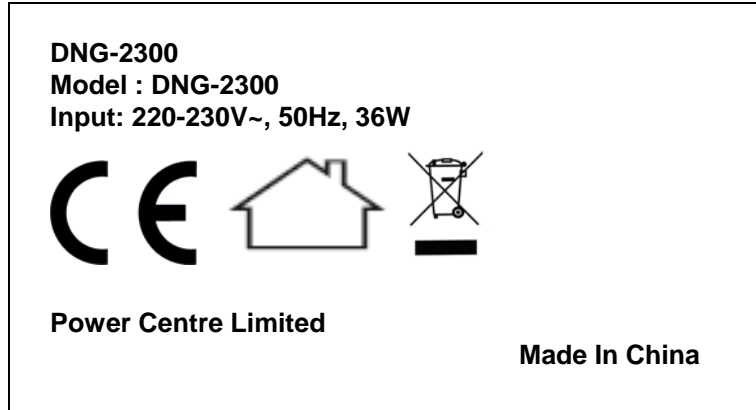


TEST REPORT EN 60065 Audio, Video and similar electronic apparatus	
Report reference No.	LCS120216090TS
Compiled by (+ signature)	Kevin Lin <i>Kevin Lin</i>
Approved by (+ signature)	Jackey Qiu <i>Jackey Qiu</i>
Date of issue	February 27, 2012
Contents	40 pages
Testing laboratory	
Name	Shenzhen LCS Compliance Testing Laboratory Ltd.
Address	Xingyuan Industrial Park, Tongda Road, Bao'an Blvd., Bao'an District, Shenzhen, Guangdong, China
Testing location	Same as above
Client	
Name	Power Centre Limited
Address	Flat/Rm C, 15/F, Unionway Commercial Centre, 283 Queen's Road Central, Hong kong, China
Test specification	
Standard	EN 60065: 2002+A1: 2006+A11: 2008+A2: 2010+A12: 2011
Test procedure	Compliance with EN 60065: 2002+A1: 2006+A11: 2008+A2: 2010+A12: 2011
Non-standard test method	N.A.
Test item Description.....	
Test item Description.....	DNG-2300
Trademark.....	N.A.
Model and/or type reference.....	DNG-2300
Manufacturer	Power Centre Limited
Address	Flat/Rm C, 15/F, Unionway Commercial Centre, 283 Queen's Road Central, Hong kong, China
Rating(s)	220-230V~, 50Hz, 36W, Class I

<p>Particulars: test item vs. test requirements</p> <p>Equipment mobility : Portable Apparatus</p> <p>Operating condition : Continuous operation</p> <p>Class of equipment : Class I equipment</p> <p>Mass of equipment (kg) : 1.45Kg</p> <p>Protection against ingress of water : IPX0</p>
<p>Test case verdicts</p> <p>Test case does not apply to the test object..... : N(N/A)</p> <p>Test item does meet the requirement : P(Pass)</p> <p>Test item does not meet the requirement : F(Fail)</p>
<p>Testing</p> <p>Date of receipt of test item : February 15, 2012</p> <p>Date(s) of performance of test..... : February 15, 2012 – February 27, 2012</p>
<p>General remarks</p> <p>This test report shall not be reproduced except in full without the written approval of the testing laboratory.</p> <p>The test results presented in this report relate only to the item tested.</p> <p>"(see remark #)" refers to a remark appended to the report.</p> <p>"(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report a comma is used as the decimal separator.</p> <p>Remark:</p> <ol style="list-style-type: none"> 1. The ambient temperature is 25°C. 2. The laboratory ambient for testing: 22.0-28.0°C, 60%-73%R.H.

Copy of marking plate



EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
3	GENERAL REQUIREMENTS		P
	Safety class of the apparatus	Class I equipment	P
3.1	A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - 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.		N

4	General test conditions		P
4.1	Conduct of tests		P
4.1.1	Tests according to this standard are type tests		P
4.1.2	The sample or samples under test shall be representative of the apparatus the user would receive.		P
4.1.3	Unless otherwise specified, the tests are carried out under normal operating conditions at: - an ambient temperature between 15°C and 35°C - a relative humidity of 75% maximum	Ambient temperature: 25°C Relative humidity: 50%	P
4.1.4	Any position of intended use of the apparatus, normal ventilation not being impeded.	During normal operation tests, ventilation is not impeded	P
4.1.5	The characteristics of the supply source used during the tests shall not appreciably influence the test results.	Considering the influence, all tests are conducted at 0.9 times or/and 1.1 times of the rated supply voltage range.	P
4.1.6	Where relevant, a standard signal consisting of PINK NOISE, band-limited by a filter whose response conforms to that given in figure C.1 in annex C.		N

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
4.1.7	The a.c. values given in this standard are r.m.s values, unless specified otherwise		P
4.2	Normal operating conditions	See below.	P
4.2.1	The apparatus is connected to a supply voltage of 0.9 times or 1.1 times of any rated supply voltage for which the apparatus is designed.	Heating test is conducted at 0.9 times and 1.1 times of the rated supply voltage, and the other tests are conducted at 1.1 times of the rated supply range.	P
4.2.2	Any position of controls which are accessible to the user for adjustment by hand		N
4.2.3	Any earth terminal and any protective earth of single-phase supply may be connected to either pole of the isolated supply source used during the test		P
4.2.4	For an audio amplifier:	See below.	P
	The apparatus is operated in such a way as to deliver one-eighth of the non-clipped output power to the rated load impedance using the standard signal described in 4.1.6.		P
	The most unfavorable rated load impedance of any output circuit is connected or not.		P
	Organs or similar instruments which have a tone-generator unit are operated with any combination of two bass pedal keys		N
4.2.5	Load conditions for the motor are chosen which may occur during intended use for apparatus incorporating motors.	Apparatus not incorporation motors.	N
4.2.6	An apparatus supplying power to other apparatus is loaded to give its rated power or not loaded.	The unit is not this kind of equipments.	N
4.2.7	A supply apparatus to be used inside apparatus, for which it is intended exclusively, is tested within such apparatus after installation according to the manufacturer's instruction for use.	Ditto.	N
4.2.8	For citizen's band apparatus, the rated load impedance is connected or not to the antenna terminal.	This apparatus is not a citizen's band apparatus.	N
4.2.9	For antenna positioners	This apparatus is not an antenna positioners.	N

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
4.2.9.1	Movements and the resting periods for antenna positioners in combination with their control and supply apparatus.	This apparatus is not an antenna positioners.	N
4.2.9.2	The power supply unit shall be loaded in accordance with the marked output rating and operated with a duty cycle of 5 min on, and 15 min off for satellite antenna positioners consisting of a power supply and control unit.	This apparatus is not an satellite antenna positioners.	N
4.2.10	Apparatus designed to be supplied exclusively by a special supply apparatus shall be tested together with this special supply apparatus.	This apparatus need not to be supplied by a special supply apparatus.	N
4.2.11	Apparatus supplied by supply apparatus for general use shall be supplied by a test power supply according to table 2.	This apparatus is not supplied by a supply apparatus for general use.	N
4.2.12	Apparatus intended to be used with optional detachable legs or stands are tested with or without legs or stands fitted.	This apparatus is not used with detachable legs or stands.	N
4.3	Fault conditions	See below.	P
4.3.1	Short-circuit across clearances and creepage distances if they are less than the values specified in clause 13 for basic and supplementary insulation.	Clearances and creepage distances are exceeded the values specified in clause 13.	P
4.3.2	Short-circuit across parts of insulating material	The insulation of the insulating materials comply with the requirements of 10.3.	P
4.3.3	Short-circuit or interruption of :	Refer to clause 11	P
	heaters of electronic tubes	No electronic tubes	N
	insulation between heaters and cathodes of electronic tubes		N
	spacings in electronic tubes, excluding picture tubes		N
	semiconductor devices, one lead at a time interrupted or any two leads connected together in turn.		N
4.3.4	Short-circuit or disconnection of resistors, capacitors, windings, loudspeakers, optocouplers, varistors or non-linear passive components.	Refer to clause 11	P

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
4.3.5	For apparatus containing an audio amplifier, using the standard signal to deliver the most unfavourable output power from zero up to the maximum attainable output power to the rated load impedance.	No audio amplifier	N
4.3.6	Motors are stalled if this is possible.	No motors.	N
4.3.7	Motors, relay coils or the like, intended for short-time or intermittent operation, are operated continuously if this can occur during operation	No motors, relay or similar components.	N
4.3.8	The apparatus is connected simultaneously to alternative types of supply		N
4.3.9	Output terminals of apparatus supplying power to other apparatus are connected to the most unfavourable load impedance, including short circuit.	See appended table 11.1	N
4.3.10	Ventilation openings shall be covered.	See appended table 11.1	P
4.3.11	The apparatus is tested with one or more batteries with both intended and reversed polarity	There are no batteries in this apparatus.	N
4.3.12	The most unfavourable load impedance including short circuit is connected to the antenna terminal for citizen's band apparatus.	This apparatus is not a citizen's band apparatus.	N
4.3.13	Mains voltage setting device should be set at the most unfavourable position for apparatus provided with a voltage setting devices.	This apparatus not provided with a voltage setting devices.	N
4.3.13	The voltage setting device should be adjusted at any output voltage for apparatus supplied by a special apparatus with a voltage setting devices for the output voltage.	This apparatus is not Supplied by a special apparatus.	N
4.3.15	Apparatus which can be supplied by supply apparatus for general use shall be tested by using a test power supply as specified in table 1 step by step upwards.	This apparatus is not supplied by supply apparatus for general use	N
5	Marking and instructions		P
	General	See below.	P

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
	Easily discernible when ready for use Indelible and legible after rubbing test	Marking plates provided on the bottom of the enclosure. After rubbing test by water and petroleum spirit, the marking still easily discernible, indelible and legible.	P
	Letter symbols comply with IEC 60027	Considered.	P
	Graphical symbols comply with IEC 60417 & and ISO 7000		P
	The on-position and off-position of switch shall be indicated in accordance with 14.6.3		N
5.1	Identification and supply ratings		P
	Maker's or responsible vendor's name, trade mark or identification mark	See the label	P
	Model number or type reference	DNG-2300	P
	Symbol of Class II	Class I equipment.	N
	Marking for apparatus designed for use in tropical climates		N
	Symbol-nature of supply	~	P
	Rated voltage (V)	220-230V~	P
	Rated frequency	50Hz	P
	Power marking	Rated power consumption is 36W.	P
5.2	Terminals		P
	The symbol of the protective earthing conductor		P
	The symbol of hazardous live under normal condition	No hazardous live terminals	N
	Marking of output terminal for supply of other apparatus	No such terminal	N
5.3	Symbol indicating a specific component of affect safety in circuit diagram		P
5.4	Instructions	Instruction for use provided in English. Versions of other languages will be provided when national approval.	P
	Instruction for installation or use	See above.	P

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
	Language of instruction	English	P
5.4.1	For main powered apparatus, instruction shall state the apparatus shall not be exposed to dripping or splashing	The instruction statement complies with the requirement.	P
	A warning of the terminals having hazardous live	Not such terminal	N
	A warning for replaceable lithium battery	No lithium battery	N
	Instructions for modem if fitted		N
	Class I earth connection warning		P
	Instructions for multimedia system connection	See user manual.	P
	Special stability warning for fixed installation	Test according to sub-clause 19.	N
	Warning: battery exposure to heat		N
	Warning: protective film on CRT face		N
5.4.2	Disconnect device: plug/coupler or all-pole mains switch location, accessibility and markings	Appliance inlet as disconnect device	P
	Instructions for permanently connected equipment	No permanently connected equipment.	N

6	Hazardous radiation		N
6.1	Ionizing radiation		N
	Adequate protection against ionizing radiation		N
	Measure value of ionizing radiation in normal condition		N
	Measure value of ionizing radiation under fault condition		N
6.2	Laser radiation	No laser radiation	N
	Protection against laser radiation under normal condition and fault condition		N
	Classification of laser radiation		N
	Measure value		N
6.2.1	a) Under normal operating conditions, the apparatus shall meet approachable emission limits of Class1 as specified in IEC60825-1		N
	b) If the apparatus comply with 6.2.1.a, the requirements mentioned under c) and d) do not apply.		N

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Clause	Requirement – Test	Result - Remark	Verdict
	c) Adequate measures shall be taken to prevent the opening of any cover by hand giving access to laser radiation in excess of class 1 limits.		N
	d) Mechanical safety interlock shall be fail-safe, or shall withstand a switching test of 50000 cycles of operation.		N
6.2.2	a) When the apparatus is operated under fault conditions as specified in 4.3, the approachable emission level shall be not higher than class 3A outside the wavelength range of 400nm to 700nm and not higher than five times the limit for class 1 within the wavelength range of 400nm to 700nm.		N
	b) If the apparatus comply with 6.2.2.a, the requirements mentioned under c) and d) do not apply.		N
	c) Adequate measures shall be taken to prevent the opening of any cover by hand giving access to laser radiation in excess of the limits given in 6.2.2.a.		N
	d) Mechanical safety interlock shall be fail-safe, or shall withstand a switching test of 50000 cycles of operation.		N

7	Heating under normal operating conditions		P
7.1	During intended use, no part of the apparatus shall attain an excessive temperature.	During intended use, no part of the apparatus shall attain an excessive temperature.	P
7.1.1	Temperature rise of accessible parts	(See appended table)	P
7.1.2	Temperature rise of parts providing electrical insulation, other than windings	Ditto.	P
7.1.3	Temperature rise of support or mechanical barrier	No such parts.	N
7.1.4	Temperature rise of windings	(See appended table)	P
7.1.5	Temperature rise of parts not subject to a limit under 7.1.1 to 7.1.4 inclusive	Ditto.	P
7.2	Insulating material supporting parts consecutively connected to the mains carry a current exceeding 0.2A, shall be resistant to heat.		N

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
8	Constructional requirements with regard to the protection against electric shock		P
8.1	Conductive parts, covered only by lacquer, solvent -based enamel, ordinary paper, untreated textile, oxide films or beads are considered to be bare.	Considered.	P
8.2	No shock hazard when changing voltage setting device, fuse-links or handling drawers etc.		P
8.3	Insulation of hazardous live parts not provided by hygroscopic materials.	No hygroscopic materials used.	P
8.4	There should be no risk of an electric shock from accessible parts or from those parts rendered accessible .		N
8.5	Class I apparatus		P
	Basic insulation between hazardous live parts and earthed accessible parts	Ditto.	P
	Capacitors bridging basic insulation complying with 14.2.1a	Ditto.	P
	Basic insulation bridged by components complying with 14.3.4.3	Ditto.	P
8.6	Class II apparatus and Class II constructions within Class II equipment		N
	Reinforced or double insulation between hazardous live parts and accessible parts		N
	Components bridging reinforced or double insulation complying with 14.1 a) or 14.3		N
	Basic and supplementary insulation each being bridged by a capacitor complying with 14.2.1 a)	No such capacitors are provided.	N
	Reinforced or double insulation being bridged with 2 capacitors in series complying with 14.2.1 a)	Ditto.	N
	Reinforced or double insulation being bridged with a single capacitor complying with 14.2.1 b)	Ditto	N
8.7	Basic insulation between parts at 35 V to 71 V (peak) a.c. or 60 V to 120 V d.c. and accessible parts	Class I equipment.	P

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Clause	Requirement – Test	Result - Remark	Verdict
	Reinforced or double insulation between circuits operating at voltages between 35 V and 71 V (peak) a.c. or between 60 V and 120 V d.c. and hazardous live parts at higher voltage		N
	Separation by Class II isolating transformer	See clause 14.3.2.	N
	Separation by Class I isolating transformer		N
	Separation by earthed conductive part		P
8.8	Basic or supplementary insulation $\geq 0.4\text{mm}$	Class I equipment.	P
	Reinforced insulation $\geq 0.4\text{mm}$	Ditto.	P
	Thin sheet insulation	Incorporated in Transformer.	P
	Basic or supplementary insulation, at least two layers, each meeting 10.3		N
	Basic or supplementary insulation, three layers any two of which meet 10.3	Insulating tape of transformer	P
	Reinforced insulation, two layers each of which meet 10.3		N
	Reinforced insulation, three layers any two which meet 10.3		P
8.9	Adequate insulation between internal hazardous live conductors and accessible parts	All internal wires with only basic insulation are routed so that they are not close any live bare components.	P
	Adequate insulation between internal hazardous live parts and conductors connected to accessible parts	Class I equipment.	N
8.10	In class II apparatus, double insulation shall be provided between:	Class I equipment.	N
	accessible parts and conductors in wires or cables conductively connected to the mains		N
	conductors in wires or cables connected to accessible conductive parts and parts conductively connected to the mains	Ditto.	N
8.11	Detaching of wires	Supply cord	P
	No undue reduction of creepage or clearance distances if wires become detached		P
	Vibration test carried out		P

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Clause	Requirement – Test	Result - Remark	Verdict
8.12	Adequate cross-sectional area of internal wiring to mains socket-outlets.	3X0.75mm ²	P
8.13	Adequate fastening of windows, lenses, lamp covers etc. (pull test 20N for 10s)	Detachable plug	N
8.14	Adequate fastening of covers (pull test 50N, for 10 s)		N
8.15	No risk of damage to the insulation of internal wiring due to not hot parts or sharp edges	Internal wiring away from sharp edges, moving parts and not to contact parts exceeding the permissible temperature.	P
8.16	Only special supply equipment can be used		N
8.17	Requirements for insulated winding wires for use without additional interleaved insulation	No insulated winding wires for use without additional interleaved insulation.	N
8.18	Endurance test for wound components with insulated winding wires without additional interleaved insulation.	Ditto.	N
	Heat run		--
	Vibration test		--
	Moisture treatment		--
	Measurements		--
8.19	Disconnection from the mains		P
8.19.1	Disconnect device	The appliance inlet as disconnect device	P
	All-pole switch or circuit breaker with >3mm contact separation		N
8.19.2	Mains switch ON indication, main switch is used as a disconnect device.		P
8.20	Switch not fitted in the mains cord		P
8.21	Bridging components comply with clause 14	No such components.	N
9	Electric shock hazard under normal operating conditions		P
9.1	Testing on outside		--
9.1.1	General	All secondary terminals are below 60Vdc. (See appended table)	P

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
9.1.1.1	Determination of hazardous live parts		P
	Touch current measured from terminal devices using the network in Annex D	See the appended table	P
	Discharge not exceeding 45 uC		--
	Energy of discharge not exceeding 350 mJ		--
9.1.1.2	Determination of accessible parts		P
9.1.2	No hazardous live shafts of knobs, handlers or levers		P
9.1.3	Ventilation holes tested by means of 4 mm x 100 mm test pin	No access to any parts bearing hazardous voltage.	P
9.1.4	Terminal devices tested with 1 mm x 20 mm test pin (10 N); test probe D of IEC 61 032		P
9.1.5	Pre-set controls tested with 2 mm x 100 mm test pin (10 N); test probe C of IEC 61 032		P
9.1.6	No shock hazard due to stored charge on withdrawal of the mains plug; voltage (V) after 2 s		N
	If C is not greater than 0.1 µF no test needed		--
9.1.7	Enclosure sufficiently resistant to external force	See below.	P
	Test probe 11 of IEC 61 032 for 10 s (50N)	50 N force applied to rear enclosure, no hazard.	P
	Test hook of fig.4 for 10s (20N)	20 N force directed outwards, is applied for 10 s at all points where this is possible, no hazard.	P
	30 mm diameter test tool for 5 s (100 or 250N)	100N	P
9.2	No hazard after removing a cover by hand		P

10	Insulation requirements		P
10.1	Insulation resistance (MΩ) at least a 2 MΩ min. after surge test for basic and 4 MΩ min. for reinforced insulation	After the test, the tested insulation complied with the requirement of clause 10.3	P
10.2	Humidity treatment 48 h or 120 h	At 93% RH., 25°C, 48hours.	P
10.3.1	Insulation material of live parts be adequate to resistant to electric shock	(See appended table)	P

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
10.3.2	The insulation listed in table 5 shall be tested for insulation resistance and for dielectric strength.	(See appended table)	P
11	Fault conditions		P
11.1	No shock hazard under fault conditions	The voltage of the audio connectors did not exceed the specified voltage. (see appended table)	P
11.2	Heating under fault condition	During fault conditions, no fire propagated beyond the equipment.	P
11.2.1	Measurement of temperature rises	(See appended table)	P
11.2.2	Temperature rise of accessible parts	(See appended table)	P
11.2.3	Temperature rise of parts, other than windings, providing electrical insulation.	(See appended table)	P
	Temperature rise of printed circuit boards (PCB) exceeding the limits of Table 2 by max. 100 K for max. 5 min		N
	a) Temperature rise of printed circuit boards (PCB) to 20.3.1, exceeding the limits of Table 2 by not more than 100 K for an area not greater than 2 cm ²		N
	b) Temperature rise of printed circuit boards (PCB) to 20.3.1 up to 300 K for an area not greater than 2 cm ² for a maximum of 5 min		N
	Meets all the special conditions if conductors on printed circuit boards are interrupted		N
11.2.4	Temperature rise of parts acting as a support or a mechanical barrier	No such parts, see 7.1.3	N
11.2.5	Temperature rise of windings	(See appended table)	P
11.2.6	Temperature rise of other parts not subject to the limits of 11.2.1 to 11.2.5	(See appended table)	P
12	Mechanical strength		P
12.1	Adequate mechanical strength		P
12.1.1	Bump test for apparatus with a mass exceeding 7Kg	Mass: 1.45kg<7kg	N

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
12.1.2	Vibration test (Amplitude 0.35 mm, Frequency range 10Hz, 55Hz, 10Hz, Sweep rate 1 octave/min)	(See appended table)	P
12.1.3	Impact test (The apparatus is subjected to three blows from a spring-operated impact hammer, applied with an impact of 0.5J to energy point of the exterior likely to be weak).	0.5 J, 3 times (After tested, no damaged and EUT can withstand the dielectric strength test as specified in 10.3).	P
	Steel ball test	3.5 J, 1 time (After tested, no damaged and EUT can withstand the dielectric strength test as specified in 10.3).	P
12.1.4	Drop test for portable apparatus having where mass < 7 kg	No damager	P
12.1.5	Stress relief test	Metal enclosure	N
12.2	Fixing of knobs, push buttons, keys and levers	Knobs and push buttons are fastened that their use did not impair the protection against electric shock.	P
12.3	Remote controls with hazardous live parts	Remote control has no hazardous live part.	N
12.4	Drawers (pull test 50 N, 10 s)		P
12.5	Antenna coaxial withstand mechanical stresses	No antenna coaxial	N
	Endurance test		--
	Impact test		--
	Torque test		--
12.6	Telescoping or rod antennas construction	No such construction	N
12.6.1	Telescoping or rod antennas securement	Ditto.	N

13	Clearances and creepage distances		P
13.1	General	See 13.2, 13.3 and 13.4.	P
13.2	Determination of operating voltage	Unit was connected to a 220-230V (maximum) power.	P
13.3	Clearances	See below.	P
13.3.1	General	Annex and minimum clearances considered.	P

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
13.3.2	Clearances in circuits conductively connected to the mains	(See appended table)	P
13.3.3	Clearances in circuits not conductively connected to the mains	(See appended table)	P
13.4	Creepage distances	(See appended table)	P
	CTI tests	CTI rating for all materials of min. 100.	P
13.5	Printed boards	See below	P
13.5.1	The minimum clearances and creepage	The PCB complied with the pull-off and peel strength requirements of IEC 60249-2 are given in figure 10.	P
13.5.2	Type B coated printed circuit boards complying with IEC 60664-3 (basic insulation only)	Printed boards inside this apparatus are not type B coated printed boards.	N
13.6	Jointed insulation	No such construction.	N
13.7	Enclosed, enveloped or hermitically sealed parts: clearances and creepage distances to table 12	No such construction.	N
13.8	Parts filled with insulating compound, meeting the requirements of 8.8	No such parts.	N

14	Components		P
14.1	Resistors	No resistors short-circuiting or disconnected of which would cause an infringement of the requirement.	N
	a) Resistors between hazardous live parts and accessible metal parts	No such resistors.	N
	b) Resistors, other than between hazardous live parts and accessible parts	Ditto.	N
	b) Resistors separately approved		N
14.2	Capacitors and RC-units	X-capacitor and Y-capacitor approved by VDE	P
	Capacitors separately approved		--
14.2.1	a) Sub-class Y2 or Y4 capacitors or RC-units withstand the tests as specified in IEC60384-14, table II	No such components	N

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Clause	Requirement – Test	Result - Remark	Verdict
	b) Sub-class Y1 or Y2 capacitors or RC-units withstand the tests as specified in IEC60384-14, table II		N
14.2.2	X-capacitors withstand test for Sub-class X1 or X2		N
14.2.3	Capacitors operating at mains frequency but not connected to the mains: tests for X2		N
14.2.4	Intentionally kept free for future requirements for capacitors or RC-units others than those mentioned in 14.2.1 to 14.2.3	See above.	N
14.2.5	Capacitors with volume exceeding 1750 mm ³ , where short-circuit current exceeds 0,2 A: compliance with IEC60384-1, 4.38 category B or better	The enclosure of ripple capacitor is made by metal.	N
	Capacitors with volume exceeding 1750 mm ³ , mounted closer to a potential ignition source than table 5 permits: compliance with IEC 60 384-1, 4.38 category B or better	Ditto.	N
	Shielded by a barrier to FV 0 or metal	Ditto.	N
14.3	Inductors and windings		P
14.3.1	Transformers and inductors marked with manufacturer's name and type	See the table 14	P
	Transformers and inductors separately approved		N
14.3.2	General	See below.	P
	Isolating transformers shall comply with 14.3.3 and 14.3.4.1 or 14.3.4.2 and 14.3.5.1 or 14.3.5.2	Class II transformer.	P
	Separating transformers shall comply with 14.3.3 and 14.3.4.03and 14.3.5.1 or 14.3.5.2		N
14.3.3	Constructional requirements		P
14.3.3.1	Clearances and creepage distances of all windings shall comply with the requirement of clause 13.	See appended table 13.1.	P
14.3.3.2	Designs with more than one winding The input and output windings shall be electrically separated from each other.	An insulation barrier consisting of an uncemented pushed-on partition wall was used.	P
14.3.4	Separation between windings	See below.	P
14.3.4.1	Windings of class II construction		P

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Clause	Requirement – Test	Result - Remark	Verdict
14.3.4.2	Windings of class I construction		N
14.3.4.3	Windings of separating construction		N
14.3.5	Insulation between hazardous live parts and accessible parts		P
14.3.5.1	Windings of class II construction		P
14.3.5.2	Windings of class I construction		N
14.4	High voltage components		N
	High-voltage components and assemblies: U > 4 kV (peak) separately approved		--
	Component meets category FV 1 of IEC 60 707		--
14.4.1	High voltage transformers and multipliers tested as part of the submission		N
14.5	Protective devices		P
	Protective devices used within their ratings	See 14.5.2.1.	P
	External clearance and creepage distances appropriate for the voltage across the device when opened		N
14.5.1.1	a) Thermal cut-outs separately approved	No thermal cut-out used.	N
	b) Thermal cut-outs tested as part of the submission		N
14.5.1.2	a) Thermal links separately approved		N
	b) Thermal links tested as part of the submission		N
14.5.1.3	Thermal devices resettable by soldering	No such components.	N
14.5.2.1	Fuse-links in the mains circuit according to IEC 60 127	VDE approved fuse used	P
14.5.2.2	Correct marking of fuse-links adjacent to holder		P
14.5.2.3	Not possible to connect fuses in parallel	Not used.	N
14.5.2.4	Not possible to touch hazardous live parts when replacing fuse-links without the use of a tool	See 14.5.2.1	N
14.5.3	PTC-S thermistors comply with IEC 60 738	No PTC-S Thermistors	N
	PTC-S devices (15 W) category FV 1 or better	Ditto.	--
14.5.4	Circuit protectors have adequate breaking capacity and their position is correctly marked	Not such protectors used.	N

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
14.6	Switches	VDE approved manually operated mechanical switch used.	P
14.6.1	a) Separate testing to IEC 61058 including: 10 000 operations Normal pollution suitability Resistance to heat and fire level 3 And V-0 compliance with annex G, G.1.1		N
	b) Tested in the apparatus:		N
	Switch controlling > 0.2A with open contact voltage > 35 V (peak)/24 V dc complying with 14.6.3, 14.6.4 and V-0 in annex G, G.1.1		N
	Switch controlling > 0.2A with open contact voltage < 35 V (peak)/24 V dc complying with 14.6.3 and V-0 in annex G, G.1.1		N
	Switch controlling < 0.2A with open contact voltage > 35 V (peak)/24 V dc complying with 14.6.4 and V-0 in annex G, G.1.1		N
14.6.2	Switch tested to 14.6.1 b) constructed to EN 61058-1 subclause 13.1 and has making/breaking action independent of speed of actuation		N
14.6.3	Switch tested to 14.6.1 b) compliant with EN 61058-1 subclause 16.2.2 d) and m) not attaining excessive temperatures in use		N
14.6.4	Switch tested to 14.6.1 b) has adequate dielectric strength		N
14.6.5	Mains switch controlling mains socket outlets additional tests to IEC 60058-1		N
	Socket outlet current marking correct		N
14.7	Safety interlocks	No safety interlocks used.	N
	Safety interlocks to 2.8 of IEC 60 950		N
14.8	Voltage setting devices	Apparatus is designed for rated rating, no voltage setting device used.	N
	Voltage setting device not likely to be changed accidentally		N
14.9	Motors	No motors used.	N
14.9.1	Endurance test on motors		N
	Motor start test		N

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
	Dielectric strength test		N
14.9.2	Not adversely affected by oil or grease etc.		N
14.9.3	Protection against moving parts		N
14.9.4	Motors with phase-shifting capacitors, three-phase motors and series motors meet Cl. B.8, B.9 and B.10 of IEC 60 950, Annex B		N
14.10	Batteries	No battery used.	N
14.10.1	Batteries mounted with no risk of accumulation of flammable gases		N
14.10.2	No possibility of recharging non-rechargeable batteries		N
14.10.3	Recharging currents and times within manufacturers limits		N
	Lithium batteries discharge and reverse currents within the manufacturers limits		N
14.10.4	Battery mould stress relief		N
14.10.5	Battery drop test		N
14.11	Optocouplers	Approved by VDE	P
	Optocouplers comply with Cl. 8		N
	Internal and external dimensions to 13.1.1		N
14.12	Surge suppression varistors	No such component	N
	Comply with IEC 61051-2		N
	Not connected between mains and accessible parts except for earthed parts of permanently connected apparatus		N
	Complies with the current pulse, fire hazard and thermal stress requirements of 14.12		N

15	Terminals		P
15.1.1	Mains plug, appliance inlet, interconnection couplers and mains socket-outlet meet the appropriate standard	The appliance inlet, plug and cord complies with the appropriate component standard.	P
15.1.2	Connectors for antenna, earth, audio, video or data		P
	No risk of insertion in mains socket-outlets		P

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
	No risk of insertion into audio or video: outlets marked with the symbol of 5.2		N
15.1.3	Output terminals of AC adaptors or similar devices not compatible with household mains socket-outlets		N
15.2	Provision for protective earthing		P
	Accessible conductive parts of Class I equipment reliably connected to earth terminal, within equipment		P
	Class I supply equipment with non-hazardous live output voltage: output circuit not connected to earth		P
	Protective earth conductors correctly coloured		P
	Equipment with non-detachable mains cord provided with separate protective earth terminal near mains input		P
	Protective earth terminal resistant to corrosion		P
	Earth resistance $\leq 0,1$		P
15.3	Terminals for external flexible cords and for permanent connection to the mains supply	Apparatus is not designed for permanent connection.	N
15.3.1	Adequate terminals for connection of permanent wiring		N
15.3.2	Reliable connection of non-detachable cords		N
	not soldered to conductors of a printed circuit board		N
	adequate clearances and creepage distances between connections should a wire break away		N
	wire secured by additional means to the conductor		N
15.3.3	Screws and nuts clamping conductors have adequate threads: ISO 261, ISO 262 or similar		N
15.3.4	Soldered conductors wrapped around terminal prior to soldering or held in place by additional means		N
	Clamping of conductor and insulation if not soldered or held by screws		N
15.3.5	Terminals allow connection of appropriate cross-sectional area of conductors, for the rated current of the equipment		N

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
15.3.6	Terminals to 15.3.3 have sizes required by Table 8		N
15.3.7	Terminals clamp conductors between metal and have adequate pressure		N
	Terminals designed to avoid conductor slipping out when tightened or loosened		N
	Terminals adequately fixed to avoid loosening when the clamping is tightened or loosened and stress on internal wiring is avoided		N
15.3.8	Terminals carrying a current more than 0,2 A: contact pressure not transmitted by insulating material except ceramic		N
15.3.9	Termination of non-detachable cords: wires terminated near to each other		P
15.4	Devices forming a part of the mains plug		P
15.4.1	No undue strain on mains socket-outlets		N
15.4.2	Device complies with standard for dimensions of mains plugs		P
15.4.3	Device has adequate mechanical strength (tests a,b,c)		P

16	External flexible cords		P
16.1	Mains cords sheathed type, complying with IEC 60 227 for PVC or IEC 60 245 for synthetic rubber cords		N
	Non-detachable cords for Class I have green/yellow core for protective earth	Class I equipment.	P
16.2	Mains cords conductors have adequate cross-sectional area for rated current consumption of the equipment	Conductor cross-section is min. 0.75mm ² .	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		N
	b) Flexible cords not complying with 16.1, withstand bending and mechanical stress (3.2 of IEC 60 227-2)		N

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
16.4	Flexible cords used for connection between equipment have adequate cross-sectional areas to avoid temperature rise under normal and fault conditions		N
16.5	Adequate strain relief on external flexible cords		P
	Not possible to push cord back into equipment		P
	Strain relief device unlikely to damage flexible cord		P
	For mains cords of Class I equipment, hazardous live conductors become taut before earth conductor	Class I equipment.	P
16.6	Apertures for external flexible cord: no risk of damage to the cord during assembly or movement in use		P
16.7	Transportable apparatus fitted with detachable cord set with appliance inlet to IEC 60 320-1	Not a transportable apparatus.	N
	Transportable apparatus fitted with detachable cord sets or with means of stowage to protect the cord		N

17	Electrical connections and mechanical fixings		P
17.1	Torque test to Table 20		N
	screws into metal: 5 times		N
	screws into non-metallic material: 10 times	Metal screw for fastening of front enclosure and rear enclosure was 5 times tightened with the force specified in table 20. (see appended table)	P
17.2	Correct introduction into female threads in non-metallic material		P
17.3	Cover fixing screws: captive	Non-captive screws used as it will not cause a reduction of clearness.	N
	Non-captive fixing screws: no hazard when replaced by a screw whose length is 10 times its diameter		N
17.4	No loosening of conductive parts carrying a current > 0,2 A	All conductive parts are fixed on PCB by at least two solder pins.	P

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
17.5	Contact pressure not transmitted through plastic other than ceramic for connections carrying a current > 0,2 A	No contact pressure by screws.	N
17.6	Stranded conductors of flexible supply cords carrying a current > 0,2 A with screw terminals not consolidated by solder	No stranded conductors connected to screw terminals.	N
17.7	Cover fixing devices other than screws have adequate strength and their positioning is unambiguous	No cover fixing devices.	N
17.8	Fixing devices for detachable legs or stands provided	No detachable legs of stands.	N
17.9	Internal pluggable connections, affecting safety, unlikely to become disconnected	Internal pluggable connections is unlikely to become disconnected.	P
18	Mechanical strength of picture tubes and protection against the effects of implosion		N
18.1	Picture tube separately approved		N
	Picture tubes > 16 cm intrinsically protected		N
	Non-intrinsically protected tubes > 16 cm used with protective screen		N
18.2	Intrinsically protected tubes: tests on 12 samples		N
18.2.1	Samples subject to ageing: 6		N
18.2.2	Samples subject to implosion test: 6		N
18.2.3	Samples subject to mechanical strength test (steel ball): 6		N
18.3	Non-intrinsically protected tubes tested to 18.3		N
19	Stability and mechanical hazards		P
	Mass of the equipment exceeding 7 kg	Mass is 1.45kg	N
19.1	Test on a plane, inclined at 10° to the horizontal	Not overturn	N
19.2	100 N applied vertically downwards		N
19.3	13% of the weight of the apparatus for 100 N applied horizontal force.		N
19.4	Smooth edges and corners	Edges and corners are smooth.	P

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
19.5	Glass surfaces with an area exceeding 0,1 m ² or maximum dimension > 450 mm, pass the test of 19.5.1		N
19.5.1	Fragmentation test		N
19.6	Wall or ceiling mountings adequate	The unit not intended for wall or ceiling mounting.	N
20	Resistance to fire		P
20.1	Electrical components and mechanical parts		P
	a) Exemption for components contained in an enclosure of material FV 0 to IEC 60 707 with openings not exceeding 1 mm in width		P
	b) Exemption for small components as defined in 20.1	All components are smaller than 1750 mm ³ except transformer and mounted on V-0 PCB.	P
20.1.1	Electrical components meet the requirements of 14.2.5, 14.4, 14.5.3, 14.6.6 or 20.1.4	Compliance with 20.1.4	P
20.1.2	Insulation of internal wiring working at voltages > 4 kV or leaving an internal fire enclosure, not contributing to the spread of fire		N
20.1.3	Material of printed circuit boards on which the available power exceeds 15 W at a voltage between 50 V and 400 V (peak) a.c. or d.c. meets FV 1 or better to IEC 60 707, unless used in a fire enclosure		N
	Material of printed circuit boards on which the available power exceeds 15 W at a voltage 400V (peak) a.c. or d.c. meets FV 0 to IEC 60 707	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 13 comply with the relevant flammability category in Table 13		N
	Components and parts as above but shielded from a potential ignition source, with the barrier area in accordance with Table 13 and fig. 13		N
20.2	Fire enclosure		P
20.2.1	Potential ignition sources with open circuit voltage > 4 kV (peak) a.c. or d.c. contained in a fire enclosure to FV 1		P

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
20.2.2	Internal fire enclosures with openings not exceeding 1 mm in width and with openings for wires completely filled		N
20.2.3	Requirements of 20.2.1 and 20.2.2 met by an internal fire enclosure	Ditto.	N

A	ANNEX A: ADDITIONAL REQUIREMENTS FOR APPARATUS WITH PROTECTION AGAINST SPLASHING WATER		N
A.5.1	Marked with IPX4 (IEC 60 529), 5.4.1 a) does not apply		N
A.10.2.1	Enclosure provides protection against splashing water		N
A.10.2.2	Humidity treatment carried out for 7 days		N

B	ANNEX B: APPARATUS TO BE CONNECTED TO THE TELECOMMUNICATION NETWORKS		N
B.5.4.1	Where the separation of TNV circuits from other circuits relies on protective earthing the instructions make it clear that protective earthing is essential		N
B.8.1	TNV circuits separated from the mains circuit and from hazardous live parts by either		N
	double or reinforced insulation		N
	basic insulation with earthed protective screening		N
B.8.2	TNV circuits separated from circuits other than those in B.8.1 and from accessible conductive parts by basic insulation meeting the requirements for clearances and creepage distances for the voltages concerned		N
B.9.1.1	TNV circuit terminals contacts which cannot be touched by probe B.1, exempt from the requirements inaccessible terminal contacts in 9.1.1		N
B.10.1	Insulation between TNV terminals and antenna terminals (including interconnection terminals which may be connected to equipment with antenna terminals) withstands the 50 discharges of 10.1		N

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
B.14.12	Surge suppressors between TNV circuits and other parts of the equipment have breakdown voltage at least 1,8 times the mains voltage		N
C	ANNEX C: BAND-PASS FILTER FOR WIDE-BAND NOISE MEASUREMENT		N
D	ANNEX D: MEASURING NETWORK FOR TOUCH CURRENTS (see 9.1.1.1)		P
	Measuring instrument	As in figure D.1 used.	P
E	ANNEX E: MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 13)		P
F	ANNEX F: TABLE OF ELECTROCHEMICAL POTENTIALS		N
G	ANNEX G: FLAMMABILITY TEST METHODS		N
H	ANNEX H: INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		N
H.1	Intentionally kept free		N
H.2	Type tests		N
H.2.1	Dielectric strength		N
H.2.2	Flexibility and adherence		N
H.2.3	Heat shock		N
H.2.4	Retention of dielectric strength after bending		N
H.3	Testing during manufacture		N
H.3.1	Routine test		N
H.3.2	Sampling test		N
J	ANNEX J: ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N
J.1	Summary of the procedure of for determining minimum clearances		N

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
J.2	Determination of mains transient voltage		N
J.3	Determination of telecommunication network transient voltage		N
J.4	Determination of required withstand voltage		N
J.5	Measurement of transient levels		N
J.6	Determination of minimum clearances		N
K	ANNEX K: IMPULSE TEST GENERATORS		N
M	ANNEX M: EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N
M.1	Reduced clearances (see 13.3)		N
N	ANNEX M: ROUTINE TESTS		N
N.1	Tests during the production process		N
N.1.1	Correct polarity and connection of components or subassemblies		N
N.1.2	Correct values of components		N
N.1.3	Protective earthing connection of screens and metal barriers		N
N.1.4	Correct position of internal wiring		N
N.1.5	Correct fit of internal plug connections		N
N.1.6	Safety relevant markings inside the apparatus		N
N.1.7	Correct mounting of mechanical parts		N
N.2	Tests at the end of the production process		N
N.2.1	Dielectric strength test		N
N.2.2	Protective earthing connection		N
N.2.3	Safety relevant marking on the outside of the apparatus		N
ZA	ANNEX ZA: OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS		N
ZB	ANNEX ZB: SPECIAL NATIONAL CONDITIONS		N

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
2.6.1	DK: 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		N
13.3.1	NO: 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 230V in case of a single earth fault		N
15.1.1	DK: mains cord for single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to Heavy Current Regulations Section 107-2-D1		N
	DK: Class I equipment with socket-outlets with earthing contact, or which are intended to be used in locations where protection against indirect contact is required shall be provided with a plug in compliance with Standard Sheet DK 2-1a		N
	DK: socket-outlets for providing power to Class II equipment with a rated current of 2,5 A shall have dimensions according to the drawing on page 131 of EN 60 065:98 other dimensions shall be to IEC 60 083 Standard Sheet C 1a for portable socket-outlets		N
	DK: other dimensions shall be in compliance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DKA 1-3 for portable socket-outlets shutters are not required		N
	DK: mains socket-outlets with earthing contact shall comply with Heavy Current Regulations Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a		N
	IE: equipment fitted with a flexible cable or cord provided with a 13 A plug in accordance with Statutory Instrument 525:97, 13 A plugs and Conversion Adapters for Domestic Use Regulations: 1997		N
	NO: mains socket-outlets on Class II equipment meet CEE Publication 7 with the following amendments:		N
	dimensions 2,5 A, 250 V two-pole socket-outlets for electronic apparatus shall comply with the enclosed Standard Sheet I		N

EN 60065			
Clause	Requirement – Test	Result - Remark	Verdict
	mechanical strength 2,5 A, 250 V socket-outlets for CLASS II electronic apparatus tested as specified in EN 60 065, 12.1.3		N
	protecting rim also tested		N
	United kingdom: equipment fitted with a flexible cable or cord provided with a 13A BS 1363 plug as in Statutory Instrument 1768:94		N
J.2	NO: due to the IT power distribution system used, the a.c. MAINS supply voltage is considered to equal to the line-to-line voltage, and will remain 230V in case of single earth fault		N

ZC	ANNEX ZC: A-DEVIATIONS		N
5	DE: additional markings required in German language:		N
	cathode ray tubes with an accelerating voltage between 20 kV and 30 kV (marking on the tube)		N
	TV receivers whose picture tube has an accelerating voltage between 20 kV and 30 kV		N
	TV receivers whose picture tube has an accelerating voltage greater than 30 kV		N
	TV receivers whose picture tube has an accelerating voltage less than 20 kV		N
5.1	IT: additional markings on the outside of the TV receiver in Italian language		N
	IT: user instructions in Italian language including a conformity declaration		N
	IT: certification number on the back cover		N
14	Sweden: switches containing mercury such as thermostats, relays and level controllers are not allowed		N

Tables

Table 5.0	Input test				P
U(V)	F(Hz)	P(W)	I(A)	Condition/status	
198	50	36.5	0.185	normal working	
220	50	36.0	0.164		
230	50	35.8	0.156		
253	50	35.4	0.142		

Table 5.1	Durability of marking test		P
Checked by	Time	Result	
Water	15s	No any curling and still legibility	
Petroleum spirit	15s	No any curling and still legibility	

Table 7.1	Temperature rise measurement				P
		Test condition: Input: 198V (220V-10%), 50Hz / 253V(230V+10%), 50Hz - Appliance within a wooden test box with 10mm side and to space, and 50mm front and back side space; front side of box was open			
Location	Name of componet	Measure [K]		Allowed [K]	
		198V, 50Hz	253V, 50Hz		
Y Capacitor	--	41.3	43.4	50	
Power wire	--	13.2	15.8	50	
Appliance inlet	--	18.2	14.5	50	
internal wire	--	38.4	39.6	50	
Switch	--	16.2	15.4	50	
winding of transformer		47.1	50.7	75	
Core of transformer		41.4	45.6	--	
Enclosure inside		44.1	46.7	60	
X capacitor		57.6	58.9	70	
Opto-coupler		54.7	55.3	65	
PCB near transformer		48.8	50.7	95	
Enclosure outside		38.1	39.6	40	
Ambient	--	25.2	25.7	35	
Winding temperature rise measurements					
temperature rise dT of winding:	R ₁ (Ω)	R ₂ (Ω)	dT (K)	required dT (K)	insulation class

Tables

<p>Note(s):</p> <p>The temperatures were measured by thermocouple and resistance method under worst case normal mode as described in 4.2.</p> <p>The maximum ambient temperature specified as +35°C.</p>					

Table 7.2	Softening temperature of thermoplastics			N
Temperature T of part	T – normal conditions (°C)	T – fault conditions (°C)	T softening (°C)	
<p>Note:</p> <p>The test have been performed on each bobbin at a temperature of the penetrations are as following: Transformer: < 0.1mm</p>				

Table 9.1.1.1	Touch current expressed at corresponding voltage U1 and U2			P
	Test conditions: - Input AC 253V(230V+10%), 50Hz - Measurement circuit of Annex D used			
Location	Remark ¹⁾	U ₁ peak [V]	U ₂ peak [V]	
Metal Enclosure	Play mode	0.11	0.07	
Output terminal	Play mode	0.87	0.24	
<p>Note: ¹⁾ "A" refer to terminal "A" and "B" refers to terminal "B" of the measuring network of Annex D Any other point after the transformer up to the touchable terminals for audio and video had lower values than measured above</p>				

Table 9.1.7	Enclosure resistance to external forces test			P
Test part	Pull force	Duration	Result	
Enclosure	50N with test probe	10s	The enclosure did not become hazardous live, and hazardous live parts did not become accessible.	
Enclosure	20N with test hook	10s	Hazardous live parts did not become accessible.	
Enclosure	100N	5s	No damage affect the safety.	

Table 10.2	Humidity treatment			P
Test condition	Temperature	Relative Humidity	Duration	
--	25°C	93%	48hours	
<p>Remark: After humidity test, insulation resistance and dielectric strength specified in clause 10.3 Should be applied.</p>				

Tables

Table 10.3 i)		Insulation resistance Measurements		P
Location		Measured [MΩ]	Allowed [MΩ]	
Between mains poles (fuse open)		>100MΩ	2MΩ	
Between: L&N and output terminals		>100MΩ	2MΩ	
Between: L&N and enclosure		>100MΩ	2MΩ	
Primary winding and core		>100MΩ	4MΩ	

Table 10.3 ii)		Electric strength measurements		P
Test conditions: - Test voltage applied for 1min				
Location		Test voltage [V]	Observation	
Between mains poles(fuse open)		1500Vac	No breakdown, no flash over	
Between L&N and output terminals		1500Vac	No breakdown, no flash over	
Between L&N and enclosure		1500Vac	No breakdown, no flash over	
Insulating tape		3000Vac	No breakdown, no flash over	
Primary winding and core		3000Vac	No breakdown, no flash over	

Table 11.2.1 a)		Fault Condition Tests		P
Test conditions: - Input as for heating - Appliance not within a wooden test box with 10mm side and to space, and 50mm front and back side space; front side of box was open				
		Applied fault condition	Observation	
(1)		Maximum attainable output power	Input power increased from 36.0W to 44.9W. no hazard. Test duration:5h42min. Max. Temperature rise see table11.2	
(2)		Faulting of components s mentioned in clause 4.3.	No significant rise of the temperature	

Table 11.2.1 b)		Fault Condition Tests			P
Component No.	Fault	Test voltage	Duration	Test result	
D8	S-C	253V	15s	Input power increased from 36W→ 100W →18.7W after 15s. Q2, R2 damage. No hazard, repeat three time.	
Q2 pin e-c	S-C	253V	10s	Input power increased from 36W→ 98W→ 23.9W after 10s. D8, R2 damage. No hazard, repeat three time.	
C2	S-C	253V	1s	Fuse open, no hazard.	

Tables

<p>Note(s):</p> <p>All faults are started during normal operation unless otherwise stated; and after each fault condition, a electric strength test is followed, the unit not breakdown.</p> <p>S-C: short circuit; O-C: open circuit; O-L: overload</p>
--

Table 11.2	Heating under fault conditions		P
	Condition	Maximum attainable output power	--
	Test voltage	253V, 50Hz	
	t1 (°C)	--	--
	t2 (°C)	--	--
	temperature rise dT of part/at:	Measured temperature rise dT (K)	Limited dT (K)
	winding of transformer	85.6	140
	Core of transformer	75.1	--
	Enclosure	51.5	65
	Internal wire	36.2	50
	Ambient	26.1	--
<p>Note(s):</p> <p>The temperatures were measured by thermocouple and resistance method under worst case normal mode as described in 4.2.</p> <p>The maximum ambient temperature specified as 35°C.</p> <p>After this test, conducted electric strength test according to clause 10.3, and no any breakdown.</p>			

Table 12.1.1	Bump test		N
Fall times	Height	Result	

Table 12.1.2	Vibration test			P
Duration	Amplitude	Frequency	Sweep rate	Result
30 min	0.35mm	10Hz...55Hz...10Hz	1 octave/min	After the test, the apparatus can withstand the dielectric strength test as specified in 10.3 and show no damage.

Table 12.1.3	Impact test		P
Force (J)	External surface	Result	

Tables

0.5	Top	No electric breakdown after test
0.5	Bottom	No electric breakdown after test
0.5	Side	No electric breakdown after test
0.5	Front	No electric breakdown after test

Table 12.1.4	Drop test		P
Height	horizontal surface	Result	
1m	13mm hard wood	No damage	

Table 12.1.5	Stress relief test		N
Temperature (°C)	Duration	Result	

Table 13.2	Working Voltage measurement			P
Location	Peak Voltage (V)	RMS Voltage (V)	Comments	
T 1 Pin1- Pin8	524	222		
Pin1- Pin9	435	225		
Pin1- Pin10	475	241		
Pin1- Pin11	473	219		
Pin1- Pin12	442	228		
Pin2- Pin8	522	236		
Pin2- Pin9	443	250		
Pin2- Pin10	445	234		
Pin2- Pin11	532	241		
Pin2- Pin12	615	278	Max. RMS	
Pin3- Pin8	576	212		
Pin3- Pin9	542	234		
Pin3- Pin10	586	242		
Pin3- Pin11	612	252		
Pin3- Pin12	628	236	Max. Peak	
Pin4- Pin8	613	225		
Pin4- Pin9	540	245		
Pin4- Pin10	537	234		

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Pin4- Pin11	553	246	
Pin4- Pin12	543	258	
Opto-coupler Pin1- Pin3	315	213	
Pin1- Pin4	323	220	
Pin2- Pin3	334	242	
Pin2- Pin4	318	242	
CY1 Pri- Sec	446	215	

TABLE 13.1	Clearance and creepage distance measurements						P
clearance (cl) and creepage distance (cr) at/of/between	Up (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)	
Between primary winding and secondary winding	628	278	4.8	10.3	5.8	11.0	
Between core and primary winding of transformer	628	278	2.4	6.2	2.9	12.4	
Between core and Secondary winding of transformer	628	278	2.4	10.3	2.9	12.6	
Fuse	420	240	2.1	4.2	2.7	4.2	
Test condition : - Pollution degree: class II - Material group: IIIb - Main transient voltage: 2.5KV							

Table 16.5	Stress relief test				N
Pull force	Duration	Times	Displaced ($\leq 2\text{mm}$)		

Table 17.1	Screw securement test				P
Diameter of screw (mm)	Torque (N.m)	Times	Result		
2.9	0.5	5	No evidence of damage or deterioration to the screw		

21	Table: List of critical components and materials					P
object/part No.	manufacturer/trademark	type/model	technical data	standard	mark(s) of	

Tables

					conformity
Power plug	Dongguan NarKen Industrial Investment Co., Ltd.	XD-006-E	250V~, 10/16A	--	VDE
Power cord	Power Cable	H05VVH2-F	300V, 105°C, VW-1, 3 X 0.75mm ²	--	VDE
Internal wire	SHENZHEN ZELONGKANG ELECTRIC LTD	1617	20AWG, 105°C, 600V	--	UL
Switch	Optional	Optional	250V, 2/8A	--	VDE
PCB	Optional	Optional	V-0, 130°C	--	UL
AC inlet	Yueqing Hongchang Radio Co., Ltd	DB-14	10A, 250V	--	VDE
Heat-Shrinkable Tube	Optional	Optional	600V, 125°C	--	UL
Fuse	Zhejian Lishui Lijin Fuse Factory	FSD	T3, 15 L, 250 VAC, 5x20mm	--	VDE
X Capacitor	Ultra Tech Xiphi Enterprise Co., Ltd.	HQX	275 VAC, 0,1 µF, 40/100/21/C, X2	--	VDE:
Optocoupler	Bright Led Electronics Corp.	BPC 817B	Int. CR / Ext. CR / Dti. 7,6mm / 8,0mm / 0,4mm	--	VDE
Y Capacitor	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	CD-Series	AC 400 V, 2200 µF, 25/125/21/C, Y1	--	VDE
Transformer	JINPIN ELECTRICAL COMPANY LTD. ZHUHAI. S. E. Z.	BCK39-D1029	Class B	--	Tested with appliance
Magnet wire	Xingning Jinyan Electrical Co., Ltd.	UEW	130°C	--	UL
Bobbin	Shanghai Twin-Tree Plastics Factory	F2C3-631(II)	V-0, 150°C	--	UL
Insulating tape	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd.	PZ	130°C	--	UL

Pictures



Fig. 1 Overview



Fig. 2 Overview

Pictures



Fig. 3 Back view



Fig. 4 Overview