


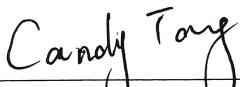
TEST REPORT

Applicant : SHENZHEN FENDA TECHNOLOGY CO., LTD.
Address : Fenda Hi-Tech Park, Zhoushi Road, Shiyao Town, Baoan District, Shenzhen City, Guangdong, China.
Manufacturer : SHENZHEN FENDA TECHNOLOGY CO., LTD.
Address : Fenda Hi-Tech Park, Zhoushi Road, Shiyao Town, Baoan District, Shenzhen City, Guangdong, China
Product Name : Computer Multimedia Speaker
Trade Mark : 
Model No. : PA938, PA923FD, PA936, T8, T9
Ratings : Input:100-240V~, 50/60Hz,1A
Standard : Audio, Video and Similar Electronic Apparatus: Safety Requirements
EN 60065:2014+A11:2017

Date of Receiver : July 03, 2019
Date of Test : July 03, 2019 to July 31, 2019
Date of Issue : September 06, 2019
Test Report Form No : NTCS-IEC60065-A1-E
Test Result : Pass *

This Test Report is Issued Under the Authority of :

Compiled by


Candy Tang / 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.

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. As declared by the applicant, the importer (and manufacturer, if it is different)'s name, registered trade name or registered trade mark and the postal address will be marked on the products before being place on the market. The contact details shall be in a language easily understood by end-users and market surveillance authorities.

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 Multimedia Speaker for Audio, Video and similar electronic apparatus. It is considered as portable apparatus.
2. The product is to be used under:
 - Maximum operating temperature: +35°C.
 - Altitude less than 2000m.
 - Indoor used only.
3. All models are the same except the model name, model PA938 are conduct for all the test.
4. LEDs used in model PA938 same as PA923 in report No. ED181225022L.

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
3	GENERAL REQUIREMENTS		P
	Safety class of the apparatus	Class II apparatus	P
4	GENERAL TEST CONDITIONS		P
4.1.4	Ventilation instructions require the use of the test box	The temperature measured in an open-fronted wooden box	P
5	MARKING AND INSTRUCTIONS		P
5.1	General requirements		P
	Comprehensible and easily discernible	Marking plate was provided on the behind of product, it was comprehensible and easily discernible.	P
	Permanent durability against water and petroleum spirit	Compliance was checked by rubbing the marking by hand for 15 s with cloth soaked with water and cloth soaked with petroleum spirit, it was durable and legible after the test.	P
5.2	Identification and supply rating		P
	a) Identification, maker	Trade mark: 	P
	b) Model number or type reference	See page 1	P
	c) Class II symbol or Class II with functional earth 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, on apparatus or in instruction manual	The apparatus is connection to an a.c mains supply	N
	Measured current or power consumption		N
	Deviation % (max 10%)		N
	h) Rated current or power consumption for apparatus intended for connection to an a.c. mains supply ..	1A	P
	Measured current or power consumption	(See appended table 7.1.)	P
	Measured current or power consumption for Television set	No such equipment	N
	Deviation % (max 10%)		N
	Symbols explained in the user manual	Explained in the user manual	P
5.3	Terminals		N
	a) Earth terminal	No such terminals.	N
	b) Hazardous live terminals	No such terminals.	N
	c) Markings on supply output terminals	No such terminals.	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
5.4	Caution marking		P
	a) Use of triangle with exclamation mark		P
	b) Marking on loudspeaker grille, IEC 60417-5036	No such grille used	N
	c) User-replaceable coin / button cell battery marking	No such battery used	N
5.5	Instructions		P
5.5.1	Safety relevant information	Provided in user manual	P
5.5.2	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 live terminals.	N
	c) Instructions for replacing lithium battery	No such batteries provided.	N
	d) Class I earth connection warning	Not Class I 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	No special fixed installation necessary.	N
	g) Warning: battery exposure to heat	Provided in user manual	P
	h) Warning: protective film on CRT face	No such device.	N
	i) Warning: Non-floor standing TV >7kg	No such equipment	N
	j) Warning: User replaceable coin / button cell battery	No such battery used	N
5.5.3	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	No such equipment	N
	Marking, signal lamps or similar for completely disconnection from the mains	No such device.	N
6	HAZARDOUS RADIATION		P
6.1	Ionizing radiation < 36 pA/kg (0,5 mR/h)	No ionizing radiation	N
	Ionizing radiation under fault condition	No ionizing radiation	N
6.2	Laser radiation, emission limits to IEC 60825-1:2007...:	No laser radiation	N
	Emission limits under fault conditions	No laser radiation	N
6.3	Light emitting diodes (LEDs) according to IEC 62471	LED only for indicating use which is low power application	P
7	HEATING UNDER NORMAL OPERATING CONDITIONS		P
7.1	General		P
7.1.1	Temperature rises not exceeding specified values; fuse links and other protective devices defeated	(See appended table 7.1.)	P
7.1.2	Temperature rise of accessible parts	(See appended table 7.1.)	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
7.1.3	Temperature rise of parts providing electrical insulation	(See appended table 7.1.)	P
7.1.4	Temperature rise of parts acting as a support or as a mechanical barrier	(See appended table 7.1.)	P
7.1.5	Temperature rise of windings	(See appended table 7.1.)	P
7.1.6	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

8	CONSTRUCTIONAL REQUIREMENTS WITH REGARD TO THE PROTECTION AGAINST ELECTRIC SHOCK		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 provided.	N
8.4	No risk of electric shock from accessible parts or from parts rendered accessible following the removal of a cover which can be removed by hand	The EUT is complied with the requirements	P
8.5	Class I apparatus <i>(Not Class I apparatus)</i>		N
	Basic insulation between hazardous live parts and earthed accessible parts		N
	Resistors bridging basic insulation complying with 14.2a)		N
	Capacitors bridging basic insulation complying with 14.3.2 a)		N
	Protective earthing terminal		N
8.6	Class II apparatus		P
	a) Basic and supplementary insulation between hazardous live parts and accessible parts		P
	b) Reinforced insulation between hazardous live parts and accessible parts	Hazardous live parts to accessible parts are separated by either reinforced or double insulation.	P
8.7	Components bridging insulation		P
	Basic insulation bridged by components complying with 14.4.5.3		N
	Components bridging basic, supplementary, double or reinforced insulation complying with 14.2 a) or 14.4	Transformers T1 bridging reinforced insulation complying with 14.4, see clause 14.4.	P
	Basic and supplementary insulation each being bridged by a capacitor or RC-unit complying with 14.3.2 a)		N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	Double or reinforced insulation being bridged with 2 capacitors or RC-units in series complying with 14.3.2a)		N
	Double or reinforced insulation being bridged with a single capacitor or RC-unit complying with 14.3.2 b)	See clause 14.3.2	P
8.8	Insulation thickness and thin sheet materials		P
	Basic or supplementary insulation > 0,4 mm (mm) :		N
	Reinforced insulation > 0,4 mm (mm) :	- Approved opto-coupler with thickness at least 0.5mm; - Bobbin of transformers T1 with min. thickness 0.75mm	P
	Thin sheet material used inside the equipment	Provided in the isolating transformers.	P
	Basic or supplementary insulation, at least two layers, each meeting 10.4		N
	Basic or supplementary insulation, three layers any two of which meet 10.4		N
	Reinforced insulation, two layers each of which meet 10.4		N
	Reinforced insulation, three layers any two which meet 10.4	3 layers insulation tape wrapped on external of transformer T1 as reinforced insulation. 3000Vac applied on any two layer of insulation tape	P
8.9	Adequate insulation between internal hazardous live conductors and accessible parts, or between internal hazardous live parts and conductors connected to accessible parts	Reinforced or double insulation provided between internal hazardous live conductors and secondary circuits which are conductively connected to accessible parts.	P
8.10	Double insulation between accessible parts and conductors connected to the mains	Reinforced or double insulation provided.	P
	Double insulation between conductors connected to accessible parts and parts connected to the mains	Reinforced or double insulation provided.	P
8.11	Detaching of wires		P
	No undue reduction of creepage or clearance distances if wires become detached	Internal secondary wires were connected by	P
	Vibration test carried out :	Considered.	P
8.12	Adequate fastening of windows, lenses, lamp covers etc. (pull test 20 N for 10 s)	No such parts	N
8.13	Adequate fastening of covers (push/pull test 50 N for 10 s)	Applied on enclosure only	P
8.14	No risk of damage to the insulation of internal wiring due to hot parts or sharp edges	Internal wires cannot touch hot parts or sharp edges which can damage its insulation.	P
8.15	Only special supply equipment can be used	Not special supply equipment.	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
8.16	Insulated winding wire without additional interleaved insulation		N
8.17	Endurance test as required by 8.16		N
8.18	Disconnection from the mains		P
	Disconnect device	See clause 5.5.3	P
	All-pole switch or circuit breaker with >3mm contact separation		N
	Mains switch ON indication		N
8.19	Switch not fitted in the mains cord		N
8.20	Bridging components comply with clause 14		N
8.21	Non-separable thin sheet material		N

9	ELECTRIC SHOCK HAZARD UNDER NORMAL OPERATING CONDITION		P
9.1	Testing on the outside		P
9.1.1	General		P
9.1.1.1	Requirements		P
	Accessible parts shall not be hazardous live		P
	Inaccessible terminals are not accessible or comply with relevant requirements		P
	For voltages >1000 V ac or >1500 V dc complies with clause 13.3.1 for basic insulation	No voltages >1000Vac or >1500Vdc	N
9.1.1.2	Determination of hazardous live parts		P
	a) Open circuit voltages	The open-circuit voltage of the secondary circuit does not exceed 60 Vdc or 35 Vpeak or the touch current measurement was conducted with the test results in appended table 9.1.1.2 b).	P
	b) Touch current measured from terminal devices using the network in annex D	The measuring network was according to Annex D, see appended table 9.1.1.2 b).	P
	c) Discharge not exceeding 45 µC	Less than 45µC	P
	d) Energy of discharge not exceeding 350 mJ	No voltage exceeding 15kV	N
9.1.1.3	Test with test finger and test probe	The test finger and probe cannot touch hazardous parts.	P
9.1.2	No hazardous live shafts of knobs, handles or levers	No such parts.	N
9.1.3	Ventilation holes and other holes tested by means of 4 mm x 100 mm test pin	No hazardous live parts can be accessed	P
9.1.4	Terminal devices tested with 1 mm x 20 mm test pin (10 N); test probe D of IEC 61032	No hazardous live parts can be accessed	P
	Terminal devices tested with 1 mm x 100 mm straight wire (1 N); test probe D of IEC 61032	No hazardous live parts can be accessed	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
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 used	N
9.1.6	Withdrawal of the mains plug		P
	No shock hazard due to stored charge after 2 s ... :	6V, 2s after withdrawal of plug under normal operation. (limit: 60Vdc) 24V, 2s after withdrawal of plug with R5 open circuited. (limit: 120Vdc) No hazards.	P
	Bleeder resistor(s) comply with 14.2 or no shock hazard when open circuited	No shock hazard when open circuited. See above.	P
	If C is not greater than 0,1 µF no test needed		N
9.1.7	Resistance to external force		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)	100N	P
9.2	No hazard after removing a cover by hand		N
10	INSULATION REQUIREMENTS		P
10.2	Insulation resistance (M) at least 2 M min. after surge test for basic and 4 M min. for reinforced insulation	Tested between primary and accessible parts, after tested, EUT complied with the requirements of 10.4	P
10.3	Humidity treatment 48 h or 120 h	95% R.H., 30°C, 48h	P
10.4	Insulation resistance and dielectric strength		P
	Between parts of different polarity directly connected to the mains	(See appended table 10.4)	P
	Between parts separated by BASIC or SUPPLEMENTARY insulation	Class II apparatus.	N
	Between parts separated by REINFORCED insulation	(See appended table 10.4)	P
11	FAULT CONDITIONS		P
11.1	No shock hazard under fault condition	No electric shock hazard in product	P
11.2	Heating		P
11.2.1	Requirements		P
	No danger of fire to the surroundings	No fire occurred.	P
	Safety not impaired by abnormal heat		P
	Flames extinguish within 10 seconds	No flames occurred	N
	No hazard from softening solder	No softening of solder point.	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	Soldered terminations not used as protective mechanism	No such part used.	P
11.2.2	Measurement of temperature rises	(see appended table 11.2)	P
11.2.3	Temperature rise of accessible parts	(see appended table 11.2)	P
11.2.4	Temperature rise of parts, other than windings and printed boards, providing electrical insulation	(see appended table 11.2)	P
11.2.5	Temperature rise of parts acting as a support or mechanical barrier	(see appended table 11.2)	P
11.2.6	Temperature rise of windings	(see appended table 11.2)	P
11.2.7	Printed boards		P
	Temperature rise does not exceed the limits of table 3 or exceed the limits of table 3 by max. 100 K for max. 5 min	(see appended table 11.2)	P
	a) Temperature rise of V-0 or VTM-0 printed circuit boards exceeding the limits of table 3 by not more than 100 K for an area not greater than 2 cm ²	No such parts	N
	b) Temperature rise of V-0 or VTM-0 printed circuit boards exceeding the limits of table 3 up to 300 K for an area not greater than 2 cm ² for a maximum of 5 min	No such parts	N
	Meets all the special conditions if conductors on printed circuit boards are interrupted		N
	Class I protective earthing maintained	Class II apparatus.	N
11.2.8	Temperature rise of parts not subject to the limits of 11.2.2 to 11.2.7 shall not exceed the limits in table 3, item e), "Fault conditions".		N

12	MECHANICAL STRENGTH		P
12.1	Complete apparatus		P
12.1.1	The apparatus have adequate mechanical strength	The apparatus have adequate mechanical strength	P
12.1.2	Bump test where mass >7 kg	Approx. 10.9Kg	P
12.1.3	Vibration test	Complied.	P
12.1.4	Impact hammer test	0.5J, 3 times applied on top, sides, bottom, rear and front of enclosure (After tested, no damage and EUT can withstand the dielectric strength test as specified in 10.4)	P
	Steel ball test	2J, 1 time applied on top, sides, bottom front of enclosure (After tested, no damage and EUT can withstand the dielectric strength test as specified in 10.4)	P
12.1.5	Drop test for portable apparatus where mass ≤ 7 kg		N
12.1.6	Thermoplastic enclosures stress relief test		P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
12.2	Fixing of knobs, push buttons, keys and levers		P
12.3	Remote controls with hazardous live parts	No such remote controls used.	N
12.4	Drawers (pull test 50 N, 10 s)	No drawers used.	N
12.5	Antenna coaxial sockets providing isolation	No such sockets	N
12.6	Telescoping or rod antennas	<i>(No such antennas used)</i>	N
12.6.1	6,0mm diameter end		N
	Prevented from falling into the apparatus		N
12.6.2	Physical securement, removal prevented		N
12.7	Apparatus containing coin / button cell batteries	<i>(No such battery used)</i>	N
12.7.2	Reduced possibility for children to remove battery		N
12.7.3	Tests		N
12.7.3.2	Stress relief test		N
12.7.3.3	Battery replacement test		N
12.7.3.4	Drop test		N
12.7.3.5	Impact test		N
12.7.4	Battery not accessible; or not removable		N
13	CLEARANCES AND CREEPAGE DISTANCES		P
13.1	Clearances in accordance with 13.3	Pollution degree 2 and material group IIIb.	P
	Creepage distances in accordance with 13.4		P
13.2	Determination of working voltage		P
13.3	Clearances		P
13.3.1	Comply with 13.3 or Annex J		P
13.3.2	Circuits conductively connected to the mains comply with table 8 and, where applicable, table 9	(See appended table 13.3&13.4)	P
13.3.3	Circuits not conductively connected to the mains comply with table 10	No hazard when short circuited according to clause 11.	P
13.3.4	Measurement of transient voltages		N
13.4	Creepage distances not less than appropriate table 11 minimum values	(See appended table 13.3&13.4)	P
13.5	Printed boards		P
13.5.1	Conductors complying with pull-of and peel strength requirements, one of which may be conductively connected to the mains, as in fig. 10		P
13.5.2	Type B coated printed circuit boards complying with IEC 60664-3 (basic insulation only)		N
13.6	Conductive parts along uncemented joints clearances and creepage distances comply with 13.3 and 13.4		N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	Conductive parts along reliably cemented joints comply with 8.8		N
	Temperature cycle test and dielectric strength test		N
	500V test for transformers, magnetic coupler and similar devices, if insulation is relied upon for safety		N
13.7	Enclosed, enveloped or hermetically sealed parts not conductively connected to the mains, clearances and creepage distances as in table 12		N
13.8	Parts filled with insulating compound, meeting the requirements of 8.8	Approved optocoupler used. See appended table 14 for the source details.	P

14	COMPONENTS		P
14.1	Flammability according to IEC 60695-11-10 or annex G, or 20.2.5		P
14.2	Resistors		N
	Resistors separately approved	No such component.	N
	a) Resistors between hazardous live parts and accessible metal parts		N
	b) Resistors, other than between hazardous live parts and accessible parts		N
14.3	Capacitors and RC units		P
	Capacitors separately approved :		P
14.3.1	Damp heat test duration 21 days		N
14.3.2	Y capacitors tested to IEC 60384-14:2005	Approved Y-capacitor CY1 used. (see appended table 14)	P
14.3.3	X capacitors tested to IEC 60384-14:2005	Approved X-capacitor CX1 and CX2 used. (see appended table 14)	P
14.3.4	Capacitors operating at mains frequency but not connected to the mains: tests for X2	No such components used.	N
14.3.6	Capacitors with volume exceeding 1750 mm ³ , where short-circuit current exceeds 0,2 A: compliance with IEC 60384-1, 4.38 category B or better	The capacitors except metal cased type provided with volume less than 1750 mm ³	N
	Capacitors with volume exceeding 1750 mm ³ , mounted closer to a potential ignition source than table 13 permits: compliance with IEC 60384-1, 4.38 category B or better		N
14.4	Inductors and windings		P
14.4.1	Comply with IEC 61558-1, IEC 61558-2 (as relevant) and clause 20.2.5	No such component.	N
	Transformers and inductors separately approved ..		N
14.4.2	Transformers and inductors marked with manufacturer's name and type	The transformer marked with the trademarks and type. See appended table 14.	P
14.4.3	General	See clause 14.4.4, 14.4.5 and 14.4.6.	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	Insulation material complies with clause 20.2.5	See clause 20.2.5.	P
14.4.4	Constructional requirements		P
14.4.4.1	Clearances and creepage distances comply with clause 13	Transformer complied with clause 13.	P
14.4.4.2	Transformers meet the constructional requirements	Complied.	P
14.4.5	Separation between windings		P
14.4.5.1	Class II transformers have adequate separation between hazardous live parts and accessible parts (double or reinforced insulation)	Double or reinforced insulation separated between primary windings and secondary windings.	P
	Coil formers and partition walls > 0,4 mm	Measured: Min. 0.75mm	P
14.4.5.2	Class I transformers, with basic insulation and protective screening only if all 7 conditions are met	Class II transformer	N
14.4.5.3	Separating transformers with at least basic insulation	No such transformers	N
14.4.6	Insulation between hazardous live parts and accessible parts		P
14.4.6.1	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. See also sub-clause 8.8.	P
	Coil formers and partition walls > 0,4 mm	Measured: Min. 0.75mm	P
14.4.6.2	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 transformer	N
	Winding wires connected to protective earth have adequate current-carrying capacity		N
14.5	High voltage components and assemblies (U > 4kV peak)		N
14.5.1	Component meets category V-1 of IEC 60695-11-10	No high-voltage components used.	N
14.5.2	High voltage transformers and multipliers		N
14.5.3	High voltage assemblies and other parts		N
14.6	Protective devices		P
14.6.1	Protective devices used within their ratings		P
	External clearances and creepage distances meet requirement of clause 13 for the voltage across the device when opened	(see appended table 13.3 & 13.4)	P
14.6.2	Thermal releases		N
14.6.2.1	Comply with 14.6.2.2, 14.6.2.3 or 14.6.2.4	No such component.	N
14.6.2.2	a) Thermal cut-outs separately approved	No such component.	N
	b) Thermal cut-outs tested as part of the submission	No such component.	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
14.6.2.3	a) Thermal links separately approved	No such component.	N
	b) Thermal links tested as part of the submission	No such component.	N
14.6.2.4	Thermal devices re-settable by soldering	No such devices	N
14.6.3	Fuses and fuse holders		P
14.6.3.1	Fuse-links in the mains circuit according to IEC 60127	Approved mains fuse used	P
14.6.3.2	Correct marking of fuse-links adjacent to holder ... :	Marked on PCB adjacent to component: F1 T5AL 250Vac.	P
14.6.3.3	Not possible to connect fuses in parallel	Single fuse is used	P
14.6.3.4	Not possible to touch hazardous live parts when replacing fuse-links without the use of a tool :	No fuse holder. Fuse can't be replaced without damaging equipment.	N
14.6.4	PTC thermistors comply with IEC 60730-1:2010	No such component.	N
	PTC devices (>15 W) category V-1 or better		N
14.6.5	Circuit protectors have adequate breaking capacity and their position is correctly marked	No such component.	N
14.7	Switches		P
14.7.1 a)	Separate testing to IEC 61058-1 including: - 10 000 operations - Normal pollution suitability - For CRT TV's, make and break speed independent of speed of actuation - V-0 or compliance with G.1.1	No such component.	N
14.7.1 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 or 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 or 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 or G.1.1		N
14.7.2	Switch tested to 14.7.1 b) checked according to IEC 61058-1 clause 13.1 and 10 000 operation test		N
14.7.3	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
14.7.4	Switch tested to 14.6.1 b) has adequate dielectric strength		N
14.7.5	Mains switch controlling mains socket outlets additional tests to IEC 61058-1		N
14.8	Safety interlocks according to 2.8 of IEC 60950-1	No safety interlocks used	N
14.9	Voltage setting device and the like are not likely to be changed accidentally		N
14.10	Motors	(No motors used)	N
14.10.1	a) Endurance test on motors		N

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Clause	Requirement + Test	Result - Remark	Verdict
	b) Motor start test		N
	Dielectric strength test		N
14.10.2	Not adversely affected by oil or grease etc.		N
14.10.3	Protection against moving parts		N
14.10.4	Motors with phase-shifting capacitors, three-phase motors and series motors meet clause. B.8, B.9 and B.10 of IEC 60950-1, Annex B		N
14.11	Batteries	(Lead-Acid battery)	P
14.11.1	Comply with IEC 62133 if applicable		N
	Batteries mounted with no risk of accumulation of flammable gases		P
14.11.2	No possibility of recharging user replaceable non rechargeable batteries		N
14.11.3	Recharging currents and times within manufacturers limits	Max charge current: 0.95A at normal condition 0.98A at abnormal condition (the limit value 1.75A)	P
	Lithium batteries discharge and reverse currents within the manufacturers limits		N
14.11.4	Battery mould stress relief		N
14.11.5	Battery drop test		N
14.12	Optocouplers		P
	Comply with constructional requirements of clause 8		P
	External clearances and creepage comply with 13.1		P
	Compound completely filling the casing or internal clearances and creepage comply with 13.1		P
	a) Complies with 13.6 (jointed insulation) and N.3.2		N
	b) Complies with IEC 60747-5-5:2007	Approved optocoupler is used, see appended table 14 for the details.	P
	c) Complies with 13.8		N
14.13	Surge suppression varistors		N
	Comply with IEC 61051-2	No such component.	N
	Not connected between mains and accessible parts except for earthed parts of permanently connected apparatus		N
	GDT bridging basic insulation complies with electric strength and distance requirements		N
15	TERMINALS		P
15.1	Plugs and sockets		P
15.1.1	Mains plug, appliance inlet, interconnection couplers and mains socket-outlet meet the appropriate standard	Mains plug meet the appropriate standard. See appended table 14.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Overloading of plugs or appliance inlets prevented if the apparatus has mains socket outlets	No mains socket outlets.	N
	Overloading of internal wiring prevented if the apparatus has mains socket outlets		N
15.1.2	Design of connectors other than for mains power		N
	Design of sockets with symbol of 5.3 b) design		N
15.1.3	Design of terminals and connectors used in output circuits of supply apparatus	Mismatching of connectors is not possible.	N
15.2	Provision for protective earthing		N
	Accessible conductive parts of Class I equipment reliably connected to earth terminal, within equipment	Class II apparatus.	N
	Protective earth conductors correctly fixed and coloured		N
	Separate protective earth terminal near mains terminal and comply with 15.3		N
	Protective earth terminal resistant to corrosion		N
	Earth resistance test: < 0,1Ω at 25 A		N
15.3	Terminals for external flexible cords and for permanent connection to the mains supply		P
15.3.1	Adequate terminals for connection of permanent wiring	Not permanent wiring	N
15.3.2	Reliable connection of non-detachable cords		N
	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		N
15.3.4	Conductors adequately fixed (two independent fixings)		P
15.3.5	Terminals allow connection of conductors having appropriate cross-sectional area		P
15.3.6	Terminals to 15.3.3 have sizes required by table 16		N
15.3.7	Terminals clamp conductors between metal and have adequate pressure		N
	Terminals designed to avoid conductor slipping out when tightened		N
	Terminals adequately fixed when tightened or loosened (no loosening, wiring not stressed, distances not reduced)		N
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		N
15.4	Devices forming a part of the mains plug		N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
15.4.1	No undue strain on mains socket-outlets		N
15.4.2	Device complies with standard for dimensions of mains plugs		N
15.4.3	Device has adequate mechanical strength (tests a,b,c)		N

16	EXTERNAL FLEXIBLE CORDS		P
16.1	Mains cords sheathed type, complying with IEC 60227 for PVC or IEC 60245 for synthetic rubber cords	Approved PVC cord used. (See appended table 14)	P
	Non-detachable cords for Class I have green/yellow core for protective earth	Class II equipment.	N
16.2	Mains cords conductors have adequate cross-sectional area for rated current consumption of the equipment	Rated current < 3A, cross-sectional area: 2 x 0.5 mm ² min, with length ≤ 2m (see appended table 14)	N
16.3	Flexible cords not complying with 16.1, used for interconnections between separate units of equipment used in combination and carrying hazardous live voltages comply with a) and b)		N
16.4	Flexible cords used for connection between equipment have adequate cross-sectional areas to avoid temperature rise under normal and fault conditions		N
16.5	Adequate strain relief on external flexible cords		N
	Not possible to push cord back into equipment	Detachable power cord	N
	Strain relief device unlikely to damage flexible cord		N
	For mains cords of Class I equipment, hazardous live conductors become taut before earth conductor		N
16.6	Apertures for external flexible cord: no risk of damage to the cord during assembly or movement in use		P
16.7	Transportable apparatus have appliance inlet according to IEC 60320-1 or means of stowage to protect the cord		N

17	ELECTRICAL CONNECTIONS AND MECHANICAL FIXINGS		P
17.1	Table 20 torque test metal thread, 5 times.....	No such screws used.	N
	Table 20 torque test non-metallic thread, 10 times....	Diameter: 2.78mm, Torque: 0.5Nm, no damage.	P
17.2	Correct introduction into female threads in non-metallic material		P
17.3	Cover fixing screws captive or no hazard when replaced by a screw whose length is 10 times its diameter	No such screws used.	N
17.4	No loosening of conductive parts carrying a current > 0,2 A		P
17.5	Contact pressure not transmitted through insulating material other than ceramic for connections carrying a current > 0,2 A	Contact pressure not transmitted through plastic.	P
17.6	Stranded conductors of flexible supply cords carrying a current > 0,2 A with screw terminals not consolidated by solder		N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
17.7	Cover fixing devices have adequate strength and their positioning is unambiguous		N
17.8	Fixing means for detachable legs or stands provided		N
17.9	Internal pluggable connections, affecting safety, unlikely to become disconnected		P
18	MECHANICAL STRENGTH OF PICTURE TUBES AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N
18.1	Comply with IEC 61965 or 18.2	No picture tube used.	N
18.2	Non-intrinsically protected tubes		N
19	STABILITY AND MECHANICAL HAZARDS		P
19.1	Apparatus > 7kg have adequate stability or is required to be fastened in place and provided with the warning of 5.5.2 f) :	Mass 10.9Kg	P
19.2	Test at 10° to the horizontal		P
19.3	Vertical force test 100 N applied downwards		P
19.4	Horizontal force test, 100 N or 13% of weight, applied horizontally to point of least stability		P
19.5	Edges or corners not hazardous	Edges and corners are smooth	P
19.6	Mechanical strength of glass		N
19.6.1	Glass surfaces (exc.laminated) with an area exceeding 0,1 m ² or major dimension > 450 mm, pass the test of 12.1.4	No any glass surface.	N
19.6.2	Fragmentation test		N
19.7	Wall or ceiling mounting means		N
19.7.1 - 19.7.3	Not dislodged and remain mechanically intact after test according to 19.7.2 Test 1, Test 2 or Test 3.....:		N
20	RESISTANCE TO FIRE		P
20.1	Start and spread of fire is prevented	Complied.	P
20.2	Electrical components and mechanical parts		P
20.2.1	a) Exemption for components contained in an enclosure of material V-0 to IEC 60695-11-10 with openings not exceeding 1 mm in width	Wooden enclosure Minimum 6.0 mm thick	P
	b) Exemption for small components	Some small components mounted on UL approved PCB with flammability of V-0	P
20.2.2	Electrical components meet the requirements of Clause 14 or 20.2.5	For components covered in the Clause 14, the approved components were used.	P
20.2.3	Insulation of internal wiring working at voltages > 4 kV or leaving an internal fire enclosure, or located within the areas mentioned in Table 21, comply with G.2	No internal wiring working at voltage higher than 4 KV.	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
20.2.4	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 IEC 60695-11-10, unless used in a fire enclosure	V-0 PCB used.	P
	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 60695-11-10.	V-0 PCB used.	P
20.2.5	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	No such construction	N
	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 circuits are working at the voltage higher than 4kV.	N
20.3	Fire enclosure		N
20.3.1	Potential ignition sources with open circuit voltage > 4 kV (peak) a.c. or d.c. contained in a fire enclosure to V-1	Open voltage not exceed 4 KV (peak) a.c. or d.c.	N
20.3.2	Internal fire enclosures with openings not exceeding 1 mm in width and with openings for wires completely filled	No such construction.	N
20.3.3	Requirements of 20.2.1 and 20.2.2 met by an internal fire enclosure	No such construction.	N

ANNEX A	ADDITIONAL REQUIREMENTS FOR APPARATUS WITH PROTECTION AGAINST SPLASHING WATER		N
A.5	Marking and instructions		N
A.5.1	A.5.2 i) Marked with at least IPX4 (IEC 60529) 5.5.2 a) does not apply	The equipment is used indoor only.	N
A.10	Insulation requirements		N
A.10.3	Splash and humidity treatment		N
A.10.3.1	The enclosure provide adequate protection against splashing water		N
A.10.3.2	Complies with 10.3,duration of the test is 168h		N

ANNEX B	APPARATUS TO BE CONNECTED TO TELECOMMUNICATION THE TELECOMMUNICATION NETWORKS		N
	Complies with IEC 62151 clause 1		N
	Complies with IEC 62151 clause 2		N
	Complies with IEC 62151 clause 3 modified		N
	Complies with IEC 62151 clause 4 modified		N
	Complies with IEC 62151 cause 5 modified		N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	Complies with IEC 62151 clause 6		N
	Complies with IEC 62151 clause 7		N
	Complies with IEC 62151 annex A, B and C		N
ANNEX L	ADDITIONAL REQUIREMENTS FOR ELECTRONIC FLASH APPARATUS FOR PHOTOGRAPHIC PURPOSES		N
L.5	Marking and instructions		N
L.5.5.1	Instructions for battery chargers and Supply apparatus indicating type or model number of flash apparatus with which it is to be used	The EUT is not electronic flash apparatus.	N
	Instructions for flash apparatus indicating type or model number of battery chargers or Supply apparatus with which it is to be used		N
L.7	Heating under normal operating conditions		N
L.7.1.6	Lithium batteries meet permissible temp rise in Table 3		N
L.9	Electric shock hazard under normal operating conditions		N
L. 9.1.1.1	Terminals for connection to synchroniser not hazardous live		N
L.14	Components		N
L.14.6.7	Mains switch characteristics appropriate to its function under normal conditions		N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict

**ATTACHMENT TO TEST REPORT IEC 60065
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES**
(Audio, video and similar electronic apparatus – Safety requirements)

Differences according to : EN 60065:2014

Attachment Form No...... : EU_GD_IEC60065L

Master Attachment..... : Date 2015-03

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	CENELEC COMMON MODIFICATIONS (EN)			P
General	1.1.3 Note 2	5.4 Note	5.5.2 Note 1 and Note 2	P
	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		

1.2 Normative references N


	Add 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 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>	Added.	N
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3 General requirements P

3.Z1	Protective devices 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	Complied	P
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IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		
4	General test conditions		N
4.1.1	Replace the text of the note by: NOTE For ROUTINE TEST, reference is made to EN 50514:2008.		N
6	Hazardous radiations		N
6.1	Replace 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 10 cm from the outer surface of the apparatus</i> <i>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.</i> <i>The dose-rate shall not exceed 1 μSv/h (0,1 mR/h) taking account of the background level.</i> NOTE 2 These values appear in Council Directive 96/29/Euratom of 13 May 1996. <i>A picture is considered to be intelligible if the following conditions are met</i> <i>- a scanning amplitude of at least 70 % of the usable screen width;</i> <i>- a minimum luminance of 50 cd/m² with locked blank raster provided by a test generator;</i> <i>- a horizontal resolution corresponding to at least 1,5 MHz in the centre, with a similar vertical degradation;</i> <i>- not more than one flashover per 5 min.</i>		N
16	External flexible cords		P
16.1	Add the following note after the first paragraph: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.	Added.	P
Z1	Protection against excessive sound pressure from personal music players		N
Z1.1	General 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	Not such apparatus.	N

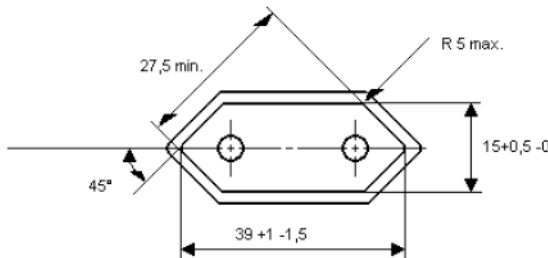
IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>personal use, that:</p> <ul style="list-style-type: none"> - is designed to allow the user to listen to recorded or broadcast sound or video; and - uses a listening device, such as headphones or earphones that can be worn in or on or 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. <p>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.</p> <p>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:</p> <ul style="list-style-type: none"> - professional equipment; <p>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.</p> <ul style="list-style-type: none"> - hearing aid equipment and other devices for assistive listening; - the following types of analogue personal music players: <ul style="list-style-type: none"> • 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>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> <ul style="list-style-type: none"> - player while connected to an external amplifier that does not allow the user to walk around while in use. <p>For equipment clearly designed or intended for use by young children, the limits of EN 71-1 apply.</p>		
Z1.2	<p>Equipment requirements No safety provision is required for equipment that complies with the following:</p> <ul style="list-style-type: none"> - equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is ≤ 85 dB(A) measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and - personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" as described in EN 50332-1. <p>NOTE 1 Wherever the term acoustic output is used in this subclause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Z1.5 and Annex ZE. All other equipment shall:</p> <ol style="list-style-type: none"> a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and 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 	Not such apparatus.	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	<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 NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. 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 ≤ 100 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 ≤ 150 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 $L_{Aeq,T}$) 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 given as long as the average sound pressure of the song does not exceed the basic limit of 85 dB(A). In this case, T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the 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). 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"> - the symbol of Figure Z1 with a minimum height of 5 mm; and - the following wording, or similar: <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px 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-top: 10px;">  </div>	Not such apparatus.	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	Figure Z1 – Warning label (IEC 60417-6044) 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.		
Z1.4	Requirements for listening devices (headphones, earphones, etc.)		N
Z1.4.1	Corded passive listening devices with analogue input With 94 dB(A) sound pressure output $L_{Aeq,T}$, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be ≥ 75 mV. 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.). NOTE The values of 94 dB(A) – 75 mV correspond with 85 dB(A) – 27 mV and 100 dB(A) – 150 mV.	Not such apparatus.	N
Z1.4.3	Cordless listening devices In wireless mode: – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – 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 programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dB(A).	Not such apparatus.	N
Z1.5	Measurement methods 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
	ANNEXES		N
Annex B	Replace the text of Note 1 by the following: In the CENELEC countries listed in IEC 62151, special national conditions apply.	Replaced.	N
Annex N	After the note in N.1, add the following: For ROUTINE TEST, reference is made to EN 50514:2008.	Added.	N
ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS		—
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		P
2.6.1	Denmark 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	Denmark	Not such apparatus.	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Add to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.</p>		
5.4	<p>Denmark, Finland, Norway and Sweden 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 Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord." In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag"</p>	Not such apparatus.	N
5.5.2	<p>Norway and Sweden Add 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.</p>	Not such apparatus.	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>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>		
13.3.1	<p>Norway Add 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
15.1.1	<p>Denmark 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. 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. 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. Other current rating socket outlets shall be in compliance with DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-1c. 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 <i>Justification:</i> Heavy Current Regulations, Section 6c</p>	Not such apparatus.	N
15.1.1	<p>Ireland 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</p>	Not such apparatus.	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Conversion Adapters for Domestic Use Regulations: 1997. <i>Justification:</i> SI 525: 1997</p>		
15.1.1	<p>Norway 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: § 8 Dimensions a) 2,5 A 250 V two-pole socket-outlets for electronic apparatus shall comply with the enclosed Standard Sheet I.</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>STANDARD SHEET I 2,5 A/250 V SOCKET-OUTLET FOR ELECTRONIC APPLIANCES OF CLASS II</p>  <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 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. <i>Justification:</i> Act of 24 May 1929 relating to supervision of electrical installation (TEA 1929/FEL 1998).</p>	No socket-outlet used.	N
15.1.1	<p>United Kingdom 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. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug. <i>Justification:</i> SI 1768: 1994</p>		N
Annex B	<p>Finland, Norway and Sweden All sub clauses given below are sub clauses of IEC 62151 (ref. corrigenda 1 and 2 to IEC 62151). Subclause 4.1.1 (corrigendum 2): Add after the first paragraph: NOTE In Finland, Norway and Sweden, 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</p>	Not such apparatus.	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>addition is intended for connection to other equipment 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, 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>Subclause 4.1.4 (corrigendum 1) Add at the end of the subclause: NOTE In Norway, for requirements see 4.1.1, note and 5.3.1, note 1.</p> <p>Subclause 4.2.1.2 (corrigendum 1) Add at the end of the subclause: NOTE 3 In Norway, for requirements see 5.3.1, note 1.</p> <p>Subclause 4.2.1.3 (corrigendum 2) Add at the end of the subclause: NOTE In Norway, for requirements see 4.1.1, note and 5.3.1, note 1.</p> <p>Subclause 4.2.1.4 (corrigendum 1) Number the existing note as NOTE 1 and add at the end of the subclause the following NOTE 2: NOTE 2 In Norway, for requirements see 4.1.1, note and 5.3.1, note 1.</p> <p>Subclause 5.3.1 (corrigendum 1) Add after the first test specifications paragraph: NOTE 1 In Finland, Norway and Sweden, there are additional requirements for the insulation.</p> <p>Renumber the existing note as NOTE 2. 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): NOTE 1 In Finland, Norway and Sweden, if this insulation is solid, including insulation forming part of a component, it shall at least consist of either • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below</p> <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"> • 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 • 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). 		

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> • the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 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; • the additional testing shall be performed on all the test specimens as described in EN 132400; • 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. <p>Subclause 5.3.2 (corrigendum 1) Add after the fourth dash: NOTE In Finland, Norway and Sweden, 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>Norway 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
C	ANNEX ZC, NATIONAL DEVIATIONS (EN)		--
5.1	<p>Italy The following requirements shall be fulfilled: - The power consumption in Watts (W) shall be indicated on TV receivers and in their instruction for use (Measurement according to IEC 60107-1) NOTE EN 60555-2 has since been replaced by IEC 60107-1:1997. - TV receivers shall be provided with an instruction for use, schematic diagrams and adjustments procedure in Italian language. - Marking for controls and terminals shall be in Italian language. Abbreviation and international symbols are allowed provided that they are explained in the instruction for use. - The ECC manufacturers are bound to issue a conformity declaration according to the above requirements in the instruction manual. The correct statement for conformity to be written in the instruction manual, shall be: Questo apparecchio è fabbricato nella CEE nel rispetto delle disposizioni del D.M. marzo 1992 ed è in particolare conforme alle prescrizioni dell'art. 1 dello stesso D.M. - The first importers of TV receivers manufactured outside EEC are bound to submit the TV receivers for previous conformity certification to the Italian Post Ministry (PP.TT). The TV receivers shall have on the backcover the certification number in the following form: D.M. 26/03/1992 xxxxx/xxxxx/S or T or pT S for stereo T for teletext pT for retrofitable teletext <i>Justification:</i> Ministerial Decree of 26 March 1992: National rules for television receivers trade. NOTE The ministerial decree above contains additional, but not safety relevant requirements.</p>	Not such apparatus.	N

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
6.1	<p>Germany The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. <i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the 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: http://www.ptb.de</p>	No such device.	N
14.1	<p>Sweden The following requirements shall be fulfilled: Switches containing mercury such as thermostats, relays and level controllers are not allowed.</p>	No such component.	N

ATTACHMENT TO TEST REPORT IEC 60065 EUROPEAN NATIONAL DIFFERENCES (Audio, video and similar electronic apparatus – Safety requirements)			
Differences according to.....: EN 60065:2014+A11: 2017			
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A
5.1	Delete the Italian deviation.	Deleted	N/A

7.1							TABLE: temperature rise measurements		P
Power consumption in the OFF/Stand-by					OFF model: 0W			--	
Position of the functional switch (W)					--			--	
Cond.	Un (V)	Hz	In (A)	Pn (W)	Uout (V)	Pout (W)	Operating Condition / Status		
1.	90	50	0.627	36.2	SW: 2.21 TW:1.04	SW: 2.44 TW:0.14	Test in Audio mode, Pink noise sine signal adjusted to output power 1/8 max. non-clipped output power		
2.	100	50	0.561	35.9					
3.	240	50	0.309	36.1					
4.	264	50	0.285	36.1					
5.	90	60	0.642	36.2					
6.	100	60	0.582	36.1					
7.	240	60	0.321	36.1					
8.	264	60	0.303	36.1					
9.	90	50	0.626	36.2	SW: 2.21 TW:1.04	SW: 2.44 TW:0.14	Test in Bluetooth mode, Pink noise sine signal adjusted to output power 1/8 max. non-clipped output power		
10.	100	50	0.563	35.9					
11.	240	50	0.312	36.1					
12.	264	50	0.287	36.1					
13.	90	60	0.645	36.2					
14.	100	60	0.586	36.1					
15.	240	60	0.322	36.1					
16.	264	60	0.307	36.1					
17.	12Vdc	/	2.41	28.92					
18.	90	50	0.628	36.2	SW: 2.21 TW:1.04	SW: 2.44 TW:0.14	Test in FM mode, Pink noise sine signal adjusted to output power 1/8 max. non-clipped output power		
19.	100	50	0.565	35.9					
20.	240	50	0.314	36.1					
21.	264	50	0.289	36.1					
22.	90	60	0.642	36.2					
23.	100	60	0.582	36.1					
24.	240	60	0.321	36.1					
25.	264	60	0.304	36.2					
26.	90	50/60	0.327	18.2	--	--	The EUT was off, and only internal fully discharged battery was charging.		
27.	100	50/60	0.297	17.6					
28.	240	50/60	0.169	18.4					
29.	264	50/60	0.155	18.2					
Loudspeaker impedance (Ω)					--			--	
Several loudspeaker systems					--			--	
Marking of loudspeaker terminals					Internally integrated			--	
Temperature Rise dT of Part				dT (K)			Limit max dT (K)		
Supply voltage				No. _13_	No. _15_	No. _17_	--		
Input wire (inside)				5.8	1.8	2.1	70		

AC inlet inside	6.9	2.2	4.6	50
AC connector CON1	14.0	8.5	1.9	Ref.
X-capacitor CX1	14.1	10.0	1.8	65
Varistor TVR1	17.4	10.7	1.6	50
RT1	29.0	18.8	1.6	Ref.
Winding of Line filter LF3	11.1	7.6	1.8	95
X-capacitor CX2	9.5	5.6	1.8	65
Winding of Line filter LF4	11.8	6.6	1.8	85
PCB under BD1	12.9	7.8	1.4	85
PCB under Q2	16.0	17.7	1.3	85
Electrolytic capacitor EC4	13.5	15.0	1.3	70
Winding of L1	17.2	16.1	10.3	95
Electrolytic capacitor EC7	10.7	9.4	3.6	70
T1 winding	20.6	27.5	1.3	85
T1 core	19.7	25.5	1.2	Ref.
T1 bobbin	15.9	17.9	1.3	Ref.
Y-capacitor CY1	11.4	9.9	1.2	90
Opto-coupler U2	9.4	7.2	1.1	65
PCB under D1	9.6	16.0	1.2	85
Winding of LF2	9.9	8.8	8.0	85
CON2	10.2	9.1	5.6	Ref.
PCB near USB (on USB board)	25.9	5.8	5.7	85
PCB near heat sink (on control board)	9.9	21.3	12.3	85
PCB main board	68.5	70.5	66.2	85
Speaker wire	5.7	5.0	4.5	70
Enclosure inside near USB board	7.5	1.3	1.2	60
Enclosure inside near transformer	4.7	4.1	1.3	60
Enclosure outside /control panel	6.6	2.3	16.7	60
Enclosure outside near AC inlet	5.9	2.3	2.0	60
Enclosure outside near USB connector	3.8	1.3	1.2	60
Enclosure outside near audio output	3.7	4.1	3.9	60
Battery wire	1.2	1.2	1.7	45
Internal Battery	1.0	1.0	1.4	Ref.
Winding temperature rise measurements				
Ambient temperature t1 (°C)	--	--	--	--
Ambient temperature t1 (°C)	--	--	--	--

Temperature rise dT of winding: $dT = (R2 - R1) \times (234.5 + t1) - (t2 - t1)$ R1	R1 (Ω)	R2 (Ω)	dT (K)	Limit max (K)	Insulation class
--	--	--	--	--	--
--	--	--	--	--	--

Supplementary information:

- Measurements were carried out with the apparatus positioned inside the box specified by the clause 4.1.4 of the standard.
- According to the user manual, the appliance is intended to be used in moderate climate, so the basic ambient temperature is 35°C.
- All the heating test was performed under BT mode.

7.2	TABLE: softening temperature of thermoplastics			N
Temperature T of part	T - normal conditions (°C)	T - fault conditions (°C)	Min T softening (°C)	
--	--	--	--	

Remark: Phenolic materials used for LF3, LF4 and transformer T1 consider as having softening temperature of 150°C, no other parts tested necessary.

9.1.1.2 a)	TABLE: Electric shock hazard under normal condition (open-circuit voltage)			P
Location	Condition	U(Vpk)	U(Vpk) Limit	
L/N of AC to accessible terminals	Normal condition	236	35	
L/N of AC to Wooden enclosure with metal foil	Normal condition	52	35	
L/N of AC to control panel	Normal condition	94	35	

Supplementary information :

- Using item a) in clause 9.1.1.2 to determine the hazardous live parts.
- If the voltage limits are exceeded, table 9.1.1.2 b) apply.

9.1.1.2 b)	TABLE: Electric shock hazard under normal condition (touch current)				P
Location	Condition	U1(Vpk)	U1(Vpk) Limit	U2(Vpk)	U2(Vpk) Limit
L/N of AC to accessible terminals	Normal condition	0.036	35	0.018	0.35
L/N of AC to Wooden enclosure with metal foil	Normal condition	0.032	35	0.012	0.35
L/N of AC to control panel	Normal condition	0.114	35	0.054	0.35

Supplementary information :

- The touch current was measured according to 9.1.1.2.b) with the test circuit of Annex D connected between the specified points.

10.4	TABLE: Insulation Resistance Measurements		P
Insulation resistance R between:	R (M)	Required R (M)	
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. 2
Transformer T1 secondary winding and core	>100	Min. 2
Two layer insulation tape of transformer	>100	Min. 4
Supplementary information: /		

10.4	TABLE: Dielectric Strength		P
Test voltage applied between:	Test potential applied (V)	Breakdown / flashover (Yes/No)	
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	1500Vac	No	
Transformer T1 secondary winding and core	1500Vac	No	
Two layer insulation tape of transformer	3000Vac	No	
Supplementary information:			

11.1	TABLE: Electric shock hazard under abnormal condition					P
Touch current measured between:	Condition	U1 (Vpk)	U1 (Vpk) Limit	U2 (Vpk)	U2 (Vpk) Limit	
L/N of AC to accessible terminals	All fault condition that cause fuse F1 opened	0.036	70	0.018	1.4	
L/N of AC to Wooden enclosure with metal foil		0.032	70	0.012	1.4	
L/N of AC to control panel		0.114	70	0.054	1.4	
Supplementary information :						
1. The touch current is measured according to 9.1.1.2 b) with the test circuit of Annex D connected between the specified points.						

11.2	TABLE: Fault Conditions				P
No.	Component	Fault	dT (K) / Component	Other results (include description and test duration)	
1.	Speaker output	Max. non-clipped	See the appended table	The unit was working normally. After testing, no damaged, no hazards. Test duration: 3hr40mins	
2.	SW Speaker output	S-C	See the appended table	The unit was working normally. After testing, no damaged, no hazards. Test duration: 2hr10mins	

3	TW Speaker output	S-C	See the appended table	The unit was working normally. After testing, no damaged, no hazards. Test duration: 2hr30mins
4	Opening	Blocked	See the appended table	The unit was working normally. After testing, no damaged, no hazards. Test duration: 3hr3mins
3.	USB output	O-L	--	Unit can not load, no damage, no hazards. Test time:10mins.
4.	USB output	S-C	--	Unit shut down immediately, no damage, no hazards. Test time:10mins.
5.	BD1	S-C	--	Unit shut down immediately, Input current form 0.285A decrease to 0A. After testing, no damaged, no hazards. Test time:10mins.
6.	EC5	S-C	--	Unit shut down immediately, Input current form 0.285A decrease to 0A. After testing, no damaged, no hazards. Test time:10mins.
7.	D4	S-C	--	Unit shut down immediately, Input current form 0.285A decrease to 0A. After testing, no damaged, no hazards. Test time:10mins.
8.	Q2 Pin D-S	S-C	--	Unit shut down immediately, Input current form 0.285A decrease to 0A. After testing, no damaged, no hazards. Test time:10mins.
9.	T1 Pin 1-3	S-C	--	Unit shut down immediately, Input current form 0.285A decrease to 0A. After testing, no damaged, no hazards. Test time:10mins.
10.	T1 Pin 4-6	S-C	--	Unit shut down immediately, Input current form 0.285A decrease to 0A. After testing, no damaged, no hazards. Test time:10mins.
11.	T1 Pin 8-11	S-C	--	Unit shut down immediately, Input current form 0.285A decrease to 0A. After testing, no damaged, no hazards. Test time:10mins.
12.	D1	S-C	--	Unit shut down immediately, Input current form 0.285A decrease to 0A. After testing, no damaged, no hazards. Test time:10mins.
13.	U2 Pin 1-2	S-C	--	Unit shut down immediately, Input current form 0.285A decrease to 0A. After testing, no damaged, no hazards. Test time:10mins.
14.	U2 Pin 3-4	S-C	--	Unit shut down immediately, Input current form 0.285A decrease to 0A. After testing, no damaged, no hazards. Test time:10mins.

Supplementary information: Used abbreviations: S-C=short circuit, I/P=input current/input power.					
Test Condition No.	No.1	No.2	No.3	No.4	—
Temperature Rise dT of Part	dT (K)				Limit Max. dT (K)
Input wire (inside)	4.7	2.4	1.4	4.4	100
AC inlet inside	5.7	3.0	2.3	8.5	Ref.
AC connector CON1	14.0	6.3	6.0	15.6	Ref.
X-capacitor CX1	15.9	7.5	7.0	15.6	65
Varistor TVR1	16.5	7.2	6.8	13.9	50
RT1	27.0	10.7	9.9	31.0	Ref.
Winding of Line filter LF3	12.7	6.1	5.8	12.5	150
X-capacitor CX2	10.3	4.6	4.2	10.4	65
Winding of Line filter LF4	12.2	4.8	4.5	10.5	150
PCB under BD1	13.6	5.7	5.4	15.1	110
PCB under Q2	25.6	11.8	11.1	17.8	110
Electrolytic capacitor EC4	28.4	14.1	13.0	15.5	70
Winding of L1	22.9	11.7	11.3	18.9	150
Electrolytic capacitor EC7	15.9	6.6	6.4	12.4	70
T1 winding	39.5	15.6	14.5	22.2	150
T1 core	36.8	14.8	13.9	21.3	Ref.
T1 bobbin	26.4	11.0	10.3	17.9	Ref.
Y-capacitor CY1	16.2	6.7	6.4	12.8	90
Opto-coupler U2	13.0	5.3	5.1	10.5	65
PCB under D1	25.5	9.0	8.3	10.5	110
Winding of LF2	15.6	5.4	5.4	10.3	150
CON2	15.6	5.8	5.7	11.2	Ref.
PCB near USB (on USB board)	9.4	6.2	5.4	27.9	110
PCB near heat sink (on control board)	29.9	21.8	19.4	11.1	110
Speaker wire	8.4	8.1	5.4	7.4	45
Enclosure inside near USB board	3.6	1.8	1.8	7.0	90
Enclosure inside near transformer	7.7	4.0	4.1	6.0	90
Enclosure outside /control panel	2.1	1.6	0.8	8.9	65
Enclosure outside near AC inlet	4.6	2.6	2.4	7.1	65
Enclosure outside near USB connector	3.7	1.8	1.7	5.3	65
Enclosure outside near audio output	1.4	1.5	0.4	14.6	65
Ambient (°C)	22.8	24.8	24.5	24.5	--
Winding temperature rise measurements					

Ambient temperature t1 (°C)	--	--	--	--	—
Ambient temperature t2 (°C)	--	--	--	--	—
Temperature rise Dt of winding:	R ₁ (Ω)	R ₂ (Ω)	Dt (K)	Limit max (K)	Insulation class
--	--	--	--	--	--
Notes: /					

13.3&13.4 TABLE: Clearance and Creepage Distance Measurements **P**

Rated supply	100-240Vac	Pollution degree ..	II	Material	IIIa or IIIb	
2 N force on internal parts applied:			Component			
30 N force on outside of conductive enclosure applied:			Wood enclosure			
clearance and creepage distance at/of:	Working voltage (V)		Clearance (mm)		Creepage (mm)	
	U peak	U r.m.s.	Required	Measured	required	Measured
Between two poles of fuse F1 (BI)	<250	<420	2.0	>2.0	2.5	>2.5
Between L and N terminal (BI)	<250	<420	2.0	>2.0	2.5	>2.5
Two terminal of capacitor CY1 (RI)	<250	<420	4.0	>4.0	5.0	>5.0
Two terminal of Opto-coupler U2 (RI)	<250	<420	4.0	>4.0	5.0	>5.0
Secondary component D1 to core of transformer T1(SI)	<250	<420	2.0	>2.0	2.5	>2.5
Primary trace to secondary trace across the PCB (RI)	<250	<420	4.0	>4.0	5.0	>5.0
Transformer T1 primary to secondary(RI)	<250	<420	4.0	7.5	5.0	7.5
Transformer T1 primary to core (BI)	<250	<420	2.0	>2.5	2.5	>2.5
Transformer T1 secondary to core (SI)	<250	<420	2.0	>2.5	2.5	>2.5

Supplementary information:

- 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.
- 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.
- 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 .
“Min” = minimum required. “Actual = Actual dimensions measured.
- BI=Basic insulation; SI=Supplementary insulation; RI=Reinforce insulation
- Triple insulated wire used for secondary winding of the transformer T1, Core of T1 considered as primary part.

14 TABLE: Critical components information **P**

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity*)
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Plug	Shenzhen Xiekang Electric Co., Ltd.	XK-01	2.5A, AC 250V	DIN VDE 0620, EN 50075	VDE:40009009
(Alternate)	Interchangeable	Interchangeable	2.5A, AC 250V	DIN VDE 0620, EN 50075	VDE
Power cord	Shenzhen Xiekang Electric Co., Ltd.	H03VVH2-F	2x 0.5 mm ² or 2 x 0.75mm ²	DIN VDE 0281-5, VDE 0281	VDE: 40029225
(Alternate)	Interchangeable	H03VVH2-F	2x 0.5 mm ² or 2 x 0.75mm ²	DIN VDE 0281-5, VDE 0281	VDE
Cord set	Shenzhen Xiekang Electric Co., Ltd.	XK-05	AC 250 V, 2.5 A	DIN EN 60320-1	VDE 40018650
(Alternate)	Interchangeable	Interchangeable	AC 250 V, 2.5 A	DIN EN 60320-1	VDE
Plastic enclosure	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	AG15A1	HB, 60°C Min. thickness 0.75mm	UL94, UL746	UL: E162823
Wood enclosure	Interchangeable	Interchangeable	Min. thickness 6.0 mm.	EN 60065	Test with appliance
AC inlet	Zhejiang LECI Electronics Co., Ltd	DB-8	250VAC, 2.5A; 250VAC, 5A, T105	EN 60320-1 UL 60320-1	VDE: 40032028 UL: E302229
Internal Lead-Acid battery	FLYING POWER (JIANGXI) CO., LTD	GS12V7AH	12Vdc, 7Ah	UL 1989	UL MH27904
PCB	CITY RIA MFG CO	FG-114	V-0, 130°C	UL94 UL796	UL: E78769
(Alternate)	Interchangeable	Interchangeable	V-0 or better, Min.130°C	UL94 UL796	UL
Heat shrinkable tube	DONGGUAN QUANTAI INDUSTRIAL CO LTD	T-2	flexible heat-shrinkable polyolefin tubing, min.300V, 125°C, VW-1	UL 224	UL E227336
(Alternate)	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR	flexible heat-shrinkable polyolefin tubing, min.300V, 125°C, VW-1	UL 224	UL E203950
Internal primary lead wire	Interchangeable	1672	105 °C, 300V, min. 18AWG	UL758	UL

Internal secondary wires	Interchangeable	Interchangeable	80 °C, 300V, min. 24AWG	UL758	UL
LEDs 1	Y.LIN ELECTRONICS CO., LTD.	3528 Cool White SMD	IF=20Ma, VF=2.8-3.4V	IEC 62471	Report No.: ED181225022L
LEDs 2	Y.LIN ELECTRONICS CO., LTD.	5050 Red/Green/Blue SMD	1.8-2.4V, 25Ma for red LED; 2.8-3.6V, 25Ma for green and blue LED	IEC 62471	Report No.: ED181225022L
LEDs 3	Y.LIN ELECTRONICS CO., LTD.	7070 Red/Green/Blue SMD	2.8-3.8V, 350Ma for blue LED; 2.8-3.6V, 350Ma for green and 1.8-2.6V, 350Ma for red LED	IEC 62471	Report No.: ED181225022L
Woofer speaker	Interchangeable	Interchangeable	Two speaker provided, each 2 ohm, 35W.	IEC 60065	Tested with appliance
Tweeter speaker	Interchangeable	Interchangeable	Two speaker provided, each 8 ohm, 10W.	IEC 60065	Tested with appliance
AC connector	ZHEJIANG JINDA ELECTRONICS CO LTD	3.96T-02	250Vac, 5A	UL1977	UL E237523
Fuse (F1)	XC ELECTRONICS (SHENZHEN)CORP LTD	5TE-Serie(s); 3T	T5AL, 250Vac	UL 248-1, EN 60127-1, EN 60127-3	VDE:40036821
X2-capacitor (CX1) (CX2) (Optional)	HSUAN TAI ELECTRONICS CO LTD	MCY	AC 275V, Max. 0.22uF, 110°C	EN60384-14; IEC60384-14	VDE: 125205
(Alternate)	WINDAY ELECTRONIC (DONG GUAN) CO LTD	MPX	AC 275V, Max. 0.22uF, 110°C or 100°C	EN60384-14; IEC60384-14	VDE: 40018071
(Alternate)	TENTA ELECTRIC INDUSTRIAL CO LTD	MEX	AC 275V, Max. 0.22uF, 100°C	EN60384-14; IEC60384-14	VDE: 119119
(Alternate)	SHENZHEN SURONG CAPACITORS CO LTD	MPX/MKP	AC 280V, Max. 0.22uF, 110°C or 100°C	EN60384-14; IEC60384-14	VDE: 40008924
(Alternate)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	MPX	AC 275V, Max. 0.22uF, 110°C	EN60384-14; IEC60384-14	VDE: 40034679
Optocoupler	EVERLIGHT ELECTRONICS CO LTD	EL817	Dti=0.5mm, Int. dcr=6.0mm, Ext. dcr=7.7mm, 110°C	UL 1577, IEC 60747-5-2	VDE: 132249
(Alternate)	LITE-ON TECHNOLOGY CORP	LTV-817	Dti=0.5mm, Int. dcr=6.0mm, Ext. dcr=7.7mm, 110°C	UL 1577, IEC 60747-5-2	VDE:40015248
Y1 Capacitor	SHENZHEN	HT	400Vac, max.	IEC 60384-14	VDE: 40029300

(CY1)	HAOTIAN ELECTRONIC CO LTD		2200pF, 125°C, Y1 type		
(Alternate)	JYH CHUNG ELECTRONICS CO LTD	JD	400Vac, max. 2200pF, 125°C, Y1 type	IEC 60384-14	VDE:137027
(Alternate)	XIAMEN WANMING ELECTRONICS CO LTD	HJ	400Vac, max. 2200pF, 125°C, Y1 type	IEC 60384-14	VDE: 40034438
(Alternate)	SHANTOU HIGH- NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	CD	400Vac, max. 2200pF, 125°C, Y1 type	IEC 60384-14	VDE: 40025754
(Alternate)	ZONKAS ELECTRONIC CO.,LTD	ZD	Min. AC 400V, Y1 type, Max. 2200pF, 125°C.	IEC60384-14	VDE: 40017350 40020372
Electrolytic Capacitor	Interchangeable	Interchangeable	Min. 100uF, Min. 400V, Min. 105°C	EN 60065	Test with appliance
Bleeder resistors (R5, R7,R8,R38)	Interchangeable	Interchangeable	Max. 1MΩ, 1/4W	EN 60065	Test with appliance
Rectifier Bridg	Interchangeable	Interchangeable	BD1, min. 800V, min.6A.	EN 60065	Test with appliance
Limiting current resistor	Interchangeable	Interchangeable	R23~R27:min.1.5Ω , min.1/4W;R28, R31: min.1.5Ω, min.1/4W	EN 60065	Test with appliance
Line filter (LF3)	SHENZHEN CENKER ENTERPRISE LTD	CK TC100604- 5uH/Min-A2696	Min. 5UH, 130°C	EN 60065	Tested with appliance
-Bobbin	CHANG CHUN PLASTICS CO., LTD	T375HF	Phenolic, V-0, 150°C, Min. 0.45mm thickness	UL 94, UL 746C	UL: E59481
-Magnet wire	DONG GUAN YIDA INDUSTRIAL CO LTD	2UEW/130	Polyurethane, 130°C	UL 1446	UL: E344055
-Varnish	JIAXING HONGTONGYAYE INSULATING MATERIALS CO LTD	844@	Rated 180°C	UL 1446	UL: E315411
Line filter (LF4)	SHENZHEN HUA XINGJINGCHENG ELECTRONIC TECHNOLOGY CO..LTD	ET24-15MH	Min. 15mH, 130°C	EN 60065	Tested with appliance
-Bobbin	CHANG CHUN PLASTICS CO., LTD	T375HF	Phenolic, V-0, 150°C, Min. 0.45mm thickness	UL 94, UL 746C	UL: E59481

-Magnet wire	SHANTOU SHENGANG ELECTRICAL INDUSTRIAL CO LTD	2UEW /130	Copper magnet wire, Min. 130°C	UL 1446	UL: E239508
-Varnish	JIAXING HONGTONGYAYE INSULATING MATERIALS CO LTD	844@	Rated 180°C	UL 1446	UL: E315411
Transformer (T1)	SHENZHEN CENKER ENTERPRISE LTD.	FDPOW012-02	Class B	EN 60065	Test in appliance
--Bobbin material	CHANG CHUN PLASTICS CO LTD	T375HF	Phenolic, V-0, 150°C, Min. 0.75mm thickness	UL 94, UL 746C	UL E59481
--Magnet wire	DONG GUAN YIDA INDUSTRIAL CO LTD	2UEW/130	130 °C	UL 1446	UL E344055
-Triple insulated wire	DONGGUAN KOSHEN INSULATOR CO.,LTD	TIW-B	Secondary winding, reinforced insulation, 130°C	UL 2353	UL E365580
- VARNISH	JIAXING HONGTONGYAYE INSULATING MATERIALS CO LTD	844@	Rated 180°C	UL 1446	UL: E315411
- TEFLON TUBE	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-L	150V, 200 °C, VW-1	UL 224	UL: E180908
-TAPE	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO.,LTD	CT*(c)(g)	130°C	UL 510	UL: E165111

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

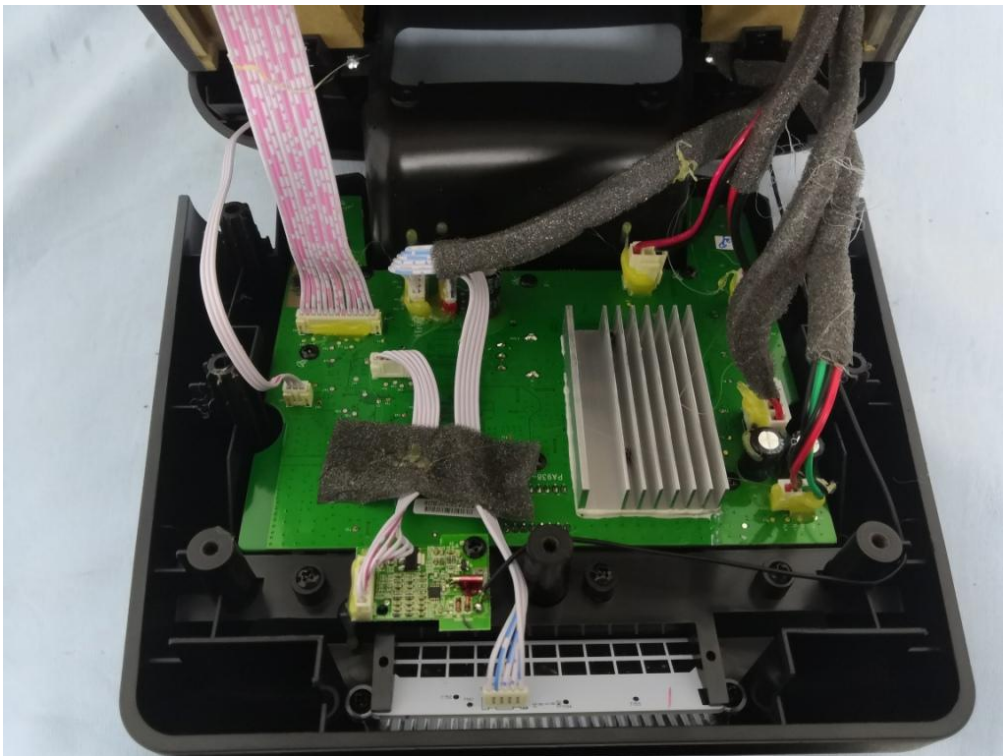


Photo 13



Photo 14



Photo 15

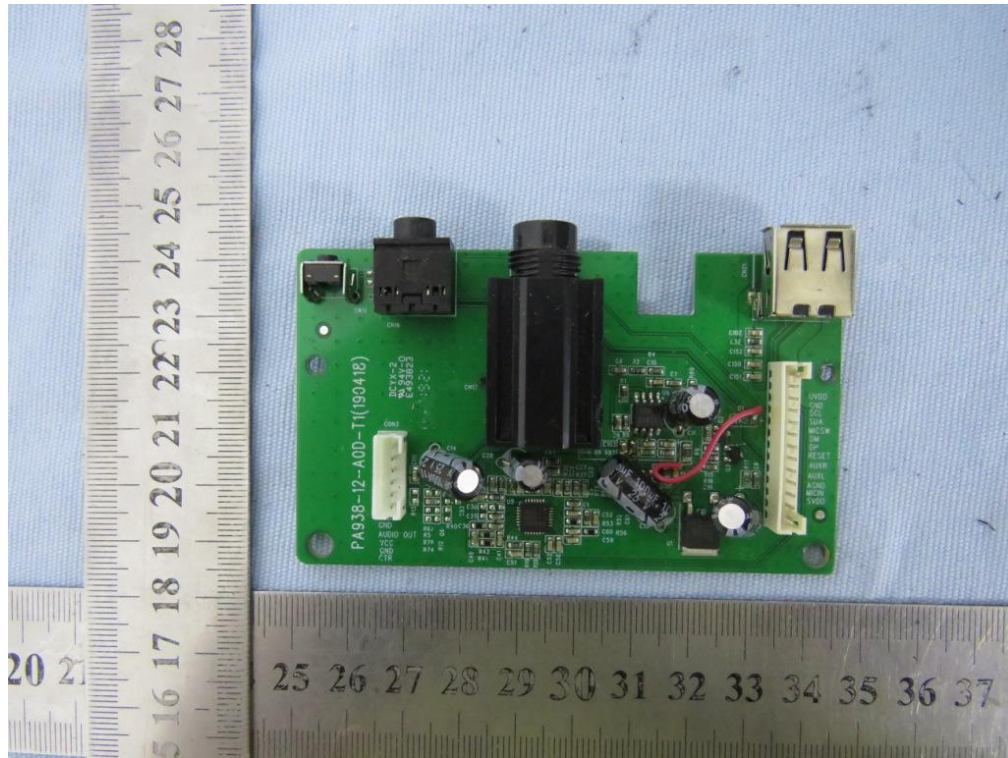


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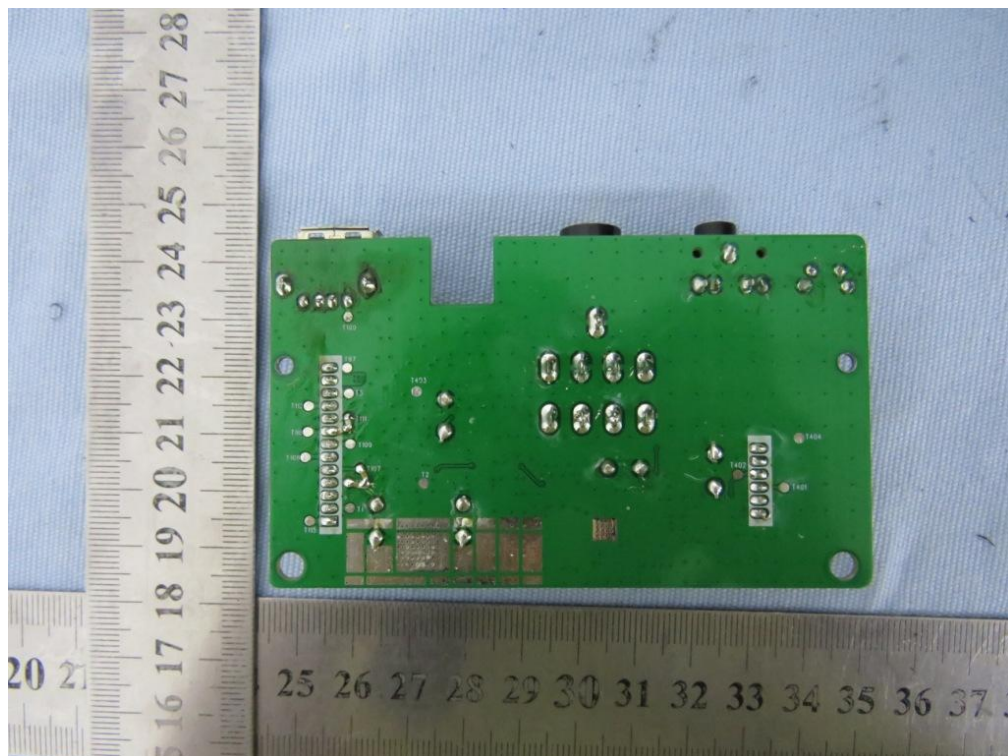


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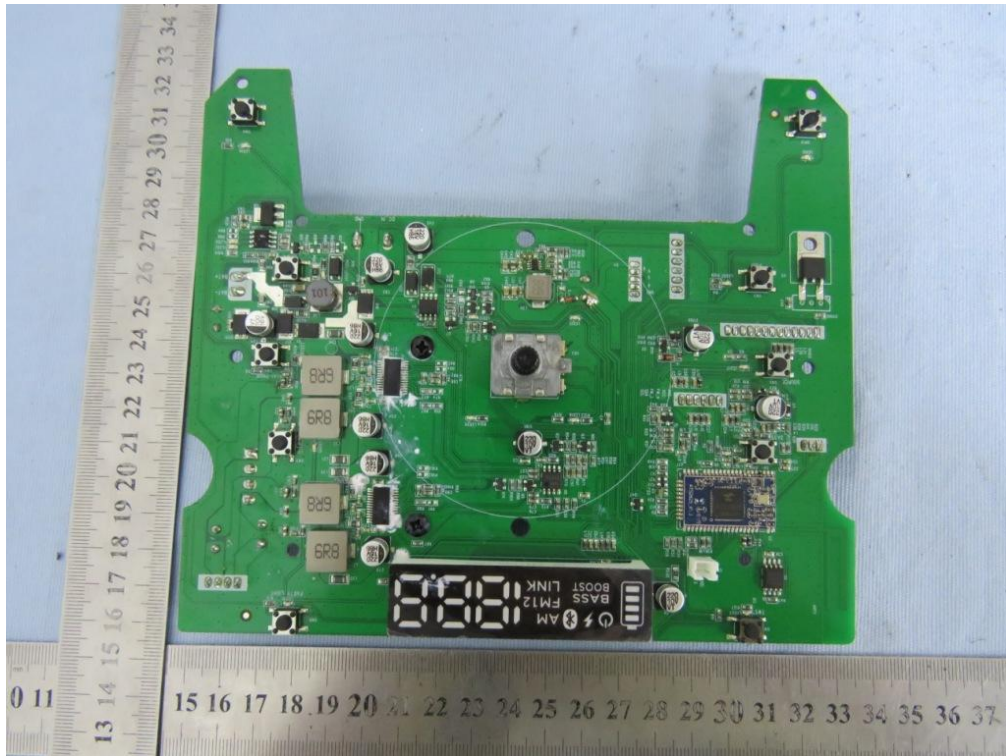


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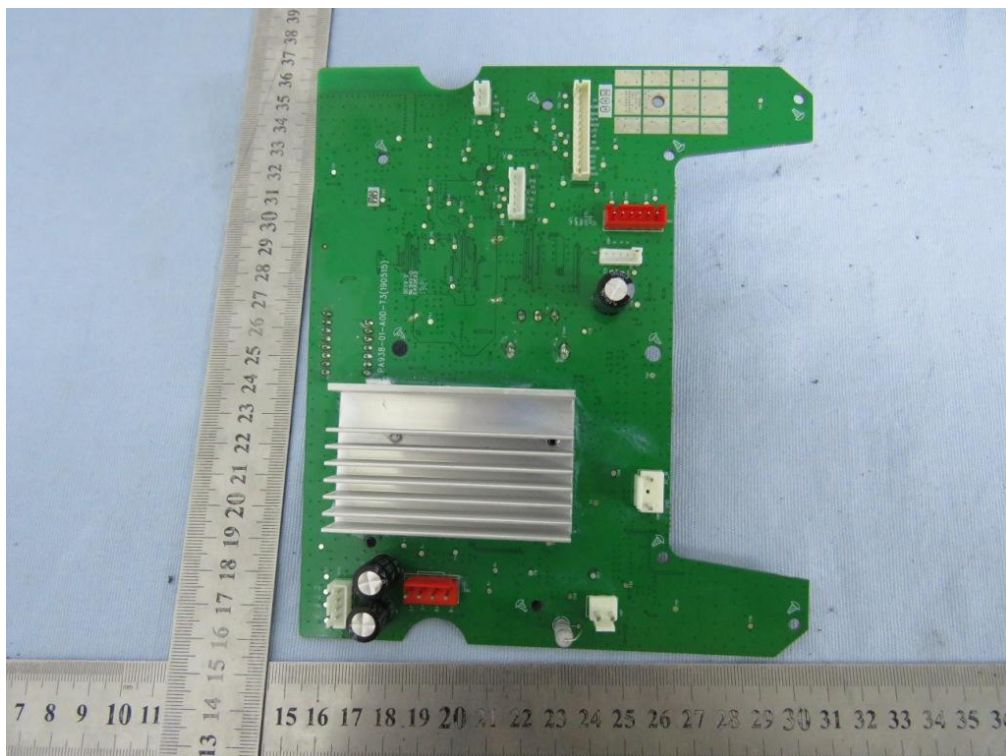


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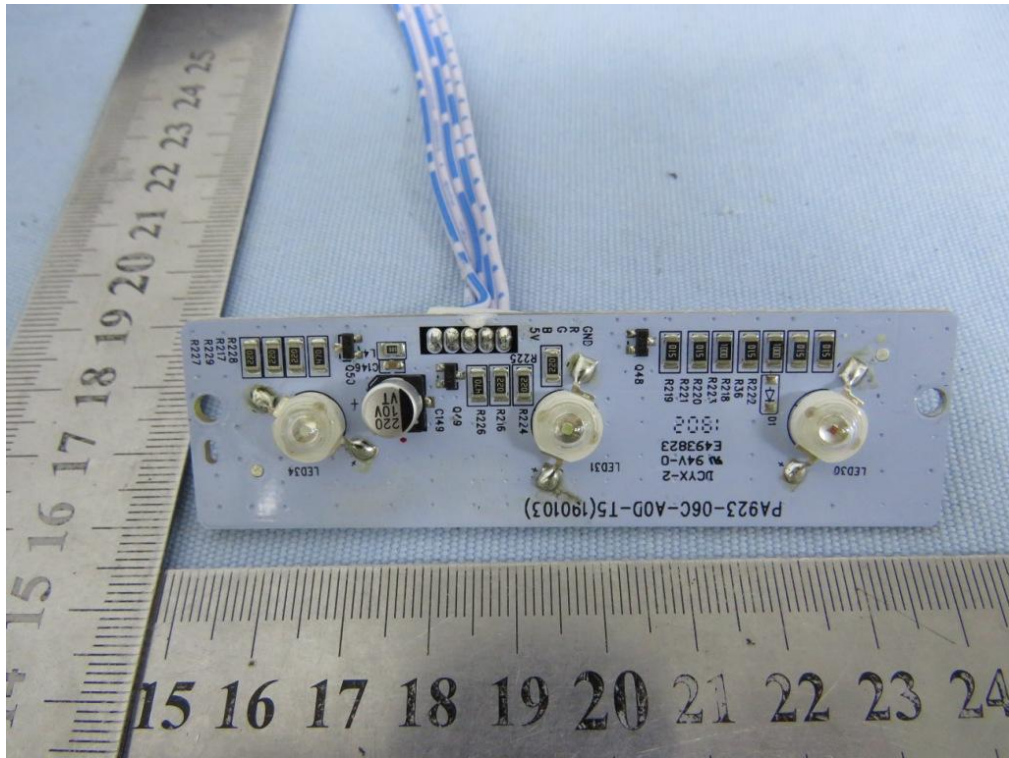


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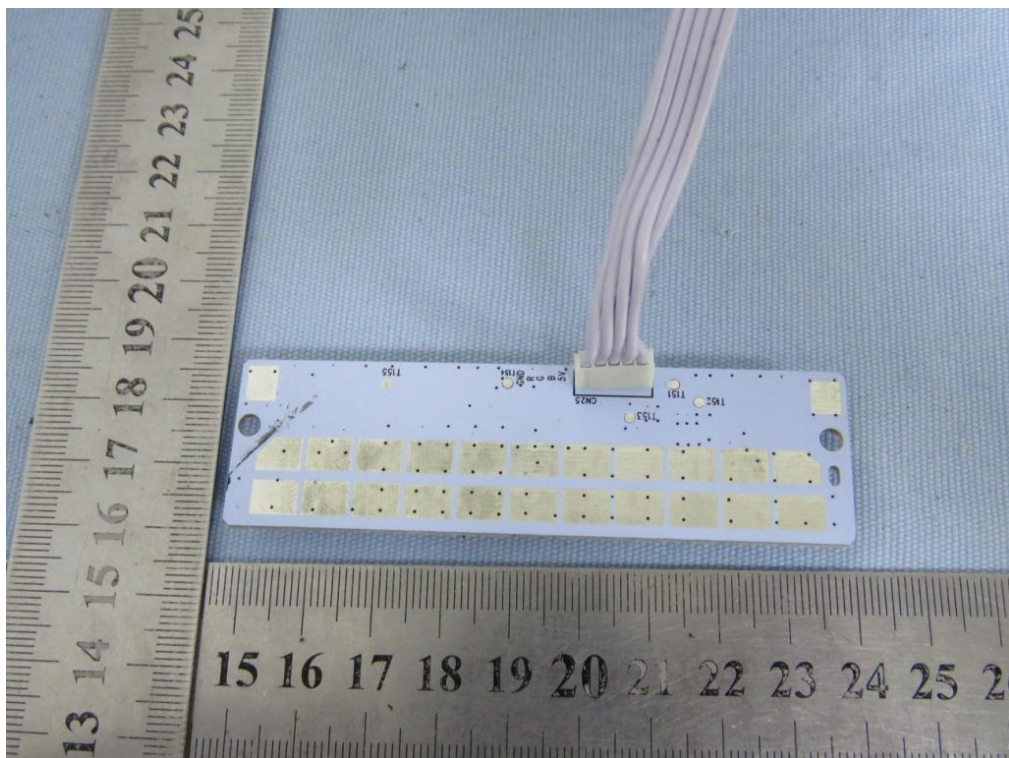


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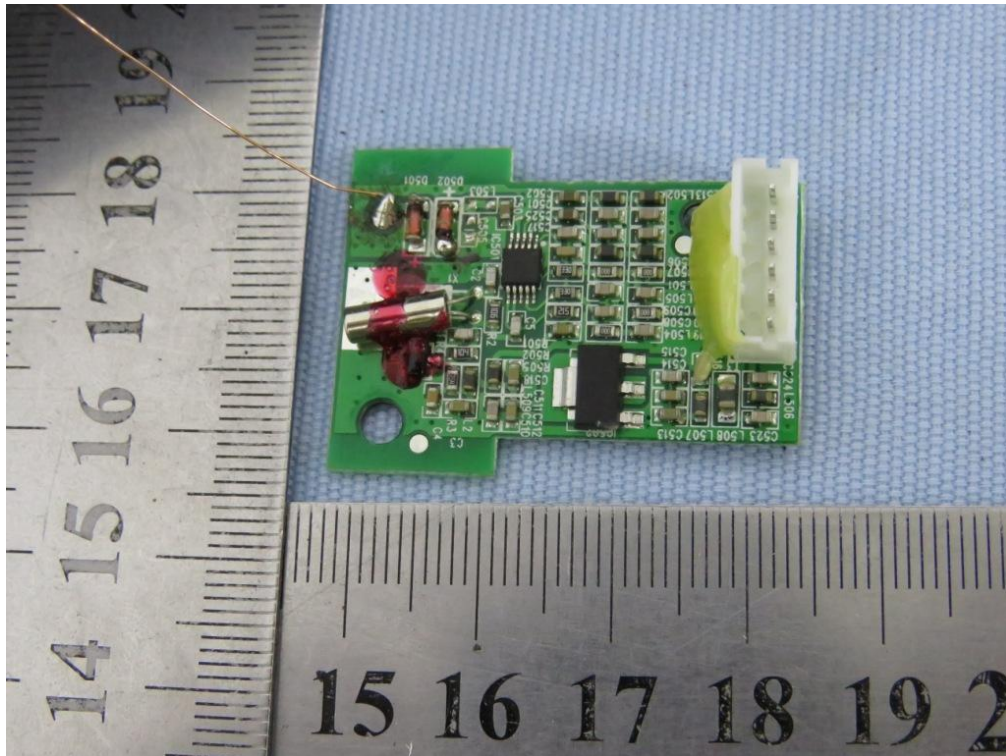


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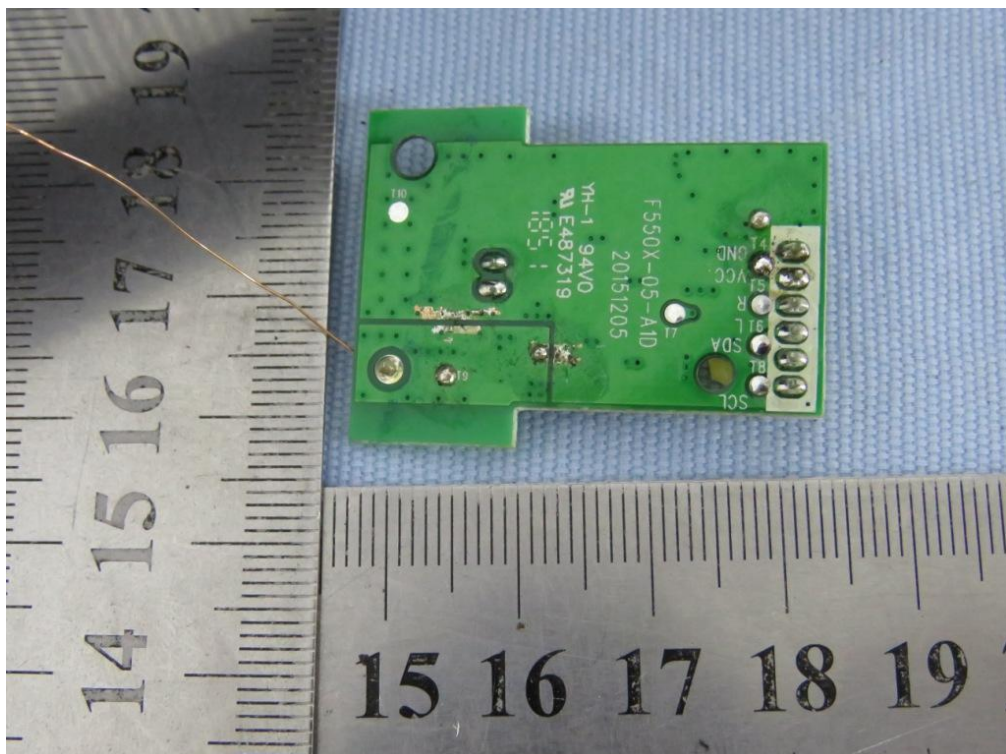


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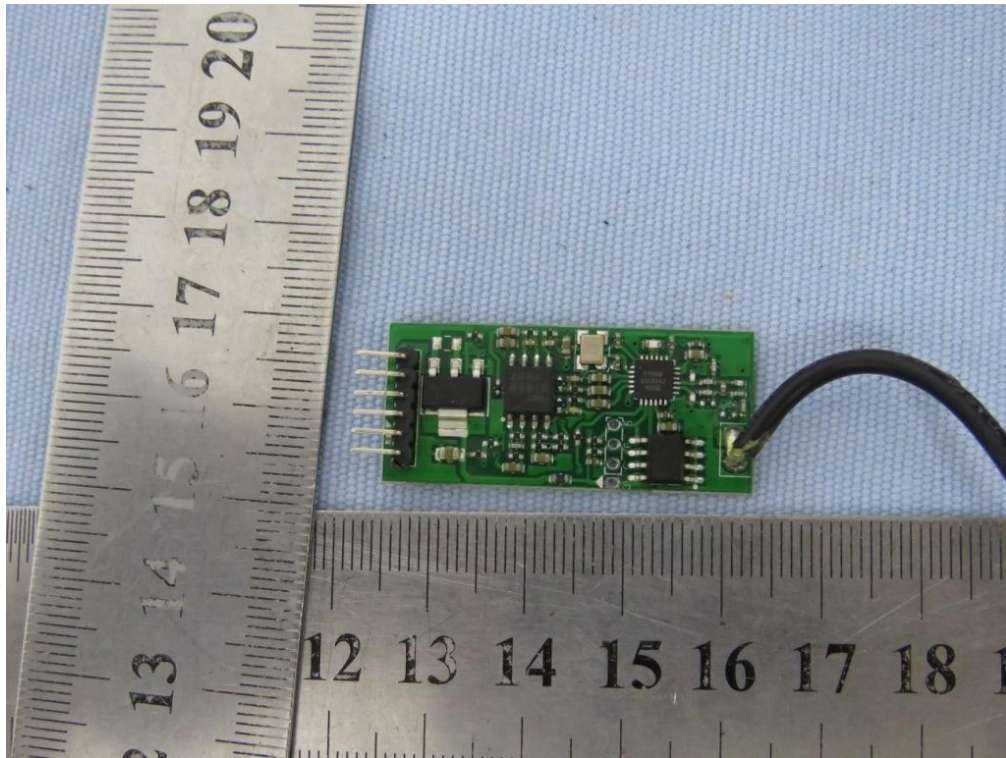


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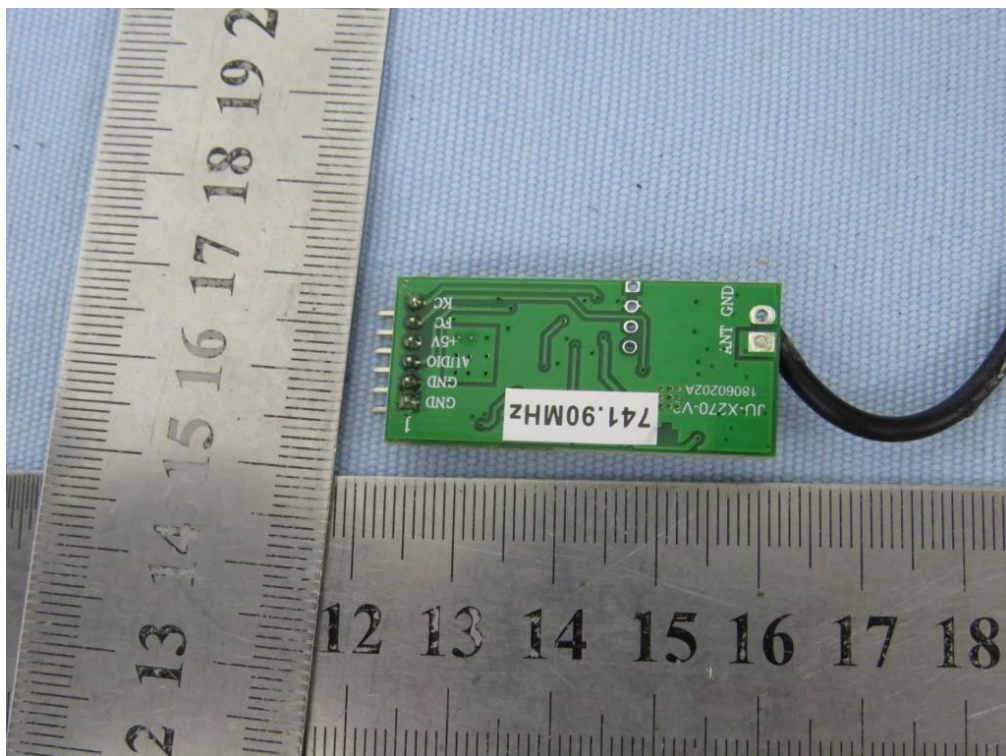


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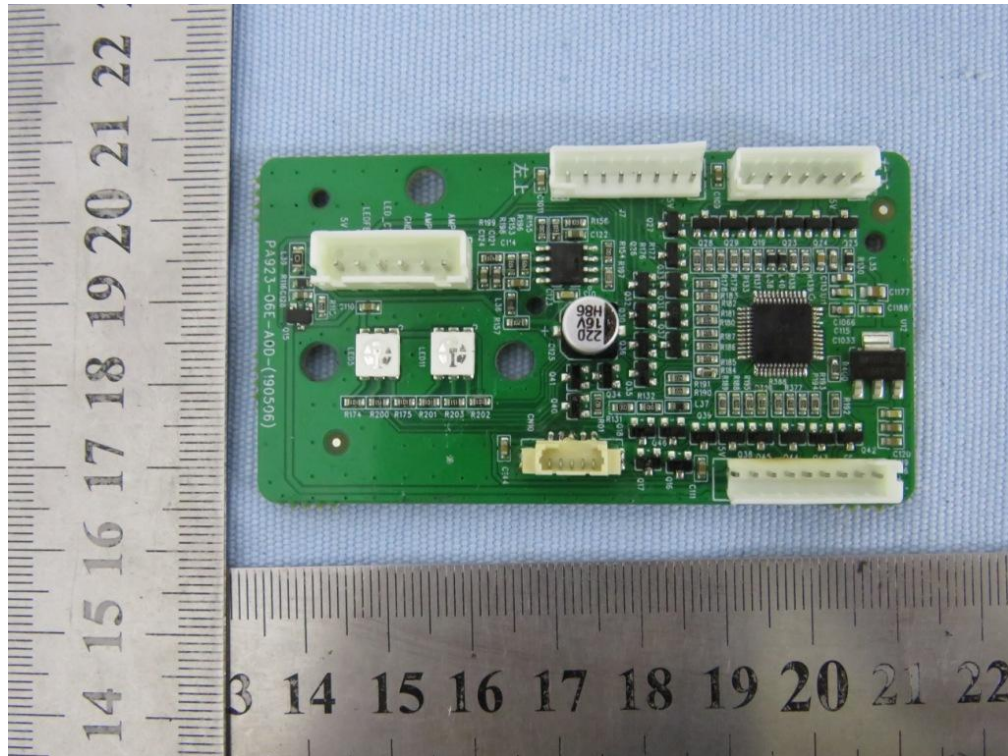


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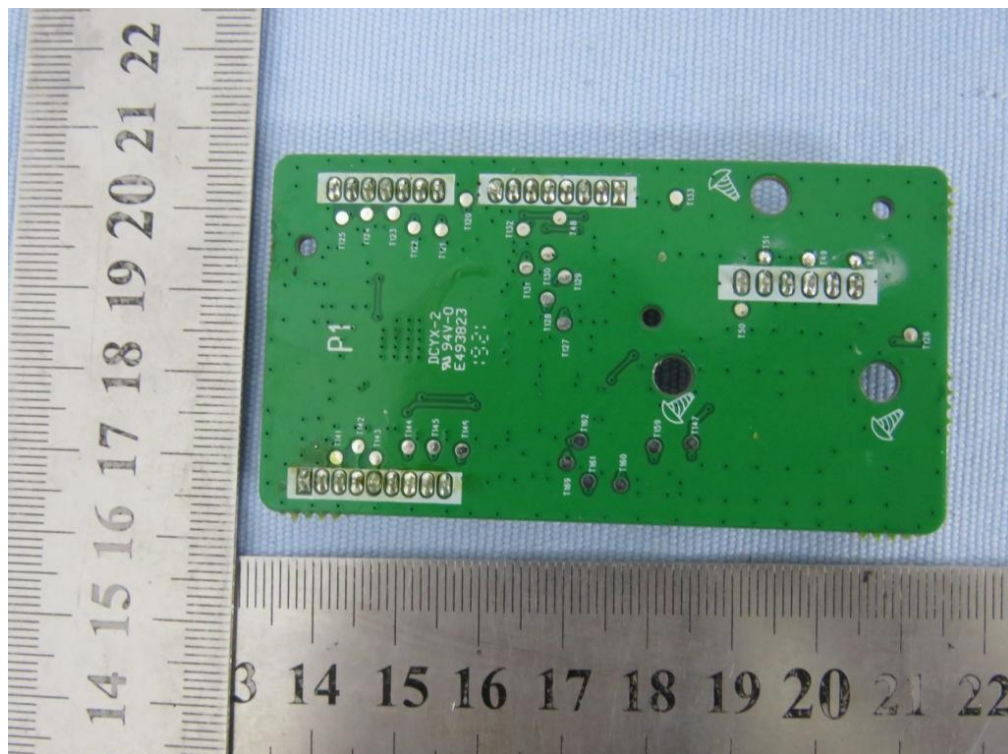


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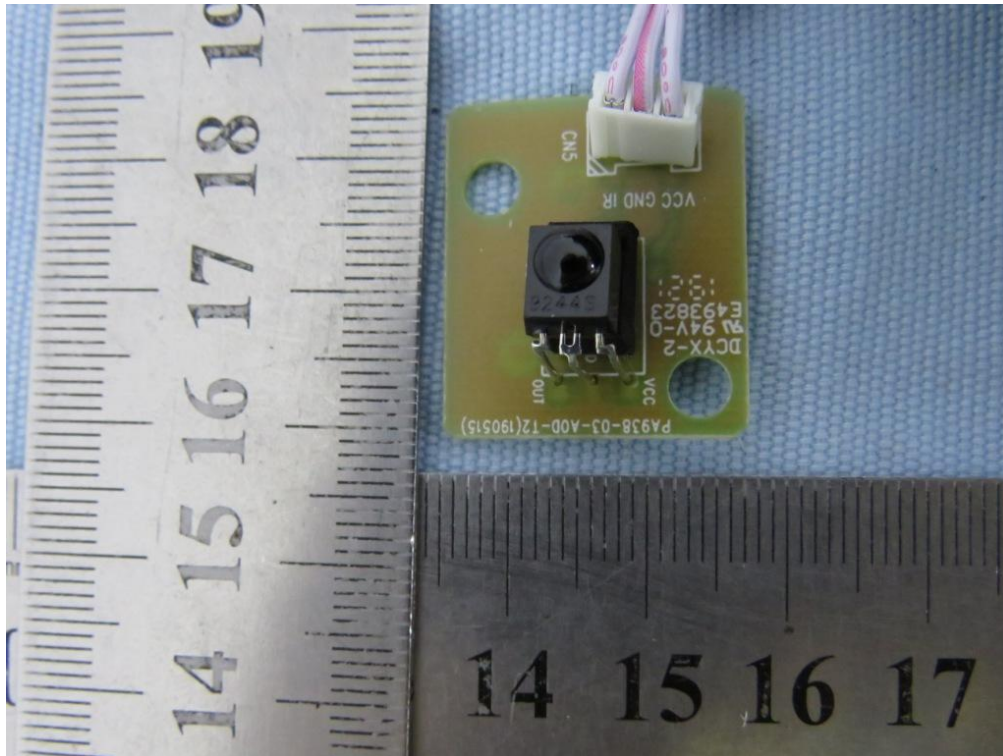


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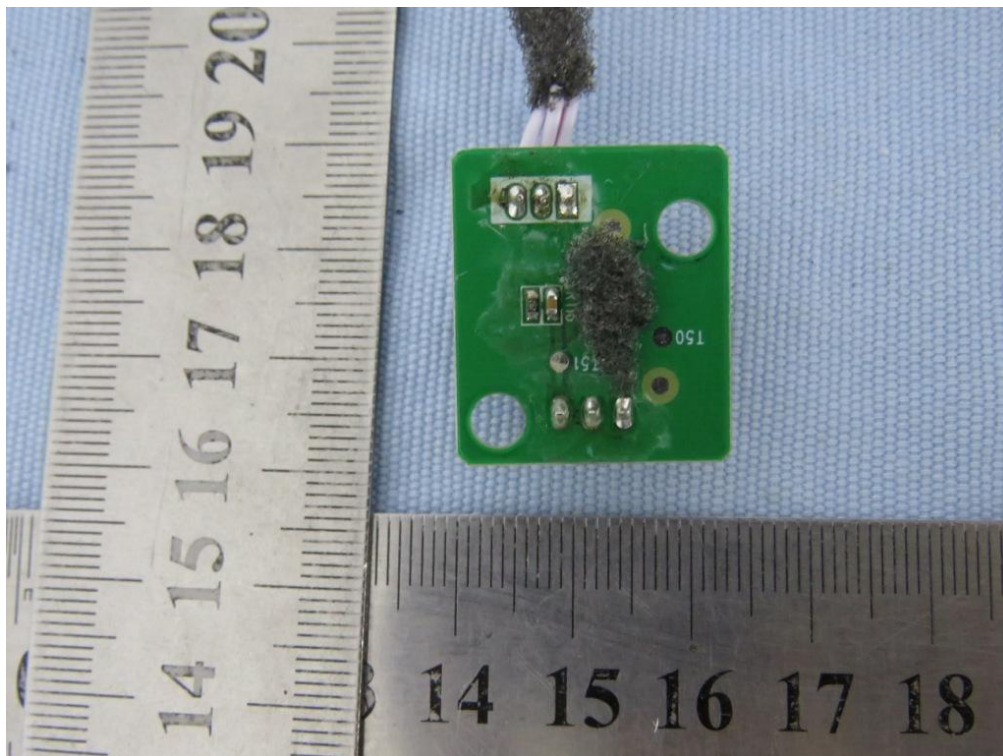


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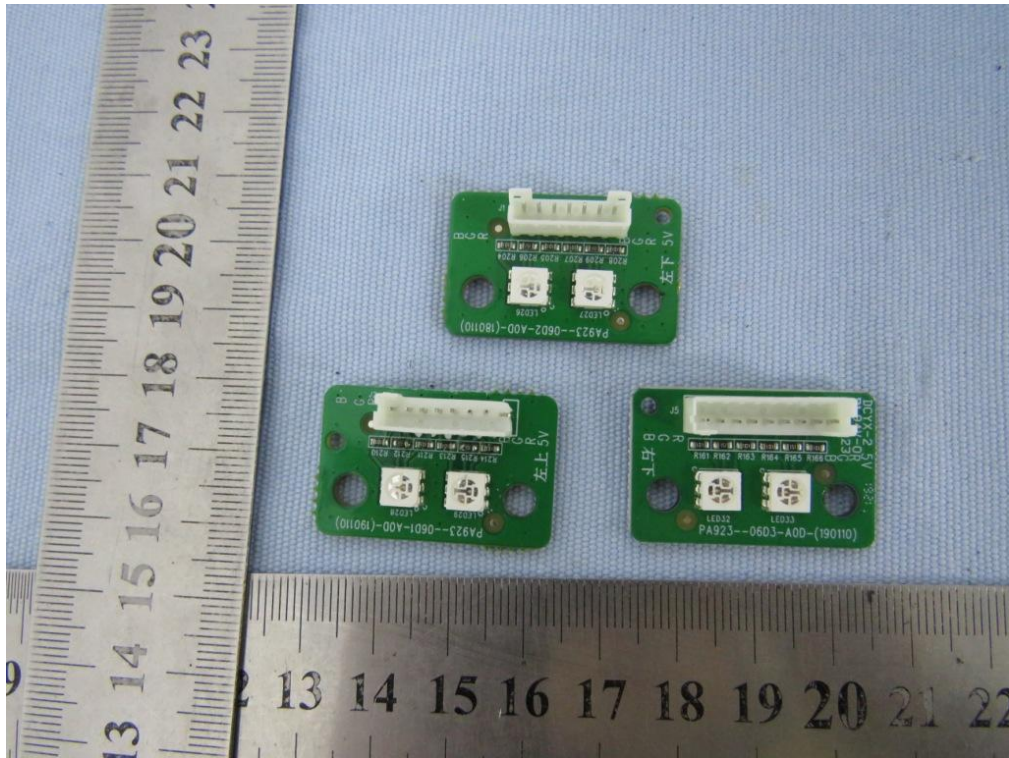


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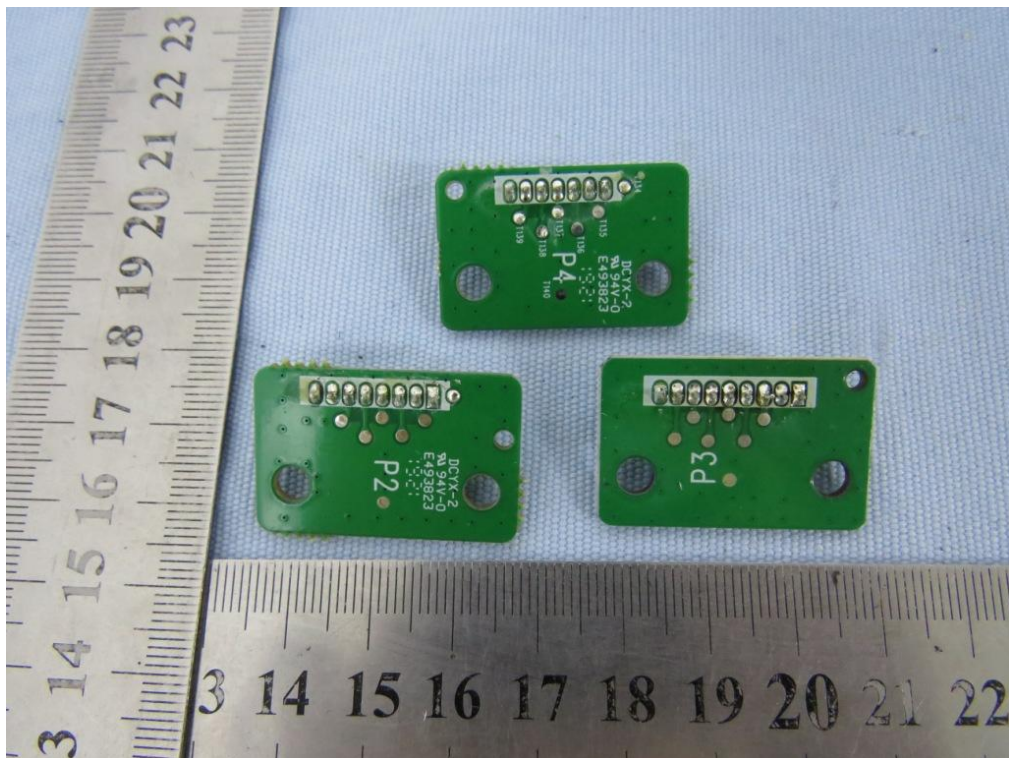


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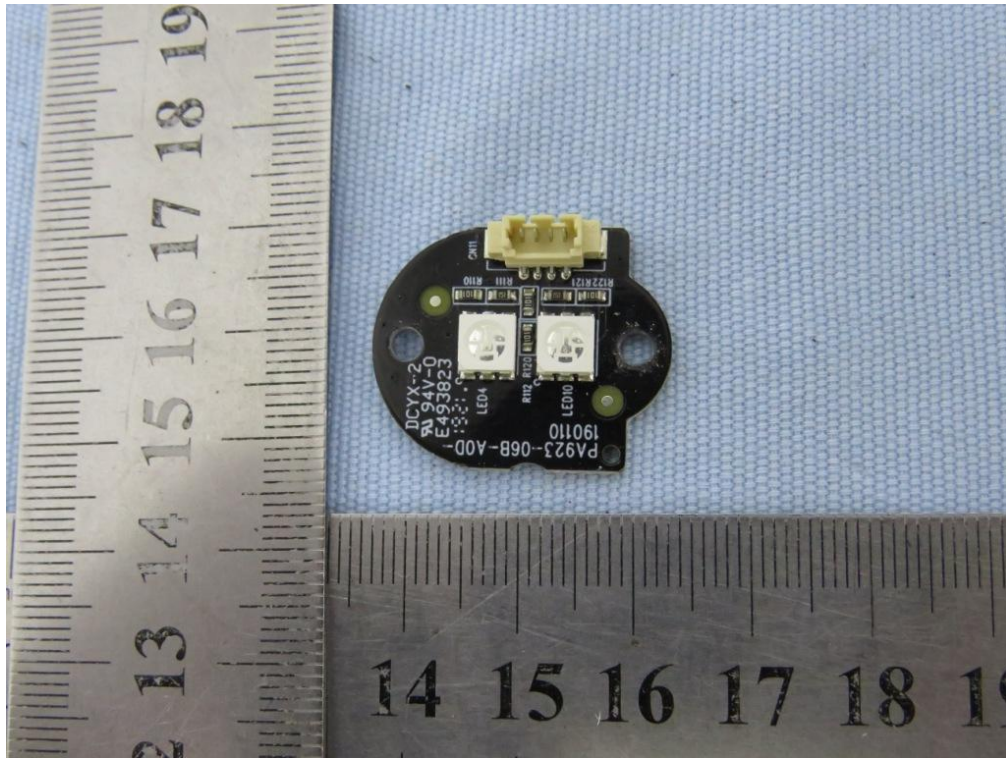


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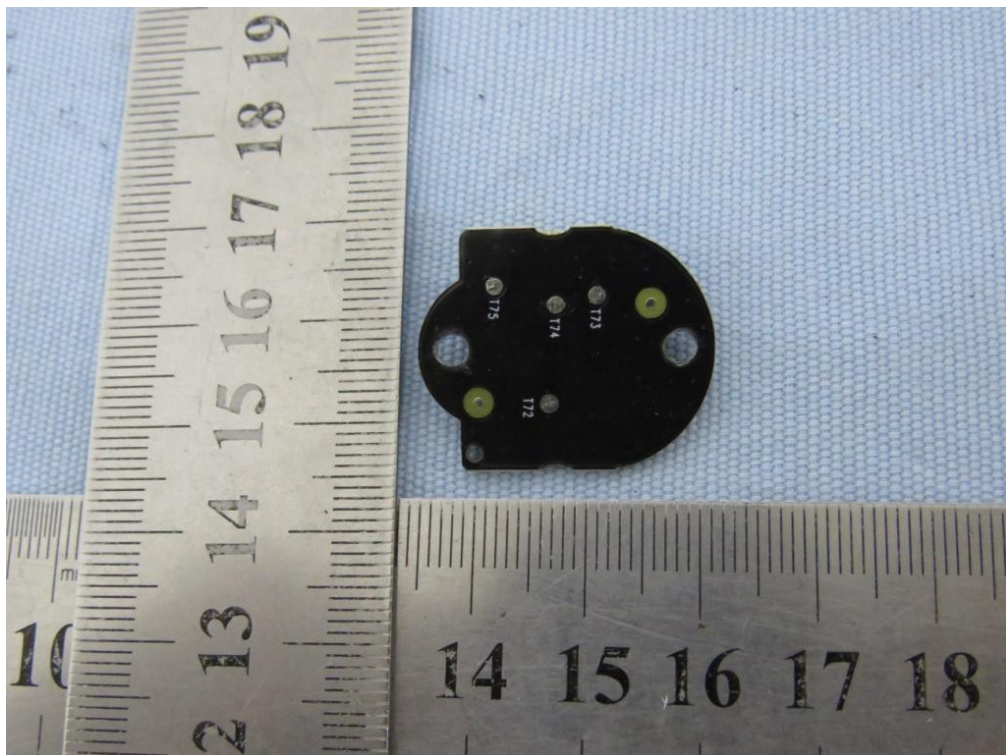


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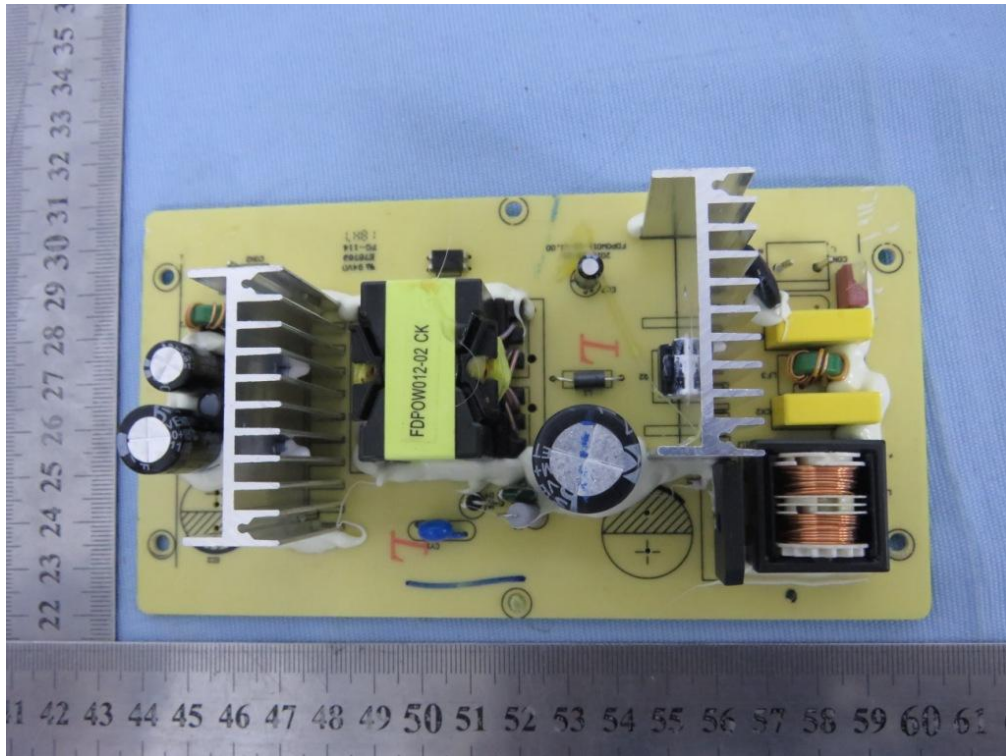


Photo 34

