



Ref. Certif. No.

JPTUV-041837-A1

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

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

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

See additional page(s)

Rating and principal characteristics
Valeurs nominales et caractéristiques principales

AC 100-240V; 50/60Hz; 2.95-1.1A; Class I

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

NEC

Model/type Ref.
Ref. de type

X463UN, X463UN(C), MultiSync X463UN

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

For model differences, refer to the test report.
Re-issue of JPTUV-041837 dated 28.12.2011,
due to non-technical change.

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

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

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

11027204 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



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Global Technology Assessment Center
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Yokohama 224-0021 Japan
Phone +81 45 914-3888
Fax +81 45 914-3354
Mail: info@jpn.tuv.com
Web: www.tuv.com

Date: 03.02.2012

Signature:

Dipl.-Ing. F. Stoezel

1. TPV Technology (Beijing) Co., Ltd.
No. 10, Jiu Xian Qiao Rd.
Chao Yang District, Beijing 100016
P.R. China
2. Tatung Mexico S.A. de. C.V.
Ave. Rosa Ma. Fuentes #7050
Complejo Industrial Fuentes
C.P. 32320, Cd. Juarez. Chih,
MEXICO
3. TPV Display Technology (Wuhan)
Co., Ltd.
Unique No. 11, Zhuankou Development
District of Economic Technological
Development Zone, Wuhan City 430056, P.R. China
4. TPV Electronics (Fujian) Co., Ltd.
Yuan Hong Rd., Shang-Zheng Hong-Lu
Fuqing City Fujian 350301
P.R. China
5. Envision Industry of Electronic
Products Ltd.
895, Joao Marcos Pozzetti Street,
Industrial District II,
69.075-215 Manaus, Am, Brazil
6. Tatung Czech s.r.o
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30100 Plzen
Czech Republic
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Zhujiang Branch
No. 161, Zhujiang Road, Suzhou
New District, Suzhou City, Jiangsu
Province, P.R. China
8. Envision Industry of Electronic
Products Ltd.
Rodovia Anhanguera S/N-KM 49
13.205-700 Tijuco Preto-Jundiaí-SP-
Brazil
9. TPV Displays Polska Sp. z o.o.
ul. Zlotego Smoka 9
66-400 Gorzów Wlkp.
Poland

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

Date: 03.02.2012

Signature:

Dipl.-Ing. F. Stoelzel

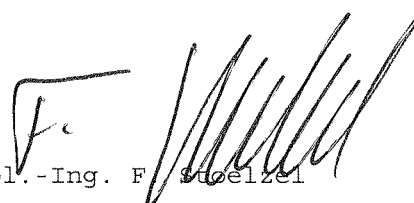
10. L&T Display Technology (Fujian) Ltd.
Optoelectronic Park, Rongqiao
Economic and Technological
Development Zone
Fuqing, Fujian 350301, P.R. China
11. TPV Display Technology (Beihai)
Co., Ltd.
China Electronic Beihai Industry
Park, Northeast of the Crossing
Between Taiwan Road and Jilin Road, Beihai City, Guangxi, P.R. China
12. Envision Industry of Electronic
Products Ltd.
Av Torquato Tapajós 7503,
Galpão : II Bloco: B-Condomínio
de Galpões-Tarumã-Manaus, AM, Brazil

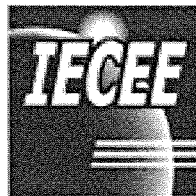
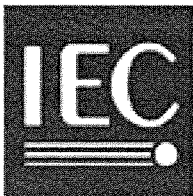
Additional information (if necessary)
Information complémentaire (si nécessaire)

Date: 03.02.2012

Signature:

Dipl.-Ing. F. Stöelzel





Test Report issued under the responsibility of:



TEST REPORT IEC 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report Number	11027204 001
Date of issue	December 20, 2011
Total number of pages	67
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 City, Taipei County 23553 Taiwan
Manufacturer's name	NEC Display Solutions, Ltd.
Address	4-28, Mita 1-chome, Minato-Ku, Tokyo, Japan
Test specification:	
Standard	IEC 60950-1:2005 (2nd Edition); Am 1:2009
Test procedure	CB Scheme
Non-standard test method	N/A
Test Report Form No.	IEC60950_1B
Test Report Form(s) Originator	SGS Fimko Ltd
Master TRF	Dated 2010-04
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Test item description	LCD Monitor
Trade Mark	NEC
Manufacturer	NEC Display Solutions, Ltd. 4-28, Mita 1-chome, Minato-Ku, Tokyo, Japan
Model/Type reference	X463UN, X463UN(C), MultiSync X463UN
Ratings	100-240 V ~, 50/60 Hz, 2.95-1.1 A

Testing procedure and testing location:		
☒	CB Testing Laboratory:	See cover page
Testing location/ address..... :		See cover page
☐	Associated CB Laboratory:	
Testing location/ address..... :		
Tested by (name + signature).....:		Raye Chou
Approved by (name + signature)		Steven W. [Signature]
☐	Testing procedure: TMP	
Testing location/ address..... :		
Tested by (name + signature).....:		
Approved by (name + signature)		
☐	Testing procedure: WMT	
Testing location/ address..... :		
Tested by (name + signature).....:		
Witnessed by (name + signature).....:		
Approved by (name + signature)		
☐	Testing procedure: SMT	
Testing location/ address..... :		
Tested by (name + signature).....:		
Approved by (name + signature)		
Supervised by (name + signature).....:		
☐	Testing procedure: RMT	
Testing location/ address..... :		
Tested by (name + signature).....:		
Approved by (name + signature)		
Supervised by (name + signature).....:		

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

- Photo documentation (6 pages)
- Measurement Section (2 pages)
- National Differences (62 pages)

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

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

- The load condition used as below during testing:
The equipment operated under maximum brightness, maximum contrast of LED backlight circuit and maximum non-clipped volume of speakers with 1 KHz signal.
- The test samples are pre-production without serial numbers.
- The equipment provided wall mounting function and complied with loading test mentioned at subclause 4.2.10.
- The base stand can be operated in horizontal (0 °) to vertical mode (90 °) when power board downside. For heating test were considered all orientation.
- Ventilation requirement according to user's manual.
- The equipment has been evaluated according to the specified by the manufacturer maximum operating altitude of 3000 m (correction factor for clearances according to IEC 60664:1992+A1:2000+A2:2002 of 1.14 is considered).

Testing location:

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

Summary of compliance with National Differences

List of countries addressed:

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

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

☒ 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, US

Explanation of used codes: AU=Australia, US = United States.

For National Differences see corresponding Attachment.

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 National Differences see corresponding Attachment.

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.

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





Test item particulars:	
Equipment mobility.....:	☐ movable ☐ hand-held ☐ transportable ☒ stationary ☐ for building-in ☐ direct plug-in
Connection to the mains	☒ pluggable equipment ☒ type A ☐ type B ☐ permanent connection ☒ detachable power supply cord ☐ non-detachable power supply cord ☐ not directly connected to the mains
Operating condition.....:	☒ continuous ☐ rated operating / resting time:
Access location	☒ operator accessible ☐ restricted access location
Over voltage category (OVC)	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other:
Mains supply tolerance (%) or absolute mains supply values	±10
Tested for IT power systems	☒ Yes ☐ No
IT testing, phase-phase voltage (V)	230 Vac
Class of equipment	☒ Class I ☐ Class II ☐ Class III ☐ Not classified
Considered current rating of protective device as part of the building installation (A)	16 (20 for North America)
Pollution degree (PD)	☐ PD 1 ☒ PD 2 ☐ PD 3
IP protection class	IPX0
Altitude during operation (m)	Up to 3000
Altitude of test laboratory (m)	Less than 2000
Mass of equipment (kg)	Approx. 25.7 (with base stand); 1.65 (for base stand)
Possible test case verdicts:	
- test case does not apply to the test object : N/A (or N)	
- test object does meet the requirement..... : P (Pass)	
- test object does not meet the requirement..... : F (Fail)	
Testing:	
Date of receipt of test item	Dec., 2011
Date(s) of performance of tests	Dec., 2011
General remarks:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report. Throughout this report a ☐ comma / ☒ point is used as the decimal separator.	

Manufacturer's Declaration per sub-clause 6.2.5 of IECCE 02:

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

- ☒ Yes
☐ Not applicable

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

Name and address of factory (ies)	1. TPV Electronics (Fujian) Co., Ltd. Yuan Hong Rd., Shang-Zheng Hong-Lu, Fuqing City Fujian 350301, P.R. China 2. TPV Technology (Beijing) Co., Ltd. No. 10, Jiu Xian Qiao Rd., Chao Yang District, Beijing 100016, P.R. China 3. TPV Display Technology (Wuhan) Co., Ltd. Unique No. 11, Zhuankou Development, District of Economic Technological Development Zone, Wuhan City 430056, P.R. China 4. TPV Technology (Suzhou) Co., Ltd., Zhujiang Branch No. 161, Zhujiang Road, Suzhou New District, Suzhou City, Jiangsu Province, P.R. China 5. Tatung Mexico S.A. de C.V. Ave. Rosa Ma. Fuentes #7050 Complejo Industrial Fuentes, C.P. 32320, Cd. Juarez. Chih, MEXICO 6. Envision Industry of Electronic Products Ltd. Rodovia Anhanguera S/N-KM 49, 13.205-700 Tijucu Preto-Jundiaí-SP-Brazil 7. Envision Industry of Electronic Products Ltd. 895, Joao Marcos Pozzetti Street, Industrial District II, 69.075-215 Manaus, Am, Brazil 8. TPV Displays Polska Sp. z o.o. ul. Zlotego Smoka 9, 66-400 Gorzów Wlkp., Poland 9. Tatung Czech s.r.o U Nove Hospody 4, 30100 Plzen, Czech Republic 10. L&T Display Technology (Fujian) Ltd. Optoelectronic Park, Rongqiao Economic and Technological, Development Zone, Fuqing, Fujian 350301, P.R. China 11. 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 12. Envision Industry of Electronic Products Ltd. Av Torquato Tapajós 7503, Galpão : II Bloco: B – Condomínio de Galpões Tarumã Manaus, AM Brazil
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General product information:

The equipment models which see cover page is LCD Monitor intended for information technology equipment scope of this standard use.

The equipment consists of the following critical components:

- LCD panel (LED backlight type) (consist with secondary function control board, SELV circuits)
- Building-in type switching power supply (evaluated within the equipment, refer to appended table 1.5.1 for the source details).
- SELV boards
- Metal enclosure is considered as fire enclosure
- External speaker terminal
- Key control board
- Two speakers
- DC Fans (maximum two provided)

Models X463UN, X463UN(C), MultiSync X463UN are identical except for model designation.

The equipment is full voltage-range design.

Wall mount function only evaluated VESA adaptor kit at back of equipment. Basically, the equipment considered to be movable. However, the equipment has four screw holes for VESA adaptor kit assembly, which is compliant with VESA standard. VESA compatible wall mounting kit, 300 × 300 mm distance, four M4 size with 10 mm length screws to secure.

The suitable power supply cord will be provided and evaluated when national approval/market.

Engineering Considerations

- The product was submitted and tested for use at the **maximum ambient temperature (T_{ma})** permitted by the manufacturer's specification of: 40 °C
- The means of connection to the mains supply is **Pluggable Type A**.
- The product is intended for use on the following **power systems**: TN and IT (only for Norway).
- The equipment **disconnect device** is considered to be: Appliance Inlet.
- The following circuit locations were investigated as a **limited power source** (see subclause 2.5): all data ports.
- The following **transformers** are provided (See subclause 1.5.4):
 - Double/Reinforced insulation: T201, T301, T401.
- The following **capacitors** bridging insulation (See subclause 1.5.6):
 - Double/Reinforced insulation: None.
 - Basic insulation: C093, C094 and C499.
 - Supplementary insulation: None.
 - Across mains conductors: C001, C002.
 - Functional insulation: None.
- The following **resistors** bridging insulation (See subclause 1.5.7):
 - Double/Reinforced insulation: None.
 - Basic insulation: None.
 - Supplementary insulation: None.
 - Across mains conductors: R001, R002.
 - Functional insulation: other than above mentioned.
- The following **VDRs** are bridging insulation (See subclause 1.5.9):
 - Functional insulation: Z001.
- The following **solid insulation** are provided (See subclause 2.10.5):
 - Reinforced insulation: Optocouplers (PC201, PC301, PC401, PC501, PC502)
 - Basic insulation: None.
 - Supplementary insulation: None.
 - Functional insulation: None.
- The following parts consist of the protective earthing (see subclause 2.6):
 - Protective earthing conductor: In power supply cord (not provided)

- Protective bonding conductor: connections of the copper trace on PCB, metal screw construction and the metal chassis.
- The following parts are **protective earthing terminals** (See subclause 2.6.4): the earthing terminal in the appliance inlet.
- The following parts are **protective bonding terminals** (See subclause 2.6.4): the bonding terminal in the metal chassis.
- The following enclosures are provided:
 - Fire enclosure: Metal enclosure.
 - Electrical enclosure: Metal enclosure.
 - Mechanical enclosure: Metal enclosure.

Additional Information

- The power supply unit used in the product is not a certified product. Hence, compliance has been evaluated in this report.
- Special national conditions for J60950-1(H22):2010
Per client's request, supplement the special national conditions for J60950-1(H22):2010 and J3000 (H21):2009 to present test report. Described as following items:
 - a) Power cord set for Japanese market is added and AC plug adaptor is optional used and the equipment is consider as Class 0I or Class I equipment.
 - b) Considered further Japanese technical requirements J60950-1 (H22)
- Power cord set is replaced and AC plug adaptor is optional used for Japanese market. The equipment is regarded to be Class 0I or Class I equipment. Unit also complies with touch current requirements for Class 0I equipment: < 1.0 mA.
- Per client's request, supplement the special national conditions for AS/NZS 60950.1:2011 to present test report.

Markings and Instructions

- Fuse Identification (See subclause 1.7.6): Fuse marking is marked on PCB near fuse F001 T8AH / 250VAC
- The product also marked with:
 -  (IEC 60417-5009) for the stand-by condition. (See subclause 1.7.8.3)
 - "I" and "O" (IEC 60417-5007 and 5008) for the power switch condition. (See subclause 1.7.8.3)

Abbreviations used in the report:

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

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	Components certified to IEC standards and/or their harmonized standards, are used within their ratings and are checked for correct application. Non-certified components are checked for correct application, used within their ratings, tested as part of the equipment and subjected to applicable tests of the component standard. Components, which no relevant IEC-Standard exists, are used within their ratings and are tested under the conditions occurring in the equipment.	P
1.5.3	Thermal controls		N/A
1.5.4	Transformers	Transformers complied with the relevant requirements.	P
1.5.5	Interconnecting cables	Interconnection cable provided with the equipment is carrying signals on energy level below 240 VA. Besides for the insulation materials, there are not other requirements for the interconnection cables.	P
1.5.6	Capacitors bridging insulation	Capacitors used in accordance with their rating and complied with subclasses of IEC 60384-14 with at least 21 days damp heat test.	P
1.5.7	Resistors bridging insulation	See below.	P
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	The bleeder resistors are located after fuse and the fuse as providing protective device while short-circuited.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N/A
1.5.8	Components in equipment for IT power systems	(see appended table 1.5.1)	P
1.5.9	Surge suppressors	See below.	P
1.5.9.1	General	See Annex Q.	P
1.5.9.2	Protection of VDRs	A fuse is connected in series with the VDR.	P
1.5.9.3	Bridging of functional insulation by a VDR	Complied.	P
1.5.9.4	Bridging of basic insulation by a VDR		N/A
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
	Symbol for Class II equipment only	The equipment is Class I equipment.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Other markings and symbols	Other markings and symbols do not give rise to misunderstanding.	P
1.7.2	Safety instructions and marking	See below.	P
1.7.2.1	General	Instructions are available.	P
1.7.2.2	Disconnect devices	See General product information - Engineering Considerations.	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
1.2.7.6	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	Same as above.	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	Appliance inlet is provided. The symbol IEC 60417-5019 was located on appliance inlet.	P
1.7.7.2	Terminals for a.c. mains supply conductors		N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators	See below.	P
1.7.8.1	Identification, location and marking	The marking and indication of the stand-by switch and power switch are located that indication of function is clearly.	P
1.7.8.2	Colours	Colours are used and safety is not involved.	P
1.7.8.3	Symbols according to IEC 60417	See General product information - Markings and Instructions.	P
1.7.8.4	Markings using figures	No indicators for different positions of control.	N/A
1.7.9	Isolation of multiple power sources	Only one power source.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.10	Thermostats and other regulating devices	Neither thermostats nor other regulating devices provided.	N/A
1.7.11	Durability	After this test there was no damage to the marking. The marking on the label did not fade. There was no curling of the marking.	P
1.7.12	Removable parts	The marking not place on the removable parts.	P
1.7.13	Replaceable batteries	No such component used.	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 though any seams within the appliance.	P
	Test with test finger (Figure 2A)	See above.	N/A
	Test with test pin (Figure 2B)	See above.	N/A
	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 in Measurement Section. No energy hazards in operator access area.	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.	P
	Measured voltage (V); time-constant (s)..... :	(See appended table)	—
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 .. :	Uoc of speakers is 4.2 V.	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	The circuits inside equipment were SELV circuits. See subclauses 2.2.2 to 2.2.4.	P
2.2.2	Voltages under normal conditions (V) .. :	Between any conductor of the SELV circuits, 42.4 V peak or 60 V d.c. is not exceeded (see appended table 2.2.2).	P
2.2.3	Voltages under fault conditions (V) .. :	Single fault did not cause excessive voltage in SELV circuits. The limits of 71 V peak and 120 V d.c. were not exceeded within 200 ms. Furthermore, the SELV limits (see subclause 2.2.2) were not exceeded for longer than 200 ms.	P
2.2.4	Connection of SELV circuits to other circuits .. :	Complied with 2.2.2 and 2.2.3.	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

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Clause	Requirement + Test	Result - Remark	Verdict
	Insulation employed		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed		—
2.3.5	Test for operating voltages generated externally		N/A
2.4	Limited current circuits		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		N/A
	Frequency (Hz).....		—
	Measured current (mA)		—
	Measured voltage (V).....		—
	Measured circuit capacitance (nF or μ F)		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	Limited power sources		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		N/A
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA)		—
	Current rating of overcurrent protective device (A) .:		—
	Use of integrated circuit (IC) current limiters		—
2.6	Provisions for earthing and bonding		P
2.6.1	Protective earthing	Reliable connection from metal chassis to the PE terminal (appliance inlet) via conductive traces. The earthing tab of appliance inlet fixed in PCB by soldering, then earthed conductive traces contacted the metal chassis by screw and star washer.	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.2	Functional earthing	Functional earthing circuit is separated from parts at hazardous voltages by double (or reinforced) insulation. Green-and-yellow color combination was not used for functional earthing conductors.	P
2.6.3	Protective earthing and protective bonding conductors	See below.	P
2.6.3.1	General	See below.	P
2.6.3.2	Size of protective earthing conductors	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	The color combination green-and-yellow is used. See also 2.6.2.	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 earthing 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

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switch or overcurrent protective device in protective earthing or bonding conductor.	P
2.6.5.3	Disconnection of protective earth	Appliance inlet provided as disconnection device.	P
2.6.5.4	Parts that can be removed by an operator	Plug or inlet, 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		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A

2.7	Overcurrent and earth fault protection in primary circuits		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 :	No service work necessary.	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.	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	The frequency does not exceeding 30 kHz.	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
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage	See below	P

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Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage		N/A
	a) Basic insulation not under stress		N/A
	b) Basic, supplementary, reinforced insulation		N/A
	c) Compliance with Annex U		N/A
	Two wires in contact inside wound component; angle between 45° and 90°		N/A
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage		N/A
	- 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
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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	Approved sources of opto-couplers used. For detail see table 1.5.1.	P
2.10.10	Test for Pollution Degree 1 environment and insulating compound	See above.	P
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A
3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	All internal wires are UL recognized, PVC insulated, VW-1 and have gauge suitable for current intended to be carried. 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
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

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Clause	Requirement + Test	Result - Remark	Verdict
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	Connection to AC mains with appliance inlet.	P
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections	Single supply connection.	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 complies with IEC/EN 60320-1. The power cord can be inserted without difficulties and does not support the unit.	P
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords	No power supply cord provided.	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)		—
	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

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Clause	Requirement + Test	Result - Remark	Verdict
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
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

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Clause	Requirement + Test	Result - Remark	Verdict

3.4.11	Multiple power sources	Single mains supply provided.	N/A
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3.5	Interconnection of equipment		P
3.5.1	General requirements		P
3.5.2	Types of interconnection circuits	SELV circuit.	P
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment	The all output data ports only signal transmission, no power output provided. See appended table 2.5.	P

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		P
	Angle of 10°	Not over balance in any position.	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	For outer enclosure After subjected 250 N, no energy or other hazards.	P
4.2.5	Impact test	For outer enclosure. No hazard as result from the steel ball impact test.	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	At 70 °C for 7 hours.	P
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified		N/A
4.2.9	High pressure lamps		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.10	Wall or ceiling mounted equipment; force (N) :	For unit an additional force of 72.15kg (3 times the mass of the unit and the mass is 24.05kg 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. VESA compatible wall mounting kit, 300 mm x 300 mm, four M4 size with 10 mm length screws to secure.	P
4.2.11	Rotating solid media		N/A
	Test to cover on the door.....:		N/A

4.3	Design and construction		P
4.3.1	Edges and corners	The edges and corners are rounded and smoothed.	P
4.3.2	Handles and manual controls; force (N) :	50 N. Following test for customer's request. Four handles provided, each handle provide additional force 251.9N (total force 102.8kg(1007.5N) = 3 times the mass of the unit with base). No loosen and no hazard results.	P
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

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Clause	Requirement + Test	Result - Remark	Verdict
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
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	The equipment does not produce significant UV radiation.	N/A
4.3.13.5	Lasers (including laser diodes) and LEDs	The LED is considered as indicating light.	P
4.3.13.5.1	Lasers (including laser diodes)		—
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)	For LED backlight, the luminance is far less than 10000 cd/m ² . With reference to subclause 4.1 of IEC 62471:2006 no further test is necessary.	—

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Clause	Requirement + Test	Result - Remark	Verdict

4.3.13.6	Other types		N/A
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4.4	Protection against hazardous moving parts		P
4.4.1	General	The rotating part of the build-in DC fans are protected by the enclosure, which considered no accessible to the user.	P
4.4.2	Protection in operator access areas		N/A
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas		N/A
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		N/A

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 bottommm, dimensions (mm) ..	(see appended table 4.6.1 and 4.6.2)	—

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Clause	Requirement + Test	Result - Remark	Verdict
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
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	Simulated fault condition tests on key control board that fire enclosure is not required (see appended table 5.3)	P
4.7.2	Conditions for a fire enclosure	See below.	P
4.7.2.1	Parts requiring a fire enclosure	Having employed the following parts: • components in primary circuits; • components in secondary circuits (not supplied by LPS); • insulated wiring the fire enclosure is required.	P
4.7.2.2	Parts not requiring a fire enclosure	See 4.7.1.	P
4.7.3	Materials		P
4.7.3.1	General	See below.	P
4.7.3.2	Materials for fire enclosures	See appended table 1.5.1.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	The base stand used material of flammability class HB or better.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	The material is made of V-2 material.	P
4.7.3.5	Materials for air filter assemblies		N/A
4.7.3.6	Materials used in high-voltage components		N/A
5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P

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Clause	Requirement + Test	Result - Remark	Verdict
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 5.1.7	P
5.1.2	Configuration of equipment under test (EUT)	See below.	P
5.1.2.1	Single connection to an a.c. mains supply	Each piece of equipment tested separately.	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	Applied.	P
5.1.6	Test measurements	See appended table 5.1	P
	Supply voltage (V)	+10% of the rated voltage.	—
	Measured touch current (mA)	(see appended table 5.1.6)	—
	Max. allowed touch current (mA)	(see appended table 5.1.6)	—
	Measured protective conductor current (mA)		—
	Max. allowed protective conductor current (mA)....		—
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.2	Electric strength		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure	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	Approval DC fan used.	P
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 overloaded (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 :	Audio function operated at maximum volume output with 1 KHz sine wave signal during the test.	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
	Sample 1 burning time (s).....		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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	Approval DC fan used.	N/A
	Position..... :		—
	Manufacturer..... :		—
	Type..... :		—
	Rated values..... :		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test duration (days)		—
	Electric strength test: test voltage (V)		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V)		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V)		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V)		—

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		P
	Position	Refer to appended table 1.5.1	—
	Manufacturer	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	D.1 used.	P
D.2	Alternative measuring instrument		N/A

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N/A
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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		P
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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
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J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		P
	Metal(s) used	Metals which the combination electrochemical potential is less than 0.6 V.	—

K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

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	Ringling signal		N/A
M.3.1.1	Frequency (Hz)		—
M.3.1.2	Voltage (V)		—
M.3.1.3	Cadence; time (s), voltage (V)		—
M.3.1.4	Single fault current (mA)		—
M.3.2	Tripping device and monitoring voltage		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V)		N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict
P	ANNEX P, NORMATIVE REFERENCES		—
Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		P
	a) Preferred climatic categories	See appended table 1.5.1.	P
	b) Maximum continuous voltage	See appended table 1.5.1.	P
	c) Pulse current	See appended table 1.5.1.	P
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N/A
			—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N/A
			—
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P
V.1	Introduction		N/A
V.2	TN power distribution systems	Single-phase TN power system considered and used for the testing	P
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N/A
Y.1	Test apparatus		N/A
Y.2	Mounting of test samples		N/A
Y.3	Carbon-arc light-exposure apparatus		N/A
Y.4	Xenon-arc light exposure apparatus		N/A
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		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
DD	ANNEX DD, Requirements for the mounting means of rack-mounted equipment		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N.....		N/A
DD.3	Mechanical strength test, 250N, including end stops.....		N/A
DD.4	Compliance.....		N/A
EE	ANNEX EE, Household and home/office document/media shredders		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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					P
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹ .	
LCD Panel (LED backlight type)	SAMUSNG	LTx460rz ³ .	46" TFT-LCD panel. 24Vdc, 3.2A or 3.4A or 5.4A (LED driver board); 12Vdc (control board)	IEC 60950- 1:2005+A1:2009	CB by TUVPS	
- LED driver board	Samsung	SSL460_0D4B REV 0.1	--	--	--	
Metal enclosure	--	--	Metal, thickness: 0.81mm min.	--	--	
Battery for remote controller used (Optional)	--	--	Two AA consumer type batteries provide.	--	--	
Stand base (2 sets) (Optional)	--	--	HB or batter and metal, total weight: 1.65 kg	UL 94	UL	
Power switch	Rong Feng	RF-1003	10 A, 250 Vac	IEC/EN 61058-1	VDE, UL	
	Solteam Electronics Co Ltd	MR-21	10 A, 250 Vac	IEC/EN 61058-1	VDE, UL	
	Solteam Electronics Co Ltd	OR-L	10 A, 250 Vac	IEC/EN 61058-1	VDE, UL	
	Chily	3024 series	16A, 250Vac	IEC/EN 61058-1	VDE, UL	
Appliance inlet	Zhang Jia Gang-Hua Jie	SA-4S, SB-4S	10 A, 250 Vac, 70 °C	IEC/EN 60320- 1, ANSI/UL 498	VDE, UL	
	Rong Feng Industrial Co Ltd	SS-120, SS-7B	10 A, 250 Vac, 70 °C	IEC/EN 60320- 1, ANSI/UL 498	VDE, UL	
	Solteam	ST-01	10 A, 250 Vac, 70 °C	IEC/EN 60320- 1, ANSI/UL 498	VDE, UL	
	Inalways	0707-1, 0711-2, 0714	10 A, 250 Vac, 70 °C	IEC/EN 60320- 1, ANSI/UL 498	VDE, UL	
	Shenzhen Delikang / Duoling	CDJ-3, CDJ-3-1	10 A, 250 Vac, 70 °C	IEC/EN 60320- 1, ANSI/UL 498	VDE, UL	
	TECX	TU-301 series	10 A, 250 Vac, 70 °C	IEC/EN 60320- 1, ANSI/UL 498	VDE, UL	
	Yueqing Hongchang Radio Co., Ltd.	DB-14	10 A, 250 Vac, 70 °C	IEC/EN 60320- 1, ANSI/UL 498	VDE, UL	

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
DC FAN (two provided)	DELTA	AUB0812MB	12 V, 0.17 A, min. 28.27 CFM	EN 60950-1: 2006+A11, UL 507	VDE, UL
	Sunonwealth	ME80151V3	12 Vdc, max. 104 mA, 30 CFM	EN 60950-1: 2006+A11, UL 507	TUV, UL
Speaker (two provided) (Optional)	Various	Various	Each 8 ohm, Max. 40W	--	--
PCB	Various	Various	V-1 or better Min. 105°C	UL 94, UL796	UL
Power supply board	Murata	MPF2948	I/P: 85-276Vac, 47-63Hz, 5.0 A Max. O/P: 24Vdc (A)/ max. 9.0A, 24Vdc (B)/ max. 4.35A, 12Vdc / max. 2.94A, 5.0Vdc / max. 3.0A	--	--
Switching Power supply: MPF2948 by Murata					
Primary Connectors (CNAC)	J.S.T	VH series	7A, 250V	IEC 61984: 2001	VDE
	J.S.T	VTseries	7A, 250V	IEC 61984: 2001	TUV
	Xinya	TÜV: M3962 series UL: 3962 series	TÜV: 6 A, 250 Vac UL: 7 A, 250 Vac	IEC 61984 UL 1997	TÜV Nord UL
	Jowle	A3963	7A, 250V	IEC 61984: 2001	TUV
	Pontronics	3962-WS(4-2)-LF	7A, 250V	IEC 61984: 2001	TUV
	Pontronics	3962-WS-**-LF	7A, 250V	IEC 61984: 2001	TUV
Fuse (F001)	Coper Bussmann	S505-series	T8A, 250Vac	IEC 60127-1, IEC 60127-2	VDE
	Littelfuse	215	T8A, 250Vac	IEC 60127-1, IEC 60127-2	VDE
Varistor (Z001)	Panasonic	ERZV10D621, V10621U	385Vac, 505Vdc, -40/80/56; 6KV/3KA pulse passed	IEC 61051-2, UL 1449 3 rd	VDE, UL
Relay (RL001)	Panasonic	LKP1aF-5V	10A ,250Vac	EN 61810	TUV S UL

IEC 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Y- Capacitor (C093, C094, C499) (Y1 type) (optional)	Murata	KX	Max.1000pF, min. 250Vac	IEC/EN 60384-14: 2005	VDE, UL
	TDK	CD	Max.1000pF, min. 250Vac	IEC/EN 60384-14: 2005	VDE, UL
X- Capacitor (C001, C002) (X1 or X2 type) (optional)	OKAYA	LE(-*)	Max. 0.47 μ F, min. 250 Vac	IEC/EN 60384-14: 2005	VDE, UL
	Panasonic	ECQUL	Max. 0.47 μ F, min. 250 Vac	IEC/EN 60384-14: 2005	VDE, UL
	Arcotronics	R.46	Max. 0.47 μ F, min. 250 Vac	IEC/EN 60384-14: 2005	VDE, UL
Line Choke (L001, L002) (optional)	NEC-TOKIN	SC-05-E100JKH	105°C	--	--
Line Choke (L003) (optional)	NEC-TOKIN	SC-05-E035J	105°C	--	--
Bridging Diode (D001, D002)	--	--	Min. 600 V, min.10A	--	--
Line Choke (L101, L102) (optional)	Murata	1P006	105°C	--	--
Bleeder Resistors (R001, R002)	--	SMD type	390 ohm, 1/4W (located after fuse)	--	--
Primary IC (IC001)	POWER INTEGRATION S	CAP015DG	1000V	--	--
Current sense resistor (R220)	--	--	1 ohm, 2W	--	--
Current sense resistor (R221, R222)	--	--	12 ohm, 1/4W	--	--
Current sense Resistor (R320)	--	--	0.47 ohm, 2W	--	--
Current sense resistor (R321, R322)	--	--	3.9 ohm, 1/4W	--	--
Current sense resistor (R406, R407)	--	--	0.12ohm, 2W	--	--

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Clause	Requirement + Test			Result - Remark	Verdict
Current sense resistor (R416)	--	--	0.18 ohm, 2W	--	--
Ripple Cap. (C110, C111)	--	--	120µF, min. 450V, 105°C	--	--
Transistors (Q201, Q301)	--	--	Min. 900 V, 5A	--	--
Transistor s(Q401, Q420)	--	--	Min. 500 V, 19A	--	--
Photo Couplers (PC201, PC301, PC401, PC501, PC502)	NEC	PS2581AL1	Dti=0.4mm, Int. Cr. > 4mm Ext. Cr. =8.0mm	DIN EN 60747-5-2:2003, IEC/EN 60950-1, UL 1577	VDE, UL
Transformer (T201)	Murata	230D1	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Transformer (T301)	Murata	229D1	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Transformer (T401)	Murata	2WS024	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Supplementary information:					
1. An asterisk indicates a mark that assures the agreed level of surveillance. 2. In the technical data column of optocoupler, where "Dti" means distance through insulation, "Int. cr" means internal creepage distance, and "Ext. cr" means external creepage distance. 3. Explanation of model LTx460rz: x may be from A to Z, denoting for final application type; r may be from A to Z, denoting for pixel number of TFT LCD product; z denotes the minor difference of interface method, revision number of customer spec and may comprise of 0 to 9 or A to Z and it can be made up by a maximum length of three alphanumeric characters.					

1.5.1	TABLE: Opto Electronic Devices	P
Manufacturer : See above table. Type..... : See above table. Separately tested..... : See above table. Bridging insulation : Reinforced. External creepage distance : See above table.		

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
Internal creepage distance : See above table.			
Distance through insulation : See above table.			
Tested under the following conditions : RI			
Input..... : N/A			
Output..... : N/A			
supplementary information			

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V/Hz)	I (A)	I _{rated} (A)	P (W)	Fuse #	I _{fuse} (A)	Condition/status	
HDMI mode							
90/50	3.01	--	266	F001	3.01	Maximum normal load	
90/60	3.01	--	266	F001	3.01	Maximum normal load	
100/50	2.69	2.95	263	F001	2.69	Maximum normal load	
100/60	2.69	2.95	263	F001	2.69	Maximum normal load	
240/50	1.15	1.1	254	F001	1.15	Maximum normal load	
240/60	1.15	1.1	254	F001	1.15	Maximum normal load	
264/50	1.07	--	254	F001	1.07	Maximum normal load	
264/60	1.07	--	254	F001	1.07	Maximum normal load	
VGA mode							
90/50	2.97	--	260	F001	2.97	Maximum normal load	
90/60	2.97	--	260	F001	2.97	Maximum normal load	
100/50	2.65	2.95	258	F001	2.65	Maximum normal load	
100/60	2.65	2.95	258	F001	2.65	Maximum normal load	
240/50	1.14	1.1	253	F001	1.14	Maximum normal load	
240/60	1.14	1.1	253	F001	1.14	Maximum normal load	
264/50	1.06	--	253	F001	1.06	Maximum normal load	
264/60	1.06	--	253	F001	1.06	Maximum normal load	
DVI mode							
90/50	2.97	--	261	F001	2.97	Maximum normal load	
90/60	2.97	--	261	F001	2.97	Maximum normal load	
100/50	2.65	2.95	259	F001	2.65	Maximum normal load	

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Clause	Requirement + Test				Result - Remark	Verdict
100/60	2.65	2.95	259	F001	2.65	Maximum normal load
240/50	1.13	1.1	251	F001	1.13	Maximum normal load
240/60	1.13	1.1	251	F001	1.13	Maximum normal load
264/50	1.05	--	251	F001	1.05	Maximum normal load
264/60	1.05	--	251	F001	1.05	Maximum normal load
S-Video mode						
90/50	2.96	--	261	F001	2.96	Maximum normal load
90/60	2.96	--	261	F001	2.96	Maximum normal load
100/50	2.65	2.95	259	F001	2.65	Maximum normal load
100/60	2.65	2.95	259	F001	2.65	Maximum normal load
240/50	1.13	1.1	251	F001	1.13	Maximum normal load
240/60	1.13	1.1	251	F001	1.13	Maximum normal load
264/50	1.05	--	250	F001	1.05	Maximum normal load
264/60	1.05	--	250	F001	1.05	Maximum normal load
BNC mode						
90/50	2.96	--	260	F001	2.96	Maximum normal load
90/60	2.96	--	260	F001	2.96	Maximum normal load
100/50	2.66	2.95	258	F001	2.66	Maximum normal load
100/60	2.66	2.95	258	F001	2.66	Maximum normal load
240/50	1.12	1.1	250	F001	1.12	Maximum normal load
240/60	1.12	1.1	250	F001	1.12	Maximum normal load
264/50	1.04	--	250	F001	1.04	Maximum normal load
264/60	1.04	--	250	F001	1.04	Maximum normal load
Display mode						
90/50	2.96	--	260	F001	2.96	Maximum normal load
90/60	2.96	--	260	F001	2.96	Maximum normal load
100/50	2.66	2.95	257	F001	2.66	Maximum normal load
100/60	2.66	2.95	257	F001	2.66	Maximum normal load
240/50	1.13	1.1	254	F001	1.13	Maximum normal load
240/60	1.13	1.1	254	F001	1.13	Maximum normal load
264/50	1.06	--	253	F001	1.06	Maximum normal load
264/60	1.06	--	253	F001	1.06	Maximum normal load

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Clause	Requirement + Test	Result - Remark	Verdict

Note(s):

1. The measured input current at rated voltage shall be $\leq 110\%$ of rated current.
2. See summary of testing in the test report for the detail max. normal condition.

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)
12 Vdc	--	11.94	4.0	46.72
5 Vdc	--	4.85	3.9	15.13
24 Vdc	--	23.99	12.3	280.68

supplementary information:

Test voltage is 240 Vac, 60 Hz

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

supplementary information:

2.2	TABLE: evaluation of voltage limiting components in SELV circuits	P
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Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
	V peak	V d.c.	
T301, Pin 1, 2, 3 to Pin 4, 5	39.2	--	--
T401, Pin 9, 10, 11, 12 to Pin 13, 14, 15, 16	40.4	--	--
T201, Pin 2, 3 to Pin 4, 5, 6	48.0	--	--
T201, After BEA251 to Rtn	60	--	--
T201, After D251 to Rtn	--	5.6	D251

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)
+5 Vdc to Rtn (D251 short-circuited)	0 Vdc

supplementary information:

Input Voltage is 240 Vac, 60 Hz

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Clause	Requirement + Test		Result - Remark		Verdict
2.5	TABLE: limited power sources				P
Circuit output tested:					
Measured Uoc (V) with all load circuits disconnected:					
	I _{sc} (A)		VA		
	Meas.	Limit	Meas.	Limit	
According to Table 2B					
For DVI port					
Normal condition, pin 1-5,8-24 to rtn; Uoc=0V	0	8	0	100	
Normal condition, pin 6,7 to rtn; Uoc=4.93V	0.01	8	0.04	100	
For VGA port					
Normal condition, pin 1-4,6-11,13-14 to rtn; Uoc=0V	0	8	0	100	
Normal condition, pin 5,12,15 to rtn; Uoc=4.72V	0.01	8	0.04	100	
For S-Video port					
Normal condition, pin 1-4 to rtn; Uoc=0V	0	8	0	100	
For LAN port					
Normal condition, pin 1-8 to rtn; Uoc=0V	0	8	0	100	
For HDMI port					
Normal condition, pin 1,2,3,6,7,9,12,15,18 to rtn; Uoc=0V	0	8	0	100	
Normal condition, pin 4,5 to rtn; Uoc=4.68V	0.01	8	0.04	100	
Normal condition, pin 8,10,11,13,14,16,17 to rtn; Uoc=3.29V	0.02	8	0.04	100	
For RS232 port					
Normal condition, pin 1-9 to rtn; Uoc=0V	0	8	0	100	
For Display port					
Normal condition, pin 1-8,10-17,19,20 to rtn; Uoc=0V	0	8	0	100	
Normal condition, pin 9 to rtn; Uoc=2.49V	0.01	8	0.02	100	
Normal condition, pin 18 to rtn; Uoc=1.12V	0.01	8	0.01	100	
For AV (Left) port					
Normal condition, pin 1 to rtn; Uoc=0V	0	8	0	100	
For AV (Right) port					
Normal condition, pin 1 to rtn; Uoc=0V	0	8	0	100	

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Clause	Requirement + Test	Result - Remark	Verdict

For MIC port				
Normal condition, pin 1 to rtn; Uoc=0V	0	8	0	100
supplementary information:				
Input condition: 264 Vac, 60 Hz.				

2.10.2	Table: working voltage measurement			P
Location	RMS voltage (V)	Peak voltage (V)	Comments	
T301 pin1,2,3 to pin13	300	444		
T301 pin1,2,3 to pin9	333	620		
T301 pin4,5 to pin13	298	416		
T301 pin4,5 to pin9	341	640	* the highest Vpeak and Vrms	
T401 pin9,10,11,12 to pin1	169	292		
T401 pin9,10,11,12 to pin2,3	173	292		
T401 pin9,10,11,12 to pin4	232	396		
T401 pin9,10,11,12 to pin5	243	416		
T401 pin9,10,11,12 to pin7	181	396		
T401 pin9,10,11,12 to pin8	179	380		
T401 pin13,14,15,16 to pin1	165	260		
T401 pin13,14,15,16 to pin2,3	182	320		
T401 pin13,14,15,16 to pin4	250	416		
T401 pin13,14,15,16 to pin5	265	444	* the highest Vpeak and Vrms	
T401 pin13,14,15,16 to pin7	179	372		
T401 pin13,14,15,16 to pin8	179	384		
T201 pin2,3 to pin7,8	299	456		
T201 pin2,3 to pin10	314	540		
T201 pin2,3 to pin12	179	376		
T201 pin2,3 to pin13	180	456		
T201 pin4,5,6 to pin7,8	297	416		
T201 pin4,5,6 to pin10	318	550	* the highest Vpeak and Vrms	
T201 pin4,5,6 to pin12	179	372		
T201 pin4,5,6 to pin13	181	500		
PC301 pin1 to pin3	186	380		
PC301 pin1 to pin4	186	380		
PC301 pin2 to pin3	186	380		

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Clause	Requirement + Test		Verdict
PC301 pin2 to pin4	186	380	
C499 primary to secondary	179	372	
PC401 pin1 to pin3	194	392	
PC401 pin1 to pin4	194	392	
PC401 pin2 to pin3	194	392	
PC401 pin2 to pin4	194	392	
PC201 pin1 to pin3	181	372	
PC201 pin1 to pin4	181	372	
PC201 pin2 to pin3	181	372	
PC201 pin2 to pin4	181	372	
PC502 pin1 to pin3	167	352	
PC502 pin1 to pin4	181	372	
PC502 pin2 to pin3	181	372	
PC502 pin2 to pin4	181	372	
PC501 pin1 to pin3	170	360	
PC501 pin1 to pin4	170	360	
PC501 pin2 to pin3	170	360	
PC501 pin2 to pin4	170	360	
RL001 pin 1 to pin 3	240	372	
RL001 pin 1 to pin 4	240	364	
RL001 pin 2 to pin 3	240	360	
RL001 pin 2 to pin 4	240	360	
supplementary information:			
Input Voltage is 240 Vac, 60 Hz			

2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements					P
Clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required dcr (mm)	dcr (mm)
Functional:						
Distance before fuse (F001)	420	250	1.8	See below	2.5	See below
- Under F001				4.5		4.5
- Line to Neutral				2.9		2.9
Basic / supplementary:						

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Clause	Requirement + Test			Result - Remark		Verdict
Primary components R007 (with 10 N) to metal chassis (earthed)	420	250	2.3	6.7	2.5	6.7
Primary traces to earthed traces on SPS	420	250	2.3	See below	2.5	See below
- Line trace to earthed trace before fuse				7.5		7.5
- Neutral trace to earthed trace before fuse				7.5		7.5
- Primary part to metal part				9.0		9.0
- Under C093, C094				7.6		7.6
- Under C499				7.5		7.5
Reinforced:						
Primary traces to secondary traces on SPS	420	250	4.6	See below	5.0	See below
- Under PC501, PC502, PC201, PC301, PC401				7.6		7.6
- Under RL001				6.8		6.8
Under T301	640	341	5.3	10.4	7.0	10.4
Under T401	444	265	4.8	7.6	5.4	7.6
Under T201	550	318	5.2	7.6	6.4	7.6
Primary winding to secondary winding of RL001	420	250	4.6	6.0	5.0	6.0
Supplementary information:						
1. Other functional insulation according to subclause 5.3.4 c). 2. Internal wire shall be fixed on secondary side and keep the sufficient insulation for the requirement of reinforced insulation. 3. Only minimum distance recored (same as clearance) and the actual distance is much larger. 4. For the clearances and creepage distances which no described above are larger than the limit above. 5. Altitude correction factor for clearances for an altitude of 3000 m (based on IEC 60664-1:1992): 1.14.						

2.10.5	TABLE: Distance through insulation measurements				P
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (Vac)	Required DTI (mm)	DTI (mm)
Optocouplers (PC201, PC301, PC401, PC501, PC502) (RI)	420	250	3000	0.4	1.
Supplementary information:					
1. See appended table 1.5.1 for the source details.					

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Clause	Requirement + Test	Result - Remark	Verdict

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		
Tested and Certified by (incl. Ref. No.)		
Circuit protection diagram:		

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Clause	Requirement + Test	Result - Remark	Verdict

MARKINGS AND INSTRUCTIONS (1.7.12, 1.7.15)

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

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

4.5	TABLE: Thermal requirements				P
	Supply voltage (V/Hz)	90/60	90/60	264/60	—
	Ambient T_{min} (°C)	--	--	--	—
	Ambient T_{max} (°C)	--	--	--	—
Maximum measured temperature T of part/at:		T (°C)			Allowed T_{max} (°C)

HDMI mode and DC fans locked considered as the worst condition

Test position	Vertical	Horizontal	Horizontal	--
Body of switch	44.3	42.7	42.3	70
Inlet near Line	47.2	45.0	42.9	70
Body of CNAC	64.6	51.3	47.6	--
Body C002	61.9	57.7	46.7	85
PCB near R007	63.8	57.5	48.4	105
L001 coil	72.3	63.0	47.0	105
L002 coil	66.1	60.6	45.3	105
L003 coil	62.8	55.1	47.2	105
L101 coil	67.5	68.7	52.5	105
L102 coil	74.2	71.8	55.3	105
Body of C111	50.1	62.3	58.0	85
PCB near D101	60.4	66.0	63.2	105
PCB near Q420	60.5	70.0	63.4	105
PCB near D451	81.8	73.5	72.0	105
T301 coil	60.2	78.7	77.4	110
T301 core	59.9	75.8	74.9	110
Body of PC301	53.9	75.9	74.5	100
T401 coil	90.5	93.1	92.2	110

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Clause	Requirement + Test				Result - Remark		Verdict	
T401 core		93.3		88.2	87.4	110		
T201 coil		66.8		63.0	60.0	110		
T201 core		67.5		62.1	59.2	110		
Body of C499		67.5		67.9	65.9	100		
Body of PC401		65.8		66.4	63.3	100		
Body of PC201		64.9		58.1	54.0	105		
PCB near Q301		54.1		72.1	68.2	105		
PCB near D352		56.8		72.5	71.2	105		
PCB near U401 (main board)		64.1		59.6	59.2	105		
Metal enclosure near T401		44.4		48.3	46.6	70		
Panel		50.0		52.5	52.3	95		
T1 coil (LED driver board)		75.5		70.4	70.0	100		
T1 core (LED driver board)		70.1		65.3	64.9	100		
Ambient		40.0		40.0	40.0	--		
Supplementary information:								
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:								
1. The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in 1.6.2 at voltages as described in above.								
2. Unit specified with maximum of 40°C ambient temperature and all temperatures were calculated for a maximum ambient temperature of 40°C.								
Winding components (providing safety isolation):								
- Class B T _{max} = 120 °C – 10 °C = 110 °C								
3. Thermocouple method used for measuring the temperatures.								
4.5.5	TABLE: Ball pressure test of thermoplastic parts							N/A
	Allowed impression diameter (mm)				≤ 2 mm		—	
Part					Test temperature (°C)		Impression diameter (mm)	
Supplementary information:								

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Clause	Requirement + Test	Result - Remark	Verdict

4.7	TABLE: Resistance to fire				P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
Metal enclosure	--	--	1.	--	P
PCB	--	--	--	V-1 or better	P
Supplementary information:					
1. See table 1.5.1 for detailed information.					

5.1	TABLE: touch current measurement			P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
Line / Neutral and output connectors	0.01	0.25	System ON and switch “e” close	
Line / Neutral and metal enclosure	1.6	3.5	System ON and switch “e” open	
Line / Neutral and panel with metal foil	0.01	0.25	System ON and switch “e” close	
supplementary information:				
1. Input voltage: 264V, 60Hz				
2. Overall capacitance: See table 1.5.1				
Line / Neutral and output connectors	0.01	0.25	System ON and switch “e” close	
Line / Neutral and metal enclosure	0.8	3.5	System ON and switch “e” open	
Line / Neutral and panel with metal foil	0.01	0.25	System ON and switch “e” close	
supplementary information:				
1. Input voltage: 110V, 60Hz				
2. Overall capacitance: 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 and earth		DC	2759	No
T201: primary and core		AC	1834	No
T201: secondary and core		AC	1834	No

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Clause	Requirement + Test	Result - Remark	Verdict
T301: primary and core		AC 1951	No
T301: secondary and core		AC 1951	No
T401: primary and core		AC 1674	No
T401: secondary and core		AC 1674	No
Reinforced:			
Unit: primary and secondary		DC 4242	No
T201: primary and secondary		AC 3000	No
T301: primary and secondary		AC 3000	No
T401: primary and secondary		AC 3000	No
Two layer of insulation tape used in transformer		AC 3000	No
Supplementary information:			
1. Test was performed on all sources of transformer and tape.			

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)		25°C, if not otherwise specified		—	
	Power source for EUT: Manufacturer, model/type, output rating		See appended table 1.5.1		—	
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
D251 pin 1 to 2	s-c	240	10 min.	F001	0.08	Unit shutdown, no damage, no hazards.
IC201 pin 2 to 6	s-c	240	10 min.	F001	0.08	Unit shutdown, IC201 damaged, repeat three times, have same results, no hazards.
Q201 pin D to S	s-c	240	1 sec	F001	--	F001 opened immediately, Q201 damaged, no hazards.
Q201 pin D to G	s-c	240	1 sec	F001	--	F001 opened immediately, Q201 damaged, no hazards.
Q201 pin G to S	s-c	240	10 min.	F001	0.08	Unit shutdown, no damage, no hazards.
D451 pin 1 to 2	s-c	240	10 min.	F001	0.18	Unit shutdown, no damage, no hazards.
IC401 pin 2 to 6	s-c	240	10 min.	F001	0.18	Unit shutdown, IC401 damaged, repeat three times, have same results, no hazards.
Q401 pin D to S	s-c	240	10 min.	F001	0.18	Unit shutdown, Q401 damaged, repeat three times, have same results, no hazards.

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Clause	Requirement + Test				Result - Remark	Verdict
Q401 pin D to G	s-c	240	10 min.	F001	0.18	Unit shutdown, Q401 damaged, repeat three times, have same results, no hazards.
Q401 pin G to S	s-c	240	10 min.	F001	0.18	Unit shutdown, no damage, no hazards.
D352 pin 1 to 2	s-c	240	10 min.	F001	0.08	Unit shutdown, no damage, no hazards.
IC301 pin 2 to 6	s-c	240	10 min.	F001	0.08	Unit shutdown, IC301 damaged, repeat three times, have same results, no hazards.
Q301 pin D to S	s-c	240	1 sec	F001	--	F001 opened immediately, Q301 damaged, no hazards.
Q301 pin D to G	s-c	240	1 sec	F001	--	F001 opened immediately, Q301 damaged, no hazards.
Q301 pin G to S	s-c	240	10 min.	F001	0.08	Unit shutdown, no damage, no hazards.
IC101	s-c	240	10 min.	F001	0.98	Unit normal operation, no hazards.
Q102 pin D to S	s-c	240	1 sec	F001	--	F001 opened immediately, Q102 damaged, no hazards.
Q102 pin D to G	s-c	240	1 sec	F001	--	F001 opened immediately, Q102 damaged, no hazards.
Q102 pin G to S	s-c	240	10 min.	F001	0.08	Unit shutdown, no damage, no hazards.
Q101 pin D to S	s-c	240	1 sec	F001	--	F001 opened immediately, Q101 damaged, no hazards.
Q101 pin D to G	s-c	240	1 sec	F001	--	F001 opened immediately, Q101 damaged, no hazards.
Q101 pin G to S	s-c	240	10 min.	F001	0.08	Unit shutdown, no damage, no hazards.
C110	s-c	240	1 sec	F001	--	F001 opened immediately, no hazards.
D002	s-c	240	1 sec	F001	--	F001 opened immediately, D002 damaged, no hazards.
PC301 pin 1 to 2	s-c	240	10 min.	F001	0.08	Unit shutdown, PC301 damaged, repeat three times, have same results, no hazards.
PC301 pin 3 to 4	s-c	240	10 min.	F001	0.88	Unit normal operation, no hazards.
PC301 pin 1	o-c	240	10 min.	F001	0.08	Unit shutdown, PC301 damaged, repeat three times, have same results, no hazards.

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Clause	Requirement + Test				Result - Remark	Verdict
PC401 pin 1 to 2	s-c	240	10 min.	F001	0.08	Unit shutdown, PC401 damaged, repeat three times, have same results, no hazards.
PC401 pin 3 to 4	s-c	240	10 min.	F001	0.15	Unit shutdown, no damage, no hazards.
PC401 pin 1	o-c	240	10 min.	F001	0.08	Unit shutdown, PC401 damaged, repeat three times, have same results, no hazards.
PC501 pin 1 to 2	s-c	240	10 min.	F001	0.98	Unit normal operation, no hazards.
PC501 pin 3 to 4	s-c	240	10 min.	F001	0.15	Unit shutdown, no damage, no hazards.
PC501 pin 1	o-c	240	10 min.	F001	0.98	Unit normal operation, no hazards.
PC502 pin 1 to 2	s-c	240	10 min.	F001	0.15	Unit shutdown, no damage, no hazards.
PC502 pin 3 to 4	s-c	240	10 min.	F001	0.98	Unit normal operation, no hazards.
PC502 pin 1	o-c	240	10 min.	F001	0.15	Unit shutdown, no damage, no hazards.
PC201 pin 1 to 2	s-c	240	10 min.	F001	0.08	Unit shutdown, no damage, no hazards.
PC201 pin 3 to 4	s-c	240	10 min.	F001	0.08	Unit shutdown, no damage, no hazards.
PC201 pin 1	o-c	240	10 min.	F001	0.08	Unit shutdown, no damage, no hazards.
T201 pin 8 to 10	s-c	240	10 min.	F001	0.04	Unit shutdown, no damage, no hazards.
T201 pin 2, 3 to 4, 5, 6	s-c	240	10 min.	F001	0.08	Unit shutdown, no damage, no hazards.
T201 pin 12 to 13	s-c	240	10 min.	F001	0.04	Unit shutdown, no damage, no hazards.
T401 pin 9 to 15	s-c	240	10 min.	F001	0.18	Unit shutdown, no damage, no hazards.
T401 pin 7 to 8	s-c	240	10 min.	F001	0.18	Unit shutdown, no damage, no hazards.
T401 pin 1 to 4	s-c	240	10 min.	F001	0.18	Unit shutdown, no damage, no hazards.
T301 pin 1, 2, 3 to 4, 5	s-c	240	10 min.	F001	0.98	Unit normal operation, no hazards.
T301 pin 8 to 10	s-c	240	1 sec	F001	--	F001 opened immediately, no hazards.

IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
All ventilation openings	b-l	240	2 hrs	F001	1.41	Maximum temperature: T301 Coil: 65.7 °C, T301 Core: 63.7 °C, T401 Coil: 79.3 °C, T401 Core: 75.5 °C, T201 Coil: 47.5 °C, T201 Core: 46.7 °C, PC301: 61.0 °C, C499: 54.6 °C, ambient: 19.5 °C. Unit normal working under thermal equilibrium was reached. No hazards.
T301 (after D352)	o-l	240	4 hrs	F001	1.71	Overload to 4.1 A then unit shut down. The maximum temperature of T301 Coil: 117.9 °C, T301 Core: 81.8 °C, T401 Coil: 74.1 °C, T401 Core: 66.5 °C, T201 Coil: 47.1 °C, T201 Core: 42.8 °C, ambient: 20.0 °C. No damage, no hazards.
T401 (after D452)	o-l	240	3 hrs	F001	1.97	Overload to 5.5 A then unit shut down. The maximum temperature of T301 Coil: 73.2 °C, T301 Core: 64.7 °C, T401 Coil: 98.9 °C, T401 Core: 78.0 °C, T201 Coil: 50.2 °C, T201 Core: 45.1 °C, ambient: 19.5 °C. No damage, no hazards.
T201 (after D251)	o-l	240	3.5 hrs	F001	1.47	Overload to 3.9 A then unit shut down. The maximum temperature of T301 Coil: 68.2 °C, T301 Core: 59.4 °C, T401 Coil: 76.8 °C, T401 Core: 69.4 °C, T201 Coil: 67.6 °C, T201 Core: 53.8 °C, ambient: 20.6 °C. No damage, no hazards.
Speaker	s-c	240	10 min	F001	1.01	Speaker shutdown, no damaged, no hazards.
For key control board						
R001	s-c	240	10 min	F001	1.11	Unit normal operation, no damaged, no hazards.
R002	s-c	240	10 min	F001	1.11	Unit normal operation, no damaged, no hazards.
R003	s-c	240	10 min	F001	1.11	Unit normal operation, no damaged, no hazards.
R004	s-c	240	10 min	F001	1.11	Unit normal operation, no damaged, no hazards.
R005	s-c	240	10 min	F001	1.11	Unit normal operation, no damaged, no hazards.
R006	s-c	240	10 min	F001	1.11	Unit normal operation, no damaged, no hazards.

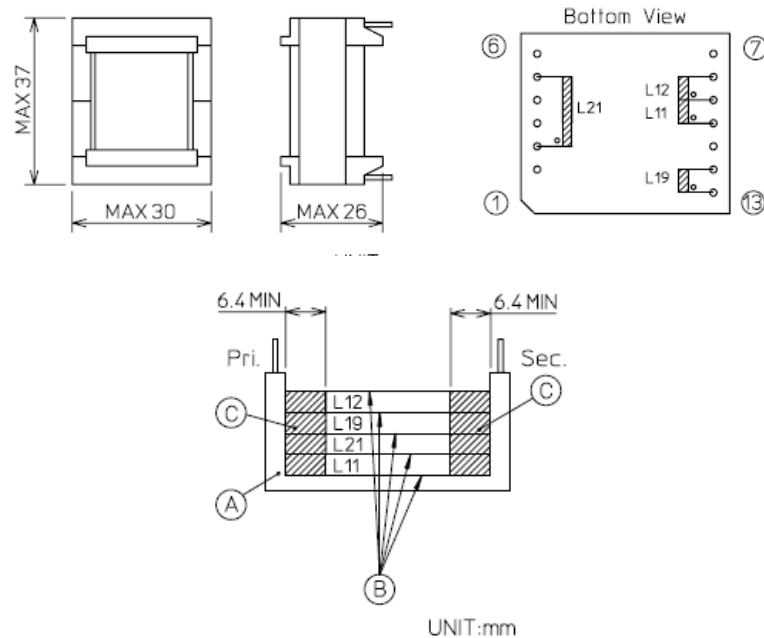
IEC 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
R001	o-c	240	10 min	F001	1.11	Unit normal operation, no damaged, no hazards.
R002	o-c	240	10 min	F001	1.11	Unit normal operation, no damaged, no hazards.
R003	o-c	240	10 min	F001	1.11	Unit normal operation, no damaged, no hazards.
R004	o-c	240	10 min	F001	1.11	Unit normal operation, no damaged, no hazards.
R005	o-c	240	10 min	F001	1.11	Unit normal operation, no damaged, no hazards.
R006	o-c	240	10 min	F001	1.11	Unit normal operation, no damaged, no hazards.
Supplementary information: 1. In fault column, where s-c = short-circuited, o-l = over-loaded, o-c = open-circuited, b-l = blocked. 2. For fuse opened condition, carried out for all sources of fuse. 3. For component damaged without fuse opened condition have been repeat 2 times with same result. 4. Maximum temperatures limitation of safety isolation transformers based on a test temperature of 40 °C: Class B $T_{max} = 175\text{ °C} - (40 - 25)\text{ °C} = 160\text{ °C}$						

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)
T301	Primary / input winding and secondary / output winding (internal) (DI)	640	341	AC 3000 V	5.4	7.0	0.4 mm.
T301	Primary / input winding and core (internal) (BI)	640	341	AC 1951 V	2.7	3.5	--
T301	Secondary / output winding and core (internal) (BI)	640	341	AC 1951 V	2.7	3.5	--
T301	Primary / input part and secondary / output part (external) (DI)	640	341	AC 3000 V	5.4	7.0	0.4 mm.
T301	Primary / input part and secondary / output winding (external) (DI)	640	341	AC 3000 V	5.4	7.0	0.4 mm.
T301	Primary / input part and core (external) (BI)	640	341	AC 1951 V	2.7	3.5	--

IEC 60950-1							
Clause	Requirement + Test			Result - Remark			Verdict
T301	Secondary / output part and core (external) (BI)	640	341	AC 1951 V	2.7	3.5	--
T301	Secondary / output part and primary / input winding (external) (DI)	640	341	AC 3000 V	5.4	7.0	0.4 mm.
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T301	Primary / input winding and secondary / output winding (internal) (DI)			AC 3000 V	12.8	12.8	0.8 mm / 2 layers
T301	Primary / input winding and core (internal) (BI)			AC 1951 V	6.4	6.4	--
T301	Secondary / output winding and core (internal) (BI)			AC 1951 V	6.4	6.4	--
T301	Primary / input part and secondary / output part (external) (DI)			AC 3000 V	26.9	26.9	0.8 mm / 2 layers
T301	Primary / input part and secondary / output winding (external) (DI)			AC 3000 V	8.9	8.9	0.8 mm / 2 layers
T301	Primary / input part and core (external) (BI)			AC 1951 V	4.2	4.2	--
T301	Secondary / output part and core (external) (BI)			AC 1951 V	3.5	3.5	--
T301	Secondary / output part and primary / input winding (external) (DI)			AC 3000 V	8.9	8.9	0.8 mm / 2 layers
supplementary information:							
1. The constructions of all sources of T301 are identical, only model designation, manufacturer, and the material of bobbin are different.							
2. Altitude correction factor for clearances for an altitude of 3000 m (based on IEC 60664-1:1992): 1.14.							
C.2	TABLE: transformers						P

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

Concentric windings on bobbin (horizontal type core). Outer winding is primary. Three layers of insulation tape provided between primary winding and secondary winding. The core is considered as floating part. The end-turn of each winding additionally fixed with insulation tape.



Insulation tape:

- Jingjiang Yahua, type No. CT
- Teraoka, type No. 631S #25 or 630F #25

Margin tape:

- 3M Company, type No. 44T-A
- Teraoka, type No. 673F 0.27 or 673F 0.5
- Jingjiang Yahua, type No. WF

Description of design:	
(a) Bobbin	
Primary/input pins..... :	10-9-8, 13-12
Secondary/output pins..... :	2-5
Material (manufacturer, type, ratings)	Type PM-9820 of Sumitomo Bakelite, phenolic, 150°C, V-0
Thickness (mm)	Min. 0.8 mm

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

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)
T401	Primary / input winding and secondary / output winding (internal) (DI)	444	265	AC 3000 V	4.8	5.4	0.4 mm.
T401	Primary / input winding and core (internal) (BI)	444	265	AC 1674 V	2.4	2.7	--
T401	Secondary / output winding and core (internal) (BI)	444	265	AC 1674 V	2.4	2.7	--
T401	Primary / input part and secondary / output part (external) (DI)	444	265	AC 3000 V	4.8	5.4	0.4 mm.
T401	Primary / input part and secondary / output winding (external) (DI)	444	265	AC 3000 V	4.8	5.4	0.4 mm.
T401	Primary / input part and core (external) (BI)	444	265	AC 1674 V	2.4	2.7	--
T401	Secondary / output part and core (external) (BI)	444	265	AC 1674 V	2.4	2.7	--
T401	Secondary / output part and primary / input winding (external) (DI)	444	265	AC 3000 V	4.8	5.4	0.4 mm.
Loc.	Tested insulation			Test voltage / V	Measured clearance / mm	Measured creepage dist. / mm	Measured distance thr. insul. / mm; number of layers
T401	Primary / input winding and secondary / output winding (internal) (DI)			AC 3000 V	12.8	12.8	0.8 mm / 2 layers
T401	Primary / input winding and core (internal) (BI)			AC 1674 V	6.4	6.4	--
T401	Secondary / output winding and core (internal) (BI)			AC 1674 V	6.4	6.4	--
T401	Primary / input part and secondary / output part (external) (DI)			AC 3000 V	26.9	26.9	0.8 mm / 2 layers
T401	Primary / input part and secondary / output winding (external) (DI)			AC 3000 V	9.4	9.4	0.8 mm / 2 layers

IEC 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
T401	Primary / input part and core (external) (BI)	AC 1674 V	4.0	4.0	--
T401	Secondary / output part and core (external) (BI)	AC 1674 V	3.2	3.2	--
T401	Secondary / output part and primary / input winding (external) (DI)	AC 3000 V	9.4	9.4	0.8 mm / 2 layers
supplementary information:					
1. The constructions of all sources of T401 are identical, only model designation, manufacturer, and the material of bobbin are different.					
2. Altitude correction factor for clearances for an altitude of 3000 m (based on IEC 60664-1:1992): 1.14.					

C.2	TABLE: transformers	P
Concentric windings on bobbin (horizontal type core). Outer winding and the outer winding is primary. Three layers of insulation tape provided between primary winding and secondary winding. The core is considered as floating part. The end-turn of each winding additionally fixed with insulation tape.		
The technical drawings include: Top View: A square outline with dimensions MAX 47 (height) and MAX 48.4 (width). Side View: A cross-section showing the bobbin and core with a dimension of MAX 27. Bottom View: A detailed layout of the windings labeled L11, L12, L18, L19, L21, and L22, with reference numerals 7, 9, 16, and 1. Winding Cross-section: A detailed view of the concentric windings on a bobbin. The primary (Pri.) and secondary (Sec.) windings are shown with insulation layers L11, L12, L18, L19, L21, and L22. Dimensions of 6.4 MIN are indicated for the winding thicknesses. Labels A, B, and C point to specific parts of the assembly. UNIT:mm		
<u>Insulation tape:</u>		

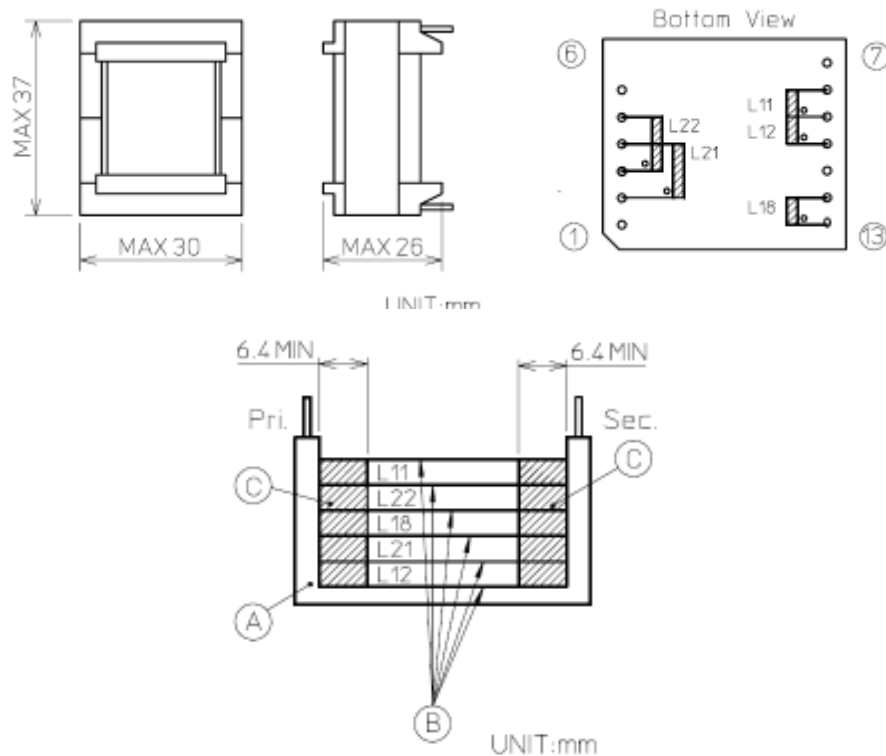
IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
- Jingjiang Yahua, type No. CT - Teraoka, type No. 630F #25 <u>Margin tape:</u> - Teraoka, type No. 673F 0.27 or 673F 0.5 - Jingjiang Yahua, type No. WF			
Description of design:			
(a) Bobbin			
Primary/input pins..... :		14,13-12,11, 16,15-10,9	
Secondary/output pins..... :		7-8, 3-4-5, 1-2	
Material (manufacturer, type, ratings)		Type PM-9820 of Sumitomo Bakelite, phenolic, 150°C, V-0	
Thickness (mm)		Min. 0.8 mm	

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)
T201	Primary / input winding and secondary / output winding (internal) (DI)	550	318	AC 3000 V	5.2	6.4	0.4 mm.
T201	Primary / input winding and core (internal) (BI)	550	318	AC 1834 V	2.6	3.2	--
T201	Secondary / output winding and core (internal) (BI)	550	318	AC 1834 V	2.6	3.2	--
T201	Primary / input part and secondary / output part (external) (DI)	550	318	AC 3000 V	5.2	6.4	0.4 mm.
T201	Primary / input part and secondary / output winding (external) (DI)	550	318	AC 3000 V	5.2	6.4	0.4 mm.
T201	Primary / input part and core (external) (BI)	550	318	AC 1834 V	2.6	3.2	--
T201	Secondary / output part and core (external) (BI)	550	318	AC 1834 V	2.6	3.2	--

IEC 60950-1							
Clause	Requirement + Test			Result - Remark			Verdict
T201	Secondary / output part and primary / input winding (external) (DI)	550	318	AC 3000 V	5.2	6.4	0.4 mm.
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T201	Primary / input winding and secondary / output winding (internal) (DI)			AC 3000 V	12.8	12.8	0.8 mm / 2 layers
T201	Primary / input winding and core (internal) (BI)			AC 1834 V	6.4	6.4	--
T201	Secondary / output winding and core (internal) (BI)			AC 1834 V	6.4	6.4	--
T201	Primary / input part and secondary / output part (external) (DI)			AC 3000 V	34.0	34.0	0.8 mm / 2 layers
T201	Primary / input part and secondary / output winding (external) (DI)			AC 3000 V	8.9	8.9	0.8 mm / 2 layers
T201	Primary / input part and core (external) (BI)			AC 1834 V	5.5	5.5	--
T201	Secondary / output part and core (external) (BI)			AC 1834 V	5.5	5.5	--
T201	Secondary / output part and primary / input winding (external) (DI)			AC 3000 V	8.9	8.9	0.8 mm / 2 layers
supplementary information:							
1. The constructions of all sources of T201 are identical, only model designation, manufacturer, and the material of bobbin are different.							
2. Altitude correction factor for clearances for an altitude of 3000 m (based on IEC 60664-1:1992): 1.14.							

C.2	TABLE: transformers	P
Concentric windings on bobbin (horizontal type core). Outer winding is primary. Three layers of insulation tape provided between primary winding and secondary winding. The core is considered as floating part. The end-turn of each winding additionally fixed with insulation tape.		

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



Insulation tape:

- Jingjiang Yahua, type No. CT
- Teraoka, type No. 630F #25

Margin tape:

- Teraoka, type No. 673F 0.27 or 673F 0.5
- Jingjiang Yahua, type No. WF

Description of design:	
(a) Bobbin	
Primary/input pins..... :	10-9-8, 13-12
Secondary/output pins..... :	3-5, 2-4
Material (manufacturer, type, ratings)	Type PM-9820 of Sumitomo Bakelite, phenolic, 150°C, V-0
Thickness (mm)	Min. 0.8 mm

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

List of test equipment used:

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

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

ATTACHMENT

Measurement Section

Page 1 of 2

Report No. 11027204 001

IEC 60950-1/Am1					
Clause	Requirement + Test			Result - Remark	Verdict
2.1.1.7	TABLE: Discharge test				P
Condition	τ calculated (s)	τ measured (s)	t u→ 0V (s)	Comments	
Line to Neutral	0.73	0.69	--	V _O = 379.1 V _{peak} , 37 % of V _O = 140.3 V _{peak} , voltage drop to 87.5 V _{peak} after 1 s	
Supplementary information: Input condition: 264 Vac, 60 Hz Overall capacity: C001=C002=0.47μF Bleeder resistor: R001=R002= 390kΩ					
2.4.2	TABLE: Limited current circuit measurement				N/A
Location	Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments
Supplementary information:					
2.6.3.4	TABLE: Resistance of earthing measurement				P
Location	Resistance measured (mΩ)		Comments		
The earth pin of appliance inlet to metal enclosure	32		Test current at 32 A, for 2 min. voltage drop to 1.05 V.		
The earth pin of appliance inlet to metal enclosure	31		Test current at 40 A, for 2 min. voltage drop to 1.24 V.		
The earth pin of appliance inlet to C499 earthed trace	23		Test current at 32 A, for 2 min. voltage drop to 0.736 V.		
The earth pin of appliance inlet to C093 earthed trace	8		Test current at 32 A, for 2 min. voltage drop to 0.256 V.		
The earth pin of appliance inlet to C093 earthed trace	10		Test current at 40 A, for 2 min. voltage drop to 0.4 V.		
The earth pin of appliance inlet to C094 earthed trace	8		Test current at 32 A, for 2 min. voltage drop to 0.256 V.		
The earth pin of appliance inlet to C094 earthed trace	10		Test current at 40 A, for 2 min. voltage drop to 0.4V.		
Supplementary information: 1. The voltage drop shall not exceed 2.5V.					
4.6.1, 4.6.2	Table: Enclosure opening measurements				P
Location	Size (mm)		Comments		

ATTACHMENT

Measurement Section

IEC 60950-1/Am1				
Clause	Requirement + Test		Result - Remark	Verdict
Metal enclosure (Horizontal)				
Top	Max. Ø 4.8	Numerous circular openings. There's no any hazardous voltage or energy hazards present within 5° projections.		
Rear	Max. Ø 4.8	Numerous circular openings. There's no any hazardous voltage or energy hazards present within 5° projections.		
Right	1) Max. Ø 4.6 2) Max. Ø 1.8	1) Numerous circular openings. 2) Numerous circular openings for speaker. There's no any hazardous voltage or energy hazards present within 5° projections.		
Left	Max. Ø 1.8	Numerous circular openings for speaker. There's no any hazardous voltage or energy hazards present within 5° projections.		
Bottom	Max. Ø 1.8 centre to centre min. 3.2 mm, thickness min. 0.81 mm	Numerous circular openings under primary circuit, comply with table 4D.		
Metal enclosure (vertical)				
Top	1) Max. Ø 4.6 2) Max. Ø 1.8	1) Numerous circular openings. 2) Numerous circular openings for speaker. There's no any hazardous voltage or energy hazards present within 5° projections.		
Right	Max. Ø 1.8	Numerous circular openings. There's no any hazardous voltage or energy hazards present within 5° projections.		
Left	Max. Ø 4.8	Numerous circular openings. There's no any hazardous voltage or energy hazards present within 5° projections.		
Rear	Max. Ø 4.8	Numerous circular openings. There's no any hazardous voltage or energy hazards present within 5° projections.		
Bottom	Max. Ø 1.8 centre to centre min. 3.2 mm, thickness min. 0.81 mm	Numerous circular openings for speaker.		
Supplementary information:				

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Information technology equipment – Safety – Part 1: General requirements	
Differences according to.....:	EN 60950-1:2006/A11:2009/A1:2010/A12:2011
Attachment Form No.....:	EU_GD_IEC60950_1B_II
Attachment Originator	SGS Fimko Ltd
Master Attachment	Date 2011-08
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EN 60950-1:2006/A11:2009/A1:2010/A12:2011 – CENELEC COMMON MODIFICATIONS
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IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)					
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions				P
General	Delete all the “country” notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1 Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2				P
General (A1:2010)	Delete all the “country” notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note				P

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.	Added.	N/A
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010	Deleted.	N/A
1.5.1	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC	Added.	P
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.	Added.	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
	Zx Protection against excessive sound pressure from personal music players		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipment for personal use, that: – is designed to allow the user to listen to recorded or broadcast sound or video; and – primarily uses headphones or earphones that can be worn in or on or around the ears; and – allows the user to walk around while in use. NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: – while the personal music player is connected to an external amplifier; or – while the headphones or earphones are not used. NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player. The requirements do not apply to: – hearing aid equipment and professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	– analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.		
	Zx.2 Equipment requirements No safety provision is required for equipment that complies with the following: – equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is ≤ 85 dBA measured while playing the fixed “programme simulation noise” as described in EN 50332-1; and – a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” as described in EN 50332-1. NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx. All other equipment shall: a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off. d) have a warning as specified in Zx.3; and e) not exceed the following: 1) equipment provided as a package (player with its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1. For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: – the symbol of Figure 1 with a minimum height of 5 mm; and – the following wording, or similar: “To prevent possible hearing damage, do not listen at high volume levels for long periods.”  Figure 1 – Warning label (IEC 60417-6044) Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.		N/A
	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be ≥ 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed “programme simulation noise” described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.		N/A
	Zx.4.3 Wireless listening devices In wireless mode: – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		N/A
	Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;	Replaced.	P
	c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		P
2.7.2	This subclause has been declared 'void'.		N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		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.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 1,5 to 2,5 1,5 to 4 Delete the fifth line: conductor sizes for 13 to 16 A		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_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.8	In Norway , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		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	In Finland, Norway and Sweden, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag" In Norway and Sweden, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: "Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.” Translation to Swedish: ”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”		
1.7.5	In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a. For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.		N/A
2.2.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.2	In Finland, Norway and Sweden there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.6.3.3	In the United Kingdom , the current rating of the circuit shall be taken as 13 A, not 16 A.		P
2.7.1	In the United Kingdom , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.13	In Finland, Norway and Sweden , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N/A
3.2.1.1	In Switzerland, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A		N/A
3.2.1.1	In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In Spain, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.		N/A
3.2.1.1	In the United Kingdom, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
3.2.1.1	In Ireland, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.		N/A
3.2.4	In Switzerland, for requirements see 3.2.1.1 of this annex.		N/A
3.2.5.1	In the United Kingdom, a power supply cord with conductor of 1,25 mm² is allowed for equipment with a rated current over 10 A and up to and including 13 A.		N/A
3.3.4	In the United Kingdom, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm² to 1,5 mm² nominal cross-sectional area.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.6	In the United Kingdom , the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
4.3.6	In Ireland , DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		N/A
5.1.7.1	In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that - is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and - has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and - is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.		N/A
	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.2	In Finland, Norway and Sweden , the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	In Finland, Norway and Sweden , for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A
7.3	In Norway and Sweden , for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A
7.3	In Norway , for installation conditions see EN 60728-11:2005.		N/A

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

ATTACHMENT TO TEST REPORT IEC 60950-1 CANADA NATIONAL DIFFERENCES

Information technology equipment – Safety –

Part 1: General requirements

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

SPECIAL NATIONAL CONDITIONS

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

1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	Unit was evaluated according to IEC 60950-1.	N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Considered.	P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the CEC/NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC are required to have special construction features and identification markings.		N/A
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."	Single-phase equipment.	N/A

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

National Differences to IEC 60950-1:2005 + A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for Canadian/US wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).		N/A
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A, or if the motor has a nominal voltage rating greater than 120 V, or is rated more than 1/3 hp (locked rotor current over 43 A).	No motor control devices.	N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.		N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.	No battery systems.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A
4.3.13.5	Equipment with lasers is required to meet the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.	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) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.	No such enclosures.	N/A
Annex H	Equipment that produces ionizing radiation is required to comply with the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations, 21 CFR 1020, as applicable.	No ionizing radiation.	N/A
OTHER DIFFERENCES The following key national differences are based on requirements other than national regulatory requirements			

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

National Differences to IEC 60950-1:2005 + A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.2	Equipment with handles is required to comply with special loading tests.		N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded. During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary.		N/A
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	No TNV circuits.	N/A
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV circuits.	N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.	No TNV circuits.	N/A

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

ATTACHMENT TO TEST REPORT IEC 60950-1 FINLAND NATIONAL DIFFERENCES

Information technology equipment – Safety –
Part 1: General requirements

Differences according to.....: EN 60950-1:2006/A11:2009/A1:2010

Attachment Form No......: FI_ND_IEC60950_1B

Attachment Originator: SGS Fimko Ltd

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

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	National Differences	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

National Differences to IEC 60950-1:2005 + A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	In Finland, TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that - is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and - has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and - is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.		N/A
6.1.2.1 (A1:2010)	In Finland, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.		N/A

National Differences to IEC 60950-1:2005 + A1:2009			
Clause	Requirement + Test	Result - Remark	Verdict
	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14:2005 which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14:2005; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14:2005, in the sequence of tests as described in EN 60384-14:2005.		
6.1.2.2	In Finland, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	In Finland, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A

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

ATTACHMENT TO TEST REPORT IEC 60950-1
GERMANY NATIONAL DIFFERENCES

Information technology equipment – Safety –

Part 1: General requirements

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

Annex ZC, 1.7.2.1	According to GPSG, section 2, clause 4: If certain rules on the use, supplementation or maintenance of an item of technical work equipment or ready-to-use commodity must be observed in order to guarantee safety and health, instructions for use in German must be supplied when it is brought into circulation.		P
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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	The following shall be added at the beginning of the clause: 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: 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	Prevention of electromagnetic interference - 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. <u>The apparatus shall meet the requirements in the appropriate part of the Standard series, SI 961.</u> - 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.		N/A
3	The clause is applicable with the following additions:		N/A
3.2.1.1	Connection to an a.c. mains supply After the note, the following note shall be added: Note: In Israel, the feed plug shall comply with the requirements of Israel Standard SI 32 Part 1.1.		N/A
3.2.1.2	Connection to a d.c. mains supply At the end of the first paragraph, the following note shall be added: Note: At the time of issue of this Standard, there is no Israel Standard for connection accessories to d.c.		N/A
Annex P	Normative references (List of relevant Israel Standards that have been inserted in place of some of the International Standards)		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

National Differences to IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
	US National Differences		P
SPECIAL NATIONAL CONDITIONS BASED ON FEDERAL REGULATIONS			
1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	The equipment was evaluated according to IEC 60950-1.	N/A
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 specified in the NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction features and identification markings.		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
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.		N/A
2.7.1	Suitable NEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	No standard supply outlets, receptacles, medium-base or smaller lampholders provided.	N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC.	Pluggable equipment type A.	N/A
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	No power supply cord provided.	N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.	Not applicable for the equipment.	N/A

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

National Differences to IEC 60950-1:2005			
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) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.	No such enclosures.	N/A
Annex H	Equipment that produces ionizing radiation must comply with Federal Regulations, 21 CFR 1020	No ionizing radiation.	N/A
OTHER NATIONAL DIFFERENCES			
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.	Components are approved by UL, see appended table 1.5.1 of IEC 60950-1 test report for details.	P
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as either a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply. This maximum operating voltage it to include consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.	No connection to DC mains supply.	N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the max. acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuits within the equipment.	N/A

National Differences to IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.	No TNV circuits within the equipment.	N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.		N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.	No CRT.	N/A
4.2.11	For equipment intended for mounting on racks and provided with slide/rails allowing the equipment to slide away from the rack for installation, service and maintenance, additional construction, performance and marking requirements are applicable to determine the adequacy of the slide/rails.	The equipment is not such equipment.	N/A
4.3.2	Equipment with handles is required to comply with special loading tests.		N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	No TNV circuits within the equipment.	N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded. During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary.		N/A
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	No TNV circuits within the equipment.	N/A
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV circuits within the equipment.	N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A

National Differences to IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
Annex NAF	Document (paper) shredders likely to be used in a home or home office (Pluggable Equipment Type A plug configuration) are required to comply with additional requirements, including markings/instructions, protection against inadvertent reactivation of a safety interlock, disconnection from the mains supply (via provision of an isolating switch), and protection against operator access (accessibility determined via new accessibility probe & probe/wedge).	The equipment is not such equipment.	N/A

National Differences to IEC 60950-1:2005			
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 to IEC 60950-1:2005																				
Clause	Requirement + Test	Result - Remark	Verdict																	
3.2.5.1	Modify Table 3B as follows: 1. Delete the first four rows and replace with the following: <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</td><td>16 [1,3]</td></tr><tr><td>Over 10 up to and including 16</td><td>1,00 (1,0) ^c 1,5</td><td>14 [2]</td></tr></table> 2. Delete NOTE 1. 3. Delete Footnote ^a and replace with the following: ^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).	RATED CURRENT of equipment A	Minimum conductor sizes		Nominal cross-sectional area mm ²	AWG or kcmil [cross-sectional area in mm ²] 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	16 [1,3]	Over 10 up to and including 16	1,00 (1,0) ^c 1,5	14 [2]	Modified.	N/A
RATED CURRENT of equipment A	Minimum conductor sizes																			
	Nominal cross-sectional area mm ²	AWG or kcmil [cross-sectional area in mm ²] 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	16 [1,3]																		
Over 10 up to and including 16	1,00 (1,0) ^c 1,5	14 [2]																		
4.1.201	Insert a new Clause 4.1.201 after Clause 4.1 as follows: 4.1.201 Display devices used for television purposes 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.		N/A																	

National Differences to IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.6	Delete the third paragraph and replace with the following: <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>	Deleted.	N/A
4.3.16.5	Add the following to the end of the first paragraph: 'or AS/NZS 2211.1'	Added.	N/A
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

National Differences to IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.201.1	4.7.201.1 General Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the apparatus, or the following: (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. (b) The following parts which would contribute negligible fuel to a fire: - 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. 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. Compliance shall be checked by the tests of 4.7.201.2, 4.7.201.3, 4.7.201.4 and 4.7.201.5. For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5. The tests shall be carried out on parts of non-metallic material which have been removed from the apparatus. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring.		N/A

National Differences to IEC 60950-1:2005									
Clause	Requirement + Test	Result - Remark	Verdict						
4.7.201.2	4.7.201.2 Testing of non-metallic materials Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550 °C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the sample tested was not thicker than the relevant part.		N/A						
4.7.201.3	4.7.201.3 Testing of insulating materials Parts of insulating material supporting POTENTIAL IGNITION SOURCES shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750 °C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE Contacts in components such as switch contacts are considered to be connections. For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test shall not be tested. The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications: <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> Replace the first paragraph with: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1. If possible the flame shall be applied at least 10 mm from a corner Replace the second paragraph with: The duration of </td></tr></table>	Clause of AS/NZS 60695.11.5	Change	9 Test procedure		9.2 Application of needleflame	Replace the first paragraph with: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1. If possible the flame shall be applied at least 10 mm from a corner Replace the second paragraph with: The duration of		N/A
Clause of AS/NZS 60695.11.5	Change								
9 Test procedure									
9.2 Application of needleflame	Replace the first paragraph with: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1. If possible the flame shall be applied at least 10 mm from a corner Replace the second paragraph with: The duration of								

National Differences to IEC 60950-1:2005				
Clause	Requirement + Test		Result - Remark	Verdict
		application of the test 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.			

National Differences to IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
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 4.7.201.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a POTENTIAL IGNITION SOURCE. The test is not carried out if the — - Printed board does not carry any POTENTIAL IGNITION SOURCE; - Base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are		N/A

National Differences to IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
	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. Compliance shall be determined using the smallest thickness of the material. 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.		
6.2.2	For Australia only, delete the first paragraph and Note, and replace with the following: In Australia only, compliance with 6.2.2 shall be checked by the tests of both 6.2.2.1 and 6.2.2.2.		N/A
6.2.2.1	For Australia only, delete the first paragraph including the Notes, and replace with the following: <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> <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> <i>(ii) for 6.2.1 b) and 6.2.1 c): 1.5 kV.</i> NOTE 201 The 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 The value of 2.5 kV for 6.2.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		N/A

National Differences to IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.2	For Australia only, delete the second paragraph including the Note, and replace with the following: <i>In Australia only, the a.c. test voltage is:</i> (i) for 6.2.1 a): 3 kV; and (ii) for 6.2.1 b) and 6.2.1 c): 1.5 kV. NOTE 201 Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
7.3	Add the following before the first paragraph: Equipment providing functions that fall only within the scope of AS/NZS 60065 and that incorporate a PSTN interface, are not required to comply with this Clause where the only ports provided on the equipment, in addition to a coaxial cable connection and a PSTN interface, are audio or video ports and analogue or data ports not intended to be used for telecommunications purposes.		N/A
Annex P	Normative references (List of relevant Australia/New Zealand Standards that have been inserted in place of some of the International Standards)		N/A

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	Add the following NOTE 1 and 2: 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. 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.	Added.	N/A
1.5.1	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. 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

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
1.5.2	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, 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. 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
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	Replaced.	N/A
1.7.1	Add local importer in this sub-clause manufacturer’s name or local importer or trade-mark or identification mark;	Added.	N/A
1.7.5	Replace “IEC 60083” to “IEC/TR 60083:1997 or JIS C 8303:2007” of this Sub-Clause	Replaced.	N/A
1.7.5.A	Add this sub-clause 1.7.5A Device Coupler 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.	Added.	N/A

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
1.7.17A	Add this sub-clause: Marking for CLASS 0I EQUIPMENT For CLASS 0I EQUIPMENT, the following instruction shall be indicated on the visible place of the mains plug or the main body: “Provide an earthing connection” <i>Example in Japanese:</i> 必ず接地接続を行って下さい 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: “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.” <i>Example in Japanese:</i> 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。	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”.	Replaced.	N/A
2.6.3.2	Add the following in front of 1st paragraph of this Sub-Clause. This also applies to the conductor of lead wire for protective earthing of CLASS 0I EQUIPMENT.	Added.	P
2.6.3.4	Add the following in this Sub-Clause. (See 2.6.3.3)	Added.	P
2.6.4.2	Add the following after 1st paragraph of this Sub-Clause. However, this shall not apply when the Class 0I equipment is equipped with a separate main protective earthing terminal.	Added.	N/A
2.6.5.4	Replace the first sentence of this Sub-Clause by: Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following:	Replaced.	N/A

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
2.6.5.8A	Add this sub-clause: Earthing of CLASS 0I EQUIPMENT Plugs with a lead wire for earthing shall not be used for equipment having a rated voltage exceeding 150V. For plugs with a lead wire for earthing, the lead wire shall not be earthed by a clip. CLASS 0I EQUIPMENT shall be provided with an earthing terminal or lead wire for earthing in the external where easily visible.	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	Add the following after Table 3A of this Sub-Clause. 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,	Added.	N/A
3.2.5.1	Add the following of this Sub-Clause. 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. - 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. - 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. Delete 1) in Table 3B.	Deleted.	P
3.3.4	Add the following in Table 3D 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	Added.	P

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.	N/A
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.	N/A
4.3.5	Replace “IEC 60083” to “JIS C 8303:2007” in the first sentence of this Sub-Clause	Replaced.	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.	Added.	N/A
4.3.13.5	Replace “IEC 60825-1” to “JIS C 6802:2005 or JIS C of this Sub-Clause	Replaced.	N/A
	Replace “IEC 60825-2:2000” to “JIS C 6803:2006 or IEC 60825-2:2000” of this Sub-Clause	Replaced.	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.

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

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

2) Value applies to materials impregnated with varnish.

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	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 Polymide 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

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

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

laminated diallyl phthalate resin mixed with inorganics	140
moulded diallyl phthalate resin mixed with:	
other than inorganics	130
inorganic powder	150
glass fiber	155
xylene resin-casting	140
polyamide-imide film	180
laminated silicone resin mixed with inorganics	180, (220) 1)
moulded silicon resins mixed with inorganics	180, (240) 4)
polyimide film	210
laminated polyimide	190
polybutadiene-casting	120
moulded polybutadiene mixed with inorganics	130
laminated diphenyl oxide mixed with inorganics	180

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.

Organic materials (Thermoplastic Resins)

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 polyphenylene 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-tetrafluoroethylene copolymer 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

Notes : 1) Values apply to capacitor dielectrics.
2) Values apply to thermal insulating material

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

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

3) Values apply to materials with a thickness of less than 0.8 mm

4) Inorganic materials

Inorganic materials

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
vulcanised fiber		180
heat resistant fiber		105
		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.	N/A
5.1.6 Table 5A	Replace Table 5A of this Sub-Clause by:	Replaced. The equipment is "Protection Class I".	P
Table 5A – Maximum current			

J 60950-1 (H22)					
Clause	Requirement – Test		Result – Remark		Verdict
	Type of equipment	Terminal A of measuring instrument connected to:	Maximum TOUCH CURRENT mA r.m.s. ¹⁾	Maximum PROTECTIVE CONDUCTOR CURRENT	
	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,		Added.		N/A
	Replace “IEC 60664-1” to “JIS C 0664 in note 4		Replaced.		N/A
7	Replace “IEC 60664-1” to “JIS C 0664:2003 of this NOTE 3		Replaced.		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.		Added.		N/A

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
Annex G 2.1	Replace “IEC 60664-1” to “JIS C 0664:2003”	Replaced.	N/A
Annex G 6	Replace “IEC 60664-1” to “JIS C 0664:2003”	Replaced.	N/A
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.	Added.	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	Added.	N/A
	Replace “IEC 60065:1998” to “IEC 60065:2001”	Replaced.	N/A
	Add the following terms. JIS C 6802:2005	Added.	N/A
	Add the following terms. JIS C 6803:2006 2004.	Added.	N/A
	Add the following terms. JIS C 8303:2007	Added.	N/A
	Add the following terms. JIS S 0101:2000	Added.	N/A
	Add the following terms. ITU-T Recommendation K.44:2003 , Resistibility tests for telecommunication equipment exposed to overvoltages and overcurrents – Basic Recommendation.	Added.	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.	Added.	N/A

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
Annex Q	Add the following terms. ITU-T Recommendation K.66:2004 , Protection of customer premises from overvoltages.	Added.	N/A
Annex T	Replace “IEC 60529:1989” to “JIS C 0920:2003	Replaced.	N/A
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.	Added. Not Document shredding machines.	N/A
JA.1	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;  and, also the following precautions for use; that use by an infant/child may cause a hazard of injury etc.; that a hand can be drawn into the mechanical section for shredding when touching the document-slot; that clothes can be drawn into the mechanical section for shredding when touching the document-slot; that hairs can be drawn into the mechanical section for shredding when touching the document-slot; in case of equipment incorporating a commutator motor, that equipment may catch fire or explode by spraying of flammable gas.	Added. Not Document shredding machines.	N/A
JA.2	<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.	Added. Not Document shredding machines.	N/A

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

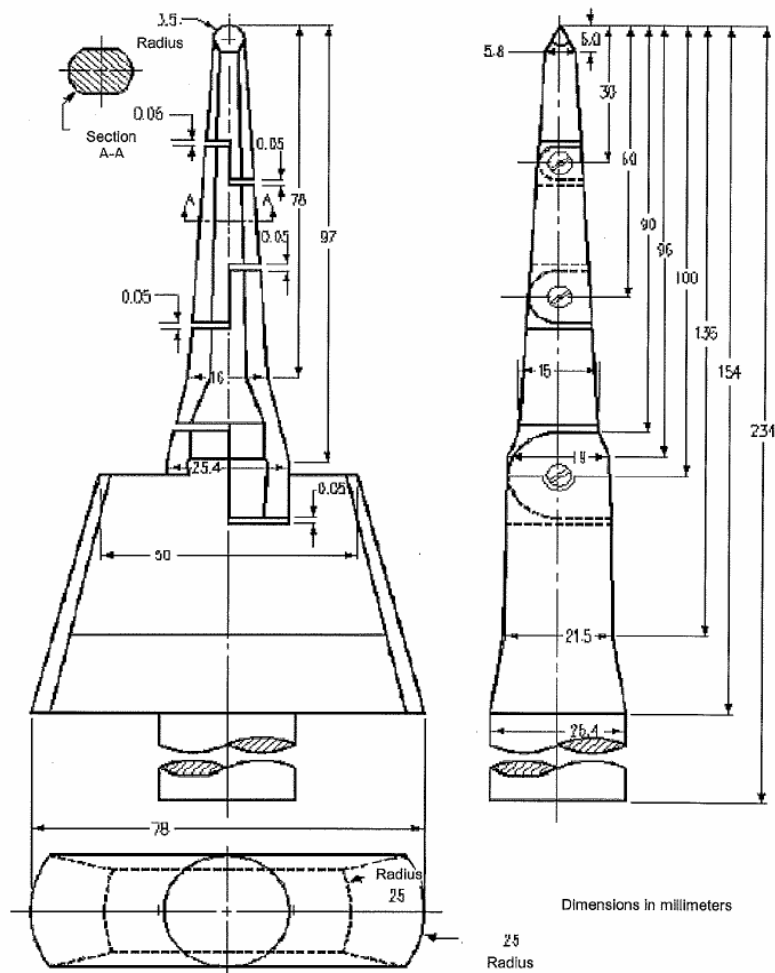
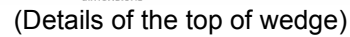


Figure JA.1 Test finger

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
JA.3	<u>Isolating switch</u> 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. 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. Compliance is checked by inspection.	Added. Not Document shredding machines.	N/A
JA.4	<u>Protection in operator access areas</u> Any warning shall not be used instead of the structure for preventing access to hazardous moving parts. Document shredding machines shall comply with the following requirements. 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. 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.	Added. Not Document shredding machines.	N/A



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

Figure JA.2 Wedge-probe

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
Annex JB (reference)	Add Annex JB (Current state and means of handling overvoltage and overcurrent in the installation environment) 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.	Added.	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

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
Appendix	J3000 (H21) 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 fixed by adequate mechanical construction, not rely on soldering.	P
2	Requirement for equipment		—
2.1	Electric heater When diode is used in parallel for adjustment of power, the equipment shall remain safe for operation under open condition of one diode.	Not electric stove.	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 9335-2-30(2006) under open condition of one diode 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およ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 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
	Enclosed by metal or ceramic		N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	No non-metallic materials within 50 mm from capacitor surface		N/A
	Non-metallic material within 50 mm 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	Plug directly inserted to outlet used refrigerator or electric freezer. Shall comply with - 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). Materials having glow wire frame temperature of 775 °C are acceptable.		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