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Report No.: CTC20201264S01

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TEST REPORT

Product name:	Wireless Mini Switch
Trademark:	Aqara
Model No:	WXKG11LM
Applicant:	Lumi United Technology Co., Ltd
Address of applicant:	8th Floor, JinQi Wisdom Valley, No.1 Tangling Road, Liuxian Ave,
	Taoyuan Residential District, Nanshan District, Shenzhen, China
Test date:	Aug. 10, 2020 to Aug. 31, 2020
Date of issue:	Sept. 4, 2020

Test result:	Pass *

* In the configuration tested, the EUT complied with the standard EN 62368-1:2014+A11:2017.



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TEST REPORT IEC 62368-1

Audio/video, information and communication technology equipment Part 1: Safety requirements

Report Number	CTC20201264S01
Tested by (+ signature):	Alison Wang
Compiled by (+ signature):	Hardy Huang
Approved by (+ signature):	Totti Zhao
Date of issue	Sept. 4, 2020
Total number of pages	53 pages
Testing laboratory	CTC Laboratories, Inc.
Address:	2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park,Longhua District, Shenzhen, Guangdong, China
Testing location	As above
Applicant's name:	Lumi United Technology Co., Ltd.
Address	8th Floor, JinQi Wisdom Valley, No.1 Tangling Road, Liuxian Ave, Taoyuan Residential District, Nanshan District, Shenzhen, China
Test specification:	
Standard	IEC 62368-1:2014 (Second Edition)
Test procedure:	CE Attestation
Non-standard test method:	N/A
Test Report Form No	IEC62368_1B
Test Report Form(s) Originator:	UL(US)
Master TRF	2014-03
This test report is specially limited to not be duplicated without prior writte	the above client company and product model only. It may n consent of CTC. Test.
Test Item description	Wireless Mini Switch
Trade Mark	Aqara
Manufacturer	Same as applicant.
Model/Type reference:	WXKG11LM
Ratings	3V (Supplied by button battery)

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Summary of	testing:	
Fests perfor	med (name of test and test clause):	Testing location:
All applicable	e tests as described in Test Case and	CTC Laboratories, Inc.
	t Sections were performed.	2/F., Building 1 and 1-2/F., Building 2,
	ts performed during evaluation	Jiaquan Building, Guanlan High-Tech
4.8.4	Battery Compartment Mechanical Tests	Park,Longhua District, Shenzhen, Guangdong, China
4.8.5	Battery Accessibility	Guanguong, China
5.2	Electrical energy source classifications	
5.4.1.4,	Maximum operating temperatures for	
6.3.2, 9.0,	materials, components and systems	
B.2.6		
B.2.5	Input tests	
B.4	Simulated single fault conditions	
F.3.9	Durability, legibility and permanence of	
	markings	
M.3	Batteries	
T.2	Steady force test, 10 N	
T.5	Steady force test, 250 N	
T.6	Enclosure impact test	
T.8	Stress relief test	
	bmitted sample was found to comply with the s of above tests.	



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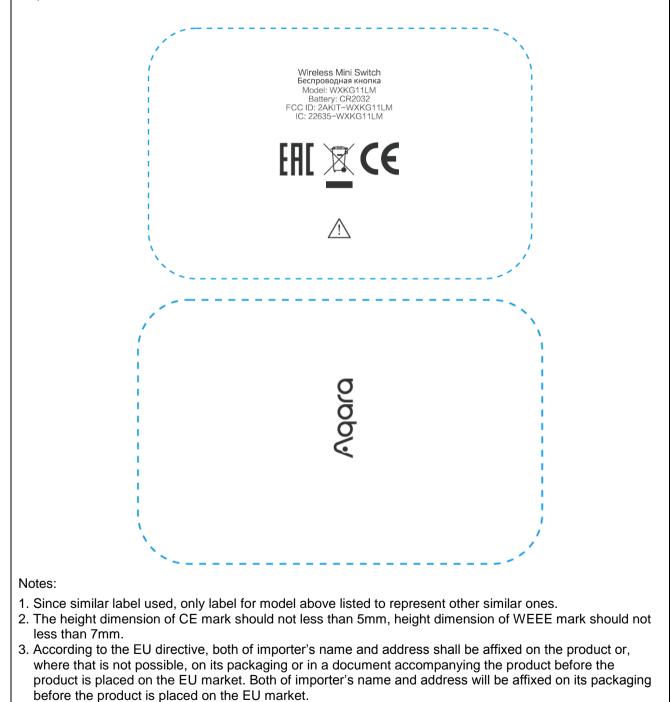
Summary of compliance with National Differences:

EU Group Differences, EU Special National Conditions

The product fulfils the requirements of EN 62368-1:2014+A11:2017.

Copy of marking plate(s):

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.



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Test item particulars:	
Classification of use by:	 Ordinary person Instructed person Skilled person
	Children likely to be present
Supply Connection	 □ AC Mains □ DC Mains ○ External Circuit - not Mains connected - ○ ES1 □ ES2 □ ES3
Supply % Tolerance:	□+10%/-10% □ +20%/-15% □ +%/% ⊠ None
Supply Connection – Type:	 pluggable equipment type A - non-detachable supply cord appliance coupler direct plug-in mating connector pluggable equipment type B - non-detachable supply cord appliance coupler permanent connection mating connector i other: building-in equipment shall be evaluated in end system (see also general product information). not directly connected to the mains
Considered current rating of protective device as part of building or equipment installation	○ (Not directly connected to mains) Installation location: □ building; □ equipment
Equipment mobility:	Image: more than and the more than a stationary Image: more than
Over voltage category (OVC):	□ OVC I □ OVC II □ OVC III □ OVC IV ⊠ other: _ class III appliance
Class of equipment	🗌 Class I 🔄 Class II 🛛 Class III
Access location:	restricted access location X/A
Pollution degree (PD)	□ PD 1
Manufacturer's specified maximum operating ambient	50°C
IP protection class	⊠ IPX0 □ IP
Power Systems	⊠ TN □ TT □ IT - <u>230</u> V _{L-L}
Altitude during operation (m)	⊠ 2000 m or less <u>5000</u> m
Altitude of test laboratory (m)	⊠ 2000 m or less □ m

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Mass of equipment (kg)	Approx.0.02kg
POSSIBLE TEST CASE VERDICTS:	
- test case does not apply to the test object:	N/A
- test object does meet the requirement:	P (Pass)
- test object does not meet the requirement:	F (Fail)
TESTING:	
Date of receipt of test item:	Aug. 10, 2020
Date (s) of performance of tests:	Aug. 10, 2020 to Aug. 31, 2020

GENERAL REMARKS:

"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.

Throughout this report a \Box comma / \boxtimes point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided	⊠ Not applicable
The application for obtaining a CB Test Certificate	Yes

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

Name and address of factory (ies):

GENERAL PRODUCT INFORMATION:

- 1. The product in this report is a Wireless Mini Switch, class III equipment used for information technology equipment.
- 2. The maximum ambient temperature specified by manufacturer is +50°C.

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Abbreviations used in the	report:		
 normal conditions functional insulation 	N.C. Fl	 single fault conditions basic insulation 	S.F.C BI
 double insulation between parts of opposite 	DI	- supplementary insulation	SI
polarity	BOP	- reinforced insulation	RI
	Indicate us	sed abbreviations (if any)	

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ENERGY SOURCE IDENTIFICATION AND CLASSIFICAT	ION TABLE:
(Note 1: Identify the following six (6) energy source forms b (Note 2: The identified classification e.g., ES2, TS1, should on the body or its ability to ignite a combustible material. Ar worse case classification e.g. PS3, ES3.	be with respect to its ability to cause pain or injury
Electrically-caused injury (Clause 5):	
(Note: Identify type of source, list sub-assembly or circuit de classification)	
Example: +5 V dc input	ES1
Source of electrical energy	Corresponding classification (ES)
All internal circuits	ES1
Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresp Example: Battery pack (maximum 85 watts):	onding energy source classification) PS2
Source of power or PIS	Corresponding classification (PS)
All internal circuits	PS1
Injury caused by hazardous substances (Clause 7) (Note: Specify hazardous chemicals, whether produces oze as part of the component evaluation.) Example: Liquid in filled component	one or other chemical construction not addressed Glycol
Source of hazardous substances	Corresponding chemical
N/A	N/A
Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & c Example: Wall mount unit	corresponding MS classification based on Table 35.) MS2
Source of kinetic/mechanical energy	Corresponding classification (MS)
Edges and corners of enclosure	MS1
Mass of the unit	MS1
Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding end location, operating temperature and contact time in Table 38 Example: Hand-held scanner – thermoplastic enclosure	
Source of thermal energy	Corresponding classification (TS)
External surface	TS1
Radiation (Clause 10) (Note: List the types of radiation present in the product and t Example: DVD – Class 1 Laser Product	he corresponding energy source classification.) RS1
Type of radiation	Corresponding classification (RS)
The LED only used for indicating, which is considered as low power & inherently exempt group according to IEC 62471.	RS1

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ENERGY SOURCE DIAGRAM

Indicate which energy sources are included in the energy source diagram. Insert diagram below

(Refer to above table)



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Hazard caused injury urce hary Filter circuit) ternal circuits caused fire	Basic	Safeguards Supplementary	Delaformed
urce hary Filter circuit) ternal circuits			
ary Filter circuit) ternal circuits			Dulu(uuuul
	NI/A		Reinforced (Enclosure)
-caused fire		N/A	N/A
urce	Basic	Safeguards	Reinforced
Watt circuit	N/A	N/A	N/A
Natt circuit	N/A	N/A	N/A
Injury caused by hazardous substances			
		Safeguards	
(hazardous material)		Supplementary	Reinforced
	N/A	N/A	N/A
Mechanically-caused injury			
Energy Source (MS3:High Pressure Lamp)	Safeguards		
	Basic	Supplementary	Reinforced (Enclosure)
es and corners	N/A	N/A	N/A
N/A N/A		N/A	
Thermal Burn –			
urce	Safeguards		
	Basic	Supplementary	Reinforced
ssible parts	N/A	N/A	N/A
Radiation			
	Safeguards		
(Output from audio port)		Supplementary	Reinforced
which is I as low power & exempt group	N/A	N/A	N/A
	Watt circuit Watt circuit Sed by hazardous suburce s material) Ally-caused injury purce on Pressure Lamp) es and corners ourn – ource ssible parts ource om audio port) LED only used for which is d as low power & exempt group to IEC 62471.	BasicWatt circuitN/AWatt circuitN/ASed by hazardous substancespurce s material)BasicN/Aally-caused injurypurce n Pressure Lamp)N/ABasicN/Aes and cornersN/Aource n Pressible partsN/Aource om audio port)Basicburce burce cexempt group to IEC 62471.N/A	BasicSupplementaryWatt circuitN/AN/AWatt circuitN/AN/AWatt circuitN/AN/AWatt circuitN/AN/ASeed by hazardous substancespurceSafeguardss material)BasicSupplementaryN/AN/AN/Aally-caused injuryN/AN/ApurceSafeguardsPressure Lamp)BasicSupplementaryes and cornersN/AN/AN/AN/AN/Auurn –N/AN/ApurceSafeguardsbasicSupplementaryssible partsN/AN/AnurceSafeguardspurceSafeguardsbasicSupplementaryssible partsN/AN/Acom audio port)BasicSupplementaryLED only used for which is d as low power & exempt group to IEC 62471.N/AN/Awhed energy source diagram for additional details. (2)

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Clause	Requirement + Test		Result - Remark	Verdict

4	GENERAL REQUIREMENTS		Р
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2	Р
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment. See also Annex G	Ρ
4.1.3	Equipment design and construction	Evaluation of safeguards regarding limiting the outputs to fulfill ES1 and protection in regard to risk of spread of fire, mechanical and thermal burn injury considered.	Ρ
4.1.15	Markings and instructions:	(See Annex F)	Р
4.4.4	Safeguard robustness	See below.	Р
4.4.4.2	Steady force tests:	(See Annex T.2 and T.5)	Р
4.4.4.3	Drop tests:	No such equipment.	N/A
4.4.4.4	Impact tests:	See Annex T.6	Р
4.4.4.5	Internal accessible safeguard enclosure and barrier tests:	The external enclosure cannot be opened without damaging the product.	N/A
4.4.4.6	Glass Impact tests:	No such glass used.	N/A
4.4.4.7	Thermoplastic material tests:		N/A
4.4.4.8	Air comprising a safeguard:	Only ES1 circuits in the equipment.	N/A
4.4.4.9	Accessibility and safeguard effectiveness	After test of 4.4.4.2, no safeguard damaged.	N/A
4.5	Explosion	No explosion occurs during normal/abnormal operation and single fault conditions	N/A
4.6	Fixing of conductors	No conductors to fix.	N/A
4.6.1	Fix conductors not to defeat a safeguard		N/A
4.6.2	10 N force test applied to:		N/A
4.7	Equipment for direct insertion into mains socket - outlets	Not equipment for direct insertion into mains socket - outlets	N/A
4.7.2	Mains plug part complies with the relevant standard:		N/A
4.7.3	Torque (Nm):		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.8	Products containing coin/button cell batteries		Р
4.8.2	Instructional safeguard	Instructional safeguard accordance with Clause F.5 have provided in user manual.	Р
4.8.3	Battery Compartment Construction		Р
	Means to reduce the possibility of children removing the battery	A tool, such as a screwdriver or coin, is required to open the battery compartment.	
4.8.4	Battery Compartment Mechanical Tests		Р
4.8.5	Battery Accessibility	After test, the battery compartment door remain functional and the battery not become accessible.	Р
4.9	Likelihood of fire or shock due to entry of conductive object:	PS1	N/A

5	ELECTRICALLY-CAUSED INJURY		Р
5.2.1	Electrical energy source classifications	: (See appended table 5.2)	Р
5.2.2	ES1, ES2 and ES3 limits		Р
5.2.2.2	Steady-state voltage and current	(See appended table 5.2)	Р
5.2.2.3	Capacitance limits:	No such capacitance within the EUT	N/A
5.2.2.4	Single pulse limits	No such single pulses generated in the EUT or applied to it.	N/A
5.2.2.5	Limits for repetitive pulses:	No such repetitive pulses within the EUT	N/A
5.2.2.6	Ringing signals	No such ringing signals within the EUT	N/A
5.2.2.7	Audio signals:	No such audio signals	N/A
5.3	Protection against electrical energy sources	Only ES1 circuits in the equipment.	N/A
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards		N/A
5.3.2.2	Contact requirements		N/A
	a) Test with test probe from Annex V		N/A
	b) Electric strength test potential (V)		N/A
	c) Air gap (mm):		N/A
5.3.2.4	Terminals for connecting stripped wire	No such terminals.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4	Insulation materials and requirements		Р
5.4.1.2	Properties of insulating material	The choice and application have taken into account as specified in this Clause 5 and Annex T and natural rubber, hygroscopic materials or asbestos are not used as insulation.	N/A
5.4.1.3	Humidity conditioning:	No hygroscopic material used.	N/A
5.4.1.4	Maximum operating temperature for insulating materials:		N/A
5.4.1.5	Pollution degree:	2	
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2 is applied. No insulating compound applied.	N/A
5.4.1.5.3	Thermal cycling	See above	N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such transformer within the EUT	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such starting pulses within the EUT	N/A
5.4.1.8	Determination of working voltage		N/A
5.4.1.9	Insulating surfaces		N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	No such thermoplastic parts.	N/A
5.4.1.10.2	Vicat softening temperature:		N/A
5.4.1.10.3	Ball pressure:		N/A
5.4.2	Clearances	Only ES1 circuits in the equipment.	N/A
5.4.2.2	Determining clearance using peak working voltage		N/A
5.4.2.3	Determining clearance using required withstand voltage:		N/A
	a) a.c. mains transient voltage:		
	b) d.c. mains transient voltage:		
	c) external circuit transient voltage:		_
	d) transient voltage determined by measurement :		
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A
5.4.2.5	Multiplication factors for clearances and test voltages:		N/A
5.4.3	Creepage distances:	Only ES1 circuits in the equipment.	N/A
5.4.3.1	General		N/A
5.4.3.3	Material Group:		

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Clause	Requirement + Test	Result - Remark	Verdict	
5.4.4	Solid insulation		N/A	
5.4.4.2	Minimum distance through insulation:		N/A	
5.4.4.3	Insulation compound forming solid insulation		N/A	
5.4.4.4	Solid insulation in semiconductor devices		N/A	
5.4.4.5	Cemented joints		N/A	
5.4.4.6	Thin sheet material		N/A	
5.4.4.6.1	General requirements		N/A	
5.4.4.6.2	Separable thin sheet material		N/A	
	Number of layers (pcs):		N/A	
5.4.4.6.3	Non-separable thin sheet material		N/A	
5.4.4.6.4	Standard test procedure for non-separable thin sheet material:		N/A	
5.4.4.6.5	Mandrel test		N/A	
5.4.4.7	Solid insulation in wound components		N/A	
5.4.4.9	Solid insulation at frequencies >30 kHz:		N/A	
5.4.5	Antenna terminal insulation		N/A	
5.4.5.1	General		N/A	
5.4.5.2	Voltage surge test		N/A	
	Insulation resistance (MΩ):		N/A	
5.4.6	Insulation of internal wire as part of supplementary safeguard:	No such insulation of internal wire as part of supplementary safeguard.	N/A	
5.4.7	Tests for semiconductor components and for cemented joints		N/A	
5.4.8	Humidity conditioning	No test requirement.	N/A	
	Relative humidity (%):			
	Temperature (°C):			
	Duration (h):			
5.4.9	Electric strength test:		N/A	
5.4.9.1	Test procedure for a solid insulation type test		N/A	
5.4.9.2	Test procedure for routine tests		N/A	
5.4.10	Protection against transient voltages between external circuit	No such external circuits	N/A	
5.4.10.1	Parts and circuits separated from external circuits		N/A	
5.4.10.2	Test methods		N/A	
5.4.10.2.1	General		N/A	

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Clause	Requirement + Test	Result - Remark	Verdict	
5.4.10.2.2	Impulse test:		N/A	
5.4.10.2.3	Steady-state test:		N/A	
5.4.11	Insulation between external circuits and earthed circuitry:	No such connections for external circuit applied within the EUT	N/A	
5.4.11.1	Exceptions to separation between external circuits and earth	No such connections to external circuit as above.	N/A	
5.4.11.2	Requirements		N/A	
	Rated operating voltage U _{op} (V):			
	Nominal voltage U _{peak} (V):			
	Max increase due to variation U _{sp} :			
	Max increase due to ageing ΔU_{sa} :			
	U_{op} = U_{peak} + ΔU_{sp} + ΔU_{sa} :			
5.5	Components as safeguards			
5.5.1	General		N/A	
5.5.2	Capacitors and RC units		N/A	
5.5.2.1	General requirement		N/A	
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector		N/A	
5.5.3	Transformers		N/A	
5.5.4	Optocouplers		N/A	
5.5.5	Relays		N/A	
5.5.6	Resistors		N/A	
5.5.7	SPD's		N/A	
5.5.7.1	Use of an SPD connected to reliable earthing		N/A	
5.5.7.2	Use of an SPD between mains and protective earth		N/A	
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable:		N/A	
5.6	Protective conductor class III e	quipment with no means of earthing	N/A	
5.6.2	Requirement for protective conductors		N/A	
5.6.2.1	General requirements		N/A	
5.6.2.2	Colour of insulation		N/A	
5.6.3	Requirement for protective earthing conductors		NA	
	Protective earthing conductor size (mm ²):			
5.6.4	Requirement for protective bonding conductors		N/A	

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Clause	Requirement + Test	Result - Remark	Verdict	
5.6.4.1	Protective bonding conductors		N/A	
	Protective bonding conductor size (mm ²):			
	Protective current rating (A):			
5.6.4.3	Current limiting and overcurrent protective devices		N/A	
5.6.5	Terminals for protective conductors		N/A	
5.6.5.1	Requirement		N/A	
	Conductor size (mm ²), nominal thread diameter (mm).		N/A	
5.6.5.2	Corrosion		N/A	
5.6.6	Resistance of the protective system		N/A	
5.6.6.1	Requirements		N/A	
5.6.6.2	Test Method Resistance (Ω):		N/A	
5.6.7	Reliable earthing		N/A	
5.7	Prospective touch voltage, touch current and prote	ective conductor current	N/A	
5.7.2	Measuring devices and networks	class III equipment	N/A	
5.7.2.1	Measurement of touch current:		N/A	
5.7.2.2	Measurement of prospective touch voltage		N/A	
5.7.3	Equipment set-up, supply connections and earth connections		N/A	
	System of interconnected equipment (separate connections/single connection)			
	Multiple connections to mains (one connection at a time/simultaneous connections)		—	
5.7.4	Earthed conductive accessible parts:		N/A	
5.7.5	Protective conductor current		N/A	
	Supply Voltage (V)			
	Measured current (mA):			
	Instructional Safeguard:		N/A	
5.7.6	Prospective touch voltage and touch current due to external circuits		N/A	
5.7.6.1	Touch current from coaxial cables		N/A	
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A	
5.7.7	Summation of touch currents from external circuits		N/A	

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Clause	Requirement + Test	Result - Remark	Verdict
	a) Equipment with earthed external circuits Measured current (mA):		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA):		N/A

6	ELECTRICALLY- CAUSED FIRE		Р
6.2	Classification of power sources (PS) and potential ig	gnition sources (PIS)	Р
6.2.2	Power source circuit classifications	PS (power source) classification determined by measuring the maximum power in Figures 34 and 35 for load and power source circuits.	Ρ
6.2.2.1	General	See the following details.	Р
6.2.2.2	Power measurement for worst-case load fault :		N/A
6.2.2.3	Power measurement for worst-case power source fault:		N/A
6.2.2.4	PS1:		Р
6.2.2.5	PS2:		N/A
6.2.2.6	PS3:		N/A
6.2.3	Classification of potential ignition sources		N/A
6.2.3.1	Arcing PIS:		N/A
6.2.3.2	Resistive PIS:		N/A
6.3	Safeguards against fire under normal operating and	abnormal operating conditions	Р
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials	No ignition and no such temperature attained within the equipment. (See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	Р
6.3.1 (b)	Combustible materials outside fire enclosure		N/A
6.4	Safeguards against fire under single fault conditions	5	N/A
6.4.1	Safeguard Method		N/A
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions :	(See appended table B.4)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict	
	Special conditions for temperature limited by fuse	No such consideration.	N/A	
6.4.4	Control of fire spread in PS1 circuits		N/A	
6.4.5	Control of fire spread in PS2 circuits		N/A	
6.4.5.2	Supplementary safeguards:	(See appended tables 4.1.2)	N/A	
6.4.6	Control of fire spread in PS3 circuit	Not PS3 circuit.	N/A	
6.4.7	Separation of combustible materials from a PIS	No PIS	N/A	
6.4.7.1	General:		N/A	
6.4.7.2	Separation by distance		N/A	
6.4.7.3	Separation by a fire barrier		N/A	
6.4.8	Fire enclosures and fire barriers	No fire enclosures and fire barriers.	N/A	
6.4.8.1	Fire enclosure and fire barrier material properties		N/A	
6.4.8.2.1	Requirements for a fire barrier		N/A	
6.4.8.2.2	Requirements for a fire enclosure		N/A	
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		N/A	
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A	
6.4.8.3.2	Fire barrier dimensions	No fire barrier.	N/A	
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm)		N/A	
	Needle Flame test		N/A	
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm)		N/A	
	Flammability tests for the bottom of a fire enclosure:		N/A	
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c):		N/A	
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating:		N/A	
6.5	Internal and external wiring		N/A	
6.5.1	Requirements		N/A	
6.5.2	Cross-sectional area (mm ²):		—	
6.5.3	Requirements for interconnection to building wiring		N/A	
6.6	Safeguards against fire due to connection to additional equipment	No connection to additional equipment.	N/A	
	External port limited to PS2 or complies with Clause Q.1		N/A	

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Clause	Requirement + Test	Result - Remark	Verdict		

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N/A
7.2	Reduction of exposure to hazardous substances	Not exposure to hazardous substances.	N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions:		_
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010)		
7.6	Batteries:	(See Annex M.)	Р

8	MECHANICALLY-CAUSED INJURY		Р
8.1	General	No moving parts in the equipment – see below regarding edges and corners.	Ρ
8.2	Mechanical energy source classifications	MS1	Р
8.3	Safeguards against mechanical energy sources		N/A
8.4	Safeguards against parts with sharp edges and corners	Edges and corners of the enclosure are rounded.	Р
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts	No moving parts.	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard :		
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks		N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard:		_
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N)		N/A
8.5.5	High Pressure Lamps		N/A
8.5.5.1	Energy Source Classification		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.5.2	High Pressure Lamp Explosion Test		N/A
8.6	Stability	Classification MS1 according to table 35, line 5 and no stability requirements.	N/A
8.6.1	Product classification		N/A
	Instructional Safeguard		
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force:		
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt:		
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force):		N/A
	Position of feet or movable parts:		
8.7	Equipment mounted to wall or ceiling	MS1	N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface):		N/A
8.7.2	Direction and applied force:		N/A
8.8	Handles strength	No handles provided.	N/A
8.8.1	Classification		N/A
8.8.2	Applied Force:		N/A
8.9	Wheels or casters attachment requirements	No wheels or casters.	N/A
8.9.1	Classification		N/A
8.9.2	Applied force:		
8.10	Carts, stands and similar carriers	No carts, stands or similar carriers.	N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard:		
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force:		
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N)		

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Clause	Requirement + Test	Result - Remark	Verdict
8.10.6	Thermoplastic temperature stability (°C)		N/A
8.11	Mounting means for rack mounted equipment	Not such equipment.	N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable N		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas	No such parts.	N/A
	Button/Ball diameter (mm)		

9	THERMAL BURN INJURY		Р
9.2	Thermal energy source classifications	TS1	Р
9.3	Safeguard against thermal energy sources	TS1.	N/A
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard		N/A

10	RADIATION		Р
10.2	Radiation energy source classification	RS1: The LED only used for indicating, which is considered as low power & inherently exempt group according to IEC 62471	Ρ
10.2.1	General classification		Р
10.3	Protection against laser radiation	No laser radiation	N/A
	Laser radiation that exists equipment:		_
	Normal, abnormal, single-fault		
	Instructional safeguard:		
	Tool:		
10.4	Protection against visible, infrared, and UV radiation	No protection needed for RS1 indicating LED.	N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons:		N/A
10.4.1.b)	RS3 accessible to a skilled person:		N/A
	Personal safeguard (PPE) instructional safeguard:		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10 1 1 1	: Normal observat single foult conditions		N1/A
10.4.1.d) 10.4.1.e)	Normal, abnormal, single-fault conditions:		N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque		N/A
10.4.1.f)	UV attenuation:		N/A
10.4.1.g)	Materials resistant to degradation UV		N/A
10.4.1.h)	Enclosure containment of optical radiation:		N/A
10.4.1.i)	Exempt Group under normal operating conditions		N/A
10.4.2	Instructional safeguard:		N/A
10.5	Protection against x-radiation	No such x-radiation generated from the equipment	N/A
10.5.1	X- radiation energy source that exists equipment :		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards:		N/A
	Instructional safeguard for skilled person		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation:		
	Abnormal and single-fault condition:		N/A
	Maximum radiation (pA/kg):		N/A
10.6	Protection against acoustic energy sources	Not such equipment.	N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A):		N/A
	Output voltage, unweighted r.m.s:		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards:		N/A
	Equipment safeguard prevent ordinary person to RS2		—
	Means to actively inform user of increase sound pressure:		
	Equipment safeguard prevent ordinary person to RS2		
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Input voltage with 94 dB(A) L _{Aeq} acoustic pressure output:		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A):		
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A):		

В	NORMAL OPERATING CONDITION TESTS, ABI CONDITION TESTS AND SINGLE FAULT COND		Р
B.2	Normal Operating Conditions	See the following details.	Р
B.2.1	General requirements	(See summary of testing & appended test tables)	Р
	Audio Amplifiers and equipment with audio amplifiers	Not such equipment.	N/A
B.2.3	Supply voltage and tolerances	DC 3V	N/A
B.2.5	Input test:	(See appended table B.2.5)	Р
B.3	Simulated abnormal operating conditions		N/A
B.3.1	General requirements		N/A
B.3.2	Covering of ventilation openings		N/A
B.3.3	D.C. mains polarity test	The EUT is not connected to a D.C. mains	N/A
B.3.4	Setting of voltage selector:	No setting of voltage selector within the EUT	N/A
B.3.5	Maximum load at output terminals	No output terminals	N/A
B.3.6	Reverse battery polarity	Reverse battery polarity has no hazards.	Р
B.3.7	Abnormal operating conditions as specified in Clause E.2.		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions		N/A
B.4	Simulated single fault conditions		Р
B.4.2	Temperature controlling device open or short- circuited	No such device used.	N/A
B.4.3	Motor tests	No motors used.	N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature		N/A
B.4.4	Short circuit of functional insulation	See the following details.	Р
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.3&B.4)	Р

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.3&B.4)	Р
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards within the EUT.	N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		N/A
B.4.6	Short circuit or disconnect of passive components	(See appended table B.3&B.4)	Р
B.4.7	Continuous operation of components	The EUT is continuous operating type and no such components intended for short time operation or intermittent operation.	N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	No change to circuits classified in 5.3.	Р
B.4.9	Battery charging under single fault conditions :	(See Annex M.)	Р

С	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation	No such UV generated from the equipment.	N/A
C.1.2	Requirements	See above.	N/A
C.1.3	Test method	See above.	N/A
C.2	UV light conditioning test	See above.	N/A
C.2.1	Test apparatus	See above.	N/A
C.2.2	Mounting of test samples	See above.	N/A
C.2.3	Carbon-arc light-exposure apparatus	See above.	N/A
C.2.4	Xenon-arc light exposure apparatus	See above.	N/A

D	TEST GENERATORS		N/A
D.1	Impulse test generators	No such consideration.	N/A
D.2	Antenna interface test generator	See above.	N/A
D.3	Electronic pulse generator	See above.	N/A

E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V):		
	Rated load impedance (Ω):		—
E.2	Audio amplifier abnormal operating conditions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND	INSTRUCTIONAL SAFEGUARDS	Р
F.1	General requirements	See the following details.	Р
	Instructions – Language:	English.	
F.2	Letter symbols and graphical symbols	See the following details.	Р
F.2.1	Letter symbols according to IEC60027-1	Letter symbols for quantities and units are complied with IEC 60027- 1.	Р
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Graphical symbols are complied with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010.	Р
F.3	Equipment markings		Р
F.3.1	Equipment marking locations	Equipment marking is located on the enclosure surface and is easily visible.	Р
F.3.2	Equipment identification markings	See the following details.	Р
F.3.2.1	Manufacturer identification:	See copy of marking on page 4.	_
F.3.2.2	Model identification:	See page 2 for details.	
F.3.3	Equipment rating markings	See the following details.	Р
F.3.3.1	Equipment with direct connection to mains		N/A
F.3.3.2	Equipment without direct connection to mains		Р
F.3.3.3	Nature of supply voltage		_
F.3.3.4	Rated voltage		_
F.3.3.4	Rated frequency		
F.3.3.6	Rated current or rated power:		
F.3.3.7	Equipment with multiple supply connections	Equipment does not have multiple supply connections.	N/A
F.3.4	Voltage setting device	No voltage selector provide within the equipment.	N/A
F.3.5	Terminals and operating devices		N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings:		N/A
F.3.5.2	Switch position identification marking:		N/A
F.3.5.3	Replacement fuse identification and rating markings		N/A
F.3.5.4	Replacement battery identification marking :		N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification	Class III equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.6.1	Class I Equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)		N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking:	IPX0.	
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking	Marking is considered to be legible and easily discernible. See also the following details.	Р
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 sec. And then again for 15 sec. With the cloth soaked with petroleum spirit. After this test the marking on the label did not fade. After each test, the marking remained legible.	Ρ
F.4	Instructions		Р
	 a) Equipment for use in locations where children not likely to be present - marking 		N/A
	b) Instructions given for installation or initial use		Р
	c) Equipment intended to be fastened in place		Р
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1	No such terminals provided.	N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES2 limits		N/A
_	h) Symbols used on equipment	No such symbols used as a safeguard considered.	N/A
	i) Permanently connected equipment not provided with all-pole mains switch	Not permanently connected equipment.	N/A
	j) Replaceable components or modules providing safeguard function	No such markings.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.5	Instructional safeguards	Symbol "	Р
	Where "instructional safeguard" is referenced in the test report it specifies the required elements, location of marking and/or instruction	See above	Р

G	COMPONENTS		Р
G.1	Switches		N/A
G.1.1	General requirements	No switch used.	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	Relays		N/A
G.2.1	General requirements	No such relay provided within the equipment.	N/A
G.2.2	Overload test	See above.	N/A
G.2.3	Relay controlling connectors supply power	See above.	N/A
G.2.4	Mains relay, modified as stated in G.2	See above.	N/A
G.3	Protection Devices		N/A
G.3.1	Thermal cut-offs	No thermal cut-off provided within the equipment.	N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)	See above.	N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)	See above.	N/A
G.3.1.2	Thermal cut-off connections maintained and secure	See above.	N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691	No thermal link provided within the equipment.	N/A
G.3.2.1b)	Thermal links tested as part of the equipment	See above.	N/A
	Aging hours (H):	See above.	
	Single Fault Condition:	See above.	
	Test Voltage (V) and Insulation Resistance (Ω). :	See above.	
G.3.3	PTC Thermistors	No PTC thermistor provided within the equipment.	N/A
G.3.4	Overcurrent protection devices	No overcurrent protection devices	N/A
G.3.5	Safeguards components not mentioned in G.3.1 to	o G.3.5	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.5.1	Non-resettable devices suitably rated and marking provided	No such safeguards components	N/A
G.3.5.2	Single faults conditions:		N/A
G.4	Connectors		N/A
G.4.1	Spacings	No such connector.	N/A
G.4.2	Mains connector configuration:		N/A
G.4.3	Plug is shaped that insertion into mains socket- outlets or appliance coupler is unlikely		N/A
G.5	Wound Components	·	N/A
G.5.1	Wire insulation in wound components	No wound components	N/A
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s):		
	Temperature (°C):		
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	Transformers		N/A
G.5.3.1	Requirements applied (IEC61204-7, IEC61558- 1/-2, and/or IEC62368-1):	No transformers	N/A
	Position:		
	Method of protection:		
G.5.3.2	Insulation		N/A
	Protection from displacement of windings:		
G.5.3.3	Overload test:		N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding Temperatures testing in the unit		N/A
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	Motors		N/A
G.5.4.1	General requirements	No motors used.	N/A
	Position:		
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days):		
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V):		
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h):		N/A
	Electric strength test (V):		
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature:		N/A
	Electric strength test (V):		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h):		N/A
	Electric strength test (V):		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage		
G.6	Wire Insulation		N/A
G.6.1	General	No power supply cord used	N/A
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	Mains supply cords		N/A
G.7.1	General requirements	Not directly connected to mains	N/A
	Туре		
	Rated current (A)		
	Cross-sectional area (mm ²), (AWG):		
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non- detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N):		—
G.7.3.2.2	Strain relief mechanism failure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.3.2.3	Cord sheath or jacket position, distance (mm):		
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry:		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g):		_
	Diameter (m):		
	Temperature (°C):		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	Varistors	1	N/A
G.8.1	General requirements	No varistors used.	N/A
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test:		N/A
G.8.3.3	Temporary overvoltage		N/A
G.9	Integrated Circuit (IC) Current Limiters		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.	No IC current limiter provided within the equipment.	N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA:		
G.9.1 d)	IC limiter output current (max. 5A):		
G.9.1 e)	Manufacturers' defined drift:		
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	Resistors	·	N/A
G.10.1	General requirements		N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable	No such resistors	N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.10.3.3	Impulse test		N/A
G.11	Capacitor and RC units		N/A
G.11.1	General requirements	No capacitor and RC units	N/A
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
G.12	Optocouplers		N/A
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results):	No optocouplers	N/A
	Type test voltage Vini, a:		
	Routine test voltage, Vini,b:		_
G.13	Printed boards		Р
G.13.1	General requirements	See the following details.	Р
G.13.2	Uncoated printed boards		Р
G.13.3	Coated printed boards	No coated printed board or multilayer board applied for within the equipment.	N/A
G.13.4	Insulation between conductors on the same inner surface	See above.	N/A
	Compliance with cemented joint requirements (Specify construction):		_
G.13.5	Insulation between conductors on different surfaces	See above.	N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)		
G.13.6	Tests on coated printed boards	See above.	N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements:	No coating on component terminals considered to affect creepage or clearances.	N/A
G.15	Liquid filled components		N/A
G.15.1	General requirements	No such device provided within the equipment.	N/A
G.15.2	Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours	No such ICX provided within the equipment.	N/A
b)	Impulse test using circuit 2 with Uc = to transient voltage:		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage:		_
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance:		—
D3)	Resistance:		_

н	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General	No telephone ringing signal generated within the equipment.	N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz)		
H.3.1.2	Voltage (V)		
H.3.1.3	Cadence; time (s) and voltage (V)		
H.3.1.4	Single fault current (mA):		
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
H.3.2.3	Monitoring voltage (V)		—
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		N/A
	General requirements		N/A

К	SAFETY INTERLOCKS		N/A
K.1	General requirements	No safety interlock provided within the equipment.	N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance:		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location):		N/A
K.7.2	Overload test, Current (A)		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test:		N/A

L	DISCONNECT DEVICES	N/A
L.1	General requirements	N/A
L.2	Permanently connected equipment	N/A
L.3	Parts that remain energized	N/A
L.4	Single phase equipment	N/A
L.5	Three-phase equipment	N/A
L.6	Switches as disconnect devices	N/A
L.7	Plugs as disconnect devices	N/A
L.8	Multiple power sources	N/A

М	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		Р
M.1	General requirements		Р
M.2	Safety of batteries and their cells		Р

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Clause	Requirement + Test	Result - Remark	Verdict	
M.2.1	Requirements	Button battery is certified to UL 1642.	Р	
M.2.2	Compliance and test method (identify method) :		Р	
M.3	Protection circuits	(see appended table Annex M)	Р	
M.3.1	Requirements	No such battery used	Р	
M.3.2	Tests	Button battery used, reverse charging is prevented	Р	
	- Overcharging of a rechargeable battery		N/A	
	- Unintentional charging of a non-rechargeable battery		N/A	
	- Reverse charging of a rechargeable battery		N/A	
	- Excessive discharging rate for any battery	(see appended table Annex M)	Р	
M.3.3	Compliance:	Button battery used, reverse charging is prevented	N/A	
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A	
M.4.1	General		N/A	
M.4.2	Charging safeguards		N/A	
M.4.2.1	Charging operating limits		N/A	
M.4.2.2a)	Charging voltage, current and temperature:			
M.4.2.2 b)	Single faults in charging circuitry			
M.4.3	Fire Enclosure		N/A	
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A	
M.4.4.2	Preparation		N/A	
M.4.4.3	Drop and charge/discharge function tests		N/A	
	Drop		N/A	
	Charge		N/A	
	Discharge		N/A	
M.4.4.4	Charge-discharge cycle test		N/A	
M.4.4.5	Result of charge-discharge cycle test		N/A	
M.5	Risk of burn due to short circuit during carrying		N/A	
M.5.1	Requirement		N/A	
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A	
M.6	Prevention of short circuits and protection from other effects of electric current		N/A	
M.6.1	Short circuits		N/A	

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Clause	Requirement + Test	Result - Remark	Verdict	
M.6.1.1	General requirements		N/A	
M.6.1.2	Test method to simulate an internal fault		N/A	
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method)		N/A	
M.6.2	Leakage current (mA):		N/A	
M.7	Risk of explosion from lead acid and NiCd batteries		N/A	
M.7.1	Ventilation preventing explosive gas concentration		N/A	
M.7.2	Compliance and test method		N/A	
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A	
M.8.1	General requirements		N/A	
M.8.2	Test method		N/A	
M.8.2.1	General requirements		N/A	
M.8.2.2	Estimation of hypothetical volume Vz (m ³ /s):			
M.8.2.3	Correction factors:			
M.8.2.4	Calculation of distance d (mm)			
M.9	Preventing electrolyte spillage		N/A	
M.9.1	Protection from electrolyte spillage		N/A	
M.9.2	Tray for preventing electrolyte spillage		N/A	
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing):		N/A	

Ν	ELECTROCHEMICAL POTENTIALS		N/A
	Metal(s) used:	Class III equipment.	
0	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		N/A
	Figures O.1 to O.20 of this Annex applied:	Class III equipment.	
Ρ	SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS		Р
P.1	General requirements		Р
P.2.2	Safeguards against entry of foreign object		Р
	Location and Dimensions (mm):	No openings.	
P.2.3	Safeguard against the consequences of entry of foreign object		Р

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Clause	Requirement + Test	Result - Remark	Verdict
P.2.3.1	Safeguards against the entry of a foreign object	No bare conductive parts of ES3 and PS3 circuits inside.	Р
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard):		N/A
P.3	Safeguards against spillage of internal liquids	No such liquids.	N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts	No such construction.	N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C):		
	Tr (°C):		
	Ta (°C):		
P.4.2 b)	Abrasion testing:		N/A
P.4.2 c)	Mechanical strength testing:		N/A

Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		N/A
Q.1	Limited power sources	No output connector.	N/A
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		N/A
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A):		—
	Current limiting method:		_
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General requirements	No such consideration.	N/A

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Clause	Clause Requirement + Test Result - Remark				
R.2	Determination of the overcurrent protective device and circuit	See above.	N/A		
R.3	Test method Supply voltage (V) and short-circuit current (A)):	See above.	N/A		

S	TESTS FOR RESISTANCE TO HEAT AND FIRE	N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	N/A
	Samples, material:	
	Wall thickness (mm):	—
	Conditioning (°C)	
	Test flame according to IEC 60695-11-5 with conditions as set out	N/A
	- Material not consumed completely	N/A
	- Material extinguishes within 30s	N/A
	- No burning of layer or wrapping tissue	N/A
S.2	Flammability test for fire enclosure and fire barrier integrity	N/A
	Samples, material	
	Wall thickness (mm)	
	Conditioning (°C)	
	Test flame according to IEC 60695-11-5 with conditions as set out	N/A
	Test specimen does not show any additional hole	N/A
S.3	Flammability test for the bottom of a fire enclosure	N/A
	Samples, material	—
	Wall thickness (mm)	
	Cheesecloth did not ignite	N/A
S.4	Flammability classification of materials	N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	N/A
	Samples, material	
	Wall thickness (mm):	
	Conditioning (test condition), (°C):	

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Clause	ause Requirement + Test Result - Remark					
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A			
	After every test specimen was not consumed completely		N/A			
	After fifth flame application, flame extinguished within 1 min		N/A			

Т	MECHANICAL STRENGTH TESTS		Р
T.1	General requirements		Р
T.2	Steady force test, 10 N	(See appended table T2)	Р
Т.3	Steady force test, 30 N		N/A
Т.4	Steady force test, 100 N		N/A
Т.5	Steady force test, 250 N	(See appended table T5)	Р
Т.6	Enclosure impact test	(See appended table T6)	Р
	Fall test		Р
	Swing test		N/A
Т.7	Drop test		N/A
Т.8	Stress relief test	(See appended table T.8)	
Т.9	Impact Test (glass)	No such glass used.	N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J)		
	Height (m):		
T.10	Glass fragmentation test		N/A
T.11	Test for telescoping or rod antennas	No such antennas provided within the equipment.	N/A
	Torque value (Nm)	See above.	

U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION			
U.1	General requirements No CRT provided within the equipment.			
U.2	Compliance and test method for non-intrinsically protected CRTs	See above.	N/A	
U.3	Protective Screen	See above.	N/A	

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Clause	Requirement + Test Result - Remark				
V	DETERMINATION OF ACCESSIBLE PARTS (FIN	IGERS, PROBES AND WEDGES)	Р		
V.1	Accessible parts of equipment	No access with test probes (test probe V.1 used) to any hazardous parts	Р		
V.2	Accessible part criterion	See above.	Р		



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Clause	Requirement + Test	Result - Remark	Verdict			

4.1.2	TABLE: List of critica	l components			Р
Object / par No.	t Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹
Plastic enclosure	SINOPLAST GROUP LTD	7015-(xx)	HB or better, Min. 80°C	UL 94	UL E335478
PCB	ZHUHAI CAMTECH CIRCUITS CO LTD	СТ-М	V-0, 130°C	UL 94, UL796	UL E343438
Button batte	PANASONIC CORPORATION PANASONIC CORPORATION OF NORTH AMERICA	CR2032	3V, Max Abnormal Charging Current 10mA	UL 1642	UL MH12210

Supplementay information:

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

4.8.4, 4.8.5	TABLE: Lit	TABLE: Lithium coin/button cell batteries mechanical tests		
(The follow	ing mechanical	tests are conducted in the seque	nce noted.)	
4.8.4.2	TABLE: Str	TABLE: Stress Relief test		
P	PartMaterialOven Temperature (°C)			Comments
Enc	Enclosure plastic 70		No hazard.	
4.8.4.3	TABLE: Bat	tery replacement test		Р
Battery par	rt no			
Battery Installation/withdrawal		rawal	Battery Installation/Removal Cycle	Comments
			10	No hazard.
.8.4.4	TABLE: Dro	p test		

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4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests				Р	
(The follow	ing mechanica	I tests are conducted in the sequen	ce noted.)			
mpact Area Drop Distance Drop No.				Obse	Observans	
4.8.4.5	TABLE: Im	pact		Р		
Impacts	per surface	Surface tested	Impact energy (Nm)	Co	omments	
Horizon	tal surface	3	6.5		damage, no nazards.	
The vert	ical surface	3	6.5		damage, no nazards.	
4.8.4.6	TABLE: Cr	ush test				
Test position		Surface tested	Crushing Force (N)		ation force oplied (s)	

4.8.5	TABLE: Lith	ABLE: Lithium coin/button cell batteries mechanical test result				
Test po	osition	Surface tested	Force (N)	Duration force applied (s)		
Battery cor do	•		30	10		
	-					
Supplementa	Supplementary information:					

5.2	Table: C	Table: Classification of electrical energy sources					Р
5.2.2.2 -	- Steady State	Voltage and Cu	rrent conditions				
Location (e.g. Parameters							
No.	Supply Voltage	circuit designation)	Test conditions ¹⁾	U (Vrms or Vpk)	l (Apk or Arms)	Hz	ES Class
1	3 d.c.	Supplied by	Normal	3 Vdc max.		DC	ES1
		button battery.	Abnormal				
			Single fault				
5.2.2.3 -	5.2.2.3 - Capacitance Limits						

Supplementary information:

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Clau	use		Requirer	nent + Test			Resu	lt - Ren	nark		Verdict		
No.	Sup Volta		Location (e.g. circuit designation)	Test conditions	Сара	acitance	Param e, nF	eters	Upk (V)		ES Class		
				Normal									
				Abnormal									
				Single fault – SC/OC									
Overal	II capao	city: Lin	nit: ES1=60V; ES	2=120V.									
5.2.2.4	1 - Sing	le Pulse	es	1									
No.	Supp Volta		Location (e.g. circuit designation)	Test conditions	Duratio	n (ms)	Parameters ns) Upk (V)						ES Class
				Normal		()				-			
				Abnormal							-		
			Single fault – SC/OC						-				
5.2.2.5	5 - Repe	etitive F	Pulses	•									
No.	Supp Volta		Location (e.g. circuit designation)	Test conditions	Off time	(ms)	Parame Upk (lpk (n	nA)	ES Class		
				Normal						,			
				Abnormal									
				Single fault – SC/OC									
	4,	Norı Abn ry inforr	mal – Full load ar ormal – Overloac mation: SC=Shor : Temperature r	output t Circuit, OC=Ope	n Circuit						P		
6.3.2, B.2.6	9.0,				(50								
		-	oply voltage (V) :										
		Am	bient T _{min} (°C):	24	4.6								

Tma (°C) : Maximum measured temperature T of part/at:

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Ambient T_{max} (°C) :

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25.0

50.0

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T (°C)

--

Allowed T_{max}

(°C)



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Clause	Requiren	nent + Te	est			Resu	t - Remark		Verdict	
Enclosure in	nside (above)		51.5					80		
Enclosure in	nside (below)		51.0						80	
Button battery			52.4						60	
PCB(near battery)			52.2						130	
PCB(near IC	C)		52.0						130	
Ambient			50.0							
Accessible p	portion									
Enclosure o	utside (above)		26.1						* 77	
Button			25.2						* 77	
Ambient			25.0							
(Tm Note 2: The	e apparatus was submitten na) of 50°C. e temperatures were mea		nder the worse		mal n					
remperature	e T of winding:					()		T _{max} (°C)	class	
					-	-				
5.4.1.10.2	TABLE: Vicat softening	temper	ature of ther	moplastic	S				N/A	
Penetration (mm)									—	
: Object/ Part No./Material Manufacturer/trademark T softening (°C							ftening (°C)	<u> </u>		
					k T softening (°C)					
	ary information:									
Supplemente										

5.4.1.10.3	TABLE: Ball pre	ABLE: Ball pressure test of thermoplastics					
Allowed impression diameter (mm): $\leq 2 \text{ mm}$							
Object/Part No./Material Manufacturer/trademark			Test temperature (°C)	meter (mm)			
Supplement	ary information:						

5.4.2.2, 5.4.2.4
and 5.4.3TABLE: Minimum Clearances/Creepage distanceN/A

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Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequenc y (Hz)	Required cl (mm)	cl (mm) ²	Required ³ cr (mm)	cr (mm)

5.4.2.3	TABLE: Minimum Clearances	TABLE: Minimum Clearances distances using required withstand volta					
	Overvoltage Category (OV):						
	Pollution Degree:						
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Mea	asured cl (mm)		
See table	5.4.2.2, 5.4.2.4 and 5.4.3 above.						
Suppleme	Supplementary information:						

5.4.2.4	TABLE: Clearances based on electric strength test						
Test voltage	Test voltage applied between: Required cl (mm) Test voltage (kV) Breakdow Yes / N						
Supplement	Supplementary information: Using procedure 2 to determine the clearance.						

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distanc	TABLE: Distance through insulation measurements					
Distance the di at/of:	rough insulation	Peak voltage (V)	Frequency (Hz)	Material	Required DTI (mm)	DTI (mm)	
Supplementary information:							

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5.4.9	TABLE: Electric strength tests			N/A
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (Vpeak)	Breakdown Yes / No
Supplemen	tary information:	•		

5.5.2.2	TABLE: St	ored dischar	ge on capacito	rs			N/A
Supply Voltage (V), Hz Test Location			Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification	
Suppleme	entary informat	ion:					
5.6.6.2	TABLE: Re	sistance of p	rotective cond	uctors and te	rminations		N/A
Accessible part			Test current (A)	Duratio (min)	n Voltage drop (V)	Res	sistance (Ω)
Suppleme	ntary Informat	ion:		1		1	

5.7.2.2, 5.7.4	•				
Supply vol	tage:		—		
Location		Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)		
		1 (e closed, normal and reverse polarity p)			
		2* (netural open (switch n), earth intact and normal polarity, again in reverse polarity (switch p)			
		3 (for IT system, each phase conductor faulted to earth, one at a time (switch g)			

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	4 (for three-phase, each phase conductor open, one at a time switches I)				
Notes: [1] Supply voltage is the anticipated maximum Touch Volt	age				
[2] Earthed neutral conductor [Voltage differences less than 1% or more]					
[3] Specify method used for measurement as described ir	1 IEC 60990 sub-clause 4.3				
[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.					
[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.					
a) Not considered IT power system.					
b) Not three phase equipment.					

c) Not IT power system or three phase delta system.

d) Not three-phase for use on centre-earthed dalta supply system.

e) Not such parts.

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6.2.2	Table: Electrica	I power sources	(PS) measurements for	or classification	N/A		
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s	PS Classification		
		Power (W):					
		V _A (V) :					
		I _A (A) :					
		Power (W):					
		V _A (V) :					
		I _A (A) :					
Suppleme	entary Information:			·	•		

6.2.3.1	Table: Determination	able: Determination of Potential Ignition Sources (Arcing PIS) N							
Location		Open circuit voltage After 3 s (Vp)	Measured r.m.s current (Irms) Calculated value (V _p x I _{rms})		Arcing PIS? Yes / No				
See below									
Supplemen	tary information:								

6.2.3.2	Table: Dete	Table: Determination of Potential Ignition Sources (Resistive PIS)							
Circuit Loo	Circuit Location (x-y) Operating Condition (Normal / Describe Single Fault)		Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No			
See below									

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Supplementary Information:

All power dissipating components in primary and secondary circuit which are supplied by a source exceeding 15W (since the output rating is higher than 15VA) are considerd as resistive PIS.

A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.

If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.

A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.

8.5.5	TABLE: High Pressure Lamp							
Description		Values	Energy Source Classifica					
Lamp type.	:		_					
Manufactur	er:		_					
Cat no	:		_					
Pressure (c	old) (MPa)		MS_					
Pressure (o	operating) (MPa)		MS_					
Operating ti	ime (minutes)		_					
Explosion n	nethod		—					
Max particle	e length escaping enclosure (mm) .:		MS_					
Max particle	e length beyond 1 m (mm):		MS_					
Overall resu	ult:							
Supplemen	tary information:							

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B.2.5 TABLE: Input test							Р
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
3Vdc	0.01		0.03				Supplied by button battery; maximum normal load
Supplementary information: The maximum measured current under rated voltage did not exceed 110% of the rated current.							

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Verdict

B.3 & B.4	TABLE: A	onormal	operating	and fa	ult conditi	on tests			Р
Ambient tem	perature (°	C)				:	25.0°C, if not specified		
Power source	e for EUT: I	Manufact	urer, mode	el/type, o	output ratir	ng:			
Component No.	Abnormal Condition	Supply voltage , (V)	Test time	Fuse no.	Fuse current, (A)	T- couple	Temp. (°C)	Ot	oservation
R1	SC	3Vdc	10 min				1	norn dam	operated nally, no age, no ards.
Battery	overdisch arge	3Vdc	7h					No c leak expl emis flam expl	r the test, chemical s, No osion, No ssion of e or ulsion of en metal.
Battery (R2 sc)	Overdisc harge	3Vdc	7h					No c leak expl emis flam expl	r the test, chemical s, No osion, No ssion of e or ulsion of en metal.

Supplementary information:

Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4.

1) SC: Short-circuited; OC: Open-circuit; OL: Overloaded.

2) The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; In addition all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions.

3) The test result showed no Class 1 or 2 energy source become Class 3 level during and after single fault condition.

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	I									
Annex M	ТА	BLE: Batte	eries							Р
The tests of	f Anr	nex M are a	applicable o	only when app	propriate ba	attery data	is not ava	ilable		Р
Is it possible	e to i	install the b	pattery in a	reverse polar	ity position	?	:	No		N/A
		Non-re	chargeable	batteries		R	lechargeal	ole batterie	es	
		Disch	arging	Un-	Char	ging	Disch	arging	Reverse	d charging
		Meas. current	Manuf. Specs.	intentional charging	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. curren during norm condition		10.0mA	225mA							
Max. curren during fault condition		11.1mA (R2 sc)	225mA							
Test results	:									Verdict
- Chemical	- Chemical leaks No chemical leaks							Р		
- Explosion of the battery No explosion							Р			
- Emission o	of fla	me or exp	ulsion of m	olten metal				No Emis of flame expulsio molten r	or on of	Ρ

	molten metal	
- Electric strength tests of equipment after completion of tests		N/A
Supplementary information:		

Annex M.4	Mex M.4 Table: Additional safeguards for equipment containing secondary lithium batteries						N/A
Battery/Cell No.		Test conditions		;	Observation		
			U	I (A)	Temp (C)		
		Normal					
		Abnormal					
		Single fault –SC/OC					
		Normal					
		Abnormal					
		Single fault – SC/OC					
Supplement	ary Informatio	on:				•	

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Battery identification	Charging at T _{lowest} (°C)	Observation		Charging at T _{highest} (°C)		Observation	
Supplementary I	nformation:						
Annex Q.1	TABLE: Circuits	intended for interconnection with building wiring (LPS)			N/A		
Note: Measured	UOC (V) with all lo	ad circuits disco	nnected:				
Output Circuit	Components	U _{oc} (V)		I _{sc} (A)	(A) S (VA		VA)
			Meas.	Li	mit	Meas.	Limit
Supplementary Information: *Unit shut-down immediately.							

T.2, T.3, T.4, T.5	TAB	LE: Steady force te	est			Р
Part/Loca	tion	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
Internal components	5	Plastic		10	5	No damage, no hazards.
Top enclosu	ire	Plastic		250	5	No damage, no hazards.
Side enclos	ure	Plastic		250	5	No damage, no hazards.
Bottom enclosure		Plastic		250	5	No damage, no hazards.
Supplement	ary inf	ormation:		•		

T.6, T.9	TAB	LE: Impact tests				Р
Part/Locati	ion	Material	Thickness (mm)	Vertical distance (mm)	Observation	
Horizonta surface		Plastic		1300	No damage, no haza	rds.
The vertic surface		Plastic		1300	No damage, no haza	rds.
Supplementa	ary info	ormation:				

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Clause	Requirement + Test	Result - Remark	Verdict

T.7 TABLE: Drop tests							
Part/Locat	ion	Material	Thickness (mm)	Drop Height (mm)	Observation		
Supplementary information:							

T.8 TABLE: Stress relief test							N/A
Part/Locat	ion	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observ	ration
Supplementa	Supplementary information:						

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IEC62368_1B - ATTACHMENT

Clause

Requirement + Test

Verdict

(Audio/vide		AN GROUP DI	IEC 62	O TEST REPOR 2368-1 ES AND NATIOR chnology equip	NAL DIFFER	ENCES I: Safety require	ements)		
Differences a	ccording to	EN	62368-1:20	014+A11:2017					
Attachment F	orm No	EU	J_GD_IEC6	2368_1B_II					
Attachment C	Driginator	: Ne	mko AS						
Master Attacl	nment	: Da	te 2017-09-	22					
		em for Confo and. All rights		ng and Certifica	ation of Elec	trical Equipmer	nt		
	CENELEC C		DIFICATION	IS (EN)					
		clauses, notes 62368-1:2014		res and annexes "Z".	s which are a	dditional to			
CONTENTS	ENTSAdd the following annexes:Annex ZA (normative)Normative references to international publications with their corresponding European publicationsAnnex ZB (normative)Special national conditionsAnnex ZC (informative)A-deviationsAnnex ZD (informative)IEC and CENELEC code designations for flexible cords					publications	Р		
		e "country" note the following lis		rence document	: (IEC 62368-	1:2014)	Р		
	0.2.1	Note	1	Note 3	4.1.15	Note			
	4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c			
	5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note			
	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3			
	5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4			
	10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3			
	+	ational condition					Р		

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Clause	Requirement + Test	Result - Remark	Verdict
1	Add the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.		P
4.Z1	Add the following new subclause after 4.9: To protect against excessive current, short-circuit and earth faults in circuits connected to an a.c. mains, protective devices shall be included eithe as integral parts of the equipment or as parts of the building installation, subject to the following, a), b and c):	r he	N/A
	a) except as detailed in b) and c), protective devices necessary to comply with the requiremen of B.3.1 and B.4 shall be included as parts of the equipment;		
	 b) for components in series with the mains input the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and ear fault protection may be provided by protective devices in the building installation; 	e	
	c) it is permitted for pluggable equipment type I or permanently connected equipment , to rely or dedicated overcurrent and short-circuit protection the building installation, provided that the means protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.	on Lin	
	If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for pluggable equipment type the building installation shall be regarded as providing protection in accordance with the rating the wall socket outlet.		
5.4.2.3.2.4	Add the following to the end of this subclause:		N/A
	The requirement for interconnection with externa circuit is in addition given in EN 50491-3:2009.		
10.2.1	Add the following to ^{c)} and ^{d)} in table 39: For additional requirements, see 10.5.1.		N/A

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			Martin
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	Add the following after the first paragraph:		N/A
	For RS 1 compliance is checked by measuremen under the following conditions:	it	
	 In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or presets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made. NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. The dose-rate is determined by means of a rediation maintaining an offentive area of 10 cm² 		
	radiation monitor with an effective area of 10 cm ² , any point 10 cm from the outer surface of the apparatus.	al	
	Moreover, the measurement shall be made under fault conditions causing an increase of the high- voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.	r	
	For RS1, the dose-rate shall not exceed 1 μ Sv/h taking account of the background level. NOTE Z2 These values appear in Directive 96/29/Euratom of	13	
10.6.1	May 1996. Add the following paragraph to the end of the subclause:		N/A
	EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.	5	
10.Z1	Add the following new subclause after 10.6.5.10.Z1 Non-ionizing radiation from radio		N/A
	frequencies in the range 0 to 300 GHz The amount of non-ionizing radiation is regulated European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 3 GHz).	e	
	For intentional radiators, ICNIRP guidelines shoul be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand held and body-mounted devices, attention is draw to EN 50360 and EN 50566	d-	
G.7.1	Add the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.	to	N/A

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Clause	Requi	rement + Test	Result - Remark	Verdict
Bibliography	Add the following IEC 60130-9 IEC 60269-2 IEC 60309-1 IEC 60364	notes for the standards indica NOTE Harmonized as EN 6 NOTE Harmonized as HD 6 NOTE Harmonized as EN 6 NOTE some parts harmoniz	0130-9. 0269-2. 0309-1. red in HD 384/HD 60364 series.	N/A
ZB	IEC 60601-2-4 IEC 60664-5 IEC 61032:1997 IEC 61508-1 IEC 61558-2-1 IEC 61558-2-4 IEC 61558-2-6 IEC 61643-1 IEC 61643-311 IEC 61643-321 IEC 61643-331	NOTE Harmonized as EN 6 NOTE Harmonized as EN 6	0664-5. 1032:1998 (not modified). 1508-1. 1558-2-1. 1558-2-4. 1558-2-6. 1643-1. 1643-21. 1643-311. 1643-321. 1643-331.	N/A
4.1.15	Denmark, Finlan To the end of the Class I pluggable connection to othe safety relies on co surge suppressors network terminals marking stating th connected to an e The marking text i as follows: In Denmark: "App stikkontakt med jo stikproppens jord. In Finland: "Laite varustettuun pisto In Norway: "Appa stikkontakt"	on liitettävä suojakoskettimilla	ed: for II, if r if II be en	N/A N/A

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Clause	Requirement + Test Result - Remark		Verdict	
4.7.3	United Kingdom		N/A	
	To the end of the subclause the following is added:			
	The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex			
5.2.2.2	Denmark		N/A	
	After the 2nd paragraph add the following:			
	A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.			



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Clause	Requirement + Test	Result - Remark	Verdict	
5.4.11.1 and Annex G	Finland and Sweden		N/A	
Annex G	To the end of the subclause the following is adde	ed:		
	For separation of the telecommunication network from earth the following is applicable:	ς		
	If this insulation is solid, including insulation form part of a component, it shall at least consist of ei			
	• two layers of thin sheet material, each of which shall pass the electric strength test below, or			
	• one layer having a distance through insulation at least 0,4 mm, which shall pass the electric strength test below.	of		
	If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances a creepage distances do not exist, if the compone passes the electric strength test in accordance w the compliance clause below and in addition	ent		
	• passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and			
	• is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5	kV.		
	It is permitted to bridge this insulation with 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 have a capacitor classified Y3 as defined by EN 6038- 14, which in addition to the Y3 testing, is tested w an impulse test of 2,5 kV defined in 5.4.11;	4- vith		
	• the additional testing shall be performed on all test specimens as described in EN 60384-14;	the		
	the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.			
5.5.2.1	Norway		N/A	
	After the 3rd paragraph the following is added:			
	Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).			

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Clause	Poquiroment L Test	Result - Remark	Verdict
Clause	Requirement + Test	Result - Remark	verdict
5.5.6	Finland, Norway and Sweden		N/A
	To the end of the subclause the following is adde	ed:	
	Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipmentype A shall comply with G.10.1 and the test of G.10.2.	nt	
5.6.1	Denmark		N/A
	Add to the end of the subclause		
	 Due to many existing installations where the sock outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse. 	be	
5.6.4.2.1	Ireland and United Kingdom		N/A
	After the indent for pluggable equipment type <i>I</i> the following is added:	Α,	
	 the protective current rating is taken to be 13 this being the largest rating of fuse used in the mains plug. 	3 A,	
5.6.5.1	To the second paragraph the following is added:		N/A
	The range of conductor sizes of flexible cords to accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is		
	1,25 mm ² to 1,5 mm ² in cross-sectional area.		
5.7.5	Denmark		N/A
	To the end of the subclause the following is adde	ed:	
	The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.1	Norway and Sweden		N/A
	To the end of the subclause the following is adde	d:	
	The screen of the television distribution system is normally not earthed at the entrance of the buildir and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system.	ng	
	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 a retailer, for example.	n	
	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:		
	"Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728 11)"		
	NOTE In Norway, due to regulation for CATV-installations, an Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric streng of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.		
	Translation to Norwegian (the Swedish text will al be accepted in Norway):	so	
	"Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – o er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet."		
	Translation to Swedish:		
	"Apparater som är kopplad till skyddsjord via jorda vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fä medfőra risk főr brand. Főr att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.".	all	

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	Denmark To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA.		N/A
B.3.1 and B.4	Ireland and United Kingdom The following is applicable: To protect against excessive currents and short- circuits in the primary circuit of direct plug-in equipment , tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the direct plug-in equipment until the requirements of Annexes B.3.1 and B.4 are met	,	N/A
G.4.2	Denmark To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. 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. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DKA 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a Justification: Heavy Current Regulations, Section 6c		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	United Kingdom		N/A
	To the end of the subclause the following is add The plug part of direct plug-in equipment shall b assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 1 12.11, 12.12, 12.13, 12.16, and 12.17, except th the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.	e I2.9, nat y an	
G.7.1	United Kingdom		N/A
	To the first paragraph the following is added: Equipment 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 shall be fitted with a 'stand plug' in accordance with the Plugs and Sockets (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and esser means an approved plug conforming to BS 1363 or an appro- conversion plug.	s ard etc	
G.7.1	Ireland To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member Sta which is equivalent to the relevant Irish Standard	s ate	N/A

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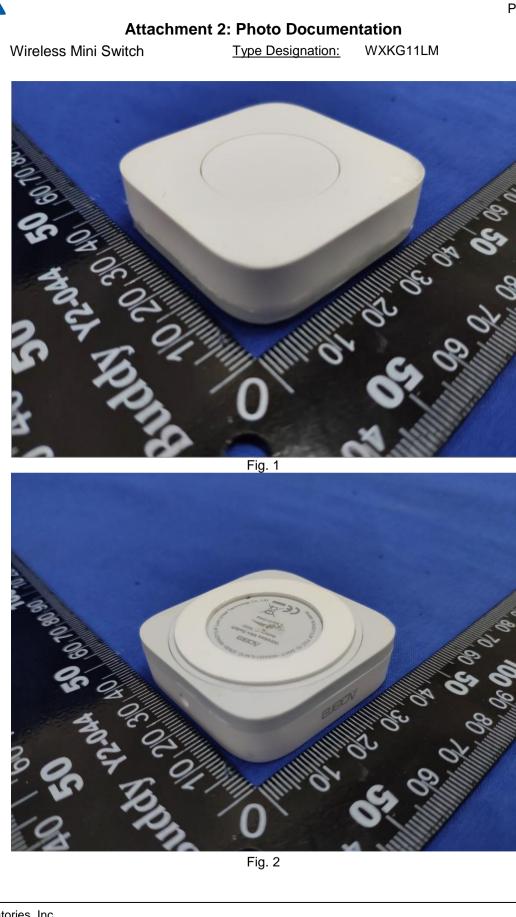
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Clause	Requirement + Test	Result - Remark	Verdict	
G.7.2	Ireland and United Kingdom		N/A	
	To the first paragraph the following is added:			
	A power supply cord with a conductor of 1,25 m is allowed for equipment which is rated over 10 and up to and including 13 A.			
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A	
10.5.2	Germany		N/A	
	The following requirement applies:			
	For the operation of any cathode ray tube intend for the display of visual images operating at an acceleration voltage exceeding 40 kV, authoriza is required, or application of type approval (Bauartzulassung) and marking.			
	Justification: German ministerial decree against ionizing radia (Röntgenverordnung), in force since 2002-07-01 implementing the European Directive 96/29/EURATOM.			
	NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int +49-531-592-6320, Internet: http://www.ptb.de			

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Product:



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Attachment 2: Photo Documentation

Product:

Wireless Mini Switch

WXKG11LM Type Designation:



Fig. 4

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Attachment 2: Photo Documentation

Product:

Wireless Mini Switch

WXKG11LM Type Designation:

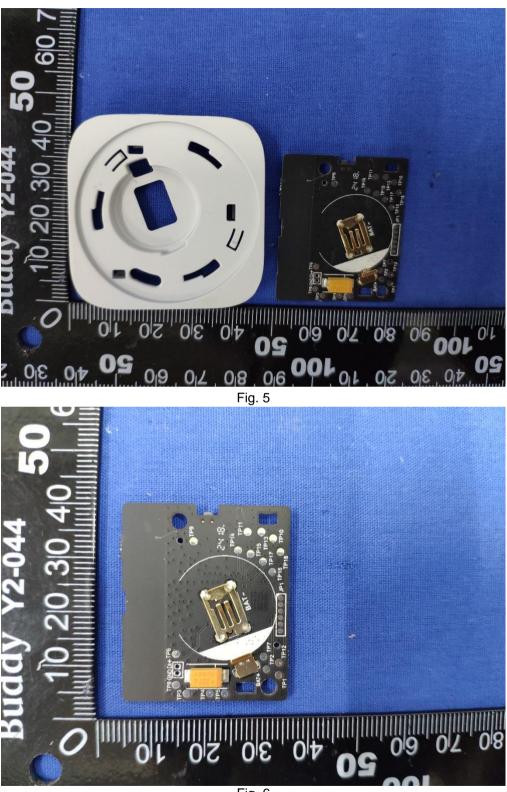


Fig. 6

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Attachment 2: Photo Documentation

Product: Wi

Wireless Mini Switch

Type Designation: WXKG11LM

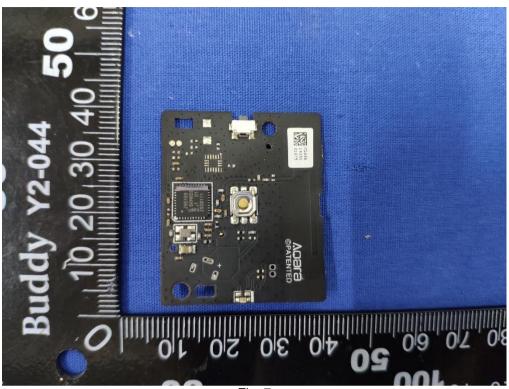


Fig. 7

END OF REPORT

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