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# TESTREPORT

Report No:STS1711221A01

Issued for

Vonino Electronics LTD

Unit 1109, 11/F., Kowloon Centre, 33 Ashley Road, Tsim  
Sha Tsui, Kowloon, Hong Kong



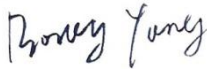
<b>Product Name:</b>	mobilephone
<b>Brand Name:</b>	Vonino
<b>Model Name:</b>	NONO33
<b>Series Model:</b>	Nono M , Nono J , Nono Q , Nono Z
<b>Test Standard:</b>	EN 60950-1:2006 + A11:2009 + A1:2010 + A12: 2011+A2:2013

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<b>TEST REPORT</b> <b>IEC 60950-1</b> <b>Information technology equipment – Safety –</b> <b>Part 1: General requirements</b>	
<b>Report Number</b> .....	STS1711221A01
<b>Tested by (+ signature)</b> .....	Mona Tao 
<b>Reviewed by (+ signature)</b> .....	Sky Hu 
<b>Approved by (+ signature)</b> .....	Bovey Yang 
<b>Date of issue</b> .....	18 Dec. 2017
<b>Total number of pages</b> .....	51 pages
<b>Testing laboratory</b> .....	Shenzhen STS Test Services Co., Ltd.
<b>Address</b> .....	1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China
<b>Applicant's name</b> .....	Vonino Electronics LTD
<b>Address</b> .....	Unit 1109, 11/F., Kowloon Centre, 33 Ashley Road, Tsim Sha Tsui, Kowloon, Hong Kong
<b>Test specification:</b>	
<b>Standard</b> .....	EN 60950-1:2006 + A11:2009 + A1:2010 + A12: 2011+A2:2013 IEC 60950-1:2005+A1:2009+A2:2013
<b>Test procedure</b> .....	Safety report
<b>Non-standard test method</b> .....	N/A
<b>Test Report Form No.</b> .....	IEC60950_1F
<b>Test Report Form(s) Originator</b> .....	SGS Fimko Ltd
<b>Master TRF</b> .....	Dated 2014-02
<b>This test report is specially limited to the above client company and product model only. It may not be duplicated without prior written consent of STS Test.</b>	
<b>Test item description</b> .....	mobilephone
<b>Trade Mark</b> .....	Vonino
<b>Manufacturer</b> .....	Hona (HK) Technology Limited
<b>Address</b> .....	Room 603, 6/F, Block R2-B, No.20, Gaoxin S.Ave.7th, Southern Section, Hi-tech Industrial Park, Nanshan District, Shenzhen, China
<b>Model/Type reference</b> .....	NONO33, Nono M , Nono J , Nono Q , Nono Z
<b>Ratings</b> .....	5V ---500mA (By Charger) or 3.7V ---800mAh (By Li-ion rechargeable battery)



### Summary of testing:

**Tests performed (name of test and test clause):**

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

The submitted samples were found to comply with the requirements of above specification.

**Testing location:**

Shenzhen STS Test Services Co., Ltd.  
1/F., Building B, Zhuoke Science Park, No.190,  
Chongqing Road, Fuyong Street, Bao'an District,  
Shenzhen, Guangdong, China  
CNAS Registration No.: L7649

### Comment:

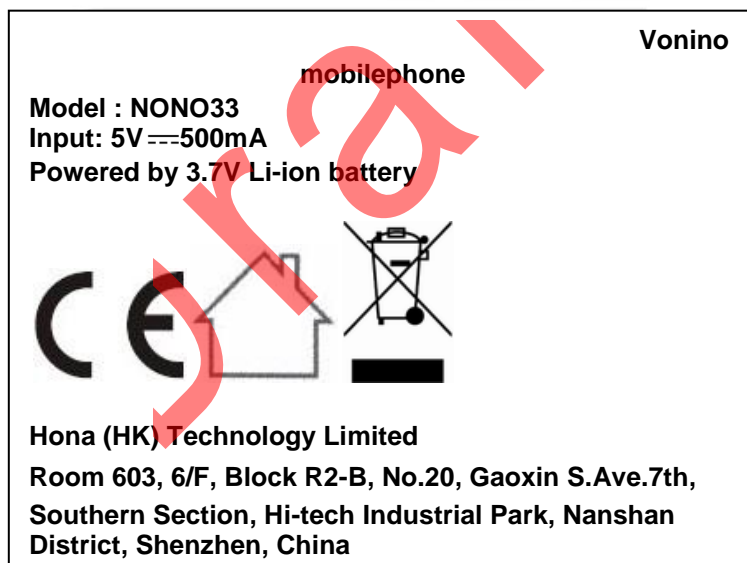
This report also includes:

- Photo documentation: N/A

### Copy of marking plate

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

(Additional requirements for markings. See 1.7 NOTE)



Remark on above marking:

1. The height of CE symbols is more than 5 mm;
2. The height of WEEE symbols is more than 7 mm;
3. The model no. on above marking plate may be replaced by other ones listed in the report.



<b>Test item particulars.....:</b>	
Equipment mobility.....:	<input type="checkbox"/> movable <input checked="" type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains.....:	<input type="checkbox"/> pluggable equipment <input type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input checked="" type="checkbox"/> not directly connected to the mains
Operating condition.....:	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location.....:	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
Over voltage category (OVC).....:	<input type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input checked="" type="checkbox"/> other:
Mains supply tolerance (%) or absolute mains supply values.....:	N/A
Tested for IT power systems.....:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V).....:	
Class of equipment.....:	<input type="checkbox"/> Class I <input type="checkbox"/> Class II <input checked="" type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A).....:	N/A
Pollution degree (PD).....:	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class.....:	IP20
Altitude during operation (m).....:	<2000m
Altitude of test laboratory (m).....:	<2000m
Mass of equipment (kg).....:	Approx. 0.073kg
<b>Possible test case verdicts:</b>	
- test case does not apply to the test object.....:	N (not applicable)
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
<b>Testing .....</b>	
Date of receipt of test item .....	21 Nov. 2017
Date(s) of performance of tests .....	21 Nov. 2017~18 Dec. 2017

**General remarks:**

The test results presented in this report relate only to the object tested.  
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.  
"(see Enclosure #)" refers to additional information appended to the report.  
"(see appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

**General product information:**

- 1.The equipment is a mobilephone which is used in information technology equipment.
- 2.The maximum working temperature is 40°C.
3. All models are identical to each other except for model name,appearance and colors, unless otherwise specified, all tests are perform on model NONO33.

**Abbreviations used in the report:**

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

Indicate used abbreviations (if any)



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component standard. Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.	P
1.5.3	Thermal controls	No thermal controls.	N
1.5.4	Transformers	No transformers.	N
1.5.5	Interconnecting cables		P
1.5.6	Capacitors bridging insulation	No such capacitors provided.	N
1.5.7	Resistors bridging insulation	No such resistors.	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		N
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	Not directly connected to AC power systems.	N



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
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	Class III equipment	N
<b>1.7</b>	<b>Marking and instructions</b>		<b>P</b>
1.7.1	Power rating	The required marking is located on the battery of the equipment.	P
	Multiple mains supply connections.....		N
	Rated voltage(s) or voltage range(s) (V) :	5V ---	P
	Symbol for nature of supply, for d.c. only:	---	P
	Rated frequency or rated frequency range (Hz) :		N
1.7.1.2	Identification markings.....		P
	Rated current (mA or A) :	500mA	P
	Manufacturer's name or trade-mark or identification mark :	See marking plate	P
	Model identification or type reference :	See marking plate	P
	Symbol for Class II equipment only :	Class III equipment	N
	Other markings and symbols .....	Other symbols do not give rise to misunderstanding.	P
1.7.2	Safety instructions and marking	Safety instruction provided	P
1.7.2.1	General	Considered.	P
1.7.2.2	Disconnect devices	No such disconnect device used.	N
1.7.2.3	Overcurrent protective device		N
1.7.2.4	IT power distribution systems	Not connect to IT power distribution system.	N
1.7.2.5	Operator access with a tool		N
1.7.2.6	Ozone		N
1.7.3	Short duty cycles	Continuous operation	N
1.7.4	Supply voltage adjustment .....	No voltage adjustment	N
	Methods and means of adjustment; reference to installation instructions .....		N
1.7.5	Power outlets on the equipment .....	No standard outlets	N
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....	No fuse used.	N
1.7.7	Wiring terminals	No such terminals provided.	N
1.7.7.1	Protective earthing and bonding terminals .....	Class III equipment	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





IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
1.7.8	Controls and indicators		P
1.7.8.1	Identification, location and marking .....	No control.	N
1.7.8.2	Colours .....		P
1.7.8.3	Symbols according to IEC 60417 .....		N
1.7.8.4	Markings using figures .....	No controls.	N
1.7.9	Isolation of multiple power sources .....	No multiple power sources	N
1.7.10	Thermostats and other regulating devices .....	Class III equipment (supplied by SELV).	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		P
1.7.13	Replaceable batteries .....		P
	Language(s) .....		P
1.7.14	Equipment for restricted access locations.....	Equipment not intended for installation in restricted access location	N

<b>2</b>	<b>PROTECTION FROM HAZARDS</b>		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	No hazardous parts in operator access areas.	P
2.1.1.1	Access to energized parts	SELV equipments, no hazards	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	No such battery compartments.	N
2.1.1.3	Access to ELV wiring	No internal wiring at ELV accessible to the operator.	N
	Working voltage (V <sub>peak</sub> or V <sub>rms</sub> ); minimum distance through insulation (mm)		N





IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
2.1.1.4	Access to hazardous voltage circuit wiring	No such accessible hazardous voltage circuit wiring	N
2.1.1.5	Energy hazards .....	No accessible energy hazards	P
2.1.1.6	Manual controls	No such controls	N
2.1.1.7	Discharge of capacitors in equipment		N
	Measured voltage (V); time-constant (s) .....		N
2.1.1.8	Energy hazards – d.c. mains supply	Not connected to 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 .....		P
2.1.2	Protection in service access areas	No such service access areas	N
2.1.3	Protection in restricted access locations	No such restricted access locations	N

<b>2.2</b>	<b>SELV circuits</b>		P
2.2.1	General requirements	Class III equipment (supplied by SELV).	P
2.2.2	Voltages under normal conditions (V) .....	<60V d.c. or <42.4Vpk.	P
2.2.3	Voltages under fault conditions (V) .....	<60V d.c. or <42.4Vpk	P
2.2.4	Connection of SELV circuits to other circuits:	Connect to SELV circuit only	P

<b>2.3</b>	<b>TNV circuits</b>		N
2.3.1	Limits		N
	Type of TNV circuits .....	No TNV circuit.	N
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 .....		N
2.3.4	Connection of TNV circuits to other circuits		N
	Insulation employed .....		N
2.3.5	Test for operating voltages generated externally		N

<b>2.4</b>	<b>Limited current circuits</b>		N
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IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
2.4.1	General requirements		N
2.4.2	Limit values		N
	Frequency (KHz) .....		N
	Measured current (mA) .....		N
	Measured voltage (V) .....		N
	Measured circuit capacitance (nF or $\mu$ F) .....		N
2.4.3	Connection of limited current circuits to other circuits		N

<b>2.5</b>	<b>Limited power sources</b>		P
	a) Inherently limited output		N
	b) Impedance limited output		N
	c) Regulating network limited output under normal operating and single fault condition	The equipment against overload fault condition by using regulating network limited output.	P
	d) Overcurrent protective device limited output		N
	Max. Output voltage (V), max. Output current (A), max. Apparent power (VA) .....	See appended table 2.5	P
	Current rating of overcurrent protective device (A) .:		N

<b>2.6</b>	<b>Provisions for earthing and bonding</b>		N
2.6.1	Protective earthing	Class III equipment	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 ( $\text{mm}^2$ ), AWG .....		N
2.6.3.3	Size of protective bonding conductors		N
	Rated current (A), cross-sectional area ( $\text{mm}^2$ ), AWG .....		N
	Protective current rating (A), cross-sectional area ( $\text{mm}^2$ ), AWG .....		N
2.6.3.4	Resistance of earthing conductors and their terminations; resistance ( $\Omega$ ), 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



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
2.6.4.2	Protective earthing and bonding terminals		N
	Rated current (A), type, nominal thread diameter (mm) .....		N
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>		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

<b>2.8</b>	<b>Safety interlocks</b>		N
2.8.1	General principles	No safety interlocks.	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 and relays		N
	Switches and 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



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

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		—
	Relative humidity (%), temperature (°C) .....		—
2.9.3	Grade of insulation	Functional insulation	P
2.9.4	Separation from hazardous voltages		N
	Method(s) used .....		—

<b>2.10</b>	<b>Clearances, creepage distances and distances through insulation</b>		P
2.10.1	General	Only SELV circuits inside the EUT. Functional insulation evaluated in accordance with clause 5.3.4. b).	P
2.10.1.1	Frequency .....		N
2.10.1.2	Pollution degrees .....		P
2.10.1.3	Reduced values for functional insulation		P
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



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
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
	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 .....		N
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	No such construction used.	N
2.10.5.4	Semiconductor devices	Not used.	N
2.10.5.5	Cemented joints	Not used.	N
2.10.5.6	Thin sheet material – General	Not used.	N
2.10.5.7	Separable thin sheet material	Not used.	N
	Number of layers (pcs) .....		N
2.10.5.8	Non-separable thin sheet material	Not used.	N
2.10.5.9	Thin sheet material – standard test procedure	Not used.	N
	Electric strength test		N
2.10.5.10	Thin sheet material – alternative test procedure	Not used.	N
	Electric strength test		N
2.10.5.11	Insulation in wound components	Not used.	N
2.10.5.12	Wire in wound components		N
	Working voltage .....		N
	a) Basic insulation not under stress .....		N
	b) Basic, supplementary, 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



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
	Routine test		N
2.10.5.14	Additional insulation in wound components	No additional insulation used	N
	Working voltage .....		N
	- Basic insulation not under stress .....		N
	- Supplementary, reinforced insulation .....		N
2.10.6	Construction of printed boards	See below.	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	No such device used.	N
2.10.12	Enclosed and sealed parts		N
<b>3</b>	<b>WIRING, CONNECTIONS AND SUPPLY</b>		<b>P</b>
3.1	General		<b>P</b>
3.1.1	Current rating and overcurrent protection	Internal wiring gauge is suitable for current intended to be carried.	<b>P</b>
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges which could damage the insulation and cause hazards.	<b>P</b>



IEC 60950-1			
Clause	Requirement+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
<b>3.2</b>	<b>Connection to a mains supply</b>		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) .....		N
3.2.4	Appliance inlets		N
3.2.5	Power supply cords		N
3.2.5.1	AC power supply cords		N
	Type .....		N
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		N
3.2.5.2	DC power supply cords		N
3.2.6	Cord anchorages and strain relief		N
	Mass of equipment (kg), pull (N) .....		N
	Longitudinal displacement (mm) .....		N
3.2.7	Protection against mechanical damage		N
3.2.8	Cord guards		N





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Clause	Requirement+Test	Result-Remark	Verdict
	Diameter or minor dimension D (mm); test mass (g) .....:		N
	Radius of curvature of cord (mm).....:		N
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	Class III equipment (suppliedby 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 <sup>2</sup> ).....:		N
3.3.5	Wiring terminal sizes		N
	Rated current (A), type, nominal thread diameter (mm) .....		N
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>		N
3.4.1	General requirement	Class III equipment (suppliedby 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
3.4.9	Plugs as disconnect devices		N
3.4.10	Interconnected equipment		N
3.4.11	Multiple power sources		N
<b>3.5</b>	<b>Interconnection of equipment</b>		P
3.5.1	General requirements	Considered.	P
3.5.2	Types of interconnection circuits .....	SELV circuit	P
3.5.3	ELV circuits as interconnection circuits	No ELV.	N
3.5.4	Data ports for additional equipment		N



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Clause	Requirement+Test	Result-Remark	Verdict

<b>4</b>	<b>PHYSICAL REQUIREMENTS</b>		P
4.1	Stability		N
	Angle of 10°		N
	Test force (N) .....		N

<b>4.2</b>	<b>Mechanical strength</b>		P
4.2.1	General		P
	Rack-mounted equipment	(see Annex DD)	N
4.2.2	Steady force test, 10 N	10N force applied to components	P
4.2.3	Steady force test, 30 N		N
4.2.4	Steady force test, 250 N	250N force applied to enclosure	P
4.2.5	Impact test		N
	Fall test		N
	Swing test		N
4.2.6	Drop test; height (mm) .....	1000mm, 3drops	P
4.2.7	Stress relief test	70°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	All edges and corners are rounded and/or smoothed.	P
4.3.2	Handles and manual controls; force (N)..... :	No knobs, grips, handles, lever etc.	N
4.3.3	Adjustable controls	No hazardous adjustable controls.	N
4.3.4	Securing of parts	No connection likely to be exposed to mechanical stress are provided in unit	N
4.3.5	Connection by plugs and sockets	No mismatch connector, plug or socket possible	N
4.3.6	Direct plug-in equipment		N
	Torque .....		N



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Clause	Requirement+Test	Result-Remark	Verdict
	Compliance with the relevant mains plug standard .....		N
4.3.7	Heating elements in earthed equipment		N
4.3.8	Batteries	Lithium ion battery used.	P
	- Overcharging of a rechargeable battery	See appended table 4.3.8	P
	- Unintentional charging of a non-rechargeable battery		N
	- Reverse charging of a rechargeable battery	Battery pack polarity cannot be reversed according to the design of enclosure and connector	N
	- Excessive discharging rate for any battery	See appended table 4.3.8	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		P
	Measured radiation (Pa/kg) .....		P
	Measured high-voltage (Kv) .....		N
	Measured focus voltage (Kv) .....		N
	CRT markings .....		N
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	The equipment does not produce significant UV radiation.	N
	Part, property, retention after test, flammability classification .....		N
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....	The equipment does not produce significant UV radiation.	N
4.3.13.5	Lasers (including laser diodes) and LEDs	Flash LED tested comply with EN 62471:2008	P
4.3.13.5.1	Laser (including laser diodes)		N
	Laser class		N
4.3.13.5.2	Light emitting diodes (LEDs)		P
4.3.13.6	Other types .....	The equipment does not generate other types of radiation.	N



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Clause	Requirement+Test	Result-Remark	Verdict
<b>4.4</b>	<b>Protection against hazardous moving parts</b>		N
4.4.1	General	No moving parts	N
4.4.2	Protection in operator access areas .....		N
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
<b>4.5</b>	<b>Thermal requirements</b>		P
4.5.1	General	See below.	P
4.5.2	Temperature tests	(See appended table 4.5)	P
	Normal load condition per Annex L .....		P
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 .....	No thermoplastic parts carrying hazardous voltages.	N
<b>4.6</b>	<b>Openings in enclosures</b>		N
4.6.1	Top and side openings		N
	Dimensions (mm) .....		N
4.6.2	Bottoms of fire enclosures		N
	Construction of the bottom, dimensions (mm) ...		N
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) .....		N
4.6.4.2	Evaluation measures for larger openings		N
4.6.4.3	Use of metallized parts		N
4.6.5	Adhesives for constructional purposes		N
	Conditioning temperature (°C), time (weeks) .....		N



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Clause	Requirement+Test	Result-Remark	Verdict
<b>4.7</b>	<b>Resistance to fire</b>		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	Refer below.	P
4.7.2.1	Parts requiring a fire enclosure	Enclosure min V-1	P
4.7.2.2	Parts not requiring a fire enclosure	Components in secondary circuits supplied by limited power sources complying with 2.5 and mounted on PCB rated V-1 min.	N
4.7.3	Materials		P
4.7.3.1	General	Components and materials have adequate flammability classification. See appended table 1.5.1.	P
4.7.3.2	Materials for fire enclosures	Min V-1	P
4.7.3.3	Materials for components and other parts outside fire enclosures		P
4.7.3.4	Materials for components and other parts inside fire enclosures		P
4.7.3.5	Materials for air filter assemblies	No air filters in the equipment.	N
4.7.3.6	Materials used in high-voltage components	No parts exceeding 4KV.	N
<b>5</b>	<b>ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS</b>		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) .....		N
	Measured touch current (mA) .....		N
	Max. Allowed touch current (mA) .....		N



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Clause	Requirement+Test	Result-Remark	Verdict
	Measured protective conductor current (mA) .....		N
	Max. Allowed protective conductor current (mA) ..		N
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) .....		N
	Measured touch current (mA) .....		N
	Max. Allowed touch current (mA) .....		N
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>		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		P
5.3.3	Transformers		N
5.3.4	Functional insulation.....	See appended table 5.3. Complies with c)	P
5.3.5	Electromechanical components		N
5.3.6	Audio amplifiers in ITE .....		P
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		P



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Clause	Requirement+Test	Result-Remark	Verdict
<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	No TNV circuit.	N
	Supply voltage (V) .....		N
	Current in the test circuit (mA) .....		N
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
6.3	Protection of the telecommunication wiring system from overheating		N
	Max. Output current (A) .....		N
	Current limiting method .....		N
<b>7</b>	<b>CONNECTION TO CABLE DISTRIBUTION SYSTEMS</b>		N
7.1	General	Not connected to Cable Distribution System.	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





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Clause	Requirement+Test	Result-Remark	Verdict
<b>A</b>	<b>ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		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)	Not used.	N
A.1.1	Samples .....		N
	Wall thickness (mm) .....		N
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 .....		N
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
A.3.3	Compliance criterion		N



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Clause	Requirement+Test	Result-Remark	Verdict

<b>B</b>	<b>ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS(see 4.7.2.2 and 5.3.2)</b>		<b>P</b>
B.1	General requirements	DC vibration motor	P
	Position .....	See appended table 1.5.1	—
	Manufacturer .....	See appended table 1.5.1	—
	Type .....	See appended table 1.5.1	—
	Rated values .....	See appended table 1.5.1	—
B.2	Test conditions		P
B.3	Maximum temperatures		P
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		P
B.7.1	General	A vibration motor inside the unit.	P
B.7.2	Test procedure		P
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>N</b>
	Position .....		—
	Manufacturer .....		—
	Type .....		—
	Rated values .....		—
	Method of protection.....		—
C.1	Overload test		N



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Clause	Requirement+Test	Result-Remark	Verdict
C.2	Insulation		N
	Protection from displacement of windings .....		N
<b>D</b>	<b>ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)</b>		N
D.1	Measuring instrument		N
D.2	Alternative measuring instrument		N
<b>E</b>	<b>ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)</b>		N
<b>F</b>	<b>ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)</b>		N
<b>G</b>	<b>ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES</b>		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
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>		N



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Clause	Requirement+Test	Result-Remark	Verdict
<b>J</b>	<b>ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)</b>		N
	Metal(s) used .....		—
<b>K</b>	<b>ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)</b>		N
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	(see appended table 5.3)	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>		P
L.1	Typewriters	Not used.	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>		N
M.1	Introduction	No telephone ringing signal.	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



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Clause	Requirement+Test	Result-Remark	Verdict
<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>		N
N.1	ITU-T impulse test generators	The impulse test generator not used.	N
N.2	IEC 60065 impulse test generator		N
<b>P</b>	<b>ANNEX P, NORMATIVE REFERENCES</b>		P
<b>Q</b>	<b>ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)</b>		N
	a) Preferred climatic categories .....	No VDR used in equipment.	N
	b) Maximum continuous voltage .....		N
	c) Pulse current .....		N
<b>R</b>	<b>ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES</b>		N
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)	The quality control programmes are not used.	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>		N
S.1	Test equipment	The impulse testing is not used.	N
S.2	Test procedure		N
S.3	Examples of waveforms during impulse testing		N
<b>T</b>	<b>ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)</b>		N
			—
<b>U</b>	<b>ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)</b>		N
			—
<b>V</b>	<b>ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)</b>		N
V.1	Introduction		N
V.2	TN power distribution systems		N
<b>W</b>	<b>ANNEX W, SUMMATION OF TOUCH CURRENTS</b>		N
W.1	Touch current from electronic circuits	Not connected to TNV circuit.	N
W.1.1	Floating circuits		N



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Clause	Requirement+Test	Result-Remark	Verdict
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
<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	Considered.	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 .....	No ultraviolet light.	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
CC.4	Test program 3.....		N
CC.5	Compliance.....		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



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Clause	Requirement+Test	Result-Remark	Verdict
EE.1	General		N
EE.2	Markings and instructions		N
	Use of markings or symbols.....:		N
	Information of user instructions, maintenance and/or servicing instruction...:		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







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

**ATTACHMENT TO TEST REPORT IEC 60950-1**  
**EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES**

Information technology equipment – Safety –  
Part 1: General requirements

**Differences according to** ..... : EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013

**Attachment Form No.** ..... : EU\_GD\_IEC60950\_1F

**Attachment Originator** ..... : SGS Fimko Ltd

**Master Attachment** ..... : Date 2014-02

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**EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013 – CENELEC COMMON MODIFICATIONS**

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Clauses, subclauses, notes, tables and figures which are additional to those in IEC60950-1 and it's amendmets are prefixed "Z"		P
Contents (A2:2013)	Add the following annexes:		P
	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	
General	Delete all the "country" notes in the reference document (IEC 60950-1:2005) according to the following list:		P
	1.4.8 Note 2	1.5.1 Note 2 & 3	
	1.5.8 Note 2	1.5.9.4 Note	
	2.2.3 Note	2.2.4 Note	
	2.3.2.1 Note 2	2.3.4 Note 2	
	2.7.1 Note	2.10.3.2 Note 2	
	3.2.1.1 Note	3.2.4 Note	
	4.3.6 Note 1 & 2	4.7 Note 4	
	4.7.3.1 Note 2	5.1.7.1 Note 3 & 4	
	6 Note 2 & 5	6.1.2.1 Note 2	
	6.2.2 Note	6.2.2.1 Note 2	
	7.1 Note 3	7.2 Note	
	G.2.1 Note 2	Annex H Note 2	
	1.5.7.1 Note	6.1.2.1 Note 2	
General (A1:2010)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list:		N
	1.5.7.1 Note	6.1.2.1 Note 2	




IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
	6.2.2.1 Note 2 EE.3 Note		
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)	<b>Replace</b> the text of NOTE 3 by the following. NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.		P
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.		P
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010	Delete.	N
1.5.1  (Added info*)	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC. New Directive 2011/65/11 *	Added.	P
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.	Added.	N
1.7.2.1 (A12:2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.	Added.	P
	<b>Zx Protection against excessive sound pressure from personal music players</b>		P



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
	<p><b>Zx.1 General</b></p> <p>This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players.</p> <p>A personal music player is a portable equipment□ for personal use, that:</p> <ul style="list-style-type: none"><li>– is designed to allow the user to listen to recorded or broadcast sound or video; and</li><li>– primarily uses headphones or earphones that can be worn in or on or around the ears; and</li><li>– allows the user to walk around while in use.</li></ul> <p>NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment.</p> <p>A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause.</p> <p>The requirements in this sub-clause are valid for music or video mode only.</p> <p>The requirements do not apply:</p> <ul style="list-style-type: none"><li>– while the personal music player is connected to an external amplifier; or</li><li>– while the headphones or earphones are not used.</li></ul> <p>NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player.</p> <p>The requirements do not apply to:</p> <ul style="list-style-type: none"><li>– hearing aid equipment and professional equipment;</li></ul> <p>NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.</p> <ul style="list-style-type: none"><li>– analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015.</li></ul> <p>NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.</p> <p>For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.</p>	a portable equipment	P



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
	<p><b>Zx.2 Equipment requirements</b></p> <p>No safety provision is required for equipment that complies with the following:</p> <ul style="list-style-type: none"><li>– equipment provided as a package (personal music player with its listening device), where the acoustic output LAeq,T is <math>\leq 85</math> dBA measured while playing the fixed “programme simulation noise” as described in EN 50332-1; and</li><li>– a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is <math>\leq 27</math> mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” as described in EN 50332-1.</li></ul> <p>NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level LAeq,T is meant. See also Zx.5 and Annex Zx.</p> <p>All other equipment shall:</p> <ul style="list-style-type: none"><li>a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and</li><li>b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and</li><li>c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and</li></ul> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off.</p> <ul style="list-style-type: none"><li>d) have a warning as specified in Zx.3; and e) not exceed the following:</li></ul> <ul style="list-style-type: none"><li>1) equipment provided as a package (player with its listening device), the acoustic output shall be <math>\leq 100</math> dBA measured while playing the fixed “programme simulation noise” described in EN 50332-1; and</li><li>2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be <math>\leq 150</math> mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” described in EN 50332-1.</li></ul> <p>For music where the average sound pressure</p>	<p><math>&lt; 85</math> dBA, <math>&lt; 150</math> mV</p>	P

IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
	<p>(long term LAeq,T) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song.</p> <p>NOTE 4 Classical music typically has an average sound pressure (long term LAeq,T) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA.</p> <p>For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.</p>		P
	<p><b>Zx.3 Warning</b></p> <p>The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:</p> <ul style="list-style-type: none"> <li>– the symbol of Figure 1 with a minimum height of 5 mm; and</li> <li>– the following wording, or similar: “To prevent possible hearing damage, do not listen at high volume levels for long periods.”</li> </ul>  <p><b>Figure 1 – Warning label (IEC 60417-6044)</b></p> <p>Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.</p>	See the packaging	P
	<b>Zx.4 Requirements for listening devices (headphones and earphones)</b>		P





IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
	<b>Zx.4.1 Wired listening devices with analogue input</b> With 94 dBA sound pressure output LAeq,T, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be $\geq 75$ mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.		N
	<b>Zx.4.2 Wired listening devices with digital input</b> With any playing device playing the fixed “programme simulation noise” described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output LAeq,T of the listening device shall be $\leq 100$ dBA. This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.		N
	<b>Zx.4.3 Wireless listening devices</b> In wireless mode: -with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and -respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and -with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output LAeq,T of the listening device shall be $\leq 100$ dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		N
	<b>Zx.5 Measurement methods</b> Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		P
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the	Replaced.	N



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
	building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		
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.	Delete.	N
3.2.5.1	Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: Up to and including 6   0,75 a)   Over 6 up to and including 10   (0,75) b) 1,0   Over 10 up to and including 16   (1,0) c) 1,5   In the conditions applicable to Table 3B delete the words "in some countries" in condition a). In NOTE 1, applicable to Table 3B, delete the second sentence.	Replaced.	N
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD		N
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16   1,5 to 2,5   1,5 to 4   Delete the fifth line: conductor sizes for 13 to 16 A	Delete.	N
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation).	Replaced.	N





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Clause	Requirement+Test	Result-Remark	Verdict
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 $\mu$ Sv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.	Replaced.	N
Bibliography	Additional EN standards.	Added.	—

<b>ZA</b>	<b>NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS</b>		—
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<b>ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)</b>			
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.	No power supply cord provided.	N
1.2.13.14 (A11:2009)	In <b>Norway</b> and <b>Sweden</b> , for requirements see 1.7.2.1 and 7.3 of this annex.	The equipment is not connected to the cable distribution systems.	N
1.5.7.1 (A11:2009)	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.		N



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

**ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)**

1.7.2.1 1.7.2.1 (A11:2009)	<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. The marking text in the applicable countries shall be as follows:</p> <p>In Finland: "Laite on liitettäväsuojakoskettimillavarustettuunpistorasiaan"</p> <p>In Norway: "Apparatetmåtilkoplesjordnetstikkontakt"</p> <p>In Sweden: "Apparatenskallanslutas till jordatuttag"</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: "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): "Utstyrsomerkoplettilbeskyttelsesjord via nettpluggog/eller via annetjordtilkopletutstyr – ogertilkoplet et kabel-TV nett, kanforårsakebrannfare. For å</p>		N
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IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
	unngådetteskaldetvedtilkoplingavutstyrettilkabel-TV nettetinstalleresengalvanisk isolator mellomutstyretogkabel-TV nettet.” Translation to Swedish: ”Utrustningsomärkopplad till skyddsjord via jordatvägguttagoch/eller via annanutrustningochsamtidigtärkopplad till kabel-TV nätkanivissa fall medföra risk för brand. Förattundvikadettaskall vid anslutningavutrustningen till kabel-TV nätgalvanisk isolator finnas mellanutrustningen ochkabel-TV nätet.”		
1.7.2.1 (A2:2013)	In <b>Denmark</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 <b>Denmark</b> shall be as follows: In <b>Denmark</b> : “Apparatetsstikpropskaltillsluttelsenstikkontakt med jord, som giver forbindelsetilstikproppensjord.”		N
1.7.5 1.7.5 (A11:2009)	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. For <b>CLASS II EQUIPMENT</b> the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.	No socket-outlets provided.	N
1.7.5 (A2:2013)	In <b>Denmark</b> , socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011. For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c, DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b, DK 1-1c, DK 1-1d or DK 1-5a. Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-3b. Justification the Heavy Current Regulations, 6c		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.		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.		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.		N



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
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.		N
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</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.		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 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</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 SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A</p>	No power supply cord provided.	N
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. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>	No power supply cord provided.	N



IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
3.2.1.1 (A2:2013)	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 DS 60884-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Justification the Heavy Current Regulations, 6c	No power supply cord provided.	N
3.2.1.1	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. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.	No power supply cord provided.	N
3.2.1.1	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. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	No power supply cord provided.	N
3.2.1.1	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.	No power supply cord provided.	N
3.2.4	In <b>Switzerland</b> , for requirements see 3.2.1.1 of this annex.	Shall be evaluated during the national approval.	N





IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
3.2.5.1	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.	No power supply cord provided.	N
3.3.4	In the <b>United Kingdom</b> , the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm <sup>2</sup> to 1,5 mm <sup>2</sup> nominal cross-sectional area.	No power supply cord provided.	N
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: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.	The equipment is not such equipment.	N




IEC 60950-1			
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: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or -one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and -is subject to ROUTINE TESTING for electricstrength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: -the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; -the additional testing shall be performed on all the test specimens as described in EN 6038414; -the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 6038414.</p>		N
6.1.2.2	<p>In <b>Finland, Norway and 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.</p>		N
7.2	<p>In <b>Finland, Norway and 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.</p>	<p>The equipment is not connected to the distribution systems.</p>	N





IEC 60950-1			
Clause	Requirement+Test	Result-Remark	Verdict
7.3 (A11:2009)	In <b>Norway</b> and <b>Sweden</b> , for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N

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

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 <sup>1)</sup>	
Charger	Shenzhen Dinglixun Electronics Technology Co., Ltd.	VNA-NN177033	Input: AC100-240V 50/60Hz 200mA Output: 5V  500mA	EN 60950-1:2006 + A11:2009 + A1:2010 + A12: 2011 + A2:2013	CE	
Enclosure	SABIC INNOVATIVE PLASTICS US L L C	940(f1), ML1655R(f1)	V-0, min.80℃	UL 94	UL E121562	
PCB	Various	Various	V-0, min.105℃	UL 796	UL	
Rechargeable Li-polymer Battery	Shen Zhen JIN Dian Chi SCIENCE And Technology Co., Ltd.	VFN33-BK	3.7V, 800mAh	IEC62133:2012	Report No.: NCT1709256 311-1	
-Cell	SHENZHEN XINSHENG NEW ENERGY CO LTD	523450AR	3.7V, 800mAh	IEC62133:2012	Report No.: NCT1709256 311-1	
LCD	Various	Various	TFT	EN 60950-1	Test with in appliance	
Flash LED	Shenzhen Hengda Optoelectronics Technology Co., Ltd.	NWW161H2D M2	2.5-3.5Vdc, 25 mA exempt	EN 62471	Test with in appliance	
DC motor	SHEN ZHEN JIN DOU SCIENCE & TECHNOLOGY CO., LTD	JD102025A	DC 3.0V	EN 60950-1	Test with in appliance	
Speaker	Various	Various	8 ohm, 0.5W	EN 60950-1	Test with in appliance	
<sup>1)</sup> An asterisk indicates a mark which assures the agreed level of surveillance						
Supplementary information:						



1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status	
3.7	0.38	-	1.40	--	--	Supplied by battery.	
5.0	0.42	0.5	2.10	--	--	Supplied by Charger and voice call.	
Supplementary information:							

2.1.1.5	TABLE: Max. V, A, VA test				P
Rated voltage (Vdc)	Rated current (mA)	Max voltage (Vdc)	Max current (A)	Max. VA (VA)	
3.7	800	4.25	1.0	4.25	
Note(s):					

2.5	TABLE: limited power source measurement					P
Components	Uoc (V)	Isc (A)		VA		
		Meas.	Limit	Meas.	Limit	
Normal	4.25	1.0	8.0	4.25	100	
Single fault: Battery “+” to “-“SC	0	0	8.0	0	100	
Supplementary information:						
Note(s):						
Measured Uoc (V) with all load circuits disconnected.						
SC=short circuit, Test voltage: 4.25V						

<b>4.3.8</b>	<b>TABLE: Batteries</b>								<b>P</b>
The tests of 4.3.8 are applicable only when appropriate battery data is not available								--	P
Is it possible to install the battery in a reverse polarity position?								No	P
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging(mA)		Discharging(mA)		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal operation	--	--	--	420mA	1000mA	380mA	1000mA	--	--
Max. current during fault operation, C1 short	--	--	--	429mA	1000mA	394mA	1000mA	--	--



Test results:		Verdict
- Chemical leaks	After the test, no chemical leaks.	P
- Explosion of the battery	No explosion.	P
- Emission of flame or expulsion of molten metal	No emission of flame or molten metal	P
- Electric strength tests of equipment after completion of tests	--	N
Supplementary information:		

4.3.13.5		Emission limits for risk groups of continuous wave lamps (based on EU Directive 2006/25/EC)							P
Risk	Action spectrum	Symbol	Units	Emission Measurement					
				Exempt		Low risk		Mod risk	
				Limit	Result	Limit	Result	Limit	Result
Actinic UV	$S_{UV}(\lambda)$	$E_s$	$W \cdot m^{-2}$	0.001	-	0.003	-	0.03	-
Near UV		$E_{UVA}$	$W \cdot m^{-2}$	10	-	33	-	100	-
Blue light	$B(\lambda)$	$L_B$	$W \cdot m^{-2} \cdot sr^{-1}$	100	-	10000	-	400000	-
Blue light, small source	$B(\lambda)$	$E_B$	$W \cdot m^{-2}$	1.0*	0.69	1,0	-	400	-
Retinal thermal	$R(\lambda)$	$L_R$	$W \cdot m^{-2} \cdot sr^{-1}$	28000/ $\alpha$	1876/ $\alpha$	28000/ $\alpha$	-	71000/ $\alpha$	-
Retinal thermal, weak visual stimulus**	$R(\lambda)$	$L_{IR}$	$W \cdot m^{-2} \cdot sr^{-1}$	6000/ $\alpha$	-	6000/ $\alpha$	-	6000/ $\alpha$	-
IR radiation, eye		$E_{IR}$	$W \cdot m^{-2}$	100	-	570	-	3200	-
* Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian.									
** Involves evaluation of non-GLS source									

4.5.1	TABLE: maximum temperatures			P
	Test voltage (V) :	3.7Vdc (for battery)	5Vdc (for Charger )	—
	tamb1 (°C) :	40.0	40.0	—
	tamb2 (°C) :	40.0	40.0	—
maximum temperature T of part/at:		T (°C)		allowed Tmax (°C)
Enclosure(outside)		48.3	49.1	75
LCD screen		49.5	50.2	80
Battery surface (inside)		49.9	50.8	60
PCB of battery pack		50.7	51.2	105
PCB near main IC		56.2	59.5	105
PCB near battery connector		50.1	50.8	105
Motor winding		48.8	49.5	130



Ambient	40.0	40.0	--
Note: The tests were measured under worst case normal mode as described in 1.2.2.1 and described in 1.6.2 at voltage. The maximum ambient temperature permitted by the manufacturer's specification is 40°C.			

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

5.1	TABLE: Touch current			N
Measured between		Measured (mA)	Limit (mA)	Comments/ conditions
--		--	--	--
--		--	--	--
--		--	--	--
--		--	--	--
Supplementary information:				
Test voltage:				

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)	Breakdown Yes / No
--		--	--	--
Supplementary information:				

<b>5.3</b>	<b>TABLE: fault condition tests</b>					P
	ambient temperature (°C) :	25.0				—
	model/type of power supply :	-				—
	manufacturer of power supply :	-				—
	rated markings of power supply :	-				—
component No.	Fault	test voltage (V)	test time	fuse No.	fuse current (A)	Result
Battery ("+" to "-")	S-C	5Vdc (for Charger)	30 min	--	0	Unit shutdown rapidly, No hazards
Speaker	S-C	3.7Vdc (for battery)	30 min	--	0.29	Unit without voice output rapidly, No hazards
Battery	Overcharge	5Vdc (for Charger)	7h	--	0.8	Temperature stability and no hazards.
Battery	Over-discharge	3.7Vdc (for battery)	7h	--	0.01	Temperature stability and no hazards.
Battery R1 open	Overcharge	5Vdc (for Charger)	7h	--	0.42	Temperature stability and no hazards.



Battery C1 short	Overcharge	5Vdc (for Charger)	7h	--	0.42	Temperature stability and no hazards.
Motor	locked	5Vdc (for Charger)	7h	--	0.41	Motor body Max. temperature is 51.3℃, Ambient 40℃ No hazard.
Supplementary information: S-C: short-circuit, O-C: open-circuit						

Zx.2	TABLE: Measured maximum output voltage		P
Measured maximum output voltage Vm (mV)		Test duration	
Left channel	Right channel		
24.72	24.32	30S	
Note: See the Attachment 1 for test method .			

Zx.2	TABLE: Measured maximum sound pressure			N
No. of measurement	Measured L <sub>Aeq</sub> (dB (A-weighted))		Test duration	
	Left channel	Right channel		
1	--	--	30S	
2	--	--	30S	
3	--	--	30S	
4	--	--	30S	
5	--	--	30S	
Mean value of all L <sub>Aeq</sub>	--	--	--	
Note: See the Attachment 2 for test method .				

**Attachment 1****Maximum sound pressure test  
Test specification standard EN 50332-1:2013  
TEST DESCRIPTION****Maximum sound pressure measurement****Measurement method:**

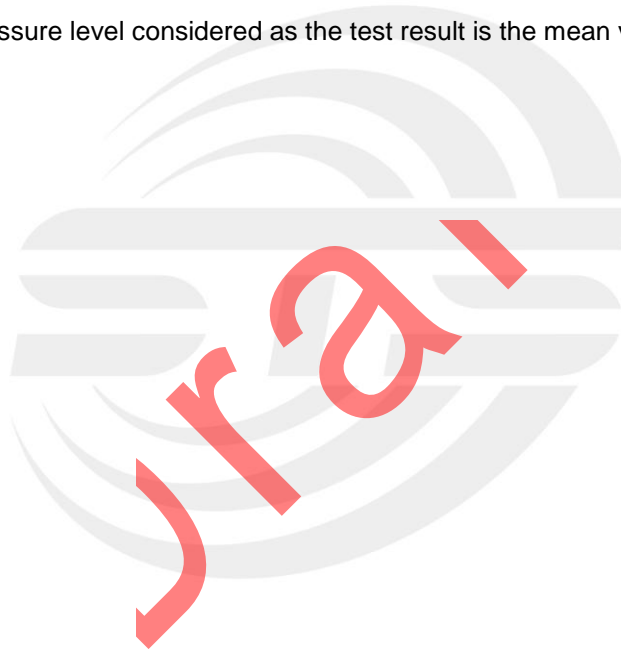
The device under test (DUT) plays the recorded test signal. Earphones or headphones shall be correctly positioned on the HATS. The sound pressure level emitted by the earphones or headphones of the portable audio equipment is measured, for both right and left ear, by a third octave analyzer connected to the microphone of the HATS ear simulator.

The A-weighting curve is applied.

Tests are repeated five times for each ear, and the headphone shall be removed and repositioned before each measurement

The A-weighted equivalent continuous sound pressure level  $L_{Aeq}$  shall be determined for each measurement, using an averaging time of 30s or more

The maximum sound pressure level considered as the test result is the mean value of all  $L_{Aeq}$  measurements.







**Attachment 2**  
**Maximum sound pressure test**  
**Test specification standard EN 50332-2:2013**  
**TEST DESCRIPTION**

**Maximum sound pressure measurement****Measurement method:**

The method of measurement was described in the order related to the limitation of the maximum output voltage level at the phone jack delivered by the EUT, in accordance with sub-clause 5.2 of EN 50332-2:2013.

- a. The test signal used was a programme simulation noise in accordance with clause 5 of 50332-1:2013.
- b. The player phone output was loaded with a resistive load of 32ohm during the measurement.
- c. During the measurement, all controls were adjusted to produce the maximum output voltage level at the phone output.
- d. The sum of then maximum wide band output voltage was measured.

Measurement results Measurement results showed the maximum RMS voltage for each third-octave frequency bandwidth and the sum of RMS voltage of the output.

===END OF TEST REPORT===