lights.	P
4.3.13.6	Other types		N/A

4.4	Protection against hazardous moving parts		N/A
4.4.1	General	No hazardous moving parts.	N/A
4.4.2	Protection in operator access areas		N/A
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a).....:		N/A
	Is considered to cause pain, not injury. b)		N/A
	Considered to cause injury. c)		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning		N/A

4.5	Thermal requirements		P
4.5.1	General	No exceeding temperature.	P
4.5.2	Temperature tests	(See appended table 4.5)	P
	Normal load condition per Annex L	(See Annex L)	—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat	Phenolic materials accepted without further testing.	P

4.6	Openings in enclosures		P
4.6.1	Top and side openings	See below.	P
	Dimensions (mm)	(see appended table)	—
4.6.2	Bottoms of fire enclosures	See below.	P
	Construction of the bottom, dimensions (mm) ..	(see appended table)	—
4.6.3	Doors or covers in fire enclosures	No doors or covers.	N/A
4.6.4	Openings in transportable equipment		N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm)		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C), time (weeks).....:		—

4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	See below.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure	See below.	P
4.7.2.1	Parts requiring a fire enclosure	Following parts require a fire enclosure: - Components in primary circuits - Insulating wiring.	P
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		P
4.7.3.1	General	Those components are mounted on V-1 material and separated from material of a class lower than V-1 by at solid barrier of V-1 material (or by at least 13 mm of air).	P
4.7.3.2	Materials for fire enclosures	See table 1.5.1.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	HB material used.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	The material is made of V-2 (or HF-2) material.	P
4.7.3.5	Materials for air filter assemblies		N/A
4.7.3.6	Materials used in high-voltage components		N/A
5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		P
5.1.1	General	See sub-clauses 5.1.2 to 5.1.7.	P
5.1.2	Configuration of equipment under test (EUT)	See below.	P
5.1.2.1	Single connection to an a.c. mains supply	Treated as a single piece of equipment.	P
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit	Test circuit in Figure 5A used.	P
5.1.4	Application of measuring instrument	Measuring instruments as in annex D used.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.5	Test procedure	All switches in the primary and likely to be operated in normal used are open and closed in all possible combinations.	P
5.1.6	Test measurements	See appended table 5.1.	P
	Supply voltage (V)	+10% of the rated voltage.	—
	Measured touch current (mA)	See appended table 5.1.	—
	Max. allowed touch current (mA)	See appended table 5.1.	—
	Measured protective conductor current (mA)		—
	Max. allowed protective conductor current (mA)....		—
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	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	Table 5B used.	P

5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors		N/A
5.3.3	Transformers	(see appended Annex C)	P
5.3.4	Functional insulation.....	Functional insulation complied with the requirements.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE	(see appended table 5.3)	P
5.3.7	Simulation of faults	Complied.	P
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	(see appended table)	P
5.3.9.1	During the tests	No fire propagated beyond the equipment, no molten metal emitted and no deformation of enclosure.	P
5.3.9.2	After the tests	Electric strength test made.	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		N/A
6.1.2.1	Requirements		N/A
	Supply voltage (V)		—
	Current in the test circuit (mA)		—
6.1.2.2	Exclusions		N/A

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

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

7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N/A
7.1	General		N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		P
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples		—
	Wall thickness (mm)		—
A.1.2	Conditioning of samples; temperature (°C)		N/A
A.1.3	Mounting of samples		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		P
A.2.1	Samples, material		—
	Wall thickness (mm)		—
A.2.2	Conditioning of samples; temperature (°C)		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

A.3.3	Compliance criterion		N/A
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B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		N/A
B.1	General requirements		N/A
	Position		—
	Manufacturer		—
	Type		—
	Rated values		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days)		—
	Electric strength test: test voltage (V)		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V)		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V)		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V)		—

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		P
	Position	Refer to appended table 1.5.1	—
	Manufacturer	Refer to appended table 1.5.1	—
	Type	Refer to appended table 1.5.1	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Rated values	Refer to appended table 1.5.1	—
	Method of protection	Overcurrent protection.	—
C.1	Overload test	(see appended table 5.3)	P
C.2	Insulation	(see appended table 5.2)	P
	Protection from displacement of windings	See appended table C.2	P
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		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	Earthed d.c. mains supplies		N/A
G.2.3	Unearthed d.c. mains supplies		N/A
G.2.4	Battery operation		N/A
G.3	Determination of telecommunication network transient voltage (V)		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks		N/A
G.4.2	Transients from telecommunication networks		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances		N/A
H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N/A
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		P
	Metal(s) used	Metals which the combination electrochemical potential is less than 0.6V.	—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V)		N/A
K.3	Thermostat endurance test; operating voltage (V)		N/A
K.4	Temperature limiter endurance; operating voltage (V)		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)		P
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment	See Summary of testing.	P
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz)		—

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Clause	Requirement + Test	Result - Remark	Verdict
M.3.1.2	Voltage (V)		—
M.3.1.3	Cadence; time (s), voltage (V)		—
M.3.1.4	Single fault current (mA)		—
M.3.2	Tripping device and monitoring voltage		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V)		N/A
N	ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	ANNEX P, NORMATIVE REFERENCES		—
Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		P
	a) Preferred climatic categories	See table 1.5.1.	P
	b) Maximum continuous voltage	See table 1.5.1.	P
	c) Pulse current	See table 1.5.1.	P
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
			—

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Clause	Requirement + Test	Result - Remark	Verdict
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N/A
			—
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P
V.1	Introduction		P
V.2	TN power distribution systems		P
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N/A
Y.1	Test apparatus		N/A
Y.2	Mounting of test samples		N/A
Y.3	Carbon-arc light-exposure apparatus		N/A
Y.4	Xenon-arc light exposure apparatus		N/A
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		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

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Clause	Requirement + Test	Result - Remark	Verdict
CC.2	Test program 1.....:		N/A
CC.3	Test program 2.....:		N/A
DD	ANNEX DD, Requirements for the mounting means of rack-mounted equipment		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N.....:		N/A
DD.3	Mechanical strength test, 250N, including end stops.....:		N/A
DD.4	Compliance.....:		N/A
EE	ANNEX EE, Household and home/office document/media shredders		N/A
EE.1	General		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					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹	
LCD Panel	SAMSUNG	LTM220MT09	22", TFT type (LED backlight)	--	--	
Plastic enclosure	TEIJIN CHEMICALS LTD RESEARCH & DEVELOPMENT DIV	TN-7500(v)	V-1 minimum, 1.2mm thickness minimum, 60°C	UL 94	UL	
Base (optional)	--	--	HB min.	UL 94	UL	
Metal enclosure	--	--	0.6 mm thickness min.	--	--	
Metal sheet (Used for bottom and side of internal metal enclosure near power board)	--	--	0.21 mm thickness min.	--	--	
Speaker (Optional) (Two provided)	--	--	6Ω max., 2.5W max.	--	--	
PCB	--	--	V-1 min., 105°C min.	UL 796	UL	
Switching power supply with DC/DC convert board, Compal Electronic, Inc., type: VP-2218, I/P:100-240Vac, 47-63Hz O/P: 5.1Vcc/2.0A, 5.1Vusb/2.0A, 16Vled0.7A.						
AC Inlet (SP801)	Zhang Jia Gang Hua Jie	SA-4S	10A, 250Vac	IEC/EN 60320-1	VDE, UL, CSA, NEMKO	
	I-Sheng	7001	10A, 250Vac	IEC/EN 60320-1	VDE, UL, CSA, NEMKO	
Fuse (SF801)	CONQUER	MST series	T3.15AL, 250V	IEC 60127-1 IEC 60127-3	VDE, UL	
	Cooper Bussmann	SS-5 series	T3.15AL, 250V	IEC 60127-1 IEC 60127-3	VDE, UL	
	Littelfuse	392 series	T3.15AL, 250V	IEC 60127-1 IEC 60127-3	VDE, UL	
Varistor (SVA801)	Thinking	TVR14471	300Vac minimum, 385Vdc minimum.	UL 1449 3rd ed.(SPD type 3) , IEC 61051-1, IEC 61051-2	VDE, UL	

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Thermistor (SRT801) (Optional)	--	--	Min. 3A., 5Ω at 25°C.	--	--
Y-capacitor (SC801, SC802, SC804, SC808) (Y1 or Y2 type) (optional)	TDK	CD, CY, CS	250Vac min., 85°C min., SC801=SC802 =100pF max. SC804=SC808 =470pF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL
	Walsin (Pan Overseas)	AH, AC	250Vac min., 85°C min., SC801=SC802 =100pF max. SC804=SC808 =470pF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL
	Murata	KX, KH	250Vac min., 85°C min., SC801=SC802 =100pF max. SC804=SC808 =470pF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL
	Vishay	VY1, VKP	250Vac min., 85°C min., SC801=SC802 =100pF max. SC804=SC808 =470pF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL
	Kunshan Micro Capacitors	B, E, F	250Vac min., 85°C min., SC801=SC802 =100pF max. SC804=SC808 =470pF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL
	Capatronics	Y5P, Y5U, Y5V	250Vac min., 85°C min., SC801=SC802 =100pF max. SC804=SC808 =470pF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL
	JYH	JD	250Vac min., 85°C min., SC801=SC802 =100pF max. SC804=SC808 =470pF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
X-capacitor (SC803, SC807) (X1 or X2 type) (optional)	Iskra	KNB1560	250Vac min., 85°C min., SC803=0.33μF max., SC807=0.22uF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL
	Taishing	MPX	250Vac min., 85°C min., SC803=0.33μF max., SC807=0.22uF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL
	UTX	HQX	250Vac min., 85°C min., SC803=0.33μF max., SC807=0.22uF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL
	SinHua	MPX	250Vac min., 85°C min., SC803=0.33μF max., SC807=0.22uF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL
	Joey	MPX	250Vac min., 85°C min., SC803=0.33μF max., SC807=0.22uF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL
Bridging Capacitor (SC800) (Y1 type) (optional)	Murata	KX	250Vac min., 85°C min., 2200pF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL
	TDK	CD	250Vac min., 85°C min., 2200pF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL
	Walsin (Pan Overseas)	AH	250Vac min., 85°C min., 2200pF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL
	Vishay	VY1	250Vac min., 85°C min., 2200pF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL
	Kunshan Micro Capacitors	B, E	250Vac min., 85°C min., 2200pF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
	Capatronics	Y5P, Y5U	250Vac min., 85°C min., 2200pF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL
	JYH	JD	250Vac min., 85°C min., 2200pF max.	IEC/EN 60384-14: 2005	VDE, SEV, SEMKO, UL
Bleeder Resistor (SR801, SR802, SR803)	--	--	390kΩ max., 1/4W min.	--	--
Bridge Diode (SBD801)	--	--	600V min., 2A min.	--	--
Transistor (SQ801)	--	--	650V min., 6A min.	--	--
Storage Capacitor (SC806)	--	--	100μF minimum, 400Vac min., 85°C min.	--	--
Optocoupler (SU800)	Lite-on	LTV-817 series	Distance through insulation = 0.4 mm, internal creepage=4.0 mm, external creepage=8.0 mm.	IEC 60950-1 DIN EN60747-5-2	VDE, Fimko, Demko
	Toshiba	TLP421	Distance through insulation = 0.4 mm, Internal dcr = thermal cycling, external creepage=8.0 mm.	IEC 60950-1 DIN EN60747-5-2	VDE, Fimko, Demko
Line filter (SL801) (optional)	JIANGSU TAICHANG ELECTRONICS CO., LTD	CL90000780I (or LCL203B)	105°C min.	--	--
Choke (SL802) (optional)	CHENPING ELECTRONIC TECHNOLOGY CO., LTD	CL90000890I (or L050350-6)	105°C min.	--	--
Transformer (ST801)	JIANGSU TAICHANG ELECTRONICS CO., LTD	DG10002780I (or BCK-ER28-17311)	Class 105 material (A)	Applicable parts in IEC 60950-1 and acc. to IEC 60085	Accepted by TÜV Rheinland

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
	Yuva ELECTRONIC CO., LTD	DG10002780I (or YUVA-1913)	Class 105 material (A)	Applicable parts in IEC 60950-1 and acc. to IEC 60085	Accepted by TÜV Rheinland
PCB	--	--	V-1 min., 105°C min.	UL 94	UL
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

1.5.1	TABLE: Opto Electronic Devices	P
Manufacturer		
Type.....		
Separately tested.....		
Bridging insulation		
External creepage distance		
Internal creepage distance		
Distance through insulation		
Tested under the following conditions		
Input.....		
Output.....		
supplementary information		
For Optocoupler, see above table 1.5.1.		

1.6.2	TABLE: Electrical data (in normal conditions)					P
U/F (V/Hz)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
Signal input from D-sub connector						
90/50	0.63	--	31.9	SF801	0.63	Maximum normal load.
100/50	0.58	0.75	31.7	SF801	0.58	Maximum normal load.
240/50	0.29	0.4	31.5	SF801	0.29	Maximum normal load.
254/50	0.28	--	31.6	SF801	0.28	Maximum normal load.
264/50	0.27	--	31.5	SF801	0.27	Maximum normal load.
90/60	0.61	--	32.0	SF801	0.61	Maximum normal load.
100/60	0.56	0.75	31.9	SF801	0.56	Maximum normal load.

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
240/50	0.29	0.4	31.5	SF801	0.29	Maximum normal load.
254/60	0.28	--	31.4	SF801	0.28	Maximum normal load.
264/60	0.27	--	31.3	SF801	0.27	Maximum normal load.
Signal input from DVI connector						
90/50	0.62	--	31.7	SF801	0.62	Maximum normal load.
100/50	0.58	0.75	31.5	SF801	0.58	Maximum normal load.
240/50	0.28	0.4	31.4	SF801	0.28	Maximum normal load.
254/50	0.28	--	31.5	SF801	0.28	Maximum normal load.
264/50	0.27	--	31.4	SF801	0.27	Maximum normal load.
90/60	0.61	--	31.8	SF801	0.61	Maximum normal load.
100/60	0.56	0.75	31.8	SF801	0.56	Maximum normal load.
240/50	0.28	0.4	31.4	SF801	0.28	Maximum normal load.
254/60	0.27	--	31.3	SF801	0.27	Maximum normal load.
264/60	0.26	--	31.0	SF801	0.26	Maximum normal load.
Signal input from Display connector						
90/50	0.62	--	31.8	SF801	0.62	Maximum normal load.
100/50	0.57	0.75	31.5	SF801	0.57	Maximum normal load.
240/50	0.29	0.4	31.4	SF801	0.29	Maximum normal load.
254/50	0.28	--	31.5	SF801	0.28	Maximum normal load.
264/50	0.27	--	31.4	SF801	0.27	Maximum normal load.
90/60	0.61	--	31.8	SF801	0.61	Maximum normal load.
100/60	0.56	0.75	31.0	SF801	0.56	Maximum normal load.
240/50	0.28	0.4	31.3	SF801	0.28	Maximum normal load.
254/60	0.27	--	31.1	SF801	0.27	Maximum normal load.
264/60	0.26	--	31.0	SF801	0.26	Maximum normal load.
Supplementary information:						

2.1.1.5 c) 1)	TABLE: max. V, A, VA test				P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
+5.1V (after D851)	--	5.25	9.7	45.59	
+16V (after D861)	--	22.04	3.5	50.02	
supplementary information:					
Input voltage=240V, 60Hz.					

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Clause	Requirement + Test	Result - Remark	Verdict

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			P
Component (measured between)		max. voltage (V) (normal operation)		Voltage Limiting Components
		V peak	V d.c.	
ST801 pin 11/12 to Earth		33.0	--	--
ST801 pin 7/8 to Earth		113.2	--	
After D851		--	5.25	D851
LED backlight connector P804 pin 3/4		--	29.7	--
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)		
D851 short		0 (unit shut down)		
L902 (backlight connector P804 pin 3/4)		0 (unit shut down)		
D901 (backlight connector P804 pin 3/4)		0 (unit shut down)		
supplementary information:				
Input voltage=240V, 60Hz.				

2.5	TABLE: limited power sources				P
Circuit output tested:					
Measured Uoc (V) with all load circuits disconnected:			See below		
		I _{sc} (A)		VA	
		Meas.	Limit	Meas.	Limit
For USB3 and USB4 connector					
Normal condition (Uoc=5.25V)		1.3	8	5.92	100
Single fault condition (F803 and F804 short) (Uoc=5.25V)		6.5	8	8.82	100
For USB1 and USB2 connector					

IEC 60950-1				
Clause	Requirement + Test	Result - Remark		Verdict
Normal condition (Uoc=5.25V)				
	1.3	8	5.92	100
Single fault condition (F801 and F802 short) (Uoc=5.25V)				
	5.0	8	7.50	100
For USB Driver connector				
Normal condition (Uoc=0V)				
	0	8	0	100
For Audio connector				
Normal condition (Uoc=0V)				
	0	8	0	100
For D-sub connector				
Normal condition (Uoc=4.89V)				
	0.003	8	0.013	100
For DVI connector				
Normal condition (Uoc=4.84V)				
	0.002	8	0.007	100
For Display connector				
Normal condition (Uoc=4.85V)				
	0.002	8	0.008	100
supplementary information:				
Input voltage=240V, 60Hz.				

2.10.2	Table: working voltage measurement			P
Location	RMS voltage (V)	Peak voltage (V)	Comments	
ST801 (Pin 1 – 7,8)	217.9	372		
ST801 (Pin 1 – 9,10)	217.9	342		
ST801 (Pin 1 – 11,12)	219.2	433		
ST801 (Pin 3 – 7,8)	244.5	451		
ST801 (Pin 3 – 9,10)	249.2	474		
ST801 (Pin 3 – 11,12)	237.8	449		
ST801 (Pin 5 – 7,8)	221.9	342		
ST801 (Pin 5 – 9,10)	218.9	345		
ST801 (Pin 5 – 11,12)	222.3	364		
ST801 (Pin 6 – 7,8)	220.3	383		
ST801 (Pin 6 – 9,10)	221.4	416		
ST801 (Pin 6 – 11,12)	220.9	366		
SC800	228	345		
SU800 (Pin 1 – 3)	221.4	347		
SU800 (Pin 1 – 4)	231.2	342		
SU800 (Pin 2 – 3)	220.1	345		

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Clause	Requirement + Test	Result - Remark	Verdict

SU800 (Pin 2 – 4)	219.4	337	
supplementary information:			
Input voltage=240V, 60Hz.			

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						P
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:							
Line to Neutral before Fuse	420	250	1.5	3.5	2.5	3.6	
Under Fuse	420	250	1.5	2.1	2.5	2.1 ³	
Basic/supplementary:							
SH801 to metal enclosure	420	250	2.0	7.7	2.5	7.7	
SPS solder side to metal enclosure	420	250	2.0	5.0	2.5	5.0	
Trace under SC801	420	250	2.0	3.2	2.5	3.2	
Trace under SC802	420	250	2.0	4.6	2.5	4.6	
Trace under SC804	420	250	2.0	4.0	2.5	4.0	
Trace under SC805	420	250	2.0	4.8	2.5	4.8	
Trace L/N to Earth	420	250	2.0	2.5	2.5	2.5	
Reinforced:							
C806 (10N) to C859	420	250	4.0	8.7	5.0	8.7	
Trace under SC800	420	250	4.0	7.1	5.0	7.1	
Trace under SU800	420	250	4.0	7.5	5.0	7.5	
Trace under T601	474	250	4.2	7.1	5.0	7.1	
Supplementary information:							
1. Functional insulation shorted, see 5.3.4.							
2. Components glued in positioning: CS806.							
3. See table 5.2 Electric strength test.							
4. For clearance and creepage did not describe above are far larger than limit above.							

2.10.5	TABLE: Distance through insulation measurements					P
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)	
Photocoupler (reinforced insulation)	420	250	3000	0.4	1.	
Plastic enclosure	420	250	3000	0.4	1.	

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
2.10.5	TABLE: Distance through insulation measurements				P
Distance through insulation (DTI) at/of:		U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)
DTI (mm)					
Supplementary information:					
1. see table 1.5.1.					

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

4.3.8	TABLE: Batteries	N/A
Battery category..... :		
Manufacturer :		
Type / model..... :		
Voltage :		
Capacity..... :		
Tested and Certified by (incl. Ref. No.) :		

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

Circuit protection diagram:

MARKINGS AND INSTRUCTIONS (1.7.12, 1.7.15)

Remark: Correct subclause reference for IEC 60950-1:2005/A1 is 1.7.2.1, 1.7.13.

Location of replaceable battery	
Language(s)	
Close to the battery	
In the servicing instructions	
In the operating instructions	

4.5	TABLE: Thermal requirements				P
	Supply voltage (V)	90 (horizontal)	264 (horizontal)	264 (vertical)	—
	Ambient T_{min} (°C)	--	--	--	—
	Ambient T_{max} (°C)	See below	See below	See below	—
Maximum measured temperature T of part/at::		T (°C)			Allowed T_{max} (°C)
AC inlet body		46.8	46.0	44.1	70
SVR801 body		52.8	50.2	48.3	--
SL801 coil		66.7	53.3	51.4	105
SC807 body		54.6	51.2	49.3	85
SC803 body		55.0	50.6	48.7	85
SC801 body		47.0	46.5	44.6	85
SC805 body		50.7	47.4	45.5	85
SC804 body		50.5	47.4	45.5	85
PWB near SRT801		63.4	53.6	51.7	105
SC806 body		52.5	48.9	47.0	85
SL802 coil		58.9	51.2	49.3	105
SL802 core		58.0	50.9	49.0	105
L901 coil		57.7	58.2	53.3	105
ST801 coil		72.9	73.7	71.8	90
ST801 core		66.0	66.5	64.6	90
SC800 body		67.5	68.2	66.3	85
SU800 body		53.5	51.6	49.4	100

IEC 60950-1							
Clause	Requirement + Test		Result - Remark		Verdict		
C859 body	55.6	54.3	52.4	85			
PWB near U601	64.2	63.6	61.7	105			
PWB near U800	50.0	49.6	47.7	105			
Enclosure inside near ST801	48.7	48.5	46.6	--			
Enclosure outside near ST801	43.5	43.7	41.8	95			
Enclosure outside near Handle	43.2	43.3	41.4	85			
Max. ambient temperature Tma (°C): Note: ambient air during test were Tamb = 24.6°C, 23.4°C and ??°C respectively	40.0	40.0	40.0	--			
Supplementary information:							
1. The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in 1.6.2 at voltages as described in above.							
2. Unit specified with maximum of 40°C ambient temperature and above test data was calculated by original test result of ambient temperature above.							
Winding components (providing safety isolation): - Class 105 material (A) Tmax = 100°C - 10°C = 90°C							
3. Thermocouple method used for measuring the temperatures.							
Temperature T of winding:	t1 (°C)	R1 (Ω)	t2 (°C)	R2 (Ω)	T (°C)	Allowed Tmax (°C)	Insulation class
Supplementary information:							

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

4.7	TABLE: Resistance to fire				P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
Supplementary information: Inner metal enclosure considered in fire enclosure and see table 1.5.1 for detail information.					

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

5.1	TABLE: touch current measurement			P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
Line to earth	0.23	3.5	The switch “e” open	
Neutral to earth	0.23	3.5	The switch “e” open	
Line to output connector	0.23	3.5	The switch “e” open	
Neutral to output connector	0.23	3.5	The switch “e” open	
Line to Enclosure covered foil	0.01	0.25	The switch “e” close	
Neutral to Enclosure covered foil	0.01	0.25	The switch “e” close	
supplementary information:				
Supplementary information:				
Test voltage: 264V, 60Hz.				
Overall capacity: See table 1.5.1.				

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				
Under Fuse trace		AC	1500	No
Basic/supplementary:				
Unit: Primary to (enclosure) Earth		DC	2414	No
Transformer ST801: primary winding to core		AC	1707	No
Transformer ST801: secondary winding to core		AC	1707	No
Reinforced:				
Unit: Primary to Secondary		DC	4242	No
Unit: Primary to external plastic enclosure (with metal foil)		DC	4242	No
Transformer ST801: primary winding to secondary winding		AC	3000	No
Transformer ST801: One layer of insulation		AC	3000	No
Transformer ST801: One layers of insulation		AC	3000	No
Supplementary information: Test for all models and all sources of Transformer ST801.				

5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C)	25°C, if no else specified	—

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	
	Power source for EUT: Manufacturer, model/type, output rating				See table 1.5.1 and below.	
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
SBD801 (pin 1-2)	Short	240	10mins	SF801	--	Fuse Open (SF801), No hazard
SC806	Short	240	10mins	SF801	--	Fuse Open (SF801), No hazard
SQ801 (Pin D-G)	Short	240	10mins	SF801	--	Fuse Open (SF801), No hazard
SQ801 (Pin D-S)	Short	240	10mins	SF801	--	Fuse Open (SF801), No hazard
SQ801 (Pin G-S)	Short	240	10mins	SF801	0.15	Unit shutdown No damaged, No hazard
SU801 (Pin 4-6)	Short	240	10mins	SF801	0.15	Unit shutdown No damaged, No hazard
SU800 (Pin 3-4)	Short	240	10mins	SF801	0.15	Unit shutdown No damaged, No hazard
SU800 (Pin 1-2)	Short	240	10mins	SF801	0.15	Unit shutdown No damaged, No hazard
SU800 (Pin 4)	Open	240	10mins	SF801	0.15	Unit shutdown No damaged, No hazard
SU800 (Pin 1)	Open	240	10mins	SF801	0.15	Unit shutdown No damaged, No hazard
ST801 (Pin 11,12-9,10)	Short	240	10mins	SF801	0.15	Unit shutdown No damaged, No hazard
ST801 (Pin 7,8-9,10)	Short	240	10mins	SF801	0.15	Unit shutdown No damaged, No hazard
D861	Short	240	10mins	SF801	0.15	Unit shutdown No damaged, No hazard
D851	Short	240	10mins	SF801	0.15	Unit shutdown No damaged, No hazard
16Vdd	Short	240	10mins	SF801	0.15	Unit shutdown No damaged, No hazard
5.1Vcc	Short	240	10mins	SF801	0.15	Unit shutdown No damaged, No hazard

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
5.1Vusb	Short	240	10mins	SF801	0.15	Unit shutdown No damaged, No hazard
Vled	Short	240	10mins	SF801	0.15	Unit shutdown No damaged, No hazard
Ventilation openings (For Horizontal mode)	blocked	240	2hrs12mins	SF801	0.29	No damaged, No hazard Measured temp for: ST801 coil: 63.1°C, ST801 core: 55.7°C, Ambient=24.7°C.
Ventilation openings (For Vertical mode)	blocked	240	2hrs16mins	SF801	0.29	No damaged, No hazard Measured temp for: ST801 coil: 62.5°C, ST801 core: 55.1°C, Ambient=24.7°C.
ST801 (Pin 11,12-9,10) after D861	Overload	240	7hrs20mins	SF801	0.15	The current add to 2.2A then shunt down, No damage, No hazard. Measured maximum temp for: ST801 coil: 78.9°C, ST801 core: 70.4°C, Ambient=26.8°C.
ST801 (Pin 7,8-9,10) after D861	Overload	240	4hrs58mins	SF801	0.15	The current add to 6.0A then shunt down, No damage, No hazard. Measured maximum temp for: ST801 coil: 78.9°C, ST801 core: 70.4°C, Ambient=26.8°C.
D-Sub output connector	Overload	240	--	SF801	0.29	Measured maximum Output Voltage = 4.89Vdc Output current=2.96mA Output power=13.05mVA
DVI output connector	Overload	240	--	SF801	0.29	Measured maximum Output Voltage = 4.84Vdc Output current=1.50mA Output power=6.9mVA

IEC 60950-1							
Clause	Requirement + Test				Result - Remark		Verdict
Display output connector	Overload	240	--	SF801	0.29	Measured maximum Output Voltage =4.86Vdc Output current=1.84mA Output power=8.28mVA	
USB Driver output connector	Overload	240	--	SF801	0.29	Measured maximum Output Voltage =0Vdc Output current=0mA Output power=0mVA	
Audio output connector	Overload	240	--	SF801	0.29	Measured maximum Output Voltage =0Vdc Output current=0mA Output power=0mVA	
Supplementary information:							
1. In fuse open condition, all sources of fuse had been tested and same results came out.							
2. Electric strength test considered right after all testing above for unit. Test voltage same as table 5.2.							

C.2	TABLE: transformers ST801						P
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)
Primary /input winding and secondary/ output winding (internal)	DI	474	250	AC 3000	4.2	5.0	0.4mm
Primary/inp ut winding and core (internal)	BI	474	250	AC 1707	2.1	2.5	--
Secondary/ output winding and core (internal)	BI	474	250	AC 1707	2.1	2.5	--
Primary/inp ut part and secondary/ output part (external)	DI	474	250	AC 3000	4.2	5.0	0.4mm

IEC 60950-1							
Clause	Requirement + Test				Result - Remark		Verdict
Primary/inp ut part and core (external)	BI	474	250	AC 1707	2.1	2.5	--
Primary/inp ut part and secondary/ output winding (external)	DI	474	250	AC 3000	4.2	5.0	0.4mm
Secondary/ output part and core (external)	BI	474	250	AC 1707	2.1	2.5	--
Secondary/ output part and primary/inp ut winding (external)	DI	474	250	AC 3000	4.2	5.0	0.4mm
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
Primary /input winding and secondary/ output winding (internal)	DI			AC 3000	6.6	6.6	0.45mm/ 3 layers (insulation tape)
Primary/inp ut winding and core (internal)	BI			AC 1707	3.3	3.3	--
Secondary/ output winding and core (internal)	BI			AC 1707	3.3	3.3	--
Primary/inp ut part and secondary/ output part (external)	DI			AC 3000	9.6	9.6	0.45mm/ 3 layers (insulation tape)

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Primary/input part and core (external)	BI	AC 1707	4.8	4.8	--
Primary/input part and secondary/output winding (external)	DI	AC 3000	5.9	5.9	0.45mm/ 3 layers (insulation tape)
Secondary/output part and core (external)	BI	AC 1707	4.8	4.8	--
Secondary/output part and primary/input winding (external)	DI	AC 3000	5.9	5.9	0.45mm/ 3 layers (insulation tape)
supplementary information:					
C.2	TABLE: transformers				P

IEC 60950-1/Am1			
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.)

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

Information:

No listing of test equipment used necessary for chosen test procedure.

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict

2.1.1.7	TABLE: Discharge test			P
Condition	τ calculated (s)	τ measured (s)	t u→ 0V (s)	Comments
Fuse in	0.64	0.63	3.6	Vpk=370V, 37%Vp=136V, (at 1s)Vpk=70
Supplementary information:				
Overall capacity : SC803=0.33 μ F max., SC807=0.22 μ F max.				
Discharge resistor: SR801=SR802=SR803=390K Ω				

2.4.2	TABLE: Limited current circuit measurement				P
Location	Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments
For bridging capacitor					
SC800	0.56	0.28	0.06	0.7	SC800=2200pF
SC800	3.8	1.9	26	18.2	SC800=2200pF
Supplementary information: Input voltage 264V/60Hz					

2.6.3.4	TABLE: Resistance of earthing measurement		P
Location		Resistance measured (mΩ)	Comments
PE pin of AC inlet to metal chassis		14	40A/2mins. (voltage drop=0.56V)
Supplementary information:			

4.6.1, 4.6.2	Table: Enclosure opening measurements		P
Location	Size (mm)	Comments	
The internal metal enclosure type (as fire enclosure)			
Top	a. Ø4.0 mm maximum b. Ø14.3 mm c. 53.9 X 4.2 mm	a. Numerous circle openings provided. b. One openings provided. There's no any hazardous voltage or energy hazards present within 5° projections. c. One opening provided. There's no any hazardous voltage or energy hazards present within 5° projections.	

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict
Rear	a. 18.0 X 6.7mm c. 33.8 X 44.8 mm d. 13.8 X 27.7 mm e. 8.9 X 22.4 mm f. 8.9 X 15.4mm	a. Two openings provided. There's no any hazardous voltage or energy hazards present within 5° projections. c. - f. One opening provided. There's no any hazardous voltage or energy hazards present within 5° projections.	
Side (SPS board side) (can be bottom when rotate)	Ø1.8 mm, center to center: 3.6 min., thickness: 0.81mm (0.6+0.21 mm)	Numerous circle openings provided. Note: metal sheet provided, see table 1.5.1.	
Side (interface board side)	Ø4.0 mm maximum	Numerous circle openings provided.	
Bottom	Ø1.8 mm, center to center: 3.6 min., thickness: 0.81mm (0.6+0.21 mm)	Numerous circle openings provided. Note: metal sheet provided, see table 1.5.1.	
External plastic enclosure			
Top (near rear)	28.3 x 2.0 mm maximum	Numerous openings provided.	
Side (both sides, near rear)	28.3 x 2.0 mm maximum	Numerous openings provided.	
Bottom,	33.9 x 2.9 mm maximum	Numerous openings provided.	
Rear, front	--	None.	
Supplementary information:			

IEC60950_1B - ATTACHMENT			
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_1B_II
Attachment Originator	SGS Fimko Ltd
Master Attachment	Date 2011-08
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EN 60950-1:2006/A11:2009/A1:2010/A12:2011 – CENELEC COMMON MODIFICATIONS
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IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)					
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions				P
General	Delete all the “country” notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1 Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2				P
General (A1:2010)	Delete all the “country” notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note				P

IEC60950_1B - ATTACHMENT			
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.	Not a portable sound system.	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		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.	Not a portable sound system.	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.	Delete	N/A
	Zx Protection against excessive sound pressure from personal music players		N/A

IEC60950_1B - ATTACHMENT			
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 equipment.		N/A

IEC60950_1B - ATTACHMENT			
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.		
	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 $L_{Aeq,T}$ 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 $L_{Aeq,T}$ 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

IEC60950_1B - ATTACHMENT			
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 $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. 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.		

IEC60950_1B - ATTACHMENT			
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 $L_{Aeq,T}$, 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

IEC60950_1B - ATTACHMENT			
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 $L_{Aeq,T}$ 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 $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		N/A
	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

IEC60950_1B - ATTACHMENT			
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.		P
2.7.2	This subclause has been declared 'void'.		N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	Deleted.	N/A
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

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.	N/A
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 (artificial optical radiation).	Replaced.	N/A
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
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.	N/A
Bibliography	Additional EN standards.		—

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—
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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.		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.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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).		N/A
1.5.9.4	In Finland, Norway and Sweden , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
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)."		N/A

IEC60950_1B - ATTACHMENT			
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.”		
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.		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
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.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
3.2.1.1	In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. 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.		N/A

IEC60950_1B - ATTACHMENT			
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.		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.		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.		N/A
3.2.4	In Switzerland , for requirements see 3.2.1.1 of this annex.		N/A
3.2.5.1	In the United Kingdom , a power supply cord with conductor of 1,25 mm ² is allowed for equipment with a rated current over 10 A and up to and including 13 A.		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 mm² to 1,5 mm² nominal cross-sectional area.		N/A

IEC60950_1B - ATTACHMENT			
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.		N/A

IEC60950_1B - ATTACHMENT			
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
	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.		

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.		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

National Differences to IEC 60950-1:2005 + A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1 CANADA NATIONAL DIFFERENCES

Information technology equipment – Safety –

Part 1: General requirements

Differences according to.....: CAN/CSA C22.2 No. 60950-1-07

SPECIAL NATIONAL CONDITIONS

The following is a summary of the key national differences based on national regulatory requirements, such as the Canadian Electrical Code (CEC) Part and the Canadian Building Code, which are referenced in legislation and which form the basis for the rules and practices followed in electrical and building installations

1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	Unit was evaluated according to IEC 60950-1.	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. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC are required to have special construction features and identification markings.	No cords lengths exceeding 3.05 m provided.	P
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."	Single-phase equipment.	N/A

National Differences to IEC 60950-1:2005 + A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC shall be marked with the voltage rating and "Class 2" or equivalent. Marking shall be located adjacent to the terminals and shall be visible during wiring.		N/A
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.	No such fuse.	N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	No such components provided.	N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.		P
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		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, is required to comply with special earthing, wiring, marking and installation instruction requirements.	No DC mains connection.	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.	Pluggable type equipment.	N/A
3.2.5	Power supply cords are required to be no longer than 4.5 m in length. Flexible power supply cords are required to be compatible with Tables 11 and 12 of the CEC and Article 400 of the NEC.	No exceeding.	P
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	Pluggable type equipment.	N/A
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.	No such terminals provided.	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).	No such screws provided.	N/A

National Differences to IEC 60950-1:2005 + A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for Canadian/US wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).	No such terminals provided.	N/A
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A, or if the motor has a nominal voltage rating greater than 120 V, or is rated more than 1/3 hp (locked rotor current over 43 A).	No such device.	N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.	No such device.	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.	Not such application.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.	No flammable liquid.	N/A
4.3.13.5	Equipment with lasers is required to meet the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.	No laser provided.	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	Not such application.	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) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.	Not such application.	N/A
Annex H	Equipment that produces ionizing radiation is required to comply with the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations, 21 CFR 1020, as applicable.		N/A
OTHER DIFFERENCES The following key national differences are based on requirements other than national regulatory requirements			

National Differences to IEC 60950-1:2005 + A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.	Complied. Components are UL or CSA approved, see component list 1.5.1.	P
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as either a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply. This maximum operating voltage shall include consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.		P
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No DC mains connection.	N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.	No TNV circuits.	N/A
2.6.3.3	The current rating of the circuit shall be taken as 20 A not 16 A	No TNV circuits.	N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.		N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.		N/A

National Differences to IEC 60950-1:2005 + A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.2	Equipment with handles is required to comply with special loading tests.	No handles.	N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	No TNV circuits.	N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded. During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary.		N/A
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	No TNV circuits.	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.	No TNV circuits.	N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.	No TNV circuits.	N/A

National Differences to IEC 60950-1:2005 + A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict

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_1B

Attachment Originator: SGS Fimko Ltd

Master Attachment.....: Date (2010-04)

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	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.	P
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
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"	N/A
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

National Differences to IEC 60950-1:2005 + A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict
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.		N/A
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.		N/A

National Differences to IEC 60950-1:2005 + A1:2009			
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.		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.		N/A

National Differences to IEC 60950-1:2005 + A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1
GERMANY NATIONAL DIFFERENCES

Information technology equipment – Safety –

Part 1: General requirements

Differences according to.....: VDE 0805-1:2011-01

Annex ZC, 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.		N/A
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National Differences to IEC 60950-1:2005 + A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1
KOREA NATIONAL DIFFERENCES

Information technology equipment – Safety –
Part 1: General requirements

Differences according to.....: K 60950-1

1.5.101	Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305)		N/A
8	EMC The apparatus shall comply with the relevant CISPR standards.		N/A

National Differences to IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
	US National Differences		P
SPECIAL NATIONAL CONDITIONS BASED ON FEDERAL REGULATIONS			
1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	Unit was evaluated according to IEC 60950-1.	P
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Complied.	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 specified in the NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction features and identification markings.	No cords lengths exceeding 3.05 m provided.	P
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings.		N/A
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.	No such fuse provided.	N/A
2.7.1	Suitable NEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC.		P
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		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, is required to comply with special earthing, wiring, marking and installation instruction requirements.		N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A

National Differences to IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.5	Power supply cords are required to be no longer than 4.5 m in length and minimum length shall be 1.5 m. Flexible power supply cords are required to be compatible with Article 400 of the NEC.		N/A
3.2.9	Permanently connected equipment must have a suitable wiring compartment and wire bending space.	Not permanently connected equipment.	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).	No such screws provided.	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, must be suitable for U.S wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).	No such terminals provided.	N/A
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A, or if the motor has a nominal voltage rating greater than 120 V, or is rated more than 1/3 hp (locked rotor current over 43 A).	Equipment is not such a device.	N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.	No such devices incorporated.	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.	Not such an application.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.	No flammable liquid.	N/A
4.3.13.5	Equipment with lasers is required to meet the Code of Federal Regulations 21 CFR 1040.	No laser contained.	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	Not such an application.	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) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.	Not such an application.	N/A
Annex H	Equipment that produces ionizing radiation must comply with Federal Regulations, 21 CFR 1020	No ionizing radiation.	N/A
OTHER NATIONAL DIFFERENCES			

National Differences to IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.	Complied.	P
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as either a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply. This maximum operating voltage it to include consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the max. acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.		N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.		N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.		N/A

National Differences to IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
4.2.11	For equipment intended for mounting on racks and provided with slide/rails allowing the equipment to slide away from the rack for installation, service and maintenance, additional construction, performance and marking requirements are applicable to determine the adequacy of the slide/rails.		N/A
4.3.2	Equipment with handles is required to comply with special loading tests.		N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded. During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary.		N/A
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.		N/A
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A
Annex NAF	Document (paper) shredders likely to be used in a home or home office (Pluggable Equipment Type A plug configuration) are required to comply with additional requirements, including markings/instructions, protection against inadvertent reactivation of a safety interlock, disconnection from the mains supply (via provision of an isolating switch), and protection against operator access (accessibility determined via new accessibility probe & probe/wedge).		N/A