

# LVD Test Report

Application No. : HX1906141806

Applicant :

Equipment Under Test (EUT)

EUT Name : Bluetooth Speaker

Model No. :

Serial No. : N/A

Brand Name : N/A

Receipt Date : 2019-06-05

Test Date : 2019-06-05 to 2019-06-13

Issue Date : 2019-06-14

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

Conclusions : Complied

This report shows that the product technically complies with the Council RED Directive 2014/53/EU requirements.

Test/Witness Engineer

*Tim Chen*

Approved & Authorized :



*Andy Zhang*



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

# TEST REPORT

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

## Information technology equipment – Safety – Part 1: General requirements

**Report Number** ..... : HX906141806

**Testing Laboratory** ..... : Shenzhen HX Detect Certification Co., Ltd.

**Address** ..... : 8/F, Haoyunlai Building B, Baomin 2th Road, Xixiang Street, Baoan District, Shenzhen, China

**Applicant's name** ..... :

**Address** ..... :

**Manufacturer's name** ..... :

**Address** ..... :

### Test specification:

**Standard** ..... : ☒ EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013 and/or  
☐ IEC 60950-1:2005 (Second Edition) + Am 1:2009

**Test procedure** ..... : LVD Test Procedure

**Non-standard test method** ..... : N/A

**Test Report Form No.** ..... : IEC60950\_1C

**Test Report Form(s) Originator** .... : TUV

**Master TRF** ..... : Dated 2013

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

**Test item description** ..... : Bluetooth Speaker

**Trade Mark** ..... : N/A

**Manufacturer** ..... : Digiview Technology Limited

**Model/Type reference** ..... : DSBT048

**Ratings** ..... : DC5V, 05A

**Copy of marking plate**

**Bluetooth Speaker**

Model No.: DSBT048

Ratings: DC5V, 0.5A



**Made In China**

**Serial No. : N/A**

**Test item particulars..... :**

Equipment mobility ..... : ☐ movable ☐ hand-held ☐ transportable  
☐ stationary ☐ for building-in ☒ direct plug-in

Connection to the mains ..... : ☒ pluggable equipment ☒ type A ☐ type B  
☐ permanent connection  
☐ detachable power supply cord  
☐ non-detachable power supply cord  
☐ not directly connected to the mains

Operating condition ..... : ☒ continuous  
☐ rated operating / resting time:

Access location ..... : ☒ operator accessible  
☐ restricted access location

Over voltage category (OVC) ..... : ☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV  
☐ other: No direct connection with mains.

Mains supply tolerance (%) or absolute mains supply values ..... :  $\pm 10\%$  according to manufacturer

Tested for IT power systems ..... : ☐ Yes ☒ No

IT testing, phase-phase voltage (V) ..... : N/A

Class of equipment ..... : ☐ Class I ☒ Class II ☐ Class III  
☐ Not classified

Considered current rating of protective device as part of the building installation (A) ..... : 16 A

Pollution degree (PD) ..... : ☐ PD 1 ☒ PD 2 ☐ PD 3

IP protection class ..... : IP X0

Altitude during operation (m) ..... : < 2000 m

Altitude of test laboratory (m) ..... : Shenzhen of China < 2000 m

Mass of equipment (kg) ..... : <300g

**Possible test case verdicts:**

- test case does not apply to the test object.....: N/A (or N)
- test object does meet the requirement .....: P (Pass)
- test object does not meet the requirement .....: F (Fail)

**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. This report shall not be reproduced except in full without the written approval of the Shenzhen HX.

**Summary of testing:**

Tests performed (name of test and test clause):

The sample(s) tested complies with the requirements of IEC/EN 60950-1

These tests fulfil the requirements of standard ISO/IEC 17025.

When determining the test conclusion, the Measurement Uncertainty of test has been considered.

Heating test (4.5):

Tma = 25 °C (declared by manufacturer)

Tamb = 25.0°C – 25.5 °C

K-type thermocouple used for temperature measurement.

Bluetooth Speaker, powered by certified external power supply approved or internal lithium battery, for indoor use only.

**Declaration of difference:**

The product model N/A are identical in the same PCB layout, interior structure and electrical circuits with the model DSBT048 which was considered as representative to perform all tests in this report, the differences are only the model name and appearance color for commercial purpose.

The product has been tested according to standard IEC 60950-1:2005 (2nd Edition) / EN 60950-1: 2006+A11: 2009+A1: 2010 +A12:2011+ A2: 2013 and those deviations taken into account of

<input checked="" type="checkbox"/> CENELEC common modifications		<input type="checkbox"/> United Kingdom	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Finland	<input type="checkbox"/> Denmark	<input type="checkbox"/> Ireland	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sweden	<input type="checkbox"/> Germany	<input type="checkbox"/> Spain	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Norway	<input type="checkbox"/> Switzerland	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>1</b>	<b>GENERAL</b>		<b>P</b>
<b>1.5</b>	<b>Components</b>		<b>P</b>
1.5.1	General		<b>P</b>
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	<b>P</b>
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 exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.</p>	<b>P</b>
1.5.3	Thermal controls		<b>N</b>
1.5.4	Transformers		<b>N</b>
1.5.5	Interconnecting cables		<b>P</b>
1.5.6	Capacitors bridging insulation		<b>N</b>
1.5.7	Resistors bridging insulation		<b>N</b>
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		<b>N</b>
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		<b>N</b>
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		<b>N</b>
1.5.8	Components in equipment for IT power systems		<b>N</b>
1.5.9	Surge suppressors		<b>N</b>
1.5.9.1	General	No VDR used	<b>N</b>
1.5.9.2	Protection of VDRs		<b>N</b>
1.5.9.3	Bridging of functional insulation by a VDR		<b>N</b>
1.5.9.4	Bridging of basic insulation by a VDR		<b>N</b>

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N
<b>1.6</b>	<b>Power interface</b>		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		N
1.6.4	Neutral conductor		P

<b>1.7</b>	<b>Marking and instructions</b>		P
1.7.1	Power rating and identification markings		P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:		N
	Rated voltage(s) or voltage range(s) (V) .....	DV5.0V	P
	Symbol for nature of supply, for d.c. only .....		N
	Rated frequency or rated frequency range (Hz) :		P
	Rated current (mA or A) .....	Max. 0.5A	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark .....	See page 1	P
	Model identification or type reference .....	See model difference	P
	Symbol for Class II equipment only .....		P
	Other markings and symbols .....	See marking plate	P
1.7.2	Safety instructions and marking		P
1.7.2.1	General		P
1.7.2.2	Disconnect devices	Plug	P
1.7.2.3	Overcurrent protective device	Fuse link used	P
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
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

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 .....	Same model for battery only.	P
	Language(s) .....	English	—
1.7.14	Equipment for restricted access locations .....	EUT is not considered for exclusive usage in restricted access locations.	N

<b>2</b>	<b>PROTECTION FROM HAZARDS</b>		<b>P</b>
2.1	Protection from electric shock and energy hazards		<b>P</b>
2.1.1	Protection in operator access areas		<b>P</b>
2.1.1.1	Access to energized parts		<b>P</b>
	Test by inspection .....		<b>P</b>
	Test with test finger (Figure 2A) .....	Hazardous parts not accessible	<b>P</b>
	Test with test pin (Figure 2B) .....	Hazardous parts not accessible	<b>P</b>

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Test with test probe (Figure 2C) .....		N
2.1.1.2	Battery compartments		N
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	N
	Working voltage (V <sub>peak</sub> or V <sub>rms</sub> ); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage wiring in operator accessible area.	N
2.1.1.5	Energy hazards .....		N
2.1.1.6	Manual controls	No such device	N
2.1.1.7	Discharge of capacitors in equipment	No risk of electric shock.	P
	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	P
<b>2.3</b>	<b>TNV circuits</b>		N
2.3.1	Limits		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



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

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
<b>2.4</b>	<b>Limited current circuits</b>		<b>P</b>
2.4.1	General requirements		P
2.4.2	Limit values		P
	Frequency (Hz).....	/	—
	Measured current (mA).....	45mA	—
	Measured voltage (V) .....	5Vdc	—
	Measured circuit capacitance (nF or $\mu$ F).....		—
2.4.3	Connection of limited current circuits to other circuits		N

<b>2.5</b>	<b>Limited power sources</b>		<b>P</b>
	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).....		—
	Current rating of overcurrent protective device (A) .:		—
	Use of integrated circuit (IC) current limiters		N

<b>2.6</b>	<b>Provisions for earthing and bonding</b>		<b>N</b>
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

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		—
2.6.3.3	Size of protective bonding conductors		N
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		—
	Protective current rating (A), cross-sectional area (mm <sup>2</sup> ), 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

<b>2.7</b>	<b>Overcurrent and earth fault protection in primary circuits</b>		P
2.7.1	Basic requirements		P
	Instructions when protection relies on building installation		N
2.7.2	Faults not simulated in 5.3.7		P
2.7.3	Short-circuit backup protection		P

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

2.7.4	Number and location of protective devices ..... :	One protective device "F1" located in line	P
2.7.5	Protection by several devices	Only one protective device	N
2.7.6	Warning to service personnel ..... :		N

<b>2.8</b>	<b>Safety interlocks</b>		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
	Protection against extreme hazard		N
2.8.5	Moving parts		N
2.8.6	Overriding		N
2.8.7	Switches, relays and their related circuits		N
2.8.7.1	Separation distances for contact gaps and their related circuits (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

<b>2.9</b>	<b>Electrical insulation</b>		P
2.9.1	Properties of insulating materials		P
2.9.2	Humidity conditioning		P
	Relative humidity (%), temperature (°C) ..... :	93 %RH, 25 °C, 48 h	—
2.9.3	Grade of insulation		P
2.9.4	Separation from hazardous voltages		P
	Method(s) used ..... :	Method 1 used	—

<b>2.10</b>	<b>Clearances, creepage distances and distances through insulation</b>		P
2.10.1	General		P
2.10.1.1	Frequency ..... :		P
2.10.1.2	Pollution degrees ..... :	II	P
2.10.1.3	Reduced values for functional insulation		P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.1.4	Intervening unconnected conductive parts		P
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		P
2.10.2.1	General		P
2.10.2.2	RMS working voltage	(See appended table 2.10.3 and 2.10.4)	P
2.10.2.3	Peak working voltage	(See appended table 2.10.3 and 2.10.4)	P
2.10.3	Clearances		P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages		P
	a) AC mains supply .....	100-240V a.c.	P
	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	(see appended table 2.10.3 and 2.10.4)	P
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 .....	2500 V	P
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
	For a d.c. mains supply .....		N
	b) Transients from a telecommunication network :		N
2.10.4	Creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.4.1	General		P
2.10.4.2	Material group and comparative tracking index		P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	CTI tests .....	Material group IIIb is assumed to be used	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
<b>2.10.5</b>	<b>Solid insulation</b>		P
2.10.5.1	General		P
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation		N
2.10.5.4	Semiconductor devices	Approved opto-coupler	P
2.10.5.5.	Cemented joints		N
2.10.5.6	Thin sheet material – General		P
2.10.5.7	Separable thin sheet material	Insulation tape used for transformer	P
	Number of layers (pcs) .....		—
2.10.5.8	Non-separable thin sheet material		N
2.10.5.9	Thin sheet material – standard test procedure		N
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure	(see appended table 2.10.5)	P
	Electric strength test		—
2.10.5.11	Insulation in wound components		P
2.10.5.12	Wire in wound components		P
	Working voltage .....		P
	a) Basic insulation not under stress .....		N
	b) Basic, supplementary, reinforced insulation ..	Reinforced insulation	P
	c) Compliance with Annex U .....	Certified triple insulated wire used as Primary winding See appended table 1.5.1	P
	Two wires in contact inside wound component; angle between 45° and 90° .....	Insulating tube used as physical separation	P
2.10.5.13	Wire with solvent-based enamel in wound components		N
	Electric strength test		—
	Routine test		N
2.10.5.14	Additional insulation in wound components		P
	Working voltage .....		P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- Basic insulation not under stress .....		N
	- Supplementary, reinforced insulation .....		N
<b>2.10.6</b>	<b>Construction of printed boards</b>		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
<b>2.10.7</b>	<b>Component external terminations</b>		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
<b>3</b>	<b>WIRING, CONNECTIONS AND SUPPLY</b>		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	(see appended table 1.5.1)	P
3.1.2	Protection against mechanical damage		P
3.1.3	Securing of internal wiring		P
3.1.4	Insulation of conductors		P
3.1.5	Beads and ceramic insulators	Not used	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	No such screws used	N

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

3.1.9	Termination of conductors		P
	10 N pull test	No looseing	P
3.1.10	Sleeving on wiring		P

<b>3.2</b>	<b>Connection to a mains supply</b>		P
3.2.1	Means of connection	Plug	P
3.2.1.1	Connection to an a.c. mains supply		P
3.2.1.2	Connection to a d.c. mains supply		N
3.2.2	Multiple supply connections	Single main supply	N
3.2.3	Permanently connected equipment	The equipment is not intended for permanent connection to the mains.	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 <sup>2</sup> ), AWG .....		—
3.2.5.2	DC power supply cords		N
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

<b>3.3</b>	<b>Wiring terminals for connection of external conductors</b>		N
3.3.1	Wiring terminals		N
3.3.2	Connection of non-detachable power supply cords		N

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 <sup>2</sup> ).....:		—
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
<b>3.4</b>	<b>Disconnection from the mains supply</b>		<b>P</b>
3.4.1	General requirement		P
3.4.2	Disconnect devices	Plug	P
3.4.3	Permanently connected equipment		N
3.4.4	Parts which remain energized		N
3.4.5	Switches in flexible cords	No such switches	N
3.4.6	Number of poles - single-phase and d.c. equipment		P
3.4.7	Number of poles - three-phase equipment	Single – phase equipment	N
3.4.8	Switches as disconnect devices		N
3.4.9	Plugs as disconnect devices		N
3.4.10	Interconnected equipment		N
3.4.11	Multiple power sources	Only one supply connection provided.	N
<b>3.5</b>	<b>Interconnection of equipment</b>		<b>P</b>
3.5.1	General requirements		P
3.5.2	Types of interconnection circuits .....	SELV circuit only	P
3.5.3	ELV circuits as interconnection circuits	No ELV circuit	N
3.5.4	Data ports for additional equipment		N
<b>4</b>	<b>PHYSICAL REQUIREMENTS</b>		<b>P</b>
4.1	Stability		P
	Angle of 10°		N



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Clause	Requirement + Test	Result - Remark	Verdict

	Test force (N) .....		N
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<b>4.2</b>	<b>Mechanical strength</b>		P
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		P
4.2.4	Steady force test, 250 N	250 N applied on outer enclosure, no hazards.	P
4.2.5	Impact test		N
	Fall test		N
	Swing test		N
4.2.6	Drop test; height (mm) .....	1m	P
4.2.7	Stress relief test	89.3 °C, 7h	P
4.2.8	Cathode ray tubes		N
	Picture tube separately certified .....		N
4.2.9	High pressure lamps		N
4.2.10	Wall or ceiling mounted equipment; force (N) ...:		N
4.2.11	Rotating solid media		N
	Test to cover on the door.....:		N

<b>4.3</b>	<b>Design and construction</b>		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	No such control	N
4.3.4	Securing of parts		P
4.3.5	Connection by plugs and sockets		N
4.3.6	Direct plug-in equipment		P
	Torque .....	< 0.1 Nm	—
	Compliance with the relevant mains plug standard .....	See annex 2	N
4.3.7	Heating elements in earthed equipment		N
4.3.8	Batteries		N

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Clause	Requirement + Test	Result - Remark	Verdict
	- Overcharging of a rechargeable battery		N
	- Unintentional charging of a non-rechargeable battery		N
	- Reverse charging of a rechargeable battery		N
	- Excessive discharging rate for any battery		N
4.3.9	Oil and grease	No 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 .....	No flammable liquids	N
	Quantity of liquid (l) .....		N
	Flash point (°C) .....		N
4.3.13	Radiation		N
4.3.13.1	General		N
4.3.13.2	Ionizing radiation		N
	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
	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		N
4.3.13.5.1	Lasers (including laser diodes)		N
	Laser class .....		—
4.3.13.5.2	Light emitting diodes (LEDs)		N
4.3.13.6	Other types .....		N

<b>4.4</b>	<b>Protection against hazardous moving parts</b>		N
4.4.1	General		N
4.4.2	Protection in operator access areas .....		N
	Household and home/office document/media shredders		N
4.4.3	Protection in restricted access locations .....		N

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Clause	Requirement + Test	Result - Remark	Verdict
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

<b>4.5</b>	<b>Thermal requirements</b>		P
4.5.1	General		P
4.5.2	Temperature tests	(see appended table 4.5)	P
	Normal load condition per Annex L .....		—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat .....	(see appended table 4.5)	P

<b>4.6</b>	<b>Openings in enclosures</b>		P
4.6.1	Top and side openings	Opening for d.c. output cable only	P
	Dimensions (mm) .....		—
4.6.2	Bottoms of fire enclosures		P
	Construction of the bottommm, dimensions (mm) ..	Opening for d.c. output cable only	—
4.6.3	Doors or covers in fire enclosures	No such part use	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

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Clause	Requirement + Test	Result - Remark	Verdict
4.6.4.3	Use of metallized parts		N
4.6.5	Adhesives for constructional purposes		N
	Conditioning temperature (°C), time (weeks).....:		—

<b>4.7</b>	<b>Resistance to fire</b>		<b>P</b>
4.7.1	Reducing the risk of ignition and spread of flame		P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests		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.	P
4.7.2.2	Parts not requiring a fire enclosure		N
4.7.3	Materials		P
4.7.3.1	General		P
4.7.3.2	Materials for fire enclosures	V-0 enclosure used	P
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	V-0 PWB used	P
4.7.3.5	Materials for air filter assemblies		N
4.7.3.6	Materials used in high-voltage components		N

<b>5</b>	<b>ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS</b>		<b>P</b>
5.1	<b>Touch current and protective conductor current</b>		<b>P</b>
5.1.1	General		P
5.1.2	Configuration of equipment under test (EUT)		P
5.1.2.1	Single connection to an a.c. mains supply		P
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N
5.1.3	Test circuit	Test circuit as in Figure 5A is used.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.4	Application of measuring instrument	Measuring instrument as in Annex D	P
5.1.5	Test procedure		P
5.1.6	Test measurements		P
	Supply voltage (V) .....	264 V~	—
	Measured touch current (mA) .....	Measured between L/N and output terminals: Max. 0.07 mA Measured between L/N and enclosure: Max. 0.05 mA	—
	Max. allowed touch current (mA) .....	0.25 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) .....		—
	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

<b>5.2</b>	<b>Electric strength</b>		<b>P</b>
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure		P

<b>5.3</b>	<b>Abnormal operating and fault conditions</b>		<b>P</b>
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IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors		P
5.3.3	Transformers	(see appended Annex C)	P
5.3.4	Functional insulation .....		P
5.3.5	Electromechanical components	No electromechanical component provided.	N
5.3.6	Audio amplifiers in ITE .....		N
5.3.7	Simulation of faults		P
5.3.8	Unattended equipment		N
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests		P
5.3.9.2	After the tests		P

<b>6</b>	<b>CONNECTION TO TELECOMMUNICATION NETWORKS</b>		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
6.1.2.1	Requirements		N
	Supply voltage (V) .....		—
	Current in the test circuit (mA) .....		—
6.1.2.2	Exclusions .....		N

<b>6.2</b>	<b>Protection of equipment users from overvoltages on telecommunication networks</b>		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

<b>6.3</b>	<b>Protection of the telecommunication wiring system from overheating</b>		N
	Max. output current (A) .....		—

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

	Current limiting method .....		—
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<b>7</b>	<b>CONNECTION TO CABLE DISTRIBUTION SYSTEMS</b>		<b>N</b>
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

<b>A</b>	<b>ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		<b>N</b>
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.....		—
	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) .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
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
A.3.3	Compliance criterion		N

<b>B</b>	<b>ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)</b>		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



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

<b>C</b>	<b>ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)</b>		<b>P</b>
	Position .....	T1 pri. - sec.	—
	Manufacturer .....	(see appended table 1.5.1)	—
	Type .....	(see appended table 1.5.1)	—
	Rated values .....		—
	Method of protection .....	Inherently limited	—
C.1	Overload test		P
C.2	Insulation	(see appended table 5.2)	P
	Protection from displacement of windings..... :	Sec. triple insulated winding wire, tube and bobbin	P

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

<b>E</b>	<b>ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)</b>		<b>N</b>
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IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

<b>F</b>	<b>ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)</b>		<b>P</b>
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<b>G</b>	<b>ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES</b>		<b>N</b>
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
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

<b>H</b>	<b>ANNEX H, IONIZING RADIATION (see 4.3.13)</b>		<b>N</b>
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<b>J</b>	<b>ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)</b>		<b>N</b>
	Metal(s) used .....		—


<b>K</b>	<b>ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)</b>		<b>N</b>
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Clause	Requirement + Test	Result - Remark	Verdict
K.1	Making and breaking capacity		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
<b>L</b>	<b>ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)</b>		<b>P</b>
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
L.7	Other business equipment		P
<b>M</b>	<b>ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)</b>		<b>N</b>
M.1	Introduction		N
M.2	Method A		N
M.3	Method B		N
M.3.1	Ringling 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
<b>N</b>	<b>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)</b>		<b>N</b>

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Clause	Requirement + Test	Result - Remark	Verdict
N.1	ITU-T impulse test generators		N
N.2	IEC 60065 impulse test generator		N
<b>P</b>	<b>ANNEX P, NORMATIVE REFERENCES</b>		—
<b>Q</b>	<b>ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)</b>		<b>P</b>
	a) Preferred climatic categories .....	Certified VDR used	P
	b) Maximum continuous voltage .....	Certified VDR used	P
	c) Pulse current .....	Certified VDR used	P
<b>R</b>	<b>ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES</b>		<b>N</b>
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
<b>S</b>	<b>ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)</b>		<b>N</b>
S.1	Test equipment		N
S.2	Test procedure		N
S.3	Examples of waveforms during impulse testing		N
<b>V</b>	<b>ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)</b>		<b>N</b>
V.1	Introduction		N
V.2	TN power distribution systems		N
<b>W</b>	<b>ANNEX W, SUMMATION OF TOUCH CURRENTS</b>		<b>N</b>
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

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Clause	Requirement + Test	Result - Remark	Verdict
<b>X</b>	<b>ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)</b>		N
X.1	Determination of maximum input current		N
X.2	Overload test procedure		N
<b>Y</b>	<b>ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)</b>		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
<b>Z</b>	<b>ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)</b>		N
<b>AA</b>	<b>ANNEX AA, MANDREL TEST (see 2.10.5.8)</b>		N
<b>BB</b>	<b>ANNEX BB, CHANGES IN THE SECOND EDITION</b>		—
<b>CC</b>	<b>ANNEX CC, Evaluation of integrated circuit (IC) current limiters</b>		N
CC.1	General		N
CC.2	Test program 1.....		N
CC.3	Test program 2.....		N
<b>DD</b>	<b>ANNEX DD, Requirements for the mounting means of rack-mounted equipment</b>		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
<b>EE</b>	<b>ANNEX EE, Household and home/office document/media shredders</b>		N
EE.1	General		N
EE.2	Markings and instructions		N
	Use of markings or symbols.....		N

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Clause	Requirement + Test	Result - Remark	Verdict
	Information of user instructions, maintenance and/or servicing instructions.....:		N
EE.3	Inadvertent reactivation test.....:		N
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

1.5.1	TABLE: list of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity <sup>1)</sup>
Li-Battery	PengHaoXin Power New Energy Co.,LTD	603040P	3.7 V  , 600 mAh	IEC 62133	Mti (No.: MTi180813B003
PCB	Various	Various	V-1 or better, min. 130 °C	--	UL
Internal Wire	various	1007	VW-1, 24 AWG, 80°C, 300V	--	UL

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
--	2.0	5.0	7.8	1.56	--	Normal condition For power supply: Un = 240 V~ / 50 Hz, In = 0.111 A, Pn = 11.8 W.
--	--	--	--	--	--	Normal condition For lithium battery discharging Idischarging = 0.6 A
Supplementary information: The EUT was powered by external power supply approved.						

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)	

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

--	--	--	--	--
supplementary information:				

<b>2.1.1.5 c) 2)</b>	<b>TABLE: stored energy</b>	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.)		
--		--		
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 <sub>sc</sub> (A)		VA	
			Meas.	Limit	Meas.	Limit
--	--	--	--	--	--	--
supplementary information:						
Sc=Short circuit, Oc=Open circuit						

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

2.10.2	Table: working voltage measurement				N
Location		RMS voltage (V)	Peak voltage (V)	Comments	
--		--	--	--	
supplementary information:					

<b>2.10.3 and 2.10.4</b>	<b>TABLE: Clearance and creepage distance measurements</b>						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:							
--	--	--	--	--	--	--	
Supplementary information:							

<b>2.10.5</b>	<b>TABLE: Distance through insulation measurements</b>					N
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)	
--	--	---	--	--	--	
Supplementary information:						



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

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

4.5.5	TABLE: ball pressure test of thermoplastic parts		P
	allowed impression diameter (mm) ..... :	≤ 2 mm	—
part		test temperature (°C)	impression diameter (mm)
Pin bridge of EU type plug portion		125	0.9
Enclosure		125	1.0
Remark: the bobbin of transformer is of phenolic material, no test required.			

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

4.7	TABLE: Resistance to fire					P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
External power supply	Various	Various	INPUT: 100-240 VAC, 50/60Hz, 0.5A, MAX OUTPUT: 5VDC, 2000mA or above, LPS	EN 60950-1	CE	
Battery pack	Various	Various	3.7 V	IEC 62133		
PWB	Various	Various	V-1 or better, min. 130 °C	--	UL	
Internal Wire	various	1007	VW-1, 24 AWG, 80°C, 300V	--	UL	
Supplementary information:						

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

**EN 60950-1:2006/A11:2009/A1:2010 – CENELEC COMMON MODIFICATIONS**

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding publications European Annex ZB (normative) Special national conditions		P
General	Delete all the “country” notes in the reference document (IEC 60950-1:2005) 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

ATTACHMENT			
Clause	Requirement + 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: 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>	Added.	N
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>	Added.	N
1.7.2.1 (A1:2010)	<p>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.</p>	Added.	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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>	Replaced.	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>		
2.7.2	This subclause has been declared „void“.	Declared.	N
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	Deleted.	N

ATTACHMENT			
Clause	Requirement + 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> <p>Up to and including 6   0,75 <sup>a)</sup>    Over 6 up to and including 10   (0,75) <sup>b)</sup> 1,0    Over 10 up to and including 16   (1,0) <sup>c)</sup>  1,5  </p> <p>In the conditions applicable to Table 3B delete the words “in some countries” in condition <sup>a)</sup>.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>	Replaced.	N
3.3.4	<p>In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following:</p> <p>Over 10 up to and including 16   1,5 to 2,5   1,5 to 4  </p> <p>Delete the fifth line: conductor sizes for 13 to 16 A</p>	Deleted.	N
4.3.13.6 (A1:2010)	<p>Replace the existing NOTE by the following:</p> <p>NOTE Z1 Attention is drawn to:</p> <p>1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and</p> <p>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).</p> <p>Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.</p>	Replaced.	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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 <math>\mu</math>Sv/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>	Replaced.	N
Bibliography	Additional EN standards.	Added.	—

<b>ZA</b>	<b>NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS</b>	—
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ZB ANNEX (normative)			
SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In <b>Denmark</b> , 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
1.2.13.14	In <b>Norway</b> and <b>Sweden</b> , for requirements see 1.7.2.1 and 7.3 of this annex.		N
1.5.7.1	In <b>Finland</b> , <b>Norway</b> and <b>Sweden</b> , 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
1.5.8	In <b>Norway</b> , 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 <b>Finland</b> , <b>Norway</b> and <b>Sweden</b> , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	No TNV circuits within the equipment.	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	<p>In <b>Finland</b>, <b>Norway</b> and <b>Sweden</b>, 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 suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p> <p>In <b>Norway</b> and <b>Sweden</b>, 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>	The marking text must be provided when marketed in applicable countries.	N



ATTACHMENT			
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>“Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.”</p> <p>Translation to Swedish:</p> <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>		
1.7.5	<p>In <b>Denmark</b>, 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 <b>CLASS II EQUIPMENT</b> the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.</p>	No socket-outlets provided.	N
2.2.4	In <b>Norway</b> , 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
2.3.2	In <b>Finland</b> , <b>Norway</b> and <b>Sweden</b> 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
2.3.4	In <b>Norway</b> , 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
2.6.3.3	In the <b>United Kingdom</b> , the current rating of the circuit shall be taken as 13 A, not 16 A.	Considered.	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	In the <b>United Kingdom</b> , 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
2.10.5.13	In <b>Finland, Norway and Sweden</b> , 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
3.2.1.1	<p>In <b>Switzerland</b>, 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> <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>		N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>In <b>Denmark</b>, 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 <b>Spain</b>, 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

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>In the <b>United Kingdom</b>, 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 <b>Ireland</b>, 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	<p>In <b>Switzerland</b>, for requirements see 3.2.1.1 of this annex.</p>		N
3.2.5.1	<p>In the <b>United Kingdom</b>, a power supply cord with conductor of 1,25 mm<sup>2</sup> is allowed for equipment with a rated current over 10 A and up to and including 13 A.</p>		N
3.3.4	<p>In the <b>United Kingdom</b>, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a <b>RATED CURRENT</b> of over 10 A up to and including 13 A is:</p> <ul style="list-style-type: none"> <li>• 1,25 mm<sup>2</sup> to 1,5 mm<sup>2</sup> nominal cross-sectional area.</li> </ul>		N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.6	In the <b>United Kingdom</b> , 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
4.3.6	In <b>Ireland</b> , 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
5.1.7.1	In <b>Finland, Norway and Sweden</b> TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:  <ul style="list-style-type: none"> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON;</li> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE B;</li> <li>• STATIONARY PERMANENTLY CONNECTED EQUIPMENT.</li> </ul>	The equipment is not such equipment.	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	<p>In <b>Finland, Norway and Sweden</b>, 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"> <li>- two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <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"> <li>- 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</li> </ul> <p>2.10.10 shall be performed using 1,5 kV), and</p> <ul style="list-style-type: none"> <li>- is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.</li> </ul> <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"> <li>- 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;</li> <li>- the additional testing shall be performed on all the test specimens as described in EN 60384-14;</li> </ul>	No TNV circuits within the equipment.	N

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.2	In <b>Finland, Norway</b> and <b>Sweden</b> , 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.	No TNV circuits within the equipment.	N
7.2	In <b>Finland, Norway</b> and <b>Sweden</b> , 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.	The equipment is not connected to the distribution systems.	N
7.3	In <b>Norway</b> and <b>Sweden</b> , for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N
7.3	In <b>Norway</b> , for installation conditions see EN 60728-11:2005.		N

## ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
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**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		N
Zx.2	For equipment provided as package: Acoustic output $L_{Aeq,T}$ while playing the fixed "programme simulation noise" of EN 50332-1 (dBA) .....	Not applicable.	N
	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) .....	Same as above.	N
	Equipment exempted from safety provisions a) to e) below	Same as above.	N
	a) Protection of user provided against unintentional acoustic outputs exceeding stated levels	Same as above.	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	Same as above.	N
	c) Means for actively informing user of increased sound pressure when operated with an acoustic output exceeding stated levels	Same as above.	N
	d) Warning of subclause Zx.3 provided	Same as above.	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) .....	Same as above.	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) .....	Same as above.	N
Zx.3	Warning		N
	Symbol of IEC 60417-6044 provided	Same as above.	N



ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Height of symbol (mm) .....	Same as above.	N
	Wording "To prevent possible hearing damage, do not listen at high volume levels for long periods.", or similar, provided	Same as above.	N
	Alternative warning method used	Same as above.	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 $L_{Aeq,T}$ while playing the fixed "programme simulation noise" of EN 50332-2 (mV) .....	Same as above.	N
Zx.4.2	Wired listening devices with digital input		N
	Acoustic output $L_{Aeq,T}$ 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) :	Same as above.	N
	Digital interface standards used for testing ... :	Same as above.	N
	Equipment modes considered during testing :	Same as above.	N
Zx.4.3	Wireless listening devices		N
	Acoustic output $L_{Aeq,T}$ of listening device (in wireless mode) (dBA) .....	Same as above.	N
	Any playing and transmitting device playing the fixed "programme simulation noise" of EN 50332-1	Same as above.	N
	Wireless transmission standard used for testing .....	Same as above.	N
	Setting of volume and sound settings in the listening device .....	Same as above.	N
Zx.5	Measurement methods		N
	Time interval T according to EN 50332-1 or EN 50332-2, as applicable (s) .....	Same as above.	N

## ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
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**ATTACHMENT TO TEST REPORT IEC 60950-1**  
**FINLAND NATIONAL DIFFERENCES**  
Information technology equipment – Safety –  
PART 1: GENERAL REQUIREMENTS

**Differences according to** ..... : EN 60950-1:2006/A11:2009/A1:2010

	National Differences		P
<b>General</b>	See also Group Differences (EN 60950-1:2006/A11/A1)		P
1.5.7.1	In <b>Finland</b> 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
1.5.9.4	In <b>Finland</b> , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	No TNV circuits within the equipment.	N
1.7.2.1	In <b>Finland</b> , 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 in Finland shall be as follows:  "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"	The marking text must be provided when marketed in Finland.	N
2.3.2	In <b>Finland</b> , 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
2.10.5.13	In <b>Finland</b> , 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

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	<p>In <b>Finland</b>, 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"> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE A that <ul style="list-style-type: none"> <li>- is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and</li> <li>- has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and</li> <li>- is provided with instructions for the installation of that conductor by a SERVICE PERSON;</li> </ul> </li> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE B;</li> <li>• STATIONARY PERMANENTLY CONNECTED EQUIPMENT.</li> </ul>	The equipment is not such equipment.	N
6.1.2.1 (A1:2010)	<p>In <b>Finland</b>, 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"> <li>- two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <p>Alternatively for components, 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"> <li>- 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</li> <li>- is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.</li> </ul>	No TNV circuits within the equipment.	N

ATTACHMENT			
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"> <li>- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14:2005 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;</li> <li>- the additional testing shall be performed on all the test specimens as described in EN 60384-14:2005;</li> <li>- the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14:2005, in the sequence of tests as described in EN 60384-14:2005.</li> </ul>		
6.1.2.2	<p>In <b>Finland</b>, 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
7.2	<p>In <b>Finland</b>, 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

## ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
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**ATTACHMENT TO TEST REPORT IEC 60950-1**  
**GERMANY NATIONAL DIFFERENCES**  
Information technology equipment – Safety –  
PART 1: GENERAL REQUIREMENTS

**Differences according to** ..... : VDE 0805-1:2011-01

Annex ZC, 1.7.2.1	According to GPSG, section 2, clause 4: If certain rules on the use, supplementation or maintenance of an item of technical work equipment or ready-to-use commodity must be observed in order to guarantee safety and health, instructions for use in German must be supplied when it is brought into circulation.	Shall be evaluated during the national approval.	N
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## EUT Photos

**Photo 1 Appearance of EUT**



**Photo 2 Appearance of EUT**



**Photo 3 Appearance of EUT**



**Photo 4 Appearance of EUT**



**END OF REPORT**