Test Report issued under the responsibility of:

TEST REPORT

IEC 60950-1: 2005 (2nd Edition)
Information technology equipment – Safety –
Part 1: General requirements

Report Reference No.....:	T223-0144/13
Date of issue.....:	2013-04-29
Total number of pages .....:	119 pages
CB Testing Laboratory.....:	SIQ – Slovenian Institute of Quality and Metrology Testing Laboratory is accredited by Slovenian Accreditation, Reg. No.: LP-009
Address .....:	Tržaška cesta 2, 1000 Ljubljana, Slovenia
Applicant's name.....:	GlobTek, Inc
Address .....:	186 Veterans Drive, Northvale, N.J, 07647, USA
Manufacturer's name .....:	GlobTek, Inc
Address .....:	186 Veterans Drive, Northvale, N.J, 07647, USA
Test specification:	
Standard .....:	IEC 60950-1:2005 (Second Edition), Am 1: 2009 EN 60950-1:2006 + Am 1:2010 + Am 11:2009 + Am 12:2011
Test procedure .....:	CB Scheme
Non-standard test method……..:	N/A
Test Report Form No.....:	IEC60950_1C
Test Report Form(s) Originator .....:	SGS Fimko Ltd
Master TRF .....:	Dated 2012-08

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

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

Test item description .....:	Switch Mode Power Supply
Trade Mark .....:	GlobTek, Inc.
Manufacturer .....:	GlobTek, Inc.
Model/Type reference.....:	GT-21131-7212 GT-21131-7219-X.X GT-21131-7224-X.X See nomenclature next page

Ratings ..... :	Input: 100-240 Vac; 1,6 A max.; 50-60 Hz Output: GT-21131-7212: 12,0 Vdc; 6,0 A GT-21131-7219-X.X: 19,0 Vdc; 3,8 A GT-21131-7224-X.X: 24,0 Vdc; 3,0 A Output power: 72 W max. **Nomenclature:** **GT-21131-72VV-X.X** Where: "GT-2" designates IEC 60950 Version power supply; "1131" represents Series Code; "72" designates Rated Output Power (72 W); "VV" designates Rated Output Voltage in Volts and can be 12, 19 or 24; "-X.X" is optional or blank and designates voltage differentiator (subtracting "X,X" Volts from standard output voltage "VV" in 0,1 V increments); Each output current can vary within its designation range, as long as the output power is not exceeded. Units are available from 12 up to 24 V in 0,1 V increments.

Testing procedure and testing location:		
☒ **CB Testing Laboratory**:	SIQ – Slovenian Institute of Quality and Metrology	
Testing location/ address.....:	Tržaška cesta 2, 1000 Ljubljana, Slovenia	
☐ **Associated CB Laboratory:**		
Testing location/ address.....:		
Tested by (name + signature) .....:	Milan Kumer	.....
Approved by (name + signature)..:	Boštjan Glavič	.....
☐ Testing procedure: **TMP**		
Testing location/ address.....:		
Tested by (name + signature) .....:		.....
Approved by (name + signature)..:		.....
☐ Testing procedure: **WMT**		
Testing location/ address.....:		
Tested by (name + signature) .....:		
Witnessed by (+ signature) .....:		
Approved by (+ signature).....:		
☐ Testing procedure: **SMT**		
Testing location/ address.....:		
Tested by (name + signature) .....:		
Approved by (name + signature)..:		
Supervised by (name + signature):		
☐ Testing procedure: **RMT**		
Testing location/ address		
Tested by (name + signature) .....:		
Approved by (name + signature)..:		
Supervised by (name + signature):		

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

1. Test Report
2. National Differences – Enclosure No. 1
3. European Group Differences and National Differences according to EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 – Enclosure No. 1a
4. Pictures – Enclosure No. 2
5. Schematics, Layouts, Transformer data - Enclosure No. 3

Summary of testing:	
Tests performed (name of test and test clause): **See next page**	**Testing location:** **SIQ Ljubljana, Tržaška c. 2, SI-1000 Ljubljana, Slovenia**

Summary of compliance with National Differences:

List of countries addressed:

Argentina**, Australia, Austria**, Belarus**, Belgium**, Brazil**, Bulgaria**, Canada, China, Croatia**, Czech Republic**, Denmark, Finland, France**, Germany, Greece**, Hungary**, India**, Indonesia**, Ireland, Israel, Italy**, Japan*, Kenya**, Korea, Malaysia**, Mexico**, Netherlands**, New Zealand*, Norway, Poland**, Portugal**, Romania**, Russian Federation**, Saudi Arabia**, Serbia**, Singapore**, Slovakia**, Slovenia**, South Africa**, Spain, Sweden, Switzerland, Thailand**, Turkey**, Ukraine**, United Arab Emirates**, United Kingdom, Uruguay**, USA

* No national differences to IEC 60950-1:2005 (2nd edition) declared

** No national differences to IEC 60950-1:2005 (2nd edition) + A1 or IEC 60950-1:2001 (1st edition) declared

☒ The product fulfils the requirements of EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 (see Enclosure No. 1a).

Copy of marking plate

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

(Additional requirements for markings. See 1.7 NOTE)

History Sheet

Date	Report Number	Change	Revision No.
2007-10-15	T223-0149/07	Initial Test Report issued.	—
2008-04-15	T223-0090/08	Input current rating changed from 1,4 A to 1,6 A. Marking plate was replaced. No additional testing was required.	1.0
2013-04-29	T223-0144/13	- Test report upgrade to new edition of the standard IEC 60950-1:2005 (Second Edition), Am 1: 2009 / EN 60950-1:2006 + Am 1:2010 + Am 11:2009 + Am 12:2011 - Additional sites of factory location added. - Alternative appliance inlet added. - Humidity test for tropical conditions **For Revision 2.0** Critical component list is updated and below tests were performed Cl.2.9.2 Humidity test Cl.5.2.2 Dielectric test	2.0

Overview of the testing done (P = Test passed, N/A test not applicable)		
Clause	Test	Test Conducted
1.6.2	Input Test	P
1.7.11	Durability	P
2.1.1.5	Energy Hazard Measurements	P
2.1.1.7	Capacitance Discharge Test	P
2.1.1.8	Energy hazards – d.c. mains supplies	N/A
2.2.2	SELV: Hazard Voltage (Circuit) Measurement Test	P
2.2.3	SELV Reliability testing	P
2.4	Limited Current Circuit (Bridging components)	N/A
2.5	Limited Power Source	N/A
2.6	Earthing Test, earth trace test (UL PAG)	P
2.9.2	Humidity Test (120h)	P
2.10.2	Working Voltage measurement on PCB and Transformer	P
2.10.3/2.10.4	Clearance and Creepage distance measurement	P
2.10.5	Distance Through Insulation measurement	P
2.10.5.6	Thin Sheet Material (barriers)	P
2.10.12	Enclosed and Sealed parts	P
4.2.2-4.2.4	Steady force test, 10N, 30 N, 250 N	P
4.2.5	Impact test, Fall test, Swing test	P
4.2.6	Drop test	N/A
4.2.7	Stress relief test; heat test (°C/7 h)	P
4.2.10	Wall or ceiling mounted equipment	N/A
4.3.2	Handle Test (with USA Deviation)	N/A
4.3.6	Torque Test for direct plug in Products. Dimensions of the plugs	N/A
4.5.2	Heating (Temperature) Test	P
4.5.5	Resistance to abnormal heat (Ball pressure test)	P
5.1	Touch Current and protective conductor current	P
5.2	Electric Strength Test	P
5.3	Abnormal Operating Tests foreseeable misuse: SELV reliability and failure in the voltage regulation Functional insulation, Component faults Overload and short and no load at the outputs	P
	Hot swap test	N/A
	Insulation resistance Test	N/A

Test item particulars ..... :	
Equipment mobility ..... :	[X] movable [] hand-held [] transportable [] stationary [] for building-in [] direct plug-in
Connection to the mains ..... :	[] pluggable equipment [X] type A [] type B [] permanent connection [X] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains
Operating condition ..... :	[X] continuous [] rated operating / resting time:
Access location ..... :	[X] operator accessible [] restricted access location
Over voltage category (OVC) ..... :	[] OVC I [X] OVC II [] OVC III [] OVC IV [] other:
Mains supply tolerance (%) or absolute mains supply values ..... :	
Tested for IT power systems ..... :	[X] Yes [] No
IT testing, phase-phase voltage (V) ..... :	Norway 230 Vac per Phase
Class of equipment ..... :	[X] Class I [] Class II [] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) ..... :	
Pollution degree (PD) ..... :	[] PD 1 [X] PD 2 [] PD 3
IP protection class ..... :	IPX0
Altitude during operation (m) ..... :	2000
Altitude of test laboratory (m) ..... :	300
Mass of equipment (kg) ..... :	0,485
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 ..... :	2013-03-25
Date(s) of performance of tests ..... :	2013-04-xx to 2013-04-xx, Rev.No.:2
General remarks:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a ☒ comma / ☐ point is used as the decimal separator.	

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

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

☒ Yes

☐ Not applicable

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

Name and address of factory (ies) ..... :

- GlobTek, Inc., Corporate Headquarters,
186 Veterans Drive, Northvale, NJ 07647, USA

- GlobTek (Suzhou) Co., Ltd.
Building 4, No. 76, Jinling East Road
Suzhou Industrial Park, Jiangsu 215021, China

General product information:

Information about the Product:
The EUT is an table-top power adaptor for general use with Information Technology Equipment

~~Additional information:~~
Optional bridging Y capacitor CY4 is not implemented in unit.

Abbreviations used in the report:

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

Indicate used abbreviations (if any)

Summary of testing:

The component was tested according to the standard IEC 60950-1:2005 (2nd Edition) +A1:2009 and/or EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011.

1. The products were tested on a 20 A (USA) and a 16 A (IEC) branch circuit in series. External circuit breaker did not open during the testing. The unit is approved for TN mains star connections and IT mains with 230 Vac phase to phase voltage. The unit provides internally one fuse in line.

2. All secondary output circuits are separated from mains by reinforced insulation and rated SELV non hazardous energy levels.

3. The unit provides the following disconnect device: appliance inlet.

4. The input connector is an IEC60320 inlet. The output connector is barrel type, molded with output cable. Other type of output connector may also be used including stripped and tinned.

5. Approved power supply cord with minimum cross sectional area of conductors 0,75 mm^2 should be used. Power supply cord and mains plug should meet national requirements of the country, where the unit is to be used.

6. The power supply is rated class I.

7. The transformer T1 provides reinforced insulation. The transformer is built up to fulfill the requirement of insulation class B and provide in addition an UR (OBJY2) insulation system. (see also list of safety critical components).

8. The maximum working voltages are 246,7 Vrms; 408 Vpk.

9. The equipment has been evaluated for use in a Pollution Degree 2 and overvoltage category II environment and a maximum altitude of 2000 m.

10. The unit provides Electrical, Mechanical and Fire enclosure.

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict
1	**GENERAL**		P
1.5	**Components**		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component standard. Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.	P
1.5.3	Thermal controls	No thermal controls.	N/A
1.5.4	Transformers	(see list of safety critical components table 1.5.1 and the transformer drawings in the Enclosure No. 4) Transformer used is suitable for intended application and comply with the relevant requirements of the standard.	P
1.5.5	Interconnecting cables	Interconnection O/P cable to other device is carrying only SELV voltage on an energy level below 240VA. Except for the insulation material there are no further requirements to the interconnection cable.	P
1.5.6	Capacitors bridging insulation	X1 or X2 and Y1 or Y2 capacitors according to IEC 60384-14:1993.	P
1.5.7	Resistors bridging insulation		N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	No such resistors are bridging double/reinforced insulation.	N/A
1.5.8	Components in equipment for IT power systems	Certified capacitors connected between line and earth, ref. List of Critical Components	P
1.5.9	Surge suppressors	No surge suppresors are used.	N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	No VDR bridging double or reinforced insulation.	N/A
1.6	**Power interface**		P
1.6.1	AC power distribution systems	TN, and IT for 230 Vac.	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.	N/A
1.6.4	Neutral conductor	Neutral is insulated from earth with basic insulation throughout the equipment.	P
1.7	**Marking and instructions**		P
1.7.1	Power rating and identification marking	Rating marking readily visible to operator	P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:		N/A
	Rated voltage(s) or voltage range(s) (V) .....:	100–240 Va.c.	P
	Symbol for nature of supply, for d.c. only.....:		N/A
	Rated frequency or rated frequency range (Hz) ....:	50-60Hz	P
	Rated current (mA or A) .....:	1,6A	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark .....:	GlobTek, Inc.	

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict
	Model identification or type reference ..... :	See description on page 1 and Nomenclature on page 2 and copy of marking on page 5.	P
	Symbol for Class II equipment only ..... :		N/A
	Other markings and symbols ..... :		P
1.7.2	Safety instructions and marking	No precautions are necessary	N/A
1.7.2.1	General	No precautions are necessary.	N/A
1.7.2.2	Disconnect devices	Appliance inlet used.	N/A
1.7.2.3	Overcurrent protective device	Unit provides appropriate overcurrent protective device inside the equipment.	P
1.7.2.4	IT power distribution systems	The following information should be given in the installation instruction: "This product is also designed for IT power distribution system with phase-to-phase voltage 230V".	N/A
1.7.2.5	Operator access with a tool	The unit is operator accessible. There are no areas to be opened with tool by the operator.	N/A
1.7.2.6	Ozone	Unit does not produce ozone.	N/A
1.7.3	Short duty cycles	The equipment is intended for continuous operation	N/A
1.7.4	Supply voltage adjustment ..... :	No voltage selector.	N/A
	Methods and means of adjustment; reference to installation instructions ..... :		N/A
1.7.5	Power outlets on the equipment ..... :	No standard power outlet.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) ..... :	Fuse rating and fuse designation is marked adjacent to the fuse on the layout: F1 T3,15A 250V.	P
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals ..... :	Unit is provided with appliance inlet. PE pin of appliance inlet was considered as PE terminal.	N/A
1.7.7.2	Terminals for a.c. mains supply conductors	Appliance inlet used, no marking required.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	not intended for connection to DC mains.	N/A

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.8	Controls and indicators		P
1.7.8.1	Identification, location and marking ..... :		P
1.7.8.2	Colours ..... :	A green LED is illuminating when the unit is operating.	P
1.7.8.3	Symbols according to IEC 60417 ..... :	No such symbol used.	N/A
1.7.8.4	Markings using figures ..... :		N/A
1.7.9	Isolation of multiple power sources ..... :		N/A
1.7.10	Thermostats and other regulating devices ..... :		N/A
1.7.11	Durability	The marking withstands required tests	P
1.7.12	Removable parts	No removable parts.	P
1.7.13	Replaceable batteries ..... :		N/A
	Language(s) ..... :		—
1.7.14	Equipment for restricted access locations ..... :	Equipment not intended for installation in RAL.	N/A

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

2	**PROTECTION FROM HAZARDS**		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas		P
2.1.1.1	Access to energized parts		P
	Test by inspection .....:	Enclosure of the unit and output pins are operator accessible.	P
	Test with test finger (Figure 2A) .....:	verified	P
	Test with test pin (Figure 2B) .....:	Verified.	P
	Test with test probe (Figure 2C) .....:	No TNV circuit.	N/A
2.1.1.2	Battery compartments	No battery compartment.	N/A
2.1.1.3	Access to ELV wiring	No ELV wiring.	N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)	(see appended table 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring	All accessible parts are separated from internal wiring at hazardous voltage by double or reinforced insulation, complying with 2.10.5 and 3.1.4.	P
2.1.1.5	Energy hazards .....:	Output is non hazardous energy level.	P
2.1.1.6	Manual controls	No shafts of knobs etc. at ELV or hazardous voltage.	N/A
2.1.1.7	Discharge of capacitors in equipment		P
	Measured voltage (V); time-constant (s) .....:	See appended table 2.1.1.7.	—
2.1.1.8	Energy hazards – d.c. mains supply		N/A
	a) Capacitor connected to the d.c. mains supply ...:		N/A
	b) Internal battery connected to the d.c. mains supply .....:		N/A
2.1.1.9	Audio amplifiers .....:	No audio amplifier within the unit.	N/A
2.1.2	Protection in service access areas	No maintenance work in operation mode is necessary. The unit must be disconnected from mains supply before accessing to the inner part of the unit (servicing).	N/A
2.1.3	Protection in restricted access locations		N/A

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict
2.2	**SELV circuits**		P
2.2.1	General requirements	SELV limits (at accessible parts) are not exceeded under normal condition nor under single fault condition.	P
2.2.2	Voltages under normal conditions (V) ..... :	(see appended table 2.2.2 in Enclosure No. 2)	P
2.2.3	Voltages under fault conditions (V) ..... :	See appended table 5.3	P
2.2.4	Connection of SELV circuits to other circuits ..... :	SELV output only for connection to SELV circuits.	P
2.3	**TNV circuits**		N/A
2.3.1	Limits	No TNV circuits in 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	No limited current circuits.	N/A
2.4.2	Limit values		N/A
	Frequency (Hz)..... :		—
	Measured current (mA) ..... :		—
	Measured voltage (V)..... :		—
	Measured circuit capacitance (nF or µF) ..... :		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	**Limited power sources**		N/A

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict
	a) Inherently limited output	No limited power source.	N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		N/A
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA).....:		—
	Current rating of overcurrent protective device (A) .:		—
	Use of integrated circuit (IC) current limiters :	(see Annex CC)	—
2.6	**Provisions for earthing and bonding**		P
2.6.1	Protective earthing	The earthing connection is provided via an IEC60320 inlet. Protective bonding wire is hooked in and soldered to appliance inlet PE pin and in addition mechanically secured by shrink tubing. On the other end is provided with double crimped type pin, secured and soldered to PCB. An EMI core provided, ferrite type, overall 13 mm OD, 8 mm ID, 6,3 mm thick. Covered with tubing.	P
2.6.2	Functional earthing	No functional earthing.	N/A
2.6.3	Protective earthing and protective bonding conductors		P
2.6.3.1	General		P
2.6.3.2	Size of protective earthing conductors	Power Supply cord not provided with the equipment.	N/A
	Rated current (A), cross-sectional area (mm^2), AWG .....:		—
2.6.3.3	Size of protective bonding conductors	Test according to clause 2.6.3.4 was performed.	P
	Rated current (A), cross-sectional area (mm^2), AWG .....:	1,4 A; minimum No. 18 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 in Enclosure No. 2)	P

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.5	Colour of insulation ..... :	Protective bonding conductor is green-and-yellow coloured.	P
2.6.4	Terminals		N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		N/A
	Rated current (A), type, nominal thread diameter (mm)..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	The equipment is provided with an appliance inlet.	P
2.6.5	Integrity of protective earthing		P
2.6.5.1	Interconnection of equipment	No interconnection of equipment.	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	There are no switches or over current protective devices in the protective earthing / bonding conductors.	P
2.6.5.3	Disconnection of protective earth		P
2.6.5.4	Parts that can be removed by an operator	No operator removable parts with protective earth connection except supply cord.	P
2.6.5.5	Parts removed during servicing	Protective earthed parts cannot be removed in a way, which impair safety.	P
2.6.5.6	Corrosion resistance	No risk of corrosion.	P
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A

2.7	**Overcurrent and earth fault protection in primary circuits**		P
2.7.1	Basic requirements		P
	Instructions when protection relies on building installation	The unit is provided with single fuse.	N/A
2.7.2	Faults not simulated in 5.3.7	The protection devices are well dimensioned and mounted.	P
2.7.3	Short-circuit backup protection	The building installation is considered as short circuit backup protection.	P
2.7.4	Number and location of protective devices ..... :	One fuse in Live supply pole.	P
2.7.5	Protection by several devices		N/A

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.6	Warning to service personnel ..... :		N/A
2.8	Safety interlocks		N/A
2.8.1	General principles	No safety interlock.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) .....:		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test	(see appended table 5.2)	N/A
2.8.8	Mechanical actuators		N/A
2.9	**Electrical insulation**		P
2.9.1	Properties of insulating materials	Neither natural rubber, materials containing asbestos nor hygroscopic materials are used as insulation. No driving belts or couplings used.	P
2.9.2	Humidity conditioning		P
	Relative humidity (%), temperature (°C) ..... :	Humidity treatment performed for 120h at 91-95%.	—
2.9.3	Grade of insulation	Insulation is considered to be functional, basic, reinforced or double.	P
2.9.4	Separation from hazardous voltages		P
	Method(s) used ..... :	Accessible conductive parts, SELV circuits or TNV circuits are separated from parts at hazardous voltage by double or reinforced insulation (Method 1).	—
2.10	**Clearances, creepage distances and distances through insulation**		P
2.10.1	General		P

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.1.1	Frequency ..... :	50-60 Hz	P
2.10.1.2	Pollution degrees ..... :	Pollution degree 2	P
2.10.1.3	Reduced values for functional insulation	Functional insulation Line to Neutral before fuse complies with 2.10.3 & 2.10.4. Other functional insulations comply with 5.3.4 c).	P
2.10.1.4	Intervening unconnected conductive parts		N/A
2.10.1.5	Insulation with varying dimensions	No such transformer used.	N/A
2.10.1.6	Special separation requirements	No TNV circuits.	N/A
2.10.1.7	Insulation in circuits generating starting pulses	No such circuit.	N/A
2.10.2	Determination of working voltage	The rms and peak measured on the switching power supply. The unit was connected to the 240 V TN power system during measurement. See appended table 2.10.2 in	P
2.10.2.1	General		P
2.10.2.2	RMS working voltage	Considered.	P
2.10.2.3	Peak working voltage	Considered.	P
2.10.3	Clearances		P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages		P
	a) AC mains supply ..... :	Overvoltage Category II (2500Vpeak).	P
	b) Earthed d.c. mains supplies ..... :		N/A
	c) Unearthed d.c. mains supplies ..... :		N/A
	d) Battery operation ..... :		N/A
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.5	Clearances in circuits having starting pulses	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.3.6	Transients from a.c. mains supply ..... :	Measurement not relevant.	N/A
2.10.3.7	Transients from d.c. mains supply ..... :	Main transient voltage	N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems ..... :	Unit not intended for connection to telecommunication network or cable distribution system.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.9	Measurement of transient voltage levels	Measurement not relevant.	N/A
	a) Transients from a mains suplply		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		P
2.10.4.1	General		P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests ..... :	Material group IIIb) is assumed to be used.	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	**Solid insulation**		P
2.10.5.1	General		P
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation	No such potted components.	N/A
2.10.5.4	Semiconductor devices	Approved optical insulators are used. See list of critical components.	P
2.10.5.5.	Cemented joints	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.5.6	Thin sheet material – General	The transformer T1 is using thin sheet material.	P
2.10.5.7	Separable thin sheet material	Used inside transformer T1	P
	Number of layers (pcs) ..... :	3 layers between primary and secondary winding.	—
2.10.5.8	Non-separable thin sheet material	No such insulation.	N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.10	Thin sheet material – alternative test procedure		N/A
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.11	Insulation in wound components	The transformers were considered as wound components. The primary secondary insulation is done with insulation tape (see above).	P
2.10.5.12	Wire in wound components	There is no triple insulated wire used.	N/A
	Working voltage ..... :	See appended table 2.10.2.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	a) Basic insulation not under stress .....:		N/A
	b) Basic, supplemetary, 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	No TNV circuits.	N/A
	Electric strength test	(see appended table 2.10.5)	—
	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
	- Supplemetary, reinforced insulation .....:		N/A
2.10.6	**Construction of printed boards**		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	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation	(see appended table 2.10.5)	N/A
	Number of insulation layers (pcs).....:		N/A
2.10.7	**Component external terminations**	(see appended table 2.10.3 and 2.10.4)	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	(see appended table 5.2)	N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

3	**WIRING, CONNECTIONS AND SUPPLY**		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	There is only protective bonding wire with adequate cross sectional area within the unit. No other internal wires. Appliance inlet is soldered directly to PCB.	P
3.1.2	Protection against mechanical damage		P
3.1.3	Securing of internal wiring	Protective bonding wire is hooked in and soldered to appliance inlet PE pin. On the other side crimped solder pin is used for connection to PCB. No other internal wiring except PCB traces and output cable.	P
3.1.4	Insulation of conductors	(see appended table 5.2) All internal wires are UL recognized wiring that is PVC insulated, rated VW-1, min. 105°C, 300V, internal wiring is suitable for current intended to be carried.	P
3.1.5	Beads and ceramic insulators	No beads or similar ceramic insulators on conductors.	N/A
3.1.6	Screws for electrical contact pressure	Screws are not used for electrical contact pressure.	N/A
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material.	P
3.1.8	Self-tapping and spaced thread screws	Thread-cutting or space thread screws are not used for electrical connections.	N/A
3.1.9	Termination of conductors	Terminations cannot become displaced so that clearances and Creepage distances can be reduced.	P
	10 N pull test		P
3.1.10	Sleeving on wiring	Sleeves are heat-shrinkable.	P

3.2	**Connection to a mains supply**		P
3.2.1	Means of connection		P

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Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	Connection to an a.c. mains supply	Provided with an appliance inlet.	P
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections	Only one supply connection.	N/A
3.2.3	Permanently connected equipment	The equipment is not intended for permanent connection to the mains	N/A
	Number of conductors, diameter of cable and conduits (mm) .....:		—
3.2.4	Appliance inlets	The appliance inlet complies with IEC 60320 and is properly placed to avoid hazards after insertion of the appliance coupler.	P
3.2.5	Power supply cords	Power supply cord is not part of the investigation.	N/A
3.2.5.1	AC power supply cords		N/A
	Type .....:		—
	Rated current (A), cross-sectional area (mm^2), AWG .....:		—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) .....:		—
	Longitudinal displacement (mm) .....:		—
3.2.7	Protection against mechanical damage	o sharp points or cutting edges on the equipment surfaces	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	Not intended for permanent connection nor provided with ordinary non-detachable cord.	N/A

3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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	Appliance coupler was considered as disconnect device.	P
3.4.2	Disconnect devices	Refer above. The unit is provided with approved appliance inlet.	P
3.4.3	Permanently connected equipment	Not permanently connected equipment.	N/A
3.4.4	Parts which remain energized	No parts remain energized.	P
3.4.5	Switches in flexible cords	No isolating switch in the flexible cord.	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	Single phase equipment.	N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices	The appliance coupler is regarded as disconnect device, no warning is required. The plug is regarded as disconnect device, the required warning is:	N/A
3.4.10	Interconnected equipment	No interconnections using hazardous voltages or hazardous energy levels.	N/A
3.4.11	Multiple power sources	One power source only.	N/A
3.5	**Interconnection of equipment**		P
3.5.1	General requirements		P
3.5.2	Types of interconnection circuits .....:	Interconnection circuits of SELV through sec o/p cable.	P

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Clause	Requirement + Test	Result - Remark	Verdict
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection.	N/A
3.5.4	Data ports for additional equipment		N/A

4	**PHYSICAL REQUIREMENTS**		P
4.1	Stability		P
	Angle of 10°		P
	Test force (N) ..... :	The unit is not floor standing	N/A

4.2	**Mechanical strength**		P
4.2.1	General		P
	Rack-mounted equipment.	(see Annex DD)	N/A
4.2.2	Steady force test, 10 N	Test on Components (see appended table 4.2.2 in Enclosure No. 2)	P
4.2.3	Steady force test, 30 N	No internal enclosure.	P
4.2.4	Steady force test, 250 N	No hazard. The test is performed at 250 N.	P
4.2.5	Impact test	(see appended table 4.2.2 in Enclosure No. 2)	P
	Fall test		P
	Swing test		P
4.2.6	Drop test; height (mm) ..... :	Drop test not applicable.	N/A
4.2.7	Stress relief test	After 7 h at 100°C and cooling down to room temperature, no shrinkage, distortion or loosing of enclosure parts was noticeable on the equipment.	P
4.2.8	Cathode ray tubes	No cathode ray tubes.	N/A
	Picture tube separately certified ..... :		N/A
4.2.9	High pressure lamps		N/A
4.2.10	Wall or ceiling mounted equipment; force (N) ..... :	Not intended to be mounted on a wall or ceiling.	N/A

4.3	**Design and construction**		P
4.3.1	Edges and corners	All edges and corners are rounded and/or smoothed.	P
4.3.2	Handles and manual controls; force (N) .....:		N/A
4.3.3	Adjustable controls		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.4	Securing of parts	No loosening of parts impairing Creepage distances or clearances is likely to occur	P
4.3.5	Connection by plugs and sockets	SELV and TNV connectors do not comply with IEC 60320 or IEC 60083.	P
4.3.6	Direct plug-in equipment	The EUT 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	The equipment does not have any heating elements.	N/A
4.3.8	Batteries	No batteries in the equipment	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 is not exposed to oil, grease etc	N/A
4.3.10	Dust, powders, liquids and gases	The equipment does not generate dust, powder, does not contain liquid or gas. The unit is specified for office environment.	N/A
4.3.11	Containers for liquids or gases	No containers for liquids or gases in the equipment.	N/A
4.3.12	Flammable liquids .....:		N/A
	Quantity of liquid (l) .....:		N/A
	Flash point (°C) .....:		N/A
4.3.13	Radiation		N/A
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg) .....:		—
	Measured high-voltage (kV) .....:		—
	Measured focus voltage (kV) .....:		—
	CRT markings .....:		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Part, property, retention after test, flammability classification .....:		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....:		N/A
4.3.13.5	Laser (including LEDs)	(see separate test report of IEC/EN 60825-1 / IEC/EN 60825-2)	N/A
4.3.13.5.1	Lasers (including laser diodes)	(see separate test report of IEC/EN 60825-1 / IEC/EN 60825-2)	N/A
	Laser class .....:		—
4.3.13.5.2	Light emitting diodes (LEDs)		N/A
4.3.13.6	Other types .....:		N/A
4.4	**Protection against hazardous moving parts**		N/A
4.4.1	General		N/A
4.4.2	Protection in operator access areas .....:	No hazardous moving parts.	N/A
	Household and home/office document/media shredders	(see Annex EE)	N/A
4.4.3	Protection in restricted access locations .....:		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a)……:		N/A
	Is considered to cause pain, not injury. b) ……:		N/A
	Considered to cause injury. c) ……:		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning ……:		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning ……:		N/A
4.5	**Thermal requirements**		P
4.5.1	General		P
4.5.2	Temperature tests		P
	Normal load condition per Annex L .....:	1) Rated load, as specified by Manufacturer.	—
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

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Clause	Requirement + Test	Result - Remark	Verdict
4.5.5	Resistance to abnormal heat ..... :	(see appended table) It has been determined from examination of the physical characteristics of the materials used that the material meets the requirements of the test.	P
4.6	**Openings in enclosures**		P
4.6.1	Top and side openings	The unit is constructed with no opening.	P
	Dimensions (mm) ..... :	No opening.	—
4.6.2	Bottoms of fire enclosures	No bottom openings	P
	Construction of the bottomm, dimensions (mm) . :		—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment	Not transportable equipment.	N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm) ..... :		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes	No barrier secured by adhesive inside enclosure.	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	Use of materials with the required flammability classes and testing in Single Fault Conditions.	P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests	(see appended table 5.3)	N/A
4.7.2	Conditions for a fire enclosure		P
4.7.2.1	Parts requiring a fire enclosure	The fire enclosure is required to cover all parts	P
4.7.2.2	Parts not requiring a fire enclosure	Output PVC cable.	P
4.7.3	Materials		P
4.7.3.1	General		P
4.7.3.2	Materials for fire enclosures	(see appended table 1.5.1)	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.3	Materials for components and other parts outside fire enclosures	Output PVC cable and appliance inlet.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal materials are rated V-2 or better or are mounted on a PWB rated V-1 or better.	P
4.7.3.5	Materials for air filter assemblies		N/A
4.7.3.6	Materials used in high-voltage components		N/A
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		P
5.1	**Touch current and protective conductor current**		P
5.1.1	General	The touch current was measured from supply to conductive parts (DC output connector) and metal foil wrapped on accessible non-conductive parts (plastic enclosure).	P
5.1.2	Configuration of equipment under test (EUT)		P
5.1.2.1	Single connection to an a.c. mains supply		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	According to Fig. 5A	P
5.1.4	Application of measuring instrument	Measuring instrument D1 was used.	P
5.1.5	Test procedure	According to the standard.	P
5.1.6	Test measurements		P
	Supply voltage (V) ..... :	See appended table 5.1	—
	Measured touch current (mA) ..... :	See appended table 5.1	—
	Max. allowed touch current (mA) ..... :	0,25mA to unearthed accessible parts (output)	—
	Measured protective conductor current (mA) ..... :		—
	Max. allowed protective conductor current (mA)... :		—
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General ..... :		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V) .....:		—
	Measured touch current (mA) .....:		—
	Max. allowed touch current (mA) .....:		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports .....:		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A
5.2	**Electric strength**		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure		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	(see appended Annex B)	N/A
5.3.3	Transformers	(see appended Annex C)	P
5.3.4	Functional insulation .....:		P
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE .....:	See separate test report IEC/EN 60065.	N/A
5.3.7	Simulation of faults		P
5.3.8	Unattended equipment	The unit is intended for continuous operation. There is no thermal sensor or cut-off for operational condition.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests	No fire, emission of molten metal or deformation was noted during the tests.	P
5.3.9.2	After the tests	The tested units passed the electric strenght test.	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	(see appended table 5.2)	N/A
6.2.2.2	Steady-state test	(see appended table 5.2)	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	(see appended table 5.2)	N/A
7.4.3	Impulse test	(see appended table 5.2)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)	1) Approved materials are used. See list of critical components.	N/A
A.1.1	Samples.....:		—
	Wall thickness (mm).....:		—
A.1.2	Conditioning of samples; temperature (°C) .....:		N/A
A.1.3	Mounting of samples .....:		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D .....:		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s) .....:		—
	Sample 2 burning time (s) .....:		—
	Sample 3 burning time (s) .....:		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A
A.2.1	Samples, material.....:		—
	Wall thickness (mm).....:		—
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

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Clause	Requirement + Test	Result - Remark	Verdict
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A
B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		N/A
B.1	General requirements		N/A
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
B.2	Test conditions		N/A
B.3	Maximum temperatures	(see appended table 5.3)	N/A
B.4	Running overload test	(see appended table 5.3)	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	(see appended table 5.3)	N/A
B.9	Test for three-phase motors	(see appended table 5.3)	N/A
B.10	Test for series motors		N/A
	Operating voltage (V) ..... :		—
C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		P
	Position ..... :	T1 - Primary to secondary	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Manufacturer .....:	See list of critical components.	—
	Type .....:	Switch mode	—
	Rated values .....:	See list of safety critical components.	—
	Method of protection..... :	Primary current limitation and input fuse.	—
C.1	Overload test	(see appended table 5.3)	P
C.2	Insulation	(see appended table 5.2)	P
	Protection from displacement of windings..... :	Use of margin tape and tubed outlets.	P

D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		P
D.1	Measuring instrument	Measuring instrument D1 was used.	P
D.2	Alternative measuring instrument		N/A

E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)**	P

F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)**	N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances .....:		N/A
H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		N/A
J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		P
	Metal(s) used .....:	Verified.	—
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	(see appended table 5.3)	N/A
L	**ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)**		N/A
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	Rated load, as specified by Manufacturer.	N/A
M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.1	Introduction		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz) .....:		—
M.3.1.2	Voltage (V) .....:		—
M.3.1.3	Cadence; time (s), voltage (V) .....:		—
M.3.1.4	Single fault current (mA) .....:		—
M.3.2	Tripping device and monitoring voltage .....:		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V) .....:		N/A
N	**ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)**		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	**ANNEX P, NORMATIVE REFERENCES**		—
Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)**		N/A
	a) Preferred climatic categories .....:	1) Minimum climatic category -10 to +85°C; min. 21 days damp heat steady state test.	N/A
	b) Maximum continuous voltage .....:		N/A
	c) Pulse current .....:	1) Min. 6kV/3kA pulse 1,2/50 µs	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

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Clause	Requirement + Test	Result - Remark	Verdict
S.3	Examples of waveforms during impulse testing		N/A
T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		N/A
		See separate test report.	—
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)**		N/A
V.1	Introduction		N/A
V.2	TN power distribution systems		N/A
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)**		P
X.1	Determination of maximum input current	Input current was measured and recorded (see appended table 5.3).	P
X.2	Overload test procedure	According to the standard.	P
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**	—

CC	**ANNEX CC, Evaluation of integrated circuit (IC) current limiters**		N/A
CC.1	General		N/A
CC.2	Test program 1……..:		N/A
CC.3	Test program 2……..:		N/A

DD	**ANNEX DD, Requirements for the mounting means of rack-mounted equipment**		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N……..:		N/A
DD.3	Mechanical strength test, 250N, including end stops……:		N/A
DD.4	Compliance……:		N/A

EE	**ANNEX EE, Household and home/office document/media shredders**		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols……:		N/A
	Information of user instructions, maintenance and/or servicing instructions……:		N/A
EE.3	Inadvertent reactivation test……:		N/A
EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols……:		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A) ……:		N/A
	Test with wedge probe (Figure EE1 and EE2) ……:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components				P
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Unit from outside (Fig1)					
Enclosure	Various	Overall measures 141 by 76 by 43 mm, minimum 2,0 mm thick. Constructed of two parts secured together by screws. Teijin Chemicals Ltd., Type LN-1250G# or P#, rated 94V-0 at min. thickness 1,0mm, min. 105°C. Alternative: SABIC, Type SE100, rated 94V-1 at min. thickness 1,5mm, min. 95°C or C6200, rated 94V-0 at min. thickness 1,5mm, min. 75°C. CHI MEI Corporation, Type PA-765A, PC-540, rated 94-1 at min. thickness 1.5mm, min.70°C		(QMFZ2)	Accepted cURus E50075 UR E45329 UR E45329 UR E56070
Appliance Inlet alternative	Inalways	0711	250 V~, 10 A. Secured to enclosure by snap fit, soldered to PCB.	IEC60320	ENEC/FI 2010084
alternative	Sun Fair	S-03	250 V~, 10 A. Secured to enclosure by snap fit, soldered to PCB.	IEC60320	VDE, S, N, D
alternative	TECX	TU-301 series	250 V~, 10 A. Secured to enclosure by snap fit, soldered to PCB.	IEC60320	VDE 40025582
alternative	RICH BAY	R-301SN	250 V~, 10 A. Secured to enclosure by snap fit, soldered to PCB.	IEC60320	VDE 40030228
alternative	Rong Feng	SS-120	250 V~, 10 A. Secured to enclosure by snap fit, soldered to PCB.	IEC60320	VDE 40028101
alternative	LECI	DB-14	250 V~, 10 A. Secured to enclosure by snap fit, soldered to PCB.	IEC60320	VDE 40032137

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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components				P
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Output Cable	Various	Various	AWM, style 1185, No. 22 AWG minimum, VW-1, 80°C, 300V. One end is soldered to the printed wiring board while the other end is molded with connector barrel type or other type of connector including stripped and tinned.	(AVLV2)	UL Accepted
Output Cable alternative	Various	Various	Same as above, except cable style SPT-1, VW-1, 105°C, No. 18 AWG minimum.	(AVLV2)	UL Accepted
Output Cable alternative	Various	Various	Same as above, except cable style No. 2468, AWM, VW-1, No. 22 AWG minimum.	(AVLV2)	UL Accepted
Output Cable alternative	Various	Various	Same as above, except cable style No. 2464, AWM, VW-1, No. 20 AWG minimum, 80°C minimum, 300V.	(AVLV2)	UL Accepted
Output Cable alternative	Various	Various	Same as above, except cable style XT, VW-1, 80°C Min, No. 20 AWG or greater.	(AVLV2)	UL Accepted
Output Cable alternative	Various	Various	Same as above, except Style No. 1185.	(AVLV2)	UL Accepted
Strain Relief of Output Cable	Various	Various	Molded with Output Cable. Strain Relief provided with a molded-on anti-kink bushing held in place by integral slots of top and bottom enclosure in an opening of 7,6 by 10 mm, min. V-1.	UL94	UL Accepted
Unit from inside:					
Fuse (F1)	Bel	5ST	3,15 A, 250 V	IEC-60127-2	S, VDE
alternative	Walter Electronic Co. Ltd.	SIP	3,15 A, 250 V	(JDYX)	UL Accepted
alternative	Sun Electronic Co. Ltd.	5R	3,15 A, 250 V	(JDYX)	UL Accepted

IEC 60950-1/Am1			
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])
Fuse (F1) alternative	WICKMANN-WERKE GMBH	191	3,15 A, 250 V	(JDYX) UL 248-14	UL Accepted
alternative	Walter	ICP	3,15 A, 250 V		VDE 40012824
alternative	Walter	TSD	3,15 A, 250 V		VDE 40001370
alternative	Conquer	MST	3,15 A, 250 V		VDE 40017118
alternative	XC Electronics (Shenzhen) Co., Ltd.	5TE	3,15 A, 250 V		VDE 40029550
alternative	Cooper Bussmann	SS-5	3,15 A, 250 V		VDE 40015513
alternative	Lanson	SMT	3,15 A, 250 V		VDE 40012592
Line Choke (LF2)	Various	Various	Toroidal type construction. Ferrite core, size 13 mm OD, 8 mm ID, 6,3 mm thick. Coil of copper magnet wire-wound on core. (Rated 130°C)	IEC60950	Accepted
Line Choke (LF1)	Various	Various	Open-type construction. Ferrite core, size 20 by 26 by 6 mm, coil of copper magnet wire-wound on three flange bobbin of R/C (QMFZ2), Phenolic, rated minimum 94V-1, minimum 0,71 mm thick. (Rated 130°C)	IEC60950	Accepted
X - capacitor (CX1)	+ CHIEFCON ELECTRONICS Co. Ltd.	CKX	maximum 0,68 µF, min. 250Vac, X1 or X2	IEC 60384-14 (FOWX2)	FI, S, D, N, VDE
alternative	U.T.X.	HQX	maximum 0,68 µF, min. 250Vac, X1 or X2	IEC 60384-14 (FOWX2)	VDE104841

IEC 60950-1/Am1			
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])
X - capacitor (CX1)	CT	CTX	maximum 0,68 μF, min. 250Vac, X1 or X2	IEC 60384-14 (FOWX2)	VDE 40022642
alternative	Shantou High-new Technology Development Zone Songtian Enterprise Co.,Ltd	MPX	maximum 0,68 μF, min. 250Vac, X1 or X2	IEC 60384-14 (FOWX2)	VDE 40034679
alternative	DAIN	MPX	maximum 0,68 μF, min. 250Vac, X1 or X2	IEC 60384-14 (FOWX2)	VDE 40018798
alternative	HUA YU	MPX	maximum 0,68 μF, min. 250Vac, X1 or X2	IEC 60384-14 (FOWX2)	VDE 40022417
alternative	HONG ZHI	MPX	maximum 0,68 μF, min. 250Vac, X1 or X2	IEC 60384-14 (FOWX2)	VDE 40023936
X – capacitor (CX2)	+ Arcotronics	1.47	maximum 0,22 μF, min. 250 Vac, X1 or X2	IEC 60384-14 (FOWX2/FOKY2)	VDE, SEV UL
alternative	U.T.X.	HQX	maximum 0,22 μF, min. 250 Vac, X1 or X2	IEC 60384-14 (FOWX2/FOKY2)	VDE104841
alternative	CT	CTX	maximum 0,22 μF, min. 250 Vac, X1 or X2	IEC 60384-14 (FOWX2/FOKY2)	VDE 40022642
alternative	Shantou High-new Technology Development Zone Songtian Enterprise Co.,Ltd	MPX	maximum 0,22 μF, min. 250 Vac, X1 or X2	IEC 60384-14 (FOWX2/FOKY2)	VDE 40034679

IEC 60950-1/Am1			
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])
X – capacitor (CX2)	DAIN	MPX	maximum 0,22 μF, min. 250 Vac, X1 or X2	IEC 60384-14 (FOWX2/FOKY2)	VDE 40018798
alternative	HUA YU	MPX	maximum 0,22 μF, min. 250 Vac, X1 or X2	IEC 60384-14 (FOWX2/FOKY2)	VDE 40022417
alternative	HONG ZHI	MPX	maximum 0,22 μF, min. 250 Vac, X1 or X2	IEC 60384-14 (FOWX2/FOKY2)	VDE 40023936
Y Capacitors CY1-CY3 Optional (Primary-to-PE)	+ JYA-NAY	JY,JN	Rated minimum 250 V~, maximum 4700 pF, Y2 or Y-1	IEC 60384-14	VDE, SEV
alternative	SUCCESS	SB SE SF	Rated minimum 250 V~, maximum 4700 pF, Y2 or Y-1	IEC 60384-14	VDE 40008996
alternative	TDK	CD CS	Rated minimum 250 V~, maximum 4700 pF, Y2 or Y-1	IEC 60384-14	VDE 138526
alternative	ZHI WEI ELECTRONICS LTD.,CO	DJ	Rated minimum 250 V~, maximum 4700 pF, Y2 or Y-1	IEC 60384-14	VDE 40032789
alternative	Shantou High-new Technology Development Zone Songtian Enterprise Co.,Ltd	CD	Rated minimum 250 V~, maximum 4700 pF, Y2 or Y-1	IEC 60384-14	VDE 40025754
alternative	Haohua Electronic Co	CT7	Rated minimum 250 V~, maximum 4700 pF, Y2 or Y-1	IEC 60384-14	VDE 40003902
alternative	Hongzhi	Y	Rated minimum 250 V~, maximum 4700 pF, Y2 or Y-1	IEC 60384-14	VDE 0004354
alternative	Jerro	JX JL	Rated minimum 250 V~, maximum 4700 pF, Y2 or Y-1	IEC 60384-14	VDE 40032158

IEC 60950-1/Am1			
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])
Bulk Capacitor (C22)	Various	Various	Rated 180 μF maximum, 400 V, 105ºC minimum Electrolytic Type, provided with integral pressure relief. Top end and bottom of capacitor covered with 2 layers, overall 22 mm wide tape on the Capacitor, Polyester tape, R/C (OANZ2), minimum 0,075 mm thick.	-	Accepted
Bleeder Resistor (R11)	Various	Various	Rated Max.1,2 MΩ, 1/4 W	-	Accepted
Bridge Diode (BD1)	Various	Various	Rated 600 V, minimum 4 A.	-	Accepted
Thermistor (RT1)	Various	Various	Rated 5 ohm, 2 A at 25ºC. Alternate - Rated 8 Ω, 3 A at 25°C. Alternate – Same as above except NTC, Rated 5 Ω, 3 A at 25°C.	-	Accepted

IEC 60950-1/Am1			
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])
Transformer (T1)	Open-type construction. Core: Ferrite core. Overall 42,4 by 35,4 by 11,6 mm thick. Coil: Copper magnet wire-wound concentrically on two-flanged bobbin. Bobbin: R/C (QMFZ2) Phenolic, minimum 0,71 mm thick. Leads exit directly through integral flanges in bobbin and are mechanically secured and soldered to pins which are molded into bobbin. Core including bobbin to PWB are covered with one layer of polyester tape and top side of Transformer is covered with silicone rubber sheet. Location #Layer / Total Thickness (mm)/ Material R/C (OANZ2), Outer wrap 2 layer / minimum 0,050 thick / polyester tape. Pri./Sec. 3 layer / minimum 0,075 thick / polyester tape. Pri./Core Bobbin, 0,71 mm thick. Sec./Core Bobbin, 0,71 mm thick. Margin tape 3,2 mm wide between winding and bobbin edge. Lead exits provided with tubing, R/C, XEPEX Electronic, model designation XB-1 or XPB-5. Class B insulation system. R/C (OBJY2), Precision Craft Electronic Co., Ltd., model designation PC-B3A, Class B insulation system. Alternate - Same as above, except R/C (OBJY2), Computer Technology Co., Ltd.., model designation ST-2804/ DASH 2 B-19, Class B insulation system. Alternate: - Same as above, except R/C (OBJY2), GlobTek Inc., model designation GTX-130-TM, Class B insulation system. Alternate: - Same as above, except R/C (OBJY2), BOAM, model designation BOAM-01, Class B insulation system. Alternate: - Same as above, except R/C (OBJY2), ZhongTong, model designation ZT-130, Class B insulation system.			IEC60950	Accepted
Transistor (Q3)	Various	Various	Rated minimum 600 V, Min. 8,5 A. Secured to Primary Heat Sink by screw and nut. A silicone rubber, minimum 0,2 mm thick provided between the body of Transistor and Heat Sink.	-	Accepted

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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components				P
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Primary Heat Sink - (Heat Sink is live.)	Various	Various	Aluminum, or copper, L-shaped, size 54 by 30 by 16 mm, 6,3 mm thick. Secured to PWB by soldering. Alternate Heat Sink – Copper, L-shaped, size 54 by 30 by 16 mm, 6,3 mm thick. Secured to PWB by soldering.	-	Accepted
Optical Isolator (U2)	Sharp	PC817	Dcr. =Min. 6,4mm; Dti. > 0,4mm, Isolation voltage min. 3000Vac, reinforced insulation (Operation temperature 100°C).	IEC 60950-1, VDE 0884	VDE
Optical Isolator (U2) - Alternative	Liteon	LTV-817	Dti > 0,6mm, ,Int cr > 5,2mm,, Ext cr > 7,8mm, Isolation 3000Vac min., 100°C min., Thermal cycling test	IEC/EN 60950-1: 2005, VDE 0884	FI, VDE
Optical Isolator (U2) - Alternative	Fairchild	CNX82A	Dti 0,6mm, Ext cr > 7mm, Isolation 3750Vac min., 100°C min., Thermal cycling test	IEC/EN 60950-1:	SEMKO
Optical Isolator (U2) - Alternative	Everlight Electronics Co. Ltd	EL817	Ext cr = 7,7mm, Int cr = 6,0mm, Dti = 0,5mm, Isolation 3000Vac min., 110°C min.,	IEC/EN 60950-1: 2005, VDE 0884	FIMKO VDE
Optical Isolator (U2) - Alternative	Bright LED Electronics Co.,Ltd	BPC-817	Dti > 0,7mm, Ext cr > 8.1mm, Isolation 3000Vac min., 100°C min., Thermal cycling test	IEC/EN 60950-1: 2005,	VDE 40007240
PCB	Various	Various	130°C; V-0 Overall 129 by 70 mm, 1,6 mm thick, single layer	UL94	UL

IEC 60950-1/Am1			
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])
EMI Board	Various	Various	130°C; V-0 Overall 126 by 68 mm, 1,0 mm thick, and keep 2,8 mm from the copper portion to primary area of main PWB. EMI board is mechanically secured and soldered by pins to the main PWB, and copper foil is connected to PE.	UL94	UL

1) [1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039.

2) + means, that components from other vendor and other model number, but with the same or better/higher rating and equivalent approvals are accepted

1.5.1	TABLE: Opto Electronic Devices	N/A

Manufacturer ..... :

Type..... :

Separately tested..... :

Bridging insulation ..... :

External creepage distance..... :

Internal creepage distance ..... :

Distance through insulation ..... :

Tested under the following conditions ..... :

Input..... :

Output..... :

supplementary information

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

1.6.2	TABLE: electrical data (in normal conditions)						P
fuse #	Irated (A)	U (V)	P (W)	I (mA)	Ifuse (mA)	condition/status	
GT-21131-7212:							
F1	—	90	—	1,53		Rated output load	
F1	1,6	100	—	1,37		Rated output load	
F1	1,6	120	—	1,14		Rated output load	
F1	1,6	140	—	1,00		Rated output load	
F1	1,6	180	—	0,466		Rated output load	
F1	1,6	200	—	0,447		Rated output load	
F1	1,6	220	—	0,431		Rated output load	
F1	1,6	230	—	0,424		Rated output load	
F1	1,6	240	—	0,417		Rated output load	
F1	—	253	—	0,412		Rated output load	
F1	—	264	—	0,408		Rated output load	
GT-21131-7224:							
F1	—	90	—	1,45		Rated output load	
F1	1,6	100	—	1,32		Rated output load	
F1	1,6	120	—	1,10		Rated output load	
F1	1,6	140	—	0,95		Rated output load	
F1	1,6	180	—	0,79		Rated output load	
F1	1,6	200	—	0,74		Rated output load	
F1	1,6	220	—	0,68		Rated output load	
F1	1,6	230	—	0,67		Rated output load	
F1	1,6	240	—	0,65		Rated output load	
F1	—	253	—	0,63		Rated output load	
F1	—	264	—	0,61		Rated output load	
Comment: The steady-state input current did not exceed the rated current at the rated voltage by more than 10% under the maximum normal load.							

2.1.1.5 c) 2)	TABLE: stored energy	N/A

Capacitance C (µF)	Voltage U (V)	Energy E (J)

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

supplementary information:

2.1.1.7	TABLE: Discharge of capacitors in the primary circuit	P

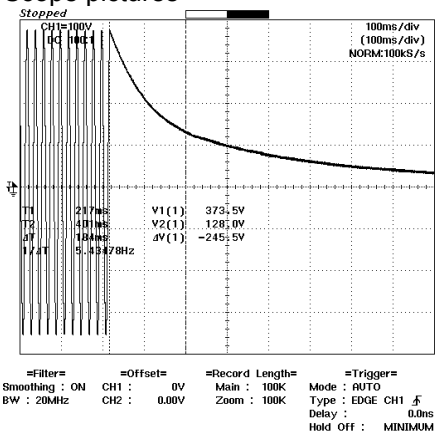
The unit was connected to 264.V a.c.,50 Hz. A storage oscilloscope was connected across the external point of disconnection of the mains supply. With all switches in the unit initially set to the off position, the unit was disconnected from the supply source. The voltage at the time of disconnection, Vo, and the voltage Vtc at 1 second was recorded.

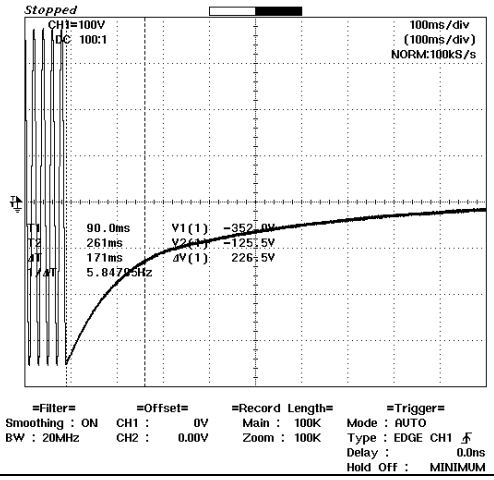
Model	Location	Time Constant	Measured voltage after 1 sec.	Condition
	L to N	< 184 ms	12 V	No load

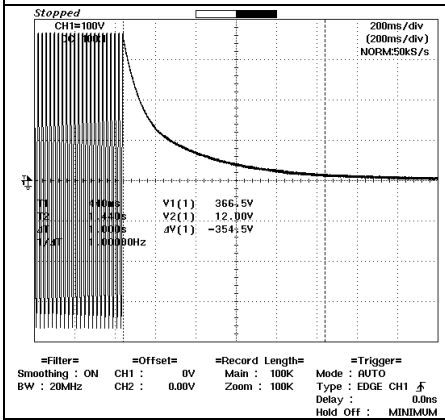
Comments: The voltage across the line capacitor did decay to less than 37 percent of it's original value in 1 second.

Scope pictures:

Scope pictures







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

2.1.1.8	**TABLE: Energy hazard – d.c. mains supplies**	N/A

The unit was connected to ____ .V d.c. A storage oscilloscope was connected across the external point of disconnection of the mains supply. With all switches in the unit initially set to the off position, the unit was disconnected from the supply source. The voltage at the time of disconnection, Vo, and the voltage Vtc at 2 second was recorded.
The stored energy was calculated from the following equation:

$E = 0{,}5\ CU^2 \times 10^{-6}$ *where:* *E = Stored energy in Joules (J)*
C = Capacitance in microfarads (μF)
U = Voltage across the Capacitor Terminals (V)

Model	Location	Measured voltage after 2 sec.	Capacitance (uF)	Calculated Energy	Comment

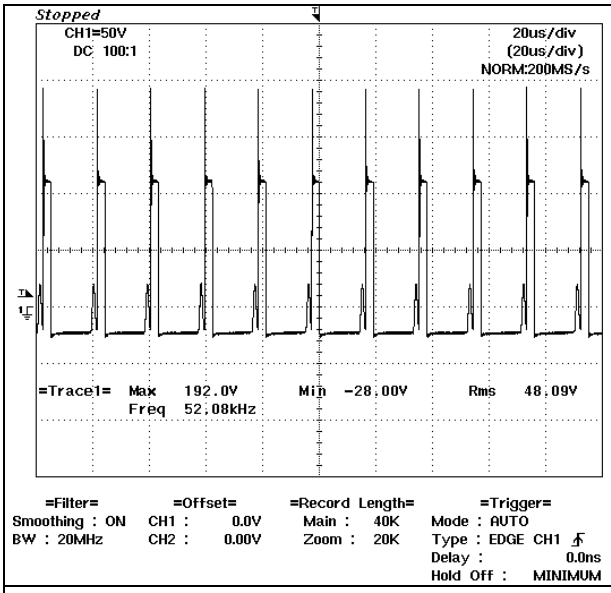
Comments:

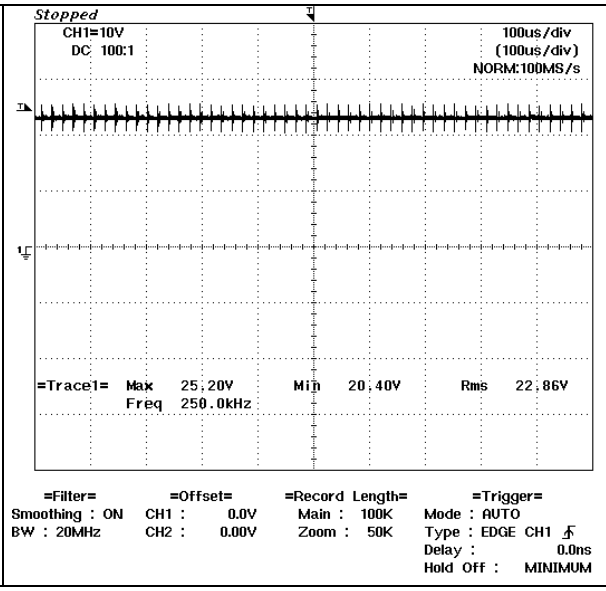
The calculated stored energy was less than 20 J at two seconds.

2.2	**TABLE: evaluation of voltage limiting components in SELV circuits**	P

Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
	V peak	V d.c.	
GT-21131-7224, T1, Pin 9/10 to Pin 12/13	192	48,1	D7
GT-21131-7224, T1, Pin 12/13 to D7 Cathode	25,2	22,86	SELV

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





Comment:
SELV reliability test was required. See Table 5.3 in the main report.

Above test was performed on the unit with highest output voltage. Therefore above test is representable for all models.

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)
supplementary information:	
See Table 5.3 SELV reliability Test	

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

2.4	TABLE: Limited current circuit	N/A
The unit was connected to _____ Vac, _____ Hz. A 2000 Ohms non-inductive resistor and a switch were connected between the user accessible part of a limited current circuit and either pole of the limited current circuit or earth. A storage oscilloscope was connected across the points under consideration. The switch was closed and voltages on resistor were measured.		
Limit values		
Circuit(s) tested	Bridging components	
Measured working voltage:	Measured working voltage:	
Measured frequency		
Measured current through 2000 Ω	was opened and the 2000 Ω resistor in series to was connected to output minus and output plus. The output was connected to the PE of simulated TN mains.	
Measured capacitance	Capacitance across =	
Comments: According to an UL PAG the touch current with D1 was measured between the capacitor to PE. The measured value was: Electric strength test was performed on the unit (see table dielectric testing) before the above measurements were done.		

2.5	TABLE: limited power sources	N/A

Circuit output tested:

Measured Uoc (V) with all load circuits disconnected:

	I_{sc} (A)		VA	
	Meas.	Limit	Meas.	Limit
Normal condition				
Single fault: …..				
Single fault: …..				
Single fault: …..				

supplementary information:

Sc=Short circuit, Oc=Open circuit

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

2.6	TABLE: Resistance of earthing conductors and their terminations				P
Using a maximum 12 V dc power source, a current of 40 A was passed between the equipment earthing terminal and the part in the equipment that is required by 2.6.1 to be earthed listed below for a period of 120 s. The voltage drop from the earthing terminal to the accessible metal part required to be earthed was recorded and the resistance was calculated.					
Model	Location		Test Current in A	Measured Voltage in (mV)	Calculated Resistance (mΩ)
GT-21131-7224	PE pin of appliance inlet to PCB		25 A / 1 min	348	13,9
GT-21131-7224	PE pin of appliance inlet to PCB		40 A / 2 min	543	13,6
Comments:					

2.9.1, 2.9.2, 5.2.2	TABLE: Humidity test Model:	P

A humidity chamber was maintained within 1°C of temperature “t” at a temperature of _24°C. The unit and any other separate components were brought to a temperature between t and t + 4°C They were then placed in the chamber and held at a relative humidity of 93% for a period of 48 hours. Prior to conditioning, parts of the unit (covers) which could be removed without the use of tools were removed and separately placed in the chamber. During conditioning, cable entrances and/or a conduit openings were left open. During this treatment, the unit was not energized.

While still in the humidity chamber, but after all parts have been placed back on the unit, a dielectric potential was applied and maintained for a period of one minute between the points indicated below. During this test, all switching devices (switches, relays, triacs, etc.) in the primary circuit were closed.

Location	Insulation type	Potential used
Primary to PE	Basic	1500 Vac
Primary to Sec.	Reinforced	3000 Vac
Primary to Enclosure	Reinforced	3000 Vac

Comment:

All components were tested. There was no breakdown.

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

Revision No. 2.0

2.9.1, 2.9.2, 5.2.2	TABLE: Humidity test Model:	P

A humidity chamber was maintained within 1°C of temperature “t” at a temperature of _120°C. The unit and any other separate components were brought to a temperature between t and t + 4°C They were then placed in the chamber and held at a relative humidity of 93% for a period of 48 hours. Prior to conditioning, parts of the unit (covers) which could be removed without the use of tools were removed and separately placed in the chamber. During conditioning, cable entrances and/or a conduit openings were left open. During this treatment, the unit was not energized.

While still in the humidity chamber, but after all parts have been placed back on the unit, a dielectric potential was applied and maintained for a period of one minute between the points indicated below. During this test, all switching devices (switches, relays, triacs, etc.) in the primary circuit were closed.

Location	Insulation type	Potential used
Primary to PE	Basic	1500 Vac
Primary to Sec.	Reinforced	3000 Vac
Primary to Enclosure	Reinforced	3000 Vac

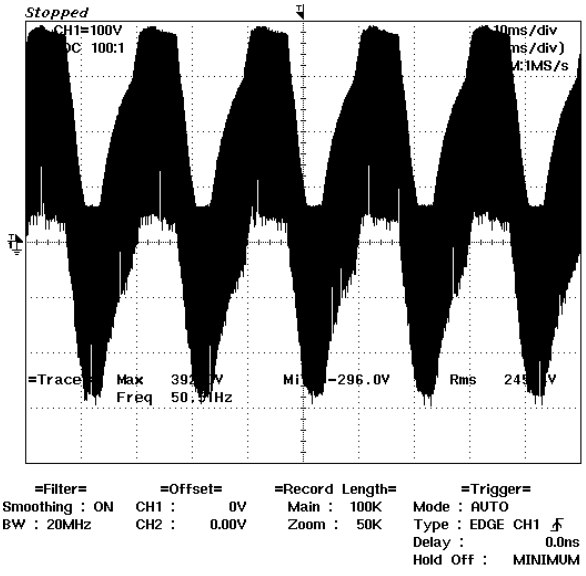
Comment:

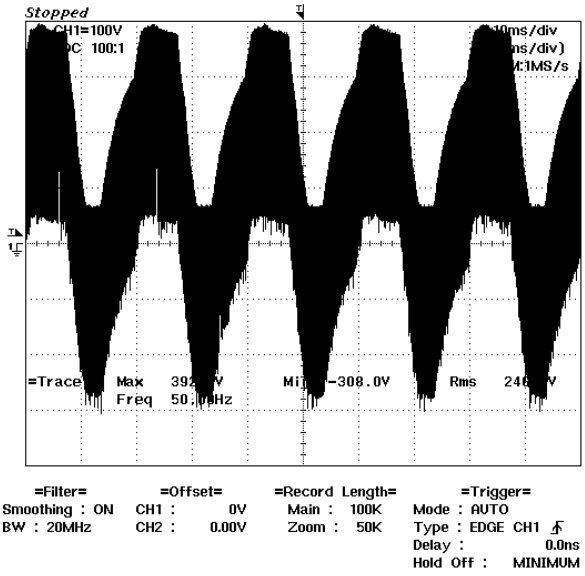
All components were tested. There was no breakdown.

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

2.10.2	Table: working voltage measurement		P
Location	RMS voltage	Peak voltage	Comments
Power transformer T1:			
Pin 8 to PE	221,2	328	Rated output load
Pin 7 to PE	180,3	328	Rated output load
Pin 5 to PE	245,4	392	Rated output load
Pin 3 to PE	168,7	404	Rated output load
Pin 5 to Pin 9 / 10	233,7	272	Rated output load
Pin 5 to Pin 12 / 13	246,7	392	Rated output load
Pin 3 to Pin	179,8	344	Rated output load
Pin 3 to Pin	180,3	408	Rated output load

Scope pictures:





Input voltage: 240 Va.c.; 50 Hz Test Condition was : Rated output load

Minus of the output, Neutral and PE were connected to simulate TN mains system.

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

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:						
Primary to Primary before fuse	340	240	2,0	3,5	2,5	3,5
Primary to Primary after fuse	340	240	Method c) was used			
Basic/supplementary:						
Primary to Earth	340	240	2,0	4,0	2,5	4,0
Reinforced:						
Primary to Secondary (Reinforced) transformer	408	246,7	4,0	6,4	5,0	6,4
Primary to Secondary on PCB	408	246,7	4,0	4,5	5,0	5,6
Supplementary information: Transformer core is wrapped with two layers of insulating tape. Bulk capacitor C22 body is wrapped with two layers of insulating tape on top and bottom (refer to pictures).						

2.10.5	TABLE: Distance through insulation measurements				P
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Shrink tubing	340	3000 Vac	0,4	Min. 0,4	Shrink tubing
Enclosure	340	3000 Vac	0,4	Min. 2,0	Enclosure
Supplementary information:					

2.10.3, 4.2.2, 4.2.3, 4.2.4	TABLE: Steady force test (internal spacings push test)	P
Components and parts, other than parts serving as an enclosure, are subjected to a steady force of 10 N ± 1 N. Parts of an enclosure located in Operator Access Area, which are protected by a cover or door, are subjected to a steady force of 30 N ± 3 N for a period of 5 s, applied by means of a straight unjointed version of the test finger, to the part on or within the equipment. External enclosures are subjected to a steady force of 250 N ± 10 N for a period of 5 s, applied in turn to the top, bottom and sides of the enclosure fitted to the equipment, by means of a suitable test tool providing contact over a circular plane surface 30 mm in diameter. However, this test is not applied to the bottom of an enclosure of equipment having a mass of more than 18 kg.		

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

Part	Thickness	Force	Observation
Components	—	10 N	Pass. See (*)
Outer Enclosure	Min. 2mm	250 N	No deflection of the material.
Comments: (*) Bulk capacitor C22 body and Transformer T1 core are isolated by min. 2 layers of isolating tape. Fuse body is glued to capacitor CX1 or tubed.			

4.2.5	TABLE: Impact Test	P

A sample consisting of the complete enclosure represented the largest area was supported in its normal position. A solid smooth steel ball , approximately 50 mm in diameter and with a mass of 500 g was permitted to fall freely from the rest through a vertical distance of 1,3 m onto the sample.

A dielectric test from primary to earth and primary to secondary was conducted after the test.

Part	Thickness	Observation
Front and sides	2,0 mm min.	No hazard. There was no visual damage on enclosure.

Dielectric test after the steel ball test:

Location	Insulation type	Potential used	Breakdown Yes/No
Primary to PE	Basic	1500 Vac	No
Primary to Enclosure	Reinforced	3000 Vac	No
Primary to Secondary	Reinforced	3000 Vac	No

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

4.3.8	**TABLE: Batteries**		N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available			
Is it possible to install the battery in a reverse polarity position?			

	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition									
Max. current during fault condition									

Test results:		Verdict
- Chemical leaks		
- Explosion of the battery		
- Emission of flame or expulsion of molten metal		
- Electric strength tests of equipment after completion of tests		
Supplementary information:		

4.3.8	**TABLE: Batteries**	N/A

Battery category .....: (Lithium, NiMh, NiCad, Lithium Ion …)
Manufacturer .....:
Type / model .....:
Voltage .....:
Capacity .....: mAh
Tested and Certified by (incl. Ref. No.) .....:
Circuit protection diagram:

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

MARKINGS AND INSTRUCTIONS (1.7.12, 1.7.15)	
Location of replaceable battery	
Language(s) ……..:	
Close to the battery ……..:	
In the servicing instructions ……..:	
In the operating instructions ……..:	

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

4.5	TABLE: maximum temperatures **(GT-21131-7212)**						P
	test voltage (V) .....:	264	264				—
	Frequency (Hz)	50	50				—
	t_{amb1} (°C) .....:	32,0	37,1				—
	t_{amb2} (°C) .....:	40	40				—

maximum temperature T of part/at::	T (°C)					allowed T_{max} (°C)
1. Appliance inlet (body)	64,9	52,3				80
2. LF1 (winding)	112,5	82,9				130
3. LF2 (winding)	79,0	62,2				130
4. CX1 (body)	67,1	72,0				105
5. CX2 (body)	85,1	65,9				105
6. Primary heat sink	111,4	97,9				130
7. BD1 (body)	118,7	85,9				-
8. Bulk capacitor C22 (body)	98,6	86,1				105
9. Mains transformer T1 (winding)	106,8	104,0				120 *
10. Mains transformer T1 (core)	105,8	102,4				120
11. Secondary heat sink	110,8	103,9				130
12. U2 (body)	95,4	86,3				100
13. Enclosure (top)	81,0	74,3				90
14. Enclosure (bottom)	78,8	72,7				90
15. Enclosure (side)	69,3	63,7				90
16. Output cable	90,9	84,8				90
Duration	4 h	4 h				

Comment:

Output load: Rated load

The above temperatures are measured at $t_{amb1.}$ The measured values were subtracted with t_{amb1} and t_{amb2} (°C) added. Therefore above measured temperatures are the absolute temperatures in °C at maximum ambient Tma.

* Thermocouple was snicked in. Therefore temperature was measured directly on winding (wire).

The printed circuit board is rated 130°C.

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

4.5	TABLE: maximum temperatures **(GT-21131-7224)**						P
	test voltage (V) ..... :	90	264				—
	Frequency (Hz)	50	50				—
	t_{amb1} (°C) ..... :	24,5	24,5				—
	t_{amb2} (°C) ..... :	40	40				—

maximum temperature T of part/at::	T (°C)					allowed T_{max} (°C)
1. Appliance inlet (body)	73,6	62,5				80
2. LF1 (winding)	108,4	82,5				130
3. LF2 (winding)	85,5	68,7				130
4. CX1 (body)	89,8	76,4				105
5. CX2 (body)	86,6	71,7				105
6. Primary heat sink	107,2	96,3				130
7. BD1 (body)	119,5	90,2				-
8. Bulk capacitor C22 (body)	40,2	88,1				105
9. Mains transformer T1 (winding)	105,1	109,6				120 *
10. Mains transformer T1 (core)	104,9	108,3				120
11. Secondary heat sink	95,1	95,4				130
12. U2 (body)	90,0	89,9				100
13. Enclosure (top)	83,8	85,3				90
14. Enclosure (bottom)	81,8	83,3				90
15. Enclosure (side)	66,9	67,0				90
16. Output cable	71,6	72,2				90
Duration	4 h	4 h				

Comment:

Output load: Rated load

The above temperatures are measured at $t_{amb1.}$ The measured values were subtracted with t_{amb1} and t_{amb2} (°C) added. Therefore above measured temperatures are the absolute temperatures in °C at maximum ambient Tma.

* Thermocouple was snicked in. Therefore temperature was measured directly on winding (wire).

The printed circuit board is rated 130°C.

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

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

Part	Test temperature (°C)	Impression diameter (mm)
Transformer bobbin	125	1,5
LF1 bobbin	130	1,4
Comment: The impression diameter caused by the ball did not exceed 2 mm.		

4.7	TABLE: Resistance to fire				P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
Supplementary information: Approved components and materials are used. See list of critical components.					

5.1	TABLE: touch current measurement			P
Measured between:	Measured (µA)	Limit (mA)	Comments/conditions	
L (N) to PE	367	3,5	Within limit	
N (L) to PE	345	3,5	Within limit	
L (N) to Enclosure *	32,2	0,25	Within limit	
N (L) to Enclosure *	<1	0,25	Within limit	
L (N) to Output – [1)]	41,0	0,25	Within limit	
N (L) to Output – [1)]	27,6	0,25	Within limit	
supplementary information:				
Input: 264 V / 50 Hz * Enclosure was wrapped with aluminium foil. [1)] During the tets L (N) switch was connected with PE.				

IEC 60950-1/Am1			
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
Functional:				
Primary to Primary before fuse– fuse open		AC	1500	No
Primary to Primary after fuse			N/A	
Basic/supplementary:				
Primary to Earth		AC	1500	No
Reinforced:				
Primary to Secondary		AC	3000	No
1 layer of polyester foil (inside and around the transformer) *		AC	3000	No
1 layer of polyester tape (Capacitor C22 body outerwrap)**		AC	3000	No
Supplementary information: * Transformer core is wrapped with two layers of polyester tape. ** Capacitor body is isolated from Secondary with two layers of polyester tape. *** Test for all types transformers under all manufacturers				

5.3	TABLE: fault condition tests		P
	ambient temperature (°C) .....:	23 +/- 2°C	—
	model/type of power supply .....:	See copy of marking	—
	manufacturer of power supply .....:	GlobTek, Inc.	—
	rated markings of power supply .....:	See copy of marking	—

component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
SELV reliability Testing						
Output Diode D7 Rated load	Short	264 V, 50 Hz	< 1 s (10 min)	F1	-	Unit switched off immediately. No defect. No hazard.
Output Diode D7 No load	Short	264 V, 50 Hz	< 1 s (10 min)	F1	-	Unit switched off immediately. No defect. No hazard.
U2 (secondary pins) Rated load	Short	264 V, 50 Hz	10 min	F1	-	Output voltage rise to 35,2 Vd.c. (SELV). No defect. No hazard.

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

component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
U2 (secondary pins) No load	Short	264 V, 50 Hz	< 200 ms (10 min)	F1	-	Output voltage rise up to 65,6 Vpk and falls down to 0 V within 120 ms. Unit damaged. No hazard, output voltage remained within required SELV limits.
Method C – functional insulation (clause 5.3.4)						
CX1	Short	90 Vac , 60 Hz	< 1 s (10 min)	F1	>10 A	F1 opened immediately. No hazard, no fire.
CX1	Short	264 Vac , 50 Hz	< 1 s (10 min)	F1	>10 A	F1 opened immediately. No hazard, no fire.
CX2	Short	90 Vac , 60 Hz	< 1 s (10 min)	F1	>10 A	F1 opened immediately. No hazard, no fire.
CX2	Short	264 Vac , 50 Hz	< 1 s (10 min)	F1	>10 A	F1 opened immediately. No hazard, no fire.
Additional Component faults						
Bulk capacitor C22	Short	90 Vac , 60 Hz	< 1 s (10 min)	F1	>10 A	F1 opened immediately. No hazard, no fire.
Bulk capacitor C22	Short	264 Vac , 50 Hz	< 1 s (10 min)	F1	>10 A	F1 opened immediately. No hazard, no fire.
Switching transistor Q3 D-G	Short	264 Vac, 50 Hz	< 1 s (10 min)	F1	-	F1 opened immediately. No hazard, no fire.
Switching transistor Q3 D-S	Short	264 Vac, 50 Hz	< 1 s (10 min)	F1	-	F1 opened immediately. No hazard, no fire.
Transformer winding Pin 8 to 5 (primary)	Short	264 Vac, 50 Hz	< 1 s (10 min)	F1	-	F1 opened immediately. No hazard, no fire.
Transformer winding Pin 3 to 7 (primary)	Short	264 Vac, 50 Hz	< 1 s (10 min)	F1	-	F1 opened immediately. No hazard, no fire.

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

component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
Misuse						
GT-21131-7224						
Output	Overload	264 V, 50 Hz	3 h	F1	0,615 A	Output load: 22,6V, 4,45A. Temperatures: T1 winding: 127,3°C; T1 core: 118,2°C; ambient: 25,1°C. No hazard, no fire.
Output	Short	264 V, 50 Hz	1 h	F1	< 0,1 A	Hiccup mode. No hazard, no excessive temperature.
GT-21131-7212						
Output	Overload	264 V, 50 Hz	2 h	F1	0,567 A	Output load: 11,74V, 6,66A. Temperatures: T1 winding: 107,3°C; T1 core: 105,6°C; Secondary heat sink: 108,6°C; ambient 25,2°C. No hazard, no fire.
Output	Short	264 V, 50 Hz	1 h	F1	< 0,1 A	Hiccup mode. No hazard, no excessive temperature.
supplementary information						
Test time: Values in parentheses mean time, until the single fault was not removed. Output overload and short test are representable also for transformer overload test due to the construction (circuit diagram) of the power supply unit. All tests were performed on GT-21131-7224 unit and are representable for all units in the family, except output overload and short test were also performed on GT-21131-7212 model. There was no flame, extensive smoke or melted metal. For use in Canada: A 3 A fuse was in serial to the PE connection and did not open during the abnormal testing.						

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

C.2	TABLE: transformers						P
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
	Reinforced	(1)	(1)	3000Vac	(2)	(2)	

Loc.	Tested insulation	Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
	Reinforced	3000Vac	(2)	(2)	

supplementary information:

(1) see appended table 2.10.2

(2) See appended table 2.10.3 / 2.10.4

C.2	TABLE: transformers	P

Transformer specification:

Refer to Enclosure No. 3.

Enclosure No. 1

National differences to IEC60950-1:2005/Am 1

<table>
<tr><td colspan="4">IEC 60950-1</td></tr>
<tr><td>Clause</td><td>Difference – Test</td><td>Result – Remark</td><td>Verdict</td></tr>
<tr><td colspan="4">AUSTRALIA-Differences to IEC 60950-1:2005</td></tr>
<tr><td colspan="4">Appendix ZZ (normative)
Variations to IEC 60950-1:2005 (2nd Ed.) for application in Australia and New Zealand</td></tr>
<tr><td colspan="4">ZZ.1 Introduction

This Appendix sets out variations and additional requirements to cover issues which have not been addressed by the International Standard. These variations indicate national variations for purposes of the IECEE CB System and will be published in the IECEE CB Bulletin.
ZZ.2 Variations
The following variations apply to the source text:</td></tr>
<tr><td>1.2</td><td>Insert the following between ‘person, service’ and ‘range, rated frequency’:
POTENTIAL IGNITION SOURCE 1.2.12</td><td>Considered.</td><td>P</td></tr>
<tr><td>1.2.12.201</td><td>Insert a new Clause 1.2.12.201 after Clause 1.2.12.15 as follows:
1.2.12.201
POTENTIAL IGNITION SOURCE
Possible fault which can start a fire if the open-circuit voltage measured across an interruption or faulty contact exceeds a value of 50 V (peak) a.c. or d.c. and the product of the peak value of this voltage and the measured r.m.s. current under normal operating conditions exceeds 15 VA.

Such a faulty contact or interruption in an electrical connection includes those which may occur in CONDUCTIVE PATTERNS on PRINTED BOARDS.

NOTE 201: An electronic protection circuit may be used to prevent such a fault from becoming a POTENTIAL IGNITION SOURCE.

NOTE 202: This definition is from AS/NZS 60065:2003.</td><td></td><td>N/A</td></tr>
<tr><td>1.5.1</td><td>1. Add the following to the end of the first paragraph:
‘or the relevant Australian/New Zealand Standard.’
2. In NOTE 1, add the following after the word ‘standard’:
‘or an Australian/New Zealand Standard’</td><td></td><td>N/A</td></tr>
<tr><td>1.5.2</td><td>Add the following to the end of the first and third dash items:
‘or the relevant Australian/New Zealand Standard’</td><td></td><td>N/A</td></tr>
<tr><td>3.2.5.1</td><td>Modify Table 3B as follows:
1. Delete the first four rows and replace with the following:
<table>
<tr><td rowspan="2">RATED CURRENT OF EQUIPMENT (A)</td><td colspan="2">Minimum conductor sizes</td></tr>
<tr><td>Nominal cross-sectional area mm²</td><td>AWG or Kcmil (cross-sectional area in mm²)
See note 2</td></tr>
</table></td><td>No cord provided.</td><td>N/A</td></tr>
</table>

IEC 60950-1			
Clause	Difference – Test	Result – Remark	Verdict
	Over 0.2 up to and including 3: 0,5 [a)]: 18 [0,8] Over 3 up to and including 7,5: 0,75: 16 [1,3] Over 7,5 up to and including 10: (0,75)[b)] 1,00: 16 [1,3] Over 10 up to and including 16: (1,0)[c)] 1,5: 14 [2]		
	2. Delete NOTE 1. 3. Delete Footnote [a] and replace with the following: [a] This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0,5 mm^2 three-core supply flexible cords are not permitted; see AS/NZS 3191).		N/A
4.1.201	Insert a new Clause 4.1.201 after Clause 4.1 as follows: **4.1.201 Display devices used for television purposes** Display devices which may be used for television purposes, with a mass of 7 kg or more, shall comply with the requirements for stability and mechanical hazards, including the additional stability requirements for television receivers, specified in AS/NZS 60065.		N/A
4.3.6	Delete the third paragraph and replace with the following: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flatpin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.		N/A
4.3.13.5	Add the following to the end of the first paragraph: ‘, or AS/NZS 2211.1’.		N/A
4.7	Add the following paragraph: ‘For alternate tests refer to Clause 4.7.201.’		N/A
4.7.201	Insert a new Clause 4.7.201 after Clause 4.7.3.6 as follows: **4.7.201 Resistance to fire – Alternative tests** **4.7.201.1 General** Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the apparatus, or the following: (a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1mm in width regardless of length. (b) The following parts which would contribute negligible fuel to a fire: - small mechanical parts, the mass of which	The flame rating of the components was evaluated to the requirements of IEC. The PCB board is specified min. V-0. Therefore no needle test was considered as required.	N/A

IEC 60950-1			
Clause	Difference – Test	Result – Remark	Verdict
	does not exceed 4g, such as mounting parts, gears, cams, belts and bearings; - small electrical components, such as capacitors with a volume not exceeding 1,750 mm^3, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10. NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to another. Compliance shall be checked by the tests of 4.7.201.2, 4.7.201.3, 4.7.201.4 and 4.7.201.5. For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5. The tests shall be carried out on parts of non-metallic material which have been removed from the apparatus. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring.		
4.7.201.2	**Testing of non-metallic materials** Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the sample tested was not thicker than the relevant part.	Approved materials are used. See list of critical components.	N/A
4.7.201.3	**Testing of insulating materials** Parts of insulating material supporting POTENTIAL IGNITION SOURCES shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE: Contacts in components such as switch contacts are considered to be connections. For parts which withstand the glow-wire test but produce a flame, other parts above the	Approved materials are used. See list of critical components.	N/A

<table>
<tr><td colspan="4">IEC 60950-1</td></tr>
<tr><td>Clause</td><td colspan="2">Difference – Test</td><td>Result – Remark</td><td>Verdict</td></tr>
<tr><td></td><td colspan="2">connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test shall not be tested.

The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:</td><td></td><td></td></tr>
<tr><td></td><td>Clause of AS/NZS 4695.11.5</td><td>Change</td><td></td><td>N/A</td></tr>
<tr><td></td><td colspan="2">9 Test procedure</td><td></td><td></td></tr>
<tr><td></td><td>9.2 Application of needleflame</td><td>Replace the first paragraph with:
The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1. If possible the flame shall be applied at least 10 mm from a corner

Replace the second paragraph with:
The duration of application of the test flame shall be 30 s ±1 s.</td><td></td><td></td></tr>
<tr><td></td><td>9.3 Number of test specimens</td><td>Replace with:
The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.</td><td></td><td></td></tr>
<tr><td></td><td>11 Evaluation of test results</td><td>Replace with:
The duration of burning (t_b) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.</td><td></td><td></td></tr>
<tr><td></td><td colspan="2">The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the sample tested was not thicker than the relevant part.</td><td></td><td></td></tr>
<tr><td>4.7.201.4</td><td colspan="2">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 shall be made on all parts of non-metallic material which are within a distance of</td><td>Approved materials are used. See list of critical components.</td><td>N/A</td></tr>
</table>

IEC 60950-1			
Clause	Difference – Test	Result – Remark	Verdict
	50 mm or which are likely to be impinged upon by flame during the tests of 4.7.201.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested. NOTE 1: If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing. NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing. NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.		

IEC 60950-1			
Clause	Difference – Test	Result – Remark	Verdict
4.7.201.5	**Testing of printed boards** The base material of printed boards shall be subjected to the needle-flame test of Clause 4.7.201.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a POTENTIAL IGNITION SOURCE. The test is not carried out if the — - Printed board does not carry any POTENTIAL IGNITION SOURCE; - Base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or - Base material of printed boards, on which the available apparatus power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. Compliance shall be determined using the smallest thickness of the material. NOTE: Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximise the apparent power for more than 2 min when the circuit supplied is disconnected	Approved PCB materials are used. See list of critical components.	N/A
6.2.2	For Australia only, delete the first paragraph and Note, and replace with the following: In Australia only, compliance with 6.2.2 shall be checked by the tests of both 6.2.2.1 and 6.2.2.2.		N/A

IEC 60950-1			
Clause	Difference – Test	Result – Remark	Verdict
6.2.2.1	For Australia only, delete the first paragraph including the Notes, and replace with the following: In Australia only, the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator reference 1 of Table N.1. The interval between successive impulses is 60 s and the initial voltage, U_c, is: (i) for 6.2.1 a): 7,0 kV for hand-held telephones and for headsets and 2,5 kV for other equipment; and (ii) for 6.2.1 b) and 6.2.1 c): 1,5 kV. NOTE 201: The 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202: The value of 2.5 kV for 6.2.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		N/A
6.2.2.2	For Australia only, delete the second paragraph including the Note, and replace with the following: In Australia only, the a.c. test voltage is: (i) for 6.2.1 a): 3 kV; and (ii) for 6.2.1 b) and 6.2.1 c): 1,5 kV. NOTE 201: Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202: The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
7.3	Add the following before the first paragraph: Equipment providing functions that fall only within the scope of AS/NZS 60065 and that incorporate a PSTN interface, are not required to comply with this Clause where the only ports provided on the equipment, in addition to a coaxial cable connection and a PSTN interface, are audio or video ports and analogue or data ports not intended to be used for telecommunications purposes.		N/A
Annex P	Add the following Normative References: AS/NZS 3191, Electric flexible cords AS/NZS 3112, Approval and test specification—Plugs and socket-outlets	Considered. IEC approved material and components are used.	P

IEC 60950-1			
Clause	Difference – Test	Result – Remark	Verdict
Index	1. Insert the following between 'asbestos, not to be used as insulation' and 'attitude see orientation': AS/NZS 2211.1.....4.3.13.5 AS/NZS 3112.....4.3.6 AS/NZS 3191..... 3.2.5.1 (Table 3B) AS/NZS 60064.....4.1.201 AS/NZS 60695.2.11..... 4.7.201.2, 4.7.201.3 AS/NZS 60695.11.10..... 4.7.201.1, 4.7.201.5 AS/NZS 60695.11.5.....4.7.201.3 2. Insert the following between 'positive temperature coefficient (PTC) device' and 'powder': potential ignition source 1.2.201, 4.7.201.3, 4.7.201.5		P

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
KOREA- Differences to IEC 60950-1, Second Edition (2005) + A1:2009			
1.5.101	Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305).	Apliance inlet	N/A
8: EMC	The apparatus shall comply with the relevant CISPR standards	End product consideration.	N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
USA - Differences to IEC 60950-1:2005, Second Edition National standard: UL 60950-1, Second Edition, Amendment 1, December 19, 2011			
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.	The unit under test is pluggable type A. The unit is provided with appliance inlet. Power supply cord is not provided with the unit and is not part of the investigation.	P
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20 A.	The unit was tested with 20 A circuit breaker.	P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction	Power supply cord is not part of the investigation.	N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
	features and identification markings.		
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 unit.	N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1 shall be marked with the voltage rating and “Class 2” or equivalent. The marking shall be located adjacent to the terminals and shall be visible during wiring.		N/A
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator accessible unless it is not interchangeable.		N/A
2.6.3.3	The first column on Table 2D modified to require, “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration.”		N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.		P
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		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
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		N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
	than 4.5 m in length. Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		
3.2.9	Permanently connected equipment must have a suitable wiring compartment and wire bending space.		N/A
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.		N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm2).		N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).		N/A
3.3.5	First column of Table 3E revised to require “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration.”		N/A
3.4.2	Motor control devices are 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 NFPA30		N/A
4.3.13.5	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m3 (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
4.7.3.1	For computer room applications, enclosures with		N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
	combustible material measuring greater than 0.9 m2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.		
Annex H	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
National Differences for Canada Amendment 1:2011 to CAN/CSA-C22.2 No. 60950-1-07			
Canada and the United States of America have adopted a single, bi-national standard, CAN/CSA C22.2 No. 60950-1/UL60950-1, Second Edition, which is based on IEC 60950-1, Second Edition. This bi-national standard should be consulted for further details on the national conditions and differences summarized below.			
SPECIAL NATIONAL CONDITIONS The following is a summary of the key national differences based on national regulatory requirements, such as the Canadian Electrical Code (CEC) Part I and the Canadian Building Code, which are referenced in legislation and which form the basis for the rules and practices followed in electrical and building installations			
1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	The components fulfil the requirements of the standard and in addition P1 and P2 of UL60950 and CSA 22.2-60950 was applied.	P
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the CEC/NEC. 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.		P
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."		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.		N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
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
2.6.3.3	The first column on Table 2D modified to require, "Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."	Considered	P
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

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
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
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. Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.		N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm^2).		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
3.3.5	First column of Table 3E revised to require “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration.”		N/A
3.4.2	Motor control devices are 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.		N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
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.		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.		N/A
Annex H	Equipment that produces ionizing radiation is required to comply with the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations, 21 CFR 1020, as applicable.		N/A
OTHER DIFFERENCES The following key national differences are based on requirements other than national regulatory requirements			
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.	The components fulfil the requirements of the standard and in addition P1 and P2 of UL60950 and CSA 22.2-60950 was applied.	P
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as either a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply. This maximum operating voltage shall include consideration of the battery charging “float voltage” associated with the intended supply system, regardless of the marked power rating of the equipment.		N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.		N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.	Earth testing was done in accordance to the additional requirements.	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
4.3.2	Equipment with handles is required to comply with special loading tests.		N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded. During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary.		N/A
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.		N/A
Annex EE	Articulated accessibility probe (Fig EE.3) required for assessing accessibility to document/media shredders instead of the Figure 2A test finger.		N/A
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A
			N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
CHINA-Differences to IEC 60950-1:2005 (ed. 2) **(GB4943.1-2011 Information technology equipment – Safety – Part 1: General requirements)**			
1.1.2	GB 4943.1-2011 applies to equipment for use at altitudes not exceeding 5000m above sea level, primarily in regions with moderate or tropical climates. Amend the third dashed paragraph of 1.1.2 as: ——equipment intended to be used in vehicles, on board ships or aircraft, at altitudes greater than 5000m;	Considered.	N/A
1.4.5	After the third paragraph, add a paragraph: If the equipment is intended for direct connection to an AC mains supply, the tolerances on RATED VOLTAGE shall be taken as +10%,-10% unless a wider tolerance is declared by the manufacturer. The first dash paragraph "-the RATED VOLTAGE is 230V single -phase or 400V three-phase, in which case the tolerance shall be taken as +10% and -10%" of IEC 60950-1:2005 is deleted in GB 4943.1-2011	Manufacturer specified wider tolerances than +10%, -10%.	P
1.4.12.1	Tma in clause 1.4.12.1 amended as: Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 35 °C, whichever is greater. Add note 1: For equipment not to be operated at tropical climatic conditions, Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 25 °C, whichever is greater. Add note 2: For equipment is to be operated at 2000m-5000m above sea leave, its temperature test conditions and temperature limits are under consideration.		N/A
1.5. 2	Add a note behind the first break off section in Clause 1.5.2: A component used shall comply with related requirements corresponding altitude of 5000m.	Unit not specified for altitude more than 2000m.	N/A
1.7	Add one paragraph before the last paragraph: The required marking and instruction should be given in normative Chinese unless otherwise specified.	Chinese label will be verified during national approval.	N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
1.7.1	Based on the AC mains supply of China, the RATED VOLTAGE should be 220V (single phase) or 380V (three-phases) for single rated voltage, for RATED VOLTAGE RANGE, it should cover 220V or 380V (three-phases), for multiple RATED VOLTAGES, one of them should be 220V or 380V (three-phases) and set on 220V or 380V (three-phases) when manufactured. And the RATED FREQUENCY or RATED FREQUENCY RANGE should be 50Hz or include 50Hz.	The rated voltage range and frequency range is covering China mains voltage 220V/50Hz.	P
1.7.2.1	Add requirements of warning for equipment intended to be used at altitudes not exceeding 2000m or at non-tropical climate regions: For equipment intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used at altitude not exceeding 2000m."  For equipment intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used in not-tropical climate regions."  If only the symbol used, the explanation of the symbol shall be contained in the instruction manual. The above statements shall be given in a language acceptable to the regions where the apparatus is intended to be used.	Unit not intended for altitude >2000m. Appropriate label added to the unit. Unit verified for tropical condition (extended humidity test performed). 2) Unit not intended for altitude >2000m and for tropical conditions. Appropriate labels added to the unit. 3) Unit not intended for altitude above 2000m and not specified for tropical conditions. Appropriate labels must be attached to the units shipped to China.	N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
2.7.1	Amended the first paragraph as: Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall be provided as an integral part of the equipment except special provisions. And the protective device shall meet the requirement of Clause 5.3. Delete note of Clause 2.7.1.	Unit provides appropriate internal protection	P
2.9.2	First section of Clause 2.9.2 amended as two sections: Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature 40±2°C and a relative humidity of (93±3)%. During this conditioning the component or subassembly is not energized. For equipment not to be operated at tropical climatic conditions, Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 48 h in a cabinet or room containing air with a relative humidity of (93±3) %. The temperature of the air, at all places where samples can be located, is maintained within 2 °C of any convenient value between 20 °C and 30 °C such that condensation does not occur. Due to pretreatment of equipment operated at high altitude area is humidity conditioning withstand hot shock, specific requirements are to be considered. Add note: For equipment to be operated at 2000 m - 5000m above sea level, assessment and requirement of humidity conditioning for Insulation material properties are considered.	Unit not intended for tropical conditions.	N/A
2.10.3.1	Amend the third paragraph of Clause 2.10.3.1 to be: These requirements apply for equipment to be operated up to 2000 m above sea level. For equipment to be operated at more than 2000 m above sea level and up to 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of IEC 60664-1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.	Unit verified for altitude <5000m.	N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
2.10.3.3& 2.10.3.4	Add "(applicable for altitude up to 2000m)" in header of Table 2K, 2L and 2M.		N/A
2.10.3.4	Add a new section above Table 2K and in Clause 2.10.3.4: Minimum CLEARANCES determined by above rules apply for equipment to be operated up to 2000m above sea level. For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1 （IEC 60664-1). For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of GB/T16935.1.		N/A
3.2.1.1	Add a paragraph before the last paragraph: Plugs connected to AC mains supply shall comply with GB 1002 or GB 1003 or GB/T 11918 as applicable.	No plug provided.	N/A
4.2.8	Clause 4.2.8 cathode ray tubes quoted Clause 18 of GB8898-2011. Delete note of Clause 4.2.8.	No CRT used.	N/A
Annex E	Last section of Annex E amended as: For comparison of winding temperatures determined by the resistance method of this annex with the temperature limits of Table 4B, 35 °C shall be added to the calculated temperature rise. And add note: for equipment not to be operated at tropical climatic conditions, 25 °C shall be added to the calculated temperature rise to compare with the temperature of Table 4B.	No linear transformer used.	N/A
Annex G.6	Change the second section of Clause G.6 to be: For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.		N/A
Annex BB (informative)	Amended as: The differences between Chinese national standards GB 4943.1-2011 and GB 4943-2001.	Considered.	--

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
Annex DD (normative)	Added annex DD: Instructions for the new safety warning labels. DD.1 Altitude warning label  Meaning of the label: Evaluation for apparatus only based on altitude not exceeding 2000m, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used at altitude above 2000m . DD.2 Climate warning label  Meaning of the label: Evaluation for apparatus only based on temperate climate condition, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used in tropical climate region.	Must be verified during national approval.	N/A
Annex EE (informative)	Added annex EE: Illustration relative to safety explanation in normative Chinese、Tibetan、Mongolian、Zhuang Language and Uighu.	the EUT is not household and home/office document/media shredder.	N/A
Other amendments	In accordance with the relevant CTL decisions and the amendments of IEC 60950-1, the specific requirements or mistakes in IEC standard are corrected or editorially modified in this part, Including clause 1.7, 2.1.1.7, 2.9.2, Table 2H, Figure 2H, F.8, F.9, M.3 and Annex U.	Considered.	P
Quoting standards and reference documents	The principles of quoting and referring to other standards in Annex P and reference documents of IEC 60950-1 are as follows: If the date of the reference document is given, only that edition applies, excluding any subsequent corrigenda and amendments. However, parties to agreements based on this part are encouraged to investigate the possibility of applying the most recent editions of the reference documents. For undated references, the latest edition of the referenced document applies, including any corrigenda and	Considered.	P

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
	amendments. For the usage of international standards in Chinese national standards and industry standards is various, in the aim of achieving easy operation and based on the requirements of GB/T 1.1 and GB/T 20000.2, when quoting an entire international standard in the normative quoting files and reference documents of Annex P of this part, the principles of quotation are as follows: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted; - If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted; - If the date of the national standard or industry standard is not given, the latest edition of the standard applies; - The national standard or industry standard number, corresponding international standard number and the consistency level code should be identified in parentheses behind the listed national standard or industry standard. When quoting several chapters or clauses of the international standard, the principles of quotation are as follows: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted; - If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted. Meanwhile, in order to retain the relevant information on international standards, informative annex CC is increased, which gives the table about the comparison of the normative quoting files and reference documents in IEC 60950-1: 2005 and GB 4943.1-2011.		

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
JAPAN- Differences to IEC 60950, Third Edition (1999) (National differences to IEC 60950-1:2005 and IEC 60950-1:2001 do not exist)			

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
1.2	**Addition:** Add the following terms. Equipment, Class 0I 1.2.4.101 Material, VTM 1.2.12.101	Considered.	P
1.2.4.101	**Addition:** CLASS 0I EQUIPMENT: Equipment where protection against electric shock is achieved by: a) using BASIC INSULATION, and b) 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 c) 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.	Equipment is rated class I.	N/A
1.2.12.1	**Replacement:** 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. NOTE 1 - When applying the requirements in this standard, HF-1 CLASS FOAMED MATERIALS are regarded as better than those of CLASS HF-2, and HF-2 better than HBF. NOTE 2 - Similarly, other MATERIALS, including rigid (engineering structural) foam of CLASSES 5V or V-0 are regarded as better than those of CLASS V-1, V-1 better than V-2, and V-2 better than HB. 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.	IEC/UL approved materials are used.	N/A
1.2.12.101	**Addition:** VTM CLASS MATERIAL: Thin MATERIALS fulfill the specified conditions during the test of clause A.101 applied for materials that the test and evaluation of clauses A.6 to A.10 is difficult to enforce. Materials are classified to three classifications as VTM-0, VTM-1 and VTM-2 according to the conditions after the removal of the test flame.	IEC/UL approved materials are used.	N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
1.7.101	**Addition:** 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” 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.”		N/A
2.1.1.1	**Replacement:** Replace “IEC 60083” to “IEC 60083 or JIS C 8303” in 2.1.1.1 b).	Considered.	P
2.6.3.1	**Addition:** Add the following after 1st paragraph. This also applies to the conductor of lead wire for protective earthing of CLASS 0I EQUIPMENT.		N/A
2.6.4.1	**Replacement:** Replace 2nd sentence in 1st paragraph. 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.		N/A
2.6.5.4	**Replacement:** Replace 1st sentence. Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following:		N/A
2.6.101	**Addition:** 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.		N/A
3.2.5	Delete 1) in Table 3B.		N/A
4.2.8	**Addition:** Add the following informative remark after the last sentence. Remark - IEC 61965 is also applicable instead of IEC 60065.		N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
4.5.1	**Addition:** Add the following to suffix 5) as specified in "Conditions applicable to Table 4A, Parts 1 and 2". With regard to Table 4A, insulating materials complying with Japanese requirements (refer to Japanese differences for the current IEC 60335-1 (3rd Edition) in CB Bulletin 101B) are also acceptable. Add a suffix 7) in "Conditions applicable to Table 4A, Parts 1 and 2". In the right column of Table 4A, Part 1, add suffix 7) to "50" (K), corresponding to "- without T – marking" in the left column so as to become "50 7) ". Add 7) to Table 4A, Part 2 as follows. 7) This value shall apply only to wiring or cords complying with relevant IEC standards. Others shall comply with Japanese requirements (refer to Japanese differences for the current IEC 60335-1 (3rd Edition) in CB Bulletin 101B).	Built in unit.	N/A
4.7.3.2	**Addition:** Add the following in 7th paragraph. **-** for thin materials, e.g., flexible printed boards, etc., used inside equipment, be of FLAMMABILITY CLASS VTM-2 or better.		N/A
5.1.6	**Replacement:** Replace Table 5A. 		N/A
5.3.8.2	**Replacement:** Replace 3rd Item as follows. - BASIC INSULATION between the PRIMARY CIRCUIT and accessible conductive parts of CLASS I or 0I EQUIPMENT;		N/A
Annex A	**Addition:** Add the subclause **A.10**1with the title "Flammability tests for classifying materials VTM" and the following: Thin sheet materials shall comply with ISO 9773.		N/A
Annex G	**Addition:** Add the following to the Note for 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.		N/A

IEC 60950-1/Am1			
Clause	Difference – Test	Result – Remark	Verdict
Annex P	**Addition:** Add "IEC 61965:2000, Mechanical Safety for Cathode Ray Tubes".		N/A
Annex U	**Replacement:** Replace 2nd paragraph. This annex covers to round winding wires having diameters between 0.05 mm and 5.00 mm.	All TIW used are approved.	N/A
U.2.1	**Replacement:** **Electric strength** The test sample is prepared according to IEC 60851-5:1997, 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.		N/A
U.2.2	**Replacement:** **Flexibility and adherence** 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 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, 1500 V, or; - for REINFORCED INSULATION, 3000 V.		N/A
Table U.1	**Replacement:** **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 *) *) in compliance with IEC 60317-43 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/mm 2 ± 10 %).		N/A

Enclosure No. 1a

European Group Differences and National Differences according to EN 60950-1:2006 +A1:2010 + A11:2009 + A12:2011

EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 – CENELEC COMMON MODIFICATIONS

Clause	Requirement	Verdict
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations	P
General	Delete all the “country” notes in the reference document according to the following list: 1.4.8 Note 2; 1.5.1 Note 2 & 3; 1.5.7.1 Note 1.5.8 Note 2; 1.5.9.4 Note; 1.7.2.1 Note 4, 5 & 6 2.2.3 Note; 2.2.4 Note; 2.3.2 Note 2.3.2.1 Note 2; 2.3.4 Note 2; 2.6.3.3 Note 2 & 3 2.7.1 Note; 2.10.3.2 Note 2; 2.10.5.13 Note 3 3.2.1.1 Note; 3.2.4 Note 3.; 2.5.1 Note 2 4.3.6 Note 1 & 2; 4.7 Note 4; 4.7.2.2 Note 4.7.3.1 Note 2; 5.1.7.1 Note 3 & 4; 5.3.7 Note 1 6 Note 2 & 5; 6.1.2.1 Note 2; 6.1.2.2 Note 6.2.2 Note 6.; 2.2.1 Note 2; 6.2.2.2 Note 7.1 Note 3; 7.2 Note; 7.3 Note 1 & 2 G.2.1 Note 2; Annex H Note 2	P
General (A1)	In IEC 60950-1:2005/A1 delete all the “country” notes according to the following list: 1.5.7.1: Note 6.1.2.1: Note 2 6.2.2.1: Note 2 EE.3: Note	P
1.1.1 (A1)	Replace the text on NOTE 3 by the following: Note 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.	N/A
1.2.3 (A1)	Add the following definition: 1.2.3.Z1 PORTABLE SOUND SYSTEM Small battery powered audio equipment: - whose prime purpose is to listen to recorded or broadcasted sound; and - that uses headphones or earphones that can be worn in or around the ears; and - that allows the user to walk around NOTE Examples are mini-disk or CD players; MP3 audio players or similar equipment.	N/A

Clause	Requirement	Verdict
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for “one package equipment”, and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.	N/A
1.3.Z1 (A12)	Delete the addition of 1.3.Z1 in EN 60950-1:2006	N/A
1.2.3 (A12)	Delete the addition of 1.3.Z1 in EN 60950-1:2006/A1:2010	N/A
1.7.2.1 (A12)	Delete NOTE Z1 and the addition for Portable Sound System in EN 60950-1:2006 and in EN 60950-1:2006/A1:2010	N/A
Add the following clause and annex to the existing standard and amendments		
ZX (A12)	Protection against excessive sound pressure from personal music players	N/A
ZX.1 (A12)	General	N/A
ZX.2 (A12)	Equipment Requirements	N/A
ZX.3 (A12)	Warning	N/A
ZX.4 (A12)	Requirements for listening devices (headphones and earphones)	N/A
ZX.5 (A12)	Measurement methods	N/A
1.5.1	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC	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~~ Add the following paragraph at the end of the subclause: In addition, for PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.	N/A

Clause	Requirement	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: | Up to and including 6 | | 0,75 [a)] | | Over 6 up to and including 10 | (0,75) [b)] 1,0 | | Over 10 up to and including 16 | (1,0) [c)] 1,5 | In the conditions applicable to Table 3B delete the words "in some countries" in condition [a)]. In NOTE 1, applicable to Table 3B, delete the second sentence.	N/A
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: | Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4 | Delete the fifth line: conductor sizes for 13 to 16 A.	N/A

Clause	Requirement	Verdict
4.3.13.6 (A1)	~~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.~~ Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum heatlh and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation) Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.	N/A
4.3.13.6	Add the following NOTE: NOTE Z1 Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.	N/A
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.	N/A
Biblio-graphy	Additional EN standards. IEC 60908 NOTE Harmonized as EN 60908	—
Biblio-graphy	Additional EN standards.	—

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

ZB	SPECIAL NATIONAL CONDITIONS	P
1.2.4.1	In **Denmark**, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	N/A
1.2.13.14 (A11)	In **Norway** and **Sweden**, for requirements see 1.7.2.1 and 7.3 of this annex.	N/A
1.5.7.1 (A11)	In **Finland**, **Norway** and **Sweden**, resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.	N/A
1.5.8	In **Norway**, due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	P

Clause	Requirement	Verdict
1.5.9.4	In **Finland**, **Norway** and **Sweden**, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	N/A
1.7.2.1	In **Finland**, **Norway** and **Sweden**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan" In Norway: “Apparatet må tilkoples jordet stikkontakt” In Sweden: “Apparaten skall anslutas till jordat uttag”	N/A
1.7.2.1 (A11)	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 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.”	N/A
1.7.5 (A11)	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a. For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.	N/A
2.2.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	N/A
2.3.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.	N/A

Clause	Requirement	Verdict
2.3.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	N/A
2.6.3.3	In the **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16 A.	N/A
2.7.1	In the **United Kingdom**, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	N/A
2.10.5.13	In **Finland**, **Norway** and **Sweden**, there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	N/A
3.2.1.1	In **Switzerland**, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998 Plug Type 25 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998 Plug Type 21 L+N 250 V, 16 A SEV 5934-2.1998 Plug Type 23 L+N+PE 250 V, 16 A	N/A
3.2.1.1	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.	N/A
3.2.1.1	In **Spain**, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.	N/A
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

Clause	Requirement	Verdict
3.2.1.1	In **Ireland**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.	N/A
3.2.4	In **Switzerland**, for requirements see 3.2.1.1 of this annex.	N/A
3.2.5.1	In the **United Kingdom**, a power supply cord with conductor of 1,25 mm2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.	N/A
3.3.4	In the **United Kingdom**, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.	N/A
4.3.6	In the **United Kingdom**, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.	N/A
4.3.6	In **Ireland**, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.	N/A
5.1.7.1	In **Finland**, **Norway** and **Sweden** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that ○ is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and ○ has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and ○ is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.	N/A

Clause	Requirement	Verdict
6.1.2.1 (A1)	In **Finland**, **Norway** and **Sweden**, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b. It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclause Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.	N/A
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**, for installation conditions see EN 60728-11:2005.	N/A
7.3 (A11)	In **Norway** and **Sweden**, for requirements see 1.2.12.14 and 1.7.2.1 of this annex.	N/A

Clause	Requirement	Verdict
ZC	A-DEVIATIONS (informative)	
1.5.1 (A11)	**Sweden** (Ordinance 1990:944) Add the following: NOTE In Sweden, switches containing mercury are not permitted. **DELETED in A11**	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.	
1.7.2.1 (A11)	**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." **DELETED in A11**	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 (A11)	**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. **DELETED in A11**	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

Clause	Requirement	Verdict
5.1.7.1 (A11)	**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. **DELETED in A11**	N/A