

**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

NEC Display Solutions, Ltd.
4-13-23 Shibaura
Minato-ku, Tokyo, 108-0023 JAPAN

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

See additional page(s)

Rating and principal characteristics
Valeurs nominales et caractéristiques principales

AC 100-240V; 50/60Hz; 0.75-0.4A; Class I

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

NEC

Model/type Ref.
Ref. de type

L228NB

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

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

11018028 001

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



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Global Technology Assessment Center
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Dipl.-Ing. F. Stoelzel

Date: 23.09.2009

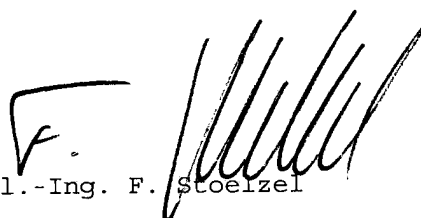
Signature:

1. TPV Technology (Beijing) Co., Ltd.
No. 10, Jiu Xian Qiao Rd.
Chao Yang District, Beijing 100016
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2. Tatung Mexico S.A. de. C.V.
Ave. Rosa Ma. Fuentes #7050
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Unique No. 11, Zhuankou Development
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ul. Zlotego Smoka 9
66-400 Gorzów Wlkp.
Poland

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

Date: 23.09.2009

Signature:


Dipl.-Ing. F. Stoelzel



Test Report issued under the responsibility of:



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.....	11018028 001
Date of issue.....	September 23, 2009
Total number of pages.....	103
CB/CCA Testing Laboratory	TÜV Rheinland Taiwan Ltd., Taichung Laboratory
Address.....	10F, No. 219, Min Chuan Rd., Taichung 403, Taiwan
Applicant's name	Top Victory Electronics (Taiwan) Co., Ltd.
Address.....	10F., No. 230, Liancheng Rd., Zhonghe City, Taipei County 23553, Taiwan
Manufacturer's name	NEC Display Solutions, Ltd.
Address.....	4-13-23 Shibaura, Minato-ku, Tokyo, 108-0023, JAPAN.
Factory's name	See page 9
Address.....	See page 9
Test specification:	
Standard	☒ IEC 60950-1:2005 (2nd Edition) and/or ☒ EN 60950-1:2006 + A11:2009
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
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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	NEC
Manufacturer.....	NEC Display Solutions, Ltd. 4-13-23 Shibaura, Minato-ku, Tokyo, 108-0023, JAPAN.
Model/Type reference.....	L228NB
Ratings.....	100-240 Vac, 50/60 Hz, 0.75 – 0.4 A

Testing procedure and testing location:	
☒ CB/CCA Testing Laboratory: Testing location/ address..... :	Refer to cover page Refer to cover page
☐ Associated CB Laboratory: Testing location/ address..... :	
Tested by (name + signature)..... : Approved by (+ signature)..... : <i>Dicky Chew</i> <i>Simon Yu</i>  	
☐ 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):

- The load condition used as below during testing:
The equipment operated under maximum brightness, minimum contrast of LED backlight circuit, dummy load of 2.5 W for each USB port, and max. volume of speakers with 1 kHz sine wave signal.
- The equipment complied with the stability test mentioned at sub-clause 4.1.
- The unit provide wall mount function and complied with loading test (sub-clause 4.2.10).
- All of USB ports (four provided with) were evaluated and complied with limit power source test (sub-clause 2.5).
- The LCD monitor can be adjustment monitor's height and operated in landscape (0 °) to portrait mode (90 °).
- The equipment has been evaluated according to the specified by the manufacturer maximum operating altitude of 3000 m (correction factor for clearances according to IEC 60664:1992+A1:2000+A2:2002 of 1.14 is considered).
- This unit provide handles function and complied with test mentioned at sub-clause 4.3.2.

Testing location:

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

Summary of compliance with National Differences:

EU Group Differences, EU Special National Conditions, EU A-Deviations, AT, AU, CA, CH, DE, DK, FI, FR, GB, IT, KR, NL, NO, PL, SE, SI, US.

Explanation of used codes: AT=Austria, AU=Australia, CA=Canada, CH=Switzerland, DE=Germany, DK=Denmark, FI=Finland, FR=France, GB=United Kingdom, IT=Italy, KR=Korea, NL=The Netherlands, NO=Norway, PL=Poland, SE=Sweden, SI=Slovenia, US=United States of America.

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.




Q40G22N-842-17A XY

For Japan only



警告



高圧注意

サービスマン以外の方は分解しない
ください。内部には高電圧部分が
あり、万一さわると危険です。

感電注意

電源コードのアースリード線は必ず
接地ください。故障のときに感電の
原因になります。



Note: The above labels are draft of artwork for marking plates pending approval by National Certification Bodies and it shall not be affixed to products prior to such approval.

Test item particulars	
Equipment mobility	☒ movable (for unit with base stand) ☐ hand-held ☐ transportable ☒ stationary (for unit without base stand) ☐ for building-in ☐ direct plug-in
Connection to the mains	☒ pluggable equipment ☐ permanent connection ☒ detachable power supply cord ☐ non-detachable power supply cord ☐ not directly connected to the mains
Operating condition	☒ continuous ☐ rated operating / resting time:
Access location	☒ operator accessible ☐ restricted access location
Over voltage category (OVC)	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other:
Mains supply tolerance (%) or absolute mains supply values	± 10 %
Tested for IT power systems	☒ Yes ☐ No
IT testing, phase-phase voltage (V)	230 V for Norway
Class of equipment	☒ Class I ☐ Class II ☐ Class III ☐ Not classified
Considered current rating (A)	16 or 20 (For North America)
Pollution degree (PD)	☐ PD 1 ☒ PD 2 ☐ PD 3
IP protection class	IPX0
Altitude during operation (m)	Up to 3000
Altitude of test laboratory (m)	Up to 2000
Mass of equipment (kg)	Approx. 6.9 (for unit with base stand), Approx. 4.4 (for unit without 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	September, 2009
Date(s) of performance of tests	September, 2009
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, which see cover page is 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 board (evaluated within the equipment, refer to appended table 1.5.1 for the source details)
- Decode board, provided with one Display port, one VGA port, DVI port and audio-in port.
- Optional two speakers (Max., 8 Ω , max., 2 W)
- Key control board
- USB board provides one USB input port (type B) and four USB output ports (type A).
- Earphone connector
- Metal enclosure considered as fire enclosure (within the plastic enclosure)
- Plastic enclosure is considered as electrical enclosure, mechanical enclosure and fire enclosure at right/left side.
- DC to DC converter board.

The equipment is full voltage-range design.

The enclosures secured together by screws and mechanical fixing.

Wall mount function only evaluated VESA adaptor kit at back of equipment. Basically, the equipment considered to be movable and allows the use of V-1 material for the outer plastic enclosure. However, The equipment has four screw holes for VESA adaptor kit assembly, which is compliant with VESA standard. VESA compatible wall mounting kit, 100 × 100 mm distance, four M4 size with 9.5 mm length screws to secure.

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.
- The equipment **disconnect device** is considered to be: Appliance Inlet.
- 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: C901, C902 and C900.
 - Supplementary insulation: None.
 - Across mains conductors: C909.
 - Functional insulation: None.
- The following **solid insulation** are provided (See subclause 2.10.5):
 - Reinforced insulation: Optocoupler (U902) ; Plastic enclosure
 - 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.
 - Protective bonding conductor: connections of the copper track on PCB and the metal chassis.
- The following parts are **protective earthing terminals** (See subclause 2.6.4): the earthing terminal in the appliance inlet.
- The following parts are **protective bonding terminals** (See subclause 2.6.4): the bonding terminal in the internal metal chassis.
- The following enclosures are provided:
 - Fire enclosure: the outer plastic enclosure and 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 T2.5 AL 250 V
- The product also marked with:
 -  (IEC 60417-5009) for the stand-by condition. (See subclause 1.7.8.3)
 - Line "I" means "ON" (IEC 60417-5007) and circle "O" means "OFF" (IEC 60417-5008) for power switch symbol. (See subclause 1.7.8.3)

Other comments:

Factory(ies):

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

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



available.

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.	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
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	See above.	N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.8	Components in equipment for IT power systems	Y1 or Y2 subclass capacitors according to IEC 60384-14:1993 provided between phase and earth are rated 250 V.	P
1.5.9	Surge suppressors		N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A
1.6	Power interface		P
1.6.1	AC power distribution systems	Considered.	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	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
	Symbol for Class II equipment only	The equipment is Class I equipment.	N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Other markings and symbols	Other markings and symbols do not give rise to misunderstanding.	P
1.7.2	Safety instructions and marking	See below.	P
1.7.2.1	General	Instructions are available.	P
1.7.2.2	Disconnect devices	See General product information - Engineering Considerations.	P
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 is located that indication of function is clearly.	P
1.7.8.2	Colours	The colours of the LED indicator are shown as follows: Blue – ON condition Amber – Power saving mode	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	No removable parts provided.	N/A
1.7.13	Replaceable batteries	No batteries provided.	N/A
	Language(s)	See above.	—
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	Unless otherwise indicated in 2.1.1.1, all parts are safe to access by operator.	P
2.1.1.1	Access to energized parts	Compliance of protection against contact with hazardous energized parts checked.	P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Test by inspection	Complied.	P
	Test with test finger (Figure 2A)	No contact.	P
	Test with test pin (Figure 2B)	No contact when applied to openings in external electrical enclosure.	P
	Test with test probe (Figure 2C)	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 (V_{peak} or V_{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage circuit in operator access area.	N/A
2.1.1.5	Energy hazards	See appended table 2.1.1.5 in Measurement Section. No energy hazards in operator access area.	P
2.1.1.6	Manual controls	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		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

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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. In addition, the circuit is derived from hazardous voltage secondary circuit that separated from the primary by double or reinforced insulation. The insulation in the transformer passed the electric strength test for basic insulation in 5.2.2.	P

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 μ F).....		—
2.4.3	Connection of limited current circuits to other circuits		N/A

2.5	Limited power sources		P
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IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	<i>For all data outputs of main board complied with Limited power source requirement.</i>		
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition	For USB ports (type A) see appended table 2.5 in Measurement Section	P
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA).....:	(see appended table 2.5 in Measurement Section)	—
	Current rating of overcurrent protective device (A)		—

2.6	Provisions for earthing and bonding		P
2.6.1	Protective earthing	Accessible conductive parts are reliably connected to protective earth.	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

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.4.2	Protective earthing and bonding terminals	The earthing terminal in the appliance inlet is regarded as the main protective earthing terminal.	P
	Rated current (A), type, nominal thread diameter (mm)	Evaluated by test. Rated current below 16 A.	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	Only protective earthing conductor used in the equipment.	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	Complied.	P
2.6.5.4	Parts that can be removed by an operator	The protective earthing connection is made earlier and broken later than the supply connection.	P
2.6.5.5	Parts removed during servicing	The relevant hazard is removed at the same time the protective earthing connections is removed for servicing.	P
2.6.5.6	Corrosion resistance	No combination above the line in Annex J is used.	P
2.6.5.7	Screws for protective bonding	Self-tapping and spaced thread screws are not used to provide protective bonding.	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

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Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	Basic requirements	Protection against overcurrents and short-circuits is provided as an integral part of the equipment. Protection against earth faults is provided as part of the building installation.	P
	Instructions when protection relies on building installation	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

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Clause	Requirement + Test	Result - Remark	Verdict
2.9.2	Humidity conditioning	Tested for 120 hrs.	P
	Relative humidity (%), temperature (°C)	95 %, 40 °C	—
2.9.3	Grade of insulation	Basic, supplementary, double insulation, reinforced or functional insulation.	P
2.9.4	Separation from hazardous voltages	See below.	P
	Method(s) used	Method 1.	—

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 V _{peak} 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	1500 V _{peak} assumed.	P
2.10.3.7	Transients from d.c. mains supply		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.8	Transients from telecommunication networks and cable distribution systems		N/A
2.10.3.9	Measurement of transient voltage levels		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network ..		N/A
2.10.4	Creepage distances	See below.	P
2.10.4.1	General	Considered.	P
2.10.4.2	Material group and comparative tracking index	Material group IIIb assumed.	P
	CTI tests	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	No wound components provided.	N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage		N/A
	a) Basic insulation not under stress		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	b) Basic, supplementary, reinforced insulation		N/A
	c) Compliance with Annex U		N/A
	Two wires in contact inside wound component; angle between 45° and 90°		N/A
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage		N/A
	- Basic insulation not under stress		N/A
	- Supplementary, reinforced insulation		N/A
2.10.6	Construction of printed boards	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

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.1	General		P
3.1.1	Current rating and overcurrent protection	All internal wires are UL recognized wiring. Internal wiring gauge is suitable for current intended to be carried.	P
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	See below.	P
	10 N pull test	The clearances and creepages are not reduced below required in 2.10.	P
3.1.10	Sleeving on wiring	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

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Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.2	Connection to a d.c. mains supply	Not connection to d.c. mains supply.	N/A
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 60320-1; the connector inserted without difficulty and not supporting 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 (mm ²), AWG		—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N)		—
	Longitudinal displacement (mm)		—
3.2.7	Protection against mechanical damage	No 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

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Clause	Requirement + Test	Result - Remark	Verdict
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm ²).....:		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm)		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

3.4	Disconnection from the mains supply		P
3.4.1	General requirement	See below.	P
3.4.2	Disconnect devices	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
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Clause	Requirement + Test	Result - Remark	Verdict
3.5.1	General requirements	Conformance to 2.2 is continued.	P
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	The all data ports of main board complies with sub-clause 2.5 request. The details see appended table 2.5	P

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		P
	Angle of 10°	The equipment does not overbalance when tilted to 10 degrees. (evaluated in all unit LCD panel orientation and most unfavourable unit height)	P
	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	30 N applied to internal metal enclosure.	P
4.2.4	Steady force test, 250 N	Applied to outer enclosure of plastic material at top, side, front, rear and metal bottom side. After subjected 250 N, no energy or other hazards.	P
4.2.5	Impact test	Applied to outer enclosure of plastic material at top, side, front, rear and metal bottom side 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

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Clause	Requirement + Test	Result - Remark	Verdict
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 any enclosure part was noticeable on the equipment (refer to the max. plastic enclosure inside temperature of heating test).	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
4.2.10	Wall or ceiling mounted equipment; force (N)	An additional force of 20.7 kg (3 times the mass of the unit and the mass is 6.9 kg with 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 × 100 mm, four M4 size with 9.5 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).....	201.7 N tested for 1 minute and passed for client's request.	P
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

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Clause	Requirement + Test	Result - Remark	Verdict
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
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	The energy of the indicator LED is far below the limit for Class 1 LED product.	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

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Clause	Requirement + Test	Result - Remark	Verdict
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	The LED power is far below Class 1 LED limit.	—
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

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	The phenolic material used for the bobbin of transformers (T901) and bobbin of line choke (L902) which is accepted without the further testing. Other materials (see appended table 4.5.5) for the test results.	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

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Clause	Requirement + Test	Result - Remark	Verdict
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	Apply to output of speaker (see appended table 5.3)	P
4.7.2	Conditions for a fire enclosure	See below.	P
4.7.2.1	Parts requiring a fire enclosure	Having employed the following parts: • components in primary circuits • insulated wiring the fire enclosure is required.	P
4.7.2.2	Parts not requiring a fire enclosure	All components mounted on PCB material and plastic enclosure of flammability rating V-1 or better. All units within the equipment cover by fire enclosure.	P
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	The base stand used material of flammability class HB or better.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	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

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Clause	Requirement + Test	Result - Remark	Verdict
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 5A is used.	P
5.1.4	Application of measuring instrument	The measuring instrument as in Annex D.1 is used.	P
5.1.5	Test procedure	The touch current was measured from mains to metal enclosure, plastic enclosure with metal foil, and output connectors.	P
5.1.6	Test measurements	See 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)		—

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Clause	Requirement + Test	Result - Remark	Verdict
	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
5.3.3	Transformers	With short-circuited and overloaded of the output of transformer, no high temperature of the transformer was recorded. The test results of short-circuited and overloaded (see appended table 5.3 and Annex C)	P
5.3.4	Functional insulation	Functional insulation complied with the requirements 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

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Clause	Requirement + Test	Result - Remark	Verdict
6	CONNECTION TO TELECOMMUNICATION NETWORKS		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements		N/A
	Supply voltage (V)		—
	Current in the test circuit (mA)		—
6.1.2.2	Exclusions		N/A
6.2	Protection of equipment users from overvoltages on telecommunication networks		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A
6.3	Protection of the telecommunication wiring system from overheating		N/A
	Max. output current (A)		—
	Current limiting method		—
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N/A
7.1	General		N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A
A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		P

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Clause	Requirement + Test	Result - Remark	Verdict
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples		—
	Wall thickness (mm)		—
A.1.2	Conditioning of samples; temperature (°C)		N/A
A.1.3	Mounting of samples		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		P
A.2.1	Samples, material		—
	Wall thickness (mm)		—
A.2.2	Conditioning of samples; temperature (°C)		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A

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

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

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

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Clause	Requirement + Test	Result - Remark	Verdict
	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
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F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		P
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G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	Earthed d.c. mains supplies		N/A
G.2.3	Unearthed d.c. mains supplies		N/A
G.2.4	Battery operation		N/A
G.3	Determination of telecommunication network transient voltage (V)		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks		N/A
G.4.2	Transients from telecommunication networks		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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
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

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Clause	Requirement + Test	Result - Remark	Verdict
M.3	Method B		N/A
M.3.1	Ringling signal		N/A
M.3.1.1	Frequency (Hz)		—
M.3.1.2	Voltage (V)		—
M.3.1.3	Cadence; time (s), voltage (V)		—
M.3.1.4	Single fault current (mA)		—
M.3.2	Tripping device and monitoring voltage		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V)		N/A
N	ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	ANNEX P, NORMATIVE REFERENCES		—
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

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Clause	Requirement + Test	Result - Remark	Verdict
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N/A
			—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N/A
			—
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P
V.1	Introduction		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
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



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Clause	Requirement + Test	Result - Remark	Verdict
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: <table><tr><td>1.4.8</td><td>Note 2</td><td>1.5.1</td><td>Note 2 & 3</td><td>1.5.7.1</td><td>Note</td></tr><tr><td>1.5.8</td><td>Note 2</td><td>1.5.9.4</td><td>Note</td><td>1.7.2.1</td><td>Note 4, 5 & 6</td></tr><tr><td>2.2.3</td><td>Note</td><td>2.2.4</td><td>Note</td><td>2.3.2</td><td>Note</td></tr><tr><td>2.3.2.1</td><td>Note 2</td><td>2.3.4</td><td>Note 2</td><td>2.6.3.3</td><td>Note 2 & 3</td></tr><tr><td>2.7.1</td><td>Note</td><td>2.10.3.2</td><td>Note 2</td><td>2.10.5.13</td><td>Note 3</td></tr><tr><td>3.2.1.1</td><td>Note</td><td>3.2.4</td><td>Note 3.</td><td>2.5.1</td><td>Note 2</td></tr><tr><td>4.3.6</td><td>Note 1 & 2</td><td>4.7</td><td>Note 4</td><td>4.7.2.2</td><td>Note</td></tr><tr><td>4.7.3.1</td><td>Note 2</td><td>5.1.7.1</td><td>Note 3 & 4</td><td>5.3.7</td><td>Note 1</td></tr><tr><td>6</td><td>Note 2 & 5</td><td>6.1.2.1</td><td>Note 2</td><td>6.1.2.2</td><td>Note</td></tr><tr><td>6.2.2</td><td>Note 6.</td><td>2.2.1</td><td>Note 2</td><td>6.2.2.2</td><td>Note</td></tr><tr><td>7.1</td><td>Note 3</td><td>7.2</td><td>Note</td><td>7.3</td><td>Note 1 & 2</td></tr><tr><td>G.2.1</td><td>Note 2</td><td>Annex H</td><td>Note 2</td><td></td><td></td></tr></table>					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
1.4.8	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																																																																									
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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																																																																									
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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																																																																											
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'.		N/A												
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N/A												
3.2.5.1	Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: <table><tr><td> Up to and including 6</td><td></td><td>0,75 ^{a)}</td><td> </td></tr><tr><td> Over 6 up to and including 10</td><td>(0,75) ^{b)}</td><td>1,0</td><td> </td></tr><tr><td> Over 10 up to and including 16</td><td>(1,0) ^{c)}</td><td>1,5</td><td> </td></tr></table> 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.	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			N/A
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													
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: <table><tr><td> Over 10 up to and including 16</td><td>1,5 to 2,5</td><td> </td><td>1,5 to 4</td><td> </td></tr></table> Delete the fifth line: conductor sizes for 13 to 16 A.	Over 10 up to and including 16	1,5 to 2,5		1,5 to 4			N/A							
Over 10 up to and including 16	1,5 to 2,5		1,5 to 4												
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
Bibliography	Additional EN standards.		—

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

IEC/EN 60950-1																											
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: <table border="0"> <tr> <td>SEV 6532-2.1991</td><td>Plug Type 15</td><td>3P+N+PE</td><td>250/400 V, 10 A</td></tr> <tr> <td>SEV 6533-2.1991</td><td>Plug Type 11</td><td>L+N</td><td>250 V, 10 A</td></tr> <tr> <td>SEV 6534-2.1991</td><td>Plug Type 12</td><td>L+N+PE</td><td>250 V, 10 A</td></tr> </table> 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: <table border="0"> <tr> <td>SEV 5932-2.1998</td><td>Plug Type 25</td><td>3L+N+PE</td><td>230/400 V, 16 A</td></tr> <tr> <td>SEV 5933-2.1998</td><td>Plug Type 21</td><td>L+N</td><td>250 V, 16 A</td></tr> <tr> <td>SEV 5934-2.1998</td><td>Plug Type 23</td><td>L+N+PE</td><td>250 V, 16 A</td></tr> </table>	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	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
SEV 6532-2.1991	Plug Type 15	3P+N+PE	250/400 V, 10 A																								
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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																								
3.2.1.1	In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.		N/A																								
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 mm ² is allowed for equipment with a rated current over 10 A and up to and including 13 A.		N/A
3.3.4	In the United Kingdom , the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 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	LM220WE* (* can be 0-9, A-Z or blank for marketing purpose)	22" LED backlight	--	--
Plastic Enclosure	Various	Various	ABS or PS, V-1 or better, min., 50 °C, thickness 2.0 mm min.	UL 94	UL
Metal Enclosure	--	--	Metal, thickness: 0.6 mm min.	--	--
Metal enclosure (under switching power supply board and rear left side of metal enclosure when LCD to horizontal mode)	--	--	Metal thickness: 0.81 mm min.	--	--
Base stand	--	--	HB or batter, weight: 2.5 kg	UL 94	UL
Speakers (two provided) (Optional)	--	--	Max. 8 Ω, max. 2 W	--	--
Switching Power supply board	TPV	715G3673	I/P: 90-264 Vac, 47-63 Hz, max. 1.5 A. O/P: max. 15 Vdc/ max. 2.4 A, max. 5.25 Vdc/ max. 4.0 A	--	--
PCB	--	--	V-1 or better, min., 105 °C	UL 796, UL 94	UL
Switching Power supply board: 715G3673 by TPV					
Appliance inlet (CN901)	Zhang Jia Gang- Hua Jie	SA-4S	10 A, 250 Vac, 70 °C	IEC/EN 60320-1	VDE
	Rong Feng Industrial Co Ltd	SS-120, SS-7B	10 A, 250 Vac, 70 °C	IEC/EN 60320-1	VDE
	Solteam	ST-01	10 A, 250 Vac, 70 °C	IEC/EN 60320-1	VDE

IEC/EN 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
	Inalways	0707-1, 0711-2, 0714	10 A, 250 Vac, 70 °C	IEC/EN 60320-1	VDE
	Shenzhen Delikang / Duoling	CDJ-3, CDJ-3-1	10 A, 250 Vac, 70 °C	IEC/EN 60320-1	VDE
	TECX	TU-301 series	10 A, 250 Vac, 70 °C	IEC/EN 60320-1	VDE
Power switch (SW901)	Rong Feng	RF-1003	10 A, 250 Vac	IEC/EN 61058-1	VDE, UL
	Solteam Electronics Co., Ltd.	MR-21	10 A, 250 Vac	IEC/EN 61058-1	VDE, UL
	Solteam Electronics Co., Ltd.	OR-L	6 A, 250 Vac	IEC/EN 61058-1	VDE, UL
	Chily	3024 series	16(4) A, 250 Vac	IEC/EN 61058-1	VDE, UL
Y- Capacitors (C901, C902) (Y1 or Y2 type) (Optional)	Walsin	AC, AH	Max., 4700 pF, min., 250 Vac	IEC 60384-14/1993	VDE, FI
	Haohua	CT 7	Max., 4700 pF, min., 250 Vac	IEC 60384-14/1993	VDE
	TDK	CS, CD	Max., 4700 pF, min., 250 Vac	IEC 60384-14/1993	VDE, FI
	Murata	KH, KX	Max., 4700 pF, min., 250 Vac	IEC 60384-14/1993	VDE, FI
	Matsushita	NS-A, NS-B	Max., 4700 pF, min., 250 Vac	IEC 60384-14/1993	VDE
	JYA-NAY	JY, JN	Max., 4700 pF, min., 250 Vac	IEC 60384-14/1993	VDE
	Hongming	F	Max., 4700 pF, min., 250 Vac	IEC 60384-14/1993	VDE
Y- Capacitor (C900) (Y1 or Y2 type) (Optional)	Walsin	AC, AH	Max., 3300 pF, min., 250 Vac	IEC 60384-14/1993	VDE, FI
	Haohua	CT 7	Max., 3300 pF, min., 250 Vac	IEC 60384-14/1993	VDE
	TDK	CS, CD	Max., 3300 pF, min., 250 Vac	IEC 60384-14/1993	VDE, FI
	Murata	KH, KX	Max., 3300 pF, min., 250 Vac	IEC 60384-14/1993	VDE, FI

IEC/EN 60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
	Matsushita	NS-A, NS-B	Max., 3300 pF, min., 250 Vac	IEC 60384-14/ 1993	VDE
	JYA-NAY	JY, JN	Max., 3300 pF, min., 250 Vac	IEC 60384-14/ 1993	VDE
	Hongming	F	Max., 3300 pF, min., 250 Vac	IEC 60384-14/ 1993	VDE
Fuse (F901)	Littelfuse / Wickmann	392, 382	T2.5 A, 250 Vac	IEC/EN 60127- 1, IEC/EN 60127-3	VDE
	Littelfuse	0663 series	T2.5 A, 250 Vac	IEC/EN 60127- 1, IEC/EN 60127-3	VDE
	Conquer	MET	T2.5 A, 250 Vac	IEC/EN 60127- 1, IEC/EN 60127-3	VDE
	SAVE FUSETTECH INC	SR-5 series, SS-5 series	T2.5 A, 250 Vac	IEC/EN 60127- 1, IEC/EN 60127-3	VDE
Bleeder Resistors (R900, R901 and R902)	--	SMD type	Max., 680 k Ω , min., 1/8 W (Located after fuse, three in series)	--	--
X- Capacitor (C909) (X1 or X2 type) (Optional)	Ultra Tech Xiphi	HQX	Max., 0.47 μ F, 250 Vac	IEC 60384-14/ 1993	VDE, FI
	Faratronic	MKP62	Max., 0.47 μ F, 250 Vac	IEC 60384-14/ 1993	VDE, FI
	Hua Jung	MKP	Max., 0.47 μ F, 250 Vac	IEC 60384-14/ 1993	VDE, FI
	Europtronic	MPX	Max., 0.47 μ F, 250 Vac	IEC 60384-14/ 1993	VDE, FI
	Liow Gu	GS-L	Max., 0.47 μ F, 250 Vac	IEC 60384-14/ 1993	VDE, FI
	Arcotronics	R.46	Max., 0.47 μ F, 250 Vac	IEC 60384-14/ 1993	VDE
Line Choke (L902) (Optional)	HAI AN	73L174-26-H, 73G174-26-H	105 °C	--	--
	TPV	73L174-26-V, 73G174-26-V	105 °C	--	--
	TDK	73L174-26-T, 73G174-26-T	105 °C	--	--

IEC/EN 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
	Taichang	73L174-26-S, 73G174-26-S	105 °C	--	--
	YAXING	73L174-26-X, 73G174-26-X	105 °C	--	--
Bridging Diode (BD901)	--	--	Min., 2 A, 600 Vac min.	--	--
Ripple Capacitor (C907)	--	--	150 to 220 µF, min., 400 V, min., 105 °C	--	--
Transistors (Q900)	--	--	Min., 650 V, min., 3 A	--	--
Optocoupler (U902)	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
	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

IEC/EN 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
	NEC	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1	Dti = 0.4 mm, Int. cr = 4.0 mm, Ext. cr = 7.0 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2:2003, IEC/EN 60950-1	VDE
Transformer (T901)	Li Tai	80GL19P-4-L, 80TL19P-4-L	Class A	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
	TPV	80GL19P-4-V, 80TL19P-4-V	Class A	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
	Taichang	80GL19P-4-S, 80TL19P-4-S	Class A	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
	YUVA	80GL19P-4-N, 80TL19P-4-N	Class A	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Supplementary information:					
1. An asterisk indicates a mark that assures the agreed level of surveillance.					
2. In the technical data column of optocoupler, where "Dti" means distance through insulation, "Int. cr" means internal creepage distance, and "Ext. cr" means external creepage distance.					

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V) / F (Hz)	I (mA)	I _{rated} (A)	P (W)	Fuse #	I _{fuse} (mA)	Condition/status	
For VGA mode:							
90 / 50	693	--	37.9	F901	693	2.	
90 / 60	696	--	37.9	F901	696	2.	
100 / 50	635	0.75	37.6	F901	635	2.	
100 / 60	639	0.75	37.6	F901	639	2.	
240 / 50	329	0.4	37.5	F901	329	2.	
240 / 60	330	0.4	37.5	F901	330	2.	
264 / 50	306	--	37.5	F901	306	2.	
264 / 60	309	--	37.5	F901	309	2.	
For DVI mode:							
90 / 50	665	--	36.7	F901	665	2.	
90 / 60	669	--	36.7	F901	669	2.	

IEC/EN 60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
100 / 50	613	0.75	36.5	F901	613	2.
100 / 60	617	0.75	36.5	F901	617	2.
240 / 50	317	0.4	36.1	F901	317	2.
240 / 60	321	0.4	36.1	F901	321	2.
264 / 50	295	--	36.0	F901	295	2.
264 / 60	299	--	36.0	F901	299	2.
For Display mode						
90 / 50	655	--	36.5	F901	655	2.
90 / 60	660	--	36.5	F901	660	2.
100 / 50	605	0.75	35.9	F901	605	2.
100 / 60	609	0.75	35.9	F901	609	2.
240 / 50	313	0.4	35.7	F901	313	2.
240 / 60	316	0.4	35.7	F901	316	2.
264 / 50	291	--	35.6	F901	291	2.
264 / 60	293	--	35.6	F901	293	2.
Supplementary information:						
1. The measured input current at rated voltage shall be $\leq 110\%$ of rated current.						
2. See summary of testing in the test report for the detail max. normal condition.						

2.10.3 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	1.8	See below	2.5	See below	
- Under F901 (with slot 4.8 mm x 1.0 mm)				2.4		3.0	
- Line to Neutral				3.5		3.5	
Basic / supplementary:							
Primary traces to earthed trace of SPS	420	250	2.3	See below	2.5	See below	
Under C901				3.5		3.5	
Under C902				3.5		3.5	
Under C900				7.2		7.2	
Under SW901				3.5		3.5	

IEC/EN 60950-1						
Clause	Requirement + Test			Result - Remark		Verdict
Between BD901 trace and earthed screw trace				8.9		8.9
Line trace to earthed trace before fuse (with slot 4.8 mm x 1.0 mm)				2.3		3.4
Neutral trace to earthed trace before fuse (with slot 4.8 mm x 1.0 mm)				2.3		3.3
Primary component (HS1) to earthed metal chassis				7.0		7.0
Primary component (L902) to earthed metal chassis				2.7		2.7
Primary component (T901) to earthed metal chassis	480	250	4.8	6.0	5.0	6.0
Primary component with 10 N to earthed trace or floating part of SPS	420	250	2.3	See below	2.5	See below
Primary component (R909) with 10 N to core of transformer (T901)				3.5		3.5
Secondary component (Q909) with 10 N to core of transformer (T901)				3.0		3.0
Secondary component (C939) with 10 N to core of transformer (T901)				3.6		3.6
Reinforced:						
Primary traces to secondary trace on SPS	420	250	4.6	See below	5.0	See below
Under U902				7.4		7.4
Under T901	480	250	4.8	8.4	5.0	8.4
Between power board of primary circuit and main board secondary circuit	420	250	4.6	7.2	5.0	7.2
Primary component with 10 N to secondary component	420	250	4.6	See below	5.0	See below
C911 with 10 N to U902 pin 3				5.0		5.0
Supplementary information:						
1. Functional insulation, see subclause 5.3.4 a).						
2. Other functional insulation according to subclause 5.3.4 c).						
3. Glued components: C907.						

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.	Altitude correction factor for clearances for an altitude of 3000 m (based on IEC 60664-1:1992): 1.14.		
5.	Internal wire shall be fixed on secondary side and keep the sufficient insulation for the requirement of reinforced insulation.		
6.	There are two layers of insulation tape provided around the core of Transformer (T901) to keep sufficient insulation for the requirement of basic insulation.		
7.	The appliance inlet was further cover with the metal sheet on inlet body and secured by solder.		
8.	For the clearances and creepage distances which no described above are larger than the limit above.		

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)
Plastic enclosure (RI)		420	250	3000 Vac	0.4	3.
Optocoupler (U902) (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.						
3. See appended table 1.5.1 for the 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	

IEC/EN 60950-1			
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):	1. 90 V/60 Hz at horizontal orientation (VGA mode) 2. 90 V/60 Hz at vertical orientation (VGA mode) 3. 264 V/60 Hz at vertical orientation (VGA mode) 4. 264 V/60 Hz at horizontal orientation (VGA mode)			—	
	Ambient T _{min} (°C).....:	--			—	
	Ambient T _{max} (°C):	--			—	
Maximum measured temperature T of part/at::		T (°C)			Allowed T _{max} (°C)	
Test condition		1.	2.	3.	4.	--
Switch body (SW901)		51.6	50.6	48.7	49.9	95
Appliance inlet (CN901) near Line pin (Power Board)		50.0	50.0	48.1	48.5	70
PCB near NR901 (Power Board)		69.0	64.5	55.8	58.9	105
C909 body (Power Board)		56.3	57.8	53.0	53.5	85
L902 coil (Power Board)		75.9	74.5	58.5	59.7	105
PCB near BD901 (Power Board)		73.1	70.7	61.7	62.9	105
C907 body (Power Board) (150 µF)		61.9	55.5	53.0	57.6	105
PCB near Q900 (Power Board)		70.3	68.6	69.9	71.0	105
U902 body (Power Board)		58.7	50.4	50.7	57.7	100
T901 coil (Power Board)		74.9	68.2	72.1	77.5	90
T901 core (Power Board)		70.5	63.0	67.1	73.5	90
C900 body (Power Board)		64.6	62.2	64.1	63.3	85
PCB near U400 (Main Board)		74.7	76.8	76.7	74.9	105
PCB near SH601 (Main Board)		68.2	75.3	74.9	68.7	105
PCB near U801 (DC converter)		61.4	54.4	55.0	61.7	105
PCB near U708 (USB Board)		57.8	67.6	67.6	58.3	105
Plastic enclosure inside near T901		48.0	44.3	44.6	47.9	50
Plastic enclosure outside near T901		45.4	43.1	43.3	45.4	95

IEC/EN 60950-1						
Clause	Requirement + Test			Result - Remark		Verdict
Ambient during test	26.1	25.2	24.8	24.7	--	
Max. ambient	40.0	40.0	40.0	40.0	--	
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:						
<u>Winding components (with safety isolation):</u>						
- Class A: $T_{max} = 100\text{ °C} - 10\text{ °C} = 90\text{ °C}$						
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)
--	--	--	--	--	--	--
Supplementary information:						

4.5.5	TABLE: Ball pressure test of thermoplastic parts		P
	Allowed impression diameter (mm) :	≤ 2 mm	—
Part		Test temperature (°C)	Impression diameter (mm)
Bobbin of transformer L902 (E I De Nemours & Co., Ltd. Type FR-530L, thickness min. 2.5 mm)		125	1.1
Bobbin of transformer L902 (Chang Chun Plastics Co., Ltd. Type PBT-4130, thickness min. 2.5 mm)		125	1.2
Supplementary information:			

4.7	Table: Resistance to fire					P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
Plastic enclosure	1.	1.	1.	1.	P	
Metal enclosure	1.	1.	1.	1.	P	
PCB	--	--	Min. 1.5	V-1 or better	P	
Supplementary information:						
1. See appended table 1.5.1 for the source details.						

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests		P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)
			Breakdown Yes / No
Basic / supplementary:			
Unit: primary and earth		AC	1707
T901: primary to core ^{1.}		AC	1707
T901: secondary to core ^{1.}		AC	1707
Reinforced:			
Unit: primary to plastic enclosure with metal foil		AC	3000
Unit: primary to secondary		DC	4242
T901: primary to secondary ^{1.}		AC	3000
T901: One layer of insulation tape ^{1.}		AC	3000
Supplementary information:			
1. The test is performed on all sources of transformer (T901).			

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)				25 °C, if not otherwise specified	—
	Power source for EUT: Manufacturer, model/type, output rating				See appended table 1.5.1	—
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
D911	s-c	240	10 min	F901	0.07	Unit shut down, Internal protection operated (U901), no hazards.
L922	s-c	240	10 min	F901	0.33	Unit normal operation, no hazards.
T901 pin 1 to pin 2	s-c	240	10 min	F901	0.07	Unit shut down, Internal protection operated (U901), no hazards.
T901 pin 4 to pin 6	s-c	240	10 min	F901	0.07	Unit shut down, Internal protection operated (U901), no hazards.
T901 pin 7, 8 to pin 12	s-c	240	10 min	F901	0.07	Unit shut down, Internal protection operated (U901), no hazards.
T901 pin 11 to pin 9, 10	s-c	240	10 min	F901	0.07	Unit shut down, Internal protection operated (U901), no hazards.
T901 pin 11 to pin 12	s-c	240	10 min	F901	0.19	Unit shut down, Internal protection operated (U901), no hazards.

IEC/EN 60950-1						
Clause	Requirement + Test				Result - Remark	
U902 pin 1 to pin 2	s-c	240	10 min	F901	0.07	Unit shut down, Internal protection operated (U901), no hazards.
U902 pin 3 to pin 4	s-c	240	10 min	F901	0.07	Unit shut down, Internal protection operated (U901), no hazards.
U902 pin 1	o-c	240	10 min	F901	0.07	Unit shut down, Internal protection operated (U901), no hazards.
Q900 (S-G)	s-c	240	10 min	F901	0.07	Unit shut down, Internal protection operated (U901), no hazards.
Q900 (G-D)	s-c	240	1 sec	F901	--	F901 opened, Q901 damaged, no hazards.
Q900 (D-S)	s-c	240	1 sec	F901	--	F901 opened, Q901 damaged, no hazards.
U901 pin 2 to pin 5	s-c	240	10 min	F901	0.07	Unit shut down, Internal protection operated (U901), no hazards.
U901 pin 2 to pin 8	s-c	240	10 min	F901	0.07	Unit shut down, Internal protection operated (U901), no hazards.
T901 pin 7, 8 to pin 9, 10	s-c	240	10 min	F901	0.07	Unit shut down, Internal protection operated (U901), no hazards.
C907	s-c	240	1 sec	F901	--	F901 opened, no hazards.
BD901 pin 1 to pin 3	s-c	240	1 sec	F901	--	F901 opened, Q901 damaged, no hazards.
Speaker (+ to -)	s-c	240	10 min	F901	0.33	Unit normal operation, no hazards.
All ventilation Openings (horizontal)	b-l	240	1.4 h	F901	0.33	Temp. was stabled, T901 coil = 65.6 °C, T901 core = 61.7 °C, ambient = 24.6 °C, no damaged, no hazards. Complied sub clause 5.3.8.
T901 pin 12 to pin 11 (after D911)	o-l	240	7.0 h	F901	0.65	Overload to 3.2 A unit protected, and loaded to 3.4 A, then unit shut down, T901 coil = 86.1 °C, T901 core = 74.1 °C, ambient = 23.8 °C, no damaged, no hazards.
T901 pin 7, 8 to pin 11	o-l	240	5.5 h	F901	0.68	Overload to 6.8 A unit protected, and loaded to 7.0 A, then unit shut down, T901 coil = 88.2 °C, T901 core = 71.3 °C, ambient = 25.7 °C, no damaged, no hazards.
T901 pin 9, 10 to pin 11	o-l	240	2.1 h	F901	0.33	Overload to 0.05 A, then unit shut down, Internal protection operated (U901), no damaged, no hazards.
For main board						

IEC/EN 60950-1						
Clause	Requirement + Test				Result - Remark	
CN600 pin 1	o-l	240	1 sec	F901	--	Circuit measured 0 V
CN100 pin 1-4, 6-11, 13-15	o-l	240	1 sec	F901	--	Circuit measured 0 V
CN100 pin 5	o-l	240	1 h	F901	--	Circuit measured 0.6 mA
CN100 pin 12, 15	o-l	240	1 h	F901	--	Circuit measured 1.2 mA
CN101 pin 1, 4-9, 11-16, 19-24	o-l	240	1 sec	F901	--	Circuit measured 0 V
CN101 pin 2, 3	o-l	240	1 h	F901	--	Circuit measured 1.2 mA
CN101 pin 10	o-l	240	1 h	F901	--	Circuit measured 0.6 mA
CN101 pin 17, 18	o-l	240	1 h	F901	--	Circuit measured 32.1 mA
CN500 pin 1-2, 4-11, 13-20	o-l	240	1 sec	F901	--	Circuit measured 0 V
CN500 pin 3, 12	o-l	240	1 h	F901	--	Circuit measured 0.3 mA
For USB board						
CN706 pin 1, 5	o-l	240	1 h	F901	--	Circuit measured 3400 mA
CN706 pin 2-4, 6-8	o-l	240	1 sec	F901	--	Circuit measured 0 V
CN707 pin 1	o-l	240	1 h	F901	--	Circuit measured 3300 mA
CN707 pin 2-4	o-l	240	1 sec	F901	--	Circuit measured 0 V
CN708 pin 1	o-l	240	1 h	F901	--	Circuit measured 3300 mA
CN708 pin 2-4	o-l	240	1 sec	F901	--	Circuit measured 0 V
CN704 pin 1-4	o-l	240	1 sec	F901	--	Circuit measured 0 V
Supplementary information:						
1. In fault column, where s-c = short-circuited, o-l = over-loaded, o-c = open-circuited, b-l = blocked.						
2. For fuse opened condition, carried out for all sources of fuse.						
3. For component damaged without fuse opened condition have been repeated two times with same result.						
4. Maximum temperatures limitation of safety isolation transformers based on a test temperature of 40 °C:						
Class A: $T_{max} = 150\text{ °C} - (40 - 25)\text{ °C} = 135\text{ °C}$						

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
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2.1.1.5	TABLE: Energy hazard measurement				P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
12	2.4	13.3	3.5	17.42	
5	4.0	5.2	11.5	47.73	
Supplementary information:					

2.1.1.7	TABLE: Discharge test				P
Condition	τ calculated (s)	τ measured (s)	t u→ 0V (s)	Comments	
Line to Neutral (Power switch ON)	0.96	0.93	--	V _O = 371 V _{peak} , 37 % of V _O = 137 V _{peak} , voltage drop to 120.9 V _{peak} after 1 s	
Supplementary information: Input condition: 264 Vac, 60 Hz Overall capacity: 0.47 μ F (C909 = 0.47 μ F) Bleeder resistor: 2.04 M Ω (R901 = R902 = R903 = 680 K Ω)					

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 7, 8 to Pin 11	--	7.40	--	
T901	Pin 9, 10 to Pin 11	34.6	--	--	
T901	Pin 12 to Pin 11	71.0	--	--	
T901	After R941, R942, R943 to Rtn	61.2	--	--	
T901	After C939 to Rtn	30.2	--	C939	
T901	After D911 to Rtn	--	13.1	D911	
Supplementary information:					

2.2.3	TABLE: SELV measurement (under fault conditions)		P
Location	Voltage (max.) (V)	Comments	
T901 pin 12 to pin 11 (+12V output to earth)	12.6	C939 shorted. The o/p-voltage did not exceed 42.4Vpk.	

Clause	Requirement + Test	Result - Remark	Verdict
T901 pin 12 to pin 11 (+12V output to earth)	0.03	D911 shorted. The o/p-voltage did not exceed 42.4Vpk.	
Supplementary information: 1) Input Voltage is 240Vac, 60Hz			

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 all type A USB ports (All PTC (F701, F702, F703 and F704) bypass during the test))				
According to Table 2B (normal condition), Uoc = 5.2 V				
current (in A)	8.0	3.4	P	
apparent power (in VA)	100	14.0	P	
According to Table 2B (single fault condition with R722 shorted), Uoc = 5.2 V				
current (in A)	8.0	3.4	P	
apparent power (in VA)	100	10.8	P	
According to Table 2B (single fault condition with R726 shorted), Uoc = 5.2 V				
current (in A)	8.0	3.4	P	
apparent power (in VA)	100	10.9	P	
According to Table 2B (single fault condition with U709 pin 4 to pin 5 shorted), Uoc = 12.4 V				
current (in A)	8.0	3.4	P	
apparent power (in VA)	100	12.3	P	
According to Table 2B (single fault condition with R744 shorted), Uoc = 0 V				
current (in A)	8.0	-- (Unit shut down)	P	
apparent power (in VA)	100	-- (Unit shut down)	P	
According to Table 2B (single fault condition with R751 shorted), Uoc = 12.4 V				
current (in A)	8.0	4.3	P	
apparent power (in VA)	100	13.1	P	

Clause	Requirement + Test	Result - Remark	Verdict
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For main board (VGA)			
According to Table 2B (normal condition), Uoc = 5.2 V			
current (in A)	8.0	0.01	P
apparent power (in VA)	100	0.01	P
For main board (DVI)			
According to Table 2B (normal condition), Uoc = 4.9 V			
current (in A)	8.0	0.01	P
apparent power (in VA)	100	0.01	P
For main board (Display)			
According to Table 2B (normal condition), Uoc = 1.8 V			
current (in A)	8.0	0.01	P
apparent power (in VA)	100	0.01	P
Supplementary information:			
1) Input test condition: 264 Vac, 60 Hz.			
2) The value of test results as above only display the worst condition.			

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.
The earth pin of appliance inlet to metal enclosure		14	Test current at 40 A, for 2 min., the drop voltage is 0.56 V
The earth pin of appliance inlet to C901 earthed trace		9	Test current at 32 A, for 2 min.
The earth pin of appliance inlet to C901 earthed trace		14	Test current at 40 A, for 2 min., the drop voltage is 0.56 V
The earth pin of appliance inlet to C902 earthed trace		11	Test current at 32 A, for 2 min.
The earth pin of appliance inlet to C902 earthed trace		12	Test current at 40 A, for 2 min., the drop voltage is 0.48 V
The earth pin of appliance inlet to C900 earthed trace		19	Test current at 32 A, for 2 min.
Supplementary information:			

2.10.2	Table: Working voltage measurement			P
Location	RMS voltage (V)	Peak voltage (V)	Comments	
T901 pin 1 to T901 pin 7, 8	212	362		

Clause	Requirement + Test		Result - Remark	Verdict
T901 pin 1 to T901 pin 9, 10	211	356		
T901 pin 1 to T901 pin 11	210	350		
T901 pin 1 to T901 pin 12	211	360		
T901 pin 2 to T901 pin 7, 8	216	410		
T901 pin 2 to T901 pin 9, 10	212	440		
T901 pin 2 to T901 pin 11	207	404		
T901 pin 2 to T901 pin 12	212	350		
T901 pin 4 to T901 pin 7, 8	203	352		
T901 pin 4 to T901 pin 9, 10	203	340		
T901 pin 4 to T901 pin 11	207	360		
T901 pin 4 to T901 pin 12	209	416		
T901 pin 6 to T901 pin 7, 8	235	472		
T901 pin 6 to T901 pin 9, 10	239	480	Max. Vrms and Vpeak of T901	
T901 pin 6 to T901 pin 11	237	476		
T901 pin 6 to T901 pin 12	229	456		
C900 Primary to Secondary pin	216	356		
U902 pin 1 to U902 pin 3	209	350		
U902 pin 1 to U902 pin 4	210	350		
U902 pin 2 to U902 pin 3	209	350		
U902 pin 2 to U902 pin 4	209	350		
Supplementary information: Input condition: 240 Vac, 60 Hz				

4.6.1, 4.6.2	Table: Enclosure opening measurements		P
Location	Size (mm)	Comments	
External plastic enclosure (at horizontal orientation)			
Top	1) Max. 33 mm x 1.8 mm, Min. 23.4 mm x 1.9 mm 2) 26 mm x 3.7 mm	1) Numerous rectangle openings at two areas, each area measured is 416 mm x 30.7 mm. 2) Fifteen rectangle openings at area that provided under handle, measured is 102 mm x 26 mm.	
Rear side	6 mm x 3.6 mm	Six rectangle openings provided.	
Left side	Max. 33 mm x 1.8 mm, Min. 29 mm x 1.9 mm	Numerous rectangle openings at area 543 mm x 48 mm. No hazardous parts located on 5° vertical project of these openings.	

Clause	Requirement + Test	Result - Remark	Verdict
Right side	1) Max. 33 mm x 1.8 mm, Min. 29 mm x 1.9 mm 2) 16.3 mm x 1.8 mm, 3) 3.7 mm x 1.8 mm	1) Numerous rectangle openings at area 109 mm x 33 mm. 2) Six rectangle openings at area 74 mm x 16.3 mm. 3) Thirteen rectangle openings at area 50 mm x 3.7 mm. No hazardous parts located on 5° vertical project of these openings.	
Bottom side	1) 27 mm x 3.6 mm, 2) Ø 2.0	1) Six rectangle openings at area 146 mm x 27 mm. 2) Numerous circle openings at two areas, each area 102 mm x 27 mm	
External plastic enclosure (at vertical orientation)			
Top	1) Max. 33 mm x 1.8 mm, Min. 29 mm x 1.9 mm 2) 16.3 mm x 1.8 mm, 3) 3.7 mm x 1.8 mm	1) Numerous rectangle openings at area 109 mm x 33 mm. 2) Six rectangle openings at area 74 mm x 16.3 mm. 3) Thirteen rectangle openings at area 50 mm x 3.7 mm.	
Rear side	6 mm x 3.6 mm	Six rectangle openings provided.	
Left side	1) Max. 33 mm x 1.8 mm, Min. 23.4 mm x 1.9 mm 2) 26 mm x 3.7 mm	1) Numerous rectangle openings at two areas, each area measured is 416 mm x 30.7 mm. 2) Fifteen rectangle openings at area that provided under handle, measured is 102 mm x 26 mm.	
Right side	1) 27 mm x 3.6 mm, 2) Ø 2.0	1) Six rectangle openings at area 146 mm x 27 mm. 2) Numerous circle openings at two areas, each area 102 mm x 27 mm	
Bottom side	Max. 33 mm x 1.8 mm, Min. 29 mm x 1.9 mm	Numerous rectangle openings at area 543 mm x 48 mm.	
Internal metal enclosure (at horizontal orientation)			
Top	1) Ø 4.8 2) 46 mm x 28 mm	1) Numerous circle openings at an area 275 mm x 32 mm. 2) One rectangle opening provided. No hazardous parts located on 5° vertical project of these openings.	
Left side	90 mm x 18.5 mm	One rectangle opening provided.	
Right side	1) 90 mm x 18.5 mm 2) 21.5 mm x 17 mm	1) and 2) One rectangle opening provided.	

Clause	Requirement + Test	Result - Remark	Verdict
Rear side	Ø 4.8	Numerous circle openings at an area 173 mm x 81 mm. The openings not exceed 5 mm in any dimension.	
Rear left side	Ø 1.8	Numerous circle openings at an area 110 mm x 8.8 mm. The openings not exceed 5 mm in any dimension.	
Bottom side	Ø 1.9 (circle hole), 3.6 (centre to centre), thickness 0.81 mm	Numerous circle openings at an area 140 mm x 22 mm. These openings comply with table 4D request.	
Internal metal enclosure (at vertical orientation)			
Top	1) 90 mm x 18.5 mm 2) 21.5 mm x 17 mm	1) and 2) One rectangle opening provided.	
Left side	1) Ø 4.8 2) 46 mm x 28 mm	1) Numerous circle openings at an area 275 mm x 32 mm. 2) One rectangle opening provided. No hazardous parts located on 5° vertical project of these openings.	
Right side	Ø 1.9 (circle hole), 3.6 (centre to centre), thickness 0.81 mm	Numerous circle openings at an area 140 mm x 22 mm. The openings not exceed 5 mm in any dimension.	
Rear side	Ø 4.8	Numerous circle openings at an area 173 mm x 81 mm. The openings not exceed 5 mm in any dimension.	
Rear bottom side	Ø 1.8 (circle hole), 3.5 (centre to centre), thickness 0.81 mm	Numerous circle openings at an area 110 mm x 8.8 mm. These openings comply with table 4D request.	
Bottom side	90 mm x 18.5 mm	One rectangle opening provided, the outer plastic enclosure considered as fire enclosure.	
Supplementary information:			
1. The LCD monitor only considered one orientation for the horizontal and vertical.			
2. Power switch at bottom side when LCD monitor is vertical orientation.			

5.1.6	TABLE: Touch current and protective conductor current measurement			P
Condition	L → terminal A (mA)	N → terminal A (mA)	Limit (mA)	Comments

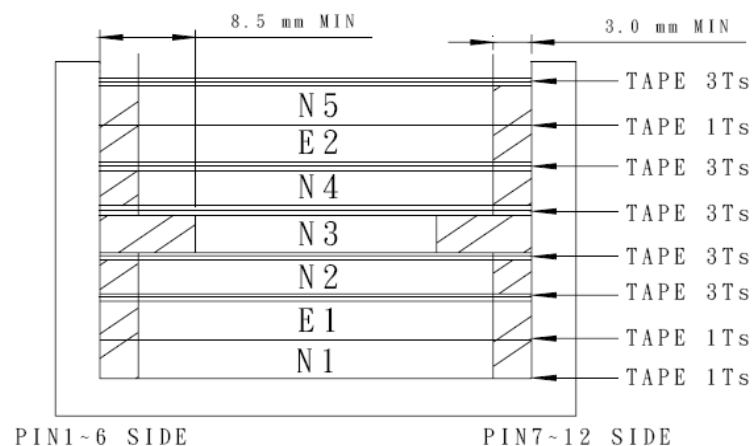
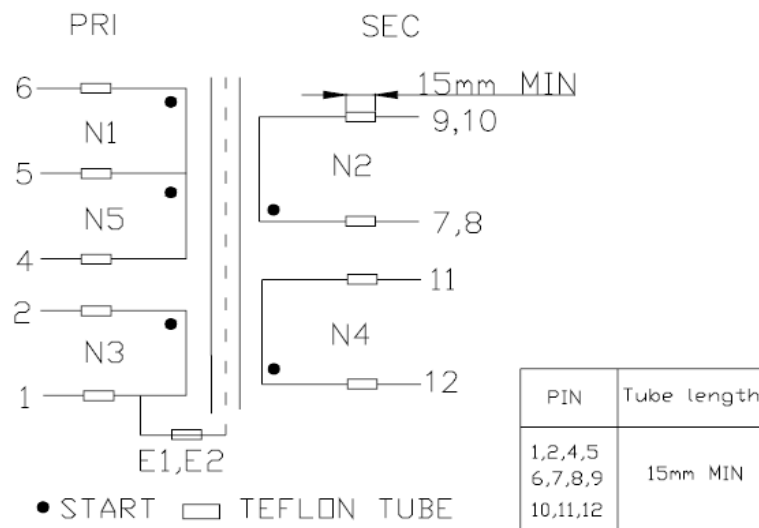
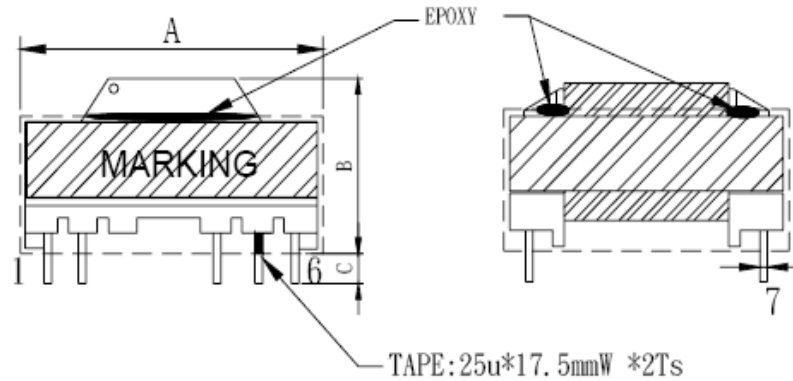
Clause	Requirement + Test			Result - Remark	Verdict
System ON ¹⁾	0.86	0.86	3.5	To metal enclosure, SW “e” opened condition.	
System ON ¹⁾	0.01	0.01	0.25	To output connector, SW “e” closed condition.	
System ON ¹⁾	0.01	0.01	0.25	To plastic enclosure with metal foil, SW “e” closed condition.	
System OFF ¹⁾	0.44	1.0	3.5	To metal enclosure, SW “e” opened condition.	
System OFF ¹⁾	0.01	0.01	0.25	To output connector, SW “e” closed condition.	
System OFF ¹⁾	0.01	0.01	0.25	To plastic enclosure with metal foil, SW “e” closed condition.	
System ON ²⁾	0.26	0.26	3.5	To metal enclosure, SW “e” opened condition.	
System ON ²⁾	0.01	0.01	0.25	To output connector, SW “e” closed condition.	
System ON ²⁾	0.01	0.01	0.25	To plastic enclosure with metal foil, SW “e” closed condition.	
System OFF ²⁾	0.14	0.34	3.5	To metal enclosure, SW “e” opened condition.	
System OFF ²⁾	0.01	0.01	0.25	To output connector, SW “e” closed condition.	
System OFF ²⁾	0.01	0.01	0.25	To plastic enclosure with metal foil, SW “e” closed condition.	
System ON ³⁾	0.32	0.32	3.5	To metal enclosure, SW “e” opened condition.	
System ON ³⁾	0.01	0.01	0.25	To output connector, SW “e” closed condition.	
System ON ³⁾	0.01	0.01	0.25	To plastic enclosure with metal foil, SW “e” closed condition.	
System OFF ³⁾	0.18	0.40	3.5	To metal enclosure, SW “e” opened condition.	
System OFF ³⁾	0.01	0.01	0.25	To output connector, SW “e” closed condition.	
System OFF ³⁾	0.01	0.01	0.25	To plastic enclosure with metal foil, SW “e” closed condition.	
Condition	MIU		Limit (mA)	Comments	
C997	0.05		0.5	For UL requirement.	
Supplementary information:					
1. Input condition: 1) 264 V 60 Hz, 2) 110 V, 50 Hz (by client request), 3) 110 V, 60 Hz (by client request)					
2. Overall capacity: C900= 3300 pF; C901=C902= 4700 pF					

C.2	TABLE: Insulation of transformers	P
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Clause	Requirement + Test	Result - Remark	Verdict
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	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)		480	250	4.8	6.0	5.0	6.0
Primary/input winding and core (internal)				2.4	3.0	2.5	3.0
Secondary/output winding and core (internal)				2.4	3.0	2.5	3.0
Primary/input part and secondary/output part (external)				4.8	5.7	5.0	5.7
Primary/input part and secondary/output winding (external)				4.8	6.6	5.0	6.6
Primary/input part and core (external)				2.4	3.5	2.5	3.5
Secondary/output part and core (external)				2.4	3.5	2.5	3.5
Description of design:							
(a) Bobbin							
Primary/input pins			6 – 5 – 4 ; 2 – 1 ; E1 and E2 connected to pin 1				
Secondary/output pins			7, 8 – 9, 10 ; 12 – 11				
Material (manufacturer, type, ratings)			Chang Chun, type No. T375HF, Phenolic, V-0, 150 °C Sumitomo Bakelite, type No. PM-9820 or PM-8375, Phenolic, V-0, 150 °C				
Thickness (mm).....			Min. 0.70 mm				
(b) General							

Clause	Requirement + Test	Result - Remark	Verdict
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Insulation tape:

- 3M, type No. 1350F-1
- Jingjiang, type No. CT
- Symbio, type No. 35660Y

Clause	Requirement + Test	Result - Remark	Verdict
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Margin tape:

- 3M, type No. 44
- Jingjiang, type WF
- Symbio, type 35661

Concentric windings on bobbin (horizontal type core). Three layers insulation tape between primary winding and secondary winding. The core is considered as floating part. Distance tape of 3.0mm min. on both side of bobbin. Tubing on all winding exit ends are leaded above the distance tape. Two copper shield provided internally (primary side). Two layers insulation tape wrapped around transformer.

Supplementary information:

1. Altitude correction factor for clearances for an altitude of 3000 m (based on IEC 60664-1:1992): 1.14.

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

	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.	Unit was evaluated according to IEC 60950-1. The requirements have to be checked during national approval.	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 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuits within the equipment.	N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.	No TNV circuits within the equipment.	N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.		N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.		N/A
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.		P
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.		P

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
	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.	Compliance has to be evaluated during the national approval process.	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.	EUT in compliance with requirements of IEC 60950-1. Overall acceptance shall be evaluated during national approval.	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.	Overall acceptance has to be evaluated during the national approval process.	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 mm ²).		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 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.	No such application.	N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.	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 V _{peak} or 60 V _{d.c.} , the max. acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuits.	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.		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.		P
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.		P
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 mm ² 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 mm³, 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 $\pm$ 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	Alternative test methods were not considered	N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	metal, having openings only for connecting 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, U_c, 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:	Deleted.	N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	In Australia (this variation does not apply in New 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

J 60950(H19) : 2007 TEST REPORT

(Deviations from IEC 60950 3rd edition, 1999)

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

1.2	Add the following terms. Equipment, Class 0I 1.2.4.101 Material, VTM 1.2.12.101	Added.	P
1.2.4.101	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
1.2.12.1	Replace the first sentence of this Sub-Clause by: FLAMMABILITY CLASSIFICATION OF MATERIALS: The recognition of the burning behaviour of materials and their ability to extinguish if ignited. Materials are classified as in 1.2.12.2 to 1.2.12.9, and 1.2.12.101 when tested in accordance with annex A.	Replaced.	P
	Add the following NOTE 3: NOTE 3 - Similarly, for thin MATERIALS, VTM-0 Class materials are regarded as better than those of VTM-1 Class, and VTM-1 better than VTM-2.	Added.	P
1.2.12.101	Add this sub-clause: VTM CLASS MATERIAL: Thin MATERIALS fulfil the specified conditions during the test of Sub-Clause A.101 applied for materials that the test and evaluation of clauses A.6 to A.10 is difficult to execute. Materials are classified to three classifications as VTM-0, VTM-1 and VTM-2 according to the state after the removal of the test flame.	Added.	P

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
1.7.101	Add this sub-clause: Marking for CLASS 0I EQUIPMENT For CLASS 0I EQUIPMENT, the following instruction shall be indicated on the visible place of the mains plug or the main body: “Provide an earthing connection” <i>Example in Japanese:</i> 必ず接地接続を行って下さい Moreover, for CLASS 0I EQUIPMENT, the following instruction shall be indicated on the visible place of the main body or written in the operating instructions: “Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains.” <i>Example in Japanese:</i> 接地接続は必ず、電源プラグを電源につなぐ前に行って下さい。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”.	Replaced.	P
2.6.3.1	Add the following after 1st paragraph of this Sub-Clause. This also applies to the conductor of lead wire for protective earthing of CLASS 0I EQUIPMENT.	Added.	P
2.6.4.1	Replace the second sentence in the first paragraph of this Sub-Clause by: For CLASS I EQUIPMENT with a DETACHABLE POWER SUPPLY CORD, the earthing terminal in the appliance inlet is regarded as the main protective earthing terminal.	Replaced.	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

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
2.6.101	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
3.2.5	Delete 1) in Table 3B.	Replaced.	P
4.2.8	Add the following informative remark after the last sentence. Remark - IEC 61965 is also applicable instead of IEC 60065.	Added.	N/A
4.5.1	In the right column of "Table 4A – Temperature rise limits, Part 1", add a suffix symbol 7) to "50" (K), corresponding to "- without T – marking" in the left column, so as to become "50 7)".	Added.	P
	Add the following to Suffix 5) of Table 4A (part one and part two). With regard to "Table 4A – Temperature rise limits, Part 1", insulating materials complying with Japanese requirements (see Attachment below) are also acceptable.	Added.	P
	Add the following to Suffix 7) in Table 4A (part one and part two). 7) This value shall apply only to wiring or cords complying with relevant IEC standards. Others shall comply with Japanese requirements (see Attachment below).	Added.	P

Attachment

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

These values may be increased by;
8 degrees for Duty 2 appliance, and
16 degrees for Duty 3 appliance.

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

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

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

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

Permissible temperature limits of insulating materials

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

Japanese Deviations for J60950 (H19): 2007 (MITI Ordinance Clause 2)

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

(Soft)	650, (850) 3)
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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.

Mica splittings and untreated mica papers

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

a: with asphalt base

b: with natural resin or denatured natural resin base

c: with ceramic base

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

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

f: with silicon resin.

g: inorganic

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

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

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

Organic materials (Thermosetting Resins)

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

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

other than inorganics	130
inorganic powder	150
glass fiber	155
xylene resin-casting	140
polyamide-imide film	180
laminated silicone resin mixed with inorganics	180, (220) ¹⁾
moulded silicon resins mixed with inorganics	180, (240) ⁴⁾
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 (°C)
methacrylic resin, cellulose resin, cellulose acetate butylate resin, ulcanise, polyethylene	50
foamed polyethylene compound for insulated conductors, polyvinyl chloride	60
polyethylene compound for insulated conductors, heat-resistant polyvinyl chloride, cross-linked polyvinyl chloride compound for insulated conductors	75
cross-linked polyethylene, chlorinated polyethylene compound for insulated conductors	90
acrylonitrile acrylic rubber styrene resin, acrylonitrile chlorinate polyethylene styrene resin	55
acrylonitrile styrene resin, acrylonitrile butadiene resin, acrylonitrile butadiene chlorinated polyethylene resin	
: general	55
: reinforced with glass fiber	80
polypropylene : general	105, (85) ³⁾
: reinforced with glass fiber	110
denatured polyphenyle oxide : general	75
: reinforced with glass fiber	100
Polystyrene	50, (70) ¹⁾
polyacetal : general	100
: reinforced with glass fiber	120
polyamide : general	90
: reinforced with glass fiber	120
polycarbonate : general	110
: reinforced with glass fiber	120
polyethylene terephthalate : general	120
: reinforced with glass fiber	130
polybutylene terephthalate : general	120
: reinforced with glass fiber	135
heat resistant polyethylene terephthalate film	135
fluorinated polyvinylidene compound for insulated conductors, polychlorotrifluoroethylene (ethylene-trifluoride resin), ethylene-tetrafluorethylene 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	120
: reinforced with glass fiber	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 (°C)
glass fiber (only alkaline free)	300
lead glass	380

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

borosilicate glass	490
quartz glass	800
ceramic	800, (1000) ¹⁾

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

Rubber compounds

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

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

Sleeves, Cloth, Tapes and like

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

4.7.3.2	Add the following in 7 th paragraph of this Sub-Clause. - for thin materials, e.g., flexible printed boards, etc., used inside equipment, be of FLAMMABILITY CLASS VTM-2 or better.	Added.	P	
5.1.6 Table 5A	Replace Table 5A of this Sub-Clause by:	Replaced.	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	-

National Differences					
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		3,5	-	
	- subject to the conditions of 5.1.7		-	5 % of input current	
	HAND-HELD	Equipment main protective earthing terminal (if any) CLASS 0I EQUIPMENT	0,5	-	
	Others		1,0	-	
	¹⁾ If peak values of TOUCH-CURRENT are measured, the maximum values obtained by multiplying the r.m.s. values by 1,414.				
5.3.8.2	Replace 3rd Item of the Sub-Clause by: - BASIC INSULATION between the PRIMARY CIRCUIT and accessible conductive parts of CLASS I or 0I EQUIPMENT;		Replaced.		N/A
Annex A A.101	Add this Sub-Clause: <i>Flammability tests for classifying materials VTM</i> Thin sheet materials shall comply with ISO 9773.		Added.		N/A
Annex G	Add the following new note below Table G.1: 2. In Japan, MAINS TRANSIENT VOLTAGE for equipment with a Nominal AC MAINS SUPPLY VOLTAGE of 100V is to be decided based on the column where Nominal AC MAINS SUPPLY VOLTAGE in Table G.1 is 150V.		Added.		N/A
Annex P	Add “IEC 61965:2000, Mechanical Safety for Cathode Ray Tubes”.		Added.		N/A
Annex U	Replace the second paragraph by: This annex covers to round winding wires having diameters between 0.05 mm and 5.00 mm.		Replaced.		N/A
U.2.1	Replace the text of this Sub-Clause by: The test sample is prepared according to IEC 60851-5:1996, 4.4.1 (for a twisted pair). The sample is then subjected to the test of 5.2.2 of this standard, with a test voltage not less than twice the appropriate voltage in table 5B (see 5.2.2) of this standard. However, the minimum values shall be as follows: for BASIC INSULATION or SUPPLEMENTARY INSULATION, 3000 V, or; - for REINFORCED INSULATION, 6000 V.		Replaced.		N/A

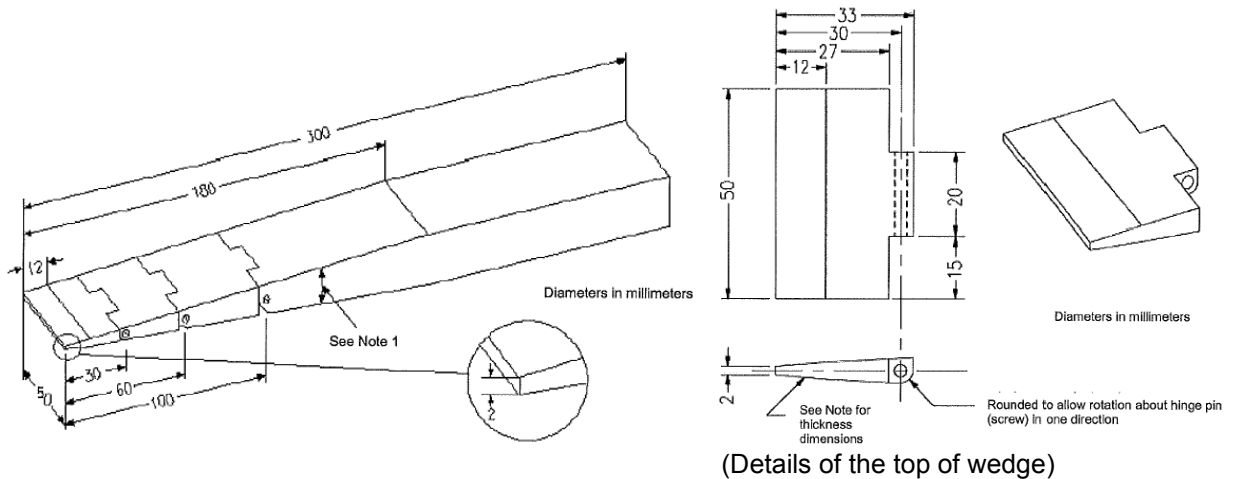
National Differences																			
Clause	Requirement – Test	Result – Remark	Verdict																
U.2.2	Replace this Sub-Clause by: Test 8 of IEC 60851-3:1996, 5.1.1, using the mandrel diameters of table U.1. The test sample is then examined in accordance with IEC 60851-3:1996, 5.1.1.4, followed by the test of 5.2.2 of this standard except applying the test voltage between the wire and the mandrel. A test voltage shall be the appropriate voltage in table 5B (see 5.2.2) of this standard. However, the minimum values shall be as follows: for BASIC INSULATION or SUPPLEMENTARY INSULATION, 1500 V, or; - for REINFORCED INSULATION, 3000 V. <table><tr><th colspan="2">Table U.1 Table U.1 - Mandrel diameter</th></tr><tr><th>Nominal Conductor diameter mm</th><th>Mandrel diameter mm ± 0,2 mm</th></tr><tr><td>0,05 – 0,34</td><td>4,0</td></tr><tr><td>0.35 – 0,49</td><td>6,0</td></tr><tr><td>0,50 – 0,74</td><td>8,0</td></tr><tr><td>0,75 – 2,49</td><td>10,0</td></tr><tr><td>2,50 – 5,00</td><td>4 times of the diameter of conductor ¹⁾</td></tr><tr><td colspan="2">¹⁾ in compliance with IEC 60317-43.</td></tr></table> The tension to be applied to the wire during winding on the mandrel is calculated from the wire diameter to be equivalent to 118 Mpa ± 10 % (118 N/mm² ± 10 %).	Table U.1 Table U.1 - Mandrel diameter		Nominal Conductor diameter mm	Mandrel diameter mm ± 0,2 mm	0,05 – 0,34	4,0	0.35 – 0,49	6,0	0,50 – 0,74	8,0	0,75 – 2,49	10,0	2,50 – 5,00	4 times of the diameter of conductor ¹⁾	¹⁾ in compliance with IEC 60317-43.		Replaced.	N/A
Table U.1 Table U.1 - Mandrel diameter																			
Nominal Conductor diameter mm	Mandrel diameter mm ± 0,2 mm																		
0,05 – 0,34	4,0																		
0.35 – 0,49	6,0																		
0,50 – 0,74	8,0																		
0,75 – 2,49	10,0																		
2,50 – 5,00	4 times of the diameter of conductor ¹⁾																		
¹⁾ in compliance with IEC 60317-43.																			
U.2.3	Replace the first paragraph of this Sub-Clause by: Test 9 of IEC 60851-6:1996, followed by the electric strength test of 5.2.2 of this standard except applying the test voltage between the wire and the mandrel. A test voltage shall be the appropriate voltage in table 5B (see 5.2.2) of this standard. However, the minimum values shall be as follows: for BASIC INSULATION or SUPPLEMENTARY INSULATION, 1500 V, or; - for REINFORCED INSULATION, 3000 V.	Replaced.	N/A																

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
U.2.4	Replace the third paragraph of this Sub-Clause, which is describing the test voltage, by: The test voltage shall not be less than the appropriate voltage in table 5B (see 5.2.2) of this standard. However, the minimum values shall be as follows: for BASIC INSULATION or SUPPLEMENTARY INSULATION, 1500 V, or; for REINFORCED INSULATION, 3000 V. It is applied between the shot and the conductor.	Replaced.	N/A
U.3.1	Replace the text of this Sub-Clause by: The test voltage for ROUTINE TESTING shall be the appropriate voltage in table 5B (see 5.2.2) of this standard. However, the minimum values shall be as follows: for BASIC INSULATION or SUPPLEMENTARY INSULATION, 1500 V r.m.s. or 2100 V peak, or; - for REINFORCED INSULATION, 3000 V r.m.s. or 4200 V peak.	Replaced.	N/A
U.3.2	Replace the text of this Sub-Clause by: Twisted pair samples shall be tested in accordance with IEC 60851-5:1996, 4.4.1. The minimum breakdown voltage shall not be less than twice the appropriate voltage in table 5B (see 5.2.2) of this standard. However, the minimum values shall be as follows: for BASIC INSULATION or SUPPLEMENTARY INSULATION, 3000 V r.m.s. or 4200 V peak, or; - for REINFORCED INSULATION, 6000 V r.m.s. or 8400 V peak.	Replaced.	N/A

National Differences			
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

National Differences			
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 with the test finger, remove the parts detachable without a tool. It shall not be possible to touch any hazardous moving parts, including the shredding roller or the mechanical section for shredding, with the probe.	Added. Not Document shredding machines.	N/A

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict



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

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

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

Figure JA.2 Wedge-probe