

**TEST REPORT****IEC 62368-1****Audio/video, information and communication technology equipment****Part 1: Safety requirements**

Report Number.....: ZKT-2403011984S

Date of issue.....: Mar 05, 2024

Total number of pages.....: 78 Page

Name of Testing Laboratory preparing the Report.....: **Shenzhen ZKT Technology Co., Ltd.**
1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

Applicant's name.....: **SHENZHEN ITOONER TECHNOLOGY CO.,LTD**
Address.....: No.5 GangZai Road, Shangxing Community, Xinqiao Street, Baoan District,Shenzhen,Guangdong,China

Test specification:

Standard.....: EN IEC 62368-1:2020+A11:2020

Test procedure.....: CE-LVD

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

TRF template used.....: IECEE OD-2020-F1:2020, Ed.1.3

Test Report Form No.....: IEC62368_1E

Test Report Form(s) Originator.....: UL(US)

Master TRF.....: Dated 2021-02-04

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



Test item description.....:	Switch
Trade Mark.....:	N/A
Manufacturer.....:	Jiangxi GENATA Technology Co.,Ltd Building 3 ,5G Intelligent Industrial Park, Industrial Park,Ganzhou,Jiangxi.China
Model/Type reference.....:	GNT-P4804V6 GNT-P9206EA, GNT-P9206EB, GNT-P9109EA, GNT-P9808V6, GNT-P9828V6, GNT-P1210SG, GNT-P4803V6, GNT-P4804V6, GNT-P4813V6, GNT-P4815V6, GNT-RP1420ES, GNT- MP1420ES, GNT-P1614ES, GNT-RP1428ES, GNT-P1006GA, GNT-P1008G6, GNT-P1210G7, GNT-P1012G6, GNT-P1307G6, GNT-P1018G6, GNT-P1026G6, GNT-P1412G6, GNT-MP1420G6, GNT-RP1420G6, GNT-RP1428G6, GNT-P9109EA-F, GNT- P9828F6, GNT-P4804F6, GNT-P4813F6, GNT-P4815F6, GNT- P1008G6-F, GNT-P1012G6-F, GNT-G1012L-F, GNT-69P31, GNT-69P51G6, GNT-69P62E6, GNT-69P62GH, GNT-6FP31, GNT-6FP51G6, GNT-P9806V6, GNT-P1006G6, GNT-53011, GNT-53003, GNT-5313AB, GNT-69P01, GNT-69P02, GNT- P9105ES,GNT-P9109ES, GNT-P9210ES, GNT-P1210ES, GNT- E9005EL, GNT-E9008EL, GNT-G1207FEL, GNT-G1005EL, GNT- G1008EL, GNT-G1018L, GNT-G1026L, GNT-MG1117EL, GNT- RG1117EL, GNT-MG1125EL, GNT-RG1125EL, GNT-P5420GC, GNT-G5420GC, GNT-P5428GC, GNT-G5428GC, GNT-2826, GNT-G2008EL, G2005EL, GNT-P1002M6, GNT-P1802M6, GNT- P1802M7, GNT-P2804M6, GNT-G1002M6, GNT-G1802M6, GNT- G1802M7, GNT-G2804M6, GNT-P0602FMI, GNT-G0602FMI, GNT-P1002FMI, GNT-G1002FMI, GNT-P1608FMI, GNT- G1608FMI, GNT-IG1008GP-AC, GNT-IG1008GP-DC, GNT- IG1008GL-AC, GNT-IG1008GL-DC, GNT-IG1210FP-DC, GNT- IG1210GF-DC, GNT-IG1210FP-AC, GNT-IG1210GF-AC, GNT- IG1218FP-DC, GNT-IG1218F8-AC, GNT-IG1218GF-DC, GNT- IG1218GF-AC, GNT-IG1218FP-AC, GNT-IG1226FP-DC, GNT- IG1226F8-AC, GNT-IG1226FP-AC, GNT-IG1226GF-DC, GNT- IG1226GF-AC, GNT-IG3210FP-AC, GNT-IG3210FP-DC, GNT- IG2210GF-AC, GNT-IG2210GF-AC, GNT-IP52130WS, GNT- IP52260WS, GNT-IP52520WS, GNT-P6428GC, GNT-MG9008T, GNT-MG9008T2, GNT-RG9654GT, GNT-RG9428GT, GNT- RG9428GT2, GNT-P3428GC, GNT-MG1206XT, GNT-RP9654GT, GNT-RP9428GT, GNT-P6428GC, GNT-G5826FG, GNT- G2420GC, GNT-G2008GL, GNT-P2428GC, GNT-P2420GC, GNT-P9XXXXX, GNT-P4XXXXX, GNT-P1XXXXX, GNT-69PXX, GNT-6FPXX, GNT-MPXXXX, GNT-RPXXXX, GNT-P54XXXX, GNT-G54XXXX, GNT-G24XXXX, GNT-IG32XX, GNT-IG33XX, GNT-EXXXX, GNT-MGXXXX, GNT-RGXXXX, GNT-RP94XXXX, GNT-RP96XXXX, GNT-P34XXXX
Ratings.....:	Input: AC 90-264V~, 50/60Hz, 130W



Testing procedure and testing location:


Testing Laboratory.....: **Shenzhen ZKT Technology Co., Ltd.**

Address.....: 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

Date of Test.....: Feb 23, 2024 to Mar 05, 2024

Tested by (name + signature).....: Peter Huang 

Reviewer (name + signature).....: Simon Gong 

Approved (name + signature).....: Awen He 

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

Attachment 1: 21 pages (National deviation)

Attachment 2: 4 pages (Photo)

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

The submitted samples were found to comply with the requirements of:

- EN IEC 62368-1:2020+A11:2020


Testing location:**Shenzhen ZKT Technology Co., Ltd.**

1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

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.****Notes:**

The above labels are draft of an artwork for marking plate pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.



1. The height of graphical symbols “” shall not be less than 7 mm;
2. The main rating label was attached in enclosure.



Test item particulars:		
Product group	<input checked="" type="checkbox"/> end product	<input type="checkbox"/> built-in component
Classification of use by	<input checked="" type="checkbox"/> Ordinary person	<input checked="" type="checkbox"/> Children likely present
	<input checked="" type="checkbox"/> Instructed person	
	<input checked="" type="checkbox"/> Skilled person	
Supply connection	<input checked="" type="checkbox"/> AC mains	<input type="checkbox"/> DC mains
	<input type="checkbox"/> not mains connected:	
	<input type="checkbox"/> ES1	<input type="checkbox"/> ES2 <input checked="" type="checkbox"/> ES3
Supply tolerance	<input checked="" type="checkbox"/> +10%/-10%	
	<input type="checkbox"/> +20%/-15%	
	<input type="checkbox"/> + %/ - %	
	<input type="checkbox"/> None	
Supply connection – type	<input checked="" type="checkbox"/> pluggable equipment type A -	
	<input type="checkbox"/> non-detachable supply cord	
	<input checked="" type="checkbox"/> appliance coupler	
	<input type="checkbox"/> direct plug-in	
	<input type="checkbox"/> pluggable equipment type B -	
	<input type="checkbox"/> non-detachable supply cord	
	<input type="checkbox"/> appliance coupler	
	<input type="checkbox"/> permanent connection	
	<input type="checkbox"/> mating connector	
	<input type="checkbox"/> other:	
Considered current rating of protective device	<input checked="" type="checkbox"/> 13A for building; 6.3A for equipment.	
	Location:	<input checked="" type="checkbox"/> building <input checked="" type="checkbox"/> equipment
Equipment mobility	<input checked="" type="checkbox"/> movable	<input type="checkbox"/> hand-held <input type="checkbox"/> transportable
	<input type="checkbox"/> direct plug-in	<input type="checkbox"/> stationary <input type="checkbox"/> for building-in
	<input type="checkbox"/> wall/ceiling-mounted	<input type="checkbox"/> SRME/rack-mounted
	<input type="checkbox"/> other:	
Overvoltage category (OVC)	<input type="checkbox"/> OVC I	<input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III
	<input type="checkbox"/> OVC IV	<input type="checkbox"/> other:
Class of equipment	<input checked="" type="checkbox"/> Class I	<input type="checkbox"/> Class II <input type="checkbox"/> Class III
	<input type="checkbox"/> Not classified	
Special installation location	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> restricted access area
	<input type="checkbox"/> outdoor location	
Pollution degree (PD)	<input type="checkbox"/> PD 1	<input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified T_{ma}	25°C	<input type="checkbox"/> Outdoor: minimum °C
IP protection class	<input checked="" type="checkbox"/> IPX0	<input type="checkbox"/> IP__
Power systems	<input checked="" type="checkbox"/> TN	<input type="checkbox"/> TT <input type="checkbox"/> IT - V _{LL}
	<input type="checkbox"/> not AC mains	
Altitude during operation (m)	<input checked="" type="checkbox"/> 2000 m or less	<input type="checkbox"/> 5000 m
Altitude of test laboratory (m)	<input type="checkbox"/> 2000 m or less	<input checked="" type="checkbox"/> <50 m
Mass of equipment (kg)	Approx <2kg	



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..... : Feb 23, 2024	
Date (s) of performance of tests..... : Feb 23, 2024 to Mar 05, 2024	
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.	
Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC60950-1:	
The application for obtaining a CB Test Certificate 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..... :	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies)..... : SHENZHEN ITOONER TECHNOLOGY CO.,LTD Building 2&Building 3(The 3rd and 4th Floor) GangZai Road, Shangxing Community, Xinqiao Street, Baoan District, Shenzhen, Guangdong, China	
General product information and other remarks:	
Product Description:	
1. EUT is a Switch manufactured by SHENZHEN ITOONER TECHNOLOGY CO.,LTD according to the information technology equipment.	
2. All tests were conducted at the model of GNT-IG1008GP-AC. The test results comply with the requirement of the relevant standards.	
3. The internal adapter was certificated.	
4. It is an embedded device.	
Additional Information	
1. The Label in Copy of marking plate is a draft of an artwork pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.	



OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	Possible Hazard			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
ES3: Primary circuits supplied by a.c. mains supply	Ordinary	N/A	N/A	Enclosure, see 5.3.2, 5.4.2, 5.4.3, 5.5.3, 5.5.4
ES1: All data ports	Ordinary	N/A	N/A	N/A
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 st S	2 nd S
PS3	Enclosure	See 6.3.1	See 6.4.3, 6.4.7	N/A
PS3	Internal / external wiring	See 6.3.1	See 6.5 (Equipment safeguards, rated VW-1)	N/A
PS3	PCB	See 6.3.1	V-0	N/A
PS3	Other combustible components / materials	See 6.3.1	See 6.4.5, 6.4.6	N/A
All data ports				
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
N/A	N/A	N/A	N/A	N/A
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS3: Equipment Mass	Ordinary	N/A	N/A	N/A
MS1: Sharp edges and corner of product	Ordinary	N/A	N/A	N/A
MS3: Wall mount	Ordinary	Robust mounting mean used (complied with clause 8.7)	Installation safeguard was mentioned in user manual	N/A
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R



TS1: All accessible parts	Ordinary	N/A	N/A	N/A
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
RS1: LED backlight of LCD panel	Ordinary	N/A	N/A	N/A
RS1: LED indicator light	Ordinary	N/A	N/A	N/A
Supplementary Information: "B" – Basic Safeguard; "S" – Supplementary Safeguard; "R" – Reinforced Safeguard				

ENERGY SOURCE DIAGRAM

Optional. Manufacturers are to provide the energy sources diagram identify declared energy sources and identifying the demarcations are between power sources. Recommend diagram be provided included in power supply and multipart systems.

Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings

ES PS MS TS RS



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	(See appended Table 4.1.2.)	P
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	P
4.1.3	Equipment design and construction	Evaluation of safeguards regarding access to ES3, and protection in regard to risk of spread of fire, mechanical-caused injury and thermal burn considered.	P
4.1.4	Specified ambient temperature for outdoor use (°C) :		N/A
4.1.5	Constructions and components not specifically covered		P
4.1.8	Liquids and liquid filled components (LFC)	No such parts used.	N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness	See below	P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Annex T.2 and T.5)	P
4.4.3.3	Drop tests	(See Annex T.7)	P
4.4.3.4	Impact tests		N/A
4.4.3.5	Internal accessible safeguard tests		N/A
4.4.3.6	Glass impact tests		N/A
4.4.3.7	Glass fixation tests		N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests		N/A
4.4.3.9	Air comprising a safeguard		N/A
4.4.3.10	Accessibility, glass, safeguard effectiveness		N/A
4.4.4	Displacement of a safeguard by an insulating liquid		N/A
4.4.5	Safety interlocks		N/A
4.5	Explosion		P
4.5.1	General		P



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Clause	Requirement + Test	Result - Remark	Verdict
4.5.2	No explosion during normal/abnormal operating condition	(See Clause B.2, B.3)	P
	No harm by explosion during single fault conditions	(See Clause B.4)	P
4.6	Fixing of conductors		N/A
	Fix conductors not to defeat a safeguard		N/A
	Compliance is checked by test..... :		N/A
4.7	Equipment for direct insertion into mains socket-outlets		N/A
4.7.2	Mains plug part complies with relevant standard... :	Not direct plug-in equipment.	N/A
4.7.3	Torque (Nm)..... :		N/A
4.8	Equipment containing coin/button cell batteries		N/A
4.8.1	General	No coin/button batteries used.	N/A
4.8.2	Instructional safeguard..... :		N/A
4.8.3	Battery compartment door/cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	Likelihood of fire or shock due to entry of conductive object		P
4.10	Component requirements		P
4.10.1	Disconnect Device	Switches and coupler	P
4.10.2	Switches and relays	(See Annex G.1 and G.2)	P
5	ELECTRICALLY-CAUSED INJURY		P
5.2	Classification and limits of electrical energy sources		P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current limits..... :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits..... :	(See appended table 5.2)	P
5.2.2.4	Single pulse limits..... :		N/A
5.2.2.5	Limits for repetitive pulses..... :		N/A
5.2.2.6	Ringing signals		N/A
5.2.2.7	Audio signals	(See Clause E.1)	P
5.3	Protection against electrical energy sources		P



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Clause	Requirement + Test	Result - Remark	Verdict
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	See below.	P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits		P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards	ES2 or ES3 source cannot access by ordinary persons	P
	Accessibility to outdoor equipment bare parts	No outdoor equipment.	N/A
5.3.2.2	Contact requirements		P
	Test with test probe from Annex V	Figure V.1, V.2 can't contact any bare internal conductive part	—
5.3.2.2 a)	Air gap – electric strength test potential (V)..... :	(See appended table 5.4.9)	N/A
5.3.2.2 b)	Air gap – distance (mm) :	>0.2	P
5.3.2.3	Compliance		P
5.3.2.4	Terminals for connecting stripped wire	No such terminals	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	Hygroscopic materials are not used for insulating material.	P
5.4.1.3	Material is non-hygroscopic	(See clause 5.4.8)	P
5.4.1.4	Maximum operating temperature for insulating materials..... :	(See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
5.4.1.5	Pollution degrees..... :	PD2	P
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2 is applied.	N/A
5.4.1.5.3	Thermal cycling test		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage..... :	(See appended table 5.4.1.8)	P
5.4.1.9	Insulating surfaces	Considered.	P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		P
5.4.1.10.2	Vicat test..... :		N/A
5.4.1.10.3	Ball pressure test..... :	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.2.1	General requirements		P
	Clearances in circuits connected to AC Mains, Alternative method	(See Annex X)	N/A



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Clause	Requirement + Test	Result - Remark	Verdict
5.4.2.2	Procedure 1 for determining clearance	(See appended table 5.4.2, 5.4.3)	P
	Temporary overvoltage	2000Vpeak.	—
5.4.2.3	Procedure 2 for determining clearance	(See appended table 5.4.2, 5.4.3)	P
5.4.2.3.2.2	a.c. mains transient voltage..... :	2500Vpeak.	—
5.4.2.3.2.3	d.c. mains transient voltage	--	—
5.4.2.3.2.4	External circuit transient voltage..... :	--	—
5.4.2.3.2.5	Transient voltage determined by measurement..... :	--	—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	(See appended table 5.4.2)	N/A
5.4.2.5	Multiplication factors for clearances and test voltages		N/A
5.4.2.6	Clearance measurement..... :	(See appended table 5.4.2, 5.4.3)	P
5.4.3	Creepage distances	(See appended table 5.4.2, 5.4.3)	P
5.4.3.1	General	See below.	P
5.4.3.3	Material group..... :	IIIa or IIIb	—
5.4.3.4	Creepage distances measurement..... :	(See appended table 5.4.3)	P
5.4.4	Solid insulation	See below	P
5.4.4.1	General requirements		P
5.4.4.2	Minimum distance through insulation	(See appended table 5.4.4.2, 5.4.4.5 c), 5.4.4.9)	P
5.4.4.3	Insulating compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices	Approved optocoupler used. Requirements of G.12 met, see table 4.1.2 for listed component used.	P
5.4.4.5	Insulating compound forming cemented joints	No such construction within the EUT	N/A
5.4.4.6	Thin sheet material		P
5.4.4.6.1	General requirements	At least 2 layers of insulation tape are used for reinforced insulation and are not expected to be subject to handling or abrasion during ordinary or instructed person servicing.	P




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Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6.2	Separable thin sheet material	Two layers of insulating tape provided as double/reinforced insulation and each layer passed the electric strength test for reinforced insulation. See appended Table 5.4.9.	P
	Number of layers (pcs)	2-layer min.	P
5.4.4.6.3	Non-separable thin sheet material		N/A
	Number of layers (pcs)		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	(See G.5.3 and G.6.1)	P
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P , K_R , d , V_{PW} (V).....	(See appended table 5.4.4.9)	P
	Alternative by electric strength test, tested voltage (V), K_R	(See appended Tables 5.4.4.9 and 5.4.9)	N/A
5.4.5	Antenna terminal insulation		P
5.4.5.1	General		P
5.4.5.2	Voltage surge test	Surge test with 50 discharges at a maximum rate of 12/min from a 1 nF capacitor charged to 10 kV performed.	P
5.4.5.3	Insulation resistance (M Ω).....	Measured 100M Ω between mains supply to secondary circuit.	P
	Electric strength test.....		N/A
5.4.6	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		P
	Relative humidity (%), temperature ($^{\circ}$ C), duration (h).....	95%, 30 $^{\circ}$ C, 48h	—
5.4.9	Electric strength test	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for type test of solid insulation.....	Method 1 used.	P
5.4.9.2	Test procedure for routine test		N/A
5.4.10	Safeguards against transient voltages from 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
5.4.10.3	Verification for insulation breakdown for impulse test..... :		N/A
5.4.11	Separation between external circuits and earth		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V)..... :		—
	Nominal voltage U_{peak} (V)..... :		—
	Max increase due to variation ΔU_{sp} :		—
	Max increase due to ageing ΔU_{sa} :		—
5.4.11.3	Test method and compliance..... :		N/A
5.4.12	Insulating liquid		N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid..... :		N/A
5.4.12.3	Compatibility of an insulating liquid..... :		N/A
5.4.12.4	Container for insulating liquid..... :		N/A
5.5	Components as safeguards		P
5.5.1	General		P
5.5.2	Capacitors and RC units	Approved X capacitor and Y capacitor provided. (See appended table 4.1.2)	P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector..... :	(See appended table 5.5.2.2)	P
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See Annex G.12)	P
5.5.5	Relays	No such relay used as safeguard	N/A
5.5.6	Resistors	No such resistor used	N/A
5.5.7	SPDs	No such varistor used	N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable..... :		N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA)..... :		—
5.6	Protective conductor	Class I equipment	P



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Clause	Requirement + Test	Result - Remark	Verdict
5.6.2	Requirement for protective conductors		P
5.6.2.1	General requirements	No switch, current limiting devices or overcurrent protective devices provided in protective earthing conductors and protective bonding conductors.	P
5.6.2.2	Colour of insulation	After appliance inlet, the insulation of protective bonding conductor is green-and-yellow.	P
5.6.3	Requirement for protective earthing conductors	An appliance inlet provided that is connected by an approved appliance coupler serves as main protective earthing conductor terminal.	P
	Protective earthing conductor size (mm ²) :	0.75mm ²	—
	Protective earthing conductor serving as a reinforced safeguard		P
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors	Reliable connection of the green-and-yellow protective bonding wire from earthed pin of appliance inlet to metal chassis, which fixed in earthing tab of appliance inlet by hooking-in and soldering, and the other end terminated in a ring type crimp which is secured to metal chassis by a screw and star washer.	P
5.6.4.1	Protective bonding conductors	See the following details.	P
	Protective bonding conductor size (mm ²)..... :	0.75 mm ² (18 AWG) for protective bonding conductor.	—
5.6.4.2	Protective current rating (A)..... :	≤ 20.5 A.	P
5.6.5	Terminals for protective conductors	Symbol  used. In addition, the green-and-yellow wire connected to metal chassis was considered as protective bonding conductor. See also subclause 5.6.6.	P
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)..... :	See above.	P
	Terminal size for connecting protective bonding conductors (mm)..... :	See above.	P
5.6.5.2	Corrosion	No combination above the line in Annex N is used.	P



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Clause	Requirement + Test	Result - Remark	Verdict
5.6.6	Resistance of the protective bonding system	See below.	P
5.6.6.1	Requirements	Compliance checked.	P
5.6.6.2	Test Method.....:	(See appended table 5.6.6.2)	P
5.6.6.3	Resistance (Ω) or voltage drop.....:	(See appended table 5.6.6.2)	P
5.6.7	Reliable connection of a protective earthing conductor	The equipment is not permanently connected equipment.	N/A
5.6.8	Functional earthing		N/A
	Conductor size (mm^2).....:		N/A
	Class II with functional earthing marking		N/A
	Appliance inlet cl & cr (mm).....:		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current	(See appended table 5.7.4)	P
5.7.2.2	Measurement of voltage	(See appended table 5.7.4)	P
5.7.3	Equipment set-up, supply connections and earth connections		P
5.7.4	Unearthed accessible parts.....:	Touch current at unearthed accessible conductive parts is not exceeding ES1 limits. (See appended table 5.7.4)	P
5.7.5	Earthed accessible conductive parts.....:		P
5.7.6	Requirements when touch current exceeds ES2 limits		N/A
	Protective conductor current (mA).....:		N/A
	Instructional Safeguard.....:		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits		N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A
	a) Equipment connected to earthed external circuits, current (mA).....:		N/A
	b) Equipment connected to unearthed external circuits, current (mA).....:		N/A
5.8	Backfeed safeguard in battery backed up supplies		N/A
	Mains terminal ES.....:	(See appended table 5.8)	N/A
	Air gap (mm).....:		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of PS and PIS		P
6.2.2	Power source circuit classifications.....:	(See appended table 6.2.2)	N/A
6.2.3	Classification of potential ignition sources	See below.	P
6.2.3.1	Arcing PIS	Primary circuits are considered as arcing PIS.	P
6.2.3.2	Resistive PIS	All components located within the EUT are considered as resistive PIS.	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials.....:	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	P
	Combustible materials outside fire enclosure.....:	V-0	P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method	Method of Control fire spread used.	P
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		P
6.4.3.1	Supplementary safeguards		P
6.4.3.2	Single Fault Conditions.....:	(See appended table B.4)	P
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits	See below.	P
6.4.5.2	Supplementary safeguards	Compliance detailed as follows: - Printed board: rated V-1 or VTM-1 min. class material; - Internal wire: complying with 6.5. - Other components other than PCB and wires are mounted on PCB rated V-1 or VTM-1 min., or made of V-2, VTM-2 or HF2 min. - Isolating transformer: complying with G.5.3.	P



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Clause	Requirement + Test	Result - Remark	Verdict
6.4.6	Control of fire spread in PS3 circuits	Compliance detailed as follows: – Parts as in 6.4.0.5 Above – Fire enclosure: rated V-0 used.	P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.2	Separation by distance		P
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	Equipment enclosure was evaluated as a fire enclosure.	P
6.4.8.2	Fire enclosure and fire barrier material properties		P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure		P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	See below	P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		P
6.4.8.3.3	Top openings and properties		N/A
	Openings dimensions (mm)..... :		N/A
6.4.8.3.4	Bottom openings and properties		N/A
	Openings dimensions (mm)..... :		N/A
	Flammability tests for the bottom of a fire enclosure		N/A
	Instructional Safeguard..... :		N/A
6.4.8.3.5	Side openings and properties		P
	Openings dimensions (mm)..... :	Φ2.9mm max.	P
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)..... :		N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating..... :	Fire enclosure is made of metal material.	P
6.4.9	Flammability of insulating liquid..... :		N/A
6.5	Internal and external wiring		P
6.5.1	General requirements	The material of VW-1 on internal wiring were considered compliance equal to equivalent to IEC/EN 60695-11-21 relevant standards	P
6.5.2	Requirements for interconnection to building wiring :	No such interconnection to building wiring.	N/A
6.5.3	Internal wiring size (mm ²) for socket-outlets..... :	No socket-outlet used.	N/A
6.6	Safeguards against fire due to the connection to additional equipment		P



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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		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards or personal protective equipment (PPE)		N/A
	Personal safeguards and instructions..... :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010)..... :		—
7.6	Batteries and their protection circuits		N/A

8	MECHANICALLY-CAUSED INJURY		P
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners		N/A
8.4.1	Safeguards	MS1 applied for edges and corners.	N/A
	Instructional Safeguard..... :		N/A
8.4.2	Sharp edges or corners	Accessible edges and corners of the equipment are rounded and are classified as MS1.	P
8.5	Safeguards against moving parts		N/A
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts	No moving parts	N/A
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard..... :		N/A
8.5.4	Special categories of equipment containing moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m)..... :		N/A
	Space between end point and nearest fixed mechanical part (mm)..... :		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly..... :		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts..... :		N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N)..... :		N/A
8.5.4.3.5	Compliance		N/A
8.5.5	High pressure lamps		N/A
	Explosion test..... :		N/A
8.5.5.3	Glass particles dimensions (mm)..... :		N/A
8.6	Stability of equipment		P
8.6.1	General	MS3	P
	Instructional safeguard..... :	Instructional safeguard provided.	P
8.6.2	Static stability	See below.	P
8.6.2.2	Static stability test..... :	Tipped at 10°, the equipment did not tip over.	P
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm)..... :		—
	Tilt test		P
8.6.4	Glass slide test	Tipped at 10°, the equipment did not tip over and no slide.	P
8.6.5	Horizontal force test..... :		N/A
8.7	Equipment mounted to wall, ceiling or other structure		N/A
8.7.1	Mount means type..... :		N/A
8.7.2	Test methods		N/A
	Test 1, additional downwards force (N)..... :		N/A
	Test 2, number of attachment points and test force (N)..... :		N/A
	Test 3 Nominal diameter (mm) and applied torque (Nm)..... :		N/A
8.8	Handles strength		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
8.8.1	General	No handle	N/A
8.8.2	Handle strength test		N/A
	Number of handles..... :		—
	Force applied (N)..... :		N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.2	Pull test		N/A
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions..... :		N/A
8.10.3	Cart, stand or carrier loading test		N/A
	Loading force applied (N)..... :		N/A
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Force applied (N)..... :		N/A
8.10.6	Thermoplastic temperature stability		N/A
8.11	Mounting means for slide-rail mounted equipment (SRME)		N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard..... :		N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force (N) applied..... :		N/A
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance		N/A
8.12	Telescoping or rod antennas		N/A
	Button/ball diameter (mm)..... :		—

9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications		P
9.3	Touch temperature limits		P
9.3.1	Touch temperatures of accessible parts..... :	(See appended table 9.3)	P
9.3.2	Test method and compliance		P
9.4	Safeguards against thermal energy sources		N/A
9.5	Requirements for safeguards		N/A
9.5.1	Equipment safeguard		N/A
9.5.2	Instructional safeguard..... :		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General		N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance.....:	(See appended table 9.6)	N/A
10	RADIATION		P
10.2	Radiation energy source classification		P
10.2.1	General classification	See Energy source identification and classification table.	P
	Lasers.....:		—
	Lamps and lamp systems.....:	RS1	—
	Image projectors.....:		—
	X-Ray.....:		—
	Personal music player.....:		—
10.3	Safeguards against laser radiation		N/A
	The standard(s) equipment containing laser(s) comply.....:		N/A
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)		P
10.4.1	General requirements	LED backlight and LED indicator are considered as RS1.	P
	Instructional safeguard provided for accessible radiation level needs to exceed		N/A
	Risk group marking and location.....:		N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure.....:	(See Annex C)	N/A
10.4.3	Instructional safeguard.....:		N/A
10.5	Safeguards against X-radiation		N/A
10.5.1	Requirements		N/A
	Instructional safeguard for skilled persons.....:		—
10.5.3	Maximum radiation (pA/kg).....:	(See appended tables B.3, B.4)	—
10.6	Safeguards against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output $L_{Aeq,T}$, dB(A).....:		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	Unweighted RMS output voltage (mV)..... :		N/A
	Digital output signal (dBFS)..... :		N/A
10.6.3	Requirements for dose-based systems		N/A
10.6.3.1	General requirements		N/A
10.6.3.2	Dose-based warning and automatic decrease		N/A
10.6.3.3	Exposure-based warning and requirements		N/A
	30 s integrated exposure level (MEL30)..... :		N/A
	Warning for MEL \geq 100 dB(A)..... :		N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		N/A
	Instructional safeguards..... :		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input		N/A
	Listening device input voltage (mV)..... :		N/A
10.6.6.2	Corded listening devices with digital input		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A)..... :		N/A
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A)..... :		N/A
			N/A

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.1	General		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
B.2	Normal operating conditions		P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers..... :	(See Annex E)	P
B.2.3	Supply voltage and tolerances	+10% and -10% for a.c. mains.	P
B.2.5	Input test..... :	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General	(See appended tables B.3, B.4)	P
B.3.2	Covering of ventilation openings	(See appended table B.3)	P
	Instructional safeguard..... :		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
B.3.3	DC mains polarity test		N/A
B.3.4	Setting of voltage selector	No voltage selector	N/A
B.3.5	Maximum load at output terminals	(See appended tables B.3, B.4)	P
B.3.6	Reverse battery polarity		N/A
B.3.7	Audio amplifier abnormal operating conditions	(See Annex E)	P
B.3.8	Safeguards functional during and after abnormal operating conditions..... :	(See appended tables B.3, B.4)	P
B.4	Simulated single fault conditions		P
B.4.1	General		P
B.4.2	Temperature controlling device	No such devices.	N/A
B.4.3	Blocked motor test	No motor used.	N/A
B.4.4	Functional insulation	(See appended tables B.3, B.4)	P
B.4.4.1	Short circuit of clearances for functional insulation		P
B.4.4.2	Short circuit of creepage distances for functional insulation		P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnection of passive components		P
B.4.7	Continuous operation of components		N/A
B.4.8	Compliance during and after single fault conditions :	(See appended tables B.3, B.4)	P
B.4.9	Battery charging and discharging under single fault conditions	(See Annex M)	N/A
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus..... :		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure test		N/A
C.2.4	Xenon-arc light-exposure test		N/A
D	TEST GENERATORS		P
D.1	Impulse test generators		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
D.2	Antenna interface test generator		P
D.3	Electronic pulse generator		N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Electrical energy source classification for audio signals		N/A
	Maximum non-clipped output power (W)..... :		—
	Rated load impedance (Ω)		—
	Open-circuit output voltage (V)..... :		—
	Instructional safeguard..... :		—
E.2	Audio amplifier normal operating conditions		N/A
	Audio signal source type..... :		—
	Audio output power (W)..... :		—
	Audio output voltage (V)..... :		—
	Rated load impedance (Ω)		—
	Requirements for temperature measurement		N/A
E.3	Audio amplifier abnormal operating conditions		N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General		P
	Language	English. Versions in other languages will be provided when national certificate approval.	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		N/A
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	The equipment marking is located on the surface and is easily visible.	P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification	See copy of marking plate	P
F.3.2.2	Model identification	See copy of marking plate	P
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains	See copy of marking plate	P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of the supply voltage..... :	See copy of marking plate	P
F.3.3.4	Rated voltage..... :	See copy of marking plate	P



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Clause	Requirement + Test	Result - Remark	Verdict
F.3.3.5	Rated frequency.....:	See copy of marking plate	P
F.3.3.6	Rated current or rated power.....:	See copy of marking plate	P
F.3.3.7	Equipment with multiple supply connections	Only one connection.	N/A
F.3.4	Voltage setting device	No voltage setting device.	N/A
F.3.5	Terminals and operating devices	See below.	P
F.3.5.1	Mains appliance outlet and socket-outlet markings:		N/A
F.3.5.2	Switch position identification marking.....:	"I" and "O" used for identified on and off.	P
F.3.5.3	Replacement fuse identification and rating markings:	The Fuse is located within the equipment and not replaceable by an ordinary person or an instructed person. The fuse marking is marked on PCB near fuse: F1 T6.3AL 250VAC	P
	Instructional safeguards for neutral fuse.....:		N/A
F.3.5.4	Replacement battery identification marking.....:		N/A
F.3.5.5	Neutral conductor terminal	Not permanently connected equipment	N/A
F.3.5.6	Terminal marking location		P
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I equipment		P
F.3.6.1.1	Protective earthing conductor terminal.....:		P
F.3.6.1.2	Protective bonding conductor terminals		P
F.3.6.2	Equipment class marking.....:	See copy of marking plate.	P
F.3.6.3	Functional earthing terminal marking.....:		N/A
F.3.7	Equipment IP rating marking.....:	IPX0	N/A
F.3.8	External power supply output marking.....:	See copy of marking plate	P
F.3.9	Durability, legibility and permanence of marking	All markings required are easily discernible under normal lighting conditions.	P
F.3.10	Test for permanence of markings	After rubbing test by water and petroleum spirit, the marking still legible; it is not easily possible to remove the marking plate and show no curling.	P
F.4	Instructions		P
	a)..... Information prior to installation and initial use		P



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Clause	Requirement + Test	Result - Remark	Verdict
	b)..... Equipment for use in locations where children not likely to be present		N/A
	c)..... Instructions for installation and interconnection	Provided in user's manual.	P
	d)..... Equipment intended for use only in restricted access area		N/A
	e)..... Equipment intended to be fastened in place		N/A
	f)..... Instructions for audio equipment terminals		P
	g)..... Protective earthing used as a safeguard		N/A
	h)..... Protective conductor current exceeding ES2 limits		N/A
	i)..... Graphic symbols used on equipment		P
	j)..... Permanently connected equipment not provided with all-pole mains switch		N/A
	k)..... Replaceable components or modules providing safeguard function		N/A
	l)..... Equipment containing insulating liquid		N/A
	m)..... Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards		P
G	COMPONENTS		P
G.1	Switches		P
G.1.1	General	VDE approved. 10000 operating cycles; normal pollution situation, level 3; and flammability material of plastic material V- 0, UL approved.	P
G.1.2	Ratings, endurance, spacing, maximum load	(See appended table 4.1.2)	P
G.1.3	Test method and compliance		P
G.2	Relays		N/A
G.2.1	Requirements		N/A
G.2.2	Overload test		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
G.2.3	Relay controlling connectors supplying power to other equipment		N/A
G.2.4	Test method and compliance		N/A
G.3	Protective devices		P
G.3.1	Thermal cut-offs		N/A
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Test method and compliance		N/A
G.3.2	Thermal links		N/A
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		N/A
	b) Thermal links tested as part of the equipment		N/A
G.3.2.2	Test method and compliance		N/A
G.3.3	PTC thermistors		N/A
G.3.4	Overcurrent protection devices	Certified source used. (See appended table 4.1.2)	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		P
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions..... :	(See appended table B.4)	P
G.4	Connectors		P
G.4.1	Spacings	See below.	P
G.4.2	Mains connector configuration..... :	Approved according to UL 498 appliance inlet was used.	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	No mismatching of connectors, plugs or sockets possible.	P
G.5	Wound components		P
G.5.1	Wire insulation in wound components	Approved TIW used for secondary winding of T1	P
G.5.1.2	Protection against mechanical stress	be achieved by providing physical separation in the form of insulating sleeving or sheet material.	P
G.5.2	Endurance test		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Test time (days per cycle)..... :		—
	Test temperature (°C)..... :		—



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Clause	Requirement + Test	Result - Remark	Verdict
G.5.2.3	Wound components supplied from the mains		N/A
G.5.2.4	No insulation breakdown		N/A
G.5.3	Transformers		P
G.5.3.1	Compliance method..... :	The transformers meet the requirements given in G.5.3.2 and G.5.3.3.	P
	Position..... :	See table	P
	Method of protection..... :	Over current protection by circuit design.	P
G.5.3.2	Insulation	Basic / supplementary / double insulation.	P
	Protection from displacement of windings..... :	By insulating tape and bobbin	—
G.5.3.3	Transformer overload tests	(See appended table B.3, B.4)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment.	P
G.5.3.3.2	Winding temperatures	(See appended table B.3, B.4)	P
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW		N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter..... :		—
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation..... :		N/A
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N/A
G.5.3.4.5	Thermal cycling test and compliance		N/A
G.5.3.4.6	Partial discharge test		N/A
G.5.3.4.7	Routine test		N/A
G.5.4	Motors		N/A
G.5.4.1	General requirements		N/A
G.5.4.2	Motor overload test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4.2	Locked-rotor overload test		N/A
	Test duration (days) :		—
G.5.4.5	Running overload test for DC motors		N/A
G.5.4.5.2	Tested in the unit		N/A
G.5.4.5.3	Alternative method		N/A
G.5.4.6	Locked-rotor overload test for DC motors		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature		N/A
G.5.4.6.3	Alternative method		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		P
G.6.1	General	Triple insulated winding in T100, T1F, T401 secondary windings used as reinforced safeguard in the isolating transformer that has separately complied with Annex J. See Appended table 4.1.2. No other wires other than Basic insulated wires not under stress used in the EUT.	P
G.6.2	Enamelled winding wire insulation		N/A
G.7	Mains supply cords		P
G.7.1	General requirements		P
	Type.....	See appendable table 4.1.2 for details.	—
G.7.2	Cross sectional area (mm ² or AWG).....	See appendable table 4.1.2 for details.	P
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords	Appliance inlet used.	N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N).....		N/A
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm).....		N/A
G.7.3.2.4	Strain relief and cord anchorage 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	Test method and compliance		N/A
	Overall diameter or minor overall dimension, <i>D</i> (mm).....		—
	Radius of curvature after test (mm).....		—
G.7.6	Supply wiring space		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	Varistors		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguards against fire		N/A
G.8.2.1	General		N/A
G.8.2.2	Varistor overload test		N/A
G.8.2.3	Temporary overvoltage test		N/A
G.9	Integrated circuit (IC) current limiters		N/A
G.9.1	Requirements		N/A
	IC limiter output current (max. 5A)..... :		—
	Manufacturers' defined drift :		—
G.9.2	Test Program		N/A
G.9.3	Compliance		N/A
G.10	Resistors		N/A
G.10.1	General		N/A
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A
G.10.6	Overload test		N/A
G.11	Capacitors and RC units		P
G.11.1	General requirements	The X-Capacitor and the Y-Capacitor are used as safeguard and complied with IEC/EN 60384-14: 2013 (See appended table 4.1.2).	P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
G.12	Optocouplers		P
	Optocouplers comply with IEC 60747-5-5 with specifics	The optocouplers used in the equipment are complied with IEC/EN 60747-5-5. (see appended table 4.1.2)	P
	Type test voltage $V_{ini, a}$:		—
	Routine test voltage, $V_{ini, b}$:		—



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.13	Printed boards		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation.....:		N/A
	Number of insulation layers (pcs) :		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2	Test method and compliance		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements	(See Clause G.13)	N/A
G.15	Pressurized liquid filled components		N/A
G.15.1	Requirements		N/A
G.15.2	Test methods and compliance		N/A
G.15.2.1	Hydrostatic pressure test		N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.3	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
G.16.1	Condition for fault tested is not required		N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test..... :		—
	Mains voltage that impulses to be superimposed on :		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test..... :		—
G.16.3	Capacitor discharge test..... :		N/A



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringling 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		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V).....		N/A
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		P
J.1	General		P
	Winding wire insulation.....	Approved triple insulated wire used. (See appended table 4.1.2)	—
	Solid round winding wire, diameter (mm).....		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm ²).....		N/A
J.2/J.3	Tests and Manufacturing	(See separate test report)	N/A
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
	Instructional safeguard.....		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
K.5.1	Under single fault condition		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance.....		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	In circuit connected to mains, separation distance for contact gaps (mm)..... :		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm)..... :		N/A
	Electric strength test before and after the test of K.7.2..... :	(See appended table 5.4.9)	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		P
L.1	General requirements	Plug used for disconnect device	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single-phase equipment	The disconnect device disconnect both poles simultaneously.	P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		P
L.8	Multiple power sources		N/A
	Instructional safeguard..... :		N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Batteries and their cells comply with relevant IEC standards..... :		N/A
M.3	Protection circuits for batteries provided within the equipment		N/A
M.3.1	Requirements		N/A
M.3.2	Test method		N/A
	Overcharging of a rechargeable battery		N/A
	Excessive discharging		N/A
	Unintentional charging of a non-rechargeable battery		N/A
	Reverse charging of a rechargeable battery		N/A
M.3.3	Compliance		N/A
M.4	Additional safeguards for equipment containing a portable secondary lithium battery		N/A
M.4.1	General		N/A



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Compliance.....:		N/A
M.4.3	Fire enclosure.....:		N/A
M.4.4	Drop test of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation and procedure for the drop test		N/A
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%):		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance		N/A
M.5	Risk of burn due to short-circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A
M.6	Safeguards against short-circuits		N/A
M.6.1	External and internal faults		N/A
M.6.2	Compliance		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
	Calculated hydrogen generation rate.....:		N/A
M.7.2	Test method and compliance		N/A
	Minimum air flow rate, Q (m ³ /h).....:		N/A
M.7.3	Ventilation tests		N/A
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A
	Hydrogen gas concentration (%):.....:		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	Obtained hydrogen generation rate.....:		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%):.....:		N/A
M.7.4	Marking.....:		N/A
M.8	Protection against internal ignition from external spark sources of batteries with aqueous electrolyte		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.8.2.2	Estimation of hypothetical volume V_z (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		N/A
	Instructional safeguard..... :		N/A
N	ELECTROCHEMICAL POTENTIALS		N/A
	Material(s) used..... :		—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Value of X (mm)..... :	Complied.	—
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECTS		P
P.1	General	No openings.	P
P.2	Safeguards against entry or consequences of entry of a foreign object		P
P.2.1	General		P
P.2.2	Safeguards against entry of a foreign object		P
	Location and Dimensions (mm) :	Side enclosure: $\Phi 2.9\text{mm}$	—
P.2.3	Safeguards against the consequences of entry of a foreign object		N/A
P.2.3.1	Safeguard requirements		N/A
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment		N/A
	Transportable equipment with metalized plastic parts..... :		N/A
P.2.3.2	Consequence of entry test..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	Metallized coatings and adhesives securing parts		N/A
P.4.1	General		N/A
P.4.2	Tests		N/A
	Conditioning, T_c (°C)..... :		—
	Duration (weeks)..... :		—



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		N/A
Q.1	Limited power sources		N/A
Q.1.1	Requirements		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output		N/A
	d) Overcurrent protective device limited output		N/A
	e) IC current limiter complying with G.9		N/A
Q.1.2	Test method and compliance.....:		N/A
	Current rating of overcurrent protective device (A):		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A):		N/A
	Current limiting method.....:		—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General		N/A
R.2	Test setup		N/A
	Overcurrent protective device for test.....:		—
R.3	Test method		N/A
	Cord/cable used for test.....:		—
R.4	Compliance		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).....:		—



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Clause	Requirement + Test	Result - Remark	Verdict
S.3	Flammability test for the bottom of a fire enclosure		N/A
S.3.1	Mounting of samples		N/A
S.3.2	Test method and compliance		N/A
	Mounting of samples		—
	Wall thickness (mm).....		—
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 exceeding 4 000 W		N/A
	Samples, material.....		—
	Wall thickness (mm).....		—
	Conditioning (°C).....		—
T	MECHANICAL STRENGTH TESTS		P
T.1	General		P
T.2	Steady force test, 10 N	(See appended table T.2)	P
T.3	Steady force test, 30 N		N/A
T.4	Steady force test, 100 N	(See appended table T.4)	P
T.5	Steady force test, 250 N	(See appended table T.5)	N/A
T.6	Enclosure impact test		P
	Fall test	(See appended table T.6)	P
	Swing test		N/A
T.7	Drop test		N/A
T.8	Stress relief test.....		N/A
T.9	Glass Impact Test.....		N/A
T.10	Glass fragmentation test		N/A
	Number of particles counted.....	No such glass provided.	N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)	No such antennas provided.	N/A
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General		N/A
	Instructional safeguard :		N/A
U.2	Test method and compliance for non-intrinsically protected CRTs		N/A
U.3	Protective screen		N/A
V	DETERMINATION OF ACCESSIBLE PARTS		P
V.1	Accessible parts of equipment		P



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Clause	Requirement + Test	Result - Remark	Verdict
V.1.1	General	Following the probes test specified in this annex Figure V.1, V.2, V.0.5 Are suitable.	P
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes		P
V.1.4	Plugs, jacks, connectors tested with blunt probe		P
V.1.5	Slot openings tested with wedge probe		P
V.1.6	Terminals tested with rigid test wire		P
V.2	Accessible part criterion		P
X	ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)		N/A
	Clearance..... :	(See appended table X)	N/A
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		N/A
Y.1	General		N/A
Y.2	Resistance to UV radiation		N/A
Y.3	Resistance to corrosion		N/A
Y.3	Resistance to corrosion		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by..... :		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure..... :		N/A
Y.3.5	Compliance		N/A
Y.4	Gaskets		N/A
Y.4.1	General		N/A
Y.4.2	Gasket tests		N/A
Y.4.3	Tensile strength and elongation tests		N/A
	Alternative test methods..... :		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means	(See Annex P.4)	N/A
Y.5	Protection of equipment within an outdoor enclosure		N/A
Y.5.1	General		N/A
Y.5.2	Protection from moisture		N/A
	Relevant tests of IEC 60529 or Y.5.3..... :		N/A
Y.5.3	Water spray test		N/A



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Y.5.4	Protection from plants and vermin		N/A
Y.5.5	Protection from excessive dust		N/A
Y.5.5.1	General		N/A
Y.5.5.2	IP5X equipment		N/A
Y.5.5.3	IP6X equipment		N/A
Y.6	Mechanical strength of enclosures		N/A
Y.6.1	General		N/A
Y.6.2	Impact test..... :	(See Table T.6)	N/A



IEC 62368-1							
Clause	Requirement + Test	Result - Remark					Verdict
5.2	TABLE: Classification of electrical energy sources						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type ¹⁾	Additional Info ²⁾	
264Vdc 60Hz	Primary circuits supplied by a.c. mains supply	Normal	264Vrms	--	--	--	ES3 (declared)
		Abnormal – See appended table B.3	--	--	--	--	
		Single fault – See appended table B.4	--	--	--	--	
264Vdc 60Hz	T1 output A to B	Normal	6.2Vdc	--	SS	DC	ES3
264Vdc 60Hz	Output + to the network port	Normal	5.09Vpk	--	--	--	ES1
		Abnormal: Overload	5.09Vpk	--	--	--	
		Single fault – Neutral open	--	--	--	--	
		Single fault – EC6 SC	--	--	--	--	
		Single fault – L1 SC	--	--	--	--	
264Vdc 60Hz	Output +/- to earth	Normal	--	0.191mA	SS	60Hz	ES1
		Abnormal: Overload	--	0.191mA	SS	60Hz	
		Single fault – Neutral open	--	0.196mA	SS	60Hz	
		Single fault – EC6 SC	--	0.191mA	SS	60Hz	
		Single fault – L1 SC	--	0.191mA	SS	60Hz	
264Vdc 60Hz	Plastic enclosure to Earth	Normal	--	0.051mA	SS	60Hz	ES1
		Abnormal: Overload	--	0.051mA	SS	60Hz	



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Clause	Requirement + Test			Result - Remark		Verdict
		Single fault – Neutral open	--	0.051mA	SS	60Hz
		Single fault – EC6 SC	--	0.051mA	SS	60Hz
		Single fault – L1 SC	--	0.051mA	SS	60Hz
Supplementary information: 1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc. 2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.						

5.4.1.8	TABLE: Working voltage measurement				P
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	
T1 pin 1 - pin A	227	416	48.5k	--	
T1 pin 2 - pin A	228	353	48.5k	--	
T1 pin 4 -pin A	242	492	48.5k	--	
T1 pin 3 -pin A	209	331	48.5k	--	
T1 pin 1 - pin B	236	442	48.5k	--	
T1 pin 2 - pin B	225	372	48.5k	--	
T1 pin 4 -pin B	249	492	48.5k	Max. RMS and Vpeak	
T1 pin 3 -pin B	207	334	48.5k	--	
U6 pin 1- pin 3	235	364	60	--	
U6 pin 1- pin 4	235	362	60	--	
U6 pin 2- pin 3	230	358	60	--	
U6 pin 2- pin 4	231	361	60	--	
CY1 pin 1 - pin 2	234	364	60	--	
Supplementary information: Input: 240 V~, 60 Hz					

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics			N/A
Method..... :				—
Object/ Part No./Material	Manufacturer/trademark	Thickness (mm)	T softening (°C)	
--	--	--	--	
Supplementary information: --				



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics				P
Allowed impression diameter (mm)..... :		≤ 2 mm		—	
Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)	
AC connector (CON1)	Land Win Electronic Corp	1.5	125	1.2	
AC connector (CON1)	Zhejiang Jieshitai Electronics Co Ltd	2.0	125	1.2	
Supplementary information: --					

5.4.2, 5.4.3	TABLE: Minimum Clearances/Creepage distance							P
Clearance (cl) and creepage distance (cr) at/of/between:	U _p (V)	U _{rms} (V)	Freq ¹⁾ (Hz)	Required cl (mm)	cl (mm)	E.S. ²⁾ (V)	Required cr (mm)	cr (mm)



IEC 62368-1									
Clause	Requirement + Test				Result - Remark				Verdict
Line trace to Neutral trace before fuse F1 (B)	420	250	≤60	1.5	3.7	--	2.5	3.7	
Trace of F1 different polarity (B)	420	250	≤60	1.5	3.0	--	2.5	3.0	
Reinforced:									
Primary trace to secondary trace under CY1(R)	420	250	≤60	3.0	7.0	--	5.0	7.0	
Primary trace to secondary trace under U6 (R)	420	250	≤60	3.0	6.4	--	5.0	6.4	
Primary to Secondary trace (PCB under T1) (R)	492	249	48.5k	3.0	5.0	--	5.6	8.2	
T1 primary core to secondary winding/pin (R)	492	249	48.5k	3.0	6.7	--	5.6	6.7	
T1 Transformer primary winding and secondary components (R)	492	249	48.5k	3.0	10.2	--	5.6	10.2	
radiating fin to accessible enclosure (R)	420	250	≤60	3.0	6.5	--	5.0	6.5	
Supplementary information:									
1) Only for frequency above 30 kHz.									
2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied).									
3) FI: Functional insulation; BI: Basic insulation; SI: Supplementary insulation; DI: Double insulation; RI: Reinforced insulation.									
4) Provide Material Group IIIb.									

5.4.4.2	TABLE: Minimum distance through insulation				P
Distance through insulation (DTI) at/of	Peak voltage (V)	Insulation	Required DTI (mm)	Measured DTI (mm)	
Insulation sheet (Under PCB)	4000Vac	See appended table 4.1.2	0.4	0.62	
Opto-coupler U6	4000Vac	See appended table 4.1.2	0.4	4000Vpeak	
Insulation tape used for transformer	4000Vac	See appended table 4.1.2	2 layers	2 layers	
Bobbin of transformer T1	4000Vac	See appended table 4.1.2	0.4	1.0	
Supplementary information:					



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

1) See appended table 4.1.2 for details.

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz						P
Insulation material	E_P	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)	
T1 bobbin	17	88.81	0.80	0.45	Reinforce	408	
T1 insulation tape	17	88.81	0.80	0.16	Reinforce	408	
Supplementary information: --							

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:	Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V)	Breakdown Yes / No	
Functional:				
L to N before fuse	DC	2500	No	
Basic/supplementary:				
L&N to accessible metal enclosure	DC	2500	No	
Reinforced:				
L&N to accessible terminal	DC	4000	No	
Transformer T1 primary winding to secondary winding	DC	4000	No	
Transformer T1 core to secondary winding	DC	4000	No	
One layers of insulation tape of transformer (All source)	DC	4000	No	
Insulation sheet (Under PCB)	DC	4000	No	
Supplementary information: --				

5.5.2.2	TABLE: Stored discharge on capacitors					P
Location	Supply voltage (V)	Operating and fault condition ¹⁾	Switch position	Measured voltage (Vpk)	ES Class	
Phase to Neutral	264Vac, 60Hz	N	on	10Vdc	ES1	
Phase to Neutral	264Vac, 60Hz	S(R1 open)	on	16Vdc	ES1	
Supplementary information:						
X-capacitors installed for testing: CX1=0.47 μ F; CX2=0.22 μ F						
<input checked="" type="checkbox"/> bleeding resistor rating: R1=R2=R3=R4=1.2M Ω						
<input type="checkbox"/> ICX:						
1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit						



IEC 62368-1				
Clause	Requirement + Test	Result - Remark		Verdict
5.6.6	TABLE: Resistance of protective conductors and terminations			P
Location	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)
Accessible metal parts and earthing terminal	32	2	0.608	0.025
Supplementary information: --				

5.7.4 TABLE: Unearthed accessible parts						P
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V_{rms} or V_{pk})	Current (A_{rms} or A_{pk})	Freq. (Hz)	
Metal enclosure	Normal	264	--	0.16mA	60	ES1
	Abnormal – see table B.3, B.4 for detail	264	--	0.16mA	60	ES1
	Single fault – see table B.3, B.4 for detail	264	--	0.27mA	60	ES1
Accessible terminal	Normal	264	--	0.63mA	60	ES1
	Abnormal – see table B.3, B.4 for detail	264	--	0.63mA	60	ES1
	Single fault – see table B.3, B.4 for detail	264	--	0.69mA	60	ES1
Supplementary information: Abbreviation: SC= short circuit; OC= open circuit						

5.7.5 TABLE: Earthed accessible conductive part				P
Supply voltage (V).....:	240			—
Phase(s)	[X] Single Phase; [] Three Phase: [] Delta [] Wye			—
Power Distribution System	<input checked="" type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT			—
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment	
Line to earth, Neutral to earthed accessible parts	1	0.18 mApk	Pass	
Supplementary Information: --				



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.8	TABLE: Backfeed safeguard in battery backed up supplies					N/A
Location	Supply voltage (V)	Operating and fault condition	Time (s)	Open-circuit voltage (V)	Touch current (A)	ES Class
--	--	--	--	--	--	--
Supplementary information: Abbreviation: SC= short circuit, OC= open circuit						

6.2.2	TABLE: Power source circuit classifications					N/A
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power ¹⁾ (W)	Time (S)	PS class
--	--	--	--	--	--	--
Supplementary information: Abbreviation: SC= short circuit; OC= open circuit 1) Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3. 2) * Unit shutdown immediately recoverable, no hazard.						

6.2.3.1	TABLE: Determination of Arcing PIS				P
Location	Open circuit voltage after 3 s (Vpk)	Measured r.m.s current (A)	Calculated value	Arcing PIS? Yes / No	
All primary circuits and components parts	264Vrms	--	--	Yes (declared)	
Supplementary information: --					

6.2.3.2	TABLE: Determination of resistive PIS			P
Location	Operating and fault condition	Dissipate power (W)	Resistive PIS? Yes / No	
All primary circuits and components parts	--	--	Yes (declared)	
Supplementary information: Abbreviation: SC= short circuit; OC= open circuit				

8.5.5	TABLE: High pressure lamp				N/A
Lamp manufacturer	Lamp type	Explosion method	Longest axis of glass particle (mm)	Particle found beyond 1 m Yes / No	
--	--	--	--	--	
Supplementary information: --					



IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
9.6	TABLE: Temperature measurements for wireless power transmitters							N/A
Supply voltage (V).....:								—
Max. transmit power of transmitter (W).....:								—
Foreign objects	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm	
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)
--	--	--	--	--	--	--	--	--
Supplementary information: --								

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements							P
Supply voltage (V):	81V/60Hz			290V/50Hz			—	
Ambient temperature during test T_{amb} (°C):	Actual			Actual			—	
Maximum measured temperature T of part/at:	T (°C)						Allowed T_{max} (°C)	
Internal line	28.8			29.1			80	
L1 winding	46.2			45.9			120	
C6	47.2			47.1			105	
U1	48.2			47.0			110	
CY3	47.2			46.8			125	
U6	47.0			50.4			110	
T4	45.3			46.7			130	
T5 winding	59.2			57.3			110	
T5 core	55.9			56.1			120	
C2	48.2			45.1			105	
PCB near BD1	45.7			44.2			130	
PCB near Q6	45.1			44.8			130	
PCB near D9	45.3			44.9			130	
PCB near C120	37.5			39.5			130	
PCB near U5	38.7			39.6			130	
Metal enclosure	26.1			26.6			51	
Ambient	24.8			24.1			--	
Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class	
--	--	--	--	--	--	--	--	



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information: Tested with HDMI mode.			

B.2.5		TABLE: Input test							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
81	50	1.01	--	121.8	--	F1	1.01	1/8 Max. Non-clipped output power with 1KHz sine wave signal input, display adjusted to maximum power consumption.	
81	60	1.01	--	121.8	--	F1	1.01		
90	50	0.86	--	118.0	130	F1	0.86		
90	60	0.87	--	118.0		F1	0.87		
264	50	0.35	--	132.4		F1	0.35		
264	60	0.35	--	132.4		F1	0.35		
290	50	0.31	--	125.0	--	F1	0.31		
290	60	0.31	--	125.0	--	F1	0.31		
Supplementary information: -									

B.3, B.4		TABLE: Abnormal operating and fault condition tests					P
Ambient temperature T_{amb} (°C)..... :						25°C if not specified	—
Power source for EUT: Manufacturer, model/type, outputrating... :						--	—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation	
BD1	SC	290	1S	F1	0.606	F1 open immediately, no hazards.	
Q2 Pin 1-3	SC	290	1S	F1	0.606	F1 open immediately, no hazards.	
EC2	SC	290	1S	F1	0.606	F1 open immediately, no hazards.	
T5 pin 1-2	SC	290	10min	F1	0.01	Unit shut down immediately, recoverable, no damage, no hazards.	
T5 pin 4-5	SC	290	10min	F1	0.01	Unit shut down immediately, recoverable, no damage, no hazards.	
T5 pin 6-7	SC	290	10min	F1	0.01	Unit shut down immediately, recoverable, no damage, no hazards.	
D9	SC	290	10mins	F1	0.606	Unit shutdown immediately and recoverable, no damaged, no hazard.	



IEC 62368-1						
Clause	Requirement + Test				Result - Remark	Verdict
C3	SC	290	10mins	F1	0.606	Unit shutdown immediately and recoverable, no damaged, no hazard.
EC6	SC	290	10mins	F1	0.606	Unit shutdown immediately and recoverable, no damaged, no hazard.
L1	SC	290	10mins	F1	0.606	Unit shutdown immediately and recoverable, no damaged, no hazard.
Supplementary information: --						

M.3	TABLE: Protection circuits for batteries provided within the equipment						N/A
Is it possible to install the battery in a reverse polarity position?.....:					No	—	
Equipment Specification-- --		Charging					
		Voltage (V)			Current (A)		
		--			--		
Manufacturer/type		Battery specification					
		Non-rechargeable batteries			Rechargeable batteries		
		Discharging current (mA)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)
				Voltage (V)	Current (A)		
		--	--	--	--	--	--
--	--	--	--	--	--		
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.							
Specified battery temperature (°C).....:					--	—	
Component No.	Fault condition	Charge/discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation
--	--	--	--	--	--	--	--
Supplementary information: Abbreviation: SC= short circuit; OC= open circuit; NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal.							

M.4.2	TABLE: Charging safeguards for equipment containing a secondary lithium battery						N/A
Maximum specified charging voltage (V).....:					--	—	
Maximum specified charging current (A)					--	—	
Highest specified charging temperature (°C)					--	—	
Lowest specified charging temperature (°C)					--	—	
Battery manufacturer/type	Operating and fault	Measurement			Observation		
		Charging	Charging	Temp.			



IEC 62368-1						
Clause	Requirement + Test				Result - Remark	Verdict
	condition	voltage (V)	current (A)	(°C)		
--	--	--	--	--	--	
Supplementary information: Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature.						

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)						N/A
Output Circuit	Condition	U _{oc} (V)	Time (s)	I _{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--
Supplementary Information: --							

T.2, T.3, T.4, T.5	TABLE: Steady force test						P
Part/Location	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation	
Internal components / parts	--	--	V.2	10	5	No damaged	
Top enclosure	Metal	2.2 Min.	--	100	5	No damaged	
Side enclosure	Metal	1.6 Min.	--	100	5	No damaged	
Bottom enclosure	Metal	1.6 Min.	--	100	5	No damaged	
Supplementary information: --							

T.6, T.9	TABLE: Impact test				N/A
Location/part	Material	Thickness (mm)	Height (mm)	Observation	
Top enclosure	Metal	1.6 Min.	1300	No damaged	
Side enclosure	Metal	1.6 Min.	1300	No damaged	
Bottom enclosure	Metal	1.6 Min.	1300	No damaged	
Supplementary information: --					

T.7	TABLE: Drop test				N/A
Location/part	Material	Thickness (mm)	Height (mm)	Observation	
Top enclosure	Metal	Min. 1.8	750	No damaged	
Side enclosure	Metal	Min. 1.8	750	No damaged	
Bottom enclosure	Metal	Min. 1.8	750	No damaged	



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information: --			

T.8	TABLE: Stress relief test					N/A
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
--	--	--	--	--	--	
Supplementary information: --						

X	TABLE: Alternative method for determining minimum clearances distances			N/A
Clearance distanced between:	Peak of working voltage (V)	Required cl (mm)	Measured cl (mm)	
--	--	--	--	
Supplementary information: --				

4.1.2	TABLE: Critical components information					P
Object / part No.	Manufacturer / trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Power supply cord	NAN KE INVESTMENT CO LTD	H03VV-F	3G0.75mm ² , 900/900V	EN 60227-5	VDE	
PCB	Interchangeable	Interchangeable	94V-0, 130°C	UL94	UL	
Metal enclosure	Interchangeable	Interchangeable	Min. thickness 1.5mm, Aluminium alloy	IEC 62368-1:2014 J62368-1 (2020)	T ested with appliance	
Fuse(F1)	Xuyi Sanwei Electric Co. Ltd.	RF1	T2AL250V	IEC60127-3: 2015	VDE 40034490	
Opto-coupler (U5)	SHENZHEN ORIENT COMPONENTS CO LTD	OR-1008	Cr.&Cl.= min.8.0mm; dti≥0.4mm, 110°C	IEC/EN 60747-5-5	VDE 40029733 UL E323844	
Y capacitor (CY1)	Shantou High-New TechnologyDev. Zone Songtian Enterprise Co., Ltd.	CD	2200pF; 500VAC/400VA C/250VAC, 40/125/21;	IEC 60384-14:2013/AMD1:2016	VDE 40025754	
Bleeder Resister (R1, R2, R3, R4)	Interchangeable	Interchangeable	R1= 2.2MΩ, R2= 2.2MΩ, R3= 2.2MΩ, R4= 2.2MΩ, min. 1/4W	IEC 62368-1, EN IEC 62368-1	Test with appliance	



IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Bridge Rectifiers (BD1)	Shandong Xinnuo Electronic Science and Technology Co., Ltd.	DBF36	3A, 600V	IEC 62368-1, EN IEC 62368-1	Test with appliance
Electrolytic Capacitor (EC1)	Interchangeable	Interchangeable	22uF, Min. 400V, 105°C	IEC 62368-1, EN IEC 62368-1	Test with appliance
Transformer(T5)	Zhongshan DongfengKaison Electronics Co., Ltd.	EF1510	Only below 2000M above sea level		
--Bobbin	CHANG CHUN PLASTICS CO., LTD.	T200HF	V-0, 150°C	UL	UL E59481
-- Magnet wire	DONG GUAN YIDA INDUSTRIAL CO., LTD.	2UE/155	155°C	UL	UL E344055
-- Insulating Tape	SUZHOU MAILADUONA ELECTRIC MATERIAL CO., LTD.	JY313#	130°C	UL	UL E188295
--Varnish	YUEYANG GREEN TECHNOLOGY CO., LTD.	JX-1150*	130°C	UL	UL E303754
NTC(NTC1)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	5D-7	Min 2A, 250V	IEC 60539-1:2016	UL E474052
Varistor (MOV1)	Cerglass MFG Inc	10D471K	Max. 420VAC, Max. peak current: 2500A 85°C	IEC/EN 61051-1, IEC/EN 61051-2-2	VDE 40028836
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-2039.					
2) Description line content is optional. Main line description needs to clearly detail the component used for testing.					



IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment - Part 1: Safety requirements)			
Differences according to: EN IEC 62368-1:2020			
Attachment Form No : EU_GD_IEC62368_1E			
Attachment Originator: UL(Demko)			
Master Attachment : 2021-02-04			
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	CENELEC COMMON MODIFICATIONS (EN)		—
	Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2020. All other clause numbers in that column, except for those in the paragraph below, refers to IEC 62368-1:2018. Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2018 are prefixed "Z".		—
	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords		—
1	Modification to Clause 3.		—
3.3.19	Sound exposure <i>Replace 3.3.19 of IEC 62368-1 with the following definitions:</i>		N/A
3.3.19.1	momentary exposure level, MEL metric for estimating 1 s sound exposure level from the HD 483-1 S2 test signal applied to both channels, based on EN 50332-1:2013, 4.2. Note 1 to entry: MEL is measured as A-weighted levels in dB. Note 2 to entry: See B.3 of EN 50332-3:2017 for additional information.		N/A



IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.19.3	<p>sound exposure, E</p> <p>A-weighted sound pressure (p) squared and integrated over a stated period of time, T</p> <p>Note 1 to entry: The SI unit is Pa² s.</p> $E = \int_0^T p(t)^2 dt$		N/A
3.3.19.4	<p>sound exposure level, SEL</p> <p>logarithmic measure of sound exposure relative to a reference value, E_0, typically the 1 kHz threshold of hearing in humans.</p> <p>Note 1 to entry: SEL is measured as A-weighted levels in dB.</p> $SEL = 10 \lg\left(\frac{E}{E_0}\right) \text{ dB}$ <p>Note 2 to entry: See B.4 of EN 50332-3:2017 for additional information.</p>		N/A
3.3.19.5	<p>digital signal level relative to full scale, dBFS</p> <p>levels reported in dBFS are always r.m.s. Full scale level, 0 dBFS, is the level of a dc-free 997-Hz sine wave whose undithered positive peak value is positive digital full scale, leaving the code corresponding to negative digital full scale unused</p> <p>Note 1 to entry: It is invalid to use dBFS for non-r.m.s. levels. Because the definition of full scale is based on a sine wave, the level of signals with a crest factor lower than that of a sine wave may exceed 0 dBFS. In particular, square wave signals may reach +3,01 dBFS.</p>		N/A
2	Modification to Clause 10		—
10.6	<p>Safeguards against acoustic energy sources</p> <p>Replace 10.6 of IEC 62368-1 with the following:</p>		N/A
10.6.1.1	<p>Introduction</p> <p>Safeguard requirements for protection against long-term exposure to excessive sound pressure levels from personal music players closely coupled to the ear are specified below. Requirements for earphones and headphones intended for use with personal music players are also covered. A personal music player is a portable equipment intended for use by an ordinary person, that:</p> <ul style="list-style-type: none"> – is designed to allow the user to listen to audio or audiovisual content / material; and – uses a listening device, such as headphones or earphones that can be worn in or on or 		N/A



IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>around the ears; and</p> <ul style="list-style-type: none"> – has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around with while in continuous use (for example, on a street, in a subway, at an airport, etc.). <p>EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment.</p> <p>Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3.</p> <p>NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360.</p> <p>NOTE 2 It is the intention of the Committee to allow the alternative methods for now, but to only use the dose measurement method as given in 10.6.5 in future. Therefore, manufacturers are encouraged to implement 10.6.0.5 As soon as possible.</p> <p>Listening devices sold separately shall comply with the requirements of 10.6.6. These requirements are valid for music or video mode only. The requirements do not apply to:</p> <ul style="list-style-type: none"> – professional equipment; <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"> – hearing aid equipment and other devices for assistive listening; – the following type of analogue personal music players: <ul style="list-style-type: none"> • long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and • cassette player/recorder; <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> <ul style="list-style-type: none"> – a player while connected to an external amplifier that does not allow the user to walk around while in use. <p>For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply.</p> <p>The relevant requirements are given in EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.</p>		
10.6.1.2	Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	<p>The amount of non-ionizing radiation is regulated by 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 300 GHz).</p> <p>For intentional radiators, ICNIRP guidelines should 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 drawn to EN 50360 and EN 50566.</p>		
10.6.2	Classification of devices without the capacity to estimate sound dose		N/A
10.6.2.1	<p>General</p> <p>This standard is transitioning from short-term based (30 s) requirements to long-term based (40 hour) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3.</p> <p>For classifying the acoustic output $L_{Aeq,T}$, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period.</p> <p>For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, measurements may be done over the duration of the complete song. In this case, T becomes the duration of the song.</p> <p>NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the content 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 does not exceed the required limit. For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, 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 dB.</p>		N/A
10.6.2.2	<p>RS1 limits (to be superseded, see 10.6.3.2)</p> <p>RS1 is a class 1 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 85 dB when playing the fixed “programme simulation noise” described in EN 50332-1. 		N/A




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Clause	Requirement + Test	Result - Remark	Verdict
	<ul style="list-style-type: none"> – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 27 mV (analogue interface) or -25 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1. – The RS1 limits will be updated for all devices as per 10.6.3.2. 		
10.6.2.3	<p>RS2 limits (to be superseded, see 10.6.3.3)</p> <p>RS2 is a class 2 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or when the combination of player and listening device is known by other means such as setting or automatic 130 detection, the $L_{Aeq,\tau}$ acoustic output shall be ≤ 100 dB(A) when playing the fixed “programme simulation noise” as described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 150 mV (analogue interface) or -10 dBFS (digital interface) when playing the fixed “programme simulation noise” as described in EN 50332-1. 		N/A
10.6.2.4	<p>RS3 limits</p> <p>RS3 is a class 3 acoustic energy source that exceeds RS2 limits.</p>		N/A
10.6.3	Classification of devices (new)		N/A
10.6.3.1	<p>General</p> <p>Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision of 23 June 2009, are given below.</p>		N/A
10.6.3.2	<p>RS1 limits (new)</p> <p>RS1 is a class 1 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,\tau}$ acoustic output shall be ≤ 80 dB when playing the fixed “programme simulation noise” described in EN 50332-1. 		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	– for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.		
10.6.3.3	<p>RS2 limits (new)</p> <p>RS2 is a class 2 acoustic energy source that does not exceed the following:</p> <p>– for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1.</p> <p>– for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3, shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.</p>		N/A
10.6.4	Requirements for maximum sound exposure		N/A
10.6.4.1	<p>Measurement methods</p> <p>All volume controls shall be turned to maximum during tests.</p> <p>Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.</p>		N/A
10.6.4.2	<p>Protection of persons</p> <p>Except as given below, protection requirements for parts accessible to ordinary persons, instructed persons and skilled persons are given in 4.3.</p> <p>NOTE 1 Volume control is not considered a safeguard.</p> <p>Between RS2 and an ordinary person, the basic safeguard may be replaced by an instructional safeguard in accordance with Clause F.5, except that the instructional safeguard shall be placed on the equipment, or on the packaging, or in the instruction manual.</p> <p>Alternatively, the instructional safeguard may be given through the equipment display during use.</p> <p>The elements of the instructional safeguard shall be as follows:</p>		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	<p>– element 1a: the symbol , IEC 60417-6044 (2011-01)</p> <p>– element 2: “High sound pressure” or equivalent wording</p> <p>– element 3: “Hearing damage risk” or equivalent wording</p> <p>– element 4: “Do not listen at high volume levels for long periods.” or equivalent wording</p> <p>An equipment safeguard shall prevent exposure of an ordinary person to an RS2 source without intentional physical action from the ordinary person and shall automatically return to an output level not exceeding what is specified for an RS1 source when the power is switched off.</p> <p>The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output exceeding RS1. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output exceeding RS1. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time.</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent of how often and how long the personal music player has been switched off.</p> <p>A skilled person shall not be unintentionally exposed to RS3.</p>		
10.6.5	Requirements for dose-based systems		N/A
10.6.5.1	<p>General requirements</p> <p>Personal music players shall give the warnings as provided below when tested according to EN 50332-3, using the limits from this clause.</p> <p>The manufacturer may offer optional settings to allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating the safeguards. This allows the users to be informed in a method that best meets their physical capabilities and device usage needs. If such optional settings are offered, an administrator (for example, parental restrictions, business/educational administrators, etc.) shall be able to lock any optional settings into a specific configuration.</p> <p>The personal music player shall be supplied with</p>		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	easy to understand explanation to the user of the dose management system, the risks involved, and how to use the system safely. The user shall be made aware that other sources may significantly contribute to their sound exposure, for example work, transportation, concerts, clubs, cinema, car races, etc.		
10.6.5.2	<p>Dose-based warning and requirements</p> <p>When a dose of 100 % CSD is reached, and at least at every 100 % further increase of CSD, the device shall warn the user and require an acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to compliance with class RS1.</p> <p>The warning shall at least clearly indicate that listening above 100 % CSD leads to the risk of hearing damage or loss.</p>		N/A
10.6.5.3	<p>Exposure-based requirements</p> <p>With only dose-based requirements, cause and effect could be far separated in time, defying the purpose of educating users about safe listening practice. In addition to dose-based requirements, a PMP shall therefore also put a limit to the short-term sound level a user can listen at.</p> <p>The exposure-based limiter (EL) shall automatically reduce the sound level not to exceed 100 dB(A) or 150 mV integrated over the past 180 s, based on methodology defined in EN 50332-3. The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster.</p> <p>Test of EL functionality is conducted according to EN 50332-3, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s shall be 100 dB or lower. For equipment provided with a standardized connector, the unweighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than -10 dBFS for a digital interface.</p> <p>NOTE In case the source is known not to be music (or test signal), the EL may be disabled.</p>		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	<p>Corded listening devices with analogue input</p> <p>With 94 dB LAeq acoustic pressure output of the listening device, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like</p>		N/A



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	<p>equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the input voltage of the listening device when playing the fixed "programme simulation noise" as described in EN 50332-1 shall be ≥ 75 mV.</p> <p>NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.</p>		
10.6.6.2	<p>Corded listening devices with digital input</p> <p>With any playing device playing the fixed "programme simulation noise" described in EN 50332-1, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.</p>		N/A
10.6.6.3	<p>Cordless listening devices</p> <p>In cordless mode,</p> <ul style="list-style-type: none"> – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the receiving device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS. 		N/A
10.6.6.4	<p>Measurement method</p> <p><i>Measurements shall be made in accordance with EN 50332-2 as applicable.</i></p>		N/A
3	Modification to the whole document		—



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Clause	Requirement + Test			Result - Remark		Verdict
	Delete all the “country” notes in the reference document according to the following list:					N/A
	0.2.1	Note 1 and 2	1	Note 4 and 5	3.3.8.1	Note 2
	3.3.8.3	Note 1	4.1.15	Note	4.7.3	Note 1 and 2
	5.2.2.2	Note	5.4.2.3.2.2 Table 12	Note c	5.4.2.3.2.4	Note 1 and 3
	5.4.2.3.2.4 Table 13	Note 2	5.4.2.5	Note 2	5.4.5.1	Note
	5.4.10.2.1	Note	5.4.10.2.2	Note	5.4.10.2.3	Note
	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3 and 4
	5.6.8	Note 2	5.7.6	Note	5.7.7.1	Note 1 and Note 2
	8.5.4.2.3	Note	10.2.1 Table 39	Note 3 and 4 and 5	10.5.3	Note 2
	10.6.4	Note 3	F.3.3.6	Note 3	Y.4.1	Note
	Y.4.5	Note				
4	Modification to Clause 1					—
1	Add the following note:					P
	<i>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.</i>					



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



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Clause	Requirement + Test	Result - Remark	Verdict
8	Modification to 10.5.1		—
10.5.1	<p>Add the following after the first paragraph:</p> <p>For RS 1 compliance is checked by measurement under the following conditions:</p> <p>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 pre-sets 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.</p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p>The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus.</p> <p>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.</p> <p>For RS1, the dose-rate shall not exceed 1 μSv/h taking account of the background level.</p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>		N/A
9	Modification to G.7.1		—
G.7.1	<p>Add the following note:</p> <p>NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>		P



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10	Modification to Bibliography		—
	Add the following notes for the standards indicated:		N/A
	IEC 60130-9	NOTE Harmonized as EN 60130-9.	
	IEC 60269-2	NOTE Harmonized as HD 60269-2.	
	IEC 60309-1	NOTE Harmonized as EN 60309-1.	
	IEC 60364	NOTE some parts harmonized in HD 384/HD 60364 series.	
	IEC 60601-2-4	NOTE Harmonized as EN 60601-2-4.	
	IEC 60664-5	NOTE Harmonized as EN 60664-5.	
	IEC 61032:1997	NOTE Harmonized as EN 61032:1998 (not modified).	
	IEC 61508-1	NOTE Harmonized as EN 61508-1.	
	IEC 61558-2-1	NOTE Harmonized as EN 61558-2-1.	
	IEC 61558-2-4	NOTE Harmonized as EN 61558-2-4.	
	IEC 61558-2-6	NOTE Harmonized as EN 61558-2-6.	
	IEC 61643-1	NOTE Harmonized as EN 61643-1.	
	IEC 61643-21	NOTE Harmonized as EN 61643-21.	
	IEC 61643-311	NOTE Harmonized as EN 61643-311.	
	IEC 61643-321	NOTE Harmonized as EN 61643-321.	
	IEC 61643-331	NOTE Harmonized as EN 61643-331.	
11	ADDITION OF ANNEXES		—
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		—
4.1.15	Denmark, Finland, Norway and Sweden		P
	<p>To the end of the subclause the following is added: Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord." In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag"</p>		



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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	<p>United Kingdom</p> <p>To the end of the subclause the following is added:</p> <p>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</p>		N/A
5.2.2.2	<p>Denmark</p> <p>After the 2nd paragraph add the following:</p> <p>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.</p>		N/A
5.4.11.1 and Annex G	<p>Finland and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>For separation of the telecommunication network from earth the following is applicable:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), <p>and</p> <ul style="list-style-type: none"> • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV. <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p>		N/A



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	<p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; the additional testing shall be performed on all the test specimens as described in EN 60384-14; <p>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.</p>		
5.5.2.1	<p>Norway</p> <p>After the 3rd paragraph the following is added:</p> <p>Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).</p>		N/A
5.5.6	<p>Finland, Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.</p>		N/A
5.6.1	<p>Denmark</p> <p>Add to the end of the subclause Due to many existing installations where the socket-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.</p>		N/A
5.6.4.2.1	<p>Ireland and United Kingdom</p> <p>After the indent for pluggable equipment type A, the following is added: – the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.</p>		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
5.6.4.2.1	<p>France</p> <p>After the indent for pluggable equipment type A, the following is added: – in certain cases, the protective current rating of the circuit supplied from the mains is taken as 20 A instead of 16 A.</p>		N/A
5.6.5.1	<p>To the second paragraph the following is added:</p> <p>The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm² to 1,5 mm² in cross-sectional area.</p>		N/A
5.6.8	<p>Norway</p> <p>To the end of the subclause the following is added: Equipment connected with an earthed mains plug is classified as class I equipment. See the Norway marking requirement in 4.1.15. The symbol IEC 60417-6092, as specified in F.3.6.2, is accepted.</p>		N/A
5.7.6	<p>Denmark</p> <p>To the end of the subclause the following is added:</p> <p>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.</p>		N/A
5.7.6.2	<p>Denmark</p> <p>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.</p>		N/A
5.7.7.1	<p>Norway and Sweden</p> <p>To the end of the subclause the following is added: The screen of the television 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 needs 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 a retailer, for example.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>“Apparatus connected to the protective earthing of</p>		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	<p>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)”</p> <p>NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplede utstyr – og er tilkoplede 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.”</p> <p>Translation to Swedish: “Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.</p>		
8.5.4.2.3	<p>United Kingdom</p> <p>Add the following after the 2nd dash bullet in 3rd paragraph:</p> <p>An emergency stop system complying with the requirements of IEC 60204-1 and ISO 13850 is required where there is a risk of personal injury.</p>		N/A



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B.3.1 and B.4	<p>Ireland and United Kingdom</p> <p>The following is applicable:</p> <p>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</p>		N/A
G.4.2	<p>Denmark</p> <p>To the end of the subclause the following is added:</p> <p>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.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a polyphase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,0.5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a.</p> <p>Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.</p> <p>Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a</p> <p><i>Justification:</i> Heavy Current Regulations, Section 6c</p>		P



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Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	<p>United Kingdom</p> <p>To the end of the subclause the following is added:</p> <p>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.</p>		P
G.7.1	<p>United Kingdom</p> <p>To the first paragraph the following is added:</p> <p>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 'standard plug' in accordance with the Plugs and Sockets etc. (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations.</p> <p>NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		P
G.7.1	<p>Ireland</p> <p>To the first paragraph the following is added:</p> <p>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 State which is equivalent to the relevant Irish Standard</p>		P
G.7.2	<p>Ireland and United Kingdom</p> <p>To the first paragraph the following is added:</p> <p>A power supply cord with a conductor of 1,25 mm² is allowed for equipment which is rated over 10 A and up to and including 13 A.</p>		N/A



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ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		—
10.5.2	Germany The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. <i>Justification:</i> German ministerial decree against ionizing radiation (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		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
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ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)		— P
	Type of flexible cord	Code designations	
		IEC	CENELEC
	PVC insulated cords		
	Flat twin tinsel cord	60227 IEC 41	H03VH-Y
	Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F
	Ordinary polyvinyl chloride sheathed flexible cord	60227 IEC 53	H05VV-F H05VVH2-F
	Rubber insulated cords		
	Braided cord	60245 IEC 51	H03RT-F
	Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F
	Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F
	Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F
	Cords having high flexibility		
	Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H
	Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H
	Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H
	Cords insulated and sheathed with halogen-free thermoplastic compounds		
	Light halogen-free thermoplastic insulated and sheathed flexible cords		H03Z1Z1-F H03Z1Z1H2-F
	Ordinary halogen-free thermoplastic insulated and sheathed flexible cords		H05Z1Z1-F H05Z1Z1H2-F



Photos

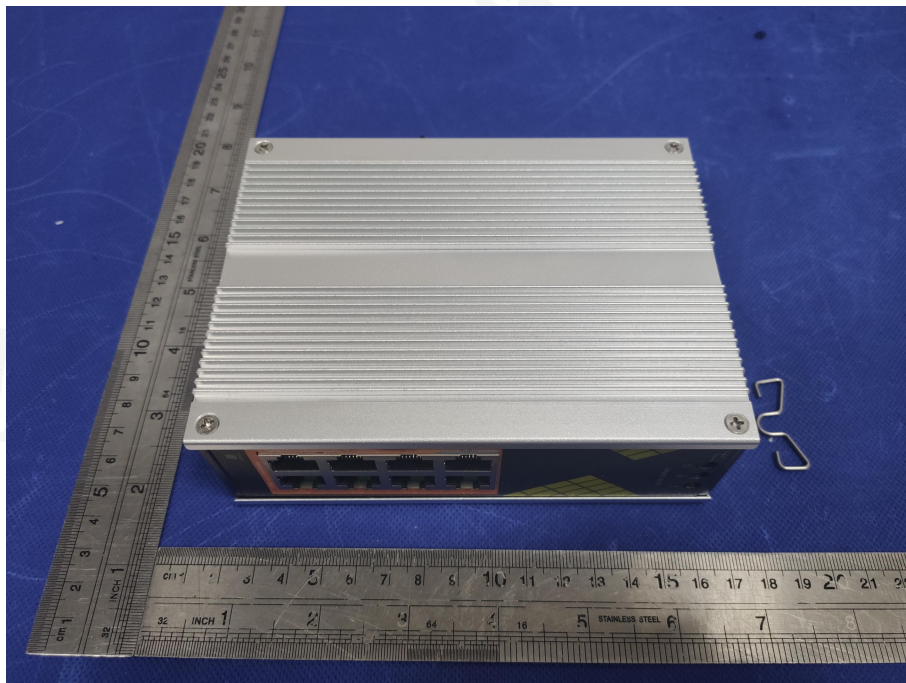


Photo 1: outside view drawing



Photo 2: outside view drawing



Photo 3: Internal view

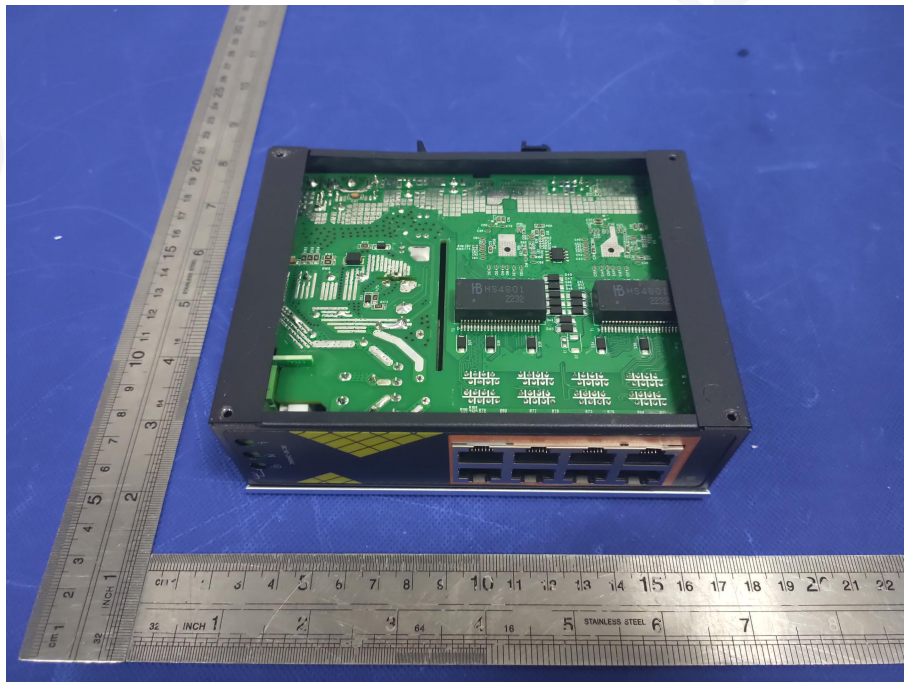


Photo 4: Internal view



Photo 5: Internal view

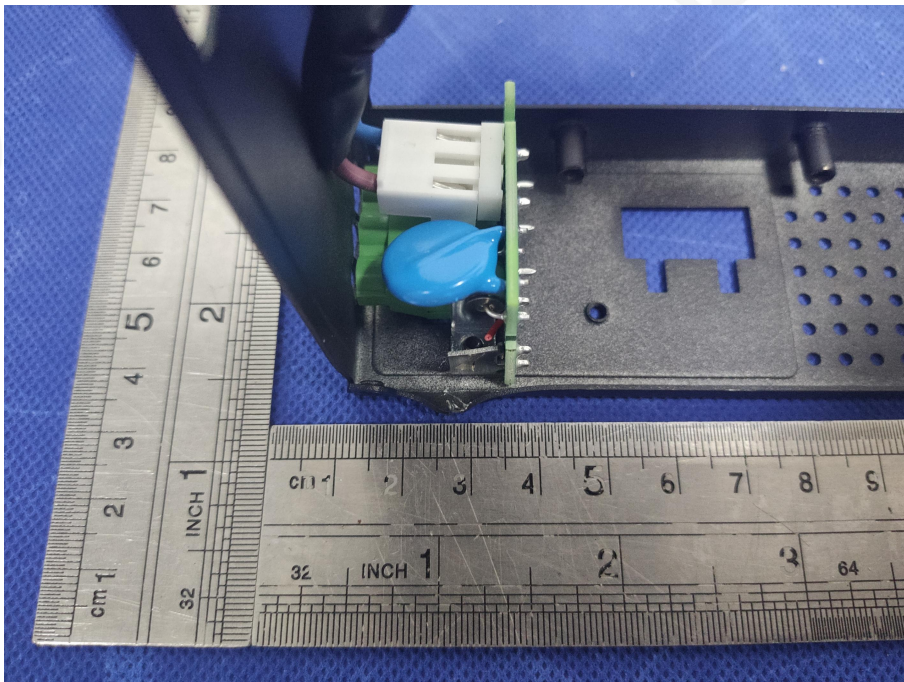


Photo 6: Internal view

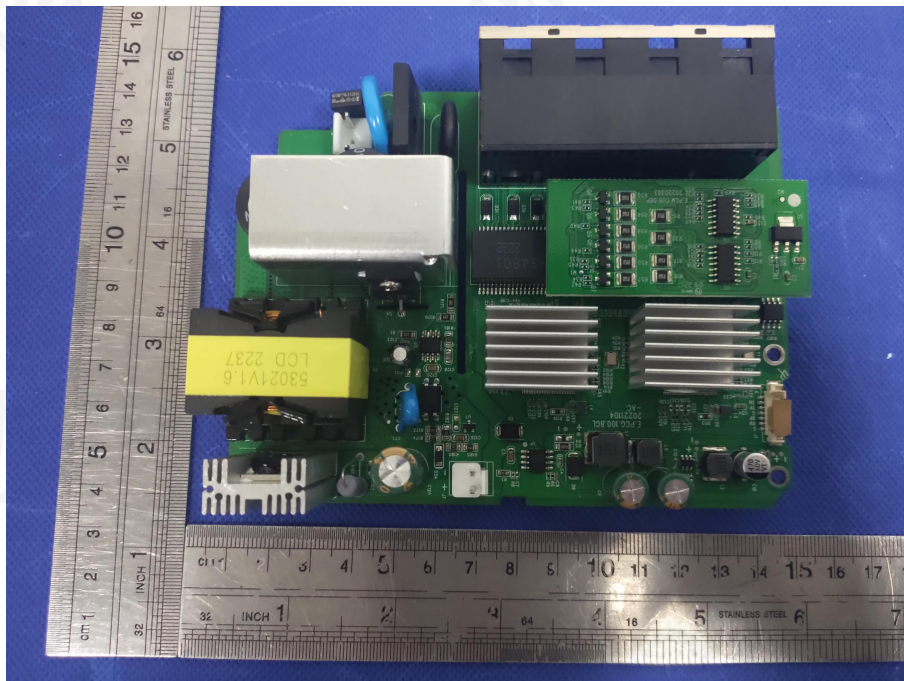


Photo 7: Internal view

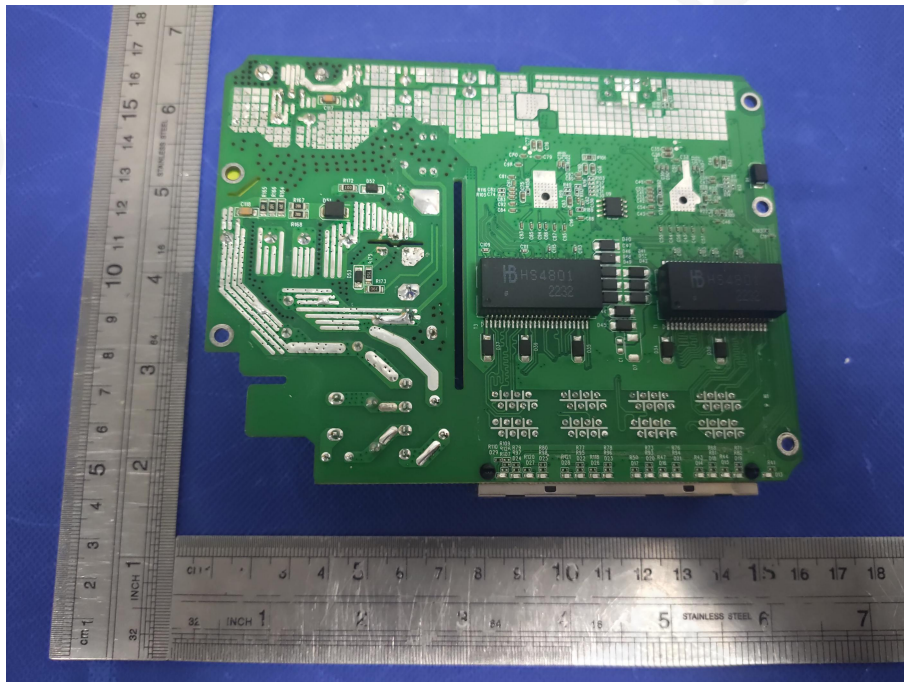


Photo 8: Internal view

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