Ref. Certif. No.

JPTUV-039312

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 City, Taipei County 23553 Taiwan
Name and address of the manufacturer Nom et adresse du fabricant	Top Victory Electronics (Taiwan) Co., Ltd. 10F., No. 230, Liancheng Rd. Zhonghe City, Taipei County 23553 Taiwan
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; 1.5A; Class I
Trade mark (if any) Marque de fabrique (si elle existe)	AOC
Model/type Ref. Ref. de type	270LM00004, e2752*** (* can be any alphanumeric characters or "+", "hyphen", "\", "/" or blank)
Additional information (if necessary) Information complémentaire (si nécessaire)	For model differences, refer to the test report.
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1:2005 National differences see test report
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce Certificat	11025443 001

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

TÜVRheinland®

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Global Technology Assessment Center
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Date: 12.07.2011

Signature: Dipl.-Ing. A. Klinker

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
   U Nove Hospody 4
   30100 Plzen
   Czech Republic

7. TPV Technology (Suzhou) Co., Ltd.,
   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: 12.07.2011

Signature: Dipl.-Ing. A. Klinker

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, Beihao City, Guangxi, P.R. China

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

Date: 12.07.2011

Signature: Dipl.-Ing. A. Klinker

Test Report issued under the responsibility of:

TÜVRheinland®

TEST REPORT

IEC 60950-1: 2005 (2nd Edition) and/or EN 60950-1:2006
Information technology equipment – Safety –
Part 1: General requirements

Report Reference No. ..... :	11025443 001
Date of issue ..... :	Jul. 7, 2011
Total number of pages	122
CB/CCA 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 ..... :	Same as applicant.
Address ..... :	Same as applicant.
Factory's name ..... :	See following page.
Address ..... :	See following page.
Test specification:	
Standard ..... :	☒ IEC 60950-1:2005 (2nd Edition) and/or ☒ EN 60950-1:2006
Test procedure ..... :	CB
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IECEN60950_1C
Test Report Form(s) Originator ..... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2007-06

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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

If this Test Report Form is used by non-CCA members, the CIG logo and the reference to the CCA Procedure shall be removed.

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

Test item description ..... :	LCD Monitor
Trade Mark ..... :	AOC
Manufacturer ..... :	Same as applicant.
Model/Type reference ..... :	270LM00004, e2752*** ("*" can be any alphanumeric characters or "+", "-", "\" "/" or blank)
Ratings ..... :	100-240 V ~, 50/60 Hz, 1.5 A

Testing procedure and testing location:	
☒ **CB/CCA Testing Laboratory:**	Refer to cover page
Testing location/ address..... :	Refer to cover page
☐ **Associated CB Laboratory:**	
Testing location/ address..... :	
Tested by (name + signature)..... :	Raye Chou
Approved by (+ signature)..... :	Carol Huang
☐ Testing procedure: TMP	
Tested by (name + signature)..... :	
Approved by (+ signature)..... :	
Testing location/ address..... :	
☐ Testing procedure: WMT	
Tested by (name + signature)..... :	
Witnessed by (+ signature) ..... :	
Approved by (+ signature)..... :	
Testing location/ address..... :	
☐ Testing procedure: SMT	
Tested by (name + signature)..... :	
Approved by (+ signature)..... :	
Supervised by (+ signature)..... :	
Testing location/ address..... :	
☐ Testing procedure: RMT	
Tested by (name + signature)..... :	
Approved by (+ signature)..... :	
Supervised by (+ signature)..... :	
Testing location/ address..... :	

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
All applicable tests as described in Test Case were performed. • The load condition used as below during testing: The equipment operated under maximum brightness, maximum contrast of LED backlight circuit, 2.5W for each USB port and max. volume of speakers with 1 kHz sine wave 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 equipment has been evaluated according to the specified by the manufacturer maximum operating altitude of 3658 m (correction factor for clearances according to IEC 60664:1992+A1:2000+A2:2002 of 1.24 is considered). • Unless special specified, all tests were performed on model 270LM00004 to represent.	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:

EU Group Differences, EU Special National Conditions, EU A-Deviations, AU, CA, CH, DE, DK, ES, FI, GB, IE, IL, KR, NO, SE, US.
Explanation of used codes: AU=Australia, CA=Canada, CH=Switzerland, DE=Germany, DK=Denmark, ES=Spain, FI=Finland, GB=United Kingdom, IE=Ireland, IL=Israel, KR=Korea, NO=Norway, SE=Sweden, US=United States of America.

The product has been tested for compliance with requirements of A11:2009 of EN 60950-1:2006.

For IEC 60950-1:2001 / EN 60950-1:2001+A11:2004
(All CB members countries listed in CB Bulletin No. 112A, dated December 2006)
EU Group Differences, EU Special National Conditions, EU A-Deviations, AR, AT, AU, BE, CA, CH, CN, CZ, DE, DK, FI, FR, GB, GR, HU, IL, IN, IT, KE, KR, MY, NL, NO, PL, SE, SG, SI, SK, US.

AR=Argentina, AT=Austria, AU=Australia, BE=Belgium, CA=Canada, CH=Switzerland, CN=China, CZ=Czech Republic, DE=Germany, DK=Denmark, FI=Finland, FR=France, GB=United Kingdom, GR=Greece, HU=Hungary, IL=Israel, IN=India, IT=Italy, KE=Kenya, KR=Korea, MY=Malaysia, NL=The Netherlands, NO=Norway, PL=Poland, SE=Sweden, SG=Singapore, SI=Slovenia, SK=Slovakia, US=United States of America.

For IEC 60950:1999 (3rd Edition) + Corr. Jan. 2000
EU Group Differences, EU Special National Conditions, EU A-Deviations, AR, AT, AU, BE, BR, CA, CH, CN, CZ, DE, DK, ES, FI, FR, GB, HU, IE, IL, IN, IT, JP, KE, KR, MY, NL, NO, PL, PT, RU, SE, SG, SI, SK, TR, UA, US, ZA.

AR=Argentina, AT=Austria, AU=Australia, BE=Belgium, BR=Brazil, CA=Canada, CH=Switzerland, CN=China, CZ=Czech Republic, DE=Germany, DK=Denmark, ES=Spain, FI=Finland, FR=France, GB= United Kingdom, HU=Hungary, IE=Ireland, IL=Israel, IN=India, IT=Italy, JP=Japan, KE=Kenya, KR=Korea,

MY=Malaysia, NL=The Netherlands, NO=Norway, PL=Poland, PT=Portugal, RU=Russian Federation, SE= Sweden, SG=Singapore, SI=Slovenia, SK=Slovakia, TR=Turkey, UA=Ukraine, US=United States of America, ZA=South Africa.

All country difference listed in the CB Bulletin are covered by Common Modifications, Special National Conditions, National Deviations and National Requirements noted follows except for the following countries which are documented in Country Difference.
Additionally, the National Differences for AR, AU, AT, BE, CA, CH, CN, CZ, DE, DK, FI, FR, GB, GR, HU, IL, IN, IT, KE, KR, MY, NL, NO, PL, SE, SG, SI, SK, US have been tested according IEC 60950-1:2001 for customer required. JP has been tested according to IEC 60950:1999 for customer required.

For National Differences see corresponding Attachment.

Copy of marking plate:

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

Test item particulars ..... :	
Equipment mobility ..... :	[**X**] movable [] hand-held [] transportable [] stationary [] for building-in [] direct plug-in
Connection to the mains ..... :	[**X**] pluggable equipment [] permanent connection [**X**] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains
Operating condition ..... :	[**X**] continuous [] rated operating / resting time:
Access location ..... :	[**X**] operator accessible [] restricted access location
Over voltage category (OVC) ..... :	[] OVC I [**X**] OVC II [] OVC III [] OVC IV [] other:
Mains supply tolerance (%) or absolute mains supply values ..... :	± 10 %
Tested for IT power systems ..... :	[**X**] Yes [] No
IT testing, phase-phase voltage (V) ..... :	230 V for Norway
Class of equipment ..... :	[**X**] Class I [] Class II [] Class III [] Not classified
Considered current rating (A) ..... :	16 or 20 (North America)
Pollution degree (PD) ..... :	[] PD 1 [**X**] PD 2 [] PD 3
IP protection class ..... :	IPX0
Altitude during operation (m) ..... :	Up to 3658
Altitude of test laboratory (m) ..... :	Less than 2000
Mass of equipment (kg) ..... :	5.34 (without base stand) ; 0.36 (for base stand)
Possible test case verdicts:	
- test case does not apply to the test object ..... :	N/A
- test object does meet the requirement ..... :	P (Pass)
- test object does not meet the requirement ..... :	F (Fail)
Testing ..... :	
Date of receipt of test item ..... :	June, 2011
Date(s) of performance of tests ..... :	June - July, 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.

Note: This TRF includes EN Group Differences together with National Differences and Special National Conditions, if any. All Differences are located in the Appendix to the main body of this TRF.

Throughout this report a point is used as the decimal separator.

General product information:

The equipment models shown as cover page are a LCD Monitor intended for information technology equipment scope of this standard use.

The equipment consists of the following critical components:

- Lamp with TFT LCD module
- Building-in type switching power supply with LED driver (evaluated within the equipment, refer to appended table 1.5.1 for the source details)
- Two decoding boards: one is P/N 715G5068 provides Audio port, SPDIF port, VGA port, DVI port, HDMI port and Display port; the other one is P/N 715G5017 provides Audio port, SPDIF port, VGA port, DVI port and HDMI port.
- Metal enclosure (within the plastic enclosure) is considered as fire enclosure
- Plastic enclosure is considered as electrical enclosure and mechanical enclosure (refer to appended table 1.5.1 for the source details)
- Two speakers
- Key control board
- Sub-board provides 4 USB ports and one USB B type port.

The equipment is full voltage-range design.

Models 270LM0004 and e2752*** are identical except the model designation.

Engineering Considerations

- The product was submitted and tested for use at the **maximum ambient temperature (Tma)** 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 accessible locations are within a **limited current circuit** (see subclause 2.4): None.
- The following circuit locations were investigated as a **limited power source** (see subclause 2.5): all data ports, 16V output of power supply and 5V output of power supply.
- The following **transformers** are provided (See subclause 1.5.4):
  - Double/Reinforced insulation: T901.
- The following **capacitors** bridging insulation (See subclause 1.5.6):
  - Double/Reinforced insulation: None.
  - Basic insulation: C920, C921, C918 and C935.
  - Supplementary insulation: None.
  - Across mains conductors: C914.
  - 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: R916, R917 and R918.
  - Functional insulation: other than above mentioned.
- The following **solid insulation** are provided (See subclause 2.10.5):
  - Reinforced insulation: Optocoupler (IC902) ; Plastic enclosure ; Bobbin of Transformer (T901)
  - 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 enclosures are provided:
  - Fire enclosure: internal metal enclosure.
  - Electrical enclosure: the outer plastic enclosure.
  - Mechanical enclosure: the outer plastic enclosure.

Additional Information

- The **power supply unit** used in the product is not a certified product. Hence, compliance has been evaluated in this report.
- The equipment is for use in **multimedia systems** and was investigated additionally to IEC GUIDE 112.

Markings and Instructions

- Fuse Identification (See subclause 1.7.6): Fuse marking is marked on PCB near fuse
  F901 T5AL / 250VAC
  F902 T5AL / 250VAC

  CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH THE SAME TYPE AND RATING OF FUSE.
- The product also marked with:
  - ⏻ (IEC 60417-5009) for the stand-by condition. (See subclause 1.7.8.3)

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: < 1.0mA.

Other comments:

Factories:

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) Tatung Mexico S.A. de C.V.
   Ave. Rosa Ma. Fuentes #7050, Complejo Industrial Fuentes, C.P. 32320, Cd. Juarez. Chih, MEXICO
5) Envision Industry of Electronic Products Ltd
   895, Joao Marcos Pozzetti Street, Industrial District II, 69.075-215 Manaus, AM, Brazil
6) Envision Industry of Electronic Products Ltd.
   Rodovia Anhanguera S/N – KM 49, 13.205-700 Tijuco Preto- Jundiaí – SP - Brazil
7) TPV Displays Polska Sp. z o.o.
   ul. Zlotego Smoka 9, 66-400 Gorzów Wlkp. Poland
8) L&T Display Technology (Fujian) Ltd.
   Optoelectronic Park, Rongqiao Economic and Technological Development Zone, Fuqing, Fujian

350301, P.R. China

9) TPV Display Technology (Beihai) Co., Ltd.
China Electronic Beihai Industry Park, Northeast of the Crossing Between Taiwan Road and Jilin Road, Beihao City, Guangxi, P.R. China

10) TPV Technology (Suzhou) Co., Ltd., Zhujiang Branch
No. 161, Zhujiang Road, Suzhou New District, Suzhou City, Jiangsu Provicne, P.R. China

11) Tatung Czech, s.r.o.
U Nove Hospody 4, 301 00 Plzen Czech Republic

The manufacturer's declaration, that the samples tested represent the products from each factory, is available.

Definition of variable(s):

Variable:	Range of variable:	Content:
*	See cover page	For marketing purpose only, no technical difference.

Attachments to this Test Report:

- Photo Documentation
- Measurement Section
- National Differences

IEC/EN 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 or relevant component standard	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components	Components certified to IEC standards and/or their harmonized standards, are used within their ratings and are checked for correct application. Non-certified components are checked for correct application, used within their ratings, tested as part of the equipment and subjected to applicable tests of the component standard.	P
1.5.3	Thermal controls	No thermal controls provided.	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	Between lines: subclass X1 or X2 capacitors according to IEC 60384-14 with 21 days damp heat test. Between Line/Neutral and earth: subclass Y1 or Y2 capacitors according to IEC 60384-14.	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
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	See above.	N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	See above.	N/A
1.5.8	Components in equipment for IT power systems	Y1 or Y2 subclass capacitors according to IEC 60384-14 provided between phase and earth are rated 250 V.	P
1.5.9	Surge suppressors	No such components used.	N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A
1.6	Power interface		P
1.6.1	AC power distribution systems	TN and IT (only for Norway) power systems are considered.	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	The equipment is not 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	The power rating marking is provided and is readily visible in operator access area.	P
	Rated voltage(s) or voltage range(s) (V) .....:	**See the copy of marking plate.**	P
	Symbol for nature of supply, for d.c. only .....:	Mains from AC source.	N/A
	Rated frequency or rated frequency range (Hz) ....:	**See the copy of marking plate.**	P
	Rated current (mA or A) .....:	**See the copy of marking plate.**	P
	Manufacturer's name or trade-mark or identification mark .....:	**See the copy of marking plate.**	P
	Model identification or type reference .....:	**See the copy of marking plate.**	P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Symbol for Class II equipment only .....:	The equipment is Class I equipment.	N/A
	Other markings and symbols .....:	Other markings and symbols do not give rise to misunderstanding.	P
1.7.2	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	The equipment is not pluggable equipment type B or permanently connected equipment.	N/A
1.7.2.4	IT power distribution systems	For Norway compliance has to be evaluated during the national approved.	N/A
1.7.2.5	Operator access with a tool	No operator access area which needs to be accessed by the use of a tool.	N/A
1.7.2.6	Ozone	The equipment does not produce ozone.	N/A
1.7.3	Short duty cycles	The equipment is designed for continuous operation.	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 standard power outlets provided.	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	The equipment is provided with appliance inlet, which is for connection of a detachable type power supply cord.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	No such conductors.	N/A
1.7.8	Controls and indicators	See below.	P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 .....:	No safety involved used, no indicated LEDs	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
1.7.10	Thermostats and other regulating devices .....:	Neither thermostats nor other regulating devices provided.	N/A
1.7.11	Durability	The marking plate was subjected to the permanence of marking test. The marking plate was rubbed with cloth soaked with water for 15 s and then again for 15 s with the cloth soaked with petroleum spirit. 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 batteries provided.	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	Unless otherwise indicated in 2.1.1.1, all parts are safe to access by operator.	P
	Test by inspection .....:	Complied.	P
	Test with test finger (Figure 2A) .....:	No contact.	P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Test with test pin (Figure 2B) .....:	No contact when applied to openings in external electrical enclosure.	P
	Test with test probe (Figure 2C) .....:	No TNV circuits within the equipment.	N/A
2.1.1.2	Battery compartments	No battery compartments provided and no TNV circuits within the equipment.	N/A
2.1.1.3	Access to ELV wiring	No ELV wiring.	N/A
	Working voltage (Vpeak or Vrms); 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	No conductive shafts of operating knobs, handles, levers and the like.	N/A
2.1.1.7	Discharge of capacitors in equipment	Voltage decay measurement was conducted with an oscilloscope having an input impedance of 100 MΩ.	P
	Measured voltage (V); time-constant (s) .....:	(see appended table 2.1.1.7)	—
2.1.1.8	Energy hazards – d.c. mains supply	No 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 8.9 V	P
2.1.2	Protection in service access areas	No maintenance works in operation mode necessary.	N/A
2.1.3	Protection in restricted access locations	The equipment is not limited to be used in restricted access locations.	N/A
2.2	SELV circuits		P
2.2.1	General requirements	See below.	P
2.2.2	Voltages under normal conditions (V) .....:	See appended table 2.2.2.	P
2.2.3	Voltages under fault conditions (V) .....:	See appended table 2.2.3.	P
2.2.4	Connection of SELV circuits to other circuits .....:	Complied with 2.2.2 and 2.2.3.	P

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Clause	Requirement + Test	Result - Remark	Verdict

2.3	TNV circuits		N/A
2.3.1	Limits	No TNV circuits within the equipment.	N/A
	Type of TNV circuits .....:		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions .....:		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed.....:		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed.....:		—
2.3.5	Test for operating voltages generated externally		N/A

2.4	Limited current circuits		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 µF).....:		—
2.4.3	Connection of limited current circuits to other circuits		N/A

2.5	Limited power sources		P
	a) Inherently limited output	Evaluated with USB ports. Also see appended table 2.5.	P
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition	Evaluated with power supply board +16V output. Also see appended table 2.5.	P
	d) Overcurrent protective device limited output	Output +5V protected by protective device of fuse. Also see appended table 2.5.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Max. output voltage (V), max. output current (A), max. apparent power (VA).....:	(see appended table 2.5)	—
	Current rating of overcurrent protective device (A)	See appended table 1.5.1.	—
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
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 supply cord provided.	N/A
	Rated current (A), cross-sectional area (mm^2), AWG .....:		—
2.6.3.3	Size of protective bonding conductors	See 2.6.3.4.	P
	Rated current (A), cross-sectional area (mm^2), AWG .....:		—
	Protective current rating (A), cross-sectional area (mm^2), AWG .....:		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min) .....:	(see appended table 2.6.3.4)	P
2.6.3.5	Colour of insulation.....:	No green-and-yellow wire used.	N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A), type, nominal thread diameter (mm) .....:	Evaluated by test.	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing	See below.	P
2.6.5.1	Interconnection of equipment	The equipment has its own earthing connection. Any other units connected to it via the output shall be provided SELV only.	P
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switch or overcurrent protective device provided in earthing conductors and protective bonding conductors.	P
2.6.5.3	Disconnection of protective earth	It is not possible to disconnect earth without disconnecting mains. The appliance inlet provided as disconnect device.	P
2.6.5.4	Parts that can be removed by an operator	The protective earthing connection is made earlier and broken later than the supply connection.	P
2.6.5.5	Parts removed during servicing	It is not necessary to disconnect the protective earthing connection except for the removing of the earthed part itself.	P
2.6.5.6	Corrosion resistance	No combination above the line in Annex J is used.	P
2.6.5.7	Screws for protective bonding	Self-tapping and spaced thread screws are not used to provide protective bonding.	N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system	Protective earthing does not rely 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

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructions when protection relies on building installation	Neither pluggable equipment type B nor permanently connected equipment.	N/A
2.7.2	Faults not simulated in 5.3.7		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
2.8.1	General principles	No safety interlocks or similar devices within the equipment.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches and relays		N/A
2.8.7.1	Contact gaps (mm) .....:		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A
2.9	Electrical insulation		P
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used.	P
2.9.2	Humidity conditioning	Tested for 120 hrs.	P
	Relative humidity (%), temperature (°C) .....:	95 %, 40 °C	—
2.9.3	Grade of insulation	Basic, supplementary, double insulation, reinforced or functional insulation.	P

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Clause	Requirement + Test	Result - Remark	Verdict
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	See below.	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
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 Vpeak 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		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

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Clause	Requirement + Test	Result - Remark	Verdict
	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 .....:	CTI rating for all materials of min. 100	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation	Complied with 2.10.5.2 to 2.10.5.14 and 5.2.	P
2.10.5.1	General	See below.	P
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation	Complied with 2.10.5.2 and 2.10.10.	P
2.10.5.4	Semiconductor devices	See 2.10.5.3.	P
2.10.5.5.	Cemented joints	(see appended table 2.10.3 and 2.10.4)	P
2.10.5.6	Thin sheet material – General	Considered.	P
2.10.5.7	Separable thin sheet material	Reinforced insulation.	P
	Number of layers (pcs) .....:	Three layers of insulation tape used for transformer (T901).	—
2.10.5.8	Non-separable thin sheet material	No such material used.	N/A
2.10.5.9	Thin sheet material – standard test procedure	See 2.10.5.10.	N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure	See below.	P
	Electric strength test	(see appended table 5.2)	—
2.10.5.11	Insulation in wound components	See below.	P
2.10.5.12	Wire in wound components	Reinforced insulation.	P
	Working voltage .....:	See appended table 2.10.2.	P
	a) Basic insulation not under stress .....:		N/A
	b) Basic, supplementary, reinforced insulation .....:		N/A
	c) Compliance with Annex U .....:	Complied with annex U, three layers.	P
	Two wires in contact inside wound component; angle between 45° and 90° .....:	Insulating sleeving provided.	P
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Routine test		N/A
2.10.5.14	Additional insulation in wound components	See below.	P
	Working voltage .....:	See appended table 2.10.2.	P
	- Basic insulation not under stress .....:		N/A
	- Supplementary, reinforced insulation .....:	Complied 2.10.5.6.	P
2.10.6	Construction of printed boards	See below.	P
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	P
2.10.6.2	Coated printed boards		N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs) .....:		N/A
2.10.7	Component external terminations		N/A
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	Certified sources of optocoupler used.	P
2.10.10	Test for Pollution Degree 1 environment and insulating compound	Certified sources of optocoupler used.	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 wiring which is PVC insulated, rated VW-1, min. 80 °C, 300 V. Internal wiring gauge is suitable for current intended to be carried.	P

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Clause	Requirement + Test	Result - Remark	Verdict
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges and heat sinks, which could damage the insulation and cause hazard.	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 materials see subclause 3.1.1.	P
3.1.5	Beads and ceramic insulators	No such insulators used.	N/A
3.1.6	Screws for electrical contact pressure	No electrical contact pressure by screwed connection.	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	No self-tapping or spaced thread screws used.	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	The clearances and creepages are not reduced below required in 2.10.	P
3.1.10	Sleeving on wiring	Internal wires cannot be touched hazardous live parts. No sleeving used as supplementary insulation function.	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	The appliance inlet used for connection of a detachable power supply cord.	P
3.2.1.2	Connection to a d.c. mains supply	Not connection to d.c. mains supply.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.2.2	Multiple supply connections	There is only one supply connection for the equipment.	N/A
3.2.3	Permanently connected equipment	The equipment is not permanently connected equipment.	N/A
	Number of conductors, diameter of cable and conduits (mm) .....:		—
3.2.4	Appliance inlets	The appliance inlet complied with IEC/EN 60320-1; the connector inserted without difficulty and does not support the equipment on a flat surface.	P
3.2.5	Power supply cords	No power supply cord provided.	N/A
3.2.5.1	AC power supply cords	No power supply cord provided.	N/A
	Type .....:		—
	Rated current (A), cross-sectional area (mm²), 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 sharp points or cutting edges within or on the surface of the equipment or at the inlet opening or inlet bushing.	P
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g) .....:		—
	Radius of curvature of cord (mm).....:		—
3.2.9	Supply wiring space	The equipment is not permanently connection or with non-detachable power supply cord.	N/A

3.3	Wiring terminals for connection of external conductors		N/A
3.3.1	Wiring terminals	No wiring terminals for connection of external conductors provided.	N/A
3.3.2	Connection of non-detachable power supply cords		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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	The appliance coupler used as disconnect device.	P
3.4.3	Permanently connected equipment	The equipment is not permanently connected equipment.	N/A
3.4.4	Parts which remain energized	When the equipment is disconnected from mains, no remaining parts at hazardous voltage in the equipment.	P
3.4.5	Switches in flexible cords	No isolating switches fitted 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	The equipment is single-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 of the power supply to the other PCBs in the equipment by secondary output wires only.	N/A
3.4.11	Multiple power sources	Only one power source provided.	N/A
3.5	Interconnection of equipment		P
3.5.1	General requirements	Conformance to 2.2 is continued.	P

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Clause	Requirement + Test	Result - Remark	Verdict
3.5.2	Types of interconnection circuits .....:	Interconnection circuits of SELV through the connectors.	P
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment	All data ports only data transmitting no voltage output.	P
4	PHYSICAL REQUIREMENTS		P
4.1	Stability		N/A
	Angle of 10°	Mass of EUT less than 7 kg.	N/A
	Test force (N) .....:	The equipment is not floor-standing equipment.	N/A
4.2	Mechanical strength		P
4.2.1	General	See below. After the tests, the equipment complies with the requirements of subclauses 2.1.1, 2.6.1 and 2.10.	P
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 of plastic material at top, side and rear are tested. After subjected 250 N, no energy or other hazards.	P
4.2.5	Impact test	For outer enclosure of plastic material are tested. 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) .....:	Not applicable.	N/A
4.2.7	Stress relief test	After 70 °C for a period of 7 hours and cooling down to room temperature, no shrinkage, distortion or loosening.	P
4.2.8	Cathode ray tubes	No cathode ray tubes provided.	N/A
	Picture tube separately certified .....:		N/A
4.2.9	High pressure lamps	No high pressure lamps provided.	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 14.94 kg (3 times the mass of the unit and the mass is 4.98 kg 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, 100 mm x 100 mm, four M4 size with 10 mm length screws to secure.	P
4.3	Design and construction		P
4.3.1	Edges and corners	All edges or corners accessible to operator are rounded and smoothed.	P
4.3.2	Handles and manual controls; force (N).....:		N/A
4.3.3	Adjustable controls	No safety relevant adjustable controls provided.	N/A
4.3.4	Securing of parts	Electrical and mechanical connections can be expected to withstand usual mechanical stress. No loosening or clearance and creepage impairing distances likely to occur.	P
4.3.5	Connection by plugs and sockets	No mismatch of connectors, plugs or sockets possible.	P
4.3.6	Direct plug-in equipment	The equipment is not direct plug-in equipment.	N/A
	Torque .....:		—
	Compliance with the relevant mains plug standard .....:		N/A
4.3.7	Heating elements in earthed equipment	No heating elements within the equipment.	N/A
4.3.8	Batteries	No batteries provided.	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

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Clause	Requirement + Test	Result - Remark	Verdict
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	The equipment does not produce dust or use powders, liquids and gases in the equipment.	N/A
4.3.11	Containers for liquids or gases		N/A
4.3.12	Flammable liquids .....:		N/A
	Quantity of liquid (l) .....:		N/A
	Flash point (°C) .....:		N/A
4.3.13	Radiation	See below.	P
4.3.13.1	General	See below.	P
4.3.13.2	Ionizing radiation	The equipment does not generate 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	The equipment does not produce significant UV radiation.	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	Laser (including LEDs)	The LED is considered as indicating light.	P
	Laser class .....:		—
4.3.13.6	Other types .....:	No other types used.	N/A

4.4	Protection against hazardous moving parts		N/A
4.4.1	General	No hazardous moving parts within the equipment.	N/A
4.4.2	Protection in operator access areas .....:		N/A
4.4.3	Protection in restricted access locations .....:		N/A
4.4.4	Protection in service access areas		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.5	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 .....:	(see appended table 4.5.5)	P
4.6	Openings in enclosures		P
4.6.1	Top and side openings	See below.	P
	Dimensions (mm) .....:	(see appended table 4.6.1 and 4.6.2)	—
4.6.2	Bottoms of fire enclosures	See below.	P
	Construction of the bottom, dimensions (mm) .....:	(see appended table 4.6.1 and 4.6.2)	—
4.6.3	Doors or covers in fire enclosures	No doors or covers provided in the fire enclosure.	N/A
4.6.4	Openings in transportable equipment	The equipment is not such 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 suitable flammability classes are used (see appended table 4.7)	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

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Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
4.7.3	Materials		P
4.7.3.1	General	The PCBs have material of flammability class V-1 or better.	P
4.7.3.2	Materials for fire enclosures	(see appended table 1.5.1)	P
4.7.3.3	Materials for components and other parts outside fire enclosures	HB material used.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	Internal components except small parts are flammability class V-2 or better.	P
4.7.3.5	Materials for air filter assemblies	No air filters provided.	N/A
4.7.3.6	Materials used in high-voltage components	No high-voltage components provided.	N/A

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		P
5.1.1	General	See subclauses 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	The EUT has only one mains connection.	P
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit	The test circuit as in figure 5 A is used.	P
5.1.4	Application of measuring instrument	The measuring instrument as in Annex D.1 is used.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.5	Test procedure	The touch current was measured from mains to metal enclosure, plastic enclosure with metal foil, and output connectors.	P
5.1.6	Test measurements	See below.	P
	Supply voltage (V) .....:	(see appended table 5.1.6)	—
	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	The touch current not exceeded 3.5 mA.	N/A
5.1.7.1	General .....:		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	No TNV circuits within the equipment.	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system	No TNV circuits within the equipment.	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	No TNV circuits within the equipment.	N/A
	a) EUT with earthed telecommunication ports .....:		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A

5.2	Electric strength		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure	Table 5B used.	P

5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	No motors provided.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.3	Transformers	(see appended table 5.3 and Annex C)	P
5.3.4	Functional insulation.....:	Functional insulation complied with the requirements of c).	P
5.3.5	Electromechanical components	No electromechanical components provided.	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	(see appended table 5.3)	P
5.3.8	Unattended equipment	None of the listed components were provided.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	See below.	P
5.3.9.1	During the tests	Neither fire nor molten metal occurs and no deformation of enclosure.	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

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

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Clause	Requirement + Test	Result - Remark	Verdict
	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) .....:		—
	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) .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
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)		P
A.3.1	Mounting of samples		P
A.3.2	Test procedure		P
A.3.3	Compliance criterion		P

B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		N/A
B.1	General requirements		N/A
	Position .....:		—
	Manufacturer .....:		—
	Type .....:		—
	Rated values .....:		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) .....:		—
	Electric strength test: test voltage (V) .....:		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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 .....:	T901	—
	Manufacturer .....:	(Refer to appended table 1.5.1.)	—
	Type .....:	(Refer to appended table 1.5.1.)	—
	Rated values .....:	(Refer to appended table 1.5.1.)	—
	Method of protection.....:	Overcurrent protection.	—
C.1	Overload test	(see appended table 5.3)	P
C.2	Insulation	(see appended table 5.2)	P
	Protection from displacement of windings.....:	(see appended table C.2)	P
D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		P
D.1	Measuring instrument	Figure 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
F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		P

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Clause	Requirement + Test	Result - Remark	Verdict
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply .....:		N/A
G.2.2	Earthed d.c. mains supplies .....:		N/A
G.2.3	Unearthed d.c. mains supplies .....:		N/A
G.2.4	Battery operation .....:		N/A
G.3	Determination of telecommunication network transient voltage (V) .....:		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks .....:		N/A
G.4.2	Transients from telecommunication networks .....:		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances .....:		N/A

H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N/A

J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		P
	Metal(s) used .....:	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
K.3	Thermostat endurance test; operating voltage (V) :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
K.4	Temperature limiter endurance; operating voltage (V) .....:		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)		P
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment	See summary of testing.	P
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz) .....:		—
M.3.1.2	Voltage (V) .....:		—
M.3.1.3	Cadence; time (s), voltage (V) .....:		—
M.3.1.4	Single fault current (mA) .....:		—
M.3.2	Tripping device and monitoring voltage .....:		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V) .....:		N/A
N	ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	ANNEX P, NORMATIVE REFERENCES		—

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Clause	Requirement + Test	Result - Remark	Verdict

Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		N/A
	a) Preferred climatic categories .....:		N/A
	b) Maximum continuous voltage .....:		N/A
	c) Pulse current .....:		N/A

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

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

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

U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		P
		Certified component.	—

V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P
V.1	Introduction		P
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
W.2.1	Isolation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N/A
Y.1	Test apparatus .....:		N/A
Y.2	Mounting of test samples .....:		N/A
Y.3	Carbon-arc light-exposure apparatus .....:		N/A
Y.4	Xenon-arc light exposure apparatus .....:		N/A
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		N/A
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N/A
BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—

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Clause	Requirement + Test	Result - Remark	Verdict

EN 60950-1:2006 – CENELEC COMMON MODIFICATIONS		
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations	P
General	Delete all the “country” notes in the reference document 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
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.	P
1.5.1	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC	N/A
1.7.2.1	Add the following NOTE: NOTE Z1 In addition, the instructions shall include, as far as applicable, a warning that excessive sound pressure from earphones and headphones can cause hearing loss	N/A

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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; 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'.		P
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-F". 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
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	Add the following NOTE: 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. Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.	N/A
Biblio-graphy	Additional EN standards.	—

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

ZB	SPECIAL NATIONAL CONDITIONS	P
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
1.5.7.1	In **Finland**, **Norway** and **Sweden**, resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.2.	N/A
1.5.8	In **Norway**, due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	N/A
1.5.9.4	In **Finland**, **Norway** and **Sweden**, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	N/A
1.7.2.1	In **Finland**, **Norway** and **Sweden**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan" In Norway: “Apparatet må tilkoples jordet stikkontakt” In Sweden: “Apparaten skall anslutas till jordat uttag”	N/A
1.7.5	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.	N/A
2.2.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	N/A
2.3.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.	N/A
2.3.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

2.6.3.3	In the **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16 A.	P
2.7.1	In the **United Kingdom**, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	N/A
2.10.5.13	In **Finland**, **Norway** and **Sweden**, there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	N/A
3.2.1.1	In **Switzerland**, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998 Plug Type 25 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998 Plug Type 21 L+N 250 V, 16 A 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 exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.	N/A
3.2.1.1	In **Spain**, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.	N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In the **United Kingdom**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		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 mm^2 to 1,5 mm^2 nominal cross-sectional area.		N/A
4.3.6	In the **United Kingdom**, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
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

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1	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. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - 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. It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, 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 132400; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400.		N/A
6.1.2.2	In **Finland**, **Norway** and **Sweden**, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	In **Finland**, **Norway** and **Sweden**, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A
7.3	In **Norway** and **Sweden**, there are many buildings where the screen of the coaxial cable is normally not connected to the earth in the building installation.		N/A
7.3	In **Norway**, for installation conditions see EN 60728-11:2005.		N/A

ZC	A-DEVIATIONS (informative)	P

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

1.5.1	**Sweden** (Ordinance 1990:944) Add the following: NOTE In Sweden, switches containing mercury are not permitted.	N/A
1.5.1	**Switzerland** (Ordinance on environmentally hazardous substances SR 814.081, Annex 1.7, Mercury - Annex 1.7 of SR 814.81 applies for mercury.) Add the following: NOTE In Switzerland, switches containing mercury such as thermostats, relays and level controllers are not allowed.	N/A
1.7.2.1	**Denmark** (Heavy Current Regulations) Supply cords of CLASS I EQUIPMENT, which is delivered without a plug, must be provided with a visible tag with the following text: Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket  eller If essential for the safety of the equipment, the tag must in addition be provided with a diagram, which shows the connection of the other conductors, or be provided with the following text: “For tilslutning af de øvrige ledere, se medfølgende installationsvejledning.”	N/A
1.7.2.1	**Germany** (Gesetz über technische Arbeitsmittel und Verbraucherprodukte (Geräte- und Produktsicherheitsgesetz – GPSG) [Law on technical labour equipment and consumer products], of 6th January 2004, Section 2, Article 4, Clause (4), Item 2). If for the assurance of safety and health certain rules during use, amending or maintenance of a technical labour equipment or readymade consumer product are to be followed, a manual in German language has to be delivered when placing the product on the market. Of this requirement, rules for use even only by SERVICE PERSONS are not exempted.	N/A
1.7.5	**Denmark** (Heavy Current Regulations) With the exception of CLASS II EQUIPMENT provided with a socket outlet in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-4a, CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.	N/A
1.7.13	**Switzerland** (Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15 Batteries) Annex 2.15 of SR 814.81 applies for batteries.	N/A
5.1.7.1	**Denmark** (Heavy Current Regulations, Chapter 707, clause 707.4) TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B.	N/A

IEC/EN 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 Monitor:					
LCD Panel	LG Display Co., Ltd.	LM270WF* (* can be 0-9,A-Z , blank)	27.0” color TFT-LCD panel, LED backlight type	--	--
	CHI MEI	M270*** (* can be 0-9,A-Z , blank)	27.0” color TFT-LCD panel, LED backlight type	--	--
Plastic Enclosure	various	various	HB or better, min. 60°C, thickness 2.2 mm min.	UL 94	UL
	Chi Mei Corporation	PA-757(+)	HB or better, thickness 2.2mm min.	UL 94	UL
	LG Chemical (Guangzhou) Engineering Plastics Co Ltd	HF-350, HF-380	HB or better, thickness 2.2mm min.	UL 94	UL
	Cheil Industries Inc Chemicals Div	SD-0150(+) BF-0670(+) BF-0675(+) BF-0677 GC-0700(+) BF-0670F HS-7000RA	HB or better, thickness 2.2mm min.	UL 94	UL
	Grand Pacific Petrochemical Corp	D-150	HB or better, thickness 2.2mm min.	UL 94	UL
	King Fa Sci & Tech Co., Ltd.	5197	HB or better, thickness 2.2mm min.	UL 94	UL
	LG	SE-750, XG-568, XG-569C, GP-1000L	HB or better, thickness 2.2mm min.	UL94	UL
	KingFa	RS-900, GAR-011C , GAR-011(L65) , RS-300 , RS-400 , GAR-011(HG6) , CK-100 , RD-9000	HB or better, thickness 2.2mm min.	UL 94	UL

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

Metal Enclosure	--	--	Metal, thickness 0.6 mm min.	--	--
Base stand (Optinal)	--	--	HB or better, weight: 0.36 kg	UL 94	UL
Switching Power supply board with DC/AC inverter	TPV	715G5074 715T5074	I/P: 90-264Vac, 47-63Hz, max. 1.5A. O/P: max.5.35Vdc / 3.0 A, max.20.6Vdc / 2.0A	--	--
PCB	--	--	V-1 or better, min., 105 °C	UL 796, UL 94	UL
Speakers (two provided)	--	--	Max. 8 Ω, 2 W max.	--	--
Switching Power supply: 715G5074 / 715T5074 by TPV					
Appliance inlet (CN901)	Rong Feng Industrial Co Ltd	SS-7B, SS-120	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
	Zhang Jia Gang-Hua Jie	SA-4S	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
	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
Fuse (F901, F902)	Littelfuse / Wickmann	392, 382	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3	VDE
	Littelfuse	663 series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3	VDE
	Conquer	MET, MST	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3	VDE
	SAVE FUSETECH INC	SR-5 series, SS-5 series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3	VDE

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

	Ever Island Electric Co., Ltd & Walter Electric	2000+, 2010+	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3	VDE
Bleeder Resistors (R916, R917, R918)	--	SMD type	Max. 910kΩ, min., 1/4W (Located after fuse, three in series)	--	--
Thermistor (NR901)	--	--	Min. 3 Ω, min. 2 A at 25 °C	--	--
X- Capacitors (C914) (X1 or X2 type) (Optional)	Hua Jung Components Co., Ltd.	MKP	Max. 0.33 µF, 250 Vac, min. 85 °C	IEC 60384-14: 2005	VDE
	Xiamen Faratronic Co., Ltd.	MKP62	Max. 0.33 µF, 250 Vac, min. 85 °C	IEC 60384-14	VDE
	Europtronic (Taiwan) Industrial Corp.	MPX	Max. 0.33 µF, 250 Vac, min. 85 °C	IEC 60384-14: 2005	VDE
	Liow Gu Electronics Industry Co., Ltd.	GS-L	Max. 0.33 µF, 250 Vac, min. 85 °C	IEC 60384-14	VDE
	Ultra Tech Xiphi Enterprise Co., Ltd.	HQX	Max. 0.33 µF, 250 Vac, min. 85 °C	IEC 60384-14	VDE
	Arcotronics Spa	R.46	Max. 0.33 µF, 250 Vac, min. 85 °C	IEC 60384-14: 2005	VDE
	Epcos Electronic Components S A	B3292#	Max. 0.33 µF, 250 Vac, min. 85 °C	IEC 60384-14: 2005	VDE
Y- Capacitors (C921, C920, C935, C918) (Y1 or Y2 type) (Optional)	Walsin	AC, AH	Max. 4700 pF, min. 250 Vac, min. 85 °C	IEC 60384-14: 2005	VDE
	TDK	CS, CD	Max. 4700 pF, min. 250 Vac, min. 85 °C	IEC 60384-14: 2005	VDE
	Murata	KH, KX	Max. 4700 pF, min. 250 Vac, min. 85 °C	IEC 60384-14: 2005	VDE

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

	JYA-NAY	JY	Max. 4700 pF, min. 250 Vac, min. 85 °C	IEC 60384-14	VDE
	JYA-NAY	JN	Max. 4700 pF, min. 250 Vac, min. 85 °C	IEC 60384-14: 2005	VDE
	Hongming	F	Max. 4700 pF, min. 250 Vac, min. 85 °C	IEC 60384-14	VDE
	Wansheng	CT7	Max. 4700 pF, min. 250 Vac, min. 85 °C	IEC 60384-14: 2005	VDE
Line Choke (L902) (Optional)	ASET	73G174-241-X 73T174-241-X	105 °C	--	--
	Dadon	73G174-241-H 73T174-241-H	105 °C	--	--
	Chenping	73G174-241-CP 73T174-241-CP	105 °C	--	--
	TPV	715G174-241-V 715T174-241-V	105 °C	--	--
Transistor (Q901)	--	--	Min. 600Vac, Min. 3.8A	--	--
Current sense resistor (R919)	--	--	0.33 ohm, 2W	--	--
Bridging Diode (BD901)	--	--	Min. 2 A, min. 600Vac	--	--
Ripple Capacitor (C902, C903)	--	--	68 µF, min. 450 V, min. 105 °C	--	--
Optocouplers (IC902)	Sharp	PC123	Dti = 0.7 mm, Int. cr = 5.0 mm, Ext. cr = 8.0 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2:2003, IEC/EN 60950-1, UL 1577	VDE, UL
	Vishay Semiconductor	TCET1103	Dti = 0.6 mm, Int. cr = 4.7 mm, Ext. cr = 8.4 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2:2003, IEC/EN 60950-1, UL 1577	VDE, UL

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

	Everlight Electronics Co., Ltd.	EL817.	Dti = 0.5 mm, Int. cr = 6.0 mm, Ext. cr = 7.7 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2:2003, IEC/EN 60950-1, UL 1577	VDE, UL
	Lite-On	LTV-817	Dti = 0.4 mm, Int. cr = 4.0 mm, Ext. cr = 8.0 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2:2003, IEC/EN 60950-1, UL 1577	VDE, UL
	Toshiba	TLP421F	Dti = 0.4 mm, Int. cr = thermal cycling test, Ext. cr = 8.0 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2:2003, IEC/EN 60950-1	VDE
	Toshiba	TLP781, TLP781F	Dti = 0.4 mm, Int. cr = thermal cycling test, Ext. cr = 8.0 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2:2003, IEC/EN 60950-1	VDE
Transformer (T901)	DARFON	80GL19P-17-DN 80TL19P-17-DN	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
	YUVA	80GL19P-17-N 80TL19P-17-N	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
	TPV	80GL19P-17-V 80TL19P-17-V	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Triple insulation wire used in T901	Cosmolink	TIW-M	130°C	IEC 60950-1	TÜV, UL
	Furukawa	TEX-E	130°C	IEC 60950-1	TÜV, UL

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.

1.6.2	TABLE: Electrical data (in normal conditions)	P

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

U (V) / F (Hz)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
Measured with decoding board P/N 715G5068						
VGA mode						
90 / 50	0.77	--	42.8	F901	0.77	2.
90 / 60	0.77	--	42.8	F901	0.77	2.
100 / 50	0.70	1.5	42.3	F901	0.70	2.
100 / 60	0.70	1.5	42.3	F901	0.70	2.
240 / 50	0.35	1.5	40.7	F901	0.35	2.
240 / 60	0.35	1.5	40.7	F901	0.35	2.
264 / 50	0.33	--	40.7	F901	0.33	2.
264 / 60	0.33	--	40.7	F901	0.33	2.
HDMI mode						
90 / 50	0.76	--	42.6	F901	0.76	2.
90 / 60	0.76	--	42.6	F901	0.76	2.
100 / 50	0.69	1.5	42.2	F901	0.69	2.
100 / 60	0.69	1.5	42.2	F901	0.69	2.
240 / 50	0.34	1.5	39.9	F901	0.34	2.
240 / 60	0.34	1.5	39.9	F901	0.34	2.
264 / 50	0.32	--	39.9	F901	0.32	2.
264 / 60	0.32	--	39.9	F901	0.32	2.
DVI mode						
90 / 50	0.77	--	43.6	F901	0.77	2.
90 / 60	0.77	--	43.6	F901	0.77	2.
100 / 50	0.69	1.5	43.3	F901	0.69	2.
100 / 60	0.69	1.5	43.3	F901	0.69	2.
240 / 50	0.35	1.5	41.3	F901	0.35	2.
240 / 60	0.35	1.5	41.3	F901	0.35	2.
264 / 50	0.33	--	41.3	F901	0.33	2.
264 / 60	0.33	--	41.3	F901	0.33	2.
DISPLAY mode						
90 / 50	0.76	--	42.5	F901	0.76	2.
90 / 60	0.76	--	42.5	F901	0.76	2.
100 / 50	0.69	1.5	41.9	F901	0.69	2.

IEC/EN 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
100 / 60	0.69	1.5	41.9	F901	0.69	2.
240 / 50	0.35	1.5	40.3	F901	0.35	2.
240 / 60	0.35	1.5	40.3	F901	0.35	2.
264 / 50	0.32	--	40.4	F901	0.32	2.
264 / 60	0.32	--	40.4	F901	0.32	2.
Measured with decoding board P/N 715G5017						
VGA mode						
90 / 50	0.77	--	40.9	F901	0.77	2.
90 / 60	0.77	--	40.9	F901	0.77	2.
100 / 50	0.70	1.5	40.5	F901	0.70	2.
100 / 60	0.70	1.5	40.5	F901	0.70	2.
240 / 50	0.34	1.5	40.1	F901	0.34	2.
240 / 60	0.34	1.5	40.1	F901	0.34	2.
264 / 50	0.32	--	39.8	F901	0.32	2.
264 / 60	0.32	--	39.8	F901	0.32	2.
DVI mode						
90 / 50	0.76	--	41.9	F901	0.76	2.
90 / 60	0.76	--	41.9	F901	0.76	2.
100 / 50	0.68	1.5	41.6	F901	0.68	2.
100 / 60	0.68	1.5	41.6	F901	0.68	2.
240 / 50	0.34	1.5	40.4	F901	0.34	2.
240 / 60	0.34	1.5	40.4	F901	0.34	2.
264 / 50	0.33	--	40.4	F901	0.33	2.
264 / 60	0.33	--	40.4	F901	0.33	2.
HDMI mode						
90 / 50	0.76	--	40.7	F901	0.76	2.
90 / 60	0.76	--	40.7	F901	0.76	2.
100 / 50	0.68	1.5	40.3	F901	0.68	2.
100 / 60	0.68	1.5	40.3	F901	0.68	2.
240 / 50	0.34	1.5	39.3	F901	0.34	2.
240 / 60	0.34	1.5	39.3	F901	0.34	2.
264 / 50	0.31	--	39.5	F901	0.31	2.
264 / 60	0.31	--	39.5	F901	0.31	2.

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

Supplementary information:

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

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Functional:						
Distance before fuse (F901)	420	250	1.9 [6)]	See below	2.5	See below
- Under F901 (with slot 5.0 mm x 1.0 mm min.)				2.2		3.3
- Line to Neutral				5.6		5.6
Basic / supplementary:						
Primary traces to earthed traces on SPS	420	250	2.5 [6)]	See below	2.5	See below
- Line trace to earthed trace before fuse				6.0		6.0
- Neutral trace to earthed trace before fuse				6.0		6.0
- Under C920				7.8		7.8
- Under C921				7.6		7.6
- trace of J9001 to earth				2.6		2.6
Primary to earthed part	420	250	2.5 [6)]	See below	2.5	See below
- Primary component (BD901) to metal enclosure				5.5		5.5
- Primary trace to metal part (panel)				5.2		5.2
Reinforced:						
Primary traces to secondary traces on SPS	420	250	5.0 [6)]	See below	5.0	See below
- Under IC902				6.8		6.8
- Under C935				8.0		8.0
- Under C918 (with slot 5.0 mm x 1.0 mm)				8.0		8.7
- trace of HS4 to trace of HS1				8.0		8.0
- trace of HS4 to trace of C801				8.0		8.0

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Clause	Requirement + Test	Result - Remark	Verdict

Under T901	484	228	5.4 [6)]	8.0	5.4	8.0

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. Component glued: C902, C903.
6. Altitude correction factor for clearances for an altitude of 3658 m (based on IEC 60664-1:1992): 1.24.

2.10.5	TABLE: Distance through insulation measurements				P
Distance through insulation (DTI) at/of:	U peak (V)	U r.m.s. (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Optocoupler (IC902) (RI)	420	250	3000 Vac	0.4	2.

Supplementary information:

1. RI: Reinforced insulation.
2. See appended table 1.5.1 for the approved component source details.

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

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Clause	Requirement + Test	Result - Remark	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:		

4.5	TABLE: Thermal requirements		P
	Supply voltage (V) ..... :	a) 90 V / 60 Hz b) 264 V / 60 Hz	—
	Ambient T_{min} (°C) ..... :	--	—
	Ambient T_{max} (°C) ..... :	--	—
Maximum measured temperature T of part/at::		T (°C)	Allowed T_{max} (°C)
Measured with decoding board P/N 715G5068, VGA mode			
Test condition	a)	b)	--
Inlet near Line	53.3	49.8	70
PCB near NR901	62.1	54.4	105
Body of C914	63.7	55.4	85
L902 coil	75.4	57.3	105
PCB near BD901	61.9	54.0	105
Body of C903	66.2	58.5	105
PCB near Q901	76.1	69.5	105
Body of C935	72.1	68.7	85
T901 coil	81.1	80.0	90
T901 core	78.3	77.5	90
Body of IC902	65.5	63.2	100
PCB near D901	81.1	80.1	105
PCB near U401 (main board)	61.2	60.7	105
Plastic enclosure inside near T901	46.5	46.0	--
Plastic enclosure outside near T901	44.6	43.8	95
Panel	46.4	46.0	95
PCB near D903	70.4	69.0	105
PCB near U752 (USB board)	66.5	66.2	105
Ambient (actual 23.8 °C / 23.4 °C)	40.0	40.0	--

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

1. The temperatures were measured under the worst case of normal mode defined in sub-clause 1.2.2.1 and as described in sub-clause 1.6.2 at voltages as described above.
2. With a specified ambient temperature of + 40 °C. Therefore the maximum temperatures measured are recalculated as follows: T + (40 – T_{amb}), where T is the maximum temperature measured during test and Tamb is the ambient temperature during the test.
3. The maximum temperatures are calculated as follows:

   Winding components (with safety isolation):

   - Class A T_{max} = 100 °C – 10 °C = 90 °C

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--

Supplementary information:

4.5.5	TABLE: Ball pressure test of thermoplastic parts		N/A
	Allowed impression diameter (mm) .....:	≤ 2 mm	—

Part	Test temperature (°C)	Impression diameter (mm)

Supplementary information:

4.7	Table: Resistance to fire				P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
Metal enclosure with metal sheet	--	--	1.	1.	1.
PCB	--	--	--	V-1 or better	1.

Supplementary information:

1. See appended table 1.5.1 for the source details.

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	2461	No

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Clause	Requirement + Test	Result - Remark	Verdict

Reinforced:			
Unit: primary and secondary	DC	4242	No
Unit: primary and plastic enclosure with metal foil	AC	4242	No
T901: primary and secondary (for all sources)	AC	3000	No
T901: secondary and core (for all sources)	AC	3000	No
Two layer of insulation tape (for all sources) used in T901	AC	3000	No
Supplementary information:			

5.3	TABLE: Fault condition tests		P
	Ambient temperature (°) .....:	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
D901 pin 2-3	s-c	240	10 min	F901	0.03	Unit shutdown, no damage, no hazards.
D903 pin 2-3	s-c	240	10 min	F901	0.03	Unit shutdown, no damage, no hazards.
16V output	s-c	240	10 min	F901	0.03	Unit shutdown, no damage, no hazards.
5V output	s-c	240	10 min	F901	0.03	Unit shutdown, no damage, no hazards.
T901 pin 8,9-10	s-c	240	10 min	F901	0.03	Unit shutdown, no damage, no hazards.
T901 pin 8,9-6	s-c	240	10 min	F901	0.03	Unit shutdown, no damage, no hazards.
T901 pin 1-3	s-c	240	10 min	F901	0.03	Unit shutdown, no damage, no hazards.
T901 pin 4-5	s-c	240	10 min	F901	0.03	Unit shutdown, no damage, no hazards.
IC902 pin 1-2	s-c	240	10 min	F901	0.03	Unit shutdown, no damage, no hazards.
IC902 pin 3-4	s-c	240	10 min	F901	0.03	Unit shutdown, no damage, no hazards.
IC902 pin 1	o-c	240	10 min	F901	0.03	Unit shutdown, no damage, no hazards.
Q901 G-S	s-c	240	10 min	F901	0.03	Unit shutdown, no damage, no hazards.

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Clause	Requirement + Test	Result - Remark	Verdict

Q901 G-D	s-c	240	10 min	F901	0.03	Q901, R919, R912, R924 damaged, no hazards.
Q901 D-S	s-c	240	10 min	F901	0.03	Q901, R919, R912, R924 damaged, no hazards.
IC901 pin 5-6	s-c	240	10 min	F901	0.03	R924, IC901 damaged, no hazards.
IC901 pin 2-6	s-c	240	10 min	F901	0.03	IC901 damaged, no hazards.
C903	s-c	240	1 s	F901	0	F901 opened, no hazards.
BD901	s-c	240	1 s	F901	0	F901 opened, no hazards.
All ventilation openings	blocked	240	2.5 hrs	F901	0.31	Unit normally operated, no hazards, no damaged. T901 coil = 64.5 °C, T901 core = 62.0 °C, IC902 = 47.5 °C, C935 = 54.0 °C, ambient = 23.4 °C
T901 pin 10 after D901	o-l	240	8 hrs	F901	0.68	Load to 2.5A then unit shutdown, no hazards, no damaged. T901 coil = 93.8 °C, T901 core = 85.5 °C, IC902 = 57.8 °C, C935 = 72.7 °C, ambient = 24.6 °C
T901 pin 8,9 after D903	o-l	240	8 hrs	F901	0.69	Load to 7.1A then unit shutdown, no hazards, no damaged. T901 coil = 96.7 °C, T901 core = 86.8 °C, IC902 = 63.1 °C, C935 = 68.0 °C, ambient = 23.6 °C
Speaker	s-c	240	10 min	F901	0.27	Unit operated normally. No damaged, no hazards.

Supplementary information:

1. In fault column, where s-c = short-circuited, o-l = over-loaded, o-c = open-circuited.
2. For fuse opened condition, carried out for all sources of fuse.
3. For component damaged without fuse opened condition have been repeated twice (three tests total) with same result.
4. Maximum temperatures limitation of safety isolation transformers based on a test temperature of 40 °C:

   Class A T_{max} = 150 °C – (40 – 25) °C = 135 °C

List of test equipment used:

Clause	Measurement / testing	Testing / measuring equipment / material used	Range used	Calibration date
Supplementary information: No listing of test equipment used necessary for chosen test procedure.				

Clause	Requirement + Test	Result - Remark	Verdict

2.1.1.5	TABLE: Energy hazard measurement				P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
5	3.0	5.1	10.6	44.31	
16	2.0	16.2	5.4	54.54	
Supplementary information: Input condition: 240 Vac, 60 Hz					

2.1.1.7	TABLE: Discharge test				P
Condition	τ calculated (s)	τ measured (s)	t u→ 0V (s)	Comments	
Line to Neutral	0.90	0.89	--	V_O = 370 Vpeak, 37 % of V_O = 133.3 Vpeak, voltage drop to 120 Vpeak after 1 s	
Supplementary information: Input condition: 264 Vac, 60 Hz Overall capacity: C914 = 0.33 µF Bleeder resistor: R916 = R917 = R918 = 910 kΩ					

2.2.2	TABLE: SELV measurement (under normal conditions)			P
Transformer	Location	Voltage (max.) (V)		Voltage Limitation Component
		V peak	V d.c.	
T901	Pin 8,9 to 6	30.8	--	--
T901	Pin 10 to 6	93.0	--	--
T901	Pin 10 to 6 (after R901)	85.0	--	--
T901	Pin 10 to 6 (after C901)	50.0	--	--
T901	Pin 10 to 6 (after D901)	--	17.5	D901
T901	Pin 10 to 6 (after C924)	--	17.5	C924
LED driver board	after L801 to earth	50.0	--	
	after ZD801 to earth	--	40.4	ZD801
Supplementary information: Input Voltage is 240 Vac, 60 Hz				

2.2.3	TABLE: SELV measurement (under fault conditions)	P
Location	Voltage (max.) (V)	Comments
+16 Vdc to Rtn	17 Vdc	C924 short-circuited
+16 Vdc to Rtn	0 Vdc	D901 short-circuited

Clause	Requirement + Test	Result - Remark	Verdict

LED driver board after ZD801 to earth	0 Vdc	ZD801 short-circuited
Supplementary information: Input Voltage is 240 Vac, 60 Hz		

2.4.2	TABLE: Limited current circuit measurement				N/A
Location	Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments
Supplementary information:					

2.5	TABLE: Limited power source measurement		P
	Limits	Measured	Verdict
For 5 Vdc output of power supply board			
According to Table 2C (normal condition), Uoc = 5.0 Vdc			
current (in A)	200	10.6	Pass
apparent power (in VA)	250	45.47	Pass
For 16 Vdc output of power supply board			
According to Table 2B (normal condition), Uoc = 16.0 Vdc			
current (in A)	8	5.4	Pass
apparent power (in VA)	100	54.54	Pass
According to Table 2B (single fault condition at R933 short-circuited)			
current (in A)	8	6	Pass
apparent power (in VA)	100	57.6	Pass
According to Table 2B (single fault condition at R910 short-circuited)			
current (in A)	8	6	Pass
apparent power (in VA)	100	57.6	Pass
According to Table 2B (single fault condition at R919 short-circuited)			
current (in A)	8	-- (unit shutdown)	Pass
apparent power (in VA)	100	-- (unit shutdown)	Pass
According to Table 2B (single fault condition at IC902 pin 1-2 short-circuited)			
current (in A)	8	-- (unit shutdown)	Pass
apparent power (in VA)	100	-- (unit shutdown)	Pass
According to Table 2B (single fault condition at IC902 pin 3-4 short-circuited)			

Clause	Requirement + Test	Result - Remark	Verdict
current (in A)	8	-- (unit shutdown)	Pass
apparent power (in VA)	100	-- (unit shutdown)	Pass
According to Table 2B (single fault condition at IC902 pin 1 open-circuited)			
current (in A)	8	-- (unit shutdown)	Pass
apparent power (in VA)	100	-- (unit shutdown)	Pass
For USB ports			
According to Table 2B (normal condition), USB pin 1 to earth, Uoc = 4.9 Vdc			
current (in A)	8	1.3	Pass
apparent power (in VA)	100	4.47	Pass
According to Table 2B (single fault condition at D701 pin 1-2 short-circuited), Uoc = 0V			
current (in A)	8	-- (unit shutdown)	Pass
apparent power (in VA)	100	-- (unit shutdown)	Pass
According to Table 2B (single fault condition at L701 short-circuited), Uoc = 5.01 Vdc			
current (in A)	8	1.1	Pass
apparent power (in VA)	100	2.64	Pass
According to Table 2B (single fault condition at U705 pin 7-3 short-circuited), Uoc = 14.5 Vdc			
current (in A)	8	0.6	Pass
apparent power (in VA)	100	7.44	Pass
According to Table 2B (single fault condition at U751 pin 1-2 short-circuited), Uoc = 4.91 Vdc			
current (in A)	8	1.2	Pass
apparent power (in VA)	100	4.36	Pass
According to Table 2B (single fault condition at U751 pin 1-3 short-circuited), Uoc = 0 Vdc			
current (in A)	8	-- (unit shutdown)	Pass
apparent power (in VA)	100	-- (unit shutdown)	Pass
According to Table 2B (single fault condition at U751 pin 2-3 short-circuited), Uoc = 4.91 Vdc			
current (in A)	8	1.2	Pass
apparent power (in VA)	100	4.36	Pass
Supplementary information: 1. Input condition: 264 Vac, 60 Hz.			

2.6.3.4	TABLE: Resistance of earthing measurement	P
Location	Resistance measured (mΩ)	Comments
The earth pin of appliance inlet to metal enclosure	13	Test current at 32 A, for 2 min. voltage drop to 0.42 V.

Clause	Requirement + Test	Result - Remark	Verdict

The earth pin of appliance inlet to metal enclosure	15	Test current at 40 A, for 2 min. voltage drop to 0.60 V.
The earth pin of appliance inlet to C921 earthed trace	12	Test current at 40 A, for 2 min. voltage drop to 0.48 V.
The earth pin of appliance inlet to C935 earthed trace	19	Test current at 40 A, for 2 min. voltage drop to 0.76 V.
The earth pin of appliance inlet to C920 earthed trace	9	Test current at 40 A, for 2 min. voltage drop to 0.36 V.
Supplementary information:		

2.10.2	Table: Working voltage measurement		P
Location	RMS voltage (V)	Peak voltage (V)	Comments
T901 pin 1 to pin 6	207	340	
T901 pin 1 to pin 8,9	205	368	
T901 pin 1 to pin 10	210	428	
T901 pin 3 to pin 6	**228**	**484**	***the highest Vrms and Vpeak**
T901 pin 3 to pin 8,9	228	476	
T901 pin 3 to pin 10	225	464	
T901 pin 4 to pin 6	219	424	
T901 pin 4 to pin 8,9	219	396	
T901 pin 4 to pin 10	216	360	
T901 pin 5 to pin 6	218	352	
T901 pin 5 to pin 8,9	218	360	
T901 pin 5 to pin 10	218	372	
IC902 pin 1 to pin 3	218	360	
IC902 pin 1 to pin 4	218	360	
IC902 pin 2 to pin 3	218	360	
IC902 pin 2 to pin 4	218	360	
C918 primary to secondary	213	356	
C935 primary to secondary	206	344	
Supplementary information: Input condition: 240 Vac, 60 Hz			

4.6.1 and 4.6.2	Table: Enclosure opening measurements		P
Location	Size (mm)	Comments	

Clause	Requirement + Test	Result - Remark	Verdict

External plastic enclosure:		
Top	None.	--
Rear	Max. 15.4 x 1.9	Numerous rectangular openings.
Side	None.	--
Bottom	Max. 20.0 x 2.1	Numerous rectangular openings. Covered by inner metal enclosure.
Internal metal enclosure:		
Top	1) Max. ∅ 4.8 2) Max. 22.0 x 9.0 3) Max. 22.0 x 9.0 4) Max. 60.0 x 2.3	1) Numerous circular openings. 2) One rectangular opening provided. 3) One rectangular opening provided. 4) One rectangular opening provided. There's no any hazardous voltage or energy hazards present within 5° projections.
Rear	1) Max. ∅ 4.5 2) Max. ∅ 13.8 3) Max. 60.4 x 9.7 4) Max. 74.9 x 4.8 5) Max. 29.4 x 2.9	1) Numerous circular openings. 2) Two openings provided. 3) One rectangular opening provided. 4) One rectangular opening provided. 5) One rectangular opening provided. There's no any hazardous voltage or energy hazards present within 5° projections.
Right	1) Max. 18.8 x 12.7 2) Max. 14.8 x 8.3 3) Max. 23.0 x 1.3	1) One rectangular opening provided. 2) One rectangular opening provided. 3) One rectangular opening provided. There's no any hazardous voltage or energy hazards present within 5° projections.
Left	1) Max. 60.4 x 9.1	1) One rectangular opening provided. There's no any hazardous voltage or energy hazards present within 5° projections.
Bottom	1) Max. ∅ 1.9 centre to centre min. 5.0 mm, thickness min. 0.6 mm 2) Max. ∅ 1.9 centre to centre min. 3.3 mm, thickness min. 0.6 mm + 1.0 mm 3) Max. ∅ 1.9 centre to centre min. 3.3 mm, thickness min. 0.6 mm 4) Max. 21.9 x 9.2 mm	1) Numerous circular openings provided under primary circuit, covering of an area approx. 122.0 mm by 12.0 mm, height of each opening is 0.81 mm min., these openings passed the Annex A.3 test. 2) Numerous circular openings under secondary circuit. 3) Numerous circular openings under secondary circuit. 4) One rectangular opening under secondary circuit.
Supplementary information:		

5.1.6	TABLE: Touch current and protective conductor current measurement	P

Clause	Requirement + Test	Result - Remark	Verdict

Condition	L→ terminal A (mA)	N → terminal A (mA)	Limit (mA)	Comments
Earthed parts	0.82	0.82	3.5	To metal enclosure, SW “e” opened condition.
Non-metal enclosure	0.01	0.01	0.25	To plastic enclosure wrapped with metal foil, SW “e” closed condition.
Unerathed pin of output connector	0.01	0.01	0.25	To output connectors, SW “e” closed condition.
Supplementary information: 1. Input condition: 264 Vac, 60 Hz 2. Overall capacity: See appended table 1.5.1				

C.2	TABLE: Insulation of transformers		P
	Transformer part name:	T901	—
	Manufacturer:	See appended table 1.5.1.	—
	Type:	See appended table 1.5.1.	—

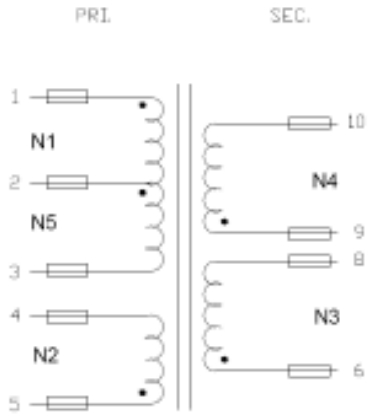
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Primary / input winding and secondary / output winding (internal)	484	228	5.4	triple insulation wire used	5.4	triple insulation wire used
Primary / input winding and core (internal)			2.7	triple insulation wire used	2.7	triple insulation wire used
Secondary / output winding and core (internal)			2.7	triple insulation wire used	2.7	triple insulation wire used
Primary / input part and secondary / output part (external)			5.4	37.9	5.4	37.9
Primary / input part and secondary / output winding (external)			5.4	triple insulation wire used	5.4	triple insulation wire used
Primary / input part and core (external)			2.7	triple insulation wire used	2.7	triple insulation wire used
Secondary / output part and core (external)			2.7	7.5	2.7	7.5
Secondary / output part and primary / input winding (external)			5.4	triple insulation wire used	5.4	triple insulation wire used
Description of design:						
(a) Bobbin						

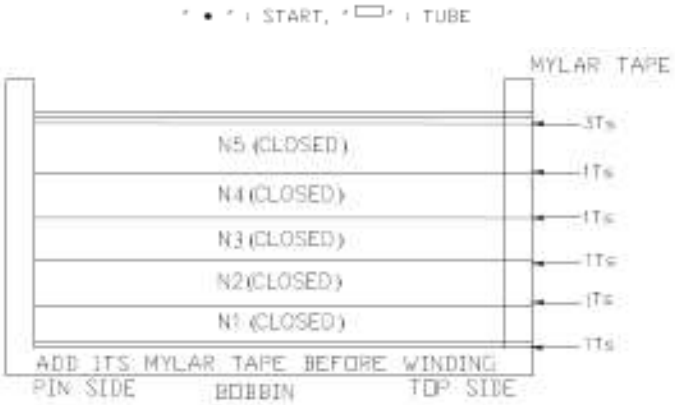
Clause	Requirement + Test	Result - Remark	Verdict

Primary/input pins ..... :	1-2-3; 5-4
Secondary/output pins ..... :	6-8; 9-10
Material (manufacturer, type, ratings) ..... :	Type PM-9820 of Sumitomo Bakelite, phenolic, 150°C, V-0
Thickness (mm)..... :	Min. 0.7 mm

(b) General

Concentric windings on bobbin (horizontal type core). Three layers of insulation tape around the outer winding and the outer winding is primary. One layer of insulation tape provided between primary winding and secondary winding. Triple insulation wire used on secondary part and the core is considered as primary part. The end-turn of each winding additionally fixed with insulation tape. Tubing on the ends of all winding exit are provided.





Insulation tape:
- Jingjiang Yahua, type No. PZ, CT(c)
- Symbio, type No. 35660Y*d

Supplementary information:

1. The constructions of all sources of T901 are identical, only manufacturer and bobbin source different.
2. Altitude correction factor for clearances for an altitude of 3658 m (based on IEC 60664-1:1992): 1.24.

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Differences according to.....: EN 60950-1:2006+A11:2009

	CENELEC COMMON MODIFICATIONS (EN)	P
ZA	Normative references to international publications with their corresponding European publications	—

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		P
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	**Replace** the existing SNC by the following: 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.	No such resistors.	N/A
1.7.2.1	**Add** as new SNC: 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).” 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		N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	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	**Add** the following paragraph to the existing SNC for **Denmark**: For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.	Class I equipment.	N/A
7.3	**Delete** the existing SNC for Norway and Sweden (based on NOTE 1 of IEC 60950-1:2005 + corr. 1). **Add** as new SNC (based on future NOTE 3 of IEC 60950-1:200X): In **Norway** and **Sweden**, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A

ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		P
1.5.1	**Sweden** **Delete** the A-deviation.	Deleted.	N/A
1.7.2.1	**Denmark** **Delete** the A-deviation.	Deleted.	N/A
1.7.5	**Denmark** **Delete** the A-deviation.	Deleted.	N/A
5.1.7.1	**Denmark** **Delete** the A-deviation.	Deleted.	N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

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

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

1.2	Insert the following between 'person, service' and 'range, rated frequency': POTENTIAL IGNITION SOURCE 1.2.12		P
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.		P
1.5.1	1. Add the following to the end of the first paragraph: 'or the relevant Australian/New Zealand Standard.' 2. In NOTE 1, add the following after the word 'standard': 'or an Australian/New Zealand Standard'	Added.	P
1.5.2	Add the following to the end of the first and third dash items: 'or the relevant Australian/New Zealand Standard'	Added.	P

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

<table>
<tr><td>3.2.5.1</td><td>Modify Table 3B as follows:
1. Delete the first four rows and replace with the following:
<table><tr><td rowspan="2">RATED CURRENT of equipment

A</td><td colspan="2">Minimum conductor sizes</td></tr><tr><td>Nominal cross-sectional area
mm²</td><td>AWG or kcmil [cross-sectional area in mm²]
see Note 2</td></tr><tr><td>Over 0.2 up to and including 3</td><td>0,5 [a]</td><td>18 [0,8]</td></tr><tr><td>Over 3 up to and including 7.5</td><td>0,75</td><td>16 [1,3]</td></tr><tr><td>Over 7.5 up to and including 10</td><td>(0,75) [b] 1,00</td><td>16 [1,3]</td></tr><tr><td>Over 10 up to and including 16</td><td>(1,0) [c] 1,5</td><td>14 [2]</td></tr></table>
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).</td><td>Modified.</td><td>N/A</td></tr>
<tr><td>4.1.201</td><td>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.</td><td></td><td>N/A</td></tr>
<tr><td>4.3.6</td><td>Delete the third paragraph and replace with the following:
Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flatpin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.</td><td>Deleted.</td><td>N/A</td></tr>
<tr><td>4.3.16.5</td><td>Add the following to the end of the first paragraph:
‘or AS/NZS 2211.1’</td><td>Added.</td><td>N/A</td></tr>
<tr><td>4.7</td><td>Add the following new paragraph to the end of the clause:
‘For alternate tests refer to Clause 4.7.201.’</td><td>Added.</td><td>N/A</td></tr>
</table>

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

4.7.201	Insert a new Clause 4.7.201 after Clause 4.7.3.6 as follows: **4.7.201 Resistance to fire – Alternative tests**		N/A
4.7.201.1	**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 mm^3, 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			
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:		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 application of the test flame shall be 30 s

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

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a POTENTIAL IGNITION SOURCE. The test is not carried out if the — - Printed board does not carry any POTENTIAL IGNITION SOURCE; - Base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or - Base material of printed boards, on which the available apparatus power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting 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

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
6.2.2.1	For Australia only, delete the first paragraph including the Notes, and replace with the following: *In Australia only, the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator reference 1 of Table N.1. The interval between successive impulses is 60 s and the initial voltage, Uc, is:* *(i) for 6.2.1 a): 7.0 kV for hand-held telephones and for headsets and 2.5 kV for other equipment; and* *(ii) for 6.2.1 b) and 6.2.1 c): 1.5 kV.* NOTE 201 The 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 The value of 2.5 kV for 6.2.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		N/A
6.2.2.2	For Australia only, delete the second paragraph including the Note, and replace with the following: *In Australia only, the a.c. test voltage is:* *(i) for 6.2.1 a): 3 kV; and* *(ii) for 6.2.1 b) and 6.2.1 c): 1.5 kV.* NOTE 201 Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.		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

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

	Canadian National Differences		P
	SPECIAL NATIONAL CONDITIONS		
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.		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
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

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
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.	The equipment is not permanently connected equipment.	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
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

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
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			
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-	Components are approved by UL, see appended table 1.5.1 of IEC 60950-1 test report for details.	P

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.		
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 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	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
2.6.3.4	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.	See IEC 60950-1 test report.	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
4.2.11	For equipment intended for mounting on racks and provided with slide/rails allowing the equipment to slide away from the rack for installation, service and maintenance, additional construction, performance and marking requirements are applicable to determine the adequacy of the slide/rails.		N/A
4.3.2	Equipment with handles is required to comply with special loading tests.	No handles provided.	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

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
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
Annex NAF	Document (paper) shredders likely to be used in a home or home office (Pluggable Equipment Type A plug configuration) are required to comply with additional requirements, including markings/instructions, protection against inadvertent reactivation of a safety interlock, disconnection from the mains supply (via provision of an isolating switch), and protection against operator access (accessibility determined via new accessibility probe & probe/wedge).		N/A

National Differences			
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.	Replaced.	N/A
1.6	The clause is applicable with the following addition:	Added.	N/A
1.6.1	Add following note: In Israel, this clause is applicable subject to the Electricity Law, 1954, its regulations and revisions.	Added.	N/A
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:	Added.	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 it 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

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
2	The clause is applicable with the following additions:	Added.	N/A
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)		N/A
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. The apparatus shall meet the requirements in the appropriate part of the Standard series, SI 961. - 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:	Added.	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

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
Annex P	Normative references (List of relevant Israel Standards that have been inserted in place of some of the International Standards)		N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	Korean National Differences		P
	Corresponding National Standard: K 60950-1		P
1.5.101	Addition: Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305).	No power cord provided.	N/A
8	Addition: EMC The apparatus shall comply with the relevant CISPR standards.		N/A

National Differences			
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.		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.	No power cord provided.	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.		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.		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.		N/A

National Differences			
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.		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.		N/A
3.2.9	Permanently connected equipment must have a suitable wiring compartment and wire bending space.	No permanently connected equipment.	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm2).		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).		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).		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.		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.		N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m3 (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.	No such application.	N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) 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 application.	N/A
Annex H	Equipment that produces ionizing radiation must comply with Federal Regulations, 21 CFR 1020		N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

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.	Complied. See IEC 60950-1 test report for further 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.		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the 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.	N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.	No TNV circuits.	N/A
2.6.3.4	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.	See IEC 60950-1 test report.	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			
Clause	Requirement – Test	Result – Remark	Verdict
4.2.11	For equipment intended for mounting on racks and provided with slide/rails allowing the equipment to slide away from the rack for installation, service and maintenance, additional construction, performance and marking requirements are applicable to determine the adequacy of the slide/rails.		N/A
4.3.2	Equipment with handles is required to comply with special loading tests.	No handles provided.	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
Annex NAF	Document (paper) shredders likely to be used in a home or home office (Pluggable Equipment Type A plug configuration) are required to comply with additional requirements, including markings/instructions, protection against inadvertent reactivation of a safety interlock, disconnection from the mains supply (via provision of an isolating switch), and protection against operator access (accessibility determined via new accessibility probe & probe/wedge).		N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

APPENDIX	Australian National Differences according to CB Bulletin No. 112A, December 2006 (AS/NZS 60950.1:2003) (IEC Publication 60950-1:2001)		**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
	Annex ZZ Variations		
1.2	Between the definitions for "Person, service" and "Range, rated frequency" insert the following: Potential ignition source 1.2.12.201	Added.	P
1.2.12.15	After the definition of 1.2.12.15, add the following: 1.2.12.201 Potential ignition source: Possible fault which can start a fire if the open-circuit voltage measured across an interruption or faulty contact exceeds a value of 50 V (peak) a.c. or d.c. and the product of the peak value of this voltage and the measured r.m.s. current under normal operating conditions exceeds 15 VA. Such a faulty contact or interruption in an electrical connection includes those which may occur in conductive patterns on printed boards. NOTE 201: An electronic protection circuit may be used to prevent such a fault from becoming a potential ignition source. NOTE 202: This definition is from AS/NZS 60065:2003.	Added.	N/A
1.5.1	Add the following to the end of first paragraph: "or the relevant Australian/New Zealand Standard."	Added.	P
1.5.2	Add the following to the end of first and third dash items: "or the relevant Australian/New Zealand Standard."	Added.	P
2.1	Delete the Note.	Deleted.	N/A
3.2.3	Delete Note 2.	Deleted.	N/A
3.2.5	Modify Table 3B as follows:	Modified.	N/A

Rated current of equipment A	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[1)]	18 [0.8]
Over 3 up to and including 7.5	0.75	16 [1.3]

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

	Over 7.5 up to and including 10	(0.75)[2] 1.00	16 [1.3]		
	Over 10 up to and including 16	(1.0)[3] 1.5	14 [2]		
	Replace footnote 1) with the following: [1] This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliances, and the entry to the plug does not exceed 2 m (0.5 mm² three-core supply flexible cords are not permitted; see AS/NZS 3191). Delete Note 1.				
4.3.6	Replace paragraph three with: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112, shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.			No direct plug-in equipment.	N/A
4.3.13.5	Add the following to the end of the first paragraph: ", or AS/NZS 2211.1"			Added.	N/A
4.7	Add the following paragraph: For alternative tests refer to clause 4.7.201.			See below.	N/A
4.7.201	Add the following after clause 4.7.3.6: 4.7.201 Resistance to fire - Alternative tests			Added. However, equipment under test used materials and components in compliance with requirements of IEC 60950-1. Alternative test methods were not considered.	N/A
4.7.201.1	General Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames originating from inside the apparatus, or the following: Components that are contained in an enclosure having a flammability category of FV-0 according to AS/NSZ 4695.707 and having openings only for the connecting wires filling the openings completely, and for the ventilation not exceeding 1 mm in width regardless of the length. The following parts which would contribute negligible fuel to a fire: small mechanical parts, the mass of which does			Alternative test methods were not considered.	N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; small electrical components, such as capacitors with a volume not exceeding 1750 mm^3, integrated circuits, transistors and optocoupler packages, if these components are mounted on material flammability category FV-1 or better according to AS/NZS 4695.707 NOTE - In considering how to minimize propagation of fire and what "small parts" are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating fire from one part to another. Compliance is checked by tests of 4.7.201.2, 4.7.201.3, 4.7.201.4 and 4.7.201.5. For the base materials of printed boards, compliance is checked by the test of 4.7.201.5. The tests shall be carried out on parts of non-metallic material, which have been removed from the apparatus. When the glow-wire test is carried out, the parts shall be placed in the same orientation, as they would be in normal use. These tests are not carried out on internal wiring.		
4.7.201.2	Parts of non-metallic material are subjected to glow wire test of AS/NZS 4695.2.11, which is 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 materials classified at least FH-3 according to ISO 9772 provided that the sample was not thicker than the relevant part.	Alternative test methods were not considered.	N/A
4.7.201.3	Testing of insulating materials Parts of insulating materials supporting potential ignition sources shall be subject to the glow-wire test of AN/NZS 4695.2.11, which is 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	Alternative test methods were not considered.	N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	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 4695.2.2 with the following modifications: **5 Severities** Replace with: The duration of application of the test flame shall be 30 s ± 1 s. **8 Test procedure** 8.2 Modification: Replace the first sentence 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. 8.4 Modification: The first paragraph does not apply. Addition: If possible, the flame shall be applied at least 10 mm from a corner. 8.5 Replacement: 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 then withstand the test. **10 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 IEC 60695-11-10, provided that the sample tested was not thicker than the relevant part.		

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
4.7.201.4	Testing in the event of non-extinguishing material If parts, other than enclosures, do not withstand the glow-wire tests of 4.7.201.3, by failure to extinguish within 30 s after the removal of the glow-wire tip, the needle-flame test detailed in 4.7.201.3 is 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 to be tested. NOTE 1 - If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirement 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 burring or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirement 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.	Alternative test methods were not considered.	N/A
4.7.201.5	Testing of printed boards The base material of printed boards is subjected to needle-flame test to Clause 4.7.201.3. The flame is 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 for 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 FV-1 or better according to AS/NZS 4695.707, or the printed boards are protected by an enclosure meeting the flammability category FV-0 according to AS/NZS 4695.707, or made of metal, having openings only for connecting	Alternative test methods were not considered.	N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	wires which fill the opening 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 printed boards supporting spark gaps which provide protection against overvoltages, is of flammability category FV-0 according to AS/NSZ 4695.707 or the printed boards are contained in a metal enclosure, having openings only for connecting wires fill the openings completely. Compliance is 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	Add the following after the first paragraph: In Australia (this variation does not apply in New Zealand), compliance with 6.2.2 is checked by the tests of both 6.2.2.1 and 6.2.2.2. Delete the note.	Added.	N/A
6.2.2.1	Delete Note 2. Add the following after the first paragraph: In Australia (this variation does not apply in New Zealand), the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator of annex N for 10/700 μs impulses. The interval between successive impulses is 60 s and the initial voltage, Uc, is: - for 6.2.1 a): 7.0 kV for hand-held telephones and for headsets and 2.5 kV for other equipment; and - for 6.2.1b) and 6.2.1c): 1.5 kV. NOTE 201 - The 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 – The 2.5 kV impulse for 6.2.1a) was chosen to ensure adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.	Deleted.	N/A
6.2.2.2	Delete the note. Add the following after the second paragraph: In Australia (this variation does not apply in New	Deleted.	N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	Zealand), the a.c. test voltage is: - for 6.2.1a): 3 kV; and - for 6.2.1b) and 6.2.1c): 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.		
Annex P	Add the following Normative References to Annex P: IEC 60065, Audio, Video and similar electronic apparatus - Safety requirements AS/NZS 3112, Approval and test specification - Plugs and socket-outlets AS/NZS 3191, Approval and test specification - Electric flexible cords AS/NZS 4695.707, Fire hazard testing of electrotechnical products - Methods of test for the determination of the flammability of solid electrical insulating materials when exposed to an igniting source	Added.	N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

APPENDIX	Canadian National Differences according to CB Bulletin No. 112A, December 2006 (CAN/CSA C22.2 No. 60950-1/UL60950-1) (IEC Publication 60950-1:2001)		P
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
Special National Conditions			
1.1.1	All equipment is to be designed to allow installations 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.	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 20 A.	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 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. 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.	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

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets, receptacles and medium-base or smaller lampholders 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 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.	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
3.2.3	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. Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.	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.	The equipment is not permanently connected equipment.	N/A
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.	Neither wiring terminal nor associated spacings.	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm²).	No wire binding screws.	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian 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 12A, or if the motor has a nominal voltage rating greater than 120V, 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

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
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 quantify of flammable liquid stored in equipment is required to comply with NFPA 30.	No flammable liquid.	N/A
4.3.13	Equipment with lasers is required to meet Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No laser.	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 27 cubic feet 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
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m² or a single dimension greater than 1.8 m 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 Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No ionizing radiation.	N/A
Other differences			
1.5.1	Components of equipment must be suitable for the application, and must comply with the requirements of the equipment standard and the applicable national (Canadian and/or U.S.) component or material standards, as far as they may apply. The acceptance will be based on the following: A) A component Certified by a Canadian or U.S. National Certification Body (NCB) to a Canadian or U.S. component standard will be checked for correct application and use in accordance with its specified rating. Where necessary, it will also be subject to the applicable tests of the equipment standard.	Components are approved by UL, see appended table 1.5.1.	P

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	B) A component, which has a CB Test Certificate for compliance with a relevant IEC component standard, will be checked for correct application and use in accordance with its specified ratings. Where necessary, it will also be subject to the applicable tests of the equipment standard, and to the applicable tests of the Canadian and/or U.S. component or material standard, under the conditions occurring in the equipment. C) A component, which has no approval as in A) or B) above or which is used not in accordance with its specified ratings, will be subject to the applicable tests of the equipment standard, and to the applicable tests of the Canadian and/or U.S. component or material standard, under the conditions occurring in the equipment. D) Some components may require annual re-testing, which may be carried out by the manufacturer, CSA International or another laboratory		
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mAd.c. under normal operating conditions.	No TNV circuits within the equipment.	N/A
2.3.2	In the event of a single fault, 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	When subject to impedance testing, protective earthing and bonding are required to be subjected to the additional test conditions specified.		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, writing, marking and installation instruction requirements.	Not applicable for this equipment.	N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160mm or more are required to reduce the risk of injury due to the implosion of the CRT.	No CRT.	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

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
6.2.1	Enamel coating on winding wire not considered electrical separation unless subjected to special investigation.	No TNV circuits within the equipment.	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
6.5	Equipment connected to a telecommunications network and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure tests.	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

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

APPENDIX	Korean National Differences according to CB Bulletin No. 112A, December 2006 (K60950) (IEC Publication 60950-1:2001)		P
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
1.5.101	Addition: Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305).	No power supply cord provided.	N/A
7	Addition: EMC The apparatus shall comply with the relevant CISPR standards.	The requirements of CISPR have to be considered during the national approval.	N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

APPENDIX	US National Differences according to CB Bulletin No. 112A, December 2006 (UL 60950-1) (IEC Publication 60950-1:2001)		P
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
Special National Conditions			
1.1.1	All equipment is to be designed to allow installations 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.	The equipment was evaluated according to IEC 60950-1.	P
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Considered.	P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g. DP, CL2) specified in the 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. 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.	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

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets, receptacles and medium-base or smaller lampholders 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 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.	No power supply cord provided.	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 Article 400 of the NEC, and Tables 11 and 12 of the CEC.	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.	Neither wiring terminals nor associated spacings.	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm²).	No wire binding screws.	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian 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 12A, or if the motor has a nominal voltage rating greater than 120V, 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

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
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 quantify of flammable liquid stored in equipment is required to comply with NFPA 30.	No flammable liquid.	N/A
4.3.13	Equipment with lasers is required to meet Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No laser.	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 27 cubic feet 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
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m² or a single dimension greater than 1.8 m 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 Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No ionizing radiation.	N/A
Other 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, surge suppressors, switches	Components are approved by UL, see appended table 1.5.1.	P

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	(including interlock switches), thermal cut-offs, thermostats, multi-layer transformer winding wire, tubing, wire connectors, and wire and cables.		
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuits within the equipment.	N/A
2.3.2	In the event of a single fault, 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	When subject to impedance testing, protective earthing and bonding are required to be subjected to the additional test conditions specified.		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, writing, marking and installation instruction requirements.	Not applicable for this equipment.	N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160mm or more are required to reduce the risk of injury due to the implosion of the CRT.	No TNV circuits within the 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
6.2.1	Enamel coating on winding wire not considered electrical separation unless subjected to special investigation.	No TNV circuits within the equipment.	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
6.5	Equipment connected to a telecommunications network and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure tests.	No TNV circuits within the equipment.	N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV circuits within the equipment.	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” *Example in Japanese:* 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.” *Example in Japanese:* 接地接続は必ず、電源プラグを電源につなぐ前に行って下さい。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 1st 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 (ºC)
Bituminous compound for filter	75, (105) 1)
Paper, cotton, silk, other natural fiber and wood	90, (105) 2)
Oil denatured natural resin	105
Silica powder	500
Mica (Hard)	500, (600) 3)
(Soft)	650, (850) 3)

Notes: 1) Value applies to thermal insulating materials.
2) Value applies to materials impregnated with varnish.
3) Value in parenthesis is applied when mechanical external force is absent.

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

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

Mica splittings and untreated mica papers

Lining	Adhesive							Permissible Temperature Limit (ºC)
	a	b	c	d	e	f	g	
None	X	X	X	X	X	X X	X	130 155 180; 450, (700) [1]; 600, (800) [2] 600, (700) [1]; 700, (850) [2]
Paper	X	X	X	X				130
Polyethylene terephtalate 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, Aramide 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 orthophatalate resin or cross-linked polyester base.
e: with silicon–denatured synthetic resin, isophatalate alkyd resin, telephatalate 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 (ºC)
laminated melamine resin mixed with glass fiber	75, (100) [1]
moulded lemaine resin mixed with: cellulose inorganics	 120 140
laminated phenol resin with: cotton fiber base paper base polyamide cloth base inorganics	 115, (85) [2] 120, (70) [3] 75 140
moulded phenol resin with: inorganics others	 150, (160) [1] 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 inorganic powder glass fiber	 120 140 155
epoxy resin-casting	120
laminated epoxy resin mixed with: inorganic other than inorganics	 130, (140) [1] 110, (90) [3]
moulded epoxy resin mixed with inorganics	130
laminated diallyl phthalate resin mixed with inorganics	140
moulded diallyl phthalate resin mixed with: other than inorganics inorganic powder glass fiber	 130 150 155

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Clause	Requirement – Test	Result – Remark	Verdict

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)]
polymide film	210
laminated polymide	190
polybutadiene-casting	120
moulded polybutadiene mixed with inorganics	130
laminated dipheny 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 (ºC)
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, acrylontirile chlorinate polyethylene styrene resin		55
acrylonitrile styrene resin, acrylonitrile butadiene resin, acrylonitrile butadiene chlorinated polyethylene resin	: general : reinforced with glass fiber	55 80
polypropylene	: general : reinforced with glass fiber	105, (85) [3)] 110
denatured polyphenyle oxide	: general : reinforced with glass fiber	75 100
Polystyrene		50, (70) [1)]
polyacetal	: general : reinforced with glass fiber	100 120
polyamide	: general : reinforced with glass fiber	90 120
polycarbonate	: general : reinforced with glass fiber	110 120
polyethylene terephtalate	: general : reinforced with glass fiber	120 130
polybutylene terephtalate	: general : reinforced with glass fiber	120 135
heat resistant polyethylene terephthalate film		135
fluorinated polyvinylidene compound for insulated conductors, polychlorotrifluoroethylene (ethylene-trifluoride resin), ethylene-tetrafleorethylene copomylene for insulated conductors		150
tetrafluoroethylene hexafluoropropylene resin		200
polytetrafluoroethylene(ethylene-tetrafluoride), perflouroalkoxy compound for insulated conductors		250
aramide(aromatic polyamide paper)		220
Polysulfone		140, (150) [2)]
polyethylene naphthalate		155
polyallylate	: general : reinforced with glass fiber	120 130

Notes : 1) Values apply to capacitor dielectrics.
2) Values apply to thermal insulating material
3) Values apply to materials with a thickness of less than 0.8 mm
4) Inorganic materials

Inorganic materials

Material	Permission temperature limit (ºC)
glass fiber (only alkaline free)	300
lead glass	380
borosilicate glass	490

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

quartz glass	800
ceramic	800, (1000) [1)]

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

Rubber compounds

Material	Permission temperature limit (ºC)
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 (ºC)
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 terephtalate alkyd resin varnish, epoxy resin varnish, alkyd resin varnish	105
polyester fabric, polyester nonwoven fabric	(ditto)	120
glass fabric, aramide paper	Iso or terephtalate, alkyd resin varnish, epoxy resin varnish silicone resin varnish, silicone rubber	155 180
vulcanised fiber		105
heat resistant fiber		120

5.1.3	Add the following NOTE Note: Note that domestic three-phase power distribution systems have many delta connections, in which case tests should be performed using IEC 60990:1990 Figure 13 test circuitry.	Added.	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

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	0,75	-
MOVABLE (other than HAND-HELD, but including TRANSPORTABLE EQUIPMENT		3,5	-

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

	STATIONARY, PLUGGABLE TYPE A	terminal (if any) CLASS I EQUIPMENT	3,5	-	
	ALL other STATIONARY EQUIPMENT not subject to the conditions of 5.1.7 - subject to the conditions of 5.1.7		3,5 -	- 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
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

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
Annex P	Add the following terms. 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 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
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	**Inadvertent reactivation** 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

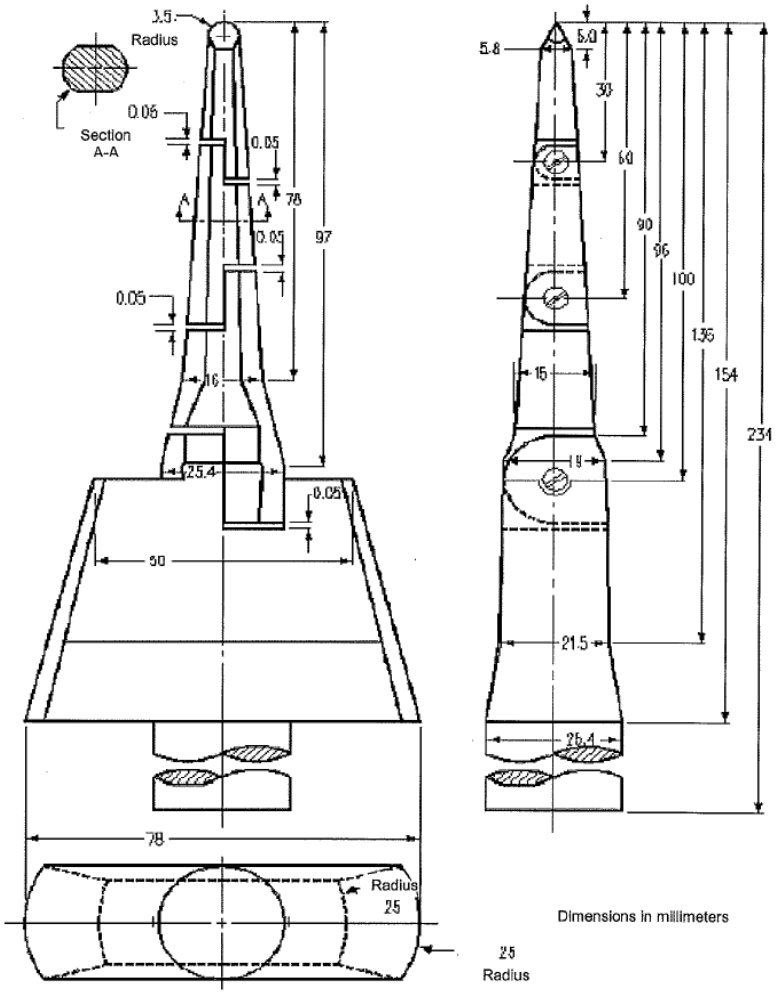
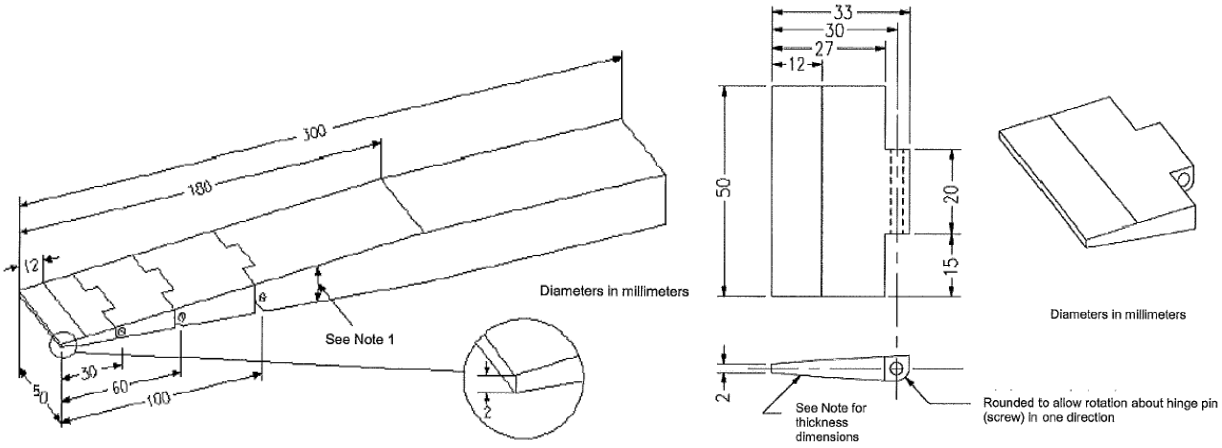


Figure JA.1 Test finger

J 60950-1 (H22)			
Clause	Requirement – Test	Result – Remark	Verdict
JA.3	**Isolating switch** 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	**Protection in operator access areas** 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 withy 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

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



(Details of the top of wedge)

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

Note 1 - The probe shall be of changing the thickness linearly. However, the slope shall be changed at the respective points shown in the table.

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

Figure JA.2 Wedge-probe

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 750ºC according to JIS C 60695-2-11(2004) or JIS C 60695-2-12(2004). Materials having glow wire frame temperature of 775 ºC are acceptable.		N/A