



Test Report issued under the responsibility of:



TEST REPORT

IEC 62368-1

Audio/video, information and communication technology equipment

Part 1: Safety requirements

Report Number..... : CN25M0ZZ 001

Date of issue : 2025-05-30

Total number of pages..... : 91

Name of Testing Laboratory
preparing the Report..... : TÜV Rheinland (Shenzhen) Co., Ltd.

Applicant's name : Harman International Industries, Incorporated

Address : 8500 Balboa Blvd. Northridge CA 91329, USA

Test specification:

Standard : IEC 62368-1:2018

Test procedure..... : CB Scheme

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

TRF template used..... : IECEE OD-2020-F1:2021, Ed.1.4

Test Report Form No. : IEC62368_1E

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

Master TRF..... : Dated 2022-04-14

Copyright © 2022 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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.

General disclaimer:

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description..... :	Portable Bluetooth Speaker	
Trade Mark(s) :	JBL	
Manufacturer..... :	Same as applicant	
Model/Type reference :	BOOMBOX 4C	
Ratings..... :	Input: 100-240Vac, 50/60Hz, 150W USB-C output: 5V=== 3A, 9V=== 3A, 15V=== 2A, 20V=== 1.5A max; 5-11V=== 2.7A (PPS1); 5-16V=== 1.85A (PPS2) 21.6Vdc, 4584mAh, 99.02Wh (supplied by internal rechargeable Li-ion battery)	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒ CB Testing Laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.	
Testing location/ address..... :	1601-1604, 1801-1804, Tower A Building 2, Shenzhen International Innovation Valley, Dashi 1st Road, Xili Street, Xili Community, Nanshan District, Shenzhen 518000, China	
Tested by (name, function, signature)..... :	Crystal Ye, Project handler	
Approved by (name, function, signature).. :	Mihawk Li, Authorizer	
Testing procedure: CTF Stage 1:		
Testing location/ address..... :		
Tested by (name, function, signature)..... :		
Approved by (name, function, signature).. :		
Testing procedure: CTF Stage 2:		
Testing location/ address..... :		
Tested by (name, function, signature)..... :		
Witnessed by (name, function, signature). :		
Approved by (name, function, signature).. :		
Testing procedure: CTF Stage 3:		
Testing procedure: CTF Stage 4:		
Testing location/ address..... :		
Tested by (name, function, signature)..... :		
Witnessed by (name, function, signature). :		
Approved by (name, function, signature).. :		
Supervised by (name, function, signature) :		

List of Attachments (including a total number of pages in each attachment):	
Attachment 1: Transformer construction (3 pages)	
Attachment 2: National Differences (51 pages)	
Attachment 3: IEC 62368-3 report (18pages)	
Attachment 4: Photo documentation (25 pages)	
Summary of testing:	
Tests performed (name of test and test clause): All applicable tests as described in Test Case and Measurement Sections were performed. Load conditions used during testing see appended table B.2.5 for details.	Testing location: TÜV Rheinland (Shenzhen) Co., Ltd. 1-5F, Block 5, No. 1100, Huanli Road, Yungu Community, Xinhua Street, Guangming District Shenzhen, China
5.2	Classification of electrical energy sources
5.3.2	Accessibility to electrical energy sources and safeguards (Accessibility test)
5.4.1.4, 6.3.2, 9.0, B.2.6	Temperature measurements
5.4.1.8	Determination of working voltage
5.4.1.10.3	Ball Pressure Test
5.4.2 & 5.4.3	Minimum Clearances/Creepage distance
5.4.8	Humidity conditioning
5.4.9	Electric Strength test
5.5.2.2	Stored discharge on capacitors
5.7.4	Unearthed accessible parts
6.2.2	Electrical power sources (PS) measurements for classification
Annex B.2.5	Input Test
Annex B.3, B.4	Simulated Abnormal operating condition tests and single fault conditions
Annex F.3.9	Durability, legibility and permanence of markings
Annex G.5.3.2	Transformer insulation
Annex G.5.3.3	Transformer overload
Annex M	Battery test
Annex Q.1	Limited power sources
Annex T.2	Steady force test, 10N
Annex T.5	Steady force test, 250N
Annex T.6	Enclosure impact test
Annex T.7	Drop test
Annex T.8	Stress relief test

Summary of compliance with National Differences (List of countries addressed):

EU Group Differences, EU Special National Conditions, AU, CA, JP, NZ, SA, US, CN, KR, AR

Explanation of used codes: AU=Australia, CA=Canada, JP=Japan, NZ=New Zealand, SA=Saudi Arabia, US=United States of America, CN=China, KR=Republic of Korea, AR=Argentina

For National Differences see attachment 2 of this test report.

☒ The product fulfils the requirements of **EN IEC 62368-1:2020+A11:2020, BS EN IEC 62368-1:2020+A11:2020, CSA C22.2 NO. 62368-1:19, UL 62368-1:2019 R10.21.**

Use of uncertainty of measurement for decisions on conformity (decision rule) :

☒ No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").

The decision rule for statements of conformity in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance to and ILAC-G8:09/2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report.

☐ Other:... (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

Information on uncertainty of measurement:

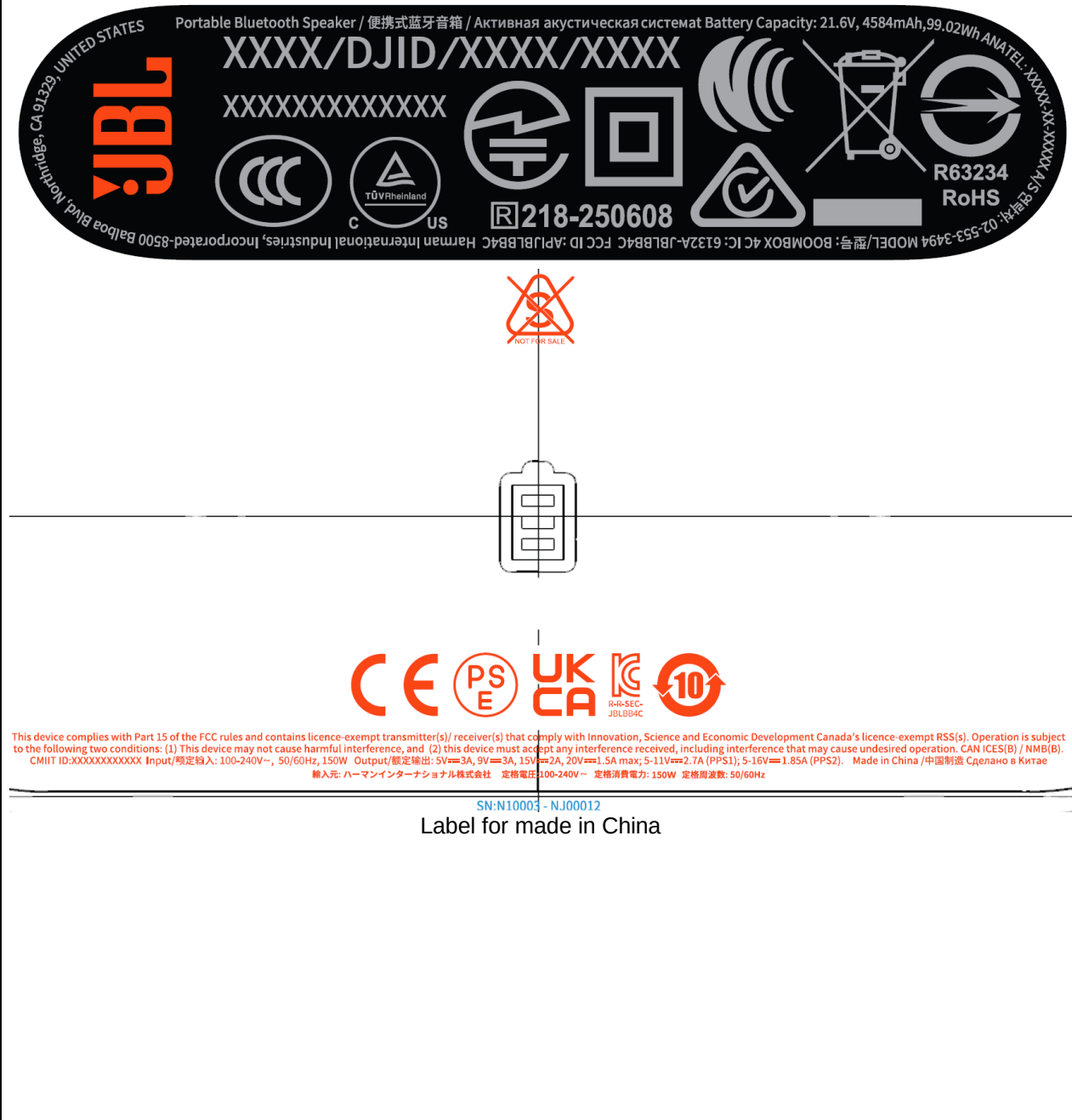
The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.

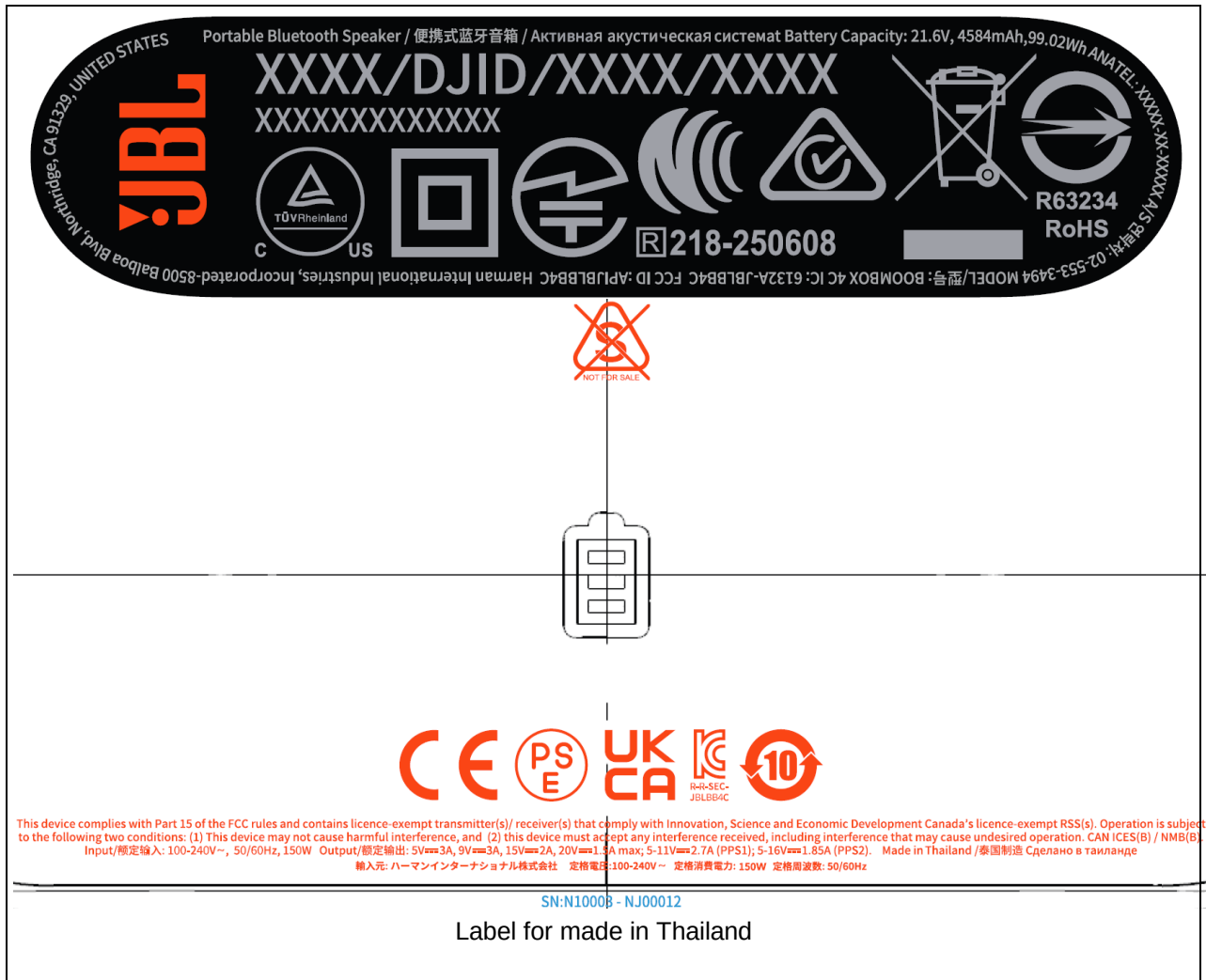
IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

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.





Test item particulars:			
Product group	☒ end product	☐ built-in component	
Classification of use by	☒ Ordinary person	☒ Children likely present	
	☒ Instructed person		
	☒ Skilled person		
Supply connection	☒ AC mains	☐ DC mains	
	☐ not mains connected:		
	☐ ES1	☐ ES2	☐ ES3
Supply tolerance	☒ +10%/-10%		
	☐ +20%/-15%		
	☐ + %/ - %		
	☐ None		
Supply connection – type	☒ pluggable equipment type A -		
	☐ non-detachable supply cord		
	☒ appliance coupler		
	☐ direct plug-in		
	☐ pluggable equipment type B -		
	☐ non-detachable supply cord		
	☐ appliance coupler		
	☐ permanent connection		
	☐ mating connector	☐ other:	
Considered current rating of protective device	☒ US, CA, FR: 20 A; UK: 13 A; Others: 16 A		
	Location: ☒ building	☐ equipment	
	☐ N/A		
Equipment mobility	☒ movable	☐ hand-held	☒ transportable
	☐ direct plug-in	☐ stationary	☐ for building-in
	☐ wall/ceiling-mounted	☐ SRME/rack-mounted	
	☐ other:		
Overvoltage category (OVC)	☐ OVC I	☒ OVC II	☐ OVC III
	☐ OVC IV	☐ other:	
Class of equipment	☐ Class I	☒ Class II	☐ Class III
	☐ Not classified	☐	
Special installation location	☒ N/A	☐ restricted access area	
	☐ outdoor location	☐	
Pollution degree (PD)	☐ PD 1	☒ PD 2	☐ PD 3
Manufacturer's specified T_{ma}	35 °C	☐ Outdoor: minimum	°C
IP protection class	☐ IPX0	☒ IP68	
Power systems	☒ TN	☐ TT	☐ IT - V _{L-L}
	☐ not AC mains		
Altitude during operation (m)	☐ 2000 m or less	☒ 5000 m	
Altitude of test laboratory (m)	☒ 2000 m or less	☐ m	
Mass of equipment (kg)	Approx. 5.87		

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..... : 2025-03-27 Date (s) of performance of tests : 2025-03-27 to 2025-04-23	
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 ☐ comma / ☒ point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
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:	☒ Yes ☐ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies)..... : 1) TYMPHANY ACOUSTIC TECHNOLOGY (THAILAND) COMPANY LIMITED 888/9, Mu 7, Khlong Kio Sub-district, Ban Bueng District, Chon Buri Province, 20220 Thailand 2) Tymphany Acoustic Technology (Huizhou) Co., Ltd. Tymphany Intelligent Audio Technology Industrial Park, Hua Guo Village, XinXu Town, HuiYang District, Huizhou, Guangdong P.R. China	
General product information and other remarks: 1. The product covered in this report is a portable Bluetooth speaker which is used as audio device. It is supplied by AC mains via detachable power cord or by internal rechargeable ion battery. 2. The product support BT and USB-C mode, the USB-C can also be used as output port and the output only 5V, 1A when unit power on; when unit power off the USB-C output is 5V=== 3A, 9V=== 3A, 15V=== 2A, 20V=== 1.5A max; 5-11V=== 2.7A (PPS1); 5-16V=== 1.85A (PPS2). 3. The product had been evaluated according to IEC 60529:1989+A1:1999+ A2:2013 in separate report CN25I9NK 001 and comply with IP68 requirement.	
The product mainly consists of: - Speaker with power board and amplifier board - Plastic enclosure	

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: All primary circuits on power board	Ordinary	N/A	N/A	Enclosure See 5.4.2, 5.4.3, 5.5.3, Y- capacitor, opto-coupler
ES3: Store discharge on capacitor	Ordinary	N/A	N/A	See 5.5.2.2
ES1: Secondary circuits after power board	Ordinary	N/A	N/A	N/A
ES1: All accessible parts and secondary port	Ordinary	N/A	N/A	N/A
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 st S	2 nd S
PS3: Circuits of power board and main board	Enclosure/All combustible materials	Equipment safeguards (no ignition)	See clause 6.4.6	See clause 6.4.8
PS2: Subwoofers and USB-C output	Enclosure/All combustible materials	Equipment safeguards (no ignition)	See clause 6.4.3	N/A
PS1: Tweeter speakers	Enclosure/All combustible materials	Equipment safeguards (no ignition)	N/A	N/A
PS1: All accessible parts except USB-C port	Enclosure/All combustible materials	Equipment safeguards (no ignition)	N/A	N/A
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
Li-ion battery	Ordinary	N/A	N/A	Comply with Annex M
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS1: Edges and corners of enclosure	Ordinary	N/A	N/A	N/A
MS1: Mass of the unit	Ordinary	N/A	N/A	N/A
9	Thermal burn			
Class and Energy Source	Body Part	Safeguards		

(e.g. TS1: Keyboard caps)	(e.g., Ordinary)	B	S	R
TS1: accessible part	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
Exempt group: LED for indicating	Ordinary	N/A	N/A	N/A
Exempt group: LED for light show	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

See above table

☐ 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	Equipment is adequately designed and constructed.	P
4.1.4	Specified ambient temperature for outdoor use (°C) :	Not outdoor use product	N/A
4.1.5	Constructions and components not specifically covered	No such constructions and components	N/A
4.1.8	Liquids and liquid filled components (LFC)	No such liquids and liquid filled components	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, T.5).	P
4.4.3.3	Drop tests	(See Annex T.7)	P
4.4.3.4	Impact tests	(See Annex T.6)	P
4.4.3.5	Internal accessible safeguard tests	Not to be accessible	N/A
4.4.3.6	Glass impact tests	No glass used	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	(See Annex T.8)	P
4.4.3.9	Air comprising a safeguard	Enclosure as safeguard complied with annex T	P
4.4.3.10	Accessibility, glass, safeguard effectiveness	After tests of 4.4.3.2, 4.4.3.3, 4.4.3.4 and 4.4.3.8, all safeguards remind effective	P
4.4.4	Displacement of a safeguard by an insulating liquid	No such safeguard used	N/A
4.4.5	Safety interlocks		N/A
4.5	Explosion		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.5.1	General	No explosion occurs during normal/abnormal operation and single fault conditions	P
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		P
	Fix conductors not to defeat a safeguard	Internal primary wires connected to appliance inlet by hook-in soldering and enclosed by heat-shrinkable tube. Wires from appliance inlet to power board by pluggable wire connector. Secondary wires connect to power board by pluggable wire connector. Secondary wires from mainboard to speakers by quick-connected connector with clamp function. Secondary wires from power board to mainboard by pluggable wire connector, and far away from primary circuit which complied with clauses 5.4.2 and 5.4.3.	P
	Compliance is checked by test..... :	10 N applied to relevant conductors. See appended table 5.4.2.2, 5.4.2.4 and 5.4.3	P
4.7	Equipment for direct insertion into mains socket-outlets		N/A
4.7.2	Mains plug part complies with relevant standard .. :	Not such 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 such battery 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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	Mains plug	P
4.10.2	Switches and relays	No such switch or relay used	N/A

5	ELECTRICALLY-CAUSED INJURY		P
5.2	Classification and limits of electrical energy sources		P
5.2.2	ES1, ES2 and ES3 limits	(See appended table 5.2)	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.....	No such single pulses generated in the EUT or applied to it.	N/A
5.2.2.5	Limits for repetitive pulses.....	No such repetitive pulses within the EUT	N/A
5.2.2.6	Ringling signals	No such ringing signals within the EUT	N/A
5.2.2.7	Audio signals	See clause Annex E.1	P
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	See only 4.3 and 5.3 to 5.5 which applies to protection between the accessible parts and hazardous parts of other circuits.	P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits	Only ES1 circuit can be accessible for product	P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors	See above	P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
	Accessibility to outdoor equipment bare parts		N/A
5.3.2.2	Contact requirements	No access with test probe to any ES3 circuit or parts.	P
	Test with test probe from Annex V		—
5.3.2.2 a)	Air gap – electric strength test potential (V).....		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.3.2.2 b)	Air gap – distance (mm)		N/A
5.3.2.3	Compliance		N/A
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Material is non-hygroscopic	See sub-clause 5.4.8.	P
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4.)	P
5.4.1.5	Pollution degrees	2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2 is considered. No insulating compound applied (however see 5.5.4).	N/A
5.4.1.5.3	Thermal cycling test		N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such transformer within the EUT	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such starting pulses within the EUT	N/A
5.4.1.8	Determination of working voltage	(See appended table 5.4.1.8)	P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	See below 5.4.1.10.3	P
5.4.1.10.2	Vicat test.....		N/A
5.4.1.10.3	Ball pressure test.....	Considered for internal AC connector Phenolic bobbin material used in transformer with thermal properties acceptable without test.	P
5.4.2	Clearances	(See appended table 5.4.2 and 5.4.3)	P
5.4.2.1	General requirements		P
	Clearances in circuits connected to AC Mains, Alternative method		N/A
5.4.2.2	Procedure 1 for determining clearance		N/A
	Temporary overvoltage		—
5.4.2.3	Procedure 2 for determining clearance		P
5.4.2.3.2.2	a.c. mains transient voltage	2500V for Overvoltage Cat. II	—
5.4.2.3.2.3	d.c. mains transient voltage	No such transient	—
5.4.2.3.2.4	External circuit transient voltage.....	No such transient	—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.2.3.2.5	Transient voltage determined by measurement :	No such transient	—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test :	Using procedure 2 to determine the clearance according to 5.4.2.3.	N/A
5.4.2.5	Multiplication factors for clearances and test voltages :	Up to 5000m: 1.48	P
5.4.2.6	Clearance measurement :	(See appended table 5.4.2 and 5.4.3)	P
5.4.3	Creepage distances	(See appended table 5.4.2 and 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material group :	IIIa & IIIb	—
5.4.3.4	Creepage distances measurement..... :	(See appended table 5.4.2 and 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)	P
5.4.4.3	Insulating compound forming solid insulation	See below only.	N/A
5.4.4.4	Solid insulation in semiconductor devices	Approved Optocoupler used. See clause G.12 and appended table 4.1.2	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	See below	P
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material	Where two layers are provided as reinforced insulation, and any one layer passed the electric strength test for reinforced insulation	P
	Number of layers (pcs) :	Min. 2 layers	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.5.1 and G.6.	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 :		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.5	Antenna terminal insulation	Not such equipment	N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance (MΩ) :		N/A
	Electric strength test :		N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard	No such insulation of internal wire as part of supplementary safeguard.	N/A
5.4.7	Tests for semiconductor components and for cemented joints	No tests necessary –see only 5.4.4.4.	N/A
5.4.8	Humidity conditioning	See below.	P
	Relative humidity (%), temperature (°C), duration (h) :	93%, 40°C, 120h	—
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..... :	For unit and transformer: compliance was checked immediately following temperature test in 5.4.1.4 and on a sample of the transformer (for every source listed in appended table 4.1.2) raised to the relevant temperature as measured during that test.	P
5.4.9.2	Test procedure for routine test	No routine tests considered. To be considered during the relevant national approval.	N/A
5.4.10	Safeguards against transient voltages from external circuits	No such external circuits	N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
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	No such connections for external circuit applied within the EUT	N/A
5.4.11.1	Exceptions to separation between external circuits and earth	No such connections to external circuit as above.	N/A
5.4.11.2	Requirements		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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	No such insulating liquid used	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	See below	P
5.5.2.1	General requirement	Approved X2 type and Y1 type capacitors provided. See G.11.1 for compliance and their application.	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		N/A
5.5.6	Resistors	Resistors (R1, R2, R3, R4) used as safeguard against capacitor discharge, R1 open considered, see appended table 5.5.2.2	P
5.5.7	SPDs	Approved VDR used between L and N	P
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 II equipment	N/A
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm ²) :		—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm ²)..... :		—
5.6.4.2	Protective current rating (A) :		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)..... :		N/A
	Terminal size for connecting protective bonding conductors (mm) :		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective bonding system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method :		N/A
5.6.6.3	Resistance (Ω) or voltage drop :		N/A
5.6.7	Reliable connection of a protective earthing conductor		N/A
5.6.8	Functional earthing	No 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		P
5.7.2.2	Measurement of voltage		P
5.7.3	Equipment set-up, supply connections and earth connections	Clause 4, 5.3 and 5.4 of IEC 60990 applied.	P
5.7.4	Unearthed accessible parts..... :	(See appended table 5.7.4)	P
5.7.5	Earthed accessible conductive parts :	No such part	N/A
5.7.6	Requirements when touch current exceeds ES2 limits		N/A
	Protective conductor current (mA)..... :		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
	Air gap (mm)		N/A

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)	P
6.2.3	Classification of potential ignition sources	See below	P
6.2.3.1	Arcing PIS	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS	(See appended table 6.2.3.2)	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.....	No ignition and no such temperature attained within the equipment. (See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
	Combustible materials outside fire enclosure.....	See table 4.1.2	P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method	See clauses 6.4.3 and 6.4.6	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits	No supplementary safeguard is required for 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 tables B.3, B.4)	P
	Special conditions for temperature limited by fuse		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.4	Control of fire spread in PS1 circuits	No supplementary safeguard is required for PS1 circuits	N/A
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards	See below	P
6.4.6	Control of fire spread in PS3 circuits	Compliance detailed as follows: - <u>Printed board</u>: Min. V-1. - <u>Internal wires</u>: comply with VW-1. - <u>Connector</u>: with size of less than 1750mm³. - Foam on internal wires: HF-1 - <u>All other components</u>: at least V-2 except for parts mounted on min. V-1 material or small parts of combustible material (with mass less than 4g) or components complying with relevant IEC standard. - <u>Isolating transformer</u>: complying with G.5.3 - V-0 plastic used for main body (both outer and internal); - V-0 plastic internal barrier used for power board and battery	P
6.4.7	Separation of combustible materials from a PIS	Only small parts of combustible material (with mass less than 4g) on the PCB is not considered as PIS does not require separation from PIS.	P
6.4.7.2	Separation by distance	PIS on power board and mainboard to external plastic fire enclosure is >15mm	P
6.4.7.3	Separation by a fire barrier		P
6.4.8	Fire enclosures and fire barriers		P
6.4.8.2	Fire enclosure and fire barrier material properties	See below	P
6.4.8.2.1	Requirements for a fire barrier	V-0 plastic frame for holding power board and battery used	P
6.4.8.2.2	Requirements for a fire enclosure	V-0 plastic used for main body (both outer and internal)	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.3.2	Fire barrier dimensions	The edges of the fire barriers extend beyond the restricted volume on Figure 39	P
6.4.8.3.3	Top openings and properties		P
	Openings dimensions (mm) :	The openings on top side of external enclosure less than 3.6mm in any direction. No top openings on internal plastic enclosure	P
6.4.8.3.4	Bottom openings and properties		P
	Openings dimensions (mm) :	The openings on plastic frame holding power board are 1mm in width or <3.0mm in any diameter. No bottom openings on internal plastic enclosure	P
	Flammability tests for the bottom of a fire enclosure	The test is not required	N/A
	Instructional Safeguard..... :		N/A
6.4.8.3.5	Side openings and properties		P
	Openings dimensions (mm) :	The openings on side of external enclosure less than 3.6mm in any direction and the side openings are not bottom openings of any PIS.	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..... :	- V-0 plastic enclosure used as fire enclosure no such separation needed	P
6.4.9	Flammability of insulating liquid..... :	No such liquid used	N/A
6.5	Internal and external wiring		P
6.5.1	General requirements	The internal wires are compiled with UL standard, of which the test method and testing condition are equal to IEC/EN 60695-11-21.	P
6.5.2	Requirements for interconnection to building wiring :	See 6.5.1.	P
6.5.3	Internal wiring size (mm ²) for socket-outlets :	No such wire used	N/A
6.6	Safeguards against fire due to the connection to additional equipment		P

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES	P
7.2	Reduction of exposure to hazardous substances	N/A
7.3	Ozone exposure	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
7.4	Use of personal safeguards or personal protective equipment (PPE)		N/A
	Personal safeguards and instructions..... :	No ozone production within the equipment	—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010)..... :		—
7.6	Batteries and their protection circuits		P

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		P
8.4.1	Safeguards	No safeguard is required	N/A
	Instructional Safeguard..... :		N/A
8.4.2	Sharp edges or corners	Edges and corners of the enclosure are rounded	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 part	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
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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		N/A
8.6.1	General	MS1 only	N/A
	Instructional safeguard	Not television set	N/A
8.6.2	Static stability		N/A
8.6.2.2	Static stability test.....		N/A
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm)		—
	Tilt test		N/A
8.6.4	Glass slide test		N/A
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		P
8.8.1	General	One handle used for MS1, no test necessary	N/A
8.8.2	Handle strength test		N/A
	Number of handles		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Force applied (N) :		—
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	No such device	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) :		—
8.10.6	Thermoplastic temperature stability		N/A
8.11	Mounting means for slide-rail mounted equipment (SRME)		N/A
8.11.1	General	Not such equipment	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 5.4.1.4)	P
9.3.2	Test method and compliance		P
9.4	Safeguards against thermal energy sources		P
9.5	Requirements for safeguards		P
9.5.1	Equipment safeguard	Enclosure provided to limit the transfer of thermal energy of internal parts under normal operating conditions and abnormal operating conditions.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
9.5.2	Instructional safeguard	Instructional safeguard is not required.	N/A
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General	No such wireless power transmitters	N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance		N/A

10	RADIATION		P
10.2	Radiation energy source classification		P
10.2.1	General classification		P
	Lasers		—
	Lamps and lamp systems	LED for indicating: Classified as Exempt Group. LED for light show: Exempt Group or risk group 1 which evaluated in separate report and single fault condition around LED circuit considered in this report and the result is LED shut down and worse condition occurred	—
	Image projectors.....	No image projectors	—
	X-Ray	No X-Ray	—
	Personal music player.....	Not 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	RS1 only	P
	Instructional safeguard provided for accessible radiation level needs to exceed	No radiation level exceed the levels in Table 40	N/A
	Risk group marking and location	Such marking is not required	N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures	No such enclosure used	N/A
	UV radiation exposure		N/A
10.4.3	Instructional safeguard.....		N/A
10.5	Safeguards against X-radiation		N/A
10.5.1	Requirements	No X-radiation exists the	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
		equipment	
	Instructional safeguard for skilled persons..... :		—
10.5.3	Maximum radiation (pA/kg) :		—
10.6	Safeguards against acoustic energy sources		N/A
10.6.1	General	Not such an equipment	N/A
10.6.2	Classification		N/A
	Acoustic output $L_{Aeq,T}$, dB(A) :		N/A
	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

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 :	Maximum normal load applied (see appended table B.2.5)	P
	Audio Amplifiers and equipment with audio amplifiers..... :	See Annex E	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.2.3	Supply voltage and tolerances	Rated voltage $\pm 10\%$ considered	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 table B.3, B.4)	P
B.3.2	Covering of ventilation openings	No such openings	N/A
	Instructional safeguard.....	No instruction safeguard is required	N/A
B.3.3	DC mains polarity test	The EUT is not connected to a D.C. mains	N/A
B.3.4	Setting of voltage selector	No voltage selector used	N/A
B.3.5	Maximum load at output terminals	Considered for USB output port	P
B.3.6	Reverse battery polarity	The construction of battery connector makes it impossible to be installed reversely	N/A
B.3.7	Audio amplifier abnormal operating conditions	(See appended table B.3, B.4)	P
B.3.8	Safeguards functional during and after abnormal operating conditions.....	All safeguards remained effective	P
B.4	Simulated single fault conditions		P
B.4.1	General	See below	P
B.4.2	Temperature controlling device	No such device used	N/A
B.4.3	Blocked motor test	No motor used	N/A
B.4.4	Functional insulation	See below for details.	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.3, B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.3, B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards within the EUT	N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.3, B.4)	P
B.4.6	Short circuit or disconnection of passive components	(See appended table B.3, B.4)	P
B.4.7	Continuous operation of components	The EUT is continuous operating type and no such components intended for short time operation or intermittent operation	N/A
B.4.8	Compliance during and after single fault conditions	No change to circuits classified in 5.3	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.4.9	Battery charging and discharging under single fault conditions	(See appended table B.3, B.4)	P
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements	The product is not likely exposed to UV radiation	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		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		P
E.1	Electrical energy source classification for audio signals		N/A
	Maximum non-clipped output power (W)	See clause E.2	—
	Rated load impedance (Ω)		—
	Open-circuit output voltage (V).....		—
	Instructional safeguard.....		—
E.2	Audio amplifier normal operating conditions		P
	Audio signal source type	(See appended table B.2.5)	—
	Audio output power (W)	(See appended table B.2.5)	—
	Audio output voltage (V)	(See appended table B.2.5)	—
	Rated load impedance (Ω)	(See appended table 4.1.2)	—
	Requirements for temperature measurement		P
E.3	Audio amplifier abnormal operating conditions	(See appended table B.3, B.4)	P
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General		P
	Language	English version user manual was provided. (version in other language will be provided when submitted for national approval)	—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1	Letter symbols for quantities and units comply with IEC 60027-1.	P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific	Graphical symbols comply with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010.	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Equipment marking is located on the enclosure 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	See copy of marking plate.	P
F.3.3.1	Equipment with direct connection to mains	The equipment is connected to AC mains supply.	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
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 supply connection	N/A
F.3.4	Voltage setting device	No such device used	N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings	No mains appliance outlet or socket-outlet provided.	N/A
F.3.5.2	Switch position identification marking	No such disconnect switch	N/A
F.3.5.3	Replacement fuse identification and rating markings	The fuse (mounted on power board) is located within the equipment and not replaceable by an ordinary person or an instructed person. However, marking is provided near the fuse on power board.	P
	Instructional safeguards for neutral fuse.....	No such fuse.	N/A
F.3.5.4	Replacement battery identification marking	Complete instructional safeguard provided in the instructions	N/A
F.3.5.5	Neutral conductor terminal		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.6	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification	Class II equipment	P
F.3.6.1	Class I equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Protective bonding conductor terminals		N/A
F.3.6.2	Equipment class marking	Class II equipment, symbol IEC 60417-5172(2003-02) marked on label	P
F.3.6.3	Functional earthing terminal marking	No functional earth	N/A
F.3.7	Equipment IP rating marking	IP68 specified in user manual	P
F.3.8	External power supply output marking	No such terminals	N/A
F.3.9	Durability, legibility and permanence of marking	Marking is considered to legible and easily discernible. See also the following details.	P
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test, 15 sec. for water and 15 sec. for petroleum spirit. After each test, the marking remained legible.	P
F.4	Instructions		P
	a) Information prior to installation and initial use		P
	b) Equipment for use in locations where children not likely to be present		N/A
	c) Instructions for installation and interconnection		P
	d) Equipment intended for use only in restricted access area	No such equipment	N/A
	e) Equipment intended to be fastened in place	No such equipment	N/A
	f) Instructions for audio equipment terminals	ES1 only	N/A
	g) Protective earthing used as a safeguard	Class II equipment	N/A
	h) Protective conductor current exceeding ES2 limits		N/A
	i) Graphic symbols used on equipment	Provided in user manual	P
	j) Permanently connected equipment not provided with all-pole mains switch	Not a permanently connected equipment	N/A
	k) Replaceable components or modules providing safeguard function	No such components or modules used	N/A
	l) Equipment containing insulating liquid	No insulating liquid	N/A
	m) Installation instructions for outdoor equipment	Indoor used	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.5	Instructional safeguards		P
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General	No such switch used	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance		N/A
G.2	Relays		N/A
G.2.1	Requirements	No relay used	N/A
G.2.2	Overload test		N/A
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	No thermal cut-off used	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	No PTC thermistor provided as safeguard within the equipment.	N/A
G.3.4	Overcurrent protection devices	Current fuse complying with the standard IEC 60127 series as overcurrent protection device in power supply board.	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4	No such components	N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions		N/A
G.4	Connectors		P
G.4.1	Spacings		P
G.4.2	Mains connector configuration	(See appended table 4.1.2)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	Other connectors are designed that the plug impossible insert into mains socket-outlet or appliance coupler.	P
G.5	Wound components		P
G.5.1	Wire insulation in wound components	Approved TIW used in transformer	P
G.5.1.2	Protection against mechanical stress	Insulation tube and tape used as mechanical protection	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)		—
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 transformer meet the requirements given in G.5.3.2 and G.5.3.3.	P
	Position	T1	P
	Method of protection	By insulation tape and/or tube	P
G.5.3.2	Insulation	See below	P
	Protection from displacement of windings	Primary windings and secondary windings are separated by insulation tape and/or tube	—
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	Approved TIW used, no FIW used.	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	No motor used.	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
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 wiring windings in T1 insulated as reinforced safeguard in the isolating transformer that has separately complied with Annex J. See table 4.1.2. All secondary wires in ES1 circuit were separated from primary circuit by plastic cover around power board which can not contact primary components, no dimensional or constructional requirement.	P
G.6.2	Enamelled winding wire insulation	Solvent-based enamel winding is not considered basic insulation.	N/A
G.7	Mains supply cords		P
G.7.1	General requirements	(see appended table 4.1.2)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Type	(see appended table 4.1.2)	—
G.7.2	Cross sectional area (mm ² or AWG)	(see appended table 4.1.2)	P
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords	Detachable power cord 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	No such device	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
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		P
G.8.1	General requirements	Approved varistor used	P
G.8.2	Safeguards against fire		P
G.8.2.1	General		P
G.8.2.2	Varistor overload test	The varistor located on power board and separated to enclosure of main body >13mm	N/A
G.8.2.3	Temporary overvoltage test		N/A
G.9	Integrated circuit (IC) current limiters		N/A
G.9.1	Requirements	No IC current limiter provided within the equipment.	N/A
	IC limiter output current (max. 5A).....		—
	Manufacturers' defined drift		—
G.9.2	Test Program		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.9.3	Compliance		N/A
G.10	Resistors		N/A
G.10.1	General	No such resistors	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	Capacitors used in accordance with their rating and approved capacitor used.	P
G.11.2	Conditioning of capacitors and RC units	(see appended table 4.1.2)	P
G.11.3	Rules for selecting capacitors	The selection followed with tables G.9 and G.12.	P
G.12	Optocouplers		P
	Optocouplers comply with IEC 60747-5-5 with specifics	(See appended table 4.1.2)	P
	Type test voltage $V_{ini,a}$:	(See appended table 4.1.2)	—
	Routine test voltage, $V_{ini,b}$:	(See appended table 4.1.2)	—
G.13	Printed boards	See the following details.	P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board or over the outer surface of coated printed boards complied with the minimum clearance and creepage requirements of 5.4.2 and 5.4.3.	P
G.13.3	Coated printed boards	No coated printed board or multilayer board applied for within the equipment.	N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
G.13.5	Insulation between conductors on different surfaces		P
	Distance through insulation..... :	>0.4mm (each source of power board PCB)	P
	Number of insulation layers (pcs)	2	—
G.13.6	Tests on coated printed boards		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 :	No coating on component terminals considered to affect creepage or clearances	N/A
G.15	Pressurized liquid filled components		N/A
G.15.1	Requirements	No such device provided within the equipment.	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
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	Ringing signal	No ringing signal generated within the equipment	N/A
H.3.1.1	Frequency (Hz) :		—
H.3.1.2	Voltage (V) :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	Triple insulated winding used as reinforced safeguard in the isolating transformer that has been evaluated to Annex J. See 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		—
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
	Instructional safeguard.....	No safety interlock used	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
	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.....		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	The mains plug used as disconnect device and mentioned in instruction manual.	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized	No parts remain energized after plug disconnected	N/A
L.4	Single-phase equipment	The plug disconnects both poles simultaneously	P
L.5	Three-phase equipment	Single-phase equipment	N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		P
L.8	Multiple power sources	Single power source	N/A
	Instructional safeguard..... :		N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		P
M.1	General requirements		P
M.2	Safety of batteries and their cells		P
M.2.1	Batteries and their cells comply with relevant IEC standards	Approved battery pack used (see appended table 4.1.2)	P
M.3	Protection circuits for batteries provided within the equipment		P
M.3.1	Requirements		P
M.3.2	Test method		P
	Overcharging of a rechargeable battery	See appended table M.3	P
	Excessive discharging	See appended table M.3	P
	Unintentional charging of a non-rechargeable battery		N/A
	Reverse charging of a rechargeable battery	The construction of battery terminal makes it impossible to be charged reversely	N/A
M.3.3	Compliance	See appended table M.3	P
M.4	Additional safeguards for equipment containing a portable secondary lithium battery		P
M.4.1	General		P
M.4.2	Charging safeguards		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.4.2.1	Requirements		P
M.4.2.2	Compliance	See appended table M.4.2	P
M.4.3	Fire enclosure.....	V-0 Plastic used for battery pack	P
M.4.4	Drop test of equipment containing a secondary lithium battery		P
M.4.4.2	Preparation and procedure for the drop test		P
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%):	Tested and complied	P
M.4.4.4	Check of the charge/discharge function		P
M.4.4.5	Charge / discharge cycle test		P
M.4.4.6	Compliance		P
M.5	Risk of burn due to short-circuit during carrying		N/A
M.5.1	Requirement	Built-in battery used	N/A
M.5.2	Test method and compliance		N/A
M.6	Safeguards against short-circuits		P
M.6.1	External and internal faults		P
M.6.2	Compliance	Internal and external fault are evaluated during battery's approval	P
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration	Not lead acid or NiCd battery.	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	Not such batteries.	N/A
M.8.2	Test method		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.8.2.1	General		N/A
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		P
	Instructional safeguard..... :	Provided in user manual	P
N	ELECTROCHEMICAL POTENTIALS		N/A
	Material(s) used..... :		—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Value of X (mm)..... :	Considered.	—
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECTS		P
P.1	General		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) :	Openings on outer enclosure is less than 3.6mm in any dimension	—
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	No such liquids	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	No such construction	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
P.4.2	Tests		N/A
	Conditioning, T _c (°C)..... :		—
	Duration (weeks) :		—
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources		P
Q.1.1	Requirements		P
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output	Considered for USB output port	P
	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 :	See appended table Q.1	P
	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	No such consideration	N/A
R.2	Test setup	See above	N/A
	Overcurrent protective device for test..... :		—
R.3	Test method	See above	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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)		—
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 enclosure materials of equipment with a 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		N/A
T.5	Steady force test, 250 N	(see appended table T.5)	P
T.6	Enclosure impact test	(see appended table T.6)	P
	Fall test		P
	Swing test		P
T.7	Drop test	(see appended table T.7)	P
T.8	Stress relief test.....	(see appended table T.8)	P
T.9	Glass Impact Test.....	No glass used.	N/A
T.10	Glass fragmentation test		N/A
	Number of particles counted		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)	No such antennas provided within the equipment.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
V.1	Accessible parts of equipment		P
V.1.1	General		P
V.1.2	Surfaces and openings tested with jointed test probes	No access with test probes (e.g. fig. V.1) to any hazardous parts	P
V.1.3	Openings tested with straight unjointed test probes	No access with test probes (e.g. fig. V.1 or fig. V.2) to any hazardous parts	P
V.1.4	Plugs, jacks, connectors tested with blunt probe	No access with test probes (e.g. fig. V.3) to any hazardous parts	P
V.1.5	Slot openings tested with wedge probe	No access with test probes (e.g. fig. V.4) to any hazardous parts	P
V.1.6	Terminals tested with rigid test wire	No access with test probes (e.g. fig. V.5) to any hazardous parts	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		N/A
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		N/A
Y.1	General	Indoor used	N/A
Y.2	Resistance to UV radiation		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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		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
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..... :		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⁾	
264Va.c, 60Hz	Primary circuits	Normal	264 Vrms	--	--	60Hz	ES3
		Abnormal –	--	--	--	--	
		Single fault –	--	--	--	--	
264Va.c, 60Hz	L to N on plug	Normal	--	--	--	--	ES3 (declared)
264Va.c, 60Hz	T1 output after CON2	Normal	24.3	--	SS	DC	ES1
		Single fault: D6 SC	0 [#]	--	SS	--	
		Single fault: C10 SC	0 [#]	--	SS	--	
		Single fault: D5 SC	0 [#]	--	SS	--	
264Va.c, 60Hz	Tweeter speaker output L/R	Max. available output power	1.32Vrms	--	SS	7000Hz	ES1
264Va.c, 60Hz	Subwoofer output L/R	Max. available output power	7.95Vrms	--	SS	200Hz	ES1
264Va.c, 60Hz	Earth pin of measurement circuit to accessible terminals	Normal	--	0.12mA peak	SS	--	ES1
		Single fault – (Unit shut*)	--	0.12mA peak	SS	--	
		Single fault – (Fuse opened*)	--	0.13mA peak	SS	--	
264Va.c, 60Hz	Earth pin of measurement circuit to PR on both end	Normal	--	0.02mA peak	SS	--	ES1
		Single fault – (Unit shut*)	--	0.02mA peak	SS	--	
		Single fault – (Fuse opened*)	--	0.02mA peak	SS	--	
264Va.c, 60Hz	Earth pin of measurement circuit to Plastic enclosure with metal foil	Normal	--	0.01mA peak	SS	--	ES1
		Single fault – (Unit shut*)	--	0.01mA peak	SS	--	
		Single fault – (Fuse opened*)	--	0.01mA peak	SS	--	
Supplementary information:							

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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. SC=Short Circuit, OC=Open Circuit *See appended table B.3, B.4. # Unit shut down			

5.4.1.8	TABLE: Working voltage measurement				P
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	
T1 pin 1- pin 7.8.9	233	368	60	--	
T1 pin 1- pin 11.12	235	440	68.5k	Max. frequency	
T1 pin 3- pin 7.8.9	277	584	65.7k	Max. Vrms & Vpk	
T1 pin 3- pin 11.12	256	552	65.8k	--	
T1 pin 2- pin 7.8.9	195	316	60	--	
T1 pin 2- pin 11.12	198	344	58.8k	--	
T1 pin 6- pin 7.8.9	197	372	59.5k	--	
T1 pin 6- pin 11.12	195	320	60	--	
CY1 pri. – sec.	214	344	60	--	
CY2 pri. – sec.	194	316	60	--	
U2 pin 1-2	212	340	60	--	
U2 pin 1-3	210	336	60	--	
U2 pin 4-2	212	340	60	--	
U2 pin 4-3	210	336	60	--	
Supplementary information:					
Test voltage: 240V; Test frequency: 60Hz					

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics			N/A
Method..... :		ISO 306 / B50		—
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 input connector on PCB (CON1)	ZHEJIANG JINDA ELECTRONICS CO LTD	Tested on sample	125	1.25
AC input connector on PCB (CON1)	JOWLE TECHNOLOGY CO LTD	Tested on sample	125	1.10
AC input connector on PCB (CON1)	ZHEJIANG LIANHE ELECTRONIC CO LTD	Tested on sample	125	1.30
AC input connector on PCB (CON1)	ZHEJIANG HONGXING ELECTRICAL CO LTD	Tested on sample	125	1.30
AC input connector on wire (connected to CON1)	Dongguan JVT Connectors Co Ltd	Tested on sample	125	1.20
AC input connector on wire (connected to CON1)	YUEQING CHANGSHUN ELECTRONICS CO LTD	Tested on sample	125	1.31
AC input connector on wire (connected to CON1)	Dongguan XDYT Precision Electronic Co Ltd	Tested on sample	125	1.40
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)
Live part on appliance inlet to accessible cover (B)	420	240	--	2.3	>3.0*	--	2.4	>3.2*
Live part on appliance inlet to nearby type-C board (R)	420	240	--	4.5	>5.9*	--	4.8	>6.3*
Live part on power board to secondary mainboard (R)	420	240	--	4.5	>5.9*	--	4.8	>6.3*
L to N on AC connector CON1 (B)	420	240	--	2.3	3.8	--	2.4	3.8
Different poles of mains fuse F1 (B)	420	240	--	2.3	3.0		2.4	3.0

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
Primary to secondary under CY1 (R)	420	240	--	4.5	7.0	--	4.8	7.0
Primary to secondary under CY2 (R)	420	240	--	4.5	7.3	--	4.8	7.3
Primary to secondary under U2 (R)	420	240	--	4.5	8.1	--	4.8	8.1
Supplementary information:								
*1.3 times of limit value used. B: Basic insulation; R: reinforced insulation. 1) Only for frequency above 30 kHz 2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied) 1. The secondary wires were well fixed to avoided touch primary circuit. 2. The equipment is intended to be operated under altitude up to 5000m. 3. For construction of transformer, see attachment 1 for details.								

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)	
Enclosure	420	Reinforced	0.4	1)	
Opto-coupler (U2)	420	Reinforced	No required dti	1)	
Insulation tape used for transformer (T1)	584	Reinforced	No required dti	1)	
Bobbin in transformer (T1)	584	Reinforced	0.4	1)	
Supplementary information:					
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)
Insulation tape used for transformer (T1)	52	68.5	0.46	0.1 (two layers)	Reinforced	584
Bobbin in transformer (T1)	17	68.5	0.71	0.75	Reinforced	584
Supplementary information:						
Reinforced insulation for insulation tape: $V_W = E_P \times K_R \times d = 52 \times 0.46 \times 0.1 = 2.39 \text{ kV}$ (exceed $1.2 \times V_{PW} / 1.41 = 497.02 \text{ V}$) Reinforced insulation for Bobbin: $V_W = E_P \times K_R \times d = 17 \times 0.71 \times 0.75 = 9.05 \text{ kV}$ (exceed $2 \times 1.2 \times V_{PW} / 1.41 = 994.04 \text{ V}$);						

IEC 62368-1				
Clause	Requirement + Test		Result - Remark	Verdict
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
Basic/supplementary:				
L to N (Fuse disconnected)		DC	2500 V	No
Reinforced:				
L/N to output terminals		DC	4000 V	No
L/N to plastic enclosure with metal foil		DC	4000 V	No
L/N to metal enclosure (PR on both end)		DC	4000 V	No
L/N to battery terminal		DC	4000 V	No
Transformer T1 primary to secondary pins		DC	4000 V	No
Transformer T1 Core to secondary pins		DC	4000 V	No
One layer of insulation tape of T1		DC	4000 V	No
Supplementary information:				
Core of transformer T1 considered as primary part.				

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	
L to N	264V, 60Hz	Normal	--	8	ES1	
L to N	264V, 60Hz	R1 OC	--	20	ES1	
Supplementary information:						
X-capacitors installed for testing: CX1=0.56μF.						
[X] bleeding resistor rating: R1=R2=R3=R4=2MΩ.						
[] ICX:						
1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit						

5.6.6	TABLE: Resistance of protective conductors and terminations				N/A
Location		Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)
Supplementary information:					

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
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)	
Accessible terminals	Normal	264Va.c, 60Hz	--	0.12mA _{peak}	--	ES1
	Abnormal – Unit shut down*	264Va.c, 60Hz	--	0.12mA _{peak}	--	
	Single fault – Fuse opened*	264Va.c, 60Hz	--	0.13mA _{peak}	--	
Accessible PR on both side	Normal	264Va.c, 60Hz	--	0.02mA _{peak}	--	ES1
	Abnormal – Unit shut down*	264Va.c, 60Hz	--	0.02mA _{peak}	--	
	Single fault – Fuse opened*	264Va.c, 60Hz	--	0.02mA _{peak}	--	
Plastic enclosure with metal foil	Normal	264Va.c, 60Hz	--	0.01mA _{peak}	--	ES1
	Single fault –unit shut down*	264Va.c, 60Hz	--	0.01mA _{peak}	--	
	Single fault – Fuse opened*	264Va.c, 60Hz	--	0.01mA _{peak}	--	
Supplementary information:						
*See appended table B.3, B.4.						

5.7.5	TABLE: Earthed accessible conductive part			N/A
Supply voltage (V).....:	264V, 60Hz			—
Phase(s)	[X] Single Phase; [] Three Phase: [] Delta [] Wye			
Power Distribution System	[X] TN []TT [] IT			
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment	
models)	1		--	
Supplementary Information:				

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:						

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Abbreviation: SC= short circuit, OC= open circuit			

6.2.2	TABLE: Power source circuit classifications					P
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power ¹⁾ (W)	Time (S)	PS class
Power board output after CON2	Load fault: Overload	23.6	14.1	332.9	5 s	PS3
	Source fault: D5 SC	0*	0*	0*	3 s	
	Source fault: C10 SC	0*	0*	0*	3 s	
	Source fault: C10 OC	23.6	14.1	332.9	5 s	
Tweeter speaker output (Left channel)	Load fault: max. available output power	1.32	0.33	0.44	3	PS1
	Source fault: U17 pin 1-3 on mainboard SC	1.23	0.31	0.38	3	
	Source fault: C156 on mainboard SC	0*	0*	0*	3	
Woofer speaker output (Left channel)	Load fault: max. available output power	7.95	1.99	15.8	5	PS2
	Source fault: U19 pin 1-3 on mainboard SC	5.13	1.28	6.58	3	
	Source fault: C213 on mainboard SC	0	0	0	3	
Supplementary information:						
1) Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3. SC=short circuit. * Unit shut down For USB-C output, see appended table Annex Q.1						

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	--	--	--	Yes (Declared)	

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 circuits of power board and mainboard and battery pack		--	--	Yes
Supplementary information:				
Output measurement >15W in normal condition and all other circuit is assumed as PS3, therefore all circuits are resistive PIS and covered by fire enclosure. A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter. If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification. A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.				

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

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:									

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

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements			P
Supply voltage (V)..... :	90Vac/ 50Hz	264Vac/ 60Hz	—	
Ambient temperature during test T_{amb} (°C) :	See below	See below	—	
Maximum measured temperature T of part/at:	T (°C)		Allowed T_{max} (°C)	
Power cord surface near appliance inlet	31.0	26.0	77 [#]	
Power button	30.6	31.2	77 [#]	
Handle part	26.3	23.9	77 [#]	
Top plastic enclosure outside near mainboard	28.2	23.6	77 [#]	
Bottom plastic enclosure outside under power board	30.6	28.1	77 [#]	
Rear plastic enclosure outside near USB terminal and AC inlet (inside the flip cover)	32.0	27.1	77 [#]	
Volume button surface	26.1	25.5	77 [#]	
PCB near type C output connector	33.1	28.1	130-35+25=120	
AC inlet connector near L pin	33.3	28.7	70-35+25=60	
AC input wire from appliance inlet to power board	37.4	39.0	105-35+25=95	
Internal AC connector on power board CON1	42.3	35.6	85-35+25=75	
Varistor MOV body	47.1	44.6	105-35+25=95	
Fuse F1 body	40.7	37.1	For reference	
NTC RT1 body	59.0	63.6	For reference	
Inductor LF1 winding (Magnet winding)	49.6	42.5	130-35+25=120	
Inductor LF1 winding (Triple insulating winding)	48.6	43.0	130-35+25=120	
X-Capacitor CX1 body	45.9	39.8	100-35+25=90	
Inductor LF2 winding 1	49.8	41.2	130-35+25=120	
BD1 body*	53.9	46.0	130-35+25=120	
E-capacitor C2 body	50.1	45.1	105-35+25=95	
MOS Q1 body*	53.1	48.5	130-35+25=120	
Y-capacitor CY1 body	43.6	46.0	125-35+25=115	
Y-capacitor CY2 body	44.0	42.5	125-35+25=115	
Optocoupler U2 body	51.2	46.5	110-35+25=100	
Transformer T1 winding	59.2	61.2	140-10-35+25=120	
Transformer T1 core	53.4	56.6	For reference	

IEC 62368-1							
Clause	Requirement + Test				Result - Remark		Verdict
Inductor LF3 winding	45.5				42.4		130-35+25=120
D6 body*	55.6				58.3		130-35+25=120
Output connector CON2 body	38.9				41.7		85-35+25=75
Lead wire from CON2 to mainboard	37.9				39.4		80-35+25=70
IC U10 body on mainboard*	44.8				45.4		130-35+25=120
IC U16 body on mainboard*	46.1				47.4		130-35+25=120
IC U13 body on mainboard*	49.6				50.4		130-35+25=120
IC U14 body on mainboard*	45.9				47.1		130-35+25=120
IC U7 body on mainboard*	40.2				42.7		130-35+25=120
IC U19 body on mainboard*	49.7				52.0		130-35+25=120
Inductor L36 body on mainboard*	49.8				51.7		130-35+25=120
Connector J1 body on mainboard	39.3				39.1		85-35+25=75
Connector J5 body on mainboard	37.7				38.3		85-35+25=75
Wire to Woofer speaker	39.3				30.8		80-35+25=70
Wire to tweeter speaker	39.9				31.4		80-35+25=70
Battery surface (near battery connector)	33.8				31.5		For reference
Battery surface (near flip cover)	30.7				28.4		For reference
Plastic frame for battery (near flip cover)	32.6				28.7		77 [#]
PCB near battery terminal	37.8				32.3		130-35+25=120
PCB near LED light	35.0				42.3		130-35+25=120
Ambient	25.0				25.0		--
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information:							
[#] TS1 limit of table 38 used. [*] PCB limit used. Maximum operating ambient temperature 35°C. Note: 1. Transformer winding (T1) Limit for Class F: (140-10)=130°C Above heating test condition is as below: Charge and operation mode with internal battery fully discharged, unit operated under BT mode, with 1/8 non-clipped output power with Pink noise signal input and USB load 2A.							

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements		P
Supply voltage (V)..... :	90Vac/ 50Hz	--	—
Ambient temperature during test T_{amb} (°C) :	See below	See below	—
Maximum measured temperature T of part/at:	T (°C)		Allowed T_{max} (°C)
Condition	a	b	
Power cord surface near appliance inlet	29.4	30.6	77 [#]
Power button	35.0	30.8	77 [#]
Handle part	27.9	26.0	77 [#]
Top plastic enclosure outside near mainboard	29.8	28.4	77 [#]
Bottom plastic enclosure outside under power board	28.5	30.1	77 [#]
Rear plastic enclosure outside near USB terminal and AC inlet (inside the flip cover)	30.5	32.1	77 [#]
Volume button surface	28.5	26.6	77 [#]
PCB near type C output connector	31.6	33.4	130-35+25=120
AC inlet connector near L pin	31.4	33.0	70-35+25=60
AC input wire from appliance inlet to power board	56.9	31.1	105-35+25=95
Internal AC connector on power board CON1	61.9	31.8	85-35+25=75
Varistor MOV body	80.0	32.1	105-35+25=95
Fuse F1 body	67.7	31.8	For reference
NTC RT1 body	110.1	32.1	For reference
Inductor LF1 winding (Magnet winding)	89.5	32.6	130-35+25=120
Inductor LF1 winding (Triple insulating winding)	88.2	32.1	130-35+25=120
X-Capacitor CX1 body	79.1	32.0	100-35+25=90
Inductor LF2 winding 1	102.8	32.3	130-35+25=120
BD1 body*	108.1	32.7	130-35+25=120
E-capacitor C2 body	88.8	32.6	105-35+25=95
MOS Q1 body*	101.5	32.7	130-35+25=120
Y-capacitor CY1 body	80.3	33.7	125-35+25=115
Y-capacitor CY2 body	76.4	33.5	125-35+25=115
Optocoupler U2 body	85.1	33.7	110-35+25=100
Transformer T1 winding	100.6	33.8	140-10-35+25=120
Transformer T1 core	98.1	33.5	For reference

IEC 62368-1							
Clause	Requirement + Test				Result - Remark		Verdict
Inductor LF3 winding	89.8				34.7		130-35+25=120
D6 body*	107.9				34.3		130-35+25=120
Output connector CON2 body	66.1				35.5		85-35+25=75
Lead wire from CON2 to mainboard	58.1				35.5		80-35+25=70
IC U10 body on mainboard*	48.5				45.2		130-35+25=120
IC U16 body on mainboard*	52.5				46.1		130-35+25=120
IC U13 body on mainboard*	57.2				49.7		130-35+25=120
IC U14 body on mainboard*	65.2				43.3		130-35+25=120
IC U7 body on mainboard*	52.4				51.3		130-35+25=120
IC U19 body on mainboard*	48.2				51.5		130-35+25=120
Inductor L36 body on mainboard	46.3				51.9		130-35+25=120
Connector J1 body on mainboard	56.3				40.3		85-35+25=75
Connector J5 body on mainboard	48.2				43.3		85-35+25=75
Wire to Woofer speaker	37.9				40.6		80-35+25=70
Wire to tweeter speaker	38.6				41.3		80-35+25=70
Battery surface (near battery connector)	38.3				34.8		For reference
Battery surface (near flip cover)	34.4				34.2		For reference
Plastic frame for battery (near flip cover)	31.3				34.8		77 [#]
PCB near battery terminal	42.8				38.6		130-35+25=120
PCB near LED light	49.8				34.3		130-35+25=120
Ambient	25.0				25.0		--
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information:							
[#] TS1 limit of table 38 used. [*] PCB limit used. Maximum operating ambient temperature 35°C. Note: 1. Transformer winding (T1) Limit for Class F: (140-10)=130°C Condition a: Charge only with internal battery fully discharged and USB output load 12V, 1.5A; Condition b: Discharge mode under BT mode, 1/8 non-clipped output power with Pink noise signal input and USB load 2A.							

IEC 62368-1									
Clause		Requirement + Test				Result - Remark		Verdict	
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	
Operation 1: Charge and operation mode with internal battery fully discharged									
90	50	0.89	--	52.1	--	F1	0.86	Bluetooth mode: 1/8 non-clipped output power with Pink noise signal input. USB-C output load: 5V, 2A. Woofer Speaker(x2): 5.13V, 6.58W Tweeter Speaker(x2): 1.23V, 0.38W Battery charge current: 1.11A	
90	60	0.89	--	52.2	--	F1	0.86		
100	50	0.82	--	51.9	150	F1	0.79		
100	60	0.82	--	52.0	150	F1	0.78		
240	50	0.45	--	51.2	150	F1	0.38		
240	60	0.45	--	51.1	150	F1	0.38		
264	50	0.41	--	51.4	--	F1	0.36		
264	60	0.40	--	51.2	--	F1	0.35		
90	50	0.78	--	42.6	--	F1	0.78	USB-C input mode: 1/8 non-clipped output power with Pink noise signal input. Woofer Speaker(x2): 5.13V, 6.58W Tweeter Speaker(x2): 1.3V, 0.42W Battery charge current: 1.14A	
90	60	0.78	--	42.9	--	F1	0.78		
100	50	0.72	--	42.8	150	F1	0.72		
100	60	0.72	--	42.9	150	F1	0.72		
240	50	0.44	--	42.5	150	F1	0.44		
240	60	0.44	--	42.4	150	F1	0.44		
264	50	0.39	--	42.4	--	F1	0.39		
264	60	0.39	--	42.4	--	F1	0.39		
90	50	0.86	--	52.8	--	F1	0.86	Bluetooth mode under multi-speaker mode: 1/8 non-clipped output power with Pink noise signal input. USB-C output load: 5V, 2A. Woofer Speaker(x2): 5.13V, 6.58W Tweeter Speaker(x2): 1.23V, 0.38W Battery charge current: 1.11A	
90	60	0.86	--	52.9	--	F1	0.86		
100	50	0.79	--	52.6	150	F1	0.79		
100	60	0.79	--	52.7	150	F1	0.79		
240	50	0.38	--	51.8	150	F1	0.38		
240	60	0.38	--	51.7	150	F1	0.38		
264	50	0.36	--	52.3	--	F1	0.36		
264	60	0.36	--	52.1	--	F1	0.36		
Operation 2: Charge only with internal battery fully discharged, Unit turned off									
90	50	2.33	--	138.1	--	F1	2.33	USB output load: 20Vdc, 1.5A Battery charge current: 3.84A	
90	60	2.33	--	138.1	--	F1	2.33	USB output load: 20Vdc, 1.5A Battery charge current: 3.84A	
100	50	2.06	--	137.1	150	F1	2.06	USB output load: 20Vdc, 1.5A Battery charge current: 3.84A	

IEC 62368-1								
Clause		Requirement + Test					Result - Remark	
100	60	2.01	--	136.5	150	F1	2.01	USB output load: 20Vdc, 1.5A Battery charge current: 3.84A
240	50	0.97	--	132.4	150	F1	0.97	USB output load: 20Vdc, 1.5A Battery charge current: 3.84A
240	60	0.98	--	132.6	150	F1	0.98	USB output load: 20Vdc, 1.5A Battery charge current: 3.84A
264	50	0.89	--	132.6	--	F1	0.89	USB output load: 20Vdc, 1.5A Battery charge current: 3.84A
264	60	0.89	--	132.9	--	F1	0.89	USB output load: 20Vdc, 1.5A Battery charge current: 3.84A
Operation 3: Discharge mode: with internal battery fully charged								
24.8*	--	--	--	26.3	--	--	--	Bluetooth mode 1/8 non-clipped output power with Pink noise signal input. All light turned on with maximum brightness. USB output load: 5Vdc, 1A Woofer Speaker(x2): 5.13V, 6.58W Tweeter Speaker(x2): 1.3V, 0.42W Battery discharge current: 1.06A
24.8*	--	--	--	16.1	--	--	--	USB-C input mode: 1/8 non-clipped output power with Pink noise signal input. Woofer Speaker(x2): 5.13V, 6.58W Tweeter Speaker(x2): 1.3V, 0.42W Battery discharge current: 0.65A

IEC 62368-1								
Clause	Requirement + Test						Result - Remark	Verdict
24.4*	--	--	--	25.4	--	--	--	Bluetooth mode under multi-speaker mode: 1/8 non-clipped output power with Pink noise signal input. All light turned on with maximum brightness. USB output load: 5Vdc, 1A Woofer Speaker(x2): 5.13V, 6.58W Tweeter Speaker(x2): 1.23V, 0.38W Battery discharge current: 1.04A
Operation 4: Discharge mode when EUT turned off, battery fully charged								
24.8*	--	--	--	13.6	--	--	--	USB output load 5V, 2A Battery discharge current: 0.55A
Supplementary information:								
* Measured voltage of fully charged battery. When unit turned on and operate under AC mode (operation 1), the specified rating for USB-C is 5V 1A, but when output connected to a load and not set PD, the output changed to 2A, therefore 2A load used.								

B.3, B.4		TABLE: Abnormal operating and fault condition tests					P
Ambient temperature T _{amb} (°C)..... :				See below			—
Power source for EUT: Manufacturer, model/type, outputrating .. :				See below			—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation	
Charging and operation mode with fully discharged battery, USB output load 5V, 2A							
All Speakers	Max attainable output power	264Vac	14mins	F1	0.42→0.56 →0.01	Unit shutdown after about 6mins, no damaged, no hazards. Subwoofer: 7.95V, 15.8W (x2) Tweeter speaker: 1.32V, 0.44W(x2) Battery charge current: 1.11A→0 The maximum temperature measured (°C):	
						Power cord surface near appliance inlet	25.3
						Power button	25.7

IEC 62368-1							
Clause	Requirement + Test					Result - Remark	Verdict
						Bottom plastic enclosure outside under power board	25.1
						Rear plastic enclosure outside near USB terminal and AC inlet (inside the flip cover)	25.7
						Transformer T1 winding	38.4
						Transformer T1 core	35.4
						Battery surface (near battery connector)	27.1
						Ambient	23.3
Woofer speaker	SC	264Vac	10mins	F1	0.42	Unit operated normally except for the shorted speaker, no damage, no hazards. Battery charge current: 1.11A	
Tweeter speaker	SC	264Vac	10mins	F1	0.42	Unit operated normally except for the shorted speaker, no damage, no hazards. Battery charge current: 1.11A	
USB -C output port	SC	264Vac	10mins	F1	0.42→0	Unit shut down immediately, no damage, no hazards, recoverable when fault removed. Battery charge current: 1.11A→0	
USB -C output port	OL	264Vac	10mins	F1	0.42→0.45→0.01	USB output shut down when load over 3.3A, recoverable when fault removed, no hazards. Battery charge current: 1.11A The maximum temperature measured (°C):	
						Power cord surface near appliance inlet	30.8
						Power button	30.4
						Bottom plastic enclosure outside under power board	29.8
						Rear plastic enclosure outside near USB terminal and AC inlet (inside the flip cover)	33.4
						Transformer T1 winding	57.2
						Transformer T1 core	48.4

IEC 62368-1																							
Clause	Requirement + Test				Result - Remark		Verdict																
						Battery surface (near battery connector)	30.9																
						Ambient	23.2																
Transformer output after CON2 on power board	OL	264Vac	1hrs 41mins	F1	0.42→1.53 →0.42	When transformer output load to 6.0A, unit protected cyclic, recoverable when fault removed, no hazards observed. Battery charge current: 1.11A The maximum temperature measured (°C): <table><tr><td>Power cord surface near appliance inlet</td><td>30.6</td></tr><tr><td>Power button</td><td>32.7</td></tr><tr><td>Bottom plastic enclosure outside under power board</td><td>30.0</td></tr><tr><td>Rear plastic enclosure outside near USB terminal and AC inlet (inside the flip cover)</td><td>31.3</td></tr><tr><td>Transformer T1 winding</td><td>130.7</td></tr><tr><td>Transformer T1 core</td><td>113.5</td></tr><tr><td>Battery surface (near battery connector)</td><td>35.6</td></tr><tr><td>Ambient</td><td>24.2</td></tr></table>		Power cord surface near appliance inlet	30.6	Power button	32.7	Bottom plastic enclosure outside under power board	30.0	Rear plastic enclosure outside near USB terminal and AC inlet (inside the flip cover)	31.3	Transformer T1 winding	130.7	Transformer T1 core	113.5	Battery surface (near battery connector)	35.6	Ambient	24.2
Power cord surface near appliance inlet	30.6																						
Power button	32.7																						
Bottom plastic enclosure outside under power board	30.0																						
Rear plastic enclosure outside near USB terminal and AC inlet (inside the flip cover)	31.3																						
Transformer T1 winding	130.7																						
Transformer T1 core	113.5																						
Battery surface (near battery connector)	35.6																						
Ambient	24.2																						
Transformer T1 pin 7.8.9-11.12	SC	264Vac	10mins	F1	0.42→0	Unit shut down immediately, no damage, no hazards, recoverable when fault removed. Battery charge current: 1.11A→0																	
BD1 pin 1-4	SC	264Vac	1s	F1	0.42→0	Unit shut down immediately, fuse opened, no hazards. Battery charge current: 1.11A→0																	
BD1 pin 2-3	SC	264Vac	1s	F1	0.42→0	Unit shut down immediately, fuse opened, no hazards. Battery charge current: 1.11A→0																	
C1	SC	264Vac	1s	F1	0.42→0	Unit shut down immediately, fuse opened, no hazards. Battery charge current: 1.11A→0																	
Q1 pin S-D	SC	264Vac	10mins	F1	0.42→0	Unit shut down immediately, no damage, no hazards, recoverable when fault removed. Battery charge current: 1.11A→0																	

IEC 62368-1						
Clause	Requirement + Test				Result - Remark	Verdict
Q1 pin G-D	SC	264Vac	10mins	F1	0.42	Unit operated normally, no damage, no hazards. Battery charge current: 1.11A
Q1 pin G-S	SC	264Vac	10mins	F1	0.42	Unit operated normally, no damage, no hazards. Battery charge current: 1.11A
R16	SC	264Vac	10mins	F1	0.42	Unit operated normally, no damage, no hazards. Battery charge current: 1.11A
U1 pin 2-5	SC	264Vac	10mins	F1	0.42→0	Unit shut down immediately, no damage, no hazards, recoverable when fault removed. Battery charge current: 1.11A→0
U1 pin 1-5	SC	264Vac	10mins	F1	0.42	Unit operated normally, no damage, no hazards. Battery charge current: 1.11A
U2 pin 1-4	SC	264Vac	10mins	F1	0.42	Unit operated normally, no damage, no hazards. Battery charge current: 1.11A
U2 pin 2-3	SC	264Vac	10mins	F1	0.42→0	Unit shut down immediately, no damage, no hazards, recoverable when fault removed. Battery charge current: 1.11A→0
U2 pin 1	OC	264Vac	10mins	F1	0.42	Unit operated normally, no damage, no hazards. Battery charge current: 1.11A
U2 pin 3	OC	264Vac	10mins	F1	0.42→0	Unit shut down immediately, no damage, no hazards, recoverable when fault removed. Battery charge current: 1.11A→0
D6	SC	264Vac	10mins	F1	0.42	Unit operated normally, no damage, no hazards. Battery charge current: 1.11A
C10	SC	264Vac	10mins	F1	0.42→0	Unit shut down immediately, no damage, no hazards, recoverable when fault removed. Battery charge current: 1.11A→0
CON2 pin 1.2-3.4	SC	264Vac	10mins	F1	0.42→0	Unit shut down immediately, no damage, no hazards, recoverable when fault removed. Battery charge current: 1.11A→0

IEC 62368-1						
Clause	Requirement + Test					Result - Remark
U14 pin 18-33 on mainboard	SC	264Vac	10mins	F1	0.42	Unit operated normally, no damage, no hazards. Battery charge current: 1.11A
U14 pin 13-33 on mainboard	SC	264Vac	10mins	F1	0.42	Unit operated normally, no damage, no hazards. Battery charge current: 1.11A
R166 on mainboard	SC	264Vac	10mins	F1	0.42	Unit operated normally, no damage, no hazards. Battery charge current: 1.11A
MOS Q24 pin 2-6	SC	264Vac	10mins	F1	0.42→0	Unit shut down immediately, no damage, no hazards, recoverable when fault removed. Battery charge current: 1.11A→0
R169 on mainboard	SC	264Vac	10mins	F1	0.42	Unit operated normally, no damage, no hazards. Battery charge current: 1.11A
U12 pin 4-11 on mainboard	SC	264Vac	10mins	F1	0.42	Unit operated normally, no damage, no hazards. Battery charge current: 1.11A
U17 pin 1-3 on mainboard	SC	264Vac	10mins	F1	0.42	Unit operated normally, no damage, no hazards. Battery charge current: 1.11A
U18 pin 1-3 on mainboard	SC	264Vac	10mins	F1	0.42	Unit operated normally, no damage, no hazards. Battery charge current: 1.11A
U7 pin 9-28 on mainboard	SC	264Vac	10mins	F1	0.42	Unit operated normally, no damage, no hazards. Battery charge current: 1.11A
C241 on mainboard	SC	264Vac	10mins	F1	0.42→0	Unit shut down immediately, no damage, no hazards, recoverable when fault removed. Battery charge current: 1.11A→0
R302 on mainboard	SC	264Vac	10mins	F1	0.42→0	Unit shut down immediately, no damage, no hazards, recoverable when fault removed. Battery charge current: 1.11A→0
U4 pin 3-5 on mainboard (V_SYSTEM CONVERTER 5V to LED board)	SC	264Vac	10mins	F1	0.42→0	LED shutdown immediately, No hazard, Unrecoverable. Current to LED board: 0A

IEC 62368-1											
Clause	Requirement + Test				Result - Remark		Verdict				
Q7 pin 2-3 (5V to LED board)	SC	264Vac	10mins	F1	0.42→0	LED shutdown immediately, No hazard, Unrecoverable. Current to LED board: 0A					
R312 on mainboard	SC	264Vac	10mins	F1	0.42→0	EUT shutdown immediately, No damage, No hazard, Recoverable. Battery charge current: 1.11A→0A					
NTC 1 in battery pack PCM board	SC	264Vac	10mins	F1	0.42→0	EUT shutdown immediately, No damage, No hazard, Recoverable. Battery charge current: 1.11A→0A					
NTC 2 in battery pack PCM board	SC	264Vac	10mins	F1	0.42→0	EUT shutdown immediately, No damage, No hazard, Recoverable. Battery charge current: 1.11A→0A					
Overcharge for battery: with internal battery fully charged											
U14 pin 33-12 on mainboard	SC	264Vac	7hrs	F1	0.2	No damage, no hazards. Battery charge current: 0					
R166 on mainboard	SC	264Vac	7hrs	F1	0.2	No damage, no hazards. Battery charge current: 0					
Charge only, Unit turned off: with internal battery fully discharged, USB load 20V, 1.5A (30W)											
U14 pin 33-12 on mainboard	SC	264Vac	10mins	F1	0.91	Unit charge normally, no damage, no hazards. Battery charge current: 3.86A					
R166 pin 1-8 on mainboard	SC	264Vac	10mins	F1	0.91	Unit charge normally, no damage, no hazards. Battery charge current: 3.86A					
Q24 pin 2-6 on mainboard	SC	264Vac	10mins	F1	0.91→0	Unit shut down immediately, no damage, no hazards, recoverable when fault removed. Battery charge current: 3.86A→0					
USB output	SC	264Vac	10mins	F1	0.91→0	Unit shut down immediately, no damage, no hazards, recoverable when fault removed. Battery charge current: 3.86A→0					
USB output	OL	264Vac	1hrs 41mins	F1	0.91→0.95	USB output shut down when load over 1.8A, recoverable when fault removed, no hazards. Battery charge current: 3.86A The maximum temperature measured (°C): <table><tr><td>Power cord surface near appliance inlet</td><td>27.6</td></tr><tr><td>Power button</td><td>33.9</td></tr></table>	Power cord surface near appliance inlet	27.6	Power button	33.9	
Power cord surface near appliance inlet	27.6										
Power button	33.9										

IEC 62368-1							
Clause	Requirement + Test				Result - Remark		Verdict
						Bottom plastic enclosure outside under power board	26.5
						Rear plastic enclosure outside near USB terminal and AC inlet (inside the flip cover)	29.1
						Transformer T1 winding	104.3
						Transformer T1 core	93.7
						Battery surface (near battery connector)	33.2
						Ambient	23.4
Discharge mode: with internal battery fully charged and USB load 5V, 1A							
All Speakers	Max. attainable output power	24.4*	1h 14mins	F1	--	Unit operated normally, no damage, no hazards. Subwoofer: 7.95V, 15.8W (x2) Tweeter speaker: 1.32V, 0.44W (x2) Battery discharge current 1.04A→2.08A The maximum temperature measured (°C):	
						Power cord surface near appliance inlet	29.6
						Power button	31.7
						Bottom plastic enclosure outside under power board	30.2
						Rear plastic enclosure outside near USB terminal and AC inlet (inside the flip cover)	31.2
						Transformer T1 winding	34.3
						Transformer T1 core	36.3
						Battery surface (near battery connector)	33.7
						Ambient	23.9
Woofer speaker	SC	24.4*	10mins	F1	--	Unit operated normally except for the shorted speaker, no hazards observed. Battery discharge current: 1.04A	
Tweeter	SC	24.4*	10mins	F1	--	Unit operated normally except for the	

IEC 62368-1																						
Clause	Requirement + Test				Result - Remark	Verdict																
speaker						shorted speaker, no hazards observed. Battery discharge current: 1.04A																
USB-C output port	OL	24.4*	53mins	F1	--	USB output shut down when load over 1.3A, recoverable when fault removed, no hazards observed. Battery discharge current: 1.04A→1.11A The maximum temperature measured (°C): <table><tr><td>Power cord surface near appliance inlet</td><td>27.5</td></tr><tr><td>Power button</td><td>28.3</td></tr><tr><td>Bottom plastic enclosure outside under power board</td><td>27.1</td></tr><tr><td>Rear plastic enclosure outside near USB terminal and AC inlet (inside the flip cover)</td><td>28.9</td></tr><tr><td>Transformer T1 winding</td><td>30.8</td></tr><tr><td>Transformer T1 core</td><td>29.8</td></tr><tr><td>Battery surface (near battery connector)</td><td>29.7</td></tr><tr><td>Ambient</td><td>23.4</td></tr></table>	Power cord surface near appliance inlet	27.5	Power button	28.3	Bottom plastic enclosure outside under power board	27.1	Rear plastic enclosure outside near USB terminal and AC inlet (inside the flip cover)	28.9	Transformer T1 winding	30.8	Transformer T1 core	29.8	Battery surface (near battery connector)	29.7	Ambient	23.4
Power cord surface near appliance inlet	27.5																					
Power button	28.3																					
Bottom plastic enclosure outside under power board	27.1																					
Rear plastic enclosure outside near USB terminal and AC inlet (inside the flip cover)	28.9																					
Transformer T1 winding	30.8																					
Transformer T1 core	29.8																					
Battery surface (near battery connector)	29.7																					
Ambient	23.4																					
USB-C output port	SC	24.4*	10mins	F1	--	Unit shut down immediately, no damage, no hazards, recoverable when fault removed. Battery discharge current: 1.04A→0.25A																
U7 pin 28-9 on mainboard	SC	24.4*	10mins	F1	--	Unit operated normally except for the shorted speaker, no hazards observed. Battery discharge current: 1.04A																
C241 on mainboard	SC	24.4*	10mins	F1	--	Unit shut down immediately, no damage, no hazards, recoverable when fault removed. Battery discharge current: 1.04A→0A																
Q14 pin 2-3 on mainboard	SC	24.4*	10mins	F1	--	Unit operated normally except for the shorted speaker, no hazards observed. Battery discharge current: 1.04A																
U18 pin 1-6	SC	24.4*	10mins	F1	--	Unit operated normally except for the																

IEC 62368-1						
Clause	Requirement + Test					Result - Remark
on mainboard						shorted speaker, no hazards observed. Battery discharge current: 1.04A
U18 pin 1-5 on mainboard	SC	24.4*	10mins	F1	--	Unit operated normally except for the shorted speaker, no hazards observed. Battery discharge current: 1.04A
U12 pin 4-11 on mainboard	SC	24.4*	10mins	F1	--	Unit operated normally except for the shorted speaker, no hazards observed. Battery discharge current: 1.04A
R150 on mainboard	SC	24.4*	10mins	F1	--	Unit operated normally except for the shorted speaker, no hazards observed. Battery discharge current: 1.04A
Supplementary information:						
Supplementary information: Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4. 1) OL: Overloaded; SC: Short circuit; OC: Open circuit. 2) The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; In addition all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions. 3) The test result showed no Class 1 or 2 energy source become Class 3 level during and after single fault condition. 4) The overloaded condition is applied according to annex G.5.3.3. Transformer winding (T1) Limit for Class F: 200°C-10-(35-Tam)°C, Plastic enclosure: 87-(25-Tam). * Measured fully charged voltage of battery pack.						

M.3	TABLE: Protection circuits for batteries provided within the equipment					P
Is it possible to install the battery in a reverse polarity position?.....:			No		—	
Equipment Specification	Charging					
	Voltage (V)		Current (A)			
	100-240Vac		-- (150W)			
Manufacturer/type	Battery specification					
	Non-rechargeable batteries		Rechargeable batteries			
	Discharging current (A)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)
			Voltage (V)	Current (A)		

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
Guangdong Highpower New Energy Technology Co., Ltd./ FG6CELL21002H	--	--	4.25	4900mA for cell; 4584mA for battery	9.5	--	
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.							
Specified battery temperature (°C)					0-45		
Component No.	Fault condition	Charge/ discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation
--*							
Supplementary information:							
*see appended table B.3&B.4.							

M.4.2	TABLE: Charging safeguards for equipment containing a secondary lithium battery					P
Maximum specified charging voltage (V)			4.25 for cell		—	
Maximum specified charging current (A)			4.9 for cell		—	
Highest specified charging temperature (°C)			45			
Lowest specified charging temperature (°C)			0			
Battery manufacturer/type	Operating and fault condition	Measurement			Observation	
		Charging voltage (V)	Charging current (A)	Temp. (°C)		
Guangdong Highpower New Energy Technology Co., Ltd./ FG6CELL21002H	Normal	24.6 (4.1V for cell)	1.19	Cell: 5 Ambient: 5.1	The charge voltage, current and temperature not exceeded the max. value as specified by manufacturer.	
	Normal	24.6 (4.1V for cell)	3.84	Cell: 12 Ambient: 12.2		
	Normal	24.6 (4.1V for cell)	3.86	Cell: 36.5 Ambient: 23.8		
	Single fault: U14 pin 33-12 SC	24.6 (4.1V for cell)	3.86	Cell: 36.5 Ambient: 23.8		
	Abnormal	--	0	Cell: 0	Unit stopped charge when cell surface temperature decreased to 0.3°C	
	Abnormal	--	0	Cell: 45	Unit stopped charge when cell surface temperature increased to 44.7°C	
Supplementary information:						

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Abbreviation: SC= short circuit			

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)						P
Output Circuit	Condition	U _{oc} (V)	Time (s)	I _{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
Unit power off							
USB output port	Normal	9.08	5	2.8	8	23.9	100
	U12 pin 4-11 on main board SC	0*	5	0*	8	0*	100
	R150 on main board SC	9.08	5	2.8	8	23.9	100
	U13 pin 28-32 on mainboard SC	0*	5	0*	8	0*	100
	Q22 pin 2-3 on mainboard SC	9.08	5	2.8	8	23.9	100
	R159 on main board SC	9.08	5	2.8	8	23.9	100
	Normal	20.3	5	1.7	8	33.8	100
	U12 pin 4-11 on main board SC	0*	5	0*	8	0*	100
	R150 on main board SC	20.3	5	1.7	8	33.8	100
	U13 pin 28-32 on mainboard SC	0*	5	0*	8	0*	100
	Q22 pin 2-3 on mainboard SC	20.3	5	1.7	8	33.8	100
	R159 on main board SC	20.3	5	1.7	8	33.8	100
Unit power ON							
USB output port	Normal	5.06	5	3.3	8	10.8	100
	U12 pin 4-11 on main board SC	0*	5	0*	8	0*	100
	R150 on main board SC	5.06	5	3.3	8	10.8	100
	U13 pin 28-32 on mainboard SC	0*	5	0*	8	0*	100
	Q22 pin 2-3 on mainboard SC	5.06	5	3.3	8	10.8	100
	R159 on main board SC	5.06	5	3.3	8	10.8	100

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

Supplementary Information:

SC=short circuit.

*Unit shut down.

T.2, T.3, T.4, T.5		TABLE: Steady force test					P
Location/Part	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation	
Internal components / parts (T.2)	--	--	--	10	5	All safeguards remain effective and no reduction to the specified value of clearances or creepage distances	
Enclosure (T.5)	Plastic	¹⁾	--	250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Supplementary information:							
¹⁾ See appended table 4.1.2.							

T.6, T.9		TABLE: Impact test				P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation		
Enclosure	Plastic	¹⁾	1300	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.		
Supplementary information:						
¹⁾ See appended table 4.1.2.						

T.7		TABLE: Drop test				P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation		
Whole product	Plastic	¹⁾	1000	Internal ES3, TS3 were not accessible after test. No insulation breakdown.		
Supplementary information:						
¹⁾ See appended table 4.1.2.						

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
T.8	TABLE: Stress relief test				P
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Whole product	Plastic	¹⁾	70	7	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Supplementary information:					
¹⁾ See appended table 4.1.2.					

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:				

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
4.1.2	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹
Mains plug (India type)	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	KH-9965	250V AC, 6A	IS 1293: 2019	BIS CML no.: 4100009461
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-130	6A, 250V	IS 1293	CML No.: 4100086580
Alternative	Interchangeable	Interchangeable	250V AC, 6A	IS 1293: 2019	BIS approval
Power cord	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	IS:694 2INF	2Cx0.75mm ² 1100V	IS 694: 2010	BIS CML no.: 4100007861
Alternative	KENIC ELECTRIC MFG.CO., LTD.	YY	2*0.75mm ² 1100V	IS 694	CML No.: 4100086378
Alternative	Interchangeable	Interchangeable	2Cx0.75mm ² 1100V	IS 694: 2010	BIS approval
Appliance coupler	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	KH-9920	250V AC, 2.5A	DIN EN 60320-1	VDE 40020728
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-22D	2.5A, 250V	EN IEC 60320-1	VDE 40001106
Alternative	Interchangeable	Interchangeable	250V AC, 2.5A	IEC/EN 60320-1	VDE or equivalent approval
Mains plug (Brazil type)	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	KH-9927	250V AC, 10A	ABNT NBR NM 60884-1: 2004	TUV 21.0542
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-67	10A, 250V	IEC 60884-1	TUV 21.0609

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alternative	Interchangeable	Interchangeable	250V AC, 10A	ABNT NBR NM 60884-1: 2004	TUV mark or other equivalent approval
Power cord	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	H03VVH2-F	2x0.75mm ² 300/300V	ICE 60227-5: 2011	TUV 23.0581
Alternative	KENIC ELECTRIC MFG.CO., LTD.	H03VVH2-F	2*0.75mm ²	IEC 60227	TUV 20.1924
Alternative	Interchangeable	Interchangeable	2x0.75mm ² 300/300V	ICE 60227-5: 2011	TUV mark or other equivalent approval
Appliance coupler	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	KH-9920	250V AC, 2.5A	DIN EN 60320-1	VDE 40020728
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-22	2.5A 250V	EN 60320-1	VDE 40023004
Alternative	Interchangeable	Interchangeable	250V AC, 2.5A	IEC/EN 60320-1	VDE or equivalent approval
Mains plug (BS type)	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	KH-9917	250V AC, 10A	BS 1363-1: 2016+A1:2018	1493 (ASTA)
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-328	13A, 250V	BS 1363 / IEC 60884-1	KM 54019
Alternative	Interchangeable	Interchangeable	250V AC, 10A	BS 1363-1: 2016+A1:2018	ASTA or other equivalent approval
Power cord	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	H03VVH2-F	2x0.75mm ² 300/300V	DIN EN 50525-2-11	VDE 40001903

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alternative	KENIC ELECTRIC MFG.CO., LTD.	H03VVH2-F	2x0.75mm ² 300/300V	EN 50525-2-11	VDE 103853
Alternative	Interchangeable	Interchangeable	2x0.75mm ² 300/300V	EN 50525-2-11	equivalent approval
Appliance coupler	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	KH--9920	250Vac, 2.5A	IEC/EN 60320-1	VDE 40020728
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-22	2.5A, 250V	EN 60320-1	VDE 40023004
Alternative	Interchangeable	Interchangeable	250V AC, 2.5A	IEC/EN 60320-1	VDE or equivalent approval
Mains plug (CN type)	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	KH-9954	250V AC, 10A	GB/T 15934-2008	CCC 201601010186 9631
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-51B	6A, 250V	GB 1002	CCC 200701010123 5610
Alternative	Interchangeable	Interchangeable	250V AC, 10A	GB/T 15934-2008	CCC
Power cord	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	60227 IEC 52(RVV)	2x0.75mm ² 300/300V	GB/T 5023.5	CCC 200201010500 6627
Alternative	KENIC ELECTRIC MFG.CO., LTD.	RVVB 300/300V	2x0.75mm ² 300/300V	GB/T5023	CCC 200201010500 9305
Alternative	Interchangeable	Interchangeable	2x0.75mm ² 300/300V	GB/T 5023.5	CCC
Appliance coupler	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	KH-9920	250V AC, 2.5A	GB/T 15934-2008	CCC 201601010186 9631

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-22D	2.5A, 250V	GB/T 17465.1-2022 GB/T 17465.6-2022	CCC 200201020400 9343
Alternative	Interchangeable	Interchangeable	250V AC, 2.5A	GB/T 15934-2008	CCC
Mains plug (KR type)	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	KH-9903	250V AC, 2.5A	KC60799	KC SU01028-21003
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-80	2.5A, 250V	KS C 8305&K60884-1	SU04012-2001D
Alternative	Interchangeable	Interchangeable	250V AC, 2.5A	KC60799	KC
Power cord	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	H03VVH2-F	2x0.75mm ² 300/300V	K60227-5	KC SU01028-4002A
Alternative	KENIC ELECTRIC MFG.CO., LTD.	H03VVH2-F	2x0.75mm ² 300/300V	K60227-5	SU01008-4001
Alternative	Interchangeable	Interchangeable	2x0.75mm ² 300/300V	K60227-5	KC or equivalent approval
Appliance coupler	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	KH-9920	250V AC, 2.5A	KC 60320-1	KC SU01028-21003
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-22	2.5A, 250V	KC-60320-1	SU04012-2003A
Alternative	Interchangeable	Interchangeable	250V AC, 2.5A	KC 60320-1	KC or equivalent approval
Mains plug (JP type)	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	P-2	125V AC, 7A	Appendix 4 section 1. section 6 and Appendix 10 chapter 5	JET2195-43001-1003

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-16	7A, 125V	JIS C 8303	JET1847-43001-1001
Alternative	Interchangeable	Interchangeable	125V AC, 7A	Appendix 4 section 1. section 6 and Appendix 10 chapter 5	JET or equivalent approval
Power cord	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	VCTFK	2x0.75mm ² 300/300V	Appendix 1 section 1,(1),(6) and (9)	JET2195-12009-1003
Alternative	KENIC ELECTRIC MFG.CO., LTD.	VCTFK	2x0.75mm ² 300/300V	JIS C 3306	JET1847-12009-1003
Alternative	Interchangeable	Interchangeable	2x0.75mm ² 300/300V	Appendix 1 section 1,(1),(6) and (9)	JET or equivalent approval
Appliance coupler	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	KH-9920A	250V AC, 2.5A	Appendix 4 section 1. section 6 and Appendix 10 chapter 5	PSE 19031506
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-18C	7A, 125V	JIS C 8303&CNS IEC 60320-1	JET1847-43006-1001
Alternative	Interchangeable	Interchangeable	250V AC, 7A	Appendix 4 section 1. section 6 and Appendix 10 chapter 5	JET or equivalent approval
Mains plug (AU type)	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	KH-9908	250V AC, 7.5A	AS/NZS 3112, AS/NZS 3100	SAA-241711-EA
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-12C	10A, 250V	AS/NZS 3112	NSW18070
Alternative	Interchangeable	Interchangeable	250V AC, 7.5A	AS/NZS 3112, AS/NZS 3100	SAA or equivalent approval

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Power cord	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	H03VVH2-F	2x0.75mm ² 300/300V	AS/NZS 3191	NSW18304
Alternative	KENIC ELECTRIC MFG.CO., LTD.	H03VVH2-F	2x0.75mm ² 300/300V	AS/NZS 4417	NSW15075
Alternative	Interchangeable	Interchangeable	2x0.75mm ² 300/300V	AS/NZS 3191	SAA or equivalent approval
Appliance coupler	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	KH-9920	250V AC, 2.5A	AS/NZS 60320.1	SAA-241751-EA
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-22	2.5A, 125V	AS/NZS 60320.1	NSW23544
Alternative	Interchangeable	Interchangeable	250V AC, 2.5A	AS/NZS 60320.1	SAA or equivalent approval
Mains plug (Thailand type)	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	KH-9962	250V AC, 16A	TIS 166	TIS 27589-309/166
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-96	16A, 250V	IEC 60884-1	DEKRA CB NL-65128 Report No. 4363381.50
Alternative	Interchangeable	Interchangeable	250V AC, 16A	TIS 166	TIS or equivalent approval
Power cord	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	H03VVH2-F	2x0.75mm ² 300/300V	TIS 11	TIS 26758-69/11
Alternative	KENIC ELECTRIC MFG.CO., LTD.	H03VVH2-F	2x0.75mm ² 300/300V	EN 50525-2-11	VDE 103853
Alternative	Interchangeable	Interchangeable	2x0.75mm ² 300/300V	TIS 11	TIS or equivalent approval

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Appliance coupler	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	KH-9920	250V AC, 2.5A	DIN EN 60320-1	VDE 40020728
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-22	2.5A, 250V	EN 60320-1	VDE 40023004
Alternative	Interchangeable	Interchangeable	250V AC, 2.5A	IEC/EN 60320-1	VDE or equivalent approval
Mains plug (US type)	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	KH-9921	125V AC, 10A	UL 817 CSA C22.2 No. 21	UL E254267
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-01	13A, 125V	UL 817 CSA C22.2 No. 21	UL E155176
Alternative	Interchangeable	Interchangeable	125V AC, 10A	UL 817 CSA C22.2 No. 21	UL or equivalent approval
Power cord	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	NISPT-2	2x18AWG	UL 62 CSA C22.2 No. 49	UL E254458
Alternative	KENIC ELECTRIC MFG.CO., LTD.	NISPT-2	2x18AWG	UL 62 CSA C22.2 No. 49	UL E167861
Alternative	Interchangeable	Interchangeable	2x18AWG	UL 62 CSA C22.2 No. 49	UL or equivalent approval
Appliance coupler	GUANGDONG KAIHUA ELECTRIC APPLIANCE CO LTD	KH-9925	125V AC, 2.5A	UL 60320-1 CSA C22.2 No. 60320-1	UL E254267
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-05D	7A, 125V	UL 60320-1 CSA C22.2 No. 60320-1	UL E155176

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alternative	Interchangeable	Interchangeable	125V AC, 2.5A	UL 60320-1 CSA C22.2 No. 60320-1	UL or equivalent approval
Mains plug (EU type)	Guangdong KaiHua Electric Appliance Co., Ltd	KH-9903B	250V AC, 2.5A	DIN VDE 0620 EN 50075	VDE 40024149
Alternative	KENIC ELECTRIC MFG.CO., LTD	KE-21	2.5A, 250V	EN 50075	VDE 097182
Alternative	Interchangeable	Interchangeable	250V AC, 2.5A	DIN VDE 0620 EN 50075	VDE or equivalent approval
Power cord	Guangdong KaiHua Electric Appliance Co., Ltd	H03VVH2-F	2x0.75mm ² 300/300V	DIN EN 50525-2-11	VDE 40001903
Alternative	KENIC ELECTRIC MFG.CO., LTD	H03VVH2-F	2x0.75mm ² 300/300V	EN 50525-2-11	VDE 103853
Alternative	Interchangeable	Interchangeable	2x0.75mm ² 300/300V	DIN EN 50525-2-11	VDE or equivalent approval
Appliance coupler	Guangdong KaiHua Electric Appliance Co., Ltd	KH-9920	250V AC, 2.5A	DIN EN 60320-1	VDE 40020728
Alternative	KENIC ELECTRIC MFG.CO., LTD	KE-22	2.5A, 250V	EN 60320-1	VDE 40023004
Alternative	Interchangeable	Interchangeable	250V AC, 2.5A	DIN EN 60320-1	VDE or equivalent approval
Mains plug (Indonesia type)	Guangdong KaiHua Electric Appliance Co., Ltd	KH-9903C	250V AC, 2.5A	SNI IEC 60884-1:2014	SNI PCS 01132.01
Alternative	KENIC ELECTRIC MFG.CO., LTD.	KE-20	2.5A, 250V	SNI IEC 60884-1:2014	PCS 01206.01

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alternative	Interchangeable	Interchangeable	250V AC, 2.5A	SNI IEC 60884-1:2014	SNI or equivalent approval
Power cord	Guangdong KaiHua Electric Appliance Co., Ltd	H03VVH2-F	2x0.75mm ² 300/300V	SNI IEC 04-6629.5.2006	SNI PCS 01132.02
Alternative	KENIC ELECTRIC MFG.CO., LTD.	H03VVH2-F	2x0.75mm ² 300/300V	SNI IEC 04-6629.5.2006	PCS0 1206.02
Alternative	Interchangeable	Interchangeable	2x0.75mm ² 300/300V	SNI IEC 04-6629.5.2006	SNI or equivalent approval
Appliance coupler	Guangdong KaiHua Electric Appliance Co., Ltd	KH-9920	250V AC, 2.5A	DIN EN 60320-1	VDE 40020728
Alternative	KENIC ELECTRIC MFG.CO., LTD	KE-22	2.5A, 250V	EN 60320-1	VDE 40023004
Alternative	Interchangeable	Interchangeable	250V AC, 2.5A	IEC/EN 60320-1	VDE or equivalent approval
Mains plug (Taiwan type)	Guangdong KaiHua Electric Appliance Co., Ltd	KH-9941	125V AC, 7A	CNS 60799 CNS 15663 CNS 690 IEC 60320-1	CNS CI3110694535 69
Alternative	KENIC ELECTRIC MFG.CO., LTD	KE-58	2.5A 125V	CNS 60799 CNS 15663 CNS 690 IEC 60320-1	CI3120694703 07 號 00
Alternative	Interchangeable	Interchangeable	125V AC, 7A	CNS 60799 CNS 15663 CNS 690 IEC 60320-1	CNS or equivalent approval
Power cord	Guangdong KaiHua Electric Appliance Co., Ltd	VCTFK	2x0.75mm ²	CNS 3199 CNS 15663	CNS C1311069453 456

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alternative	KENIC ELECTRIC MFG.CO., LTD	VCTFK	2x0.75mm ²	CNS 3199 CNS 15663	CI3190694702 69 號 99
Alternative	Interchangeable	Interchangeable	2x0.75mm ²	CNS 3199 CNS 15663	CNS or equivalent approval
Appliance coupler	Guangdong KaiHua Electric Appliance Co., Ltd	KH-9943	125V AC, 7A	CNS 60799 CNS 15663 CNS 690 IEC 60320-1	CNS CI3110694535 69
Alternative	KENIC ELECTRIC MFG.CO., LTD	KE-18C	2.5A, 125V	CNS 60799 CNS 15663 CNS 690 IEC 60320-1	CI3120694703 07 號 00
Alternative	Interchangeable	Interchangeable	125V AC, 2.5A	CNS 60799 CNS 15663 CNS 690 IEC 60320-1	CNS or equivalent approval
For main unit					
Outer plastic enclosure	DONGGUAN HONOUR E P LTD	H2216RC(H)	V-0, 80°C, min. thickness 3.0mm	UL 94	UL E341783
Alternative	DONGGUAN HONOUR E P LTD	H1214FRC(H)	V-0, 60°C, min. thickness 3.0mm	UL 94	UL E341783
Plastic material for handle	GUANGDONG HTASO NEW MATERIALS TECHNOLOGY CO., LTD	T305F00 CR(hh)	V-0, 80°C, min. thickness 3.0mm	UL 94	UL E321019
Alternative	GUANGDONG HTASO NEW MATERIALS TECHNOLOGY CO., LTD	T315F00 CR(hh)	V-0, 80°C, min. thickness 3.0mm	UL 94	UL E321019
Rubber material outside of handle	PUTEMEI Rubber & Plastic Raw Material (Dong Guan) Co., LTD	FRXXA	V-0, 50°C, min. thickness 1.6mm	UL 94	UL E354547

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Internal plastic enclosure including battery compartment	DONGGUAN HONOUR E P LTD	H2216RC(H)	V-0, 80°C, min. thickness 2.5mm	UL 94	UL E341783
Alternative	DONGGUAN HONOUR E P LTD	H1214FRC(H)	V-0, 60°C, min. thickness 2.5mm	UL 94	UL E341783
Plastic material for holding AC inlet	DONGGUAN HONOUR E P LTD	H2216RC(H)	V-0, 80°C, min. thickness 1.7mm	UL 94	UL E341783
Alternative	DONGGUAN HONOUR E P LTD	H1214FRC(H)	V-0, 60°C, min. thickness 1.7mm	UL 94	UL E341783
Rubber material for PR on both end	DONGGUAN XIONGTENG ELECTRONIC S TECHNOLOGY CO., LTD.	IIR	HB	UL 94	SGS test report: GZMR2504012 01301
Rubber material for PR inside the product on rear side	DONGGUAN XIONGTENG ELECTRONIC S TECHNOLOGY CO., LTD.	IIR	HB	UL 94	SGS test report: GZMR2504012 01301
AC inlet	LECI Electronics Co., Ltd	DB-8-16AVS1B	250Vac, 2.5A	IEC/EN 60320-1 ANSI/UL 60320-1 CAN/CSA-C22.2 No. 60320-1	VDE 40032028 UL E302229
All PCB	MODERN TIME ELECTRONIC TECHNOLOGY (HZ) CO LTD	HT-M, HT-D	V-0, 130°C	UL 796	UL E217290
Alternative	Jiangxi Union Gain Electronics Technology Co., Ltd.	ML1	V-0, 130°C	UL 796	UL E464601
Alternative	Interchangeable	Interchangeable	V-0, 130°C	UL 796	UL

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Foam on internal wires	DONG GUAN YUNDY FOAM CO LTD	YU356A	HF-1	UL 94	UL E336036
Alternative	Interchangeable	Interchangeable	HF-1	UL 94	UL
Internal primary wires from inlet to power board	KAI TAT INDUSTRIES CO	10368	300V, 105°C, VW-1, 20AWG	UL 758	UL E309338
Alternative	LTK Electric Wire (Huizhou) Ltd	10368	300V, 105°C, VW-1, 20AWG	UL 758	UL E148000
Internal secondary wires from power board to mainboard	LTK Electric Wire (Huizhou) Ltd	10368	300V, 105°C, VW-1, 20AWG	UL 758	UL E148000
Alternative	KAI TAT INDUSTRIES CO	10368	300V, 105°C, VW-1, 20AWG	UL 758	UL E309338
Other secondary wires	LTK ELECTRIC WIRE (HUIZHOU) LTD	10368	24AWG or 22AWG VW-1, 105°C, 300V	UL 758	UL E148000
Alternative	SHENZHEN ZH ONGDA WIRE CO., LTD	10368	24AWG or 22AWG VW-1, 105°C, 300V	UL 758	UL E309338
Other secondary wires-FFC	GUANGDONG LEARY NEW MATERIAL TECHNOLOGY CO., LTD	20624	VW-1, 80°C, 60V	UL 758	UL E488937
Alternative	Shenzhen JTK wire&cable Co., Ltd	20861	VW-1, 80°C, 60V	UL 758	UL E359216
Alternative	Guang dong TATSU Electronic Technology Co., Ltd	20624	VW-1, 80°C, 60V	UL 758	UL E308092
Heat-shrinkable tube on internal primary wires	PENGYUAN ELECTRONICS MATERIAL CO LTD	RPF(600)	600V, 125°C, VW-1	UL 224	UL E515092

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alternative	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR	600V, 125°C, VW-1	UL 224	UL E203950
Alternative	Dongguan Quantai Industrial Co., Ltd	QT-1	600V, 125°C, VW-1	UL 224	UL E227336
Battery pack	Guangdong Highpower New Energy Technology Co., Ltd.	FG6CELL21002H	21.6V, 4584mAh, 99.02Wh	IEC 62133-2 UL 2054	DEKRA CB cert.: NL-113551 CB report: 4930075.50 UL MH46055
LED for light show	Zhongshan MLS Electronic Co. Ltd	S5050SRGBXX	5VDC, 40mA, exempt group for red and green; Risk group 1 for blue.	IEC 62471	Test report from WALTEK: WTF22F07134 853X2N
On power board					
AC Connector (CON1)	ZHEJIANG JINDA ELECTRONICS CO LTD	3.96T-01-3A	V-0, 250Vac, min. 85°C	UL 1977	UL E237523
(Alternative)	JOWLE TECHNOLOGY CO LTD	A3963WV2-3P-D	V-0, 250Vac, min. 85°C	UL 1977	UL E144544
(Alternative)	ZHEJIANG LIANHE ELECTRONIC CO LTD	VH f/b-3A	V-0, 250Vac, min. 85°C	UL 1977	UL E364711
(Alternative)	ZHEJIANG HONGXING ELECTRICAL CO LTD	HX39601-3A	V-0, 250Vac, min. 85°C	UL 1977	UL E228500
Connector on wire side to above CON1	Dongguan JVT Connectors Co Ltd	JVT1121H	V-0, 250Vac, min. 85°C	UL 1977	UL E364171
(Alternative)	Dongguan XDYT Precision Electronic Co Ltd	KY3961HS03	V-0, 250Vac, min. 85°C	UL 1977	UL E511914

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	YUEQING CHANGSHUN ELECTRONICS CO LTD	CS39602-3Y	V-0, 250Vac, min. 85°C	UL 1977	UL E238126
Fuse (F1)	Honghu Bluelight Electronic Co., Ltd.	6ET	T5AL, min. 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40034107 UL E324232
(Alternative)	Dongguan Better Electronics Technology Co., Ltd.	932	T5AL, min. 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40033369 UL E300003
(Alternative)	Conquer Electronics Co., Ltd.	MST	T5AL, min. 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40017118 UL E82636
(Alternative)	SHENZHEN LANSON ELECTRONICS CO LTD	SMT	T5AL, min. 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	E221465 VDE 40013102
(Alternative)	SUZHOU WALTER ELECTRONIC CO LTD	2010	T5AL, min. 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	E56092 VDE 40018781
Varistor (MOV)	SHANTOU HIGH-NEW TECHNOLOGY DE VELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	10D681K	Max. continuous voltage 420Vac, 125°C, coating V-0 (Tested by UL or VDE for 6KV/3KA Combination pulse)	IEC/EN 61051-1, IEC 61051-2, UL 1449	VDE 40023049 UL E330837
(Alternative)	BESTBRIGHT ELECTRONICS CO LTD	681KD10	Max. continuous voltage 420Vac, min. 105°C, coating V-0 (Tested by UL or VDE for 6KV/3KA Combination pulse)	IEC/EN 61051-1, IEC/EN 61051- 2+A1, IEC/EN 61051-2-2, UL 1449	VDE 40027827 UL E327997

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	Thinking Electronic Industrial Co Ltd	TVR10681-U	Max. continuous voltage 420Vac, 125°C, coating V-0 (Tested by UL or VDE for 6KV/3KA Combination pulse)	IEC/EN 61051-1, IEC/EN 61051-2+A1, IEC/EN 61051-2-2, UL 1449	VDE 40021243 UL E314979
(Alternative)	HUIZHOU SONGLONGXI NDIAN ELECTRONICS TECHNOLOGY CO., LTD	10D681KH	Max. continuous voltage 420Vac, 125°C, (tested by UL for min. 6.0KV/3.0KA combination pulse), coating V-0	IEC/EN 61051-1, IEC/EN 61051-2+A1, IEC/EN 61051-2-2, UL 1449	UL E359158 VDE 40040037
X-Cap (CX1)	DONGGUAN WEIQING ELECTRONIC CO LTD	MPX	Rated 560nF±10%, min. 310Vac, min. 100°C, X2 type	IEC/EN/UL 60384-14	VDE 40040406 UL E466405
(Alternative)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	MPX	Rated 560nF±10%, min. 310Vac, min. 100°C, X2 type	IEC/EN/UL 60384-14	VDE 40034679 UL E208107
(Alternative)	Dongguan Easy-Gather Electronics Co., Ltd.	MKP-X2	Rated 560nF±10%, min. 310Vac, min. 100°C, X2 type	IEC/EN/UL 60384-14	VDE 40022258 UL E252221
(Alternative)	GUANGDONG SURONG CAPACITORS CO LTD	MPX/MKP	Rated 560nF±10%, min. 310Vac, min. 100°C, X2 type	IEC/EN/UL 60384-14	VDE 40008924 UL E314875
Y-capacitor (CY1, CY2)	Dongguan Weiqing electronic CO LTD	WD	Max. 470pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40050021 UL E466405
(Alternative)	Walsin Technology Corp.	AH Series	Max. 470pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40001804 UL E146544
(Alternative)	SUCCESS ELECTRONICS CO LTD	SE	Max. 470pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40020001 UL E114280

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	CD	Max. 470pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40025754 UL E208107
(Alternative)	GUANGDONG SOUTH HONGMING ELECTRONIC SCIENCE & TECHNOLOGY CO LTD	F	Max. 470pF, min. 250Vac, 125°C, Y2 type	IEC/EN/UL 60384-14	VDE 40036393, 40036246 UL E154899
(Alternative)	DONGGUAN EASY-GATHER ELECTRONIC CO LTD	DCF	Max. 470pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	VDE 40022942 UL E252221
Opto-coupler (U2)	Lite-On Technology Corporation	LTV-1009	External Cr.&Cl.≥8.0mm, Dti.≥0.4mm, 115°C, Vini,a=Vini,b≥ 5000V	IEC/EN 60747- 5-5, UL 1577	VDE 138213 UL E113898
(Alternative)	CRM ICBG (Wuxi) Co., Ltd.	HK1019	External Cr.&Cl.≥8.1mm, Dti.≥0.4mm, 110°C, Vini,a=Vini,b≥ 5000V	IEC/EN 60747- 5-5, UL 1577	VDE 40042139 UL E465130
(Alternative)	Everlight Electronics Co., Ltd.	EL1019 V (For VDE) EL1019 (For UL)	External Cr.&Cl.≥8.1mm, Dti.≥0.4mm, 110°C, Vini,a=Vini,b≥ 5000V	IEC/EN 60747- 5-5, UL 1577	VDE 40028391 UL E214129
(Alternative)	COSMO Electronics Corporation (For VDE) COSMO ELECTRONICS CORP (For UL)	KT1019	External Cr.&Cl.≥8.0mm, Dti.≥0.4mm, 115°C, Vini,a=Vini,b≥ 5000V	IEC/EN 60747- 5-5, UL 1577	VDE 40031267 UL E169586

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	FUJIAN LIGHTNING OPTOELECTRONIC CO., LTD	TD1019 (For UL), TD1019(Z)-GV (For VDE)	External Cr.&Cl≥8.0mm,Dti.≥0.4mm, 110°C, Vini,a=Vini,b≥5000V	IEC/EN 60747-5-5, UL 1577	VDE 40048885 UL E501654
Thermistor (RT1)	NANJING SHIHENG ELECTRONICS	MF72-2.5D13 (For TUV) MF72 2.5D13 (For UL)	Min. 22Ω at 25°C	EN 60539-1 UL 1434	TUV mark: R 50245892 UL E241319
(Alternative)	THINKING ELECTRONIC INDUSTRIAL CO LTD	SCK-224	Min. 22Ω at 25°C	UL 1434	UL E138827
(Alternative)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	2.5D-15X	Min. 22Ω at 25°C	UL 1434	UL E474052
PCB	Interchangeable	Interchangeable	V-0, min. 130°C	UL 796	UL or equivalent approval
Electrolytic Capacitor (C1, C2)	Interchangeable	Interchangeable	Min. 400V, max. 120μF, min. 105°C	IEC/EN/UL 62368-1	Test with appliance
MOSFET (Q1)	Interchangeable	Interchangeable	Min. 15A, 650V	IEC/EN/UL 62368-1	Test with appliance
Rectifier bridge (BD1)	Interchangeable	Interchangeable	Min. 800V, 15A	IEC/EN/UL 62368-1	Test with appliance
Choke (LF1)	Group Intellect Power Technology Ltd.	GHIT33V5.5C-5V3C-LF1	Min. 600uH	IEC/EN/UL 62368-1	Test with appliance
- TIW	DAH JIN TECHNOLOGY CO LTD	TLW	130°C	UL 2353	UL E236542
Alternative	TEAMWORK INTERNATIONAL CORPORATION	TIWW-B	130°C	UL 2353	UL E321186

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alternative	Furukawa Electric Co., Ltd.	TEX	130°C	UL 2353	UL E230451
Alternative	Interchangeable	Interchangeable	130°C	UL 2353	UL or equivalent approval
- Magnet wire	DONG GUAN YIDA INDUSTRIAL CO LTD	xUEW/155	155°C	UL 1446	UL E344055
Alternative	SHANTOU SHENGANG ELECTRICAL INDUSTRIAL CO LTD	xUEW/155	155°C	UL 1446	UL E239508
Alternative	Interchangeable	Interchangeable	155°C	UL 1446	UL or equivalent approval
Choke (LF2)	Group Intellect Power Technology Ltd.	SMC1515M-1	Min.10mH	IEC/EN/UL 62368-1	Test with appliance
- Bobbin	Chang Chun Plastics Co Ltd	T375J	V-0, 150°C	UL 94	UL E59481
Alternative	Sumitomo Backlite Co Ltd	PM9820	V-0, 150°C	UL 94	UL E41429
Transformer (T1)	Group Intellect Power Technology Ltd.	GHIT24.5V-7.7C-T1	CLASS F	IEC/EN/UL 62368-1	Test with appliance
-Triple insulation wire	FURUKAWA ELECTRIC CO LTD	TEX-E	155°C	IEC/EN 62368-1, UL 2353	VDE 006735 UL E206440
-Bobbin	Sumitomo Bakelite Co Ltd	PM-9820	Phenolic, rate V-0, 150°C, Min. thickness 0.7mm	UL 94, UL 746C	UL E41429
(Alternative)	Chang Chun Plastics Co., Ltd	T375HF	Phenolic, rate V-0, 150°C, Min. thickness 0.7mm	UL 94, UL 746C	UL E59481
-Magnet wire	Interchangeable	Interchangeable	155°C	UL 1446	UL
-Tube	Great Holding Industrial Co Ltd	TFT, TFS	200°C, Min. 300V, VW-1	UL 224	UL E156256
-Varnish	ELANTAS PDG, Inc.	468-2 (d)	155°C	UL 1446	UL E75225

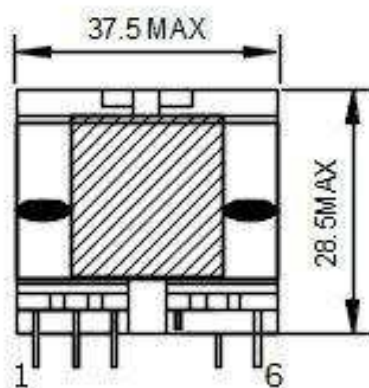
IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
-Insulation tape	P LEO & CO LTD	1P801, 1P802, 1P133 (f)	155°C	UL 510A	UL E126174
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. The licenses are available upon requested.					

G.5.3	TABLE: transformer							P
Loc.	Tested insulation	Working voltage peak / V (5.4.1.8)	Working voltage rms / V (5.4.1.8)	Required electric strength (5.4.9)	Required clearance / mm (5.4.2.2)	Required creepage distance / mm (5.4.3)	Required distance thr. insul. (5.4.4.6)	
Primary winding to secondary winding	RI	584	277	4000Vdc	4.5	5.6	0.4mm	
Core to secondary winding	RI	584	277	4000Vdc	4.5	5.6	0.4mm	
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers	
Primary winding to secondary winding	RI			4000Vdc	10.6	11.0	TIW used for secondary winding, min. 2 insulation tape used.	
Core to secondary winding	RI			4000Vdc	10.3	10.3	TIW used for secondary winding, min. 2 insulation tape used.	
Note(s): 1. Concentric windings on single bobbin. 2. Core of transformer consider as primary parts. 3. Min. two layers of insulation tape used between primary winding and secondary winding, TIW used as secondary winding. 4. Two layers insulation tape used on secodnary bottom side of core.								

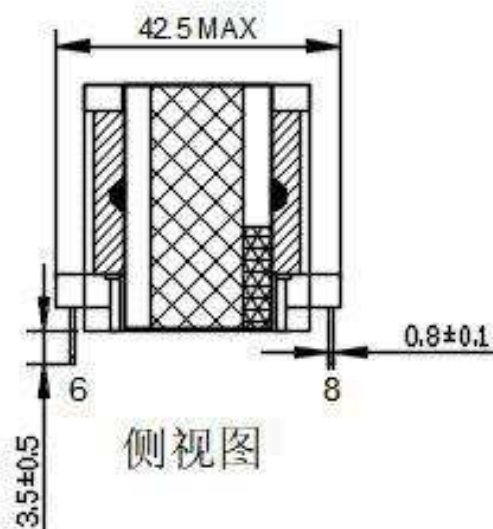
G.5.3

TABLE: transformer

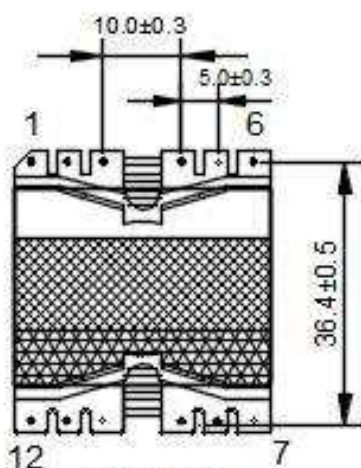
--



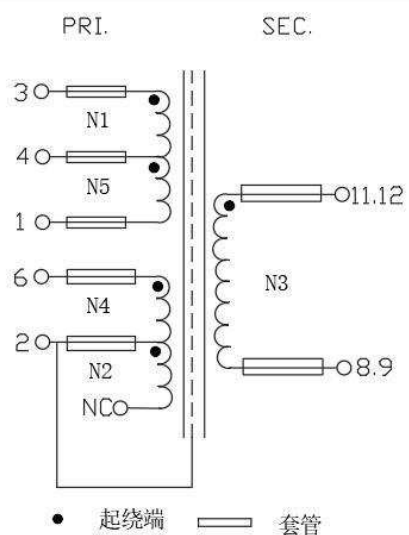
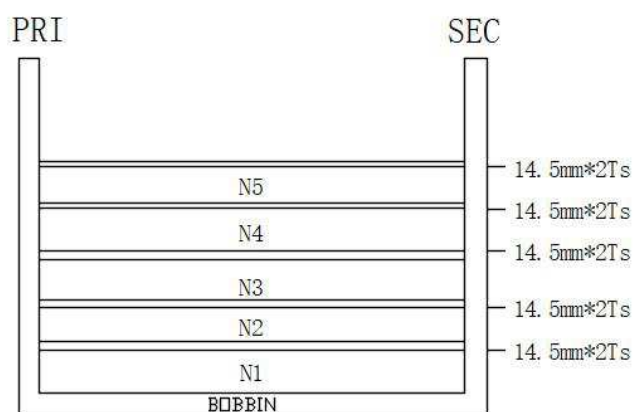
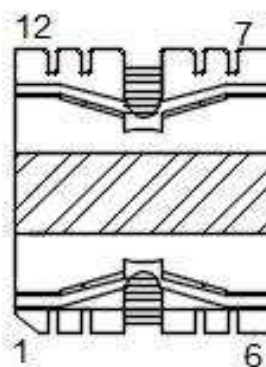
正视图



侧视图

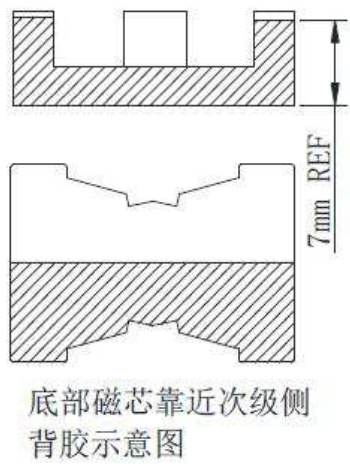


底视图



绕组	绕线脚位		线径规格	绕线圈数 (Ts)	胶带圈数 (Ts)	绕线方式
	起	终				
N1	3	4	∅0.7*2P 2UEW-F	17	2	密绕
N2	2	NC	∅0.2*2P 2UEW-F	10	2	疏绕
N3	11.12	8.9	∅0.8*2P TIW-F	6	2	密绕
N4	6	2	∅0.2*2P 2UEW-F	5	2	疏绕
N5	4	1	∅0.7*2P 2UEW-F	13	2	密绕

磁芯背胶方式图



标签内容如上图

贴于产品顶部，字体朝 PIN1-6 侧

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+A11:2020		
Attachment Form No.....: EU_GD_IEC62368_1E		
Attachment Originator.....: UL(Demko)		
Master Attachment.....: 2021-02-04		
Copyright © 2021 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.		
	CENELEC COMMON MODIFICATIONS (EN)	—
	Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2020+A11:2020. 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”.	P
	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	P
1	Modification to Clause 3 .	N/A
3.3.19	Sound exposure Replace 3.3.19 of IEC 62368-1 with the following definitions:	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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
3.3.19.3	sound exposure, E A-weighted sound pressure (p) squared and integrated over a stated period of time, T Note 1 to entry: The SI unit is $\text{Pa}^2 \text{ s}$. $E = \int_0^T p(t)^2 dt$		N/A
3.3.19.4	sound exposure level, SEL logarithmic measure of sound exposure relative to a reference value, E_0 , typically the 1 kHz threshold of hearing in humans. Note 1 to entry: SEL is measured as A-weighted levels in dB. $SEL = 10 \lg \left(\frac{E}{E_0} \right) \text{ dB}$ Note 2 to entry: See B.4 of EN 50332-3:2017 for additional information.		N/A
3.3.19.5	digital signal level relative to full scale, dBFS 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 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.		N/A
2	Modification to Clause 10		N/A
10.6	Safeguards against acoustic energy sources Replace 10.6 of IEC 62368-1 with the following:		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.1.1	Introduction 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: – 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 around the ears; and – 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.). EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment. Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3. NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360. 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 10.6.5 as soon as possible. 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: – professional equipment; 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. – hearing aid equipment and other devices for assistive listening; – the following type of analogue personal music players: • long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and • cassette player/recorder; NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	within a few years it will no longer exist. This exemption will not be extended to other technologies. – a player while connected to an external amplifier that does not allow the user to walk around while in use. For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply. The relevant requirements are given in EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.		
10.6.1.2	Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz 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). 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.	To be evaluated during national approval	N/A
10.6.2	Classification of devices without the capacity to estimate sound dose		N/A
10.6.2.1	General 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. For classifying the acoustic output $L_{Aeq,T}$, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period. 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. 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		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		
10.6.2.2	RS1 limits (to be superseded, see 10.6.3.2) RS1 is a class 1 acoustic energy source that does not exceed the following: – 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. – 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.		N/A
10.6.2.3	RS2 limits (to be superseded, see 10.6.3.3) RS2 is a class 2 acoustic energy source that does not exceed the following: – 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 $L_{Aeq,T}$ 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	RS3 limits RS3 is a class 3 acoustic energy source that exceeds RS2 limits.		N/A
10.6.3	Classification of devices (new)		N/A
10.6.3.1	General Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Commission Decision of 23 June 2009, are given below.		
10.6.3.2	RS1 limits (new) RS1 is a class 1 acoustic energy source that does not exceed the following: – 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 ≤ 80 dB when playing the fixed “programme simulation noise” 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 ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.		N/A
10.6.3.3	RS2 limits (new) RS2 is a class 2 acoustic energy source that does not exceed the following: – 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. – 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.		N/A
10.6.4	Requirements for maximum sound exposure		N/A
10.6.4.1	Measurement methods All volume controls shall be turned to maximum during tests. Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.		N/A
10.6.4.2	Protection of persons Except as given below, protection requirements for parts accessible to ordinary persons, instructed		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	persons and skilled persons are given in 4.3. NOTE 1 Volume control is not considered a safeguard. 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. Alternatively, the instructional safeguard may be given through the equipment display during use. The elements of the instructional safeguard shall be as follows: – element 1a: the symbol , IEC 60417-6044 (2011-01) – element 2: “High sound pressure” or equivalent wording – element 3: “Hearing damage risk” or equivalent wording – element 4: “Do not listen at high volume levels for long periods.” or equivalent wording 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. 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. NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed. 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. A skilled person shall not be unintentionally exposed to RS3.		
10.6.5	Requirements for dose-based systems		N/A
10.6.5.1	General requirements		N/A
	Personal music players shall give the warnings as provided below when tested according to EN 50332-3, using the limits from this clause.		

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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. The personal music player shall be supplied with 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	Dose-based warning and requirements When a dose of 100 % <i>CSD</i> is reached, and at least at every 100 % further increase of <i>CSD</i>, 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. The warning shall at least clearly indicate that listening above 100 % <i>CSD</i> leads to the risk of hearing damage or loss.		N/A
10.6.5.3	Exposure-based requirements 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. 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. 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		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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. NOTE In case the source is known not to be music (or test signal), the EL may be disabled.		
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input 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 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. NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.	Not such equipment	N/A
10.6.6.2	Corded listening devices with digital input 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 LAeq,T acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.3	Cordless listening devices In cordless mode, – 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 LAeq,T acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A

IEC62368_1E - ATTACHMENT																																																																			
Clause	Requirement + Test				Result - Remark		Verdict																																																												
10.6.6.4	Measurement method Measurements shall be made in accordance with EN 50332-2 as applicable.						N/A																																																												
3	Modification to the whole document						P																																																												
	Delete all the “country” notes in the reference document according to the following list: <table><tr><td>0.2.1</td><td>Note 1 and 2</td><td>1</td><td>Note 4 and 5</td><td>3.3.8.1</td><td>Note 2</td></tr><tr><td>3.3.8.3</td><td>Note 1</td><td>4.1.15</td><td>Note</td><td>4.7.3</td><td>Note 1 and 2</td></tr><tr><td>5.2.2.2</td><td>Note</td><td>5.4.2.3.2.2 Table 12</td><td>Note c</td><td>5.4.2.3.2.4</td><td>Note 1 and 3</td></tr><tr><td>5.4.2.3.2.4 Table 13</td><td>Note 2</td><td>5.4.2.5</td><td>Note 2</td><td>5.4.5.1</td><td>Note</td></tr><tr><td>5.4.10.2.1</td><td>Note</td><td>5.4.10.2.2</td><td>Note</td><td>5.4.10.2.3</td><td>Note</td></tr><tr><td>5.5.2.1</td><td>Note</td><td>5.5.6</td><td>Note</td><td>5.6.4.2.1</td><td>Note 2 and 3 and 4</td></tr><tr><td>5.6.8</td><td>Note 2</td><td>5.7.6</td><td>Note</td><td>5.7.7.1</td><td>Note 1 and Note 2</td></tr><tr><td>8.5.4.2.3</td><td>Note</td><td>10.2.1 Table 39</td><td>Note 3 and 4 and 5</td><td>10.5.3</td><td>Note 2</td></tr><tr><td>10.6.1</td><td>Note 3</td><td>F.3.3.6</td><td>Note 3</td><td>Y.4.1</td><td>Note</td></tr><tr><td>Y.4.5</td><td>Note</td><td></td><td></td><td></td><td></td></tr></table>						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	10.6.1	Note 3	F.3.3.6	Note 3	Y.4.1	Note	Y.4.5	Note					P
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																																																														
10.6.1	Note 3	F.3.3.6	Note 3	Y.4.1	Note																																																														
Y.4.5	Note																																																																		
4	Modification to Clause 1						P																																																												
1	Add the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.						P																																																												

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5	Modification to 4.Z1		P
4.Z1	Add the following new subclause after 4.9: 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): 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; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for pluggable equipment type B or permanently connected equipment, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for pluggable equipment type A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.	Considered. Complied with item a) for internal fuse used and for parts as described in b) reliance on the protection in the building installation.	P
6	Modification to 5.4.2.3.2.4		N/A
5.4.2.3.2.4	Add the following to the end of this subclause: The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.	No connection to such external circuit.	N/A
7	Modification to 10.2.1		N/A
10.2.1	Add the following to ^{c)} and ^{d)} in table 39: For additional requirements, see 10.5.1.	No such radiation from the equipment. No such radiation from the equipment.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

8	Modification to 10.5.1		N/A
10.5.1	Add the following after the first paragraph: For RS 1 compliance is checked by measurement under the following conditions: 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. NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. 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. 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. For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level. NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.	Added. No x-radiation used.	N/A
9	Modification to G.7.1		P
G.7.1	Add the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.		P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

10	Modification to Bibliography		P
	Add the following notes for the standards indicated: 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.		P
11	ADDITION OF ANNEXES		P
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		P
4.1.15	Denmark, Finland, Norway and Sweden 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. The marking text in the applicable countries shall be as follows: In Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord." In Finland: "Laitte on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag"		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	United Kingdom To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex	Not direct plug-in equipment	N/A
5.2.2.2	Denmark After the 2nd paragraph add the following: A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No high touch current.	N/A
5.4.11.1 and Annex G	Finland and Sweden To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. 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 • 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), and • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.	No connection to such a network.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		
5.5.2.1	Norway After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
5.5.6	Finland, Norway and Sweden To the end of the subclause the following is added: 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.	No such resistors used	N/A
5.6.1	Denmark 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.		N/A
5.6.4.2.1	Ireland and United Kingdom 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.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.4.2.1	France 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.		N/A
5.6.5.1	To the second paragraph the following is added: 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.		N/A
5.6.8	Norway 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.		N/A
5.7.6	Denmark To the end of the subclause the following is added: 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.		N/A
5.7.6.2	Denmark To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .		N/A
5.7.7.1	Norway and Sweden 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. 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. 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:		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	“Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)” NOTE In Norway, due to regulation for CATV-installations, 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. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.” Translation to Swedish: “Apparater som är kopplad till skyddsjord via 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.”.		
8.5.4.2.3	United Kingdom Add the following after the 2nd dash bullet in 3rd paragraph: 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.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
B.3.1 and B.4	Ireland and United Kingdom The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of direct plug-in equipment , tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the direct plug-in equipment , until the requirements of Annexes B.3.1 and B.4 are met		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	Denmark To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a 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. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a <i>Justification:</i> Heavy Current Regulations, Section 6c		N/A
G.4.2	United Kingdom To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	United Kingdom To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc. (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	Approved power supply cord set used	P
G.7.1	Ireland To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	Ireland and United Kingdom To the first paragraph the following is added: 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.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A
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

IEC62368_1E - ATTACHMENT																																																							
Clause	Requirement + Test	Result - Remark	Verdict																																																				
ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)		P																																																				
	<table><tr><th rowspan="2">Type of flexible cord</th><th colspan="2">Code designations</th></tr><tr><th>IEC</th><th>CENELEC</th></tr><tr><td colspan="3">PVC insulated cords</td></tr><tr><td>Flat twin tinsel cord</td><td>60227 IEC 41</td><td>H03VH-Y</td></tr><tr><td>Light polyvinyl chloride sheathed flexible cord</td><td>60227 IEC 52</td><td>H03VV-F H03VVH2-F</td></tr><tr><td>Ordinary polyvinyl chloride sheathed flexible cord</td><td>60227 IEC 53</td><td>H05VV-F H05VVH2-F</td></tr><tr><td colspan="3">Rubber insulated cords</td></tr><tr><td>Braided cord</td><td>60245 IEC 51</td><td>H03RT-F</td></tr><tr><td>Ordinary tough rubber sheathed flexible cord</td><td>60245 IEC 53</td><td>H05RR-F</td></tr><tr><td>Ordinary polychloroprene sheathed flexible cord</td><td>60245 IEC 57</td><td>H05RN-F</td></tr><tr><td>Heavy polychloroprene sheathed flexible cord</td><td>60245 IEC 66</td><td>H07RN-F</td></tr><tr><td colspan="3">Cords having high flexibility</td></tr><tr><td>Rubber insulated and sheathed cord</td><td>60245 IEC 86</td><td>H03RR-H</td></tr><tr><td>Rubber insulated, crosslinked PVC sheathed cord</td><td>60245 IEC 87</td><td>H03RV4-H</td></tr><tr><td>Crosslinked PVC insulated and sheathed cord</td><td>60245 IEC 88</td><td>H03V4V4-H</td></tr><tr><td colspan="3">Cords insulated and sheathed with halogen-free thermoplastic compounds</td></tr><tr><td>Light halogen-free thermoplastic insulated and sheathed flexible cords</td><td></td><td>H03Z1Z1-F H03Z1Z1H2-F</td></tr><tr><td>Ordinary halogen-free thermoplastic insulated and sheathed flexible cords</td><td></td><td>H05Z1Z1-F H05Z1Z1H2-F</td></tr></table>	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	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																																																					

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 U.S.A. AND CANADA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to : CSA/UL 62368-1:2019			
TRF template used: : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. : US_CA_ND_IEC62368_1E			
Attachment Originator : UL(US)			
Master Attachment : Dated 2022-03-04			
Copyright © 2022 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
IEC 62368-1 - US and Canadian National Differences Special National Conditions based on Regulations and Other National Differences			
1 (1DV.1) (1.3)	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part 1, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.	In accordance with the National Electrical Code (NEC) and the Canadian Electrical Code (CEC) part 1 CAN/CSA C22.1, ANSI/NFPA 70, and unless marked or otherwise identified, the Standard for Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	P
1 (1DV.2.1)	This standard includes additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities. See Annex DVB.	Not such application.	N/A
1 (1DV.2.2)	This standard includes additional requirements for equipment intended for mounting under cabinets. See Annex DVC.		N/A
1 (1DV.2.3)	IEC 62368-3 clause 5 for DC power transfer at ES1 or ES2 voltage levels is considered informative. IEC 62368-3 clause 6 for remote power feeding telecommunication (RFT) circuits is considered normative (see ITU K.50). Alternatively, equipment with RFT circuits are given in either UL 2391 or CSA/UL 60950-21. RFT-C circuits are not permitted unless the RFT-C circuit complies with RFT-V limits ($\leq 200V$ per conductor to earth).	Considered	P

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1 (1DV.3)	For protection against direct lightning strikes, reference is made to NFPA 780 and CAN/CSA-B72 for additional requirements.		N/A
1 (DV.5)	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		N/A
4.1 (4.1.17)	For lengths exceeding 3.05 m, external interconnecting cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.		N/A
	For lengths 3.05 m or less, external interconnecting cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		N/A
4.6 (4.6.2)	Wire-wrap terminals have special construction and performance requirements.		N/A
4.8 (4.8.3, 4.8.4.5, 4.8.5)	Coin / button cell batteries have modified special construction and performance requirements.	No such batteries.	N/A
5.4.2.3.2 (5.4.2.3.2.1)	Surge Arrestors and Transient Voltage Surge Suppressors installed external to the equipment are required to comply with the appropriate NEC and CEC requirements.		N/A
5.5.9	Receptacles, rated 125-V, single phase, 15- or 20-A accessible to either ordinary, instructed, or skilled persons are required to be provided with GFCI Protection for Personnel if the equipment containing the receptacles is installed outdoors. The protection devices are required to comply with UL 943, and CAN/CSA C22.2 No.144.	No such receptacles	N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.7, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment.	Class II equipment	N/A
5.7.8 (5.7.8.1)	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	No TNV circuits within the equipment.	N/A
6.5.1	PS3 wiring outside a fire enclosure is required to comply with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A
Annex F (F.3.3.9)	Output terminals provided for supply of other equipment, except mains supply, are required to be marked with a maximum rating or reference to equipment permitted to be connected.	Considered for USB-C port	P

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex F (F.3.7)	Outdoor Enclosures are required to be classified and marked in accordance with UL 50 or 50E, or CAN/CSA C22.2 No. 94.1 or 94.2.	Indoor used only	N/A
Annex G (G.7)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	Not permanent connected equipment	N/A
	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	Approved power cord used	P
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		P
	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		P
	Power supply cords for outdoor equipment are required to be suitable outdoor use type as required by Section 400.4 of the NEC and Rule 4-012 of the CEC, i.e., marked "W."	Indoor used only	N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV circuits within the equipment.	N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuits within the equipment.	N/A
Annex Q (Q.3)	Equipment with paired conductor and/or coax communications cables/wiring connected to building wiring are required to have special voltage, current, power and marking requirements.		N/A
Annex DVA (1)	Equipment that is designed such that it may be powered from a separate electrical service, is required to meet applicable requirements for service equipment for control and protection of services and their installation and complies with Article 230 of the National Electrical Code (NEC), NFPA 70 and Section 6 of the Canadian Electrical Code, Part I, CSA C22.1.	Not such application.	N/A
	Equipment intended for use in spaces used for environmental air (plenums) are subjected to special flammability requirements for heat and visible smoke release.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. and Canadian Regulations.		N/A
	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.	Not a baby monitor	N/A
	Storage batteries and battery management equipment, other than associated with lead-acid batteries, and including battery backup systems that are not an integral part of stationary AV and ICT equipment, such as provided in separate cabinets, are required to be certified (listed) to the appropriate standard(s) for such storage batteries and equipment.		N/A
Annex DVA (5.6)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Considered	P
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.	No flammable liquids within the equipment.	N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a minimum flammability classification of V-1.		N/A
Annex DVA (10.3)	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No laser	N/A
Annex DVA (10.5)	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No ionizing radiation	N/A
Annex DVA (F.3.3.4)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or that are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (F.3.3.6)	Equipment identified for ITE (computer) room installation is required to be marked with the rated current.	Not such application.	N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position, where mounted in an enclosure, vertically mounted disconnect switches and circuit breakers with vertical operating means extending outside the enclosure are required to indicate in a location visible when accessing the external operating means whether the switch or circuit breaker is in the open (off) or closed (on) position.	No such parts	N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No such parts	N/A
	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.	No such parts	N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-400 and 10-612.	No such parts	N/A
Annex DVA (G.4.3)	Interconnection of units by conductors supplied by a limited power source, or a Class 2 circuit defined in the NEC/CEC may have field wiring connections other than specified in DVH.3, such as wire-wrap and crimp-on types, if the limited power source and Class 2 circuits are separated from all other circuits by barriers, routing or fixing.	No such parts	N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	No such parts	N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).	No such parts	N/A
Annex DVA (G.7)	Flexible cords used outdoors are required to have the suffix "W" marked on the flexible cord.	No such parts	N/A
Annex DVA (M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the ITE room remote power-off circuit.	Not such application.	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (Q)	If applicable per NEC 725.121(C), some limited power sources supplied from AV/ICT equipment are required to have a label indicating the maximum voltage and rated current output for per conductor for each connection point. Where multiple connection points have the same rating, a single label is permitted to be used.	Not such application.	N/A
	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1 are required to be marked with the voltage rating and "Class 2" or equivalent. The marking is located adjacent to the terminals and visible during wiring.		N/A
	Applicable parts of Chapter 8 of the NEC, and Rules 54 and 60 of the CEC, may be applicable to ITE installed outdoors with connections to communication systems.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.	Not such application.	N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.	Not such application.	N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These equipment and components include: appliance couplers, attachment plugs, battery backup systems, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, modular data centres, power supply cords, some power distribution equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.	Considered	P
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.	Not permanent connection to the mains supply	N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are required to be in accordance with the NEC/CEC.		N/A
Annex DVH (DVH.2.1)	For safe and reliable connection to a mains, permanently connected equipment is to be provided.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.2.2)	Additional considerations for D.C. mains.		N/A
Annex DVH (DVH.3.2.1)	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified.		N/A
Annex DVH (DVH.3.2.3)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N/A
Annex DVH (DVH.3.2.4)	All associated mains supply terminals are located in proximity to each other and to the main protective earthing terminal, if any.		N/A
Annex DVH (DVH.3.2.5)	Terminals are located, guarded or insulated so that, should a strand of a conductor escape when the conductor is fitted, there is no likelihood of accidental contact between such a strand and accessible conductive parts or unearthed conductive parts separated from accessible conductive parts by supplementary insulation only.		N/A
Annex DVH (DVH.3.3)	When field connection to an external circuit is via wires (example, free conductors), the wires are not smaller than 18 AWG (0.82 mm ²) and the free length of the wire inside an outlet box or wiring compartment is 150 mm or more.		N/A
Annex DVH (DVH.3.4)	Size of protective earthing conductors and terminals		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	Not such equipment.	N/A
Annex DVH (DVH.4.1)	Wire bending space		N/A
Annex DVH (DVH.4.2)	Volume of wiring compartment		N/A
Annex DVH (DVH.4.3)	Separation of circuits		N/A
Annex DVH (DVH.5)	Equipment markings and instructional safeguards		N/A
Annex DVH (DVH.5.1)	Identification of protective earthing terminal		N/A
Annex DVH (DVH.5.2)	Identification of terminal for earthed conductor (neutral)		N/A
Annex DVH (DVH.5.3)	Identification of terminals for aluminium conductors		N/A
Annex DVH (DVH.5.4)	Wire temperature ratings		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.	The equipment not connected to a centralized d.c. power system.	N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.	No TNV circuits within the equipment.	N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1:2018 SAUDI ARABIA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment Part 1: Safety requirements)			
Differences according to: National standard SASO-IEC 62368-1:2020			
TRF template used:: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No.: SA_ND_IEC62368_1E			
Attachment Originator: SASO			
Master Attachment: 2022-12-22			
Copyright © 2022 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		P
	Plugs used for pluggable equipment comply with standard SASO-2203.	Evaluated in national approval	N/A
--	Frequency (Hz)		P
	60 Hz	Rated 50/60Hz	P
--	Rated voltage (V)		P
	Single phase 230 V Three phase 400 V	Rated 100-240V AC for single phase	P

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 (AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment)			
Differences according to: AS/NZS 62368.1:2022			
TRF template used:: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No.: AU_NZ_ND_IEC62368_1E			
Attachment Originator: JAS-ANZ			
Master Attachment: 2022-07-01			
Copyright © 2020 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		P
Appendix ZZ	Variations to IEC 62368-1:2018 (ED. 3.0) for Australia and New Zealand		P
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2018 (ED. 3.0)		P
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		P
2	After the first paragraph, <i>add</i> the following: The Australian or Australian/New Zealand Standards listed below are modified adoptions of, or not equivalent to, the IEC normative references and are required for the application of this Standard. All references in the source text to those IEC normative references shall be replaced by references to the corresponding Australian or Australian/New Zealand Standards. Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably -AS/NZS 3112, <i>Approval and test specification—Plugs and socket-outlets</i> -AS/NZS 3123, <i>Approval and test specification—Plugs, socket-outlets and couplers for general industrial application</i> -AS/NZS 3191, <i>Electric flexible cords</i> -AS/NZS 60884.1, <i>Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</i> -IEC 60086-2 <i>Primary batteries — Part 2: Physical and electrical specifications</i> -AS/NZS 60065, <i>Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)</i> -AS/NZS 60320.1, <i>Appliance couplers for household and similar general purposes, Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)</i> -AS/NZS 60320.2.2, <i>Appliance couplers for</i>		P

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<i>household and similar general purposes</i> <i>Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD)</i> <i>-AS/NZS 60695.2.11, Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products</i> <i>-AS/NZS 60695.11.5, Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance</i> <i>-AS/NZS 60695.11.10, Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods</i> <i>-AS/NZS 60884.1, Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</i> <i>-AS/NZS 60950.1, Information technology equipment—Safety, Part 1: General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)</i> <i>IEC 61032:1997, Protection of persons and equipment by enclosures—Probes for verification</i> <i>-AS/NZS 61558.1, Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 3, MOD)</i> <i>-AS/NZS 61558.2.16, Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.</i>		
4.7.2	Requirements Delete the text of the second paragraph and replace with the following: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet conforming to AS/NZS 3112, shall conform to the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets. Conformity is checked by inspection and, if necessary, by the tests in AS/NZS 3112. NOTE: Equipment with plug portions for use in countries other than Australia and New Zealand will need to conform to other countries' requirements Note Additional AS/NZS 3112 Appendix J,TRF is appended to end of this TRF.	Not such equipment.	N/A
4.7.3	Compliance Criteria Delete this clause		N/A

IEC62368_1E ATTACHMENT				
Clause	Requirement + Test		Result - Remark	Verdict
4.8.1	General After second list, <i>add</i> the following: NOTE: Refer to the Consumer Goods (Products Containing Button/Coin Batteries) Safety Standard 2020 and Consumer Goods (Products Containing Button/Coin Batteries) Information Standard 2020 for more information on button cell batteries in Australia..			N/A
5.4.10.2.1	General <i>Delete</i> the first paragraph and <i>replace</i> with the following: In Australia, the separation is checked by the test given in both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test given in either 5.4.10.2.2 or 5.4.10.2.3..			N/A
Table 28	<i>Delete</i> Table 28 and <i>replace</i> with the following:			N/A
Parts		Impulse test	Steady state test	
		New Zealand	Australia	
Parts indicated in Clause 5.4.10.1 a) ^a		2.5 kV	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment.	1.5 kV 3 kV
Parts indicated in Clause 5.4.10.1 b) and c) ^b		1.5 kV ^c	1.0 kV	1.5 kV
^a Surge suppressors shall not be removed. ^b Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment. ^c During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.				
5.4.10.2.2	<i>Delete</i> "NOTE" and <i>replace</i> with "NOTE 1". After NOTE 1, <i>add</i> the following: NOTE 2: For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 3: For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.			N/A
5.4.10.2.3	<i>Delete</i> "NOTE" and <i>replace</i> with "NOTE 1". After NOTE 1, <i>add</i> the following: NOTE 2: For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 3: The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.			N/A
6	Electrically-caused fire			P

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.6	After Clause 6.6, <i>add</i> the new Clauses 6.201 as follows: 6.201 External power supplies, docking stations and other similar devices (see special national conditions)		P
8.6	Stability of equipment		N/A
Table 36	Footnote ^a , after first sentence, <i>add</i> the following: Equipment having displays with moving images shall include "television sets and display devices".	Not such equipment	N/A
8.6.1	After Clause 8.6.1 <i>add</i> the following new clauses: 8.6.201 Restraining Device fixing point (see special national conditions) 8.6.202 Restraining device (see special national conditions)		N/A
Annex F Paragraph F.3.3.4	Rated Voltage <i>Delete</i> "NOTE" and <i>replace</i> with NOTE1" After NOTE 1, <i>add</i> the following Equipment that is intended for connection to the supply mains in Australia and New Zealand shall be marked with: (a) A rated voltage of: • 230 V for single phase equipment • 400 V for poly phase equipment Or (b) A rated voltage range that includes: • 230 V for single phase equipment • 400 V for poly phase equipment NOTE 2: equipment that is not rated as above is not suitable for direct connection to the supply mains in Australia or new Zealand.	Rated 100-240V, 50/60Hz	P
Annex F.3.3.5	After the list, <i>add</i> the following Equipment that is intended for connection to supply mains in Australia or New Zealand shall be marked with a rated frequency of 50 Hz or a rated frequency range or nominal value which includes 50Hz		P
Annex F.3.8	After "The DC output of an external power supply", insert "or docking stations and other similar external devices"	No such DC output	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex G Paragraph G.4.2	Mains connectors 1 After "IEC 60320", insert "or AS/NZS 60320 series". 2 After "IEC 60906-1", insert "or AS/NZS 3123" 3 After first paragraph add the following: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.		P
Paragraph G.5.3.1	Transformers, General 1 Third dashed point <i>replace</i> 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 Fourth dashed point <i>replace</i> 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.	Considered	P
Annex G.7.1	Mains supply cords, General Fourth dashed paragraph, <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'	(See appended table 4.1.2)	P
Table G.7	Sizes of conductors 1 First column, second row, <i>delete</i> "6" and <i>replace</i> with "7.5" 2 Second column, second row, <i>delete</i> '0,75' and <i>replace</i> with '0.75' ^b 3 <i>Delete</i> NOTE 1. 4 <i>Replace</i> 'NOTE 2' with 'NOTE:'. 5 <i>Delete</i> 'Footnote b' and <i>replace</i> with the following: ^b This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm ² three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 Footnote c <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1' 7 Footnote d <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'	(See appended table 4.1.2)	P
Annex M M 2.1	<i>Add</i> "IEC 60086-2" to the list		N/A
Annex M Paragraph M.3.2	Test method <i>Delete</i> "NOTE" and <i>replace</i> with "NOTE 1" After NOTE 1 <i>add</i> the following: NOTE 2: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of ES1 may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Special national conditions (if any)		N/A
6.201	External power supplies, docking stations and other similar devices For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage— (a) at all ES1 outlets or connectors shall not increase by more than 10 % of the output rated voltage under normal operating conditions, measured after 3 s of introducing a single fault condition and after 3 s of introducing abnormal operating conditions; and (b) of a USB outlet or connector shall not increase by more than 3 V or 10 % of the output rated voltage under normal operating conditions, whichever is higher, measured after 3 seconds of introducing a single fault condition and after 3 s of introducing abnormal operating conditions For equipment with multiple rated voltages at the output, the requirements apply with the equipment configured for each output rated voltage in turn NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries. The 3 s measurement delay is based on IEC document 108/742/INF, <i>TC 108, Standards Interpretation Panel Question 15 — Output voltage</i>, in relation to similar requirements in IEC 62368-3:2017. Conformity shall be checked by measurement, taking into account the abnormal operating conditions of Annex B.3 and the simulated single fault conditions of Annex B.4.	Considered for USB-C port	P

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.201	Restraining device fixing point Freestanding-capable MS2 and MS3 television sets and display devices shall be provided with a fixing point to facilitate the anchoring of the equipment from toppling The fixing point shall conform to Clause 8.7 where the fixing point uses a wall, ceiling or other structure mount. Alternatively, the fixing point shall be capable of withstanding a pull equal to the mass of the equipment in all directions without damage Instructions for installation or instructions for use shall be provided to specify correct use of the fixing point		N/A
8.6.202	Restraining device MS2 and MS3 television sets and display devices shall be provided with a restraining device and associated hardware to attach to the television set or display device. The restraining device shall be capable of withstanding a pull equal to the mass of the equipment in all directions. Instructions for installation or instructions for use shall be provided to specify correct use of the fixing point		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1:2018 CHINA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment -Part 1: Safety requirements)			
Differences according to: GB 4943.1-2022			
TRF template used:: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No: CN_ND_IEC62368_1E			
Attachment Originator: CQC			
Master Attachment: 2025-02-25			
Copyright © 2025 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		
4.1.2	Use of components Add a paragraph: A component used shall comply with related requirements corresponding altitude of the equipment.	To be evaluate during national approval.	N/A
4.11	Add clause 4.11,as follows: Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall be provided as an integral part of the equipment except the device shall meet the all requirement of Fault conditions. If pluggable equipment type B or permanently connected equipment depends on protective devices outside the equipment for protection, this shall be stated in the installation instructions of the equipment, with requirements for short-circuit protection, over-current protection, or both if necessary.		P
5.3.2.2	Contact requirements Amend the 2 nd paragraph of table 8 to be: For equipment intended to be used at altitude of 2000m to 5000m, the values in this table are multiplied by the multiplication factor corresponding altitude of 5000m.	Up to 5000m Considered	P

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.2.5	Multiplication factors for altitudes higher than 2 000 m above sea level Amend the 1st paragraph to be: For equipment to be operated at more than 2000 m above sea level and up to 5000m above sea level, the minimum CLEARANCE in tables 10,11 and 14, and resistance test voltages required in table 15, shall meet the requirements of 5000 m above sea level, this is multiplied by the multiplication factor corresponding altitude of 5000m in table 16. For equipment to be used at equal or less than 2000 m above sea level, the minimum CLEARANCE in tables 10, 11 and 14, and resistance test voltages required in table 15, shall meet the requirements of 2000 m above sea level. This is multiplied by the multiplication factor corresponding altitude of 2000m in table 16. Delete note 2 of Clause 5.4.2.5.	1.48 used for up to 5000m above sea level	P
5.4.5.1	General Delete the 2nd paragraph of Clause 5.4.5.1: This test does not apply to equipment where one antenna terminal on the equipment is connected to earth in accordance with 5.6.7. Add the following: The Insulation resistance between CATV antenna coaxial sockets and protective earth of apparatus shall comply with BASIC INSULATION. If it's possible that CLASS II apparatus with CATV antenna coaxial sockets connect with protective earth of another CLASS I apparatus by other terminals, the insulation resistance between them shall comply with BASIC INSULATION as well. If antenna cable separated from the protective earth before connection to the apparatus, there is no requirements of Insulation resistance between them but F.4 requirements shall be meet. Delete "NOTE" of Clause 5.4.5.1	Not such antenna terminal.	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.8	Humidity conditioning Amend clause 5.4.8 as follows : The humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature (40±2) °C and a relative humidity of (93±3)%. During this conditioning, the component or subassembly is not energized. For equipment not to be operated at tropical climatic conditions, humidity conditioning is conducted for 48 h in a cabinet or room containing air with a relative humidity of (93±3) %. The temperature of the air, at all places where samples can be located, is maintained within 2 °C of any convenient value between 20 °C and 30 °C such that condensation does not occur. Add note: For equipment to be operated at 2000 m - 5000m above sea level, assessment and requirement of humidity conditioning for Insulation material properties are considered. Pre-processing conditions and requirements below 2000m can be used until additional data is available.	Considered.	P
6.4.9 Y.4.3	Delete references to ASTM and NEMA.		N/A
6.5.1	General requirements Delete the text of the Note "Wire complying with UL 2556 VW-1 is considered to comply with these requirements".	To be evaluate during national approval.	N/A
F.1	Amend the second paragraph of annex F.1 to be: Unless symbols are used or otherwise specified, safety related equipment markings, instructions, and instructional safeguards shall be in normative Chinese.	To be evaluate during national approval.	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
F.2.2	After the first paragraph of annex F.2.2 ,add the following: For apparatus intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording or a symbol shown below shall fixed to the equipment at readily visible place. "Only used at altitude not exceeding 2000m."  For apparatus intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording or a symbol shown below shall fixed to the equipment at readily visible place. "Only used in not-tropical climate regions."  If only symbol used, the explanation of the symbol shall be contained in the instruction manual. The statements above shall be given in a language acceptable to the regions where the apparatus is intended to be used.		N/A
F.3.3.4	After the last paragraph, Added: ...for single rated voltage, "220 V" or three-phase "380V" shall be marked only. For a rating voltage range, 220 V or three-phase 380V shall be covered. For multiple rated voltages, one of them shall be 220 V or three-phase 380V and which default setting from manufacture shall be 220 V or three-phase 380V as well.	Rated 100-240V	P
F.3.3.5	After the last paragraph, Added: Rated frequency shall be 50Hz or frequency range shall cover 50Hz.	Rated 50/60Hz	P
F.4	Instructions Added: For apparatus incorporating antenna coaxial sockets which is non-separated with CATV network, a warning wording or a similar shall be given in the instruction manual: "A CATV cable intended to be connected to apparatus shall be separated with the protective earth of the apparatus, otherwise fire hazard might be caused."		N/A
F.5	Instructional safeguards In table F.2 , change 230V to 220V, change 400Y/230V 3Ø to 380 Y/220 V 3Ø		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	Amend clause G.4.2 as follows : Plugs connected to the MAINS in apparatus shall comply with GB/T 1002,GB/T 1003,GB/T 2099.1 or GB/T11918 (All parts) series. Appliance coupler shall comply with GB/T 17465 (All parts) series or GB/T 11918 (All parts) series.	To be evaluate during national approval.	N/A
	Special national conditions (if any)		
0.12	Add clause 0.12 Description of relevant information.		
1	GB 4943.1-2022 applies to equipment used at altitudes not exceeding 5000m above sea level, For apparatus intended to be used at altitude not exceeding 2000m, The requirements can be appropriately reduced, but warning instructions shall be provided.. Revise the sixth paragraph of 1 as: In addition to specified by the manufacturer, this document assumes a maximum altitude of 5000m		P
B.2.6.1	Amend T_{ma} as follows: T_{ma} is the maximum ambient temperature permitted by the manufacturer's specification, or 35 °C, whichever is greater. Add note 1: For equipment not to be operated at tropical climatic conditions, T_{ma} is the maximum ambient temperature permitted by the manufacturer's specification, or 25 °C, whichever is greater. Add note 2: For equipment to be operated at 2000m-5000m above sea leave, its temperature test conditions and temperature limits are under consideration. temperature test conditions and temperature limits below 2000m can be used until additional data is available.	35°C as specified by manufacturer	P
Annex Z (normative)	Added annex Z: Instructions of the new safety warning labels.	To be evaluate during national approval.	N/A
Annex AA (informative)	Added annex AA: Illustration relative to safety explanation in normative Chinese, Tibetan, Mongolian, Zhuang Language and Uighur.	To be evaluate during national approval.	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1:2018 JAPAN NATIONAL DIFFERENCES Audio/video, information and communication technology equipment – Part 1: Safety requirements			
Differences according to : J62368-1(2023)			
TRF template used: : IECEE OD-2020-F3:2022, Ed. 1.2			
Attachment Form No : JP_ND_IEC62368_1E			
Attachment Originator : UL Solutions (JP)			
Master Attachment : Dated 2023-05-12			
Copyright © 2023 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		P
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this document or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.		P
5.6.1	Mains socket-outlet and interconnection coupler shall comply with Clause G.4.2A if they are incorporated as part of the equipment.	Class II equipment.	N/A
5.6.2.1	Connection for protective conductor of class 0I equipment provided with instructional safeguard in accordance with Clause F.3.6.1A is considered to make earlier and break later than supply connection. Mains plug having a lead wire for protective earthing connection of class 0I equipment shall comply with all of the following: – Not to be used for equipment having a rated voltage of 150 V or more – Clip is not used for the earthing connection of the lead wire. – The lead wire for earthing is at least 10 cm long If class 0I equipment provides an independent main protective earthing terminal and is intended to be installed by ordinary person, earthing wire shall be provided in the package of the equipment.	Not class 0I equipment.	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.2.2	Internal earthing conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector need not be green-and-yellow.		N/A
5.6.3	In case of class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall comply with either of the following: – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cable with 1.25 mm ² or more cross-sectional area		N/A
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series, JIS C 8300 or JIS C 8303, or that is provided with mains appliance outlet as specified in JIS C 8283 series for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.	Not class 0I equipment.	N/A
5.7.5	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990:2016.	Not class 0I equipment.	N/A
6.4.3.2	A fuse complying with JIS C 6575 series or a fuse having equivalent characteristics shall open within 1 s. A fuse having time/current characteristics other than those specified in IEC 60127 shall be tested with the characteristics taken into account. In case of Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”.		P
8.5.4.3.1	Only three-phase stationary equipment rated more than AC 200 V can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.	Not such equipment.	N/A
8.5.4.3.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.		N/A
8.5.4.3.4	The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.3.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part. Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.		N/A
F.3.5.1	When the mains socket-outlet is configured in accordance with JIS C 8282 series, JIS C 8300 or JIS C 8303, the assigned current or power shall be marked. If the voltage of the socket-outlet is the same as the mains voltage, the voltage need not be marked. Instructional safeguard of Class 0I equipment shall be provided with an instructional safeguard in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8300 or JIS C 8303 to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.		N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic shall be included.		N/A
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.2 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions shall be provided regarding the earthing connection. In addition to the above, for class 0I equipment, an instruction to connect earthing before and disconnect earthing after the connection of supply conductors shall be marked on the visible place of the main body or shall be in the text of an accompanying document.	Not class 0I equipment.	N/A
F.3.6.2	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.		P
F.3.8A	Attention marking for aging deterioration of CRT television Year of manufacture, standard usage period by design according to JIS C 9921-5 and cautionary statement for possible risks of aging deterioration when used beyond the specified period shall be marked on CRT television except for industrial use CRT television.	No such device.	N/A

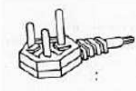
IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
F.4	For audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A, the instructions shall require that the external wiring connected to these terminals shall be installed by a skilled person, or shall be connected by means of ready-made leads or cords that are constructed in a way that would prevent contact with any ES3 circuit. For class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided in the package of the equipment, if the protective earthing connection is made by instructed person or skilled person, the suitable installation instruction for the protective earthing connection shall be provided.	ES1	N/A
G.3.2.1	The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.	No such device used.	N/A
G.3.4	Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the applicable JIS or IEC standard in accordance with 4.1.2 or shall have equivalent or better properties. Such a protective device shall have adequate breaking (rupturing) capacity to interrupt the maximum fault current (including short-circuit current) that can flow.	Approved fuse used. (See appended table 4.1.2)	P
G.4.1	This requirement does not apply to connectors covered in Clauses G.4.2 and G.4.2A.		P

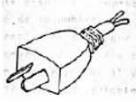
IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	Mains connectors, mains plugs and socket-outlets shall comply with JIS C 8283 series, JIS C 8285, IEC 60309 series, JIS C 8282 series, JIS C 8300, JIS C 8303, or have equivalent or better properties. A power supply cord set provided with appliance connector that can fit appliance inlet complying with JIS C 8283-1 shall comply with JIS C 8286. Construction shall prevent mechanical stress not to transmit to the soldering part of appliance inlet terminal. When an equipment is rated not more than 125 V and all of the following are met, Type C14 and C18 appliance inlet complying with JIS C 8283-3 can be considered as rated 15 A. – The temperature of appliance inlet does not exceed the value specified in JIS C 8283-1 under the most unfavourable normal operating condition as specified in Clause B.2.1. – "Use only designated cord set attached in this equipment" or equivalent text is described in the operating instruction. If the cord set is not provided in the package of the equipment, suitable information regarding to the cord set is described in the operating instruction.	Approved mains plug used	P
G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively	No such mains socket-outlet	N/A
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.		N/A
G.7.2 Table G.7	Cross-sectional area of equipment rated up to and including 3 A shall be 0.75 mm ² .		P
G.7.6.1 Table G.9	The cross-sectional area of mains cords according to JIS C 3010 may comply with relevant Japanese wiring regulation. For cables other than those complying with JIS C 3662 series or JIS C 3663 series, the terminals shall be suitable for the size of the intended cables.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1:2018 Republic of Korea NATIONAL DIFFERENCES Audio/video, information and communication technology equipment - Part 1: Safety requirements			
Differences according to : KC 62368-1(2021-08)			
TRF template used: : IECEE OD-2020-F3, Ed. 1.2			
Attachment Form No. : KR_ND_IEC62368_1E			
Attachment Originator : KTL			
Master Attachment : 2024-09-02			
Copyright © 2024 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		
4.1.1	As of January 1, 2023, internal and external components and subassemblies that comply with IEC 60950-1 or IEC 60065 are not acceptable if those components and subassemblies mandates KC certification.		P
G.4.2	Plugs for the connection of the apparatus to the supply main shall comply with the Korean requirement (KS C 8305 or KC 60884-1 or KC 60799).		P
	Special national conditions (if any)		
Voltage	The marking of rated voltage or rated voltage range, for appliances intended to be connected to the supply mains, shall include 110 V, 220 V or 380 V.	100-240V ~	P
Frequency	Only appliances having supply frequency of 60 Hz or a frequency range including 60 Hz are accepted.	50/60Hz	P
Instruction	Instruction manuals and appliance marking related safety, including nameplate shall be in Korean	To be evaluated in national approval	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 ARGENTINA NATIONAL DIFFERENCES Audio/video, information and communication technology equipment - Part 1: Safety requirements			
Differences according to		Special National Conditions	
TRF template used:		IECEE OD-2020-F3:2022, Ed. 1.2	
Attachment Form No.		AR_ND_IEC62368_1_A	
Attachment Originator		IRAM – Instituto Argentino de Normalización y Certificación	
Master Attachment		2024-06-06	
Copyright © 2022 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		P
	Not applicable		N/A
	Special national conditions (if any)		P
	- Appliances other than SELV, ratings shall cover 220 VAC - 50 Hz or 3x380 VAC – 50 Hz		N/A
	- Class 0 and Class 0I appliances are not allowed		N/A
	- Safety instructions and manuals shall be written in Spanish language	Should be evaluated during national approval	N/A
	- Country of origin shall be shown on the marking plate		P
	- Class I appliances provided with plugs shall be provided with the label specified in sheet "Class I" IMPORTANTE PARA EL USUARIO Los aparatos de la Clase I, poseen ficha de 3 espigas planas con toma de tierra, para aumentar su seguridad.  NO LA ELIMINE colocando un adaptador o reemplazando la ficha por otra de 2 espigas. PARA SU SEGURIDAD, su instalación debe estar provista de conductor de tierra. De no ser así, realice la adecuación con personal especializado.	Class II	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	- Class II appliances provided with plugs shall be provided with the label specified in sheet "Class II" IMPORTANTE PARA EL USUARIO Los aparatos de la Clase II, que se identifican con el símbolo  poseen ficha de 2 espigas planas sin toma de tierra, pues poseen doble aislación o aislación reforzada en todas sus partes.  NO LA ELIMINE colocando un adaptador o reemplazando la ficha por otra de 2 espigas cilíndricas, ya que la misma es compatible con los tomacorrientes con toma de tierra. PARA SU SEGURIDAD, su instalación debe estar provista de conductor de tierra. De no ser así, realice la adecuación con personal especializado.	 symbol marked on product	N/A
	- Plugs shall be in conformity with IRAM 2063 Standard for Class II appliances and IRAM 2073 Standard for Class I appliances	Should be evaluated during national approval	N/A
	- Appliances with detachable interchangeable plug pins must include with its products, written instructions to inform the customer about the type of interchangeable and detachable plug pins approved and suitable for use in Argentina.	Should be evaluated during national approval	N/A
	- Direct plug-in appliances or appliances provided with integrated plugs shall be according to geometry of IRAM 2063 standard for Class II appliances or IRAM 2073 standard for Class I appliances		N/A
	- Appliances with integrated socket outlet shall be according to geometry of IRAM 2071 standard.		N/A

TEST REPORT IEC 62368-3 Audio/video, information and communication technology equipment Part 3: Safety aspects for DC power transfer through communication cables and ports	
Report Number.....	CN25M0ZZ 001
Date of issue	See main test report
Total number of pages.....	18
Name of Testing Laboratory preparing the Report	TÜV Rheinland (Shenzhen) Co., Ltd.
Applicant's name	Harman International Industries, Incorporated
Address.....	8500 Balboa Blvd. Northridge CA 91329, USA
Test specification:	
Standard.....	IEC 62368-3:2017 for use in conjunction with IEC 62368-1:2014, IEC 62368-1:2018 or IEC 62368-1:2023
Test procedure.....	CB Scheme
Non-standard test method.....	N/A
Test Report Form No.	IEC62368_3D
Test Report Form(s) Originator..	TÜV Rheinland Japan Ltd.
Master TRF.....	2024-10-04
Copyright © 2024 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved. This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context. If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed. This Test Report Form is intended for the investigation of safety in accordance with IEC 62368-3. It can only be used together with the IEC 62368-1 requirements. 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.	
General disclaimer:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

Test Item description	Portable Bluetooth Speaker	
Trade Mark	JBL	
Manufacturer(s).....	Same as applicant	
Model/Type reference	BOOMBOX 4C	
Ratings	Input: 100-240Vac, 50/60Hz, 150W USB-C output: 5V--- 3A, 9V--- 3A, 15V--- 2A, 20V--- 1.5A max; 5-11V--- 2.7A (PPS1); 5-16V--- 1.85A (PPS2) 21.6Vdc, 4584mAh, 99.02Wh (supplied by internal rechargeable Li-ion battery)	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	CB Testing Laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.
Testing location/ address	1601-1604, 1801-1804, Tower A Building 2, Shenzhen International Innovation Valley, Dashi 1st Road, Xili Street, Xili Community, Nanshan District, Shenzhen 518000, China	
Tested by (name, function, signature)	See main test report	
Approved by (name, function, signature) ..	See main test report	
☐	Testing procedure: CTF Stage 1:	
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature) ..		
☐	Testing procedure: CTF Stage 2:	
Testing location/ address		
Tested by (name + signature).....		
Witnessed by (name, function, signature) .		
Approved by (name, function, signature) ..		
☐	Testing procedure: CTF Stage 3:	
☐	Testing procedure: CTF Stage 4:	
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) .		
Approved by (name, function, signature) ..		
Supervised by (name, function, signature) :		

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

See main test report

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

5.1	Power transfer using ES1 or ES2 voltages. General requirements
5.3.2	DC power transfer interconnection to other equipment
5.4.1	Requirement for the PSE

Testing location:**TÜV Rheinland (Shenzhen) Co., Ltd.**

1-5F, Block 5, No. 1100, Huanli Road, Yungu Community, Xinhua Street, Guangming District Shenzhen, China

Summary of compliance with National Differences (List of countries addressed):

See main test report

☒ The product fulfils the requirements of IEC 62368-3: 2017.

Use of uncertainty of measurement for decisions on conformity (decision rule) :

☒ No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").

☐ Other: ... (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

Information on uncertainty of measurement:

The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.

IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

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.

See main test report

Test item particulars.....	: See referred IEC 62368-1 test report.
Supply Connection	☒ AC Mains ☐ DC Mains ☐ Battery ☐ External Circuit - not Mains connected - ☐ ES1 ☐ ES2 ☐ ES3
Class of equipment	☐ Class I ☒ Class II ☐ Class III
Equipment type	☒ PSE power sourcing equipment ☐ PD powered device ☐ connected to ICT network ☐ RFT circuit (remote feeding telecom circuit)

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 : See main test report. Date (s) of performance of tests : See main test report.	
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 ☐ comma / ☒ point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60335-1:	
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 :	☒ Yes ☐ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) :	See main test report.
General product information and other remarks: See main test report.	

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:
See referred IEC 62368-1 test report.

ENERGY SOURCE DIAGRAM
Indicate which energy sources are included in the energy source diagram. Insert diagram below
See referred IEC 62368-1 test report.

OVERVIEW OF EMPLOYED SAFEGUARDS
See referred IEC 62368-1 test report.

IEC 62368-3			
Clause	Requirement - Test	Result	Verdict

4	GENERAL REQUIREMENTS		P
	Equipment serving as a PD or a PSE using voltages at ES1 or ES2,	Equipment serving as a PSE using voltages at ES1	P
	Equipment used as PSE or PD with proprietary connectors	No proprietary connectors	N/A
	Equipment where a proprietary protocol is used to enable the power transfer		N/A

5	POWER TRANSFER USING ES1 OR ES2 VOLTAGES		P
5.1	General requirements		P
	Maximum rated output voltage of PSE (V).....:	See appended table 5.1	—
	under conditions of no load (V)	See appended table 5.1	—
	normal load (V)	See appended table 5.1	—
	maximum rated load (V)	See appended table 5.1	—
	Rated limits of intended communication systems:		P
	PD or PSE have the capability to both provide power and receive power		N/A
5.2	Electrical-caused injury, electrical sources and safeguards		P
	For a PSE classified as ES1 and ES2, the requirements of IEC 62368-1 clause 5.2 apply.		P
5.3	Electrical-caused fire, power sources and safeguards		P
5.3.1	Output power reduces the likelihood of ignition.		N/A
	Output current does not cause damage to communication cables, building wiring, and other devices including PD.		N/A
	PSE circuits comply with IEC 62368 1, Annex Q.1 requirements for limited power source (LPS).	See appended table 5.3.1	P
	Interconnection of PSE circuits to other devices for DC power transfer via building wiring		P
	PSE maximum continuous current (A).....:		—
	Minimum wire gauge specified in the equipment installation instruction (mm ² or AWG)		—
	Current limits of minimum wire gauge (A)		—
	PD receives multiple PSE power inputs. PD implements power limiting in accordance with PS2 or IEC 62368-1, Annex Q		N/A
	PSE connected to external paired conductor cable having a minimum wire diameter of 0.4 mm (IEC 62368-1:2014, Table 14, ID 1 and 2 IEC 62368-1:2018, Table 13, ID 1 and 2)		N/A

IEC 62368-3			
Clause	Requirement - Test	Result	Verdict
	Current limited to not more than 1.3 A		—
5.3.2	DC power transfer interconnection to other equipment, where it is unknown that attached devices are likely to comply with IEC 62368-1, PSE circuit shall comply with requirements of IEC 62368-1 for PS2 or Clause Q.1	(See main report appendix table Q.1)	P
	Available output current under abnormal operating conditions and single fault conditions in the PSE does not exceed the specified fault current rating in power delivery specification.		P
	Fault current rating in power delivery specification (A)		—
	Available output current under abnormal operating conditions and single fault conditions in the PSE (A)		—
	No prescribed maximum fault current specified for standardized interface. Available current not exceeding:		P
	8.0 A under any circumstances		P
	Circuits > 2 A, 130% for more than 5 s		P
	Circuits ≤ 2 A, 150% for more than 5 s:		N/A
5.4	Safeguards to protect against a single fault condition in the PSE		P
5.4.1	Requirement for the PSE	See appended table 5.4.1	P
	PSE with a single output voltage		P
	Nominal rated output voltage (V)		—
	Single fault conditions output voltage (V)		—
	ES2 limit (DC 120V, 50V RMS, 70.7 V peak)		N/A
	PSE delivering a range of output voltages via negotiation with the PD		N/A
	Single fault conditions output voltage (V)		—
	Negotiated > 5 V, output 130% (min. 7.5 V)		P
	Negotiated ≤ 5 V, output 150%		P
5.4.2	Requirement for the PD	See appended table 5.4.2	N/A
	Nominal rated input voltage (V)		—
	Nominal > 5 V, supplied with 130% (min. 7.5 V) :		N/A
	Nominal ≤ 5 V supplied with 150%		N/A
	Any consequential failure of components in the PD		N/A

IEC 62368-3			
Clause	Requirement - Test	Result	Verdict

6	POWER TRANSFER USING RFT		N/A
6.1	General requirements		N/A
	Access to RFT circuit conductors is restricted to a skilled person.....:		N/A
	Access by an instructed person is restricted in accordance with IEC 62368-1, clause 5.3.2.1 and 5.3.2.2		N/A
6.2	Connection to ICT networks		N/A
	RFT circuit directly connected to an ICT network:		N/A
6.3	Electrically caused injury		N/A
6.3.1.1.1	The current limits in 6.3.1.1.2 to 6.3.1.1.4 are inherently met.	See appended table 6.3.1.1	N/A
	The RFT-C circuit has a monitoring and control device that maintains the required current limits		N/A
6.3.1.1.2	Limits under normal operating conditions		N/A
	a) steady state current from supply equipment into ICT network under any load condition (mA)		N/A
	b) using a resistor of $2\,000\ \Omega \pm 2\%$, max. steady state current from one conductor of equipment through ICT network to earth (mA)		N/A
	c) RFT-C circuit is limited to voltage rating of ICT network wiring, if this voltage is known (V).....:		N/A
	d) RFT-C circuit voltage rating of insulation between conductors and from any conductor to earth is coordinated with max. RFT-C circuit supply equipment voltage (V)		N/A
6.3.1.1.3	Current measured under single fault conditions did not exceed the line-to-earth and line-to-line limits in Figure 1	See appended table 6.3.1.1	N/A
6.3.1.1.4	Current limits with one RFT-C conductor accidentally earthed, between the other conductor and earth measured through a $2\,000\ \Omega \pm 2\%$ resistor, under any external load condition		N/A
	Current not exceeding line-to-earth limits in Figure 1 with a limit of 25 mA after 10 s.....:		N/A
	Open circuit voltage between other conductor and earth not exceeding maximum RFT-C circuit voltage determined in 6.3.1.1.2 c) and 6.3.1.1.2 d), after 2 s		N/A

IEC 62368-3			
Clause	Requirement - Test	Result	Verdict
6.3.1.2	RFT-V circuit limits	See appended table 6.3.1.2	N/A
6.3.1.2.1	Limits under normal operating conditions		N/A
	Steady state open circuit voltage between earth and each RFT-V circuit conductor that normally connects to an ICT network, not exceeding (V) - 140 V DC : - 200 V DC with monitoring and control device in accordance with 6.3.1.2.3 :		N/A
	Voltage rating of insulation of RFT-V circuit receiving power via ICT network is suitable for - 400 V between conductors and - 200 V from any conductor to earth :		N/A
6.3.1.2.2	Voltage limits within RFT-V circuit supply equipment under single fault conditions (see IEC 62368-1, clause B.4)		N/A
	with any conductor of RFT-V circuit that normally connects to ICT network being earthed (V) :		—
	without any conductor of RFT-V circuit that normally connects to ICT network being earthed (V) :		—
	Not exceeding Figure 2 limits during first 200 ms, measured across a $5\,000\ \Omega \pm 2\%$ resistor with all load circuits disconnected		N/A
	Not exceeding 6.3.1.2.1 limits after first 200 ms		N/A
6.3.1.2.3	Voltage limits with one RFT-V conductor earthed, between the other conductor and earth:		N/A
	Not exceeding maximum RFT-V circuit supply voltage after 200 ms (V) :		N/A
	For RFT-V circuits with normal open circuit voltage exceeding 140 V DC, current between the other conductor and earth not exceeding Figure 1 line-to-earth limits, measured through a $2\,000\ \Omega \pm 2\%$ resistor, under any external load condition..... :		N/A
	This current not exceeding 10 mA DC after 10 s :		N/A
6.3.2	Accessibility to electrical energy sources and safeguards (See also IEC 62368-1, 5.3.2)		N/A
6.3.2.1	Accessibility for an ordinary person		N/A
	Adequate protection against contact with RFT circuits bare parts for all positions of the equipment wired and operated as in normal use.		N/A
	Not accessible: bare parts at ES3; and an ES3 basic safeguard		N/A
	Not accessible: bare parts at ES2, except for pins of connectors. However, such pins are not accessible under normal operating conditions by IEC 62368-1, Figure V.3 blunt probe		N/A

IEC 62368-3			
Clause	Requirement - Test	Result	Verdict
	Protection achieved by insulation, guarding (electrical enclosure), interlocks :	See appended table 4.1.2	N/A
6.3.2.2	Accessibility for an instructed person (See also IEC 62368-1, clause 4.3.3)		N/A
	Contact is possible with RFT circuit bare parts by the IEC 62368-1, Figure V.3 blunt probe		N/A
	RFT circuit bare parts so located or guarded that unintentional contact is unlikely.		N/A
6.3.2.3	Accessibility for a skilled person (See also IEC 62368-1, clause 4.3.4 and 5.3)		N/A
	RFT circuits bare parts located or guarded so that accidental shorting to ES1 or ES2 parts is unlikely		N/A
	Required guards easily removable and replaceable if necessary for servicing.		N/A
6.3.3	Safeguards		N/A
6.3.3.1	RFT circuits separated from other circuits and parts		N/A
	- from other RFT circuits by functional insulation. If shorted, neither circuit exceeds 6.3.1.1 and 6.3.1.2 limits		N/A
	- from other RFT circuits separated as if one was at ES3		N/A
	- from earthed accessible parts, earthed ES1 circuits and earthed ES2 circuits by basic insulation		N/A
	- from unearthed accessible parts, ES1, ES2 and ES3 circuits by one or both: • double insulation or reinforced insulation; • basic insulation, together with a conductive screen as protective bonding conductor.		N/A
6.3.3.2	Interconnection of equipment		N/A
6.3.3.2.1	General requirements.....		N/A
	Interconnecting cable containing more than one type of circuit.....		N/A
6.3.3.2.2	Interconnection between RFT circuits		N/A
	RFT-C circuits in supply equipment are connected to RFT-C circuits in other equipment		N/A
	RFT-V circuits in supply equipment are connected to RFT-V circuits in other equipment		N/A
6.3.4	Installation instructions for equipment using an RFT circuit do specify:		N/A
6.3.4 a)	RFT circuit voltage (V).....		N/A
6.3.4 b)	EUT effective capacitance between connection points		N/A
	1) for the ICT network conductors (nF)		—
	2) for ICT network one conductor and earth (nF):		—

IEC 62368-3			
Clause	Requirement - Test	Result	Verdict
6.3.4 c)	A system assessment shall be carried out at the time of installation, to ensure:		N/A
	Effective capacitance of the total system, including the capacitance of the EUT, does not exceed the values specified in Figure 3		N/A
6.3.4 d)	Checking is done that the voltage rating of ICT network wiring is adequate for normal RFT circuit voltage, together with superimposed transients ..		N/A
6.3.4 e)	Checking is done that circuits to be connected together are either all RFT-C circuits or all RFT-V circuits		N/A
6.3.4 f)	Where an RFT circuit is directly connected to an ICT network, that the building cabling termination records are updated to indicate which terminals are used for an RFT circuit		N/A
6.4	Electrically caused fire		N/A
6.4.1	Classification of RFT power sources		N/A
6.4.1.1	RFT-C power source is a PS2 circuit (See IEC 62368-1, clause 6.2.2.5 or 6.2.2.6)		N/A
	RFT-C circuit limited by maximum current (60 mA) and maximum voltage (usually < 800 V).		N/A
	RFT-C circuits comply with requirements of 6.4.2.		N/A
6.4.1.2	RFT-V power source is a PS2 circuit (See IEC 62368-1, clause 6.2.2.5)		N/A
	RFT-V circuits comply with requirements of 6.4.2.		N/A
6.4.2	Fire protection requirements		N/A
	RFT circuit power in accordance with Table 1.....		N/A
	Output voltage (V)		—
	Maximum current (A)		—
	Maximum Power (W)		—
	Steady state current that can be supplied to ICT network complies with IEC 62368-1:2014, 6.5.3 IEC 62368-1:2018, 6.5.2		N/A

IEC 62368-3			
Clause	Requirement - Test	Result	Verdict

5.1	Table: Power transfer using ES1 or ES2 voltages. General requirements				P
Output Connector	Components	Output voltage V dc)			
		No load	Normal load	Max. rated road	Limits
USB output (unit turned on)	Normal operation	5.07	4.84	5	60
USB output (unit turned off)	Normal operation	20.3	20.2	20	60
Supplementary Information: For USB ports, applied normal load equal to max. rated load. In AC mode: Charge out Power is max 5V/3A, 9V/3A , 15V/2A ,20V/1.5A, 5~11V/2.7A(PPS),5~16V/1.85A(PPS) when DUT is off. Charge out Power is max 5V/1A when DUT is power on.					

5.3.2	TABLE: DC power transfer interconnection to other equipment					P
Note: Measured each port with maximum attainable current:						
Output Circuit	Components	Fault current rating (A)	Any circumstance (A)		More than 5 s (A)	
			Meas.	Limit	Meas.	Limit
Unit turned on						
USB output port	--	5	3.3	8	3.3	6.5
USB output port	U12 pin 4-11 on main board SC	5	0	8	0	6.5
USB output port	U13 pin 28-32 on mainboard SC	5	0	8	0	6.5
USB output port	R150 on mainboard SC	5	3.3	8	3.3	6.5
Unit turned off						
USB output port	--	5	3.23	8	3.23	6.5
USB output port	R150 on mainboard SC	5	3.23	8	3.23	6.5
Supplementary Information: Fault current rating: > 2 A, limit 130%, ≤ 2 A, limit 150%						
Fault conditions tested: SC=Short circuit, OC=Open circuit						
In AC mode:						
Charge out Power is max 5V/3A, 9V/3A , 15V/2A ,20V/1.5A, 5~11V/2.7A(PPS),5~16V/1.85A(PPS) when DUT is off.						
Charge out Power is max 5V/1A when DUT is power on.						

IEC 62368-3			
Clause	Requirement - Test	Result	Verdict

5.4.1	TABLE: Requirement for the PSE					P
Note: Measured U fault (V) with all load circuits disconnected:						
Output Circuit	Components	U nominal rated (V)	U fault (V)		Fault conditions tested	
			Meas.	Limit		
Unit turned off						
USB output port	--	5	5.07	5.9*	Overload	
USB output port	U12 pin 4-11 on main board	5	0	5.9*	SC	
USB output port	U13 pin 28-32 on mainboard	5	0	5.9*	SC	
USB output port	--	9	9.04	11.0*	Overload	
USB output port	U12 pin 4-11 on main board	9	0	11.0*	SC	
USB output port	U13 pin 28-32 on mainboard	9	0	11.0*	SC	
USB output port	--	15	14.98	16.0*	Overload	
USB output port	U12 pin 4-11 on main board	15	0	16.0*	SC	
USB output port	U13 pin 28-32 on mainboard	15	0	16.0*	SC	
USB output port	--	20	19.21	21.0*	Overload	
USB output port	U12 pin 4-11 on main board	20	0	21.0*	SC	
USB output port	U13 pin 28-32 on mainboard	20	0	21.0*	SC	
USB output port	--	11	10.82	14.3	Overload	
USB output port	U12 pin 4-11 on main board	11	0	14.3	SC	
USB output port	U13 pin 28-32 on mainboard	11	0	14.3	SC	
USB output port	--	16	15.83	20.8	Overload	
USB output port	U12 pin 4-11 on main board	16	0	20.8	SC	
USB output port	U13 pin 28-32 on mainboard	16	0	20.8	SC	
Unit turned on						
USB output port	--	5	5.07	6.5	Overload	

IEC 62368-3			
Clause	Requirement - Test	Result	Verdict

Supplementary Information: Fault conditions tested: SC=Short circuit, OC=Open circuit * Max Voltage for PPS voltage from USB PD specification used.

5.4.2	TABLE: Requirement for the PD					N/A
Note: Measured U input at PSE with all other load circuits disconnected:						
Input Circuit	Components	U nominal rated (V)	U input (V)		Observation	
			Meas.	Limit	Component	Hazard
Supplementary Information: Conditions tested: PD supplied with voltage above nominal rated input voltage. Nominal > 5 V, supplied with 130% (min. 7.5 V) Nominal ≤ 5 V supplied with 150%						

IEC 62368-3			
Clause	Requirement - Test	Result	Verdict

6.3.1.1		TABLE: RFT-C circuit limits					N/A
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			Observation
				U (V DC)	I (mA DC)	limit	
1			Normal load			60 mA	
			Abnormal load			60 mA	
			To earth			2 mA	
			Single fault			60 mA	
			Single fault – to earth			25 mA	
2			Normal load			60 mA	
			Abnormal load			60 mA	
			To earth			2 mA	
			Single fault –			60 mA	
			Single fault – to earth			25 mA	
Supplementary information:							
1) Current flow from the RFT-C CIRCUIT supply equipment into the TELECOMMUNICATION NETWORK							
2) Current flow from one conductor of the RFT-C CIRCUIT supply equipment through the TELECOMMUNICATION NETWORK to earth. Use of a resistor of 2000 ± 2 %							

IEC 62368-3			
Clause	Requirement - Test	Result	Verdict

6.3.1.2		TABLE: RFT-V circuit limits					N/A
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			Observation
				U (V DC)	I (mA DC)	limit	
1			Open circuit			140 V	
			Open circuit, monitored			200 V	
			Single fault – < 200 ms			Figure 2	
			Single fault – > 200 ms			140 V	
			Single fault – > 200 ms, monitored			200 V	
			Conductor earthed > 200 ms			Figure 1	
			Conductor earthed > 10 s			10 mA	
2			Open circuit			140 V	
			Open circuit, monitored			200 V	
			Single fault – < 200 ms			Figure 2	
			Single fault – > 200 ms			140 V	
			Single fault – > 200 ms, monitored			200 V	
			Conductor earthed > 200 ms			Figure 1	
			Conductor earthed > 10 s			10 mA	
Test Conditions: Normal – Abnormal - Supplementary information: SC=Short Circuit, OC=Open Circuit							

4.1.2	TABLE: List of critical components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹	
--	--	--	--	--	--	
Supplementary information: See referred IEC 62368-1 test report.						
¹) Provided evidence ensures the agreed level of compliance. See OD-2039.						

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C



Figure 1: Overall view with accessories



Figure 2: External view (rear side)

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C



Figure 3: External view (rear and bottom)



Figure 4: External view (bottom)

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C

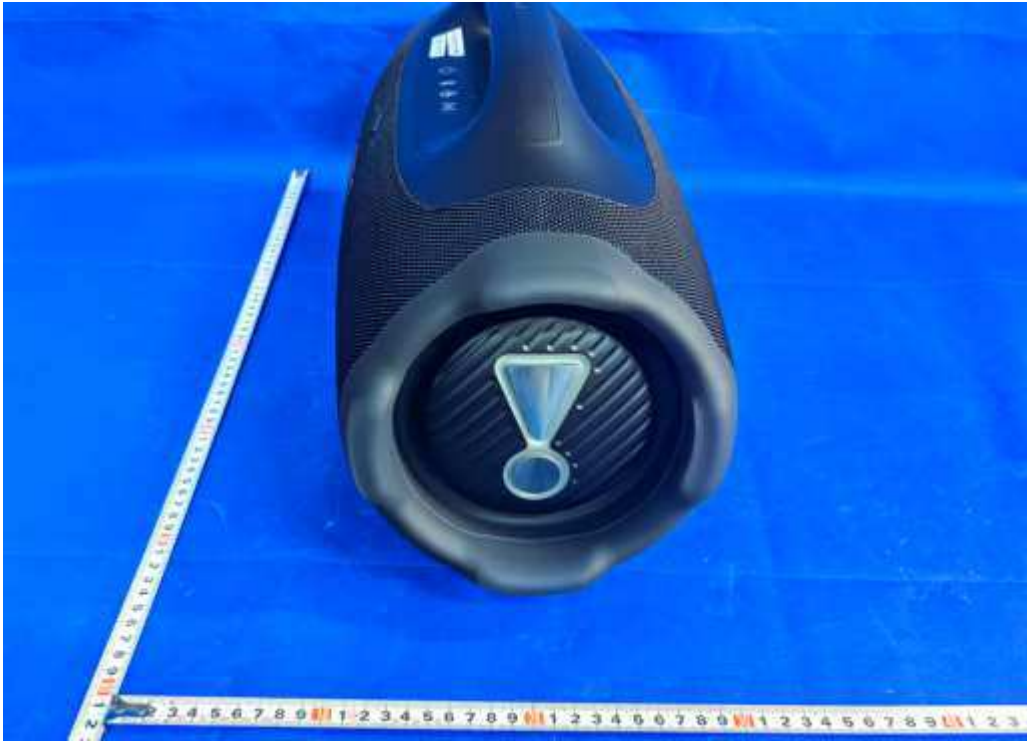


Figure 5: External view (side 1)



Figure 6: External view (side 2)

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C



Figure 7: Internal view -1 (Battery cover removed)



Figure 8: Internal view -2 (Battery removed)

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C



Figure 9: Internal view -3



Figure 10: Internal view -4

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C



Figure 11: Internal view -5



Figure 12: Internal view -6

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C



Figure 13: Internal view -7



Figure 14: Internal view -8

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C

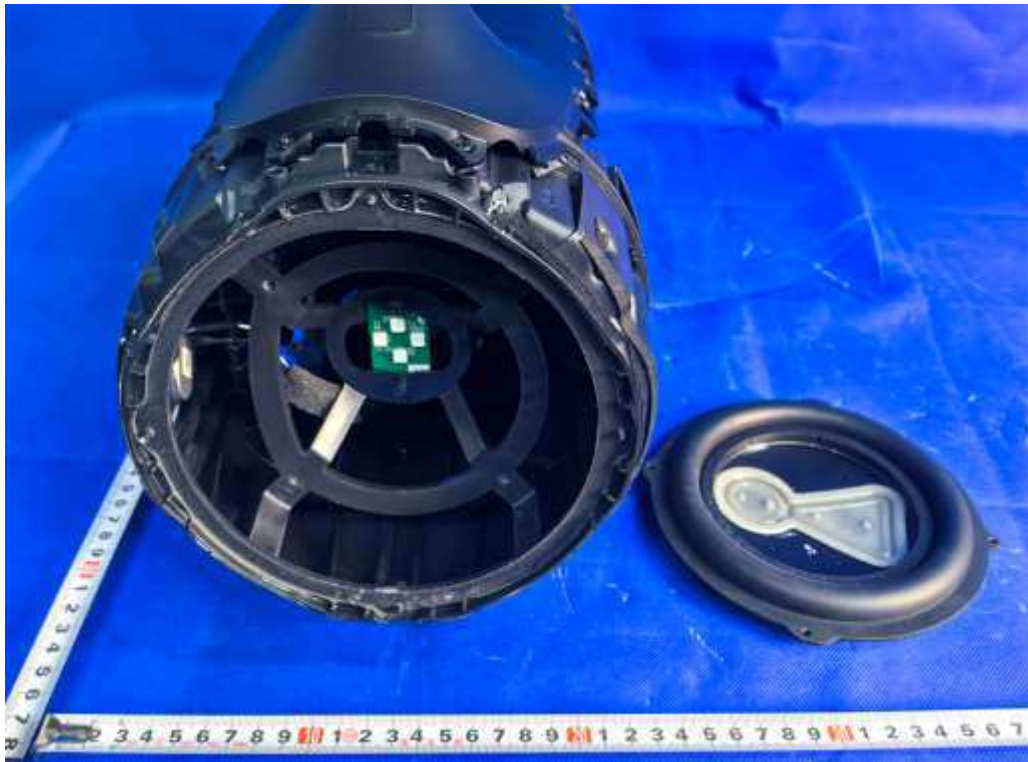


Figure 15: Internal view -9 (Right side)



Figure 16: Internal view -10 (Right side)

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C

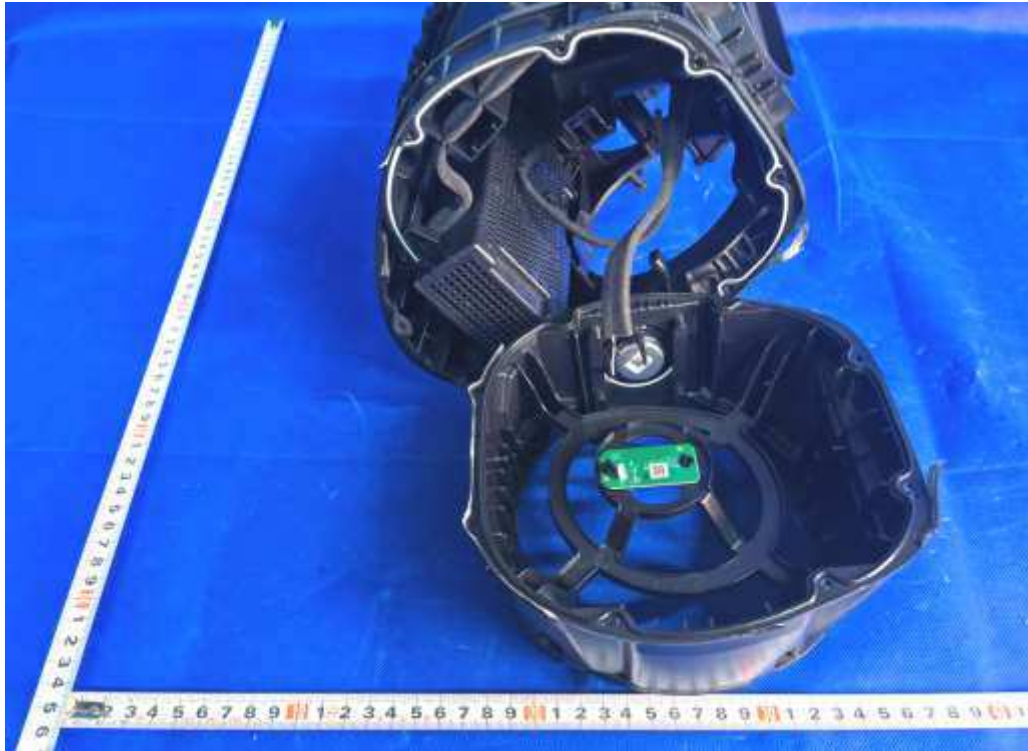


Figure 17: Internal view -11 (Right side)

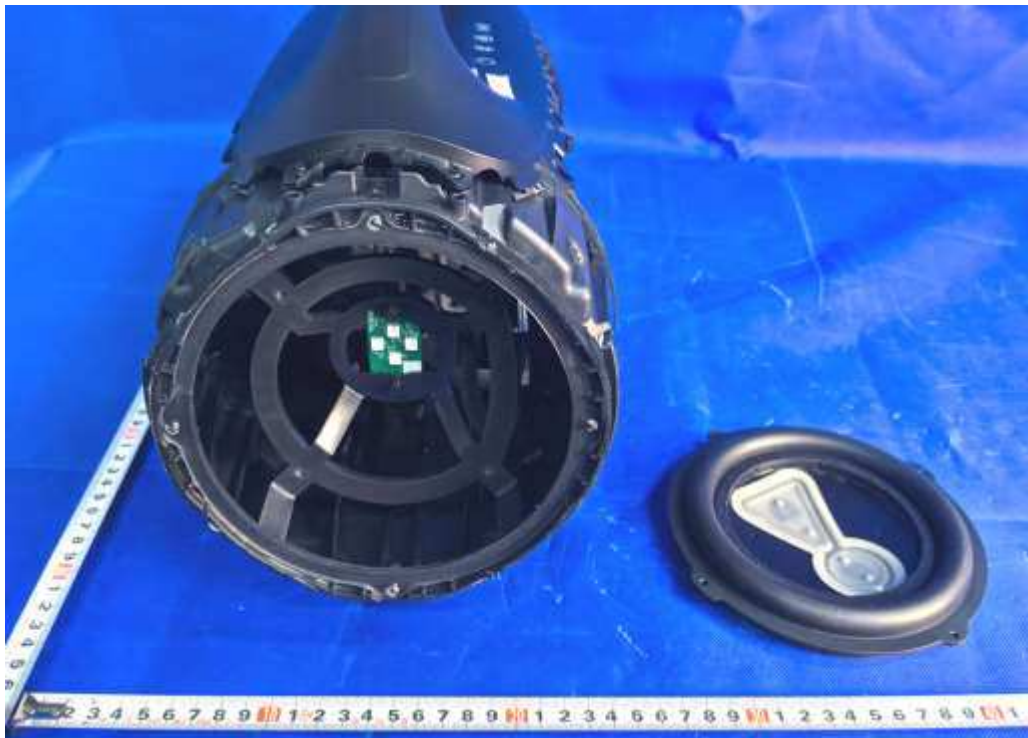


Figure 18: Internal view -12 (Left side)

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C

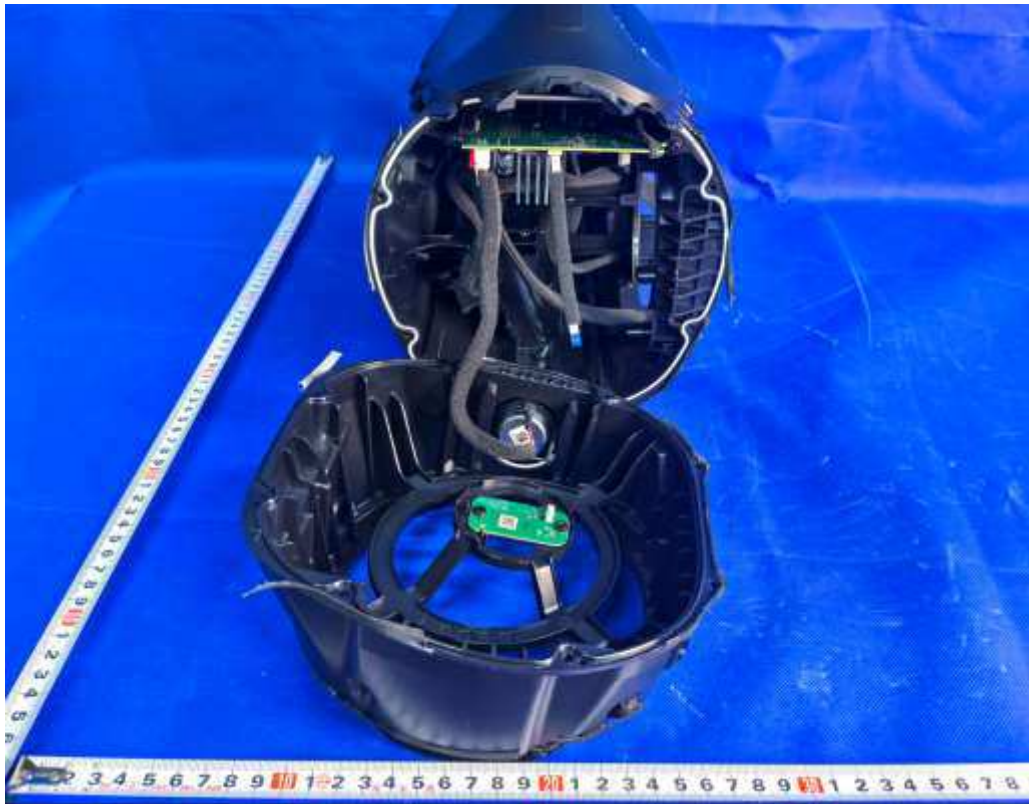


Figure 19: Internal view -13 (Left side)



Figure 20: Internal view -14

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C



Figure 21: Internal view -15



Figure 22: Internal view -16

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C



Figure 23: Button board view



Figure 24: Mainboard view -1

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C

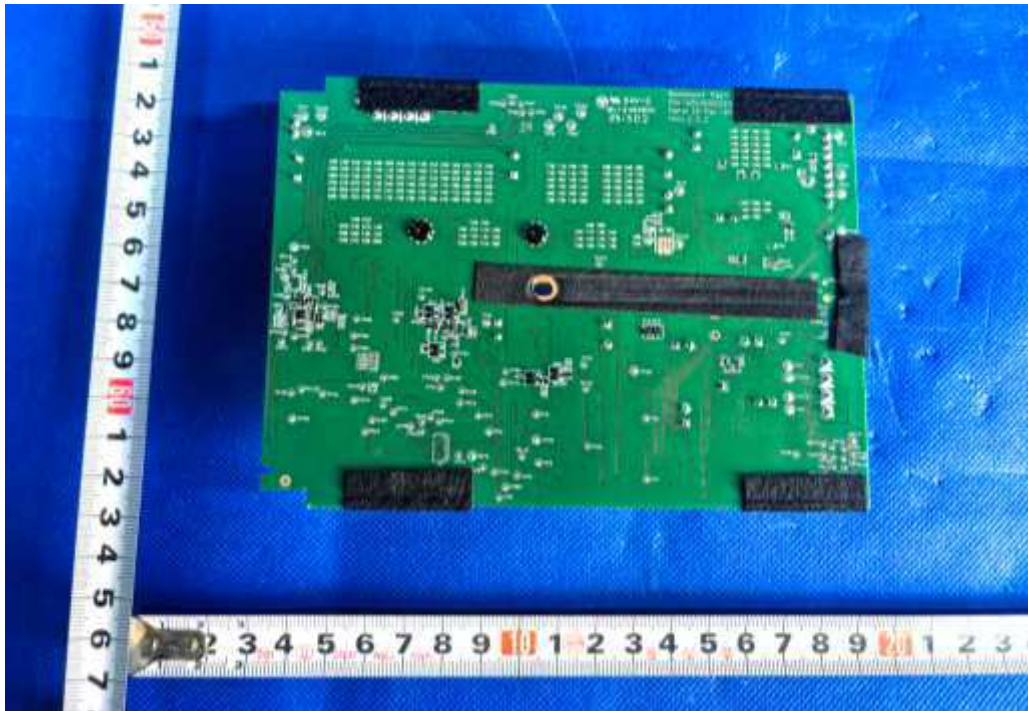


Figure 25: Mainboard view -2

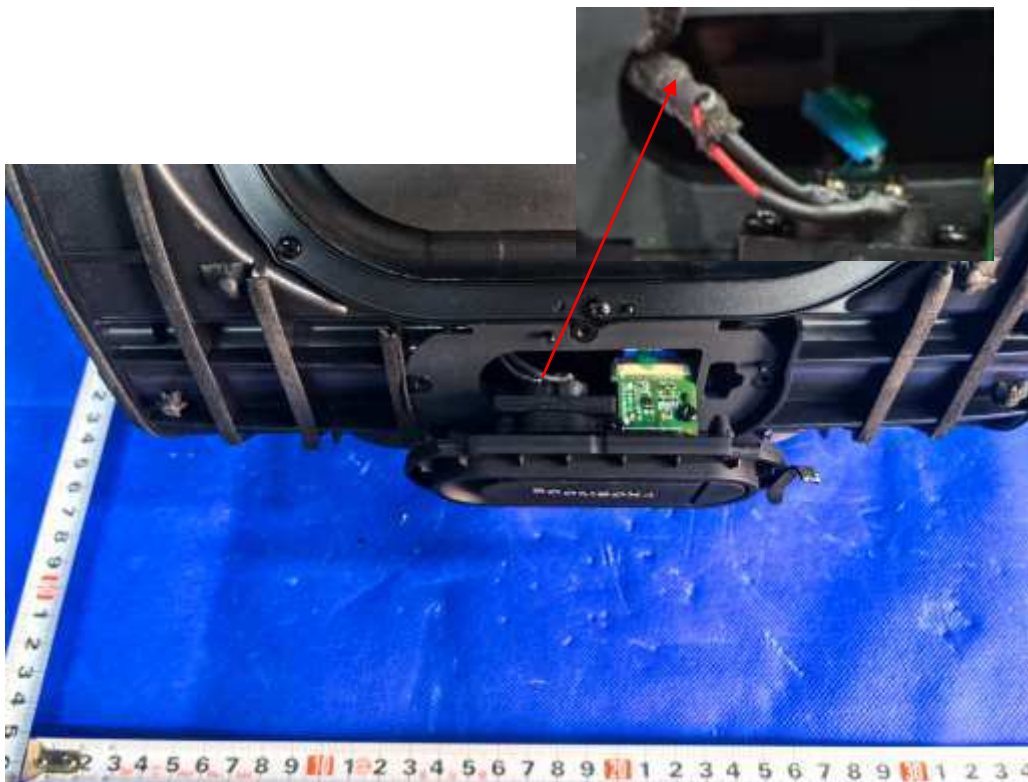


Figure 26: Internal view for AC inlet and USB-C board (Heat-shrinkable tube used on internal primary wires)

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C



Figure 27: Power board view -1



Figure 28: Power board view -2

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C

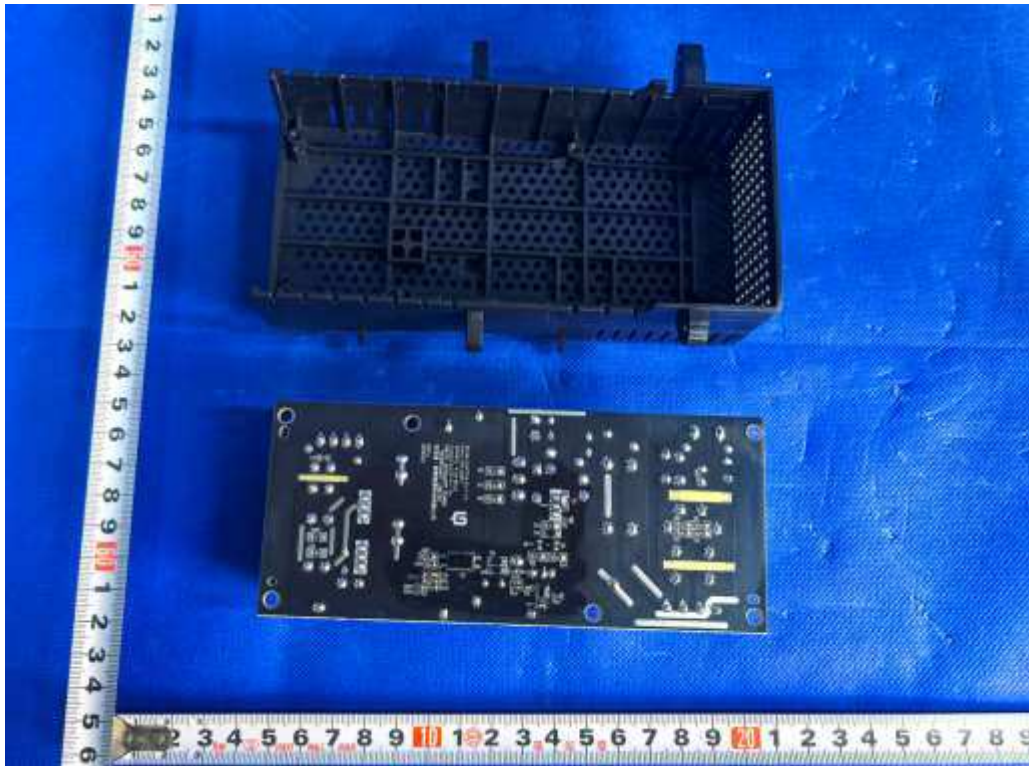


Figure 29: Power board view -3

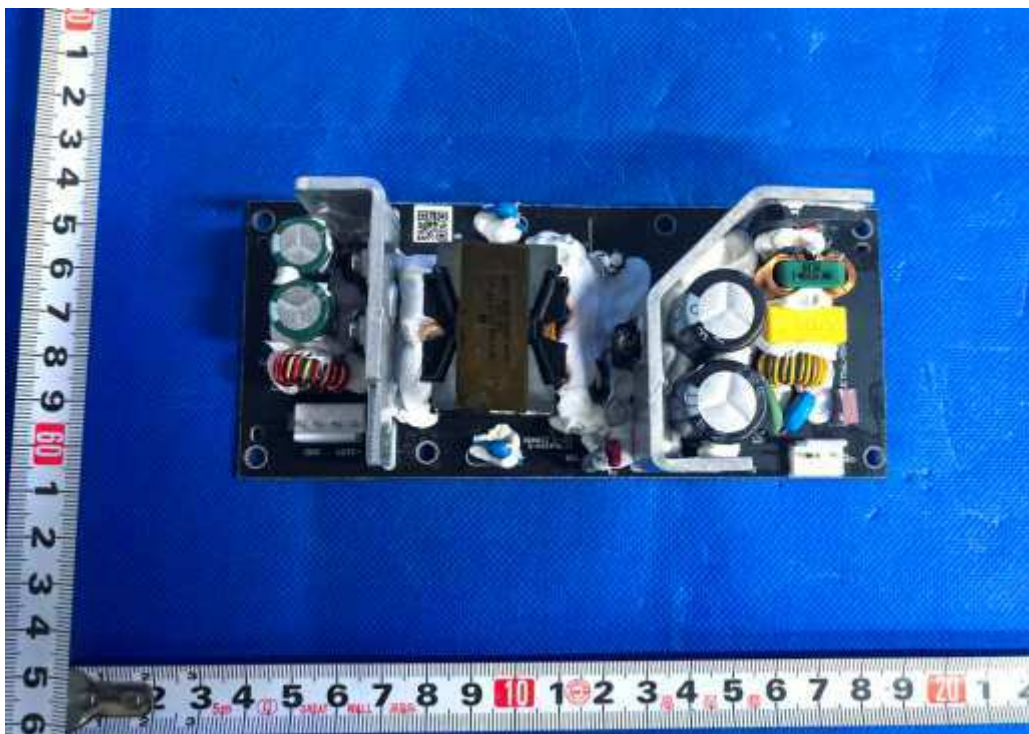


Figure 30: Power board view -4

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C



Figure 31: Internal view for appliance inlet and USB-C board

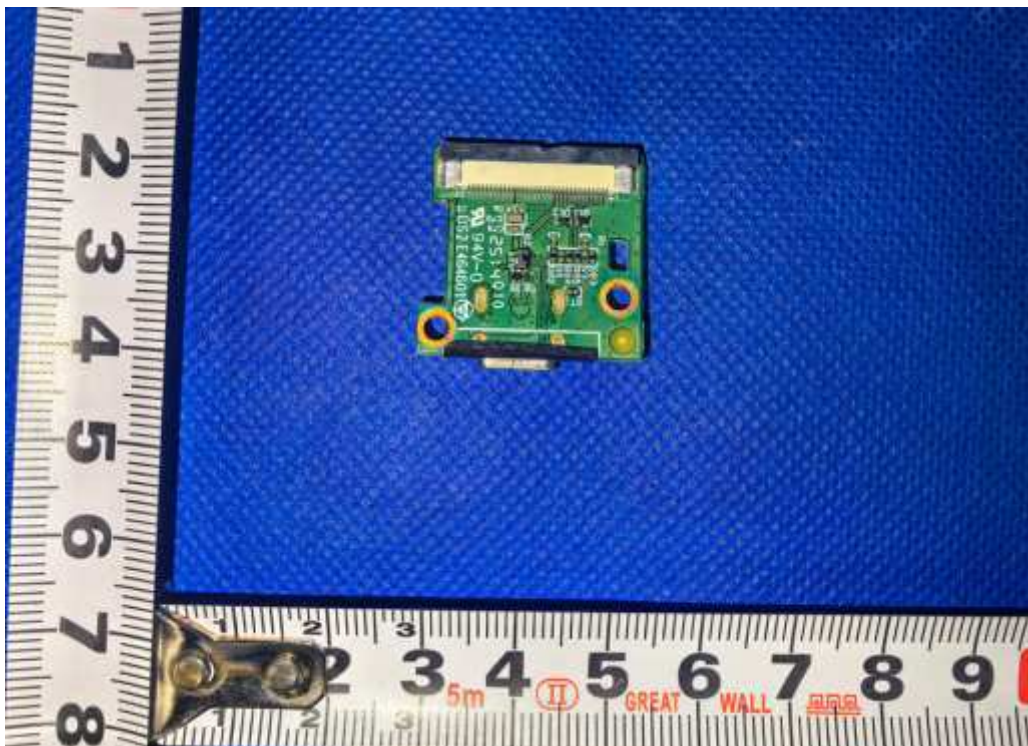


Figure 32: USB-C board view -1

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C

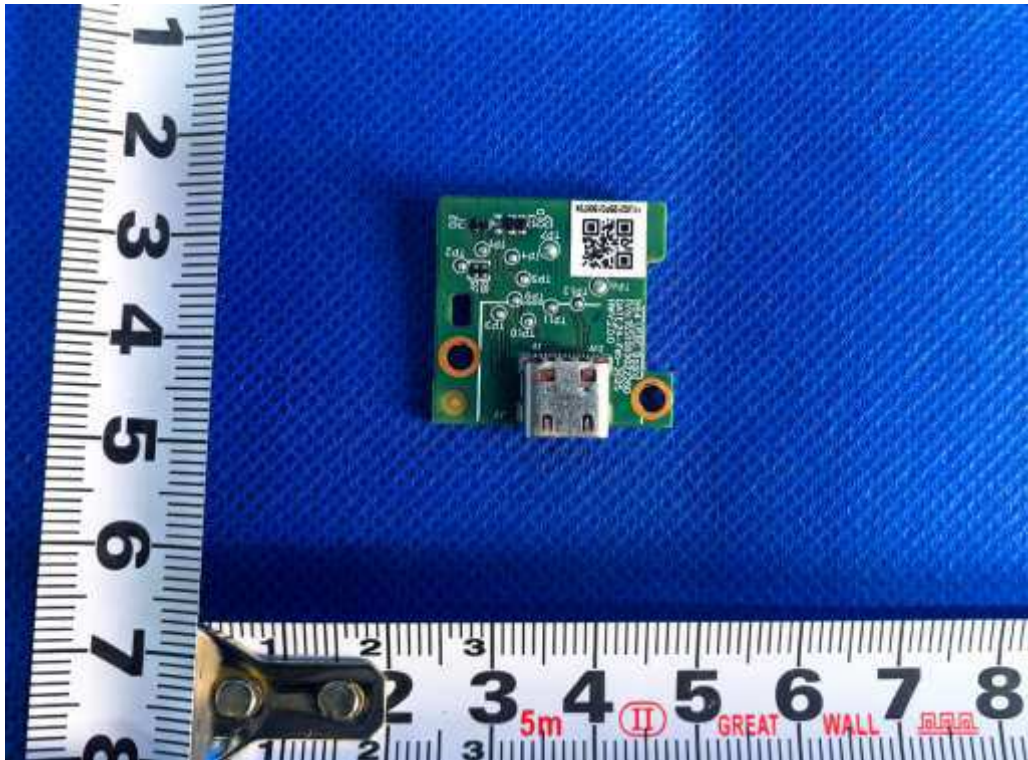


Figure 33: USB-C board view -2



Figure 34: Battery view -1

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C



Figure 35: Battery view -2



Figure 36: Transformer view -1

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C

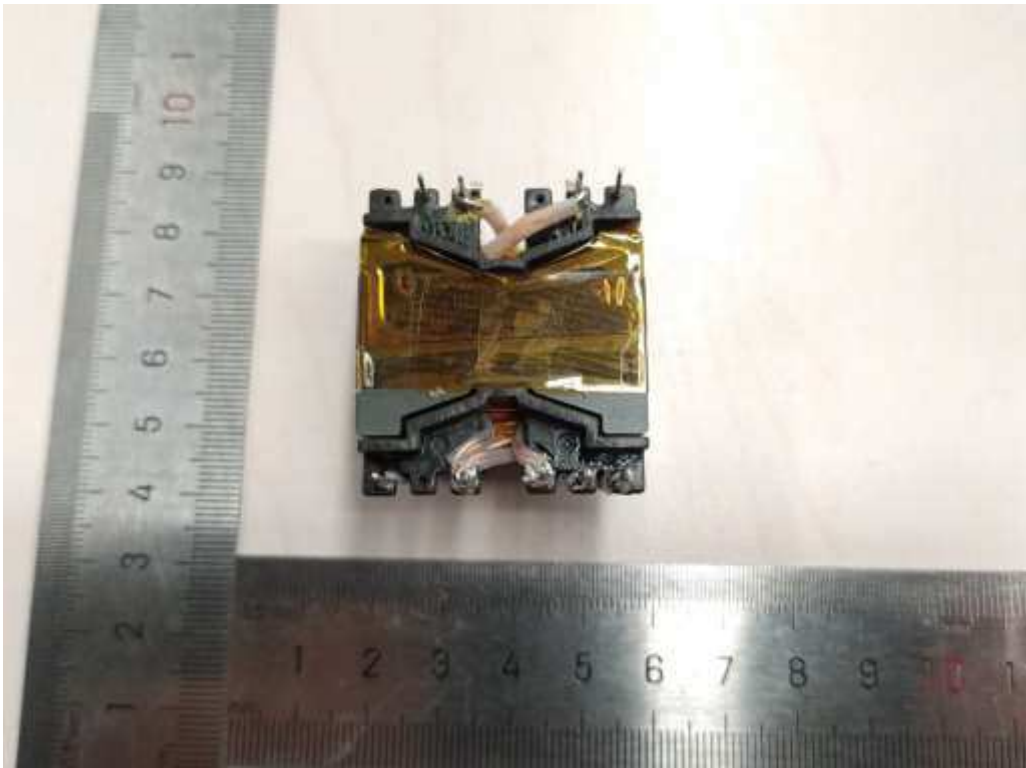


Figure 37: Transformer view -2



Figure 38: Transformer view -3

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C

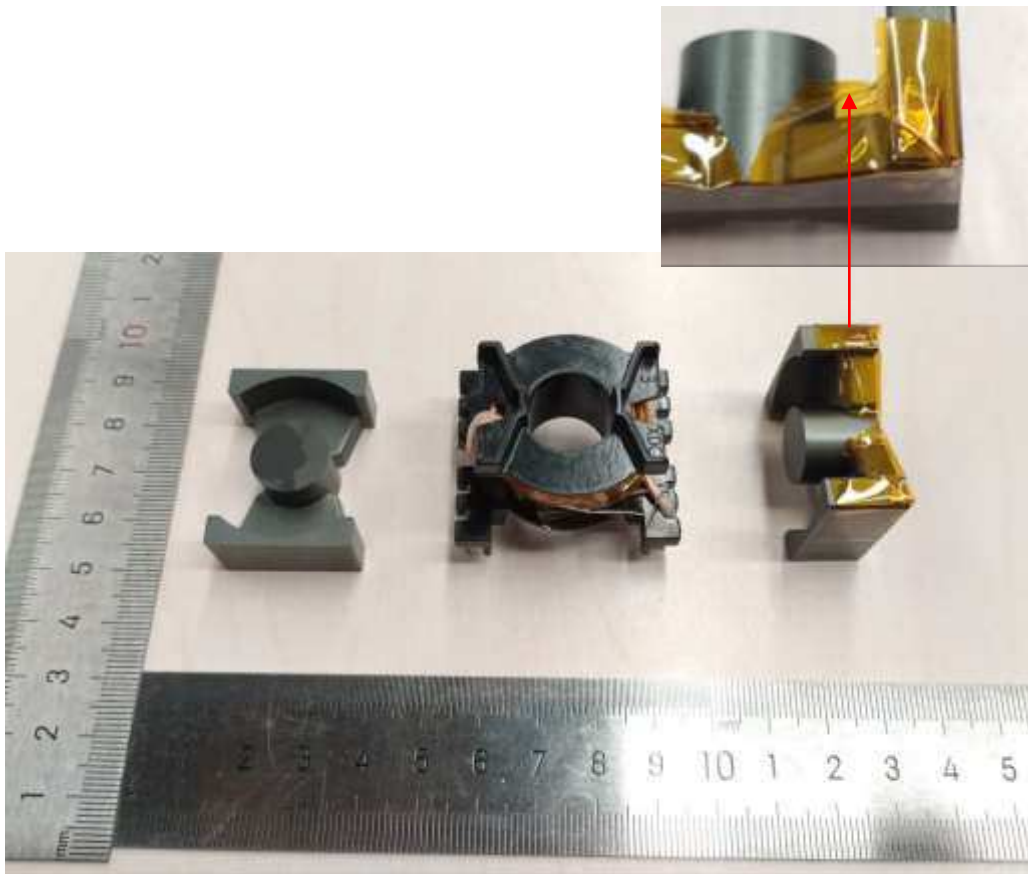


Figure 39: Transformer view -4 (Two layers insulation tape used on bottom of core)



Figure 40: Transformer view -5

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C



Figure 41: Transformer view -6

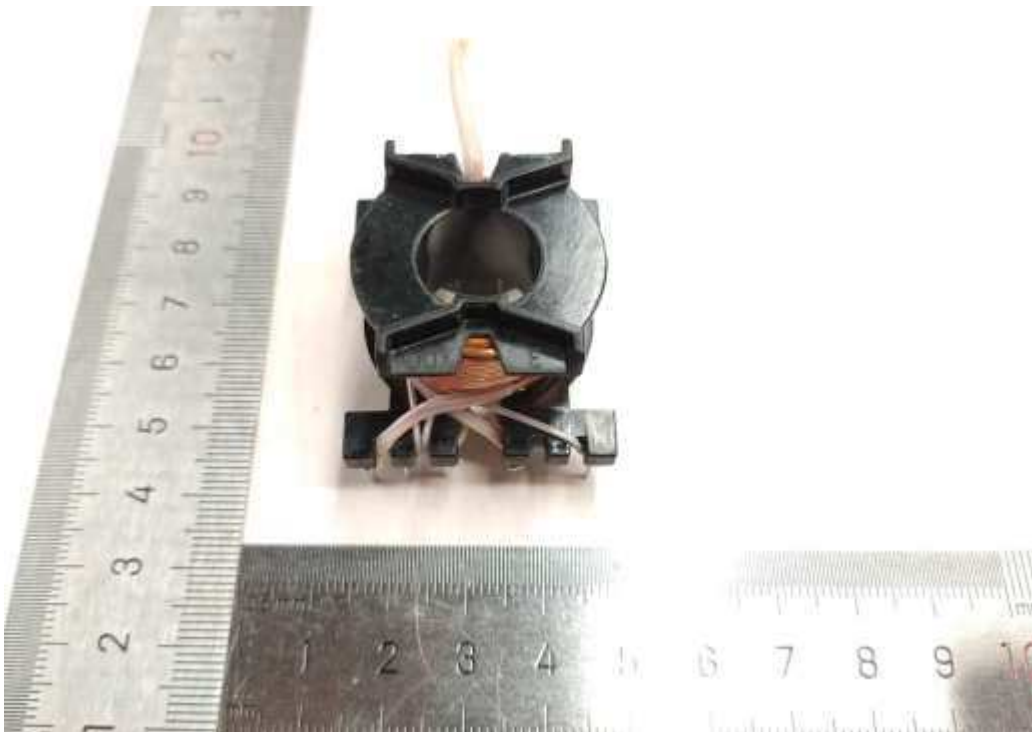


Figure 42: Transformer view -7

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C



Figure 43: Transformer view -8



Figure 44: Transformer view -9

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C

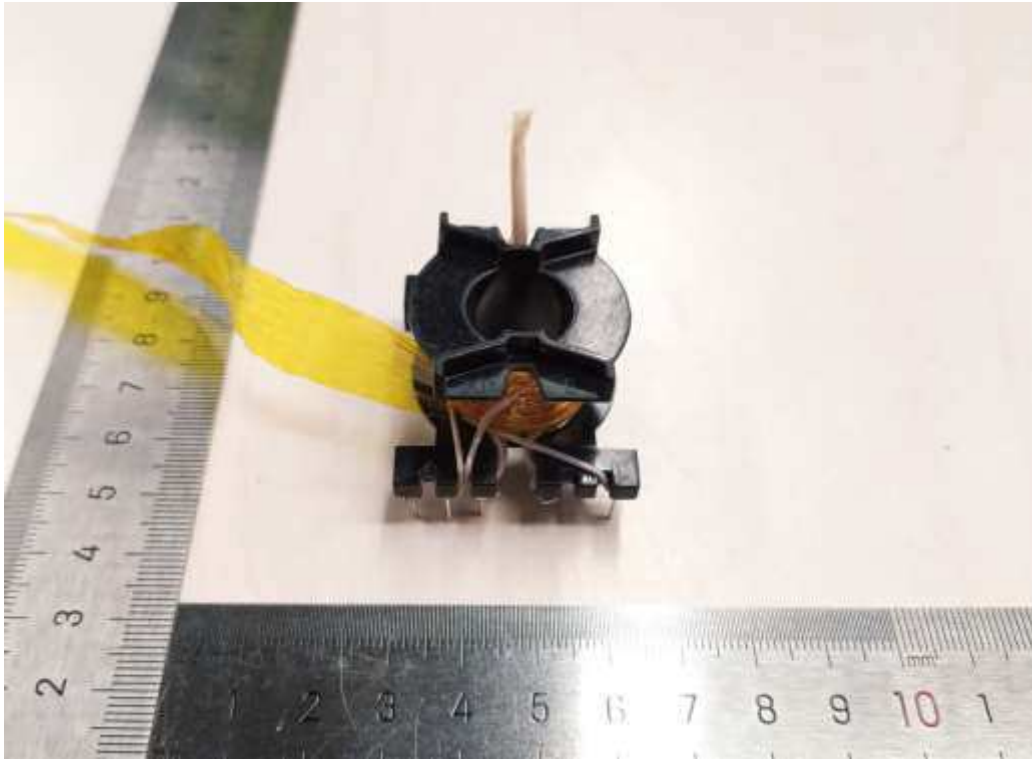


Figure 45: Transformer view -10

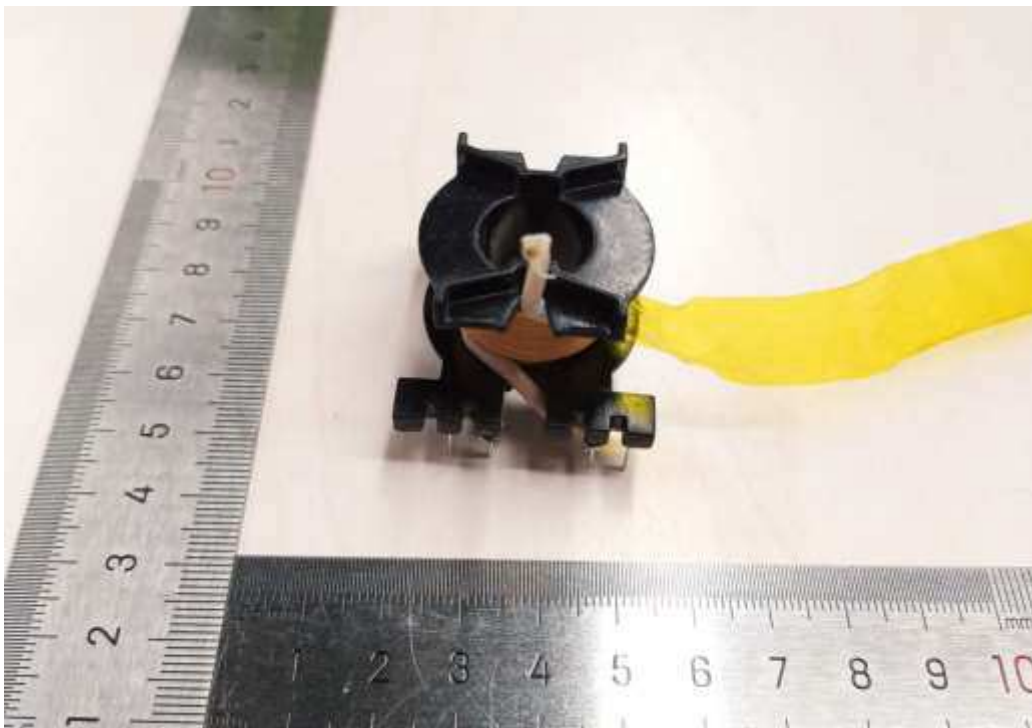


Figure 46: Transformer view -11

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C



Figure 47: Transformer view -12

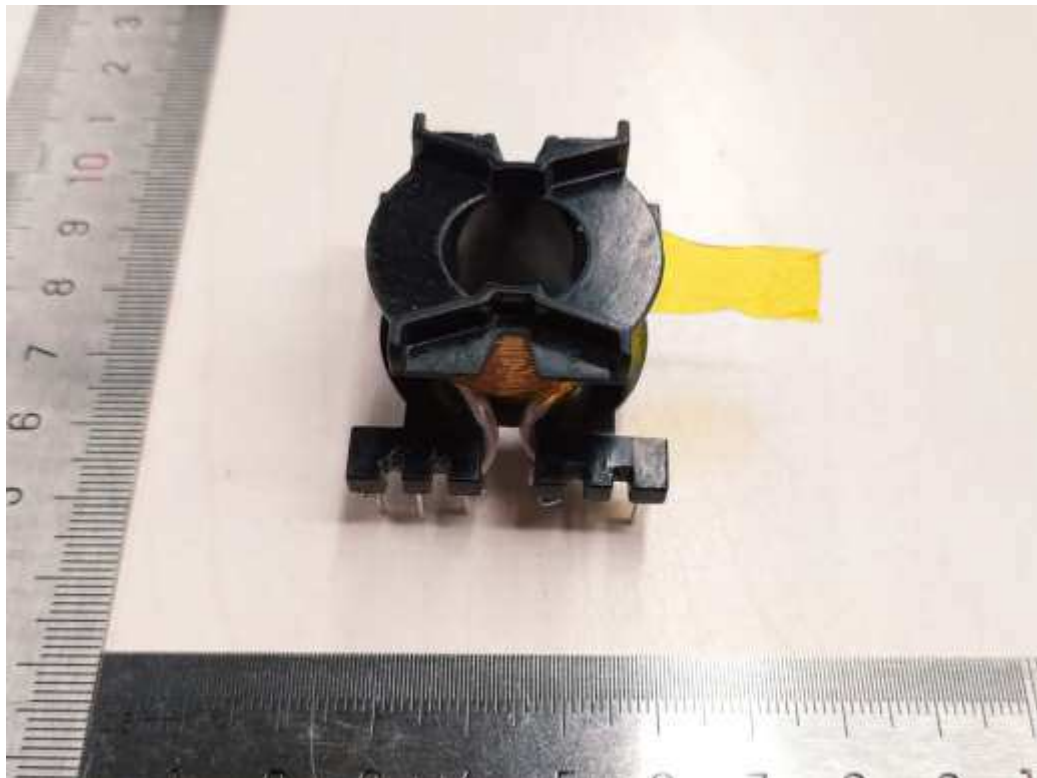


Figure 48: Transformer view -13

Product: Portable Bluetooth Speaker

Type Designation: BOOMBOX 4C



Figure 49: Transformer view -14