

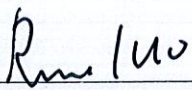
TEST REPORT

Applicant : SHENZHEN FENDA TECHNOLOGY CO., LTD.
Address : Fenda Hi-Tech Park, Zhoushi Road, Shiyan Town, Baoan District, Shenzhen City, Guangdong, China
Manufacturer : SHENZHEN FENDA TECHNOLOGY CO., LTD.
Address : Fenda Hi-Tech Park, Zhoushi Road, Shiyan Town, Baoan District, Shenzhen City, Guangdong, China
Product Name : 5.1 Multimedia Speaker
Trade Mark : F&D
Model No. : F2300X, F2300BT, F2300U, F2300BTU
Ratings : 220-240V~ 50/60Hz, 0.32A
Standard : Audio, Video and Similar Electronic Apparatus: Safety Requirements
EN 60065:2002+A1:2006+A11:2008+A2:2010+ A12:2011

Date of Receiver : October 29, 2014
Date of Test : October 29, 2014 to November 07, 2014
Date of Issue : November 11, 2014
Test Report Form No : NTCS-IEC60065-A1-E
Test Result : Pass *

This Test Report is Issued Under the Authority of :

Compiled by


Ryan Luo/ Engineer



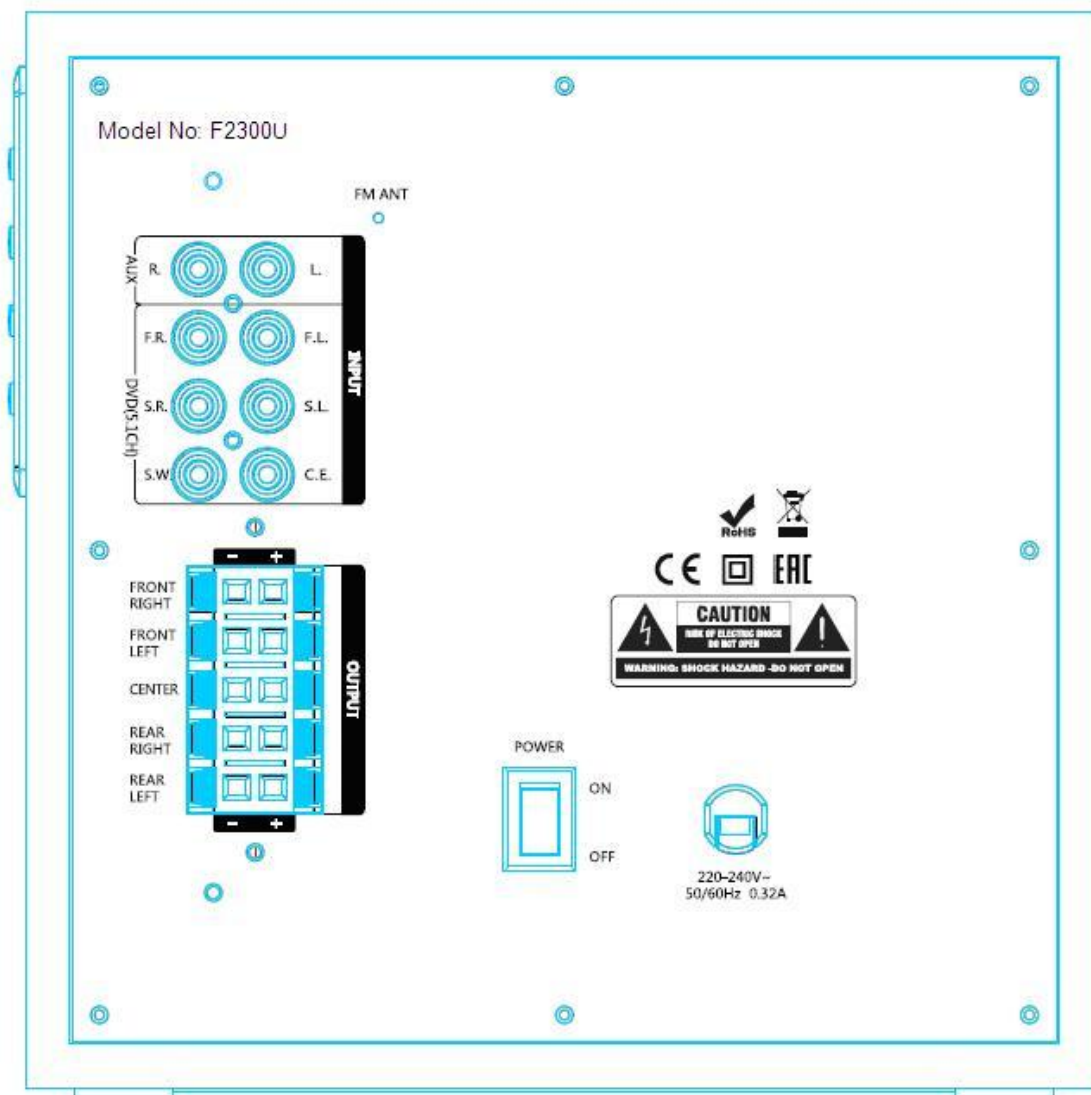
Han Song / Manager

*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)

For model F2300U example label showing below:



Note:

- Marking label was stucked on rear external enclosure.
- The above marking are the minimum requirements required by the safety standard. For the final production sample, the marking which do not give rise to misunderstanding may be add.
- The other models are identical to this model except for the model name and brand name.

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	5.1 Multimedia Speaker
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/A (Not Applicable)
- test object does meet the requirement	P (Pass)
- test object does not meet the requirement	F (Fail)
General remarks:	
<p>"(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report. Throughout this report a comma is used as the decimal separator.</p> <p>1.</p>	
General product information:	
<p>1. The product covered by this report is 5.1 Multimedia Speaker for Audio, Video and similar electronic apparatus., It is considered as movable,</p> <p>2. The all models have same construction and principle of circuits, Class II equipment, only the model name, trademark and appearance of colour different for marketing purpose. all test were performed on model F2300U to represent the other model.</p> <p>3. The product is to be used under:</p> <ul style="list-style-type: none">— Maximum operating temperature: +35°C.— Altitude less than 2000m.— Indoor used only.	

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
3	General requirements		P
	Safety class of the apparatus	Class II	P
4	General test conditions		P
4.1.4	Ventilation instructions require the use of the test box.	Not used, according to user instructions.	N/A
5	Marking and instructions		P
	Comprehensible and easily discernible	No misunderstanding	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
5.1	a) Identification, maker	See marking plate	P
	b) Model number or type reference	See marking plate	P
	c) Class II symbol if applicable	See marking plate	P
	d) Nature of supply	~	P
	e) Rated supply voltage	220-240V~	P
	f) Mains frequency if safety dependant	50/60Hz	P
	g) Rated current or power consumption for apparatus supplied by supply apparatus for general use	The apparatus is connection to an a.c mains supply	N/A
	Measured current or power consumption		N/A
	Deviation % (max 10%)		N/A
	h) Rated current or power consumption for apparatus intended for connection to an a.c. mains supply.:	0.32A	P
	Measured current or power consumption	See appended table 7.1	P
	Measured current or power consumption for Television set		N/A
	Deviation % (max 10%)	Not exceed 10%	P
5.2	a) Earth terminal	Class II equipment.	N/A
	b) Hazardous live terminals	No such terminals.	N/A
	c) Markings on supply output terminals		N/A
5.3	a) Use of triangle with exclamation mark	Symbol provided at appropriate sections of the circuit diagram.	P

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
	b) marking on loudspeaker grille, IEC 60417-5036	No such construction	N/A
5.4	Instructions for use	Evaluated the user manual in English version. The manufacturer commits to provide them in the language of the countries where the product will be distributed.	P
5.4.1	a) Mains powered equipment not exposed to dripping or splashing. Warning concerning objects filled with liquid, etc.	Provided in the user manual.	P
	b) Hazardous live terminals, instructions for wiring	No live terminals.	N/A
	c) Instructions for replacing lithium battery	No lithium battery	N/A
	d) Class I earth connection warning	Class II equipment.	N/A
	e) Instructions for multimedia system connection	Described in the user manual.	P
	f) Special stability warning for attachment of the apparatus to the floor/wall	No special fixed installation necessary.	N/A
	g) Warning: battery exposure to heat	Provided in the user manual.	P
	h) Warning: protective film on CRT face	No such device.	N/A
5.4.2	a-b) Disconnect device: plug/coupler or all-pole mains switch location, accessibility and markings	The mains plug is used as disconnect device, the statement was provided in the user's	P
	c) Instructions for permanently connected equipment	The EUT is non-permanently connected equipment.	N/A
	Marking, signal lamps or similar for completely disconnection from the mains	No such device.	N/A
6	Hazardous radiation		N/A
6.1	Ionizing radiation < 36 Pa/kg (0,5 Mr/h)	No Ionizing radiation	N/A
	Ionizing radiation under fault condition	No Ionizing radiation	N/A
6.2	Laser radiation, emission limits to IEC 60825-1:2007	Class I laser	N/A
	Emission limits under fault conditions	Class I laser	N/A
7	Heating under normal operating conditions		P
7.1	Temperature rises not exceeding specified values; fuse links and other protective devices defeated	See appended table 7.1	P
7.1.1	Temperature rise of accessible parts	See appended table 7.1	P
7.1.2	Temperature rise of parts providing electrical insulation	See appended table 7.1	P

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
7.1.3	Temperature rise of parts acting as a support or as a mechanical barrier	(see appended table)	P
7.1.4	Temperature rise of windings	(see appended table)	P
7.1.5	Parts not subject to a limit under 7.1.1 to 7.1.4	(see appended table)	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/A

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.	N/A
8.3	Insulation of hazardous live parts not provided by hygroscopic material	No insulation formed of hygroscopic material.	P
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	No removable cover.	N/A
8.5	Class I equipment	Class II equipment.	N/A
	Basic insulation between hazardous live parts and earthed accessible parts		N/A
	Resistors bridging basic insulation complying with 14.1 a)		N/A
	Capacitors bridging basic insulation complying with 14.2.1 a)		N/A
	Protective earthing terminal		N/A
8.6	Class II equipment and Class II constructions within Class I equipment	Class II equipment.	P
	Double or reinforced insulation between hazardous live parts and accessible parts	The accessible parts and wiring were separated from the hazardous live parts by double insulation.	P
	Components bridging double or reinforced insulation complying with 14.1 a) or 14.3	Transformer provided with the double insulation.	P
	Basic insulation bridged by components complying with 14.3.4.3.	No such components.	N/A
	Basic and supplementary insulation each being bridged by a capacitor complying with 14.1 a)	No such capacitor.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Double or reinforced insulation being bridged with 2 capacitors in series complying with 14.2.1 a)	No such components.	N/A
	Double or reinforced insulation being bridged with a single capacitor complying with 14.2.1 b)	All sources of bridging capacitors are according to IEC 60384-14:2005.	P
8.7	This clause is void		—
8.8	Basic or supplementary insulation > 0,4 mm (mm) :	Approved power cord used	P
	Reinforced insulation > 0,4 mm (mm):	Bobbin of transformer (T1), optocouplers (IC1), insulation sheet under power board and enclosure complied with this requirement	P
	Thin sheet insulation (excluding non-separable thin sheet insulation. See 8.22)	Insulation tape be used for transformer.	P
	Basic or supplementary insulation, at least two layers, each meeting 10.3	No such construction.	N/A
	Basic or supplementary insulation, three layers any two of which meet 10.3	No such construction.	N/A
	Reinforced insulation, two layers each of which meet 10.3	No such construction.	N/A
	Reinforced insulation, three layers any two which meet 10.3	2 layers of the 3 layers withstood the test. (see appended table 10.3)	P
8.9	Adequate insulation between internal hazardous live conductors and accessible parts	The accessible parts were separated from the internal hazardous live conductors by double insulation.	P
	Adequate insulation between internal hazardous live parts and conductors connected to accessible parts	The conductors connected to the accessible parts were separated from the internal hazardous live conductors by double insulation.	P
8.10	Double insulation between conductors connected to the mains and accessible parts.	The conductors connected to the accessible parts were separated from the internal hazardous live conductors by double insulation.	P
	Double insulation between internal hazardous live parts and conductors connected to accessible parts.	The conductors connected to the accessible parts were separated from the internal hazardous live conductors by double insulation.	P
8.11	Detaching of wires	There is no risk of a wire becoming detached, see below for evaluation.	P
	No undue reduction of creepages or clearance distances if wires become detached	The necessary spacing did not become loosened or detached after the test.	P
	Vibration test carried out:	See sub-clause 12.1.2.	P

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
8.12	This clause is void		—
8.13	Adequate fastening of windows, lenses, lamp covers etc. (pull test 20 N for 10 s)	No such windows, lenses, lamps etc.	N/A
8.14	Adequate fastening of covers (push/pull test 50 N for 10 s)	The cover used to fix power cord is considered	P
8.15	No risk of damage to the insulation of internal wiring due to hot parts or sharp edges	The internal wiring does not touch heat sources or sharp edges that may damage the insulation or cause hazards when considered the 2N force.	P
8.16	Only special supply equipment can be used	No such device.	N/A
8.17	Insulated winding wire without additional interleaved insulation	No such device.	N/A
8.18	Endurance test as required by 8.17		N/A
8.19	Disconnection from the mains	See below.	P
8.19.1	Disconnect device	Mains plug of non-detachable power cord used and considered as disconnect device. See sub-clause 5.4.2	P
	All-pole switch or circuit breaker with >3mm contact separation	No such device	N/A
8.19.2	Mains switch ON indication	No such device	N/A
8.20	Switch not fitted in the mains cord	Not in the cord	P
8.21	Bridging components comply with clause 14	No such device.	N/A
8.22	Non-separable thin sheet material	The power supply did not equip with the non-separable thin sheet material. Only the separable insulation tape was used in the isolating transformer.	N/A

9	Electric shock hazard under normal operating conditions		P
9.1	Testing on the outside		P
9.1.1	For voltages >1000 V ac or >1500 V dc complies with clause 13.3.1 for basic insulation		P
9.1.1.1	a) Open circuit voltages	The open circuit voltage does not exceed 60Vdc or 35Vpeak, or complied with requirement of touch current, see b).	P

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
	b) Touch current measured from terminal devices using the network in annex D	The measured voltages from mains and accessible parts are exceeding 35Vpk. The touch current measurement for unit operated: U1=0.84V, U2=0.22V	P
	c) Discharge not exceeding 45 μ C	The stores charges did not exceed 45 μ C.	P
	d) Energy of discharge not exceeding 350 mJ	No such circuit.	N/A
9.1.1.2	Test with test finger and test probe	The test finger and test probe cannot access to the hazardous live part.	P
9.1.2	No hazardous live shafts of knobs, handles or levers	No shafts, handles or likes.	N/A
9.1.3	Ventilation holes and other holes tested by means of 4 mm x 100 mm test pin	No internal part could be accessible while the test pin applied.	P
9.1.4	Terminal devices tested with 1 mm x 20 mm test pin (10 N); test probe D of IEC 61032	All terminals did not become hazardous live after test.	P
	Terminal devices tested with 1 mm x 100 mm straight wire (1 N); test probe D of IEC 61032	All terminals did not become hazardous live after test.	P
9.1.5	Pre-set controls tested with 2.5 mm x 100 mm test pin (10 N); test probe C of IEC 61032	No pre-set control.	N/A
9.1.6	No shock hazard due to stored charge on withdrawal of the mains plug; voltage (V) after 2 s	The residual voltage of the EUT is 4V (normal) after 2s.	P
	If C is not greater than 0,1 μ F no test needed		N/A
9.1.7	Resistance to external forces	No damage to the enclosure.	P
	a) Test probe 11 of IEC 61032 for 10 s (50 N)	Hazardous live part is not accessible.	P
	b) Test hook of fig. 4 for 10 s (20 N)	Hazardous live part is not accessible.	P
	c) 30 mm diameter test tool for 5 s (100 or 250 N)		P
9.2	No hazard after removing a cover by hand	Tools required.	N/A
10	Insulation requirements		P
10.1	Insulation resistance (M Ω) at least 2 M Ω min. after surge test for basic and 4 M Ω min. for reinforced insulation	Surge test performed. Resistance of reinforced insulation exceeding 100M Ω	P
10.2	Humidity treatment 48 h or 120 h	At 93% R.H., 120 hrs, 40°C	P
10.3	Insulation resistance and dielectric strength between mains terminals	(see appended table)	P

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
	Insulation Resistance and dielectric strength across BASIC or SUPPLEMENTARY insulation (Class I)	Class II equipment.	N/A
	Insulation resistance and dielectric strength across REINFORCED insulation (Class II)	(see appended table)	P
11	Fault conditions		P
11.1	No shock hazard under fault condition	No electric shock during fault operation.	P
11.2	Heating under fault condition	(see appended table)	P
	Flames extinguish within 10 seconds	No solder point become soft.	P
	No hazard from softening solder	No flames extinguish within 10 seconds	P
	Soldered terminations not used as protective mechanism	No soldered termination used as protective mechanism in the EUT.	P
11.2.1	Measurement of temperature rises	(see appended table 11.2)	P
11.2.2	Temperature rise of accessible parts	(see appended table 11.2)	P
11.2.3	Temperature rise of parts, other than windings and printed boards, providing electrical insulation	(see appended table 11.2)	P
11.2.4	Temperature rise of parts acting as a support or mechanical barrier	(see appended table 11.2)	P
11.2.5	Temperature rise of windings	(see appended table 11.2)	P
11.2.6	Temperature rise of printed boards shall not exceed the limits of table 3 by max. 100 K for max. 5 min		N/A
	Printed circuit boards (PCB) classified as V-0 according to 60695-11-10 or Clause G.1 may exceed the limit in table 3 in case a) and b):	See below.	P
	a) Temperature rise of printed circuit boards exceeding the limits of table 3 by not more than 100 K for an area not greater than 2 cm ²		P
	b) Temperature rise of printed circuit boards exceeding the limits of table 3 up to 300 K for an area not greater than 2 cm ² for a maximum of 5 min	Temperature did not exceed the limits.	N/A
	Meets all the special conditions if conductors on printed circuit boards are interrupted		N/A
	Class I protective earthing maintained		N/A
11.2.7	Temperature rise of parts not subject to the limits of 11.2.1 to 11.2.6 shall not exceed the limits in table 3, item e), "Fault conditions".	Not exceed the limits	N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
12	Mechanical strength		P
12.1.1	Bump test where mass >7 kg	No, Mass: 5.39kg,	N/A
12.1.2	Vibration test	No damage to the apparatus after the test	P
12.1.3	Impact hammer test	No damage to the apparatus after the impact test.	P
	Steel ball test	No damage to the apparatus after the impact test.	P
12.1.4	Drop test for portable apparatus where mass ≤ 7 kg	Not portable apparatus.	N/A
12.1.5	Thermoplastic enclosures stress relief test	After 7 hours, 70°C, no hazardous moving parts and hazardous live parts can not become accessible	P
12.2	Fixing of knobs, push buttons, keys and levers	No actuating elements affecting electric shock.	N/A
12.3	Remote controls with hazardous live parts	No hazardous live parts are inside the remote control.	N/A
12.4	Drawers (pull test 50 N, 10 s)	No drawer inside the equipment.	N/A
12.5	Antenna coaxial sockets providing isolation	Antenna not for providing isolation.	N/A
12.6	Telescoping or rod antennas construction	No telescoping or rod inside the EUT.	N/A
12.6.1	Telescoping or rod antennas securement	No telescoping or rod inside the EUT.	N/A
13	Clearances and creepage distances		P
13.1	Clearances in accordance with 13.3	(see appended table 13)	P
	Creepage distances in accordance with 13.4	(see appended table 13)	P
13.2	Determination of working voltage	The unit was connected to a 240V TN power system. (see appended table 13)	P
13.3	Clearances	(see appended table 13)	P
13.3.1	General	(see appended table 13)	P
13.3.2	Circuits conductively connected to the mains comply with table 8 and, where applicable, table 9	(see appended table 13)	P
13.3.3	Circuits not conductively connected to the mains comply with table 10	(see appended table 13)	P
13.3.4	Measurement of transient voltages	Considered only normal transient voltage.	N/A
13.4	Creepage distances	(see appended table 13)	P
	Creepage distances greater than table 11 minimum values	(see appended table 13)	P
13.5	Printed boards	No apply for.	N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
13.5.1	Clearances and creepage distances between conductors on printed circuit boards, one of which may be conductively connected to the mains, as in fig. 10	No apply for.	N/A
13.5.2	Type B coated printed circuit boards complying with IEC 60664-3 (basic insulation only)	No apply for.	N/A
13.6	Conductive parts along uncemented joints clearances and creepage distances comply with 13.3 and 13.4	No such part.	N/A
	Conductive parts along reliably cemented joints comply with 8.8	No such part.	N/A
	Temperature cycle test and dielectric strength test	No such part.	N/A
	500V test for transformers, magnetic coupler and similar devices, if insulation is relied upon for safety	No such part.	N/A
13.7	Enclosed, enveloped or hermetically sealed parts not conductively connected to the mains, clearances and creepage distances as in table 12	No such part.	N/A
13.8	Parts filled with insulating compound, meeting the requirements of 8.8	VDE approved optocoupler with insulation thickness Min. 0.4 mm	P
14	Components		P
14.1	Resistors		P
	a) Resistors between hazardous live parts and accessible metal parts	No such component.	N/A
	b) Resistors, other than between hazardous live parts and accessible parts	The bleeder resistors (R8, R9, R10 and R11) connected between Live and Neutral, located after fuse. Shorting circuit or disconnecting of one resistor does not cause infringement of the requirement for operation under fault conditions	P
	Resistors separately approved	No such component.	N/A
14.2	Capacitors and RC units	See below.	P
	Capacitors separately approved :	(see appended table 14)	P
14.2.1	Y capacitors tested to IEC 60384-14:2005	VDE approved Y-capacitors CY1. See appended table 14.	P
14.2.2	X capacitors tested to IEC 60384-14:2005	VDE approved X-capacitors CX1,CX2. See appended table 14	P
14.2.3	Capacitors operating at mains frequency but not connected to the mains: tests for X2		N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
14.2.5	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		N/A
	Capacitors with volume exceeding 1750 mm ³ , mounted closer to a potential ignition source than table 5 permits: compliance with IEC 60384-1, 4.38 category B or better		N/A
	Shielded by a barrier acc. to 20.1.4/ table 21 or metal	Electrolytic capacitor is having a metal case as a barrier.	P
14.3	Inductors and windings	(see appended table 14)	P
	Comply with IEC 61558-1, IEC 61558-2 (as relevant) and clause 20.1.4		N/A
14.3.1	Transformers and inductors marked with manufacturer's name and type	The transformer is marked with the manufacturer's name and type. See appended 14 for details.	P
	Transformers and inductors separately approved .:		N/A
14.3.2	General	See 14.3.3, 14.3.4 and 14.3.5.	P
	Insulation material complies with clause 20.1.4	Ditto.	P
14.3.3	Constructional requirements	See below.	P
14.3.3.1	Clearances and creepage distances comply with clause 13	Complied with clause 13.	P
14.3.3.2	Transformers meet the constructional requirements	Double insulation between primary and secondary windings.	P
14.3.4	Separation between windings	See below.	P
14.3.4.1	Class II transformers have adequate separation between hazardous live parts and accessible parts (double or reinforced insulation)	Double insulation provided in transformer	P
	Coil formers and partition walls > 0,4 mm	See 8.8.	P
14.3.4.2	Class I transformers, with basic insulation and protective screening only if all 7 conditions of 14.3.4.2 are met	No such construction.	N/A
14.3.4.3	Separating transformers with at least basic insulation	No such construction.	N/A
14.3.5	Insulation between HAZARDOUS LIVE parts and ACCESSIBLE parts	Double or reinforce insulation between hazardous live parts	P
14.3.5.1	Class II transformers have adequate insulation between hazardous live parts and accessible parts (double or reinforced insulation)	Double insulation provided in transformer.	P
	Coil formers and partition walls > 0,4 mm	See 8.8.	P

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
14.3.5.2	Class I transformers have adequate insulation between hazardous live parts and accessible conductive parts or those conductive parts or protective screens connected to a protective earth terminal	Not class I transformer design.	N/A
	Winding wires connected to protective earth have adequate current-carrying capacity	Not such a transformer design.	N/A
14.4	High voltage components	No component operated at voltage higher than 4 kV.	N/A
	High-voltage components and assemblies: $U > 4$ kV (peak) separately approved	No component operated at voltage higher than 4 kV.	N/A
	Component meets category V-1 of IEC 60695-11-10	No component operated at voltage higher than 4 kV.	N/A
14.4.1	High voltage transformers and multipliers tested as part of the submission	No such device.	N/A
14.4.2	High voltage assemblies and other parts tested as part of the submission	No such device.	N/A
14.5	Protective devices	See below.	P
	Protective devices used within their ratings	Fuse (F1) in PCB: T2AL 250VAC	P
	External clearances and creepage distances meet requirement of clause 13 for the voltage across the device when opened	Basic insulation was provided between the terminals of the protective devices.	P
14.5.1.1	a) Thermal cut-outs separately approved	No such device.	N/A
	b) Thermal cut-outs tested as part of the submission	No such device.	N/A
14.5.1.2	a) Thermal links separately approved	No such device.	N/A
	b) Thermal links tested as part of the submission	No such device.	N/A
14.5.1.3	Thermal devices re-settable by soldering	No such device.	N/A
14.5.2.1	Fuse-links in the mains circuit according to IEC 60127	Certified components used.	P
14.5.2.2	Correct marking of fuse-links adjacent to holder ...:	F1 T2AL 250 VAC	P
14.5.2.3	Not possible to connect fuses in parallel:	No such construction	P
14.5.2.4	Not possible to touch hazardous live parts when replacing fuse-links without the use of a tool:	The fuse-link was not for user replaceable.	N/A
14.5.3	PTC thermistors comply with IEC 60730-1:2007	No such device.	N/A
	PTC devices (15 W) category V-1 or better	No such device.	N/A
14.5.4	Circuit protectors have adequate breaking capacity and their position is correctly marked	No such device.	N/A
14.6	Switches	Certified components used.	P

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
14.6.1 a)	Separate testing to IEC 61058-1 including: - 10 000 operations - Normal pollution suitability - Make and break speed independent of speed of actuation V-0 compliance with annex G, G.1.1	Ditto.	P
14.6.1 b)	Tested in the apparatus:		N/A
	Switch controlling > 0.2A with open contact voltage > 35 V (peak)/24 V dc complying with 14.6.3, 14.6.4 and V-0 in annex G, G.1.1		N/A
	Switch controlling > 0.2A with open contact voltage < 35 V (peak)/24 V dc complying with 14.6.3 and V-0 in annex G, G.1.1		N/A
	Switch controlling < 0.2A with open contact voltage > 35 V (peak)/24 V dc complying with 14.6.4 and V-0 in annex G, G.1.1		N/A
14.6.2	Switch tested to 14.6.1 b) constructed to IEC 61058-1 subclause 13.1 and has making/breaking action independent of speed of actuation		N/A
14.6.3	Switch tested to 14.6.1 b) compliant with IEC 61058-1 subclause 16.2.2 d) and m) not attaining excessive temperatures in use		N/A
14.6.4	Switch tested to 14.6.1 b) has adequate dielectric strength		N/A
14.6.5	Mains switch controlling mains socket outlets additional tests to IEC 61058-1	No mains socket outlets inside the EUT.	N/A
	Socket outlet current marking correct		N/A
14.7	Safety interlocks	No safety interlocks inside the	N/A
	Safety interlocks to 2.8 of IEC 60950-1		N/A
14.8	Voltage setting devices and the like	No voltage setting devices inside the EUT.	N/A
	Voltage setting device not likely to be changed accidentally		N/A
14.9	Motors	No such device.	N/A
14.9.1	Endurance test on motors	No such device.	N/A
	Motor start test		N/A
	Dielectric strength test		N/A
14.9.2	Not adversely affected by oil or grease etc.	No such device.	N/A
14.9.3	Protection against moving parts	No such device.	N/A
14.9.4	Motors with phase-shifting capacitors, three-phase motors and series motors meet clause. B.8, B.9 and B.10 of IEC 60950-1, Annex B	No such device.	N/A
14.10	Batteries	No such device.	N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
14.10.1	Batteries mounted with no risk of accumulation of flammable gases		N/A
14.10.2	No possibility of recharging non-rechargeable batteries		N/A
14.10.3	Recharging currents and times within manufacturers limits		N/A
	Lithium batteries discharge and reverse currents within the manufacturers limits		N/A
14.10.4	Battery mould stress relief		N/A
14.10.5	Battery drop test		N/A
14.11	Optocouplers	VDE approved optocouplers, refer to appended table 14.	P
	a) Comply with 13.6 (jointed insulation) and N.2.1		N/A
	b) Comply with IEC 60747-5-5:2007		P
	Alternative to a) and b) optocoupler comply with 13.8		N/A
	a) Comply with 13.6 (jointed insulation) and N.2.1		N/A
14.12	Surge suppression varistors		N/A
	Comply with IEC 61051-2	No such construction	N/A
	Not connected between mains and accessible parts except for earthed parts of permanently connected apparatus		N/A
	Complies with the current pulse, fire hazard and thermal stress requirements of 14.12		N/A
15	Terminals		P
15.1.1	Mains plug, appliance inlet, interconnection couplers and mains socket-outlet meet the appropriate standard	Certified mains plug used.	P
	Overloading of plugs or appliance inlets prevented if the apparatus has mains socket outlets	No socket-outlet in the EUT.	N/A
	Overloading of internal wiring prevented if the apparatus has mains socket outlets	No socket-outlet in the EUT.	N/A
15.1.2	Connectors for antenna, earth, audio, video or data		P
	No risk of insertion in mains socket-outlets	No such risk.	P
	No risk of insertion into audio- or video- outlets marked with the symbol of 5.2	No socket-outlet in the EUT.	N/A
15.1.3	Output terminals of a.c. adaptors or similar devices not compatible with household mains socket-outlets	No socket-outlet in the EUT.	N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
15.2	Provision for protective earthing		N/A
	Accessible conductive parts of Class I equipment reliably connected to earth terminal, within equipment	Class II equipment.	N/A
	Protective earth conductors correctly coloured		N/A
	Equipment with non-detachable mains cord provided with separate protective earth terminal near mains input		N/A
	Protective earth terminal resistant to corrosion		N/A
	Earth resistance test: $< 0,1 \Omega$ at 25 A		N/A
15.3	Terminals for external flexible cords and for permanent connection to the mains supply	See below.	P
15.3.1	Adequate terminals for connection of permanent wiring	Not permanently connected equipment.	N/A
15.3.2	Reliable connection of non-detachable cords	A strain relief bushing was provided for the reliable connection.	P
	Not soldered to conductors of a printed circuit board	A certified primary connector was provided.	P
	Adequate clearances and creepage distances between connections should a wire break away	A certified primary connector was provided.	P
	Wire secured by additional means to the conductor	A certified primary connector was provided.	P
15.3.3	Screws and nuts clamping conductors have adequate threads: ISO 261, ISO 262 or similar	No such screws and nuts.	N/A
15.3.4	Soldered conductors wrapped around terminal prior to soldering or held in place by additional means	No such construction	N/A
	Clamping of conductor and insulation if not soldered or held by screws	No such device.	N/A
15.3.5	Terminals allow connection of appropriate cross-sectional area of conductors, for the rated current of the equipment	No such terminals.	N/A
15.3.6	Terminals to 15.3.3 have sizes required by table 16	No such device.	N/A
15.3.7	Terminals clamp conductors between metal and have adequate pressure	No such construction.	N/A
	Terminals designed to avoid conductor slipping out when tightened or loosened		N/A
	Terminals adequately fixed to avoid loosening when the clamping is tightened or loosened and stress on internal wiring is avoided		N/A
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

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
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	A certified primary connector was used.	N/A
15.4	Devices forming a part of the mains plug	No such device inside the EUT.	N/A
15.4.1	No undue strain on mains socket-outlets	No socket-outlet inside the EUT.	N/A
15.4.2	Device complies with standard for dimensions of mains plugs	Certified non-detachable power supply cord used.	N/A
15.4.3	Device has adequate mechanical strength (tests a,b,c)	Certified non-detachable power supply cord used.	N/A
16	External flexible cords		P
16.1	Mains cords sheathed type, complying with IEC 60227 for PVC or IEC 60245 for synthetic rubber cords	Certified non-detachable power supply cord used.	P
	Non-detachable cords for Class I have green/yellow core for protective earth	Class II equipment	N/A
16.2	Mains cords conductors have adequate cross-sectional area for rated current consumption of the equipment	Certified non-detachable power supply cord used.	P
16.3	a) Flexible cords not complying with 16.1, used for interconnections between separate units of equipment used in combination and carrying hazardous live voltages, have adequate dielectric strength	Not interconnection carrying the hazardous voltage.	N/A
	b) Flexible cords not complying with 16.1, withstand bending and mechanical stress (3.2 of IEC 60227-2)	No such device.	N/A
16.4	Flexible cords used for connection between equipment have adequate cross-sectional areas to avoid temperature rise under normal and fault conditions	No such interconnected flexible cords.	N/A
16.5	Adequate strain relief on external flexible cords	Displacement Measured 0.9mm.	P
	Not possible to push cord back into equipment	A strain-relief bushing was provided to prevent the push back of the power supply cord	P
	Strain relief device unlikely to damage flexible cord	40N, 100 times. Also applied 0.25Nm torque test	P

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
	For mains cords of Class I equipment, hazardous live conductors become taut before earth conductor	Hazardous live conductors become taut before earth conductor	P
16.6	Apertures for external flexible cord: no risk of damage to the cord during assembly or movement in use	A bushing was provided to prevent the damage of the power cord.	P
16.7	Transportable musical instruments and amplifiers fitted with detachable cord set with appliance inlet to IEC 60320-1	The EUT is not transportable equipment.	N/A
	Transportable musical instruments and amplifiers fitted with detachable cord sets or with means of stowage to protect the cord	The EUT is not transportable equipment.	N/A
17	Electrical connections and mechanical fixings		P
17.1	Torque test to table 20	See below.	P
	- screws into metal: 5 times		N/A
	- screws into non-metallic material: 10 times	Torque force: 0.6Nm.	P
17.2	Correct introduction into female threads in non-metallic material		P
17.3	Cover fixing screws: captive	No cover on the EUT.	N/A
	Non-captive fixing screws: no hazard when replaced by a screw whose length is 10 times its diameter	No captive screws used. No hazard when replacing a screw with one which length is 10 times its diameter.	P
17.4	No loosening of conductive parts carrying a current > 0,2 A	All conductive parts are fixed on PCB by at least two soldering points or by additional glue and soldering-pin.	P
17.5	Contact pressure not transmitted through plastic other than ceramic for connections carrying a current > 0,2 A	No polymeric material was withstanding the strain from contact pressure.	N/A
17.6	Stranded conductors of flexible supply cords carrying a current > 0,2 A with screw terminals not consolidated by solder	No such construction.	N/A
17.7	Cover fixing devices other than screws have adequate strength and their positioning is unambiguous	No cover on the EUT.	N/A
17.8	Fixing devices for detachable legs or stands provided	No such device.	N/A
17.9	Internal pluggable connections, affecting safety, unlikely to become disconnected	After applying the 2N force, no hazard occurs.	P

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
18	Mechanical strength of picture tubes and protection against the effects of implosion		N/A
18.1	Picture tube separately approved to IEC 61965	No picture tube inside the EUT.	N/A
	Picture tube separately approved to 18.2	No picture tube inside the EUT.	N/A
18.2	Non-intrinsically protected tubes tested to 18.2		N/A
19	Stability and mechanical hazards		P
	Mass of the equipment exceeding 7 kg	No, Approx.5.39Kg	N/A
	Apparatus intended to be fastened in place – suitable instructions	No such construction.	N/A
19.1	Test on a plane, inclined at 10° to the horizontal	The weight of EUT less than 7kg.	N/A
19.2	100 N force applied vertically downwards	The weight of EUT less than 7kg.	N/A
19.3	100 N force, or 13% of weight, applied horizontally to point of least stability	The weight of EUT less than 7kg.	N/A
19.4	Edges or corners not hazardous	No dangerous edges or corner in the equipment.	P
19.5	Glass surfaces (exc.laminated) with an area exceeding 0,1 m ² or maximum dimension > 450 mm, pass the test of 19.5.1	No any glass surface.	N/A
19.6	Wall or ceiling mountings adequate		N/A
20	Resistance to fire		P
20.1	Electrical components and mechanical parts		P
	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		N/A
	b) Exemption for small components as defined in 20.1	Components are mounted on a PCB of V-0	P
20.1.1	Electrical components meet the requirements of Clause 14 or 20.1.4	The bobbin of T1 complied with sub-clause 20.1.4; The enclosures is wooden complied with sub-clause 20.1.4	P
20.1.2	Insulation of internal wiring working at voltages > 4 kV or leaving an internal fire enclosure, or located within the areas mentioned in Table 21, not contributing to the spread of fire	No voltage exceeds 4kV.	N/A
20.1.3	Material of printed circuit boards on which the available power exceeds 15 W at a voltage between 50 V and 400 V (peak) a.c. or d.c. meets V-1 or better to IEC 60695-11-10, unless used in a fire enclosure	Rated Min. V-0 PCB used.	N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
	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.	The PCB has the flammability rating of V-0.	P
20.1.4	Components and parts not covered by 20.1.1, 20.1.2 and 20.1.3 (other than fire enclosures) mounted nearer to a potential ignition source than the distances in Table 21 comply with the relevant flammability category in Table 21		P
	Components and parts as above but shielded from a potential ignition source, with the barrier area in accordance with Table 21 and fig. 13		N/A
	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		N/A
20.2	Fire enclosure	See below.	N/A
20.2.1	Potential ignition sources with open circuit voltage > 4 kV (peak) a.c. or d.c. contained in a fire enclosure to V-1	No parts are working at voltage higher than 4kV.	N/A
20.2.2	Internal fire enclosures with openings not exceeding 1 mm in width and with openings for wires completely filled		N/A
20.2.3	Requirements of 20.2.1 and 20.2.2 met by an internal fire enclosure		N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
A	Annex A, Additional requirements for apparatus with protection against splashing water		N/A
A.5	Marking and instructions	The EUT is for indoor use only.	N/A
A.5.1	j) Marked with IPX4 (IEC 60529), 5.4.1 a) does not apply		N/A
A.10	Insulation requirements		N/A
A.10.2	Splash and humidity treatment		N/A
A.10.2.1	Enclosure provides protection against splashing water		N/A
A.10.2.2	Humidity treatment carried out for 7 days		N/A
B	Annex B, Apparatus to be connected to the TELECOMMUNICATION NETWORKS		N/A
	Complies with IEC 62151 clause 1	The EUT did not connect to the telecommunication network.	N/A
	Complies with IEC 62151 clause 2		N/A
	Complies with IEC 62151 clause 3 but with 3.5.4 modified to 2.4.10 of this standard		N/A
	Complies with IEC 62151 clause 4 but with 4.1.2, 4.1.3 and 4.2.1.2 modified in accordance with annex B of this standard		N/A
	Complies with IEC 62151 cause 5 but with 5.3.1 modified in accordance with annex B of this standard		N/A
	Complies with IEC 62151 clause 6		N/A
	Complies with IEC 62151 clause 7		N/A
	Complies with IEC 62151 annex A, B and C		N/A
L	ANNEX L, Additional requirements for electronic flash apparatus for photographic purposes		N/A
L. 5	Marking and instructions	No such device.	N/A
L. 5.4	Instructions for battery chargers and Supply apparatus indicating type or model number of flash apparatus with which it is to be used		N/A
	Instructions for flash apparatus indicating type or model number of battery chargers or Supply apparatus with which it is to be used		N/A
L. 7	Heating under normal operating conditions	No such device.	N/A
L7.1.5 & L11.2.7	Lithium batteries meet permissible temp rise in Table 3, unless comply with 6.2.2.1 or 6.2.2.2 of IEC 60086-4		N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
L. 9	Electric shock hazard under normal operating conditions	No such device.	N/A
L. 9.1.1	Terminals to connection to synchroniser not HAZARDOUS LIVE		N/A
L.10	Insulation requirements	No such device.	N/A
L. 10.3.2	High frequency puls ignition	No such device.	N/A
L. 12	Mechanical strength	No such device.	N/A
L. 12.1.3	Windows for flash tubes are excluded from steel ball impact test	No such device.	N/A
L. 14	Components	No such device.	N/A
L14.6.6	Mains switch characteristics appropriate to its function under normal conditions	No such device.	N/A
L. 20	Resistance to fire	No such device.	N/A
L. 20.1 c)	Trigger coil for discharge purpose is not considered to be a POTENTIAL IGNITION SOURCE	No such device.	N/A

IEC60065			
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 60065:2002 + A1:2006 + A11:2008 + A2:2010 + A12:2011
Attachment Form No.:	EU_GD_IEC60065K_II
Attachment Originator.....:	IntertekSemko AB
Master Attachment	Date (2011-09)
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IEC 60065, GROUP DIFFERENCES (CENELEC common modifications (EN))			
Clause	Requirement + Test	Result - Remark	Verdict
Contents	Add the following annexes: Annex ZA (normative) Other international publications quoted in this standard with the references of the relevant European publications (See the CB Bulletin) Annex ZB (nominative) Special national conditions Annex ZC (informative) A-deviations		P
Definition 2.2.Z1 (A11:2008)	Add after the definition 2.2.12 the following new definition: PORTABLE SOUND SYSTEM small battery powered audio equipment: <ul style="list-style-type: none"> • whose prime purpose is to listen to recorded or broadcasted sound; and • that uses headphones or earphones that can be worn in or on or around the ears; and • that allows the user to walk around NOTE Examples are mini-disc or CD players, MP3 audio players or similar equipment.		N/A
2.2 (A12:2011)	In EN 60065:2002/A11:2008 Delete the definition 2.2.Z1		--

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
3.1	<p>Add the following indent at the end of the list</p> <ul style="list-style-type: none"> - Exposure to excessive sound pressures from headphones or earphones <p>NOTE A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment</p> <p>– Maximum sound pressure level measurement methodology and limit considerations – Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment – Maximum sound pressure level measurement methodology and limit considerations – Part 2: Guidelines to associate sets with headphones coming from different manufacturers.</p>		N/A
3.1 (A12:2011)	<p>In EN 60065:2002</p> <p>Delete the addition of indent regarding sound pressure excessive</p>		--
3.Z1 (A2:2010)	<p>After 3.2 add a new clause 3.Z1:</p> <p>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):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 11 shall be included as parts of the equipment;</p> <p>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;</p> <p>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.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for not 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.</p>		N/A
4.1.1	<p>Replace the text of the note by: NOTE For ROUTINE TEST reference is made to EN 50514.</p>		--

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1 za) (A11:2008)	Modify indent za) as follows: za) For a PORTABLE SOUND SYSTEM, a warning that excessive sound pressure from earphones and headphones can cause hearing loss.		N/A
5.4.1 (A12:2011)	In EN 60065:2002/A1:2006 and EN 60065:2002/A11:2008 Delete the modification in indent za) Add the following clause and annex to the existing standard and amendments		N/A
	Zx Protection against excessive sound pressure from personal music players		--

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.1 General</p> <p>This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players.</p> <p>A personal music player is a portable equipment for 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 -primarily uses headphones or earphones that can be worn in or on or around the ears; and -allows the user to walk around while in use. <p>NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment.</p> <p>A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause.</p> <p>The requirements in this sub-clause are valid for music or video mode only.</p> <p>The requirements do not apply:</p> <ul style="list-style-type: none"> while the personal music player is connected to an external amplifier; or - while the headphones or earphones are not used. <p>NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player.</p> <p>The requirements do not apply to:</p> <ul style="list-style-type: none"> hearing aid equipment and professional equipment; <p>NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.</p> <p>analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015.</p> <p>NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.</p> <p>For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.</p>		N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
Cont.	<p>Zx.2 Equipment requirements</p> <p>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 LAeq,T is ≤ 85 dBA measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and -a 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 clause, the 30 s A-weighted equivalent sound pressure level LAeq,T is meant. See also Zx.5 and Annex Zx.</p> <p>All other equipment shall:</p> <ul 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 c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off.</p> <ul style="list-style-type: none"> d) have a warning as specified in Zx.3; and e) not exceed the following: <ul style="list-style-type: none"> 1) equipment provided as a package (player with its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and 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. 		N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
Cont.	<p>For music where the average sound pressure (long term LAeq,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 is below the basic limit of 85 dBA. In this case T becomes the duration of the song.</p> <p>NOTE 4 Classical music typically has an average sound pressure (long term LAeq,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 dBA.</p> <p>For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, 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 dBA.</p>		N/A
	<p>Zx.3 Warning</p> <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 1 with a minimum height of 5 mm; and -the following wording, or similar: <p>"To prevent possible hearing damage, do not listen at high volume levels for long periods."</p> <div data-bbox="529 1456 791 1715" data-label="Image"> <p>The image shows a warning symbol consisting of an equilateral triangle. Inside the triangle, there is a stylized human ear on the right side, and three curved lines representing sound waves on the left side, pointing towards the ear.</p> </div> <p>Figure 1 – Warning label (IEC 60417-6044)</p> <p>Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.</p>		N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
Cont.	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output LAeq,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 (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.		N/A
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output LAeq,T of the listening device shall be ≤ 100 dBA. This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.		N/A
	Zx.4.3 Wireless 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 LAeq,T of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Zx.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.</p> <p>NOTE Test method for wireless equipment provided without listening device should be defined.</p>		N/A
6.1 (A11:2008)	<p>Replace the entire subclause in EN 60065:2002 and EN 60065:2002/A1:2006 by:</p> <p>Ionizing radiation 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></p> <p>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 1μSv/h (0,1 mR/h) taking account of the background level.</i></p> <p>NOTE 2 These values appear in Directive 96/29/Euratom of 13th May 1996. <i>A picture is considered to be intelligible if the following conditions are met:</i> - a scanning amplitude of at least 70 % of the usable screen width; - a minimum luminance of 50 cd/m² with locked blank raster provided by a test generator; - a horizontal resolution corresponding to at least 1,5 MHz in the centre, with a similar vertical degradation; - not more than one flashover per 5 min.</p>		N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
Z1 (A11:2008)	<p>Add the following new clause after Clause 20:</p> <p>Z1 Resistance to candle flame ignition</p> <p>A television set shall be so designed that the likelihood of ignition and the spread of fire caused by a candle flame is reduced.</p> <p>NOTE 1 An apparatus with a viewing screen is not regarded to be a television set if it is declared not to be so by the manufacturer.</p> <p>This requirement does not apply to the display screen of rear projection TV's.</p> <p>NOTE 2 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.</p> <p>NOTE 3 The frame around the screen is not exempted from the requirements.</p> <p>Wood and WOOD-BASED MATERIAL with a thickness of at least 6 mm is considered to fulfil the V-1 requirement when applying CLC/TS 62441.</p> <p><i>Compliance is checked according to CLC/TS 62441.</i></p> <p>NOTE 4 The term vertical, as used in the first dash of clause 5.2 of CLC/TS 62441, does not mean a perfectly vertical position. It should be interpreted as any surface that can be touched by the flame of a candle of 150 mm height and 20mm diameter while the candle is still touching the supporting surface. A typical candle used in the home is assumed to be 20 mm diameter.</p> <p>NOTE 5 It is expected that CLC/TS 62441 will in the future be replaced by a standard, at which time that standard will become applicable, subject to a vote by National Committees at the time.</p>		P
General	<p>13.3.1 Delete note 4.</p> <p>14 Delete note 4 and note 5.</p> <p>15.1.1 Delete notes 1 and 2.</p> <p>15.2 Delete note 2.</p> <p>16.1 Delete note 1.</p> <p>16.2 Delete the note.</p> <p>20 Delete note 2.</p> <p>Annex B Replace note 1 by: In the CENELEC countries listed in IEC 62151, special national conditions apply.</p> <p>Annex G Delete the note.</p> <p>Annex J.2 Delete the notes of Table J.1.</p> <p>Annex N Add after the introduction: For ROUTINE TEST reference is made to EN 50333. (Replaced by EN 50514)</p>		Noted

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
General (A2:2010)	In IEC 60065:2001/A2 Delete all the “country” notes according to the following list: 5.3 Note 5.4.1 Note 20 Note For special national conditions, see Annex ZB.		--
Bibliography	Additional EN standards.		P
ZA	Normative references to international publications with their corresponding European publications		P
ZB	ANNEX ZB TO EN 60065, SPECIAL NATIONAL CONDITIONS (EN)		P
2.6.1	DK: 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 107.		N/A
3.Z1 (A2:2010)	Denmark Add to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.		N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
5.3 (A2:2010)	<p>Finland, Norway and Sweden</p> <p>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 Finland: "Laite on liitettäväsuojaoskettimillavarustettuunpistorasiaan" In Norway: "Apparatetmåtilkoplesjordetstikkontakt" In Sweden: "Apparatenskillanslutas till jordatuttag"</p>		N/A
5.4 (A11:2008)	<p>Finland, Norway and Sweden</p> <p>To the end of 5.4 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 MAINS socket-outlet with protective earth. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettäväsuojaoskettimillavarustettuunpistorasiaan" In Norway: "Apparatetmåtilkoplesjordetstikkontakt" In Sweden: "Apparatenskillanslutas till jordatuttag"</p>		N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1 (A11:2008)	<p>Norway and Sweden</p> <p>To the end of 5.4.1 (after the compliance statement) the following is added:</p> <p>The screen of the cable 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 cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>“Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)”</p> <p>NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Utstyrsmarkoplettilbeskyttelsesjord via nettpluggog/eller via annetjordtilkopletutstyr – ogertilkoplet et kabel-TV nett, kanforårsakebrannfare. For å unngådetteskaldetvedtilkoplingavutstyrettilkabel-TV nettetinstalleres en galvanisk isolator mellomutstyretogkabel-TV nettet.”</p> <p>Translation to Swedish:</p> <p>”Utrustningsmärkopplad till skyddsjord via jordatvägguttagoch/eller via annanutrustningochsamtidigtärkopplad till kabel-TV nätkanivissa fall medföra risk för brand.</p> <p>Förattundvikadettaskall vid anslutningavutrustningen till kabel-TV nätgalvanisk isolator finnas mellanutrustningen ochkabel-TV nätet.”</p>		N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
13.3.1	<p>NO: To the second paragraph the following is added:</p> <p>In Norway, 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.</p> <p><i>Justification:</i> Based on a use in Norway of an IT power distribution system where the neutral is not provided.</p>	Shall be evaluated when submitted for national approval	N/A
15.1.1 (A11:2008)	<p>Denmark</p> <p>The text of the Danish SNC in EN 60065:2002 has been modified as follows:</p> <p>To the first paragraph the following is added:</p> <p>In Denmark, supply cords of single-phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations Section 107-2-D1.</p> <p>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 in accordance with the Heavy Current Regulations, Section 107-2-D1 standard sheet DK 2-1a.</p> <p>To the second paragraph the following is added:</p> <p>Socket outlets intended for providing power to CLASS II apparatus with a rated current of 2,5 A shall be in accordance with the Heavy Current Regulation, Section 107-2-D1 standard sheet DKA 1-4a.</p> <p>Other current ratings socket outlets shall be in compliance with the Heavy Current Regulation, Section 107-2-D1 standard sheet DKA 1-3a or DKA 1-3b.</p> <p>To the third paragraph the following is added:</p> <p>Mains socket-outlets with earthing contact shall be in compliance with the Heavy Current Regulation, Section 107-2-D1 standard sheet DK 1-3a, DK 1-5a or DK 1-7a.</p> <p><i>Justification:</i> Heavy Current Regulations, Section 107-2-D1</p>		N/A
15.1.1	<p>IE: Apparatus which is fitted with a flexible cable or cord shall be provided with a 13 A plug in accordance with Statutory Instrument 525:97, "13 A Plugs and Conversion Adapters for Domestic Use Regulations:1997.</p> <p><i>Justification:</i> SI 525: 1997</p>		N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
15.1.1	<p>NO: Mains socket-outlets mounted on CLASS II apparatus shall comply with the specifications given in CEE Publ. 7 as far as a applicable, with the following amendments:</p> <p>§ 8 Dimensions</p> <p>a 2.5 A 250 V two-pole socket-outlets for electronic apparatus shall comply with the enclosed Standard Sheet I.</p> <p>Mains socket-outlets mounted on CLASS II apparatus shall comply with the specifications given in CEE Publ. 7 as far as a Applicable, with the following amendments:</p> <p>§ 8 Dimensions</p> <p>a 2.5 A 250 V two-pole socket-outlets for electronic apparatus shall comply with the enclosed Standard Sheet I.</p> <p>§ 24 Mechanical strength</p> <p>a 2.5 A, 250 V socket-outlets for CLASS II electronic apparatus are tested as specified in 12.1.3 of EN 60065. Also the protecting rim shall be tested.</p> <p>§ 24 Mechanical strength</p> <p>A 2,5 A 250 V socket-outlets for CLASS II electronic apparatus are tested as specified in 12.1.3 of EN 60065. Also the protecting rim shall be tested</p> <p><i>Justification:</i> Act of 24 May 1929 relating to supervision of electrical installation (TEA 1929/FEL 1998).</p>		N/A
15.1.1	<p>UK: Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug shall be fitted with a "standard plug" in accordance with Statutory Instrument 1768: 1994: The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those Regulations.</p> <p>NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p> <p><i>Justification:</i> SI 1768: 1994</p>		N/A

IEC60065			
Clause	Requirement + Test	Result - Remark	Verdict
J.2	<p>NO: After Table J.1 the following is added: In Norway, 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>	Shall be evaluated when submitted for national approval	N/A
ZC	ANNEX ZC TO EN 60065, A-DEVIATIONS (EN)		N/A
5.1	IT: Additional markings on the outside of the TV receiver in Italian language	Shall be evaluated when submitted for national approval	N/A
	IT: User instructions in Italian language including a conformity declaration		N/A
	IT: Certification number on the back cover		N/A
6.1	<p>DE: The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. <i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de</p>		N/A
14	<p>SE: Switches containing mercury such as thermostats, relays and level controllers are not allowed. <i>Justification:</i> Ordinance (1990:944) on Prohibition in Connection with handling. Importation and exportation of Chemical Products (Certain Cases)</p>		N/A

7.1	TABLE: temperature rise measurements:		P
	Power consumption in the OFF/Stand-by mode of the functional switch (W)	Stand-by: --W Off: 0W	

For AUX mode, input 1KHz signal to deliver the 1/8 Max. Non-Clipped output power on speakers, USB loading 5V/200mA.

Cond.	input (V)	I input (A)	P input (W)	Output voltage (V)		
1	198V 50Hz	0.283	28.6	Left=2.32	Rear=1.15	Front=1.15
				Right=2.32	Centre=2.24	Sub=0.627
2	220V 50Hz	0.265	28.5	Left=2.32	Rear=1.15	Front=1.15
				Right=2.32	Centre=2.24	Sub=0.627
3	240V 50Hz	0.251	28.6	Left=2.32	Rear=1.15	Front=1.15
				Right=2.32	Centre=2.24	Sub=0.627
4	264V 50Hz	0.237	28.7	Left=2.32	Rear=1.15	Front=1.15
				Right=2.32	Centre=2.24	Sub=0.627
5	198V 60Hz	0.282	28.2	Left=2.32	Rear=1.15	Front=1.15
				Right=2.32	Centre=2.24	Sub=0.627
6	220V 60Hz	0.264	28.3	Left=2.32	Rear=1.15	Front=1.15
				Right=2.32	Centre=2.24	Sub=0.627
7	240V 60Hz	0.251	28.4	Left=2.32	Rear=1.15	Front=1.15
				Right=2.32	Centre=2.24	Sub=0.627
8	264V 60Hz	0.238	28.6	Left=2.32	Rear=1.15	Front=1.15
				Right=2.32	Centre=2.24	Sub=0.627

For USB mode, input 1KHz signal to deliver the 1/8 Max. Non-Clipped output power on speakers, USB loading 5V/200mA.

Cond.	input (V)	I input (A)	P input (W)	Output voltage (V)		
9	198V 50Hz	0.301	30.7	Left=2.29	Rear=1.09	Front=1.09
				Right=2.29	Centre=2.18	Sub=0.647
10	220V 50Hz	0.281	30.8	Left=2.29	Rear=1.09	Front=1.09
				Right=2.29	Centre=2.18	Sub=0.647
11	240V 50Hz	0.267	30.8	Left=2.29	Rear=1.09	Front=1.09
				Right=2.29	Centre=2.18	Sub=0.647
12	264V 50Hz	0.251	30.9	Left=2.29	Rear=1.09	Front=1.09
				Right=2.29	Centre=2.18	Sub=0.647
13	198V 60Hz	0.302	30.6	Left=2.29	Rear=1.09	Front=1.09
				Right=2.29	Centre=2.18	Sub=0.647
14	220V 60Hz	0.282	30.5	Left=2.29	Rear=1.09	Front=1.09
				Right=2.29	Centre=2.18	Sub=0.647
15	240V 60Hz	0.268	30.8	Left=2.29	Rear=1.09	Front=1.09
				Right=2.29	Centre=2.18	Sub=0.647
16	264V 60Hz	0.253	30.9	Left=2.29	Rear=1.09	Front=1.09
				Right=2.29	Centre=2.18	Sub=0.647

For DVD(5.1CH) mode, input 1KHz signal to deliver the 1/8 Max. Non-Clipped output power on speakers, USB loading 5V/200mA.

Cond.	input (V)	I input (A)	P input (W)	Output voltage (V)		
17	198V 50Hz	0.272	27.2	Left=2.27	Rear=1.12	Front=1.12
				Right=2.27	Centre=2.22	Sub=0.612
18	220V 50Hz	0.255	27.3	Left=2.27	Rear=1.12	Front=1.12
				Right=2.27	Centre=2.22	Sub=0.612
19	240V 50Hz	0.242	27.4	Left=2.27	Rear=1.12	Front=1.12
				Right=2.27	Centre=2.22	Sub=0.612
20	264V 50Hz	0.228	27.5	Left=2.27	Rear=1.12	Front=1.12
				Right=2.27	Centre=2.22	Sub=0.612
21	198V 60Hz	0.274	27.2	Left=2.27	Rear=1.12	Front=1.12
				Right=2.27	Centre=2.22	Sub=0.612
22	220V 60Hz	0.257	27.3	Left=2.27	Rear=1.12	Front=1.12
				Right=2.27	Centre=2.22	Sub=0.612
23	240V 60Hz	0.243	27.3	Left=2.27	Rear=1.12	Front=1.12
				Right=2.27	Centre=2.22	Sub=0.612
24	264V 60Hz	0.230	27.4	Left=2.27	Rear=1.12	Front=1.12
				Right=2.27	Centre=2.22	Sub=0.612

For FM mode, input 1KHz signal to deliver the 1/8 Max. Non-Clipped output power on speakers, USB loading 5V/200mA.

Cond.	input (V)	I input (A)	P input (W)	Output voltage (V)		
25	198V 50Hz	0.289	29.2	Left=2.29	Rear=1.12	Front=1.12
				Right=2.29	Centre=2.22	Sub=0.650
26	220V 50Hz	0.271	29.3	Left=2.29	Rear=1.12	Front=1.12
				Right=2.29	Centre=2.22	Sub=0.650
27	240V 50Hz	0.256	29.4	Left=2.29	Rear=1.12	Front=1.12
				Right=2.29	Centre=2.22	Sub=0.650
28	264V 50Hz	0.241	29.5	Left=2.29	Rear=1.12	Front=1.12
				Right=2.29	Centre=2.22	Sub=0.650
29	198V 60Hz	0.292	29.1	Left=2.29	Rear=1.12	Front=1.12
				Right=2.29	Centre=2.22	Sub=0.650
30	220V 60Hz	0.273	29.3	Left=2.29	Rear=1.12	Front=1.12
				Right=2.29	Centre=2.22	Sub=0.650
31	240V 60Hz	0.259	29.4	Left=2.29	Rear=1.12	Front=1.12
				Right=2.29	Centre=2.22	Sub=0.650
32	264V 60Hz	0.244	29.4	Left=2.29	Rear=1.12	Front=1.12
				Right=2.29	Centre=2.22	Sub=0.650

For Bluetooth mode, input 1KHz signal to deliver the 1/8 Max. Non-Clipped output power on speakers, USB loading 5V/200mA.

Cond.	input (V)	I input (A)	P input (W)	Output voltage (V)		
33	198V 50Hz	0.287	29.0	Left=2.35	Rear=1.16	Front=1.16
				Right=2.35	Centre=2.30	Sub=0.668
34	220V 50Hz	0.269	29.1	Left=2.35	Rear=1.16	Front=1.16
				Right=2.35	Centre=2.30	Sub=0.668
35	240V 50Hz	0.255	29.2	Left=2.35	Rear=1.16	Front=1.16
				Right=2.35	Centre=2.30	Sub=0.668
36	264V 50Hz	0.240	29.3	Left=2.35	Rear=1.16	Front=1.16
				Right=2.35	Centre=2.30	Sub=0.668
37	198V 60Hz	0.292	29.5	Left=2.35	Rear=1.16	Front=1.16
				Right=2.35	Centre=2.30	Sub=0.668
38	220V 60Hz	0.273	29.5	Left=2.35	Rear=1.16	Front=1.16
				Right=2.35	Centre=2.30	Sub=0.668
39	240V 60Hz	0.259	29.6	Left=2.35	Rear=1.16	Front=1.16
				Right=2.35	Centre=2.30	Sub=0.668
40	264V 60Hz	0.227	29.3	Left=2.35	Rear=1.16	Front=1.16
				Right=2.35	Centre=2.30	Sub=0.668

For SD mode, input 1KHz signal to deliver the 1/8 Max. Non-Clipped output power on speakers, USB loading 5V/200mA.

Cond.	input (V)	I input (A)	P input (W)	Output voltage (V)		
41	198V 50Hz	0.291	29.4	Left=2.32	Rear=1.09	Front=1.09
				Right=2.32	Centre=2.22	Sub=0.604
42	220V 50Hz	0.272	29.5	Left=2.32	Rear=1.09	Front=1.09
				Right=2.32	Centre=2.22	Sub=0.604
43	240V 50Hz	0.258	29.6	Left=2.32	Rear=1.09	Front=1.09
				Right=2.32	Centre=2.22	Sub=0.604
44	264V 50Hz	0.243	29.6	Left=2.32	Rear=1.09	Front=1.09
				Right=2.32	Centre=2.22	Sub=0.604
45	198V 60Hz	0.293	29.5	Left=2.32	Rear=1.09	Front=1.09
				Right=2.32	Centre=2.22	Sub=0.604
46	220V 60Hz	0.274	29.6	Left=2.32	Rear=1.09	Front=1.09
				Right=2.32	Centre=2.22	Sub=0.604
47	240V 60Hz	0.259	29.5	Left=2.32	Rear=1.09	Front=1.09
				Right=2.32	Centre=2.22	Sub=0.604
48	264V 60Hz	0.245	29.7	Left=2.32	Rear=1.09	Front=1.09
				Right=2.32	Centre=2.22	Sub=0.604

Note (if applicable):

input 1KHz signal to deliver the 1/8 Max. Non-Clipped output power on speakers, Until steady conditions were established. The measured consumption at rated supply voltage shall not exceed the marked value by more than 10%.

	Loudspeaker impedance (Ω) :	Left, Right, Rear, Front, Centre, Sub 8Ω x 5		—	
	Several loudspeaker systems :	--		--	
	Marking of loudspeaker terminals :	--		--	
Temperature Rise dT of Part		dT (K)			Limit max dT (K)
Test Condition No.		No _13__	No _12__	No ____	--
Power switch		15.6	15.9	--	40
Input wire		21.6	22.0	--	Ref
AC connector (CON1)		20.7	21.0	--	Ref
Winding of Line filter LT2		24.9	25.0	--	130-35-10=85
X-capacitor (C1)		29.1	29.5	--	85-35-10=40
Winding of Line filter LT1		35.3	33.7	--	130-35-10=85
X-capacitor (C2)		33.2	32.9	--	85-35-10=40
PCB under D2		33.1	32.0	--	130-35-10=85
Electrolytic capacitor (C3)		37.9	37.9	--	105-35-10=60
PCB under MOS1		46.3	49.6	--	130-35-10=85
Electrolytic capacitor (C6)		41.6	44.3	--	105-35-10=60
T1 winding		55.1	57.2	--	75* (T120-35-10)
T1 core		47.0	49.0	--	75* (T120-35-10)
Opto-coupler (IC1)		38.1	39.8	--	110-35-10=65
Y-capacitor (CY1)		40.0	40.9	--	125-35-10=80
Electrolytic capacitor (C11)		45.2	47.0	--	105-35-10=60
Winding of Line filter L3		42.4	43.7	--	130-35-10=85
Electrolytic capacitor (C64)		44.9	45.3	--	105-35-10=60
PCB under UND2		51.3	51.8	--	130-35-10=85
PCB under IC9		58.9	59.3	--	130-35-10=85
PCB under IC6		33.3	28.9	--	130-35-10=85
PCB under UND1		40.7	41.0	--	130-35-10=85
PCB under IC11		42.7	43.1	--	130-35-10=85
PCB under U9		35.4	35.8	--	130-35-10=85
PCB under IC5		77.5	77.8	--	130-35-10=85
Surface of button		10.7	9.3	--	40
Wooden Enclosure inside near power supply board		22.6	22.9	--	Ref

Wooden Enclosure outside near power supply board	12.9		12.7		--	Ref	
Ambient	27.7°C		27.5°C		--	--	
Ambient temperature t1 (°C)	--		--		--	--	
Ambient temperature t2 (°C)	--		--		--	--	
Temperature rise dT of winding: dT = (R2 – R1) x (234.5 + t1) – (t2 – t1) R1	R1 (Ω)	R2 (Ω)		dT (K)	Limit max (K)		Insulation class
--	--	--		--	--		--
--	--	--		--	--		--
--	--	--		--	--		--
--	--	--		--	--		--
Remark: - Max. operation temperature: 35°C .) Minus (-) 10K applied for thermo-couple method for windings.							

7.2	TABLE: softening temperature of thermoplastics			N/A
Temperature T of part	T - normal conditions (°C)	T - fault conditions (°C)	Min T softening (°C)	
--	--	--	--	
--	--	--	--	
Remark: only for clause 7.2 inside plastic enclosure temperature limit				

9.1.1.1	Touch current expressed as voltages U1 and U2 in Annex D					P
Location	Open circuit voltage (V)	Measured U1 V (peak)	Measured U1 V (DC)	Measured U2 V (peak)	Measured I (mA)	Limits : U1 Max 35V (peak) U1 Max 1.0V (DC) U2 Max 0.35V (peak)
L/N and output terminal	192	0.840	--	0.220	0.14	Pass
L/N and wooden enclosure	72	0.268	--	0.074	0.005	Pass
Input: 264V/60Hz						

10.3	TABLE: insulation resistance measurements		P
Insulation resistance R between:		R (MΩ)	Required R (MΩ)
Bl: Between L & N (Fuse removed)		>50	Min. 2
Rl: Between Pri. & Sec.		>100	Min. 4
Rl: Between Pri. & wooden enclosure (with metal foil)		>100	Min. 4
Rl: Between Pri. & terminals		>100	Min. 4
Rl: Transformer T1 primary winding and secondary winding		>100	Min. 4
Bl: Transformer T1 primary winding and core		>50	Min. 2
Bl: Transformer T1 secondary winding and core		>50	Min. 2
Rl: One layer insulation tape used in Transformer T1		>100	Min. 4

10.3	TABLE: electric strength measurements		P
Test voltage applied between:		Test voltage (V)	Breakdown
Bl: Between L & N (Fuse removed)		1500Vac	No
Rl: Between Pri. & Sec.		3000Vac	No
Rl: Between Pri. & wooden enclosure (with metal foil)		3000Vac	No
Rl: Between Pri. & terminals		3000Vac	No
Rl: Transformer T1 primary winding and secondary winding		3000Vac	No
Bl: Transformer T1 primary winding and core		1500Vac	No
Bl: Transformer T1 secondary winding and core		1500Vac	No
Rl: One layer insulation tape used in Transformer T1		3000Vac	No

11.2	TABLE: summary of fault condition tests		P
	Voltage (V) 0,9 or 1,1times rated voltage	264V	—
	Frequency (Hz)	50Hz	—
	Ambient temperature (°C)	See below	—

No.	Component	Fault	dT (K) / Component	Other results (include description and test duration)
1	Ventilation openings	Blocked	Power switch: 16.9K Input wire: 23.1K AC connector (CON1): 22.3K Winding of Line filter LT2: 26.2K X-capacitor (C1): 30.6K Winding of Line filter LT1: 34.4K X-capacitor (C2): 33.8K PCB under D2: 33.0K Electrolytic capacitor (C3): 38.9K PCB under MOS1: 51.0K Electrolytic capacitor (C6): 45.7K T1 winding: 58.7K T1 core: 49.3K Opto-coupler (IC1): 41.5K Y-capacitor (CY1): 42.4K Electrolytic capacitor (C11): 48.7K Winding of Line filter L3: 45.3K Electrolytic capacitor (C64): 45.8K PCB under UND2: 52.8K PCB under IC9: 60.1K PCB under IC6: 37.2K PCB under UND1: 41.7K PCB under IC11: 44.0K PCB under U9: 36.3K PCB under IC5: 77.9K Surface of button: 11.3K wooden Enclosure inside near power supply board: 24.1K wooden Enclosure outside near power supply board: 14.0K Ambient: 27.0°C	I/P: 264V, 0.253A, 30.9W. Normal operation, temperature rise stable, no hazard. Test duration: 2h 26min.

2	Max. non-clipped	--	<p>Power switch: 26.4K Input wire: 36.1K AC connector (CON1): 35.3K Winding of Line filter LT2: 45.8K X-capacitor (C1): 54.3K Winding of Line filter LT1: 73.8K X-capacitor (C2): 59.7K PCB under D2: 57.1K Electrolytic capacitor (C3): 63.4K PCB under MOS1: 91.9K Electrolytic capacitor (C6): 78.2K T1 winding: 106.1K T1 core: 87.4K Opto-coupler (IC1): 67.9K Y-capacitor (CY1): 67.2K Electrolytic capacitor (C11): 86.0K Winding of Line filter L3: 93.6K Electrolytic capacitor (C64): 68.9K PCB under UND2: 76.1K PCB under IC9: 84.1K PCB under IC6: 52.6K PCB under UND1: 58.1K PCB under IC11: 61.4K PCB under U9: 52.0K PCB under IC5: 117.8K Surface of button: 14.0K wooden Enclosure inside near power supply board: 38.9K wooden Enclosure outside near power supply board: 23.2K Ambient: 26.8°C</p>	<p>I/P: 264V, 0.476A, 70.8W Normal operation, temperature rise stable, no hazard. Test duration: 2h 16min.</p>
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3	Loudspeaker L/R	SC	<p>Power switch: 20.8K Input wire: 28.2K AC connector (CON1): 26.9K Winding of Line filter LT2: 32.1K X-capacitor (C1): 37.5K Winding of Line filter LT1: 43.4K X-capacitor (C2): 41.3K PCB under D2: 40.3K Electrolytic capacitor (C3): 46.7K PCB under MOS1: 60.8K Electrolytic capacitor (C6): 54.3K T1 winding: 70.9K T1 core: 59.6K Opto-coupler (IC1): 48.4K Y-capacitor (CY1): 50.3K Electrolytic capacitor (C11): 58.0K Winding of Line filter L3: 56.8K Electrolytic capacitor (C64): 59.3K PCB under UND2: 66.6K PCB under IC9: 75.0K PCB under IC6: 45.2K PCB under UND1: 52.2K PCB under IC11: 54.7K PCB under U9: 45.5K PCB under IC5: 105.4K Surface of button: 11.4K wooden Enclosure inside near power supply board: 29.0K wooden Enclosure outside near power supply board: 16.1K Ambient: 28.2°C</p>	<p>I/P: 264V, 0.274A, 38.0W Normal operation, temperature rise stable, no hazard. Test duration: 3h 12min.</p>
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4	Loudspeaker SUB	SC	<p>Power switch: 22.1K Input wire: 29.9K AC connector (CON1): 28.4K Winding of Line filter LT2: 33.6K X-capacitor (C1): 39.4K Winding of Line filter LT1: 45.8K X-capacitor (C2): 43.4K PCB under D2: 42.2K Electrolytic capacitor (C3): 48.7K PCB under MOS1: 63.3K Electrolytic capacitor (C6): 56.7K T1 winding: 73.7K T1 core: 62.0K Opto-coupler (IC1): 50.6K Y-capacitor (CY1): 52.4K Electrolytic capacitor (C11): 60.5K Winding of Line filter L3: 58.3K Electrolytic capacitor (C64): 63.4K PCB under UND2: 70.3K PCB under IC9: 77.0K PCB under IC6: 45.1K PCB under UND1: 53.6K PCB under IC11: 56.6K PCB under U9: 47.0K PCB under IC5: 106.8K Surface of button: 10.6K wooden Enclosure inside near power supply board: 30.4K wooden Enclosure outside near power supply board: 16.6K Ambient: 28.4°C</p>	<p>I/P: 264V, 0.281A, 40.3W Normal operation, temperature rise stable, no hazard. Test duration: 3h 25min.</p>
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5	USB output	OL	<p>Power switch: 17.2K Input wire: 23.7K AC connector (CON1): 22.7K Winding of Line filter LT2: 27.1K X-capacitor (C1): 31.9K Winding of Line filter LT1: 36.7K X-capacitor (C2): 35.4K PCB under D2: 34.6K Electrolytic capacitor (C3): 40.6K PCB under MOS1: 53.5K Electrolytic capacitor (C6): 47.6K T1 winding: 62.1K T1 core: 52.2K Opto-coupler (IC1): 43.0K Y-capacitor (CY1): 43.9K Electrolytic capacitor (C11): 51.2K Winding of Line filter L3: 47.7K Electrolytic capacitor (C64): 48.8K PCB under UND2: 54.8K PCB under IC9: 62.0K PCB under IC6: 37.8K PCB under UND1: 43.1K PCB under IC11: 45.4K PCB under U9: 37.6K PCB under IC5: 81.9K Surface of button: 12.8K wooden Enclosure inside near power supply board: 24.5K wooden Enclosure outside near power supply board: 13.8K Ambient: 27.9°C</p>	Unit shut down when the USB output load to Max. 0.4A, recoverable when the fault removed. Normal operation, temperature rise stable, no hazard. Test duration: 3h 19min.
6	C3	SC	--	Fuse F1 opened immediately, no hazards. Test time=1s. I/P: 0A, 0W
7	D3	SC	--	Fuse F1 opened immediately, no hazards. Test time=1s. I/P: 0A, 0W
8	T1 Pin 1-3	SC	--	Unit shut down immediately, input decrease to 0.033A/0.46W, recoverable when the fault removed. No damage, no hazards. Test time=10mins.
9	T1 Pin 4-5	SC	--	Unit shut down immediately, input decrease to 0.033A/0.54W, recoverable when the fault removed. No damage, no hazards. Test time=10mins.
10	T1 Pin 6-7	SC	--	Unit shut down immediately, input decrease to 0.033A/0.62W, recoverable when the fault removed. No damage, no hazards. Test time=10mins.

11	D10 SC	SC	--	Unit shut down immediately, input decrease to 0.033A/0.59W, recoverable when the fault removed. No damage, no hazards. Test time=10mins.
12	D7 SC	SC	--	Unit shut down immediately, input decrease to 0.033A/0.57W, recoverable when the fault removed. No damage, no hazards. Test time=10mins.
13	IC1 Pin 1-2	SC	--	Unit shut down immediately, input decrease to 0.033A/0.49W, recoverable when the fault removed. No damage, no hazards. Test time=10mins.
14	IC1 Pin 3-4	S-C	--	Unit shut down immediately, input decrease to 0.033A/0.55W, recoverable when the fault removed. No damage, no hazards. Test time=10mins.
15	IC1 Pin 1	O-C	--	Unit shut down immediately, input decrease to 0.033A/0.51W, recoverable when the fault removed. No damage, no hazards. Test time=10mins.
16	IC1 Pin 3	O-C	--	Unit shut down immediately, input decrease to 0.033A/0.50W, recoverable when the fault removed. No damage, no hazards. Test time=10mins.
17	MOS1 D-S	S-C	--	Fuse F1 opened immediately, R6, R7, R8, R9 and MOS1 damaged, no hazards. Test time=1s. I/P: 0A, 0W
18	MOS1 D-G	S-C	--	Fuse F1 opened immediately, MOS1 damaged, no hazards. Test time=1s. I/P: 0A, 0W
19	MOS1 G-S	S-C	--	Unit shut down immediately, input decrease to 0.033A/0.50W, recoverable when the fault removed. No damage, no hazards. Test time=10mins.
20	U1 Pin 2-5	SC	--	U1 damaged, input decrease to 0.033A/0.42W, recoverable when the fault removed. No damage, no hazards. Test time=10mins.
Ambient temperature t1 (°C)			24.6	—
Ambient temperature t2 (°C)			27.7	—
Remark: SC = Short-circuit, OC = Open circuit, OL = Overload				

13	TABLES: clearances and creepage distances					P
Rated supply voltage:	100-240Vac	Pollution degree ...:	II	Material Group:	IIIb	
2 N force on internal parts applied:			Component			--
30 N force on outside of conductive enclosure applied:			Metal enclosure			--
Location	Working Voltage		Clearance (mm)		Creepage (mm)	
	V rms	V peak	Min	Actual	Min	Actual
Different polarity of L & N before fuse F1 (BI)	<250	<420	2.0	2.5	2.5	2.5
Different polarity of fuse (BI)	<250	<420	2.0	3.4	2.5	3.4
Live part to accessible part (RI)	<250	<420	4.0	<10	5.0	<10
CY1 capacitor primary to secondary (RI)	<250	<420	4.0	7.3	5.0	7.3
Photo coupler IC1 primary to secondary on PCB Layout (RI)	<250	<420	4.0	6.7	5.0	6.7
Transformer T1 primary winding to secondary winding (RI)	235	504	4.4	6.5	5.0	7.0
Transformer T1 primary winding to core (BI)	235	504	2.2	3.2	2.5	3.6
Transformer T1 Secondary winding to core (BI)	235	504	2.2	3.2	2.5	3.6
Transformer T1 primary to secondary on PCB Layout (RI)	235	504	4.4	7.8	5.0	7.8
Circuits conductively connected to the mains (use Tables 8, 9 and 11): see note below.						
<p>Notes:</p> <p>1. Secondary circuits of Class II apparatus which have connector terminals that could be earthed (e.g. antenna signal input), are subjected to the requirements for circuits conductively connected to the mains in Tables 8 and 9.</p> <p>2. Floating secondary circuits of Class I 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 unless the floating secondary circuit is separated from the primary circuits by an earthed metal screen (e.g. in the power transformer), or the floating secondary circuit is connected to earth via a component such as a capacitor.</p> <p>3. 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.</p> <p>4. 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 .</p> <p>"Min" = minimum required.</p> <p>"Actual" = Actual dimensions measured.</p>						
Remark:						

14	TABLE: list of critical components and materials					P
Component	Manufacturer/ trademark	Type/model	Value / rating	Standard	Approval/ Reference	
Power plug	Awin Wire & Cable Co., Ltd.	AW112	2.5A, 250Vac	DIN VDE 0620, EN 50075	VDE: 40010116	
Alternative	Various	Various	2.5A, 250Vac	DIN VDE 0620, EN 50075	VDE	
Power cord	Shenzhen Bao Hing Electric Wire & Cable Manufacture Co. Ltd.	H03VVH2-F	2x 0.5 mm ² or 2 x 0.75mm ²	DIN VDE 0281-5, VDE 0281	VDE: 131689	
Alternative	Awin Wire & Cable Co., Ltd.	H03VVH2-F	2x 0.5 mm ² or 2 x 0.75mm ²	DIN VDE 0281-5, VDE 0281	VDE: 40023114	
Power switch	ZHONGXUN ELECTRONICS INDUSTRY COMPANY	KCD1-104	6A 250V /10A 250V	EN 61058-1:2002	TUV: R 50049218	
Alternative	Yueqing Huansheng Electronics	KCD-117	6A 250V	EN 61058-1:2002	VDE 40024304	
Plastic	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	AG15A1	HB,50℃	UL94, UL746C	UL: E162823	
Heat Shrinkable tube	DONGGUAN QUANTAI INDUSTRIAL CO	T-2	VW-1, 125 °C, 600V.	UL 224	UL: E227336	
Alternative	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR-H	VW-1, 125 °C, 600V.	UL 224	UL: E203950	
Alternative	Various	Various	Min. VW-1, 125 °C, 600V.	UL 224	UL	
Wooden material	Various	Various	Min. 6.0mm thickness	EN 60065	Test in appliance	
PCB	CHEERFUL INDUSTRIAL (HK) LTD	CC-3	Min V-0, 130℃	UL 796	UL: E141796	
Alternative	Various	Various	V-0 or better, Min. 105 °C	UL 796	UL	
Fuse (F1)	XC ELECTRONICS(SHENZHEN)CORP LTD	3T	T2AL, 250Vac	EN 60127-1, EN 60127-3	VDE: 40019614	

X- capacitor (C1, C2)	HSUAN TAI ELECTRONICS CO LTD	MCY	275Vac, 0.22uF, 85°C	UL 1414, IEC 60384-14	UL: E199069, VDE: 125205
Alternative	SHANTOU HIGH- NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	MPX	275Vac, 0.22uF, 85°C	UL 1414, IEC 60384-14	UL:E208107 VDE:4003467 9
Alternative	Tenta Electric Industrial Co. Ltd.	MEX	275Vac, Max. 0.22uF, 85°C	IEC 60384-14	VDE: 119119
Alternative	Shenzhen Su Rong Capacitors Co., Ltd.	MPX/MKP	280Vac, Max. 0.22uF, 85°C	IEC 60384-14	VDE: 40008924
Y1- capacitor (CY1)	SHENZHEN HAOTIAN ELECTRONIC CO LTD	HTC	250Vac, Y1 type, Max. 2200pF, 125°C.	UL 1414,	UL: E326483,
Alternative	SHENZHEN HAOTIAN ELECTRONIC CO LTD	HT	Min. 400Vac, Y1 type, Max. 2200pF, 125°C.	IEC 60384-14	VDE: 40029300
Alternative	XIAMEN WANGMING ELECTRONICS CO LTD	HJ	Min. 400V, 85°C, 2200pF Min.	UL 1414, IEC 60384-14	UL: E221839
Alternative	SHANTOU HIGH- NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	CD	Min. 400Vac, Y1 type, Max. 2200pF, 125°C.	IEC 60384-14	VDE:4002575 4
Alternative	SHENZHEN HAOTIAN ELECTRONIC CO LTD	HTC	250Vac, Y2 type, Max.2200Pf	UL 1414	UL: E208107
Alternative	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Min. 250Vac, Y1 type, Max. 2200pF, 85°C.	IEC 60384-14	VDE: 118357
Alternative	Shenzhen Teruixiang Electronic Co, Ltd.	TY-Series	400Vac, Y1 type, Max. 2200pF, 125°C.	IEC 60384-14	VDE: 40023136
Optocoupler (IC1)	EVERLIGHT ELECTRONICS CO LTD	EL817	Dti=0.5mm, Int. dcr=6.0mm, Ext. dcr=7.7mm,	UL 1577, IEC 60747-5-2	UL: E214129, VDE: 132249

Line filter (LT1)	SHEN ZHEN CITY OBX ELECTRONICS CO., LTD	UU9.8-20MH	Min. 20mH, 130°C	EN60065	Tested with appliance
--Bobbin of LT1	Chang Chun Plastics Co., Ltd	T375J	V-0, 150°C, Min. 0.45mm thickness	UL 746C	UL: E59481
--Magnet wire of LT1	TAI-I ELECTRIC WIRE & CABLE CO LTD	UEW	Copper magnet wire, Min. 130°C	UL 1446	UL: E85640
--Varnish of LT1	HANG CHEUNG PETROCHEMICAL LTD	8562/D	155°C	UL 1446	UL: E200154
Primary connector (CN1)	ZHEJIANG JINDA ELECTRONICS CO LTD	3.96T-02	250Vac, 5A, 85°C	UL 1977	UL: E237523
Transformer (T1)	KINGSUM ELECTRONICS MANUFACTOR	LX.555	Class B	EN 60065	Test in appliance
--Bobbin material	CHANG CHUN PLASTICS CO LTD	T375J	V-0, 150°C, Min. 0.75mm thickness	UL 94, UL 746C	UL: E59481
--Insulation tape	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-02A(h)	130°C	UL 510	UL: E246820
--Magnet wire	TAI-I ELECTRIC WIRE & CABLE CO LTD	UEW	Copper magnet wire, Min. 130°C	UL 1446	UL: E85640
Alternative	Various	Various	Copper magnet wire, Min. 130°C	UL 1446	UL
--Magnet wire	SHANGHAI LUCKY TRADE CO LTD.	TIW-E	Copper magnet wire, Min. 150°C	UL 1446	UL:E305883
--Tube	FLUO TECH INDUSTRIES CO LTD	TFT	300V, 200°C, VW-1	UL 224	UL: E175982
--Varnish	HANG CHEUNG PETROCHEMICAL LTD	8562/D	155°C	UL 1446	UL: E200154

Photo documentation

Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7

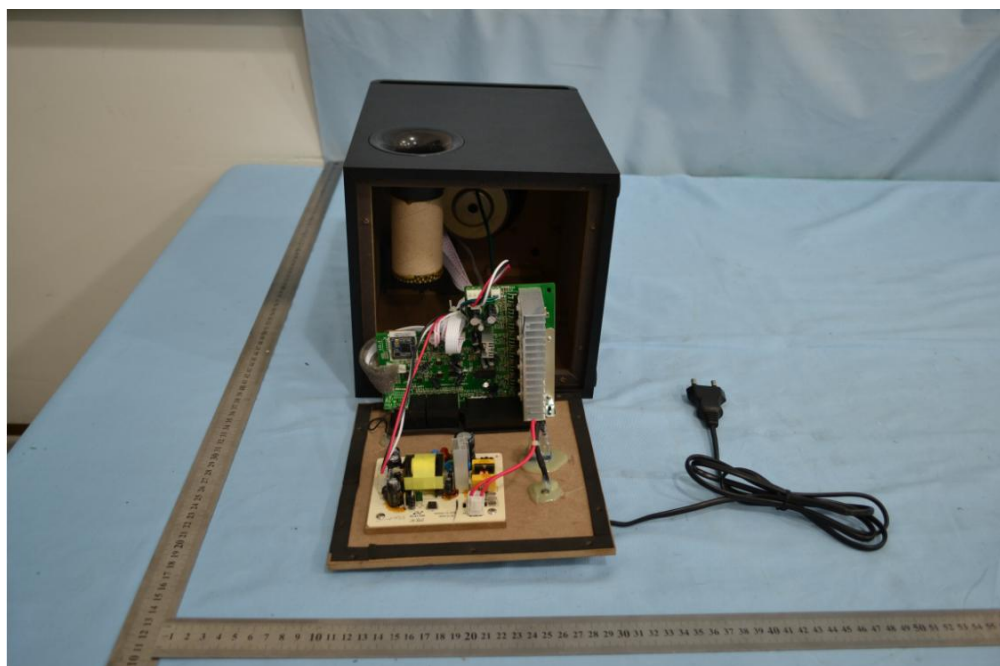


Photo 8



Photo 9

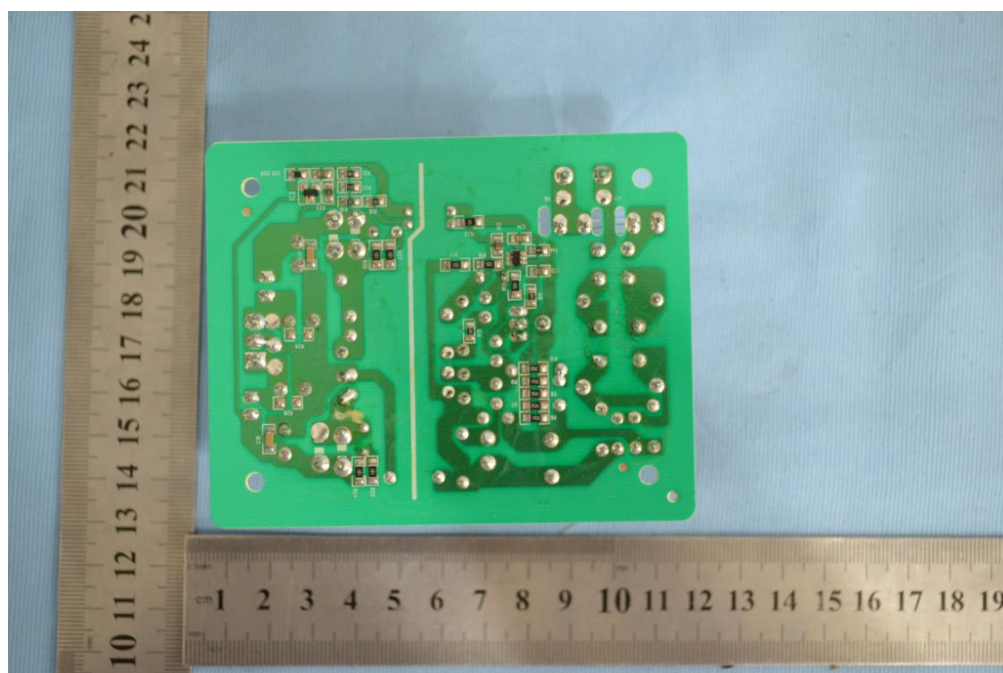


Photo 10

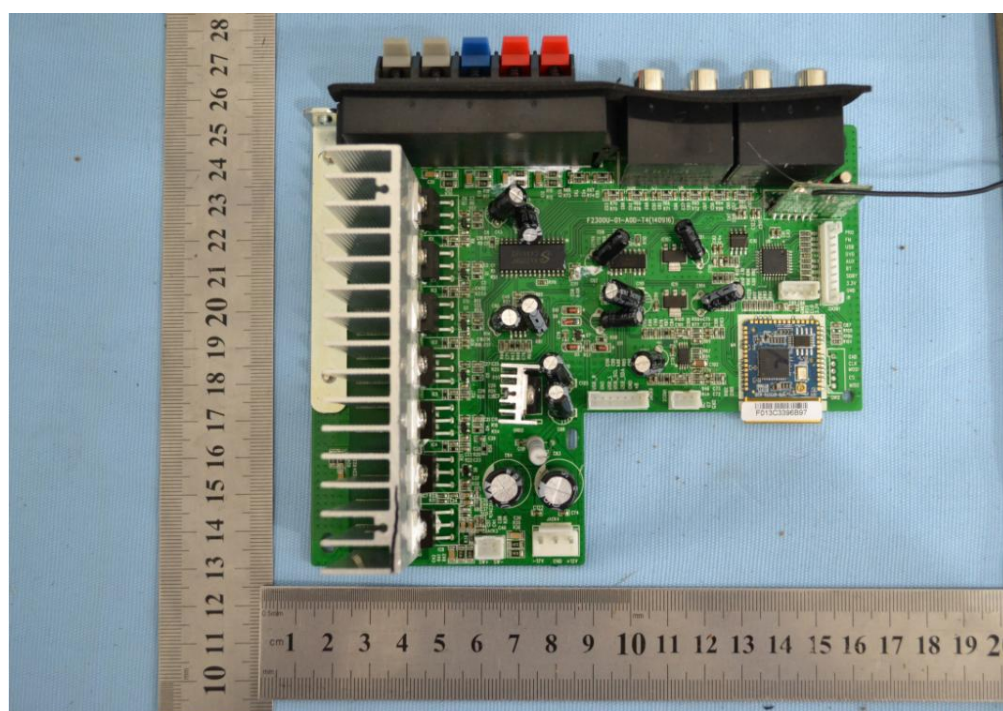
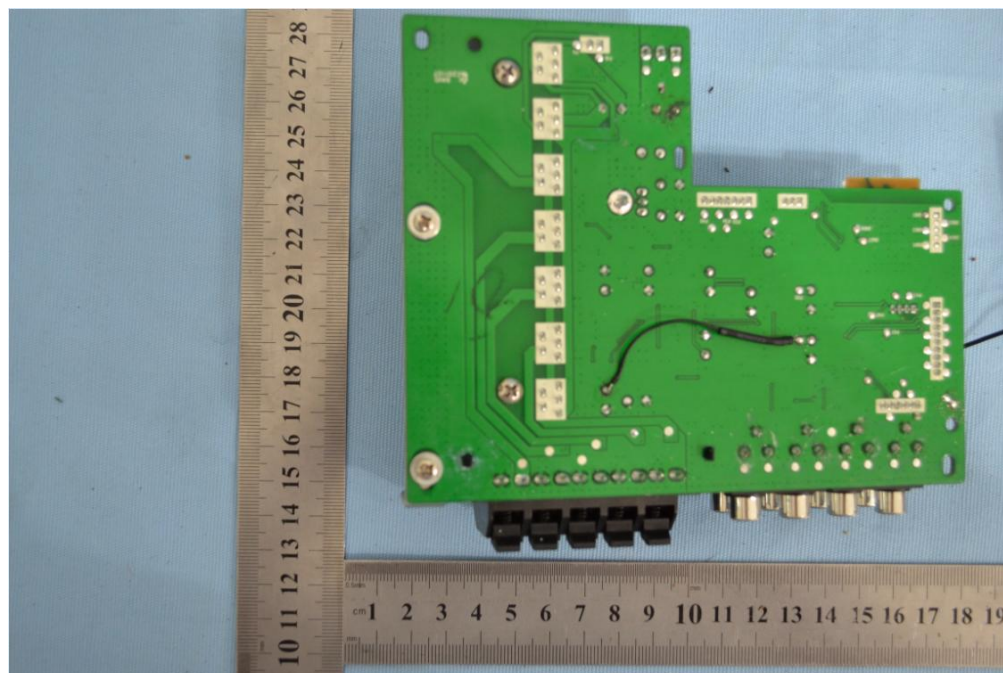


Photo 11



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