



Test Report issued under the responsibility of:



TEST REPORT

IEC 62368-1

Audio/video, information and communication technology equipment

Part 1: Safety requirements

Report Number : SA1905115S 001

Date of issue : 2019-12-30

Total number of pages : 76

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 : IEC 62368-1:2014 (Second Edition)

Test procedure : CB Scheme

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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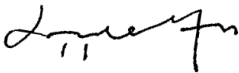
If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.

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Test Item description	Switching Power Adapter	
Trade Mark	N/A	
Manufacturer	SHRINTON ELECTRON TECHNOLOGY LTD 3F, Building 21, Second Industrial Zone, Changzhen Community, Yutang Street, Guangming District, Shenzhen, Guangdong 518000 CHINA.	
Model/Type reference	HT39B-xxxxxyzz (xxx, yyyy, zz are variable, xxx=033-160, yyyy=0001-3000, zz=EU or US. see model list for details)	
Ratings	Input: 100-240V~, 50/60Hz, 0.45A Max Output: 3.3-16.0Vdc 0.001-3.0A	
Testing procedure and testing location:		
<input checked="" type="checkbox"/> CB 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 CB Testing Laboratory:		
Testing location/ address		
Tested by (name + signature)	Karo Wu Project handler	
Approved by (name + signature)	Apple Hu Reviewer	
<input type="checkbox"/> Testing procedure: TMP/CTF Stage 1		
Testing location/ address		
Tested by (name + signature)		
Approved by (name + signature)		
<input type="checkbox"/> Testing procedure: WMT/CTF Stage 2		
Testing location/ address		
Tested by (name + signature)		
Witnessed by (name + signature)		
Approved by (name + signature)		
<input type="checkbox"/> 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): - Attachment 1: National difference (32 pages) - Attachment 2: Photo Documentation (8 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 HT39-0603000US, HT39-1601100US, and HT39-0603000EU to present other similar models.	
Tests performed (name of test and test clause): STRESS RELIEF TEST (4.4.4.7, ANNEX T.8) STEADY FORCE TESTS, 100N (4.4.4.2, ANNEX T.4) DROP TESTS (4.4.4.3, ANNEX T.7) EQUIPMENT FOR DIRECT INSERTION INTO MAINS SOCKET-OUTLETS (4.7) CLASSIFICATION OF ELECTRICAL ENERGY SOURCES (5.2) MAXIMUM OPERATING TEMPERATURE FOR MATERIALS, COMPONENTS AND SYSTEMS (5.4.1.4, 6.3.2, 9.0, 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:** CA, DK, US, EU, JP, AU

CA=Canada, DK=Denmark, EU=European Group Difference, US=United States of America, JP=Japan, AU=Australia

☒ **The product fulfils the requirements of IEC 62368-1:2014 (Second Edition); EN 62368-1:2014+A11:2017**

Copy of marking plate:

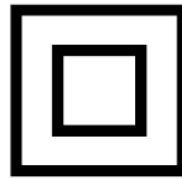
The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

Switching Power Adapter

MODEL: HT39B-0603000US

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

OUTPUT: 6V \equiv 3000mA 



MADE IN CHINA

D/C:1946

SHRINTON ELECTRON TECHNOLOGY LTD

Notes:

- The above markings are the min. requirements required by the safety standard. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.
- DATE: 1946 represents the date code (19: year code, 46: week code).

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	16A (13A for UK, 20A for US and Canada); 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:	__40__ °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"/> ____ 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>	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies)	Same as applicant
GENERAL PRODUCT INFORMATION:	
<p>Product Description –</p> <ol style="list-style-type: none"> 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. IP protection class of the product is IP20 evaluation by engineering judgement, no test report needed. 5. Primary component LF1, L1 and L1A cannot use at the same time, not effect safety, only for marketing purpose. 6. There are two kinds assemble condition of Y capacitor, One Y1-capacitor (CY3) or two Y1 capacitors (CY1 & CY2) in series used between primary and secondary in this product. 7. The product was investigated to the following additional standards: For model HT39B-xxxxyyyUS UL 1310 Class 2 Power Units under UL 62368-1 clause 4.7 national difference requirements: <ol style="list-style-type: none"> (1) Direct Plug In Equipment-Moment Test; (2) Direct Plug-In Blade Securement Test; (3) Direct Plug-In Security of Input Contacts; (4) Direct Plug-In Rod Pressure Test; (5) Direct Plug-In Resistance To Crushing; (6) Weight and moment determination: (direct plug-in unit) <p>There are no mechanical assembly damaged. The blade dimension was evaluated to be complied with NEMA configurations in accordance with Wiring Devices – Dimensional Specifications, ANSI/NEMA WD6.</p> <p>"The official TRF used for this evaluation has not been updated to include CTF information. As a temporary solution the NCB included missing CTF page and informed IECEE Secretariat about the required TRF update."</p>	

Model Differences –

1. All models have the same technical construction including circuit diagram, PCB layout and component layout, except for the model name, AC plug, transformer, secondary non-critical component and output rating.

- Model list: HT39B-xxxxyyyyzz

Table A : Definition of Variables		
xxx	033-160	3 digits code indicate output voltage range from 3.3V-16.0V, the rising step is 0.01V. eg:033=3.3Vdc, 160=16.0Vdc
yyyy	0001-3000	4 digits code indicate output current from 0.001A to 3A, the rising step is 0.001A. eg: 0001=0.001A, 3000=3.0A
zz	EU or US	'EU' indicate European AC plug, 'US' indicate America AC plug.

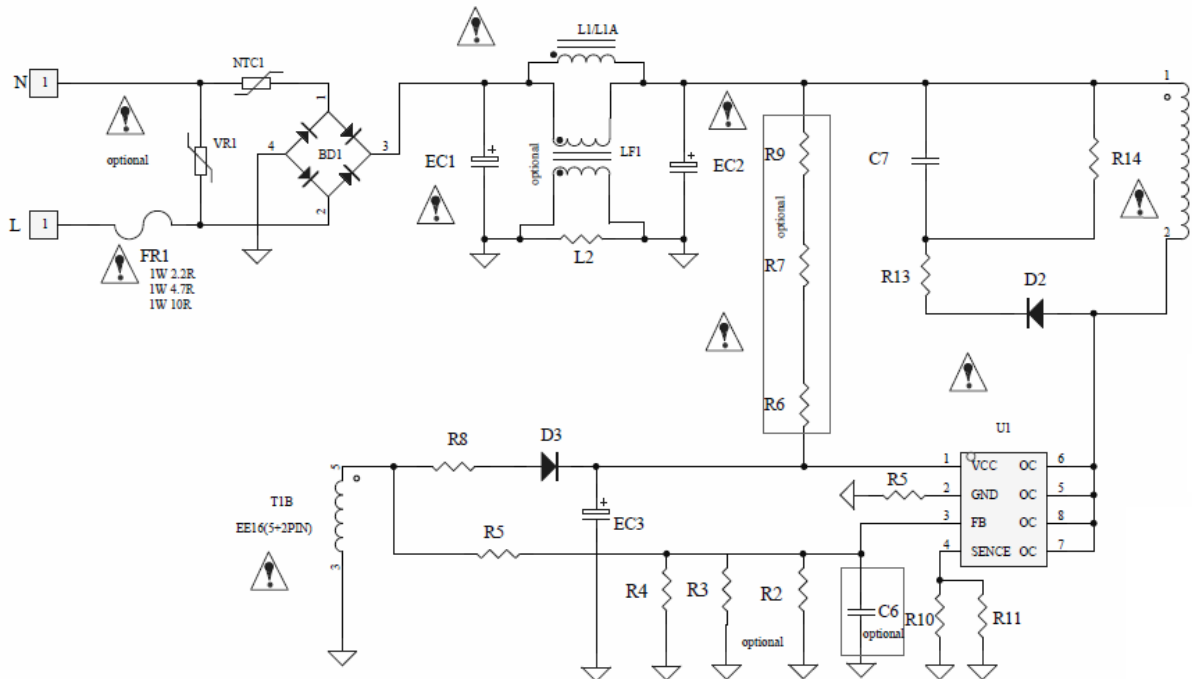
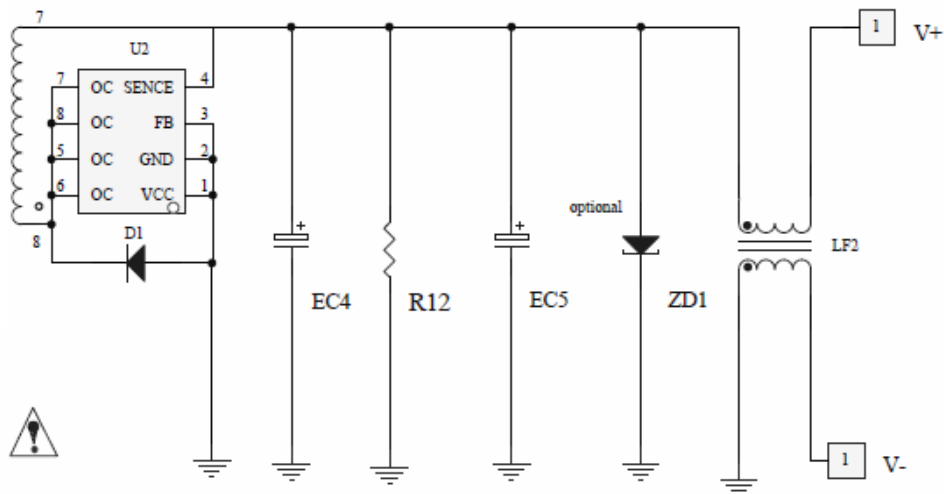
Table B: model list					
Model	Input	Output Voltage (Vdc)	Output Current (A)	Max. Output Power (W)	Transformer (T1)
HT39B-xxxxyyyyzz	100-240V~, 50/60Hz, 0.45A Max	3.3-8.0	0.001-3.0	18	HT39B-030-080
		8.1-16.0	0.001-1.1	17.6	HT39B-080-160

Additional application considerations – (Considerations used to test a component or sub-assembly) –
N/A

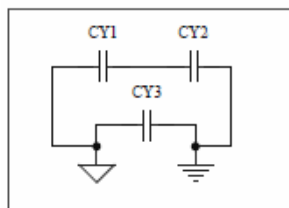
ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite 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)
All circuits except output 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)
Sharp 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)
Internal circuits	TS3
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

ENERGY SOURCE DIAGRAM

Indicate which energy sources are included in the energy source diagram. Insert diagram below

ES3 (Primary circuit)**ES1 (secondary circuit, after U2)**

optional


☒ ES ☒ PS ☒ MS ☒ TS ☐ RS

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 or better	N/A
Plastic materials not part of PS3 circuits	PS3 circuits	See 6.3	V-2 or better	N/A
The other components/materials	PS3 circuits	See 6.3	See 6.4.5, 6.4.6	N/A
Internal / External wiring	PS3 circuits	N/A	N/A	See 6.5
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
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS3: Internal parts/circuits	N/A	N/A	Enclosure
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.....		P
4.4.4.9	Accessibility and safeguard effectiveness	After tests of 4.4.4.2, 4.4.4.3, 4.4.4.7, no safeguard damaged.	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	10 N applied to all relevant conductors.	P
4.7	Equipment for direct insertion into mains socket - outlets		P
4.7.2	Mains plug part complies with the relevant standard.....	US plug according with UL 1310, The plug for other countries shall be evaluated when submitted for national approval.	P
4.7.3	Torque (Nm)	0.036Nm Max for US plug, 0.038Nm Max for EU plug	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		—
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 conductive object can be entry	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.	P
5.3.2.1	Accessibility to electrical energy sources and safeguards	Only ES1 circuit can be accessed for this product.	P
5.3.2.2	Contact requirements	No access with test probe to any ES3 circuit or parts.	P
	a) Test with test probe from Annex V	Impossible contact to conductive part by test probe.	P
	b) Electric strength test potential (V)		N/A
	c) Air gap (mm)		N/A
5.3.2.4	Terminals for connecting stripped wire	No such terminals.	N/A
5.4	Insulation materials and requirements		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
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.	N/A
5.4.1.5.3	Thermal cycling		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	Max. working voltage of T1: 552Vpeak, 276Vrms	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 T1 and LF1 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	See appended table 5.4.2.2, 5.4.2.4 and 5.4.3	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	Option was not used.	—
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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.3.3	Material Group	Material group IIIb is assumed to be used	—
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
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 T1 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: $V_w = E_p \cdot K \cdot d = 17K \cdot 0.71 \cdot 0.51 = 6155.7V$ 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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Insulation resistance (MΩ).....:	100 MΩ	—
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%	—
	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		P
5.5.1	General	See the following details.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.2	Capacitors and RC units	Approved Y1 type (CY1, CY2 or CY3) 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
5.5.7	SPD's		N/A
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		N/A
	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		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance (Ω).....:		N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P

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Clause	Requirement + Test	Result - Remark	Verdict
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
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

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.3	Classification of potential ignition sources	See the following details.	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 terminal complying with 6.4.6.	P
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		N/A
6.4.5	Control of fire spread in PS2 circuits	Output is PS2	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 - 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

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8	Fire enclosures and fire barriers	See below.	P
6.4.8.1	Fire enclosure and fire barrier material properties	V-0 fire enclosure used.	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	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A
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	Enclosure is V-0 material.	P
6.5	Internal and external wiring		P
6.5.1	Requirements	The output cord and input cord are complied to UL 758 standard, rated VW-1	P
6.5.2	Cross-sectional area (mm ²)	See table 4.1.2	—
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	No hazardous chemicals within the equipment.	N/A
7.3	Ozone exposure	No ozone production within the equipment.	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	No battery used.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8	MECHANICALLY-CAUSED INJURY		P
8.1	General		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	N/A
8.4.1	Safeguards		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
	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
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	All accessible surfaces are classed as TS1. Internal parts are claimed as TS3	P
9.3	Safeguard against thermal energy sources	Enclosure is used as safeguard.	P
9.4	Requirements for safeguards		P

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Clause	Requirement + Test	Result - Remark	Verdict
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
10.3	Protection against laser radiation	No laser radiation	N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault..... :		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		—

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Clause	Requirement + Test	Result - Remark	Verdict
	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
	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

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Clause	Requirement + Test	Result - Remark	Verdict
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
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

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Clause	Requirement + Test		Verdict
D	TEST GENERATORS		P
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		P
D.3	Electronic pulse generator		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
	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 model list on page 8	—
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	100-240V	—
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

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Clause	Requirement + Test	Result - Remark	Verdict
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 ohm	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
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

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Clause	Requirement + Test	Result - Remark	Verdict
	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
	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

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Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		P
G.3.5.1	Non-resettable devices suitably rated and marking provided		P
G.3.5.2	Single faults conditions.....	(See appended table B.3 & B.4)	P
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	Mains plug complied with UL 1310. The plugs for other countries shall be evaluated when submitted to national approval.	P
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 T1.	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		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.	—

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Clause	Requirement + Test	Result - Remark	Verdict
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	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
	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

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Clause	Requirement + Test	Result - Remark	Verdict
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)		—
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		N/A
G.8.3.2	Varistor overload test		N/A
G.8.3.3	Temporary overvoltage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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
G.11	Capacitor and RC units		P
G.11.1	General requirements	Approval Y1 capacitors used, see table 4.2.1 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 V _{ini}		—
	Routine test voltage, V _{ini,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

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Clause	Requirement + Test	Result - Remark	Verdict
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
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		—

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Clause	Requirement + Test	Result - Remark	Verdict
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)		—
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

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Clause	Requirement + Test	Result - Remark	Verdict
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	Direct plug-in equipment.	N/A
L.8	Multiple power sources	Only one a.c. mains connection.	N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
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
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

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Clause	Requirement + Test	Result - Remark	Verdict
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	considered	—
P	SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS		N/A
P.1	General requirements	No openings 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)	See above.	N/A
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
	T _c (°C)		—
	T _r (°C)		—
	T _a (°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

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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	Approved fire enclosure with V-0 used.	N/A
	Samples, material		—
	Wall thickness (mm)		—
	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		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Wall thickness (mm)		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		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
	Swing test		N/A
T.7	Drop test	(See appended table T.7)	P
T.8	Stress relief test	(See appended table T.8)	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

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Clause	Requirement + Test	Result - Remark	Verdict
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	See above.	P

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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 746C	UL E45329
Plug holder	SABIC INNOVATIVE PLASTICS B V	940(f1)	PC, V-0, 120°C	UL 94, UL 746C	UL E45329
PCB	FENGSHUN HONGJIANG ELECTRONICS CO LTD	HJ-01	130°C, V-0	UL 796	UL E329252
(Alternative)	DONGGUAN RONGTUO ELECTRONIC TECHNOLOGY CO LTD	1S	130°C, V-0	UL 796	UL E248992
(Alternative)	MEI ZHOU CHAO JIE ELECTRONIC CO LTD	CJ-06	V-0, 130°C	UL 796	UL E313924
(Alternative)	GUANG DONG HONG TAI ELECTRONIC INC CO LTD	HH-1, HH-2	V-0, 130°C	UL 796	UL E315852
(Alternative)	MEIZHOU HUADA CIRCUIT BOARD CO LTD	HD-D	V-0, 130°C	UL 796	UL E486784
(Alternative)	DONGGUAN YE JIU GUAN ELECTRONIC TECHNOLOGY CO LTD	YJG-1, YJG-2	V-0, 130°C	UL 796	UL E363712
(Alternative)	Interchangeable	Interchangeable	V-1 or better, 130°C	UL 796	UL
Mylar sheet between primary PCB trace and input plug	FORMEX, DIV OF ILLINOIS TOOL WORKS INC	FORMEX GK-(a)(d)(f2)	V-0, 115 °C, Min. thickness: 0.37mm	UL 94, UL 746C	UL E121855

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Clause	Requirement + Test		Result - Remark		Verdict
pin					
(Alternate)	SABIC JAPAN L L C	EX06316C	V-0, 105°C, Min. thickness: 0.35mm	UL 94, UL 746C	UL E207780
(Alternate)	TORAY INDUSTRIES INC FILM DIV	Lumirror U436	VTM-2,105°C, Min. thickness: 0.2mm	UL 94, UL 746C	UL E86511
Primary lead wire	DONGGUAN HONGFUWEI CABLE TECHNOLOGY CO LTD	1007, 1015, 1185	VW-1, min. 22AWG, min. 80°C, 300V, max.length:50mm	UL 758	UL E316005
(Alternative)	SHENZHEN SHI YIHUAXING ELECTRON CO LTD	1007, 1015, 1185	VW-1, min. 22AWG, min. 80°C, 300V, max.length:50mm	UL 758	UL E318553
(Alternative)	SHENZHEN HONGYA ELECTRONICS CO LTD	1007, 1015, 1185	VW-1, min. 22AWG, min. 80°C, 300V, max.length:50mm	UL 758	UL E346933
(Alternative)	SHENZHEN LEVITEK ELECTRONICS CO LTD	1007, 1015, 1185	VW-1, min. 22AWG, min. 80°C, 300V, max.length:50mm	UL 758	UL E352217
(Alternative)	Interchangeable	Interchangeable	VW-1, min. 22AWG, min. 80°C, 300V, max.length:50mm	UL 758	UL
Fuse (FR1)	SHENZHEN GREAT ELECTRONICS CO LTD	RXF-1W Series (for UL) RXF (for VDE)	2.2Ω or 4.7Ω or 10Ω, 1W	UL 1412, EN60065	UL E301541 VDE 40026608
(Alternative)	DONGGUAN HONGDA ELECTRONIC TECHNOLOGY CO LTD	RXF Series (for VDE) RXF(RX21) (for UL)	2.2Ω or 4.7Ω or 10Ω, 1W	UL 1412, EN60065	UL E359590 VDE 40036858
Heat shrinkable tube of FR1 (Optional)	DONGGUAN SALIPT CO LTD	SALIPT S-901- 300, SALIPT S-901- 600, SALIPT S-HPT- 600	Min.125°C, Min.300V, VW-1	UL 224	UL E209436
Line chock (LF1)	Shenzhen Jie Wang Electronic	UU9.8	130°C	IEC/EN 62368-1	Test with appliance

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
(Optional)	Technology Co., Ltd.				
-Bobbin of LF1	CHANG CHUN PLASTICS CO LTD	T375J	V-0, 150°C, Min. thickness: 0.5mm	UL 94, UL 746C	UL E59481
Magnet wire of LF1	Interchangeable	MW28, MW75	130°C	UL 1446	UL
Line choke (L1) (Optional)	Zhongshan Huagan Electronic Technology Co. LTD	DR 6*8	130°C	IEC/EN 62368-1	Tested in appliance
Line choke (L1A) (Optional)	SHENZHEN LITAIHUA ELECTRONIC CO., LTD	CLEC0510-1MH, KPI	130°C	IEC/EN 62368-1	Tested in appliance
Heat shrinkable tube of L1	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-HFT	Min.600V, 125°C, VW-1	UL 224	UL E180908
Magnet wire of L1	Interchangeable	MW28, MW75	130°C	UL 1446	UL E190672
Varistor (VR1) (Optional)	CENTRA SCIENCE CORP	CNR-10D471K-CNR-10D681K, CNR-14D471K-CNR-14D681K	Min. 300V ac, 85°C, Coating: V-0. (test by UL for 3KV/1.5KA combination pulse)	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. (test by UL for 6KV/3KA combination pulse)	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.(test by UL for min.4KV/2KA combination pulse)	IEC/EN61051-1, IEC61051-2, UL 1449	VDE 40018747, UL E329651
(Alternative)	GUANGXI NEW FUTURE INFORMATION INDUSTRY CO	14D471K-14D561K	Min. 300V ac, 85°C, Coating: V-0. (test by UL for 6KV/3KA	IEC/EN61051-1, IEC61051-2, UL 1449	VDE 40030322, UL E323753

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	LTD		combination pulse)		
(Alternative)	HuiZhou Lien Shun Electronic Co., Ltd.	10D471K-10D681K, 14D471K-14D681K	Min. 300V ac, 85°C, Coating: V-0. (test by UL for 6KV/3KA combination pulse)	IEC/EN61051-1, IEC61051-2, UL 1449	VDE 40005858, UL E315524
(Alternative)	SUCCESS ELECTRONICS (HUIZHOU) CO LTD (for UL), SUCCESS ELECTRONICS CO LTD (for VDE)	SVR10D471K***** - SVR10D681K***** , SVR14D471K***** - SVR14D681K***** (for UL) SVR10DxxxKxxxxH, SVR14DxxxKxxxxH (for VDE)	Min. 300V ac, 85°C, Coating: V-0. (test by UL for 6KV/3KA combination pulse)	IEC/EN61051-1, IEC61051-2, UL 1449	VDE 40030401, UL E502378
(Alternative)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	10D471K-10D681K, 14D471K-14D681K	Min. 300V ac, 85°C, Coating: V-0. (test by UL for 6KV/3KA combination pulse)	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
Current-limiting resistance (R10,R11)	Interchangeable	Interchangeable	Min.0.3ohm,1/4W	IEC/EN 62368-1	Tested with appliance
Thermistor (NTC1) (optional)	CerglassMfg Inc.	SCK102	10R 2A at 25°C	IEC/EN 62368-1	Tested with appliance
Electrolytic Capacitor (EC1, EC2)	Interchangeable	Interchangeable	2.2-15uF, min. 400V, 105°C	IEC/EN 62368-1	Tested with appliance
Y- Capacitor (CY3 used or CY1 and CY2 used in series)	SUCCESS ELECTRONICS CO LTD	SE	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	UL E114280 VDE 40020002
(Alternative)	GUANGDONG SOUTH HONGMING	F	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	UL E154899 VDE 40036393

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	ELECTRONIC SCIENCE & TECHNOLOGY CO LTD				
(Alternative)	NAN JING YUYUE ELECTRONICS CO LTD	CT7, 2E CT7, 2F (for UL) CT7 (for VDE)	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	UL E237728 VDE 40008010
(Alternative)	DONGGUAN EASY-GATHER ELECTRONIC CO LTD	DCF	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	UL E252221 VDE 40015758
(Alternative)	SUCCESS ELECTRONICS CO LTD	SF	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	UL E114280 VDE 40019457
(Alternative)	HAOHUA ELECTRONIC CO	CT7	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	UL E233106 VDE 40003902
(Alternative)	WALSIN TECHNOLOGY CORP	AH Series (#)(& (for UL), AH (for VDE)	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	UL E146544 VDE 40001804
(Alternative)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	CD (for UL), CD-Series (for VDE)	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	UL E208107 VDE 40025754
(Alternative)	SHAANXI HUAXING ELECTRONIC DEVELOPMENT CO LTD	CT7Y1 Series (for UL), CT7Y1 (for VDE)	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	UL E217400 VDE 40015542
(Alternative)	JYH CHUNG ELECTRONICS CO LTD (for UL), JYH CHUNG (JEC) ELECTRONICS CO., LTD (for VDE)	JD	Max. 2200pF, min. 250Vac, 125°C, Y1 type	IEC/EN/UL 60384-14	UL E187963 VDE 40047775
Transformer (T1)	SHENZHEN HUA ZHI	HT39B-030-080, HT39B-080-160	Class B	IEC/EN 62368-1	Tested with appliance

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	CHUANG ELECTRONIC TECHNOLOGY CO LTD			UL1446	
Insulation System	SHENZHEN HUA ZHI CHUANG ELECTRONIC TECHNOLOGY CO LTD	HZC-B	Class B	UL 1446	UL E334728
Bobbin of T1	Sumitomo Bakelite Co Ltd	PM-9820	V-0, min.150°C, min. thickness 0.51 mm	UL 94	UL E41429
Insulation tape of T1	Jingjiang Yahua Pressure Sensitive Glue Co Ltd	CT* (b)(g), PZ*(b), WF* (c)(h)	130°C	UL 510A	UL E165111
Triple insulation wire of T1	TOTOKU ELECTRIC CO LTD	TIW-2X	130°C	UL 2353	UL E166483 VDE 40005154
(Alternative)	FURUKAWA ELECTRIC CO LTD	TEX-E	130°C	UL 2353	UL E206440 VDE 006735
Magnet wire of T1	Interchangeable	MW28, MW75	130°C	UL 1446	UL
Tube of T1	GREAT HOLDING INDUSTRIAL CO LTD	TFT, TFS	VW-1, 200°C, min. 300V	UL 224	UL E156256
Varnish of T1	ELANTAS ELECTRICAL INSULATION ELANTAS PDG INC	V1630FS, 468-2(d)	130°C	UL 1446	UL E75225
Output wire	SHENZHEN BOSITAI COMPUTER ACCESSORY CO LTD	2464	VW-1, min. 24AWG, min. 80°C, min. 300V, max.length:30mm	UL 758	UL E341894
(Alternative)	DONGGUAN HONGFUWEI CABLE TECHNOLOGY	2464, 2468	VW-1, min. 24AWG, min. 80°C, min. 300V, max.length:30mm	UL 758	UL E316005

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	CO LTD				
(Alternative)	SHENZHEN SHI YIHUAXING ELECTRON CO LTD	2464, 2468	VW-1, min. 24AWG, min. 80°C, min. 300V, max.length:30mm	UL 758	UL E318553
(Alternative)	SHENZHEN HONGYA ELECTRONICS CO LTD	2464, 2468	VW-1, min. 24AWG, min. 80°C, min. 300V, max.length:30mm	UL 758	UL E346933
(Alternative)	SHENZHEN LEVITEK ELECTRONICS CO LTD	2464, 2468	VW-1, min. 24AWG, min. 80°C, min. 300V, max.length:30mm	UL 758	UL E352217
(Alternative)	Interchangeable	Interchangeable	VW-1, min. 24AWG, min. 80°C, min. 300V, max.length:30mm	UL 758	UL
strain relief	Interchangeable	Interchangeable	V-1 or better	IEC/EN 62368-1	UL, Tested with appliance
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. 2) The manufactures of the component list has been verified by the CBTL.					

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.)			
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	
		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:			

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

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 (A _{pk} or A _{rms})	Hz	
Model: HT39B-0603000US(with LF1)							
1	264	Output “+” to “-”	Normal	6.04Vdc	--	--	ES1
			Abnormal OL	5.93Vdc	--	--	
			Single fault –T1 pin 7 to pin 8 SC	0.2Vdc	--	--	
			Single fault – U2 5,6,7,8 to 1,2,3 SC	0.2Vdc	--	--	
			Single fault – BD1 Pin 2 to Pin 3 SC	0Vdc	--	--	
			Single fault –EC1 SC	0Vdc	--	--	
			Single fault –EC2 SC	0Vdc	--	--	
			Single fault –R10 SC	0Vdc	--	--	
2	264	Output to Earth (due to primary- output coupling by CY3)	Normal	--	0.365mA _{pk}	60Hz	ES1
			Abnormal- output overload	--	0.364mA _{pk}	60Hz	
			Single fault –T1 pin 7 to pin 8 SC	--	0.363mA _{pk}	60Hz	
			Single fault- U2 5,6,7,8 to 1,2,3 SC	--	0.364mA _{pk}	60Hz	
3	264	Output to Earth (due to primary- output coupling by CY1 and	Normal	--	0.180mA _{pk}	60Hz	ES1
			Abnormal- output overload	--	0.181mA _{pk}	60Hz	

IEC 62368-1							
Clause		Requirement + Test		Result - Remark			Verdict
		CY2)	Single fault –T1 pin 7 to pin 8 SC	--	0.182mA _{pk}	60Hz	
			Single fault- U2 5,6,7,8 to 1,2,3 SC	--	0.181mA _{pk}	60Hz	
			Single fault: CY1 SC	--	0.364mA _{pk}	60Hz	
Model: HT39B-1601100US(with LF1)							
1	264	Output “+” to “-”	Normal	16.54Vdc	--	--	ES1
			Abnormal-output overload	15.22Vdc	--	--	
			Single fault –T1 pin 7 to pin 8 SC	0.2Vdc	--	--	
			Single fault – U2 5,6,7,8 to 1,2,3 SC	0.2Vdc	--	--	
			Single fault – BD1 Pin 2 to Pin 3 SC	0Vdc	--	--	
			Single fault –EC1 SC	0Vdc	--	--	
			Single fault –EC2 SC	0Vdc	--	--	
			Single fault –R10 SC	0Vdc	--	--	
2	264	Output to Earth (due to primary- output coupling by CY3)	Normal	--	0.365mA _{pk}	60Hz	ES1
			Abnormal- output overload	--	0.364mA _{pk}	60Hz	
			Single fault –T1 pin 7 to pin 8 SC	--	0.363mA _{pk}	60Hz	
			Single fault- U2 5,6,7,8 to 1,2,3 SC	--	0.364mA _{pk}	60Hz	
3	264	Output to Earth (due to primary- output coupling by CY1 and CY2)	Normal	--	0.180mA _{pk}	60Hz	ES1
			Abnormal- output overload	--	0.181mA _{pk}	60Hz	
			Single fault –T1 pin 7 to pin 8 SC	--	0.182mA _{pk}	60Hz	
			Single fault- U2 5,6,7,8 to 1,2,3 SC	--	0.181mA _{pk}	60Hz	
			Single fault: CY1 SC	--	0.365mA _{pk}	60Hz	

IEC 62368-1							
Clause	Requirement + Test			Result - Remark		Verdict	
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	--	--	--	
			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)	Ipk (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)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	
Test Conditions: Normal – Abnormal – Supplementary information: SC=Short Circuit, OC=Open Circuit, OL= Over load							

IEC 62368-1						
Clause	Requirement + Test		Result - Remark			Verdict
5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) :	90V/60Hz Vertical	90V/60Hz 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) :	40.0	40.0	40.0	40.0	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T _{max} (°C)
Model: HT39B-0603000US (with LF1)						
Plug holder		69.6	68.7	65.0	65.0	120
Input wire		74.6	72.9	70.4	68.7	80
Mylar sheet		80.3	79.4	68.7	66.3	105
VR1		70.5	68.2	66.6	65.1	85
EC1		88.9	86.4	74.5	76.3	105
LF1 winding		94.8	91.5	80.9	83.0	130
EC2		97.1	93.5	83.5	85.2	105
T1 winding		102.6	100.9	97.2	95.4	110
T1 core		99.6	97.2	93.6	92.2	110
CY1		92.7	99.3	89.5	82.6	125
EC4		76.7	75.1	71.0	69.8	105
EC5		73.7	74.4	68.2	67.4	105
Output wire		68.6	71.7	66.1	65.7	80
PCB under U2		112.8	116.1	104.6	101.5	130
PCB under BD1		97.8	97.2	78.4	78.3	130
PCB under U1		122.1	121.3	118.2	115.5	130
Enclosure inside near T1 top		98.7	97.1	92.3	89.5	120
Enclosure inside near T1 bottom		94.9	91.9	84.9	81.9	120
Ambient		40.0	40.0	40.0	40.0	--
Enclosure outside near T1 top		72.5	70.1	66.6	63.6	77
Enclosure outside near T1 bottom		68.7	65.4	58.3	55.1	77
Ambient		25.0	25.0	25.0	25.0	--
Model: HT39B-0603000US (with L1)						
Plug holder		68.4	67.8	--	--	120
Input wire		73.3	71.9	--	--	80
Mylar sheet		78.8	78.2	--	--	105
VR1		68.7	66.7	--	--	85

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
EC1	87.6	85.4	--	--	105
L1	91.9	88.9	--	--	130
EC2	95.6	92.3	--	--	105
T1 winding	99.3	97.9	--	--	110
T1 core	96.2	94.1	--	--	110
CY1	91.5	98.4	--	--	125
EC4	75.1	73.8	--	--	105
EC5	71.9	72.9	--	--	105
Output wire	67.5	70.9	--	--	80
PCB under U2	109.2	112.8	--	--	130
PCB under BD1	94.4	94.1	--	--	130
PCB under U1	118.9	118.4	--	--	130
Enclosure inside near T1 top	96.6	95.3	--	--	120
Enclosure inside near T1 bottom	92.9	90.2	--	--	120
Ambient	40.0	40.0	--	--	--
Enclosure outside near T1 top	71.2	69.1	--	--	77
Enclosure outside near T1 bottom	67.6	64.6	--	--	77
Ambient	25.0	25.0	--	--	--
Model: HT39B-0603000US (with L1A)					
Plug holder	68.1	67.1	--	--	120
Input wire	72.8	70.7	--	--	80
Mylar sheet	78.0	77.6	--	--	105
VR1	68.1	66.1	--	--	85
EC1	87.2	84.5	--	--	105
L1A	90.1	87.6	--	--	130
EC2	94.8	91.7	--	--	105
T1 winding	98.6	96.6	--	--	110
T1 core	95.6	93.5	--	--	110
CY1	91.1	97.5	--	--	125
EC4	74.6	72.7	--	--	105
EC5	70.6	71.3	--	--	105
Output wire	67.0	69.2	--	--	80
PCB under U2	108.7	111.9	--	--	130
PCB under BD1	93.6	93.8	--	--	130
PCB under U1	117.6	117.5	--	--	130
Enclosure inside near T1 top	95.5	94.6	--	--	120
Enclosure inside near T1 bottom	91.7	89.1	--	--	120
Ambient	40.0	40.0	--	--	--
Enclosure outside near T1 top	70.5	68.7	--	--	77

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Enclosure outside near T1 bottom	67.2	65.2	--	--	77
Ambient	25.0	25.0	--	--	--
Model: HT39B-1601100US (with LF1)					
Plug holder	55.7	52.3	55.3	52.7	120
Input wire	61.1	58.6	57.6	56.1	80
Mylar sheet	64.9	62.9	61.9	60.7	105
VR1	58.3	56.7	54.8	53.9	85
EC1	85.3	82.5	74.0	70.5	105
LF1 winding	84.6	82.6	75.9	73.7	130
EC2	91.0	90.3	87.8	86.6	105
T1 winding	98.7	97.6	96.1	94.6	110
T1 core	95.5	95.2	93.4	91.3	110
CY1	79.4	80.9	78.4	79.2	125
EC4	67.8	68.4	67.6	67.9	105
EC5	63.2	62.3	60.9	59.8	105
Output wire	65.8	66.4	65.3	65.9	80
PCB under U2	101.3	102.3	101.2	104.4	130
PCB under BD1	95.3	92.3	76.8	73.2	130
PCB under U1	113.8	111.4	108.7	106.6	130
Enclosure inside near T1 top	88.6	87.4	81.6	79.7	120
Enclosure inside near T1 bottom	85.2	83.9	76.3	73.7	120
Ambient	40.0	40.0	40.0	40.0	--
Enclosure outside near T1 top	62.7	61.5	55.0	53.4	77
Enclosure outside near T1 bottom	59.4	57.3	50.0	47.8	77
Ambient	25.0	25.0	25.0	25.0	--
Model: HT39B-1601100US (with L1)					
Plug holder	54.8	51.4	--	--	120
Input wire	60.1	57.6	--	--	80
Mylar sheet	63.7	61.7	--	--	105
VR1	56.8	55.2	--	--	85
EC1	84.3	81.5	--	--	105
L1	82.0	80.0	--	--	130
EC2	89.8	89.1	--	--	105
T1 winding	95.7	94.6	--	--	110
T1 core	92.4	92.1	--	--	110
CY1	78.5	80.0	--	--	125
EC4	66.5	67.1	--	--	105
EC5	61.7	60.8	--	--	105
Output wire	65.0	65.6	--	--	80

IEC 62368-1							
Clause	Requirement + Test			Result - Remark		Verdict	
PCB under U2	98.0	99.0	--	--		130	
PCB under BD1	92.2	89.2	--	--		130	
PCB under U1	110.9	108.5	--	--		130	
Enclosure inside near T1 top	86.8	85.6	--	--		120	
Enclosure inside near T1 bottom	83.5	82.2	--	--		120	
Ambient	40.0	40.0	--	--		--	
Enclosure outside near T1 top	61.7	60.5	--	--		77	
Enclosure outside near T1 bottom	58.6	56.5	--	--		77	
Ambient	25.0	25.0	--	--		--	
Model: HT39B-1601100US (with L1A)							
Plug holder	53.6	49.7	--	--		120	
Input wire	59.5	55.6	--	--		80	
Mylar sheet	63.2	59.5	--	--		105	
VR1	55.7	53.6	--	--		85	
EC1	83.6	79.4	--	--		105	
L1	78.5	78.9	--	--		130	
EC2	88.7	88.5	--	--		105	
T1 winding	94.8	93.1	--	--		110	
T1 core	91.6	91.3	--	--		110	
CY1	77.6	79.2	--	--		125	
EC4	65.9	66.5	--	--		105	
EC5	60.3	59.3	--	--		105	
Output wire	64.3	63.3	--	--		80	
PCB under U2	97.1	98.2	--	--		130	
PCB under BD1	91.6	87.9	--	--		130	
PCB under U1	109.7	106.6	--	--		130	
Enclosure inside near T1 top	85.7	83.9	--	--		120	
Enclosure inside near T1 bottom	82.2	81.6	--	--		120	
Ambient	40.0	40.0	--	--		--	
Enclosure outside near T1 top	60.8	59.3	--	--		77	
Enclosure outside near T1 bottom	58.2	55.8	--	--		77	
Ambient	25.0	25.0	--	--		--	
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
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

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(T1) and line choke(LF1) 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 FR1 (B)	420	240	0.06	1.5	3.4	2.5	3.4
Two terminals of FR1(B)	420	240	0.06	1.5	8.3	2.5	8.3
CY2 two terminals (B)	420	240	0.06	1.5	3.1	2.5	3.1
CY1 two terminals (S)	420	240	0.06	1.5	3.4	2.5	3.3
CY3 two terminals (R)	420	240	0.06	3.0	6.7	5.0	6.7
Primary live part body (EC2) to outside enclosure (R)	552	276	54.7	3.0	6.7	5.6	6.7
T1 primary winding to secondary pin (R)	552	276	54.7	3.0	7.5	5.6	7.5
T1 core to secondary pin (R)	552	276	54.7	3.0	7.0	5.6	7.0
T1 core to EC4 (R)	552	276	54.7	3.0	7.5	5.6	7.5

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Clause	Requirement + Test			Result - Remark			Verdict
T1 primary winding to CE4	552	276	54.7	3.0	4.6	5.6	6.1
T1 core to the secondary pin of CY1 (R)	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 Note 4: B=Basic insulation, S= Supplenmentary insulation, R=Reinforce insulation 1) Core of transformer T1 is considered as primary part. 2) The secondary winding wire of T1 is approved reinforced insulation wire. 3) If no specified, the worst condition was considered. 4) Insulation sheet between input metal pin and primary component as basic insulation.							

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage				P
	Overvoltage Category (OV):				II
	Pollution Degree:				2
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Measured cl (mm)	
Refer Table 5.4.2.2, 5.4.2.4 and 5.4.3		2500Vpeak	Refer Table 5.4.2.2, 5.4.2.4 and 5.4.3	Refer Table 5.4.2.2, 5.4.2.4 and 5.4.3	
Supplementary information:					

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
--		--	--	--
--		--	--	--
--		--	--	--
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	--	Plastic	0.4	1.5	
Bobbin of T1*	552	54.7	Plastic	0.4	0.51	
Supplementary information: Considered for all source list in table 4.1.2						

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Clause	Requirement + Test		Verdict
5.4.9	TABLE: Electric strength tests		P
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V)
			Breakdown Yes / No
Functional:			
Basic/supplementary:			
L and N (fuse out)	DC	2500	No
Insulation sheet between metal pin and primary component #	DC	2500	No
Heat shrinkable tube of FR1#	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
1 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 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						

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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.			

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Clause	Requirement + Test	Result - Remark	Verdict

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-0603000US (with LF1)						
Output	Normal condition	Power (W) :	--	18.62	PS2	
		V _A (V) :	--	5.93		
		I _A (A) :	--	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 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		
Model: HT39B-1601100US (with LF1)						
Output	Normal condition	Power (W) :	--	26.18	PS2	
		V _A (V) :	--	15.22		
		I _A (A) :	--	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	Power (W) :	0	0	PS1	

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Clause	Requirement + Test		Result - Remark		Verdict
U1 Pin 5,6,7,8 to 4	circuit^	V _A (V) :	0	0	PS1
		I _A (A) :	0	0	
	Short circuit^	Power (W) :	0	0	
		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)				P
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)				P
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, V _A and ammeter I _A may be used instead of a wattmeter.					
If a separate voltmeter and ammeter are used, the product of (V _A x I _A) 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_	

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Clause	Requirement + Test	Result - Remark	Verdict
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:			

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-0603000US (with LF1)								
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-0603000US (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-0603000US (with L1A)								
90Vac, 50Hz	0.394	--	22.0	-	FR1	0.394	Load with 6V3A	
90Vac, 60Hz	0.397	--	22.0	-	FR1	0.397	Load with 6V3A	
100Vac, 50Hz	0.355	0.45	21.7	-	FR1	0.355	Load with 6V3A	
100Vac, 60Hz	0.358	0.45	21.8	-	FR1	0.358	Load with 6V3A	
240Vac, 50Hz	0.191	0.45	21.0	-	FR1	0.191	Load with 6V3A	

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Clause	Requirement + Test				Result - Remark		Verdict
240Vac, 60Hz	0.189	0.45	21.1	-	FR1	0.189	Load with 6V3A
264Vac, 50Hz	0.181	--	21.0	-	FR1	0.181	Load with 6V3A
264Vac, 60Hz	0.180	--	21.2	-	FR1	0.180	Load with 6V3A
Model: HT39B-1601100US (with LF1)							
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-1601100US (with L1)							
90Vac, 50Hz	0.373	--	20.8	-	FR1	0.373	Load with 16V1.1A
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
Model: HT39B-1601100US (with L1A)							
90Vac, 50Hz	0.371	--	20.5	-	FR1	0.371	Load with 16V1.1A
90Vac, 60Hz	0.372	--	20.6	-	FR1	0.372	Load with 16V1.1A
100Vac, 50Hz	0.335	0.45	20.3	-	FR1	0.335	Load with 16V1.1A
100Vac, 60Hz	0.339	0.45	20.2	-	FR1	0.339	Load with 16V1.1A
240Vac, 50Hz	0.188	0.45	20.3	-	FR1	0.188	Load with 16V1.1A
240Vac, 60Hz	0.184	0.45	20.1	-	FR1	0.184	Load with 16V1.1A
264Vac, 50Hz	0.175	--	20.2	-	FR1	0.175	Load with 16V1.1A
264Vac, 60Hz	0.173	--	20.0	-	FR1	0.173	Load with 16V1.1A
Supplementary information:							
Equipment may be have rated current or rated power or both. Both should be measured							

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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
For model HT39B-0603000US (with LF1)								
Output terminal	OL	264Vac	5hrs52 mins	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: 5.93V Output to earth:0.365m Apk
Output terminal	OL	90Vac	5hrs36 min	FR1	0.402A to 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: 5.92V Output to earth:0.185m Apk

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Clause	Requirement + Test				Result - Remark			Verdict
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: 0V Output to earth:0.365m Apk
Transformer T1	OL	264Vac	5hrs52 mins	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: 5.93V Output to earth:0.365m Apk
Transformer T1	OL	90Vac	5hrs36 min	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: 5.92V Output to earth:0.185m Apk
For model HT39B-1601100US (with LF1)								

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Clause	Requirement + Test				Result - Remark			Verdict
Output terminal	OL	264Vac	6hrs10 min	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>1.65 A circuit protect operated. The Max temperature obtained at 1.63A. NB, NC. output: 15.22V Output to earth:0.365m Apk
Output terminal	OL	90Vac	6hrs40 min	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 >1.65 A circuit protect operated. The Max temperature obtained at 1.63A. NB, NC. output: 15.21V Output to earth:0.185m Apk
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: 0V Output to earth:0.365m Apk

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
Transformer T1	OL	264Vac	6hrs10 min	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 >1.65 A circuit protect operated. The Max temperature obtained at 1.63A. NB, NC. output: 15.22V Output to earth:0.365m Apk
Transformer T1	OL	90Vac	6hrs40 min	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 >1.65 A circuit protect operated. The Max temperature obtained at 1.63A. NB, NC. output: 15.21V Output to earth:0.185m Apk
<p>Supplementary information:</p> <p>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>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> <p>Transformer winding and core temperature limit is $149.1^{\circ}\text{C}=(175-10-(40-24.1))^{\circ}\text{C}$.</p> <p>Enclosure outside surface temperature limit is $86.1^{\circ}\text{C}=(87-(25-24.1))^{\circ}\text{C}$.</p>								

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
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-0603000US(with LF1)								
BD1 Pin 2 to 3 (Condition1)	SC	264Vac	1S	FR1	0.184A to 0A	--	--	FR1 opened immediately, NB/NC, no hazards. Output: 0V Output to earth:0.372mA _{pk}
EC1 (Condition1)	SC	264Vac	1S	FR1	0.184A to 0A	--	--	FR1 opened immediately, NB/NC, no hazards. output: 0V Output to earth:0.375mA _{pk}
EC2 (Condition1)	SC	264Vac	1S	FR1	0.184A to 0A	--	--	FR1 opened immediately, NB/NC, no hazards. output: 0V Output to earth:0.375mA _{pk}
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:0.375mA _{pk}
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:0.375mA _{pk}
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:0.375mA _{pk}

IEC 62368-1								
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:0.375mA _{pk}
R10 (Condition1)	SC	264Vac	1S	FR1	0.184A to 0A	--	--	FR1 open, U1 damaged, no hazard. NB, NC output: 0V Output to earth:0.375mA _{pk}
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: 0V Output to earth:0.365mA _{pk}
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: 0V Output to earth:0.365mA _{pk}

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
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: 0V Output to earth:0.365mA _{pk}
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: 0V Output to earth:0.365mA _{pk}
For model HT39B-0603000US (with LF1)								
BD1 Pin 2 to 3 (Condition1)	SC	264Vac	1S	FR1	0.179A to 0A	--	--	FR1 opened immediately, NB/NC, no hazards. Output: 0V Output to earth:0.372mA _{pk}
EC1 (Condition1)	SC	264Vac	1S	FR1	0.179A to 0A	--	--	FR1 opened immediately, NB/NC, no hazards. output: 0V Output to earth:0.375mA _{pk}

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
EC2 (Condition1)	SC	264Vac	1S	FR1	0.179A to 0A	--	--	FR1 opened immediately, NB/NC, no hazards. output: 0V Output to earth:0.375mA _{pk}
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:0.375mA _{pk}
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:0.375mA _{pk}
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:0.375mA _{pk}
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:0.375mA _{pk}
R10 (Condition1)	SC	264Vac	1S	FR1	0.179A to 0A	--	--	FR1 open, U1 damaged, no hazard. NB, NC output: 0V Output to earth:0.375mA _{pk}

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: 0V Output to earth:0.365mApk
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: 0V Output to earth:0.365mApk
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: 0V Output to earth:0.365mApk

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
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: 0V Output to earth:0.365mA _{pk}
<p>Supplementary information:</p> <p>SC – Short Circuit</p> <p>NB - No indication of dielectric breakdown</p> <p>NC – Cheesecloth remained intact</p> <p>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 list in table 4.1.2 and same result observed.</p> <p>After each of above test unit can pass the dielectric strength test specified in table 5.4.9.</p> <p>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.</p> <p>Output circuit is under ES1 limit.</p> <p>Transformer winding and core temperature limit is $149.1^{\circ}\text{C}=(175-10-(40-24.1))^{\circ}\text{C}$.</p> <p>Enclosure outside surface temperature limit is $86.1^{\circ}\text{C}=(87-(25-24.1))^{\circ}\text{C}$.</p>								

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										

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
- 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	-	-	-	-
-	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-0603000US (with LF1)						
Output	--	6.04	3.14	8	18.62	100
Output	R10 SC	0*	0*	8	0*	100
Output	U1 Pin 5,6,7,8 to 1 SC	0*	0*	8	0*	100
Output	U1 Pin 5,6,7,8 to 2 SC	0*	0*	8	0*	100
Output	U1 Pin 5,6,7,8 to 3 SC	0*	0*	8	0*	100
Output	U1 Pin 5,6,7,8 to 4 SC	0*	0*	8	0*	100
Model: HT39B-1601100US (with LF1)						
Output	--	16.54	1.72	8	26.18	100
Output	R10 SC	0*	0*	8	0*	100
Output	U1 Pin 5,6,7,8 to 1 SC	0*	0*	8	0*	100
Output	U1 Pin 5,6,7,8 to 2 SC	0*	0*	8	0*	100

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
Output	U1 Pin 5,6,7,8 to 3 SC	0*	0*	8	0*	100
Output	U1 Pin 5,6,7,8 to 4 SC	0*	0*	8	0*	100
Supplementary Information: SC=Short circuit, OC=Open circuit # Unit shut down immediately *FR1 opened immediately, U1 damaged, no hazard						

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 in table 4.1.2						

T.6, T.9	TABLE: Impact tests				N/A
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
--	--	--	--	--	
--	--	--	--	--	
--	--	--	--	--	
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 in table 4.1.2					

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	
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 in table 4.1.2					

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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)					P
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z".					P
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					P
	Delete all the "country" notes in the reference document (IEC 62368-1:2014) according to the following list:					P
	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.					

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1	<p>Add the following note:</p> <p>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.</p>		P
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:</p> <p><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:</p> <p>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.</p> <p>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:</p> <p>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)		P
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>	Should be evaluated in national approval	N/A

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; 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. 		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>	Should be evaluated in national approval	N/A

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: 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: 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: 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: 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> 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

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 DENMARK NATIONAL DIFFERENCES Audio/video, information and communication technology equipment – Part 1: Safety requirements			
Differences according to: DS/EN 62368-1:2014			
Attachment Form No.: DK_ND_IEC62368_1B			
Attachment Originator: UL (Demko)			
Master Attachment: 2014-10			
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	National Differences		
4.1.15	<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: “Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.”</p>		N/A
5.2.2.2	<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
5.6.1	<p>Add to the end of the subclause:</p> <p>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.</p> <p>Justification: In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.5	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
5.7.6.2	To the end of the subclause the following is added: 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.		N/A
G.4.2	<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>Justification: Heavy Current Regulations, Section 6c</p>	Should be evaluated in national approval	N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 2th Ed. U.S.A. NATIONAL DIFFERENCES Audio/video, information and communication technology equipment – Part 1: Safety requirements			
Differences according to		: CSA/UL 62368-1:2014	
Attachment Form No.		: US&CA_ND_IEC623681B	
Attachment Originator		: UL(US)	
Master Attachment		: Date 2015-06	
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IEC 62368-1 - US and Canadian National Differences Special National Conditions based on Regulations and Other National Differences			
1.1	All equipment is to be designed to allow installation according to the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.		P
1.4	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		N/A
4.1.17	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.		N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		N/A
4.8	Lithium coin / button cell batteries have modified special construction and performance requirements.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.5, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment		N/A
5.7.7	Equipment intended to receive telecommunication ringing signals complies with a special touch current measurement tests.		N/A
6.5.1	PS3 wiring outside a fire enclosure complies with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex F (F.3.3.8)	Output terminals provided for supply of other equipment, except mains, supply are marked with a maximum rating or references to which equipment it is permitted to be connected.		P
Annex G (G.7.1)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
Annex G (G.7.3)	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
Annex G (G.7.5)	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V d.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
Annex M	Battery packs for stationary applications comply with special component requirements.		N/A
Annex DVA (1)	Equipment intended for use in spaces used for environmental air are subjected to special flammability requirements for heat and visible smoke release.		N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. & Canadian Regulations.		N/A
	Baby monitors additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
Annex DVA (5.6.3)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		P

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a min. flammability classification of V-1.		N/A
Annex DVA (10.3.1)	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (10.5.1)	Equipment that produces ionizing radiation complies with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (F.3.3.3)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."		N/A
Annex DVA (F.3.3.5)	Equipment identified for ITE (computer) room installation is marked with the rated current		N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position		N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles complies with NEC 250.146(D) and CEC 10-112 and 10-906(8).		N/A
Annex DVA (G.4.3)	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.		N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
Annex DVA (Annex M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A
Annex DVA (Q)	Wiring terminals intended to supply Class 2 outputs according to the NEC or CEC Part 1 are marked with the voltage rating and "Class 2" or equivalent; marking is located adjacent to the terminals and visible during wiring.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. Components required to comply include: appliance couplers, attachment plugs, battery back-up systems, battery packs, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultra-capacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, data storage equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.		P
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.		N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are in accordance with the NEC/CEC.		N/A
Annex DVH (DVH.3.2)	Terminals for permanent wiring, including protective earthing terminals, are suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and are specially marked when specified.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.3.2)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, complies with special earthing, wiring, marking and installation instruction requirements.		N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.		N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 (JAPAN) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to : J62368-1 (H30)			
Attachment Form No. : JP_ND_IEC62368_1B			
Attachment Originator : UL (JP)			
Master Attachment : Date 2018-11-22			
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	National Differences		—
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this standard or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.		P
5.6.1	Mains socket-outlet and appliance outlet shall comply with Clause G.4.2A if they are incorporated as part of the equipment.		N/A
5.6.2.1	Mains connection of class 0I equipment: Instructional safeguard in accordance with Clause F.3.6.1A; Mains plug having a lead wire for protective earthing connection of class 0I equipment; Independent main protective earthing terminal installed by ordinary person.		N/A
5.6.2.2	This requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.3	In case of class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall comply with either of the following: – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cab tire cable with 1.25 mm ² or more cross-sectional area		N/A
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series or JIS C 8303, or otherwise being considered to comply with relevant regulations, or that is provided with mains appliance outlet as specified in JIS C 8283-2-2 for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.		N/A
5.7.4	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990.		N/A
6.4.3.3	A fuse complying with JIS C 6575 series or a fuse having equivalent characteristics shall open within 1 s. For Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”. A fuse not complying with JIS C 6575 series shall be tested with the breaking capacity taken into account.		P
8.5.4.2.1	Only three-phase stationary equipment rated more than 200 V ac can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.		N/A
8.5.4.2.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.2.4	The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.		N/A
8.5.4.2.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part. Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.		N/A
9.2.6, Table 38	Handles, Knobs, grips, etc. and external surfaces either held, touched or worn against the body in normal use (> 1 min) ^{b,c}		N/A
F.3.5.1	Instructional safeguard of class 0I equipment in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8303 or relevant regulation to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.		N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic.		P
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.3 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions and instructional safeguard shall be provided regarding the earthing connection.		N/A
F.3.6.2.1	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.		N/A
F.4	Instruction for audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A. Installation instruction for the protective earthing connection for class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided within the package for the equipment.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.3.2.1	The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.		N/A
G.3.4	Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the relevant part of JIS C 6575 (corresponding to IEC60127) or shall have equivalent characteristics. If there are no applicable IEC standards, overcurrent protective devices used as a safeguard shall comply with their applicable IEC standards.		P
G.4.1	This requirement is not applicable to Clauses G.4.2 and G.4.2A.		N/A
G.4.2	Mains connector shall comply with JIS C 8282 series, JIS C 8283 series, JIS C 8285, JIS C 8303 or IEC 60309 series. Mains plugs and socket-outlets shall comply with JIS C 8282 series, JIS C 8303, IEC 60309 series, or have equivalent or better performance. A power supply cord set provided with appliance connector that can fit appliance inlet complying with JIS C 8283-1 shall comply with JIS C 8286. Construction preventing mechanical stress not to transmit to the soldering part of inlet terminal. Consideration for an equipment rated not more than 125 V provided with Type C14 and C18 appliance coupler complying with JIS C 8283 series.		N/A
G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively.		N/A
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.		N/A
G.8.3.3	Withstand $1,71 \times 1.1 \times U_0$ for 5 s.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<p align="center">ATTACHMENT TO TEST REPORT IEC 62368-1 (AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment)</p>			
Differences according to : AS/NZS 62368.1:2018			
Attachment Form No. : AU_NZ_ND_IEC62368_1B			
Attachment Originator : JAS-ANZ			
Master Attachment : 2018-02			
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	National Differences		
Appendix ZZ	Variations to IEC 62368-1:2014 (ED. 2.0) for Australia and New Zealand		P
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2014 (ED. 2.0)		P
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		P
2	Add the following to the list of normative references: The following normative documents are referenced in Appendix ZZ: -AS/NZS 3112, <i>Approval and test specification—Plugs and socket-outlets</i> -AS/NZS 3123, <i>Approval and test specification—Plugs, socket-outlets and couplers for general industrial application</i> -AS/NZS 3191, <i>Electric flexible cords</i> -AS/NZS 60065, <i>Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)</i> -AS/NZS 60320.1, <i>Appliance couplers for household and similar general purposes, Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)</i> -AS/NZS 60320.2.2, <i>Appliance couplers for household and similar general purposes Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD)</i> -AS/NZS 60695.2.11, <i>Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products</i> -AS/NZS 60695.11.5, <i>Fire hazard testing, Part</i>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance</p> <p>-AS/NZS 60695.11.10, Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods</p> <p>-AS/NZS 60884.1, Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</p> <p>-AS/NZS 60950.1:2015, Information technology equipment—Safety, Part 1: General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)</p> <p>IEC 61032:1997, Protection of persons and equipment by enclosures—Probes for verification</p> <p>-AS/NZS 61558.1:2008 (including Amendment 2:2015), Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 2.1, MOD)</p> <p>-AS/NZS 61558.2.16, Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.</p>		
4.1.1	<p>Application of requirements and acceptance of materials, components and subassemblies</p> <p>1 Replace the text 'IEC 60950-1' with 'AS/NZS 60950.1:2015'.</p> <p>2 Replace the text 'IEC 60065' with 'AS/NZS 60065'.</p>		P
4.7	Equipment for direct insertion into mains socket-outlets		
4.7.2	<p>Requirements</p> <p>Delete the text of the second paragraph and replace with the following:</p> <p>Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.</p>		P
4.7.3	<p>Compliance Criteria</p> <p>Delete the first paragraph and Note 1 and Note 2 and replace with the following:</p> <p>Compliance is checked by inspection and, if necessary, by the tests in AS/NZS 3112.</p>		P

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.8	<i>Delete</i> existing clause title and <i>replace</i> with the following: 4.8 Products containing coin/button cell batteries		
4.8.1	General 1 Second dashed point, <i>delete</i> the text and <i>replace</i> with the following: – include coin/button cell batteries with a diameter of 32 mm or less. 2 After the second dashed point, <i>insert</i> the following Note: NOTE 1: Batteries are specified in IEC 60086-2. 3 After the third dashed point, <i>renumber</i> the existing Note as 'NOTE 2'. 4 Fifth dashed point, <i>delete</i> the word 'lithium'.		N/A
4.8.2	Instructional Safeguard First line, <i>delete</i> the word 'lithium'.		N/A
4.8.3	Construction First line, after the word 'Equipment' <i>insert</i> the words 'containing one or more coin/button batteries and'		N/A
4.8.5	Compliance criteria <i>Delete</i> the first paragraph and <i>replace</i> with the following: <i>Compliance is checked by applying a force of 30 N +/- 1 N for 10 s to the battery compartment door/cover by a rigid test finger according to test probe 11 of IEC 61032:1997 at the most unfavourable place and in the most unfavourable direction. The force shall be applied in one direction at a time.</i>		N/A
5.4.10.2	Test methods		
5.4.10.2.1	General <i>Delete</i> the first paragraph and <i>replace</i> with the following: In Australia only, the separation is checked by the test of both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test of either Clause 5.4.10.2.2 or Clause 5.4.10.2.3.		N/A
Table 29	<i>Replace</i> the table with the following:		N/A

IEC62368_1B - ATTACHMENT					
Clause	Requirement + Test		Result - Remark		Verdict
Parts	Impulse test		Steady state test		
	New Zealand				

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.1	Large data storage equipment In the first dashed row and the second dashed rows <i>replace</i> 'IEC 60950-1:2005' with 'AS/NZS 60950.1:2015'.		N/A
8.6	Stability of equipment		
8.6.1 and Table 36	Requirements 1. Table 36, <i>insert</i> Footnote c at the end of the 'Glass slide' heading, and <i>add</i> a new Footnote c after the text of Footnote b in the last row of Table 36 as follows: ° The glass slide test is not applicable to floor standing equipment, even though the equipment may have controls or a display. 2. Table 36, fifth row, <i>insert</i> '201' at the end of 'No stability requirements' 3. Table 36, ninth row, <i>insert</i> '201' at the end of 'No stability requirements' 4. Table 36, <i>add</i> the following new footnote: 201 MS2 and MS3 television sets and display devices, designed only for fixing to a wall, ceiling or equipment rack, are not subjected to stability requirements only if the instructional safeguard of Clause 8.6.1.201 is provided. Otherwise, the glass slide requirements of Clause 8.6.4 and horizontal force requirements of Clause 8.6.5 apply. 5. Second paragraph beneath Table 36, <i>delete</i> the words 'MS2 and MS3 television sets' and <i>replace</i> with 'MS2 and MS3 television sets and display devices'		N/A
8.6.1	After Clause 8.6.1 <i>add</i> the following new clauses: 8.6.1.201 Instructional safeguard for fixed-mount television sets (see special national conditions)		N/A
Annex F Paragraph F.3.5.1	Mains appliance outlet and socket-outlet markings <i>Replace</i> 'IEC 60320-2-2' with 'AS/NZS 60320.2.2'.		N/A
Annex G Paragraph G.4.2	Mains connectors 1 In the second line <i>insert</i> 'or AS/NZS 3123' after 'IEC 60906-1'. 2 In the second line <i>insert</i> 'or AS/NZS 60320 series' after 'IEC 60320 series' 3 <i>Add</i> the following new paragraph: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Paragraph G.5.3.1	Transformers, General 1 In the third dashed point <i>replace</i> 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 In the fourth dashed point <i>replace</i> 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.		P
Paragraph G.7.1	Mains supply cords, General In the fourth dashed paragraph, <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A
Table G.5	Sizes of conductors 1 In the second row, first column, <i>delete</i> '6' and <i>replace</i> with '7.5' 2 In the second row, second column, <i>delete</i> '0,75' and <i>replace</i> with '0.75 ^b 3 <i>Delete</i> Note 1. 4 <i>Replace</i> 'NOTE 2' with 'NOTE:'. 5 <i>Delete</i> the text of 'Footnote b' and <i>replace</i> with the following: ^b This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm ² three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 In Footnote c <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1' 7 In Footnote d <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A
Annex M Paragraph M.3.2	Protection circuits for batteries provided within the equipment, Test method After the first dashed point <i>add</i> the following Note: NOTE 201: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of SELV may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.		N/A
	Special national conditions (if any)		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.201	<p>External power supplies, docking stations and other similar devices</p> <p>For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage—</p> <ul style="list-style-type: none"> – at all ES1 outlets or connectors shall not increase by more than 10% of its rated output voltage under normal operating condition; and – of a USB outlet or connector shall not increase by more than 3 V or 10% of its rated output voltage under normal operating conditions, whichever is higher. <p>For equipment with multiple rated output voltages, the requirements apply with the equipment configured for each rated output voltage in turn.</p> <p>NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries.</p> <p><i>Compliance shall be checked by measurement, taking into account the abnormal operating conditions of Annex B.3 and the simulated single-fault conditions of Annex B.4</i></p>	Complied	P
6.202	Resistance to fire—Alternative tests	Appropriate fire material used	N/A
6.202.1	<p>General</p> <p>Parts of non-metallic material shall be resistant to ignition and spread of fire.</p> <p>This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the equipment, or the following:</p> <p>a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length.</p> <p>b) The following parts which would contribute negligible fuel to a fire:</p> <ul style="list-style-type: none"> – small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; – small electrical components, such as capacitors with a volume not exceeding 1 750 mm³, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, 		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	according to AS/NZS 60695.11.10. NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to another.		
	<i>Compliance shall be checked by the tests of Clauses 6.202.2, 6.202.3 and 6.202.4.</i> For the base material of printed boards, compliance shall be checked by the test of Clause 6.202.5. The tests shall be carried out on parts of non-metallic material which have been removed from the equipment. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring.		N/A
6.202.2	Testing of non-metallic materials Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the relevant part is not thinner than the sample tested.		N/A
6.202.3	Testing of insulating materials Parts of insulating material supporting Potential Ignition Sources shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE: Contacts in components such as switch contacts are considered to be connections		N/A
	For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test need not be tested		N/A
	The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test		Verdict
	following modifications:		
	Clause of AS/NZS 60695.11.5	Change	
	9 Test procedure		
	9.2 Application of needle-flame	<p><i>Delete</i> the first and second paragraphs and <i>replace</i> with the following: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner.</p> <p>The duration of application of the test flame shall be 30 s 1 s.</p>	
	9.3 Number of test specimens	<p><i>Replace</i> with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.</p>	
	11 Evaluation of test results	<p><i>Replace</i> with the following: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.</p>	
The needle-flame test shall not be carried out on parts of material classified as			

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	V-0 or V-1 according to AS/NZS 60695.11.10, provided that the relevant part is not thinner than the sample tested.		
6.202.4	<p>Testing in the event of non-extinguishing material</p> <p>If parts, other than enclosures, do not withstand the glow wire tests of Clause 6.202.3, by failure to extinguish within 30 s after the removal of the glowwire tip, the needle-flame test detailed in Clause 6.202.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of Clause 6.202.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested.</p> <p>NOTE 1: If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing.</p> <p>NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing.</p> <p>NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.</p>		N/A
6.202.5	<p>Testing of printed boards</p> <p>The base material of printed boards shall be subjected to the needle-flame test of Clause 6.202.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a potential ignition source.</p> <p>The test is not carried out if—</p> <ul style="list-style-type: none"> – the printed board does not carry any potential ignition source; – the base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under 		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or</p> <p>– the base material of printed boards, on which the available equipment power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely.</p> <p><i>Conformance shall be determined using the smallest thickness of the material.</i></p> <p>NOTE: Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximize the apparent power for more than 2 min when the circuit supplied is disconnected.</p>		
6.202.6	<p>For open circuit voltages greater than 4 kV</p> <p>Potential ignition sources with open circuit voltages exceeding 4 kV (peak) a.c. or d.c. under normal operating conditions shall be contained in a FIRE ENCLOSURE which shall comply with flammability category V-1 or better according to AS/NZS 60695.11.10.</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.1.201	<p>8.6.1.201 Instructional safeguard for fixed-mount television sets</p> <p>MS2 and MS3 television sets and display devices designed only for fixed mounting to a wall of ceiling or equipment rack shall, where required in Table 36, footnote 201, have an instructional safeguard in accordance with Clause F.5 which may be on the equipment or included in the installation instructions or equivalent document accompanying the equipment.</p> <p>The elements of the instructional safeguard shall be as follows:</p> <ul style="list-style-type: none"> – element 1a: not available; – element 2: ‘Stability Hazard’ or equivalent wording; – element 3: ‘The television set may fall, causing serious personal injury or death’ or equivalent text; – element 4: the following or equivalent text: To prevent injury, this television set must be securely attached to the floor/wall in accordance with the installation instructions 		N/A
8.6.1.202	<p>Restraining device</p> <p>MS2 and MS3 television sets and display devices that are not solely fixed-mounted should be provided with a restraining device such as a fixing point to facilitate restraining the equipment from toppling forward. The restraining device shall be capable of withstanding a pull of 100 N in all directions without damage.</p> <p>Where a restraining device is provided, instructions shall be provided in the instructions for installation or instructions for use to ensure correct and safe installation.</p>		N/A



Figure 1. Overall view of unit



Figure 2. Overall view of unit

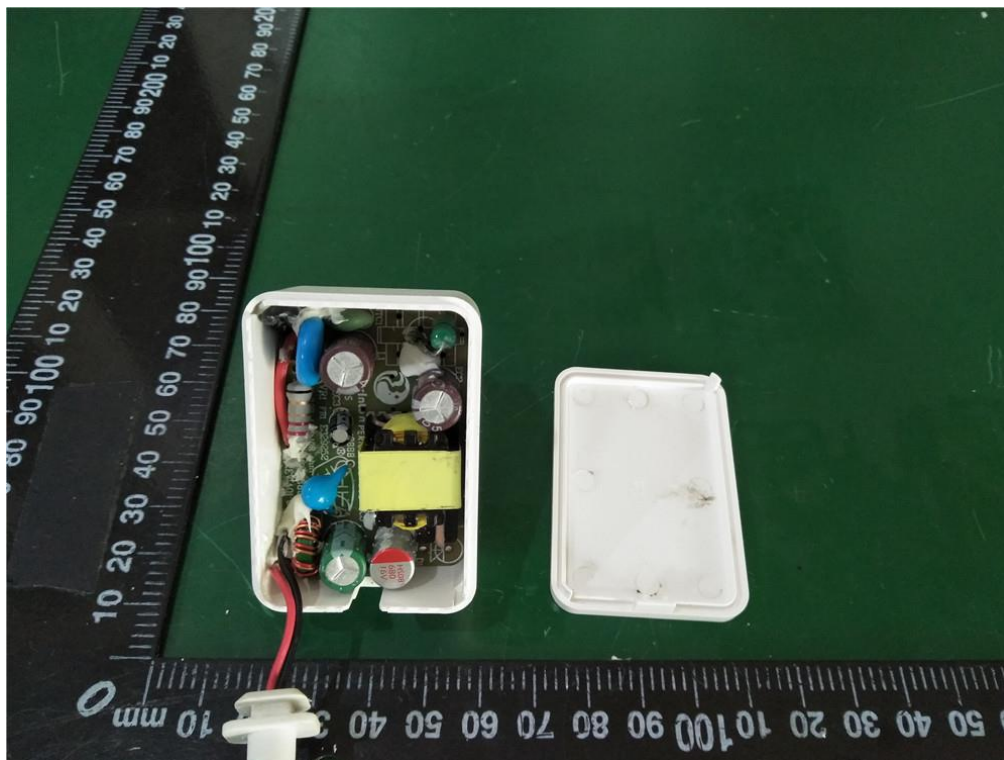


Figure 3. Internal view of unit

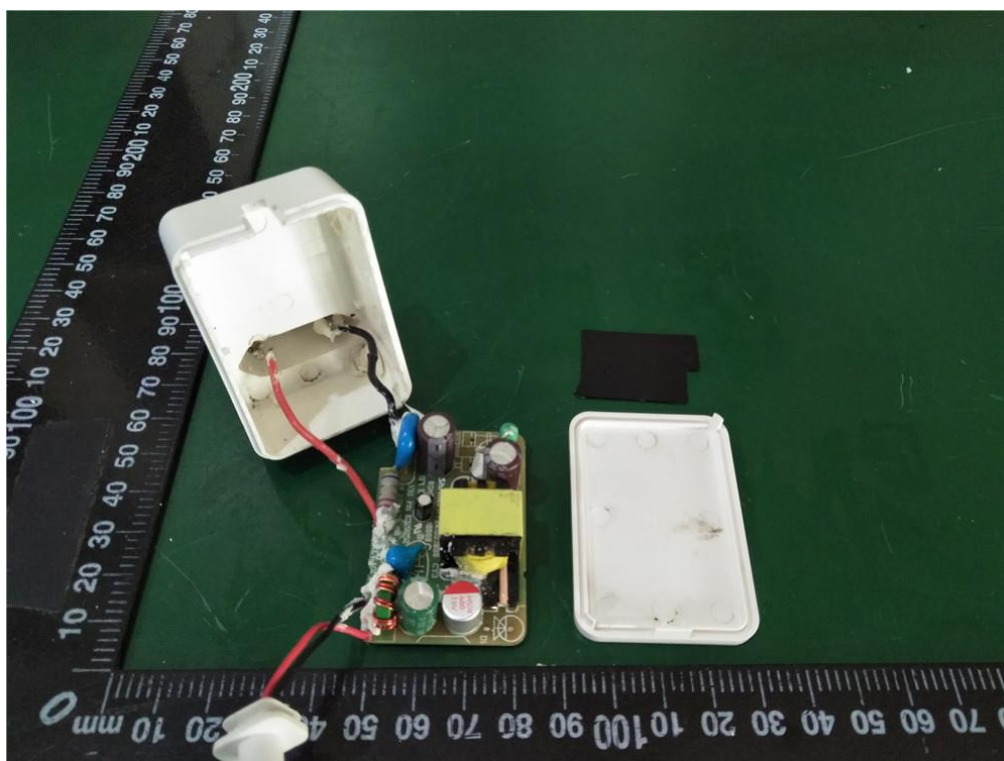


Figure 4. Internal view of unit



Figure 5. Overall view of unit



Figure 6. Overall view of unit



Figure 7. Internal view of unit



Figure 8. Internal view of unit

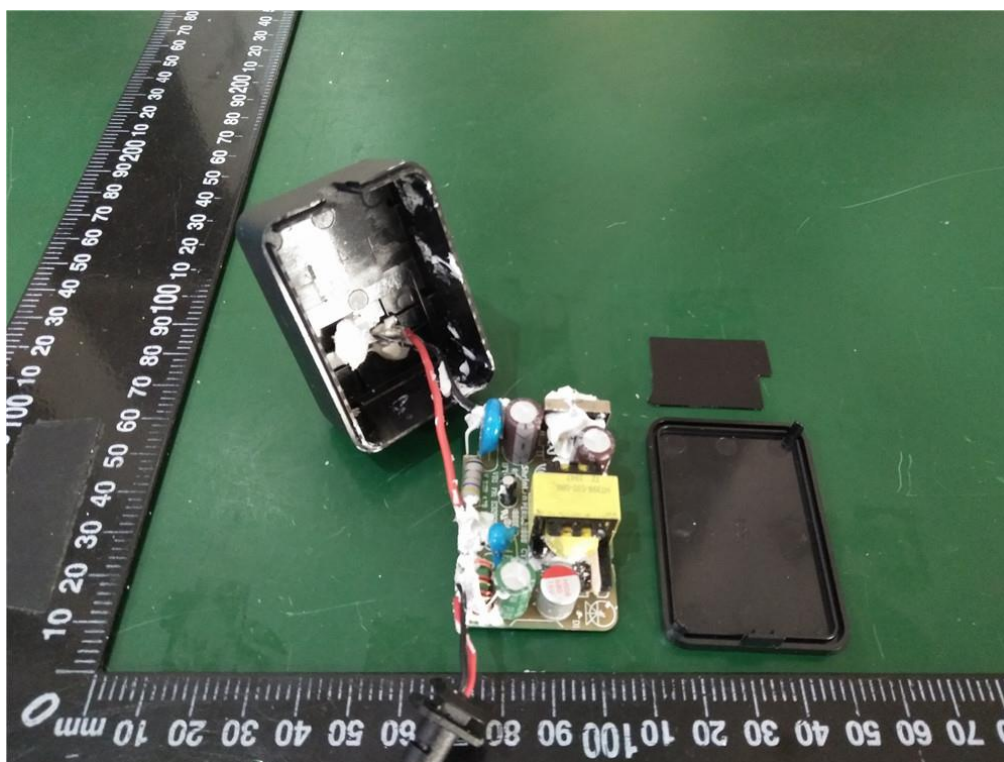


Figure 9. Internal view of unit

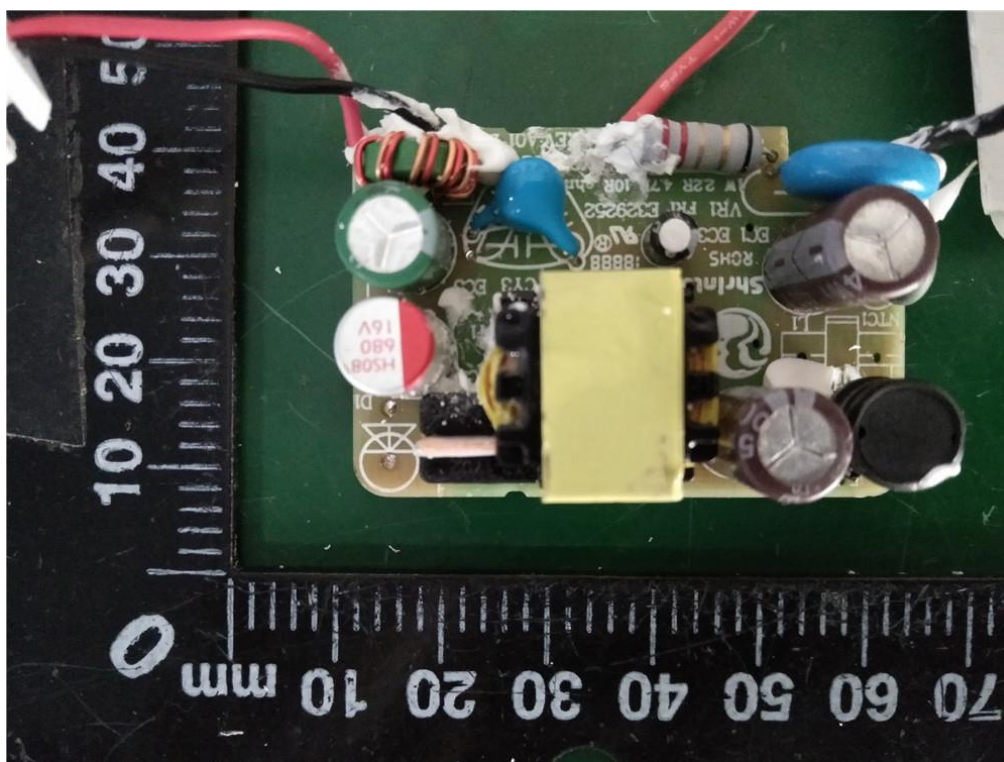


Figure 10. Top view of PCB used L1

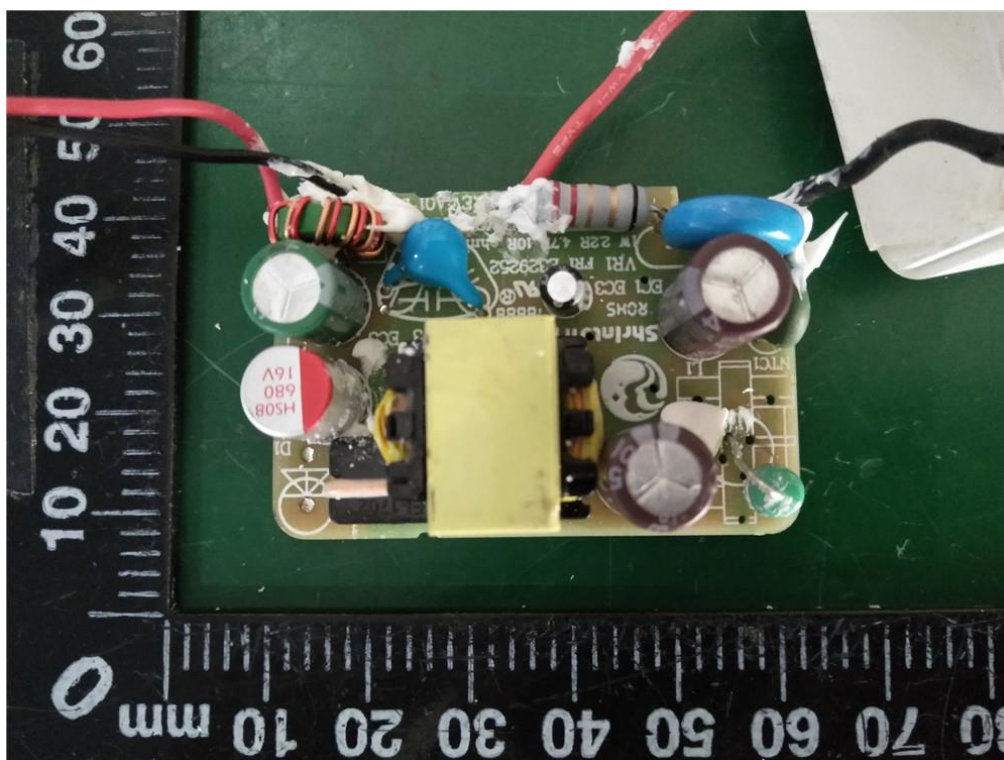


Figure 11. Top view of PCB used L1A

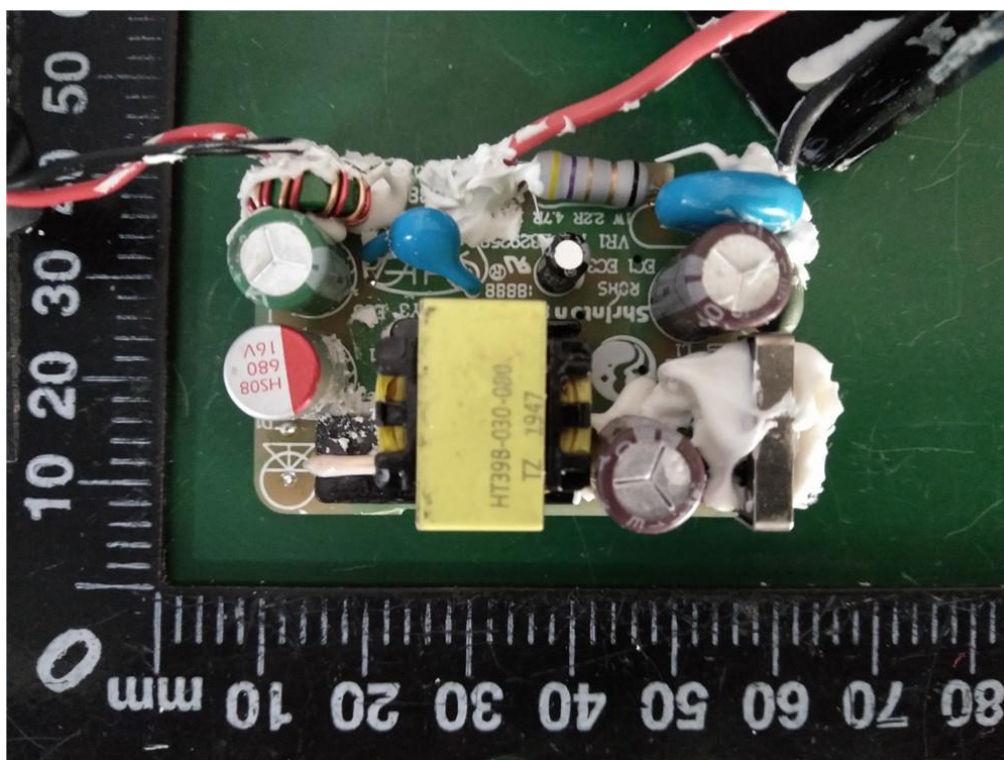


Figure 12. Top view of PCB used LF1

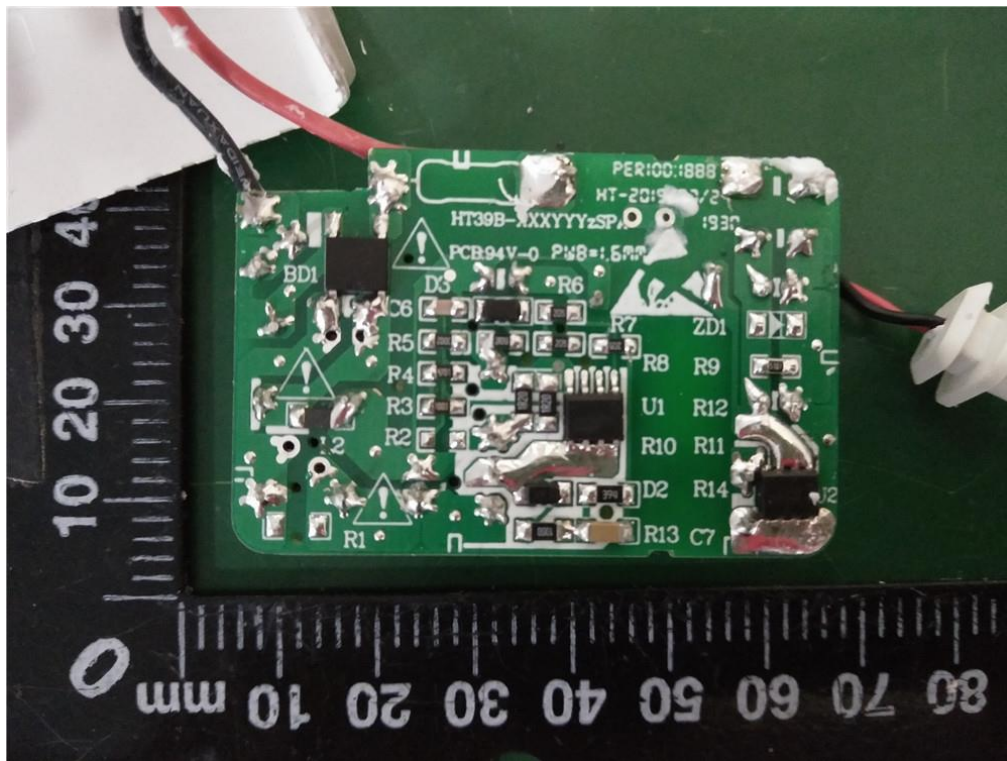


Figure 13. Bottom view of PCB

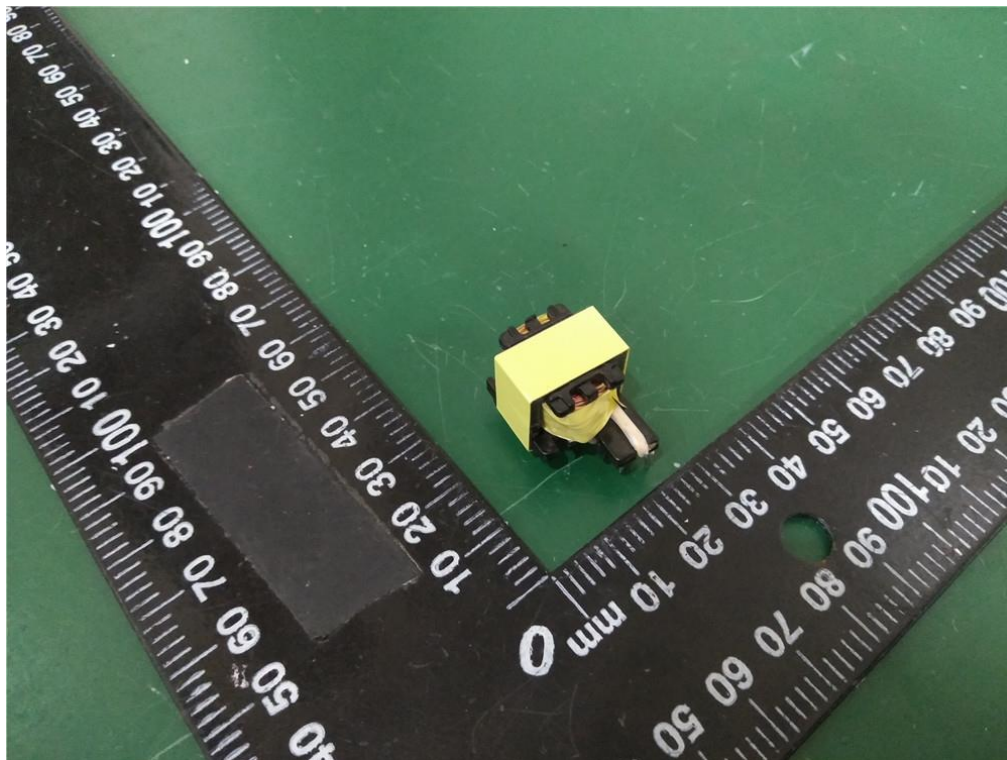


Figure 14. Overall view of transformer

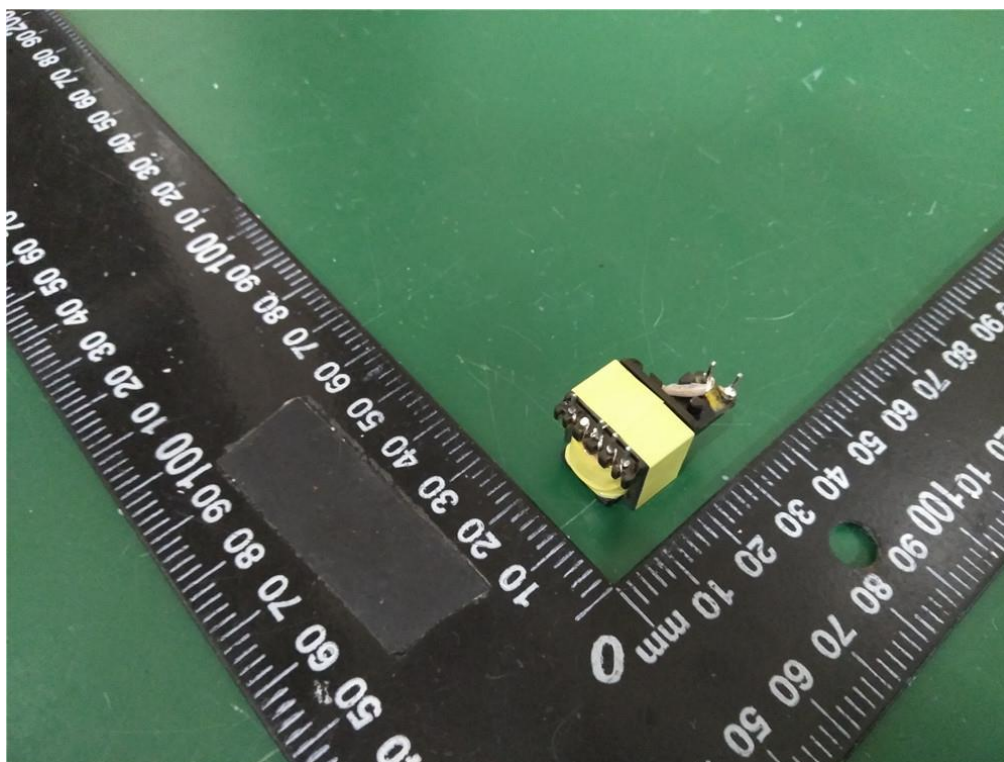


Figure 15. Overall view of transformer