



Ref. Certif. No.

JPTUV-055364

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

Top Victory Electronics (Taiwan) Co., Ltd.
10F., No. 230, Liancheng Rd.
Zhonghe Dist., New Taipei City, 23553 Taiwan

Name and address of the manufacturer
Nom et adresse du fabricant

Top Victory Electronics (Taiwan) Co., Ltd.
10F., No. 230, Liancheng Rd.
Zhonghe Dist., New Taipei City, 23553 Taiwan

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

See additional page(s)

Ratings and principal characteristics
Valeurs nominales et caractéristiques principales

AC 100-240V; 50/60Hz; 1.5A; Class I

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

AOC

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

N/A

Model / Type Ref.
Ref. de type

280LM00003, U2868PQ*****
(* = 0-9, A-Z, a-z, +, hyphen, \, /, or blank)

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

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+A2
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 partie de ce Certificat

11034935 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®

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

Date:

26.02.2014

Signature:

Dipl.-Ing. B. Stöelzel

1. TPV Display Technology (Wuhan)
Co., Ltd.
Unique No. 11, Zhuankou Development
District of Economic Technological
Development Zone, Wuhan City 430056, P.R. China
2. TPV Electronics (Fujian) Co., Ltd.
Shangzheng, Yuan Hong Road
Fuqing City, Fujian Province
P.R. China
3. Envision Industry of Electronic
Products Ltd.
Rodovia Anhanguera S/N-KM 49
13.205-700 Tijuco Preto-Jundiá-SP-
Brazil
4. L&T Display Technology (Fujian) Ltd.
Optoelectronic Park, Rongqiao
Economic and Technological
Development Zone
Fuqing, Fujian 350301, P.R. China
5. TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and
Technological Development Zone
Fuqing City, Fujian Province
P.R. China
6. Trend Smart CE Mexico S de RL de CV
Avenida Sor Juana Ines de la Cruz
de 19602 Nueva Tijuana,
22435 Tijuana Baja California
MEXICO
7. TPV Display Technology (Beihai)
Co., Ltd.
China Electronic Beihai Industry
Park, Northeast of the Crossing
Between Taiwan Road and Jilin Road, Beihai City, Guangxi, P.R. China
8. TPV Technology (Qingdao)
Co., Ltd.
No.99 Huoju Road, High-tech
Industrial Development Zone
Qingdao City, Shandong Province, P.R. China
9. TPV Display Technology (China)
Co., Ltd.
No. 106 Jinghai 3 Rd., BDA
Beijing City 100176
P.R. China

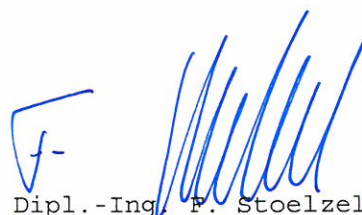
Additional information (if necessary)
Information complémentaire (si nécessaire)

Report Ref. No.: 11034935 001

Date:

26.02.2014

Signature:


Dipl.-Ing. F. Stoelzel

10. Hefei Huntkey Display Technology
Co., Ltd.
South Jinxiu Road, East Qingtan Road
Economic And Technological
Development Zone, Hefei, Anhui 230601, P.R. China

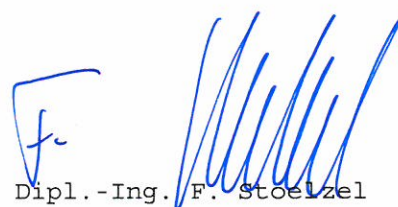
Additional information (if necessary)
Information complémentaire (si nécessaire)

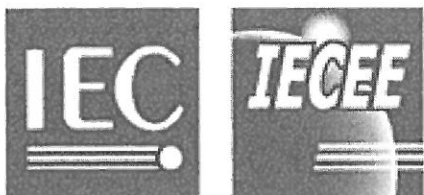
Report Ref. No.: 11034935 001

Date:

26.02.2014

Signature:


Dipl.-Ing. F. Stoelzel



Test Report issued under the responsibility of:



TEST REPORT IEC 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report Number	11034935 001
Date of issue	Feb. 26 th , 2014
Total number of pages	71
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	Top Victory Electronics (Taiwan) Co., Ltd.
Address	10F., No. 230, Liancheng Rd., Zhonghe Dist., New Taipei City 23553 Taiwan
Manufacturer's name	Same as applicant
Address	Same as applicant
Test specification:	
Standard	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013
Test procedure	CB Scheme
Non-standard test method	N/A
Test Report Form No	IEC60950_1E
Test Report Form(s) Originator	SGS Fimko Ltd
Master TRF	Dated 2013-07
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Test item description	LCD Monitor
Trade Mark	AOC
Manufacturer	See above manufacturer
Model/Type reference	280LM00003,U2868PQ***** (*= 0-9, A-Z, a-z, +, -, \, /, blank)
Ratings	100-240Vac, 50/60Hz, 1.5 A

Testing procedure and testing location:		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	TÜV Rheinland Taiwan Ltd., Taichung Laboratory
Testing location/ address.....:		No. 9, Ln. 36, Sec. 3, Minsheng Rd., Daya District, Taichung City, 428 Taiwan
<input type="checkbox"/>	Associated CB Testing Laboratory:	
Testing location/ address.....:		
Tested by (name + signature).....:		Nai-Shing Lin
Approved by (name + signature).....:		P. H. Lin
<input type="checkbox"/>	Testing procedure: TMP	
Testing location/ address.....:		
Tested by (name + signature).....:		
Approved by (name + signature).....:		
<input type="checkbox"/>	Testing procedure: WMT	
Testing location/ address.....:		
Tested by (name + signature).....:		
Witnessed by (name + signature)		
Approved by (name + signature).....:		
<input type="checkbox"/>	Testing procedure: SMT	
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
- National Differences
- Measurement Section

Total number of pages in each attachment is indicated in individual attachment.

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 manufacturer specified the maximum ambient temperature as +40°C.
- Highest load condition for this equipment is to operate at maximum backlight, brightness and contrast of LED backlight, and adjust to max. volume with 1KHz sine waveform of speakers, additional load of 5V/0.9A for USB (3.0) port, 5V/0.5A for USB (2.0) port, 5V/1.5A for USB (TURBO) port, 5V/0.9A for HDMI(MHL) port, 3.3V/0.5A for Display pin 20.
- The product is to be operated at 5000 m above sea level, the minimum clearances were multiplied by the factor given in Table A.2 of IEC 60664-1: 1.48
- Test samples are pre-production samples without serial numbers.
- The LCD Monitor can be adjustment monitor's height and operated in landscape (0 °) to portrait mode (90 °) when USB circuit board downside. For heating test were considered all orientation during test conducting.

Testing location:

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

Summary of compliance with National Differences

EU Group Differences, EU Special National Conditions.

☒ The product fulfils the requirements of EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013

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

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

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

For IEC 60950-1:2005 / EN 60950-1:2006+A11:2009 (per client request):

AU

Explanation of used codes: AU=Australia

For IEC 60950-1:2001 / EN 60950-1:2001+A11:2004 (per client request):

(All CB members countries listed in CB Bulletin No. 112A, dated December 2006)

AR, AT, BE, CN, CZ, FR, GR, HU, IN, IT, JP, KE, MY, NL, PL, SG, SI, SK.

Explanation of used codes: AR=Argentina, AT=Austria, BE=Belgium, CN=China, CZ=Czech Republic, FR=France, GR=Greece, HU=Hungary, IN=India, IT=Italy, JP=Japan, KE=Kenya, MY=Malaysia, NL=The Netherlands, PL=Poland, SG=Singapore, SI=Slovenia, SK=Slovakia.

For IEC 60950:1999 (3rd Edition) + Corr. Jan. 2000 (per client request):

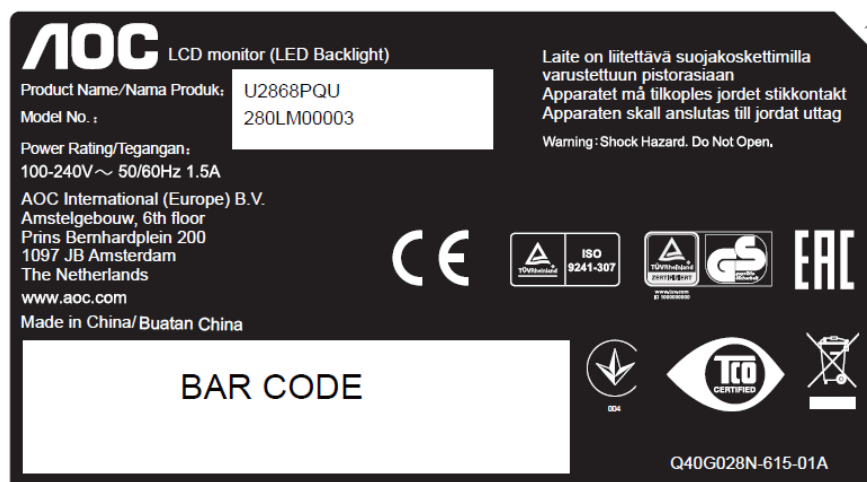
BR, IE, PT, RU, TR, UA, ZA.

Explanation of used codes: BR=Brazil, IE=Ireland, PT=Portugal, RU=Russian Federation, TR=Turkey, UA=Ukraine, ZA=South Africa.

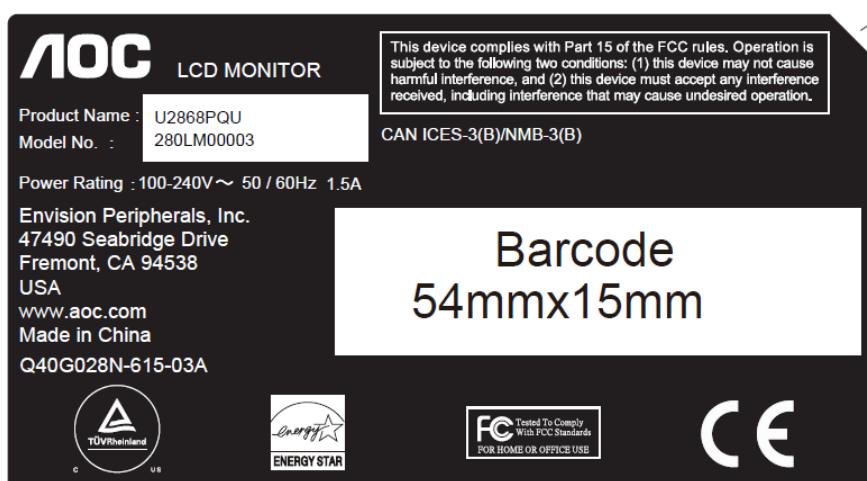
For National Differences see corresponding Attachment.

Copy of marking plate

The above label is a draft of an artwork for marking plate pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.



For North America and Canada:



For China:



Test item particulars.....:	
Equipment mobility.....:	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input checked="" type="checkbox"/> stationary (when with wall mounting function) <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains.....:	<input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input checked="" type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains
Operating condition.....:	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
Mains supply tolerance (%) or absolute mains supply values	±10
Tested for IT power systems	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
IT testing, phase-phase voltage (V)	230 for Norway
Class of equipment	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A)	16 (20 for North America)
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class	IPX0
Altitude during operation (m)	Up to 5000
Altitude of test laboratory (m)	Less than 2000
Mass of equipment (kg)	approx. 7.9kg (including base); base : Max. 2.6 kg
Possible test case verdicts:	
- test case does not apply to the test object : N/A	
- test object does meet the requirement..... : P (Pass)	
- test object does not meet the requirement : F (Fail)	
Testing.....:	
Date of receipt of test item.....:	Oct., 2013
Date(s) of performance of tests	Oct., 2013 to Feb., 2014
General remarks:	
<p>The test results presented in this report relate only to the object tested.</p> <p>This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.</p> <p>"(see Enclosure #)" refers to additional information appended to the report.</p> <p>"(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	

Manufacturer's Declaration per sub-clause 4.2.5 of IEC60950:

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. TPV Electronics (Fujian) Co., Ltd.
Shangzheng, Yuan Hong Road, Fuqing City,
Fujian Province, P.R.China
 2. TPV Display Technology (Wuhan) Co., Ltd.
Unique No. 11, Zhuankou Development, District
of Economic Technological Development Zone,
Wuhan City 430056, P.R. China
 3. TPV Technology (Qingdao) Co., Ltd.
No.99 Huoju Road, High-tech Industrial,
Development Zone Qingdao City, Shandong
Province, P.R. China
 4. L&T Display Technology (Fujian) Ltd.
Optoelectronic Park, Rongqiao Economic and
Technological, Development Zone, Fuqing,
Fujian 350301, P.R. China
 5. Envision Industry of Electronic Products Ltd.
Rodovia Anhanguera S/N-KM 49, 13.205-700
Tijuco Preto-Jundiaí-SP-Brazil
 6. TPV Display Technology (Beihai) Co., Ltd.
China Electronic Beihai Industry Park,
Northeast of the Crossing Between Taiwan
Road and Jilin Road, Beihai City, Guangxi, P.R.
China
 7. TPV Display Technology (China) Co., Ltd.
No. 106 Jinghai 3 Rd., BDA, Beijing City100176
P.R. China
 8. Hefei Huntkey Display Technology Co., Ltd.
South Jinxiu Road, East Qingtan Road,
Economic And Technological Development
Zone, Hefei, Anhui 230601, P.R. China
 9. Trend Smart CE Mexico S de RL de CV
Avenida Sor Juana Ines de la Cruz de 19602
Nueva Tijuana, 22435 Tijuana Baja California,
MEXICO
 10. TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and Technological
Development Zone, Fuqing City, Fujian
Province, P. R. China

General product information:

This equipment consists of the following critical constructions:

- LCD panel (LED backlight type)
- Building-in type non-approved switching power supply board (P/N: 715G6457) (incorporate with LED Driver circuit)
- Main board (HDMI port *1, VGA port *1, Display port *1, DVI port *1, Audio in/out *1)
- Secondary USB circuit board (USB (2.0) port *2, USB (3.0) port *1, USB TURBO port *1, USB port for upstream transition)
- Two internal speakers provided (optional)

The three sources of T9101 are similar to each other except for type designation, manufacturer, and material sources.





The suitable power supply cord will be provided and evaluated during national approval.

The alternative sources of L9901, L9902, L9801 were similar to each other except for manufacturer and type designation.

Additional Information

- 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.
- Special national conditions for J60950-1(H22):2009
Per client's request, supplement the special national conditions for J60950-1(H22):2090 and J3000 (H25) to present test report. Described as following items:
a) Power cord set for Japanese market is consider as Class 0I or Class I equipment.
b) Considered further Japanese technical requirements J60950-1 (H22)
- The Audio out jack for decoding board has also been tested and found in compliance with the requirements of EN 50332-2. Measured maximum output power of the speaker jack: Left side: 27.4 mV; Right side: 29.6 mV.

Markings and Instructions

- Fuse Identification (See sub clause 1.7.6): F9901 T5AL / 250V
-  (IEC 60417-5019) for the wiring terminal of protective earthing conductor (See subclause 1.7.7.1)
-  (IEC 60417-5017) for the wiring terminal of protective bonding conductor. (See subclause 1.7.7.1)
-  (IEC 60417-5009) or  for the stand-by condition. (See sub clause 1.7.8.3)

Definition of variable(s):

Variable:	Range of variable:	Content:
*	0-9, A-Z, a-z, +,-,\,/ , blank	For marketing purpose

Abbreviations used in the report:

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

Indicate used abbreviations (if any)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	General	See below.	P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components	<p>Components certified to IEC standards and/or their harmonized standards, are used within their ratings and are checked for correct application.</p> <p>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> <p>Components, which no relevant IEC-Standard exists, are used within their ratings and are tested under the conditions occurring in the equipment.</p>	P
1.5.3	Thermal controls		N/A
1.5.4	Transformers	Transformers complied with the relevant requirements.	P
1.5.5	Interconnecting cables	<p>Interconnection cable provided with the equipment is carrying signals on energy level below 240 VA.</p> <p>Besides for the insulation materials, there are no other requirements for the interconnection cables.</p>	P
1.5.6	Capacitors bridging insulation	<p>Between lines: sub class X1 or X2 capacitors according to IEC 60384-14 with 21 days damp heat test.</p> <p>Between Line/Neutral and earth: subclass Y1 or Y2 capacitors according to IEC 60384-14.</p>	P
1.5.7	Resistors bridging insulation	See below	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	The bleeder resistors are located after fuse and the fuse as providing protective device while short-circuited.	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.)	N/A
1.5.9	Surge suppressors		N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A

1.6	Power interface		P
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.	P

1.7	Marking and instructions		P
1.7.1	Power rating and identification markings	The power rating marking is provided and is readily visible in operator access area.	P
1.7.1.1	Power rating marking	See copy of marking plate	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		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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Symbol for Class II equipment only	The equipment is Class I equipment.	N/A
	Other markings and symbols	Other markings and symbols do not give rise to misunderstanding.	P
1.7.1.3	Use of graphical symbols		N/A
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 provided as disconnect device.	N/A
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 approval.	N/A
1.7.2.5	Operator access with a tool		N/A
1.7.2.6	Ozone		N/A
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment	Full range voltage design, no necessary adjustment.	N/A
	Methods and means of adjustment; reference to installation instructions		N/A
1.7.5	Power outlets on the equipment	No such device.	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	See General product information - Markings and Instructions.	P
1.7.7.2	Terminals for a.c. mains supply conductors	The equipment is provided with appliance inlet, which is for connection of a detachable type power supply cord.	N/A
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 marking and indication of the power switch is located that indication of function is clearly.	P
1.7.8.2	Colours	No safety involved used.	P
1.7.8.3	Symbols according to IEC 60417	See General product information - Markings and Instructions.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	No marking place in removable parts.	P
1.7.13	Replaceable batteries		N/A
	Language(s)		—
1.7.14	Equipment for restricted access locations	The equipment is not intended to be use in 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	See below.	P
2.1.1.1	Access to energized parts		P
	Test by inspection	No access with test finger to any parts with only basic insulation to hazardous voltage. The test pin cannot touch hazardous voltage through any seams within the appliance.	P
	Test with test finger (Figure 2A)	See above.	P
	Test with test pin (Figure 2B)	See above.	P
	Test with test probe (Figure 2C)	No TNV circuit.	N/A
2.1.1.2	Battery compartments		N/A
2.1.1.3	Access to ELV wiring		N/A
	Working voltage (V_{peak} or V_{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage circuit in operator access area.	N/A
2.1.1.5	Energy hazards	See appended table 2.1.1.5.	P
2.1.1.6	Manual controls		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.7	Discharge of capacitors in equipment	Voltage decay measurement was conducted with an oscilloscope having an input impedance of 100 MΩ in parallel with an input capacitance of 25 pF or less.	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	Complied with 2.1.1.1	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)	P
2.2.3	Voltages under fault conditions (V)	(see appended table 2.2)	P
2.2.4	Connection of SELV circuits to other circuits	Complied with sub-clauses, 2.2.2, 2.2.3, 2.4.3	P
2.3	TNV circuits		N/A
2.3.1	Limits		N/A
	Type of TNV circuits		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed		—
2.3.5	Test for operating voltages generated externally		N/A
2.4	Limited current circuits		P

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Clause	Requirement + Test	Result - Remark	Verdict
2.4.1	General requirements	The limits of 2.4.2 were not exceeded under normal operating conditions. (Performed upon client request)	P
2.4.2	Limit values	See below.	P
	Frequency (Hz)	See appended table 2.4.	—
	Measured current (mA).....	See appended table 2.4.	—
	Measured voltage (V)	See appended table 2.4.	—
	Measured circuit capacitance (nF or μ F)	See table 1.5.1 and 2.4.	—
2.4.3	Connection of limited current circuits to other circuits	The limits of 2.4.2 were not exceeded under normal operating conditions.	P
2.5	Limited power sources		P
	a) Inherently limited output	(see appended table 2.5)	P
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition	(see appended table 2.5)	P
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA).....	(see appended table 2.5)	—
	Current rating of overcurrent protective device (A) ..		—
	Use of integrated circuit (IC) current limiters		—
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. See General product information - Markings and Instructions	P
2.6.2	Functional earthing	Secondary functional earthing is separated to primary by double or reinforced insulation or by basic insulation and protective earthing.	P
	Use of symbol for functional earthing		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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	No power cord provided.	N/A
	Rated current (A), cross-sectional area (mm ²), AWG		—
2.6.3.3	Size of protective bonding conductors	Evaluation by test. See sub-clause 2.6.3.4.	P
	Rated current (A), cross-sectional area (mm ²), AWG	See above.	—
	Protective current rating (A), cross-sectional area (mm ²), AWG	See above.	—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)	(Refer to appended table 2.6.3.4).	P
2.6.3.5	Colour of insulation	After appliance inlet, the insulation of protective bonding conductor is green-and-yellow.	P
2.6.4	Terminals	See below.	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
	Rated current (A), type, nominal thread diameter (mm)	Evaluation by test.	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	Only protective bonding conductor used in this equipment.	P
2.6.5	Integrity of protective earthing	See below.	P
2.6.5.1	Interconnection of equipment	This unit has it's own earthing connection. Any other units connected via the output shall be provided SELV only.	P
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switch or overcurrent protective device in bonding conductor.	P
2.6.5.3	Disconnection of protective earth	Appliance inlet provided as disconnection device.	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.4	Parts that can be removed by an operator	Appliance inlet provided, the earth connection is made before and broken after the hazardous voltage. No other operator removable parts.	P
2.6.5.5	Parts removed during servicing	It is not necessary to disconnect the earth connection except for the removing of the earthed part itself.	P
2.6.5.6	Corrosion resistance	All safety earthing connections in compliance with Annex J.	P
2.6.5.7	Screws for protective bonding	Self-tapping and spaced thread screws are not used to provide protective bonding. The protective bonding screw is threaded into the metal part at least twice the pitch of the screw thread.	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
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	Only one fuse provided	N/A
2.7.6	Warning to service personnel :		N/A
2.8	Safety interlocks		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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. After the humidity treatment of 2.9.2, the insulation is then subjected to the relevant electric strength test of 5.2.2	P
2.9.2	Humidity conditioning	Tested for 120 hrs.	P
	Relative humidity (%), temperature (°C)	95% R.H., 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.	—

2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General		P
2.10.1.1	Frequency		P
2.10.1.2	Pollution degrees	2	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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.1.7	Insulation in circuits generating starting pulses		N/A
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 is considered.	P
2.10.3.2	Mains transient voltages	See below.	P
	a) AC mains supply	2500 Vpk 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	Refer to sub-clause 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
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

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.3	Insulating compound as solid insulation	Approved sources of optocoupler provide min. 0.4 mm distance through insulation for reinforced insulation. See appended table 1.5.1 for internal distance.	P
2.10.5.4	Semiconductor devices	See 2.10.5.3.	P
2.10.5.5.	Cemented joints	See appended table 1.5.1 for optocoupler distances.	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)	See appended table 5.2.	—
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	See below.	P
	Electric strength test	(see appended table 5.2)	—
2.10.5.11	Insulation in wound components	See 2.10.5.12, 2.10.5.14	P
2.10.5.12	Wire in wound components	Reinforced insulation.	P
	Working voltage	See appended table 2.10.2.	P
	a) Basic insulation not under stress		N/A
	b) Basic, supplementary, reinforced insulation		N/A
	c) Compliance with Annex U	Complied with annex U, three layers.	P
	Two wires in contact inside wound component; angle between 45° and 90°	Mechanical stress relief achieved by sleeving/tape to avoid the contact angle between 45 ° and 90 °.	P
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage		N/A
	- Basic insulation not under stress		N/A
	- Supplementary, reinforced insulation		N/A
2.10.6	Construction of printed boards		P
2.10.6.1	Uncoated printed boards		P
2.10.6.2	Coated printed boards		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1, routed away from primary uninsulated conducted parts and unless insulated for the highest voltage involved, from insulated primary circuit wiring. No internal wire for primary power distribution.	P
3.1.2	Protection against mechanical damage	The wireways including holes are smooth and free from sharp edges.	P
3.1.3	Securing of internal wiring	Internal wires are secured by soldering and quick connector or other mechanical fixing means so that a loosening of the terminal connection is unlikely.	P

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Clause	Requirement + Test	Result - Remark	Verdict
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the application and the working voltage. For the insulation material see 3.1.1.	P
3.1.5	Beads and ceramic insulators		N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Insulating materials in electrical connections	All current carrying connections made by metal to metal.	P
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors	All conductors are reliably secured by solder-pin or glued or other mechanical fixing means.	P
	10 N pull test	Complied.	P
3.1.10	Sleeving on wiring		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	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		N/A
3.2.5.1	AC power supply cords		N/A
	Type		—
	Rated current (A), cross-sectional area (mm ²), AWG		—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N)		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Longitudinal displacement (mm)		—
3.2.7	Protection against mechanical damage	No parts under this unit likely to damage the power supply cords. Enclosure without sharp edges.	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	See below.	P
3.4.2	Disconnect devices	Appliance inlet is considered as disconnect device.	P
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized	When the power cord is removed from the inlet no remaining parts with hazardous voltage in the equipment.	P
3.4.5	Switches in flexible cords		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment	Interconnection to other equipments via secondary output connectors at SELV.	N/A
3.4.11	Multiple power sources	Single mains supply provided.	N/A

3.5	Interconnection of equipment		P
3.5.1	General requirements	See below.	P
3.5.2	Types of interconnection circuits	SELV, L.C.C. circuit.	P
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment	see appended table 2.5.	P

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

4.2	Mechanical strength		P
4.2.1	General	See below. After the tests, the equipment complies with the requirements of sub-clauses 2.1.1, 2.6.1 and 2.10.	P
	Rack-mounted equipment.		N/A
4.2.2	Steady force test, 10 N	10 N applied to all components other than the parts serving as an enclosure.	P
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N	After subjected 250 N to the external enclosure, no energy or other hazards.	P
4.2.5	Impact test	No hazard as result from the steel ball impact test to the external enclosure.	P
	Fall test	See above.	P
	Swing test	See above.	P
4.2.6	Drop test; height (mm)		N/A
4.2.7	Stress relief test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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)	For unit an additional force of 15.9kg (155.82N) (3 times the mass of the unit without base) was applied to the unit with the VESA adaptor kit The unit withstood the load test without damages or breaks from the VESA adaptor kit.	P

4.3	Design and construction		P
4.3.1	Edges and corners	The edges and corners 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	Electrical and mechanical connections can be expected to withstand usual mechanical stress. No loosening of clearance or creepage impairing distances likely to occur.	P
4.3.5	Connection by plugs and sockets	No mismatch of connectors, plugs or socket possible.	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
	- 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	Insulation in intended use not considered to be exposed to oil or grease.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.10	Dust, powders, liquids and gases	Equipment in intended use not considered to be exposed to these.	N/A
4.3.11	Containers for liquids or gases		N/A
4.3.12	Flammable liquids	No flammable liquids provided.	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	See below.	P
4.3.13.5.1	Lasers (including 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. Optocouplers. For LED backlight, the luminance is far less than 10000 cd/m ² . With reference to sub clause 4.1 of IEC 62471:2006 no further test is necessary.	P
4.3.13.6	Other types		N/A
4.4	Protection against hazardous moving parts		N/A
4.4.1	General		N/A
4.4.2	Protection in operator access areas		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades		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 material used without further test. Others refer to table 4.5.5. upon client's request.	P

4.6	Openings in enclosures		P
4.6.1	Top and side openings	See below.	P
	Dimensions (mm)	(see appended table 4.6.1 and 4.6.2)	—
4.6.2	Bottoms of fire enclosures	See below.	P
	Construction of the bottom, dimensions (mm) ..	(see appended table 4.6.1 and 4.6.2)	—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm)		—
4.6.4.2	Evaluation measures for larger openings		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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
	Method 1, selection and application of components wiring and materials	Materials with the required flammability classes are used.	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: <ul style="list-style-type: none"> ▪ Components in primary circuits ▪ Components in secondary circuits not supplied by limited power source ▪ 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	The PCBs have material of flammability class V-1 or better.	P
4.7.3.2	Materials for fire enclosures	Metal material used. For USB port part plastic enclosure: Min. V-1 used.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	HB min.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	Internal components except small parts are flammability class V-2, HF-2 or better.	P
4.7.3.5	Materials for air filter assemblies		N/A
4.7.3.6	Materials used in high-voltage components		N/A

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		P
5.1.1	General	See appended table 5.1. See sub-clauses 5.1.2 to 5.1.6.	P
5.1.2	Configuration of equipment under test (EUT)	See below.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.2.1	Single connection to an a.c. mains supply	The EUT has only one mains connection.	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
5.1.5	Test procedure	The touch current was measured from mains to metal enclosure, plastic enclosure with metal foil, and output connectors.	P
5.1.6	Test measurements	See appended table 5.1.	P
	Supply voltage (V)	See appended table 5.1.	—
	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	The touch current not exceeded 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

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

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	With short-circuited and overloaded of the output of transformer, no high temperature of the transformer was recorded. The test results of short-circuited and overload. (see appended table 5.3 and Annex C)	P
5.3.4	Functional insulation	Functional insulation complied with the requirements c).	P
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE	No hazards assumed within this kind of speakers.	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	Neither fire burns the equipment nor molten metal.	P
5.3.9.2	After the tests	Electric strength test made.	P

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

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Clause	Requirement + Test	Result - Remark	Verdict
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
A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples.....		—
	Wall thickness (mm).....		—
A.1.2	Conditioning of samples; temperature (°C)		N/A
A.1.3	Mounting of samples		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A
A.2.1	Samples, material.....		—
	Wall thickness (mm).....		—
A.2.2	Conditioning of samples; temperature (°C)		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A
B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		N/A
B.1	General requirements		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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		
B.6.1	General		
B.6.2	Test procedure		
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	(see appended table 5.3)	N/A
B.9	Test for three-phase motors	(see appended table 5.3)	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	See above.	—
	Type	See above.	—
	Rated values	See above.	—
	Method of protection	Overcurrent protection by circuit design.	—
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	Figure D.1 used	P
D.2	Alternative measuring instrument		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
	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	Complied.	—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		N/A
K.1	Making and breaking capacity		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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)		—
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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
P	ANNEX P, NORMATIVE REFERENCES		—
Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		N/A
	- Preferred climatic categories		N/A
	- Maximum continuous voltage		N/A
	- Combination pulse current		N/A
	Body of the VDR Test according to IEC60695-11-5		N/A
	Body of the VDR. Flammability class of material (min V-1)		N/A
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N/A
			—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		P
		Certified triple insulation wire used.	—
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P
V.1	Introduction	Considered.	P
V.2	TN power distribution systems	Considered.	P
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N/A
W.1	Touch current from electronic circuits		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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)		P
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N/A
BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—
CC	ANNEX CC, Evaluation of integrated circuit (IC) current limiters		N/A
CC.1	General		N/A
CC.2	Test program 1		N/A
CC.3	Test program 2		N/A
CC.4	Test program 3		N/A
CC.5	Compliance		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

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Clause	Requirement + Test	Result - Remark	Verdict
DD.3	Mechanical strength test, 250 N, including end stops.....:		N/A
DD.4	Compliance.....:		N/A
EE	ANNEX EE, Household and home/office document/media shredders		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols.....:		N/A
	Information of user instructions, maintenance and/or servicing instructions.....:		N/A
EE.3	Inadvertent reactivation test.....:		N/A
EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols.....:		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A):		N/A
	Test with wedge probe (Figure EE1 and EE2):		N/A

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

1.5.1	TABLE: List of critical components				
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹
LCD Panel	InnoLux	M280DGJ	28 inch TFT LCD Panel.	--	--
Alt.	Interchangeable	Interchangeable	28 inch TFT LCD Panel.	--	--
Metal enclosure	--	--	Metal, thickness: 0.81 mm min.	--	--
Plastic enclosure	Chi Mei Corporation	PA-757(+) PH-88HT(+)	Plastic, min. HB, min. 2.0mm.	UL 94	UL
	LG Chemical Ltd.	HF350(#), HF380(#), HF388(#), XG568(#), XG569(#), LUPOY GP- 1000, LUPOY GP-1000(m)(#), LUPOY GP- 1000(#)	Plastic, min. HB, min. 2.0mm.	UL 94	UL
	Cheil Industries Inc. Chemicals Div	SD-0150(+), BF-0670(+), BF-0675(+), BF-0677(+), GC- 0700(+), HS- 7000(+), GC-0750(+), HG-0760(+), LX-0951(+), LX- 0957(+), HR- 1360(+)	Plastic, min. HB, min. 2.0mm.	UL 94	UL
	Grand Pacific Petrochemical Corp	D-150	Plastic, min. HB, min. 2.0mm.	UL 94	UL
	LG CHEMICAL LTD	SE750(#) SE885(#)	Plastic, min. HB, min. 2.0mm.	UL 94	UL

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Clause	Requirement + Test		Result - Remark		Verdict
	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, GAR-011C, GAR-011(ww), CK-100, HP-126, ABS-660, ABS-122, GAR-322 GAR-332, GAR-220, H12, G360, GAR-011, CK-55(M) (##), CK-58(M) (##)	Plastic, min. HB, min. 2.0mm.	UL 94	UL
	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	Plastic, min. HB, min. 2.0mm.	UL 94	UL
	PLASTIC WORLD (CHINA) LTD	RPS-3014Y XNN (a)	Plastic, min. HB, min. 2.0mm.	UL 94	UL
	STYROLUTION GMBH	495F(o) Q604 KG2, 495F (o) Q604 KG21, 495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	Plastic, min. HB, min. 2.0mm.	UL 94	UL
	STYRON EUROPE GMBH	STYRON A-TECH 1400	Plastic, min. HB, min. 2.0mm.	UL 94	UL
	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441, 260-XX	Plastic, min. HB, min. 2.0mm.	UL 94	UL
Alt.	Interchangeable	Interchangeable	Plastic, min. HB, min. 2.0mm.	UL 94	UL
Plastic enclosure for USB port	Cheil	VH-0819	Plastic, min. V-1	UL 94	UL

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt.	Interchangeable	Interchangeable	Plastic, min. V-1	UL 94	UL
Stand base (Optional)	--	--	HB or better and metal, weight: 2.6 kg	UL 94	UL
P.C.B	--	--	V-1 or better Min. 105°C	UL 796	UL
Internal speaker (two provided) (Optional)	--	--	Each rated 12 ohm min. , Max. 20W.	--	--
AC inlet	Yueqing Hongchang	DB-6-04	5A/250Vac	IEC 60320 /GB17465.1-1998	VDE, UL
Alt.	Solteam	ST-03	2.5A/250Vac	IEC 60320 /GB17465.1-1998	VDE, UL
Alt.	Interchangeable	Interchangeable	2.5A/250Vac	IEC 60320 /GB17465.1-1998	VDE, UL
For Switching Power supply board mfr. TPV, type 715G6457					
Primary Connectors (CN9901)	Xinya	TÜV: M3962 series UL: 3962 series	TÜV: 6 A, 250 Vac UL: 7 A, 250 Vac	IEC 61984 UL 1997	TÜV Nord UL
Alt.	J.S.T	VH series	7A, 250V	IEC61984: 2001	VDE
Alt.	J.S.T	VT series	7A, 250V	IEC61984: 2001	TUV
Alt.	Jowle	A3963 series	7A, 250V	IEC61984: 2001	TUV
Alt.	Pontronics	3962 series	7A, 250V	IEC61984: 2001	TUV
Alt.	Xinya	W7913-02 RVA-S02	7A, 250Vac	IEC61984: 2001	TÜV Nord
Alt.	Interchangeable	Interchangeable	7A, 250V	IEC61984: 2001	VDE
Fuse (F9901)	Littelfuse / Wickmann	392, 382	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3	VDE
Alt.	Littelfuse	663 series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3	VDE
Alt.	Walter	ICP Series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3	VDE
Alt.	Conquer	MET, MST	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3	VDE
Alt.	SAVE FUSETTECH INC	SR-5, SS-5	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3	VDE

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt.	Ever Island Electric Co., Ltd & Walter Electric	2000+, 2010+	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3	VDE
Alt.	BUSSMANN	SS-5	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3	VDE
Y - Capacitors (C9903, C9904, C9909, C9910, C9911) (Y1 or Y2 type) (Optional) For North America : only Y1 type source used for (C9911)	Walsin	AC, AH	Max. 4700 pF, min. 250 Vac, min. 85°C	EN 60384-14: 2005	VDE, UL
Alt.	Haohua	CT 7	Max. 4700 pF, min. 250 Vac, min. 85°C	EN 60384-14: 2005	VDE, UL
Alt.	TDK	CS, CD	Max. 4700 pF, min. 250 Vac, min. 85°C	EN 60384-14: 2005	VDE, UL
Alt.	Murata	KH, KX	Max. 4700 pF, min. 250 Vac, min. 85°C	EN 60384-14: 2005	VDE, UL
Alt.	JYA-NAY	JN, JY	Max. 4700 pF, min. 250 Vac, min. 85°C	EN 60384-14: 2005	VDE, UL
Alt.	Hongming	F	Max. 4700 pF, min. 250 Vac, min. 85°C	EN 60384-14: 2005	VDE, UL
Alt.	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 4700 pF, min. 250 Vac, min. 85°C	EN 60384-14: 2005	VDE, UL
Alt.	Kunshan Wansheng	CT7	Max. 4700 pF, min. 250 Vac, min. 85°C	EN 60384-14: 2005	VDE, UL
Alt.	SUCCESS	SE	Max. 4700 pF, min. 250 Vac, min. 85°C	EN 60384-14: 2005	VDE, UL
Alt.	Interchangeable	Interchangeable	Max. 4700 pF, min. 250 Vac, min. 85°C	EN 60384-14: 2005	VDE, UL

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
X- Capacitor (C9905, C9906) (X1 or X2 type) (Optional)	Ultra Tech Xiphi Enterprise Co., Ltd.	HQX	Max. 0.47 μ F, min. 250 Vac, min. 85°C	EN 60384-14: 2005	VDE, UL
Alt.	Xiamen Faratronic Co., Ltd.	MKP62	Max. 0.47 μ F, min. 250 Vac, min. 85°C	EN 60384-14: 2005	VDE, UL
Alt.	Hua Jung Components Co., Ltd.	MKP	Max. 0.47 μ F, min. 250 Vac, min. 85°C	EN 60384-14: 2005	ENEC, UL
Alt.	Europtronic (Taiwan) Industrial Corp.	MPX, MPX2	Max. 0.47 μ F, min. 250 Vac, min. 85°C	EN 60384-14: 2005	VDE, UL
Alt.	Liow Gu Electronics Industry Co., Ltd.	GS-L	Max. 0.47 μ F, min. 250 Vac, min. 85°C	EN 60384-14: 2005	VDE, UL
Alt.	Kemet	R.46	Max. 0.47 μ F, min. 250 Vac, min. 85°C	EN 60384-14: 2005	VDE, UL
Alt.	Epcos Electronic Components S A	B3292#	Max. 0.47 μ F, min. 250 Vac, min. 85°C	EN 60384-14: 2005	VDE, UL
Alt.	Interchangeable	Interchangeable	Max. 0.47 μ F, min. 250 Vac, min. 85°C	EN 60384-14: 2005	VDE, UL
Line Chokes (L9901) (Optional)	Channelon (Dadon)	73G174-270-H	105 °C	--	--
Alt.	ASET	73G174-270-X	105 °C	--	--
Line Choke (L9902) (Optional)	ASET	373G174302X	105 °C	--	--
Alt.	Taichang	373G174302S	105 °C	--	--
Line Chokes (L9801) (Optional)	ASET	373G174297X	105 °C	--	--
Alt.	Channelon (Dadon)	373G0174297H	105 °C	--	--
Bridging Diode (BD9901)	--	--	Min. 2A, min. 400Vac	--	--
Ripple Capacitor (C9814, C9815)	--	--	56 μ F, min. 400 V, min. 105 °C	--	--

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
Transistors (Q9801)	--	--	Min. 600 V, min. 10 A	--	--
Transistors (Q9101)	--	--	Min.600 V, min. 10 A	--	--
Thermistor (NR9901) (Optional)	--	--	Min. 2.0 Ω , min. 2A at 25 °C	--	--
Bleeder Resistors (R9901, R9902, R9903)	--	SMD type	330 K ohm, 1/4W (located after fuse)	--	--
Transformer (T9101)	Channelon (Dadon)	380GL52P070H	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Transformer (T9101)	YUVA	380GL52P070N	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Transformer (T9101)	Top Nation	380GL52P070Y S	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Transformer (T9101)	TPV	S80GL52P070V	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Optocouplers (IC9102,IC9401)	Sharp	PC123	Di = more than 0.4 mm,, Int. cr = thermal cycling test, Ext. cr = 8.0 mm, 5000 Vac, 100 °C	DIN EN 60747-5-2:2003, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Nemko, Fimko
Alt.	Vishay Semiconductor	TCET1103	Dti = 0.5 mm, Int. cr = 6.0, Ext. cr = 8.4 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2:2003, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko, Nemko,
Alt.	Everlight Electronics Co., Ltd.	EL817, EL817M UL: EL8X7 (X=1 or 2)	Dti = more than 0.5 mm, Int. cr = 6.0 mm, Ext. cr = more than 7.7 mm ext cr.= more than 8.0 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2:2003, IEC/EN 60950-1, UL 1577	VDE, UL, Nemko, Semko, Fimko

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt.	Toshiba	TLP421F	Dti = more than 0.4 mm, Int. cr = thermal cycling test, Ext. cr = more than 8.0 mm, 5000 Vac, 100 °C	DIN EN 60747-5-2:2003, IEC/EN 60950-1	VDE, UL, Semko, Fimko
Alt.	Toshiba	TLP781, TLP781F	Di = more than 0.5 mm, Int. cr = thermal cycling test, Ext. cr = more than 8.0 mm, 4800 Vac, 100 °C	DIN EN 60747-5-2:2003, IEC/EN 60950-1	VDE, UL, Semko, Fimko
Alt.	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di = more than 0.4 mm, Int. cr = thermal cycling test, ext. cr = more than 8.0 mm, 5000 Vac, 100 °C	DIN EN 60747-5-2:2003, IEC/EN 60950-1	VDE, UL, Nemko, Fimko
Alt.	Everlight Electronics Co., Ltd.	EL1013 V	Di=0.4mm, int.cr=thermal cycling, ext. cr= more than 8.1 mm, 3000Vac, 100°C	DIN EN 60747-5-2:2003 IEC/EN 60950-1 UL 1577	VDE, Nemko, Semko, Fimko ,UL
Supplementary information: ¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039. ²⁾ Abbreviation of Di = Distances through insulation, int.cr = internal creepage distance, ext. cr. = external creepage distance.					

1.5.1	TABLE: Opto Electronic Devices	P
Manufacturer : See supplementary information Type..... : See supplementary information Separately tested : See supplementary information Bridging insulation : Reinforced insulation External creepage distance : See supplementary information Internal creepage distance : See supplementary information Distance through insulation : See supplementary information		

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

Tested under the following conditions : See supplementary information

Input..... :

Output..... :

Supplementary information:

1. See 1.5.1 TABLE: List of critical components for details of sources.
2. All sources of optocoupler were certified according to DIN EN 60747-5-2 which complies with the requirements and provisions of IEC 60747-5-5.
3. All sources of optocoupler comply with IECEE CTL DSH 759.

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V)/(Hz)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status	
VGA Mode							
90/50	1.07	--	95.2	F9901	1.07	Max. Normal Load	
90/60	1.07	--	95.2	F9901	1.07	Max. Normal Load	
100/50	0.96	1.5	94.4	F9901	0.96	Max. Normal Load	
100/60	0.96	1.5	94.4	F9901	0.96	Max. Normal Load	
240/50	0.44	1.5	92.5	F9901	0.44	Max. Normal Load	
240/60	0.44	1.5	92.5	F9901	0.44	Max. Normal Load	
264/50	0.42	--	92.3	F9901	0.42	Max. Normal Load	
264/60	0.42	--	92.3	F9901	0.42	Max. Normal Load	
HDMI Mode							
90/50	1.00	--	88.7	F9901	1.00	Max. Normal Load	
90/60	1.00	--	88.7	F9901	1.00	Max. Normal Load	
100/50	0.90	1.5	88.0	F9901	0.90	Max. Normal Load	
100/60	0.90	1.5	88.0	F9901	0.90	Max. Normal Load	
240/50	0.42	1.5	86.3	F9901	0.42	Max. Normal Load	
240/60	0.42	1.5	86.3	F9901	0.42	Max. Normal Load	
264/50	0.39	--	85.9	F9901	0.39	Max. Normal Load	
264/60	0.39	--	85.9	F9901	0.39	Max. Normal Load	
Display Mode							
90/50	1.07	--	95.5	F9901	1.07	Max. Normal Load	
90/60	1.07	--	95.5	F9901	1.07	Max. Normal Load	
100/50	0.96	1.5	94.7	F9901	0.96	Max. Normal Load	
100/60	0.96	1.5	94.7	F9901	0.96	Max. Normal Load	
240/50	0.44	1.5	92.6	F9901	0.44	Max. Normal Load	
240/60	0.44	1.5	92.6	F9901	0.44	Max. Normal Load	

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
264/50	0.42	--	92.4	F9901	0.42	Max. Normal Load
264/60	0.42	--	92.4	F9901	0.42	Max. Normal Load
DVI Mode						
90/50	1.07	--	95.3	F9901	1.07	Max. Normal Load
90/60	1.07	--	95.3	F9901	1.07	Max. Normal Load
100/50	0.96	1.5	94.3	F9901	0.96	Max. Normal Load
100/60	0.96	1.5	94.3	F9901	0.96	Max. Normal Load
240/50	0.44	1.5	92.5	F9901	0.44	Max. Normal Load
240/60	0.44	1.5	92.5	F9901	0.44	Max. Normal Load
264/50	0.42	--	92.3	F9901	0.42	Max. Normal Load
264/60	0.42	--	92.3	F9901	0.42	Max. 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)	
+12V	--	12.16	7.5	77.03	
+24V	--	25.08	4.5	107.1	
Supplementary information:					

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

2.2	TABLE: evaluation of voltage limiting components in SELV circuits			P
Component (measured between)		max. voltage (V) (normal operation)		Voltage Limiting Components
		V peak	V d.c.	
T9101 pin 6, 7, 8, 9 to earth		73.0	--	--
After R9146, R9145 to earth		72.5	--	--

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
After C9141 to earth	54.0	--	--
After C9143 to earth	30.0	--	--
After C9143/D9106	--	12.4	C9143/D9106
T9101 pin 12 to earth	142.0	--	--
After R9140, R9139, R9102 to earth	141.0	--	-
After R9114, R9103, R9113 to earth	141.0	--	-
After C9126 to earth	78.0	--	--
After C9127, D9105 to earth	--	27.0	C9127/D9105
For LED driver output			
After L8101 to earth	47.2	--	--
After D9101	--	40.8	D9101
Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)		
C9143 short circuited	+12V Vout = 12.4Vdc		
D9106 short circuited	Unit shutdown		
D9105 short circuited	Unit shutdown		
C9127 short circuited	+24VS Vout = 27Vdc		
For LED driver output			
D8101 short circuited	CN 8102 pin 3, 4 Vout = 29Vdc		
Supplementary information:			
Input Voltage: 240Vac, 60Hz			

2.5	TABLE: Limited power sources					P
Circuit output tested:						
Note: Measured Uoc (V) with all load circuits disconnected:						
Components	Sample No.	Uoc (V)	I _{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
Building-in Power supply output +12V to earth according to table 2B						
Normal	1	12.16	7.5	8	77.03	100
Single fault (with F9902 by passed)						
R9124 short	1	12.16	7.5	8	77.03	100
R9111 short	1	Unit shutdown	Unit shutdown	8	Unit shutdown	100
R9109 short	1	12.16	7.4	8	76.96	100

IEC 60950-1						
Clause	Requirement + Test			Result - Remark		Verdict
U9101 pin 6 opened	1	Unit shutdown	Unit shutdown	8	Unit shutdown	100
Building-in Power supply output +24V to earth according to table 2B						
Normal	1	25.3	3.5	8	79.8	100
Single fault (with F9902 by passed)						
R9111 short	1	Unit shutdown	Unit shutdown	8	Unit shutdown	100
R9109 short	1	25.3	3.4	8	78.2	100
U9101 pin 6 opened	1	Unit shutdown	Unit shutdown	8	Unit shutdown	100
Building-in Power supply output +5.2 V to earth according to table 2B						
Normal	1	5.14	5.1	8	14.91	100
Single fault (with F9902 by passed)						
R9124 short	1	5.14	5.1	8	14.91	100
R9111 short	1	Unit shutdown	Unit shutdown	8	Unit shutdown	100
R9109 short	1	5.14	5.0	8	14.03	100
U9101 pin 6 opened	1	Unit shutdown	Unit shutdown	8	Unit shutdown	100
VGA port (CN101) pin 5 to earth according to table 2B						
Normal	1	2.53	--	8	--	100
VGA port (CN101) pin 12, 15 to earth according to table 2B						
Normal	1	4.67	--	8	--	100
VGA port (CN101) pin 9 to earth according to table 2B						
Normal	1	0.34	--	8	--	100
VGA port (CN101) other pin to earth according to table 2B						
Normal	1	0	--	8	--	100
DVI port (CN103) pin 2-3 to earth according to table 2B						
Normal	1	4.67	--	8	--	100
DVI port (CN103) pin 4-8, 12-13, 15-18, 20-24 to earth according to table 2B						
Normal	1	3.27	--	8	--	100
DVI port (CN103) pin 10-11 to earth according to table 2B						
Normal	1	0.24	--	8	--	100
DVI port (CN103) other pin to earth according to table 2B						
Normal	1	0	--	8	--	100
Display port (CN102) pin 8 to earth according to table 2B						
Normal	1	0.80	--	8	--	100

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Clause	Requirement + Test			Result - Remark		Verdict
Display port (CN102) pin 9 to earth according to table 2B						
Normal	1	0.23	--	8	--	100
Display port (CN102) pin 18 to earth according to table 2B						
Normal	1	2.54	--	8	--	100
Display port (CN102) pin 19 to earth according to table 2B						
Normal	1	3.22	0.65	8	0.9	100
U706 pin 1 to 5 short	1	0.4	--	8	--	100
Display port (CN102) other pin to earth according to table 2B						
Normal	1	0	--	8	--	100
HDMI port (CN501) pin 1-2, 4-5, 12-13, 15-16 to earth according to table 2B						
Normal	1	3.27	--	8	--	100
HDMI port (CN501) pin 6 to earth according to table 2B						
Normal	1	3.06	--	8	--	100
HDMI port (CN501) pin 8 to earth according to table 2B						
Normal	1	4.80	--	8	--	100
HDMI port (CN501) pin 10 to earth according to table 2B						
Normal	1	0.39	--	8	--	100
HDMI port (CN501) pin 18 to earth according to table 2B						
Normal	1	5.14	1.06	8	4.92	100
U506 pin 3 to 4 short	1	5.14	2.11	8	10.82	100
HDMI port (CN501) other pin to earth according to table 2B						
Normal	1	0	--	8	--	100
Audio in port (CN603) all pin to earth according to table 2B						
Normal	1	0	--	8	--	100
Audio out port (CN604) all pin to earth according to table 2B						
Normal	1	0	--	8	--	100
Turbo USB port (CN704) pin 1 to earth according to table 2B						
Normal	1	5.12	2.5	8	5.41	100
U708 pin 2 to 8 short	1	5.12	4.3	8	12.02	100
U710 pin 3-11, 20 short	1	5.12	2.6	8	5.1	100
Turbo USB port (CN704) other pin to earth according to table 2B						
Normal	1	0	--	8	--	100
USB (2.0) port (CN702) pin 1 to earth according to table 2B						

IEC 60950-1						
Clause	Requirement + Test			Result - Remark		Verdict
Normal	1	5.12	1.5	8	4.0	100
U710 pin 3-11, 20 short (with F702 by passed)	1	5.12	5.0	8	13.81	100
USB (2.0) port (CN702) other pin to earth according to table 2B						
Normal	1	0	--	8	--	100
USB (2.0) port (CN703) pin 1 to earth according to table 2B						
Normal	1	5.12	1.6	8	4.16	100
U710 pin 3-11, 20 short (with F702 by passed)	1	5.12	5.0	8	13.81	100
USB (2.0) port (CN703) other pin to earth according to table 2B						
Normal	1	0	--	8	--	100
USB (3.0) port (CN705) pin 1 to earth according to table 2B						
Normal	1	5.12	3.2	8	5.12	100
U710 pin 3-11, 20 short (with F701 by passed)	1	5.12	5.0	8	13.81	100
USB (3.0) port (CN705) other pin to earth according to table 2B						
Normal	1	0	--	8	--	100
Supplementary information: Input Voltage: 240Vac, 60Hz						

2.10.2	Table: working voltage measurement			P
Location		RMS voltage (V)	Peak voltage (V)	Comments
Test voltage: 100V/60Hz				
T9101 pin 1 to pin 6,7,8,9		195	384	
T9101 pin 1 to pin 10,11		188	368	
T9101 pin 1 to pin 12		197	398	
T9101 pin 2 to pin 6,7,8,9		188	414	
T9101 pin 2 to pin 10,11		192	484	
T9101 pin 2 to pin 12		188	360	
T9101 pin 3 to pin 6,7,8,9		324	528	
T9101 pin 3 to pin 10,11		333	536	Highest Vp of T9101

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Clause	Requirement + Test	Result - Remark	Verdict
T9101 pin 3 to pin 12	314	504	
T9101 pin 5 to pin 6,7,8,9	303	494	
T9101 pin 5 to pin 10,11	300	420	
T9101 pin 5 to pin 12	309	556	Highest Vrms of T9101
Test voltage: 240V/60Hz			
T9101 pin 1 to pin 6, 7, 8, 9	185	380	
T9101 pin 1 to pin 10, 11	183	364	
T9101 pin 1 to pin 12	192	392	
T9101 pin 2 to pin 6, 7, 8, 9	184	412	
T9101 pin 2 to pin 10, 11	189	480	
T9101 pin 2 to pin 12	183	364	
T9101 pin 3 to pin 6, 7, 8, 9	321	524	
T9101 pin 3 to pin 10, 11	331	536	Highest Vp and Vrms of T9101
T9101 pin 3 to pin 12	312	500	
T9101 pin 5 to pin 6, 7, 8, 9	299	488	
T9101 pin 5 to pin 10, 11	297	416	
T9101 pin 5 to pin 12	303	552	
IC9401 pin 3 to pin 1	172	348	
IC9401 pin 3 to pin 2	172	348	
IC9401 pin 4 to pin 1	172	348	
IC9401 pin 4 to pin 2	172	348	
IC9102 pin 3 to pin 1	189	376	
IC9102 pin 3 to pin 2	189	376	
IC9102 pin 4 to pin 1	189	376	
IC9102 pin 4 to pin 2	189	376	
C9903 primary to secondary	10	24	
C9904 primary to secondary	242	364	
C9910 primary to secondary	242	364	
C9911 primary to secondary	183	364	
Supplementary information:			
2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements		P

IEC 60950-1						
Clause	Requirement + Test			Result - Remark		Verdict
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 trace to Neutral trace before fuse	420	250	2.3 *	2.6	2.5	2.6
Under Fuse				2.7		2.7
Basic/supplementary:						
Primary trace to earthed component or trace	420	250	3.0 *	See below	3.0	See below
Under C9903				7.3		7.3
Under C9904				7.4		7.4
Under C9911				7.5		7.5
Under C9910				7.4		7.4
Under C9909				8.7		8.7
Primary trace to earthed component or trace	420	250	3.0 *	See below	3.0	See below
HS9101 to metal chassis				6.5		6.5
Reinforced:						
Primary trace to earthed component or trace	420	250	6.0 *	See below	6.0	See below
IC9102				7.7		7.7
IC9401				7.7		7.7
T9101	556	333	6.6*	11.0	6.7	11.0
Supplementary information: Supplementary information: 1. Functional insulation shorted, see 5.3.4 c). 2. Working voltages of primary circuits to secondary circuits/user accessible parts considered as 420 V pk and 250 V r.m.s. minimum (according to applicable rows of tables 2H and 2L). 3. The required clearances multiplied by 1.48 considering that EUT operates up to 5000m. 4. For clearance and creepage did not describe above are far larger than limit above. 5. All internal wires are located by mechanical fixings to keep distance. 6. There is one mylar sheet between Power supply board component side and metal chassis. (Completely covers primary components) 7. There is one mylar sheet between Power supply board trace layout side and metal chassis. (Completely covers the primary trace)						

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Clause	Requirement + Test	Result - Remark	Verdict

2.10.5	TABLE: Distance through insulation measurements					
Distance through insulation (DTI) at/of:		U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Optical Isolator (reinforced insulation)		420	250	3000Vac	0.4	1.
Mylar sheet (basic insulation) (higher value used upon client request)		420	250	3000Vac	--	1.
Supplementary information:						

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..... : (Lithium, NiMh, NiCad, Lithium Ion ...)		
Manufacturer		
Type / model.....		
Voltage		
Capacity..... : mAh		

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Clause	Requirement + Test	Result - Remark	Verdict

Tested and Certified by (incl. Ref. No.) :

Circuit protection diagram:

MARKINGS AND INSTRUCTIONS (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)	a. 90V/60Hz (Display mode)/Horizontal b. 90V/60Hz (Display mode)/Vertical c. 264V/60Hz (Display mode)/Horizontal		—	
	Ambient T _{min} (°C)	See below		—	
	Ambient T _{max} (°C)	See below		—	
Maximum measured temperature T of part/at.....:		T (°C)		Allowed T _{max} (°C)	
Test condition		a.	b.	c.	--
AC inlet near L pin		48.7	46.3	47.4	70
CN9901 near L pin		51.4	49.3	49.4	70
PCB near NR9901		72.4	68.4	58.5	105
C9905 body		56.2	54.3	52.6	85
L9901 coil		64.9	63.1	56.6	105
C9906 body		61.5	58.5	57.2	85
L9902 coil		75.7	67.8	61.5	105
PCB near BD9901		81.1	73.8	66.5	105
C9815 body		77.3	60.8	68.5	85
L9801 coil		99.3	74.9	74.4	105
PCB near Q9101		96.7	75.6	93.9	105
IC9102 body		81.3	76.8	80.1	100
T9101 coil		92.9	85.9	91.0	110
T9101 core		92.3	86.2	90.2	110

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Clause	Requirement + Test		Result - Remark	Verdict			
C9911 body	70.5	65.7	65.9	85			
C9910 body	64.5	62.1	62.0	85			
PCB near D9106	83.0	80.0	81.4	105			
PCB near IC9105	79.0	84.7	78.5	105			
PCB near D9105	83.5	83.7	83.1	105			
L8101 coil	81.7	72.9	81.4	105			
PCB near U8101	80.6	64.3	80.0	105			
PCB near CN411	90.1	89.8	89.7	105			
PCB near CN412	91.2	97.7	90.4	105			
PCB near U701	64.4	55.2	61.7	105			
Pastic enclosure inside near T9101	52.9	52.1	51.38	--			
Plastic enclosure outside near T9101	49.8	49.3	48.9	95			
Panel body	54.0	53.5	54.5	95			
Tma	40.0	40.0	40.0	--			
Tamb.	30.9	28.3	29.1	--			
Supplementary information:							
Supplementary information:							
1. The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in sub-clause 1.6.2 and at voltages as described above.							
2. The instruction installation manual defines the Tma at 40°C.							
<u>Winding components (providing safety isolation):</u>							
- Class B Tmax = 120°C - 10°C= 110°C							
3. All values for T (°C) are re-calculated from actual ambient.							
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
Supplementary information:							

4.5.5	TABLE: Ball pressure test of thermoplastic parts		P
	Allowed impression diameter (mm)	≤ 2 mm	—
Part	Test temperature (°C)	Impression diameter (mm)	
Plastic enclosure, Kingfa : HIPS-5197, 2.5mm	90	1.59	
Plastic enclosure, Kingfa : GAR-011(L85), 2.5mm	85	1.31	
Plastic enclosure, Kingfa : GAR-011(L65), 2.5mm	85	1.29	
Plastic enclosure, Kingfa : HIPS-510(H), 2.5mm	80	1.29	
Plastic enclosure, Kingfa : FRHIPS-960, 2.5mm	85	1.88	

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Clause	Requirement + Test	Result - Remark	Verdict
	Plastic enclosure, Cheil : GC-0750(+), 2.5mm	80	1.61
	Plastic enclosure, Cheil : GC-0700(+), 2.5mm	80	1.94
	Plastic enclosure, Cheil : HG-0760(+), 2.5mm	85	1.73
	Plastic enclosure, Cheil : LX-0951(+), 2.5mm	85	1.83
	Plastic enclosure, Cheil : SD-0150, 2.5mm	85	1.48
	Plastic enclosure, Cheil : HR-1360, 2.5mm	85	1.71
	Plastic enclosure, Cheil : BF-0670F, 2.5mm	80	1.59
	Plastic enclosure, LG : HF380, 2.5mm	85	1.48
	Plastic enclosure, LG : SE885, 2.5mm	80	1.42
	Plastic enclosure, LG : LUPOY GP-1000(#), 2.5mm	95	1.21
	Plastic enclosure, LG : XG568, 2.5mm	80	1.81
	Plastic enclosure, LG : XG569C, 2.5mm	80	1.85
	Plastic enclosure, LG : HF388H, 2.5mm	85	1.39
	Plastic enclosure, LG : SE750, 2.5mm	80	1.5
	Plastic enclosure, Teijin : TN-7500, 2.5mm	85	1.57
	Plastic enclosure, ORINKO : HIPS-2000, 2.5mm	85	1.48
	Plastic enclosure, Kingfa : GAR-011C, 2.5mm	90	1.91
	Plastic enclosure, Kingfa : GAR-011C, 3.0mm	90	1.59
Supplementary information: See sub-clause 4.5.5 for details.			

4.7	TABLE: Resistance to fire					P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
Metal enclosure	--	--	1)	--	--	
PCB	--	--	--	1)	1)	
Plastic enclosure used for USB output port	--	--	--	1)	1)	
Supplementary information: 1) See table 1.5.1 for details.						

5.1	TABLE: touch current measurement				P
Measured between:		Measured (mA)	Limit (mA)	Comments/conditions	
Test voltage: 264V / 60Hz					

IEC 60950-1			
Clause	Requirement + Test		Verdict
Line / Neutral to Accessible conductive parts (metal chassis)	2.4 / 2.4	3.5	Switch "e" opened.
Line / Neutral to Secondary port	0.01 / 0.01	0.25	Switch "e" closed
Line / Neutral to plastic enclosure with foil	0.01 / 0.01	0.25	Switch "e" closed
Test voltage: 110V / 50Hz			
Line / Neutral to Accessible conductive parts (metal chassis)	1.0 / 1.0	3.5	Switch "e" opened.
Line / Neutral to Secondary port	0.01 / 0.01	0.25	Switch "e" closed
Line / Neutral to plastic enclosure with foil	0.01 / 0.01	0.25	Switch "e" closed
Supplementary information: 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
Basic/supplementary:				
Unit: Primary to Earth		DC	2577	No
Reinforced:				
Unit: Primary to Secondary		DC	4242	No
T9101: Primary windings to Secondary windings		AC	3000	No
T9101: Secondary windings to Core		AC	3000	No
Supplementary information: Above all sources of insulation tape were tested with equipment before humidity test and after humidity test				

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)		25°C, if no otherwise state.			—
	Power source for EUT: Manufacturer, model/type, output rating		--			—
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Ventilation openings	Blocked	240	2.9 hrs	F9901	0.44	Normal operation, no hazards, no damage. Max. temp. stabled at T9101 coil = 101.7 degree C, T9101 core = 101.4 degree C, Tamb. = 21.3 degree C.

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
BD9901 pin 3 to 4	shorted	240	10 min.	F9901	--	Fuse opened immediately, no hazards.
C9814	shorted	240	10 min.	F9901	--	Fuse opened immediately, no hazards.
Q9801 pin G to S	shorted	240	10 min.	F9901	0.4	Normal operation, no excessive input current or temp. raise being observed.
Q9801 pin G to D	shorted	240	10 min.	F9901	--	F9901 open, Q9801 damaged, no hazards.
Q9801 pin D to S	shorted	240	10 min.	F9901	--	F9901 open, Q9801 damaged, no hazards.
IC9801 in 6 to 8	shorted	240	10 min.	F9901	0.10	Unit shutdown, no hazards, no damage.
IC9101 pin 1 to 7	shorted	240	10 min.	F9901	0.09	IC9101 damaged, test repeated twice, all came out with same results.
Q9101 pin G to S	shorted	240	10 min.	F9901	0.09	Unit shutdown, no hazards, no damage.
Q9101 pin G to D	shorted	240	10 min.	F9901	--	Fuse opened immediately, Q9801 IC9801 damaged, no hazards.
Q9101 pin D to S	shorted	240	10 min.	F9901	--	Fuse opened immediately, Q9801 IC9801 damaged, no hazards.
T9101 pin 3 to 5	shorted	240	10 min.	F9901	0.1	Unit shutdown, no hazards, no damage.
T9101 pin 1 to 2	shorted	240	10 min.	F9901	0.40	Normal operation, no excessive input current or temp. raise being observed.
T9101 pin 7 to 10	shorted	240	10 min.	F9901	0.43	Normal operation, no excessive input current or temp. raise being observed.
T9101 pin 11 to 12	shorted	240	10 min.	F9901	0.09-0.17	Cycle protection, no hazards, no damage.
IC9102 pin 1	shorted	240	10 min.	F9901	0.42	Normal operation, no excessive input current or temp. raise being observed.
IC9102 pin 1 to 2	shorted	240	10 min.	F9901	0.09-0.11	Cycle protection, no hazards, no damage.
IC9102 pin 3 to 4	shorted	240	10 min.	F9901	0.09	Unit shutdown, no hazards, no damage.
IC9401 pin 1	open	240	10 min.	F9901	0.43	Normal operation, no excessive input current or temp. raise being observed.

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
IC9401 pin 1 to 1	shorted	240	10 min.	F9901	0.43	Normal operation, no excessive input current or temp. raise being observed.
IC9401 pin 3 to 4	shorted	240	10 min.	F9901	0.43	Normal operation, no excessive input current or temp. raise being observed.
D9106	shorted	240	10 min.	F9901	0.09	Unit shutdown, no hazards, no damage.
D9105	shorted	240	10 min.	F9901	0.09	Unit shutdown, no hazards, no damage.
+12V to earth	shorted	240	10 min.	F9901	0.09	Unit shutdown, no hazards, no damage.
+24V to earth	shorted	240	10 min.	F9901	0.09	Unit shutdown, no hazards, no damage.
Speaker	shorted	240	10 min.	F9901	0.32	Only speaker output shutdown, no hazards.
T9101 Pin 12 (after D9105) +24V	overload	240	4.27 hrs.	F9901	0.70	Constant temperature at load to 2.5A, unit shutdown when load to 2.7A. Max. temp. stabilized at T9101 coil = 106.8 degree C, T9101 core = 102.7 degree C. Tamb. = 22.1 degree C, no hazards.
T9101 Pin 6, 7, 8, 9 (after D9106) +12V	overload	240	4.22 hrs.	F9901	0.68	Constant temperature at load to 4.6A, unit shutdown when load to 4.8A. Max. temp. stabilized at T9101 coil = 121.8 degree C, T9101 core = 109.2 degree C. Tamb. = 22.1 degree C, no hazards.
VGA port (CN101)						
Pin 5 to earth	Overload	240V	--	F9901	0.4	Open circuit voltage: 2.53V, Normal operation, no hazards, no damage.
Pin 12, 15 to earth	Overload	240V	--	F9901	0.4	Open circuit voltage: 4.67V Normal operation, no hazards, no damage.
Pin 9 to earth	Overload	240V	--	F9901	0.4	Open circuit voltage: 0.34V Normal operation, no hazards, no damage.
Other pin to earth	Overload	240V	--	F9901	0.4	Open circuit voltage: 0V Normal operation, no hazards, no damage.
DVI port (CN103)						
Pin 2-3 to earth	Overload	240V	--	F9901	0.4	Open circuit voltage: 4.67V, Normal operation, no hazards, no damage.

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
Pin 4-8, 12-13, 15-18, 20-24 to earth	Overload	240V	--	F9901	0.4	Open circuit voltage: 3.27V Normal operation, no hazards, no damage.
Pin 10-11 to earth	Overload	240V	--	F9901	0.4	Open circuit voltage: 0.24V Normal operation, no hazards, no damage.
Other pin to earth	Overload	240V	--	F9901	0.4	Open circuit voltage: 0V Normal operation, no hazards, no damage.
Display port (CN102)						
Pin 8 to earth	Overload	240V	--	F9901	0.4	Open circuit voltage: 0.8V, Normal operation, no hazards, no damage.
Pin 9 to earth	Overload	240V	--	F9901	0.4	Open circuit voltage: 0.23V Normal operation, no hazards, no damage.
Pin 18 to earth	Overload	240V	--	F9901	0.4	Open circuit voltage: 2.54V Normal operation, no hazards, no damage.
Pin 19 to earth	Overload	240V	1hrs	F9901	0.4	Open circuit voltage: 3.22V, max. available current = 550mA, Normal operation, no hazards, no damage.
Other pin to earth	Overload	240V	--	F9901	0.4	Open circuit voltage: 0V Normal operation, no hazards, no damage.
HDMI port (CN501)						
Pin 1-2, 4-5, 12-13, 15-16 to earth	Overload	240V	--	F9901	0.4	Open circuit voltage: 3.27V, Normal operation, no hazards, no damage.
Pin 6 to earth	Overload	240V	--	F9901	0.4	Open circuit voltage: 3.06V Normal operation, no hazards, no damage.
Pin 8 to earth	Overload	240V	--	F9901	0.4	Open circuit voltage: 4.8V Normal operation, no hazards, no damage.
Pin 10 to earth	Overload	240V	--	F9901	0.4	Open circuit voltage: 0.39V, max. available current = 550mA, Normal operation, no hazards, no damage.
Pin 18 to earth	Overload	240V	1hrs	F9901	0.4	Open circuit voltage: 5.14V, max. available current = 800mA, Normal operation, no hazards, no damage.
Other pin to earth	Overload	240V	--	F9901	0.4	Open circuit voltage: 0V Normal operation, no hazards, no damage.
CN603 all pin to earth (Audio in)	Overload	240V	--	F9901	0.4	Open circuit voltage: 3.06V Normal operation, no hazards, no damage.
CN604 all pin to earth (Audio out)	Overload	240V	--	F9901	0.4	Open circuit voltage: 0V Normal operation, no hazards, no damage.
CN704 pin 1 to earth (USB SS)	Overload	240V	1hrs	F9901	0.4	Open circuit voltage: 5.12V, max. available current =2100mA, Normal operation, no hazards, no damage.

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
CN704 all pin to earth (USB SS)	Overload	240V	--	F9901	0.4	Open circuit voltage: 0V Normal operation, no hazards, no damage.
CN702 pin 1 to earth (USB 2.0)	Overload	240V	1hrs	F9901	0.4	Open circuit voltage: 5.12V, max. available current =1200mA, Normal operation, no hazards, no damage.
CN702 pin 1 to earth (USB 2.0)	Overload	240V	--	F9901	0.4	Open circuit voltage: 0V Normal operation, no hazards, no damage.
CN703 pin 1 to earth (USB 2.0)	Overload	240V	1hrs	F9901	0.4	Open circuit voltage: 5.12V, max. available current =1200mA, Normal operation, no hazards, no damage.
CN703 pin 1 to earth (USB 2.0)	Overload	240V	--	F9901	0.4	Open circuit voltage: 0V Normal operation, no hazards, no damage.
CN705 pin 1 to earth (USB 3.0)	Overload	240V	1hrs	F9901	0.4	Open circuit voltage: 5.12V, max. available current =2680mA, Normal operation, no hazards, no damage.
CN705 pin 1 to earth (USB 3.0)	Overload	240V	--	F9901	0.4	Open circuit voltage: 0V Normal operation, no hazards, no damage.
Supplementary information:						

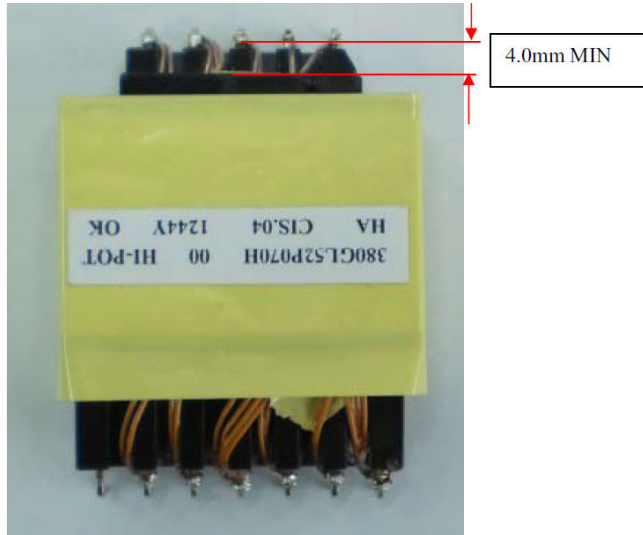
C.2	TABLE: transformers						P
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
T9101	Primary / input winding and secondary / output winding (internal) (DI)	556	333	AC 3000V	6.6	6.7	Min. 2 layers insulation tape, 0.4mm thickness or TIW
T9101	Primary / input winding and core (internal)	--	--	--	--	--	--
T9101	Secondary / output winding and core (internal) (DI)	556	333	AC 3000V	6.6	6.7	See above
T9101	Primary / input part and secondary / output part (external) (DI)	556	333	AC 3000V	6.6	6.7	See above

IEC 60950-1							
Clause	Requirement + Test			Result - Remark			Verdict
T9101	Primary / input part and secondary / output winding (external) (DI)	556	333	AC 3000V	6.6	6.7	See above
T9101	Primary / input part and core (external)	--	--	--	--	--	--
T9101	Secondary / output part and core (external) (DI)	556	333	AC 3000V	6.6	6.7	See above
T9101	Secondary / output part and primary / input winding (external) (DI)	556	333	AC 3000V	6.6	6.7	See above
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T9101	Primary / input winding and secondary / output winding (internal) (DI)			AC 3000V	Triple insulation wire used	Triple insulation wire used	See supplementary information
T9101	Primary / input winding and core (internal)			--	--	--	--
T9101	Secondary / output winding and core (internal) (DI)			AC 3000V	Triple insulation wire used	Triple insulation wire used	See above
T9101	Primary / input part and secondary / output part (external) (DI)			AC 3000V	53.1	53.1	See above
T9101	Primary / input part and secondary / output winding (external) (DI)			AC 3000V	Triple insulation wire used	Triple insulation wire used	See above
T9101	Primary / input part and core (external)			--	--	--	--
T9101	Secondary / output part and core (external) (DI)			AC 3000V	13.3	13.3	See above
T9101	Secondary / output part and primary / input winding (external) (DI)			AC 3000V	9.8	9.8	See above
supplementary information: (considered for all sources)							
The required clearances multiplied by 1.48 considering that EUT operates up to 5000m.							

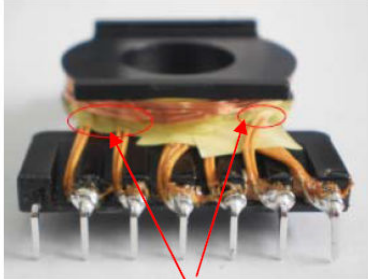
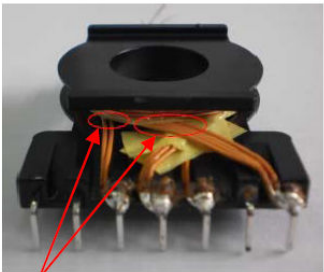
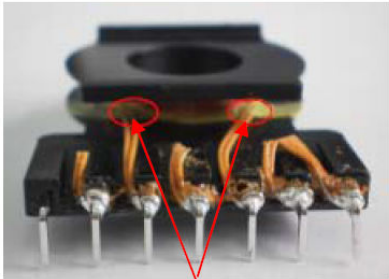
C.2	TABLE: transformers	P
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Concentric windings on bobbin (vertical type core). Outer winding is Primary. Min. 2 layers of insulation tape provided between primary winding and secondary winding (triple insulation wire). The core is considered as primary part. The secondary triple wire and primary wire are separated by one additional tape to prevent them crossing and overlapping at each other.

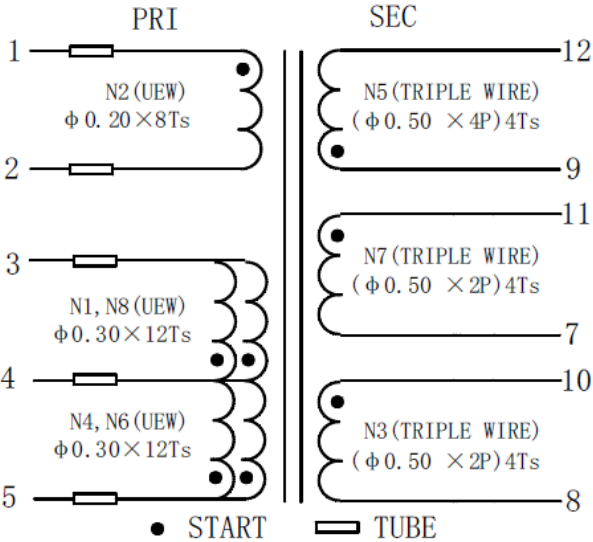


IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

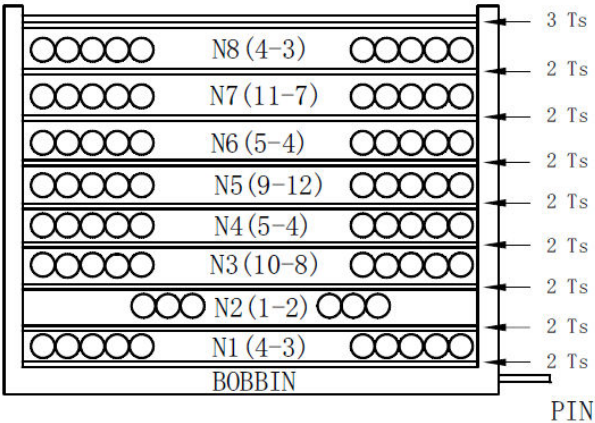


次级绕组TAPE适当加宽为5.5mm或在次级侧三层线上贴一层宽度为4.5mm的TAPE，使得TAPE向三层线方向偏移约1mm贴到三层线上或直接贴TAPE在三层线上。

初级线圈与三层线交叉处不接触



PIN	Tube length
1, 2, 3, 4, 5	10mm MIN



NOTE: 1) 二次侧三层绝缘线重叠处需用Mylar Tape隔离
2) PRI SIDE START AND FINISH ADDED TUBE,

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

6.1 MATERIAL LIST

NO.	COMPONENT PART.	MAT'L	UL File NO.	TEMP.	MANUFACTURER
1	Bobbin	Phenolic 94V-0 PM-9630/PM-9820 (THICKNESS:0.45mm MIN) L:48.9mm±0.3mm W:38.0mm±0.3mm H:11.4mm±0.2mm	E41429	150℃	Sumitomo bakelite co ltd.
2	Core	TP4A, DMR44, JPP-44 L:39.8mm+0.7mm W:28.3mm+0.35mm H:13.0mm+0.4mm	-	-	Ferrite core:ER4013 TDG, DMEGC, A-CORE
3	Wire(2UWE)	TYA1-U155 (UEW-F) TYTUN-B130 (UEWNY-F)	E197768	155℃	Heng ya electric(dongguan) ltd.
		SFFY-2#/UEYT#	E174837	155℃	Jung shing wire co., ltd.
	Triple Wire	STW-B	E242198 VDE:40013359 CSA:1562877 NEMKO:P04202638	130℃	Young chang silicone co., ltd.
4	Tape (Yellow)	CT(c) (CTI:GROUP I) (Thickness:0.06mm)	E165111	130℃	Jingjiang yahua pressure sensitive glue co., ltd
		NO. 35660Y* (%) (CTI:GROUP I) (Thickness:0.055mm)	E50292	130℃	Symbio inc.
5	Margin tape	WF(c) (CTI:GROUP I)	E165111	130℃	Jingjiang yahua pressure sensitive glue co., ltd
		35661\$ (CTI:GROUP I)	E50292	130℃	Symbio inc.
5	Varnish	WP-2952F-2G	E72979	130℃	Hitachi chemical co ltd.
		DVB-2085(*)	E93947	130℃	Noroo paint & coatings co ltd.
6	Tube	TFL TUBE	E156256	200℃	Great holding industrial co., ltd
		CB-TT-L	E180908	200℃	Changyuan electronics (shenzhen) co., ltd.
7	Epoxy	E-500(XX)	E218090	130℃	Dongguan eatto electronic material co.,ltd.
		3300A-1/3300B-1	E218090	130℃	Dongguan eatto electronic material co., ltd.
8	Terminals	Tin-plated copper wire	-	-	Well Fore Special wire corp.
9	Solder	Pb<1000ppm	-	-	-

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

Attachments file1. MATERIAL LIST

ITEM	MATERIAL	UL NO.	FLAM	MANUFACTURER	UI page
BOBBIN	PM-9820 BLACK(94V-0) Thickness: 0.45mm MIN	E41429	150°C	SUMITOMO BAKELITE CO.,LTD	22-25
	LENGTH 49mm ± 0.3mm				
	WIDTH 38mm ± 0.3 mm				
	HEIGHT 11.1mm ± 0.2 mm				
WIRE	POLYURETHANE ENAMELLED xUEW-A MW75-C	E193774	130°C	DALIAN FUJI FINE CO LTD	26
	UEW MW-75	E106004		TATUNG CO	27
	xUEW@/130	E339217		ZHUHAI WEIHAN WIRE CO LTD	28
	TIW-M	E213764(UL) 138053(VDE) 1245797(CSA) P01102418 (NEMKO)	130°C	COSMOLINK CO.,LTD	29-33
CORE	FERRITE CORE ER40 DMR44 ER40 P41	/	/	HENG DIAN GROUP DMEGC MAGNET CO.,LTD	34-37
	LENGTH 28.4mm ± 0.35 mm WIDTH 40.0mm ± 0.35 mm HEIGHT 12.8mm ± 0.4mm			ACME ELECTRONICS CORPORATION	
MYLAR TAPE	NO.35660Y*(%) (CTI GROUP I) THICKNESS 0.055mm	E50292	130°C	SYMBIO INC	38-40
	NO.CT(c) (CTI GROUP I) THICKNESS 0.06mm	E165111	130°C	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO.,LTD	41-42
VARNISH	WP-2952F-2G(Y)	E72979	130°C	J HITACHI CHEMICAL CO., LTD	43-44
	BC-346A	E317427	200°C	JOHN C.DOLPH CO	45
FLUX	1544	/	/	UNION SOLTEK INC	
SOLDER	Sn(96.5%Sn+3.0%Ag+0.5%Cu) or EQUIVALENT			XIN YING CO LTD	
INK	JP-K33	/	/	HITACH INDUSTRIAL EQUIPMENT SYSTEMS CO.,LTD	
TUBE	TEFLON TUBING TFL	E156256	200°C	GREAT HOLDING INDUSTRIAL CO.,LTD	46
EPOXY	3300A-1/3300B-1	E218090	130°C	DONGGUAN EATTO ELECTRONIC MATERIAL CO.,LTD	47

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

Attachments file1. MATERIAL LIST

NO	SUB PART	TYPE	UL NO	FLAME	MANUFACTURER
1	CORE	ER40 TP4A	N/A	N/A	TDG
		ER40 DMR44			DMEGC
		L:39.8±0.7mm W:28.3±0.4mm H:12.8±0.4mm			
2	BOBBIN	PM-9820 94V-0 THICKENSS 0.45mm MIN L:48.9±0.5mm W:38.0±0.5mm H:11.4±0.3mm	E41429	150°C	SUMITOMO BAKELITE CO LTD
3	WIRE	UEW (MW75#)	E214423	130°C	SHANGHAI ASIA PACIFIC ELECTRIC CO.,LTD.
4	TRIPLE INSULATION WIRE	TIW-M	E213764	130°C	COSMOLINK CO.,LTD
			TÜVB070252 617001		
			VDE 138053		
			NEMKO P01102418		
5	TAPE	No.35660Y* (%) (CTI = I) THICKNESS: 0.055mm	E50292	130°C	SYMBIO INC
		No.CT(c) (CTI = I) THICKNESS: 0.06mm	E165111	130°C	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO. , LTD
6	TUBE	TEFLON TUBE TFL	E156256	200°C	GREAT HOLDING INDUSTRIAL CO. , LTD
7	VARNISH	V1630FS	E87039	130°C	ELANTAS ELECTRICAL INSULATION ELANTAS PDG INC
8	EPOXY	3300A-1/3300B-1 E-500 (XX)	E218090	130°C	DONGGUAN EATTO ELECTRONIC MATERIAL CO. , LTD
9	SOLDER	STEEL 78%+Cu22%+Sn99.9% THICKNESS 6 +2/-1µm LEAD FREE SOLDER Sn+0.7Cu	N/A	N/A	ASIA GENERAL ELECTRONIC CO., LTD
10	FLUX	WS -10B	N/A	N/A	HAIMEN SANYANG FLUX FACTORY
11	INK	9175	N/A	N/A	IMAGE

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

7. Material List 【绝缘系统：TPV-B1】

NO	SUB PART	TYPE	UL NO	FLAME	MANUFACTURER
1	CORE	FERRITE CORE ER40, DMR44 ER40 NH2C L = 40.0+/-0.5mm W = 28.4+/-0.5mm H = 12.8+/-0.4mm	/	/	HENGDIAN DMEGC MAGNETICS CO.,LTD HAINING LIANFENG MAGNET INDUSTRY CO.,LTD
2	BOBBIN	PM-9820 BLACK(94V-0) Thickness: 0.45 mm MIN L:48.9±0.5mm W:38.0±0.5mm H:11.5±0.3mm	E41429	150℃	SUMITOMO BAKELITE CO.,LTD
3	WIRE	UEW	E214423	130℃	SHANGHAI ASIA PACIFIC ELECTRIC CO LTD
		UEW or QA/130	E229341		HANGZHOU WEIFENG ELECTRONIC CO.,LTD
4	TRIPLE INSULATION WIRE	TEX-E	E206440 TÜV T9251520 VDE 6735 NEMKO P05204570/A1	130℃	FURUKAWA ELECTRIC CO.,LTD
5	TAPE	NO.35660Y [35660Y*(%), CTI GPOUP I Thickness: 0.055mm]	E50292	130℃	SYMBIO INC
		NO.CT [CT (c), CTI GPOUP I, Thickness: 0.06mm]	E165111	130℃	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO.,LTD
6	TUBE	TEFLON TUBE TFL	E156256	200℃	GREAT HOLDING INDUSTRIAL CO.,LTD
7	VARNISH	BC-346A, BC-346-A	E317427	200℃	JOHN C.DOLPH CO
		T-4260(a)	E228349	130℃	WU JIANG TAIHU INSULATING MATERIAL CO LTD
8	EPOXY	3300A-1/B-1	E218090	130℃	DONGGUAN EATTO ELECTRONIC MATERIAL CO.,LTD
9	SOLDER	AS9750NC	N/A	N/A	安臣锡品制造有限公司
10	INK	JP-K67	N/A	N/A	XIAMEN WINDFIRM TECH CO.,LTD

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
Description of design:			
(a) Bobbin			
Primary/input pins		1-2, 5-4-3	
Secondary/output pins		11-7, 10-8, 9-12	
Material (manufacturer, type, ratings)		See above	
Thickness (mm)		Min. 0.7 mm	

IEC 60950-1			
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

IEC60950_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<p align="center">ATTACHMENT TO TEST REPORT IEC 60950-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Information technology equipment – Safety – Part 1: General requirements</p>			
Differences according to: EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013			
Attachment Form No.: EU_GD_IEC60950_1E			
Attachment Originator: SGS Fimko Ltd			
Master Attachment: Date 2013-09			
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EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013 – CENELEC COMMON MODIFICATIONS

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Clauses, subclauses, notes, tables and figures which are additional to those in IEC60950-1 and it's amendmets are prefixed "Z"		P
Contents (A2:2013)	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZD (informative) IEC and CENELEC code designations for flexible cords		P
General	Delete all the "country" notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2		P
General (A1:2010)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note		P

IEC60950_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
General (A2:2013)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A2:2013) according to the following list: 2.7.1 Note * 2.10.3.1 Note 2 6.2.2. Note * Note of secretary: Text of Common Modification remains unchanged.		P
1.1.1 (A1:2010)	Replace the text of NOTE 3 by the following. NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.		P
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.		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 (Added info*)	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. New Directive 2011/65/11 *	Added.	P
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.		N/A
1.7.2.1 (A12:2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.		N/A

IEC60950_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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


IEC60950_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

IEC60950_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off.</p> <p>d) have a warning as specified in Zx.3; and</p> <p>e) not exceed the following:</p> <ol style="list-style-type: none"> 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. <p>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.</p> <p>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.</p> <p>For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.</p>		

IEC60950_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

IEC60950_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

IEC60950_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;	Replaced.	P
	c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		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.		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.	No power cord provided	N/A
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD		N/A

IEC60950_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
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	No power cord provided	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).		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.		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)			
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 (A11:2009)	In Norway and Sweden , for requirements see 1.7.2.1 and 7.3 of this annex.		N/A
1.5.7.1 (A11:2009)	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_1E - 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).	Complied.	P
1.5.9.4	In Finland, Norway and Sweden , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
1.7.2.1	<p>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:</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p>		P
1.7.2.1 (A11:2009)	<p>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.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>"Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."</p>		

IEC60950_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.”</p> <p>Translation to Swedish:</p> <p>”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”</p>		
1.7.2.1 (A2:2013)	<p>In Denmark, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in Denmark shall be as follows: In Denmark: “Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.”</p>		N/A
1.7.5 1.7.5 (A11:2009)	<p>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.</p> <p>For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.</p>		N/A

IEC60950_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.5 (A2:2013)	<p>In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011.</p> <p>For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c, DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b, DK 1-1c, DK 1-1d or DK 1-5a.</p> <p>Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-3b.</p> <p>Justification the Heavy Current Regulations, 6c</p>		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
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	<p>In Switzerland, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:</p> <p>SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A</p>	No approved power cord provided.	N/A

IEC60950_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A</p> <p>SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <p>SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A</p> <p>SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A</p> <p>SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A</p>		
3.2.1.1	<p>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.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>		N/A
3.2.1.1 (A2:2013)	<p>In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>Justification the Heavy Current Regulations, 6c</p>		N/A

IEC60950_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>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.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>		N/A
3.2.1.1	<p>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.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		N/A
3.2.1.1	<p>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.</p>		N/A
3.2.4	<p>In Switzerland, for requirements see 3.2.1.1 of this annex.</p>		N/A
3.2.5.1	<p>In the United Kingdom, a power supply cord with conductor of 1,25 mm² is allowed for equipment with a rated current over 10 A and up to and including 13 A.</p>		N/A
3.3.4	<p>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:</p> <ul style="list-style-type: none"> • 1,25 mm² to 1,5 mm² nominal cross-sectional area. 		N/A

IEC60950_1E - 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: <ul style="list-style-type: none"> • 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, 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 <ul style="list-style-type: none"> - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. 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		N/A

IEC60950_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. 		
	<p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14: - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14. 		N/A
6.1.2.2	<p>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.</p>		N/A
7.2	<p>In Finland, Norway and Sweden, for requirements see 6.1.2.1 and 6.1.2.2 of this annex.</p> <p>The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>		N/A
7.3 (A11:2009)	<p>In Norway and Sweden, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.</p>		N/A

IEC60950_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Annex ZD
(informative)

IEC and CENELEC code designations for flexible cords

Type of flexible cord	Code designations	
	IEC	CENELEC
PVC insulated cords		
Flat twin tinsel cord	60227 IEC 41	H03VH-Y
Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F
Ordinary polyvinyl chloride sheathed flexible cord	60277 IEC 53	H05VV-F H05VVH2-F
Rubber insulated cords		
Braided cord	60245 IEC 51	H03RT-F
Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F
Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F
Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F
Cords having high flexibility		
Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H
Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H
Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H

IEC60950_1C - 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_1C_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


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_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.3.Z1	<p>Add the following subclause:</p> <p>1.3.Z1 Exposure to excessive sound pressure</p> <p>The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones.</p> <p>NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.</p>		N/A
(A12:2011)	<p>In EN 60950-1:2006/A12:2011</p> <p>Delete the addition of 1.3.Z1 / EN 60950-1:2006</p> <p>Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010</p>		N/A
1.5.1	<p>Add the following NOTE:</p> <p>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC</p>	Added.	P
1.7.2.1 (A1:2010)	<p>In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.</p>		N/A
1.7.2.1 (A12:2011)	<p>In EN 60950-1:2006/A12:2011</p> <p>Delete NOTE Z1 and the addition for Portable Sound System.</p> <p>Add the following clause and annex to the existing standard and amendments.</p>		N/A
	Zx Protection against excessive sound pressure from personal music players		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.1 General</p> <p>This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players.</p> <p>A personal music player is a portable equipment for personal use, that:</p> <ul style="list-style-type: none"> is designed to allow the user to listen to recorded or broadcast sound or video; and primarily uses headphones or earphones that can be worn in or on or around the ears; and allows the user to walk around while in use. <p>NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment.</p> <p>A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause.</p> <p>The requirements in this sub-clause are valid for music or video mode only.</p> <p>The requirements do not apply:</p> <ul style="list-style-type: none"> while the personal music player is connected to an external amplifier; or while the headphones or earphones are not used. <p>NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player.</p> <p>The requirements do not apply to:</p> <ul style="list-style-type: none"> hearing aid equipment and professional equipment; <p>NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.</p>		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015.</p> <p>NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.</p> <p>For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.</p>		
	<p>Zx.2 Equipment requirements</p> <p>No safety provision is required for equipment that complies with the following:</p> <p>equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is ≤ 85 dBA measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and</p> <p>a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" as described in EN 50332-1.</p> <p>NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx.</p> <p>All other equipment shall:</p> <p>a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and</p> <p>b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and</p>		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off.</p> <p>d) have a warning as specified in Zx.3; and</p> <p>e) not exceed the following:</p> <p>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</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.</p>		

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.3 Warning</p> <p>The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:</p> <p style="padding-left: 40px;">the symbol of Figure 1 with a minimum height of 5 mm; and</p> <p style="padding-left: 40px;">the following wording, or similar:</p> <p>“To prevent possible hearing damage, do not listen at high volume levels for long periods.”</p> <div style="text-align: center;">  </div> <p style="text-align: center;">Figure 1 – Warning label (IEC 60417-6044)</p> <p>Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.</p>		N/A
	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	<p>Zx.4.1 Wired listening devices with analogue input</p> <p>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.</p> <p>This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control).</p> <p>NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.</p>		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.4.2 Wired listening devices with digital input</p> <p>With any playing device playing the fixed “programme simulation noise” described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA.</p> <p>This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.).</p> <p>NOTE An example of a wired listening device with digital input is a USB headphone.</p>		N/A
	<p>Zx.4.3 Wireless listening devices</p> <p>In wireless mode:</p> <p>with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and</p> <p>respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and</p> <p>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.</p> <p>NOTE An example of a wireless listening device is a Bluetooth headphone.</p>		N/A
	<p>Zx.5 Measurement methods</p> <p>Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s.</p> <p>NOTE Test method for wireless equipment provided without listening device should be defined.</p>		N/A

IEC60950_1C - 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.		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.	No power cord provided.	N/A

IEC60950_1C - 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	No power cord provided.	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).		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.		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_1C - 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).	Complied.	P
1.5.9.4	In Finland, Norway and Sweden , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
1.7.2.1	<p>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:</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p> <p>In 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.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>"Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."</p>		P

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.”</p> <p>Translation to Swedish:</p> <p>”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”</p>		N/A
1.7.5	<p>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.</p> <p>For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.</p>		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_1C - 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	<p>In Switzerland, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:</p> <p>SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A</p> <p>SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A</p> <p>SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <p>SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A</p> <p>SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A</p> <p>SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V,</p>	No approved power cord provided.	N/A
3.2.1.1	<p>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.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>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.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>		N/A
3.2.1.1	<p>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.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		N/A
3.2.1.1	<p>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.</p>		N/A
3.2.4	<p>In Switzerland, for requirements see 3.2.1.1 of this annex.</p>		N/A
3.2.5.1	<p>In the United Kingdom, a power supply cord with conductor of 1,25 mm² is allowed for equipment with a rated current over 10 A and up to and including 13 A.</p>		N/A
3.3.4	<p>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:</p> <ul style="list-style-type: none"> • 1,25 mm² to 1,5 mm² nominal cross-sectional area. 		N/A

IEC60950_1C - 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: <ul style="list-style-type: none"> • STATIONARY PLUGGABLE EQUIPMENT TYPE A that <ul style="list-style-type: none"> 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_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	<p>In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <p>Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> - 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
	<p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14. 		N/A

IEC60950_1C - 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

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<p align="center">ATTACHMENT TO TEST REPORT IEC 60950-1 CANADA NATIONAL DIFFERENCES Information technology equipment – Safety – Part 1: General requirements</p>			
Differences according to: CAN/CSA-C22.2 NO. 60950-1A-07			
Attachment Form No.: CA_ND_IEC60950_1C			
Attachment Originator: TÜV SÜD Product Service GmbH			
Master Attachment: Date (2012-08)			
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	Special national conditions		P
1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2.	Considered.	P
	Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.		P
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Considered.	P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the CEC/NEC.		N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC are required to have special construction features and identification markings.		N/A
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings.	Single-phase equipment.	N/A
	A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and		N/A
	- if it is part of a range that extends into the Table 2 "Normal Operating Conditions."		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	A voltage rating is not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."		N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC are marked with the voltage rating and "Class 2" or equivalent.		N/A
	- Marking is located adjacent to the terminals		N/A
	- Marking is visible during wiring		N/A
2.5	Fuse providing Class 2, Limited Power Source, or TNV current limiting is not operator-accessible unless it is not interchangeable.		N/A
2.6.3.3	Modify first column on Table 2D to "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."		P
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is provided for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No such components provided.	N/A
	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, provided with special transformer overcurrent protection.		N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains is in accordance with the NEC/CEC.	No power cord provided.	N/A
3.2.1	Attachment plugs of power supply cords are rated not less than 125 percent of the rated current of the equipment.		N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment comply with special earthing, wiring, marking and installation instruction requirements.		N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
3.2.5	Power supply cords are no longer than 4.5 m in length.		N/A
	Minimum cord length is 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement.		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Flexible power supply cords are compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
3.2.9	Permanently connected equipment have a suitable wiring compartment and wire bending space.		N/A
3.3	Wiring terminals and associated spacings for field wiring connections comply with CSA C22.2 No. 0.	No wire binding screws.	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are suitable for Canadian/US wire gauge sizes, are		N/A
	- rated 125 percent of the equipment rating, and		N/A
	- are specially marked when specified (1.7.7).		N/A
3.3.5	Revise first column of Table 3E to "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."		N/A
3.4.2	Motor control devices are provided for cord-connected equipment with a motor if the equipment is rated more than 12 A,		N/A
	- or if the motor has a nominal voltage rating greater than 120 V		N/A
	- or is rated more than 1/3 hp (locked rotor current over 43 A)		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position.		N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the computer room remote power-off circuit.		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.		N/A
4.3.13.5	Equipment with lasers meet the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.	No Laser.	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less.		N/A
	For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.		N/A
Annex H	Equipment that produces ionizing radiation comply with the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations, 21 CFR 1020, as applicable.	No ionizing radiation.	N/A
	Other National Differences		P
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements.	Approved components provided, see appended table 1.5.1 of IEC 60950-1 test report.	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.		N/A
	This maximum operating voltage includes consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.		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 maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
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 reduce the risk of injury due to the implosion of the CRT.		N/A
4.3.2	Equipment with handles complies with special loading tests.		N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals comply with a special touch current measurement tests.		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are overloaded.	See IEC 60950-1 test report.	P
	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	See IEC 60950-1 test report.	P
6.4	Equipment intended for connection to telecommunication network outside plant cable is protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.		N/A
Annex EE	Articulated accessibility probe (Fig EE.3) is used for assessing accessibility to document/media shredders instead of the Figure 2A test finger.		N/A
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear comply with special acoustic pressure requirements.		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	<p>In Finland, TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:</p> <ul style="list-style-type: none"> • STATIONARY PLUGGABLE EQUIPMENT TYPE A that <ul style="list-style-type: none"> - 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)	<p>In Finland, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <p>Alternatively for components, there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. 		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> - 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	<p>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.</p>		N/A
7.2	<p>In Finland, for requirements see 6.1.2.1 and 6.1.2.2 of this annex.</p> <p>The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>		N/A

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 ISRAEL NATIONAL DIFFERENCES

Information technology equipment – Safety –

Part 1: General requirements

Differences according to.....: SI 60950 Part 1

1.1.1	Replace the the text of Note 3 as follows: The requirements of Israel Standard SI 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment.		P
1.6	The clause is applicable with the following addition:		P
1.6.1	Add following note: In Israel, this clause is applicable subject to the Electricity Law, 1954, its regulations and revisions.		P
1.7	The clause is applicable with the following additions: Subclause 1.7.201 shall be added at the beginning of the clause as follows:		N/A
1.7.201	Marking in the Hebrew language The marking in the Hebrew language shall be in accordance with the Consumer Protection Order (Marking of goods), 1983. In addition to the marking required by clause 1.7.1, the following details shall be marked in the Hebrew language. The details shall be marked on the apparatus or on its package, or on a label properly attached to the apparatus or on the package, by bonding or sewing, in a manner that the label cannot be easily removed. 1. Name of the apparatus and its commercial designation; 2. Manufacturer's name and address. If the apparatus is imported, the importer's name and address; 3. Manufacturer's registered trademark, if any; 4. Name of the model and serial number, if any; 5. Country of manufacture.		N/A
1.7.2.1	The following shall be added to the clause: All the instructions and warnings related to safety shall also be written in the Hebrew language.		N/A
2	The clause is applicable with the following additions:		P

National Differences to IEC 60950-1:2005 + A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict
2.9.4	<p>The following shall be added at the beginning of the clause:</p> <p>In Israel, according to the Electricity Law, 1954, and the Electricity Regulations (Earthing and means of protection against electricity of voltages up to 1,000V) 1991, seven means of protection against electrocution are permitted, as follows:</p> <ol style="list-style-type: none"> 1) TN-S - Network system earthing; TN-C-S - Network system earthing; 2) TT - Network system earthing; 3) IT - Network Insulation Terre; 4) Isolated transformer; 5) Safety extra low voltage (SELV or ELV); 6) Residual current circuit breaker (30 mA = IΔ); 7) Reinforced insulation; Double insulation (class II) 		P
2.201	<p>Prevention of electromagnetic interference</p> <p>- Prior to carrying out the tests in accordance with the clauses of this Standard, the compliance of the apparatus with the relevant requirements specified in the appropriate part of the Standard series, SI 961, shall be checked.</p> <p><u>The apparatus shall meet the requirements in the appropriate part of the Standard series, SI 961.</u></p> <p>- If there are components in the apparatus for the prevention of electromagnetic interference, these components shall not reduce the safety level of the apparatus as required by this Standard.</p>		N/A
3	The clause is applicable with the following additions:		N/A
3.2.1.1	<p>Connection to an a.c. mains supply</p> <p>After the note, the following note shall be added:</p> <p>Note:</p> <p>In Israel, the feed plug shall comply with the requirements of Israel Standard SI 32 Part 1.1.</p>		N/A
3.2.1.2	<p>Connection to a d.c. mains supply</p> <p>At the end of the first paragraph, the following note shall be added:</p> <p>Note:</p> <p>At the time of issue of this Standard, there is no Israel Standard for connection accessories to d.c.</p>		N/A
Annex P	<p>Normative references</p> <p>(List of relevant Israel Standards that have been inserted in place of some of the International Standards)</p>		P

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

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<p align="center">ATTACHMENT TO TEST REPORT IEC 60950-1 U.S.A. NATIONAL DIFFERENCES Information technology equipment – Safety – Part 1: General requirements</p>			
Differences according to: UL 60950-1-07			
Attachment Form No.: US_ND_IEC60950_1C			
Attachment Originator: TÜV SÜD Product Service GmbH			
Master Attachment: Date (2012-08)			
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	Special national conditions		P
1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2.		P
	Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	Considered.	P
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the CEC/NEC.	No power cord provided.	N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC are required to have special construction features and identification markings.		N/A
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings.	Single-phase equipment.	N/A
	A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and		N/A
	- if it is part of a range that extends into the Table 2 "Normal Operating Conditions."		N/A

IEC60950_1C - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	A voltage rating is not to be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."		N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC are marked with the voltage rating and "Class 2" or equivalent.		N/A
	- Marking is located adjacent to the terminals		N/A
	- Marking is visible during wiring		N/A
2.5	Fuse providing Class 2, Limited Power Source, or TNV current limiting is not operator-accessible unless it is not interchangeable.		N/A
2.6.3.3	Modify first column on Table 2D to "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."		P
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is provided for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No such components provided.	N/A
	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, provided with special transformer overcurrent protection.		N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains is in accordance with the NEC/CEC.	No power cord provided.	N/A
3.2.1	Attachment plugs of power supply cords are rated not less than 125 per cent of the rated current of the equipment.		N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment comply with special earthing, wiring, marking and installation instruction requirements.		N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
3.2.5	Power supply cords are no longer than 4.5 m in length.		N/A
	Minimum cord length is 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Flexible power supply cords are compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
3.2.9	Permanently connected equipment have a suitable wiring compartment and wire bending space.		N/A
3.3	Wiring terminals and associated spacings for field wiring connections comply with CSA C22.2 No. 0.	No wire binding screws.	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are suitable for Canadian/US wire gauge sizes, are		N/A
	- rated 125 per cent of the equipment rating, and		N/A
	- are specially marked when specified (1.7.7).		N/A
3.3.5	Revise first column of Table 3E to "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."		N/A
3.4.2	Motor control devices are provided for cord-connected equipment with a motor if the equipment is rated more than 12 A,		N/A
	- or if the motor has a nominal voltage rating greater than 120 V		N/A
	- or is rated more than 1/3 hp (locked rotor current over 43 A)		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position.		N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the computer room remote power-off circuit.		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.		N/A
4.3.13.5	Equipment with lasers meet the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.	No Laser.	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less.		N/A
	For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.		N/A
Annex H	Equipment that produces ionizing radiation complies with U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No ionizing radiation.	N/A
	Other National Differences		P
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements.	Approved components provided, see appended table 1.5.1 of IEC 60950-1 test report.	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.		N/A
	This maximum operating voltage includes consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.		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 maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
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 reduce the risk of injury due to the implosion of the CRT.		N/A
4.3.2	Equipment with handles complies with special loading tests.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.8.3	Equipment intended to receive telecommunication ringing signals 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 overloaded.	See IEC 60950-1 test report.	P
	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	See IEC 60950-1 test report.	P
6.4	Equipment intended for connection to telecommunication network outside plant cable is protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.		N/A
Annex EE	Articulated accessibility probe (Fig EE.3) is used for assessing accessibility to document/media shredders instead of the Figure 2A test finger.		N/A
Annex M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear comply with special acoustic pressure requirements.		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1
AUSTRALIA and NEW ZEALAND NATIONAL DIFFERENCES
Information technology equipment – Safety –
Part 1: General requirements

Differences according to.....: AS/NZS 60950.1:2011

1.2	Insert the following between 'person, service' and 'range, rated frequency': POTENTIAL IGNITION SOURCE 1.2.12		N/A
1.2.12.201	Insert a new Clause 1.2.12.201 after Clause 1.2.12.15 as follows: 1.2.12.201 POTENTIAL IGNITION SOURCE Possible fault which can start a fire if the open-circuit voltage measured across an interruption or faulty contact exceeds a value of 50 V (peak) a.c. or d.c. and the product of the peak value of this voltage and the measured r.m.s. current under normal operating conditions exceeds 15 VA. Such a faulty contact or interruption in an electrical connection includes those which may occur in CONDUCTIVE PATTERNS on PRINTED BOARDS. NOTE 201 An electronic protection circuit may be used to prevent such a fault from becoming a POTENTIAL IGNITION SOURCE. NOTE 202 This definition is from AS/NZS 60065:2003.		N/A
1.5.1	1. Add the following to the end of the first paragraph: 'or the relevant Australian/New Zealand Standard.' 2. In NOTE 1, add the following after the word 'standard': 'or an Australian/New Zealand Standard'	Added.	P
1.5.2	Add the following to the end of the first and third dash items: 'or the relevant Australian/New Zealand Standard'	Added.	P

National Differences																				
Clause	Requirement + Test	Result - Remark	Verdict																	
3.2.5.1	<div>Modify Table 3B as follows:</div> <div>1. Delete the first four rows and replace with the following:</div> <table><tr><th rowspan="2">RATED CURRENT of equipment A</th><th colspan="2">Minimum conductor sizes</th></tr><tr><th>Nominal cross-sectional area mm²</th><th>AWG or kcmil [cross-sectional area in mm²] see Note 2</th></tr><tr><td>Over 0.2 up to and including 3</td><td>0,5 ^a</td><td>18 [0,8]</td></tr><tr><td>Over 3 up to and including 7.5</td><td>0,75</td><td>16 [1,3]</td></tr><tr><td>Over 7.5 up to and including 10</td><td>(0,75) ^b 1,00</td><td>16 [1,3]</td></tr><tr><td>Over 10 up to and including 16</td><td>(1,0) ^c 1,5</td><td>14 [2]</td></tr></table> <div>2. Delete NOTE 1.</div> <div>3. Delete Footnote ^a and replace with the following:</div> <div>^a This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0,5 mm² three-core supply flexible cords are not permitted; see AS/NZS 3191).</div>	RATED CURRENT of equipment A	Minimum conductor sizes		Nominal cross-sectional area mm²	AWG or kcmil [cross-sectional area in mm²] see Note 2	Over 0.2 up to and including 3	0,5 ^a	18 [0,8]	Over 3 up to and including 7.5	0,75	16 [1,3]	Over 7.5 up to and including 10	(0,75) ^b 1,00	16 [1,3]	Over 10 up to and including 16	(1,0) ^c 1,5	14 [2]	Modified.	N/A
RATED CURRENT of equipment A	Minimum conductor sizes																			
	Nominal cross-sectional area mm²	AWG or kcmil [cross-sectional area in mm²] see Note 2																		
Over 0.2 up to and including 3	0,5 ^a	18 [0,8]																		
Over 3 up to and including 7.5	0,75	16 [1,3]																		
Over 7.5 up to and including 10	(0,75) ^b 1,00	16 [1,3]																		
Over 10 up to and including 16	(1,0) ^c 1,5	14 [2]																		
4.1.201	<div>Insert a new Clause 4.1.201 after Clause 4.1 as follows:</div> <div>4.1.201 Display devices used for television purposes</div> <div>Display devices which may be used for television purposes, with a mass of 7 kg or more, shall comply with the requirements for stability and mechanical hazards, including the additional stability requirements for television receivers, specified in AS/NZS 60065.</div>		N/A																	
4.3.6	<div>Delete the third paragraph and replace with the following:</div> <div><i>Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flatpin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.</i></div>	Deleted.	N/A																	
4.3.16.5	<div>Add the following to the end of the first paragraph:</div> <div>'or AS/NZS 2211.1'</div>	Added.	N/A																	

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
4.7	Add the following new paragraph to the end of the clause: 'For alternate tests refer to Clause 4.7.201.'	Added.	N/A
4.7.201	Insert a new Clause 4.7.201 after Clause 4.7.3.6 as follows: 4.7.201 Resistance to fire – Alternative tests		N/A
4.7.201.1	<p>4.7.201.1 General</p> <p>Parts of non-metallic material shall be resistant to ignition and spread of fire.</p> <p>This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the apparatus, or the following:</p> <p>(a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1mm in width regardless of length.</p> <p>(b) The following parts which would contribute negligible fuel to a fire:</p> <ul style="list-style-type: none"> - small mechanical parts, the mass of which does not exceed 4g, such as mounting parts, gears, cams, belts and bearings; - small electrical components, such as capacitors with a volume not exceeding 1,750 mm³, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10. <p>NOTE In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to another.</p> <p>Compliance shall be checked by the tests of 4.7.201.2, 4.7.201.3, 4.7.201.4 and 4.7.201.5.</p> <p>For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5.</p> <p>The tests shall be carried out on parts of non-metallic material which have been removed from the apparatus. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use.</p> <p>These tests are not carried out on internal wiring.</p>		N/A

National Differences									
Clause	Requirement + Test	Result - Remark	Verdict						
4.7.201.2	<p>4.7.201.2 Testing of non-metallic materials</p> <p>Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550 °C.</p> <p>Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the sample tested was not thicker than the relevant part.</p>		N/A						
4.7.201.3	<p>4.7.201.3 Testing of insulating materials</p> <p>Parts of insulating material supporting POTENTIAL IGNITION SOURCES shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750 °C.</p> <p>The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection.</p> <p>NOTE Contacts in components such as switch contacts are considered to be connections.</p> <p>For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test shall not be tested.</p> <p>The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:</p> <table><tr><td>Clause of AS/NZS 60695.11.5</td><td>Change</td></tr><tr><td colspan="2">9 Test procedure</td></tr><tr><td>9.2 Application of needleflame</td><td><p>Replace the first paragraph with:</p><p>The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1. If possible the flame shall be applied at least 10 mm from a corner</p><p>Replace the second paragraph with:</p><p>The duration of application of the test</p></td></tr></table>	Clause of AS/NZS 60695.11.5	Change	9 Test procedure		9.2 Application of needleflame	<p>Replace the first paragraph with:</p> <p>The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1. If possible the flame shall be applied at least 10 mm from a corner</p> <p>Replace the second paragraph with:</p> <p>The duration of application of the test</p>		N/A
Clause of AS/NZS 60695.11.5	Change								
9 Test procedure									
9.2 Application of needleflame	<p>Replace the first paragraph with:</p> <p>The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1. If possible the flame shall be applied at least 10 mm from a corner</p> <p>Replace the second paragraph with:</p> <p>The duration of application of the test</p>								

National Differences			
Clause	Requirement + Test		Verdict
		flame shall be 30 s ± 1 s.	
	9.3 Number of test specimens	Replace with: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.	
	11 Evaluation of test results	Replace with: The duration of burning (t_b) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.	
	The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the sample tested was not thicker than the relevant part.		
4.7.201.4	4.7.201.4 Testing in the event of non-extinguishing material If parts, other than enclosures, do not withstand the glow wire tests of 4.7.201.3, by failure to extinguish within 30 s after the removal of the glowwire tip, the needle-flame test detailed in 4.7.201.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of 4.7.201.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested. NOTE 1 If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing. NOTE 2 If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing. NOTE 3 Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.		N/A
4.7.201.5	4.7.201.5 Testing of printed boards The base material of printed boards shall be subjected to the needle-flame test of Clause		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>4.7.201.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a POTENTIAL IGNITION SOURCE.</p> <p>The test is not carried out if the —</p> <ul style="list-style-type: none"> - Printed board does not carry any POTENTIAL IGNITION SOURCE; - Base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or - Base material of printed boards, on which the available apparatus power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. <p>Compliance shall be determined using the smallest thickness of the material.</p> <p>NOTE Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximise the apparent power for more than 2 min when the circuit supplied is disconnected.</p>		
6.2.2	<p>For Australia only, delete the first paragraph and Note, and replace with the following:</p> <p>In Australia only, compliance with 6.2.2 shall be checked by the tests of both 6.2.2.1 and 6.2.2.2.</p>		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.1	<p>For Australia only, delete the first paragraph including the Notes, and replace with the following:</p> <p><i>In Australia only, the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator reference 1 of Table N.1. The interval between successive impulses is 60 s and the initial voltage, U_c, is:</i></p> <p><i>(i) for 6.2.1 a): 7.0 kV for hand-held telephones and for headsets and 2.5 kV for other equipment; and</i></p> <p><i>(ii) for 6.2.1 b) and 6.2.1 c): 1.5 kV.</i></p> <p>NOTE 201 The 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines.</p> <p>NOTE 202 The value of 2.5 kV for 6.2.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.</p>		N/A
6.2.2.2	<p>For Australia only, delete the second paragraph including the Note, and replace with the following:</p> <p><i>In Australia only, the a.c. test voltage is:</i></p> <p><i>(i) for 6.2.1 a): 3 kV; and</i></p> <p><i>(ii) for 6.2.1 b) and 6.2.1 c): 1.5 kV.</i></p> <p>NOTE 201 Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used.</p> <p>NOTE 202 The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.</p>		N/A
7.3	<p>Add the following before the first paragraph:</p> <p>Equipment providing functions that fall only within the scope of AS/NZS 60065 and that incorporate a PSTN interface, are not required to comply with this Clause where the only ports provided on the equipment, in addition to a coaxial cable connection and a PSTN interface, are audio or video ports and analogue or data ports not intended to be used for telecommunications purposes.</p>		N/A
Annex P	<p>Normative references</p> <p>(List of relevant Australia/New Zealand Standards that have been inserted in place of some of the International Standards)</p>		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict



ATTACHMENT TO TEST REPORT IEC 60950-1
CHINA NATIONAL DIFFERENCES

Information technology equipment – Safety –

Part 1: General requirements



Differences according to.....: GB4943.1-2011

1.1.2	GB 4943.1-2011 applies to equipment for use at altitudes not exceeding 5000m above sea level, primarily in regions with moderate or tropical climates. Amend the third dashed paragraph of 1.1.2 as: — — equipment intended to be used in vehicles, on board ships or aircraft, at altitudes greater than 5000m;		N/A
1.4.5	After the third paragraph, add a paragraph: If the equipment is intended for direct connection to an AC mains supply, the tolerances on RATED VOLTAGE shall be taken as +10%,-10% unless a wider tolerance is declared by the manufacturer. The first dash paragraph "-the RATED VOLTAGE is 230V single -phase or 400V three-phase, in which case the tolerance shall be taken as +10% and -10%" of IEC 60950-1:2005 is deleted in GB 4943.1-2011	Class III equipment.	N/A
1.4.12.1	Tma in clause 1.4.12.1 amended as: Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 35 °C, whichever is greater. Add note 1: For equipment not to be operated at tropical climatic conditions, Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 25 °C, whichever is greater. Add note 2: For equipment is to be operated at 2000m-5000m above sea leave, its temperature test conditions and temperature limits are under consideration.		P
1.5. 2	Add a note behind the first break off section in Clause 1.5.2: A component used shall comply with related requirements corresponding altitude of 5000m.		P
1.7	Add one paragraph before the last paragraph: The required marking and instruction should be given in normative Chinese unless otherwise specified.		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.1	<p>Based on the AC mains supply of China, the RATED VOLTAGE should be 220V (single phase) or 380V (three-phases) for single rated voltage, for RATED VOLTAGE RANGE, it should cover 220V or 380V (three-phases), for multiple RATED VOLTAGES, one of them should be 220V or 380V (three-phases) and set on 220V or 380V (three-phases) when manufactured.</p> <p>And the RATED FREQUENCY or RATED FREQUENCY RANGE should be 50Hz or include 50Hz.</p>		N/A
1.7.2.1	<p>Add requirements of warning for equipment intended to be used at altitudes not exceeding 2000m or at non-tropical climate regions:</p> <p>For equipment intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place.</p> <p>"Only used at altitude not exceeding 2000m."</p>  <p>For equipment intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place.</p> <p>"Only used in not-tropical climate regions."</p>  <p>If only the symbol used, the explanation of the symbol shall be contained in the instruction manual.</p> <p>The above statements shall be given in a language acceptable to the regions where the apparatus is intended to be used.</p>		N/A
2.7.1	<p>Amended the first paragraph as:</p> <p>Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall be provided as an integral part of the equipment except special provisions. And the protective device shall meet the requirement of Clause 5.3.</p> <p>Delete note of Clause 2.7.1.</p>	Class III equipment.	N/A

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

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.4	Add a new section above Table 2K and in Clause 2.10.3.4: Minimum CLEARANCES determined by above rules apply for equipment to be operated up to 2000m above sea level. For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1 (IEC 60664-1). For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of GB/T16935.1.		N/A
3.2.1.1	Add a paragraph before the last paragraph: Plugs connected to AC mains supply shall comply with GB 1002 or GB 1003 or GB/T 11918 as applicable.		N/A
4.2.8	Clause 4.2.8 cathode ray tubes quoted Clause 18 of GB8898-2011. Delete note of Clause 4.2.8.		N/A
Annex E	Last section of Annex E amended as: For comparison of winding temperatures determined by the resistance method of this annex with the temperature limits of Table 4B, 35 °C shall be added to the calculated temperature rise. And add note: for equipment not to be operated at tropical climatic conditions, 25 °C shall be added to the calculated temperature rise to compare with the temperature of Table 4B.		N/A
Annex G.6	Change the second section of Clause G.6 to be: For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.		N/A
Annex BB (informative)	Amended as : The differences between Chinese national standards GB 4943.1-2011 and GB 4943-2001.		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DD (normative)	<p>Added annex DD: Instructions for the new safety warning labels.</p> <p>DD.1 Altitude warning label</p>  <p>Meaning of the label: Evaluation for apparatus only based on altitude not exceeding 2000m, therefore it's the only operating condition applied for the equipment. There may be some potential safety hazard if the equipment is used at altitude above 2000m.</p> <p>DD.2 Climate warning label</p>  <p>Meaning of the label: Evaluation for apparatus only based on temperate climate condition, therefore it's the only operating condition applied for the equipment. There may be some potential safety hazard if the equipment is used in tropical climate region.</p>		N/A
Annex EE (informative)	<p>Added annex EE:</p> <p>Illustration relative to safety explanation in normative Chinese, Tibetan, Mongolian, Zhuang Language and Uighu.</p>		N/A
Other amend-ments	<p>In accordance with the relevant CTL decisions and the amendments of IEC 60950-1, the specific requirements or mistakes in IEC standard are corrected or editorially modified in this part, Including clause 1.7, 2.1.1.7, 2.9.2, Table 2H, Figure 2H, F.8, F.9, M.3 and Annex U.</p>		N/A
Quoting standards and reference documents	<p>The principles of quoting and referring to other standards in Annex P and reference documents of IEC 60950-1 are as follows:</p> <p>If the date of the reference document is given, only that edition applies, excluding any subsequent corrigenda and amendments. However, parties to agreements based on this part are encouraged to investigate the possibility of applying the most recent editions of the reference documents. For undated references, the latest edition of the referenced document applies, including any corrigenda and amendments.</p> <p>For the usage of international standards in Chinese national standards and industry</p>		N/A

National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>standards is various, in the aim of achieving easy operation and based on the requirements of GB/T 1.1 and GB/T 20000.2, when quoting an entire international standard in the normative quoting files and reference documents of Annex P of this part, the principles of quotation are as follows:</p> <ul style="list-style-type: none"> - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted; - If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted; - If the date of the national standard or industry standard is not given, the latest edition of the standard applies; - The national standard or industry standard number, corresponding international standard number and the consistency level code should be identified in parentheses behind the listed national standard or industry standard. <p>When quoting several chapters or clauses of the international standard, the principles of quotation are as follows:</p> <ul style="list-style-type: none"> - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted; - If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted. <p>Meanwhile, in order to retain the relevant information on international standards, informative annex CC is increased, which gives the table about the comparison of the normative quoting files and reference documents in IEC 60950-1: 2005 and GB 4943.1-2011.</p>		

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict

J 60950-1 (H22) : 2009 TEST REPORT

(Deviations from IEC 60950-1:2001, first edition)

Special National conditions, National deviation and other information according to MITI Ordinance No. 85.

Japanese unique deviations in J60950-1(H22):2009(=JIS C 6950-1:2009)

1.1.A	Add this sub-clause See Annex P for normative references	Added.	P
1.2	Add the following terms. Equipment, Class 0I 1.2.4.3A	Added.	P
1.2.4.1	Add the following NOTE 2: NOTE 2 – Even in the case of CLASS 0I equipment, two-pins plug with a protective earthing lead wire (an adapter for converting a Class 0I equipment plug into a two-pin plug without earthing wire) and cord sets having a two-pin type plug with a lead wire for earthing are also regarded as Class 0I equipment if they are included in packaging as accessories or if users are recommended to use them.	Added.	P
1.2.4.3A	Add this sub-clause: CLASS 0I EQUIPMENT: Equipment where protection against electric shock is achieved by: using BASIC INSULATION, and providing a means of connecting to the protective earthing conductor in the building wiring those conductive parts that are otherwise capable of assuming HAZARDOUS VOLTAGES if the BASIC INSULATION fails, and using a supply cord without earthing conductor and a plug without earthing wire although the equipment has externally an earth terminal or a lead wire for earthing. Equipment provided with a cord set having a two-pin type plug with a lead wire for earthing is also regarded as Class 0I. NOTE – Class 0I equipment may have a part constructed with Double Insulation or Reinforced Insulation as well as an operating part as SELV circuit.	Added.	P

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
1.3.2	<p>Add the following NOTE 1 and 2:</p> <p>Note1: transportable equipments or similar equipments that are frequently transported for use should not be considered Class I or Class 0I equipments. However, this shall not apply to equipments that are intended for installation by service personnel or installation personnel.</p> <p>Note 2: in consideration of the state of electrical power distribution in Japan, it is best to avoid the use of Class I or Class 0I devices if it is evident that it will be difficult to connect earthing during installation of the equipment. However, this shall not apply to devices that are intended for installation by service personnel or installation personnel.</p>	Added.	P
1.5.1	<p>When safety issues apply, in the absence of matters required by these specifications or JIS stipulated required matters concerning safety of related components, or in the absence of JIS concerning the component, the component must comply with one of the related IEC safety requirements. However, if a component compliant with ministerial ordinance (1962 Trade and Commerce Ministerial Ordinance No. 85) providing technical standards for electrical products is being used in accordance with the rating indicated for that component, apply articles 1.5.4, 2.8.7 and 3.2.5; electrical power cord sets that fit with inlets for equipments regulated by the IEC 60320-1 Standards Sheet must match the dimensions indicated on the applicable IEC 60320-1 Connector Standards Sheet.</p> <p>Note 1: regarding the JIS or IEC standards related to a component as related shall be limited to cases where the component in question is clearly within the scope of application of those standards.</p>		P

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
1.5.2	<p>In the case of components that are certified as being in compliance with JIS harmonized with the related IEC, it must be confirmed that the component is being used correctly in accordance with the stipulated standards. In the absence of JIS harmonized with the related IEC,</p> <p>Note 1: When using an IEC 60320-1 C.14 device coupler with rated voltage less than 125 V and rated current in excess of 10A, refer to 1.7.5A.</p> <p>If JIS harmonized with the IEC related to the component does not exist concurrently with the IEC standards, or if the component is using circuitry that does not comply with its rating, the component must be tested in accordance with the conditions and within equipment. The number of samples required for testing shall normally be the same as the number required under similar standards.</p>		N/A
1.5.6	Replace “IEC 60384-14:1993” to “JIS C 5101-14:1998 or IEC 60384-14:1993” of this Sub-Clause	Replaced.	P
1.5.7.2	Replace “IEC 60384-14:1993” to “JIS C 5101-14:1998 or IEC 60384-14:1993” of this Sub-Clause	Replaced.	P
1.5.8	Replace “IEC 60384-14:1993” to “JIS C 5101-14:1998 or IEC 60384-14:1993” of this Sub-Clause		N/A
1.7.1	Add local importer in this sub-clause manufacturer's name or local importer or trade-mark or identification mark;		N/A
1.7.5	Replace “IEC 60083” to “IEC/TR 60083:1997 or JIS C 8303:2007” of this Sub-Clause		N/A
1.7.5.A	<p>Add this sub-clause</p> <p>1.7.5A Device Coupler</p> <p>When using an IEC 60320-1 C.14 device coupler (rated current 10A) with rated voltage less than 125 V and rated current in excess of 10A, be sure to write “Only use power supply cord sets that are provided with this device” or a similar statement in the user's manual.</p>		N/A

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
1.7.17A	<p>Add this sub-clause:</p> <p>Marking for CLASS 0I EQUIPMENT</p> <p>For CLASS 0I EQUIPMENT, the following instruction shall be indicated on the visible place of the mains plug or the main body:</p> <p>“Provide an earthing connection”</p> <p><i>Example in Japanese:</i></p> <p>必ず接地接続を行って下さい</p> <p>Moreover, for CLASS 0I EQUIPMENT, the following instruction shall be indicated on the visible place of the main body or written in the operating instructions:</p> <p>“Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains.”</p> <p><i>Example in Japanese:</i></p> <p>接地接続は必ず、電源プラグを電源につなぐ前に行ってください。又、接地接続を外す場合は、必ず電源プラグを電源から切り離してから行って下さい。</p>	Added.	P
2.1.1.1	In the Item b) of this Sub-Clause, replace “IEC 60083” to “ IEC 60083 or JIS C 8303:2007”.		N/A
2.6.3.2	<p>Add the following in front of 1st paragraph of this Sub-Clause.</p> <p>This also applies to the conductor of lead wire for protective earthing of CLASS 0I EQUIPMENT.</p>		N/A
2.6.3.4	<p>Add the following in this Sub-Clause.</p> <p>(See 2.6.3.3)</p>	Added.	P
2.6.4.2	<p>Add the following after 1st paragraph of this Sub-Clause.</p> <p>However, this shall not apply when the Class 0I equipment is equipped with a separate main protective earthing terminal.</p>	Added.	P
2.6.5.4	<p>Replace the first sentence of this Sub-Clause by:</p> <p>Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following:</p>	Added.	P

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
2.6.5.8A	<p>Add this sub-clause:</p> <p>Earthing of CLASS 0I EQUIPMENT</p> <p>Plugs with a lead wire for earthing shall not be used for equipment having a rated voltage exceeding 150V.</p> <p>For plugs with a lead wire for earthing, the lead wire shall not be earthed by a clip.</p> <p>CLASS 0I EQUIPMENT shall be provided with an earthing terminal or lead wire for earthing in the external where easily visible.</p>	Added.	P
2.10.1	Replace “IEC 60664-1” to “JIS C 0664:2003” in NOTE of this Sub-Clause	Replaced.	P
2.10.3.1	Replace “IEC 60664-1” to “JIS C 0664:2003” in NOTE 1 and NOTE 2	Replaced.	P
2.10.3.2	Replace “IEC 60664-1” to “JIS C 0664:2003” in the first sentence of this Sub-Clause	Replaced.	P
3.2.3	<p>Add the following after Table 3A of this Sub-Clause.</p> <p>Table 3A shall apply when a JIS C 3662 or JIS C 3663 compliant cable is used. Other cables that are used must be designed to allow suitable conduits to be run in,</p>		N/A
3.2.5.1	<p>Add the following of this Sub-Clause.</p> <p>Or must be sheathed in accordance with Section 1, Annex 1 of the ministerial ordinance (1962 Trade and Commerce Ministerial Ordinance No. 85) providing technical standards for electrical products.</p> <p>- Or must be sheathed in accordance with Section 1, Annex 1 of the ministerial ordinance (1962 Trade and Commerce Ministerial Ordinance No. 85) providing technical standards for electrical products.</p> <p>- Electric cables that comply with JIS C 3662 or JIS C 3663 have a conductor with a cross-sectional area value greater than the values provided for in Table 3B. Other electrical cables comply with relevant wiring regulations.</p> <p>Delete 1) in Table 3B.</p>	Added.	N/A
3.3.4	<p>Add the following in Table 3D</p> <p>Note: when using JIS C 3662 or JIS C 3663-compliant electrical wiring, the terminal must enable connection of electric wiring commensurate with the regulated sizes</p>	Added.	N/A

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
3.3.7	Add the following after 1 st paragraph of this Sub-Clause. ◦ However, this shall not apply to the external grounding terminals of Class 0I equipment.	Added.	P
4.3.4	Add the following of this Sub-Clause. ◦ Class 0I equipment where the values for creepage distance and clearance distance of the basic insulation drop further to a level lower than that stipulated in 2.10 must be properly fixed to withstand the mechanical stress generated in the course of normal use.	Added.	P
4.3.5	Replace “IEC 60083” to “JIS C 8303:2007” in the first sentence of this Sub-Clause		N/A
4.3.13.3	Add the following in Table 4A Note: JIS K 7161:1994, JIS K 7162:1994, IS K 7127:1999 are available as JIS compatible with part of ISO527.		N/A
4.3.13.5	Replace “IEC 60825-1” to “JIS C 6802:2005 or JIS C of this Sub-Clause		N/A
	Replace “IEC 60825-2:2000” to “JIS C 6803:2006 or IEC 60825-2:2000” of this Sub-Clause		N/A
4.5.1	Add the following to Suffix 3) of Table 4B (part one and part two). Note: When data concerning materials is unavailable, Annex 4, 1 (1) 3 of “Regarding Interpretation of Ministerial Ordinance Providing Technical Standards for Electrical Products” (June 19, 2008 Bureau of Commerce No. 3) may be applied to Item 1.	Added.	P

Attachment

The insulating materials shall not be exposed to the temperature exceeding the values when the appliance is operated at rated voltage and normal operating condition.

These values may be increased by;

8 degrees for Duty 2 appliance, and

16 degrees for Duty 3 appliance.

In order to classify the appliances, following assumptions are to be used.

Duty 1 appliances: considered to be connected to supply mains throughout the years such as refrigerators

Duty 2 appliances: considered to be connected to be in between Duty 1 and Duty 3 such as room heaters

Duty 3 appliances: considered to be connected to supply mains when it is operated for rather short time such as portable coffee mill.

Permissible temperature limits of insulating materials

Natural materials	
Material	Permissible temperature limit (°C)
Bituminous compound for filter	75, (105) 1)
Paper, cotton, silk, other natural fiber and wood	90, (105) 2)
Oil denatured natural resin	105
Silica powder	500
Mica (Hard)	500, (600) 3)
(Soft)	650, (850) 3)

Notes: 1) Value applies to thermal insulating materials.

2) Value applies to materials impregnated with varnish.

Japanese Deviations for J60950-1 (H22):2009 (MITI Ordinance Clause 2)

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict

3) Value in parenthesis is applied when mechanical external force is absent.

Mica splittings and untreated mica papers

Lining	Adhesive							Permissible Temperature Limit (°C)
	a	b	c	d	e	f	g	
None	X	X	X	X	X	X X	X	130 155 180; 450, (700) 1); 600, (800) 2) 600, (700) 1); 700, (850) 2)
Paper	X	X	X	X				130
Polyethylene terephthalate film				X				130
Glass fabric				X	X	X		130 155 180
Polyester nonwoven fabric, Polyester woven, and Polyethylene naphthalate film				X	X			130 155
Polyamide-imide film, Aramid film, and Polyimide film						X	X	155 180

a: with asphalt base

b: with natural resin or denatured natural resin base

c: with ceramic base

d: with oil-denatured synthetic resin, alkyd orthophthalate resin or cross-linked polyester base.

e: with silicon-denatured synthetic resin, isophthalate alkyd resin, telephthalate alkyd resin or epoxy resin.

f: with silicon resin.

g: inorganic

Notes: 1) value applies to hard mica-made heating substrate.

2) value applies to soft mica-made heating substrate.

Remarks: value in parenthesis is applied when mechanical external force is absent.

Organic materials (Thermosetting Resins)

Material	Permissible temperature limit (°C)
laminated melamine resin mixed with glass fiber	75, (100) 1)
moulded melamine resin mixed with: cellulose	120
inorganics	140
laminated phenol resin with: cotton fiber base	115, (85) 2)
paper base	120, (70) 3)
polyamide cloth base	75
inorganics	140
moulded phenol resin with: inorganics	150, (160) 1)
others	140, (150) 1)
moulded melamine phenol resin with the gravity of less than 1.55	130
moulded urea resin mixed with cellulose	90
unsaturated polyester-casting	120
laminated unsaturated polyester mixed with inorganics	140
moulded unsaturated polyester mixed with: other than organics	120
inorganic powder	140
glass fiber	155
epoxy resin-casting	120
laminated epoxy resin mixed with: inorganic	130, (140) 1)
other than inorganics	110, (90) 3)
moulded epoxy resin mixed with inorganics	130
laminated diallyl phthalate resin mixed with inorganics	140
moulded diallyl phthalate resin mixed with: other than inorganics	130

Japanese Deviations for J60950-1 (H22):2009 (MITI Ordinance Clause 2)

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict

Notes:

- 1) Values apply to thermal insulating materials.
- 2) Values apply to materials with a thickness less than 0.8 mm.
- 3) Values apply to materials with a thickness less than 0.8 mm when treated to retard flame.
- 4) Values apply to materials used for thermal insulation and to seal outlets of sheathed heating wires.

Material	Permissible temperature limit (°C)
methacrylic resin, cellulose resin, cellulose acetate butylate resin, ulcanise, polyethylene	50
foamed polyethylene compound for insulated conductors, polyvinyl chloride	60
polyethylene compound for insulated conductors, heat-resistant polyvinyl chloride, cross-linked polyvinyl chloride compound for insulated conductors	75
cross-linked polyethylene, chlorinated polyethylene compound for insulated conductors	90
acrylonitrile acrylic rubber styrene resin, acrylonitrile chlorinate polyethylene styrene resin	55
acrylonitrile styrene resin, acrylonitrile butadiene resin, acrylonitrile butadiene chlorinated polyethylene resin : general	55
: reinforced with glass fiber	80
polypropylene : general	105, (85) 3)
: reinforced with glass fiber	110
denatured polyphenyle oxide : general	75
: reinforced with glass fiber	100
Polystyrene	50, (70) 1)
polyacetal : general	100
: reinforced with glass fiber	120
polyamide : general	90
: reinforced with glass fiber	120
polycarbonate : general	110
: reinforced with glass fiber	120
polyethylene terephthalate : general	120
: reinforced with glass fiber	130
polybutylene terephthalate : general	120
: reinforced with glass fiber	135
heat resistant polyethylene terephthalate film	135
fluorinated polyvinylidene compound for insulated conductors, polychlorotrifluoroethylene (ethylene-trifluoride resin), ethylene-tetraflourethylene copomylene for insulated conductors	150
tetrafluoroethylene hexafluoropropylene resin	200
polytetrafluoroethylene(ethylene-tetrafluoride), perfluoroalkoxy compound for insulated conductors	250
aramide(aromatic polyamide paper)	220
Polysulfone	140, (150) 2)
polyethylene naphthalate	155
polyallylate : general	120
: reinforced with glass fiber	130

Inorganic materials

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict

Material	Permission temperature limit (°C)
glass fiber (only alkaline free)	300
lead glass	380
borosilicate glass	490
quartz glass	800
ceramic	800, (1000) 1)

Note: 1) Value apply to materials used as electric heating elements

Rubber compounds

Material	Permission temperature limit (°C)
natural rubber, polyurethane rubber, ebonite	60
nitrile rubber, styrene butadiene rubber, chloroprene rubber	75
butyl rubber	80
ethylene propylene (diene) rubber, chlorosulfonated polyethylene rubber	90
silicone rubber	180, (200) 1)

Note : 1) Value apply to thermal insulating material and sealing compounds for sheathed heating elements.

Sleeves, Cloth, Tapes and like


Material	Impergnat or coating	Permission temperature limit (°C)
rayon, cellulose acetate, vinylon	adhesive, oil varnish	105
paper, cotton fabric, silk fabric, polyamide, polyester fabric, polyester nonwoven fabric	oil varnish	105
polyester fabric, polyester nonwoven fabric	alkyd resin varnish	120
glass fabric	(ditto)	130
paper	Iso or terephthalate alkyd resin varnish, epoxy resin varnish, alkyd resin varnish	105
polyester fabric, polyester nonwoven fabric	(ditto)	120
glass fabric, aramide paper	Iso or terephthalate, alkyd resin varnish, epoxy resin varnish, silicone resin varnish, silicone rubber	155 180
vulcanised fiber		105
heat resistant fiber		120

5.1.3	Add the following NOTE Note: Note that domestic three-phase power distribution systems have many delta connections, in which case tests should be performed using IEC 60990:1990 Figure 13 test circuitry.	Added. Single phase power distribution system used.	N/A
5.1.6 Table 5A	Replace Table 5A of this Sub-Clause by:	Replaced. The equipment is "Protection Class 0I".	P
Table 5A – Maximum current			
	Type of equipment	Terminal A of measuring instrument connected to:	Maximum TOUCH CURRENT mA r.m.s. ¹⁾
			Maximum PROTECTIVE CONDUCTOR CURRENT

J 60950-1 (H22)						
Clause	Requirement – Test		Result – Remark		Verdict	
	ALL equipment	Accessible parts and circuits not connected to protective earth	0,25	-		
	HAND-HELD	Equipment main protective earthing terminal (if any) CLASS I EQUIPMENT	0,75	-		
	MOVABLE (other than HAND-HELD, but including TRANSPORTABLE EQUIPMENT		3,5	-		
	STATIONARY, PLUGGABLE TYPE A		3,5	-		
	ALL other STATIONARY EQUIPMENT not subject to the conditions of 5.1.7		3,5	-		
	- subject to the conditions of 5.1.7		-	5 % of input current		
	HAND-HELD	Equipment main protective earthing terminal (if any) CLASS 0I EQUIPMENT	0,5	-		
	Others		1,0	-		
	1) If peak values of TOUCH-CURRENT are measured, the maximum values obtained by multiplying the r.m.s. values by 1,414.					
6	Add the following after NOTE1 of this Sub-Clause. Refer to the accompanying document, JB, for details concerning appropriate additional measures,				N/A	
	Replace “IEC 60664-1” to “JIS C 0664 in note 4				N/A	
7	Replace “IEC 60664-1” to “JIS C 0664:2003 of this NOTE 3				N/A	
7.2	Add the following However, when all of the following criteria are satisfied, the separation requirement and test in 6.2.1 a), b) and c) shall not be applied to the cable distribution system. - the applicable circuit is a TNV-1 circuit. - the applicable circuit’s common side or grounding side is connected to the coaxial cable shielding, and to all accessible parts and circuits (SELV circuits, accessible metal parts, and limited current circuits also applicable if they exist) - the external conductor of the coaxial cable is intended to be connected to the grounding wire used for building wiring.				N/A	
Annex G 2.1	Replace “IEC 60664-1” to “JIS C 0664:2003”				N/A	
Annex G 6	Replace “IEC 60664-1” to “JIS C 0664:2003”				N/A	

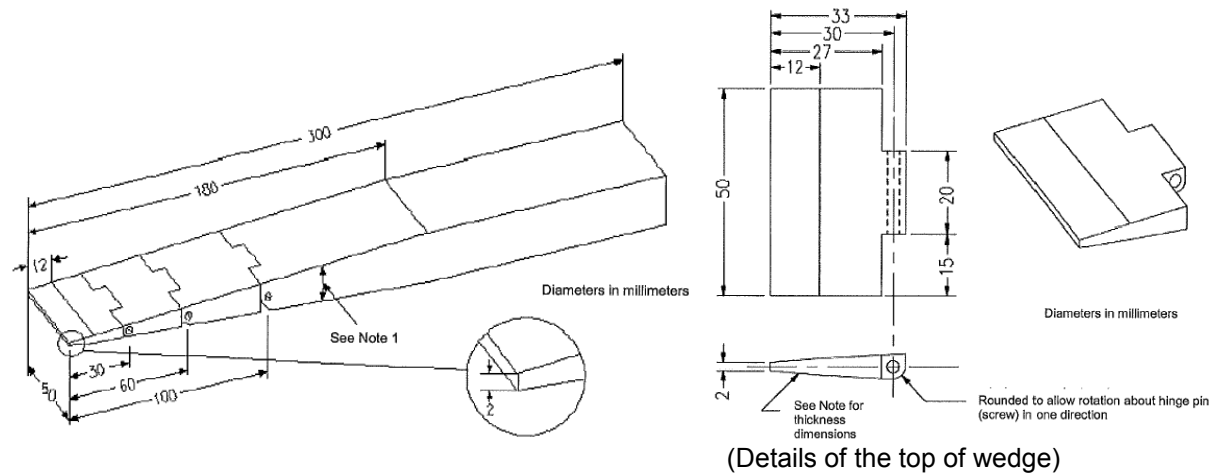
J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
Annex N	Add Note Note: ITU-T Recommendation K.17:1996 has been abolished and replaced with ITU-T Recommendation K.44:2003, K.45:2003.		N/A
	Note: The ITU-T Recommendation K.21:1996 test circuit was replaced with K.44:2003 in July 2003.		N/A
Annex P	Add the following terms. <u>JIS C 5101-14:1998 Fixed capacitors for use in electronic equipment -- Part 14: Type-specific standards: Fixed capacitors for electromagnetic interference suppression in electrical power supply</u> Fixed capacitors for use in electronic equipment – Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains		N/A
	Replace “IEC 60065:1998” to “IEC 60065:2001”		N/A
	Add the following terms. JIS C 6802:2005		N/A
	Add the following terms. JIS C 6803:2006 2004.		N/A
	Add the following terms. JIS C 8303:2007		N/A
	Add the following terms. JIS S 0101:2000		N/A
	Add the following terms. ITU-T Recommendation K.44:2003 , Resistibility tests for telecommunication equipment exposed to overvoltages and overcurrents – Basic Recommendation.		N/A
	Add the following terms. ITU-T Recommendation K.45:2003 , Resistibility of telecommunication equipment installed in the access and trunk networks to overvoltages and overcurrents.		N/A
Annex Q	Add the following terms. ITU-T Recommendation K.66:2004 , Protection of customer premises from overvoltages.		N/A
Annex T	Replace “IEC 60529:1989” to “JIS C 0920:2003		N/A

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
Annex W.1	Add following. Equipment, Class 0I	Added.	P

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
Annex JA	Add Annex JA (Document shredding machines) Document shredding machines shall also comply with the requirements of this annex except those of STATIONARY EQUIPMENT used by connecting directly to an AC MAINS SUPPLY of three-phase 200V or more.		N/A
JA.1	<p>Markings and instructions In the easily visible part near the document-slot, by a method capable to make out clearly and not easily disappeared, and by easily understandable wording, shall indicate the symbol of;</p> <p></p> <p>and, also the following precautions for use; that use by an infant/child may cause a hazard of injury etc.;</p> <p>that a hand can be drawn into the mechanical section for shredding when touching the document-slot;</p> <p>that clothes can be drawn into the mechanical section for shredding when touching the document-slot;</p> <p>that hairs can be drawn into the mechanical section for shredding when touching the document-slot;</p> <p>in case of equipment incorporating a commutator motor, that equipment may catch fire or explode by spraying of flammable gas.</p>		N/A
JA.2	<p><u>Inadvertent reactivation</u> Any safety interlock which can be operated by means of the test finger, Figure JA.1, is considered to cause reactivation of the hazard. Compliance is checked by inspection and, where necessary, by a test with the test finger, Figure JA.1.</p>		N/A

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
JA.3	<p><u>Isolating switch</u></p> <p>Document shredding machines shall incorporate an isolating switch complying with sub-clause 3.4.2 as the device disconnecting the power of hazardous moving parts. For this switch, two-position (single-use) switch or multi-position (multifunction) switch (e.g., slide switch) may be used.</p> <p>If two-position switch, the positions for “ON” and “OFF” shall be indicated in accordance with sub-clause 1.7.8. If multi-position switch, the position for “OFF” shall be indicated in accordance with sub-clause 1.7.8 and other positions shall be indicated with proper terms or symbols.</p> <p>Compliance is checked by inspection.</p>		N/A
JA.4	<p><u>Protection in operator access areas</u></p> <p>Any warning shall not be used instead of the structure for preventing access to hazardous moving parts.</p> <p>Document shredding machines shall comply with the following requirements.</p> <p>Push the test finger, Figure JA.1, into all openings in MECHANICAL ENCLOSURES without applying additional force. It shall not be possible to touch hazardous moving parts with the test finger. The document shredding machine is installed as intended, and all face of MECHANICAL ENCLOSURES are subjected to this test. Before testing with the test finger, remove the parts detachable without a tool.</p> <p>Push the wedge-probe, Figure JA.2, into the document-slot. And, against all directions of openings, if straight-cutting type, a force of 45 N shall apply to the probe, and 90 N if cross-cutting type. In this case, the weight of the probe shall not influence the test. Before testing with the test finger, remove the parts detachable without a tool. It shall not be possible to touch any hazardous moving parts, including the shredding roller or the mechanical section for shedding, with the probe.</p>		N/A

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict



Distance from the top	Thickness of probe
0	2
12	4
180	24

Note 1 - The probe shall be of changing the thickness linearly. However, the slope shall

be changed at the respective points shown in the table.

Note 2 –The allowable dimensional tolerance of the probe is +/- 0.127 mm.

Figure JA.2 Wedge-probe

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
Annex JB (reference)	<p>Add Annex JB (Current state and means of handling overvoltage and overcurrent in the installation environment)</p> <p>The objective of this reference is not to propose new technical standards for the device. As a means of reducing the possibility that voltages in excess of 1.5kV peak may be applied to the device, these specifications provide for matters that must be adhered to concerning the device on the premise that it is installed in an environment within which appropriate measures have been taken in accordance with “ITU-T Recommendation K.11:1993”. However, since environments that are not commensurate with this K.11 are often discovered domestically, this document attempts to describe the preferred environment and demonstrate the means for developing the preferred installation environment, thus contributing to its enhancement.</p>		N/A
JB.1	JB.1 Preferred installation environment		N/A
JB.2	Current state and means of handling overvoltage and overcurrent in the installation environment		N/A

J3000 (H25)			
Clause	Requirement – Test	Result – Remark	Verdict
Appendix	Appendix 12 J3000 (H25) Special National conditions, National deviation and other information according to MITI Ordinance No. 85.		—
1	General requirement When equipment provides with appliance inlet complying with JIS C 8283-1(2008), soldered parts of appliance inlet is not applied by force during insert or removal of connector. This is not applied when inlet body is fixed itself and not fixed by solder.	Inlet is cover by adequate mechanical construction, not rely on soldering.	P
2	Requirement for equipment		—
2.1	Heater Appliances When diode is used in parallel at the power sources for adjustment of power consumption, the equipment shall remain safe for operation under open condition of one diode.		N/A
	The current rating of one diode shall be more than main current. The diodes connected in parallel are same type.		N/A
	The heating test specified by clause 11 of JIS C 9335-1(2003) and a specified in applicable individual requirements under open condition of one diode of parallel shall comply with the requirements.		N/A
2.2	Electric heater with glowing heating elements	Not electric stove.	N/A
	Surface treatment by paint or adhesive on protective frame or protective mesh shall not be used.		N/A
	Caution marking like below shall be on - easily visible place of the equipment or - Instruction manual 「注意 当該機器から、使用初期段階で揮発性有機化合物及びカルボニル化合物が最も放散するおそれがあるため、その際には十分換気を行うこと。」		N/A
3	Components used in equipment	No relevant equipment or component.	N/A
3.1	Motor capacitors used in ventilating fan, electric fan, air conditioner, electric washing machine, refrigerator or electric freezer shall be comply with - capacitors with protective elements or protective mechanism complying with JIS C 4908(2007) - P2 capacitor complying with IEC 60252-1(2001) Capacitor complying with below is acceptable		N/A

J3000 (H25)			
Clause	Requirement – Test	Result – Remark	Verdict
	Enclosed by metal or ceramic		N/A
	No non-metallic materials within 50 mm from capacitor surface		N/A
	Non-metallic material within 50mm from capacitor surface comply with needle frame test of JIS C 9335-1(2003), Annex E		N/A
	Non-metallic material within 50 mm from capacitor surface comply with V-1 test of JIS C 60965-11-10(2006).		N/A
3.2	<p>Plug directly inserted to outlet used refrigerator or electric freezer.</p> <p>Shall comply with</p> <ul style="list-style-type: none"> - Face contact with outlet shall have CTI with more than 400 according to JIS C 2134(2007) or - Supporting material of blades shall comply with glow wire test by temperature of 750°C according to JIS C 60695-2-11(2004) or JIS C 60695-2-12(2004). <p>Materials having glow wire frame temperature of 775 °C are acceptable.</p>		N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
APPENDIX	Ukrainian National Differences according to CB Bulletin No. 110A, June 2006 (IEC Publication 60950:1999)		P
EXPLANATION FOR ABBREVIATIONS			
P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
1.4.5	In Ukraine the NOMINAL VOLTAGE is 220 V for monophase or 380 V for three-phase supply.		N/A
1.5.8	In Ukraine components connected between phase and earthing or between phase and neutral terminal shall be calculated for the voltage between phases.		N/A
1.7.2	In Ukraine for the APPARATUS of CLASS I the necessity of its obligatory earthing shall be indicated in the manuals.		N/A
2.3.3	In Ukraine method b) is not used.		N/A
6.2.2	In Ukraine the both tests in 6.2.2.1 and 6.2.2.2 are applied.		N/A
6.2.2.1	In Ukraine in 6.2.1 a) is used Uc=3.5 kV.		N/A
6.2.2.2	In Ukraine in 6.2.1 a) is used 3.0 kV for telephones and headsets and 2.5 kV for other equipment and in 6.2.1 b) and c) is used 1.5 kV.		N/A
Annex N	In Ukraine in 6.2.1 a) is used 3.0 kV for telephones and headsets and 2.5 kV for other equipment and in 6.2.1 b) and c) is used 1.5 kV.		N/A

Clause	Requirement + Test	Result - Remark	Verdict
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2.1.1.7	TABLE: Discharge test			P
Condition	τ calculated (s)	τ measured (s)	t u→0V (s)	Comments
Line to Neutral	931	862	--	$V_O = 370.84V_{peak}$, 37 % of $V_O = 137.21 V_{peak}$, voltage drop to 104.17V _{peak} after 1 s
Supplementary information: Supply voltage: 264 Vac, 60 Hz Overall capacity and bleeder resistor: see appended table 1.5.1				

2.4.2	TABLE: Limited current circuit measurement				P
Location	Voltage (V)	Current (mA)	Freq. (Hz)	Limit (mA)	Comments
C9911 Secondary pin to Earth	0.38	0.19	60	0.7	2K Ω non-conductive resistance used.
Supplementary information: Supply voltage: 240 Vac, 60 Hz					

2.6.3.4	TABLE: Resistance of earthing measurement			P
Location	Resistance measured (m Ω)		Comments	
AC inlet earth pin to Metal enclosure	8.2		Test current : 32A, duration: 2 min., Voltage drop: 0.256V	
AC inlet earth pin to Metal enclosure	9.0		Test current : 40A, duration: 2 min., Voltage drop: 0.36V	
AC inlet earth pin to C9903 trace	15.0		Test current : 32A, duration: 2 min., Voltage drop: 0.48V	
AC inlet earth pin to C9903 trace	17.0		Test current : 40A, duration: 2 min., Voltage drop: 0.68V	
AC inlet earth pin to C9904 trace	15.0		Test current : 32A, duration: 2 min., Voltage drop: 0.48V	
AC inlet earth pin to C9904 trace	17.0		Test current : 40A, duration: 2 min., Voltage drop: 0.68V	
AC inlet earth pin to C9910 trace	15.0		Test current : 32A, duration: 2 min., Voltage drop: 0.48V	
AC inlet earth pin to C9910 trace	17.0		Test current : 40A, duration: 2 min., Voltage drop: 0.68V	
AC inlet earth pin to C9911 trace	19.0		Test current : 32A, duration: 2 min., Voltage drop: 0.608V	
AC inlet earth pin to C9907 trace	4.0		Test current : 32A, duration: 2 min., Voltage drop: 0.128V	
AC inlet earth pin to C9907 trace	5.0		Test current : 40A, duration: 2 min., Voltage drop: 0.200V	

Clause	Requirement + Test	Result - Remark	Verdict
AC inlet earth pin to C9908/C9909 trace	5.0	Test current : 32A, duration: 2 min., Voltage drop: 0.160V	
AC inlet earth pin to C9908/C9909 trace	6.0	Test current : 40A, duration: 2 min., Voltage drop: 0.240V	
Supplementary information:			

4.6.1, 4.6.2	Table: Enclosure opening measurements		P
Location	Size (mm)	Comments	
Metal Chassis as fire enclosure (Horizontal)			
Top	1) Ø 3.9 2) 20 mm x 14 mm max. 3) 20 mm x 17 mm max. 4) 20mm x 13mm max. (covers by external plastic enclosure) 5) 70mm x 23mm	1) Numerous circular openings provided above power supply board 2) Numerous openings provided. There is no portion of the side of fire enclosure falls within the area traced out by the 5° angle. 3), 5) One openings provided. There is no portion of the side of fire enclosure falls within the area traced out by the 5° angle. 4) One openings provided near Power Supply primary side which covers completely by external plastic enclosure.	
Rear	1) Ø 5.0 2) 70 mm x 25 mm max.	1) Numerous circular openings provided. 2) One openings provided. There is no portion of the side of fire enclosure falls within the area traced out by the 5° angle.	
Left	16.0mm x 1.0 mm	Numerous small gaps around USB ports Which will be covered by external plastic enclosure (rated min. V-1, see table 1.5.1 for detail)	
Right side	1) 27 mm x 23 mm max. 2) Ø 3.3	1) One openings provided. There is no portion of the side of fire enclosure falls within the area traced out by the 5° angle. 2) Numerous circular openings provided above power supply board	
Bottom	Ø 1.7 (center to center min. 3.6mm) thickness: 0.81	Numerous circle openings provided. Compliance with 4.6.2 table 4D.	
Metal Chassis as fire enclosure (Vertical)			

Clause	Requirement + Test	Result - Remark	Verdict
Top	1) 27 mm x 23 mm max. 2) Ø 3.3	1) One opening which covers completely by external plastic enclosure 2) Numerous circular openings provided.	
Rear	1) Ø 5.0 2) 70 mm x 25 mm max.	1) Numerous circular openings provided. 2) One openings provided. There is no portion of the side of fire enclosure falls within the area traced out by the 5° angle.	
Left	1) Ø 3.9 2) 20 mm x 14 mm max. 3) 20 mm x 17 mm max. 4) 20mm x 13mm max. (covers by external plastic enclosure) 5) 70mm x 23mm	1) Numerous circular openings provided above power supply board 2) Numerous openings provided. There is no portion of the side of fire enclosure falls within the area traced out by the 5° angle. 3), 5) One openings provided. There is no portion of the side of fire enclosure falls within the area traced out by the 5° angle. 4) One openings provided near Power Supply primary side which covers completely by external plastic enclosure.	
Right side (near building-in power supply board)	Ø 1.7	Numerous circle openings provided.	
Bottom	16.0mm x 1.0 mm	Numerous small gaps around USB ports Which will be covered by external plastic enclosure (rated min. V-1, see table 1.5.1 for detail)	
Plastic enclosure (Horizontal)			
Top, Rear	--	No opening	
Right	3.2 x 18.0mm	Numerous openings provided which blocked by internal metal chassis, for metal chassis openings refer to above.	
Left	145 x 14mm	One openings provided which blocked by internal metal chassis and one external separated plastic enclosure which rated min. V-1	
Bottom	1) 151 x 18mm 2) 24 x 20mm 3) 20 x 3.3mm	Numerous openings provided which blocked by internal metal chassis, for metal chassis openings refer to above.	
Plastic enclosure (Vertical)			

Clause	Requirement + Test	Result - Remark	Verdict
Top	3.2 x 18.0mm	Numerous openings provided which blocked by internal metal chassis, for metal chassis openings refer to above.	
Rear, Left	--	No opening	
Right	1) 151 x 18mm 2) 24 x 20mm 3) 20 x 3.3mm	Numerous openings provided which blocked by internal metal chassis, for metal chassis openings refer to above.	
Bottom	145 x 14mm	One openings provided which blocked by internal metal chassis and one external separated plastic enclosure which rated min. V-1	
Supplementary information:			