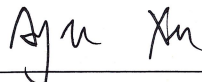


## TEST REPORT

Applicant : SHENZHEN FENDA TECHNOLOGY CO., LTD.  
Address : Fenda Hi-Tech Park, Zhoushi Road, Shiyan Town, Baoan District, Shenzhen City, Guangdong, China  
Manufacturer : SHENZHEN FENDA TECHNOLOGY CO., LTD.  
Address : Fenda Hi-Tech Park, Zhoushi Road, Shiyan Town, Baoan District, Shenzhen City, Guangdong, China  
Product Name : Computer Multimedia Speaker  
Trade Mark : F&D  
Model No. : PA300, PA200, PA928, PA948, PA310, PA100, PA388  
Ratings : Input : 100-240V~ 50/60Hz, 1A  
Standard : Audio/video, information and communication technology equipment  
Part 1: Safety requirements  
EN 62368-1:2014+A11:2017  
Date of Receiver : November 11, 2020  
Date of Test : November 19, 2020 to December 12, 2020  
Date of Issue : December 17, 2020  
Test Report Form No : NTCS-IEC62368-1-A1-E  
Test Result : Pass \*

This Test Report is Issued Under the Authority of:

Compiled by



Ayu Xu/ Engineer

Approved by & Authorized Signer



Ryan Luo / Authorized Signatory

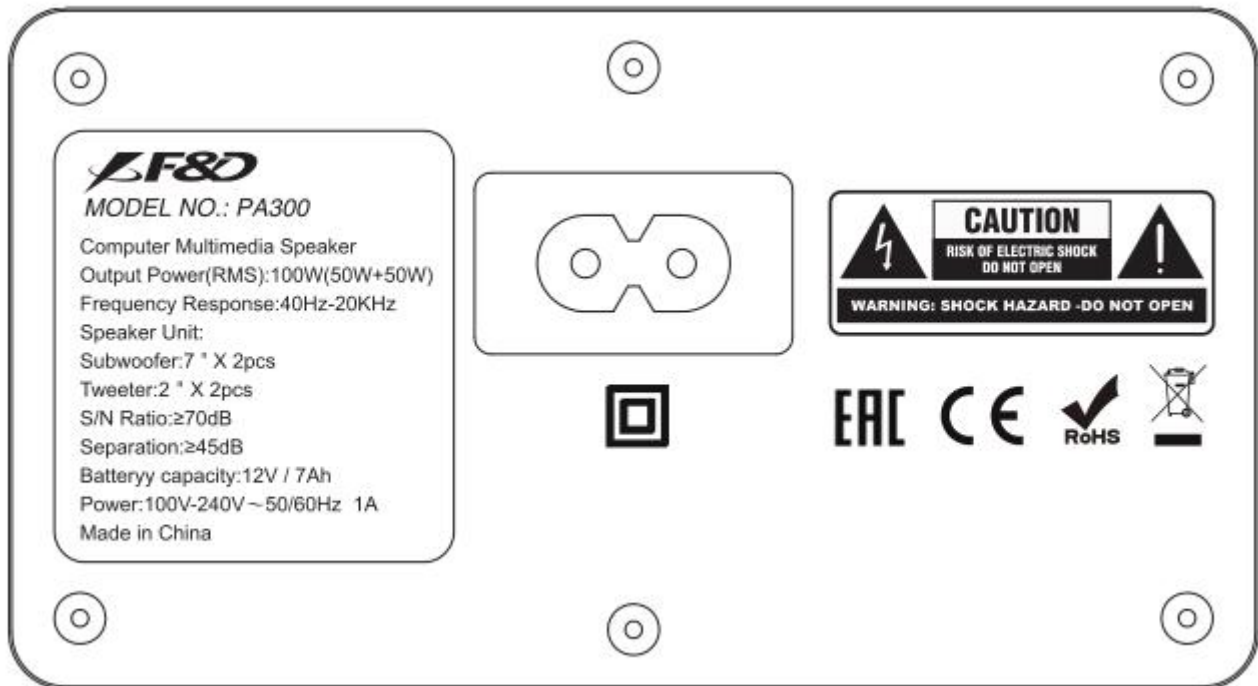
\*Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of Dongguan Nore Testing Center Co., Ltd. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

### Revision History of This Test Report

Report Number	Description	Issued Date
NTC2011119SV00	Initial Issue	2020-12-17
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--

Copy of marking plate:



Remarks:

1. The above markings are the minimum requirements required by the safety standard. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.
2. The CE marking and WEEE symbol should be at least 5.0mm and 7.0mm respectively in height.
3. Marking label of all models are identical to each other except for model number.
4. The importer information (Name and Address) and manufacturer information (Name and Address) should be marked in product when this product import to European marketing.

Summary of testing:

From the result of our tests on the submitted samples, we conclude they comply with the requirements of the standards.

TEST ITEM PARTICULARS:	
Classification of use by.....:	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input checked="" type="checkbox"/> Children likely to be present
Supply Connection.....:	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit - not Mains connected - <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input checked="" type="checkbox"/> ES3
Supply % Tolerance .....	<input checked="" type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> + ____% / - ____% <input type="checkbox"/> None
Supply Connection – Type .....	<input checked="" type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input checked="" type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input type="checkbox"/> other:
Considered current rating of protective device as part of building or equipment installation.....:	16 A Installation location: <input checked="" type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility.....:	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC) .....	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
Class of equipment .....	<input type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III
Access location .....	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD) .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maximum operating ambient.....:	35°C
IP protection class .....	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP20
Power Systems .....	<input type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - ____ V <sub>L-L</sub>
Altitude during operation (m) .....	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> <5000 m
Altitude of test laboratory (m) .....	<input type="checkbox"/> 2000 m or less <input checked="" type="checkbox"/> <50 m
Mass of equipment (kg) .....	Approx.15.80Kg
POSSIBLE TEST CASE VERDICTS:	
- test case does not apply to the test object.....:	N (N/A)
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)

**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.

Determination of the test result includes consideration of measurement uncertainty from the test equipment and methods.

**GENERAL PRODUCT INFORMATION:**

**Product Description**

1. This equipment is a Computer Multimedia Speaker supplied by AC mains via Detachable power cordset with attachment plug or internal acid-lead battery and for indoor used only.
2. All models have the same construction, circuit diagram and PCB layout, except model name and appearance color different for marketing purpose, all test were performed on model PA-300 present the other model.
3. The product is to be used under:
  - Maximum operating temperature: +35°C.
  - Altitude less than 2000m.
  - Indoor used only.
4. Unless other specified, the testing is conducted under "AUX" mode due to larger power consumption.

**Additional application considerations –**

- |   |  |
|---|--|
| - normal conditions <b>N.C.</b>                 | - single fault conditions <b>S.F.C</b> |
| - functional insulation <b>FI</b>               | - basic insulation <b>BI</b>           |
| - double insulation <b>DI</b>                   | - supplementary insulation <b>SI</b>   |
| - between parts of opposite polarity <b>BOP</b> | - reinforced insulation <b>RI</b>      |
| - short circuit <b>SC</b>                       | - open circuit <b>OC</b>               |
| - overload <b>O/L</b>                           |  |

**Indicate used abbreviations (if any)**

- equipment under test **EUT**

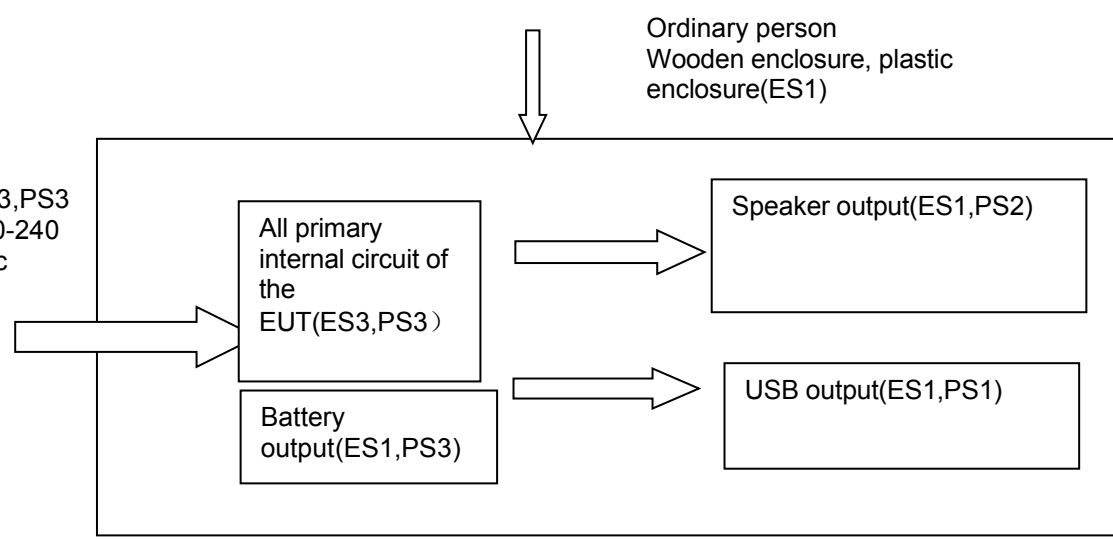
<b>ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:</b>	
<p>(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.)</p>	
<p><b>Electrically-caused injury (Clause 5):</b> (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input <span style="float: right;">ES1</span></p>	
Source of electrical energy	Corresponding classification (ES)
All primary internal circuit of the EUT	ES3
Wooden enclosure, plastic enclosure, USB terminal, speaker output	ES1
Battery output	ES1
<p><b>Electrically-caused fire (Clause 6):</b> (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): <span style="float: right;">PS2</span></p>	
Source of power or PIS	Corresponding classification (PS)
All primary internal circuit of the EUT and battery output	PS3
Speaker output	PS2
USB output	PS1
<p><b>Injury caused by hazardous substances (Clause 7)</b> (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component <span style="float: right;">Glycol</span></p>	
Source of hazardous substances	Corresponding chemical
Battery	Electrolyte
<p><b>Mechanically-caused injury (Clause 8)</b> (Note: List moving part(s), fan, special installations, etc. &amp; corresponding MS classification based on Table 35.) Example: Wall mount unit <span style="float: right;">MS2</span></p>	
Source of kinetic/mechanical energy	Corresponding classification (MS)
Shape edges and corner of product	MS1
Equipment mass- Approx. 15.80kg	MS2
<p><b>Thermal burn injury (Clause 9)</b> (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure <span style="float: right;">TS1</span></p>	
Source of thermal energy	Corresponding classification (TS)
External accessible enclosures/parts	TS1
<p><b>Radiation (Clause 10)</b> (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product <span style="float: right;">RS1</span></p>	
Type of radiation	Corresponding classification (RS)
LED for indicating	RS1

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
LED lights of speaker	RS1

**ENERGY SOURCE DIAGRAM**

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

ES     
  PS     
  MS     
  TS     
  RS



Ordinary person  
 Wooden enclosure, plastic enclosure(ES1)

ES3, PS3  
 100-240  
 Vac

All primary internal circuit of the EUT(ES3, PS3)

Battery output(ES1, PS3)

Speaker output(ES1, PS2)

USB output(ES1, PS1)

ES3: All primary internal circuit of the EUT  
 ES1: Wooden enclosure, plastic enclosure, USB terminal, speaker output  
 PS3: All primary internal circuit of the EUT and battery output  
 PS2: Speaker output  
 PS1: USB output

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	ES3: All internal circuit of the EUT	Equipment safeguards	Equipment safeguards	Transformer, optocoupler, Y-capacitor, enclosure
Ordinary	ES1: Wooden enclosure, plastic enclosure, USB terminal, speaker output	N/A	N/A	N/A
Ordinary	ES1: Battery output	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Combustible materials within equipment	PS3: >100 Watt All primary internal circuit of the EUT and battery output	Equipment safeguards (no ignition)	Equipment, safeguard, Fire enclosure	N/A
Combustible materials within equipment	PS2: Speaker output	Equipment safeguards (no ignition)	Control fire spread (rated V-0 material PCB used)	N/A
Combustible materials within equipment	PS1: <15 Watt USB output	Equipment safeguards (no ignition)	N/A	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	Chemical electrolyte	N/A	The enclosure of battery used as container	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3: High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	MS1: Sharp edges and corners	N/A	N/A	N/A
Ordinary	MS2: Equipment mass	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part	Energy Source	Safeguards		



(e.g., Ordinary)	(TS2)	Basic	Supplementary	Reinforced
Ordinary	TS1: External accessible enclosures/parts	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	RS1: LED for indicating	N/A	N/A	N/A
Ordinary	RS1:LED lights of speaker	N/A	N/A	N/A
Supplementary Information: (1) See attached energy source diagram for additional details. (2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4</b>	<b>GENERAL REQUIREMENTS</b>		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.	P
4.1.3	Equipment design and construction	Equipment is adequately designed and constructed.	P
4.1.15	Markings and instructions.....:	See Annex F.	P
4.4.4	Safeguard robustness	See below.	P
4.4.4.2	Steady force tests..... :	(See Annex T.2, T.3, T.4, T.5).	P
4.4.4.3	Drop tests.....:		N/A
4.4.4.4	Impact tests..... :	(See Annex T.6.)	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....:		N/A
4.4.4.6	Glass Impact tests.....:	No such glass used.	N/A
4.4.4.7	Thermoplastic material tests.....:	(See Annex T.8)	N/A
4.4.4.8	Air comprising a safeguard..... :	(See Annex T)	P
4.4.4.9	Accessibility and safeguard effectiveness	After tests, no safeguard damaged.	P
4.5	Explosion	No explosion occurs during normal/abnormal operation and single fault conditions	P
4.6	Fixing of conductors	See below.	P
4.6.1	Fix conductors not to defeat a safeguard	All part is fixed with two means	P
4.6.2	10N force test applied to .....	Applied 10N, no loose	P
4.7	Equipment for direct insertion into mains socket - outlets	The unit was not direct plug-in	N/A
4.7.2	Mains plug part complies with the relevant standard..... :	Not such equipment	N/A
4.7.3	Torque (Nm)..... :	Not such equipment	N/A
4.8	Products containing coin/button cell batteries	No coin/button cell batteries used.	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery.....:		—
4.8.4	Battery Compartment Mechanical Tests.....:		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object..... :	(See Annex P)	P

<b>5</b>	<b>ELECTRICALLY-CAUSED INJURY</b>		P
5.2.1	Electrical energy source classifications..... :	See below	P
5.2.2	ES1, ES2 and ES3 limits	(See appended table 5.2)	P
5.2.2.2	Steady-state voltage and current..... :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits..... :		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	Ringing signals .....	No such ringing signals within the EUT	N/A
5.2.2.7	Audio signals .....	See Annex E.1	P
5.3	Protection against electrical energy sources	See below	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
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
5.3.2.2	Contact requirements	No opening of enclosure, no access with test probe to any ES3 circuit or parts.	P
	a) Test with test probe from Annex V..... :	No access with test probe to any ES3 circuit or parts.	P
	b) Electric strength test potential (V)..... :		N/A
	c) Air gap (mm) .....		N/A
5.3.2.4	Terminals for connecting stripped wire	No stripped wire used.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Humidity conditioning..... :	See sub-clause 5.4.8.	N/A
5.4.1.4	Maximum operating temperature for insulating materials .....	(See appended table 5.4.1.4.)	P
5.4.1.5	Pollution degree..... :	Pollution degree 2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2 is applied. No insulating compound applied (however see 5.5.4).	N/A
5.4.1.5.3	Thermal cycling		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	Bobbin materials of transformers and primary choke are Phenolic that is accepted without further tests. Other parts see below.	P
5.4.1.10.2	Vicat softening temperature..... :		N/A
5.4.1.10.3	Ball pressure ..... :		P
5.4.2	Clearances	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.2.2	Determining clearance using peak working voltage		P
5.4.2.3	Determining clearance using required withstand voltage ..... :		P
	a) a.c. mains transient voltage..... :	2500V for Overvoltage Cat. II	—
	b) d.c. mains transient voltage ..... :	No such transient.	—
	c) external circuit transient voltage..... :	No such transient.	—
	d) 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 2000m	N/A
5.4.3	Creepage distances..... :	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group ..... :	IIIa & IIIb	—
5.4.4	Solid insulation	See clause G.13.5 for PCB and see below for other parts	P
5.4.4.2	Minimum distance through insulation ..... :	(See appended table 5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation	See below	P
5.4.4.4	Solid insulation in semiconductor devices	Approved optocoupler used. Requirements of G.12 met, see table 4.1.2 for listed component used	P
5.4.4.5	Cemented joints	See below	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6	Thin sheet material	3 layers of insulation tape in and around outside and between winding and core of transformer T1 are used for reinforced insulation and are not expected to be subject to handling or abrasion during ordinary or instructed person servicing.	P
5.4.4.6.1	General requirements	3 layers are provided as reinforced insulation any one layer passed the electric strength test for reinforced insulation	P
5.4.4.6.2	Separable thin sheet material	2	P
	Number of layers (pcs) .....		P
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material.....		N/A
5.4.4.6.5	Mandrel test	See G.5.1 and G.6.	N/A
5.4.4.7	Solid insulation in wound components	(See Annex G.5 and G.6)	P
5.4.4.9	Solid insulation at frequencies >30 kHz.....		N/A
5.4.5	Antenna terminal insulation		P
5.4.5.1	General		P
5.4.5.2	Voltage surge test	Surge test with 50 discharges at a maximum rate of 12/min from a 1 nF capacitor charged to 10 kV performed.	P
	Insulation resistance (MΩ).....	Measured 100MΩ between mains supply to antenna circuit.	—
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 (%).....	93	—
	Temperature (°C) .....	40	—
	Duration (h) .....	120	—
5.4.9	Electric strength test.....	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test	(See appended table 5.4.9)	P
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit	No connection to external circuits with transient voltage.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
5.4.11	Insulation between external circuits and earthed circuitry..... :	No such connections for external circuit applied within the EUT	N/A
5.4.11.1	Exceptions to separation between external circuits and earth	No such connections to external circuit as above.	N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage $U_{op}$ (V)..... :		—
	Nominal voltage $U_{peak}$ (V)..... :		—
	Max increase due to variation $U_{sp}$ ..... :		—
	Max increase due to ageing $\Delta U_{sa}$ ..... :		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ ..... :		—
5.5	Components as safeguards		P
5.5.1	General		P
5.5.2	Capacitors and RC units	Approved X2 type and Y1 type capacitors provided. See G.11.1 for compliance and their application.	P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector..... :	(See appended table 5.5.2.2)	P
5.5.3	Transformers	See Annex G.5.3.	P
5.5.4	Optocouplers	See Annex G.12.	P
5.5.5	Relays	No such component	N/A
5.5.6	Resistors		N/A
5.5.7	SPD's	No such component	N/A
5.5.7.1	Use of an SPD connected to reliable earthing	No such component	N/A
5.5.7.2	Use of an SPD between mains and protective earth	No such component	N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable..... :	No such device	N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors	No such device	N/A
5.6.2.1	General requirements	No such device	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.2.2	Colour of insulation	No such device	N/A
5.6.3	Requirement for protective earthing conductors	No such device	N/A
	Protective earthing conductor size (mm <sup>2</sup> ) ..... :	No such device	N/A
5.6.4	Requirement for protective bonding conductors	No such device	N/A
5.6.4.1	Protective bonding conductors	No such device	N/A
	Protective bonding conductor size (mm <sup>2</sup> )..... :	No such part	—
	Protective current rating (A) ..... :	No such part	—
5.6.4.3	Current limiting and overcurrent protective devices	No such device	N/A
5.6.5	Terminals for protective conductors	No such device	N/A
5.6.5.1	Requirement	No such device	N/A
	Conductor size (mm <sup>2</sup> ), nominal thread diameter (mm)..... :	No such device	N/A
5.6.5.2	Corrosion	No such device	N/A
5.6.6	Resistance of the protective system	No such device	N/A
5.6.6.1	Requirements	No such device	N/A
5.6.6.2	Test Method Resistance ( $\Omega$ )..... :	No such device	N/A
5.6.7	Reliable earthing	Not permanently connected equipment	N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks	Figure 4 of IEC 60990 was used in determining of the limit of ES1.	P
5.7.2.1	Measurement of touch current..... :	(See appended table 5.2)	P
5.7.2.2	Measurement of prospective touch voltage		P
5.7.3	Equipment set-up, supply connections and earth connections	Clause 4, 5.3 and 5.4 of IEC 60990:1999 applied.	P
	System of interconnected equipment (separate connections/single connection)..... :	Single connection.	—
	Multiple connections to mains (one connection at a time/simultaneous connections)..... :	Single connection.	—
5.7.4	Earthed conductive accessible parts..... :		N/A
5.7.5	Protective conductor current		N/A
	Supply Voltage (V)..... :		—
	Measured current (mA)..... :		—
	Instructional Safeguard..... :		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits	The equipment is not connected to such external circuit.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits		N/A
	a) Equipment with earthed external circuits Measured current (mA).....:		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		N/A

<b>6</b>	<b>ELECTRICALLY- CAUSED FIRE</b>		<b>P</b>
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications	PS (power source) classification determined by measuring the maximum power in Figures 34 and 35 for load and power source circuits.	P
6.2.2.1	General	See the following details.	P
6.2.2.2	Power measurement for worst-case load fault... :	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault.....:	(See appended table 6.2.2)	P
6.2.2.4	PS1 .....	(See appended table 6.2.2)	P
6.2.2.5	PS2 .....	(See appended table 6.2.2)	P
6.2.2.6	PS3 .....	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources	All conductors and devices in both primary and secondary are considered as PIS except external secondary connectors.	P
6.2.3.1	Arcing PIS .....	See note to appended table 6.2.3.1	P
6.2.3.2	Resistive PIS .....	(See appended table 6.2.3.1)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials.....:	No ignition and no such temperature attained within the equipment. (See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure		P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method by control of fire spread applied, Fire enclosure and fire cover and fire barrier provided.	P



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		P
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		P
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions..... :		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits	See below	P
6.4.5.2	Supplementary safeguards ..... :	(See appended tables 4.1.2 and Annex G)	P
6.4.6	Control of fire spread in PS3 circuit	<p>Compliance detailed as follows:</p> <ul style="list-style-type: none"> <li>- <u>Printed board</u>: rated V-0</li> <li>- <u>Internal wires</u>: complying with UL 758 standard, which test method and testing condition equal to IEC/EN 60695-11-21.</li> <li>- <u>Connector</u>: with size of less than 1750mm<sup>3</sup>.</li> <li>- <u>All other components</u>: at least V-2 except for parts mounted on min. V-1 material or small parts of combustible material or components complying with relevant IEC standard.</li> <li>- <u>Isolating transformer</u>: complying with G.5.3</li> </ul> <p>Plastic enclosure and min 6.0mm thickness wooden enclosure which considered V-1) used;</p>	P
6.4.7	Separation of combustible materials from a PIS	See below	P
6.4.7.1	General..... :	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. Separation requirements from PIS to the wooden enclosure see also clause 6.4.8.4	P
6.4.7.2	Separation by distance		P
6.4.7.3	Separation by a fire barrier		P
6.4.8	Fire enclosures and fire barriers	See below.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.1	Fire enclosure and fire barrier material properties	Fire enclosure (fireproof cover on power board rated V-0, Plastic enclosure and min 6mm thickness wooden enclosure which considered V-1) and fire barrier used.	P
6.4.8.2.1	Requirements for a fire barrier	Fire barrier (metal barrier around of main board) used.	P
6.4.8.2.2	Requirements for a fire enclosure	Fire enclosure (fireproof cover on power board rated V-0, Plastic enclosure and min 6mm thickness wooden enclosure which considered V-1) used.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	See below	P
6.4.8.3.1	Fire enclosure and fire barrier openings	Figure 41 and Figure 42 considered, detail see 6.4.8.3.3 and 6.4.8.3.4.	P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....	No opening	P
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....	The opening not within the volume as show in Figure 41	P
	Flammability tests for the bottom of a fire enclosure .....		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c)..... :	No enclosure can be opened by an ordinary person	N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating..... :	The min. distance: between component (resistive PIS) on power board and wooden enclosure: 31.8mm, The wooden enclosure with min. thickness 6.0mm near power board at rear side.	P
6.5	Internal and external wiring		P
6.5.1	Requirements	The internal wires are complied with UL standard, of which the test method and testing condition are equal to IEC/EN 60695-11-21.	P
6.5.2	Cross-sectional area (mm <sup>2</sup> ) .....	See 6.5.1.	—
6.5.3	Requirements for interconnection to building wiring..... :	No such wire used	N/A
6.6	Safeguards against fire due to connection to additional equipment		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	External port limited to PS2 or complies with Clause Q.1	Only audio signal connectors and USB port which considered as PS1 in this equipment	P

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		P
7.2	Reduction of exposure to hazardous substances	No hazardous chemicals within the equipment.	P
7.3	Ozone exposure	No ozone production within the equipment.	N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions.....:		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010).....:		—
7.6	Batteries.....:	See Annex M	P

8	MECHANICALLY-CAUSED INJURY		P
8.1	General	See below.	P
8.2	Mechanical energy source classifications	MS1: Sharp edges and corners MS2: Equipment mass	P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners	Edges and corners of the enclosure are rounded.	P
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts	No moving parts.	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard.....:		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment	Not such equipment	N/A
8.5.4.2	Equipment having electromechanical device for destruction of media	Not such equipment	N/A
8.5.4.2.1	Safeguards and Safety Interlocks.....:	Not such equipment	N/A
8.5.4.2.2	Instructional safeguards against moving parts	No such moving part	N/A
	Instructional Safeguard.....:	No such moving part	—
8.5.4.2.3	Disconnection from the supply	No such device	N/A
8.5.4.2.4	Probe type and force (N).....:	No such device	N/A
8.5.5	High Pressure Lamps	No such device	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.5.1	Energy Source Classification	No such device	N/A
8.5.5.2	High Pressure Lamp Explosion Test..... :	No such device	N/A
8.6	Stability	Mass: 15.8kg. Classification MS2 according to table 35, line 5	P
8.6.1	Product classification		P
	Instructional Safeguard..... :	No safeguard requirement	—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force..... :		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test	Tilt 10°, rotate 360°, During the test, the equipment do not slide or tip over on a supporting surface.	P
	Unit configuration during 10° tilt..... :		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force)..... :		N/A
	Position of feet or movable parts..... :		—
8.7	Equipment mounted to wall or ceiling	No such mounting means	N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....	No such mounting means	N/A
8.7.2	Direction and applied force..... :	No such requirement	N/A
8.8	Handles strength	See below.	P
8.8.1	Classification	MS2	P
8.8.2	Applied Force .....	3x15.80kg=47.40kg	P
8.9	Wheels or casters attachment requirements		P
8.9.1	Classification	MS2	P
8.9.2	Applied force..... :	20N	—
8.10	Carts, stands and similar carriers	No such part	N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard..... :		—
8.10.3	Cart, stand or carrier loading test and compliance		
	Applied force..... :		—
8.10.4	Cart, stand or carrier impact test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N).....:		—
8.10.6	Thermoplastic temperature stability (°C).....:		N/A
8.11	Mounting means for rack mounted equipment	No such mounting means	N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable <i>N</i> .....		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas.....	No such part	N/A
	Button/Ball diameter (mm).....:		—
<b>9</b>	<b>THERMAL BURN INJURY</b>		<b>P</b>
9.2	Thermal energy source classifications	No part considered to be accessible other than enclosure. The equipment evaluated by temperature test (See appended Table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
9.3	Safeguard against thermal energy sources	Temperature of enclosure classed as TS1.	P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard	Enclosure provided to limit the transfer of thermal energy of internal parts under normal operating conditions and abnormal operating conditions.	P
9.4.2	Instructional safeguard .....	Instructional safeguard is not required.	N/A
<b>10</b>	<b>RADIATION</b>		<b>P</b>
10.2	Radiation energy source classification	See below.	P
10.2.1	General classification	The LEDs used for indicating, which are considered as low power application, classify RS1 classification; The LED lights of speaker complied with IEC 62471, classify RS1 classification.	P
10.3	Protection against laser radiation	No laser radiation.	N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault.....:		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Instructional safeguard..... :		—
	Tool..... :		—
10.4	Protection against visible, infrared, and UV radiation	No protection needed for RS1.	N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons..... :		N/A
10.4.1.b)	RS3 accessible to a skilled person..... :		N/A
	Personal safeguard (PPE) instructional safeguard..... :		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1:		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions ..... :		N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque..... :		N/A
10.4.1.f)	UV attenuation..... :		N/A
10.4.1.g)	Materials resistant to degradation UV..... :		N/A
10.4.1.h)	Enclosure containment of optical radiation..... :		N/A
10.4.1.i)	Exempt Group under normal operating conditions ..... :		N/A
10.4.2	Instructional safeguard..... :		N/A
10.5	Protection against x-radiation	No such x-radiation generated from the equipment	N/A
10.5.1	X- radiation energy source that exists equipment:		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards..... :		N/A
	Instructional safeguard for skilled person..... :		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation..... :		—
	Abnormal and single-fault condition..... :		N/A
	Maximum radiation (pA/kg)..... :		N/A
10.6	Protection against acoustic energy sources	No acoustic energy sources	N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A)..... :		N/A
	Output voltage, unweighted r.m.s..... :		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards..... :		N/A
	Equipment safeguard prevent ordinary person to		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	RS2.....:		
	Means to actively inform user of increase sound pressure.....:		—
	Equipment safeguard prevent ordinary person to RS2.....:		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) $L_{Aeq}$ acoustic pressure output.....:		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A).....:		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A).....:		—

<b>B</b>	<b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b>		P
B.2	Normal Operating Conditions	See the following details.	P
B.2.1	General requirements.....:	(See appended table B.2.5)	P
	Audio Amplifiers and equipment with audio amplifiers.....:	See Annex E	P
B.2.3	Supply voltage and tolerances	Rated voltage $\pm 10\%$	P
B.2.5	Input test.....:	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements.....:	(See appended table B.3)	P
B.3.2	Covering of ventilation openings	(See appended table B.3)	P
B.3.3	D.C. mains polarity test		N/A
B.3.4	Setting of voltage selector.....:		N/A
B.3.5	Maximum load at output terminals.....:	(See appended table B.3)	P
B.3.6	Reverse battery polarity	No replaceable battery for ordinary person.	N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.	(See appended table B.3)	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.4.2	Temperature controlling device open or short-circuited.....:	No such device	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.4.3	Motor tests	No such device	N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature .....		N/A
B.4.4	Short circuit of functional insulation	See below for details.	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table 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.4)	P
B.4.6	Short circuit or disconnect of passive components	(See appended table 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	Class 1 and Class 2 energy sources within limits during and after single fault conditions	No change to circuits classified in 5.3	P
B.4.9	Battery charging under single fault conditions.....	See Annex M	P
<b>C</b>	<b>UV RADIATION</b>		N/A
C.1	Protection of materials in equipment from UV radiation	No such UV generated from the equipment.	N/A
C.1.2	Requirements		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 apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
<b>D</b>	<b>TEST GENERATORS</b>		P
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		P
D.3	Electronic pulse generator		N/A
<b>E</b>	<b>TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS</b>		P
E.1	Audio amplifier normal operating conditions		P



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Audio signal voltage (V).....:		—
	Rated load impedance (Ω) .....	(See appended table 4.1.2)	
E.2	Audio amplifier abnormal operating conditions	(See appended table B.3)	P
<b>F</b>	<b>EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS</b>		P
F.1	General requirements		P
	Instructions – Language .....	English version provided	—
F.2	Letter symbols and graphical symbols	See below for the details.	P
F.2.1	Letter symbols according to IEC60027-1	Complied	P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Graphic symbols comply with relevant standards	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	See below for details.	P
F.3.2.1	Manufacturer identification .....	Trademark:F&D	—
F.3.2.2	Model identification .....	Model:PA300, PA200, PA928, PA948, PA310, PA100, PA388	—
F.3.3	Equipment rating markings	See below for details.	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 supply voltage.....:	IEC 60417-5032 for a.c. symbol used.	—
F.3.3.4	Rated voltage.....:	100-240V~	—
F.3.3.4	Rated frequency.....:	50/60Hz	—
F.3.3.6	Rated current or rated power.....:	1A	—
F.3.3.7	Equipment with multiple supply connections	Single supply connection.	N/A
F.3.4	Voltage setting device	No voltage setting device	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.....:	(See the marking plate)	P
F.3.5.3	Replacement fuse identification and rating markings.....:	The fuse is located within the equipment and not replaceable by an ordinary person or an instructed person. The fuse is marked with Fuse1 T3.15AL 250VAC	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.4	Replacement battery identification marking.....:	The battery could not be replaced by an incorrect type of replaceable battery	N/A
F.3.5.5	Terminal marking location	No such part	N/A
F.3.6	Equipment markings related to equipment classification	See below for details	P
F.3.6.1	Class I Equipment	Class II equipment	N/A
F.3.6.1.1	Protective earthing conductor terminal	Class II equipment	N/A
F.3.6.1.2	Neutral conductor terminal	Not permanently connected equipment.	N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)	Class II equipment	P
F.3.6.2.1	Class II equipment with or without functional earth	without functional earth	P
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking .....	This equipment is classified as IPX0.	—
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking	Marking is considered to be legible and easily discernible. See also the following details.	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) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use	Provided in the manual.	P
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1	No such terminals provided.	N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES 2 limits	Not such equipment	N/A
	h) Symbols used on equipment	See label for details	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	i) Permanently connected equipment not provided with all-pole mains switch	Not such equipment	N/A
	j) Replaceable components or modules providing safeguard function	No such part	N/A
F.5	Instructional safeguards	See below	N/A
	Where "instructional safeguard" is referenced in the test report it specifies the required elements, location of marking and/or instruction	Not the requirement	N/A

<b>G</b>	<b>COMPONENTS</b>		P
<b>G.1</b>	<b>Switches</b>		P
G.1.1	General requirements		P
G.1.2	Ratings, endurance, spacing, maximum load	(See appended Table 4.1.2)	P
<b>G.2</b>	<b>Relays</b>		N/A
G.2.1	General requirements	No relay used	N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
<b>G.3</b>	<b>Protection Devices</b>		P
G.3.1	Thermal cut-offs	No thermal cut-offs used.	N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated inc)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691		N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H)..... :	No such device	—
	Single Fault Condition..... :	No such device	—
	Test Voltage (V) and Insulation Resistance (Ω).. :	No such device	—
G.3.3	PTC Thermistors	No PTC thermistors used.	N/A
G.3.4	Overcurrent protection devices	Current fuse complying with IEC 60127 as overcurrent protection device.	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.3.5.2	Single faults conditions.....:		N/A
<b>G.4</b>	<b>Connectors</b>		P
G.4.1	Spacings	Approved connectors used.	P
G.4.2	Mains connector configuration .....	(See appended Table 4.1.2)	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	The connector was designed not insertion into a mains socket-outlet	P
<b>G.5</b>	<b>Wound Components</b>		P
G.5.1	Wire insulation in wound components.....	(See appended table 4.1.2)	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	Physical separation provided.	P
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s).....:		—
	Temperature (°C).....:		—
G.5.2.3	Wound Components supplied by mains		N/A
<b>G.5.3</b>	<b>Transformers</b>		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....:	The transformer meets the requirements given in G.5.3.2 and G.5.3.3.	P
	Position.....:	T1	—
	Method of protection .....	See G.5.3.3.	—
G.5.3.2	Insulation	See below.	P
	Protection from displacement of windings.....:	Primary windings (TIW) and secondary windings are separated by Reinforced insulation (The core is considered as secondary part as it is not isolated from secondary)	—
G.5.3.3	Overload test.....:	(See appended table B.3)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment.	P
G.5.3.3.2	Winding Temperatures testing in the unit	(See appended tables B.3&B.4)	P
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
<b>G.5.4</b>	<b>Motors</b>		N/A
G.5.4.1	General requirements	No motors used.	N/A
	Position .....		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) .....		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V).....		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....		N/A
	Electric strength test (V).....		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature .....		N/A
	Electric strength test (V) .....		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h).....		N/A
	Electric strength test (V).....		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage .....		—
<b>G.6</b>	<b>Wire Insulation</b>		P
G.6.1	General		P
G.6.2	Solvent-based enamel wiring insulation		N/A
<b>G.7</b>	<b>Mains supply cords</b>		P
G.7.1	General requirements	Approved power cord used	P
	Type.....	(See appended table 4.1.2)	—
	Rated current (A).....	(See appended table 4.1.2)	—
	Cross-sectional area (mm <sup>2</sup> ), (AWG).....	(See appended table 4.1.2)	—
G.7.2	Compliance and test method		P
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		P
G.7.3.2	Cord strain relief	Detachable power supply used.	N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N).....		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm).....		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry..... :		P
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) .....		—
	Diameter (m)..... :		—
	Temperature (°C)..... :		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
<b>G.8</b>	<b>Varistors</b>		N/A
G.8.1	General requirements	No varistor used	N/A
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test..... :		N/A
G.8.3.3	Temporary overvoltage..... :		N/A
<b>G.9</b>	<b>Integrated Circuit (IC) Current Limiters</b>		N/A
G.9.1 a)	Manufacturer defines limit at max.5A.	No IC current limiter provided within the equipment.	N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA .....		—
G.9.1 d)	IC limiter output current (max. 5A)..... :		—
G.9.1 e)	Manufacturers' defined drift .....		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
<b>G.10</b>	<b>Resistors</b>		N/A
G.10.1	General requirements		N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
<b>G.11</b>	<b>Capacitor and RC units</b>		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.11.1	General requirements	(See appended table 4.1.2) X2 Capacitor as Basic safeguard and Y1-capacitor used as Reinforced safeguard both complied with IEC/EN 60384-14.	P
G.11.2	Conditioning of capacitors and RC units	All capacitors complied as environmental category at least 40/110/56 (56 days humidity) or 25/125/21 (21 days humidity) and in any case at 40°C	P
G.11.3	Rules for selecting capacitors	The selection followed with tables G.9 and G.12. Y1 capacitor bridging Reinforced insulation with rated voltage at least 250V tested with impulse 8kV peak and 4kV rms	P
<b>G.12</b>	<b>Optocouplers</b>		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results)..... :	The optocoupler complied with standard IEC/EN 60747-5-5.	P
	Type test voltage Vini .....	(see appended table 4.1.2)	—
	Routine test voltage, Vini,b .....	(see appended table 4.1.2)	—
<b>G.13</b>	<b>Printed boards</b>		P
G.13.1	General requirements	See the following details.	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
	Compliance with cemented joint requirements (Specify construction)..... :		—
G.13.5	Insulation between conductors on different surfaces	Reinforced insulation between T1 core (which considered as secondary) and primary traces on different surfaces of power board.	P
	Distance through insulation..... :	>0.4mm (each source of power board PCB)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Number of insulation layers (pcs) .....: 1		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
<b>G.14</b>	<b>Coating on components terminals</b>		N/A
G.14.1	Requirements .....: No coating on component terminals considered to affect creepage or clearances.		N/A
<b>G.15</b>	<b>Liquid filled components</b>		N/A
G.15.1	General requirements	No such device provided within the equipment.	N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
<b>G.16</b>	<b>IC including capacitor discharge function (ICX)</b>		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours	No such component used	N/A
b)	Impulse test using circuit 2 with $U_c =$ to transient voltage .....:		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage .....:		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance .....:		—
D3)	Resistance .....:		—
<b>H</b>	<b>CRITERIA FOR TELEPHONE RINGING SIGNALS</b>		N/A
H.1	General	No telephone ringing signal generated within the equipment.	N/A



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) ..... :		—
H.3.1.2	Voltage (V) ..... :		—
H.3.1.3	Cadence; time (s) and voltage (V) ..... :		—
H.3.1.4	Single fault current (mA):..... :		—
H.3.2	Tripping device and monitoring voltage..... :		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)..... :		—
<b>J</b>	<b>INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION</b>		N/A
	General requirements		N/A
<b>K</b>	<b>SAFETY INTERLOCKS</b>		N/A
K.1	General requirements	No safety interlock provided within the equipment.	N/A
K.2	Components of safety interlock safeguard mechanism .....		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance..... :		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method..... :		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) ..... :		N/A
K.7.2	Overload test, Current (A)..... :		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test ..... :		N/A
<b>L</b>	<b>DISCONNECT DEVICES</b>		P
L.1	General requirements	Appliance Inlet as disconnect device.	P
L.2	Permanently connected equipment		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
L.3	Parts that remain energized	When the power cord is removed from the inlet no remaining parts with hazardous voltage in the equipment.	P
L.4	Single phase equipment	The disconnect device disconnects both poles simultaneously.	P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		P
L.8	Multiple power sources		N/A
<b>M</b>	<b>EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS</b>		P
M.1	General requirements	See below	P
M.2	Safety of batteries and their cells	The battery and cell complied with IEC 61056	P
M.2.1	Requirements	The battery and cell complied with IEC 61056	P
M.2.2	Compliance and test method (identify method)... :	The battery and cell complied with IEC 61056	P
M.3	Protection circuits		P
M.3.1	Requirements		P
M.3.2	Tests	(See appended table Annex M)	P
	- Overcharging of a rechargeable battery	See clause B.3	P
	- Unintentional charging of a non-rechargeable battery	No non-rechargeable battery used.	N/A
	- Reverse charging of a rechargeable battery	Rechargeable battery cannot reverse charging.	P
	- Excessive discharging rate for any battery	See clause B.3	P
M.3.3	Compliance .....	(See appended table Annex M and M.4)	P
M.4	Additional safeguards for equipment containing secondary lithium battery	See below	P
M.4.1	General		P
M.4.2	Charging safeguards		P
M.4.2.1	Charging operating limits	Not exceed the limit	P
M.4.2.2a)	Charging voltage, current and temperature..... :	(See appended table Annex M.4)	—
M.4.2.2 b)	Single faults in charging circuitry..... :	(See appended table Annex B.4)	—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.4.3	Fire Enclosure	The fire enclosure is the lithium battery itself, rated V-0 tape wrapped whole battery pack	P
M.4.4	Endurance of equipment containing a secondary lithium battery		P
M.4.4.2	Preparation	The battery is fully charged at the same time under the same charging conditions.	P
M.4.4.3	Drop and charge/discharge function tests		P
	Drop	Three impacts at the height of 1000mm. The voltage difference not exceed 5% after test	P
	Charge	After drop, the charge circuit function (charge-control voltage, charging control current and temperature control) are effective	P
	Discharge	After drop, the discharge circuit function (charge-control voltage, charging control current and temperature control) are effective	P
M.4.4.4	Charge-discharge cycle test		P
M.4.4.5	Result of charge-discharge cycle test		P
M.4.4.6	Compliance criteria	No fire or explosion occur	P
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current	See below	P
M.6.1	Short circuits		P
M.6.1.1	General requirements		P
M.6.1.2	Test method to simulate an internal fault	Not explode or emit molten material	P
M.6.2	Leakage current (mA) ..... :		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.8	Protection against internal ignition from external spark sources of lead acid batteries	Not such battery	N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume $V_z$ ( $m^3/s$ )..... :		—
M.8.2.3	Correction factors..... :		—
M.8.2.4	Calculation of distance $d$ (mm) ..... :		—
M.9	Preventing electrolyte spillage	See below	P
M.9.1	Protection from electrolyte spillage	Sealed enclosure preventing electrolyte spillage.	P
M.9.2	Tray for preventing electrolyte spillage	Sealed enclosure preventing electrolyte spillage.	P
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) ..... :	Mentioned in the user manual	N/A
<b>N</b>	<b>ELECTROCHEMICAL POTENTIALS</b>		<b>P</b>
	Metal(s) used..... :		—
<b>O</b>	<b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>		<b>P</b>
	Figures O.1 to O.20 of this Annex applied..... :	Considered.	—
<b>P</b>	<b>SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS</b>		<b>P</b>
P.1	General requirements		P
P.2.2	Safeguards against entry of foreign object		P
	Location and Dimensions (mm) ..... :		—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts..... :		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) ..... :		N/A
P.3	Safeguards against spillage of internal liquids	See below	N/A
P.3.1	General requirements	No inter liquids spillage, batteries see annex M.	N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts	No such part	N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C)..... :		—
	Tr (°C)..... :		—
	Ta (°C)..... :		—
P.4.2 b)	Abrasion testing .....	Not for metalized coating	N/A
P.4.2 c)	Mechanical strength testing..... :	(See Annex T)	N/A
<b>Q</b>	<b>CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING</b>		<b>P</b>
Q.1	Limited power sources	All connectors used for external interconnections are for data transmission or for audio inputs	N/A
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		N/A
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) .....		—
	Current limiting method..... :		—
<b>R</b>	<b>LIMITED SHORT CIRCUIT TEST</b>		<b>N/A</b>
R.1	General requirements	No such consideration.	N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A). .....		N/A
<b>S</b>	<b>TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		<b>P</b>
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity	Wooden enclosure with min. thickness 6mm near power board (on which power board mounted) applied to this test)	P
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		P
	Test specimen does not show any additional hole	Not burned through the wooden enclosure after test, no additional hole observed.	P
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (test condition), (°C).....:		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
<b>T</b>	<b>MECHANICAL STRENGTH TESTS</b>		P
T.1	General requirements	See below.	P
T.2	Steady force test, 10 N .....	(see appended table T.2)	P
T.3	Steady force test, 30 N .....		N/A
T.4	Steady force test, 100 N .....	(see appended table T.4)	P
T.5	Steady force test, 250 N .....	(see appended table T.5)	P
T.6	Enclosure impact test	(see appended table T.6)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Fall test		P
	Swing test		P
T.7	Drop test .....		N/A
T.8	Stress relief test.....	(see appended table T.8)	P
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J).....	Not suitable	—
	Height (m).....	Not suitable	—
T.10	Glass fragmentation test.....		N/A
T.11	Test for telescoping or rod antennas	No such antennas provided within the equipment.	N/A
	Torque value (Nm) .....		—
<b>U</b>	<b>MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION</b>		N/A
U.1	General requirements	No CRT provided within the equipment.	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen.....		N/A
<b>V</b>	<b>DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)</b>		P
V.1	Accessible parts of equipment	No access with test probes (e.g. fig. V.1) to any hazardous parts	P
V.2	Accessible part criterion	See above	P

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

<b>ATTACHMENT TO TEST REPORT IEC 62368-1</b> <b>EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</b> <b>(Audio/video, information and communication technology equipment Part 1: Safety requirements)</b>
Differences according to.....: EN 62368-1:2014+A11:2017
Attachment Form No.....: EU_GD_IEC62368_1B_II
Copyright © 2017 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.

	CENELEC COMMON MODIFICATIONS (EN)																																					
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z".	--																																				
CONTENTS	<b>Add</b> 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	--																																				
	<b>Delete</b> all the "country" notes in the reference document (IEC 62368-1:2014) according to the following list: <table border="1" data-bbox="288 1048 1318 1532"> <tr> <td>0.2.1</td> <td>Note</td> <td>1</td> <td>Note 3</td> <td>4.1.15</td> <td>Note</td> </tr> <tr> <td>4.7.3</td> <td>Note 1 and 2</td> <td>5.2.2.2</td> <td>Note</td> <td>5.4.2.3.2.2 Table 13</td> <td>Note c</td> </tr> <tr> <td>5.4.2.3.2.4</td> <td>Note 1 and 3</td> <td>5.4.2.5</td> <td>Note 2</td> <td>5.4.5.1</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</td> </tr> <tr> <td>5.7.5</td> <td>Note</td> <td>5.7.6.1</td> <td>Note 1 and 2</td> <td>10.2.1 Table 39</td> <td>Note 2, 3 and 4</td> </tr> <tr> <td>10.5.3</td> <td>Note 2</td> <td>10.6.2.1</td> <td>Note 3</td> <td>F.3.3.6</td> <td>Note 3</td> </tr> </table>	0.2.1	Note	1	Note 3	4.1.15	Note	4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c	5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3	5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4	10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3	--
0.2.1	Note	1	Note 3	4.1.15	Note																																	
4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c																																	
5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note																																	
5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3																																	
5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4																																	
10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3																																	
	For special national conditions, see Annex ZB.	--																																				
1	<b>Add</b> the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.	P																																				
4.Z1	<b>Add</b> 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;	P																																				



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p> <p>c) it is permitted for pluggable equipment type B or permanently connected equipment, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for pluggable equipment type A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>		
5.4.2.3.2.4	<b>Add</b> the following to the end of this subclause: The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.		N/A
10.2.1	<b>Add</b> the following to <sup>c)</sup> and <sup>d)</sup> in table 39: For additional requirements, see 10.5.1.		--
10.5.1	<p><b>Add</b> 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 presets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1h, at the end of which the measurement is made.</p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p>The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm<sup>2</sup>, at any point 10 cm from the outer surface of the apparatus.</p> <p>Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.</p> <p>For RS1, the dose-rate shall not exceed 1μSv/h taking account of the background level.</p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>		N/A
10.6.2.1	<b>Add</b> the following paragraph to the end of the subclause: EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
10.Z1	<p><b>Add</b> the following new subclause after 10.6.5.  <b>10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</b>                      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</p>		N/A
G.7.1	<p><b>Add</b> the following note:                      NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>		N/A
Bibliography	<p><b>Add</b> the following standards:  <b>Add</b> 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>		--

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>ZB</b>	<b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)</b>		--
4.1.15	<p><b>Denmark, Finland, Norway and Sweden</b> To the end of the subclause the following is added <b>Class I pluggable equipment type A</b> 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 <b>Denmark</b>: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord." In <b>Finland</b>: "Laitte on liitettävä suojakoskettimilla varustettuun pistorasiaan" In <b>Norway</b>: "Apparatet må tilkoples jordet stikkontakt" In <b>Sweden</b>: "Apparaten skall anslutas till jordat uttag"</p>		N/A
4.7.3	<p><b>United Kingdom</b> 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</p>		N/A
5.2.2.2	<p><b>Denmark:</b> After the 2<sup>nd</sup> 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.</p>		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.11.1 and Annex G	<p><b>Finland and Sweden</b> SEK Svensk Elstandard Downloaded by [se-fre_wennersten] [2014-11-20] For SEK internal use only Copyright SEK Svensk Elstandard 2014 20_x0001_..... 1 5 – EN 62368-1:2014</p> <p><b>Clause Special national condition</b> 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</p> <ul style="list-style-type: none"> <li>• 3 layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>• one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> <li>• 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</li> <li>• is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV.</li> </ul> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>• the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11;</li> <li>• 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.</li> </ul>		N/A
5.5.2.1	<p><b>Norway:</b> After the 3<sup>rd</sup> 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).</p>		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.6	<p><b>Finland, Norway and Sweden:</b>            To the end of the subclause the following is added            Resistors used as basic safeguard or bridging basic insulation in <b>class I pluggable equipment type A</b> shall comply with G.10.1 and the test of G.10.2.</p>		N/A
5.6.1	<p><b>Denmark:</b>  <b>Add</b> 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.            Justification:            In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.</p>		N/A
5.6.4.2.1	<p><b>Ireland and United Kingdom:</b>            After the indent for <b>pluggable equipment type A</b>, the following is added:            20. _x0001_ ..... t                      he protective current rating is taken to be 13A,            this being the largest rating of fuse used in the mains plug.</p>		N/A
5.6.5.1	<p><b>Ireland and United Kingdom:</b>            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 mm<sup>2</sup> to 1,5 mm<sup>2</sup> in cross-sectional area.</p>		N/A
5.7.5	<p><b>Denmark:</b>            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.</p>		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.1	<p><b>Norway and Sweden:</b> 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: “Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing 20. _x0001_ . .....a nd 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 jordtilkøplet utstyr – og er tilkøplet 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.”</p>		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	<p><b>Denmark:</b> 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 3,5mA .</p>		N/A
B.3.1 and B.4	<p><b>Ireland and United Kingdom:</b> 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</p>		N/A
G.4.2	<p><b>Denmark:</b> 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 DS60884-2-D1:2011.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>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.</p> <p>Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.</p> <p>Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a</p> <p>Justification: Heavy Current Regulations, Section 6c</p>		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	<b>United Kingdom:</b> 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
G.7.1	<b>United Kingdom:</b> 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.		N/A
G.7.1	<b>Ireland:</b> 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	<b>Ireland and United Kingdom:</b> To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm <sup>2</sup> is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A

<b>ZC</b>	<b>ANNEX ZC, NATIONAL DEVIATIONS (EN)</b>		N/A
10.5.2	<b>Germany:</b> 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 40kV, authorization is required, or application of type approval (Bauartzulassung) and marking. Justification: 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: <a href="http://www.ptb.de">http://www.ptb.de</a>		N/A



4.1.2	TABLE: List of critical components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1)</sup>	
PCB	MEIZHOU WEILIBANG ELECTRONIC TECHNOLOGY CO LTD	W8282-22F	V-0, min.1.5mm 130°C	UL94, UL 796	UL: E354175	
	KINGBOARD LAMINATES HOLDINGS LTD	KB-5150	V-0, min.1.5mm 130°C	UL94, UL 796	UL: E123995	
(Alternate)	Interchangeable	Interchangeable	Min. V-0, 105°C, Min. thickness 1.6mm	UL94, UL 796	UL	
Fuse (Fuse1)	LITTELFUSE INC	392 +, &	T3.15AL 250VAC	IEC 60127-1	VDE:126983	
AC connector (CN1)	ZHEJIANG JINDA ELECTRONICS CO LTD	3.96T-03	250Vac, 5A	UL94, UL 796	UL: E237523	
Bleeder resistors (R2,R3,R4,R5)	Interchangeable	Interchangeable	Max. 2MΩ, 1/4W	--	Test within appliance	
E-capacitors (EC1)	Interchangeable	Interchangeable	Max. 68uF, Min. 400V, Min. 105°C	--	Test within appliance	
Rectifier (BD1)	Interchangeable	Interchangeable	Min. 3A, Min. 600V	--	Test within appliance	
Transistor (U1)	Interchangeable	Interchangeable	Min. 4A, Min. 600V	--	Test within appliance	
X-capacitor (CX1)	Tenta Electric Industrial Co. Ltd	MEX	Max.0.47UF,min.2 75Vac,100°C, X2 type	IEC 60384-14	VDE: 119119	
Y1 Capacitor (YC3)	JYA-NAY CO., LTD.	JNC	Max.2.2 NF,min.400Vac,12 5°C, Y1 type	IEC 60384-14 UL 60384-14	UL:E201384 TUV: R50232059	
(Alternate)	Jyh Chung Electronic Co.Ltd.	JD	Max.2.2 NF,min.400Vac,12 5°C, Y1 type	IEC 60384-14 EN 60384-14	SGS:173344 A1 VDE:137027 UL:187963	
Optocoupler (U2)	ZhuHai Dapeng Electronics Technology Co Ltd.	DPC817C	Internal Cr: min.7.6mm; External Cr:min. 7.6mm; DTI: min.0.4mm; Isolation voltage: 5000 Vac. min.100° C	IEC 60747-5 EN 60747-5	UL:E343249 VDE: 40038417	

(Alternate)	Hubei Kento Electronic Stock Corporation	JC817	Internal Cr: min.8.0mm; External Cr: min.8.0mm; DTI: min.0.4mm; Isolation voltage: 5000 Vac. min.100°C	IEC 60747-5 EN 60747-5	VDE:40037109
(Alternate)	Cosmo Electronics Corp	KPC817	Internal Cr: min.6.5mm; External Cr: min.6.5mm; DTI: min.0.4mm; Isolation voltage: 5000 Vac. min.115°C	IEC 60747-5 EN 60747-5	VDE:101347 UL:E169586
Line filter (FL1)	SHENZHEN CHU ANGFAELECTRONICS .CO LTD	T9*5*3(800uH)	9mm*5mm*3mm	EN 62368-1	Test within appliance
Line filter (FL2)	SHENZHEN CHU ANGFAELECTRONICS .CO LTD	T14*8*7(20mH)	14mm*8mm*7mm	EN 62368-1	Test within appliance
--Magnet wire	SHENZHEN CHENGWEI INDUSTRY CO LTD	2UEW-E-(&)-(*)	Min. 130°C	UL 1446	UL:E227475
(Alternate)	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
--Multi-layer Insulated Winding	SHENZHEN BAOAN DISTRICT CHANG JIN ELECTRONICS PRODUCT FACTORY	CTIW-B	32 - 18 AWG.Min:130°C	UL 2353	UL: E361204
Transformer (T1)	SHAN TOU XIN KE DIAN ZI	EC2820	Class B	EN 62368-1	Test within appliance
--Bobbin	CHANG CHUN PLASTICS CO LTD OR EQU	T375HF	Phenolic, V-0, 150°C, Min. 0.75mm thickness	UL 94, UL 746C	UL: E59481
(Alternate)	Interchangeable	Interchangeable	Min. 130°C	UL 1446	UL
--Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ* (b)	Min.130°C,YELLOW	UL 510	UL:E165111
--Tube	Gopdess	ND-LL	Max Oper Temp:200°C	UL 224	UL:E468727
--AC inlet	LECI Electronics CO. Ltd	DB-8-Series	2.5A, 250V~	EN 60320-1 UL 498	VDE 40032028 UL E302229
--Power cord	Shenzhen Nanfang Electronic Product Co.,Ltd.	H03VV-F	2.5A, 250V~ 2 x0.5mm <sup>2</sup>	EN 50075:1990 EN50525-2-11:2011	VDE 40033283 40033811
Loud speaker	Interchangeable	Interchangeable	2 pcs,each 4Ω, 7W	EN 62368-1	Test within appliance

Woofer speaker	Interchangeable	Interchangeable	2 pcs,each 4Ω, 50W	EN 62368-1	Test within appliance
Supplementary information: 1) Provided evidence ensures the agreed level of compliance.					

5.2		Table: Classification of electrical energy sources					P
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk or Vdc)	I (Apk or Arms)	Hz	
1.	264Va.c, 60Hz	Primary circuits supplied by a.c. mains supply	Normal	264Vrms	--	60	ES3
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	
2.	264Vac/ 60Hz	Loud speaker output	Normal	3.46	--	1.7k	ES1
			Abnormal: SC	--	--	--	
			Signal fault	--	--	--	
3.	264Vac/ 60Hz	Woofer speaker output	Normal	2.163	--	2.1k	ES1
			Abnormal: SC	--	--	--	
			Signal fault	--	--	--	
4.	264Vac/ 60Hz	Transformer secondary wiring A to B	Normal	79.0V	--	26.7k	ES1
			Abnormal:	--	--	--	
			Signal fault	--	--	--	
5.	264Vac/ 60Hz	T1 pin A to Pin B after D10	Normal	17.8	--	DC	ES1
			Abnormal: overload	17.8	--	DC	
			Signal fault	--	--	--	
6.	264Vac/ 60Hz	USB output + to -	Normal	4.9	--	DC	ES1
			Abnormal: overload	4.9	--	DC	
			Signal fault:U2 Pin 1-2 S-C	0	--	--	
			Signal fault:C10 S-C	4.9	--	DC	
7	264Vac/ 60Hz	USB output +/- to GND	Normal	--	0.14 mApk	--	ES1
			Abnormal: overload	--	0.14 mApk	--	
			Signal fault:U2 Pin 1-2 S-C	--	0.14 mApk	--	
			Signal fault:C10 S-C	--	0.14 mApk	--	

8	264Vac/ 60Hz	Enclosure to GND	Normal	-	0.11 mApk	60Hz	ES1
			Abnormal: overload	--	0.11 mApk	60Hz	
			Signal fault:U2 Pin 1-2 S-C	--	0.11 mApk	60Hz	
			Signal fault:C10 S-C	--	0.11 mApk	60Hz	

9	12Vdc	Battery output	Normal	--	--	--	ES1 (declare)
			Abnormal: overload	--	--	--	
			Signal fault	--	--	--	

Notes:

#### 5.2.2.3 - Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
--	--	--	Normal	--	--	--
			Abnormal	--	--	
			Single fault – SC/OC	--	--	

#### 5.2.2.4 - Single Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

#### 5.2.2.5 - Repetitive Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Off time (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

Test Conditions:

Normal – Full load and no load.

Abnormal – Overload output

Supplementary information: SC=Short Circuit, OC=Open Circuit.

5.4.1.4, 6.3.2, 9.0, B.2.6							TABLE: Temperature measurements (Included Touch Temperatures)					P
Supply voltage (V) .....		90V/ 60Hz (A)	264V/ 50Hz (A)	90V/ 60Hz (B)	264V/ 50Hz (B)	12V (C)	---					
Ambient T <sub>min</sub> (°C) .....		--	--	--	--	--	---					
Ambient T <sub>max</sub> (°C) .....		--	--	--	--	--	---					
T <sub>ma</sub> (°C) .....		--	--	--	--	--	---					
Maximum measured temperature T of part/at:			T (°C)					Allowed T <sub>max</sub> (°C)				
AC Inlet			64.4	64.5	67.6	67.7	58.6	Ref.				
Input wire (for power supply)			65.9	66.0	69.2	69.3	58.9	80				
PCB surface near D10 on power board			83.5	83.4	87.7	87.6	78.5	130				
Photo-coupler(U2) body on power board			63.4	63.4	66.6	66.6	62.2	130				
E-capacitor near U1 surface			79.7	79.6	83.7	83.6	74.5	105				
E-capacitor C1 surface			66.0	66.1	69.3	69.4	63.5	105				
Winding of FL4 on power board			69.7	69.6	73.2	73.1	68.5	130				
Core of FL4 on power board			67.6	67.6	71.0	71.0	67.0	130				
Paper box of power board			61.9	62.1	65.0	65.2	60.1	Ref.				
Primary winding of transformer			86.3	86.3	90.6	90.6	85.7	120				
Core of transformer			89.0	90.3	93.5	94.8	88.5	140				
Secondary winding of transformer			90.1	90.5	94.6	95.0	89.2	120				
E-capacitor EC8 on amplifier board			45.9	45.8	79.7	79.6	73.1	105				
E-capacitor EC7 on amplifier board			44.5	44.5	68.8	68.8	64.7	105				
Ambient			40.0	40.0	40.0	40.0	40.0	--				
Below points are tested based on ambient at 25°C												
Power switch			29.4	30.0	30.9	31.5	29.3	70				
Wooden enclosure outside near transformer			25.8	26.3	27.1	27.6	25.8	70				
Wooden enclosure outside near AUX			38.5	39.0	40.4	41.0	37.6	70				
Wooden enclosure outside near input cord			25.0	25.2	26.3	26.5	25.1	70				
Ambient			25.0	25.0	25.0	25.0	25.0	--				
Temperature T of winding:		t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class				
--		--	--	--	--	--	--	--				
--		--	--	--	--	--	--	--				

Supplementary information:

Note 1: Tma should be considered as directed by applicable requirement

Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

Test mode A:AC power supply and the internal fully discharged battery was charging, pink noise sine signal adjusted to output power 1/8 max. non-clipped output power.

Test mode B:AC power supply and the internal fully charged, pink noise sine signal adjusted to output power 1/8 max. non-clipped output power.

Test mode C:Supply with internal battery.

5.4.1.8	Table: working voltage measurement				P
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	
T1 Pin1 to Pin A	282	380	24k	--	
T1 Pin3 to Pin A	183	376	24k	--	
T1 Pin5 to Pin A	285	376	24k	--	
T1 Pin6 to Pin A	184	388	24k	--	
T1 Pin1 to Pin B	284	384	24k	--	
T1 Pin3 to Pin B	184	376	24k	--	
T1 Pin5 to Pin B	<b>290</b>	368	24k	<b>Max Vrms of T1</b>	
T1 Pin6 to Pin B	181	<b>416</b>	24k	<b>Max Vpeak of T1</b>	
YC3 Pri. to Sec.	180	376	60	--	
U2 Pin1 to Pin 3	190	392	60	--	
U2 Pin1 to Pin 4	190	391	60	--	
U2 Pin2 to Pin 3	190	392	60	--	
U2 Pin2 to Pin 4	190	391	60	--	
T1 Pin1 to Pin A	282	380	24k	--	
T1 Pin3 to Pin A	183	376	24k	--	
T1 Pin5 to Pin A	285	376	24k	--	
T1 Pin6 to Pin A	184	388	24k	--	
supplementary information:					
Test voltage: 240V					
Test frequency: 60Hz					

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

5.4.1.10.3			TABLE: Ball pressure test of thermoplastics		P
Allowed impression diameter (mm) .....			≤ 2 mm		—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)		Impression diameter (mm)	
Bobbin of transformer	CHANG CHUN PLASTICS CO LTD	125		0.81	
Supplementary information:					

5.4.2.2, 5.4.2.4 and 5.4.3		TABLE: Minimum Clearances/Creepage distance						P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)	Required cl (mm)*	cl (mm)	Required cr (mm)	cr (mm)	
Between two poles of fuse Fuse1 (B)	<420	<250	<30	1.27	2.6	2.5	2.6	
Between L and N terminal (B)	<420	<250	<30	1.27	3.5	2.5	3.5	
Two terminal of capacitor YC3 (R)	<420	<250	<30	2.54	6.7	5.0	6.7	
Two terminal of optocoupler (U2) (R)	<420	<250	<30	2.54	6.3	5.0	6.3	
Primary component YC3 to iron core of transformer T1(R)	416	290	<30	2.54	7.4	5.8	7.4	
Transformer T1 primary to secondary(R)	416	290	<30	2.54	6.0	5.8	6.6	
Transformer T1 primary to core (S)	416	290	<30	2.54	2.6	5.8	6.5	
Transformer T1 secondary to core (S)	416	290	<30	2.54	4.5	5.8	6.9	
Supplementary information: B=Basic insulation, S= insulation, R=Reinforced insulation. Triple insulated wire used for primary windings. Core of transformer (T1) is considered as secondary.								

5.4.2.3		TABLE: Minimum Clearances distances using required withstand voltage			P
		Overvoltage Category (OV):			-
		Pollution Degree:			-
Clearance distanced between:	Required withstand	Required cl	Measured cl (mm)		



	voltage	(mm)	
Basic insulation/supplementary insulation (See table 5.4.2.2, 5.4.2.4 and 5.4.3 above)	2500V	1.5	See table 5.4.2.2, 5.4.2.4 and 5.4.3 above
Reinforced insulation (See table 5.4.2.2, 5.4.2.4 and 5.4.3 above)	2500V	3.0	See table 5.4.2.2, 5.4.2.4 and 5.4.3 above
Supplementary information:			

5.4.2.4	TABLE: Clearances based on electric strength test			N/A
Test voltage applied between:	Required cl (mm)	Test voltage (kV) peak / r.m.s. / d.c.	Breakdown Yes / No	
--	--	--	--	
Supplementary information:				

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements					N/A
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)	
--	--	--	--	--	--	
--	--	--	--	--	--	
Supplementary information: Bobbin materials of transformer is phenolic						

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No	
Basic/supplementary insulation:				
Between L and N (fuse opened)	DC	2500	No	
Reinforced insulation:				
L/N to Plastic enclosure with foil	DC	4000	No	
L/N to Accessible terminals	DC	4000	No	
Primary to Secondary of Transformer	DC	4000	No	
Primary to Core of Transformer	DC	4000	No	
Two layer insulation tape of transformer	DC	4000	No	
Supplementary information:				

5.5.2.2	TABLE: Stored discharge on capacitors			P
---------	---------------------------------------	--	--	---

Supply Voltage (V)/ Hz	Test Location	Operating Condition	Switch position on or off	Measured Voltage (after 2 seconds)	ES Classification
264Vac, 60Hz	Phase to Neutral	N	--	38V	ES1
264Vac, 60Hz	Phase to Neutral(R2 open circuir)	S	--	58V	ES1

Supplementary information:

C15=68 $\mu$ F $\pm$ 10%.

bleeding resistor rating: R2=R3=R4=R5=1.5M $\Omega$

Notes:

A. Test Location:

Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth

B. Operating condition abbreviations:

N – Normal operating condition (e.g., normal operation, or open fuse);

S –Single fault condition (Bleeder Resistor open circuit)

5.6.6.2	TABLE: Resistance of protective conductors and terminations				N/A
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (m $\Omega$ )	
--	--	--	--	--	
--	--	--	--	--	

Supplementary information:

5.7.2.1, 5.7.4	TABLE: Earthed accessible conductive part		N/A
Supply voltage .....	--		—
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)	
--	--	--	
--	--	--	
Supplementary information:			
[1] Supply voltage is the anticipated maximum Touch Voltage			
[2] Earthed neutral conductor [Voltage differences less than 1% or more]			
[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.34) IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.			
[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.			
[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.			
a) Not considered IT power system.			
b) Not three phase equipment.			
c) Not IT power system or three phase delta system.			
d) Not three-phase for use on centre-earthed delta supply system.			
e) Not such parts.			

6.2.2	Table: Electrical power sources (PS) measurements for classification				P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s <sup>*</sup> )	PS Classification
All primary circuits inside the equipment enclosure	Normal operation	Power (W) :	--	--	PS3 (declare)
		V <sub>A</sub> (V) :	--	--	
		I <sub>A</sub> (A) :	--	--	
Loud speaker output	Normal operation	Power (W) :	18.60	18.60	PS2
		V <sub>A</sub> (V) :	3.05	3.05	
		I <sub>A</sub> (A) :	6.1	6.1	
Loud speaker output	Fault condition: Max. non-clipped output	Power (W) :	22.11	22.11	PS2
		V <sub>A</sub> (V) :	9.41	9.41	
		I <sub>A</sub> (A) :	2.35	2.35	
Woofer speaker output	Normal operation	Power (W) :	17.29	17.29	PS2
		V <sub>A</sub> (V) :	2.94	2.94	
		I <sub>A</sub> (A) :	5.88	5.88	
Woofer speaker output	Fault condition: Max. non-clipped	Power (W) :	19.08	19.08	PS2
		V <sub>A</sub> (V) :	8.75	8.75	
		I <sub>A</sub> (A) :	2.18	2.18	

output					
Battery pack output	Normal	Power (W) :	>100W	>100W	PS3
		V <sub>A</sub> (V) :	--	--	
		I <sub>A</sub> (A) :	>10A	>10A	
USB port output	Normal operation	Power (W) :	0.98		PS1
		V <sub>A</sub> (V) :	4.9		
		I <sub>A</sub> (A) :	0.2		

Supplementary Information:

\*) Measurement taken only when limits at 3 seconds exceed PS1 limits

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)				P
Location	Open circuit voltage After 3 s (V <sub>p</sub> )	Measured r.m.s current (I <sub>rms</sub> )	Calculated value (V <sub>p</sub> x I <sub>rms</sub> )	Arcing PIS? Yes / No	
All internal circuits/ components	--	--	--	Yes (declaration)	

Supplementary information:

An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V<sub>p</sub>) and normal operating condition rms current (I<sub>rms</sub>) is greater than 15.

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

Supplementary information:

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
Description	Values	Energy Source Classification	
Lamp type..... :		—	
Manufacturer..... :		—	

Cat no.....:		—
Pressure (cold) (MPa).....:		MS_
Pressure (operating) (MPa).....:		MS_
Operating time (minutes).....:		—
Explosion method.....:		—
Max particle length escaping enclosure (mm) :		MS_
Max particle length beyond 1 m (mm).....:		MS_
Overall result .....		
Supplementary information:		

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	
90Vac/50Hz	0.328	--	18.38	--	Fuse1	0.328	Off mode and the internal fully discharged battery was charging.	
100Vac/50Hz	0.320	0.2	19.14	100	Fuse1	0.320		
240Vac/50Hz	0.154	0.2	20.38	100	Fuse1	0.154		
264Vac/50Hz	0.147	--	20.91	--	Fuse1	0.147		
90Vac/60Hz	0.331	--	18.36	--	Fuse1	0.331		
100Vac/60Hz	0.321	0.2	20.13	100	Fuse1	0.321		
240Vac/60Hz	0.155	0.2	20.40	100	Fuse1	0.155		
264Vac/60Hz	0.145	--	21.13	--	Fuse1	0.145		
90Vac/50Hz	0.623	--	32.2	--	Fuse1	0.623	AUX mode,AC power supply and the internal fully discharged battery was charging, pink noise sine signal adjusted to output power 1/8 max. non-clipped output power.	
100Vac/50Hz	0.553	0.2	32.4	100	Fuse1	0.553		
240Vac/50Hz	0.279	0.2	32.1	100	Fuse1	0.279		
264Vac/50Hz	0.264	--	32.3	--	Fuse1	0.264		
90Vac/60Hz	0.621	--	32.3	--	Fuse1	0.621		
100Vac/60Hz	0.554	0.2	32.6	100	Fuse1	0.554		
240Vac/60Hz	0.278	0.2	32.0	100	Fuse1	0.278		
264Vac/60Hz	0.261	--	32.4	--	Fuse1	0.261		

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	
12Vdc	1.136	--	13.63	--	Fuse1	--	AUX mode,internal fully charged battery is discharging,pink noise sine signal adjusted to output power 1/8 max. non-clipped output power.	
Supplementary information: Equipment may be have rated current or rated power or both. Both should be measured								

B.3		TABLE: Abnormal operating condition tests							P
Ambient temperature (°C).....:						25°C, if not specified		—	
Power source for EUT: Manufacturer, model/type, output rating .:						--		—	
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current (A)	T-couple	Temp. (°C)	Observation	
Speaker	Max. non-clipped output	264Vac	1h30min	Fuse1	0.261	--	Enclosure outside near Transformer:29.8°C Enclosure outside near battery: 38.5 °C Enclosure outside near USB: 40.2°C Battery body:41.1 °C Button surface: 30.1°C Knob: 29.4°C Ambient: 25.0°C	The unit was working normally.no damaged, no hazards. Battery discharging current was max.0.386A	
Speaker	S-C	264Vac	1h30min	Fuse1	0.261 → 0.011	--	Enclosure outside near Transformer: 29.1°C Enclosure outside near battery: 36.2°C Enclosure	Unit shutdown immediately.No damage, no hazard	

B.3		TABLE: Abnormal operating condition tests						P
Ambient temperature (°C)..... :						25°C, if not specified		—
Power source for EUT: Manufacturer, model/type, output rating . :						--		—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current (A)	T-couple	Temp. (°C)	Observation
							outside near USB:36..4 °C Battery body:38.2 °C Button surface: 28.4°C Knob: 28.2°C Ambient: 25.0°C	
Transformer secondary	O-L	264Vac	4h30min	Fuse1	0.179 → 0.287 → 0.361 → 0.419 → 0.485 → 0.563 → 0.036	--	Enclosure outside near Transformer:48.2°C Enclosure outside near battery: 39.0°C Enclosure outside near USB: 42.8°C Battery body: 41.6°C Button surface: 31.2°C Knob: 30.2°C Ambient: 25.0°C	USB output overload to 2.0A, the maximum temperture. Output overload to 2.1A, unit shutdonw, no damaged, no hazard
Ventilation openings	Blocked	264Vac	1h30min	Fuse1	0.261	--	Enclosure outside near Transformer: 29.6°C Enclosure outside near battery: 38.2°C Enclosure outside	The unit was working normally. no damaged, no hazards. Battery discharging current was max.0.426A

B.3 TABLE: Abnormal operating condition tests								P
Ambient temperature (°C)..... :						25°C, if not specified		—
Power source for EUT: Manufacturer, model/type, output rating .. :						--		—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current (A)	T-couple	Temp. (°C)	Observation
							near USB:38.4 °C Battery body:40.2 °C Button surface: 29.4°C Knob: 29.2 °C Ambient: 25.0°C	
Supplementary information:								
1) 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.								
2) The overloaded condition is applied according to annex G.5.3.3.								

B.4 TABLE: Fault condition tests								P
Ambient temperature (°C) .....						25°C, if not specified		—
Power source for EUT: Manufacturer, model/type, output rating ... :						--		—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
D10 on mains power board	S-C	264Vac	10min	--	0.011	--	--	Unit shutdown immediately, no damaged, no hazards
U2 Pin 1-2 on mains power board	S-C	264Vac	10min	--	0.011	--	--	Unit shutdown immediately, no damaged, no hazards
U2 Pin 3-4 on mains power board	S-C	264Vac	10min	--	0.011	--	--	Unit shutdown immediately, no damaged, no hazards
U2 pin 1 on mains power board	O-C	264Vac	10min	--	0.011	--	--	Unit shutdown immediately, no damaged, no hazards
U2 pin 3 on mains power board	O-C	264Vac	10min	--	0.011	--	--	Unit shutdown immediately, no damaged, no hazards



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) S-C: Short-circuited
- 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 same as result test conducted on all fuse sources, all fuse sources see table 4.1.2 for details.

Annex M	TABLE: Batteries									P
The tests of Annex M are applicable only when appropriate battery data is not available										
Is it possible to install the battery in a reverse polarity position?..... :										
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal condition	--	--	--	0.486A	2.1A	1.136A	7.0A	--	--	
Max. current during fault condition:IC5 S-C	--	--	--	0.486A	2.1A	1.136A	7.0A	--	--	
Test results:										Verdict
- Chemical leaks						No chemical leaks.				P
- Explosion of the battery						No explosion.				P
- Emission of flame or expulsion of molten metal						No emission of flame or expulsion of molten metal				P
- Electric strength tests of equipment after completion of tests						No isolation requirement.				N/A
Supplementary information:										

Annex M.4	Table: Additional safeguards for equipment containing secondary lithium batteries						P
Battery/Cell No.	Test conditions	Measurements			Observation		
		U	I (mA)	Temp (°C)			
Battery pack	Normal charging-under off mode	13.48	0.486A	45.2	No damaged. Not defeat a safeguard.		
Battery pack	Abnormal charging (Single fault –IC5 SC)	0	0	0	No damaged. Not defeat a safeguard.		
Supplementary Information:--							

Battery identification	Charging at $T_{lowest}$ (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation
--	--	--	--	--
Supplementary Information:				

Annex Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)	P				
Note: Measured UOC (V) with all load circuits disconnected:						
Output Circuit	Components	U <sub>oc</sub> (V)	I <sub>sc</sub> (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
USB OUTPUT	Normal condition	4.9	0.2	8.0	0.98	100
	U2 Pin 1-2 SC	0	0	8.0	0	100
	U2 Pin 1-2 SC	0	0	8.0	0	100
	U2 pin 1 OC	0	0	8.0	0	100
	U2 pin 3 OC	0	0	8.0	0	100
Supplementary Information:			SC=Short circuit, OC=Open circuit			

T.2, T.3, T.4, T.5	TABLE: Steady force test	P			
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
Top enclosure (T.4,T.5)	Wooden	Min.6.00	100,250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Bottom enclosure (T.4,T.5)	Wooden	Min.6.00	100,250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Side enclosure (T.4,T.5)	Wooden	Min.6.00	100,250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.

Top enclosure (T.4,T.5)	Plastic	Min. 1.5	100,250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Bottom enclosure (T.4,T.5)	Plastic	Min. 1.5	100,250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Side enclosure (T.4,T.5)	Plastic	Min. 1.5	100,250	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.
Internal components (T.2)	--	--	10	5	No reduction the clearances and creepage distances
Supplementary information:					

T.6, T.9	TABLE: Impact tests				P
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
Top enclosure (T.6)	Wooden	Min.6.00	1300	All safeguards remain effective	
Bottom enclosure (T.6)	Wooden	Min.6.00	1300	All safeguards remain effective	
Side enclosure (T.6)	Wooden	Min.6.00	1300	All safeguards remain effective	
Top enclosure (T.6)	Plastic	Min. 1.5	1300	All safeguards remain effective	
Bottom enclosure (T.6)	Plastic	Min. 1.5	1300	All safeguards remain effective	
Side enclosure (T.6)	Plastic	Min. 1.5	1300	All safeguards remain effective	
Supplementary information:					

T.7	TABLE: Drop tests				N/A
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Supplementary information:					

--	--	--	--	--
--	--	--	--	--
Supplementary information: --				

T.8	TABLE: Stress relief test					P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Complete sample	Wooden	Min.6.00	70	7	Enclosure remained intact, no cracking/opening developed in the enclosure joint. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Complete sample	Plastic	Min.1.50	70	7	Enclosure remained intact, no cracking/opening developed in the enclosure joint. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Supplementary information: --						

Photo documentation

Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6

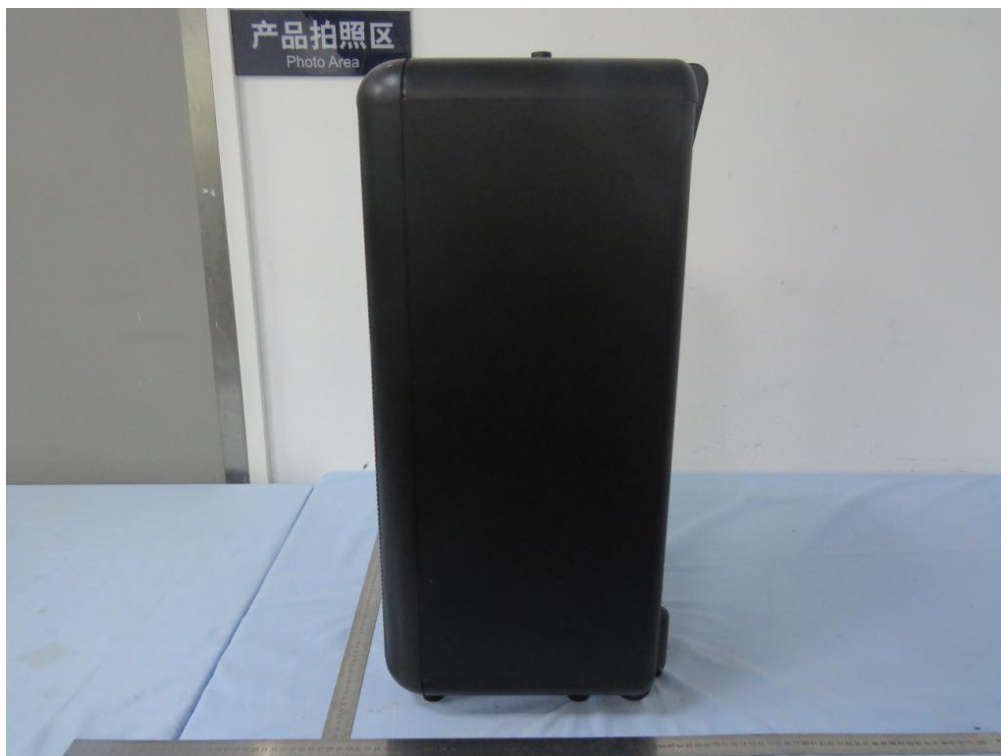


Photo 7



Photo 8

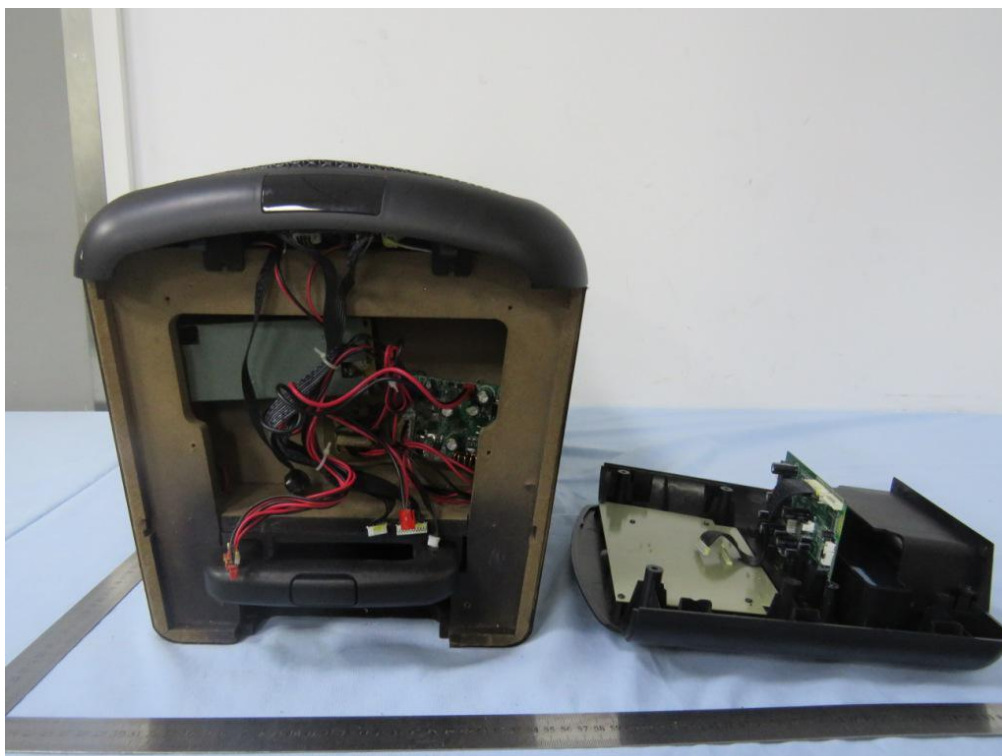




Photo 9



Photo 10

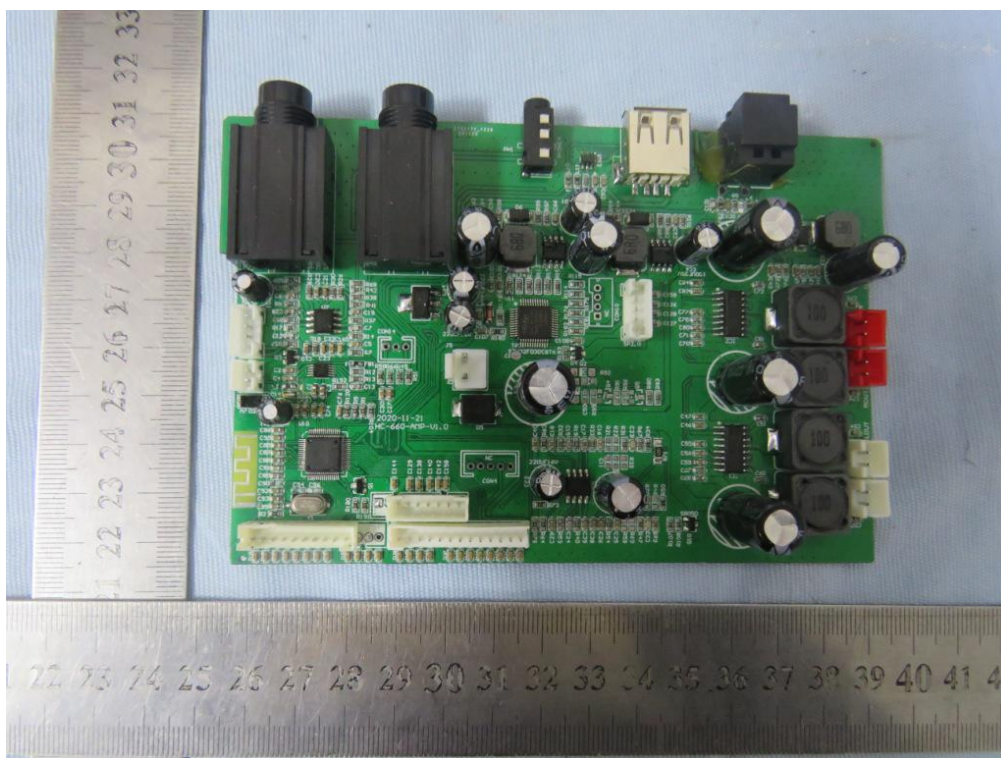


Photo 11

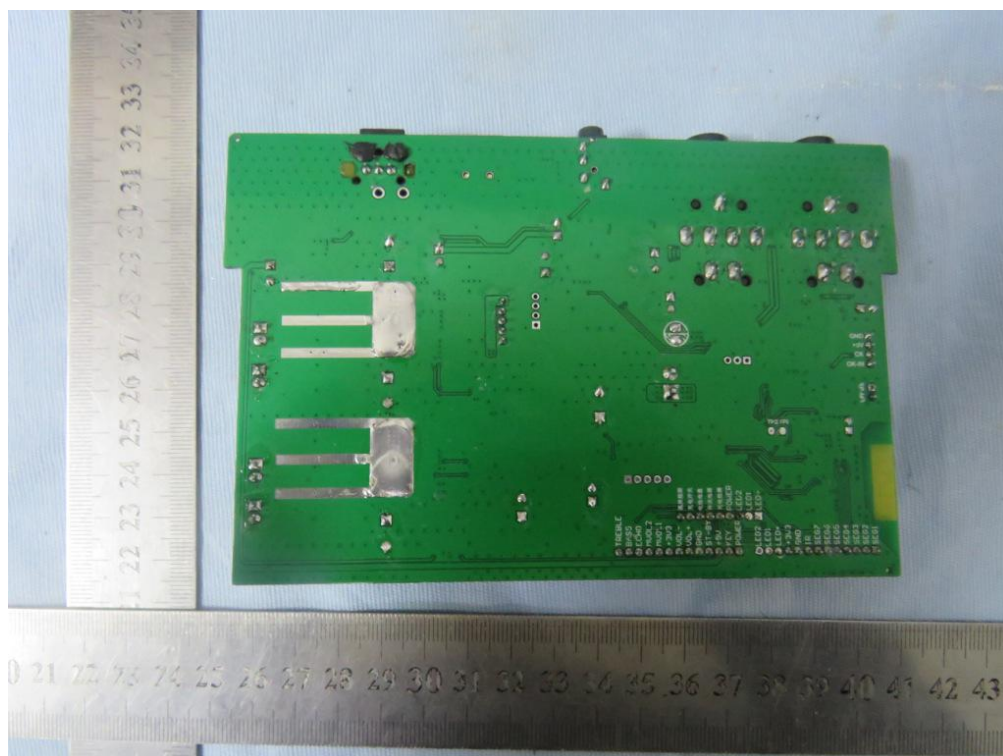


Photo 12

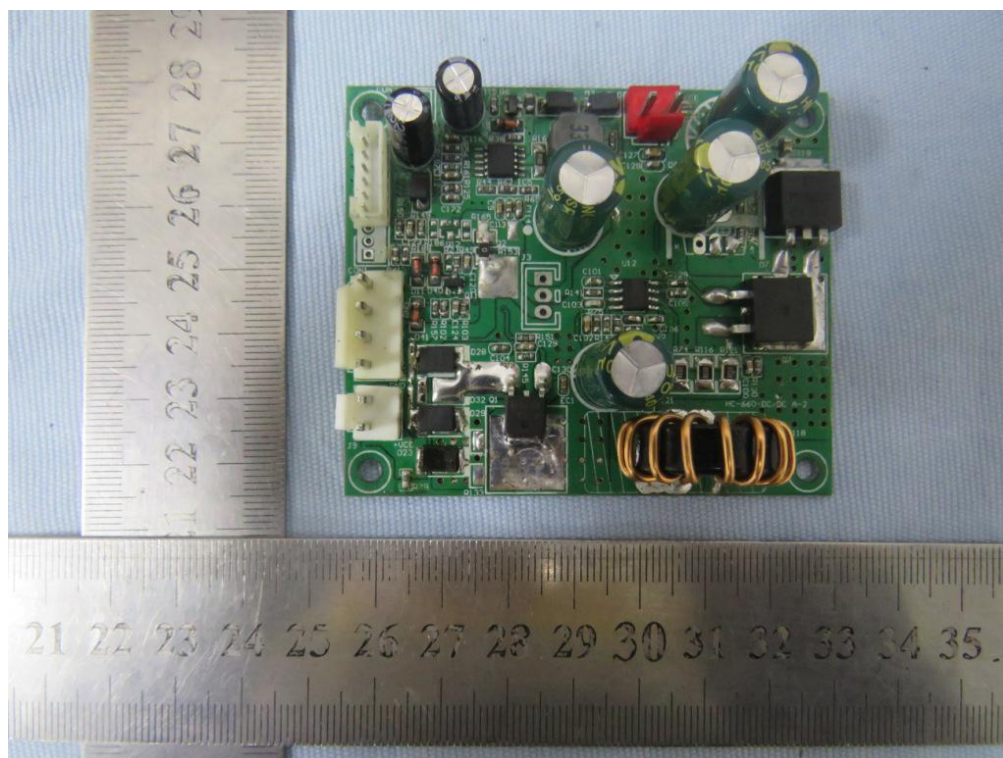


Photo 13

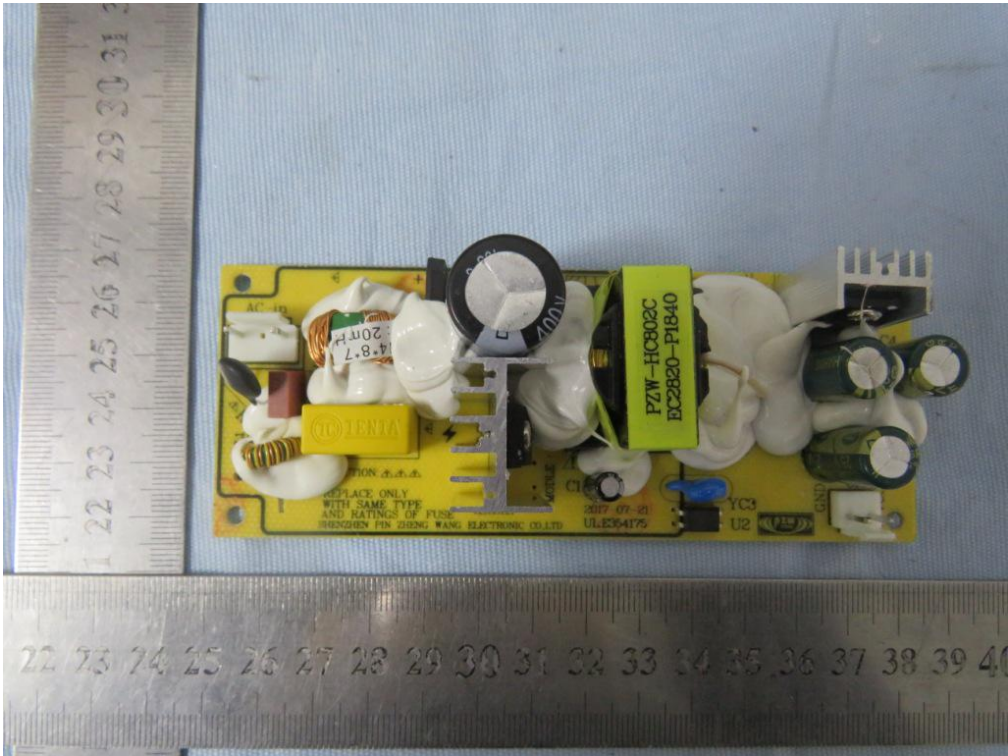


Photo 14

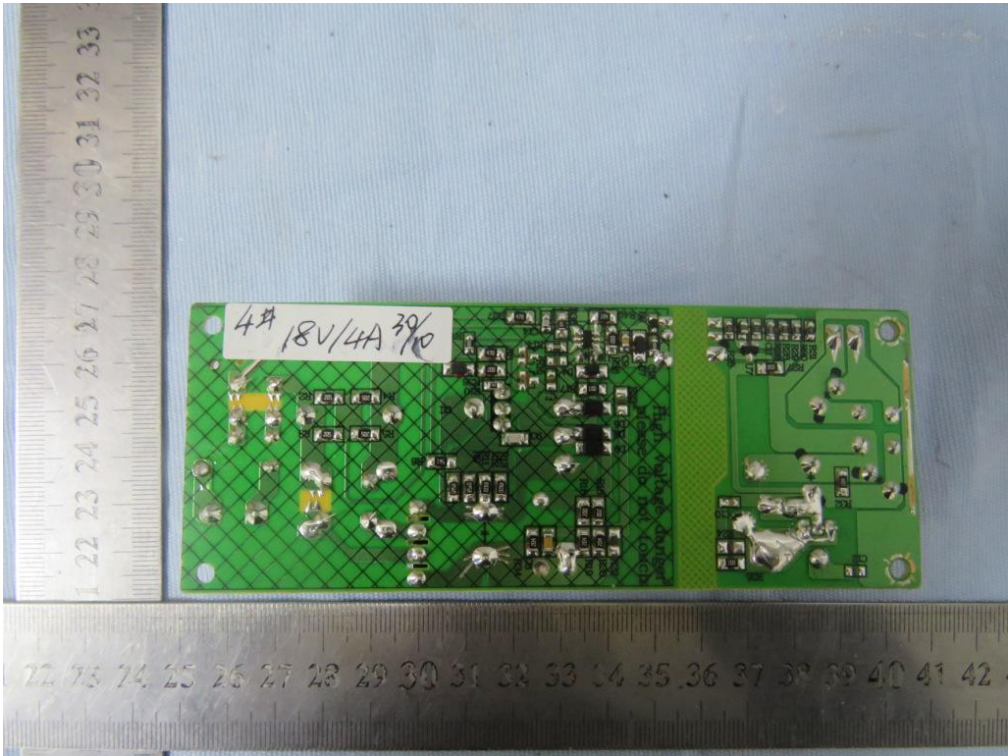


Photo 15

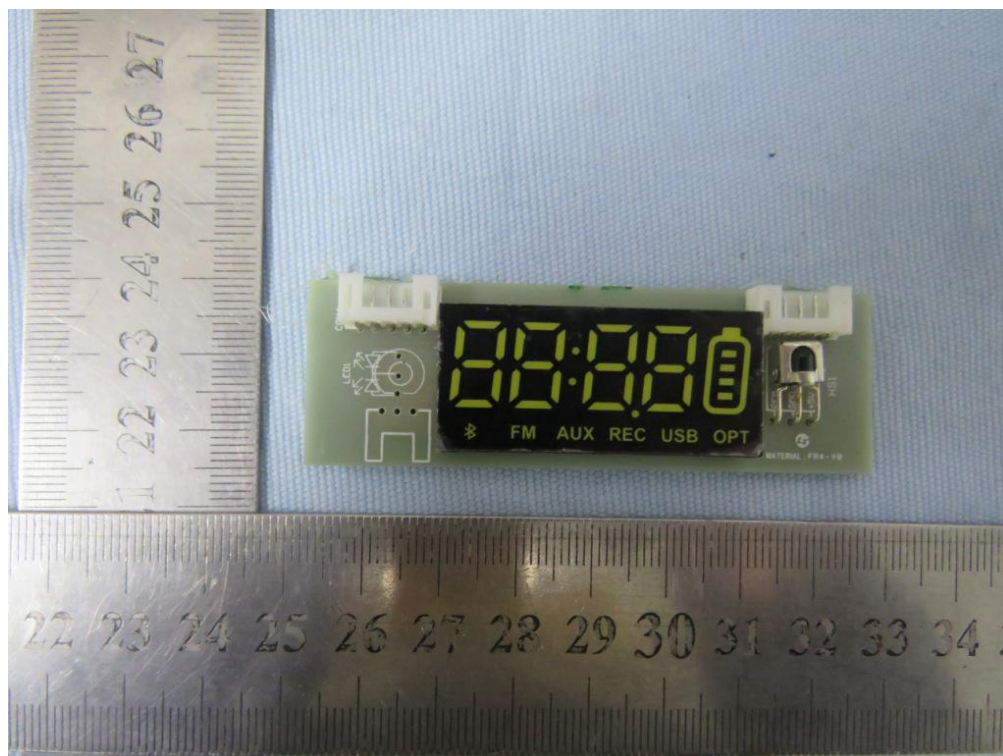


Photo 16

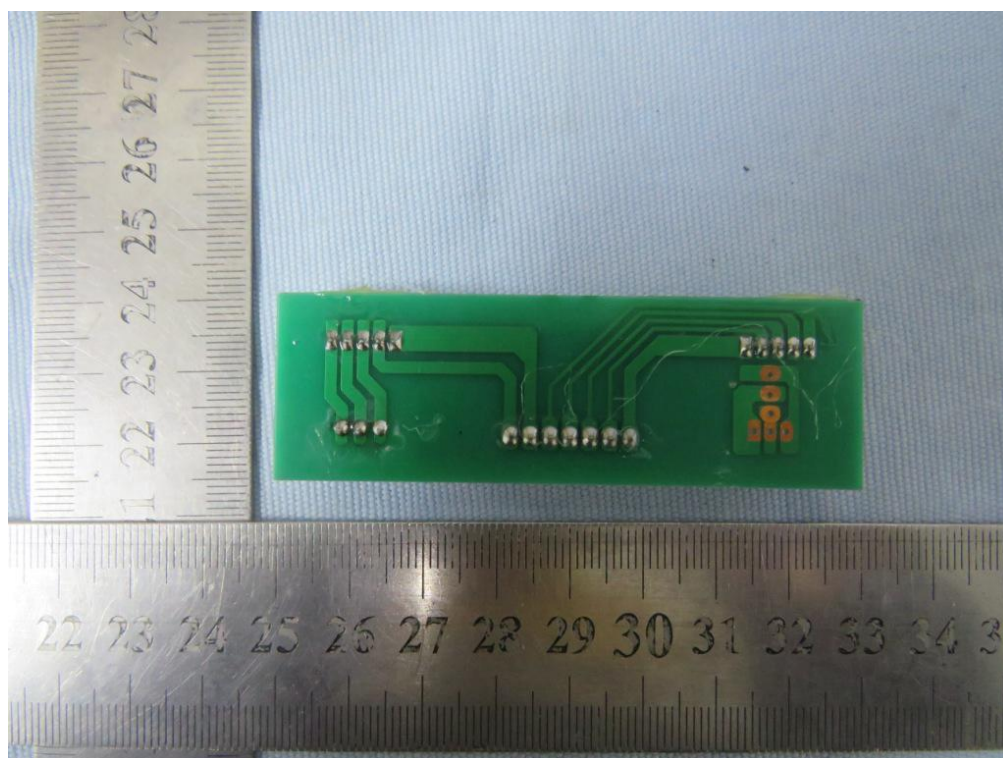


Photo 17

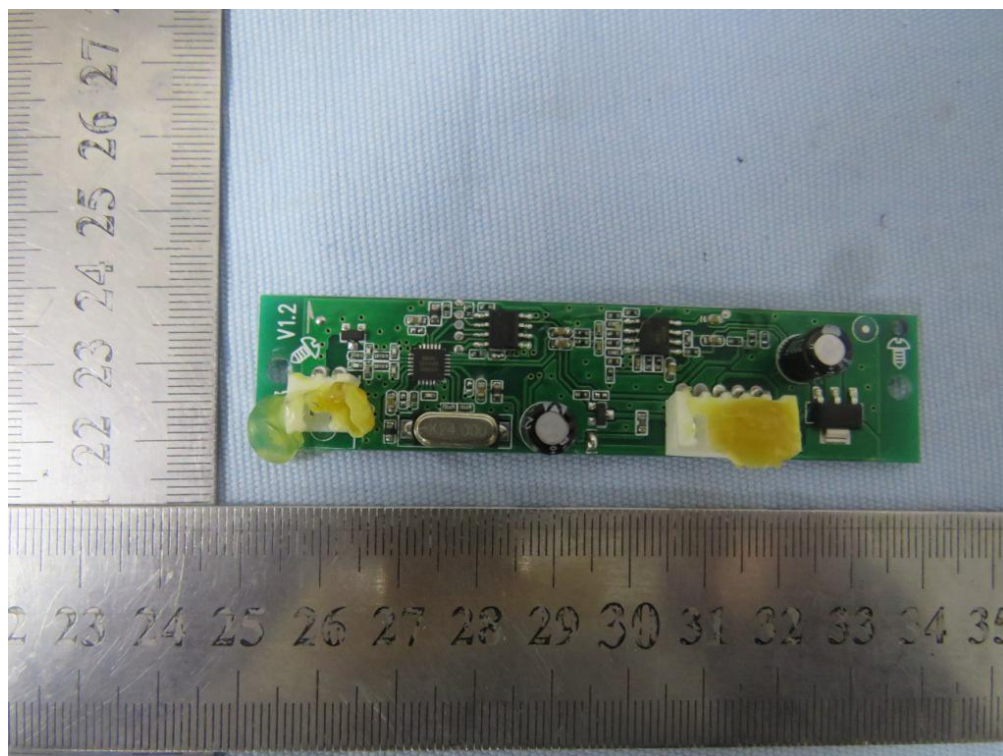


Photo 18

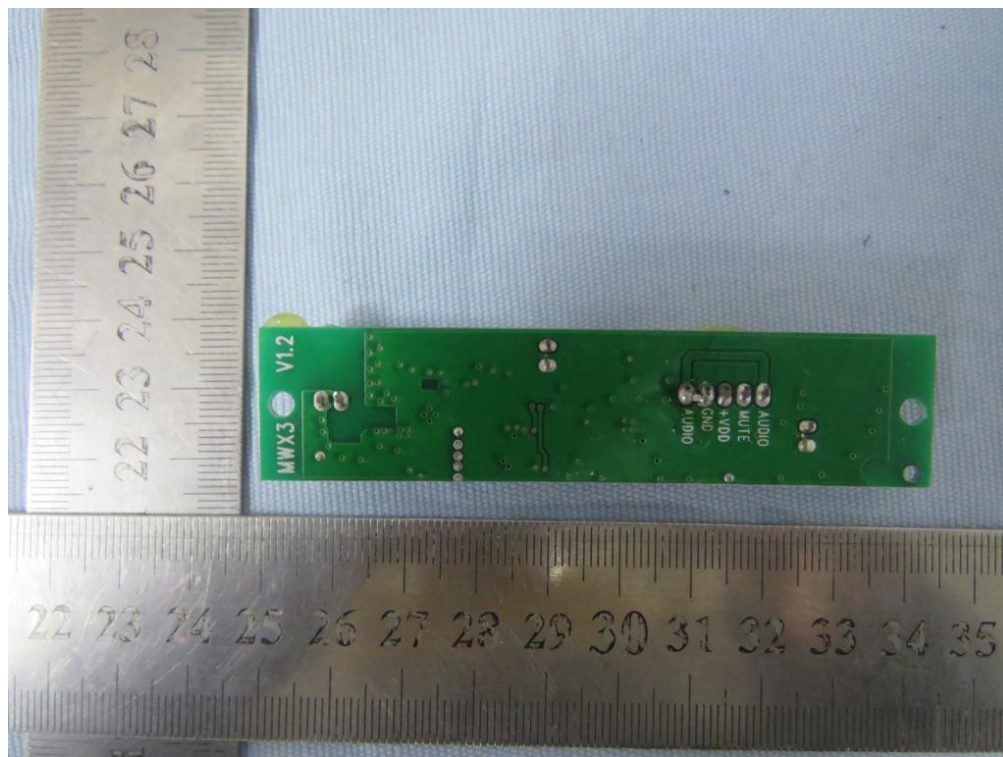


Photo 19

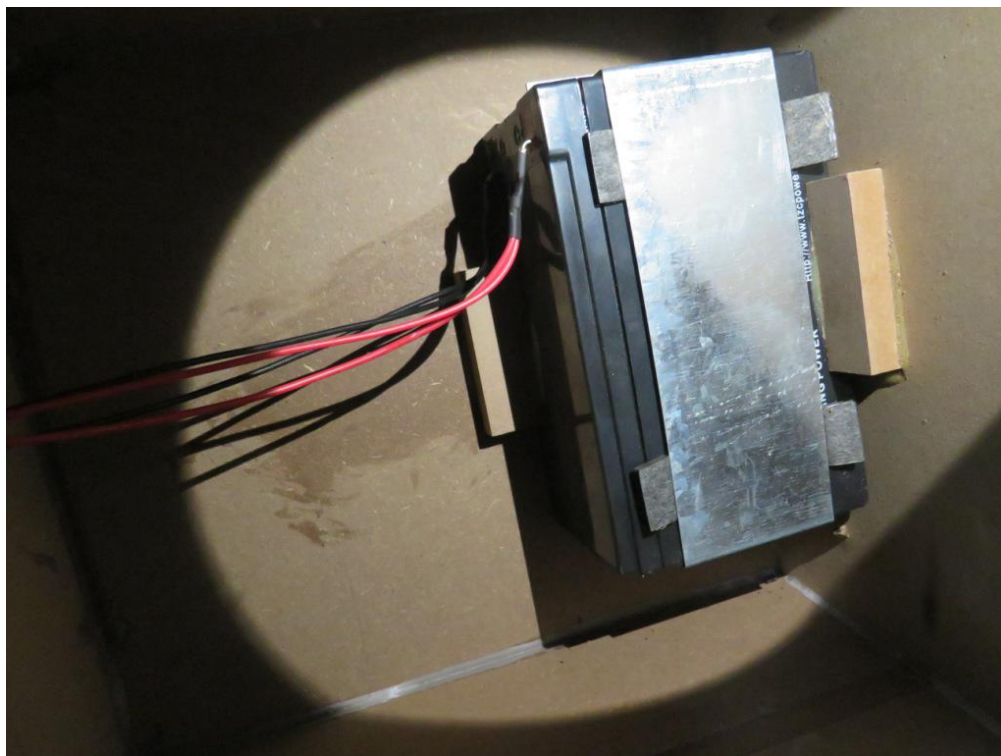


Photo 20

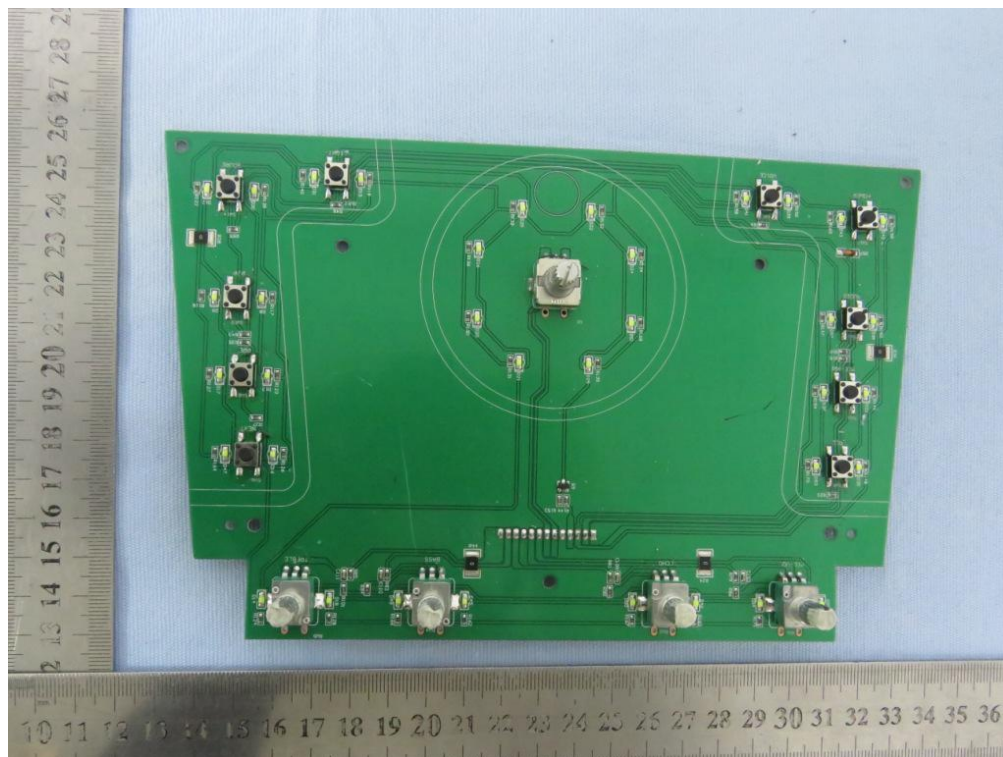
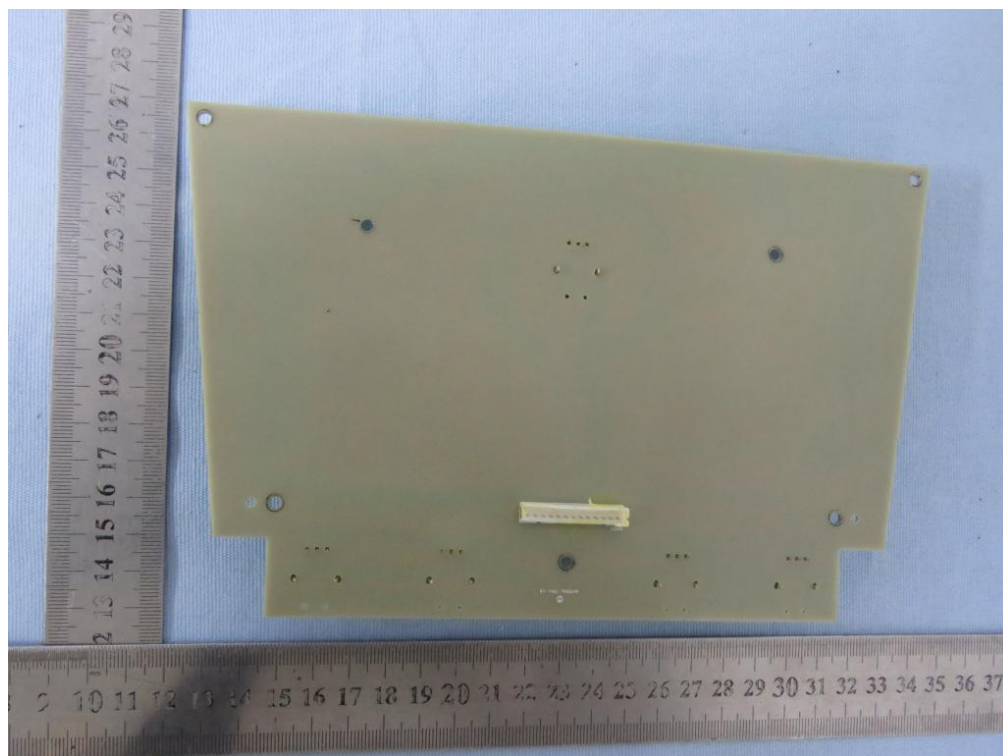


Photo 21



--- END OF THIS REPORT---