




TEST REPORT IEC/EN 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report Number..... :	BTL-LVD-1-S1611C036
Tested by (+ signature)..... :	Willie Xian 
Approved by (+ signature)..... :	Ben Liu 
Date of issue	2016-12-20
Total number of pages	49
Testing Laboratory	BTL Inc.
Address	No.3, Jinshagang 1st Road, ShiXia, Dalang Town, DongGuan, China
Applicant's name	SHENZHEN TENDA TECHNOLOGY CO., LTD
Address	6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052
Test specification:	
Standard	IEC 60950-1:2005 (Second Edition)+Am 1:2009+Am 2:2013 EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
Test procedure..... :	Service of CE Marking in LVD
Non-standard test method..... :	N/A
Test Report Form No. :	IEC60950_1F (LVD)
Master TRF	Dated 2014-02
Test item description	PoE Adapter
Trade Mark..... :	Tenda
Manufacturer	Same as applicant.
Model/Type reference..... :	PoE30G-AT
Ratings..... :	Input: AC100-240V 0.8A 50/60Hz Output: 51V  , 30W

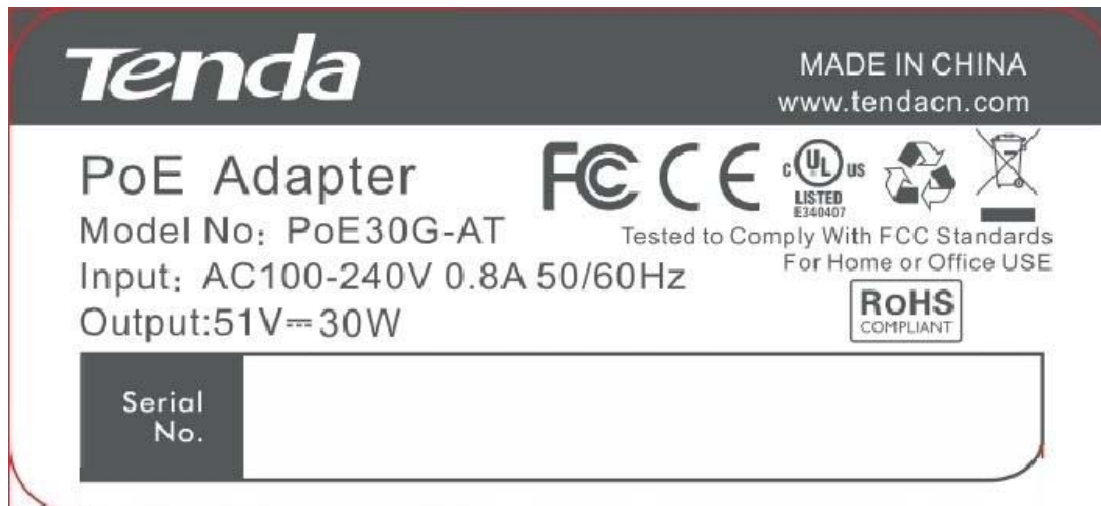
List of Attachments (including a total number of pages in each attachment):

- European Group difference and nation differences (19 pages)
- Photos documentation (4 pages)

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)



Test item particulars :	
Equipment mobility	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains :	<input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input checked="" type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains
Operating condition :	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: not directly connected to the mains
Mains supply tolerance (%) or absolute mains supply values	±10 %
Tested for IT power systems	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V)	N/A
Class of equipment	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A)	16 A (13 A for UK)
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class	IPX0
Altitude during operation (m)	Up to 2000m
Altitude of test laboratory (m)	Not over 2000m
Mass of equipment (kg)	Approx.0.23kg
Possible test case verdicts:	
- test case does not apply to the test object..... :	N/A (Not Applicable)
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)
Testing :	
Date of receipt of test item	2016-11-07
Date(s) of performance of tests	2016-11-07 to 2016-11-16
General remarks:	
"(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 <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
Name and address of factory (ies)	
N/A.	

General product information:

Report Summary

- All applicable tests according to the referenced standard(s) have been carried out.
- The test result in this report applied the data from worst condition otherwise not specified.
- The test samples were pre-production samples without serial numbers.

Product Description

- The equipment is a PoE Adapter for use in information technology equipment.
- The equipment shall be provided with an approved mains cord set complying with the national regulations of the countries in which the appliance is to be sold.
- The equipment consists of switching power supply circuit and function circuit on the same PCB (Printed Circuit Board), housed in a plastic enclosure.
- The enclosure was secured by ultrasonic welding.
- The equipment is recommended to use in indoor.

Model Differences

- N/A

Technical Considerations

- The product was submitted and tested for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40°C.
- The equipment disconnect device is considered to be: appliance inlet.
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): All R-J45 ports.
- Instructions and equipment marking related to safety is applied in the language that is acceptable in the country in which the equipment is to be sold.

Abbreviations used in the report:

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

Indicate used abbreviations (if any)

IEC/EN60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	GENERAL		P

1.5	Components		P
1.5.1	General	See below.	P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components	<p>Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this Standard.</p> <p>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.</p> <p>Components, for which no relevant IEC Standard exist, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.</p>	P
1.5.3	Thermal controls	No such component used.	N/A
1.5.4	Transformers	Transformer used is suitable for the intended application and comply with the relevant requirements of the standard and particularly with those of Annex C.	P
1.5.5	Interconnecting cables	Interconnection cables complied with the relevant requirements.	P
1.5.6	Capacitors bridging insulation	Capacitors used in accordance with their rating and complied with subclasses of IEC 60384-14 with at least 21 days damp heat test.	P
1.5.7	Resistors bridging insulation	No such component.	N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N/A
1.5.8	Components in equipment for IT power systems		N/A

IEC/EN60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.9	Surge suppressors	See below.	P
1.5.9.1	General	See Annex Q.	P
1.5.9.2	Protection of VDRs	F1 on powerboard used as protection of varistor	P
1.5.9.3	Bridging of functional insulation by a VDR	See Clause 1.5.9.1.	P
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A

1.6	Power interface		P
1.6.1	AC power distribution systems	TN power system for others	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	Not hand-held equipment	N/A
1.6.4	Neutral conductor	The neutral is not identified in the equipment. Reinforced insulation for rated voltage between secondary parts and primary phases.	P

1.7	Marking and instructions		P
1.7.1	Power rating and identification markings	See below.	P
1.7.1.1	Power rating marking	The required marking is located on the outside surface of the equipment.	P
	Multiple mains supply connections.....:	Only one mains supply connections.	N/A
	Rated voltage(s) or voltage range(s) (V)	AC100-240V	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)	0.8A	P
1.7.1.2	Identification markings	See below.	P
	Manufacturer's name or trade-mark or identification mark	Trade-mark: Tenda	P
	Model identification or type reference :	PoE30G-AT	P
	Symbol for Class II equipment only	Class I equipment.	P
	Other markings and symbols	Other markings and symbols do not give rise to misunderstanding.	P
1.7.1.3	Use of graphical symbols		N/A
1.7.2	Safety instructions and marking	See below.	P

IEC/EN60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	General	Instructions are available.	P
1.7.2.2	Disconnect devices	The equipment is provided with an appliance coupler.	P
1.7.2.3	Overcurrent protective device	Pluggable type A equipment.	N/A
1.7.2.4	IT power distribution systems	For Norway compliance has to be evaluated during the nation approval.	N/A
1.7.2.5	Operator access with a tool		N/A
1.7.2.6	Ozone		N/A
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment	Full range voltage design, no necessary adjustment.	N/A
	Methods and means of adjustment; reference to installation instructions		N/A
1.7.5	Power outlets on the equipment	No power outlets provided.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	Marking adjacent to fuse on power board PCB as: F1 T3.15AL 250VAC	P
1.7.7	Wiring terminals	See below.	P
1.7.7.1	Protective earthing and bonding terminals	Appliance inlet is provided.	P
1.7.7.2	Terminals for a.c. mains supply conductors	The equipment with appliance inlet is intended to be use the detachable type power supply cord.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators	See below.	P
1.7.8.1	Identification, location and marking	No indicators affecting safety are used.	N/A
1.7.8.2	Colours	Only functional indicators use color.	P
1.7.8.3	Symbols according to IEC 60417.....	No such controls device 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

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.11	Durability	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 sec. and then again for 15 sec. with the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was no curling nor lifting of the label edge.	P
1.7.12	Removable parts		N/A
1.7.13	Replaceable batteries		N/A
	Language(s)		—
1.7.14	Equipment for restricted access locations		N/A

2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas		P
2.1.1.1	Access to energized parts	Only SELV signal interface accessible by operator.	P
	Test by inspection	See below.	P
	Test with test finger (Figure 2A)	No access with test finger to any energized parts or hazardous voltage.	P
	Test with test pin (Figure 2B)	No access to any energized parts or hazardous voltage with test pin.	P
	Test with test probe (Figure 2C)	No TNV circuit	N/A
2.1.1.2	Battery compartments		N/A
2.1.1.3	Access to ELV wiring	No internal wiring at ELV accessible to the operator.	N/A
	Working voltage (V _{peak} or V _{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage wiring in operator accessible area.	N/A
2.1.1.5	Energy hazards	No energy hazardous parts in operator access area.	P
2.1.1.6	Manual controls	No Manual control.	N/A
2.1.1.7	Discharge of capacitors in equipment	see below.	P
	Measured voltage (V); time-constant (s).....	See appended table 2.1.1.7	—

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Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.8	Energy hazards – d.c. mains supply	Not connected to 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.	N/A
2.1.2	Protection in service access areas		N/A
2.1.3	Protection in restricted access locations		N/A

2.2	SELV circuits		P
2.2.1	General requirements	SELV limits are not exceeded under normal condition and after a single fault.	P
2.2.2	Voltages under normal conditions (V) .. :	42.4V peak or 60V d.c. are not exceeded in SELV circuit under normal operation. Results see appended table 2.2.2.	P
2.2.3	Voltages under fault conditions (V) .. :	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71V peak and 120V d.c. were not exceeded within 0.2 seconds and limits 42.4V peak and 60V d.c. were not exceeded for longer than 0.2 seconds.	P
2.2.4	Connection of SELV circuits to other circuits .. :	See 2.2.2 and 2.2.3.	P

2.3	TNV circuits		N/A
2.3.1	Limits	No TNV circuits.	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 .. :		—

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Clause	Requirement + Test	Result - Remark	Verdict
2.3.5	Test for operating voltages generated externally		N/A

2.4	Limited current circuits		P
2.4.1	General requirements	The limits of 2.4.2 were not exceeded under normal operating conditions and single fault conditions.	P
2.4.2	Limit values	See appended table 2.4.2	P
	Frequency (Hz)	See appended table 2.4.2	—
	Measured current (mA)	See appended table 2.4.2	—
	Measured voltage (V).....	See appended table 2.4.2	—
	Measured circuit capacitance (nF or μ F)	See appended table 2.4.2	—
2.4.3	Connection of limited current circuits to other circuits	Output circuit as limited current circuit connected to primary via one bridging capacitor.	P

2.5	Limited power sources		P
	a) Inherently limited output		P
	b) Impedance limited output		N/A
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition	(see appended table 2.5)	P
	Use of integrated circuit (IC) current limiters		N/A
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA)	(See appended table 2.5)	—
	Current rating of overcurrent protective device (A) ..		—

2.6	Provisions for earthing and bonding		P
2.6.1	Protective earthing	Parts connected to protective earthing reliably.	P
2.6.2	Functional earthing	Secondary functional ground separated to primary by reinforced or double insulation.	P
	Use of symbol for functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		P
2.6.3.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.2	Size of protective earthing conductors	Appliance inlet used. Power supply cord is not provided.	N/A
	Rated current (A), cross-sectional area (mm ²), AWG..... :		—
2.6.3.3	Size of protective bonding conductors	See 2.6.3.4.	P
	Rated current (A), cross-sectional area (mm ²), AWG..... :	See below.	—
	Protective current rating (A), cross-sectional area (mm ²), AWG..... :	Protective current rating is not more than 16A, and comply with the requirements of 2.6.3.4	P
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)..... :	(see appended table 2.6.3.4)	P
2.6.3.5	Colour of insulation	Protective earth terminal and bonding conductors are in appliance inlet. No green/yellow insulated protective earth conductors are provided.	N/A
2.6.4	Terminals		P
2.6.4.1	General		P
2.6.4.2	Protective earthing and bonding terminals	The equipment is provided with an appliance inlet and the test of sub-clause 2.6.3.4 was performed for protective bonding conductor and their 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	Appliance inlet used.	P
2.6.5	Integrity of protective earthing		P
2.6.5.1	Interconnection of equipment	No interconnection of protective earthing to other equipment.	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switches or fuses in earthing conductors.	P
2.6.5.3	Disconnection of protective earth	Appliance inlet used.	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

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.5	Parts removed during servicing	Connections to protective earthing cannot be removed unless hazardous voltage is removed from the part simultaneously.	P
2.6.5.6	Corrosion resistance	All safety earthing connections in compliance with Annex J.	P
2.6.5.7	Screws for protective bonding	No self tapping screws are used.	P
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A

2.7	Overcurrent and earth fault protection in primary circuits		P
2.7.1	Basic requirements	Equipment relies on a 16A fuse or circuit breaker of the wall outlet protection of the building installation in regard to L to N short circuit. Over current protection provided by the built-in current fuse.	P
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not simulated in 5.3.7		N/A
2.7.3	Short-circuit backup protection	Pluggable equipment type A. The building installation is considered as providing short-circuit backup protection.	P
2.7.4	Number and location of protective devices	Over current protection by one built-in current fuse.	P
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel	No service work necessary.	N/A

2.8	Safety interlocks		N/A
2.8.1	General principles	No safety interlock provided.	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

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Clause	Requirement + Test	Result - Remark	Verdict
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A

2.9	Electrical insulation		P
2.9.1	Properties of insulating materials	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	Humidity treatment performed for 48 hours for equipment, after humidity test, Hi-pot test has been performed, see table 5.2.	P
	Relative humidity (%), temperature (°C)	93%, 30°C	—
2.9.3	Grade of insulation	Insulation is considered to be functional, basic, reinforced or double insulation.	P
2.9.4	Separation from hazardous voltages	Double or reinforce insulation.	P
	Method(s) used		—

2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General	See below.	P
2.10.1.1	Frequency	Considered.	P
2.10.1.2	Pollution degrees	Pollution degree II	P
2.10.1.3	Reduced values for functional insulation	The functional insulations complies with 5.3.4 a) and c)	P
2.10.1.4	Intervening unconnected conductive parts	Considered.	P
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage	See below.	P
2.10.2.1	General	The rms and the peak voltage of the appliance is mains voltage 240V. The unit was connected to a 240V TN power system.	P
2.10.2.2	RMS working voltage	(See appended table 2.10.2)	P
2.10.2.3	Peak working voltage	(See appended table 2.10.2)	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.3	Clearances	(See appended table 2.10.3 and 2.10.4)	P
2.10.3.1	General	See below.	P
2.10.3.2	Mains transient voltages	240Vac	P
	a) AC mains supply	Overvoltage category II for primary circuit and transient voltage 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	Only the functional insulation in secondary circuits complied with clause 5.3.4.	N/A
2.10.3.5	Clearances in circuits having starting pulses	The circuit will not generating starting pulse.	N/A
2.10.3.6	Transients from a.c. mains supply	See 2.10.3.2.	P
2.10.3.7	Transients from d.c. mains supply		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems	No TNV circuit	N/A
2.10.3.9	Measurement of transient voltage levels	See 2.10.3.6.	N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances	See below	P
2.10.4.1	General	(see appended table 2.10.3 and 2.10.4)	P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests	Only material group IIIb is assumed.	—
2.10.4.3	Minimum creepage distances	(See appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation	See below	P
2.10.5.1	General	Considered	P
2.10.5.2	Distances through insulation	See appended table 2.10.5	P
2.10.5.3	Insulating compound as solid insulation	Certified sources of opto couplers used. Complied with 2.10.5.2 and 2.10.10.	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.4	Semiconductor devices	For optocouplers see subclause 2.10.5.3.	P
2.10.5.5.	Cemented joints		N/A
2.10.5.6	Thin sheet material – General	The thin sheet materials of polyester tape used in and around transformer T1	P
2.10.5.7	Separable thin sheet material	At least two layers of insulation tape used around transformer T1	P
	Number of layers (pcs)..... :	Min.2 layers	—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure		P
	Electric strength test	See appended table 5.2	—
2.10.5.11	Insulation in wound components	See below	P
2.10.5.12	Wire in wound components	Approved tripe insulated wire used in secondary winding of transformer (T1)	P
	Working voltage :	See appended table 2.10.2	P
	a) Basic insulation not under stress :		N/A
	b) Basic, supplementary, reinforced insulation :	See below.	P
	c) Compliance with Annex U :	Approved multiple insulated winding wires used, comply with Annex U	P
	Two wires in contact inside wound component; angle between 45° and 90°..... :	The teflon tubing is provided for both primary and secondary winding of transformer (T1) to protect against mechanical stress.	P
2.10.5.13	Wire with solvent-based enamel in wound components	No wire with solvent-based enamel in wound components.	N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage :		N/A
	- Basic insulation not under stress :		N/A
	- Supplementary, reinforced insulation :		N/A
2.10.6	Construction of printed boards	See below.	P
2.10.6.1	Uncoated printed boards	(See appended table 2.10.3 and 2.10.4).	P
2.10.6.2	Coated printed boards		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs) :		N/A
2.10.7	Component external terminations		N/A
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling	Approved sources of opto-coupler used. For detail see table 1.5.1.	P
2.10.10	Test for Pollution Degree 1 environment and insulating compound	See above.	P
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts	Certificated opto-coupler used.	P

3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	All internal wires are UL recognized, PVC insulated, rated VW-1 or FT-1 or better, min. 60°C having gauge suitable for current intended to be carried. The internal wires are suitable to carry the intended current of the equipment.	P
3.1.2	Protection against mechanical damage	The wires are routed away from sharp edges and parts, which could damage insulation.	P
3.1.3	Securing of internal wiring	The wires are secured by quick connection or soldering with solder pin so that a loosening of the terminal connection is unlikely.	P

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Clause	Requirement + Test	Result - Remark	Verdict
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the application and the working voltage.	P
3.1.5	Beads and ceramic insulators	Not used.	N/A
3.1.6	Screws for electrical contact pressure	Electrical screw connection is only connecting protective earth to chassis. Metal screw engages more than 2 threads. Screws made of insulating material are not used where electrical connections, including protective earthing, are involved.	P
3.1.7	Insulating materials in electrical connections		P
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors	All conductors are reliable secured.	P
	10 N pull test	Test performed and passed.	P
3.1.10	Sleeving on wiring		N/A

3.2	Connection to a mains supply		P
3.2.1	Means of connection	See below.	P
3.2.1.1	Connection to an a.c. mains supply	The unit is 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		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter of cable and conduits (mm)		—
3.2.4	Appliance inlets	The appliance inlet complies with IEC 60320. The power cord can be inserted without difficulties and does not support the unit.	P
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords		N/A
	Type		—
	Rated current (A), cross-sectional area (mm ²), AWG		—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N)		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Longitudinal displacement (mm)		—
3.2.7	Protection against mechanical damage	No parts under this unit likely to damage the power supply cord.	P
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g)		—
	Radius of curvature of cord (mm)		—
3.2.9	Supply wiring space		N/A

3.3	Wiring terminals for connection of external conductors		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm ²)		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm)		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

3.4	Disconnection from the mains supply		P
3.4.1	General requirement		P
3.4.2	Disconnect devices	The appliance inlet is considered to be the disconnect device.	P
3.4.3	Permanently connected equipment	Not a permanently connected equipment.	N/A
3.4.4	Parts which remain energized	When appliance inlet is disconnected no remaining parts with hazardous voltage in the equipment.	P
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment	Disconnect device disconnects both poles simultaneously.	P
3.4.7	Number of poles - three-phase equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A

3.5	Interconnection of equipment		P
3.5.1	General requirements	See below.	P
3.5.2	Types of interconnection circuits	Interconnection circuits of SELV through secondary output connector.	P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection.	N/A
3.5.4	Data ports for additional equipment	See clause 2.5 for details.	P

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		N/A
	Angle of 10°	The unit is less than 7 kg.	N/A
	Test force (N)		N/A

4.2	Mechanical strength		P
4.2.1	General	See below.	P
	Rack-mounted equipment		N/A
4.2.2	Steady force test, 10 N	Considered.	P
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N	250 N applied to outer enclosure for surface of enclosure. No energy or other hazards. Force applied at various locations of: - top enclosure - bottom enclosure - side enclosure	P
4.2.5	Impact test	No hazard as result from steel ball fall test at various locations of : - top enclosure - bottom enclosure - side enclosure	P
	Fall test	After tests, no hazards.	P
	Swing test	After tests, no hazards.	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.6	Drop test; height (mm)		N/A
4.2.7	Stress relief test	After 7 hours at temperature of 70.8°C and cooling down to room temperature, no shrinkage, distortion or loosening any enclosure part was noticeable on the equipment. Test was performed for all sources of enclosure material.	P
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified		N/A
4.2.9	High pressure lamps		N/A
4.2.10	Wall or ceiling mounted equipment; force (N)		N/A

4.3	Design and construction		P
4.3.1	Edges and corners	All edges and corners are judged to be sufficiently well rounded so as not to constitute a hazard.	P
4.3.2	Handles and manual controls; force (N)		N/A
4.3.3	Adjustable controls		N/A
4.3.4	Securing of parts	No connections likely to be exposed to mechanical stress are inside the unit.	P
4.3.5	Connection by plugs and sockets	No mismatch of connectors, plugs or socket possible.	P
4.3.6	Direct plug-in equipment		N/A
	Torque		—
	Compliance with the relevant mains plug standard		N/A
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries	No battery.	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		N/A
4.3.10	Dust, powders, liquids and gases		N/A
4.3.11	Containers for liquids or gases		N/A
4.3.12	Flammable liquids		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Quantity of liquid (l)		N/A
	Flash point (°C)		N/A
4.3.13	Radiation	See below.	P
4.3.13.1	General	LEDs are used as indicator.	P
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg)		—
	Measured high-voltage (kV)		—
	Measured focus voltage (kV)		—
	CRT markings		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A
	Part, property, retention after test, flammability classification		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation		N/A
4.3.13.5	Lasers (including laser diodes) and LEDs	See below.	P
4.3.13.5.1	Lasers (including laser diodes)		N/A
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)	LEDs in this equipment are used for indicating function with low optical power.	P
4.3.13.6	Other types		N/A

4.4	Protection against hazardous moving parts		N/A
4.4.1	General	No moving parts.	N/A
4.4.2	Protection in operator access areas		N/A
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a).....		N/A
	Is considered to cause pain, not injury. b)		N/A
	Considered to cause injury. c)		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.5	Thermal requirements		P
4.5.1	General	No exceeding temperature.	P
4.5.2	Temperature tests	(See appended table 4.5)	P
	Normal load condition per Annex L :	(See Annex L)	—
4.5.3	Temperature limits for materials	(See appended table 4.5)	P
4.5.4	Touch temperature limits	(See appended table 4.5)	P
4.5.5	Resistance to abnormal heat :		N/A
4.6	Openings in enclosures		N/A
4.6.1	Top and side openings		N/A
	Dimensions (mm) :		—
4.6.2	Bottoms of fire enclosures		N/A
	Construction of the bottom, dimensions (mm) ... :		—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm) :		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C), time (weeks)..... :		—
4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	See below.	P
	Method 1, selection and application of components wiring and materials	Method 1: Selection and application of components and materials which minimize the possibility of ignition and spread of flame.	P
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure	See below.	P
4.7.2.1	Parts requiring a fire enclosure	With having the following parts: - components in primary - components in secondary - insulated wiring The fire enclosure is required.	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.2.2	Parts not requiring a fire enclosure	See 4.7.2.1.	N/A
4.7.3	Materials		P
4.7.3.1	General	The propagation of fire is minimized through the fire enclosure construction.	P
4.7.3.2	Materials for fire enclosures	See table 1.5.1.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	Connectors are made of materials of Class V-2 minimum.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal materials are rated V-2 or better and 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	See sub-clauses 5.1.2 to 5.1.6.	P
5.1.2	Configuration of equipment under test (EUT)	See below.	P
5.1.2.1	Single connection to an a.c. mains supply	EUT has only one a.c. mains connection.	P
5.1.2.2	Redundant multiple connections to an a.c. mains supply	No multiple power sources.	N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	No multiple power sources.	N/A
5.1.3	Test circuit	Using figure 5A.	P
5.1.4	Application of measuring instrument	Using measuring instrument in annex D.	P
5.1.5	Test procedure	The touch current was measured from mains to SELV connector and to metal case.	P
5.1.6	Test measurements	See below.	P
	Supply voltage (V)	+10% of the rated voltage.	—
	Measured touch current (mA)	(see appended table 5.1)	—
	Max. allowed touch current (mA)	(see appended table 5.1)	—
	Measured protective conductor current (mA)		—
	Max. allowed protective conductor current (mA) ...		—
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	Not connected to 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	Table 5B used.	P

5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	(See appended table 5.3).	P
5.3.2	Motors		N/A
5.3.3	Transformers	With the shorted and overload of the transformer, no high temperature of the transformer was recorded. Results of the tests see appended table 5.3 and Annex C.	P
5.3.4	Functional insulation	Complies with a) and c).	P
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE		N/A
5.3.7	Simulation of faults	(See appended table 5.3).	P
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	No fire occurred. No molten metal was emitted.	P
5.3.9.1	During the tests	No fire propagated beyond the equipment. No molten metal was emitted.	P
5.3.9.2	After the tests	Electric strength test made.	P

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Clause	Requirement + Test	Result - Remark	Verdict
6	CONNECTION TO TELECOMMUNICATION NETWORKS		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2.1	Requirements	No TNV circuits.	N/A
	Supply voltage (V)		—
	Current in the test circuit (mA)		—
6.1.2.2	Exclusions		N/A
6.2	Protection of equipment users from overvoltages on telecommunication networks		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A
6.3	Protection of the telecommunication wiring system from overheating		N/A
	Max. output current (A)		—
	Current limiting method		—
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N/A
7.1	General		N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A

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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)		N/A
A.1.1	Samples		N/A
	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		N/A
	Wall thickness (mm).....		—
A.2.2	Conditioning of samples; temperature (°C)		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s).....		—
	Sample 2 burning time (s).....		—
	Sample 3 burning time (s).....		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s).....		—
	Sample 2 burning time (s).....		—
	Sample 3 burning time (s).....		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

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

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

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Clause	Requirement + Test	Result - Remark	Verdict
	Method of protection	By protection circuit design.	—
C.1	Overload test	(see appended table 5.3)	P
C.2	Insulation	See below.	P
	Protection from displacement of windings	(see appended tables 5.2 and C.2)	P

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

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N/A
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F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		P
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G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	Earthed d.c. mains supplies		N/A
G.2.3	Unearthed d.c. mains supplies		N/A
G.2.4	Battery operation		N/A
G.3	Determination of telecommunication network transient voltage (V)		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks		N/A
G.4.2	Transients from telecommunication networks		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
	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		—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V)		N/A
K.3	Thermostat endurance test; operating voltage (V) :		N/A
K.4	Temperature limiter endurance; operating voltage (V)		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)		P
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		P
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringling signal		N/A
M.3.1.1	Frequency (Hz)		—
M.3.1.2	Voltage (V)		—
M.3.1.3	Cadence; time (s), voltage (V)		—

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Clause	Requirement + Test	Result - Remark	Verdict
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)		P
	- Preferred climatic categories	Approved sources of Varistor used. Refer to appended table 1.5.1.	P
	- Maximum continuous voltage	See above.	P
	- Combination pulse current	See above.	P
	Body of the VDR Test according to IEC60695-11-5.....		N/A
	Body of the VDR. Flammability class of material (min V-1).....		P
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N/A
			—

IEC/EN60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		P
		Approved TIW used in T1 secondary.	—

V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P
V.1	Introduction	Considered	P
V.2	TN power distribution systems	Considered	P

W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A

X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A

Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N/A
Y.1	Test apparatus		N/A
Y.2	Mounting of test samples		N/A
Y.3	Carbon-arc light-exposure apparatus		N/A
Y.4	Xenon-arc light exposure apparatus		N/A

Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		N/A
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AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N/A
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BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—
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CC	ANNEX CC, Evaluation of integrated circuit (IC) current limiters		N/A
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IEC/EN60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
CC.1	General		N/A
CC.2	Test program 1.....:		N/A
CC.3	Test program 2.....:		N/A
CC.4	Test program 3.....:		N/A
CC.5	Compliance.....:		N/A

DD	ANNEX DD, Requirements for the mounting means of rack-mounted equipment	N/A
DD.1	General	N/A
DD.2	Mechanical strength test, variable N.....:	N/A
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

IEC/EN60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity 1)
01. Plastic enclosure	SABIC INNOVATIVE PLASTICS B V	940(f1)	V-1 or better, min. 2.5 mm thickness, min. 80°C	UL 94, UL746C	ULE45329
02. Mylar sheet (above power board on cover)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117, DFR117ECO, DFR117ECOB, DFR117ECOC	Min V-2, min.125°C, min. 0.4mm	UL 94	ULE199019
03. Thermal pad(above power board)	SHENZHEN NUODE SITE TECHNOLOGY CO LTD	NDST-CP120, NDST-SB-110,NDST-SP-001, NDST-SPT	Min V-2, 150°C, Min. 0.8mm thickness	UL 94	ULE338508
	DONGGUAN CITY GOLDCOOL NANO TECHNOLOGY CO LTD	GC-TP	Min V-2, 105°C,Min. 0.8mm thickness	UL 94	UL E364451
04. Thermal pad(under power board)	SHENZHEN NUODE SITE TECHNOLOGY CO LTD	NDST-CP120, NDST-SB-110,NDST-SP-001, NDST-SPT	Min V-2, 150°C, Min. 3.0mm thickness	UL 94	ULE338508
	DONGGUAN CITY GOLDCOOL NANO TECHNOLOGY CO LTD	GC-TP	Min V-2, 105°C,Min. 3.0mm thickness	UL 94	UL E364451
05. AC inlet	Shenzhen Kangyongda Electronics Co., Ltd.	DE-14-3P, DE-14	10A, 250Vac, 70 °C	IEC 60320-1	VDE 40036820
	Steady Electronics Corporation	2111	10A, 250Vac, 70 °C	IEC 60320-1	VDE 40011922
06. PCB	Interchangeable	Interchangeable	V-1 or better, 105°C	UL 796	UL
07. Fuse (F1)	Zhong Shan LanBao Electrical Appliances Co., Ltd.	RTI-10	T3.15AL, 250V	IEC/EN 60730-1 IEC/EN 60730-3	VDE 40017009
08. Heat-shrink tubing (for F1)	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	WF	VW-1 or better, min. 300V, min.105 °C	UL 224	UL
09. Thermistor (R7) (Optional)	--	--	3A max., 5 Ω at 25°C	--	--

IEC/EN60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
10. Varistor (RV1)	Centra Science Corp.	CNR-10D471K	Min. 300Vac, 85°C, complied with 6KV/3KA test., coating V-1 min.	IEC 61051-1, IEC 61051-2, IEC 61051-2-2	VDE 40008220
	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	10D471K	Min. 300Vac, 85°C, complied with 6KV/3KA test., coating V-1 min.	IEC 61051-1, IEC 61051-2, IEC 61051-2-2	VDE 40023049
	Cerglass MFG Inc	10D471K	Min. 300Vac, 85°C, complied with 6KV/3KA test., coating V-1 min.	IEC 61051-1, IEC 61051-2, IEC 61051-2-2	VDE 40028836
	Hongzhi Enterprises Ltd.	10D471K	Min. 300Vac, 85°C, complied with 6KV/3KA test., coating V-1 min.	IEC 61051-1, IEC 61051-2, IEC 61051-2-2	VDE 40037512
	Guangxi New Future Information Industry Co., Ltd.	10D471K	Min. 300Vac, 85°C, complied with 6KV/3KA test., coating V-1 min.	IEC 61051-1, IEC 61051-2, IEC 61051-2-2	VDE 40030322
11. X-Cap (C2)	Shenzhen Yimanfeng Science And Technology Co., Ltd.	X2-MPX/MKP	X2 type, 275/280VAC, 0.33uF, 110°C	IEC/EN 60384-14	VDE 40028516
	Shenzhen Jinghao Capacitor Co., Ltd.	CBB62B	X2 type, 280VAC, 0.33uF, 110°C	IEC/EN 60384-14	VDE 40018690
	Dain Electronics Co., Ltd.	MEX, MPX, NPX	X2 type, 275VAC, 0.33uF, 100/110°C	IEC/EN 60384-14	VDE 40018798
	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	MPX	X2 type, 275VAC, 0.33uF, 110°C	IEC/EN 60384-14	VDE 40034679
	Hongzhi Enterprises Ltd.	MPX	X2 type, 275VAC, 0.33uF, 100°C	IEC/EN 60384-14	VDE 40023936
12. Bleeder resistor (R1, R2, R3, R4, R5, R6)	--	--	330KΩ, 1/8W	--	--
13. Chock (L1)	DONGGUAN SUN HUNG KIN ELECTRICAL CO LTD (HUNG KAY INDUSTRIAL CO LTD)	LT.10U1531W	Min. 105°C	--	--
	Shenzhen Cenker Enterprise Ltd.	LT.10U1531W	Min. 105°C	--	--
14. Bridge-Capacitors (C38)(Y1 type)	Hongzhi Enterprises Ltd.	Y1	1000pF, min. 250Vac, min.85 °C	EN60384-14	VDE 40038760

IEC/EN60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
	Hsuan Tai Electronic Co.,Ltd.	CY	1000pF, min. 250Vac, 125 °C	EN60384-14	VDE 40008912
	Jyh Chung Electronic Co., Ltd.	JD	1000pF, min. 250Vac, min.85 °C	EN60384-14	VDE 137027
	Shenzhen HaotianElectronic Co., Ltd.	HT	1000pF, min. 250Vac, 125 °C	EN60384-14	VDE 40029300
	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.,	CD-Series	1000pF, min. 250Vac, 125 °C	EN60384-14	VDE40025 754
15. Bridge-Capacitors (C1/C3/C15)(Y 1 type)	Hongzhi Enterprises Ltd.	Y1	2200pF, min. 250Vac, min.85 °C	EN60384-14	VDE 40038760
	Hsuan Tai Electronic Co.,Ltd.	CY	2200pF, min. 250Vac, 125 °C	EN60384-14	VDE 40008912
	Jyh Chung Electronic Co., Ltd.	JD	2200pF, min. 250Vac, min.85 °C	EN60384-14	VDE 137027
	Shenzhen HaotianElectronic Co., Ltd.	HT	2200pF, min. 250Vac, 125 °C	EN60384-14	VDE 40029300
	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.,	CD-Series	2200pF, min. 250Vac, 125 °C	EN60384-14	VDE40025 754
16. Bridging Diode (D1)	--	--	Min.2A, min. 600V	--	--
17. Mosfet (Q1)	--	--	Min. 7.5A, min.600V	--	--
18. Current sense resistor(R20/R 21/R22/R23)	--	--	1.8Ω, 1/4W	--	--
19. Photo coupler (U1)	Cosmo Electronics Corporation	K1010	Int. Cr=5.3 mm, Ext. Cr=8.0 mm, Dti=0.5 mm, min. 100 °C. (comply with thermal cycling test, clause 2.10.11)	EN 60747-5-2, IEC/EN 60950-1,	VDE 101347
	Sharp Corporation Electronic Components and Devices Division	PC817	Ext. Cr. =6.4mm, Min. 100 °C	EN 60747-5-5,	VDE 40008087

IEC/EN60950-1					
Clause	Requirement + Test		Result - Remark		Verdict
20. Transformer (T1)	DONGGUAN SUN HUNG KIN ELECTRICAL CO LTD (HUNG KAY INDUSTRIAL CO LTD)	SP7289	Class A	--	--
20-01. Bobbin	CHANG CHUN PLASTICS CO., LTD.	T375J	Phenolic, V-1 or better, 150°C, min.	UL 94, UL 746C	UL
20-02. Triple insulation wire (Secondary)	Furukawa Electric Co., Ltd.	TEX-E	130°C	IEC/EN 60950-1	VDE
20-03. Insulating Tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT*	130°C	UL 510	UL
Supplementary information:					

1.5.1	TABLE: Opto Electronic Devices	P
Manufacturer : See table 1.5.1 Type..... : See table 1.5.1 Separately tested..... : See table 1.5.1 Bridging insulation : Reinforced insulation External creepage distance : See table 1.5.1 Internal creepage distance : See table 1.5.1 Distance through insulation : See table 1.5.1 Tested under the following conditions : -- Input..... : -- Output..... : --		
supplementary information		

IEC/EN60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	I _{rated} (A)	P (W)	Fuse #	I _{fuse} (A)	Condition/status
90V, 50Hz	0.566	--	30.7	F1	0.566	Maximum normal load
90V, 60Hz	0.564	--	30.6	F1	0.564	Maximum normal load
100V, 50Hz	0.516	0.8	30.6	F1	0.516	Maximum normal load
100V, 60Hz	0.515	0.8	30.5	F1	0.515	Maximum normal load
240V, 50Hz	0.260	0.8	30.8	F1	0.260	Maximum normal load
240V, 60Hz	0.258	0.8	30.5	F1	0.258	Maximum normal load
264V, 50Hz	0.242	--	30.8	F1	0.242	Maximum normal load
264V, 60Hz	0.241	--	30.8	F1	0.241	Maximum normal load
supplementary information: "Maximum normal load" was defined as follows: All RJ45 ports transfer data continuously, and PoE output port dummy load 30W.						

2.1.1.5 c) 1)	TABLE: max. V, A, VA test				P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
+51V	--	51.68	0.68	35.14VA	
supplementary information:					

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

2.1.1.7	TABLE: Discharge test			P
Condition		Calculated(s)	Measured (s)	Comments
Normal(L to N)		0.163	0.156	Vo=372V, 37% of Vo=137.64V, measured voltage after 1s=4V
Supplementary information: C2=0.33uF, R=0.495MΩ(R1=R2=R3=R4=R5=R6=0.33MΩ)				

2.2	TABLE: evaluation of voltage limiting components in SELV circuits			P
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IEC/EN60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
--	V peak	V d.c.	--
T1 Pin7,8 to Pin11,12	308	--	--
After C6 to return	--	51.27	C6
After R9/R11/D3 to return	--	51.8	R9/R11/D3
Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)		
C6 S-C	51.27Vdc		
D3 S-C	0		
supplementary information:			
S-C = short circuit, O-C = open circuit			

2.4.2	TABLE: limited current circuit measurement					P
Location	Voltage (V)	Current (mA)	Freq. (Hz)	Limit (mA)	Comments	
C15 secondary pin to earth	0.88	0.44	60	0.7	C15= 2200pF	
C38 secondary pin to earth (C1/C3)	1.12	0.56	60	0.7	C38= 1000pF	
Supplementary information:						
Test voltage: 264V/60Hz						

2.5	TABLE: Limited power sources					P
Circuit output tested: see below						
Note: Measured Uoc (V) with all load circuits disconnected:						
Components	Test condition (single fault)	Uoc (V)	I _{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
Output +48V	--	51.68	0.68	8	35.14VA	100
Output +48V	R20/ R21/ R22/ R23 S-C	0	0	8	0	100
Output +48V	R29/ R28 S-C	0	0	8	0	100
Output +48V	U1 pin1-2 S-C	0	0	8	0	100

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Clause	Requirement + Test			Result - Remark		Verdict
Output +48V	U1 pin3-4 S-C	0	0	8	0	100
Output +48V	U1 pin1 O-C	0	0	8	0	100
Output +48V	U1 pin3 O-C	0	0	8	0	100
POE port: Pin1,2 to pin3,6	--	51.68	0.7	8	33.8	100
POE port: Pin1,2 to pin3,6	U5 pin21 to pin26 S-C	51.74	1.2	8	37.6	100
POE port: Pin4,5,7,8 to Return	--	0	0	8	0	100
DATA IN port: all Pins to Return	--	0	0	8	0	100
supplementary information:						
S-C = short circuit, O-C = open circuit						

2.6.3.4	TABLE: Resistance of earthing measurement		P
Location	Resistance measured (mΩ)	Comments	
PE pin to metal enclosure	10	32A / 2minutes	

2.10.2	Table: working voltage measurement			P
Location	RMS voltage (V)	Peak voltage (V)	Comments	
T1: Pin 1 to Pin 7,8	213	352	--	
T1: Pin 1 to Pin 11,12	238	576	Max. V_{PEAK} Of T1	
T1: Pin 3 to Pin 7,8	273	548	Max. V_{RMS} Of T1	
T1: Pin 3 to Pin 11,12	230	448	--	
T1: Pin 4 to Pin 7,8	224	360	--	
T1: Pin 4 to Pin 11,12	239	412	--	
T1: Pin 5 to Pin 7,8	227	444	--	
T1: Pin 5 to Pin 11,12	230	424	--	
T1: Pin 6 to Pin 7,8	225	360	--	
T1: Pin 6 to Pin 11,12	238	412	--	
C15 primary to secondary	222	352	--	
U1 Pin 3 to Pin 2	258	400	--	
U1 Pin 3 to Pin 1	258	400	--	
U1 Pin 4 to Pin 2	258	400	--	
U1 Pin 4 to Pin 1	256	400	--	
supplementary information:				

IEC/EN60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

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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:							
Line to Neutral	420	250	1.5	8.2	2.5	8.2	
PCB trace between F1	420	250	1.5	2.7	2.5	2.7	
Basic/supplementary:							
Line to GND	420	250	2.0	4.1	2.5	4.1	
Neutral to GND	420	250	2.0	4.1	2.5	4.1	
Primary components (R7) to GND	420	250	2.0	3.1	2.5	3.1	
PCB trace under C1	420	250	2.0	6.5	2.5	6.5	
Reinforced:							
Primary trace to Secondary trace of PCB under U1	420	250	4.0	5.5	5.0	5.5	
Primary trace to Secondary trace of PCB under C38	420	250	4.0	6.5	5.0	6.5	
Primary trace to Secondary trace of PCB under C1/C3	420	250	4.0	6.5	5.0	6.5	
Primary trace to Secondary trace of PCB under C15	420	250	4.0	6.5	5.0	6.5	
Primary components (H1) to accessible enclosure	420	250	4.0	6.0	5.0	6.0	
Primary trace to Secondary trace of PCB under T1	576	273	4.6	6.0	5.5	6.0	
T1 core to secondary trace	576	273	4.6	6.0	5.5	6.0	
T1 primary wire to secondary components (C34)	576	273	4.6	8.0	5.5	8.0	
Supplementary information:							
1. Functional insulation shorted, see 5.3.4 a) 2. Sleeving/Tubing components: secondary wire of PSU 3. Glue component: R7. 4. Transformer T1 insulation glue at the bottom of the package to the secondary side edge pin feet. 5. Transformer body is wrapped with min.2 layers of insulation tape. 6. The transformer construction refers to appended table C.2.							

2.10.5	TABLE: Distance through insulation measurements	P
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IEC/EN60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Optocoupler (U1) (RI)	400	258	3000Vac	0.4	1)
Supplementary information: 1) For distance through insulation, see appended table 1.5.1 for details.					

4.3.8	TABLE: Batteries								N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available					--			N/A	
Is it possible to install the battery in a reverse polarity position?					--			N/A	
	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	--	--	--	--	--	--	--	--	--
Supplementary information:									
Test results:					--			Verdict	
- Chemical leaks					--			N/A	
- Explosion of the battery					--			N/A	
- Emission of flame or expulsion of molten metal					--			N/A	
- Electric strength tests of equipment after completion of tests					--			N/A	
Supplementary information:									

4.3.8	TABLE: Batteries	N/A
Battery category.....:		
Manufacturer.....:		
Type / model.....:		
Voltage.....:		
Capacity.....:		
Tested and Certified by (incl. Ref. No.)		
Circuit protection diagram:		

IEC/EN60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

MARKINGS AND INSTRUCTIONS (1.7.12, 1.7.15)

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

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

4.5	TABLE: Thermal requirements					P
	Supply voltage (V)	90Vac / 50Hz	264Vac / 50Hz			—
	Ambient Tmin (°C)	See below	See below	--		—
	Ambient Tmax (°C)	--	--	--		—
Maximum measured temperature T of part/at:		T (°C)				Allowed Tmax (°C)
01. T1 coil	66.7	81.9	67.9	83.8	--	90
02. T1 core	51.1	66.3	50.2	66.1	--	90
03. U1 body	56.2	71.4	55.1	71.0	--	100
04. C15 body	63.9	79.1	62.3	78.2	--	85
05. C3 body	59.9	75.1	55.3	71.2	--	85
06. C1 body	56.2	71.4	52.1	68.0	--	85
07. C38 body	55.3	70.5	53.0	68.9	--	85
08. AC inlet	42.2	57.4	37.9	53.8	--	70
09. RV1 body	51.5	66.7	45.0	60.9	--	85
10. PWB near R7	57.4	72.6	47.4	63.3	--	105
11. C2 body	53.0	68.2	47.7	63.6	--	85
12. L1 coil	65.9	81.1	52.5	68.4	--	105
13. PWB near D1	64.6	79.8	51.6	67.5	--	105
14. C4 body	58.9	74.1	50.8	66.7	--	105
15. PWB near Q1	60.7	75.9	54.6	70.5	--	105
16. C7 body	59.6	74.8	58.1	74.0	--	105
17. L2 coil	58.8	74.0	57.8	73.7	--	105
18. PWB near U5	59.3	74.5	58.6	74.5	--	105
19. PWB near T2	55.7	70.9	55.1	71.0	--	105
20. Inside plastic enclosure near T1	45.6	60.8	44.6	60.5	--	--

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Clause	Requirement + Test				Result - Remark		Verdict
21. Outside plastic enclosure near T1	41.7	56.9	40.4	56.3	--	95	
22. Ambient	24.8	40.0	24.1	40.0	--	--	
Temperature T of winding:	t1 (°C)	R1 (Ω)	t2 (°C)	R2 (Ω)	T (°C)	Allowed Tmax (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information: 1. The temperatures were measured under the worst case of normal mode defined in sub-clause 1.2.2.1 and as described in sub-clause 1.6.2 at voltages as described above. 2. With a specified ambient temperature of + 40°C. Therefore the maximum temperatures measured are recalculated as follows: $T + (40 - T_{amb})$, where T is the maximum temperature measured during test and T_{amb} is the ambient temperature during the test. 3. The maximum temperatures are calculated as follows: Winding components (with safety isolation): - Class ATmax = 100°C – 10°C = 90°C							

4.5.5	TABLE: Ball pressure test of thermoplastic parts			N/A
	Allowed impression diameter (mm)	≤ 2 mm		—
Part		Test temperature (°C)	Impression diameter (mm)	
--		--	--	
Supplementary information:				

4.6.1, 4.6.2	TABLE: Enclosure openings			N/A
Location		Size (mm)	Comments	
--		--	--	
supplementary information:				

4.7	TABLE: Resistance to fire					P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
Plastic enclosure	--	See table 1.5.1	See table 1.5.1	--	--	
PWB	--	--	--	V-1 min.	--	
Supplementary information:						

5.1	TABLE: touch current measurement				P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions		

IEC/EN60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
Primary and Secondary (Normal/Reverse)	0.05/0.05	0.25	Terminal A to output connector with switch "e" close
supplementary information:			
Input voltage: 264 Vac Input frequency: 60 Hz Overall capacity: See table 1.5.1			

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Unit: primary to secondary output		AC	3000	No
Unit: primary to plastic enclosure with foil		AC	3000	No
Mylar sheet		AC	3000	No
Thermal pad (All source)		AC	3000	No
T1: primary to secondary		AC	3000	No
T1: secondary to core		AC	3000	No
One layer of insulation tape of T1		AC	3000	No
Supplementary information:				

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)				See below.	—
	Power source for EUT: Manufacturer, model/type, output rating				--	—
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
T1 Pin7,8 to Pin11,12 (after D3)	O-L	240V	7hrs	F1	0.298A to 0.394A to 0.475A to 0.025A	When T1 pin7,8 to pin11,12 (after D3) was overload to 0.7A, unit shut down. Maximum temperature: 01. T1 coil = 95.8°C 02. T1 core = 92.6°C 03. Ambient= 25.9°C NB, NC, NT
Output	O-L	240V	7hrs	F1	0.305A to 0.316A to 0.328A to 0.033A	When output was overload to 0.72A, unit shut down. Maximum temperature: 01. T1 coil = 74.3°C 02. T1 core = 54.4°C 03. Ambient= 25.9°C NB, NC, NT

IEC/EN60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
Output	S-C	240V	10mins	F1	0.031A	Unit shut down immediately, on damaged, no hazard. NB, NC, NT
R28/R29	S-C	240V	10mins	F1	0.031A	Unit shut down immediately, on damaged, no hazard. NB, NC, NT
C7	S-C	240V	10mins	F1	0.031A	Unit shut down immediately, on damaged, no hazard. NB, NC, NT
C10	S-C	240V	10mins	F1	0.031A	Unit shut down immediately, on damaged, no hazard. NB, NC, NT
D3	S-C	240V	10mins	F1	0.031A	Unit shut down immediately, on damaged, no hazard. NB, NC, NT
C6	S-C	240V	10mins	F1	0.26A	Unit operated normally, no damaged, no hazards. NB, NC, NT
U2 Pin 2 to Pin 5	S-C	240V	10mins	F1	0.031A	Unit shut down immediately, on damaged, no hazard. NB, NC, NT
U1 Pin1 to Pin 2	S-C	240V	10mins	F1	0.031A	Unit shut down immediately, on damaged, no hazard. NB, NC, NT
U1 Pin3 to Pin 4	S-C	240V	10mins	F1	0.031A	Unit shut down immediately, on damaged, no hazard. NB, NC, NT
U1 Pin1	O-C	240V	10mins	F1	0.031A	Unit shut down immediately, on damaged, no hazard. NB, NC, NT
U1 Pin3	O-C	240V	10mins	F1	0.031A	Unit shut down immediately, on damaged, no hazard. NB, NC, NT
T1 Pin1 to Pin 3	S-C	240V	10mins	F1	0.031A	Unit shut down immediately, on damaged, no hazard. NB, NC, NT
T1 Pin5 to Pin 6	S-C	240V	10mins	F1	0.031A	Unit shut down immediately, on damaged, no hazard. NB, NC, NT
T1 Pin 7,8 to Pin 11,12	S-C	240V	10mins	F1	0.031A	Unit shut down immediately, on damaged, no hazard. NB, NC, NT

IEC/EN60950-1						
Clause	Requirement + Test				Result - Remark	Verdict
R20/ R21/ R22 R23	S-C	240V	10mins	F1	0.031A	Unit shut down immediately, on damaged, no hazard. NB, NC, NT
D1 Pin 1 to Pin 2	S-C	240V	1s	F1	0 A	Fuse open immediately, no damaged, no hazard. NB, NC, NT
C4	S-C	240V	1s	F1	0 A	Fuse open immediately, no damaged, no hazard. NB, NC, NT
Q1 G to S	S-C	240V	10mins	F1	0.031A	Unit shut down immediately, on damaged, no hazard. NB, NC, NT
Q1 G to D	S-C	240V	1s	F1	0 A	Fuse open immediately, no damaged, no hazard. NB, NC, NT
Q1 S to D	S-C	240V	1s	F1	0 A	Fuse open immediately, no damaged, no hazard. NB, NC, NT
<p>Supplementary information:</p> <ol style="list-style-type: none"> The following Electric Strength (ES) potentials were applied after fault condition were indicated for one minute, the test voltage see table 5.2 for detail All sources for fuse (see appended table 1.5.1 for details) were tested when fuse opened, and same result came out. <p>Results Key:</p> <p>S-C = short circuit, O-C = open circuit, O-L = Over load NB = No indication of dielectric breakdown NC = Cheesecloth remained intact NT = Tissue paper remained intact B = Circuit measures 0 Volts C = Other. Please explain.</p>						

IEC/EN60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

C.2	TABLE: transformers							P
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)	
Primary winding to Secondary winding	DI	576	273	3000Vac	4.6	5.5	0.4mm / 2 layers	
Core to Secondary winding	DI	576	273	3000Vac	4.6	5.5	0.4mm / 2 layers	
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. Insul. / mm; number of layers	
Primary winding to Secondary winding	DI			3000Vac	8.5	8.5	Triple insulation wire used on Secondary	
Core to Secondary winding	DI			3000Vac	6.0	6.0	Triple insulation wire used on Secondary	
supplementary information:								

IEC/EN60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1、骨架缺第 9,10 脚;成品时 PIN2 需将不挂线部份剪去(余留部份不超出骨架挡板)。

2、产品底部磁芯需用一层 0.025t×14mm×42mm 胶带背胶一半,有背胶的部份装于次级侧;磁芯通过镀锡引线接地于 PIN6。气隙磁芯装于顶部,固定磁芯包胶带 13.0mm×3Ts。

3、磁芯固定后沿线包方向包 9mm 的胶带 2Ts,再加外屏蔽:0.025t×7mm×1.1Ts 铜箔(闭合,不接地),然后再在铜箔外包 9mm 的胶带 2Ts。

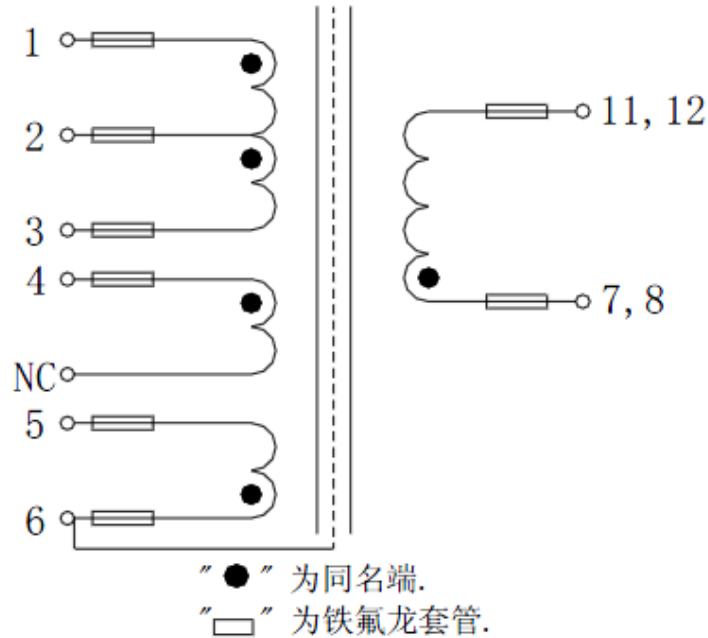
4、产品需真空含浸,烘烤。成品需沿磁芯方向外包 25mm 胶带 2Ts;

5、印字标签于顶部磁芯胶带朝 PIN1-6 正贴(如上图)。

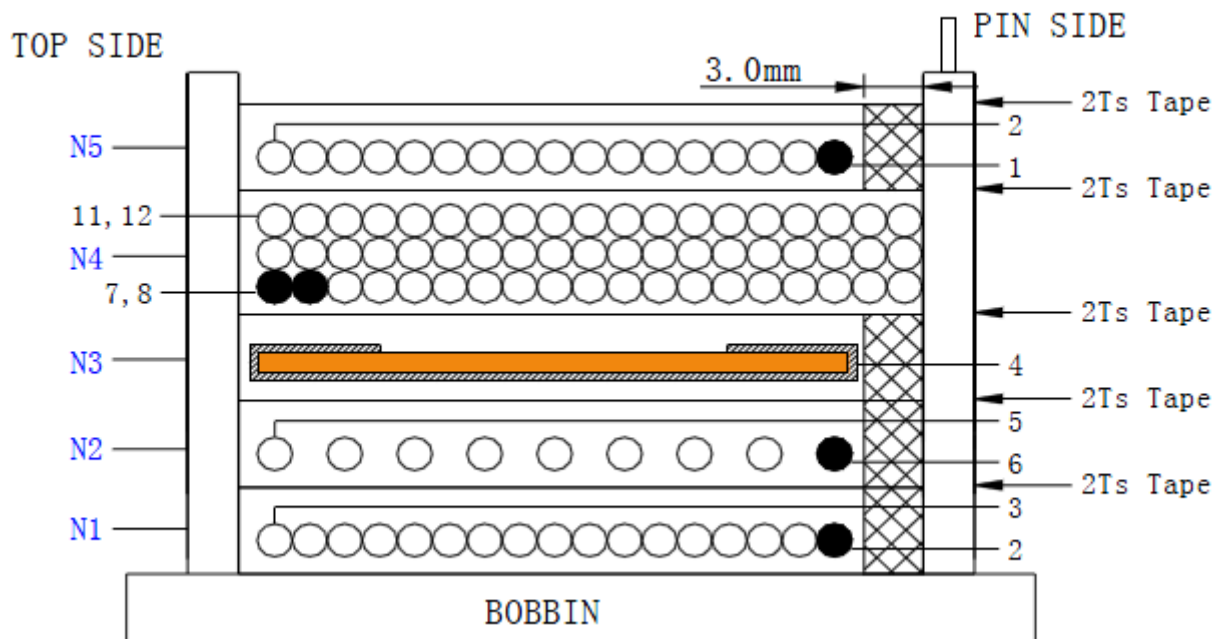
6、外层包裹的时候包到二次侧pin脚边上

IEC/EN60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

原理图/SCHEMATIC DIAGRAM:



解剖图/Anatomy Map:



Transformer description:

01. Transformer description: Concentric windings on T375J type bobbin or similar phenolic type of bobbin, outer winding is primary. Two layer insulation tape at least between primary and secondary. Teflon tube added on primary and secondary winding exit. Secondary windings are triple insulated wire, core is considered to be primary. Transformer body is wrapped with 2 layers of insulation tape at least.

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Information technology equipment – Safety – Part 1: General requirements	
Differences according to	EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013
Attachment Form No.	EU_GD_IEC60950_1F
Attachment Originator	SGS Fimko Ltd
Master Attachment	Dated 2014-02
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EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013 – CENELEC COMMON MODIFICATIONS

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

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
General (A2:2013)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A2:2013) according to the following list: 2.7.1 Note * 2.10.3.1 Note 2 6.2.2. Note * Note of secretary: Text of Common Modification remains unchanged.		P
1.1.1 (A1:2010)	Replace the text of NOTE 3 by the following. NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.		P
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.	Not a portable sound system.	N/A
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010	Delete.	N/A
1.5.1 (Added info*)	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC. New Directive 2011/65/11 *	Added.	P
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.	Not a portable sound system.	N/A
1.7.2.1 (A12:2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.	Delete.	N/A

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx Protection against excessive sound pressure from personal music players</p>		N/A
	<p>Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players.</p> <p>A personal music player is a portable equipment for personal use, that: is designed to allow the user to listen to recorded or broadcast sound or video; and primarily uses headphones or earphones that can be worn in or on or around the ears; and allows the user to walk around while in use.</p> <p>NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment.</p> <p>A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause.</p> <p>The requirements in this sub-clause are valid for music or video mode only.</p> <p>The requirements do not apply: while the personal music player is connected to an external amplifier; or while the headphones or earphones are not used.</p> <p>NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player.</p> <p>The requirements do not apply to: hearing aid equipment and professional equipment;</p> <p>NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.</p>		N/A


IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off.</p> <p>d) have a warning as specified in Zx.3; and</p> <p>e) not exceed the following:</p> <ol style="list-style-type: none"> 1) equipment provided as a package (player with its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1. <p>For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song.</p> <p>NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA.</p> <p>For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.</p>		

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: the symbol of Figure 1 with a minimum height of 5 mm; and the following wording, or similar: “To prevent possible hearing damage, do not listen at high volume levels for long periods.”</p>  <p>Figure 1 – Warning label (IEC 60417-6044)</p> <p>Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.</p>		N/A
	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	<p>Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be ≥ 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.</p>		N/A

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed “programme simulation noise” described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA.</p> <p>This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.).</p> <p>NOTE An example of a wired listening device with digital input is a USB headphone.</p>		N/A
	<p>Zx.4.3 Wireless listening devices In wireless mode: with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA.</p> <p>NOTE An example of a wireless listening device is a Bluetooth headphone.</p>		N/A
	<p>Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s.</p> <p>NOTE Test method for wireless equipment provided without listening device should be defined.</p>		N/A

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;	Replaced.	N/A
	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.		N/A
2.7.2	This subclause has been declared 'void'.	Declared.	N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	Delete.	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.	Replaced.	N/A
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD		

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 1,5 to 2,5 1,5 to 4 Delete the fifth line: conductor sizes for 13 to 16 A	Delete.	N/A
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation).	Replaced.	N/A
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.	Replaced.	N/A
Bibliography	Additional EN standards.	Added.	—

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—
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ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In Denmark , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	No power supply cord provided.	N/A
1.2.13.14 (A11:2009)	In Norway and Sweden , for requirements see 1.7.2.1 and 7.3 of this annex.	The equipment is not connected to the cable distribution systems.	N/A

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.7.1 (A11:2009)	In Finland, Norway and Sweden , resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.	No such resistors.	N/A
1.5.8	In Norway , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
1.5.9.4	In Finland, Norway and Sweden , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	No TNV circuit within the equipment.	N/A

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	<p>In Finland, Norway and Sweden, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows:</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p>	Shall be evaluated during the national approval.	N/A
1.7.2.1 (A11:2009)	<p>In Norway and Sweden, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>"Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."</p>		

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative)			
SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Utstyrsmorkoplettilbeskyttelsesjord via nettpluggog/eller via annetjordtilkoplet utstyr – ogertilkoplet et kabel-TV nett, kanforårsakebrannfare. For å unngådetteskaldetvedtilkoplingavutstyrettilkabel-TV nettetinstalleresengalvanisk isolator mellomutstyretogkabel- TV nettet.”</p> <p>Translation to Swedish:</p> <p>”Utrustningsomärkopplad till skyddsjord via jordatvägguttagoch/eller via annan utrustningochsamtidigtärkopplad till kabel-TV nätkanivissa fall medföra risk för brand. Förrattundvikadettaskall vid anslutningavutrustningen till kabel-TV nät galvanisk isolator finnas mellanutrustningen ochkabel-TV nätet.”</p>	Shall be evaluated during the national approval.	N/A
1.7.2.1 (A2:2013)	<p>In Denmark, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in Denmark shall be as follows: In Denmark: “Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.”</p>	Shall be evaluated during the national approval.	N/A
1.7.5 1.7.5 (A11:2009)	<p>In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.</p> <p>For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.</p>	No socket-outlets provided.	N/A

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.5 (A2:2013)	<p>In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011.</p> <p>For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c, DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b, DK 1-1c, DK 1-1d or DK 1-5a.</p> <p>Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-3b.</p> <p>Justification the Heavy Current Regulations, 6c</p>		N/A
2.2.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits within the equipment.	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.	No TNV circuits within the equipment.	N/A
2.3.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits within the equipment.	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.	Considered. However, test was performed with 16 A for representative.	P
2.7.1	In the United Kingdom , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	The equipment is not direct plug-in equipment.	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.	No TNV circuits within the equipment.	N/A
3.2.1.1	<p>In Switzerland, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:</p> <p>SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A</p>	No power supply cord provided.	N/A

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A</p> <p>SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <p>SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A</p> <p>SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A</p> <p>SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A</p>		
3.2.1.1	<p>In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>	No power supply cord provided.	N/A

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1 (A2:2013)	<p>In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>Justification the Heavy Current Regulations, 6c</p>		N/A
3.2.1.1	<p>In Spain, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>	No power supply cord provided.	N/A
3.2.1.1	<p>In the United Kingdom, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>	No power supply cord provided.	N/A

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	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.	No power supply cord provided.	N/A
3.2.4	In Switzerland , for requirements see 3.2.1.1 of this annex.	Shall be evaluated during the national approval.	N/A
3.2.5.1	In the United Kingdom , a power supply cord with conductor of 1,25 mm ² is allowed for equipment with a rated current over 10 A and up to and including 13 A.	No power supply cord provided.	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.	No power supply cord provided.	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.	The equipment is not direct plug-in equipment.	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.	The equipment is not direct plug-in equipment.	N/A

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	<p>In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:</p> <ul style="list-style-type: none"> • STATIONARY PLUGGABLE EQUIPMENT TYPE A that <ul style="list-style-type: none"> is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT. 	The equipment is not such equipment.	N/A
6.1.2.1 (A1:2010)	<p>In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <p>Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. 	No TNV circuits within the equipment.	N/A

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, 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. 		
6.1.2.2	<p>In Finland, Norway and Sweden, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.</p>	No TNV circuits within the equipment.	N/A
7.2	<p>In Finland, Norway and Sweden, for requirements see 6.1.2.1 and 6.1.2.2 of this annex.</p> <p>The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>	The equipment is not connected to the distribution systems.	N/A
7.3 (A11:2009)	<p>In Norway and Sweden, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.</p>		N/A

IEC/EN60950-1_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Annex ZD (informative)

IEC and CENELEC code designations for flexible cords

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

PHOTOS



Externalview-1

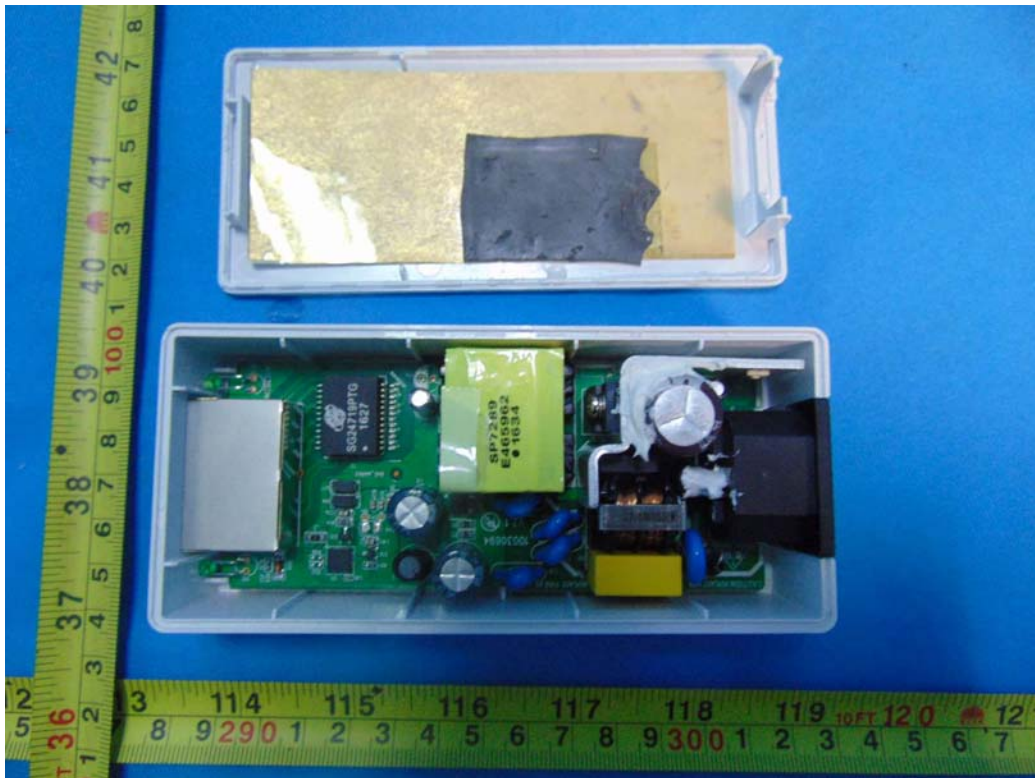


Externalview-2

PHOTOS

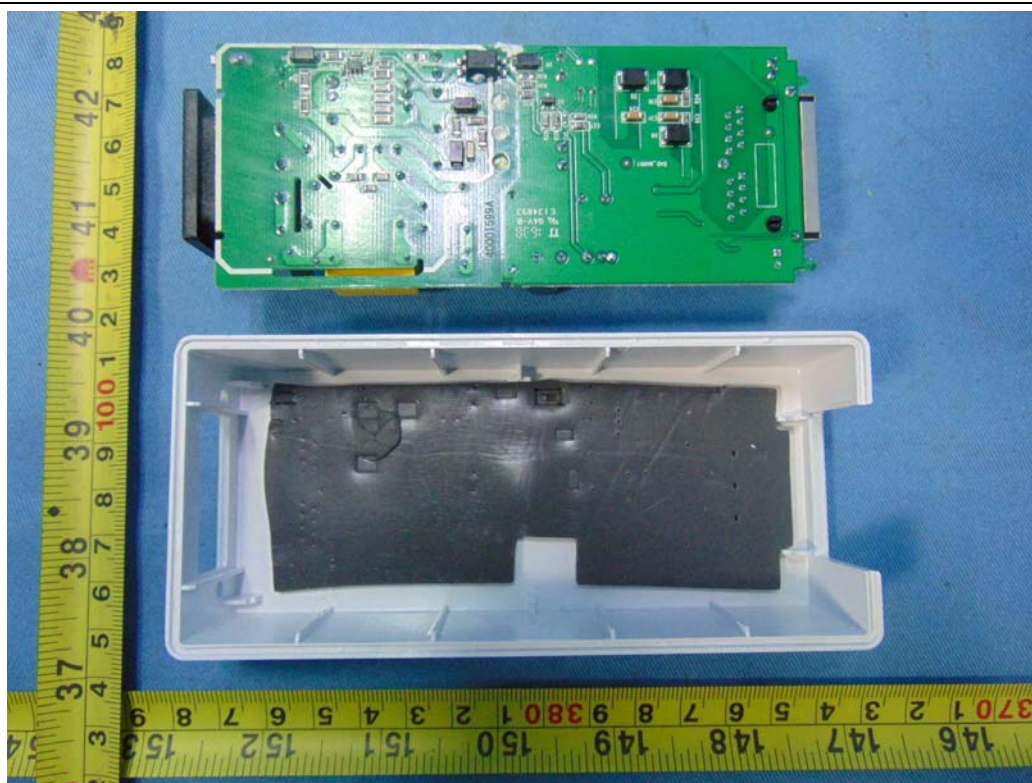


Connector view

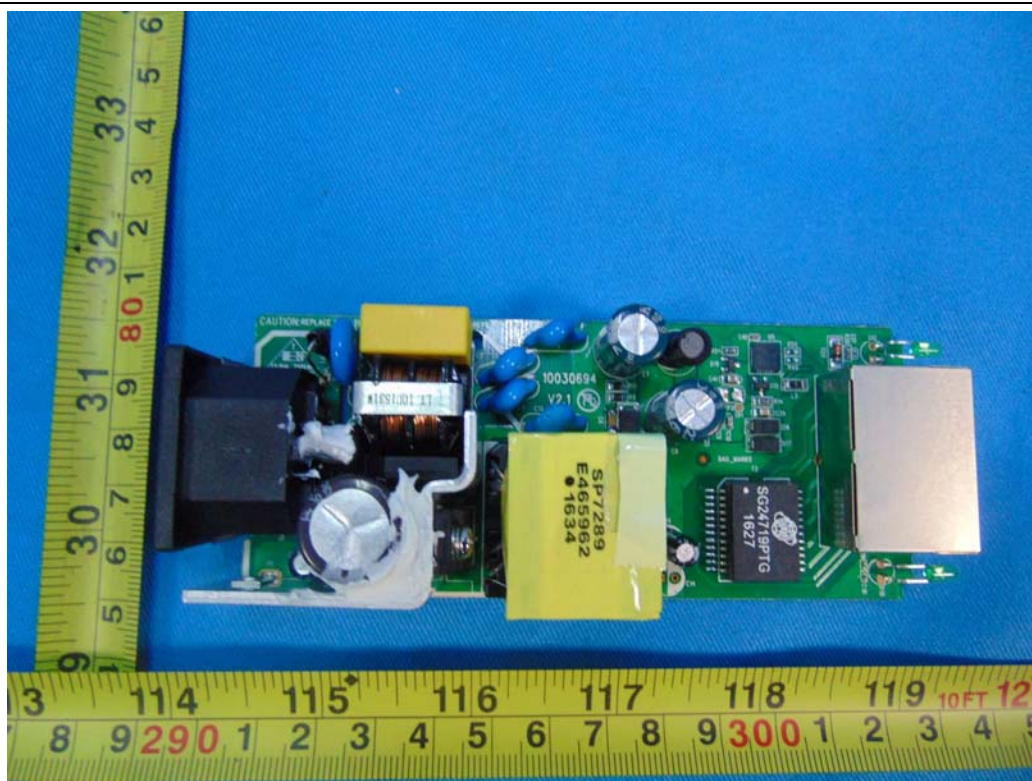


Internal view-1

PHOTOS

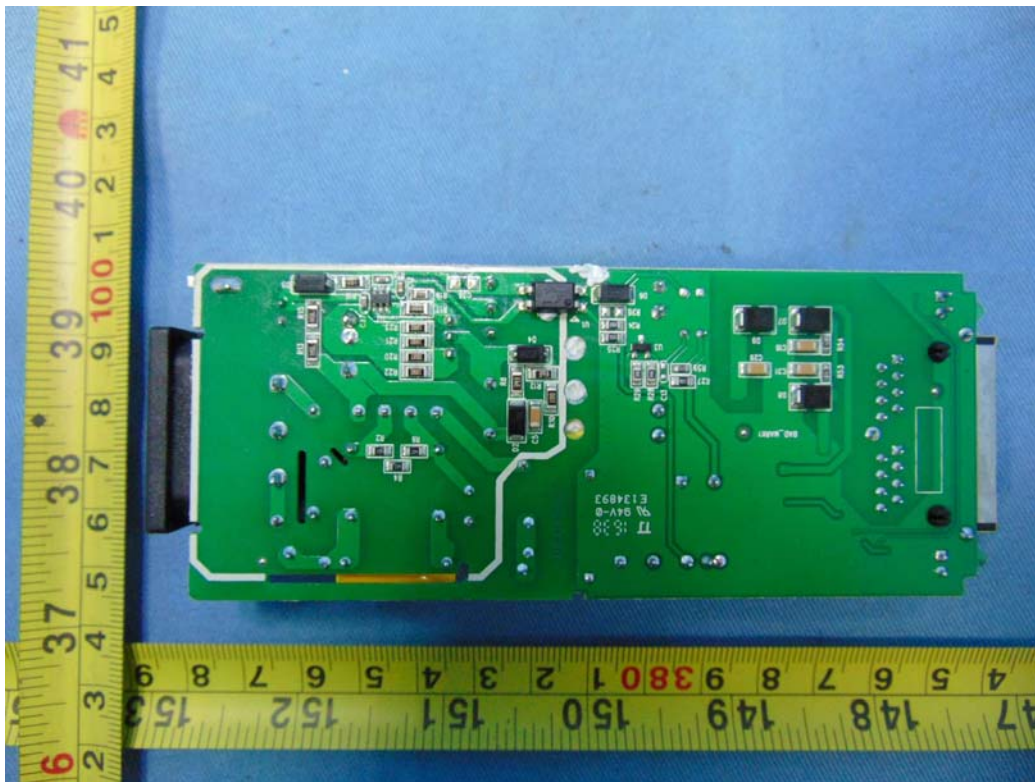


Internal view-2



Component side of Main board

PHOTOS



Solder side of Main board