



Test Report issued under the responsibility of:



TEST REPORT

EN 62368-1

Audio/video, information and communication technology equipment

Part 1: Safety requirements

Report Number : SA1905115L 01001

Date of issue : 2019-11-27

Total number of pages : 72

Applicant's name : SHRINTON ELECTRON TECHNOLOGY LTD

Address : 3F, Building 21, Second Industrial Zone, Changzhen Community, Yutang Street, Guangming District, Shenzhen, Guangdong 518000 CHINA.

Test specification:

Standard..... : EN 62368-1:2014+ A11:2017 (Second Edition)

Test procedure : CE-LVD

Non-standard test method : N/A

Test Report Form No. : IEC62368_1B

Test Report Form(s) Originator..... : UL(US)

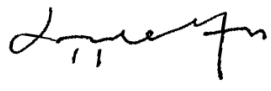
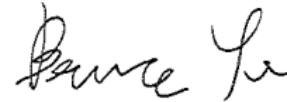
Master TRF : 2014-03

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Test Item description	Switching Power Adapter	
Trade Mark	N/A	
Manufacturer	Same as applicant	
Model/Type reference	HT39B-xxxxxxxEU (xxx, yyyy are variable, xxx=033-160, yyyy=0001-3000, see model list for details)	
Ratings	Input: 100-240V~, 50/60Hz, 0.45A Max Output: See model list for details	
Testing procedure and testing location:		
<input checked="" type="checkbox"/> Testing Laboratory:	Dongguan Anci Electronic Technology Co., Ltd.	
Testing location/ address	1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan Lake Hi-tech Industrial Development Zone, Dongguan City, Guangdong Pr. China	
<input type="checkbox"/> Associated Testing Laboratory:	N/A	
Testing location/ address	N/A	
Tested by (name + signature)	Apple Hu Project handler	
Approved by (name + signature)	Bruce Yu Reviewer	
Testing procedure: TMP/CTF Stage 1		
Testing location/ address		
Tested by (name + signature)		
Approved by (name + signature)		
Testing procedure: WMT/CTF Stage 2		
Testing location/ address		
Tested by (name + signature)		
Witnessed by (name + signature)		
Approved by (name + signature)		
Testing procedure: SMT/CTF Stage 3 or 4		
Testing location/ address		
Tested by (name + signature)		
Approved by (name + signature)		
Supervised by (name + signature)		

List of Attachments (including a total number of pages in each attachment): <ul style="list-style-type: none"> - Attachment 1: National difference (9 pages) - Attachment 2: Photograph (5 pages) 	
Summary of testing: Unless otherwise indicated, all tests were conducted at Dongguan Anci Electronic Technology Co., Ltd. 1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan Lake Hi-tech Industrial Development Zone, Dongguan City, Guangdong Pr. China. If not otherwise specified, tests were performed on models HT39-0603000EU, and HT39-1601100EU to represent other similar models.	
Tests performed (name of test and test clause): STEADY FORCE TESTS, 100N (4.4.4.2, ANNEX T.4) DROP TESTS (4.4.4.3, ANNEX T.7) STRESS RELIEF TEST (4.4.4.7, ANNEX T.8) EQUIPMENT FOR DIRECT INSERTION INTO MAINS SOCKET-OUTLETS (4.7) CLASSIFICATION OF ELECTRICAL ENERGY SOURCES (5.2, 5.7) MAXIMUM OPERATING TEMPERATURE FOR MATERIALS, COMPONENTS AND SYSTEMS (5.4.1.4, Annex B.2) DETERMINATION OF WORKING VOLTAGE (5.4.1.8) BALL PRESSURE TEST (5.4.1.10.3) ANTENNA TERMINAL INSULATION – VOLTAGE SURGE (5.4.5, G.10.3.2) HUMIDITY CONDITIONING (5.4.8) ELECTRIC STRENGTH TEST (5.4.9) SEPARABLE THIN SHEET MATERIAL (5.4.4.6.2) POWER MEASUREMENTS (6.2.2.2, 6.2.2.3) INPUT TEST: SINGLE PHASE (B.2.5) SIMULATED ABNORMAL OPERATING CONDITIONS (B.3) SIMULATED SINGLE FAULT CONDITIONS (B.4) TEST FOR PERMANENCE OF MARKINGS (F.3.10) TRANSFORMER OVERLOAD (ANNEX G.5.3.3) LIMITED POWER SOURCE (ANNEX Q.1) STEADY FORCE TEST, 10 N (ANNEX T.2, 5.4.2.6, 5.4.3.2, G.15.3.6)	Testing location: Dongguan Anci Electronic Technology Co., Ltd. 1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan Lake Hi-tech Industrial Development Zone, Dongguan City, Guangdong Pr. China

Summary of compliance with National Differences:

List of countries addressed: EU

EU=European

Copy of marking plate:

The artwork below may be only a draft.

Switching Power Adapter

MODEL: HT39B-0603000EU

INPUT:100-240V~50/60Hz 0.45A Max

OUTPUT:6V \equiv 3000mA 



MADE IN CHINA

D/C:1946

Shrinton Electron Technology Ltd

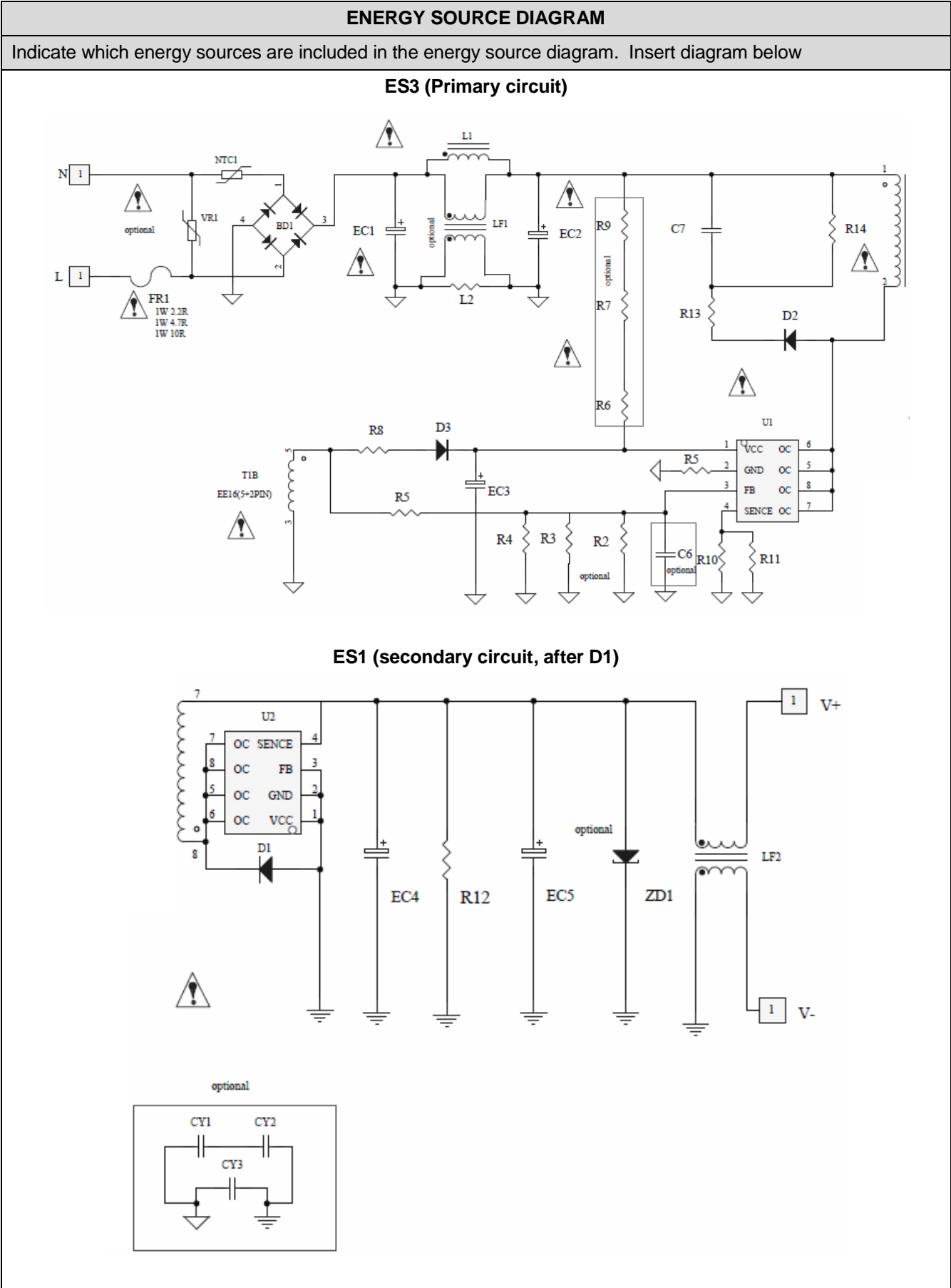
Remark:

- The above markings are the minimum requirements required by the safety standard. For the final productions samples, the additional markings which do not give rise to misunderstanding may be added.
- The height of CE marking should be minimum 5mm high and WEEE symbol should be minimum 7mm high.
- The importer name would be remarked on label.

TEST ITEM PARTICULARS:	
Classification of use by	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input checked="" type="checkbox"/> Children likely to be present
Supply Connection.....	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit - not Mains connected - <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance	<input checked="" type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> +____%/ -____% <input type="checkbox"/> None
Supply Connection – Type	<input checked="" type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input checked="" type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input type="checkbox"/> other:_____
Considered current rating of protective device as part of building or equipment installation	<u>16</u> A; Installation location: <input checked="" type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input checked="" type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: _____
Class of equipment	<input type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III
Access location	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maximum operating ambient:	<u>40</u> °C
IP protection class	<input type="checkbox"/> IPX0 <input checked="" type="checkbox"/> IP20
Power Systems	<input checked="" type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - ____ V _{L-L}
Altitude during operation (m)	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> __5000__ m
Altitude of test laboratory (m)	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m
Mass of equipment (kg)	<input checked="" type="checkbox"/> __Approx. 0.09__ kg
POSSIBLE TEST CASE VERDICTS:	
- test case does not apply to the test object.....	N/A
- test object does meet the requirement	P (Pass)
- test object does not meet the requirement	F (Fail)

TESTING:																													
Date of receipt of test item.....:	2019-11-14																												
Date (s) of performance of tests.....:	2019-11-15 to 2019-11-26																												
GENERAL REMARKS:																													
<p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>																													
Name and address of factory (ies)	Same as applicant																												
GENERAL PRODUCT INFORMATION:																													
Product Description –																													
1. The product is Switching Power Adapter (direct plug-in type) for use with audio/video, information technology equipment. 2. The bottom enclosure is secured to top enclosure by ultrasonic. 3. The specified Max. ambient temperature is +40°C. 4. Model list																													
<table border="1"> <tr> <th>Table A :</th> <th colspan="2">Definition of Variables</th> </tr> <tr> <td>xxx</td> <td>033-160</td> <td>3 digits code indicate output voltage range from 3.3V-16V, the rising step is 0.01V. eg:033=3.3Vdc, 160=16Vdc</td> </tr> <tr> <td>yyyy</td> <td>0001-3000</td> <td>4 digits code indicate output current from 0.01A to 3A, the rising step is 0.001A. eg: 0001=0.001A, 3000=3A</td> </tr> </table>		Table A :	Definition of Variables		xxx	033-160	3 digits code indicate output voltage range from 3.3V-16V, the rising step is 0.01V. eg:033=3.3Vdc, 160=16Vdc	yyyy	0001-3000	4 digits code indicate output current from 0.01A to 3A, the rising step is 0.001A. eg: 0001=0.001A, 3000=3A																			
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		8.1-16	0.01-1.1	18	HT39B-080-160																								
Note: --																													
Model Differences –																													
1. All models have the same technical construction including circuit diagram, PCB layout and component layout, except for the model name, transformer, secondary non-critical component and output rating. 2. Primary component LF1 and L1 cannot use at the same time.																													
Additional application considerations – (Considerations used to test a component or sub-assembly) –																													
N/A																													

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.)	
Electrically-caused injury (Clause 5): (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input	
ES1	
Source of electrical energy	Corresponding classification (ES)
Primary circuit	ES3
Output circuit	ES1
Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts):	
PS2	
Source of power or PIS	Corresponding classification (PS)
All circuits except output circuit	PS3, Arcing PIS, Resistive PIS
Output circuit	PS2
Injury caused by hazardous substances (Clause 7) (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component	
Glycol	
Source of hazardous substances	Corresponding chemical
N/A	N/A
Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit	
MS2	
Source of kinetic/mechanical energy	Corresponding classification (MS)
Edges and corners of enclosure	MS1
Equipment Mass	MS1
Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure	
TS1	
Source of thermal energy	Corresponding classification (TS)
External surface	TS1
Radiation (Clause 10) (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product	
RS1	
Type of radiation	Corresponding classification (RS)
N/A	N/A



OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. skilled)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary person	ES3: primary circuit	N/A	N/A	Enclosure, See 5.4.2, 5.4.3, 5.5.3
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Enclosure	PS3 circuits	See 6.3	V-0	N/A
PCB	PS3 circuits	See 6.3	V-1	N/A
Plastic materials not part of PS3 circuits	PS3 circuits	See 6.3	V-2	N/A
Internal/External wiring	PS3 circuit	N/A	N/A	6.5
The other components/materials	PS3 circuits	See 6.3	See 6.4.5, 6.4.6	N/A
Output connector	PS2 circuits	See 6.3	V-1 or better	N/A
Output	PS2 circuits	See 6.3	See 6.4.5	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
Supplementary Information:				
(1) See attached energy source diagram for additional details.				
(2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment. See also Annex G	P
4.1.3	Equipment design and construction	Evaluation of safeguards regarding limiting the outputs to fulfill ES1 and protection in regard to risk of spread of fire, mechanical and thermal burninjury considered.	P
4.1.15	Markings and instructions.....:	(See Annex F)	P
4.4.4	Safeguard robustness	See below.	P
4.4.4.2	Steady force tests.....:	See Annex T.2, T.4	P
4.4.4.3	Drop tests	See Annex T.7	P
4.4.4.4	Impact tests		N/A
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....:	The external enclosure cannot be opened without damaging the product.	N/A
4.4.4.6	Glass Impact tests	No such glass used.	N/A
4.4.4.7.4	Thermoplastic material tests	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard.....:		N/A
4.4.4.9	Accessibility and safeguard effectiveness		P
4.5	Explosion	No explosion occurs during normal/abnormal operation and single fault conditions	P
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard	Complied.	P
4.6.2	10 N force test applied to	Output wire and internal component	P
4.7	Equipment for direct insertion into mains socket - outlets		P
4.7.2	Mains plug part complies with the relevant standard.....:	EN 50075	P
4.7.3	Torque (Nm)	0.036Nm Max.	P
4.8	Products containing coin/button cell batteries	No coin/button cell batteries used.	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery.....:		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.8.4	Battery Compartment Mechanical Tests		N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object.....	No openings	N/A

5	ELECTRICALLY-CAUSED INJURY		P
5.2.1	Electrical energy source classifications.....	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current	See appended table 5.2)	P
5.2.2.3	Capacitance limits		N/A
5.2.2.4	Single pulse limits	No such single pulses generated in the EUT or applied to it.	N/A
5.2.2.5	Limits for repetitive pulses	No such repetitive pulses within the EUT	N/A
5.2.2.6	Ringing signals	No such ringing signals within the EUT	N/A
5.2.2.7	Audio signals	No such audio signals	N/A
5.3	Protection against electrical energy sources	See below	P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	See only 4.3 and 5.3 to 5.5 which applies to protection between the accessible parts and hazardous parts of other circuits. Except for the model assembled with AC mains bare conductor.	P
5.3.2.1	Accessibility to electrical energy sources and safeguards	Only ES1 circuit can be accessed for this product. Except for the model assembled with AC bare conductor wire.	P
5.3.2.2	Contact requirements		P
	a) Test with test probe from Annex V	Checked by V.1.2 (figure V.1)	P
	b) Electric strength test potential (V)	See appended table 5.4.9	P
	c) Air gap (mm)		P
5.3.2.4	Terminals for connecting stripped wire	No such terminals.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	The choice and application have taken into account as specified in this Clause 5 and Annex T and natural rubber, hygroscopic materials or asbestos are not used as insulation.	P
5.4.1.3	Humidity conditioning	See Sub-clause 5.4.8	P
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.5	Pollution degree	2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2 is applied. No insulating compound applied (however see 5.5.4).	N/A
5.4.1.5.3	Thermal cycling	See above	N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such transformer within the EUT	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such starting pulses within the EUT	N/A
5.4.1.8	Determination of working voltage	(See appended table 5.4.1.8)	P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	Blade holder	P
5.4.1.10.2	Vicat softening temperature.....		N/A
5.4.1.10.3	Ball pressure	Phenolic bobbin material used in transformer and line choke which are acceptable without test. For other parts see appended table 5.4.1.10.3	P
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage	See appended table 5.4.2.2, 5.4.2.4 and 5.4.3	P
5.4.2.3	Determining clearance using required withstand voltage	552Vpeak 276Vrms for T1	P
	a) a.c. mains transient voltage	2500V for Overvoltage Cat. II	—
	b) d.c. mains transient voltage	No such transient	—
	c) external circuit transient voltage	No such transient	—
	d) transient voltage determined by measurement		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	Using procedure 2 to determine the clearance according to 5.4.2.3	N/A
5.4.2.5	Multiplication factors for clearances and test voltages		N/A
5.4.3	Creepage distances	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group	IIIa&IIIb	—
5.4.4	Solid insulation	See below	P
5.4.4.2	Minimum distance through insulation	(See appended table 5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation	No such component used in the EUT	N/A
5.4.4.4	Solid insulation in semiconductor devices	No such component used in the EUT	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.5	Cemented joints	No such construction within the EUT	N/A
5.4.4.6	Thin sheet material	See below	P
5.4.4.6.1	General requirements	Two layers of insulation tape between winding and core of transformer is used for reinforced insulation and are not expected to be subject to handling or abrasion during ordinary or instructed person servicing.	P
5.4.4.6.2	Separable thin sheet material	Where two layers are provided as reinforced insulation any one layer passed the electric strength test for reinforced insulation	P
	Number of layers (pcs) :	2	P
5.4.4.6.3	Non-separable thin sheet material	No such thin sheet material within the EUT	N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material :	See above	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components	See G.5.1 and G.6	P
5.4.4.9	Solid insulation at frequencies >30 kHz :	For bobbin of T1: $V_w = E_p \cdot K_r \cdot d = 17 \cdot 0.71 \cdot 0.51 = 6155.7V$ exceeds $2 \cdot 1.2 \cdot 552V = 1324.8V$ (Peak working voltage at high frequency $V_{pw} = 552V$ which is highest peak measured for T1)	P
5.4.5	Antenna terminal insulation	Performed between mains and output connector which may be connected to an equipment with antenna terminal	P
5.4.5.1	General		P
5.4.5.2	Voltage surge test	Surge test with 50 discharges at a maximum rate of 12/min from a 1nF capacitor charged to 10kV performed. Measured insulation resistance between mains supply to output terminals after the surge test, see below for details.	P
	Insulation resistance (MΩ)..... :	100 MΩ	P
5.4.6	Insulation of internal wire as part of supplementary safeguard :	No such insulation of internal wire as part of supplementary safeguard.	N/A
5.4.7	Tests for semiconductor components and for cemented joints	No tests necessary –see only 5.4.4.4.	N/A
5.4.8	Humidity conditioning	see below	P
	Relative humidity (%)..... :	95%	—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Temperature (°C)	40°C	—
	Duration (h)	120h	—
5.4.9	Electric strength test	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test	Compliance was checked immediately following temperature test in 5.4.1.4 and on a sample of the transformer raised to the relevant temperature as measured during that test.	P
5.4.9.2	Test procedure for routine tests	No routine tests considered. To be considered during the relevant national approval.	N/A
5.4.10	Protection against transient voltages between external circuit	No such external circuits	N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test		N/A
5.4.10.2.3	Steady-state test.....		N/A
5.4.11	Insulation between external circuits and earthed circuitry	No such connections for external circuit applied within the EUT	N/A
5.4.11.1	Exceptions to separation between external circuits and earth	No such connections to external circuit as above.	N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V).....		—
	Nominal voltage U_{peak} (V).....		—
	Max increase due to variation U_{sp}		—
	Max increase due to ageing ΔU_{sa}		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$		—
5.5	Components as safeguards		
5.5.1	General	See the following details.	P
5.5.2	Capacitors and RC units	Approved Y1 type capacitors provided. See G.11.1 for compliance and their application.	P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector.....		N/A
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers		N/A
5.5.5	Relays	No such component provided	N/A
5.5.6	Resistors		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.7	SPD's	Approval varistor used, see table 4.1.2 for details.	P
5.5.7.1	Use of an SPD connected to reliable earthing	No such construction.	N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable.....:	No such external circuits.	N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors	Class II equipment	N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm ²)		—
5.6.4	Requirement for protective bonding conductors	Not such construction	N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm ²).:		—
	Protective current rating (A) :		—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Requirement		NA
	Conductor size (mm ²), nominal thread diameter (mm).:		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		NA
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance (Ω)		NA
5.6.7	Reliable earthing		NA
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks	Figure 4 of IEC 60990 was used in determining of the limit of ES1.	P
5.7.2.1	Measurement of touch current	(See appended table 5.2)	P
5.7.2.2	Measurement of prospective touch voltage		P
5.7.3	Equipment set-up, supply connections and earth connections	Clause 4.5.3 and 5.4 of IEC 60990:1999 applied.	P
	System of interconnected equipment (separate connections/single connection)	Single equipment.	—
	Multiple connections to mains (one connection at a time/simultaneous connections)	Single connection.	—
5.7.4	Earthed conductive accessible parts	Class II equipment	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.5	Protective conductor current		N/A
	Supply Voltage (V).....:		—
	Measured current (mA).....:		—
	Instructional Safeguard.....:		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits	No external circuits.	N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits	No external circuits.	N/A
	a) Equipment with earthed external circuits Measured current (mA).....:		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		N/A

6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications	PS (power source) classification determined by measuring the maximum power in Figures 34 and 35 for load and power source circuits.	P
6.2.2.1	General	See the following details.	P
6.2.2.2	Power measurement for worst-case load fault ... :	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault.....:	(See appended table 6.2.2)	P
6.2.2.4	PS1		N/A
6.2.2.5	PS2	(See appended table 6.2.2)	P
6.2.2.6	PS3	The primary circuit considered as PS3.	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS	See note to appended table 6.2.3.1	P
6.2.3.2	Resistive PIS	All components considered as PIS, see also note to appended table 6.2.3.2	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials	No ignition and no such temperature attained within the equipment. (See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure	Only output wire and output terminal complying with 6.4.6.	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method of control fire spread used. Fire enclosure provided.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions..... :		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits	PS3 circuits inside.	N/A
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards :	See Table 4.1.2 and Annex G	P
6.4.6	Control of fire spread in PS3 circuit	Compliance detailed as follows: - Printed board: rated min. V-1 - Wire insulation: complying with Clause 6. The output cord is complied to UL 758 standard, which test method and testing condition equal to IEC/EN 60695-11-21. - All other components: at least V-2 except for parts mounted on min. V-1 material or small parts of combustible material) with mass less than 4g) or components complying to relevant IEC standard. - Isolating transformer: complying with G.5.3. - Fire enclosure rated V-0 used.	P
6.4.7	Separation of combustible materials from a PIS	Fire enclosure is provided.	N/A
6.4.7.1	General..... :		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	Fire enclosure used	P
6.4.8.1	Fire enclosure and fire barrier material properties		P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	Enclosure material: V-0 without any openings provided.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		N/A
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm)	No openings	N/A
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm)		N/A
	Flammability tests for the bottom of a fire enclosure		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c)		N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating		N/A
6.5	Internal and external wiring		P
6.5.1	Requirements	The output cord are complied to UL 758 standard, rated VW-1 or FT-1.	P
6.5.2	Cross-sectional area (mm ²)	Less than 0.5mm ²	—
6.5.3	Requirements for interconnection to building wiring		N/A
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1	Output complies with Clause Q.1.	P

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010)		—
7.6	Batteries		N/A

8	MECHANICALLY-CAUSED INJURY		P
8.1	General	No moving parts in the equipment	P
8.2	Mechanical energy source classifications	MS1	P
8.3	Safeguards against mechanical energy sources		N/A
8.4	Safeguards against parts with sharp edges and corners	Edges and corners of the enclosure are rounded and classification as MS1	P
8.4.1	Safeguards		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.5	Safeguards against moving parts	No moving parts.	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard..... :		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks:		N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard.....:		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N):		N/A
8.5.5	High Pressure Lamps		N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test.....:		N/A
8.6	Stability	Classification MS1 according to table 35, line 5 and no stability requirements.	N/A
8.6.1	Product classification		N/A
	Instructional Safeguard.....:		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force:		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt:		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force).....:		N/A
	Position of feet or movable parts.....:		—
8.7	Equipment mounted to wall or ceiling	No wall or ceiling mounted	N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface):		N/A
8.7.2	Direction and applied force.....:		N/A
8.8	Handles strength	No handles provided.	N/A
8.8.1	Classification		N/A
8.8.2	Applied Force:		N/A
8.9	Wheels or casters attachment requirements	No wheels or casters.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.9.1	Classification		N/A
8.9.2	Applied force		—
8.10	Carts, stands and similar carriers	No carts, stands or similar carriers.	N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N)		—
8.10.6	Thermoplastic temperature stability (°C).....		N/A
8.11	Mounting means for rack mounted equipment	Not such equipment.	N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable <i>N</i>		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas	No such parts.	N/A
	Button/Ball diameter (mm).....		—

9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications	No part considered to be accessible other than enclosure. The equipment evaluated by temperature test (see table 5.4.1.4).	P
9.3	Safeguard against thermal energy sources	Temperature of enclosure classed as TS1.	P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard	Enclosure provided to limit the transfer of thermal energy of internal parts under normal operating conditions and abnormal operating conditions.	P
9.4.2	Instructional safeguard	Instructional safeguard is not required.	N/A

10	RADIATION		N/A
10.2	Radiation energy source classification	No such component used	N/A
10.2.1	General classification	See above	N/A


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

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

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.2	Normal Operating Conditions	See the following details.	P
B.2.1	General requirements..... :	Maximum rated output applied (See appended table)	P
	Audio Amplifiers and equipment with audio amplifiers	Not such equipment.	N/A
B.2.3	Supply voltage and tolerances	Rated voltage $\pm 10\%$	P
B.2.5	Input test..... :	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements..... :	(See appended table B.3 & B.4)	P
B.3.2	Covering of ventilation openings	No ventilation openings.	N/A
B.3.3	D.C. mains polarity test	The EUT is not connected to a D.C. mains	N/A
B.3.4	Setting of voltage selector	No setting of voltage selector within the EUT	N/A
B.3.5	Maximum load at output terminals	(See appended table B.3&B.4)	P
B.3.6	Reverse battery polarity	No battery within the EUT	N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.	Not such equipment.	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions	All safeguards remained effective.	P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited	No such device used.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.3	Motor tests	No motors used.	N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature :		N/A
B.4.4	Short circuit of functional insulation	See the following details.	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.3 & B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.3 & B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards within the EUT	N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.3 & B.4 for faults on electronic components)	P
B.4.6	Short circuit or disconnect of passive components	(See appended table B.3 & B.4)	P
B.4.7	Continuous operation of components	The EUT is continuous operating type and no such components intended for short time operation or intermittent operation	N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	No change to circuits classified in 5.3.	P
B.4.9	Battery charging under single fault conditions ... :	No battery involved in the EUT	N/A
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation	No such UV generated from the equipment.	N/A
C.1.2	Requirements	See above.	N/A
C.1.3	Test method	See above.	N/A
C.2	UV light conditioning test	See above.	N/A
C.2.1	Test apparatus	See above.	N/A
C.2.2	Mounting of test samples	See above.	N/A
C.2.3	Carbon-arc light-exposure apparatus	See above.	N/A
C.2.4	Xenon-arc light exposure apparatus	See above.	N/A
D	TEST GENERATORS		N/A
D.1	Impulse test generators	No such consideration.	N/A
D.2	Antenna interface test generator	See above.	N/A
D.3	Electronic pulse generator	See above.	N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Audio amplifier normal operating conditions	Not such equipment.	N/A
	Audio signal voltage (V) :	See above.	—
	Rated load impedance (Ω) :	See above.	
E.2	Audio amplifier abnormal operating conditions	See above.	N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General requirements	See the following details.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructions – Language	English.	—
F.2	Letter symbols and graphical symbols	See the following details.	P
F.2.1	Letter symbols according to IEC60027-1	Letter symbols for quantities and units are complied with IEC 60027-1.	P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Graphical symbols are complied with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010.	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Equipment marking is located on the enclosure surface and is easily visible.	P
F.3.2	Equipment identification markings	See the following details.	P
F.3.2.1	Manufacturer identification	See copy of marking	—
F.3.2.2	Model identification	See page 2	—
F.3.3	Equipment rating markings	See the following details.	P
F.3.3.1	Equipment with direct connection to mains	The equipment is connected to AC mains supply.	P
F.3.3.2	Equipment without direct connection to mains	See above.	N/A
F.3.3.3	Nature of supply voltage	~	—
F.3.3.4	Rated voltage	100-240Vac	—
F.3.3.4	Rated frequency	50/60Hz	—
F.3.3.6	Rated current or rated power	0.45A Max	—
F.3.3.7	Equipment with multiple supply connections	Only one supply connection.	N/A
F.3.4	Voltage setting device	Auto range and no voltage selector provide within the equipment.	N/A
F.3.5	Terminals and operating devices	See below.	P
F.3.5.1	Mains appliance outlet and socket-outlet markings	No such devices on the equipment.	N/A
F.3.5.2	Switch position identification marking	No such switch on the equipment.	N/A
F.3.5.3	Replacement fuse identification and rating markings	The fuses are located within the equipment and not replaceable by an ordinary person or an instructed person. The fuse rating marked on PCB with FR1: 1W 2.2R, 4.7R, 10R	P
F.3.5.4	Replacement battery identification marking	No such battery on the equipment. See sub-clause F.5	N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification	See below.	P
F.3.6.1	Class I Equipment	Class II Equipment	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.6.1.1	Protective earthing conductor terminal	Not such construction	N/A
F.3.6.1.2	Neutral conductor terminal	Not such construction	N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)		P
F.3.6.2.1	Class II equipment with or without functional earth	 used	P
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking:	IP20	—
F.3.8	External power supply output marking	See copy of marking	P
F.3.9	Durability, legibility and permanence of marking	Marking is considered to be legible and easily discernible. See also the following details.	P
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 sec. And then again for 15 sec. With the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. After each test, the marking remained legible.	P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use		P
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1	No such terminals provided.	N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment	No such symbols used as a safeguard considered.	N/A
	i) Permanently connected equipment not provided with all-pole mains switch	Not permanently connected equipment.	N/A
	j) Replaceable components or modules providing safeguard function	No such markings.	N/A
F.5	Instructional safeguards	No instructional safeguard is considered as necessary.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction	No instructional safeguard required in the equipment.	N/A
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General requirements	No switch used.	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	Relays		N/A
G.2.1	General requirements	No such relay provided within the equipment.	N/A
G.2.2	Overload test	See above.	N/A
G.2.3	Relay controlling connectors supply power	See above.	N/A
G.2.4	Mains relay, modified as stated in G.2	See above.	N/A
G.3	Protection Devices		P
G.3.1	Thermal cut-offs	No thermal cut-off provided within the equipment.	N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)	See above.	N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)	See above.	N/A
G.3.1.2	Thermal cut-off connections maintained and secure	See above.	N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691	No thermal link provided within the equipment.	N/A
G.3.2.1b)	Thermal links tested as part of the equipment	See above.	N/A
	Aging hours (H)		—
	Single Fault Condition		—
	Test Voltage (V) and Insulation Resistance (Ω). :		—
G.3.3	PTC Thermistors	No PTC thermistor provided within the equipment.	N/A
G.3.4	Overcurrent protection devices	Fuse (FR1) complying with the standard IEC 60127 as overcurrent protection device. See table 4.1.2	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions.....:	See table B.4 for details.	N/A
G.4	Connectors		P
G.4.1	Spacings	No such connector with insulated surfaces accessible within the EUT	N/A
G.4.2	Mains connector configuration		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	Output connector with a shape that insertion into a mains connector or socket is unlikely to occur.	P
G.5	Wound Components		P
G.5.1	Wire insulation in wound components.....	Approved TIW used for secondary winding of transformer	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	Separated by tube between windings	P
G.5.1.2 b)	Construction subject to routine testing	The routine tests are to be considered for the production based on the relevant approval.	N/A
G.5.2	Endurance test on wound components	Not applied for.	N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s)		—
	Temperature (°C)		—
G.5.2.3	Wound Components supplied by mains	See above.	N/A
G.5.3	Transformers		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1)	The transformers meet the requirements given in G.5.3.2 and G.5.3.3.	P
	Position.....	T1	—
	Method of protection	See G.5.3.3.	—
G.5.3.2	Insulation	Primary windings and secondary windings are separated by Reinforced insulation (The core is considered as primary part as it is not isolated from Primary)	P
	Protection from displacement of windings	The end-turn of each winding is fixed by insulating tape	—
G.5.3.3	Overload test	(See appended table B.3 & B.4)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment as an SMPS.	P
G.5.3.3.2	Winding Temperatures testing in the unit	(See appended table B.3&B.4)	P
G.5.3.3.3	Winding Temperatures - Alternative test method	Alternative test method was not considered.	N/A
G.5.4	Motors		N/A
G.5.4.1	General requirements	No motors used.	N/A
	Position		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test duration (days)		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V)		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h)		N/A
	Electric strength test (V)		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature		N/A
	Electric strength test (V)		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h)		N/A
	Electric strength test (V)		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage		—
G.6	Wire Insulation		P
G.6.1	General	Triple insulated winding in T1 secondary windings used as reinforced safeguard in the isolating transformer that has separately complied with Annex J. See Appended table 4.1.2. No other wires used in the EUT.	P
G.6.2	Solvent-based enamel wiring insulation	Insulation does not rely on solvent-based enamel.	N/A
G.7	Mains supply cords		N/A
G.7.1	General requirements	No such cord used	N/A
	Type.....	See above	—
	Rated current (A)		—
	Cross-sectional area (mm ²), (AWG)		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N)		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm).... :		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry :		N/A
G.7.5	Non-detachable cord bend protection	Not hand-held equipment	N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) :		—
	Diameter (m) :		—
	Temperature (°C) :		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	Varistors		P
G.8.1	General requirements	Approval varistor used, see table 4.1.2 for details	P
G.8.2	Safeguard against shock		P
G.8.3	Safeguard against fire		P
G.8.3.2	Varistor overload test :	(See appended table B.3)	N/A
G.8.3.3	Temporary overvoltage :	(See appended table B.3)	N/A
G.9	Integrated Circuit (IC) Current Limiters		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.	No IC current limiter provided within the equipment.	N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA :		—
G.9.1 d)	IC limiter output current (max. 5A) :		—
G.9.1 e)	Manufacturers' defined drift :		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	Resistors		N/A
G.10.1	General requirements	No such component used.	N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.11	Capacitor and RC units		P
G.11.1	General requirements	Approval Y1 capacitor provide, see table 4.1.2 for details.	P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
G.12	Optocouplers		N/A
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results)		N/A
	Type test voltage Vini		—
	Routine test voltage, Vini,b		—
G.13	Printed boards		P
G.13.1	General requirements	See the following details.	P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board or over the outer surface of coated printed boards complied with the minimum clearance and creepage requirements of 5.4.2 and 5.4.3.	P
G.13.3	Coated printed boards	No coated printed board or multilayer board applied for within the equipment.	N/A
G.13.4	Insulation between conductors on the same inner surface	See above.	N/A
	Compliance with cemented joint requirements (Specify construction)		—
G.13.5	Insulation between conductors on different surfaces	See above.	N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)		—
G.13.6	Tests on coated printed boards	See above.	N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements		N/A
G.15	Liquid filled components		N/A
G.15.1	General requirements	No such device provided within the equipment.	N/A
G.15.2	Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		N/A
b)	Impulse test using circuit 2 with $U_c =$ to transient voltage		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance		—
D3)	Resistance		—
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General	No telephone ringing signal generated within the equipment.	N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz)		—
H.3.1.2	Voltage (V)		—
H.3.1.3	Cadence; time (s) and voltage (V)		—
H.3.1.4	Single fault current (mA):		—
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)		—

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Clause	Requirement + Test		Verdict
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		P
	General requirements	Triple insulated winding wiring used as reinforced safeguard in the isolating transformer that has been evaluated to Annex J as follows: Requirements of Annex U of IEC 60950-1/A2 or IEC 62368-1 are identical to Annex J of this standard (for wires providing Reinforced insulation). See Table 4.1.2.	P
K	SAFETY INTERLOCKS		N/A
K.1	General requirements	No safety interlock provided within the equipment.	N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location)		N/A
K.7.2	Overload test, Current (A)		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	DISCONNECT DEVICES		P
L.1	General requirements	AC plug used to disconnect from AC mains.	P
L.2	Permanently connected equipment	Not permanently connected equipment.	N/A
L.3	Parts that remain energized	When AC plug is disconnected no hazardous voltage in the equipment.	P
L.4	Single phase equipment	The mains plug disconnects both poles simultaneously.	P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices	See above.	P
L.8	Multiple power sources	Only one a.c. mains connection.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N/A
M.1	General requirements	No battery used.	N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method) .. :		N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance :		N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature :		—
M.4.2.2 b)	Single faults in charging circuitry :		—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method)		N/A
M.6.2	Leakage current (mA)		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s).....		—
M.8.2.3	Correction factors		—
M.8.2.4	Calculation of distance d (mm)		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing)		N/A
N	ELECTROCHEMICAL POTENTIALS		N/A
	Metal(s) used		—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Figures O.1 to O.20 of this Annex applied		—
P	SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS		N/A
P.1	General requirements	No opening of enclosure.	N/A
P.2.2	Safeguards against entry of foreign object		N/A
	Location and Dimensions (mm)		—
P.2.3	Safeguard against the consequences of entry of foreign object	See above.	N/A
P.2.3.1	Safeguards against the entry of a foreign object	See above.	N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
P.3	Safeguards against spillage of internal liquids	No such liquids.	N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts	No such construction.	N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C)..... :		—
	Tr (°C)..... :		—
	Ta (°C)..... :		—
P.4.2 b)	Abrasion testing		N/A
P.4.2 c)	Mechanical strength testing		N/A
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources	See appended table Annex Q.1	P
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		P
	- Regulating network limited output under normal operating and simulated single fault condition	A regulating network limits the output in compliance with table Q.1 both under normal operating conditions and after any single fault.	P
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method	See appended table Annex Q.1	P
Q.2	Test for external circuits – paired conductor cable	No such circuit for connection to the EUT	N/A
	Maximum output current (A)		—
	Current limiting method..... :		—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit	See above.	N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)).	See above.	N/A
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material		—
	Wall thickness (mm).....:		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials	See Table 4.1.2 only.	N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm).....:		—
	Conditioning (test condition), (°C)		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
T	MECHANICAL STRENGTH TESTS		P
T.1	General requirements		P
T.2	Steady force test, 10 N	(See appended table T.2)	P
T.3	Steady force test, 30 N		N/A
T.4	Steady force test, 100 N	(See appended table T.4)	P
T.5	Steady force test, 250 N		N/A
T.6	Enclosure impact test		N/A
	Fall test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Swing test		N/A
T.7	Drop test	(See appended table T.7)	P
T.8	Stress relief test	(See appended table T8)	P
T.9	Impact Test (glass)	No glass used.	N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J)		—
	Height (m)		—
T.10	Glass fragmentation test		N/A
T.11	Test for telescoping or rod antennas	No such antennas provided within the equipment.	N/A
	Torque value (Nm)	See above.	—
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General requirements	No CRT provided within the equipment.	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs	See above.	N/A
U.3	Protective Screen	See above.	N/A
V	DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)		P
V.1	Accessible parts of equipment	No access with test probes to any hazardous parts.	P
V.2	Accessible part criterion		N/A

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Clause	Requirement + Test		Result - Remark		Verdict
4.1.2	Table: List of critical components				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹
Enclosure	SABIC INNOVATIVE PLASTICS B V	940(f1)	PC, V-0, 120°C, min. thickness: 1.5mm	UL 94, UL 746A, IEC/EN 62368-1	UL E45329, Tested with appliance
Plug holder	SABIC INNOVATIVE PLASTICS B V	940(f1)	PC, V-0, 120°C	UL 94, UL 746A, IEC/EN 62368-1	UL E45329, Tested with appliance
PCB	FENGSHUN HONGJIANG ELECTRONICS CO LTD	HJ-01	130°C, V-0	UL 796, IEC/EN 62368-1	UL E329252, Tested with appliance
(Alternative)	DONGGUAN RONGTUO ELECTRONIC TECHNOLOGY CO LTD	1S	130°C, V-0	UL 796, IEC/EN 62368-1	UL E248992, Tested with appliance
(Alternative)	MEI ZHOU CHAO JIE ELECTRONIC CO LTD	CJ-06	V-0, 130°C	UL 796, IEC/EN 62368-1	UL E313924, Tested with appliance
(Alternative)	GUANG DONG HONG TAI ELECTRONIC INC CO LTD	HH-1, HH-2	V-0, 130°C	UL 796, IEC/EN 62368-1	UL E315852, Tested with appliance
(Alternative)	SHANDONG JINBAO ELECTRONICS CO LTD	ZD-95(G)F	V-0, 130°C	UL 796, IEC/EN 62368-1	UL E141940, Tested with appliance
(Alternative)	KINGBOARD LAMINATES HOLDINGS LTD	KB-5150	V-0, 130°C	UL 796, IEC/EN 62368-1	UL E123995, Tested with appliance
(Alternative)	MEIZHOU HUADA CIRCUIT BOARD CO LTD	HD-D	V-0, 130°C	UL 796, IEC/EN 62368-1	UL E486784, Tested with appliance
(Alternative)	DONGGUAN YE JIU GUAN ELECTRONIC	YJG-1, YJG-2	V-0, 130°C	UL 796, IEC/EN 62368-1	UL E363712, Tested with

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	TECHNOLOGY CO LTD				appliance
(Alternative)	Interchangeable	Interchangeable	V-1 or better, 130°C	UL 796, IEC/EN 62368-1	UL, Tested with appliance
Mylar sheet between PCB trace and plug pin	FORMEX, DIV OF ILLINOIS TOOL WORKS INC	FORMEX GK-(a)(b)(f2)	V-0, 115 °C, Min. thickness: 0.35mm	UL 94, UL 746C, IEC/EN 62368-1	UL E121855, Tested with appliance
(Alternate)	SABIC JAPAN L L C	EX06316C	V-0, 105°C, Min. thickness: 0.35mm	UL 94, UL 746C, IEC/EN 62368-1	UL E207780, Tested with appliance
(Alternate)	TORAY INDUSTRIES INC FILM DIV	Lumirror U436	VTM-2, 105°C, Min. thickness: 0.2mm	UL 94, UL 746C, IEC/EN 62368-1	UL E86511, Tested with appliance
Primary lead wire	DONGGUAN HONGFUWEI CABLE TECHNOLOGY CO LTD	1007, 1015, 1185	VW-1, min. 22AWG, min. 80°C, 300V	UL 758, IEC/EN 62368-1	UL E316005, Tested with appliance
(Alternative)	SHENZHEN SHI YIHUAXING ELECTRON CO LTD	1007, 1015, 1185	VW-1, min. 22AWG, min. 80°C, 300V	UL 758, IEC/EN 62368-1	UL E318553, Tested with appliance
(Alternative)	SHENZHEN HONGYA ELECTRONICS CO LTD	1007, 1015, 1185	VW-1, min. 22AWG, min. 80°C, 300V	UL 758, IEC/EN 62368-1	UL E346933, Tested with appliance
(Alternative)	SHENZHEN LEVITEK ELECTRONICS CO LTD	1007, 1015, 1185	VW-1, min. 22AWG, min. 80°C, 300V	UL 758, IEC/EN 62368-1	UL E352217, Tested with appliance

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	Interchangeable	Interchangeable	VW-1, min. 22AWG, min. 80°C, 300V	UL 758, IEC/EN 62368-1	UL, Tested with appliance
Fuse (FR1)	SHENZHEN GREAT ELECTRONICS CO LTD	RXF-1W Series	2.2Ω or 4.7Ω or 10Ω, 1W	UL 1412, EN60065	UL E301541 VDE 40026608
(Alternative)	DONGGUAN HONGDA ELECTRONIC TECHNOLOGY CO LTD	RXF Series	2.2Ω or 4.7Ω or 10Ω, 1W	UL 1412, EN60065	UL E359590 VDE 40036858
Heat shrinkable tube of FR1	SHENZHEN WOER HEAT- SHRINKABLE MATERIAL CO LTD	WF	Min.125°C, 600V	UL 224, IEC/EN 62368-1	UL E203950, Tested with appliance
(Alternative)	DONGGUAN SALIPT CO LTD	SALIPT S-901- 300, SALIPT S-901- 600, SALIPT S-HPT- 300	Min.125°C, 300V,	UL 224, IEC/EN 62368-1	UL E209436, Tested with appliance
Line chock (LF1)	Shenzhen Jie Wang Electronic Technology Co., Ltd.	UU9.8 19.0mH MIN	Min. 19mH, 130°C	IEC/EN 62368-1 IEC/EN 61347-1, IEC/EN 61347-2- 13	Test with appliance
(Alternative)	Shenzhen Jie Wang Electronic Technology Co., Ltd.	UU9.8 30.0mH MIN	Min. 30mH, 130°C	IEC/EN 62368- 1IEC/EN 61347-1, IEC/EN 61347-2- 13	Test with appliance
-Bobbin of LF1	CHANG CHUN PLASTICS CO LTD	T375J	V-0, 150°C, Min. thickness: 0.5mm	UL 94, UL 746C, IEC/EN 62368-1	UL E59481
Magnet wire of LF1	Interchangeable	MW28, MW75	130°C	UL 1446, IEC/EN 62368-1	UL, Tested with appliance
Line choke (L1) (Optional)	Zhongshan Huashan Electronic Technology Co. LTD	DR 6*8	130°C	IEC/EN 62368-1	Tested in appliance
Alternative	SHENZHEN XINYUCHENG ELECTRONIC	8*10-1.0MH	130°C	IEC/EN 62368-1	Tested in appliance

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	CO., LTD				
(Alternative)	HUI ZHOU DELI ELECTRONICS CO., LTD	AL0510- 102KLF, 6*8-1.0MH	130°C	IEC/EN 62368-1	Tested in appliance
Heat shrinkable tube of L1	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-HTF	Min.600V, 125°C	UL 224, IEC/EN 62368-1	UL E180908
Magnet wire of L1	Interchangeable	MW28, MW75	130°C	UL 1446, IEC/EN 62368-1	UL E190672
Varistor (VR1) (Optional)	CENTRA SCIENCE CORP	CNR-10D471K- CNR-10D681K, CNR-14D471K- CNR-14D681K	Min. 300V ac, 85°C, Coating: V-0.	IEC/EN61051-1, IEC61051-2, UL 1449	VDE 40008220, UL E316325
(Alternative)	CERGLASS MFG INC	10D471K- 10D681K, 14D471K- 14D681K	Min. 300V ac, 85°C, Coating: V-0.	IEC/EN61051-1, IEC61051-2, UL 1449	VDE 40028836, UL E317616
(Alternative)	SHAANXI HUAXING ELECTRONIC GROUP CO LTD	MYG20G10K471- MYG20G10K681, MYG20G14K471- MYG20G14K681	Min. 300V ac, 85°C, Coating: V-0.	IEC/EN61051-1, IEC61051-2, UL 1449	VDE 40018747, UL E329651
(Alternative)	GUANGXI NEW FUTURE INFORMATION INDUSTRY CO LTD	14D471K- 14D561K	Min. 300V ac, 85°C, Coating: V-0.	IEC/EN61051-1, IEC61051-2, UL 1449	VDE 40030322, UL E323753
(Alternative)	LIEN SHUN ELECTRONICS CO LTD	10D471K- 10D681K, 14D471K- 14D681K	Min. 300V ac, 85°C, Coating: V-0.	IEC/EN61051-1, IEC61051-2, UL 1449	VDE 40005858, UL E315524
(Alternative)	SUCCESS ELECTRONICS CO LTD	+10D471K©- +10D681K©, +14D471K©- +14D681K©	Min. 300V ac, 85°C, Coating: V-0.	IEC/EN61051-1, IEC61051-2, UL 1449	VDE 40030401, UL E330256
(Alternative)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	10D471K- 10D681K, 14D471K- 14D681K	Min. 300V ac, 85°C, Coating: V-0.	IEC/EN61051-1, IEC61051-2, UL 1449	VDE 40023049, UL E330837
Bridge diode (BD1)	Interchangeable	Interchangeable	Min.1A, min. 600V	IEC/EN 62368-1	Tested with appliance
Thermistor (NTC1)	CerglassMfg Inc.	SCK102	10R 2A	IEC/EN 62368-1	Tested with appliance

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Electrolytic Capacitor (EC1, EC2)	Interchangeable	Interchangeable	2.2-15uF, min. 400V, 105°C	IEC/EN 62368-1	Tested with appliance
Y- Capacitor (CY3 or CY1 and CY2 used in series)	SUCCESS ELECTRONICS CO LTD	SE	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL60384 -14	UL E114280 VDE 40020002
(Alternative)	GUANGDONG SOUTH HONGMING ELECTRONIC SCIENCE & TECHNOLOGY CO LTD	F	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL60384 -14	UL E154899 VDE 40036393
(Alternative)	NAN JING YUYUE ELECTRONICS CO LTD	CT7, 2E CT7, 2F	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL60384 -14	UL E237728 VDE 40008010
(Alternative)	DONGGUAN EASY-GATHER ELECTRONIC CO LTD	DCF	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL60384 -14	UL E252221 VDE 40015758
(Alternative)	SUCCESS ELECTRONICS CO LTD	SF	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL60384 -14	UL E114280 VDE 40019457
(Alternative)	HAOHUA ELECTRONIC CO	CT7	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL60384 -14	UL E233106 VDE 40003902
(Alternative)	WALSIN TECHNOLOGY CORP	AH Series	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL60384 -14	UL E146544 VDE 40001804
(Alternative)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	CD	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL60384 -14	UL E208107 VDE 40025754
(Alternative)	SHAANXI HUAXING ELECTRONIC DEVELOPMEN T CO LTD	CT7Y1 Series	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL60384 -14	UL E217400 VDE 40015542

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	JYH CHUNG ELECTRONICS CO LTD	JD	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL60384 -14	UL E187963 VDE 40047775
Transformer (T1)	SHENZHEN HUA ZHI CHUANG ELECTRONIC TECHNOLOGY CO LTD	HT39B-030-080 HT39B-080-160	Class B	IEC/EN 62368-1	Tested with appliance
Insulation System	SHENZHEN HUA ZHI CHUANG ELECTRONIC TECHNOLOGY CO LTD	HZC-B	Class B	UL 1446, IEC/EN 62368-1	UL E334728, Tested with appliance
Bobbin of T1	Sumitomo Bakelite Co Ltd	PM-9820	V-0, min.150°C, min. thickness 0.51 mm	UL 94, IEC/EN 62368-1	UL E41429, Tested with appliance
Insulation tape of T1	Jingjiang Yahua Pressure Sensitive Glue Co Ltd	CT* (b)(g), PZ*(b), WF* (c)(h)	130°C	UL 510, IEC/EN 62368-1	UL E165111, Tested with appliance
Triple insulation wire of T1	TOTOKU ELECTRIC CO LTD	TIW-2X	130°C	UL 2353, IEC/EN 62368-1	UL E166483 VDE 40005154
(Alternative)	FURUKAWA ELECTRIC CO LTD	TEX-E	130°C	UL 2353, IEC/EN 62368-1	UL E206440 VDE 006735
Magnet wire of T1	Interchangeable	MW28, MW75	130°C	UL 1446, IEC/EN 62368-1	UL, Tested with appliance
Tube of T1	GREAT HOLDING INDUSTRIAL CO LTD	TFT, TFS	VW-1, 200°C, min. 300V	UL 224, IEC/EN 62368-1	UL E156256, Tested with appliance
Varnish of T1	ELANTAS ELECTRICAL INSULATION ELANTAS PDG INC	V1630FS, 468-2(d)	130°C	UL 1446 IEC/EN 62368-1	UL E75225, Tested with appliance
Output wire	SHENZHEN BOSITAI COMPUTER ACCESSORY CO LTD	2464	VW-1, min. 24AWG, min. 80°C, min. 300V	UL 758, IEC/EN 62368-1	UL E341894, Tested with appliance

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Alternative)	DONGGUAN HONGFUWEI CABLE TECHNOLOGY CO LTD	2464, 2468	VW-1, min. 24AWG, min. 80°C, min. 300V	UL 758, IEC/EN 62368-1	UL E316005, Tested with appliance
(Alternative)	SHENZHEN SHI YIHUAXING ELECTRON CO LTD	2464, 2468	VW-1, min. 24AWG, min. 80°C, min. 300V	UL 758, IEC/EN 62368-1	UL E318553, Tested with appliance
(Alternative)	SHENZHEN HONGYA ELECTRONICS CO LTD	2464, 2468	VW-1, min. 24AWG, min. 80°C, min. 300V	UL 758, IEC/EN 62368-1	UL E346933, Tested with appliance
(Alternative)	SHENZHEN LEVITEK ELECTRONICS CO LTD	2464, 2468	VW-1, min. 24AWG, min. 80°C, min. 300V	UL 758, IEC/EN 62368-1	UL E352217, Tested with appliance
(Alternative)	Interchangeable	Interchangeable	VW-1, min. 24AWG, min. 80°C, min. 30V	UL 758, IEC/EN 62368-1	UL, Tested with appliance
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests			N/A
(The following mechanical tests are conducted in the sequence noted.)				
4.8.4.2	TABLE: Stress Relief test			—
Part		Material	Oven Temperature (°C)	Comments
4.8.4.3	TABLE: Battery replacement test			—
Battery part no.:				—
Battery Installation/withdrawal			Battery Installation/Removal Cycle	Comments
			1	
			2	
			3	
			4	
			5	
			6	
			8	
			9	

IEC 62368-1				
Clause	Requirement + Test	Result - Remark	Verdict	
4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests		N/A	
(The following mechanical tests are conducted in the sequence noted.)				
		10		
4.8.4.4	TABLE: Drop test		—	
Impact Area		Drop Distance	Drop No.	Observations
			1	
			2	
			3	
4.8.4.5	TABLE: Impact			—
Impacts per surface		Surface tested	Impact energy (Nm)	Comments
4.8.4.6	TABLE: Crush test			—
Test position		Surface tested	Crushing Force (N)	Duration force applied (s)
Supplementary information:				

4.8.5	TABLE: Lithium coin/button cell batteries mechanical test result			N/A
Test position		Surface tested	Force (N)	Duration force applied (s)
Supplementary information:				

5.2	Table: Classification of electrical energy sources						P
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
Model: HT39B-0603000EU							
1	264	Primary	Normal	264Vrms	--	60	ES3

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
		circuits supplied by a.c. mains supply	Abnormal	--	--	--	
			Single fault – SC/OC(SC)	--	--	--	
2	264	Output “+” to “-”	Normal	6.04Vdc	--	--	ES1
			Abnormal-output overload	5.93Vdc	--	--	
			Single fault – SC/OC T1 pin 7 to pin 8 SC	0.2Vdc	--	--	
			Single fault – U2 5,6,7,8 to 1,2,3 SC	0.2Vdc	--	--	
3	264	Output to Earth (due to primary-output coupling by CY3)	Normal	210Vpk	0.365mApk	60	ES1
			Abnormal-output overload	211Vpk	0.364mApk	60	
			Single fault – SC/OC T1 pin 7 to pin 8 SC	211Vpk	0.363mApk	60	
			Single fault-SC/OC U2 5,6,7,8 to 1,2,3 SC	210Vpk	0.364mApk	60	
4	264	Output to Earth (due to primary-output coupling by CY1 and CY2)	Normal	210Vpk	0.180mApk	60	ES1
			Abnormal-output overload	211Vpk	0.181mApk	60	
			Single fault – SC/OC T1 pin 7 to pin 8 SC	210Vpk	0.182mApk	60	
			Single fault-SC/OC U2 5,6,7,8 to 1,2,3 SC	212Vpk	0.181mApk	60	
Model: HT39B-1601100EU							
1	264	Primary circuits supplied by a.c. mains supply	Normal	264Vrms	--	60	ES3
			Abnormal	--	--	--	
			Single fault – SC/OC(SC)	--	--	--	
2	264	Output “+” to “-”	Normal	16.54Vdc	--	--	ES1
			Abnormal-output overload	15.22Vdc	--	--	
			Single fault – SC/OC T1 pin 7 to pin 8 SC	0.2Vdc	--	--	
			Single fault – U2 5,6,7,8 to 1,2,3 SC	0.2Vdc	--	--	

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
3	264	Output to Earth (due to primary-output coupling by CY3)	Normal	211Vpk	0.362mApk	60	ES1
			Abnormal-output overload	212Vpk	0.363mApk	60	
			Single fault – SC/OC T1 pin 7 to pin 8 SC	210Vpk	0.363mApk	60	
			Single fault- SC/OC U2 5,6,7,8 to 1,2,3 SC	210Vpk	0.364mApk	60	
4	264	Output to Earth (due to primary-output coupling by CY1 and CY2)	Normal	210Vpk	0.182mApk	60	ES1
			Abnormal-output overload	211Vpk	0.183mApk	60	
			Single fault – SC/OC T1 pin 7 to pin 8 SC	210Vpk	0.181mApk	60	
			Single fault- SC/OC U2 5,6,7,8 to 1,2,3 SC	212Vpk	0.181mApk	60	

5.2.2.3 - Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
1	--	--	Normal	--	--	ES1
			Abnormal	--	--	
			Single fault – SC/OC	--	--	

5.2.2.4 - Single Pulses

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

5.2.2.5 - Repetitive Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Off time (ms)	Upk (V)	lpk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
			Single fault – SC/OC	--	--	--
Test Conditions: Normal – Abnormal – Supplementary information: SC=Short Circuit, OC=Short Circuit						

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V)	90V/60 Hz Vertical	90V/60 Hz Horizontal	264V/ 50Hz Vertical	264V/ 50Hz Horizontal	—
	Ambient T _{min} (°C)	See below	See below	See below	See below	—
	Ambient T _{max} (°C)	See below	See below	See below	See below	—
	T _{ma} (°C)	40	40	40	40	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T _{max} (°C)
Model: HT39B-0603000EU		--	--	--	--	--
Plug holder		53.6	52.7	49.0	49.0	120-(40-24.0)=104
Input wire		58.6	56.9	54.4	52.7	80-(40-24.0)=64
Mylar sheet		64.3	63.4	52.7	50.3	105-(40-24.0)=89
VR1		54.5	52.2	50.6	49.1	85-(40-24.0)=69
EC1		72.9	70.4	58.5	60.3	105-(40-24.0)=89
LF1 winding		78.8	75.5	64.9	67.0	130-(40-24.0)=114
EC2		81.1	77.5	67.5	69.2	105-(40-24.0)=89
T1 winding		86.6	84.9	81.2	79.4	110-(40-24.0)=94
T1 core		83.6	81.2	77.6	76.2	110-(40-24.0)=94
CY1		76.7	83.3	73.5	66.6	125-(40-24.0)=109
EC4		60.7	59.1	55.0	53.8	105-(40-24.0)=89
EC5		57.7	58.4	52.2	51.4	105-(40-24.0)=89
Output wire		52.6	55.7	50.1	49.7	80-(40-24.0)=64
PCB under U2		96.8	100.1	88.6	85.5	130-(40-24.0)=114
PCB under BD1		81.8	81.2	62.4	62.3	130-(40-24.0)=114
PCB under U1		106.1	105.3	102.2	99.5	130-(40-24.0)=114
Enclosure inside near T1 top		82.7	81.1	76.3	73.5	120-(40-24.0)=104
Enclosure inside near T1 bottom		78.9	75.9	68.9	65.9	120-(40-24.0)=104
Enclosure outside near T1 top		71.5	69.1	65.6	62.6	77-(25-24.0)=76
Enclosure outside near T1 bottom		67.7	64.4	57.3	54.1	77-(25-24.0)=76

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Ambient	24.7	24.4	24.0	24.7	--
Model: HT39B-0603000EU (with L1)	--	--	--	--	--
Plug holder	52.4	51.8	--	--	120-(40-24.0)=104
Input wire	57.3	55.9	--	--	80-(40-24.0)=64
Mylar sheet	62.8	62.2	--	--	105-(40-24.0)=89
VR1	52.7	50.7	--	--	85-(40-24.0)=69
EC1	71.6	69.4	--	--	105-(40-24.0)=89
L1	75.9	72.9	--	--	130-(40-24.0)=114
EC2	79.6	76.3	--	--	105-(40-24.0)=89
T1 winding	83.3	81.9	--	--	110-(40-24.0)=94
T1 core	80.2	78.1	--	--	110-(40-24.0)=94
CY1	75.5	82.4	--	--	125-(40-24.0)=109
EC4	59.1	57.8	--	--	105-(40-24.0)=89
EC5	55.9	56.9	--	--	105-(40-24.0)=89
Output wire	51.5	54.9	--	--	80-(40-24.0)=64
PCB under U2	93.2	96.8	--	--	130-(40-24.0)=114
PCB under BD1	78.4	78.1	--	--	130-(40-24.0)=114
PCB under U1	102.9	102.4	--	--	130-(40-24.0)=114
Enclosure inside near T1 top	80.6	79.3	--	--	120-(40-24.0)=104
Enclosure inside near T1 bottom	76.9	74.2	--	--	120-(40-24.0)=104
Enclosure outside near T1 top	70.2	68.1	--	--	77-(25-24.0)=76
Enclosure outside near T1 bottom	66.6	63.6	--	--	77-(25-24.0)=76
Ambient	24.0	24.4	--	--	--
Model: HT39B-1601100EU					
Plug holder	39.7	36.3	39.3	36.7	120-(40-24.0)=104
Input wire	45.1	42.6	41.6	40.1	80-(40-24.0)=64
Mylar sheet	48.9	46.9	45.9	44.7	105-(40-24.0)=89
VR1	42.3	40.7	38.8	37.9	85-(40-24.0)=69
EC1	69.3	66.5	58.0	54.5	105-(40-24.0)=89
LF1 winding	68.6	66.6	59.9	57.7	130-(40-24.0)=114
EC2	75.0	74.3	71.8	70.6	105-(40-24.0)=89
T1 winding	82.7	81.6	80.1	78.6	110-(40-24.0)=94
T1 core	79.5	79.2	77.4	75.3	110-(40-24.0)=94
CY1	63.4	64.9	62.4	63.2	125-(40-24.0)=109
EC4	51.8	52.4	51.6	51.9	105-(40-24.0)=89
EC5	47.2	46.3	44.9	43.8	105-(40-24.0)=89
Output wire	49.8	50.4	49.3	49.9	80-(40-24.0)=64
PCB under U2	85.3	86.3	85.2	88.4	130-(40-24.0)=114
PCB under BD1	79.3	76.3	60.8	57.2	130-(40-24.0)=114
PCB under U1	97.8	95.4	92.7	90.6	130-(40-24.0)=114

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
Enclosure inside near T1 top	72.6	71.4	65.6	63.7	120-(40-24.0)=104		
Enclosure inside near T1 bottom	69.2	67.9	60.3	57.7	120-(40-24.0)=104		
Enclosure outside near T1 top	61.7	60.5	54.0	52.4	77-(25-24.0)=76		
Enclosure outside near T1 bottom	58.4	56.3	49.0	46.8	77-(25-24.0)=76		
Ambient	24.4	24.9	24.5	24.0	--		
Supplementary information:							
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
Supplementary information:							
Note 1: Tma should be considered as directed by applicable requirement							
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							
Note 3: Thermocouple method used							
Note 4: The maximum ambient temperature specified by manufacturer is 40°C							

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

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics			P
Allowed impression diameter (mm) : ≤ 2 mm				—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)	
Plug holder (Type: 940 (f1))	SABIC INNOVATIVE PLASTICS B V	125	1.1	
Supplementary information:				
The bobbin materials of transformer and line choke are phenolic, no test is needed.				

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz) ¹	Required cl (mm)	cl (mm) ²	Required ³ cr (mm)	cr (mm)
Line and Neutral before F1	420	240	0.06	1.5	7.1	2.5	7.1
Two terminals of F1	420	240	0.06	1.5	8.3	2.5	8.3

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Clause	Requirement + Test			Result - Remark			Verdict
CY2 two terminals	420	240	0.06	1.5	3.1	2.5	3.1
CY3 two terminals	420	240	0.06	1.5	3.3	2.5	3.3
CY1 two terminals	420	240	0.06	3.0	6.7	5.0	6.7
Primary live part body (EC2) to outside enclosure	420	240	0.06	3.0	6.7	5.0	6.7
T1 primary winding to secondary pin	552	276	54.7	3.0	7.5	5.6	7.5
T1 core to secondary pin	552	276	54.7	3.0	7.0	5.6	7.0
T1 core to EC4	552	276	54.7	3.0	7.5	5.6	7.5
T1 core to the secondary pin of CY1	552	276	54.7	3.0	6.8	5.6	6.8
Supplementary information: Note 1: Only for frequency above 30 kHz Note 2: See table 5.4.2.4 if this is based on electric strength test Note 3: Provide Material Group: IIIb 1) Core of transformer T1 is considered as primary part. 2) Insulation tube covering transformer is approved reinforced insulation. 3) The secondary winding wire of T1 is approved reinforced insulation wire. 4) If no specified, the worst condition was considered. 5) All internal wire fixed on PCB by soldered and glued.							

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage				N/A
	Overvoltage Category (OV):				
	Pollution Degree:				
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Measured cl (mm)	
Supplementary information: Refer Table 5.4.2.2, 5.4.2.4 and 5.4.3					

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

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Clause	Requirement + Test	Result - Remark	Verdict
--	--	--	--
--	--	--	--
--	--	--	--
Supplementary information: Not used the alternative method to determine the clearances.			

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements					P
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)	
Enclosure *	420	0.6	Plastic	0.4	1.5	
Bobbin of LF1*	420	0.6	Plastic	0.4	0.5	
Bobbin of T1*	552	54.7	Plastic	0.4	0.51	
Supplementary information: (*) the material of enclosure refer to table 4.1.2.						

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Functional:				
L and N (fuse out)		DC	2500	No
Basic/supplementary:				
Mylar sheet		DC	2500	No
Reinforced:				
L/N to output		DC	4000	No
L/N to enclosure(with metal foil)		DC	4000	No
Transformer T1: primary to secondary winding		DC	4000	No
Transformer T1: secondary winding to core		DC	4000	No
One layer of insulation tape #		DC	4000	No
Routine Tests:				
--		--	--	--
--		--	--	--
Supplementary information:				
1) # Test repeated for all alternate materials listed in table 4.1.2.				
2) The routine test would be conducted in the factory.				
3) Alternating polarity for electric strength test of dc voltage.				
4) Core of transformer T1 is considered as primary part.				

5.5.2.2	TABLE: Stored discharge on capacitors					N/A
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification	
--	--	--	--	--	--	
Supplementary information:						
X-capacitors installed for testing are:						
<input checked="" type="checkbox"/> bleeding resistor rating:						
<input type="checkbox"/> ICX:						
Notes:						
A. Test Location:						
Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth						
B. Operating condition abbreviations:						
N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition						

5.6.6.2	TABLE: Resistance of protective conductors and terminations				N/A
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	

IEC 62368-1				
Clause	Requirement + Test		Result - Remark	Verdict
5.6.6.2	TABLE: Resistance of protective conductors and terminations			N/A
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)
--	--	--	--	--
Supplementary information:				

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part		N/A
Supply voltage			—
Location		Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)
		1	--
		2	--
		3	--
		4	--
		5	--
		6	--
		7	--
Supplementary Information:			
Notes:			
[1] Supply voltage is the anticipated maximum Touch Voltage			
[2] Earthed neutral conductor [Voltage differences less than 1% or more]			
[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3			
[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.			
[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.			

6.2.2	Table: Electrical power sources (PS) measurements for classification				P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s ^{*)}	PS Classification
Model: HT39B-0603000EU					
Output	Normal condition	Power (W) :	18.62	18.62	PS2
		V _A (V) :	5.93	5.93	
		I _A (A) :	3.14	3.14	
R10	Short circuit [^]	Power (W) :	0	0	PS1
		V _A (V) :	0	0	
		I _A (A) :	0	0	
U1 Pin 5,6,7,8 to	Short	Power (W) :	0	0	PS1

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
1	circuit^	V _A (V) :	0	0	
		I _A (A) :	0	0	
U1 Pin 5,6,7,8 to 2	Short circuit^	Power (W) :	0	0	PS1
		V _A (V) :	0	0	
		I _A (A) :	0	0	
U1 Pin 5,6,7,8 to 3	Short circuit^	Power (W) :	0	0	PS1
		V _A (V) :	0	0	
		I _A (A) :	0	0	
U1 Pin 5,6,7,8 to 4	Short circuit^	Power (W) :	0	0	PS1
		V _A (V) :	0	0	
		I _A (A) :	0	0	
Model: HT39B-1601100EU					
Output	Normal condition	Power (W) :	26.18	26.18	PS2
		V _A (V) :	15.22	15.22	
		I _A (A) :	1.72	1.72	
R10	Short circuit^	Power (W) :	0	0	PS1
		V _A (V) :	0	0	
		I _A (A) :	0	0	
U1 Pin 5,6,7,8 to 1	Short circuit^	Power (W) :	0	0	PS1
		V _A (V) :	0	0	
		I _A (A) :	0	0	
U1 Pin 5,6,7,8 to 2	Short circuit^	Power (W) :	0	0	PS1
		V _A (V) :	0	0	
		I _A (A) :	0	0	
U1 Pin 5,6,7,8 to 3	Short circuit^	Power (W) :	0	0	PS1
		V _A (V) :	0	0	
		I _A (A) :	0	0	
U1 Pin 5,6,7,8 to 4	Short circuit^	Power (W) :	0	0	PS1
		V _A (V) :	0	0	
		I _A (A) :	0	0	
Supplementary Information:					
(*) Measurement taken only when limits at 3 seconds exceed PS1 limits					
(#)Unit shut-down immediately; ^FR1 open immediately, U1 damaged.					

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)	N/A
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IEC 62368-1				
Clause	Requirement + Test		Result - Remark	Verdict
Location	Open circuit voltage After 3 s (V _p)	Measured r.m.s current (I _{rms})	Calculated value (V _p x I _{rms})	Arcing PIS? Yes / No
All internal circuits/components	--	--	--	Yes (declaration)
Supplementary information: An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V _p) and normal operating condition rms current (I _{rms}) is greater than 15.				

6.2.3.2	Table: Determination of Potential Ignition Sources (Resistive PIS)					N/A
	Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No
	All internal circuits/components	--	--	--	--	Yes (declaration)
Supplementary Information: A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter. If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification. A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, <u>or</u> (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.						

8.5.5	TABLE: High Pressure Lamp		N/A
Description		Values	Energy Source Classification
Lamp type			—
Manufacturer			—
Cat no.			—
Pressure (cold) (MPa).....			MS_
Pressure (operating) (MPa)			MS_
Operating time (minutes)			—
Explosion method			—
Max particle length escaping enclosure (mm) .:			MS_
Max particle length beyond 1 m (mm).....			MS_
Overall result			
Supplementary information:			

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Clause	Requirement + Test			Result - Remark			Verdict
B.2.5	TABLE: Input test						P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
Model: HT39B-0603000EU							
90Vac/50Hz	0.400	--	22.3	-	FR1	0.400	Load with 6V3A
90Vac/60Hz	0.402	--	22.3	-	FR1	0.402	Load with 6V3A
100Vac/50Hz	0.360	0.45	22.0	-	FR1	0.360	Load with 6V3A
100Vac/60Hz	0.364	0.45	22.1	-	FR1	0.364	Load with 6V3A
240Vac/50Hz	0.196	0.45	21.4	-	FR1	0.196	Load with 6V3A
240Vac/60Hz	0.195	0.45	21.5	-	FR1	0.195	Load with 6V3A
264Vac/50Hz	0.185	--	21.5	-	FR1	0.185	Load with 6V3A
264Vac/60Hz	0.184	--	21.6	-	FR1	0.184	Load with 6V3A
Model: HT39B-0603000EU(with L1)							
90Vac, 50Hz	0.397	--	22.1	-	FR1	0.397	Load with 6V3A
90Vac, 60Hz	0.400	--	22.1	-	FR1	0.400	Load with 6V3A
100Vac, 50Hz	0.357	0.45	21.9	-	FR1	0.357	Load with 6V3A
100Vac, 60Hz	0.361	0.45	22.0	-	FR1	0.361	Load with 6V3A
240Vac, 50Hz	0.193	0.45	21.2	-	FR1	0.193	Load with 6V3A
240Vac, 60Hz	0.191	0.45	21.2	-	FR1	0.191	Load with 6V3A
264Vac, 50Hz	0.183	--	21.2	-	FR1	0.183	Load with 6V3A
264Vac, 60Hz	0.182	--	21.3	-	FR1	0.182	Load with 6V3A
Model: HT39B-1601100EU							
90Vac, 50Hz	0.376	--	21.0	-	FR1	0.376	Load with 16V1.1A
90Vac, 60Hz	0.378	--	21.1	-	FR1	0.378	Load with 16V1.1A
100Vac, 50Hz	0.341	0.45	20.7	-	FR1	0.341	Load with 16V1.1A
100Vac, 60Hz	0.345	0.45	20.9	-	FR1	0.345	Load with 16V1.1A
240Vac, 50Hz	0.191	0.45	20.6	-	FR1	0.191	Load with 16V1.1A
240Vac, 60Hz	0.189	0.45	20.5	-	FR1	0.189	Load with 16V1.1A
264Vac, 50Hz	0.181	--	20.7	-	FR1	0.181	Load with 16V1.1A
264Vac, 60Hz	0.179	--	20.6	-	FR1	0.179	Load with 16V1.1A
Model: HT39B-1601100EU(with L1)							
90Vac, 50Hz	0.373	--	20.8	-	FR1	0.373	Load with 16V1.1A

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Clause	Requirement + Test	Result - Remark	Verdict

B.2.5	TABLE: Input test						P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
90Vac, 60Hz	0.375	--	20.9	-	FR1	0.375	Load with 16V1.1A
100Vac, 50Hz	0.338	0.45	20.6	-	FR1	0.338	Load with 16V1.1A
100Vac, 60Hz	0.341	0.45	20.6	-	FR1	0.341	Load with 16V1.1A
240Vac, 50Hz	0.189	0.45	20.5	-	FR1	0.189	Load with 16V1.1A
240Vac, 60Hz	0.186	0.45	20.4	-	FR1	0.186	Load with 16V1.1A
264Vac, 50Hz	0.179	--	20.5	-	FR1	0.179	Load with 16V1.1A
264Vac, 60Hz	0.174	--	20.3	-	FR1	0.174	Load with 16V1.1A
Supplementary information:							
Equipment may be have rated current or rated power or both. Both should be measured							

B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C)					See below			—
Power source for EUT: Manufacturer, model/type, output rating ...					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
For model HT39B-0603000EU								
Output terminal	OL	264	5hrs52mins	FR1	0.185A to 0.192A to 0.208A to 0.006A	1.T1 winding, 2. T1 core, 3.Enclosure outside near T1 top 4. Enclosure outside near T1 bottom 5.Ambient	1.97.8°C 2.94.6°C 3.75.3°C 4.71.3°C 5.24.7°C	Output current 3.1A>, circuit protect operated. The Max temperature obtained at 3.08A. NB, NC. output: 0.2V Output to earth:0.365 mA

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Clause	Requirement + Test				Result - Remark			Verdict
B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C)					See below			—
Power source for EUT: Manufacturer, model/type, output rating ...					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Output terminal	OL	90	5hrs36min	FR1	0.402A 0.417A to 0.425A to 0.006A	1.T1 winding, 2. T1 core, 3.Enclosure outside near T1 top 4. Enclosure outside near T1 bottom 5.Ambient	1.101.4°C 2.98.1°C 3.77.2°C 4.73.0°C 5.24.4°C	Output current 3.1A>, circuit protect operated. The Max temperature obtained at 3.08A. NB, NC. output: 0.2V Output to earth:0.365 mA
Output terminal	SC	264Vac	10min	FR1	0.184A to 0.006A	--	--	EUT shutdown immediately, recoverable. Input power and output power was less than normal operation, no temperature was recorded. NB, NC output: 0.2V Output to earth:0.365 mA
For model HT39B-1601100EU								

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

B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C)					See below			—
Power source for EUT: Manufacturer, model/type, output rating ...					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Output terminal	OL	264	6hrs10min	FR1	0.181A to 0.190A to 0.198A to 0.006A	1.T1 winding, 2. T1 core, 3.Enclosure outside near T1 top 4. Enclosure outside near T1 bottom 5.Ambient	1.93.9°C 2.90.5°C 3.65.5°C 4.62.0°C 5.24.1°C	Output current 1.65A>, circuit protect operated. The Max temperature obtained at 1.63A. NB, NC. output: 0.2V Output to earth:0.365 mA
Output terminal	OL	90	6hrs40min	FR1	0.378A 0.386A to 0.395A to 0.004A	1.T1 winding, 2. T1 core, 3.Enclosure outside near T1 top 4. Enclosure outside near T1 bottom 5.Ambient	1.97.8°C 2.94.3°C 3.67.7°C 4.64.0°C 5.24.3°C	Output current 1.65A>, circuit protect operated. The Max temperature obtained at 1.63A. NB, NC. output: 0.2V Output to earth:0.365 mA

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Clause	Requirement + Test	Result - Remark	Verdict

B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C)					See below			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Output terminal	SC	264Vac	10min	FR1	0.179A to 0.006A	--	--	EUT shutdown immediately, recoverable. Input power and output power was less than normal operation, no temperature was recorded. NB, NC output: 0.2V Output to earth: 0.365 mA
<p>Supplementary information:</p> <p>1. Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4.</p> <p>2. The overload of transformer is same as output overload.</p> <p>SC – Short Circuit</p> <p>OL - Overload</p> <p>NB - No indication of dielectric breakdown</p> <p>NC – Cheesecloth remained intact</p> <p>NT - Tissue paper remained intact</p> <p>Output circuit is under ES1 limit.</p>								

B.4	TABLE: Fault condition tests							P
Ambient temperature (°C)					20 - 25			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
For model HT39B-0603000EU								

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Clause	Requirement + Test				Result - Remark			Verdict
BD1 (Condition1)	SC	264Vac	1S	FR1	0.184A to 0A	--	--	FR1 opened immediately, NB/NC, no hazards. Output: 0V Output to earth:0.372m A
EC1 (Condition1)	SC	264Vac	1S	FR1	0.184A to 0A	--	--	FR1 opened immediately, NB/NC, no hazards. output: 0V Output to earth:0.375m A
EC2 (Condition1)	SC	264Vac	1S	FR1	0.184A to 0A	--	--	FR1 opened immediately, NB/NC, no hazards. output: 0V Output to earth:0.375m A
U1 Pin5,6,7,8 to 1 (Condition1)	SC	264Vac	1S	FR1	0.184A to 0A	--	--	FR1 open, U1 damaged, no hazard. NB, NC output: 0V Output to earth:0.375m A
U1 Pin5,6,7,8 to 2 (Condition1)	SC	264Vac	1S	FR1	0.184A to 0A	--	--	FR1 open, U1 damaged, no hazard. NB, NC output: 0V Output to earth:0.375m A
U1 Pin5,6,7,8 to 3 (Condition1)	SC	264Vac	1S	FR1	0.184A to 0A	--	--	FR1 open, U1 damaged, no hazard. NB, NC output: 0V Output to earth:0.375m A

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Clause	Requirement + Test				Result - Remark			Verdict
U1 Pin5,6,7,8 to 4 (Condition1)	SC	264Vac	1S	FR1	0.184A to 0A	--	--	FR1 open, U1 damaged, no hazard. NB, NC output: 0V Output to earth:0.375m A
R10 (Condition1)	SC	264Vac	1S	FR1	0.184A to 0A	--	--	FR1 open, U1 damaged, no hazard. NB, NC output: 0V Output to earth:0.375m A
T1 pin 1 to pin 2	SC	264Vac	10min	FR1	0.184A to 0.006A	--	--	EUT shutdown immediately, recoverable. Input power and output power was less than normal operation, no temperature was recorded. NB, NC output: 0.2V Output to earth:0.365m A

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Clause	Requirement + Test				Result - Remark			Verdict
T1 Pin 3 to Pin 5	SC	264Vac	10min	FR1	0.184A to 0.006A	--	--	EUT shutdown immediately, recoverable. Input power and output power was less than normal operation, no temperature was recorded. NB, NC output: 0.2V Output to earth:0.365m A
T1 Pin 7 to Pin 8	SC	264Vac	10min	FR1	0.184A to 0.006A	--	--	EUT shutdown immediately, recoverable. Input power and output power was less than normal operation, no temperature was recorded. NB, NC output: 0.2V Output to earth:0.365m A

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
U2 Pin 5,6,7,8 to 1,2,3	SC	264Vac	10min	FR1	0.184A to 0.006A	--	--	EUT shutdown immediately, recoverable. Input power and output power was less than normal operation, no temperature was recorded. NB, NC output: 0.2V Output to earth:0.365m A
For model: HT39B-1601100EU								
BD1 (Condition1)	SC	264Vac	1S	FR1	0.179A to 0A	--	--	FR1 opened immediately, NB/NC, no hazards. Output: 0V Output to earth:0.372m A
EC1 (Condition1)	SC	264Vac	1S	FR1	0.179A to 0A	--	--	FR1 opened immediately, NB/NC, no hazards. output: 0V Output to earth:0.375m A
EC2 (Condition1)	SC	264Vac	1S	FR1	0.179A to 0A	--	--	FR1 opened immediately, NB/NC, no hazards. output: 0V Output to earth:0.375m A

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
U1 Pin5,6,7,8 to 1 (Condition1)	SC	264Vac	1S	FR1	0.179A to 0A	--	--	FR1 open, U1 damaged, no hazard. NB, NC output: 0V Output to earth:0.375m A
U1 Pin5,6,7,8 to 2 (Condition1)	SC	264Vac	1S	FR1	0.179A to 0A	--	--	FR1 open, U1 damaged, no hazard. NB, NC output: 0V Output to earth:0.375m A
U1 Pin5,6,7,8 to 3 (Condition1)	SC	264Vac	1S	FR1	0.179A to 0A	--	--	FR1 open, U1 damaged, no hazard. NB, NC output: 0V Output to earth:0.375m A
U1 Pin5,6,7,8 to 4 (Condition1)	SC	264Vac	1S	FR1	0.179A to 0A	--	--	FR1 open, U1 damaged, no hazard. NB, NC output: 0V Output to earth:0.375m A
R10 (Condition1)	SC	264Vac	1S	FR1	0.179A to 0A	--	--	FR1 open, U1 damaged, no hazard. NB, NC output: 0V Output to earth:0.375m A

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
T1 pin 1 to pin 2	SC	264Vac	10min	FR1	0.179A to 0.006A	--	--	EUT shutdown immediately, recoverable. Input power and output power was less than normal operation, no temperature was recorded. NB, NC output: 0.2V Output to earth:0.365m A
T1 Pin 3 to Pin 5	SC	264Vac	10min	FR1	0.179A to 0.006A	--	--	EUT shutdown immediately, recoverable. Input power and output power was less than normal operation, no temperature was recorded. NB, NC output: 0.2V Output to earth:0.365m A

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
T1 Pin 7 to Pin 8	SC	264Vac	10min	FR1	0.179A to 0.006A	--	--	EUT shutdown immediately, recoverable. Input power and output power was less than normal operation, no temperature was recorded. NB, NC output: 0.2V Output to earth:0.365m A
U2 Pin 5,6,7,8 to 1,2,3	SC	264Vac	10min	FR1	0.179A to 0.006A	--	--	EUT shutdown immediately, recoverable. Input power and output power was less than normal operation, no temperature was recorded. NB, NC output: 0.2V Output to earth:0.365m A

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

Supplementary information:

Condition1 FR1: Rated 2.2ohm/1W, 4.7ohm/1W, 10ohm/1W, All tests which fuse opened were repeated 2 times with each source of fuse and same result observed.

SC – Short Circuit

OC – Open Circuit

OL – Overload

NB - No indication of dielectric breakdown

NC – Cheesecloth remained intact

Output circuit is under ES1 limit.

After each of above test unit can pass the dielectric strength test specified in table 5.4.9

If the fuse opened during the faults, the tests were repeated one more time with all source listed in the table 4.1.2 and with same result.

Annex M	TABLE: Batteries								N/A	
The tests of Annex M are applicable only when appropriate battery data is not available										
Is it possible to install the battery in a reverse polarity position? :										
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal condition										
Max. current during fault condition										
Test results:									Verdict	
- Chemical leaks										
- Explosion of the battery										
- Emission of flame or expulsion of molten metal										
- Electric strength tests of equipment after completion of tests										
Supplementary information:										

Annex M.4	Table: Additional safeguards for equipment containing secondary lithium batteries					N/A
Battery/Cell No.	Test conditions	Measurements			Observation	
		U	I (A)	Temp (C)		
-		Normal	-	-	-	-

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
-	Abnormal	-	-	-	-
-	Single fault –SC/OC	-	-	-	-
Supplementary Information:					
Battery identification	Charging at T _{lowest} (°C)	Observation	Charging at T _{highest} (°C)	Observation	
-	-	-	-	-	
Supplementary Information:					

Annex Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)					P
Note: Measured UOC (V) with all load circuits disconnected:						
Output Circuit	Components	U _{oc} (V)	I _{sc} (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
Model: HT39B-0603000EU						
Output	--	6.04	3.14	8	18.62	100
Output	R10 SC	0*	0*	8	0*	100
Model: HT39B-1601100EU						
Output	--	16.54	1.72	8	26.18	100
Output	R10 SC	0*	0*	8	0*	100
Supplementary Information: SC=Short circuit, OC=Open circuit # EUT shutdown immediately FR1 open immediately, U1 damaged						

T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation	
Internal Components	--	--	10	5	No reduce the clearance and creepage distances	
External enclosure	*	1.5	100	5	Enclosure remained intact	
Supplementary information: *All the Enclosure material has been tested:						

T.6, T.9	TABLE: Impact tests				N/A
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	

IEC 62368-1				
Clause	Requirement + Test		Result - Remark	
--	--	--	--	--
--	--	--	--	--
--	--	--	--	--
Supplementary information:				

T.7	TABLE: Drop tests				P
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Top	*	1.5	1000	No damaged	
Side	*	1.5	1000	No damaged	
Bottom	*	1.5	1000	No damaged	
Supplementary information:					
*All the Enclosure material has been tested:					

T.8	TABLE: Stress relief test				P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Enclosure	*	1.5	109	7	No damaged
Supplementary information:					
*All the Enclosure material has been tested:					

IEC62368_1B - ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
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ATTACHMENT TO TEST REPORT

IEC 62368-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
 (Audio/video, information and communication technology equipment - Part 1: Safety requirements)

Differences according to : EN 62368-1:2014+A11:2017

Attachment Form No. : EU_GD_IEC62368_1B_II

Attachment Originator..... : Nemko AS

Master Attachment : Date 2017-09-22

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	CENELEC COMMON MODIFICATIONS (EN)					
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z".					
CONTENTS	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords					
	Delete all the "country" notes in the reference document (IEC 62368-1:2014) according to the following list:					N/A
	0.2.1	Note	1	Note 3	4.1.15	Note
	4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c
	5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note
	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3
	5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4
	10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3
	For special national conditions, see Annex ZB.					
1	Add the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.					P

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	<p>Add the following new subclause after 4.9:</p> <p>To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. mains, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p> <p>c) it is permitted for pluggable equipment type B or permanently connected equipment, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for pluggable equipment type A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>		P
5.4.2.3.2.4	<p>Add the following to the end of this subclause:</p> <p>The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.</p>		N/A
10.2.1	<p>Add the following to ^{c)} and ^{d)} in table 39:</p> <p>For additional requirements, see 10.5.1.</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	<p>Add the following after the first paragraph: <i>For RS 1 compliance is checked by measurement under the following conditions:</i></p> <p><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 presets 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 Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p><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></p> <p><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></p> <p><i>For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.</i></p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>		N/A
10.6.1	<p>Add the following paragraph to the end of the subclause: EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.</p>		N/A
10.Z1	<p>Add the following new subclause after 10.6.5. 10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</p> <p>The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz).</p> <p>For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566</p>		N/A
G.7.1	<p>Add the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Bibliography	<p>Add the following standards:</p> <p>Add the following notes for the standards indicated:</p> <p>IEC 60130-9 NOTE Harmonized as EN 60130-9.</p> <p>IEC 60269-2 NOTE Harmonized as HD 60269-2.</p> <p>IEC 60309-1 NOTE Harmonized as EN 60309-1.</p> <p>IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series.</p> <p>IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4.</p> <p>IEC 60664-5 NOTE Harmonized as EN 60664-5.</p> <p>IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified).</p> <p>IEC 61508-1 NOTE Harmonized as EN 61508-1.</p> <p>IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1.</p> <p>IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4.</p> <p>IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6.</p> <p>IEC 61643-1 NOTE Harmonized as EN 61643-1.</p> <p>IEC 61643-21 NOTE Harmonized as EN 61643-21.</p> <p>IEC 61643-311 NOTE Harmonized as EN 61643-311.</p> <p>IEC 61643-321 NOTE Harmonized as EN 61643-321.</p> <p>IEC 61643-331 NOTE Harmonized as EN 61643-331.</p>		
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		
4.1.15	<p>Denmark, Finland, Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord."</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p>		N/A
4.7.3	<p>United Kingdom</p> <p>To the end of the subclause the following is added:</p> <p>The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex</p>		P

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.2	<p>Denmark</p> <p>After the 2nd paragraph add the following: A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.</p>		N/A
5.4.11.1 and Annex G	<p>Finland and Sweden</p> <p>To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5kV. <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> • the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; • the additional testing shall be performed on all the test specimens as described in EN 60384-14; <p>the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.</p>		N/A
5.5.2.1	<p>Norway</p> <p>After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.6	Finland, Norway and Sweden To the end of the subclause the following is added: Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.		N/A
5.6.1	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
5.6.4.2.1	Ireland and United Kingdom After the indent for pluggable equipment type A , the following is added: – the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.		N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm ² to 1,5 mm ² in cross-sectional area.		N/A
5.7.5	Denmark To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.1	<p>Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system.</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 a retailer, for example.</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>“Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has 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 CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.”</p> <p>Translation to Swedish:</p> <p>“Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”</p>		N/A
5.7.6.2	<p>Denmark</p> <p>To the end of the subclause the following is added:</p> <p>The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
B.3.1 and B.4	<p>Ireland and United Kingdom</p> <p>The following is applicable:</p> <p>To protect against excessive currents and short-circuits in the primary circuit of direct plug-in equipment, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the direct plug-in equipment, until the requirements of Annexes B.3.1 and B.4 are met</p>		N/A
G.4.2	<p>Denmark</p> <p>To the end of the subclause the following is added:</p> <p>Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a.</p> <p>Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.</p> <p>Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a</p> <p><i>Justification:</i> Heavy Current Regulations, Section 6c</p>		N/A
G.4.2	<p>United Kingdom</p> <p>To the end of the subclause the following is added:</p> <p>The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.</p>		P

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	<p>United Kingdom</p> <p>To the first paragraph the following is added:</p> <p>Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations.</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>		N/A
G.7.1	<p>Ireland</p> <p>To the first paragraph the following is added:</p> <p>Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard</p>		N/A
G.7.2	<p>Ireland and United Kingdom</p> <p>To the first paragraph the following is added:</p> <p>A power supply cord with a conductor of 1,25 mm² is allowed for equipment which is rated over 10 A and up to and including 13 A.</p>		N/A
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		
10.5.2	<p>Germany</p> <p>The following requirement applies:</p> <p>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.</p> <p><i>Justification:</i></p> <p>German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM.</p> <p>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

EUT PHOTOS



Figure 1. Overall view of unit



Figure 2. Overall view of unit

EUT PHOTOS



Figure 3. Internal view of unit



Figure 4. Internal view of unit

EUT PHOTOS

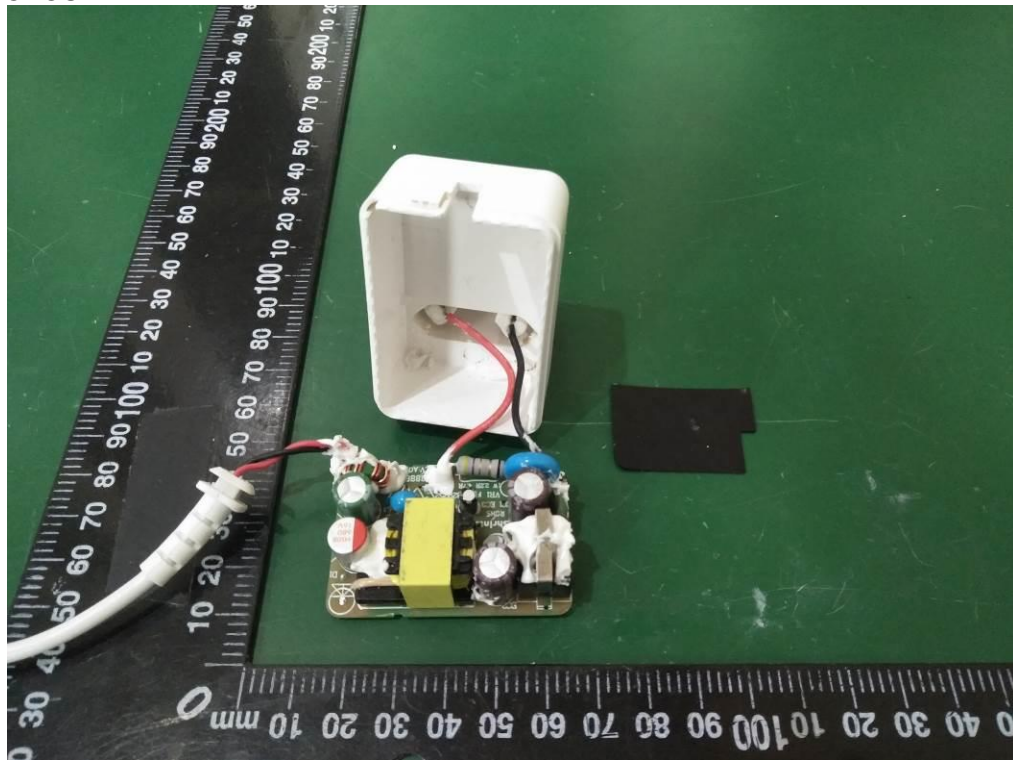


Figure 5. Internal view of unit

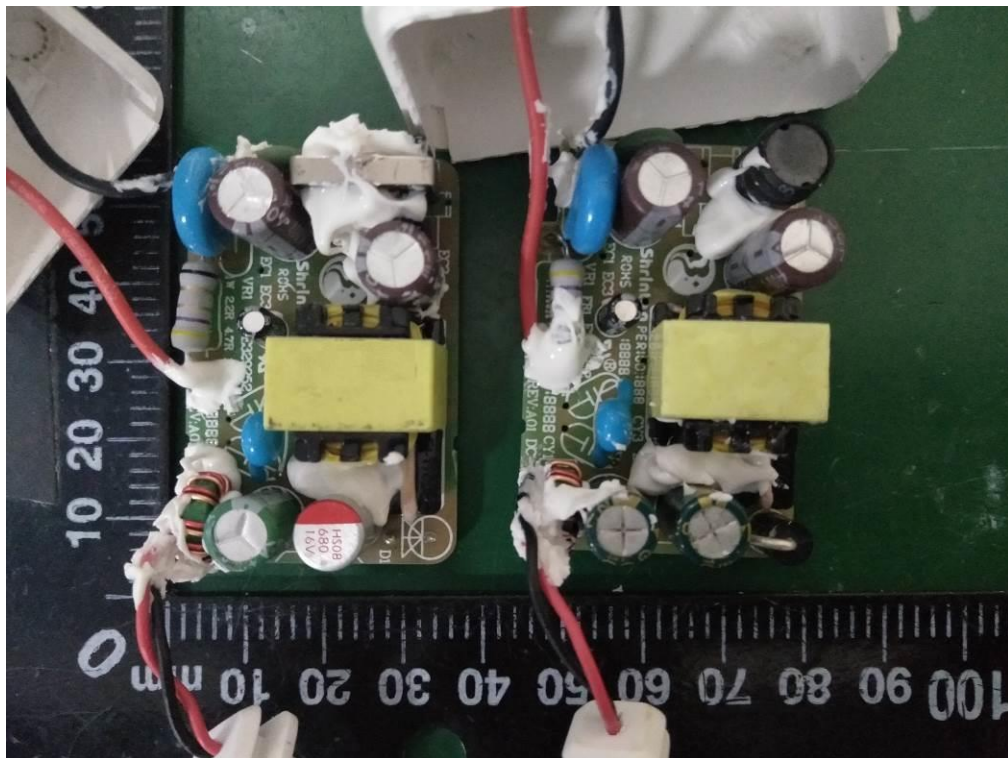


Figure 6. Top view of PCB

EUT PHOTOS

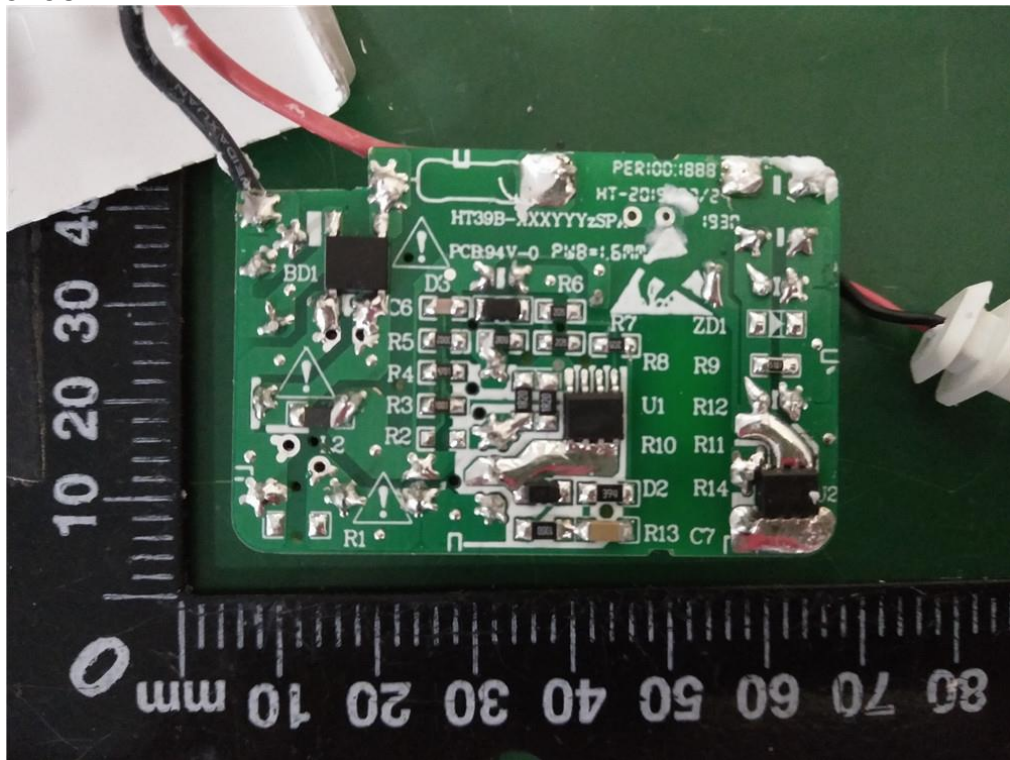


Figure 7. Bottom view of PCB

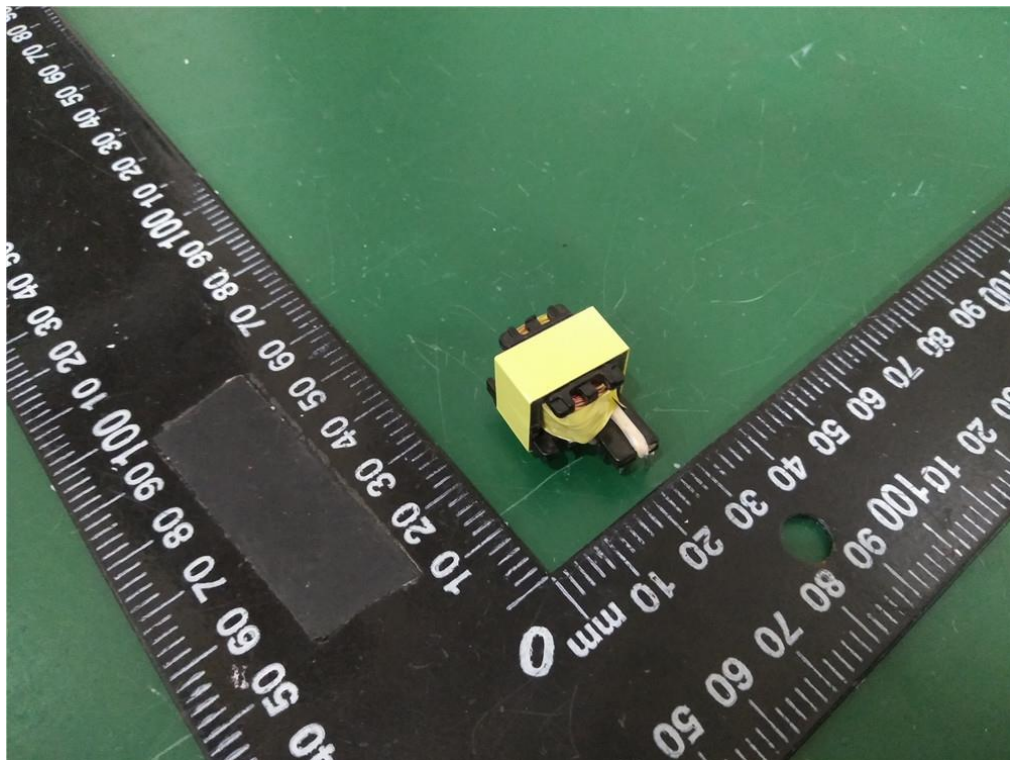


Figure 8. Overall view of transformer

EUT PHOTOS

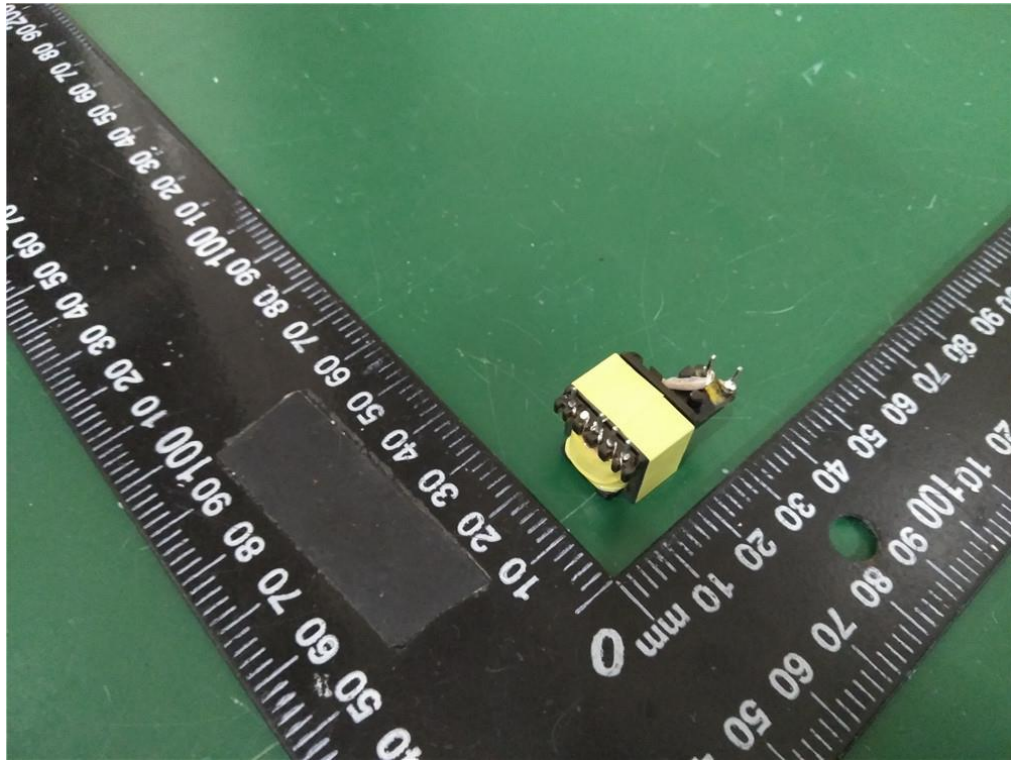


Figure 9. Overall view of transformer