

LVD Test Report

Application No. : IP19082740

Applicant : ASBISC Enterprises PLC

Equipment Under Test (EUT)

EUT Name : Wireless mouse

Model No. : CNS-CMSW13XX

Serial No. : CNS-CMSW13BO

Brand Name : CANYON

Receipt Date : 2019-08-07

Test Date : 2019-08-08 to 2019-08-16

Issue Date : 2019-08-17

Standards : EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013.

Test result : The safety testing has been performed on the submitted samples and found in compliance with the council LVD Directive 2014/35/EU requirements.

Tested by

Approved by

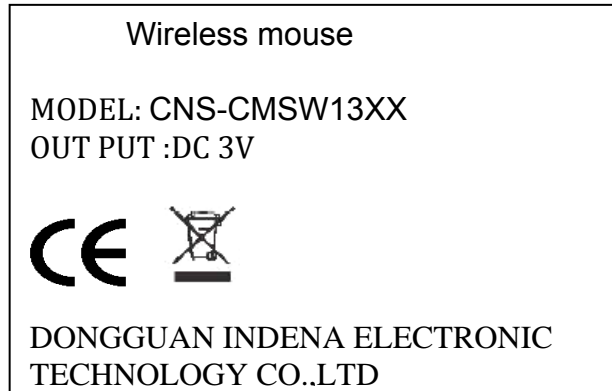


This test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013 Safety of Information technology equipment Part 1: General requirements	
Testing laboratory-----:	Shenzhen iPEN Testing Technology Co., Ltd.
Address-----:	4/F Building E,Fenghuanggang Second Industrial Zone,Xixiang Street,Baoan District,Shenzhen,China
Testing location-----:	Shenzhen iPEN Testing Technology Co., Ltd.
Applicant-----:	ASBISC Enterprises PLC
Address-----:	43 Kolonakiou street, Diamond Court, 4103, Ayios Athanasios, Limassol, Cyprus
Standard-----:	EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013.
Test result-----:	Compliance with the requirements.
Procedure deviation-----:	N.A.
Non-standard test method---	N.A.
Brand Name -----:	CANYON
Type of test object-----:	Wireless mouse
Models/Type reference-----:	CNS-CMSW13XX, CNS-CMSW13BO
Model Differencet-----:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is model name for commercial.
Rating-----:	DC 3V
Factory-----:	DONGGUAN INDENA ELECTRONIC TECHNOLOGY CO.,LTD.
Address-----:	City NO.6 GAOLI 7 TH ROAD QINGHUTOU COMMUNITY TANGXIA TOWN DONGGUAN,CHINA

Test item particulars:	
Equipment mobility -----:	Transportable equipment
Operating condition-----:	Continuous
Class of equipment -----:	Class III
Protection against ingress of water-----:	IPX0
Mass of equipment-----:	<1kg
Possible test case verdicts: Test case does not apply to the object-----:N Test object does meet the requirement -----: P Test object does not meet the requirement-----: F	
General product information: Unless otherwise specified, test are carried out in a draught-proof room at (25 ± 5) °C.	
General remarks: 1.” (see remark #) ” refers to a remark appended to the report. 2. Throughout this report a point is used as the decimal separator. 3. The test results presented in this report relate only to the object tested. 4. All models are the same except model name and sharp. 5. This report shall not be reproduced except in full without the written approval of the Shenzhen iPEN. 6. If client has any objection to the testing results, please advise us within 30 working days after publish, otherwise claims will not be accepted.	

Label of Equipment



Remark: this marking label intend to mark on product package or other place.

EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013			
CL.	Requirement of the test	Result--Remark	Verdict
1	GENERAL		P

1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	Components comply with the requirements of this standard or relevant IEC/EN component standard. see appended table 1.5.1	P
1.5.2	Evaluation and testing of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component standard. Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.	P
1.5.3	Thermal controls		N
1.5.4	Transformers		N
1.5.5	Interconnecting cables		P
1.5.6	Capacitors bridging insulation		N
1.5.7	Resistors bridging insulation		N
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N
1.5.8	Components in equipment for IT power systems		N
1.5.9	Surge suppressors	No VDR used	N

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CL.	Requirement of the test	Result--Remark	Verdict
1.5.9.1	General		N
1.5.9.2	Protection of VDRs		N
1.5.9.3	Bridging of functional insulation by a VDR		N
1.5.9.4	Bridging of basic insulation by a VDR		N
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N

1.6	Power interface		P
1.6.1	AC power distribution systems		N
1.6.2	Input current	See appended table 1.6.2	P
1.6.3	Voltage limit of hand-held equipment		P
1.6.4	Neutral conductor		N

1.7	Marking and instructions		P
1.7.1	Power rating		P
	Rated voltage(s) or voltage range(s) (V) :	3Vdc	P
	Symbol for nature of supply, for d.c. only :	---	P
	Rated frequency or rated frequency range (Hz) :		N
	Rated current (mA or A) :		P
	Manufacturer's name or trade-mark or identification mark :	See the marking plate	P
	Model identification or type reference :	See the marking plate	P
	Symbol for Class II equipment only :	Class III equipment	N
	Other markings and symbols :	See the marking plate	P
1.7.2	Safety instructions and marking	Safety instruction provided	P
1.7.2.1	General		P
1.7.2.2	Disconnect devices		N
1.7.2.3	Overcurrent protective device		N
1.7.2.4	IT power distribution systems		N
1.7.2.5	Operator access with a tool		N
1.7.2.6	Ozone		N

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CL.	Requirement of the test	Result--Remark	Verdict
1.7.3	Short duty cycles		N
1.7.4	Supply voltage adjustment :		N
	Methods and means of adjustment; reference to installation instructions :		N
1.7.5	Power outlets on the equipment :		N
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) :		N
1.7.7	Wiring terminals		N
1.7.7.1	Protective earthing and bonding terminals :		N
1.7.7.2	Terminals for a.c. mains supply conductors		N
1.7.7.3	Terminals for d.c. mains supply conductors		N
1.7.8	Controls and indicators		N
1.7.8.1	Identification, location and marking :		N
1.7.8.2	Colours :		N
1.7.8.3	Symbols according to IEC 60417:		N
1.7.8.4	Markings using figures :		N
1.7.9	Isolation of multiple power sources :		N
1.7.10	Thermostats and other regulating devices :		N
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 s and then again for 15 s 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	There is do not give rise to misunderstanding.	N
1.7.13	Replaceable batteries :		N
	Language(s) :		--
1.7.14	Equipment for restricted access locations:	EUT is not considered for exclusive usage in restricted access locations.	N

EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013			
CL.	Requirement of the test	Result--Remark	Verdict
2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas		P
2.1.1.1	Access to energized parts		N
	Test by inspection :		N
	Test with test finger (Figure 2A) :		N
	Test with test pin (Figure 2B) :		N
	Test with test probe (Figure 2C) :		N
2.1.1.2	Battery compartments		N
2.1.1.3	Access to ELV wiring		N
	Working voltage (V _{peak} or V _{rms}); minimum distance through insulation (mm)		--
2.1.1.4	Access to hazardous voltage circuit wiring		N
2.1.1.5	Energy hazards:		P
2.1.1.6	Manual controls		N
2.1.1.7	Discharge of capacitors in equipment		N
	Measured voltage (V); time-constant (s) :		--
2.1.1.8	Energy hazards – d.c. mains supply		N
	a) Capacitor connected to the d.c. mains supply :		N
	b) Internal battery connected to the d.c. mains supply :		N
2.1.1.9	Audio amplifiers :		N
2.1.2	Protection in service access areas		N
2.1.3	Protection in restricted access locations		N

2.2	SELV circuits		P
2.2.1	General requirements		P
2.2.2	Voltages under normal conditions (V) :	< 60 V d.c	P
2.2.3	Voltages under fault conditions (V) :	< 60 V d.c	P
2.2.4	Connection of SELV circuits to other circuits :	SELV circuits only	N

EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013			
CL.	Requirement of the test	Result--Remark	Verdict
2.3	TNV circuits		N
2.3.1	Limits	No TNV circuits	N
	Type of TNV circuits:		--
2.3.2	Separation from other circuits and from accessible parts		N
2.3.2.1	General requirements		N
2.3.2.2	Protection by basic insulation		N
2.3.2.3	Protection by earthing		N
2.3.2.4	Protection by other constructions :		N
2.3.3	Separation from hazardous voltages		N
	Insulation employed:		--
2.3.4	Connection of TNV circuits to other circuits		N
	Insulation employed:		--
2.3.5	Test for operating voltages generated externally		N
2.4	Limited current circuits		N
2.4.1	General requirements		N
2.4.2	Limit values		N
	Frequency (Hz):		--
	Measured current (mA) :		--
	Measured voltage (V):		--
	Measured circuit capacitance (nF or μ F) :		--
2.4.3	Connection of limited current circuits to other circuits		N
2.5	Limited power sources		P
	a) Inherently limited output		P
	b) Impedance limited output		N
	c) Regulating network limited output under normal operating and single fault condition		N
	d) Overcurrent protective device limited output		N
	Max. output voltage (V), max. output current (A), max. apparent power (VA):		--

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CL.	Requirement of the test	Result--Remark	Verdict

	Current rating of overcurrent protective device (A)	Not used	--
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2.6	Provisions for earthing and bonding		N
2.6.1	Protective earthing		N
2.6.2	Functional earthing		N
2.6.3	Protective earthing and protective bonding conductors		N
2.6.3.1	General		N
2.6.3.2	Size of protective earthing conductors		N
	Rated current (A), cross-sectional area (mm ²), AWG:		--
2.6.3.3	Size of protective bonding conductors		N
	Rated current (A), cross-sectional area (mm ²), AWG:		--
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min):		N
2.6.3.5	Colour of insulation:		N
2.6.4	Terminals		N
2.6.4.1	General		N
2.6.4.2	Protective earthing and bonding terminals		N
	Rated current (A), type, nominal thread diameter (mm) :		--
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N
2.6.5	Integrity of protective earthing		N
2.6.5.1	Interconnection of equipment		N
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N
2.6.5.3	Disconnection of protective earth		N
2.6.5.4	Parts that can be removed by an operator		N
2.6.5.5	Parts removed during servicing		N
2.6.5.6	Corrosion resistance		N
2.6.5.7	Screws for protective bonding		N
2.6.5.8	Reliance on telecommunication network or cable distribution system		N

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CL.	Requirement of the test	Result--Remark	Verdict

2.7	Overcurrent and earth fault protection in primary circuits		N
2.7.1	Basic requirements		N
	Instructions when protection relies on building installation		N
2.7.2	Faults not simulated in 5.3.7		N
2.7.3	Short-circuit backup protection		N
2.7.4	Number and location of protective devices :		N
2.7.5	Protection by several devices		N
2.7.6	Warning to service personnel:		N

2.8	Safety interlocks		N
2.8.1	General principles		N
2.8.2	Protection requirements		N
2.8.3	Inadvertent reactivation		N
2.8.4	Fail-safe operation		N
2.8.5	Moving parts		N
2.8.6	Overriding		N
2.8.7	Switches and relays		N
2.8.7.1	Contact gaps (mm) :		N
2.8.7.2	Overload test		N
2.8.7.3	Endurance test		N
2.8.7.4	Electric strength test		N
2.8.8	Mechanical actuators		N

2.9	Electrical insulation		N
2.9.1	Properties of insulating materials		N
2.9.2	Humidity conditioning		N
	Relative humidity (%), temperature (°C) :		--
2.9.3	Grade of insulation		N
2.9.4	Separation from hazardous voltages		N
	Method(s) used :		--

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CL.	Requirement of the test	Result--Remark	Verdict

2.10	Clearances, creepage distances and distances through insulation		N
2.10.1	General		N
2.10.1.1	Frequency :		N
2.10.1.2	Pollution degrees :		N
2.10.1.3	Reduced values for functional insulation		N
2.10.1.4	Intervening unconnected conductive parts		N
2.10.1.5	Insulation with varying dimensions		N
2.10.1.6	Special separation requirements		N
2.10.1.7	Insulation in circuits generating starting pulses		N
2.10.2	Determination of working voltage		N
2.10.2.1	General		N
2.10.2.2	RMS working voltage		N
2.10.2.3	Peak working voltage		N
2.10.3	Clearances		N
2.10.3.1	General		N
2.10.3.2	Mains transient voltages		N
	a) AC mains supply :		N
	b) Earthed d.c. mains supplies :		N
	c) Unearthed d.c. mains supplies :		N
	d) Battery operation :		N
2.10.3.3	Clearances in primary circuits		N
2.10.3.4	Clearances in secondary circuits		N
2.10.3.5	Clearances in circuits having starting pulses		N
2.10.3.6	Transients from a.c. mains supply :		N
2.10.3.7	Transients from d.c. mains supply :		N
2.10.3.8	Transients from telecommunication networks and cable distribution systems :		N
2.10.3.9	Measurement of transient voltage levels		N
	a) Transients from a mains supply		N
	For an a.c. mains supply:		N

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CL.	Requirement of the test	Result--Remark	Verdict
	For a d.c. mains supply:		N
	b) Transients from a telecommunication network :		N
2.10.4	Creepage distances		N
2.10.4.1	General		N
2.10.4.2	Material group and comparative tracking index		N
	CTI tests:		--
2.10.4.3	Minimum creepage distances		N
2.10.5	Solid insulation		N
2.10.5.1	General		N
2.10.5.2	Distances through insulation		N
2.10.5.3	Insulating compound as solid insulation		N
2.10.5.4	Semiconductor devices		N
2.10.5.5	Cemented joints		N
2.10.5.6	Thin sheet material – General		N
2.10.5.7	Separable thin sheet material		N
	Number of layers (pcs)		N
2.10.5.8	Non-separable thin sheet material		N
2.10.5.9	Thin sheet material – standard test procedure		N
	Electric strength test		N
2.10.5.10	Thin sheet material – alternative test procedure		N
	Electric strength test		N
2.10.5.11	Insulation in wound components		N
2.10.5.12	Wire in wound components		N
	Working voltage		N
	a) Basic insulation not under stress		N
	b) Basic, installers ry, reinforced insulation		N
	c) Compliance with Annex U		N
	Two wires in contact inside wound component; angle between 45° and 90°		N
2.10.5.13	Wire with solvent-based enamel in wound components		N
	Electric strength test		N

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CL.	Requirement of the test	Result--Remark	Verdict
	Routine test		N
2.10.5.14	Additional insulation in wound components		N
	Working voltage		N
	- Basic insulation not under stress		N
	- Supplementary, reinforced insulation		N
2.10.6	Construction of printed boards		N
2.10.6.1	Uncoated printed boards		N
2.10.6.2	Coated printed boards		N
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N
2.10.6.4	Insulation between conductors on different layers of a printed board		N
	Distance through insulation		N
	Number of insulation layers (pcs)		N
2.10.7	Component external terminations		N
2.10.8	Tests on coated printed boards and coated components		N
2.10.8.1	Sample preparation and preliminary inspection		N
2.10.8.2	Thermal conditioning		N
2.10.8.3	Electric strength test		N
2.10.8.4	Abrasion resistance test		N
2.10.9	Thermal cycling		N
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N
2.10.11	Tests for semiconductor devices and cemented joints		N
2.10.12	Enclosed and sealed parts		N

3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Internal wiring gauge is suitable for current intended to be carried.	P
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges which could damage the insulation and cause hazards.	P

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CL.	Requirement of the test	Result--Remark	Verdict
3.1.3	Securing of internal wiring	Wire ways are smooth and free from edges. Wires are adequately fixed to prevent excessive strain on wire and terminals and avoiding damage to the insulation of the conductors.	P
3.1.4	Insulation of conductors	Insulation on internal conductors is considered to be of adequate quality and suitable for the application and the working voltage involved.	P
3.1.5	Beads and ceramic insulators		N
3.1.6	Screws for electrical contact pressure		N
3.1.7	Insulating materials in electrical connections		N
3.1.8	Self-tapping and spaced thread screws		N
3.1.9	Termination of conductors		P
	10 N pull test	All conductors are reliable secured.	P
3.1.10	Sleeving on wiring		N

3.2	Connection to a mains supply		N
3.2.1	Means of connection		N
3.2.1.1	Connection to an a.c. mains supply		N
3.2.1.2	Connection to a d.c. mains supply		N
3.2.2	Multiple supply connections		N
3.2.3	Permanently connected equipment		N
	Number of conductors, diameter of cable and conduits (mm) :		--
3.2.4	Appliance inlets		N
3.2.5	Power supply cords		N
3.2.5.1	AC power supply cords		N
	Type :		--
	Rated current (A), cross-sectional area (mm ²), AWG :		--
3.2.5.2	DC power supply cords		N

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CL.	Requirement of the test	Result--Remark	Verdict
3.2.6	Cord anchorages and strain relief		N
	Mass of equipment (kg), pull (N) :		--
	Longitudinal displacement (mm) :		--
3.2.7	Protection against mechanical damage		N
3.2.8	Cord guards		N
	Diameter or minor dimension D (mm); test mass (g) :		--
	Radius of curvature of cord (mm):		--
3.2.9	Supply wiring space		N
3.3	Wiring terminals for connection of external conductors		N
3.3.1	Wiring terminals	Class III equipment (supplied by SELV).	N
3.3.2	Connection of non-detachable power supply cords		N
3.3.3	Screw terminals		N
3.3.4	Conductor sizes to be connected		N
	Rated current (A), cord/cable type, cross-sectional area (mm ²):		--
3.3.5	Wiring terminal sizes		N
	Rated current (A), type, nominal thread diameter (mm) :		--
3.3.6	Wiring terminal design		N
3.3.7	Grouping of wiring terminals		N
3.3.8	Stranded wire		N
3.4	Disconnection from the mains supply		N
3.4.1	General requirement	Class III equipment (supplied by SELV).	N
3.4.2	Disconnect devices		N
3.4.3	Permanently connected equipment		N
3.4.4	Parts which remain energized		N
3.4.5	Switches in flexible cords		N
3.4.6	Number of poles – single-phase and d.c. equipment		N
3.4.7	Number of poles – three-phase equipment		N
3.4.8	Switches as disconnect devices		N

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CL.	Requirement of the test	Result--Remark	Verdict
3.4.9	Plugs as disconnect devices		N
3.4.10	Interconnected equipment		N
3.4.11	Multiple power sources		N
3.5	Interconnection of equipment		P
3.5.1	General requirements		P
3.5.2	Types of interconnection circuits :	Only SELV to SELV	P
3.5.3	ELV circuits as interconnection circuits		N
3.5.4	Data ports for additional equipment	USB port only used to transfer data	P
4	PHYSICAL REQUIREMENTS		P
4.1	Stability		N
	Angle of 10°	Based on construction, the test was deemed not necessary.	N
	Test force (N) :		N
4.2	Mechanical strength		N
4.2.1	General		N
	Rack-mounted equipment.		N
4.2.2	Steady force test, 10 N		N
4.2.3	Steady force test, 30 N		N
4.2.4	Steady force test, 250 N		N
4.2.5	Impact test		N
	Fall test		N
	Swing test		N
4.2.6	Drop test; height (mm) :		N
4.2.7	Stress relief test		N
4.2.8	Cathode ray tubes		N
	Picture tube separately certified :		N
4.2.9	High pressure lamps		N

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CL.	Requirement of the test	Result--Remark	Verdict
4.2.10	Wall or ceiling mounted equipment; force (N) :		N
4.3	Design and construction		P
4.3.1	Edges and corners	Round and smooth	P
4.3.2	Handles and manual controls; force (N):		N
4.3.3	Adjustable controls		N
4.3.4	Securing of parts		N
4.3.5	Connection by plugs and sockets		N
4.3.6	Direct plug-in equipment		N
	Torque :		--
	Compliance with the relevant mains plug standard :		N
4.3.7	Heating elements in earthed equipment		N
4.3.8	Batteries		P
	- Overcharging of a rechargeable battery		P
	- Unintentional charging of a non-rechargeable battery		P
	- Reverse charging of a rechargeable battery		P
	- Excessive discharging rate for any battery		P
4.3.9	Oil and grease		N
4.3.10	Dust, powders, liquids and gases		N
4.3.11	Containers for liquids or gases		N
4.3.12	Flammable liquids :		N
	Quantity of liquid (l) :		N
	Flash point (°C) :		N
4.3.13	Radiation		P
4.3.13.1	General		P
4.3.13.2	Ionizing radiation		N
	Measured radiation (pA/kg) :		--
	Measured high-voltage (kV) :		--
	Measured focus voltage (kV) :		--
	CRT markings :		--

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CL.	Requirement of the test	Result--Remark	Verdict
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N
	Part, property, retention after test, flammability classification :		N
4.3.13.4	Human exposure to ultraviolet (UV) radiation :		N
4.3.13.5	Lasers (including laser diodes) and LEDs		P
4.3.13.5.1	Lasers (including laser diodes)		P
	Laser class		--
4.3.13.5.2	Light emitting diodes (LEDs)		N
4.3.13.6	Other types :		N

4.4	Protection against hazardous moving parts		N
4.4.1	General		N
4.4.2	Protection in operator access areas :		N
	Household and home/office document/media shredders		--
4.4.3	Protection in restricted access locations :		N
4.4.4	Protection in service access areas		N
4.4.5	Protection against moving fan blades		N
4.4.5.1	General		N
	Not considered to cause pain or injury. A):		N
	Is considered to cause pain, not injury. B):		N
	Considered to cause injury. C):		N
4.4.5.2	Protection for users		N
	Use of symbol or warning:		N
4.4.5.3	Protection for service persons		N
	Use of symbol or warning:		N

4.5	Thermal requirements		P
4.5.1	General		P
4.5.2	Temperature tests	see appended table 4.5	P
	Normal load condition per Annex L :		--

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CL.	Requirement of the test	Result--Remark	Verdict
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
4.6	Openings in enclosures		N
4.6.1	Top and side openings		N
	Dimensions (mm) :		--
4.6.2	Bottoms of fire enclosures		N
	Construction of the bottom, dimensions (mm) :		--
4.6.3	Doors or covers in fire enclosures		N
4.6.4	Openings in transportable equipment		N
4.6.4.1	Constructional design measures		N
	Dimensions (mm) :		--
4.6.4.2	Evaluation measures for larger openings		N
4.6.4.3	Use of installer parts		N
4.6.5	Adhesives for constructional purposes		N
	Conditioning temperature (°C), time (weeks):		--
4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	Use of plastic with the required flammability classes	P
	Method 1, selection and application of components wiring and materials	Method 1 is used.	P
	Method 2, application of all of simulated fault condition tests	Not used method 2.	N
4.7.2	Conditions for a fire enclosure		P
4.7.2.1	Parts requiring a fire enclosure	The fire enclosure is required to cover all parts.	N
4.7.2.2	Parts not requiring a fire enclosure	All components mounted on V-1 PCB	P
4.7.3	Materials		P
4.7.3.1	General		P
4.7.3.2	Materials for fire enclosures		N

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CL.	Requirement of the test	Result--Remark	Verdict
4.7.3.3	Materials for components and other parts outside fire enclosures		N
4.7.3.4	Materials for components and other parts inside fire enclosures		N
4.7.3.5	Materials for air filter assemblies		N
4.7.3.6	Materials used in high-voltage components		N

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		N
5.1.1	General		N
5.1.2	Configuration of equipment under test (EUT)		N
5.1.2.1	Single connection to an a.c. mains supply		N
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N
5.1.3	Test circuit		N
5.1.4	Application of measuring instrument		N
5.1.5	Test procedure		N
5.1.6	Test measurements		N
	Supply voltage (V) :		--
	Measured touch current (mA) :		--
	Max. allowed touch current (mA) :		--
	Measured protective conductor current (mA) :		--
	Max. allowed protective conductor current (mA):		--
5.1.7	Equipment with touch current exceeding 3,5 mA		N
5.1.7.1	General :		N
5.1.7.2	Simultaneous multiple connections to the supply		N
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N
	Supply voltage (V) :		--

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CL.	Requirement of the test	Result--Remark	Verdict
	Measured touch current (mA) :		--
	Max. allowed touch current (mA) :		--
5.1.8.2	Summation of touch currents from telecommunication networks		N
	a) EUT with earthed telecommunication ports :		N
	b) EUT whose telecommunication ports have no reference to protective earth		N
5.2	Electric strength		N
5.2.1	General		N
5.2.2	Test procedure		N
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
5.3.3	Transformers		N
5.3.4	Functional insulation:		P
5.3.5	Electromechanical components		N
5.3.6	Audio amplifiers in ITE:		N
5.3.7	Simulation of faults	See appended table 5.3	P
5.3.8	Unattended equipment	.	N
5.3.9	Compliance criteria for abnormal operating and fault conditions	No flame emitted, no molten material emitted, no deformation of enclosure	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	No hazards.	P
6	CONNECTION TO TELECOMMUNICATION NETWORKS		N
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N
6.1.1	Protection from hazardous voltages		N
6.1.2	Separation of the telecommunication network from earth		N

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CL.	Requirement of the test	Result--Remark	Verdict
6.1.2.1	Requirements	No TNV circuit.	N
	Supply voltage (V) :		--
	Current in the test circuit (mA) :		--
6.1.2.2	Exclusions :		N
6.2	Protection of equipment users from overvoltages on telecommunication networks		N
6.2.1	Separation requirements		N
6.2.2	Electric strength test procedure		N
6.2.2.1	Impulse test		N
6.2.2.2	Steady-state test		N
6.2.2.3	Compliance criteria		N
6.3	Protection of the telecommunication wiring system from overheating		N
	Max. output current (A) :		--
	Current limiting method :		--
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N
7.1	General		N
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
7.3	Protection of equipment users from overvoltages on the cable distribution system		N
7.4	Insulation between primary circuits and cable distribution systems		N
7.4.1	General		N
7.4.2	Voltage surge test		N
7.4.3	Impulse test		N
A	Annex A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N
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.1.1	Samples, material:		--

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CL.	Requirement of the test	Result--Remark	Verdict
	Wall thickness (mm):		--
A.1.2	Conditioning of samples; temperature (°C) :		N
A.1.3	Mounting of samples :		N
A.1.4	Test flame (see IEC 60695-11-3)		N
	Flame A, B, C or D :		--
A.1.5	Test procedure		N
A.1.6	Compliance criteria		N
	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.2.1	Samples, material:		--
	Wall thickness (mm):		--
A.2.2	Conditioning of samples; temperature (°C) :		N
A.2.3	Mounting of samples :		N
A.2.4	Test flame (see IEC 60695-11-4)		N
	Flame A, B or C :		--
A.2.5	Test procedure		N
A.2.6	Compliance criteria		N
	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
	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.3.1	Mounting of samples		N
A.3.2	Test procedure		N

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CL.	Requirement of the test	Result--Remark	Verdict
A.3.3	Compliance criterion		N
B	Annex B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		N
B.1	General requirements		N
	Position :		--
	Manufacturer :		--
	Type :		--
	Rated values :		--
B.2	Test conditions		N
B.3	Maximum temperatures		N
B.4	Running overload test		N
B.5	Locked-rotor overload test		N
	Test duration (days) :		--
	Electric strength test: test voltage (V) :		--
B.6	Running overload test for d.c. motors in secondary circuits		N
B.6.1	General		N
B.6.2	Test procedure		N
B.6.3	Alternative test procedure		N
B.6.4	Electric strength test; test voltage (V) :		N
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N
B.7.1	General		N
B.7.2	Test procedure		N
B.7.3	Alternative test procedure		N
B.7.4	Electric strength test; test voltage (V) :		N
B.8	Test for motors with capacitors		N
B.9	Test for three-phase motors		N
B.10	Test for series motors		N
	Operating voltage (V) :		--
C	Annex C, TRANSFORMERS (see 1.5.4 and 5.3.3)		N

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CL.	Requirement of the test	Result--Remark	Verdict
	Position :		--
	Manufacturer :		--
	Type :		--
	Rated values :		--
	Method of protection:		--
C.1	Overload test		N
C.2	Insulation		N
	Protection from displacement of windings:		N
D	Annex D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		N
D.1	Measuring instrument		N
D.2	Alternative measuring instrument		N
E	Annex E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N
F	Annex F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		N
G	Annex G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N
G.1	Clearances		N
G.1.1	General		N
G.1.2	Summary of the procedure for determining minimum clearances		N
G.2	Determination of mains transient voltage (V)		N
G.2.1	AC mains supply :		N
G.2.2	Earthed d.c. mains supplies :		N
G.2.3	Unearthed d.c. mains supplies :		N
G.2.4	Battery operation :		N
G.3	Determination of telecommunication network transient voltage (V) :		N
G.4	Determination of required withstand voltage (V)		N
G.4.1	Mains transients and internal repetitive peaks :		N

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CL.	Requirement of the test	Result--Remark	Verdict
G.4.2	Transients from telecommunication networks :		N
G.4.3	Combination of transients		N
G.4.4	Transients from cable distribution systems		N
G.5	Measurement of transient voltages (V)		N
	a) Transients from a mains supply		N
	For an a.c. mains supply		N
	For a d.c. mains supply		N
	b) Transients from a telecommunication network		N
G.6	Determination of minimum clearances :		N
H	Annex H, IONIZING RADIATION (see 4.3.13)		N
J	Annex J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N
	Metal(s) used.....:		--
K	Annex K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		N
K.1	Making and breaking capacity	No thermal controls	N
K.2	Thermostat reliability; operating voltage (V) :		N
K.3	Thermostat endurance test; operating voltage (V) :		N
K.4	Temperature limiter endurance; operating voltage (V) :		N
K.5	Thermal cut-out reliability		N
K.6	Stability of operation		N
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
L.2	Adding machines and cash registers		N
L.3	Erasers		N
L.4	Pencil sharpeners		N
L.5	Duplicators and copy machines		N
L.6	Motor-operated files		N

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CL.	Requirement of the test	Result--Remark	Verdict
L.7	Other business equipment		P
M	Annex M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N
M.1	Introduction		N
M.2	Method A		N
M.3	Method B		N
M.3.1	Ringing signal		N
M.3.1.1	Frequency (Hz) :		--
M.3.1.2	Voltage (V) :		--
M.3.1.3	Cadence; time (s), voltage (V) :		--
M.3.1.4	Single fault current (mA) :		--
M.3.2	Tripping device and monitoring voltage :		N
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N
M.3.2.2	Tripping device		N
M.3.2.3	Monitoring voltage (V) :		N
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
N.1	ITU-T impulse test generators		N
N.2	IEC 60065 impulse test generator		N
P	Annex P, NORMATIVE REFERENCES		--
Q	Annex Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		N
	a) Preferred climatic categories :		N
	b) Maximum continuous voltage :		N
	c) Pulse current :		N
R	Annex R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N
R.2	Reduced clearances (see 2.10.3)		N

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CL.	Requirement of the test	Result--Remark	Verdict
S	Annex S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N
S.1	Test equipment		N
S.2	Test procedure		N
S.3	Examples of waveforms during impulse testing		N
T	Annex T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N
			--
U	Annex U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N
			--
V	Annex V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		N
V.1	Introduction		N
V.2	TN power distribution systems		N
W	Annex W, SUMMATION OF TOUCH CURRENTS		N
W.1	Touch current from electronic circuits		N
W.1.1	Floating circuits		N
W.1.2	Earthed circuits		N
W.2	Interconnection of several equipments		N
W.2.1	Isolation		N
W.2.2	Common return, isolated from earth		N
W.2.3	Common return, connected to protective earth		N
X	Annex X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N
X.1	Determination of maximum input current		N
X.2	Overload test procedure		N

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CL.	Requirement of the test	Result--Remark	Verdict
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N
Y.1	Test apparatus :		N
Y.2	Mounting of test samples :		N
Y.3	Carbon-arc light-exposure apparatus :		N
Y.4	Xenon-arc light exposure apparatus :		N
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		N
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N
BB	ANNEX BB, CHANGES IN THE SECOND EDITION		--
CC	Annex CC, Evaluation of integrated circuit (IC) current limiters		N
CC.1	General		N
CC.2	Test program 1:		N
CC.3	Test program 2:		N
DD	Annex DD, Requirements for the mounting means of rack-mounted equipment		N
DD.1	General		N
DD.2	Mechanical strength test, variable N.....:		N
DD.3	Mechanical strength test, 250N, including end stops.....:		N
DD.4	Compliance.....:		N
EE	Annex EE, Household and home/office document/media shredders		N
EE.1	General		N
EE.2	Markings and instructions		N
	Use of markings or symbols.....:		N
	Information of user instructions, maintenance and/or servicing instructions.....:		N
EE.3	Inadvertent reactivation test.....:		N

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CL.	Requirement of the test	Result--Remark	Verdict
EE.4	Disconnection of power to hazardous moving parts:		N
	Use of markings or symbols.....:		N
EE.5	Protection against hazardous moving parts		N
	Test with test finger (Figure 2A):		N
	Test with wedge probe (Figure EE1 and EE2):		N

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CL.	Requirement of the test	Result--Remark	Verdict

EN 60950-1:2006 – COMMON MODIFICATIONS			
Contents (A2:2013)	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZD (informative) IEC and CENELEC code designations for flexible cords		P
General	Delete all the “country” notes in the reference document according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1 Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6. 2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2		P
General (A1:2010)	Delete all the “country” notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note		P
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.		N

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CL.	Requirement of the test	Result--Remark	Verdict
1.3.Z1	<p>Add the following subclause:</p> <p>1.3.Z1 Exposure to excessive sound pressure</p> <p>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.</p> <p>NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment:</p> <p>Headphones and earphones associated with portable audio equipment – Maximum sound pressure level measurement methodology and limit considerations – Part 1: General method for “one package equipment”, and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment – Maximum sound pressure level measurement methodology and limit considerations – Part 2: Guidelines to associate sets with headphones coming from different manufacturers.</p>		N
(A12:2011)	<p>In EN 60950-1:2006/A12:2011</p> <p>Delete the addition of 1.3.Z1 / EN 60950-1:2006</p> <p>Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010</p>		P
1.5.1	<p>Add the following NOTE:</p> <p>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC</p>		P
1.7.2.1	Add the ZX		N
2.7.1	<p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>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):</p> <p>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;</p> <p>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;</p> <p>c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>		N
2.7.2	This subclause has been declared 'void'.		N
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N

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CL.	Requirement of the test	Result--Remark	Verdict												
3.2.5.1	<p>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”.</p> <p>In Table 3B, replace the first four lines by the following:</p> <table><tr><td> Up to and including 6</td><td></td><td>0,75 ^{a)}</td><td> </td></tr><tr><td> Over 6 up to and including 10</td><td>(0,75) ^{b)}</td><td>1,0</td><td> </td></tr><tr><td> Over 10 up to and including 16</td><td>(1,0) ^{c)}</td><td>1,5</td><td> </td></tr></table> <p>In the conditions applicable to Table 3B delete the words “in some countries” in condition ^{a)}.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>	Up to and including 6		0,75 ^{a)}		Over 6 up to and including 10	(0,75) ^{b)}	1,0		Over 10 up to and including 16	(1,0) ^{c)}	1,5			N
Up to and including 6		0,75 ^{a)}													
Over 6 up to and including 10	(0,75) ^{b)}	1,0													
Over 10 up to and including 16	(1,0) ^{c)}	1,5													
3.3.4	<p>In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following:</p> <table><tr><td> Over 10 up to and including 16</td><td>1,5 to 2,5</td><td>1,5 to 4</td></tr></table> <p>Delete the fifth line: conductor sizes for 13 to 16 A.</p>	Over 10 up to and including 16	1,5 to 2,5	1,5 to 4		N									
Over 10 up to and including 16	1,5 to 2,5	1,5 to 4													
4.3.13.6	<p>Add the following NOTE:</p> <p>NOTE Z1 Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.</p>		N												
Annex H	<p>Replace the last paragraph of this annex by:</p> <p>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.</p> <p>Replace the notes as follows:</p> <p>NOTE These values appear in Directive 96/29/Euratom.</p> <p>Delete NOTE 2.</p>		N												
Bibliography	Additional EN standards.		--												

ZA	Normative references to international publications with their corresponding European publications (EN 60950-1/A11)	--
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ZB	Special national conditions	N
1.2.13.14	In Norway and Sweden, for requirements see 1.7.2.1 and 7.3 of this annex. (EN 60950-1/A11)	N
1.2.4.1	In Denmark, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	N

EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013			
CL.	Requirement of the test	Result--Remark	Verdict
1.5.7.1	In Finland, Norway and Sweden, resistors bridging basic insulation in class I pluggable equipment type A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2. (EN 60950-1/A11)		N
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
1.5.9.4	In Finland, Norway and Sweden, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N
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.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Finland : « Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan »</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p>		N
1.7.2.1	<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> <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>"Utstyr installert koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel-TV nettet."</p> <p>Translation to Swedish:</p>		N

EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013																											
CL.	Requirement of the test	Result--Remark	Verdict																								
	<p>“Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”</p> <p>(EN 60950-1/A11)</p>																										
1.7.5	In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.		N																								
1.7.5	For class ii equipment the socket outlet shall be in accordance with Standard Sheet DKA1-4a. (EN 60950-1/A11)		N																								
2.2.4	In Norway, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N																								
2.3.2	In Finland, Norway and Sweden there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N																								
2.3.4	In Norway, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N																								
2.6.3.3	In the United Kingdom, the current rating of the circuit shall be taken as 13 A, not 16 A.		N																								
2.7.1	In the United Kingdom, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.		N																								
2.10.5.13	In Finland, Norway and Sweden, there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N																								
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> <table> <tr> <td>SEV 6532-2.1991</td><td>Plug Type 15</td><td>3P+N+PE</td><td>250/400 V, 10 A</td></tr> <tr> <td>SEV 6533-2.1991</td><td>Plug Type 11</td><td>L+N</td><td>250 V, 10 A</td></tr> <tr> <td>SEV 6534-2.1991</td><td>Plug Type 12</td><td>L+N+PE</td><td>250 V, 10 A</td></tr> </table> <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> <table> <tr> <td>SEV 5932-2.1998</td><td>Plug Type 25</td><td>3L+N+PE</td><td>230/400 V, 16 A</td></tr> <tr> <td>SEV 5933-2.1998</td><td>Plug Type 21</td><td>L+N</td><td>250 V, 16 A</td></tr> <tr> <td>SEV 5934-2.1998</td><td>Plug Type 23</td><td>L+N+PE</td><td>250 V, 16 A</td></tr> </table>	SEV 6532-2.1991	Plug Type 15	3P+N+PE	250/400 V, 10 A	SEV 6533-2.1991	Plug Type 11	L+N	250 V, 10 A	SEV 6534-2.1991	Plug Type 12	L+N+PE	250 V, 10 A	SEV 5932-2.1998	Plug Type 25	3L+N+PE	230/400 V, 16 A	SEV 5933-2.1998	Plug Type 21	L+N	250 V, 16 A	SEV 5934-2.1998	Plug Type 23	L+N+PE	250 V, 16 A		N
SEV 6532-2.1991	Plug Type 15	3P+N+PE	250/400 V, 10 A																								
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EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013			
CL.	Requirement of the test	Result--Remark	Verdict
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>		N
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>		N
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>		N
3.2.1.1	<p>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.</p>		N
3.2.4	In Switzerland, for requirements see 3.2.1.1 of this annex.		N
3.2.5.1	In the United Kingdom, a power supply cord with conductor of 1,25 mm ² is allowed for equipment with a rated current over 10 A and up to and including 13 A.		N
3.3.4	<p>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:</p> <ul style="list-style-type: none"> • 1,25 mm² to 1,5 mm² nominal cross-sectional area. 		N

EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013			
CL.	Requirement of the test	Result--Remark	Verdict
4.3.6	In the United Kingdom, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N
4.3.6	In Ireland, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 – National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		N
5.1.7.1	In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: <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. 		N
6.1.2.1	In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause: <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>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</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. <p>It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 132400:1994, may bridge this</p>		N

EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013			
CL.	Requirement of the test	Result--Remark	Verdict
	insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 132400; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400.		
6.1.2.2	In Finland, Norway and Sweden, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N
7.2	In Finland, Norway and Sweden, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N
7.3	In Norway and Sweden, for requirements see 1.2.13.14 and 1.7.2.1 of this annex. (EN 60950-1/A11)		N
7.3	In Norway, for installation conditions see EN 60728-11:2005.		N
ZC	A-DEVIATIONS (informative) (EN 60950-1/A11)		N
1.5.1	Switzerland (Ordinance on environmentally hazardous substances SR 814.081, Annex 1.7, Mercury – Annex 1.7 of SR 814.81 applies for mercury.) Add the following: NOTE In Switzerland, switches containing mercury such as thermostats, relays and level controllers are not allowed.		N
1.7.2.1	Germany (Gesetz über technische Arbeitsmittel und Verbraucherprodukte (Geräte- und Produktsicherheitsgesetz – GPSG) [Law on technical labour equipment and consumer products], of 6 th January 2004, Section 2, Article 4, Clause (4), Item 2). If for the assurance of safety and health certain rules during use, amending or maintenance of a technical labour equipment or readymade consumer product are to be followed, a manual in German language has to be delivered when placing the product on the market. Of this requirement, rules for use even only by SERVICE PERSONS are not exempted.		N
1.7.13	Switzerland (Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15 Batteries) Annex 2.15 of SR 814.81 applies for batteries.		N

EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013			
CL.	Requirement of the 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/A12:2011

Zx.	Protection against excessive sound pressure from personal music players		P
Zx.2	For equipment provided as package: Acoustic output $L_{Aeq,T}$ while playing the fixed “programme simulation noise” of EN 50332-1 (dBA)		P
	For personal music player with analogue electrical output for a listening device: Electrical output as described in EN 50332-2 while playing the fixed “programme simulation noise” of EN 50332-1 (mV)		P
	Equipment exempted from safety provisions a) to e) below		N
	a) Protection of user provided against unintentional acoustic outputs exceeding stated levels		N
	b) Equipment has a standard acoustic output level not exceeding stated levels, and automatically returns to an output level not exceeding stated levels when the power is switched off		N
	c) Means for actively informing user of increased sound pressure when operated with an acoustic output exceeding stated levels		N
	d) Warning of subclause Zx.3 provided		N
	e) 1) For equipment provided as package: Acoustic output $L_{Aeq,T}$ while playing the fixed “programme simulation noise” of EN 50332-1 (dBA)		N
	e) 2) For personal music player with analogue electrical output for a listening device: Electrical output as described in EN 50332-2 while playing the fixed “programme simulation noise” of EN 50332-1 (mV)		P
Zx.3	Warning		N
	Symbol of IEC 60417-6044 provided		N
	Height of symbol (mm)		N

EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013			
CL.	Requirement of the test	Result--Remark	Verdict
	Wording "To prevent possible hearing damage, do not listen at high volume levels for long periods.", or similar, provided		N
	Alternative warning method used		N
Zx.4	Requirements for listening devices (headphones and earphones)		N
Zx.4.1	Wired listening devices with analogue input		N
	Input voltage with 94 dBA sound pressure output Laeq,T while playing the fixed "programme simulation noise" of EN 50332-2 (mV) :		N
Zx.4.2	Wired listening devices with digital input		N
	Acoustic output Laeq,T of listening device with any playing device playing the fixed "programme simulation noise" of EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level) (dBA) :		N
	Digital interface standards used for testing :		N
	Equipment modes considered during testing ... :		N
Zx.4.3	Wireless listening devices		N
	Acoustic output Laeq,T of listening device (in wireless mode) (dBA) :		N
	Any playing and transmitting device playing the fixed "programme simulation noise" of EN 50332-1		N
	Wireless transmission standard used for testing :		N
	Setting of volume and sound settings in the listening device :		N
Zx.5	Measurement methods		P
	Time interval T according to EN 50332-1 or EN 50332-2, as applicable (s) :		P

EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013

CL.	Requirement of the test	Result--Remark	Verdict
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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)	
PCB	Various	Various	V-0, 130°C	--	UL	
Enclosure	Various	Various	ABS+PC; V-0	--	UL	
Battery for node	EVE	ER18505	3V	--	UL	
-PCB	Various	Various	V-0, 130°C	--	UL	
Supplementary information:						

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V)	I (A)	I _{rated} (A)	P (W)	Fuse #	I(A)	Condition/status	
3	0.5					Normal condition, supplied by adapter	
Supplementary information:							

2.1.1.5 c) 1)	TABLE: max. V, A, VA test				N
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
--	--	--	--	--	
supplementary information:					

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

2.2	TABLE: evaluation of voltage limiting components in SELV circuits			N
Component (measured between)		max. voltage (V) (normal operation)		Voltage Limiting Components
		V peak	V d.c.	
--		--	--	--
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)		
--		--		

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CL.	Requirement of the test	Result--Remark	Verdict
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supplementary information:

2.5 TABLE: Limited power sources

N

Circuit output tested:

Note: Measured Uoc (V) with all load circuits disconnected:

Components	Sample No.	Uoc (V)	I _{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
--	--	--	--	--	--	--

supplementary information:

Sc=Short circuit, Oc=Open circuit

2.10.2 Table: working voltage measurement

N

Location	RMS voltage (V)	Peak voltage (V)	Comments
--	--	--	--

supplementary information:

2.10.3 and 2.10.4 TABLE: Clearance and creepage distance measurements

N

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:						
--	--	--	--	--	--	--
Basic/supplementary:						
--	--	--	--	--	--	--
Reinforced:						
--	--	--	--	--	--	--
Supplementary information:						

2.10.5 TABLE: Distance through insulation measurements

N

Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
--	--	--	--	--	--
Supplementary information:					

4.3.8	TABLE: Batteries								P
The tests of 4.3.8 are applicable only when appropriate battery data is not available									--
Is it possible to install the battery in a reverse polarity position?					No				--
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition	--	--	--	--	--	--	--	--	--
Max. current during fault condition	--	--	--	--	--	--	--	--	--
Test results:									Verdict
- Chemical leaks					--				P
- Explosion of the battery					--				P
- Emission of flame or expulsion of molten metal					--				P
- Electric strength tests of equipment after completion of tests					--				N
Supplementary information: Battery's information see table 1.5.1									

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CL.	Requirement of the test	Result--Remark	Verdict
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4.5	TABLE: Thermal requirements						P
		A					--
	Supply voltage (V _≡)	3.6					
	Ambient T _{min} (°C)	35.0					--
	Ambient T _{max} (°C)	35.1					--
Maximum measured temperature T of part/at::		T (°C)					Allowed T _{max} (°C)
Plastic enclosure surface		1.4					30
Internal wire		2.2					45
PCB		4.1					95
Battery surface		5.6					25
Supplementary information:							
Temperature T of winding:		t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)
--		--	--	--	--	--	--
Supplementary information:							
Test condition:							
Notes: The EUT was powered by lithium battery.							

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

4.7	TABLE: Resistance to fire					N
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
--	--	--	--	--	--	
Supplementary information:						

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

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CL.	Requirement of the test	Result--Remark	Verdict

supplementary information:

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			N
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdo wn Yes / No
Functional:				
--		--	--	--
Basic/supplementary:				
--		--	--	--
Reinforced:				
--		--	--	--
Supplementary information:				

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)		25.1 – 25.3			--
	Power source for EUT: Manufacturer, model/type, output rating		--			--
Component No.	Fault	Supply voltage (Vdc)	Test time	Fuse #	Fuse current (A)	Observation
Capacitor	s-c	5	10min	--	--	Unit shut down immediately, No hazard.
Diode	s-c	5	10min	--	--	Unit shut down immediately, No hazard.
Resistor	s-c	5	10min	--	--	No hazard., Ambient: 25°C Enclosure inside: 29°C
Audion	s-c	5	10min		--	Charging current is 0 mA
Supplementary information:						
Notes:						

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CL.	Requirement of the test	Result--Remark	Verdict
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C.2	TABLE: transformers						N
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Require d electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
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Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measure d distance thr. insul. / mm; number of layers
--	--			--	--	--	--
supplementary information:							

C.2	TABLE: transformers	N
Transformer		

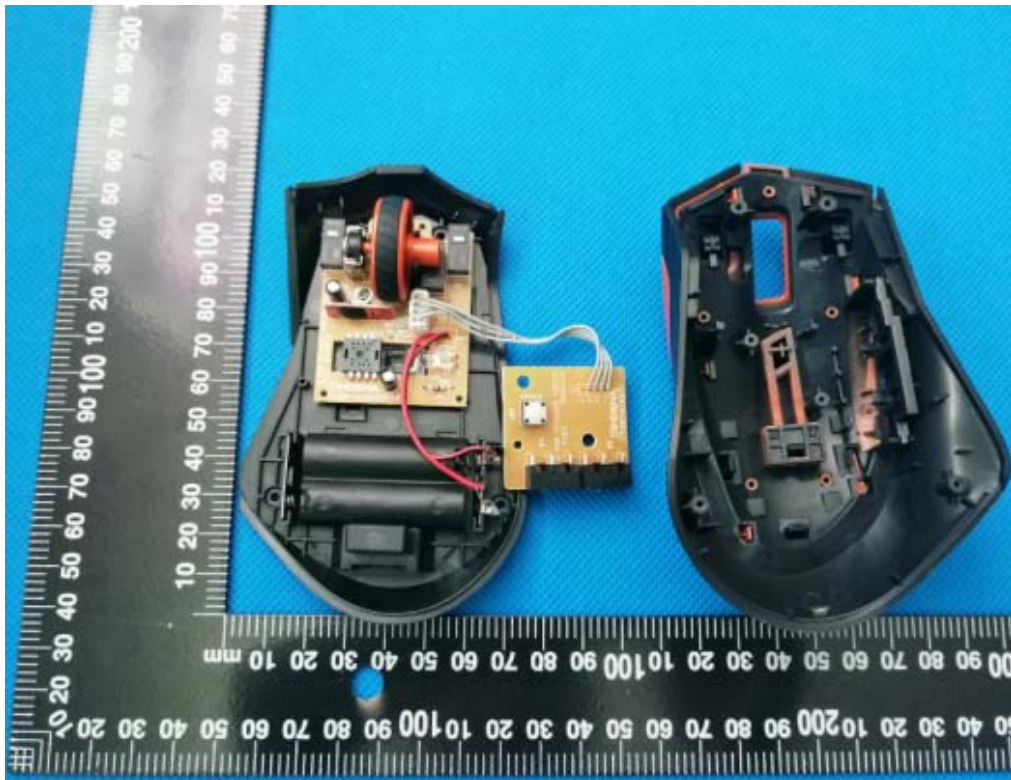
EUT Photos 1



EUT Photos 2



EUT Photos 3



EUT Photos 4



END OF REPORT