

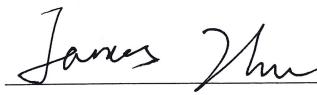
# TEST REPORT

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. : T-35X, T-30X, T-35BT, T-40X, T-40BT, T-45X, 50BT, R55BT  
Ratings : Input: 100-240V~, 50/60Hz, 1.5A  
Standard : Audio, Video and Similar Electronic Apparatus: Safety Requirements  
EN 60065:2014+A11:2017

Date of Receiver : December 30, 2019  
Date of Test : December 30, 2019 to January 13, 2020  
Date of Issue : January 15, 2020  
Test Report Form No : NTCS-IEC60065-A1-E  
Test Result : Pass \*

This Test Report is Issued Under the Authority of :

Compiled by

  
James Zhu/ Engineer

Approved by & Authorized Signer



Ryan Luo/ Authorized Signatory

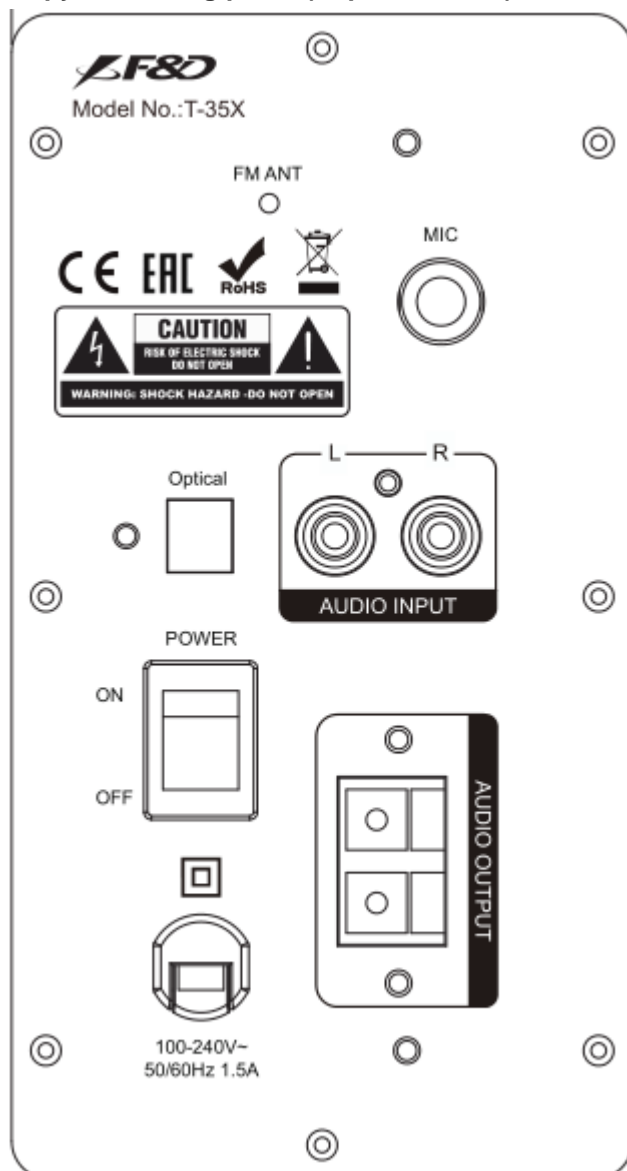
**\*Remarks:**

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

[illegible]

**Copy of marking plate: (Representative)**



**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. EUT marking label and trade mark were located on external enclosure.
4. The importer information(importer and address ) and manufacturer information (manufacturer 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 installation and use .....: Class II  
Supply Connection .....: Non-detachable power cord with plug

**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:**

The test results presented in this report relate only to the object tested.  
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.  
"(see Enclosure #)" refers to additional information appended to the report.  
"(see appended table)" refers to a table appended to the report.  
Throughout this report, a point (coma) is used as the decimal separator.  
List of test equipment must be kept on file and available for review.

**General product information:**

1. The product covered by this report is a Computer Multimedia Speaker for Audio, Video and similar electronic apparatus.
2. All models have the same construction, circuit diagram and PCB layout except model no different for marketing purpose, all test were performed on model T-35X present the other model.
3. The product is to be used under:
  - Maximum operating temperature: +35°C.
  - Altitude less than 2000m.
  - Indoor used only.

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
<b>3</b>	<b>GENERAL REQUIREMENTS</b>		P
	Safety class of the apparatus .....	Class II apparatus	P
<b>4</b>	<b>GENERAL CONDITIONS OF TESTS</b>		P
4.1.4	Ventilation instructions require the use of the test box	The temperature measurement was carried out with the apparatus positioned in accordance with the user's manual.	P
<b>5</b>	<b>MARKING</b>		P
	Comprehensible and easily discernible	Marking plate was provided on the bottom of product, it was comprehensible and easily discernible.	P
	Permanent durability against water and petroleum spirit	After rubbing test by water and petroleum spirit, the label still easily discernible, indelible and legible.	P
5.1	a) Identification, maker .....	Trade mark: F&D	P
	b) Model number or type reference .....	T-35X,T-30X,T-35BT,T-40X,T-40BT,T-45X,50BT,R55BT	P
	c) Class II symbol if applicable .....		P
	d) Nature of supply .....	~	P
	e) Rated supply voltage .....	100-240V	P
	f) Mains frequency if safety dependant .....	50/60Hz	P
	g) Rated current or power consumption for apparatus supplied by supply apparatus for general use .....	The apparatus is connection to an a.c mains supply	N
	Measured current or power consumption .....	See above	N
	Deviation % (max 10%) .....	See above	N
	h) Rated current or power consumption for apparatus intended for connection to an a.c. mains supply . :	1.5A	P
	Measured current or power consumption .....	(see appended table 7.1)	P
	Measured current or power consumption for Television set .....	Not television set	N
	Deviation % (max 10%) .....	Not exceed 10%	P
5.2	a) Earth terminal	Class II apparatus	N
	b) Hazardous live terminals	No hazards live terminals	N
	c) Markings on supply output terminals	No such output terminals	N
5.3	a) Use of triangle with exclamation mark	In circuit diagram	P
	b) marking on loudspeaker grille, IEC 60417-5036		N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
5.4	Instructions for use	English version checked. Versions of other languages will be provided when submitted for national approval.	P
5.4.1	a) Mains powered equipment not exposed to dripping or splashing. Warning concerning objects filled with liquid, etc.	Provided in the user manual.	P
	b) Hazardous live terminals, instructions for wiring	No hazardous live terminal	N
	c) Instructions for replacing lithium battery	No lithium battery	N
	d) Class I earth connection warning	Class II apparatus	N
	e) Instructions for multimedia system connection	Adequate instructions supplied.	P
	f) Special stability warning for attachment of the apparatus to the floor/wall		N
	g) Warning: battery exposure to heat		N
	h) Warning: protective film on CRT face		N
5.4.2	a-b) Disconnect device: plug/coupler or all-pole mains switch location, accessibility and markings	The mains plug is used as disconnect device, the statement was provided in the user's manual.	P
	c) Instructions for permanently connected equipment	The unit is not a permanently connected equipment	N
	Marking, signal lamps or similar for completely disconnection from the mains	No such construction	N

<b>6</b>	<b>HAZARDOUS RADIATION</b>		N
6.1	Ionizing radiation < 36 pA/kg (0,5 mR/h)	No picture tube inside the EUT.	N
6.1	European Council Directive 96/29/Euratom of 13 May 1996 10cm from outer surface of apparatus <1μSv/h (0,1mR/h)	No picture tube inside the EUT.	N
6.2	Laser radiation, emission limits to IEC 60825-1 .....	Class 1 laser product	N
	Emission limits under fault conditions .....	Class 1 laser product	N

<b>7</b>	<b>HEATING UNDER NORMAL OPERATING CONDITIONS</b>		P
7.1	Temperature rises not exceeding specified values, no operation of fuse links	(see appended table 7.1)	P
7.1.1	Temperature rise of accessible parts	(see appended table 7.1)	P
7.1.2	Temperature rise of parts providing electrical insulation	(see appended table 7.1)	P
7.1.3	Temperature rise of parts acting as a support or as a mechanical barrier	(see appended table 7.1)	P
7.1.4	Temperature rise of windings	(see appended table 7.1)	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
7.1.5	Parts not subject to a limit under 7.1.1 to 7.1.4	(see appended table 7.1)	P
7.2	Softening temperature of insulating material supporting parts conductively connected to the mains carrying a current > 0,2 A at least 150 °C		N

<b>8</b>	<b>CONSTRUCTIONAL REQUIREMENTS WITH REGARD TO THE PROTECTION AGAINST ELECTRIC SHOCK</b>		P
8.1	Conductive parts covered by lacquer, paper, untreated textile oxide films and beads etc. considered to be bare	The subject bare conductive parts provided with the proper insulation from the accessible parts.	P
8.2	No shock hazard when changing voltage setting device, fuse-links or handling drawers etc.	Auto-range for supply voltage, no user replaceable fuse and no removable parts inside the EUT.	P
8.3	Insulation of hazardous live parts not provided by hygroscopic material	No hygroscopic material used	P
8.4	No risk of electric shock following the removal of a cover which can be removed by hand	The EUT is complied with the requirements	P
8.5	Class I equipment	Class II apparatus	N
	Basic insulation between hazardous live parts and earthed accessible parts	No such insulation	N
	Resistors bridging basic insulation complying with 14.1 a)	No such component	N
8.6	Class II equipment and Class II constructions within Class I equipment	Class II apparatus	P
	Reinforced or double insulation between hazardous live parts and accessible parts	Hazardous live parts to accessible parts are separated by either reinforced or double insulation.	P
	Components bridging reinforced or double insulation complying with 14.1 a) or 14.3	Transformer provided with the double insulation.	P
	Basic insulation bridged by components complying with 14.3.4.3		N
	Basic and supplementary insulation each being bridged by a capacitor complying with 14.2.1 a)		N
	Reinforced or double insulation being bridged with 2 capacitors in series complying with 14.2.1 a)	No such components	N
	Reinforced or double insulation being bridged with a single capacitor complying with 14.2.1 b)	All sources of bridging capacitors are according to IEC 60384-14:2005.	P
8.7	This clause is void		--
8.8	Basic or supplementary insulation > 0,4 mm (mm) :	Approved power cord used	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	Reinforced insulation > 0,4 mm (mm) .....	The wooden material through transformer bobbin and heat shrinkable tube min. 0.4 mm.	P
	Thin sheet insulation (excluding non-separable thin sheet insulation. See 8.22)	Insulation tape be used for transformer.	P
	Basic or supplementary insulation, at least two layers, each meeting 10.3	At least two layer insulation tape around T1 core	P
	Basic or supplementary insulation, three layers any two of which meet 10.3		N
	Reinforced insulation, two layers each of which meet 10.3		N
	Reinforced insulation, three layers any two which meet 10.3	2 layers of the 3 layers withstood the test. (see appended table 10.3)	P
8.9	Adequate insulation between internal wiring hazardous live conductors and accessible parts	Reinforced insulation	P
	Adequate insulation between internal wiring hazardous live parts and conductors connected to accessible parts	Secondary wires safely secured away from hazardous live parts	P
8.10	Double insulation between conductors connected to the mains and accessible parts.	Double or reinforced insulation	P
	Double insulation between internal hazardous live parts and conductors connected to accessible parts.	Double or reinforced insulation	P
8.11	Detaching of wires	No risk of any wire becoming detached	P
	No undue reduction of creepages or clearance distances if wires become detached	Internal wirings were well routed and secured	P
	Vibration test carried out :	See clause 12.1.2.	P
8.12	This clause is void		--
8.13	Adequate fastening of windows, lenses, lamp covers etc. (pull test 20 N for 10 s)		P
8.14	Adequate fastening of covers (pull test 50 N for 10 s)	The cover used to fix power cord is considered	P
8.15	No risk of damage to the insulation of internal wiring due to hot parts or sharp edges	The internal wiring does not touch heat sources or sharp edges that may damage the insulation or cause hazards when considered the 2N force.	P
8.16	Only special supply equipment can be used	No such construction	N
8.17	Insulated winding wire without additional interleaved insulation		P
8.18	Endurance test as required by 8.17	No such construction	N
8.19	Disconnection from the mains	See below	P



IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
8.19.1	Disconnect device	Mains plug was considered as disconnect device. see sub-clause 5.4.2	P
	All-pole switch or circuit breaker with >3mm contact separation	All-pole switch	P
8.19.2	Mains switch ON indication		P
8.20	Switch not fitted in the mains cord	No such switch used	N
8.21	Bridging components comply with clause 14	No such components	N
8.22	Non-separable thin sheet material	The power supply did not equip with the non-separable thin sheet material. Only the separable insulation tape was used in the isolating transformer.	N

<b>9</b>	<b>ELECTRIC SHOCK HAZARD UNDER NORMAL OPERATING CONDITIONS</b>		<b>P</b>
9.1	Testing on the outside		P
9.1.1	For voltages >1000 V ac or >1500 V dc complies with clause 13.3.1 for basic insulation	No voltages exceeding 1000Vac or 1500Vdc	N
9.1.1.1	a) Open circuit voltages		P
	b) Touch current measured from terminal devices using the network in annex D .....		P
	c) Discharge not exceeding 45 µC	Less than 45µC	P
	d) Energy of discharge not exceeding 350 mJ	No voltage exceeding 15kV	N
9.1.1.2	Test with test finger and test probe	The test finger and test probe can not touch hazardous parts.	P
9.1.2	No hazardous live shafts of knobs, handles or levers	No live shafts, handles or levers.	N
9.1.3	Ventilation holes and other holes tested by means of 4 mm x 100 mm test pin	No internal part could be accessible while the test pin applied.	P
9.1.4	Terminal devices tested with 1 mm x 20 mm test pin (10 N); test probe D of IEC 61032	Test probe and test pin did not become hazardous live parts after test.	P
	Terminal devices tested with 1 mm x 100 mm straight wire (1 N); test probe D of IEC 61032	Test probe and test pin did not become hazardous live parts after test.	P
9.1.5	Pre-set controls tested with 2.5 mm x 100 mm test pin (10 N); test probe C of IEC 61032	No Pre-set controls	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
9.1.6	No shock hazard due to stored charge on withdrawal of the mains plug; voltage (V) after 2 s :	8V, 2s after withdrawal of AC plug under normal operation. (limit: 60Vdc) 16V, 2s after withdrawal of AC plug with one of bleeder resistor open R3 circuited.(limit: 120Vdc) No hazards.	P
	If C is not greater than 0,1 $\mu$ F no test needed		N
9.1.7	Resistance to external forces		P
	a) Test probe 11 of IEC 61032 for 10 s (50 N)	No damage of enclosure and no hazardous live parts are accessible.	P
	b) Test hook of fig. 4 for 10 s (20 N)	No hazardous live parts are accessible.	P
	c) 30 mm diameter test tool for 5 s (100 or 250 N)		P
9.2	No hazard after removing a cover by hand	Tools required.	N

<b>10</b>	<b>INSULATION REQUIREMENTS</b>		P
10.1	Insulation resistance (M $\Omega$ ) at least 2 M $\Omega$ min. after surge test for basic and 4 M $\Omega$ min. for reinforced insulation .....	Surge test performed between Line/natural and accessible enclosure. >100M, Complies with 10.3.	P
10.2	Humidity treatment 48 h or 120 h .....	Performed for 48h at temp. 30°C and humidity 95%.	P
10.3	Insulation resistance and dielectric strength between mains terminals	(See appended table 10.3)	P
	Insulation Resistance and dielectric strength across BASIC or SUPPLEMENTARY insulation (Class I)		N
	Insulation resistance and dielectric strength across REINFORCED insulation (Class II)	Class II construction	P

<b>11</b>	<b>FAULT CONDITIONS</b>		P
11.1	No shock hazard under fault condition	No electric shock hazard under fault conditions	P
11.2	Heating under fault condition	(see appended table 11.2)	P
	Flames extinguish within 10 seconds	No any flames during fault conditions testing	P
	No hazard from softening solder	No softening of solder point and becoming fluid	P
	Soldered terminations not used as protective mechanism	No such construction	P
11.2.1	Measurement of temperature rises	(see appended table 11.2)	P
11.2.2	Temperature rise of accessible parts	(see appended table 11.2)	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
11.2.3	Temperature rise of parts, other than windings and printed boards, providing electrical insulation	(see appended table 11.2)	P
11.2.4	Temperature rise of parts acting as a support or mechanical barrier	(see appended table 11.2)	P
11.2.5	Temperature rise of windings	(see appended table 11.2)	P
11.2.6	Temperature rise of printed boards shall not exceed the limits of table 3 by max. 100 K for max. 5 min		N
	Printed circuit boards (PCB) classified as V-0 according to 60695-11-10 or Clause G.1 may exceed the limit in table 3 in case a) and b):		P
	a) Temperature rise of printed circuit boards exceeding the limits of table 3 by not more than 100 K for an area not greater than 2 cm <sup>2</sup> .....	Temperature rise did not exceed the limits.	P
	b) Temperature rise of printed circuit boards exceeding the limits of table 3 up to 300 K for an area not greater than 2 cm <sup>2</sup> for a maximum of 5 min	Temperature rise did not exceed the limits.	N
	Meets all the special conditions if conductors on printed circuit boards are interrupted	No printed board were interrupted, peeled, or loose after test	N
	Class I protective earthing maintained	Class II equipment.	N
11.2.7	Temperature rise of parts not subject to the limits of 11.2.1 to 11.2.6 shall not exceed the limits in table 3, item e), "Fault conditions".	(See appended table 11.2)	P

<b>12</b>	<b>MECHANICAL STRENGTH</b>		P
12.1.1	Bump test where mass >7 kg	The weight of the EUT is less than 7kg.	N
12.1.2	Vibration test	No hazards after the test	P
12.1.3	Impact hammer test	No hazards after the test	P
	Steel ball test	No hazards after the test	P
12.1.4	Drop test for portable apparatus where mass ≤ 7 kg	No hazards after the test	P
12.1.5	Thermoplastic enclosures stress relief test	70°C, 7 hours (after tested, the hazardous live parts cannot be touched.)	P
12.2	Fixing of knobs, push buttons, keys and levers		P
12.3	Remote controls with hazardous live parts	No remote control device with hazardous live parts	N
12.4	Drawers (pull test 50 N, 10 s)	No drawer inside the equipment.	N
12.5	Antenna coaxial sockets providing isolation	No such device.	N
12.6	Telescoping or rod antennas construction	No such device.	N
12.6.1	Telescoping or rod antennas securement	No such device.	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict

<b>13</b>	<b>CLEARANCE AND CREEPAGE DISTANCES</b>		<b>P</b>
13.1	Clearances in accordance with 13.3	Clearances measured according to annex E. Pollution degree 2 was considered	P
	Creepage distances in accordance with 13.4	Creepage measured according to annex E. Pollution degree 2 was considered	P
13.2	Determination of operating voltage	The unit was connected to a 240V TN power system. (see appended table 13)	P
13.3	Clearances	(see appended table 13)	P
13.3.1	General	(see appended table 13)	P
13.3.2	Circuits conductively connected to the mains comply with table 8 and, where applicable, table 9	(see appended table 13)	P
13.3.3	Circuits not conductively connected to the mains comply with table 10		N
13.3.4	Measurement of transient voltages		N
13.4	Creepage distances	(see appended table 13)	P
	Creepage distances greater than table 11 minima	(see appended table 13)	P
13.5	Printed boards	No such construction	N
13.5.1	Clearances and creepage distances between conductors on printed circuit boards, one of which may be conductively connected to the mains, as in fig. 10		N
13.5.2	Type B coated printed circuit boards complying with IEC 60664-3 (basic insulation only)	No such construction	N
13.6	Conductive parts along uncemented joints clearances and creepage distances comply with 13.3 and 13.4	No such construction	N
	Conductive parts along reliably cemented joints comply with 8.8	No such construction	N
	Temperature cycle test and dielectric strength test	No such construction	N
13.7	Enclosed, enveloped or hermetically sealed parts: not conductively connected to the mains: clearances and creepage distances as in table 12	No such construction	N
13.8	Parts filled with insulating compound, meeting the requirements of 8.8	VDE approved optocoupler with insulation thickness Min. 0.4 mm	P

<b>14</b>	<b>COMPONENTS</b>		<b>P</b>
14.1	Resistors		N
	a) Resistors between hazardous live parts and accessible metal parts	No such resistors used	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	b) Resistors, other than between hazardous live parts and accessible parts	No such resistors used	N
	Resistors separately approved .....		N
14.2	Capacitors and RC units	See below.	P
	Capacitors separately approved		P
14.2.1	Y capacitors tested to IEC 60384-14, 2 <sup>nd</sup> edition ...:	CY1 (see appended table 14)	P
14.2.2	X capacitors tested to IEC 60384-14, 2 <sup>nd</sup> edition ...:	CX1 (see appended table 14)	P
14.2.3	Capacitors operating at mains frequency but not connected to the mains: tests for X2 .....	See below.	N
14.2.5	Capacitors with volume exceeding 1750 mm <sup>3</sup> , where short-circuit current exceeds 0,2 A: compliance with IEC60384-1, 4.38 category B or better .....		N
	Capacitors with volume exceeding 1750 mm <sup>3</sup> , mounted closer to a potential ignition source than table 5 permits: compliance with IEC 60 384-1, 4.38 category B or better .....	See below.	N
	Shielded by a barrier acc. to 20.1.4/ table 21 or metal .....	Electrolytic capacitor is having a metal case as a barrier.	N
14.3	Inductors and windings	See below	P
	Comply with IEC 61558-1, IEC 61558-2 (as relevant) and clause 20.1.4	Inductors and windings comply with relative clauses of 14.3.1 – 14.3.5	N
14.3.1	Transformers and inductors marked with manufacturer's name and type .....	The mark provided on transformer.	P
	Transformers and inductors separately approved ..	No, tested with appliance	N
14.3.2	General	See 14.3.3, 14.3.4 and 14.3.5.	P
	Isolating transformers shall comply with 14.3.3 and 14.3.4.1 or 14.3.4.2 and 14.3.5.1 or 14.3.5.2		P
	Separating transformers shall comply with 14.3.3 and 14.3.4.03 and 14.3.5.1 or 14.3.5.2		N
14.3.3	Constructional requirements	See below.	P
14.3.3.1	Clearances and creepage distances comply with clause 13		P
14.3.3.2	Transformers meet the constructional requirements	Double insulation between primary and secondary windings.	P
14.3.4.1	Class II transformers have adequate separation between hazardous live parts and accessible parts (double or reinforced insulation)		P
	Coil formers and partition walls > 0,4 mm		N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
14.3.4.2	Class I transformers, with basic insulation and protective screening only if all 7 conditions of 14.3.4.2 are met	Class II transformer.	N
14.3.4.3	Separating transformers with at least basic insulation	Class II construction used	N
14.3.5	Insulation between HAZARDOUS LIVE parts and ACCESSIBLE parts		P
14.3.5.1	Class II transformers have adequate insulation between hazardous live parts and accessible parts (double or reinforced insulation)	Double or reinforced insulation separated between hazardous live windings and windings intended to be connected to output terminals.	P
	Coil formers and partition walls > 0,4 mm	Measured thickness of transformer bobbin>0.4mm	P
14.3.5.2	Class I transformers have adequate insulation between hazardous live parts and accessible conductive parts or those conductive parts or protective screens connected to a protective earth terminal	Class II construction used	N
	Winding wires connected to protective earth have adequate current-carrying capacity	No such components.	N
14.4	High voltage components	No such device within the EUT	N
	High-voltage components and assemblies: U > 4 kV (peak) separately approved		N
	Component meets category V-1 of IEC 60707		N
14.4.1	High voltage transformers and multipliers tested as part of the submission		N
14.4.2	High voltage assemblies and other parts tested as part of the submission		N
14.5	Protective devices	See below.	P
	Protective devices used within their ratings	Fuse (F1) in PCB:T3.15AL 250V AC	P
	External clearances and creepage distances meet requirement of clause 13 for the voltage across the device when opened	Basic insulation was provided between the terminals of the protective devices.	P
14.5.1.1	a) Thermal cut-outs separately approved	No such device within the EUT	N
	b) Thermal cut-outs tested as part of the submission		N
14.5.1.2	a) Thermal links separately approved	No such device within the EUT	N
	b) Thermal links tested as part of the submission		N
14.5.1.3	Thermal devices re-settable by soldering	No such component used.	N
14.5.2.1	Fuse-links in the mains circuit according to IEC 60127	The fuse-link is approved according to IEC 60127	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
14.5.2.2	Correct marking of fuse-links adjacent to holder ...:	Fused marked on PCB adjacent to component as: F1 T3.15AL 250V	P
14.5.2.3	Not possible to connect fuses in parallel .....	No fuse holder is designed to be connected in parallel in the same circuit	P
14.5.2.4	Not possible to touch hazardous live parts when replacing fuse-links without the use of a tool .....	Tools required	P
14.5.3	PTC-S thermistors comply with IEC 60730-1	No such device within the EUT	N
	PTC-S devices (15 W) category V-1 or better		N
14.5.4	Circuit protectors have adequate breaking capacity and their position is correctly marked	No such device within the EUT	N
14.6	Switches	Certified components used.	P
14.6.1 a)	Separate testing to IEC 61058 including: 10 000 operations Normal pollution suitability Resistance to heat and fire level 3 And Make and break speed independent of speed of actuation V-0 compliance with annex G, G.1.1		P
14.6.1 b)	Tested in the apparatus:		N
	Switch controlling > 0.2A with open contact voltage > 35 V (peak)/24 V dc complying with 14.6.3, 14.6.4 and V-0 in annex G, G.1.1		N
	Switch controlling > 0.2A with open contact voltage < 35 V (peak)/24 V dc complying with 14.6.3 and V-0 in annex G, G.1.1		N
	Switch controlling < 0.2A with open contact voltage > 35 V (peak)/24 V dc complying with 14.6.4 and V-0 in annex G, G.1.1		N
14.6.2	Switch tested to 14.6.1 b) constructed to IEC 61058-1 subclause 13.1 and has making/breaking action independent of speed of actuation		N
14.6.3	Switch tested to 14.6.1 b) compliant with IEC 61058-1 subclause 16.2.2 d) and m) not attaining excessive temperatures in use		N
14.6.4	Switch tested to 14.6.1 b) has adequate dielectric strength		N
14.6.5	Mains switch controlling mains socket outlets additional tests to IEC 60058-1	No mains socket outlet.	N
	Socket outlet current marking correct		N
14.7	Safety interlocks	No such devices within the EUT	N
	Safety interlocks to 2.8 of IEC 60950		N
14.8	Voltage setting devices and the like	No such devices within the EUT	N
	Voltage setting device not likely to be changed accidentally		N



IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
14.9	Motors	No such devices within the EUT	N
14.9.1	Endurance test on motors		N
	Motor start test		N
	Dielectric strength test		N
14.9.2	Not adversely affected by oil or grease etc.		N
14.9.3	Protection against moving parts		N
14.9.4	Motors with phase-shifting capacitors, three-phase motors and series motors meet clause. B.8, B.9 and B.10 of IEC 60950, Annex B		N
14.10	Batteries	No such devices within the EUT	N
14.10.1	Batteries mounted with no risk of accumulation of flammable gases		N
14.10.2	No possibility of recharging non-rechargeable batteries		N
14.10.3	Recharging currents and times within manufacturers limits		N
	Lithium batteries discharge and reverse currents within the manufacturers limits		N
14.10.4	Battery mould stress relief		N
14.10.5	Battery drop test		N
14.11	Optocouplers	Approved optocoupler is used	P
	Comply with IEC 60747-5-5:2007	(See appended table 14)	P
	Internal and external dimensions to 13.1. or alternatively 13.6 (jointed insulation)		P
14.12	Surge suppression varistors	No such construction	N
	Comply with IEC 61051-2		N
	Not connected between mains and accessible parts except for earthed parts of permanently connected apparatus		N
	Complies with the current pulse, fire hazard and thermal stress requirements of 14.12		N

<b>15</b>	<b>TERMINALS</b>		<b>P</b>
15.1.1	Mains plug, appliance inlet, interconnection couplers and mains socket-outlet meet the appropriate standard	Approved mains plug used.	P
	Overloading of plugs or appliance inlets prevented if the apparatus has mains socket outlets	Not provide mains socket outlets to other apparatus.	N
	Overloading of internal wiring prevented if the apparatus has mains socket outlets	No mains socket-outlets.	N
15.1.2	Connectors for antenna, earth, audio, video or data:		P



IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	No risk of insertion in mains socket-outlets	No risk to insert into mains socket-outlets	P
	No risk of insertion into audio or video: outlets marked with the symbol of 5.2	No mains socket-outlet.	N
15.1.3	Output terminals of a.c. adaptors or similar devices not compatible with household mains socket-outlets	No mains socket-outlet.	N
15.2	Provision for protective earthing		N
	Accessible conductive parts of Class I equipment reliably connected to earth terminal, within equipment	Class II equipment.	N
	Protective earth conductors correctly coloured	Class II equipment.	N
	Equipment with non-detachable mains cord provided with separate protective earth terminal near mains input	Class II equipment.	N
	Protective earth terminal resistant to corrosion	Class II equipment.	N
	Earth resistance test: $< 0,1 \Omega$ at 25 A .....	Class II equipment.	N
15.3	Terminals for external flexible cords and for permanent connection to the mains supply	See below :	P
15.3.1	Adequate terminals for connection of permanent wiring	Not permanently connected equipment	N
15.3.2	Reliable connection of non-detachable cords:	A strain relief bushing was provided for the reliable connection.	P
	Not soldered to conductors of a printed circuit board		P
	Adequate clearances and creepage distances between connections should a wire break away		P
	Wire secured by additional means to the conductor		P
15.3.3	Screws and nuts clamping conductors have adequate threads: ISO 261, ISO 262 or similar	No such device	N
15.3.4	Soldered conductors wrapped around terminal prior to soldering or held in place by additional means	Supply conductors soldered to Isolating transformers fixed by screws	N
	Clamping of conductor and insulation if not soldered or held by screws	No such device	N
15.3.5	Terminals allow connection of appropriate cross-sectional area of conductors, for the rated current of the equipment	No such terminals used	N
15.3.6	Terminals to 15.3.3 have sizes required by table 16	No such terminals used	N
15.3.7	Terminals clamp conductors between metal and have adequate pressure	No such terminals used	N
	Terminals designed to avoid conductor slipping out when tightened or loosened	No such terminals used	N
	Terminals adequately fixed to avoid loosening when the clamping is tightened or loosened and stress on internal wiring is avoided	No such terminals used	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
15.3.8	Terminals carrying a current more than 0,2 A: contact pressure not transmitted by insulating material except ceramic	A certified primary connector was used with its rating.	P
15.3.9	Termination of non-detachable cords: wires terminated near to each other	A certified primary connector was used with its rating.	P
	Terminals located and shielded: test with 8 mm strand	No such terminals used	N
15.4	Devices forming a part of the mains plug	No such construction	N
15.4.1	No undue strain on mains socket-outlets	No such construction	N
15.4.2	Device complies with standard for dimensions of mains plugs	Certified non-detachable power supply cord used.	N
15.4.3	Device has adequate mechanical strength (tests a,b,c)	Certified non-detachable power supply cord used.	N

<b>16</b>	<b>EXTERNAL FLEXIBLE CORDS</b>		<b>P</b>
16.1	Mains cords sheathed type, complying with IEC 60227 for PVC or IEC 60245 for synthetic rubber cords .....	Certified non-detachable power supply cord used.	P
	Non-detachable cords for Class I have green/yellow core for protective earth	Class II apparatus	N
16.2	Mains cords conductors have adequate cross-sectional area for rated current consumption of the equipment	Certified non-detachable power supply cord used.	P
16.3	a) Flexible cords not complying with 16.1, used for interconnections between separate units of equipment used in combination and carrying hazardous live voltages, have adequate dielectric strength	Not interconnection carrying the hazardous voltage.	N
	b) Flexible cords not complying with 16.1, withstand bending and mechanical stress (3.2 of IEC 60227-2)	No such kind of flexible cords used.	N
16.4	Flexible cords used for connection between equipment have adequate cross-sectional areas to avoid temperature rise under normal and fault conditions	No such kind of flexible cords used.	N
16.5	Adequate strain relief on external flexible cords	Displacement Measured 0.8mm.	P
	Not possible to push cord back into equipment	A strain-relief bushing was provided to prevent the push back of the power supply cord	P
	Strain relief device unlikely to damage flexible cord	40N, 100 times. Also applied 0.25Nm torque test	P
	For mains cords of Class I equipment, hazardous live conductors become taut before earth conductor	Class II apparatus	N
16.6	Apertures for external flexible cord: no risk of damage to the cord during assembly or movement in use	No damage	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
16.7	Transportable musical instruments and amplifiers fitted with detachable cord set with appliance inlet to IEC 60320-1	No such apparatus	N
	Transportable musical instruments and amplifiers fitted with detachable cord sets or with means of stowage to protect the cord	No such apparatus	N

<b>17</b>	<b>ELECTRICAL CONNECTIONS AND MECHANICAL FIXINGS</b>		<b>P</b>
17.1	Torque test to table 20:	See below:	P
	- screws into metal: 5 times	No such screws	N
	- screws into non-metallic material: 10 times	Torque force: 0.5Nm.	P
17.2	Correct introduction into female threads in non-metallic material	No such screws	N
17.3	Cover fixing screws: captive	Non-captive fixing screw used.	N
	Non-captive fixing screws: no hazard when replaced by a screw whose length is 10 times its diameter	No captive screws used. No hazard when replacing a screw with one which length is 10 times its diameter.	P
17.4	No loosening of conductive parts carrying a current > 0,2 A	All conductive parts are fixed on PCB by at least two soldering points or by additional glue and soldering-pin.	P
17.5	Contact pressure not transmitted through plastic other than ceramic for connections carrying a current > 0,2 A	No such construction	N
17.6	Stranded conductors of flexible supply cords carrying a current > 0,2 A with screw terminals not consolidated by solder	No such construction	N
17.7	Cover fixing devices other than screws have adequate strength and their positioning is unambiguous	No such construction	N
17.8	Fixing devices for detachable legs or stands provided	No such construction	N
17.9	Internal pluggable connections, affecting safety, unlikely to become disconnected	After applying the 2N force, no hazard occurs.	P

<b>18</b>	<b>MECHANICAL STRENGTH OF PICTURE TUBES AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION</b>		<b>N</b>
18.1	Picture tube separately approved to IEC 61965 .....	No picture tube used	N
	Picture tube separately approved to 18.2 .....	No picture tube used	N
18.2	Non-intrinsically protected tubes tested to 18.2	No picture tube used	N

<b>19</b>	<b>STABILITY AND MECHANICAL HAZARDS</b>		<b>P</b>
	Mass of the equipment exceeding 7 kg .....	Approx.4.742Kg	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	Apparatus intended to be fastened in place – suitable instructions		P
19.1	Test on a plane, inclined at 10° to the horizontal		P
19.2	100 N force applied vertically downwards		P
19.3	100 N force, or 13% of weight, applied horizontally to point of least stability.		P
19.4	Edges or corners not hazardous	The outer surface of the EUT is smoothed. No sharp edges and corners	P
19.5	Glass surfaces (exc.laminated) with an area exceeding 0,1 m <sup>2</sup> or maximum dimension > 450 mm, pass the test of 19.5.1	No glass surface in the EUT	N
19.6	Wall or ceiling mountings adequate	The EUT is not a such mounted apparatus	N

<b>20</b>	<b>RESISTANCE TO FIRE</b>		<b>P</b>
20.1	Electrical components and mechanical parts		P
	a) Exemption for components contained in an enclosure of material V-0 to IEC 60707 with openings not exceeding 1 mm in width		N
	b) Exemption for small components as defined in 20.1	Components are mounted on a PCB of V-0	P
20.1.1	Electrical components meet the requirements of Clause 14 or 20.1.4	The bobbin of T1 complied with sub-clause 20.1.4; The enclosures is plastic and wooden complied with sub-clause 20.1.4	P
20.1.2	Insulation of internal wiring working at voltages > 4 Kv or leaving an internal fire enclosure, or located within the areas mentioned in Table 21, not contributing to the spread of fire	No voltage exceeds 4kV.	N
20.1.3	Material of printed circuit boards on which the available power exceeds 15 W at a voltage between 50 V and 400 V (peak) a.c. or d.c. meets V-1 or better to IEC60707, unless used in a fire enclosure		N
	Material of printed circuit boards on which the available power exceeds 15 W at a voltage >400 V (peak) a.c. or d.c. meets V-0 to IEC 60707	The PCB has the flammability rating of V-0	P
20.1.4	Components and parts not covered by 20.1.1, 20.1.2 and 20.1.3 (other than fire enclosures) mounted nearer to a potential ignition source than the distances in Table 21 comply with the relevant flammability category in Table 21		P
	Components and parts as above but shielded from a potential ignition source, with the barrier area in accordance with Table 21 and fig. 13		N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	Apparatus with voltages >4kV under normal operating conditions and distances to the enclosure exceed those specified Table 21, flammability classification HB40 or better is required for the enclosure.	No voltages exceeding 4kV	N
20.2	Fire enclosure	See below:	N
20.2.1	Potential ignition sources with open circuit voltage > 4 kV (peak) a.c. or d.c. contained in a fire enclosure to V-1	No voltage exceeds 4kV.	N
20.2.2	Internal fire enclosures with openings not exceeding 1 mm in width and with openings for wires completely filled	No internal fire enclosure.	N
20.2.3	Requirements of 20.2.1 and 20.2.2 met by an internal fire enclosure	Ditto	N

<b>A</b>	<b>APPENDIX A, ADDITIONAL REQUIREMENTS FOR APPARATUS WITH PROTECTION AGAINST SPLASHING WATER</b>		N
A.5	Marking and instructions	The EUT is for Indoor used only	N
A.5.1	j) Marked with IPX4 (IEC 60529), 5.4.1 a) does not apply		N
A.10	Insulation requirements		N
A.10.2	Splash and humidity treatment		N
A.10.2.1	Enclosure provides protection against splashing water		N
A.10.2.2	Humidity treatment carried out for 7 days		N

<b>B</b>	<b>APPENDIX B, APPARATUS TO BE CONNECTED TO THE TELECOMMUNICATION NETWORKS</b>		N
	Complies with IEC 62151 clause 1	No connection to the telecommunication network	N
	Complies with IEC 62151 clause 2		N
	Complies with IEC 62151 clause 3 but with 3.5.4 modified to 2.4.10 of this standard		N
	Complies with IEC 62151 clause 4 but with 4.1.2, 4.1.3 and 4.2.1.2 modified in accordance with annex B of this standard		N
	Complies with IEC 62151 clause 5 but with 5.3.1 modified in accordance with annex B of this standard		N
	Complies with IEC 62151 clause 6		N
	Complies with IEC 62151 clause 7		N
	Complies with IEC 62151 annex A, B and C		N

<b>L</b>	<b>APPENDIX L, ADDITIONAL REQUIREMENTS FOR ELECTRONIC FLASH APPARATUS FOR PHOTOGRAPHIC PURPOSES.</b>		N
L. 5	Marking and instructions	See below	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
L. 5.4	Instructions for battery chargers and Supply apparatus indicating type or model number of flash apparatus with which it is to be used	No such device	N
	Instructions for flash apparatus indicating type or model number of battery chargers or Supply apparatus with which it is to be used	No such device	N
L. 7	Heating under normal operating conditions	see below:	N
L7.1.5 & L11.2.7	Lithium batteries meet permissible temp rise in Table 3, unless comply with 6.2.2.1 or 6.2.2.2 of IEC 60086-4	No such batteries used	N
L. 9	Electric shock hazard under normal operating conditions	See below	N
L. 9.1.1	Terminals to connection to synchroniser not HAZARDOUS LIVE	No such device	N
L.10	Insulation requirements	See below	N
L. 10.3.2	High frequency pulse ignition	No such device	N
L. 12	Mechanical strength	See below	N
L. 12.1.3	Windows for flash tubes are excluded from steel ball impact test	No such device	N
L. 14	Components	See below	N
L14.6.6	Mains switch characteristics appropriate to its function under normal conditions	No such device	N
L. 20	Resistance to fire	See below	N
L. 20.1 c)	Trigger coil for discharge purpose is not considered to be a POTENTIAL IGNITION SOURCE	No such device	N

ATTACHMENT TO TEST REPORT IEC 60065 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (Audio, video and similar electronic apparatus – Safety requirements)			
Differences according to ..... E EN 60065:2014 +A11: 2017			
Attachment Form No..... EU_GD_IEC60065L			
Master Attachment..... Date 2015-03			
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	<b>CENELEC COMMON MODIFICATIONS (EN)</b>		P
General	1.1.3 Note 2	5.4 Note	5.5.2 Note 1 and Note 2
	13.3.1 Note 4	14.1 Note 1 and Note 2	15.1.1 Note 1 and Note 2
	15.2 Note 2	16.1 Note 2	16.2 Note
	20 Note	J.3 Note 1 and Table J.1 Note 2	
<b>1.2</b>	<b>Normative references</b>		N
	<b>Add</b> the following: EN 71-1, <i>Safety of toys – Part 1: Mechanical and physical properties</i> EN 50332-1, <i>Sound system equipment: Headphones and earphones associated with personal music players – Maximum sound pressure level measurement methodology – Part 1: General method for "one package equipment"</i> EN 50332-2, <i>Sound system equipment: Headphones</i>	Added.	N


IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	<i>and earphones associated with personal music players – Maximum sound pressure level measurement methodology – Part 2: Matching of sets with headphones if either or both are offered separately, or are offered as one package equipment but with standardised connectors between the two allowing to combine components of different manufacturers or different design</i>		
<b>3</b>	<b>General requirements</b>		P
3.Z1	<b>Protective devices</b> To protect against excessive current, short-circuits and earth faults in 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 Clause 11 shall be included as parts of the equipment; b) for components in series or parallel with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for equipment supplied via an industrial mains plug or for PERMANENTLY CONNECTED APPARATUS, to rely on dedicated over current and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for apparatus not supplied via an industrial mains plug or for PERMANENTLY CONNECTED APPARATUS the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.	Complied	P
<b>4</b>	<b>General test conditions</b>		N
4.1.1	<b>Replace</b> the text of the note by: NOTE For ROUTINE TEST, reference is made to EN 50514:2008.		N
<b>6</b>	<b>Hazardous radiations</b>		N
6.1	<b>Replace</b> the entire subclause by the following: Apparatus including a potential source of ionizing radiation shall be so constructed that personal protection against ionizing radiation is provided under normal operating conditions and under fault conditions. <i>Compliance is checked by measurement under the following conditions:</i> <i>In addition to the normal operating conditions, all controls adjustable from the outside BY HAND, by any object such as a tool or a coin, and those internal adjustments or pre-sets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.</i> NOTE 1 Soldered joints and paint lockings are examples of adequate locking. <i>The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point</i>		N



IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>10 cm from the outer surface of the apparatus Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made. The dose-rate shall not exceed 1 <math>\mu</math>Sv/h (0,1 mR/h) taking account of the background level. NOTE 2 These values appear in Council Directive 96/29/Euratom of 13 May 1996. A picture is considered to be intelligible if the following conditions are met: - a scanning amplitude of at least 70 % of the usable screen width; - a minimum luminance of 50 cd/m<sup>2</sup> with locked blank raster provided by a test generator; - a horizontal resolution corresponding to at least 1,5 MHz in the centre, with a similar vertical degradation; - not more than one flashover per 5 min.</p>		
<b>16</b>	<b>External flexible cords</b>		P
16.1	<p><b>Add</b> the following note after the first paragraph: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>	Added.	P
<b>Z1</b>	<b>Protection against excessive sound pressure from personal music players</b>		N
Z1.1	<p><b>General</b> This subclause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. Requirements for earphones and headphones intended for use with personal music players are also covered. A personal music player is a portable equipment for personal use, that: - is designed to allow the user to listen to recorded or broadcast sound or video; and - uses a listening device, such as headphones or earphones that can be worn in or on or around the ears; and - is body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around while in use. EXAMPLES CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player shall comply with the requirements of this subclause. NOTE 1 Protection against acoustic energy sources from telecom terminal equipment is referenced to ITU-T Recommendation P.360. The requirements in this subclause are valid for music or video mode only. The requirements do not apply to: - professional equipment; NOTE 2 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment. - hearing aid equipment and other devices for assistive listening; - the following types of analogue personal music players: • long distance radio receiver (for example, a multiband radio receiver or a world band radio receiver, an AM radio receiver) and • cassette player/recorder;</p>	Not such apparatus.	N



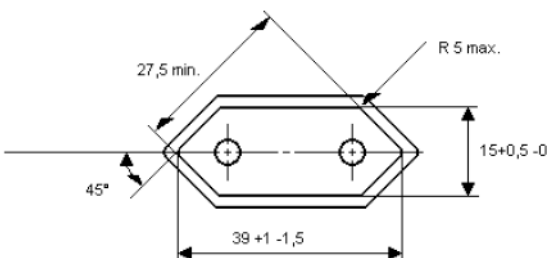
IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>NOTE 3 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.</p> <p>– player while connected to an external amplifier that does not allow the user to walk around while in use.</p> <p>For equipment clearly designed or intended for use by young children, the limits of EN 71-1 apply.</p>		
Z1.2	<p><b>Equipment requirements</b></p> <p>No safety provision is required for equipment that complies with the following:</p> <p>– equipment provided as a package (personal music player with its listening device), where the acoustic output <math>L_{Aeq,T}</math> is <math>\leq 85</math> dB(A) measured while playing the fixed “programme simulation noise” as described in EN 50332-1; and</p> <p>– personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is <math>\leq 27</math> mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” as described in EN 50332-1.</p> <p>NOTE 1 Wherever the term acoustic output is used in this subclause, the 30 s A-weighted equivalent sound pressure level <math>L_{Aeq,T}</math> is meant. See also Z1.5 and Annex ZE.</p> <p>All other equipment shall:</p> <p>a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and</p> <p>b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and</p> <p>c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off.</p> <p>d) have a warning as specified in Z1.3; and</p> <p>e) not exceed the following:</p> <p>1) equipment provided as a package (player with its listening device), the acoustic output shall be <math>\leq 100</math> dB(A) measured while playing the fixed “programme simulation noise” described in EN 50332-1; and</p> <p>2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be <math>\leq 150</math> mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” described in EN 50332-1.</p> <p>For music where the average sound pressure (long term <math>L_{Aeq,T}</math>) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be</p>	Not such apparatus.	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>given as long as the average sound pressure of the song does not exceed the basic limit of 85 dB(A). In this case, <math>T</math> becomes the duration of the song.</p> <p>NOTE 4 Classical music typically has an average sound pressure (long term <math>L_{Aeq,T}</math>) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dB(A).</p> <p>NOTE 5 For example, if the player is set with the programme simulation noise to 85 dB(A), but the average music level of the song is only 65 dB(A), there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dB(A).</p>		
Z1.3	<p>The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:</p> <ul style="list-style-type: none"> <li>– the symbol of Figure Z1 with a minimum height of 5 mm; and</li> <li>– the following wording, or similar:</li> </ul> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>To prevent possible hearing damage, do not listen at high volume levels for long periods.</p> </div> <div style="text-align: center; margin: 10px auto;">  </div> <p><b>Figure Z1 – Warning label (IEC 60417-6044)</b></p> <p>Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.</p>	Not such apparatus.	N
<b>Z1.4</b>	<b>Requirements for listening devices (headphones, earphones, etc.)</b>		N
Z1.4.1	<p><b>Corded passive listening devices with analogue input</b></p> <p>With 94 dB(A) sound pressure output <math>L_{Aeq,T}</math>, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be <math>\geq 75</math> mV.</p> <p>This requirement is applicable in any mode where the headphones can operate including any available setting (for example built-in volume level control, an additional sound feature like equalization, etc.).</p> <p>NOTE The values of 94 dB(A) – 75 mV correspond with 85 dB(A) – 27 mV and 100 dB(A) – 150 mV.</p>	Not such apparatus.	N
Z1.4.3	<p><b>Cordless listening devices</b></p> <p>In wireless mode:</p> <ul style="list-style-type: none"> <li>– with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and</li> <li>– respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and</li> <li>– with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above-mentioned</li> </ul>	Not such apparatus.	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be $\leq 100$ dB(A).		
Z1.5	<b>Measurement methods</b> Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval $T$ shall be 30 s. NOTE Test method for cordless equipment provided without listening device should be defined.	Not such apparatus.	N
	<b>ANNEXES</b>		P
<b>Annex B</b>	<b>Replace</b> the text of Note 1 by the following: In the CENELEC countries listed in IEC 62151, special national conditions apply.	Replaced.	P
<b>Annex N</b>	After the note in N.1, <b>add</b> the following: For ROUTINE TEST, reference is made to EN 50514:2008.	Added.	N
<b>ZA</b>	<b>NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS</b>		—
<b>ZB</b>	<b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)</b>		P
2.6.1	<b>Denmark</b> The following is added: Certain types of Class I apparatus, see 15.1.1, may be provided with a plug not establishing earthing continuity when inserted in Danish socket-outlets <i>Justification:</i> Heavy Current Regulations, Section 6c	Not such apparatus.	N
3.Z1	<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. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.	Not such apparatus.	N
5.4	<b>Denmark, Finland, Norway and Sweden</b> To the end of the subclause the following is added: CLASS I apparatus which is intended for connection to the building installation wiring via a plug or an appliance coupler, or both and in addition is intended for connection to other apparatus or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network TERMINALS and ACCESSIBLE parts, have a marking stating that the apparatus must 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> : "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In <b>Norway</b> : "Apparatet må tilkoples jordet stikkontakt" In <b>Sweden</b> : "Apparaten skall anslutas till jordat uttag"	Not such apparatus.	N

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.2	<p><b>Norway and Sweden</b>  <b>Add</b> to the end of 5.5.2 (after the compliance statement) the following:  The screen of the coaxial cable 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 need to be isolated from the screen of a coaxial cable based television distribution system. It is however accepted to provide the insulation external to the apparatus 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 apparatus is intended to be used in:  “Apparatus connected to the protective earthing of the building installation through the MAINS connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system has therefore 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 installations of 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):  “Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare.  For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel-TV nettet.”  Translation to Swedish:  “Utrustning 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 utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”</p>	Not such apparatus.	N
13.3.1	<p><b>Norway</b>  <b>Add</b> to the second paragraph the following:  Due to the IT power distribution system used, the a.c. MAINS supply voltage is considered to be equal to the line-to-line voltage, and will remain 230 V in case of a single earth fault.  <i>Justification:</i>  Based on a use in Norway of an IT power distribution system where the neutral is not provided</p>		N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
15.1.1	<p><b>Denmark</b></p> <p>To the first paragraph the following is added: In Denmark, supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1. Appliances of Class I provided with socket-outlets with earth contact 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 which assure earth continuity with the socket-outlet in accordance with DS 60884-2-D1.</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 60309-1.</p> <p>To the second paragraph the following is added: Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a.</p> <p>Other current rating socket outlets shall be in compliance with DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-1c.</p> <p>To the third paragraph the following is added: Mains socket-outlets with earthing contact shall be in compliance with DS 60884-2-D1, Standard sheet DK 1-3a, DK 1-1c, DK 1-1d, DK 1-5a or DK 1-7a</p> <p><i>Justification:</i> Heavy Current Regulations, Section 6c</p>	Not such apparatus.	N
15.1.1	<p><b>Ireland</b></p> <p>Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997.</p> <p><i>Justification:</i> SI 525: 1997</p>	Not such apparatus.	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
15.1.1	<p><b>Norway</b></p> <p>Mains socket-outlets mounted on Class II apparatus shall comply with the specifications given in CEE Publ. 7 as far as applicable, with the following amendments:</p> <p>§ 8 Dimensions</p> <p>a) 2,5 A 250 V two-pole socket-outlets for electronic apparatus shall comply with the enclosed Standard Sheet I.</p> <div><div>STANDARD SHEET I</div><div>2,5 A/250 V SOCKET-OUTLET FOR ELECTRONIC APPLIANCES OF CLASS II</div><div><p>Dimensions in mm Other dimensions according to CEE Publication 7 Standard Sheet I "Portable Single-Way Socket-Outlets".</p></div><p>§ 24 Mechanical strength</p><p>a) 2,5 A, 250 V socket-outlets for Class II electronic apparatus are tested as specified in EN 60065:2014, 12.1.3. Also the protecting rim shall be tested.</p><p><i>Justification:</i> Act of 24 May 1929 relating to supervision of electrical installation (TEA 1929/FEL 1998).</p></div>	No socket-outlet used.	N
15.1.1	<p><b>United Kingdom</b></p> <p>Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug shall be fitted with a "standard plug" in accordance with Statutory Instrument 1768: 1994: The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those Regulations.</p> <p>NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p> <p><i>Justification:</i> SI 1768: 1994</p>		N
Annex B	<p><b>Finland, Norway and Sweden</b></p> <p>All sub clauses given below are sub clauses of IEC 62151 (ref. corrigenda 1 and 2 to IEC 62151).</p> <p><b>Subclause 4.1.1 (corrigendum 2):</b></p> <p><b>Add</b> after the first paragraph:</p> <p>NOTE In <b>Finland, Norway and Sweden</b>, CLASS I equipment which is intended for connection to the building installation via a non-industrial plug or a non-industrial appliance coupler, or both and in addition is intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge</p>	Not such apparatus.	N



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Clause	Requirement + Test	Result - Remark	Verdict
	<p>suppressors are connected between the network terminals and ACCESSIBLE parts, has a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Finland: " Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan "</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p> <p><b>Subclause 4.1.4 (corrigendum 1)</b> <b>Add</b> at the end of the subclause: NOTE In <b>Norway</b>, for requirements see 4.1.1, note and 5.3.1, note 1.</p> <p><b>Subclause 4.2.1.2 (corrigendum 1)</b> <b>Add</b> at the end of the subclause: NOTE 3 In <b>Norway</b>, for requirements see 5.3.1, note 1.</p> <p><b>Subclause 4.2.1.3 (corrigendum 2)</b> <b>Add</b> at the end of the subclause: NOTE In <b>Norway</b>, for requirements see 4.1.1, note and 5.3.1, note 1.</p> <p><b>Subclause 4.2.1.4 (corrigendum 1)</b> <b>Number</b> the existing note as NOTE 1 and <b>add</b> at the end of the subclause the following NOTE 2: NOTE 2 In <b>Norway</b>, for requirements see 4.1.1, note and 5.3.1, note 1.</p> <p><b>Subclause 5.3.1 (corrigendum 1)</b> <b>Add</b> after the first test specifications paragraph: NOTE 1 In <b>Finland, Norway and Sweden</b>, there are additional requirements for the insulation.</p> <p><b>Renumber</b> the existing note as NOTE 2.</p> <p>For additional requirements for the insulation in Finland, Norway and Sweden in NOTE 1 the following text is added between the first and the second paragraph (this text is identical to the corresponding EN 60950-1:2001):</p> <p>NOTE 1 In <b>Finland, Norway and Sweden</b>, 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>two 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 the accordance with the compliance clause below and in addition:</p> <ul style="list-style-type: none"> <li>• passes the test and inspection criteria of 13.6 with an electric strength test of 10.3 using the test voltage of 1,5 kV multiplied by 1,6, and</li> <li>• is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV (for performance of the test see N.2.1).</li> </ul> <p>It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 132400:1994, 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</li> </ul>		

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>by EN 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in IEC 62151:2000, 6.2.1;</p> <ul style="list-style-type: none"> <li>the additional testing shall be performed on all the test specimens as described in EN 132400;</li> <li>the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400 in the sequence of tests as described in EN 132400.</li> </ul> <p><b>Subclause 5.3.2 (corrigendum 1)</b> <b>Add after the fourth dash:</b></p> <p>NOTE In <b>Finland, Norway and Sweden</b>, exclusions are applicable for equipment which is intended for connection to the building installation wiring using screw terminals or other reliable means, and for equipment which is intended for connection to the building installation wiring via an industrial plug and socket -outlet or an appliance coupler, or both, complying with EN 60309 or with a comparable national standard.</p>		
J.2	<p><b>Norway</b> After Table J.1 the following is added: Due to the IT power distribution system used, the a.c. MAINS supply voltage is considered to be equal to the line-to-line voltage, and will remain 230 V in case of a single earth fault. <i>Justification:</i> Based on a use in Norway of an IT power distribution system where the neutral is not provided</p>		N
<b>C</b>	<b>ANNEX ZC, NATIONAL DEVIATIONS (EN)</b>		
6.1	<p><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 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. <i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the Council Directive 96/29/Euratom in Germany. 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></p>	No such device.	N
14.1	<p><b>Sweden</b> The following requirements shall be fulfilled: Switches containing mercury such as thermostats, relays and level controllers are not allowed.</p>	No such component.	N



7.1		TABLE: temperature rise measurements:						P
		Power consumption in the OFF/Stand-by mode of the functional switch (W) ..... :						
Cond.	Un (V)	Hz	In (A)	Pn (W)	Uout (V) Left/ Right/ Sub	Pout (W) Left/ Right/ Sub	Operating Condition / Status	
1	90	50	0.332	18.8	S:2.83 T:2.13	S:2.00 T:1.13	Test for L/R Audio input mode, pink noise sine signal adjusted to output power 1/8 max. non-clipped output power. USB Max load: 500mA.	
2	100	50	0.304	18.7				
3	240	50	0.155	18.8				
4	264	50	0.146	18.9				
5	90	60	0.366	18.9				
6	100	60	0.338	18.9				
7	240	60	0.246	22.4				
8	264	60	0.221	20.2				
		Loudspeaker impedance (Ω) ..... :				SW=4Ω,Tw=8Ω		—
		Several loudspeaker systems ..... :				--		--
		Marking of loudspeaker terminals ..... :				Internally integrated		--
Temperature Rise dT of Part					dT (K)			Limit max dT (K)
Test condition No.					90V/60Hz	264V/60Hz	--	--
Internal AC wire					7.0	7.6	--	70
Power switch					3.4	3.5	--	50
AC Connector(CON1)					14.9	14.1	--	30
Winding of Line filter LF4					27.6	27.8	--	85
X-capacitor CX1					18.3	17.6	--	65
Winding of Line filter LF2					15.7	16.5	--	85
Bobbin of Line filter LF2					15.9	16.5	--	Ref.
PCB near BD1					28.2	26.1	--	95
PCB near Q2					26.7	27.6	--	85
Opto-coupler U2					17.9	18.3	--	65
Y-capacitor CY1					26.2	26.2	--	90
Transformer T1 coil					25.7	26.7	--	75
Transformer T1 Bobbin					25.7	26.9	--	Ref.
PCB near D1					23.5	24.6	--	85
Winding of Line filter LF3					18.3	18.6	--	85
Electrolytic capacitor (EC3)					16.8	17.8	--	70
PCB near U1					24.0	24.5	--	85
Winding of Line filter L2					18.9	20.0	--	85
PCB near USB					10.0	10.7		95
Wooden enclosure inside near T1					5.6	6.3	--	Ref.

Wooden enclosure outside near T1	0.1	0.3	--	60	
Metal enclosure inside near main board	1.7	2.1	--	Ref.	
Metal enclosure outside near main board	1.4	1.7	--	40	
Plastic enclosure surface	0.3	0.5	--	60	
Button	0.1	0.0	--	60	
Ambient(错误! 未找到引用源。C)	25.9	25.6	--	--	
Supplementary information:					
Ambient temperature t1 (错误! 未找到引用源。C) .....:	--	--	--	--	
Ambient temperature t2 (错误! 未找到引用源。C) .....:	--	--	--	--	
Temperature rise dT of winding: dT = (R2 – R1) x (234.5 + t1) – (t2 – t1) R1	R1 (Ω)	R2 (Ω)	dT (K)	Limit max (K)	Insulation class
--	--	--	--	--	--
--	--	--	--	--	--
Notes: According to the user manual, the appliance is intended to be used in moderate climate, so the basic ambient temperature is 35°C.					

<b>7.2</b>	<b>TABLE: softening temperature of thermoplastics</b>			N
Temperature T of part	T - normal con-ditions(°C)	T - fault condi-tions(°C)	Min T softening(°C)	
--	--	--	--	
--	--	--	--	

<b>10.3</b>	<b>TABLE: electric strength measurements</b>		P
Test voltage applied between:		Test voltage (V)	Breakdown
Between L and N (fuse opened)		1500Vac	No
Between L&N and terminals		3000Vac	No
Between L&N and enclosure for metal foil		3000Vac	No
Transformer T1 primary winding and secondary winding		3000Vac	No
Transformer T1 primary winding and core		3000Vac	No
Transformer T1 secondary winding and core		3000Vac	No
Two layer insulation tape of transformer		3000Vac	No
Note(s):			

<b>10.3</b>	<b>TABLE: insulation resistance measurements</b>		P
Insulation resistance R between:		R (MΩ)	Required R (MΩ)
Between L and N (fuse opened)		>100	Min. 2
Between L&N and terminals		>100	Min. 4

Between L&N and enclosure for metal foil	>100	Min. 4
Transformer T1 primary winding and secondary winding	>100	Min. 4
Transformer T1 primary winding and core	>100	Min. 4
Transformer T1 secondary winding and core	>100	Min. 4
Two layer insulation tape of transformer	>100	Min. 4
Note(s):		

11.2	TABLE: Fault Conditions			P
	Voltage (V) 0,9 or 1,1times rated voltage.....:		264V	--
	Frequency (Hz).....:		--	--
	Ambient temperature (错误！未找到引用源。C) .....		25	--
No.	Component	Fault	dT (K) /Component	Test conditions, test duration, test result
1.	Speaker output	Max. non-clipped	See the appended table	The stable temperature rise was obtained. Input power increased to 24.6W. After testing, no damaged, no hazards. Test duration:1 hours 30 minutes.
2.	Ventilation openings	blocked	See the appended table	The stable temperature rise was obtained. After testing, no damaged, no hazards. Test duration: 1 hours 30 minutes.
3.	USB Output	O-L	See the appended table	Max. loading current was 0.3A, when the USB loading current was increased to 0.4A, the USB shutdown. After testing, no damaged, no hazards. Test duration: 1 hours 30 minutes.
4	Subwoofer Speaker output	S-C	See the appended table	The stable temperature rise was obtained. Input power decreased to 17.8W. After testing, no damaged, no hazards. Test duration: 1 hours 30 minutes.
5	Tweeter Speaker output	S-C	See the appended table	The stable temperature rise was obtained. Input power decreased to 17.5W. After testing, no damaged, no hazards. Test duration: 1 hours 30 minutes.
6	BD1 Pin1-2	S-C	--	The unit shutdown immediately. After testing, no damaged, no hazards. Test duration: 30minutes.
7	EC1	S-C	--	The unit shutdown immediately. After testing, no damaged, no hazards. Test duration: 30minutes.
8	Q2 Pin G-D	S-C	--	The unit shutdown immediately. After testing, no damaged, no hazards. Test duration: 30minutes.
9	Q2 Pin G-S	S-C	--	The unit shutdown immediately. After testing, no damaged, no hazards. Test duration: 30minutes.
10.	Q2 Pin D-S	S-C	--	The unit shutdown immediately. After testing, no damaged, no hazards. Test duration: 30minutes.
11	R19	S-C	--	The unit shutdown immediately. After

				testing, no damaged, no hazards. Test duration: 30minutes.
12	U1 Pin6-2	S-C	--	The unit shutdown immediately. After testing, no damaged, no hazards. Test duration: 30minutes.
13	U1 Pin5-1	S-C	--	The unit shutdown immediately. After testing, no damaged, no hazards. Test duration: 30minutes.
14	U1 Pin8-2	S-C	--	The Fuse FP1 opened with breaking current exceeding 2.1 times of the fuse rating, no hazard. Test duration: 1s.
15	U2 Pin1-2	S-C	--	The unit shutdown immediately. After testing, no damaged, no hazards. Test duration: 30minutes.
16	U2 Pin3-4	S-C	--	The unit shutdown immediately. After testing, no damaged, no hazards. Test duration: 30minutes.
17	U2 Pin1	O-C	--	The unit shutdown immediately. After testing, no damaged, no hazards. Test duration: 30minutes.
18	U2 Pin3	O-C	--	The unit shutdown immediately. After testing, no damaged, no hazards. Test duration: 30minutes.
19	D1	S-C	--	The unit shutdown immediately. After testing, no damaged, no hazards. Test duration: 30minutes.
20	EC4	S-C	--	The Fuse FP1 opened with breaking current exceeding 2.1 times of the fuse rating, no hazard. Test duration: 1s.
21	USB Output	S-C	--	The unit shutdown immediately. After testing, no damaged, no hazards. Test duration: 30minutes.
22	T1 Pin1-3	S-C	--	The unit shutdown immediately. After testing, no damaged, no hazards. Test duration: 30minutes.
23	T1 Pin 4-6	S-C	--	The unit shutdown immediately. After testing, no damaged, no hazards. Test duration: 30minutes.
24	T1 Pin 8-11	S-C	--	The unit shutdown immediately. After testing, no damaged, no hazards. Test duration: 30minutes.

Supplementary information:

- Used abbreviations: s-c=short circuit, I/P=input current/input power, o-l=overload.

TABLE: temperature rise measurements under abnormal condition tests							P
--	Test condition	1	2	3	4	5	--
--	Test voltage.....	264	264	264	264	264	
1	Internal AC wire	7.8	7.9	7.6	7.6	7.6	90.

2	Power switch	4.4	4.4	3.5	2.6	2.6	65
3	AC Connector(CON1)	15.2	16.3	14.1	12.8	12.8	Ref.
4	Winding of Line filter LF4	31.4	28.3	27.8	27.3	27.3	150
5	X-capacitor CX1	20.0	17.8	17.6	16.3	16.3	Ref.
6	Winding of Line filter LF2	29.6	29.9	16.5	14.7	14.7	150
7	Bobbin of Line filter LF2	27.2	28.0	16.5	14.0	14.0	Ref.
8	PCB near BD1	31.1	28.2	26.1	24.5	24.5	110
9	PCB near Q2	29.3	27.6	27.6	24.6	24.6	110
10	Opto-coupler U2	19.9	18.1	18.3	17.7	17.7	Ref.
12	Y-capacitor CY1	28.6	26.7	26.2	25.3	25.3	Ref.
14	Transformer T1 coil	34.0	28.2	26.7	25.2	25.2	140
15	Transformer T1 Bobbin	28.1	29.0	26.9	25.4	25.4	Ref.
16	PCB near D1	25.0	26.3	24.6	22.5	22.5	110
17	Winding of Line filter LF3	18.4	16.1	18.6	16.6	16.6	140
18	Electrolytic capacitor (EC3)	25.5	26.3	17.8	17.2	17.2	Ref.
19	PCB near U1	28.0	28.6	24.5	23.0	23.0	110
20	Winding of Line filter L2	23.2	19.5	20.0	21.3	21.3	150
21	PCB near USB	11.1	6.9	10.7	11.1	11.1	110
23	Wooden enclosure inside near T1	8.0	8.0	6.3	8.0	8.0	Ref.
24	Wooden enclosure outside near T1	2.8	2.8	0.3	2.8	2.8	65
25	Metal enclosure inside near main board	3.3	3.3	2.1	3.3	3.3	65
26	Metal enclosure outside near main board	1.5	1.5	1.7	1.5	1.5	65
27	Plastic enclosure surface	0.3	0.3	0.5	0.3	0.3	65
28	Button	0.1	0.1	0.0	0.1	0.1	65
29	Ambient(错误! 未找到引用源。C)	25.9	25.9	25.6	25.9	25.9	--

Note:

13.1	TABLE: clearance and creepage distance measurements						P
Clearance cl and Creepage distance cr at/of:	Upeak (V)	U r.m.s. (V)	Required cl (mm)	Actual cl (mm)	Required dcr (mm)	Actual cr (mm)	
Different polarity of L & N before fuse F1 (BI)	<420	<250	2.0	5.0	2.5	5.0	
Different polarity of fuse (BI)	<420	<250	2.0	3.3	2.5	3.3	
CY1 capacitor primary to secondary (RI)	<420	<250	4.0	7.3	5.0	7.3	
Optocoupler U1 primary to secondary (RI)	<420	<250	4.0	5.9	5.0	5.9	
Transformer T1 primary to secondary on PCB Layout (RI)	448	223	4.2	5.9	5.0	5.9	

Transformer T1 primary winding to secondary pins (RI)	448	223	4.2	6.5	5.0	6.5
Transformer T1 core to secondary pins (RI)#	448	223	4.2	6.0	5.0	6.2

Note(s):

1. Secondary circuits of Class II apparatus which have connector terminals that could be earthed (e.g. antenna signal input), are subjected to the requirements for circuits conductively connected to the mains in Tables 8 and 9.
2. For insufficient clearances and creepage distances from secondary to secondary circuits and from secondary circuits to earth, see Cl. 4.3.1, 4.3.2 and 11.2.
3. If the minimum creepage distance in Table 11 is less than the minimum required clearance in Tables 8, 9 or 10 as required, then the value for clearance is used as the minimum creepage distance .
4. BI=Basic insulation; SI=Supplementary insulation; RI=Reinforce insulation
5. #Triple insulated wire used for secondary winding of the transformer T1, Core of T1 considered as primary part.

14	TABLE: LIST OF CRITICAL COMPONENTS AND MATERIALS				P
Component	manufacturer/trademark	type/model	Value/rating	Standard	Approval/Reference
Power plug	Awin Wire & Cable Co., Ltd.	AW112	2.5A, 250Vac	DIN VDE 0620, EN 50075	VDE: 40010116
(Alternative)	Interchangeable	Interchangeable	Min. 2.5A, 250Vac	DIN VDE 0620, EN 50075	VDE
Power cord	Shenzhen Bao Hing Electric Wire & Cable Manufacture Co. Ltd.	H03VVH2-F	2x 0.5mm <sup>2</sup> or 2x 0.75mm <sup>2</sup>	DIN VDE 0281-5, VDE 0281	VDE: 131689
Power cord	Awin Wire & Cable Co., Ltd.	H03VVH2-F	2x 0.5mm <sup>2</sup> or 2 x 0.75mm <sup>2</sup>	DIN VDE 0281-5, VDE 0281	VDE: 40023114
(Alternative)	Interchangeable	Interchangeable	2x 0.5mm <sup>2</sup> or 2 x 0.75mm <sup>2</sup>	DIN VDE 0281-5, VDE 0281	VDE
Power switch	Zhongxun Electronics Industry Company	KCD1-104	6A, 250Vac /10A, 250Vac	EN 61058-1:2002	TUV: R 50049218
(Alternate)	Yueqing Huansheng Electronics Co., Ltd.	KCD-117	6A, 250Vac	EN 61058-1:2002	VDE : 40024304
Internal AC wire	DONGGUAN XIEHE WIRE CO LTD	1672	VW-1, 105°C, 300V, 18AWG	UL 758	UL: E251491
(Alternate)	Interchangeable	Interchangeable	VW-1, Min. 80°C, Min. 300V, Min. 18AWG	UL 758	UL
PCB	CITY RIA MFG CO	CITY RIA MFG CO	130°C, min. V-0, min. Thickness 1.6mm	UL94, UL 796	UL E78769
AC connector (CON1)	ZHEJIANG JINDA ELECTRONICS CO LTD	3.96T-02	7A, 250VAC, Max 85 °C	UL 1977	UL E237523
Fuse (F1)	XC ELECTRONICS(SHENZHEN)CORP LTD	5TE-Serie(s)	T5AL, 250Vac	UL 248-1, EN 60127-1, EN 60127-3	VDE:40036821 UL:E249609
X2-capacitor (CX1)	WINDAY ELECTRONIC CO.,LTD	MPX	Min. 250Vac Max 0.22uF, 110°C X2 Type	IEC 60384-14 UL60384-14	UL E302125 VDE: 40030283
(Alternative)	ZONKAS ELECTRONIC CO.,LTD	MPX	Min. 250Vac Max 0.22uF, 110°C X2 Type	IEC 60384-14 UL60384-14	UL E302125 VDE: 40018071
(Alternative)	WINDAY ELECTRONIC CO.,LTD	MPX	Min. 250Vac Max 0.22uF, 110°C X2 Type	IEC 60384-14 UL60384-14	UL E302125 VDE: 40030283
(Alternative)	ZONKAS	MPX	Min. 250Vac	IEC 60384-14	ULE302125

	ELECTRONIC CO.,LTD		Max 0.22uF, 110°C X2 Type	UL60384-14	VDE: 40018071
Y1 Capacitor (CY1)	ZONKAS ELECTRONIC CO.,LTD	ZD	Min. 400Vac, Y1 type, Max. 2200pF, 125°C.	IEC 60384-14 UL60384-14	UL: E258931 VDE: 40017350
E-capacitors (EC4)	Interchangeable	Interchangeable	Min. 100uF, Min. 400V, Min. 105°C	EN60065	Tested with appliance
Optocoupler (U2)	EVERLIGHT ELECTRONICS CO LTD	EL817	Dti=0.5mm, Int. dcr=6.0mm, Ext. dcr=7.7mm, 110°C	UL 1577, IEC 60747-5-2	UL: E214129, VDE: 132249
Line filter (LF3)	SHENZHEN CENKER ENTERPRISE LTD	CKTC10060 4-5uH/Min-A2696	Min. 5UH, 130°C	EN60065	Tested with appliance
--Bobbin	CHANG CHUN PLASTICS CO., LTD	T375J	Phenolic, V-0, 150°C, Min. 0.45mm thickness	UL 94, UL 746C	UL: E59481
Line filter (LF4)	SHENZHEN CENKER ENTERPRISE LTD	CKCMV151 5	Min. 20mH, 130°C	EN60065	Tested with appliance
--Bobbin	CHANG CHUN PLASTICS CO LTD	T375	Phenolic, V-0, 150°C, Min. 0.45mm thickness	UL 94, UL 746C	UL: E59481
Transformer (T1)	SHENZHEN CENKER ENTERPRISE LTD.	ATMOS	Class B	EN60065	Tested with appliance
--Bobbin material	CHANG CHUN PLASTICS CO.,LTD	T375HF T200HF	Phenolic, V-0, 150°C, Min. 0.75mm thickness	UL 94, UL 746C	UL E59481
-- TEFLON TUBE	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-L	300Vac, 200错误! 未找到引用源。 C	UL 224	UL: E180908
Subwoofer	Interchangeable	Interchangeable	1pcs provided , rated 4Ω,25W	EN60065	Tested with appliance
Tweeter	Interchangeable	Interchangeable	1pcs provided , rated 8Ω,8W	EN60065	Tested with appliance

Supplementary information:

\*)Provided evidence ensures the agreed level of compliance.

“Interchangeable” means any type from any manufacturer that complies with the specification can be used.



**Photo documentation**

Photo 1



Photo 2



Photo 3



Photo 4



Photo 5

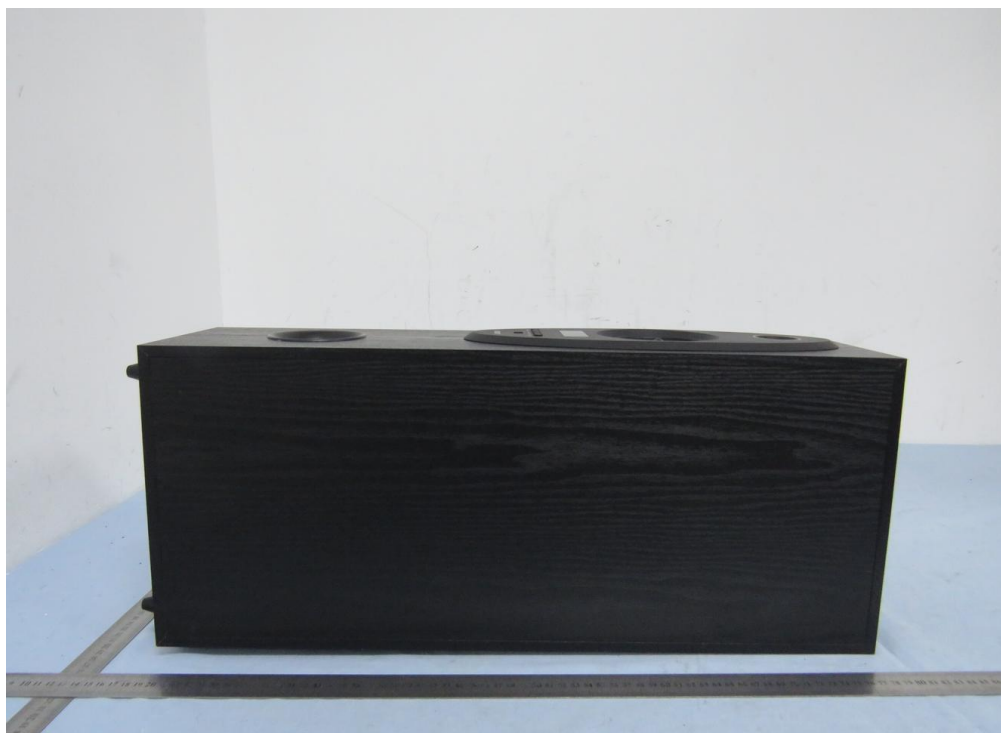


Photo 6



Photo 7



Photo 8





Photo 9



Photo 10

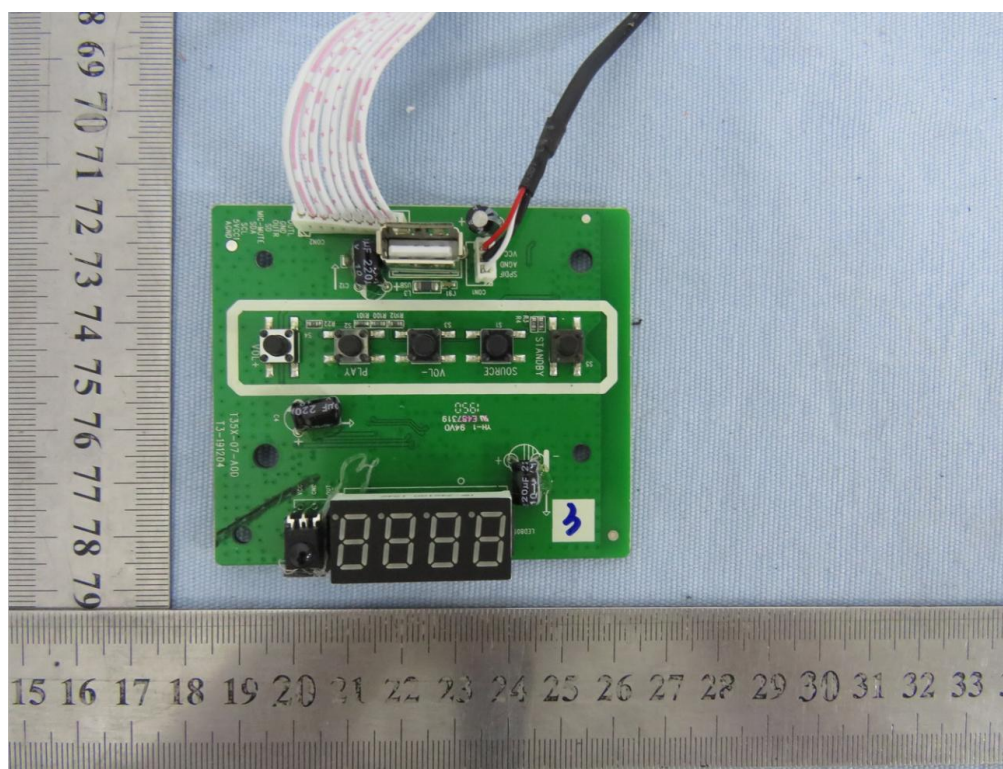


Photo 11

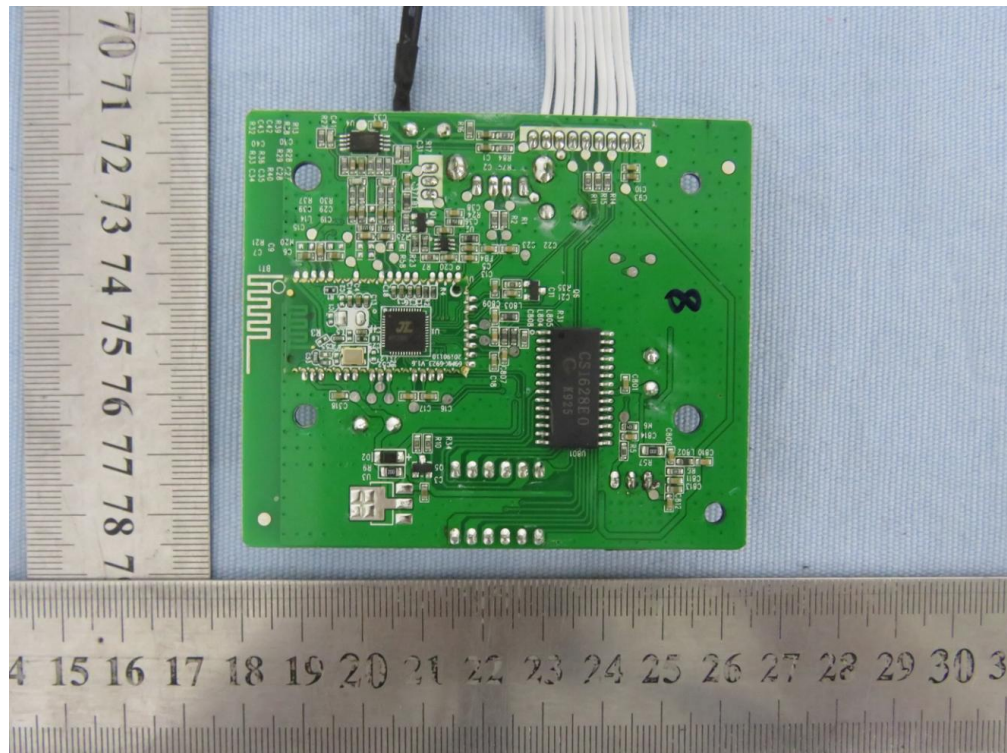


Photo 12

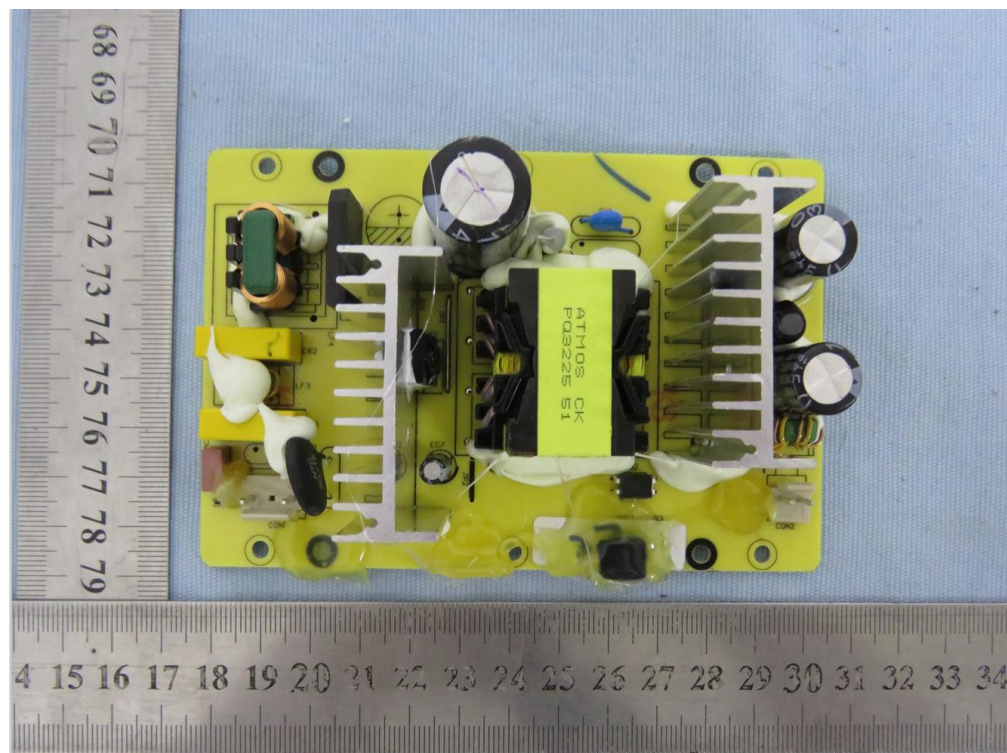




Photo 13

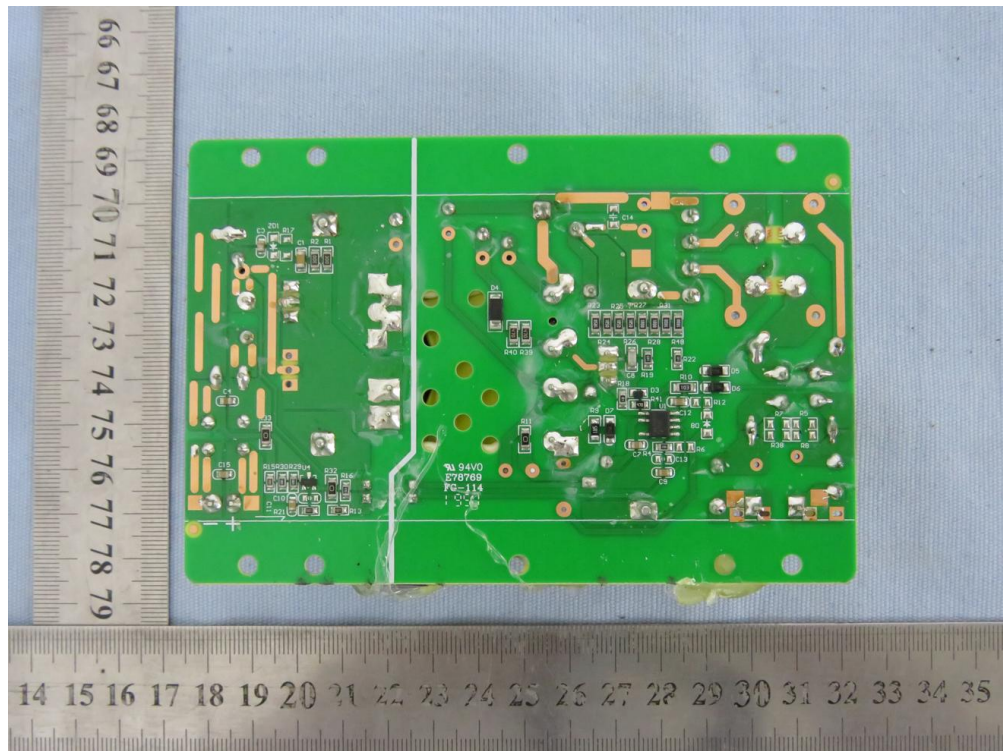


Photo 14

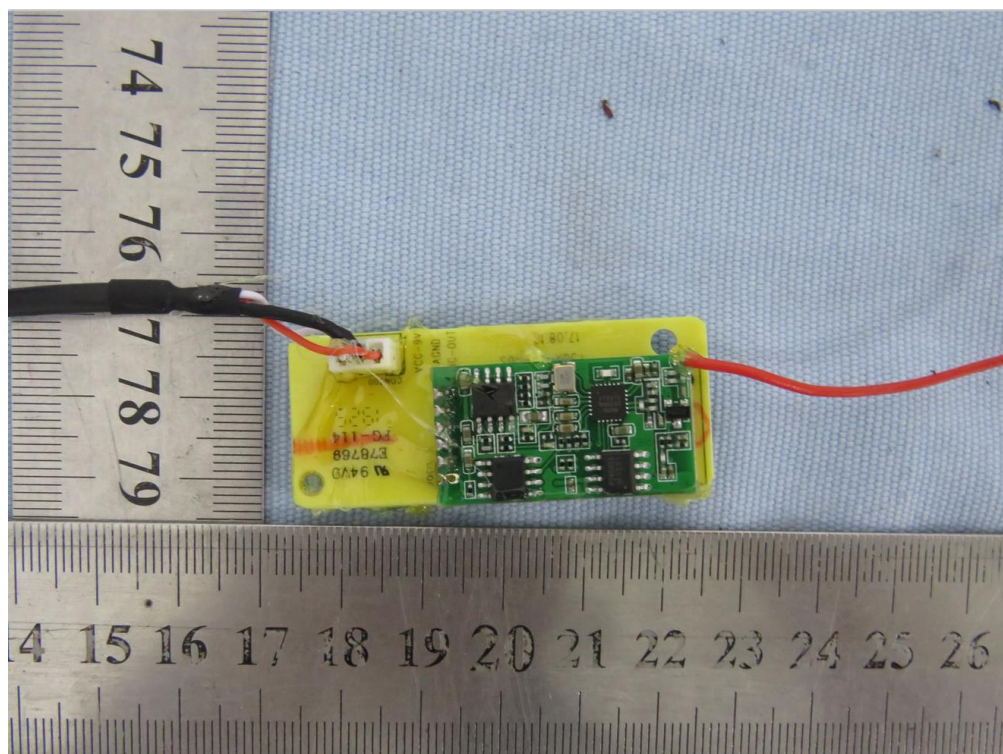




Photo 15

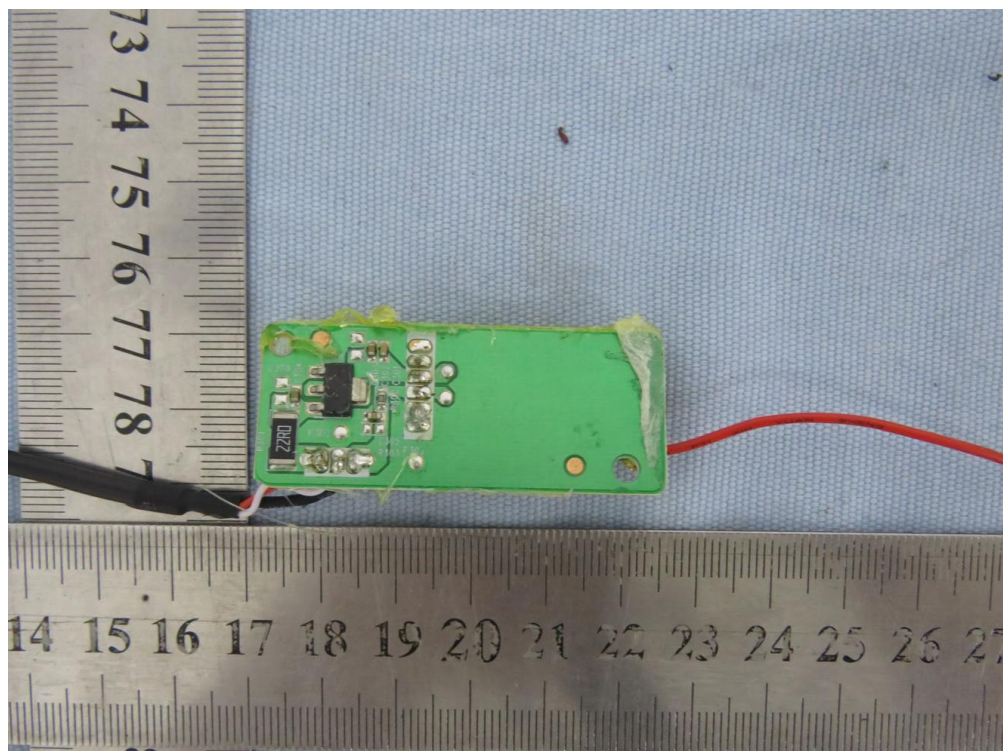


Photo 16

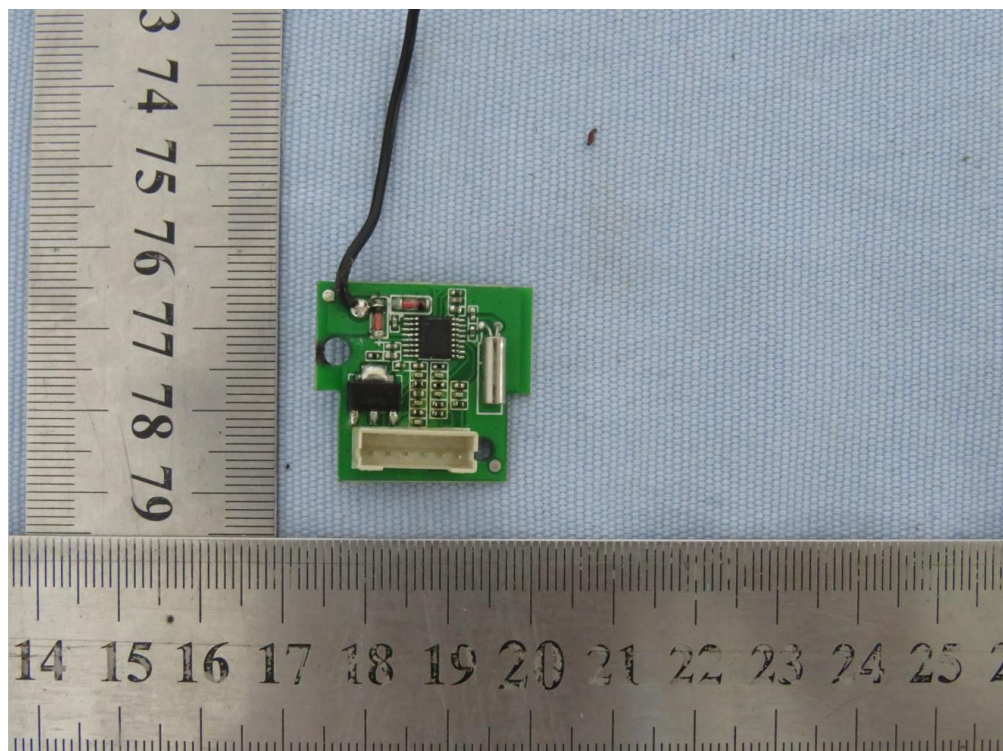


Photo 17

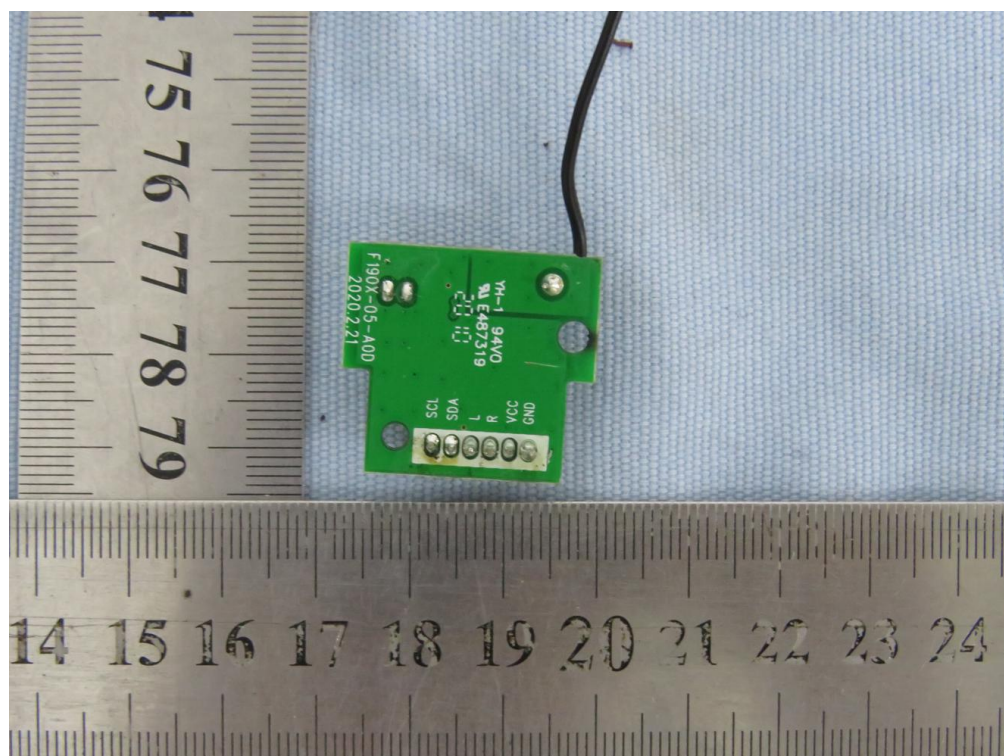


Photo 18

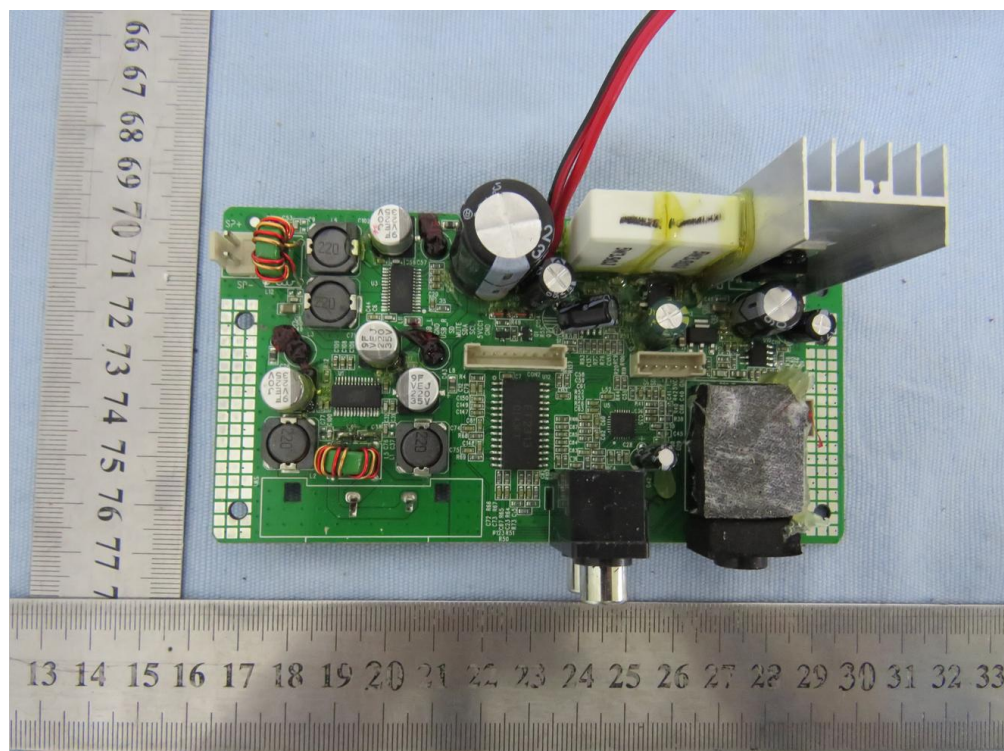
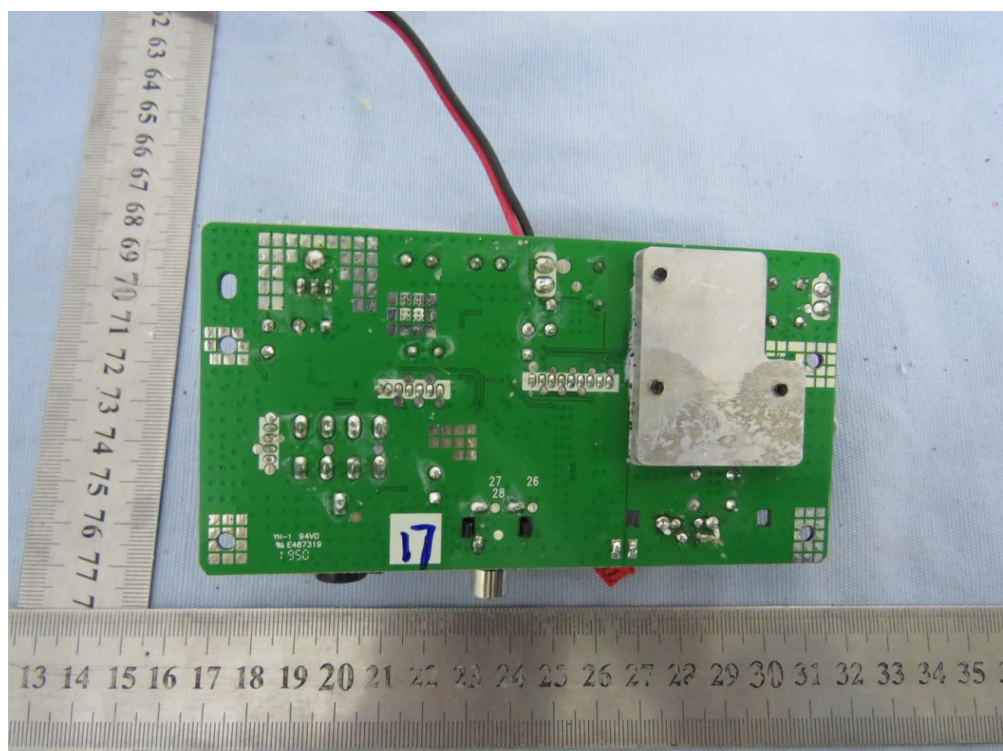




Photo 19



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