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TEST REPORT IEC 62368-1 Audio/video, information and communication technology equipment Part 1: Safety requirements	
Report Number.....	456668
Date of issue	2022-01-19
Total number of pages	82 pages and refer to page 4 for the attachments
Name of Testing Laboratory preparing the Report	Nemko Shanghai Ltd. Shenzhen Branch
Applicant's name	GlobTek, Inc.
Address	186 Veterans Dr. Northvale, NJ 07647 USA
Test specification:	
Standard	IEC 62368-1:2018
Test procedure.....	CB Scheme
Non-standard test method	N/A
TRF template used	IECEE OD-2020-F1:2020, Ed.1.3
Test Report Form No.....	IEC62368_1E
Test Report Form(s) Originator....	UL(US)
Master TRF	Dated 2021-02-04
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General disclaimer:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

Test item description	ICT/ITE Power Supply
Trade Mark(s)	
Manufacturer	Same as applicant.
Model/Type reference	GT*21097-X-Y.Y (see general product information for model designation)
Ratings	Input: 1.6A Max. 100-240V~ 50-60Hz or 50/60Hz for all models Output: see general product information for details, Class I

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	Nemko Shanghai Ltd. Shenzhen Branch
Testing location/ address		Unit CD, Floor 2 & Floor 10, Tower 2, Kefa Road 8#, Hi-Technology Park, Nanshan District, Shenzhen, Guangdong, China
Tested by (name, function, signature)		<div>Jefferson Li</div> <div>(Project Handler)</div> <div></div>
Approved by (name, function, signature) ..		<div>Jane Sun</div> <div>(Verificator)</div> <div></div>
<input type="checkbox"/>	Testing procedure: CTF Stage 1:	
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature) ..		
<input type="checkbox"/>	Testing procedure: CTF Stage 2:	
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature) ..		
<input type="checkbox"/>	Testing procedure: CTF Stage 3:	
<input type="checkbox"/>	Testing procedure: CTF Stage 4:	
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature) ..		
Supervised by (name, function, signature) :		

List of Attachments (including a total number of pages in each attachment):

1. Photos (7 pages)
2. PCB layout (2 pages)
3. Transformer specification (12 pages)
4. European differences (22 pages)
5. US and Canada differences (7 pages)
6. Japanese differences (4 pages)
7. Australia / New Zealand differences (10 pages)
8. Singapore differences (3 pages)

Summary of testing:
Tests performed (name of test and test clause):

Clause	Test(s)
4	General Requirements
5	Electrically-caused injury
6	Electrically-caused fire
9	Thermal burn injury
B	Normal operating condition tests, abnormal operating condition tests and single fault condition tests
F	Equipment markings, instructions, and instructional safeguards
G	Components
L	Disconnect devices
N	Electrochemical potentials
O	Measurement of creepage distances and clearances
Q	Circuit intended for interconnection with building wiring (LPS)
T	Mechanical strength tests
V	Determination of accessible parts

Testing location:

Refer to page 3

4.1, G.7
Power supply cord set

Power supply cord is not provided with the equipment, should be considered when market to relevant country.

4.1.15

Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.

The marking text in the applicable countries shall be as follows:

In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"

In Norway: "Apparatet må tilkoples jordet stikkontakt"

In Sweden: "Apparaten skall anslutas till jordat uttag"

In Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord."

The manufacture confirmed the text must be applied when market to these country.

Summary of compliance with National Differences (List of countries addressed):

- Europe, US and Canada, Australia / New Zealand, Japan, Singapore.

☒ **The product fulfils the requirements of IEC 62368-1: 2018 (Third Edition) and EN IEC 62368-1: 2020+A11:2020**

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:












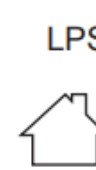
















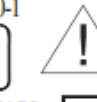





Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.














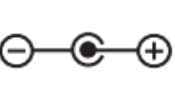


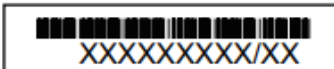





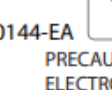







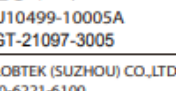



☒ **Statement not required by the standard used for type testing**

(Note: When IEC or ISO standard requires a statement concerning the uncertainty of the measurement systems used for tests, this should be reported above. The informative text in parenthesis should be delete in both cases after selecting the applicable option)

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.

<div data-bbox="236 504 691 607">  GlobTek, Inc. www.globtek.com </div> <div data-bbox="181 616 772 779"> <p>Fuente de alimentación de ITE/адаптер питания ICT/ITE POWER SUPPLY(电源适配器) P/N/Número de pieza/номер(料号): MODEL/Modelo/модель(型号): GT-21097-5048 INPUT/Entrada/вводить(输入): 100-240V~, 50-60Hz, 1.6A MAX OUTPUT/Salida/экспорт(输出): 48V --- 1.1A, 50W</p> </div> <div data-bbox="199 790 772 875">    </div> <div data-bbox="215 884 758 996">     </div> <div data-bbox="199 1008 758 1176">      </div> <div data-bbox="199 1182 574 1218"> <p>PRECAUCION: PARA USO EN EQUIPOS ELECTRONICOS SOLAMENTE</p> </div> <div data-bbox="199 1220 758 1344">     </div> <div data-bbox="383 1330 758 1388"> <p>仅适用于在海拔2000m以下地区使用 仅适用于在非热带气候条件下使用</p> </div> <div data-bbox="218 1415 734 1469"> <p>S/N:  RoHS</p> </div> <div data-bbox="234 1476 691 1541"> <p>MADE IN CHINA/HECHO EN CHINA Китай Производство/中国制造</p> </div>	<div data-bbox="890 504 1305 584">  GlobTek, Inc. www.globtek.com </div> <div data-bbox="834 598 1401 781"> <p>Fuente de alimentación de ITE/адаптер питания ICT/ITE POWER SUPPLY(电源供应器) P/N/Número de pieza/номер(料号): MODEL/Modelo/модель(型号): GT-21097-3005 INPUT/Entrada/вход(输入): 100-240V~, 50-60Hz, 1.6A MAX Input only for India: 100-240V~, 50/60Hz, 1.6A MAX OUTPUT/Salida/выход(输出): 5.0V --- 6.0A, 30.0W</p> </div> <div data-bbox="821 790 1396 875">     </div> <div data-bbox="821 884 1396 974">     </div> <div data-bbox="829 981 1383 1014"> <p>IS 13252 (Part 1) IEC 60950-1</p> </div> <div data-bbox="829 1019 1396 1120">      </div> <div data-bbox="829 1113 1189 1196"> <p>R-41017175 www.bis.gov.in</p>  </div> <div data-bbox="1018 1171 1163 1196"> <p>180364-12</p> </div> <div data-bbox="829 1202 1142 1335"> <p>직류전원장치 AC/DC ADAPTER KTC HU10499-10005A 모델명:GT-21097-3005 Mfr. Name: GLOBTEK (SUZHOU) CO.,LTD A/S Center: 10-6221-6100</p> </div> <div data-bbox="821 1341 1402 1395"> <p>RoHS 仅适用于海拔2000米以下地区使用 仅适用于在非热带气候条件下使用</p> </div> <div data-bbox="829 1402 1268 1469"> <p>UK CA  S/N: XXXXXXXXX/XX</p> </div> <div data-bbox="850 1482 1369 1541"> <p>제조국가:중국/MADE IN CHINA/HECHO EN CHINA/ Китай Производство/中国制造</p> </div>
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<div data-bbox="231 257 686 369">  GlobTek, Inc. www.globtek.com </div> <div data-bbox="175 369 766 537"> <p>Fuente de alimentación de ITE/адаптер питания ICT/ITE POWER SUPPLY(电源适配器) P/N/Número de pieza/номер(料号): MODEL/Modelo/модель(型号): GT-21097-5048 INPUT/Entrada/вводить(输入): 100-240V~, 50/60Hz, 1.6A MAX OUTPUT/Salida/экспорт(输出): 48V --- 1.1A, 50W</p> </div> <div data-bbox="191 537 766 1075">            <p>PRECAUCION: PARA USO EN EQUIPOS ELECTRONICOS SOLAMENTE</p>     </div> <div data-bbox="175 1075 766 1276"> <p>仅适用于在海拔2000m以下地区使用 仅适用于在非热带气候条件下使用</p> <p>S/N:  XXXXXXXXXX/XX RoHS</p> <p>MADE IN CHINA/HECHO EN CHINA Китай Производство/中国制造</p> </div>	<div data-bbox="885 257 1340 369">  GlobTek, Inc. www.globtek.com </div> <div data-bbox="829 369 1420 537"> <p>Fuente de alimentación de ITE/адаптер питания ICT/ITE POWER SUPPLY(电源供应器) P/N/Número de pieza/номер(料号): MODEL/Modelo/модель(型号): GT-21097-3005 INPUT/Entrada/вход(输入): 100-240V~, 50/60Hz, 1.6A MAX Input only for India: 100-240V~, 50/60Hz, 1.6A MAX OUTPUT/Salida/выход(输出): 5.0V --- 6.0A, 30.0W</p> </div> <div data-bbox="829 537 1420 1075">            <p>PRECAUCION: PARA USO EN EQUIPOS ELECTRONICOS SOLAMENTE</p>     </div> <div data-bbox="813 1075 1420 1276"> <p>仅适用于在海拔2000米以下地区使用 仅适用于在非热带气候条件下使用</p> <p>S/N:  XXXXXXXXXX/XX RoHS</p> <p>MADE IN CHINA/HECHO EN CHINA/ Китай Производство/中国制造</p> </div>
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(Representative all the models GT*21097-5012-Y.Y,
GT*21097-5015-Y.Y, GT*21097-5018-Y.Y,
GT*21097-5024-Y.Y and GT*21097-5048-Y.Y)

(Representative all the models GT*21097-2003-Y.Y,
GT*21097-3005-Y.Y and GT*21097-4509-Y.Y)

Calibration:	<p>All instruments used in the tests given in this test report are calibrated and traceable to national or international standards.</p> <p>Further information about traceability will be given on request.</p>
Measurement uncertainty:	<p>Measurement uncertainties are calculated for all instruments and instrument set-ups given in this report. Calculations are based on the principles given in the standard EA-4/02 (Dec. 1999), IEC Guide 115:2007.</p> <p>Further information about measurement uncertainties will be given on request.</p>
Evaluation of results:	<p>If not explicitly stated otherwise in the standard, the test is passed if the measured value is equal to or below (above) the limit line, regardless of the measurement uncertainty. If the measured value is above (below) the limit line, the test is not passed – ref IEC Guide 115:2007. The instrumentation accuracy is within limits agreed by IECCE-CTL.</p>

Test item particulars:			
Product group	<input checked="" type="checkbox"/> end product	<input type="checkbox"/> built-in component	
Classification of use by	<input checked="" type="checkbox"/> Ordinary person	<input checked="" type="checkbox"/> Children likely present	
	<input type="checkbox"/> Instructed person		
	<input type="checkbox"/> Skilled person		
Supply connection.....	<input checked="" type="checkbox"/> AC mains	<input type="checkbox"/> DC mains	
	<input type="checkbox"/> 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 checked="" type="checkbox"/> appliance coupler		
	<input type="checkbox"/> direct plug-in		
	<input type="checkbox"/> pluggable equipment type B -		
	<input type="checkbox"/> non-detachable supply cord		
	<input type="checkbox"/> appliance coupler		
	<input type="checkbox"/> permanent connection		
Considered current rating of protective device.....	<input type="checkbox"/> mating connector	<input type="checkbox"/> other:	
	<input checked="" type="checkbox"/> 16 A (20A for Canada and US);		
	Location: <input checked="" type="checkbox"/> building	<input type="checkbox"/> equipment	
Equipment mobility	<input type="checkbox"/> N/A		
	<input checked="" type="checkbox"/> movable	<input type="checkbox"/> hand-held	<input type="checkbox"/> transportable
	<input type="checkbox"/> direct plug-in	<input type="checkbox"/> stationary	<input type="checkbox"/> for building-in
	<input type="checkbox"/> wall/ceiling-mounted	<input type="checkbox"/> SRME/rack-mounted	
	<input type="checkbox"/> other:		
Overvoltage 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 checked="" type="checkbox"/> Class I	<input type="checkbox"/> Class II	<input type="checkbox"/> Class III
	<input type="checkbox"/> Not classified	<input type="checkbox"/>	
Special installation location	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> restricted access area	
	<input type="checkbox"/> outdoor location	<input type="checkbox"/>	
Pollution degree (PD)	<input type="checkbox"/> PD 1	<input checked="" type="checkbox"/> PD 2	<input type="checkbox"/> PD 3
Manufacturer's specified T _{ma}	30°C		
IP protection class	<input type="checkbox"/> Outdoor: minimum °C		
	<input checked="" type="checkbox"/> IPX0	<input type="checkbox"/> IP____	
Power systems	<input checked="" type="checkbox"/> TN	<input type="checkbox"/> TT	<input checked="" type="checkbox"/> IT - 230 V _{L-L}
	<input type="checkbox"/> not AC mains		
Altitude during operation (m)	<input checked="" type="checkbox"/> 2000 m or less	<input type="checkbox"/> up to	
Altitude of test laboratory (m)	<input checked="" type="checkbox"/> 2000 m or less	<input type="checkbox"/> m	
Mass of equipment (kg)	Weight Approx.: 0.255 kg		
	Dimension Approx.: 117mm x 58mm x 33mm		

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: 2021-12-17 Date (s) of performance of tests: 2021-12-17 to 2022-01-13	
General remarks: "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60335-1:	
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) : GlobTek, Inc. 186 Veterans Dr. Northvale, NJ 07647 USA GlobTek (Suzhou) Co., Ltd Building 4, No. 76, Jin Ling East Rd., Suzhou Industrial Park, Suzhou, JiangSu 215021, China	

General product information and other remarks:

The equipment is a series of external type switching mode power supply adaptors (desktop type with appliance inlet).

External enclosure is made of V-0 plastic material. Two pieces of enclosure are enclosed with ultrasonic welding without screw.

The models GT-21097-3005, GT-21097-5012, GT-21097-5024 and GT-21097-5048 represent the worst case because the models have highest V, A and VA.

The DC output complies with requirements of Clause Q.1 only for model: GT-21097-5012-Y.Y, GT-21097-5015-Y.Y, GT-21097-5018-Y.Y, GT-21097-5024-Y.Y and GT-21097-5048-Y.Y.

Max. normal load condition: Output load to rated output.

Maximum recommended ambient (T_{mra}): 30°C.

Model Differences –

Explanation of model designation GT*21097-X-Y.Y:

“*” can be ‘M’ or ‘-’ or ‘H’ for market identification and not related to safety

“X” denotes the standard output power and voltage, which can be 2003, 3005, 4509, 5012, 5015, 5018, 5024 or 5048, the former two numbers of figures indicate max. output power, max. 50W and the latter two numbers of figures indicate standard model output voltage.

“-Y.Y” is optional variable or blank for specifying output voltage deviation from standard model; which means subcontracting volts from standard output voltage in 0.1V increments or blank; 0.1 min. to 23.9 max., actual voltage range is 3.3-48V only.

The model designations and ratings are detailed as follows:

Model	Standard model	Standard model output voltage (V)	Standard model output current (A)	Y.Y scope	Output voltage range(V)	Max output power (W)
GT*21097-2003-Y.Y	GT*21097-2003	DC 3.3V	6A	0.1-0.3 or blank	3.0-3.3	20
GT*21097-3005-Y.Y	GT*21097-3005	DC 5V	6A	0.1-1.6 or blank	3.4-5	30
GT*21097-4509-Y.Y	GT*21097-4509	DC 9V	5A	0.1-3.9 or blank	5.1-9	45
GT*21097-5012-Y.Y	GT*21097-5012	DC 12V	4.17A	0.1-2.9 or blank	9.1-12	50
GT*21097-5015-Y.Y	GT*21097-5015	DC 15V	3.3A	0.1-2.9 or blank	12.1-15	50
GT*21097-5018-Y.Y	GT*21097-5018	DC 18V	2.8A	0.1-2.9 or blank	15.1-18	50
GT*21097-5024-Y.Y	GT*21097-5024	DC 24V	2.1A	0.1-5.9 or blank	18.1-24	50
GT*21097-5048-Y.Y	GT*21097-5048	DC 48V	1.1A	0.1-23.9 or blank	24.1-48	50

The output current can vary up to its maximum rated current provided the max. output power is not exceeded.

All models are similar to each other except for model name, output ratings, transformer T1, ripple capacitor C22 and components in the secondary.

There are two types of PCB layout, PCB layout A and PCB layout B, used in all models. They use same circuit diagram and have some tiny differences (see photos page). All tests were applied to PCB layout A and some relevant tests were applied to PCB layout B.

This equipment is intended to operate in a "normal" environment (Offices and homes).

This equipment is not an electromedical equipment intended to be physically connected to a patient.

Equipment used in vehicles, ships or aircrafts, in tropical countries, or at elevations > 2000m:
This equipment is intended to operate in a "normal" environment (Offices and homes) and is intended to be operated under altitude up to 2000m, specified in table 17 of IEC 62368-1.

OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	Possible Hazard			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
ES3: Primary circuits conductively connected to the mains and secondary circuits before DC output.	Ordinary	N/A	N/A	Enclosure: Annex T, no openings
ES3: Primary circuits conductively connected to the mains	Ordinary	N/A	N/A	Cl. & Cr. Distance comply 5.4.2 & 5.4.3; Dielectric Strength Test 5.4.9; Component comply Annex G
ES3: Primary Circuit (X-cap)	Ordinary	N/A	N/A	Bleeder resistor Voltage: according to 5.5.2.2
ES3: Primary circuits conductively connected to the mains	Ordinary	Basic insulation: Distances: cl. 5.4.2 and 5.4.3	Protective bonding conductor (wire) comply 5.6.4 (Table G.5); Instruction on label for class I connection	N/A
ES1: DC output	Ordinary	N/A	N/A	N/A
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 st S	2 nd S
PS3: Internal circuit	Entry of foreign objects	N/A	N/A	No opening
PS3: Internal circuit	Internal combustible material	1)	Min. V-1 PCB; Min. V-0 Enclosure Components comply with cl 6.4.6	N/A
PS2: DC output	Combustible material - Output wire	Comply with Annex Q	6.5.1 Complied with 60695-	N/A

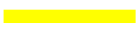
			11-21 or equivalent	
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
N/A	Ordinary	N/A	N/A	N/A
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS1: Sharp edges and corners (none)	Ordinary	N/A	N/A	N/A
MS1: Equipment mass less than 7kg (0.255kg)	Ordinary	N/A	N/A	N/A
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1: Accessible parts	Ordinary	N/A	N/A	N/A
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
RS1: LED indicating lamp (Diffusive type)	Ordinary	N/A	N/A	N/A
Supplementary Information:				
“B” – Basic Safeguard; “S” – Supplementary Safeguard; “R” – Reinforced Safeguard				
1) No ignition, Components inside of fire enclosure which measured temperature <300°C during test under normal and abnormal operating conditions, refer to table 5.4.1.4, 9.3, B.1.5, B.2.6, and table B.3, B.4.				

ENERGY SOURCE DIAGRAM

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



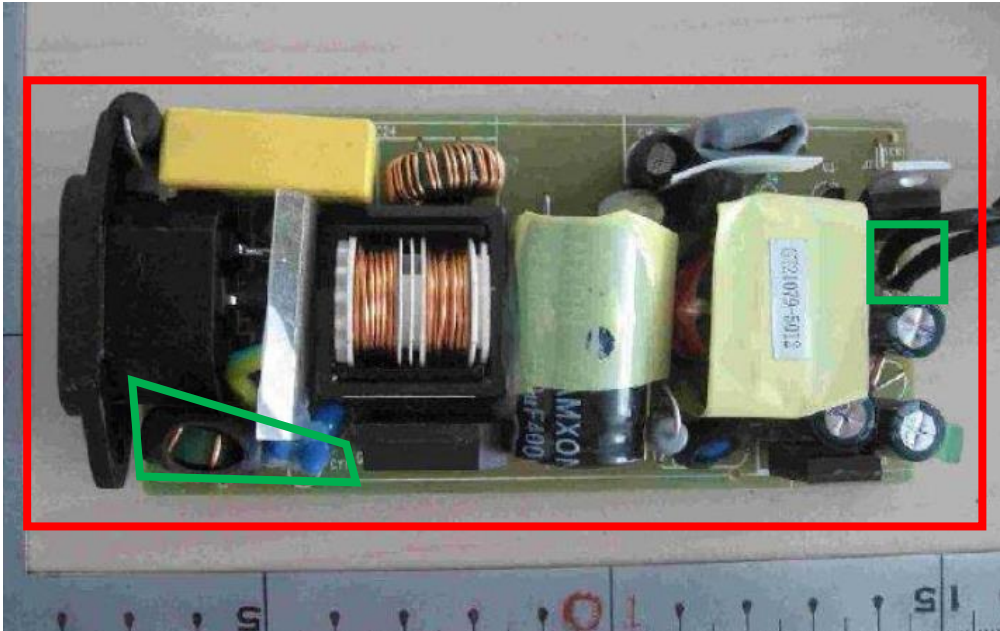
Class 1



Class 2



Class 3



☒ ES

☐ PS

☐ MS

☐ TS

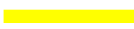
☐ RS

ENERGY SOURCE DIAGRAM

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



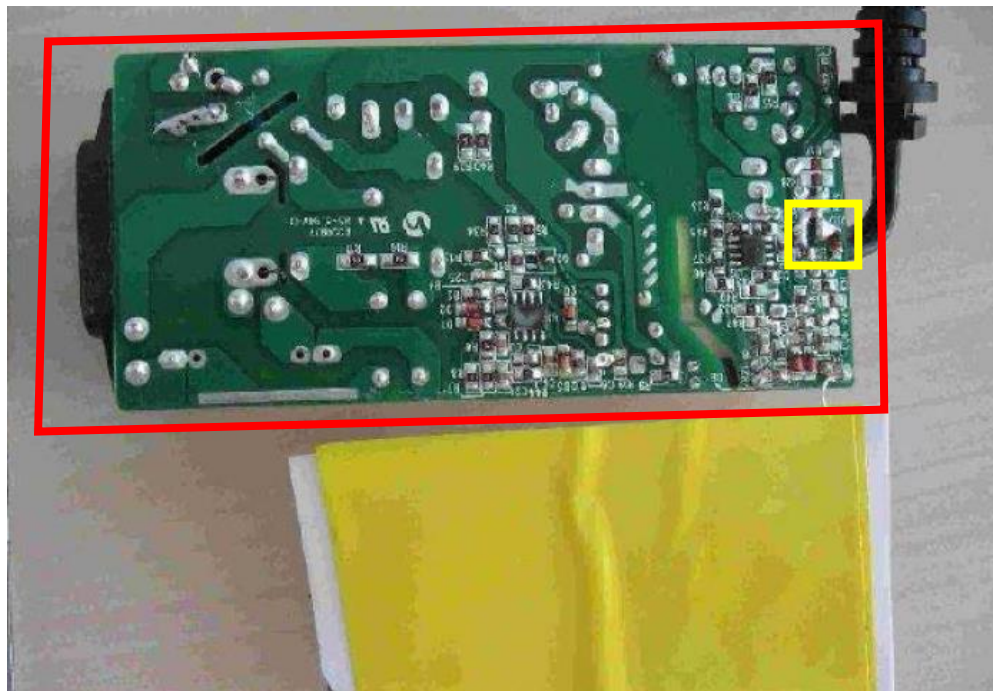
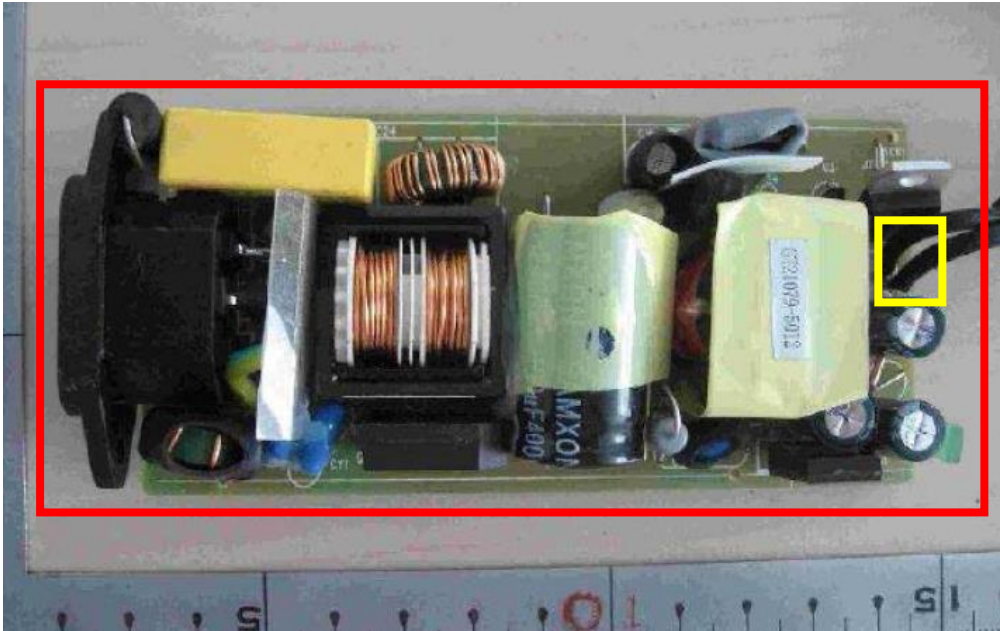
Class 1



Class 2



Class 3



☐ ES

☒ PS

☐ MS

☐ TS

☐ RS

ENERGY SOURCE DIAGRAM		
Indicate which energy sources are included in the energy source diagram. Insert diagram below		
<div></div> Class 1	<div></div> Class 2	<div></div> Class 3
<div></div> <div><input type="checkbox"/> ES <input type="checkbox"/> PS <input checked="" type="checkbox"/> MS <input checked="" type="checkbox"/> TS <input type="checkbox"/> RS</div>		

ENERGY SOURCE DIAGRAM		
Indicate which energy sources are included in the energy source diagram. Insert diagram below		
<div></div> Class 1	<div></div> Class 2	<div></div> Class 3
<div></div>		
<div><input type="checkbox"/> ES <input type="checkbox"/> PS <input type="checkbox"/> MS <input type="checkbox"/> TS <input checked="" type="checkbox"/> RS</div>		

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	Refer to summary of testing and appended table 4.1.2.	P
4.1.2	Use of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard. Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 62368-1.	P
4.1.3	Equipment design and construction	Equipment is adequately designed and constructed.	P
4.1.4	Specified ambient temperature for outdoor use (°C) :	Not for outdoor use.	N/A
4.1.5	Constructions and components not specifically covered	No such part.	N/A
4.1.8	Liquids and liquid filled components (LFC)	No LFC.	N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness	See below:	P
4.4.3.1	General	(See below)	P
4.4.3.2	Steady force tests	(See Clause T.4)	P
4.4.3.3	Drop tests	(See Clause T.7)	P
4.4.3.4	Impact tests	(See Annex T.6)	P
4.4.3.5	Internal accessible safeguard tests	Internal part was not accessible.	P
4.4.3.6	Glass impact tests	No glass.	N/A
4.4.3.7	Glass fixation tests	No laminated glass.	N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests	(See Annex T.8)	P
4.4.3.9	Air comprising a safeguard	(See Annex T.2)	P
4.4.3.10	Accessibility, glass, safeguard effectiveness	All safeguards remain effective.	P
4.4.4	Displacement of a safeguard by an insulating liquid	No insulating liquid used.	N/A
4.4.5	Safety interlocks	No interlock.	N/A
4.5	Explosion		P
4.5.1	General		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.5.2	No explosion during normal/abnormal operating condition	(See Clause B.2, B.3)	P
	No harm by explosion during single fault conditions		N/A
4.6	Fixing of conductors	See below:	P
	Fix conductors not to defeat a safeguard	After 10N test, no reducing clearances or creepage distances.	P
	Compliance is checked by test..... :	(See appended table T.2)	P
4.7	Equipment for direct insertion into mains socket-outlets		N/A
4.7.2	Mains plug part complies with relevant standard .. :	Not equipment for direct insertion into mains socket-outlets	—
4.7.3	Torque (Nm) :		N/A
4.8	Equipment containing coin/button cell batteries		N/A
4.8.1	General	No such battery.	N/A
4.8.2	Instructional safeguard :		N/A
4.8.3	Battery compartment door/cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	Likelihood of fire or shock due to entry of conductive object		N/A
4.10	Component requirements		P
4.10.1	Disconnect Device	(See Annex L)	P
4.10.2	Switches and relays	No such component used.	N/A

5	ELECTRICALLY-CAUSED INJURY		P
5.2	Classification and limits of electrical energy sources		P
5.2.2	ES1, ES2 and ES3 limits	See below:	P
5.2.2.2	Steady-state voltage and current limits :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits :	(See appended table 5.2)	P
5.2.2.4	Single pulse limits :	No single pulses generated.	N/A
5.2.2.5	Limits for repetitive pulses :	No repetitive pulses generated.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.6	Ringling signals	Not used an analogue telephone network ringing signal in the equipment.	N/A
5.2.2.7	Audio signals	No audio signal.	N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	Sufficient safeguard was provided between energy source and ordinary, instructed and skilled persons.	P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits	Reinforced safeguard was provided between energy source and ordinary, instructed and skilled persons.	P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards	ES3 parts are not accessible to ordinary persons.	P
	Accessibility to outdoor equipment bare parts	Not intend for outdoor used.	N/A
5.3.2.2	Contact requirements	No openings in the enclosure.	P
	Test with test probe from Annex V		P
5.3.2.2 a)	Air gap – electric strength test potential (V)		N/A
5.3.2.2 b)	Air gap – distance (mm)		N/A
5.3.2.3	Compliance		P
5.3.2.4	Terminals for connecting stripped wire	No such terminal.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	Insulating material complied with cl. 5 and Annex T. No hygroscopic material.	P
5.4.1.3	Material is non-hygroscopic	See clause 5.4.8 and 5.4.9	P
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4) Transformer insulation system is certified by UL.	P
5.4.1.5	Pollution degrees	2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling test		N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such part.	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such part.	N/A
5.4.1.8	Determination of working voltage	(See appended table 5.4.1.8)	P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	No such part.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.10.2	Vicat test.....:		N/A
5.4.1.10.3	Ball pressure test		N/A
5.4.2	Clearances		P
5.4.2.1	General requirements	See below	P
	Clearances in circuits connected to AC Mains, Alternative method		N/A
5.4.2.2	Procedure 1 for determining clearance	The highest voltage is temporary overvoltage.	P
	Temporary overvoltage	2000V peak	—
5.4.2.3	Procedure 2 for determining clearance	See below:	P
5.4.2.3.2.2	a.c. mains transient voltage	2500V peak	—
5.4.2.3.2.3	d.c. mains transient voltage		—
5.4.2.3.2.4	External circuit transient voltage.....:		—
5.4.2.3.2.5	Transient voltage determined by measurement		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	Not used.	N/A
5.4.2.5	Multiplication factors for clearances and test voltages	2000m.	N/A
5.4.2.6	Clearance measurement	(See appended table 5.4.2)	P
5.4.3	Creepage distances	(See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material group	IIIb	—
5.4.3.4	Creepage distances measurement	(See appended table 5.4.3)	P
5.4.4	Solid insulation		P
5.4.4.1	General requirements	See below:	P
5.4.4.2	Minimum distance through insulation	(See appended table 5.4.4.2)	P
5.4.4.3	Insulating compound forming solid insulation	Evaluated with cl. 5.4.4.4	P
5.4.4.4	Solid insulation in semiconductor devices	Certificated optocoupler used and comply with G.12 (See appended table 4.1.2)	P
5.4.4.5	Insulating compound forming cemented joints		N/A
5.4.4.6	Thin sheet material		P
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material	(See appended table 5.4.4.2)	P
	Number of layers (pcs)		P
5.4.4.6.3	Non-separable thin sheet material	Not used.	N/A
	Number of layers (pcs)		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6.4	Standard test procedure for non-separable thin sheet material		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components	Insulation on winding wire complies with G.6.	P
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P , K_R , d , V_{PW} (V)	(See appended Table 5.4.4.9)	P
	Alternative by electric strength test, tested voltage (V), K_R	(See appended Tables 5.4.4.9 and 5.4.9)	P
5.4.5	Antenna terminal insulation	No Antenna terminal used.	N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance (M Ω)		N/A
	Electric strength test		N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning	For equipment and all source transformers	P
	Relative humidity (%), temperature (°C), duration (h)	95% r.h., 30°C, 120hr	—
5.4.9	Electric strength test	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for type test of solid insulation.....	Test voltage based on transient voltages. (See appended table 5.4.9)	P
5.4.9.2	Test procedure for routine test		N/A
5.4.10	Safeguards against transient voltages from 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
5.4.10.3	Verification for insulation breakdown for impulse test		N/A
5.4.11	Separation between external circuits and earth	The equipment not intended to connect to external circuits.	N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V)		—
	Nominal voltage U_{peak} (V)		—
	Max increase due to variation ΔU_{sp}		—
	Max increase due to ageing ΔU_{sa}		—
5.4.11.3	Test method and compliance		N/A
5.4.12	Insulating liquid		N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid		N/A
5.4.12.3	Compatibility of an insulating liquid		N/A
5.4.12.4	Container for insulating liquid		N/A
5.5	Components as safeguards		P
5.5.1	General		P
5.5.2	Capacitors and RC units	See below:	P
5.5.2.1	General requirement	X capacitors complied with IEC 60384-14. Y capacitors complied with IEC 60384-14.	P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector	(See appended table 5.5.2.2)	P
5.5.3	Transformers	T1 (See Annex G.5.3)	P
5.5.4	Optocouplers	Optocouplers (U2) comply with the requirements of 5.4 or with Clause G.12. (See Annex G.12)	P
5.5.5	Relays	No such component used.	N/A
5.5.6	Resistors	Certified bleeder resistors (R11 and R16 in series) used after fuse and used as discharge safeguard. (See appended table 4.1.2)	P
5.5.7	SPDs	No such component used.	N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable		N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment	Not for outdoor used.	N/A
	RCD rated residual operating current (mA)		—
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors		P
5.6	Protective conductor		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.2	Requirement for protective conductors		P
5.6.2.1	General requirements	Certified appliance inlet used. Green-and-yellow wire is hooked in, soldered and additionally covered by heat shrinkable tubing to appliance inlet ground pin with its other end soldered and additionally secured by glue to PCB.	P
5.6.2.2	Colour of insulation	Green-and-yellow colour.	P
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm ²) :		—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors		P
5.6.4.1	Protective bonding conductors	See below:	P
	Protective bonding conductor size (mm ²). :	18AWG	—
5.6.4.2	Protective current rating (A)..... :	Input rated current: 1.6A	—
5.6.5	Terminals for protective conductors		P
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)..... :	Certified AC inlet used.	P
	Terminal size for connecting protective bonding conductors (mm) :	Rated current: 1.6A; 18AWG wire used.	P
5.6.5.2	Corrosion		P
5.6.6	Resistance of the protective bonding system		P
5.6.6.1	Requirements	Protective bonding conductor and appliance inlet does not have excessive resistance.	P
5.6.6.2	Test Method..... :	(See appended table 5.6.6)	P
5.6.6.3	Resistance (Ω) or voltage drop..... :	(See appended table 5.6.6)	P
5.6.7	Reliable connection of a protective earthing conductor	Not permanently connected equipment.	N/A
5.6.8	Functional earthing	No such application.	N/A
	Conductor size (mm ²)..... :		N/A
	Class II with functional earthing marking :		N/A
	Appliance inlet cl & cr (mm) :		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current	(See appended table 5.7.4)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.2.2	Measurement of voltage		P
5.7.3	Equipment set-up, supply connections and earth connections		P
5.7.4	Unearthed accessible parts	(See appended table 5.7.4)	P
5.7.5	Earthed accessible conductive parts	(See appended table 5.7.5)	P
5.7.6	Requirements when touch current exceeds ES2 limits	Touch current is within ES1.	N/A
	Protective conductor current (mA)		N/A
	Instructional Safeguard		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits	The equipment not intended connect to external circuits.	N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A
	a) Equipment connected to earthed external circuits, current (mA)		N/A
	b) Equipment connected to unearthed external circuits, current (mA)		N/A
5.8	Backfeed safeguard in battery backed up supplies		N/A
	Mains terminal ES		N/A
	Air gap (mm)		N/A

6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of PS and PIS		P
6.2.2	Power source circuit classifications	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources	See below	P
6.2.3.1	Arcing PIS		N/A
6.2.3.2	Resistive PIS	(See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6, and table B.3, B.4)	P
	Combustible materials outside fire enclosure	No combustible material outside fire enclosure.	N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method	Control fire spread was used.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	Supplementary safeguards		N/A
6.4.3.2	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	All circuit is PS2 or above.	P
6.4.5.2	Supplementary safeguards	(See appended tables 4.1.2 and Annex G) Fire enclosure used and output cable complied cl.6.5.	P
6.4.6	Control of fire spread in PS3 circuits	The enclosure made of V-0 and components comply with 6.4.6. (Refer to table 4.1.2)	P
6.4.7	Separation of combustible materials from a PIS	All circuit are resistive PIS. Fire enclosure is made by V-0 material. Components complied with requirement, detail refer to table 6.2.3.1 and 6.2.3.2	P
6.4.7.2	Separation by distance	All components are within PIS fire cone, refer to table 6.2.3.2.	P
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	See below:	P
6.4.8.2	Fire enclosure and fire barrier material properties	Fire enclosure is made of V-0 material.	P
6.4.8.2.1	Requirements for a fire barrier	No fire barrier.	N/A
6.4.8.2.2	Requirements for a fire enclosure	Available power <4000W. Fire enclosure is made of V-0 material.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	No openings in the fire enclosure.	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 and properties		N/A
	Openings dimensions (mm)..... :		N/A
6.4.8.3.4	Bottom openings and properties		N/A
	Openings dimensions (mm)..... :		N/A
	Flammability tests for the bottom of a fire enclosure		N/A
	Instructional Safeguard..... :		N/A
6.4.8.3.5	Side openings and properties		N/A
	Openings dimensions (mm)..... :		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)	No such part used	N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating	Fire enclosure is made of V-0 material.	P
6.4.9	Flammability of insulating liquid.....	No such part.	N/A
6.5	Internal and external wiring		P
6.5.1	General requirements	Internal wires complied with IEC 60695-11-21. The test method described in IEC 60695-11-21 is considered equivalent to that test wiring materials which bearing VW-1 rating according to UL 758 3rd, see table 4.1.2 for details.	P
6.5.2	Requirements for interconnection to building wiring	Not intended to provide power over the wiring system to remote equipment.	N/A
6.5.3	Internal wiring size (mm ²) for socket-outlets.....		N/A
6.6	Safeguards against fire due to the connection to additional equipment		P

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards or personal protective equipment (PPE)		N/A
	Personal safeguards and instructions	No hazardous substances.	—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010).....	No hazardous substances.	—
7.6	Batteries and their protection circuits		N/A

8	MECHANICALLY-CAUSED INJURY		P
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners		P
8.4.1	Safeguards	MS1: No sharp edges or corners. Mass less than 7 kg (0.255kg)	P
	Instructional Safeguard		N/A
8.4.2	Sharp edges or corners		N/A
8.5	Safeguards against moving parts		N/A
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts	No moving parts.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard.....:		N/A
8.5.4	Special categories of equipment containing moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m).....:		N/A
	Space between end point and nearest fixed mechanical part (mm)		N/A
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts		N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N).....:		N/A
8.5.4.3.5	Compliance		N/A
8.5.5	High pressure lamps		N/A
	Explosion test.....:		N/A
8.5.5.3	Glass particles dimensions (mm)		N/A
8.6	Stability of equipment		N/A
8.6.1	General	MS1.	N/A
	Instructional safeguard.....:		N/A
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm)		—
	Tilt test		N/A
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test		N/A
8.7	Equipment mounted to wall, ceiling or other structure		N/A
8.7.1	Mount means type		N/A
8.7.2	Test methods		N/A
	Test 1, additional downwards force (N).....		N/A
	Test 2, number of attachment points and test force (N).....		N/A
	Test 3 Nominal diameter (mm) and applied torque (Nm).....		N/A
8.8	Handles strength		N/A
8.8.1	General		N/A
8.8.2	Handle strength test		N/A
	Number of handles.....		—
	Force applied (N)		—
8.9	Wheels or casters attachment requirements		N/A
8.9.2	Pull test		N/A
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions.....		N/A
8.10.3	Cart, stand or carrier loading test		N/A
	Loading force applied (N)		N/A
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Force applied (N)		—
8.10.6	Thermoplastic temperature stability		N/A
8.11	Mounting means for slide-rail mounted equipment (SRME)		N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard.....		N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force (N) applied.....		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance		N/A
8.12	Telescoping or rod antennas		N/A
	Button/ball diameter (mm)		—

9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications		P
9.3	Touch temperature limits		P
9.3.1	Touch temperatures of accessible parts	(See appended table 9.3)	P
9.3.2	Test method and compliance		P
9.4	Safeguards against thermal energy sources		P
9.5	Requirements for safeguards		P
9.5.1	Equipment safeguard	Enclosure provided to limit the transfer of thermal energy of internal parts under normal operating conditions and abnormal operating conditions.	P
9.5.2	Instructional safeguard.....	Instructional safeguard is not required.	N/A
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General	Not applicable.	N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance		N/A

10	RADIATION		P
10.2	Radiation energy source classification		P
10.2.1	General classification	LED light is indicating lights type, classified as RS1.	P
	Lasers		—
	Lamps and lamp systems		—
	Image projectors		—
	X-Ray		—
	Personal music player		—
10.3	Safeguards against laser radiation		N/A
	The standard(s) equipment containing laser(s) comply		N/A
10.4	Safeguards against optical radiation from lamps and lamp systems (including		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	LED types)		
10.4.1	General requirements		N/A
	Instructional safeguard provided for accessible radiation level needs to exceed		N/A
	Risk group marking and location		N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure	No UV radiation.	N/A
10.4.3	Instructional safeguard		N/A
10.5	Safeguards against X-radiation		N/A
10.5.1	Requirements	Not X-radiation.	N/A
	Instructional safeguard for skilled persons		—
10.5.3	Maximum radiation (pA/kg)		—
10.6	Safeguards against acoustic energy sources		N/A
10.6.1	General	Not personal music player.	N/A
10.6.2	Classification		N/A
	Acoustic output $L_{Aeq,T}$, dB(A)		N/A
	Unweighted RMS output voltage (mV)		N/A
	Digital output signal (dBFS)		N/A
10.6.3	Requirements for dose-based systems		N/A
10.6.3.1	General requirements		N/A
10.6.3.2	Dose-based warning and automatic decrease		N/A
10.6.3.3	Exposure-based warning and requirements		N/A
	30 s integrated exposure level (MEL30)		N/A
	Warning for MEL ≥ 100 dB(A)		N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		N/A
	Instructional safeguards		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input		N/A
	Listening device input voltage (mV)		N/A
10.6.6.2	Corded listening devices with digital input		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A)		N/A
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A)		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.1	General		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
B.2	Normal operating conditions		P
B.2.1	General requirements	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers	(See Annex E)	N/A
B.2.3	Supply voltage and tolerances	+10% / -10% (264V / 90V)	P
B.2.5	Input test	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General	See below:	P
B.3.2	Covering of ventilation openings	No openings in enclosure.	N/A
	Instructional safeguard		N/A
B.3.3	DC mains polarity test	AC mains supplied.	N/A
B.3.4	Setting of voltage selector	No voltage selector.	N/A
B.3.5	Maximum load at output terminals	(See appended table B.3)	P
B.3.6	Reverse battery polarity	No battery.	N/A
B.3.7	Audio amplifier abnormal operating conditions	No audio amplifier.	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions.....	All safeguards remain effective. (See appended table B.3)	P
B.4	Simulated single fault conditions		P
B.4.1	General		P
B.4.2	Temperature controlling device	No such device.	N/A
B.4.3	Blocked motor test	No motor.	N/A
B.4.4	Functional insulation	See below	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated PCB used.	N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.4)	P
B.4.6	Short circuit or disconnection of passive components	(See appended table B.4)	P
B.4.7	Continuous operation of components	No component intended for short-time operation or intermittent operation.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.4.8	Compliance during and after single fault conditions :	Enclosure limited to TS1 during and after single fault conditions. Accessible output terminal limited to ES1 and TS1 during and after single fault conditions. No flame during and after single fault condition. (See appended table B.4)	P
B.4.9	Battery charging and discharging under single fault conditions	No battery.	N/A
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus..... :		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure test		N/A
C.2.4	Xenon-arc light-exposure test		N/A
D	TEST GENERATORS		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Electrical energy source classification for audio signals		N/A
	Maximum non-clipped output power (W)..... :		—
	Rated load impedance (Ω) :		—
	Open-circuit output voltage (V)..... :		—
	Instructional safeguard :		—
E.2	Audio amplifier normal operating conditions		N/A
	Audio signal source type..... :		—
	Audio output power (W) :		—
	Audio output voltage (V) :		—
	Rated load impedance (Ω) :		—
	Requirements for temperature measurement		N/A
E.3	Audio amplifier abnormal operating conditions		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General		P
	Language :	English verified.	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1	A, V, Hz	P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific	AC symbol (IEC 60417-5032), DC symbol (IEC 60417-5031).	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	The required marking is located on the external enclosure of the equipment.	P
F.3.2	Equipment identification markings	Refer below.	P
F.3.2.1	Manufacturer identification :	See copy of marking plate.	—
F.3.2.2	Model identification :	See page 2.	—
F.3.3	Equipment rating markings	Refer below.	P
F.3.3.1	Equipment with direct connection to mains	Refer F.3.3.3 – F.3.3.6	P
F.3.3.2	Equipment without direct connection to mains	Direct connection to mains.	N/A
F.3.3.3	Nature of the supply voltage :	~ (IEC 60417-5032)	—
F.3.3.4	Rated voltage..... :	See page 2.	—
F.3.3.5	Rated frequency :	See page 2.	—
F.3.3.6	Rated current or rated power..... :	See page 2.	—
F.3.3.7	Equipment with multiple supply connections	Single supply connection.	N/A
F.3.4	Voltage setting device	No voltage selector. Auto ranging used.	N/A
F.3.5	Terminals and operating devices	Refer below.	N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings :	No mains outlet.	N/A
F.3.5.2	Switch position identification marking :	No switch.	N/A
F.3.5.3	Replacement fuse identification and rating markings :	Non-replaceable PCB-mount fuse: F1 T1.6A 250V	P
	Instructional safeguards for neutral fuse :		N/A
F.3.5.4	Replacement battery identification marking..... :	No battery.	N/A
F.3.5.5	Neutral conductor terminal	Not permanently connected equipment.	N/A
F.3.5.6	Terminal marking location	No such terminals.	N/A
F.3.6	Equipment markings related to equipment classification	Refer below.	P
F.3.6.1	Class I equipment	Certified appliance inlet used.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.6.1.1	Protective earthing conductor terminal..... :		N/A
F.3.6.1.2	Protective bonding conductor terminals :		N/A
F.3.6.2	Equipment class marking..... :		N/A
F.3.6.3	Functional earthing terminal marking :		N/A
F.3.7	Equipment IP rating marking :	No IP rating.	N/A
F.3.8	External power supply output marking :	See copy of marking plate	P
F.3.9	Durability, legibility and permanence of marking	Marking comply with the requirements.	P
F.3.10	Test for permanence of markings	Markings withstand the required test.	P
F.4	Instructions		N/A
	a) Information prior to installation and initial use		N/A
	b) Equipment for use in locations where children not likely to be present		N/A
	c) Instructions for installation and interconnection		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Equipment intended to be fastened in place		N/A
	f) Instructions for audio equipment terminals		N/A
	g) Protective earthing used as a safeguard		N/A
	h) Protective conductor current exceeding ES2 limits		N/A
	i) Graphic symbols used on equipment		N/A
	j) Permanently connected equipment not provided with all-pole mains switch		N/A
	k) Replaceable components or modules providing safeguard function		N/A
	l) Equipment containing insulating liquid		N/A
	m) Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards		N/A
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General	No mains switch.	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance		N/A
G.2	Relays		N/A
G.2.1	Requirements	No relay.	N/A
G.2.2	Overload test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.2.3	Relay controlling connectors supplying power to other equipment		N/A
G.2.4	Test method and compliance		N/A
G.3	Protective devices		P
G.3.1	Thermal cut-offs		N/A
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Test method and compliance		N/A
G.3.2	Thermal links		N/A
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		N/A
	b) Thermal links tested as part of the equipment		N/A
G.3.2.2	Test method and compliance		N/A
G.3.3	PTC thermistors		N/A
G.3.4	Overcurrent protection devices	F1 complied with IEC 60127.	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions		N/A
G.4	Connectors		P
G.4.1	Spacings	Certified inlet used.	P
G.4.2	Mains connector configuration.....	Certified inlet used.	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	Output connector can't insert into main socket-outlet.	P
G.5	Wound components		P
G.5.1	Wire insulation in wound components	(See Annex J)	P
G.5.1.2	Protection against mechanical stress	Protection against mechanical stress is provided by insulation tape or tube.	P
G.5.2	Endurance test		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Test time (days per cycle).....		—
	Test temperature (°C)		—
G.5.2.3	Wound components supplied from the mains		N/A
G.5.2.4	No insulation breakdown		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.5.3	Transformers		P
G.5.3.1	Compliance method..... :	IEC 62368-1 cl.G.5.3.2 & G.5.3.3.	P
	Position :	ES3 to ES1 in T1.	P
	Method of protection :	Inherent.	P
G.5.3.2	Insulation	Reinforced.	P
	Protection from displacement of windings :	Refer to transformer specification.	—
G.5.3.3	Transformer overload tests	(See appended table B.3)	P
G.5.3.3.1	Test conditions	Switch mode transformers tested in the complete equipment. Load applied to the output of the power supply unit.	P
G.5.3.3.2	Winding temperatures	Current limiting transformer, Class 130. Temperature limit: 175°C	P
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW	FIW not used.	N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter :		—
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation..... :		N/A
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N/A
G.5.3.4.5	Thermal cycling test and compliance		N/A
G.5.3.4.6	Partial discharge test		N/A
G.5.3.4.7	Routine test		N/A
G.5.4	Motors	No motor.	N/A
G.5.4.1	General requirements		N/A
G.5.4.2	Motor overload test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4.2	Locked-rotor overload test		N/A
	Test duration (days) :		—
G.5.4.5	Running overload test for DC motors		N/A
G.5.4.5.2	Tested in the unit		N/A
G.5.4.5.3	Alternative method		N/A
G.5.4.6	Locked-rotor overload test for DC motors		N/A
G.5.4.6.2	Tested in the unit		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Maximum Temperature		N/A
G.5.4.6.3	Alternative method		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage		—
G.6	Wire Insulation		P
G.6.1	General	<p>Peak working voltage is ES3. Not under mechanical stress. Basic insulation is required.</p> <p>Triple insulated wire in transformer, Peak working voltage is ES3. Reinforced insulation is required. IEC 60950-1 Annex U certified component.</p>	P
G.6.2	Enamelled winding wire insulation		N/A
G.7	Mains supply cords		N/A
G.7.1	General requirements	Mains supply cords is not covered in this report.	N/A
	Type		—
G.7.2	Cross sectional area (mm ² or AWG)		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)		N/A
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)		N/A
G.7.3.2.4	Strain relief and cord anchorage material		N/A
G.7.4	Cord Entry		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Test method and compliance		N/A
	Overall diameter or minor overall dimension, <i>D</i> (mm)		—
	Radius of curvature after test (mm)		—
G.7.6	Supply wiring space		N/A
G.7.6.1	General requirements		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	Varistors		N/A
G.8.1	General requirements	No such component used.	N/A
G.8.2	Safeguards against fire		N/A
G.8.2.1	General		N/A
G.8.2.2	Varistor overload test		N/A
G.8.2.3	Temporary overvoltage test		N/A
G.9	Integrated circuit (IC) current limiters		N/A
G.9.1	Requirements	No such component used.	N/A
	IC limiter output current (max. 5A)..... :		—
	Manufacturers' defined drift :		—
G.9.2	Test Program		N/A
G.9.3	Compliance		N/A
G.10	Resistors		P
G.10.1	General	Certified bleeder Resistors R1 & R2 in series used as safeguard. (See appended table 4.1.2)	P
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A
G.10.6	Overload test		N/A
G.11	Capacitors and RC units		P
G.11.1	General requirements	X1 or X2, Y1 and Y2 capacitors are certified according to IEC60384-14.	P
G.11.2	Conditioning of capacitors and RC units	Capacitors complied with IEC 60384-14.	P
G.11.3	Rules for selecting capacitors	X1 or X2, Y1 and Y2 capacitors are certified according to IEC60384-14.	P
G.12	Optocouplers		P
	Optocouplers comply with IEC 60747-5-5 with specifics	Certificated optocoupler used and comply with requirement. (See appended table 4.1.2)	P
	Type test voltage $V_{ini,a}$:		—
	Routine test voltage, $V_{ini,b}$:		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.13	Printed boards	See below:	P
G.13.1	General requirements	Primary and secondary circuits are not insulated by PCB layers.	P
G.13.2	Uncoated printed boards	Safeguard complied cl.5.4.2 & 5.4.3.	P
G.13.3	Coated printed boards	Not used.	N/A
G.13.4	Insulation between conductors on the same inner surface	Inner surface not used with cemented joint requirements.	N/A
G.13.5	Insulation between conductors on different surfaces	Basic insulation. No thickness requirement.	N/A
	Distance through insulation :		N/A
	Number of insulation layers (pcs) :		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2	Test method and compliance		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements :		N/A
G.15	Pressurized liquid filled components		N/A
G.15.1	Requirements		N/A
G.15.2	Test methods and compliance		N/A
G.15.2.1	Hydrostatic pressure test		N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.3	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
G.16.1	Condition for fault tested is not required	No such component used.	N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test..... :		—
	Mains voltage that impulses to be superimposed on :		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test..... :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.16.3	Capacitor discharge test		N/A
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringling 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		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)		N/A
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		P
J.1	General		P
	Winding wire insulation	Triple insulated wire used in transformers are separately approved.	—
	Solid round winding wire, diameter (mm)		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm ²)		N/A
J.2/J.3	Tests and Manufacturing		—
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
	Instructional safeguard		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
K.5.1	Under single fault condition		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance		N/A
K.7	Interlock circuit isolation		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm)		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm)		N/A
	Electric strength test before and after the test of K.7.2.....		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	Both phase conductors were interrupted by appliance inlet.	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized	No parts remain energized, refer to cl.5.5.2.2.	N/A
L.4	Single-phase equipment	Both poles were disconnected simultaneously.	P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices	Not used.	N/A
L.7	Plugs as disconnect devices	No power cord coved in report.	N/A
L.8	Multiple power sources	Single power source.	N/A
	Instructional safeguard		N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Batteries and their cells comply with relevant IEC standards	No battery.	N/A
M.3	Protection circuits for batteries provided within the equipment		N/A
M.3.1	Requirements		N/A
M.3.2	Test method		N/A
	Overcharging of a rechargeable battery		N/A
	Excessive discharging		N/A
	Unintentional charging of a non-rechargeable battery		N/A
	Reverse charging of a rechargeable battery		N/A
M.3.3	Compliance		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.4	Additional safeguards for equipment containing a portable secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Compliance..... :		N/A
M.4.3	Fire enclosure :		N/A
M.4.4	Drop test of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation and procedure for the drop test		N/A
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%): :		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance		N/A
M.5	Risk of burn due to short-circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A
M.6	Safeguards against short-circuits		N/A
M.6.1	External and internal faults		N/A
M.6.2	Compliance		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
	Calculated hydrogen generation rate :		N/A
M.7.2	Test method and compliance		N/A
	Minimum air flow rate, Q (m ³ /h) :		N/A
M.7.3	Ventilation tests		N/A
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A
	Hydrogen gas concentration (%) :		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	Obtained hydrogen generation rate..... :		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%) :		N/A
M.7.4	Marking :		N/A
M.8	Protection against internal ignition from external spark sources of batteries with aqueous electrolyte		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s)..... :		—
M.8.2.3	Correction factors :		—
M.8.2.4	Calculation of distance d (mm) :		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse		N/A
	Instructional safeguard :		N/A
N	ELECTROCHEMICAL POTENTIALS		P
	Material(s) used :		—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Value of X (mm) :	1.00mm	—
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECTS		N/A
P.1	General		N/A
P.2	Safeguards against entry or consequences of entry of a foreign object		N/A
P.2.1	General	No openings.	N/A
P.2.2	Safeguards against entry of a foreign object		N/A
	Location and Dimensions (mm) :		—
P.2.3	Safeguards against the consequences of entry of a foreign object		N/A
P.2.3.1	Safeguard requirements		N/A
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment		N/A
	Transportable equipment with metalized plastic parts :		N/A
P.2.3.2	Consequence of entry test..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	Metallized coatings and adhesives securing parts		N/A
P.4.1	General		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
P.4.2	Tests		N/A
	Conditioning, T _c (°C)		—
	Duration (weeks).....		—
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources		P
Q.1.1	Requirements		P
	a) Inherently limited output	The equipment against overload fault condition by using inherently limited output. (see appended table Annex Q.1) The DC output complies with requirements of Clause Q.1 only for model: GT-21097-5012-Y.Y, GT-21097-5015-Y.Y, GT-21097-5018-Y.Y, GT-21097-5024-Y.Y and GT-21097-5048-Y.Y.	P
	b) Impedance limited output		N/A
	c) Regulating network limited output		P
	d) Overcurrent protective device limited output		N/A
	e) IC current limiter complying with G.9		N/A
Q.1.2	Test method and compliance		P
	Current rating of overcurrent protective device (A)		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A)		N/A
	Current limiting method.....		—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General		N/A
R.2	Test setup		N/A
	Overcurrent protective device for test.....		—
R.3	Test method		N/A
	Cord/cable used for test.....		—
R.4	Compliance		N/A
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material	Fire enclosure is made from V-0 material. No testing required.	—
	Wall thickness (mm)		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
S.3	Flammability test for the bottom of a fire enclosure		N/A
S.3.1	Mounting of samples		N/A
S.3.2	Test method and compliance		N/A
	Mounting of samples		—
	Wall thickness (mm)		—
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosure materials of equipment with a steady state power exceeding 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
T	MECHANICAL STRENGTH TESTS		P
T.1	General		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		P
	Fall test	(See appended table T.6)	P
	Swing test	(See appended table T.6)	P
T.7	Drop test	(See appended table T.7)	P
T.8	Stress relief test	(See appended table T.8)	P
T.9	Glass Impact Test		N/A
T.10	Glass fragmentation test		N/A
	Number of particles counted		N/A

IEC 62368-1			
Clause	Requirement + Test		Verdict
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)		N/A
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General		N/A
	Instructional safeguard :		N/A
U.2	Test method and compliance for non-intrinsically protected CRTs		N/A
U.3	Protective screen		N/A
V	DETERMINATION OF ACCESSIBLE PARTS		P
V.1	Accessible parts of equipment		P
V.1.1	General	See below:	P
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes	No opening.	N/A
V.1.4	Plugs, jacks, connectors tested with blunt probe		N/A
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		P
V.2	Accessible part criterion		P
X	ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)		N/A
	Clearance	(See appended table X)	N/A
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		N/A
Y.1	General	Not intended for outdoor used.	N/A
Y.2	Resistance to UV radiation		N/A
Y.3	Resistance to corrosion		N/A
Y.3	Resistance to corrosion		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by..... :		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure		N/A
Y.3.5	Compliance		N/A
Y.4	Gaskets		N/A
Y.4.1	General		N/A
Y.4.2	Gasket tests		N/A
Y.4.3	Tensile strength and elongation tests		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Alternative test methods		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means		N/A
Y.5	Protection of equipment within an outdoor enclosure		N/A
Y.5.1	General		N/A
Y.5.2	Protection from moisture		N/A
	Relevant tests of IEC 60529 or Y.5.3		N/A
Y.5.3	Water spray test		N/A
Y.5.4	Protection from plants and vermin		N/A
Y.5.5	Protection from excessive dust		N/A
Y.5.5.1	General		N/A
Y.5.5.2	IP5X equipment		N/A
Y.5.5.3	IP6X equipment		N/A
Y.6	Mechanical strength of enclosures		N/A
Y.6.1	General		N/A
Y.6.2	Impact test		N/A

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

5.2	TABLE: Classification of electrical energy sources						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type ¹⁾	Additional Info ²⁾	
264Vac	Primary and secondary circuits before DC output	Normal	N/A	N/A	N/A	N/A	ES3
		Abnormal	N/A	N/A	N/A	N/A	
		Single fault – SC/OC	N/A	N/A	N/A	N/A	
264Vac	DC output port (+5V / GT-21097-3005)	Normal	4.84	N/A	SS	d.c.	ES1
		Abnormal	4.83	N/A	SS	d.c.	ES1
		Single fault – SC/OC	0	N/A	SS	N/A	ES1
264Vac	DC output port (+12V / GT-21097-5012)	Normal	11.74	N/A	SS	d.c.	ES1
		Abnormal	11.76	N/A	SS	d.c.	ES1
		Single fault – SC/OC	0	N/A	SS	N/A	ES1
264Vac	DC output port (+24V / GT-21097-5024)	Normal	23.66	N/A	SS	d.c.	ES1
		Abnormal	23.69	N/A	SS	d.c.	ES1
		Single fault – SC/OC	0	N/A	SS	N/A	ES1
264Vac	DC output port (+48V / GT-21097-5048)	Normal	47.0	N/A	SS	d.c.	ES1
		Abnormal	47.1	N/A	SS	d.c.	ES1
		Single fault – SC/OC	0	N/A	SS	N/A	ES1
264Vac	Line to Neutral	Normal	374Vpk	N/A	CP	C24= 470nF	ES3
Supplementary information:							
1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc.							
2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.							
SC=Short Circuit.							

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

5.4.1.8	TABLE: Working voltage measurement				P
Location	Peak voltage (V)	RMS voltage (V)	Frequency (Hz)	Comments	
T1 pin 1- pin5	190	340	52.6k	--	
T1 pin 1- pin6,7	206	506	52.6k	--	
T1 pin 2- pin5	190	342	52.6k	--	
T1 pin 2- pin6,7	205	398	52.6k	--	
T1 pin 3- pin5	233	528	52.6k	Max. Vp, Max. Vrms	
T1 pin 3- pin6,7	198	472	52.6k	--	
T1 pin 4- pin5	197	438	52.6k	--	
T1 pin 4- pin6,7	195	388	52.6k	--	
U2 pin1 to pin3	222	386	60	--	
U2 pin2 to pin3	220	384	60	--	
U2 pin1 to pin4	221	386	60	--	
U2 pin2 to pin4	220	382	60	--	
CY3 pri.pin to sec. pin	203	335	60	--	
Supplementary information:					
The highest measured working voltages in transformer are indicated with bold characters. Vin=240Vac, 60Hz					

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics			N/A
Method.....:		ISO 306 / B50		—
Object/ Part No./Material	Manufacturer/trademark	Thickness (mm)	T softening (°C)	
Supplementary information:				

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics				N/A
Allowed impression diameter (mm):			≤ 2 mm		—
Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)	
Supplementary information:					

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

5.4.2, 5.4.3	TABLE: Minimum Clearances/Creepage distance							P
Clearance (cl) and creepage distance (cr) at/of/between:	U _p (V)	U _{rms} (V)	Freq ¹⁾ (kHz)	Required cl (mm) ^{*) **)}	cl (mm)	E.S. ²⁾ (V)	Required cr (mm) ³⁾	cr (mm)
Basic:								
Live – Neutral before fuse F1 1)	340	240	0.06	1.5	4.1	N/A	2.5	4.1
F1, in to out 1)	340	240	0.06	1.5	2.7	N/A	2.5	2.7
CY1 primary pin to earth trace 1) 2)	340	240	0.06	1.5	6.5	N/A	2.5	7.7
CY2 primary pin to earth trace 1) 2)	340	240	0.06	1.5	5.3	N/A	2.5	>5.3
Live – earth trace near LF2 (for PCB layout A) 1) 2)	340	240	0.06	1.5	4.7	N/A	2.5	7.9
Live – earth trace near LF2 (for PCB layout B) 1)	340	240	0.06	1.5	4.4	N/A	2.5	4.4
Reinforced:								
Transformer T1 primary pin to Secondary pin 1)	528	240	0.06	3.0	8.1	N/A	5.0	8.1
Transformer T1 primary pin to Secondary trace near R45 1) 2)	528	240	0.06	3.0	6.1	N/A	5.0	6.7
U2 primary pin to Secondary pin 1) 2)	386	240	0.06	3.0	5.9	N/A	5.0	>5.9
CY3 primary pin to Secondary pin 1)	340	240	0.06	3.0	8.1	N/A	5.0	8.1
Below for Transformer T1								
Reinforced: Primary – Secondary	528	240	52.6	3.0	7.2	N/A	5.0	7.2
Reinforced: Core – Secondary	528	240	52.6	3.0	7.2	N/A	5.0	7.2

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

Supplementary information:

- 1) Only for frequency above 30 kHz
- 2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied)
- 3) Provide Material Group IIIb.

Internal side of metal frame glued with one layer of insulation tape and one layer of mylar.

L2, R10, C10, C9 sleeved with heat shrinkable tube.

No distance reduced after 10 N force applied to various components: Metal frame, CY1, CY2, CY3 and internal wiring.

Two layers of insulation tape wrapped on T1 core used as reinforced insulation.

T1 Core is considered as primary part.

1) Measured on PCB.

2) There is a >1.0mm slot

*) This equipment is intended to be operated under altitude up to 2000 m.

**) Limit considered by cl.5.4.2.3.4 with required withstand voltage (2500V). Procedure 2 is used.

5.4.4.2	TABLE: Minimum distance through insulation				P
Distance through insulation (DTI) at/of	Peak voltage (V)	Insulation	Required DTI (mm)	Measured DTI (mm)	
Insulation cover of Q3 (Between Q3 in primary and earthed metal frame)	528	Basic	--	0.65 mm	
Insulation tape (Between primary components and earthed metal frame)	528	Basic	--	2 layers	
Insulation sheet (Between copper foil and primary components)	528	Basic	--	1 layer	
Optional insulation between AC inlet and LF1	420	Basic	--	1 layer	
Bobbin of transformer	528	Reinforced	0.4	Min. 0.4	
Insulation tape on T1 core (Test with 1 layer)	528	Reinforced	2 layers	2 layers	
Enclosure	528	Reinforced	0.4	Min. 1.5	
Supplementary information:					

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

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz						P
Insulation material	E_P	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)	
Bobbin of T1: T373J 1)	9	52.6	0.71	0.4	Reinforced	528	
Bobbin of T1: T375J 2)	17	52.6	0.71	0.4	Reinforced	528	
Bobbin of T1: T375HF 3)	10	52.6	0.71	0.4	Reinforced	528	
Bobbin of T1: PM-9820 4)	14	52.6	0.71	0.4	Reinforced	528	
Bobbin of T1: PM-9630 5)	24	52.6	0.71	0.4	Reinforced	528	
Bobbin of T1: PM-9823 6)	15	52.6	0.71	0.4	Reinforced	528	
Bobbin of T1: CP-J-8800 7)	25	52.6	0.71	0.4	Reinforced	528	
Insulation tape of T1: all sources 8)	52	52.6	0.46	0.025*2	Reinforced	528	

Supplementary information:

1) Calculated actual electric strength (Vw) for reinforced insulation = $E_P \times K_R \times d = 9 \times 0.71 \times 0.4 = 2.556$ kV, 2.4 times of peak working voltage Vpw for reinforced insulation = $2.4 \times 528 / 1.41 = 0.899$ kV, 2.556 kV > 0.899 kV.

2) Calculated actual electric strength (Vw) for reinforced insulation = $E_P \times K_R \times d = 17 \times 0.71 \times 0.4 = 4.828$ kV, 2.4 times of peak working voltage Vpw for reinforced insulation = $2.4 \times 528 / 1.41 = 0.899$ kV, 4.828 kV > 0.899 kV.

3) Calculated actual electric strength (Vw) for reinforced insulation = $E_P \times K_R \times d = 10 \times 0.71 \times 0.4 = 2.840$ kV, 2.4 times of peak working voltage Vpw for reinforced insulation = $2.4 \times 528 / 1.41 = 0.899$ kV, 2.840 kV > 0.899 kV.

4) Calculated actual electric strength (Vw) for reinforced insulation = $E_P \times K_R \times d = 14 \times 0.71 \times 0.4 = 3.976$ kV, 2.4 times of peak working voltage Vpw for reinforced insulation = $2.4 \times 528 / 1.41 = 0.899$ kV, 3.976 kV > 0.899 kV.

5) Calculated actual electric strength (Vw) for reinforced insulation = $E_P \times K_R \times d = 24 \times 0.71 \times 0.4 = 6.816$ kV, 2.4 times of peak working voltage Vpw for reinforced insulation = $2.4 \times 528 / 1.41 = 0.899$ kV, 6.816 kV > 0.899 kV.

6) Calculated actual electric strength (Vw) for reinforced insulation = $E_P \times K_R \times d = 15 \times 0.71 \times 0.4 = 4.260$ kV, 2.4 times of peak working voltage Vpw for reinforced insulation = $2.4 \times 528 / 1.41 = 0.899$ kV, 4.260 kV > 0.899 kV.

7) Calculated actual electric strength (Vw) for reinforced insulation = $E_P \times K_R \times d = 25 \times 0.71 \times 0.4 = 7.100$ kV, 2.4 times of peak working voltage Vpw for reinforced insulation = $2.4 \times 528 / 1.41 = 0.899$ kV, 7.100 kV > 0.899 kV.

8) Calculated actual electric strength (Vw) for reinforced insulation = $E_P \times K_R \times d = 52 \times 0.46 \times 0.05 = 1.196$ kV, 2.4 times of peak working voltage Vpw for reinforced insulation = $2.4 \times 528 / 1.41 = 0.899$ kV, 1.196 kV > 0.899 kV.

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

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V) *)	Breakdown Yes / No
Basic:				
Live – Neutral (disconnected fuse)		DC	2500 V	No
Primary – earth pin of AC inlet		DC	2500 V	No
Reinforced:				
Primary – Output terminals		DC	4000 V	No
Primary – Plastic enclosure (wrapped with foil)		DC	4000 V	No
T1 Primary – Secondary 2)		DC	4000 V	No
T1 Core – Secondary 1) 2)		DC	4000 V	No
Insulation tape used in T1 (Test with 1 layer)		DC	4000 V	No
Supplementary information:				
*) Method of transient voltage considered. 1) T1 core considered as primary. 2) Tests conducted on all type's transformer under all manufacturers.				

5.5.2.2	TABLE: Stored discharge on capacitors				P
Location	Supply voltage (V)	Operating and fault condition ¹⁾	Switch position	Measured voltage (Vpk)	ES Class
Phase to Neutral	264Vac	Normal	N/A	0	ES1
Supplementary information:					
X-capacitors installed for testing: C24=0.47μF. <input checked="" type="checkbox"/> bleeding resistor rating: Certified bleeder resistors used. R11=R16=470kΩ. (Two resistors are in series). See table 4.1.2. <input type="checkbox"/> ICX:					
¹⁾ Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit					

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

5.6.6	TABLE: Resistance of protective conductors and terminations				P
Location	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	
From the PE pin of appliance inlet to internal metal frame	32	2	0.768	0.024	
From the PE pin of appliance inlet to internal metal frame	40	2	1.12	0.028	
Supplementary information:					

5.7.4	TABLE: Unearthed accessible parts					P
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V_{rms} or V_{pk})	Current (A_{rms} or A_{pk})	Freq. (Hz)	
Output port	Normal	264	N/A	0.02 mApk	60	ES1 *)
	Fault (Refer to fault condition on table B.3 and B.4, fuse open)	264	N/A	0.02 mApk	60	ES1 *)
	Fault (Refer to fault condition on table B.3 and B.4, output shutdown)	264	N/A	0.02 mApk	60	ES1 *)
	Fault (Single fault condition of basic safeguard: loss of protective earth connection)	264	N/A	0.216 mApk	60	ES1 *)
Accessible Enclosure (with metal foil) to earth	Normal	264	--	0.001 mApk	60	ES1 *)
Supplementary information:						
Vin= 264Vac, 60Hz *) Test with IEC 60990 figure 4.						

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

5.7.5	TABLE: Earthed accessible conductive part			P
Supply voltage (V)	264			—
Phase(s)	[X] Single Phase; [] Three Phase: [] Delta [] Wye			
Power Distribution System	[X] TN [] TT [X] IT			
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment	
Output “-” to earth	1	0.216mA _{peak}	N/A	
	2(*)	N/A	N/A	
	3	1)	N/A	
	4	N/A	N/A	
	5	2)	N/A	
	6	N/A	N/A	
	8	N/A	N/A	
Supplementary Information:				
<p>[1] Supply voltage is the anticipated maximum Touch Voltage</p> <p>[2] Earthed neutral conductor [Voltage differences less than 1% or more]</p> <p>[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3</p> <p>[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.</p> <p>[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.</p> <p>1) Norway IT power system Line fault condition was evaluated, which is as same as TN, TT system earthing conductor fault condition, other IT power system is not evaluated.</p> <p>2) Not applicable, Single-phase equipment.</p>				

5.8	TABLE: Backfeed safeguard in battery backed up supplies					N/A
Location	Supply voltage (V)	Operating and fault condition	Time (s)	Open-circuit voltage (V)	Touch current (A)	ES Class
Supplementary information:						

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

6.2.2	TABLE: Power source circuit classifications					P
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power ¹⁾ (W)	Time (S)	PS class
All circuits except for DC output	N/A	N/A	N/A	N/A	N/A	PS3
DC output port (+5V / GT-21097-3005)	Normal	5.23	13.0	44.3	5	PS2
Output port (+9.1V / GT-21097-5012-2.9)	Normal	9.35	5.2	48.6	5	PS2
Output port (+12V / GT-21097-5012)	Normal	12.21	5.7	50.5	5	PS2
DC output port (+24V / GT-21097-5024)	Normal	24.26	3.5	70.3	5	PS2
DC output port (+48V / GT-21097-5048)	Normal	46.78	1.49	51.2	5	PS2
Supplementary information:						
Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3. Vin=264Vac, 60Hz. The above measurements are the maximum values (max. V and max. A obtained at the same time).						

6.2.3.1	TABLE: Determination of Arcing PIS				N/A
Location		Open circuit voltage after 3 s (Vpk)	Measured r.m.s current (A)	Calculated value	Arcing PIS? Yes / No
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 (Vp) and normal operating condition rms current (Irms) is greater than 15W.					

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

6.2.3.2	TABLE: Determination of resistive PIS			P
Location		Operating and fault condition	Dissipate power (W)	Arcing PIS? Yes / No
All Circuits		N/A	N/A	Yes *)
Supplementary information:				
<p>A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.</p> <p>If a separate voltmeter and ammeter are used, the product of (V x I) is used to determine Resistive PIS classification.</p> <p>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.</p> <p>*) All circuit declared as resistive PIS, fire enclosure provided.</p>				

8.5.5	TABLE: High pressure lamp				N/A
Lamp manufacturer	Lamp type	Explosion method	Longest axis of glass particle (mm)	Particle found beyond 1 m Yes / No	
Supplementary information:					

9.6	TABLE: Temperature measurements for wireless power transmitters								N/A
Supply voltage (V)..... :								—	
Max. transmit power of transmitter (W)..... :								—	
Foreign objects	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm		
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	
Supplementary information:									

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

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements			P
	Supply voltage (V)..... :	90V 50Hz	264V 50Hz	—
	Ambient temperature during test T_{amb} (°C) :	--	--	—
	Maximum measured temperature T of part/at:	T (°C)		Allowed T_{max} (°C)
GT-21097-3005				
Internal wire		70.1	64.3	105
Enclosure		61.7	62.7	—
L2 coil		66.4	64.5	120 *)
LF1 coil		75.4	70.5	120 *)
LF2 coil		82.7	73.8	120 *)
C22 body		82.6	77.4	105
CY1 body		51.4	52.9	85
CY2 body		52.7	54.2	85
CY3 body		52.1	55.6	85
Heat sink of BD1		90.9	76.3	--
Heat sink of D7		75.5	76.0	--
Heat sink of Q3		80.4	82.1	--
PCB near BD1		76.4	77.7	105
U2		72.9	74.6	110
T1 core		86.7	89.4	110 *)
T1 coil		92.0	97.1	110 *)
T1 bobbin		93.1	96.5	110 *)
PCB under T1		79.2	80.2	105
L1		93.0	95.9	120 *)
C2		82.5	85.2	105
Inlet		58.6	52.9	70
Ambient		30.0	30.0	--
Touch Temperatures				
Output cord		59	61.8	77 (TS1) **)
Top enclosure		56.7	57.7	94 (TS1) ***)
Bottom enclosure		54.2	54.4	94 (TS1) ***)

IEC 62368-1							
Clause	Requirement + Test				Result - Remark		Verdict
Ambient	25.0				25.0		--
Supplementary information:							
<p>T_{mra}=30°C.</p> <p>*) Temperature limits of winding include less 10°C for thermocouple measurement method. If no limit is stated, temperature is for reference only.</p> <p>**) External surfaces touched occasionally for very short periods (>1 s and <10 s).</p> <p>***) External surfaces that need not be touched to operate the equipment (<1 s).</p>							
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
Supplementary information:							

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements			P
Supply voltage (V)..... :		90V 60Hz	264V 50Hz	—
Ambient temperature during test T_{amb} (°C) :		--	--	—
Maximum measured temperature T of part/at:		T (°C)		Allowed T_{max} (°C)
GT-21097-5012				
Internal wire		55.0	50.2	105
Enclosure		45.0	39.0	—
L2 coil		46.0	37.0	120 *)
LF1 coil		73.0	52.0	120 *)
LF2 coil		64.0	49.0	120 *)
C22 body		64.0	52.0	105
CY1 body		46.1	47.2	85
CY2 body		45.3	46.8	85
CY3 body		45.9	46.7	85
Heat sink of BD1		65.0	41.2	--
Heat sink of D7		54.0	39.0	--
Heat sink of Q3		58.0	45.1	--
PCB near BD1		66.9	45.4	105
U2		69.2	67.8	110
T1 core		45.0	49.0	110 *)
T1 coil		59.0	63.0	110 *)

IEC 62368-1								
Clause		Requirement + Test			Result - Remark		Verdict	
T1 bobbin		64.1			66.5		110 *)	
PCB under T1		56.5			44.3		105	
L1		54.5			52.7		120 *)	
C2		64.6			62.5		105	
Inlet		46.1			36.8		70	
Ambient		30.0			30.0		--	
Touch Temperatures								
Output cord		46.2			43.9		77 (TS1) **)	
Top enclosure		40			34		94 (TS1) ***)	
Bottom enclosure		38.2			32.6		94 (TS1) ***)	
Ambient		25.0			25.0		--	
Supplementary information:								
Tmra=30°C. *) Temperature limits of winding include less 10°C for thermocouple measurement method. If no limit is stated, temperature is for reference only. **) External surfaces touched occasionally for very short periods (>1 s and <10 s). ***) External surfaces that need not be touched to operate the equipment (<1 s).								
Temperature T of winding:		t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowe d T _{max} (°C)	Insulation class
Supplementary information:								

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements			P
Supply voltage (V)..... :		90V 60Hz	264V 50Hz	—
Ambient temperature during test T_{amb} (°C) :		--	--	—
Maximum measured temperature T of part/at:		T (°C)		Allowed T_{max} (°C)
GT-21097-5024				
Internal wire		75.4	62.4	105
Enclore		71.3	59.8	—
L2 coil		76.5	62.6	120 *)
LF1 coil		86.3	64.1	120 *)

IEC 62368-1								
Clause		Requirement + Test			Result - Remark		Verdict	
LF2 coil		75.2			63.9		120 *)	
C22 body		72.5			65.2		105	
CY1 body		46.9			43.8		85	
CY2 body		45.7			42.7		85	
CY3 body		45.6			41.8		85	
Heat sink of BD1		78.8			64.9		--	
Heat sink of D7		62.5			65.2		--	
Heat sink of Q3		67.7			63.1		--	
PCB near BD1		73.2			72.9		105	
U2		71.8			75.9		110	
T1 core		79.2			77.3		110 *)	
T1 coil		79.8			83.6		110 *)	
T1 bobbin		82.3			85.4		110 *)	
PCB under T1		72.6			75.7		105	
L1		87.3			84.9		120 *)	
C2		78.2			73.7		105	
Inlet		55.4			50.2		70	
Ambient		30.0			30.0		--	
Touch Temperatures								
Output cord		54.7			58.1		77 (TS1) **)	
Top enclosure		66.3			54.8		94 (TS1) ***)	
Bottom enclosure		60.2			52.1		94 (TS1) ***)	
Ambient		25.0			25.0		--	
Supplementary information:								
Tmra=30°C.) Temperature limits of winding include less 10°C for thermocouple measurement method. If no limit is stated, temperature is for reference only.) External surfaces touched occasionally for very short periods (>1 s and <10 s).) External surfaces that need not be touched to operate the equipment (<1 s).								
Temperature T of winding:		t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowe d T _{max} (°C)	Insulation class
Supplementary information:								

IEC 62368-1				
Clause	Requirement + Test	Result - Remark	Verdict	
5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements		P	
	Supply voltage (V)..... :	90V 60Hz	264V 50Hz	—
	Ambient temperature during test T_{amb} (°C) :	--	--	—
	Maximum measured temperature T of part/at:	T (°C)		Allowed T_{max} (°C)
GT-21097-5048				
Internal wire	85.9	64.3	105	
Enclore	75.5	62.7	—	
L2 coil	80.0	64.5	120 *)	
LF1 coil	99.3	70.5	120 *)	
LF2 coil	82.7	73.8	120 *)	
C22 body	81.3	75.3	105	
CY1 body	55.1	56.4	85	
CY2 body	54.8	55.9	85	
CY3 body	55.6	56.7	85	
Heat sink of BD1	90.9	76.3	--	
Heat sink of D7	75.5	76.0	--	
Heat sink of Q3	80.4	82.1	--	
PCB near BD1	76.4	77.7	105	
U2	72.9	74.6	110	
T1 core	86.7	89.4	110 *)	
T1 coil	92.0	97.1	110 *)	
T1 bobbin	95.1	103.3	110 *)	
PCB under T1	79.2	80.2	105	
L1	93.0	95.9	120 *)	
C2	82.5	85.2	105	
Inlet	57.6	52.1	70	
Ambient	30.0	30.0	--	
Touch Temperatures				
Output cord	59	61.8	77 (TS1) **)	
Top enclosure	70.5	57.7	94 (TS1 ***)	
Bottom enclosure	61.8	54.4	94 (TS1 ***)	
Ambient	25.0	25.0	--	

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

Supplementary information:

T_{mra}=30°C.

*) Temperature limits of winding include less 10°C for thermocouple measurement method. If no limit is stated, temperature is for reference only.

**) External surfaces touched occasionally for very short periods (>1 s and <10 s).

***) External surfaces that need not be touched to operate the equipment (<1 s).

Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class

Supplementary information:

B.2.5		TABLE: Input test							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
GT-21097-3005									
90	50	0.74	--	39.3	--	F1	0.74	Max. normal load: 5Vdc/6A	
90	60	0.74	--	39.1	--	F1	0.74	Max. normal load: 5Vdc/6A	
100	50	0.67	1.6	39.0	--	F1	0.67	Max. normal load: 5Vdc/6A	
100	60	0.67	1.6	38.7	--	F1	0.67	Max. normal load: 5Vdc/6A	
240	50	0.33	1.6	38.4	--	F1	0.33	Max. normal load: 5Vdc/6A	
240	60	0.32	1.6	38.4	--	F1	0.32	Max. normal load: 5Vdc/6A	
264	50	0.30	--	38.6	--	F1	0.30	Max. normal load: 5Vdc/6A	
264	60	0.29	--	38.5	--	F1	0.29	Max. normal load: 5Vdc/6A	
GT-21097-5012									
90	50	1.13	--	61	--	F1	1.13	Max. normal load: 12Vdc/4.17A	
90	60	1.15	--	61	--	F1	1.15	Max. normal load: 12Vdc/4.17A	
100	50	1.03	1.6	60	--	F1	1.03	Max. normal load: 12Vdc/4.17A	
100	60	1.06	1.6	61	--	F1	1.06	Max. normal load: 12Vdc/4.17A	

IEC 62368-1								
Clause	Requirement + Test					Result - Remark		Verdict
240	50	0.59	1.6	59	--	F1	0.59	Max. normal load: 12Vdc/4.17A
240	60	0.52	1.6	59	--	F1	0.52	Max. normal load: 12Vdc/4.17A
264	50	0.56	--	59	--	F1	0.56	Max. normal load: 12Vdc/4.17A
264	60	0.49	--	60	--	F1	0.49	Max. normal load: 12Vdc/4.17A
GT-21097-5015								
90	50	1.11	--	60	--	F1	1.11	Max. normal load: 15Vdc/3.33A
90	60	1.13	--	61	--	F1	1.13	Max. normal load: 15Vdc/3.33A
100	50	1.02	1.6	60	--	F1	1.02	Max. normal load: 15Vdc/3.33A
100	60	1.03	1.6	60	--	F1	1.03	Max. normal load: 15Vdc/3.33A
240	50	0.57	1.6	59	--	F1	0.57	Max. normal load: 15Vdc/3.33A
240	60	0.55	1.6	59	--	F1	0.55	Max. normal load: 15Vdc/3.33A
264	50	0.53	--	59	--	F1	0.53	Max. normal load: 15Vdc/3.33A
264	60	0.52	--	60	--	F1	0.52	Max. normal load: 15Vdc/3.33A
GT-21097-5018								
90	50	0.99	--	58	--	F1	0.99	Max. normal load: 18Vdc/2.78A
90	60	1.00	--	58	--	F1	1.00	Max. normal load: 18Vdc/2.78A
100	50	1.08	1.6	59	--	F1	1.08	Max. normal load: 18Vdc/2.78A
100	60	1.10	1.6	59	--	F1	1.10	Max. normal load: 18Vdc/2.78A
240	50	0.57	1.6	58	--	F1	0.57	Max. normal load: 18Vdc/2.78A
240	60	0.54	1.6	58	--	F1	0.54	Max. normal load: 18Vdc/2.78A
264	50	0.53	--	58	--	F1	0.53	Max. normal load: 18Vdc/2.78A
264	60	0.51	--	59	--	F1	0.51	Max. normal load: 18Vdc/2.78A
GT-21097-5024								

IEC 62368-1								
Clause	Requirement + Test					Result - Remark		Verdict
90	50	1.06	--	58	--	F1	1.06	Max. normal load: 24Vdc/2.08A
90	60	1.08	--	58	--	F1	1.08	Max. normal load: 24Vdc/2.08A
100	50	0.97	1.6	58	--	F1	0.97	Max. normal load: 24Vdc/2.08A
100	60	0.99	1.6	58	--	F1	0.99	Max. normal load: 24Vdc/2.08A
240	50	0.52	1.6	58	--	F1	0.52	Max. normal load: 24Vdc/2.08A
240	60	0.53	1.6	58	--	F1	0.53	Max. normal load: 24Vdc/2.08A
264	50	0.49	--	58	--	F1	0.49	Max. normal load: 24Vdc/2.08A
264	60	0.49	--	58	--	F1	0.49	Max. normal load: 24Vdc/2.08A
GT-21097-5048								
90	50	1.05	--	57.8	--	F1	1.05	Max. normal load: 48Vdc/1.1A
90	60	1.07	--	57.8	--	F1	1.07	Max. normal load: 48Vdc/1.1A
100	50	0.96	1.6	57.7	--	F1	0.96	Max. normal load: 48Vdc/1.1A
100	60	0.95	1.6	57.7	--	F1	0.95	Max. normal load: 48Vdc/1.1A
240	50	0.50	1.6	57.8	--	F1	0.50	Max. normal load: 48Vdc/1.1A
240	60	0.50	1.6	57.8	--	F1	0.50	Max. normal load: 48Vdc/1.1A
264	50	0.47	--	57.9	--	F1	0.47	Max. normal load: 48Vdc/1.1A
264	60	0.47	--	57.9	--	F1	0.47	Max. normal load: 48Vdc/1.1A
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured.								

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

B.3, B.4	TABLE: Abnormal operating and fault condition tests					P
Ambient temperature T_{amb} (°C)..... :					25°C, if not specify the ambient temperature.	—
Power source for EUT: Manufacturer, model/type, outputrating .. :					--	—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
DC output (+12V / GT-21097-5012) *)	O-L	264	7hrs	F1	0.55	Temperature was stable when output loaded to 5.1A. No hazard. No damage. Maximum temperature: T1 coil: 148.9°C T1 core: 143.9°C Top enclosure: 86.5°C Bottom enclosure: 86.5°C Output cord: 28.5°C PCB near T1: 107.7°C Ambient: 23.4°C
DC output (+5V / GT-21097-3005) *)	O-L	264	6hrs40mins	F1	0.40	Temperature was stable when output loaded to 6.8A. No hazard. No damage. Maximum temperature: T1 coil: 106.8°C T1 core: 105.7°C Top enclosure: 66.4°C Bottom enclosure: 70.5°C Output cord: 29.9°C PCB near T1: 89.5°C Ambient: 24.7°C
DC output (+48V / GT-21097-5048) *)	O-L	264	5hrs50mins	F1	0.54	Temperature was stable when output loaded to 1.4A. No hazard. No damage. Maximum temperature: T1 coil: 136.4°C T1 core: 123.0°C Top enclosure: 71.4°C Bottom enclosure: 73.5°C Output cord: 28.3°C PCB near T1: 86.2°C Ambient: 23.8°C
GT-21097-5012						
BD1	S-c	264	<1s	F1	*)	Fuse F1 open immediately, no hazards.
C22	S-c	264	<1s	F1	*)	Fuse F1 open immediately, no hazards.
Q3 (D-S)	S-c	264	<1s	F1	*)	Fuse F1 open immediately, Q1, Q3 damaged, no hazards.

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
Q3 (D-G)	S-c	264	<1s	F1	*)	Fuse F1 open immediately, Q1, Q3, U1, D5 damaged, no hazards.
U2 primary	S-c	264	10 mins	F1	0.02	Unit shut down, no damaged, no hazards.
U2 secondary	S-c	264	25 mins	F1	0.05 - 0.24	Unit cycle protection, no damaged, no hazards. Output still complies with ES1 requirements.
T1 pin 1 to pin 2	S-c	264	20 mins	F1	0.02 – 0.07	Unit cycle protection, no damaged, no hazards. Output still complies with ES1 requirements.
T1 pin 5 to pin 6	S-c	264	1 hr	F1	0.02 – 0.07	Unit cycle protection, no damaged, no hazards. Output still complies with ES1 requirements.
D7	S-c	264	10 mins	F1	0.03	Unit shut down, no damaged, no hazards.
Output	S-c	264	45 mins	F1	0.04 – 0.08	Unit cycle protection, no damaged, no hazards. Output still complies with ES1 requirements.
GT-21097-3005						
T1 pin 1 to pin 2	S-c	264	20 mins	F1	0.03 – 0.07	Unit cycle protection, no damaged, no hazards. Output still complies with ES1 requirements.
T1 pin 5 to pin 6	S-c	264	1 hr	F1	0.06 – 0.13	Unit cycle protection, no damaged, no hazards. Output still complies with ES1 requirements.
Output	S-c	264	45 mins	F1	0.04 – 0.09	Unit cycle protection, no damaged, no hazards. Output still complies with ES1 requirements.
GT-21097-5048						
T1 pin 1 to pin 2	S-c	264	20 mins	F1	0.05 – 0.09	Unit cycle protection, no damaged, no hazards. Output still complies with ES1 requirements.
T1 pin 5 to pin 6	S-c	264	1 hr	F1	0.06 – 0.14	Unit cycle protection, no damaged, no hazards. Output still complies with ES1 requirements.

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
Output	S-c	264	45 mins	F1	0.02 – 0.07	Unit cycle protection, no damaged, no hazards. Output still complies with ES1 requirements.
Supplementary information:						
<p>S-c=short circuit, O-c=open circuit.</p> <p>*) Fuse current is more than fuse rating times 2.1, repeated the test with each source of fuse and same result come out.</p> <p>Electric strength tests conducted after every single fault condition, no flash over or insulation breakdown. After above fault condition tests, the output comply with ES1 limit.</p>						

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

M.3	TABLE: Protection circuits for batteries provided within the equipment						N/A
Is it possible to install the battery in a reverse polarity position?:						—	
Equipment Specification	Charging						
	Voltage (V)			Current (A)			
Manufacturer/type	Battery specification						
	Non-rechargeable batteries		Rechargeable batteries				
	Discharging current (A)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)	
			Voltage (V)	Current (A)			
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.							
Specified battery temperature (°C):							
Component No.	Fault condition	Charge/ discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation
Supplementary information:							
Abbreviation: SC= short circuit; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal.							

M.4.2	TABLE: Charging safeguards for equipment containing a secondary lithium battery					N/A
Maximum specified charging voltage (V)						—
Maximum specified charging current (A)						—
Highest specified charging temperature (°C)						
Lowest specified charging temperature (°C)						
Battery manufacturer/type	Operating and fault condition	Measurement			Observation	
		Charging voltage (V)	Charging current (A)	Temp. (°C)		
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature						

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

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)						P
Output Circuit	Condition	U _{oc} (V)	Time (s)	I _{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
DC output port (+9.1V / GT-21097-5012-2.9)	Normal	9.34	5.2	5.2	8	48.6	100
	Single fault: ZD2 O-c	9.36	5.3	5.3	8	50.3	100
	Single fault: R10 S-c	9.34	5.9	5.9	8	61.1	100
DC output port (+12V / GT-21097-5012)	Normal	12.21	5.7	5.7	8	50.5	100
	Single fault: ZD2 O-c	12.22	5.8	5.8	8	51.2	100
	Single fault: R10 S-c	12.21	6.2	6.2	8	64.5	100
DC output port (+24V / GT-21097-5024)	Normal	24.26	3.50	3.50	8	70.3	100
	Single fault: ZD2 O-c	24.25	3.48	3.48	8	69.7	100
	Single fault: R10 S-c	24.28	3.9	3.9	8	86.5	100
DC output port (+48V / GT-21097-5048)	Normal	46.78	1.49	1.49	8	51.2	100
	Single fault: ZD2 O-c	46.78	1.49	1.49	8	52.3	100
	Single fault: R10 S-c	46.79	2.10	2.10	8	65.2	100
Supplementary Information:							
S-c=Short circuit, O-c=open circuit.							

T.2, T.3, T.4, T.5	TABLE: Steady force test						P
Location/Part	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation	
Enclosure	Thermoplastic	Min. 1.5 mm	Circular Plane surface 30mm in diameter	250N	5sec	Safeguards remained effective	
Metal frame, CY1, CY2, CY3 and internal wiring	--	--	Push-Pull tester	10N	5sec	Safeguards remained effective	
Supplementary information:							

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

T.6, T.9	TABLE: Impact test				P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
Enclosure	Thermoplastic	1.5mm min.	1300	Safeguards remained effective	
Supplementary information:					
Required by manufacturer.					

T.7	TABLE: Drop test				N/A
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
Supplementary information:					

T.8	TABLE: Stress relief test					P
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Enclosure	Thermoplastic	1.5mm min.	85.5	7	No risk of shrinkage or distortion on material	
Supplementary information:						

X	TABLE: Alternative method for determining minimum clearances distances			N/A
Clearance distanced between:	Peak of working voltage (V)	Required cl (mm)	Measured cl (mm)	
Supplementary information:				

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

4.1.2	TABLE: Critical components information					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Plastic enclosure	SABIC	C2950	V-0, 75°C, Min. 2.0mm thickness	UL 94	UL	
Alt.)	SABIC	CX7211(GG)	V-0, 90°C, Min. 2.0mm thickness	UL 94	UL	
Alt.)	SABIC	945(GG)	V-0, 120°C, Min. 1.5mm thickness	UL 94	UL	
Alt.)	SABIC	HF500R(f2)	V-0, 125°C, Min. 1.5mm thickness	UL 94	UL	
Alt.)	SABIC	940(f1)	V-0, 120°C, Min. 2.0mm thickness	UL 94	UL	
Alt.)	TEIJIN LIMITED RESIN AND PLASTIC	LN-1250P(#)(f1)	V-0, 115°C, Min. 1.5mm thickness	UL 94	UL	
Alt.)	TEIJIN LIMITED RESIN AND PLASTIC	LN-1250G(#)(*)	V-0, 115°C, Min. 1.5mm thickness	UL 94	UL	
Appliance inlet (AC1)	Rich Bay Co., Ltd.	R-301	AC 250V, 10A, 70°C, C14 type	IEC/EN 60320-1	VDE	
Alt.)	TECX-UNIONS TECHNOLOGY CORP	TU-301 series	AC 250V, 10A, 70°C, C14 type	IEC/EN 60320-1	ENEC 15	
Alt.)	Zhe Jiang Bei Er Jia Electronic Co., Ltd.	ST-A01 series	AC 250V, 10A, 70°C, C14 type	IEC/EN 60320-1	VDE	
Alt.)	Kunshan DLK Electronics Technology Co., Ltd	CDJ-3	AC 250V, 10A, 70°C, C14 type	IEC/EN 60320-1	VDE	
Alt.)	Zhejiang LECI Electronics Co., Ltd	DB-14	AC 250V, 10A, 70°C, C14 type	IEC/EN 60320-1	VDE	
Alt.)	Steady Electronics Corporation	2107	AC 250V, 10A, 70°C, C14 type	IEC/EN 60320-1	VDE	
Fuse (F1)	Bel Fuse Ltd.	5ST	AC 250V, T1.6A	IEC/EN 60127-1, IEC/EN 60127-2	VDE	
Alt.)	Cooper Bussmann LLC	S506	AC 250V, T1.6A	IEC/EN 60127-1, IEC/EN 60127-2	VDE	

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹⁾
Alt.)	Conquer Electronics Co., Ltd.	UTE, UTE-A, UDA / UDA-A	AC 250V, T1.6A	IEC/EN 60127-1, IEC/EN 60127-2	VDE
Alt.)	Littelfuse Inc.	218-series	AC 250V, T1.6A	IEC/EN 60127-1, IEC/EN 60127-2	VDE
Alt.)	Suzhou Walter Electronic Co. Ltd.	TSD-Serie(s)	AC 250V, T1.6A	IEC/EN 60127-1, IEC/EN 60127-2	VDE
Alt.)	XC Electronics (Shen Zhen) Corp. Ltd.	5TE	AC 250V, T1.6A	IEC/EN 60127-1, IEC/EN 60127-2	VDE
Alt.)	Sun Electric Co. O/B Heroday Ltd.	5B	AC 250V, T1.6A	IEC/EN 60127-1, IEC/EN 60127-2	VDE
Alt.)	Sunny East Enterprise Co. Ltd.	GTL	AC 250V, T1.6A	IEC/EN 60127-1, IEC/EN 60127-2, UL 248-1, UL 248-14	VDE, UL
X-Capacitor (C24) (optional)	Okaya Electric Industries Co. LTD	RE	Max. 0.47µF Min. 250Vac, Min. 100°C, X2 type	IEC/EN 60384-14	VDE
Alt.)	Europtronic (SuZhou) Co. Ltd	MPX	Max. 0.47µF Min. 250Vac, Min. 100°C, X2 type	IEC/EN 60384-14	VDE
Alt.)	Vishay Electrónica Portugal, Lda	F 1772 Serie(s)	Max. 0.47µF Min. 250Vac, Min. 100°C, X2 type	IEC/EN 60384-14	VDE
Alt.)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0.47µF Min. 250Vac, Min. 100°C, X2 type	IEC/EN 60384-14	VDE
Alt.)	Cheng Tung Industrial Co Ltd	CTX	AC 250V, 0.47µF min.100°C (Min.X2)	IEC/EN 60384-14	ENEC 15
Alt.)	Shantou High-New Technology	MPX	AC 250V, 0.47µF min.100°C (Min.X2)	IEC/EN 60384-14	VDE
Alt.)	Sinhua Electronics (Huzhou) Co., Ltd	MPX	Max. 0.47µF Min. 250Vac, Min. 100°C, X1 type	IEC/EN 60384-14	VDE

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹⁾
Alt.)	Jiangsu Xinghua Huayu Electronics Co., Ltd.	MPX-Series	Max. 0.47µF Min. 250Vac, Min. 100°C, X2 type	IEC/EN 60384-14	VDE
Alt.)	Dain Electronics Co., Ltd.	MEX, MPX, NPX	Max. 0.47µF Min. 250Vac, Min. 100°C, X2 type	IEC/EN 60384- 14, UL 60284-14	VDE, UL
Alt.)	WINDAY ELECTRONIC (DONG GUAN) CO., LTD	MPX series	Max. 0.47µF Min. 250Vac, Min. 100°C, X2 type	IEC/EN 60384- 14, UL 60284-14	VDE, UL
Alt.)	Tenta Electric Industrial Co. Ltd.	MEX	Max. 0.47µF Min. 250Vac, Min. 100°C, X2 type	IEC/EN 60384- 14, UL 60284-14	VDE, UL
Alt.)	Foshan Shunde Chuang Ge Electronic Industrial Co., Ltd.	MKP-X2	Max. 0.47µF Min. 250Vac, Min. 100°C, X2 type	IEC/EN 60384- 14, UL 60284-14	VDE, UL
Protective bonding conductor (Green/Yellow)	Interchangeable	Interchangeable	Min. VW-1, Min. 18AWG, Min. 300V, Min. 105°C	UL 758	UL
Output wire	Interchangeable	Interchangeable	Min. VW-1, Min. 22AWG, Min. 300V, Min. 80°C	UL 758	UL
Bleeder Resistor (R11, R16) (located after fuse)	Yageo Components (Suzhou)	HHV series	470kΩ, 0.25W, (two in series)	IEC 62368- 1:2018 G.10	VDE
Alt.)	Futaba Electric Co., Ltd.	RM series	470kΩ, 0.25W, (two in series)	EN 60065:2014	VDE
Rectifier bridge (BD1)	Interchangeable	Interchangeable	Min. 2A, min. 500V	IEC 62368-1	Tested in equipment
Transistor (Q3)	Interchangeable	Interchangeable	Min. 4A, Min. 600V	IEC 62368-1	Tested in equipment
Y-Capacitor (CY1, CY2) (Optional)	Murata Mfg. Co., Ltd.	KX	Max. 2200pF, Min. 250Vac, Min. 85 °C, Y1 type	IEC/EN 60384-14	VDE

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹⁾
Alt.)	Success Electronics Co., Ltd.	SF, SB, SE	Max. 2200pF, Min. 250Vac, Min. 85 °C, Y1 type	IEC/EN 60384-14	VDE
Alt.)	TDK Corporation	CD	Max. 2200pF, Min. 250Vac, Min. 85 °C, Y1 type	IEC/EN 60384-14	VDE
Alt.)	Shantou High-New Technology	CD	Max. 2200pF, Min. 250Vac, Min. 85 °C, Y1 type	IEC/EN 60384-14	VDE
Alt.)	Welson Industrial Co., Ltd.	WD	Max. 2200pF, Min. 250Vac, Min. 85 °C, Y1 type	IEC/EN 60384-14	VDE
Alt.)	Zhi Wei Electronics Co. Ltd.	DJ	Max. 2200pF, Min. 250Vac, Min. 85 °C, Y1 type	IEC/EN 60384-14	VDE
Bridging capacitor (CY3) (Optional)	Murata Mfg. Co., Ltd.	KX	Max. 2200pF, Min. 250Vac, Min. 85 °C, Y1 type	IEC/EN 60384-14	VDE
Alt.)	Walsin Technology Corp.	AH	Max. 2200pF, Min. 250Vac, Min. 85 °C, Y1 type	IEC/EN 60384-14	VDE
Alt.)	Success Electronics Co., Ltd.	SB, SE	Max. 2200pF, Min. 250Vac, Min. 85 °C, Y1 type	IEC/EN 60384-14	VDE
Alt.)	TDK Corporation	CD	Max. 2200pF, Min. 250Vac, Min. 85 °C, Y1 type	IEC/EN 60384-14	VDE
Alt.)	Shantou High-New Technology	CD	Max. 2200pF, Min. 250Vac, Min. 85 °C, Y1 type	IEC/EN 60384-14	VDE
Alt.)	Welson Industrial Co., Ltd.	WD	Max. 2200pF, Min. 250Vac, Min. 85 °C, Y1 type	IEC/EN 60384-14	VDE

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹⁾
Alt.)	Zhi Wei Electronics Co. Ltd.	DJ	Max. 2200pF, Min. 250Vac, Min. 85 °C, Y1 type	IEC/EN 60384-14	VDE
Inductor (L2) (optional) 1) (No bobbin)	SYN / GlobTek / Haopuwei / BOAM / ENG	04C117	130°C	IEC 62368-1	Tested in equipment
Line filter (LF1) 1)	SYN / GlobTek / Haopuwei / BOAM / ENG	04A052	130°C	IEC 62368-1	Tested in equipment
- Bobbin of LF1	CHANG CHUN PLASTICS CO LTD	T373J, T375J, T375HF	Phenolic, V-0, 150°C, Min. 1.2mm thickness	UL 94	UL
Alt.)	SUMITOMO BAKELITE CO LTD	PM-9820, PM-9630, PM-9823	Phenolic, V-0, 150°C, Min. 1.2mm thickness	UL 94	UL
Alt.)	HITACHI CHEMICAL CO LTD	CP-J-8800	Phenolic, V-0, 150°C, Min. 1.2mm thickness	UL 94	UL
Line filter (LF2) (optional) 1) (No bobbin)	SYN / GlobTek / Haopuwei / BOAM / ENG	04C106	130°C	IEC 62368-1	Tested in equipment
Bulk Capacitor (C22)	Interchangeable	Interchangeable	Max. 150 µF, Min. 400V, 105°C	IEC 62368-1	Tested in equipment
PCB	Interchangeable	Interchangeable	Min. V-1, 105°C	UL 796	UL
Heat shrinkable tube	Interchangeable	Interchangeable	600V, 125°C, VW-1	UL 224	UL
Optocoupler (U2)	Lite-On Technology Corporation	LTV-817	Ext. Dcr&Cl: ≥7.0mm, DTI: ≥0.4mm Thermal cycling test, 115°C	IEC/EN 60747-5- 5, IEC/EN 62368-1	VDE
Alt.)	Everlight Electronics Co., Ltd.	EL817	Ext. Dcr&Cl: ≥7.6mm, DTI: ≥0.4mm Thermal cycling test, 110°C	IEC/EN 60747-5- 5, IEC/EN 62368-1	VDE
Alt.)	Bright Led Electronics Corp.	BPC-817	Ext. Dcr&Cl: ≥7.6mm, DTI: ≥0.4mm Thermal cycling test, 110°C	IEC/EN 60747-5- 5, IEC/EN 60950-1, IEC/EN 60065	VDE, S

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹⁾
Alt.)	Sharp Corporation Electronic Components and Devices Division	PC817, PC123	Ext. Dcr&Cl: ≥6.4mm, DTI: ≥0.4mm Thermal cycling test, 110°C	IEC/EN 60747-5- 5, UL 1577	VDE, UL
Alt.)	COSMO	K1010, KP1010	Ext. Dcr&Cl: ≥6.5mm, DTI: ≥0.4mm Thermal cycling test, 115°C	IEC/EN 60747-5- 5, UL 1577	VDE, UL
Alt.)	Fairchild Semiconductor Pte Ltd	H11A817B, H11A817C, FOD817B	Ext. Dcr&Cl: ≥7.0mm, DTI: ≥0.4mm Thermal cycling test, 115°C	IEC/EN 60747-5- 5, IEC 62368-1, UL 1577	VDE, UL
Transformer (T1) (3-7.5V) 1)	GLOBTEK	04B273	Class B, UL insulation system GTX- 130-TM (E243347)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	HAOPUWEI	04B273	Class B, UL insulation system ZT-130 (E315275)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	ENG	04B273	Class B, UL insulation system ENG130-1 (E308897)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	BOAM	04B273	Class B, UL insulation system BOAM- 01 or B1 (E252329)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	SUNNY ELECTRONICS	04B273	Class B, UL insulation system DASH 2 B-19 (183163)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Transformer (T1) (7.6-12.9V) 1)	GLOBTEK	04B167	Class B, UL insulation system GTX- 130-TM (E243347)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	HAOPUWEI	04B167	Class B, UL insulation system ZT-130 (E315275)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹⁾
Alt.)	ENG	04B167	Class B, UL insulation system ENG130-1 (E308897)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	BOAM	04B167	Class B, UL insulation system BOAM- 01 or B1 (E252329)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	SUNNY ELECTRONICS	04B167	Class B, UL insulation system DASH 2 B-19 (183163)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Transformer (T1) (13-18V) 1)	GLOBTEK	04B173	Class B, UL insulation system GTX- 130-TM (E243347)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	HAOPUWEI	04B173	Class B, UL insulation system ZT-130 (E315275)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	ENG	04B173	Class B, UL insulation system ENG130-1 (E308897)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	BOAM	04B173	Class B, UL insulation system BOAM- 01 or B1 (E252329)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	SUNNY ELECTRONICS	04B173	Class B, UL insulation system DASH 2 B-19 (183163)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Transformer (T1) (18.1-20V) 1)	GLOBTEK	04B172	Class B, UL insulation system GTX- 130-TM (E243347)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	HAOPUWEI	04B172	Class B, UL insulation system ZT-130 (E315275)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment

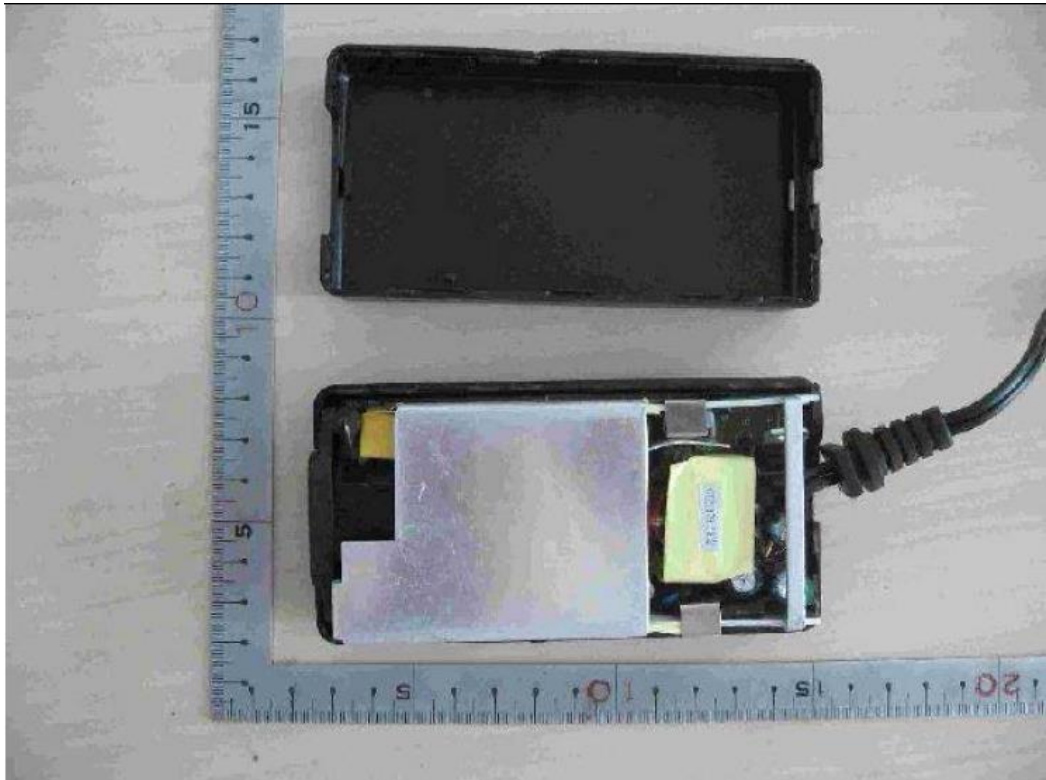
IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹⁾
Alt.)	ENG	04B172	Class B, UL insulation system ENG130-1 (E308897)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	BOAM	04B172	Class B, UL insulation system BOAM- 01 or B1 (E252329)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	SUNNY ELECTRONICS	04B172	Class B, UL insulation system DASH 2 B-19 (183163)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Transformer (T1) (20.1-24V) 1)	GLOBTEK	04B171	Class B, UL insulation system GTX- 130-TM (E243347)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	HAOPUWEI	04B171	Class B, UL insulation system ZT-130 (E315275)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	ENG	04B171	Class B, UL insulation system ENG130-1 (E308897)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	BOAM	04B171	Class B, UL insulation system BOAM- 01 or B1 (E252329)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	SUNNY ELECTRONICS	04B171	Class B, UL insulation system DASH 2 B-19 (183163)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Transformer (T1) (24.1-35.9V) 1)	GLOBTEK	04B212	Class B, UL insulation system GTX- 130-TM (E243347)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	HAOPUWEI	04B212	Class B, UL insulation system ZT-130 (E315275)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹⁾
Alt.)	ENG	04B212	Class B, UL insulation system ENG130-1 (E308897)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	BOAM	04B212	Class B, UL insulation system BOAM- 01 or B1 (E252329)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	SUNNY ELECTRONICS	04B212	Class B, UL insulation system DASH 2 B-19 (183163)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Transformer (T1) (36-48V) 1)	GLOBTEK	04B171	Class B, UL insulation system GTX- 130-TM (E243347)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	HAOPUWEI	04B171	Class B, UL insulation system ZT-130 (E315275)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	ENG	04B171	Class B, UL insulation system ENG130-1 (E308897)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	BOAM	04B171	Class B, UL insulation system BOAM- 01 or B1 (E252329)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
Alt.)	SUNNY ELECTRONICS	04B171	Class B, UL insulation system DASH 2 B-19 (183163)	IEC 62368-1 and evaluated acco. to IEC 60085, UL 1446	Tested in equipment
- Bobbin for all the transformer	CHANG CHUN PLASTICS CO LTD	T373J, T375J, T375HF	Phenolic, V-0, 150°C	UL 94	UL
Alt.)	SUMITOMO BAKELITE CO LTD	PM-9820, PM-9630, PM-9823	Phenolic, V-0, 150°C	UL 94	UL
Alt.)	HITACHI CHEMICAL CO LTD	CP-J-8800	Phenolic, V-0, 150°C	UL 94	UL

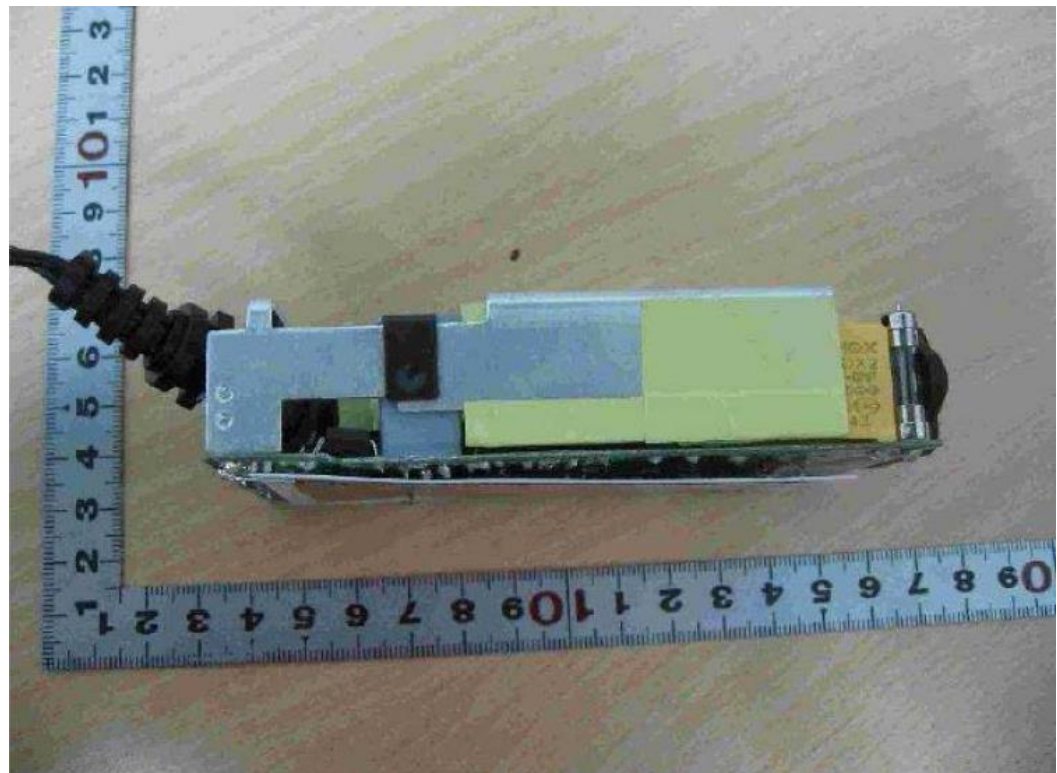
IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹⁾
- Insulation tape for all the transformer	3M	1350F, 1350-1	130°C	UL 510	UL
Alt.)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ, CT	130°C	UL 510	UL
Alt.)	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	130°C	UL 510	UL
Alt.)	SYMBIO INC	35660Y	130°C	UL 510	UL
- Insulation tube for all the transformer	Interchangeable	Interchangeable	Min. 600V, 200°C, min. 0.4 mm thick , VW- 1	UL 224	UL
- TIW for all the transformer	Furukawa	TEX-E	130°C	UL 60950-1, UL 2353	UL
Alt.)	GREAT LEOFON INDUSTRIAL CO LTD	TRW(B)	130°C	UL 60950-1, UL 2353	UL
Alt.)	KBI COSMOLINK CO.,LTD.	TIW-M	130°C	UL 60950-1, UL 2353	UL
Optional insulator between AC inlet and LF1	Interchangeable	Interchangeable	Min. V-1, Min. 0.4mm thickness	UL 94	UL
Current sensor resistor (R10)	Interchangeable	Interchangeable	Min.0.1Ω, 2W.	IEC 62368-1	Tested in equipment
Supplementary information:					
¹⁾ Provided evidence ensures the agreed level of compliance. ¹⁾ T1/LF2/LF1/L2 shares the same construction from different vendors.					

— End of the report —

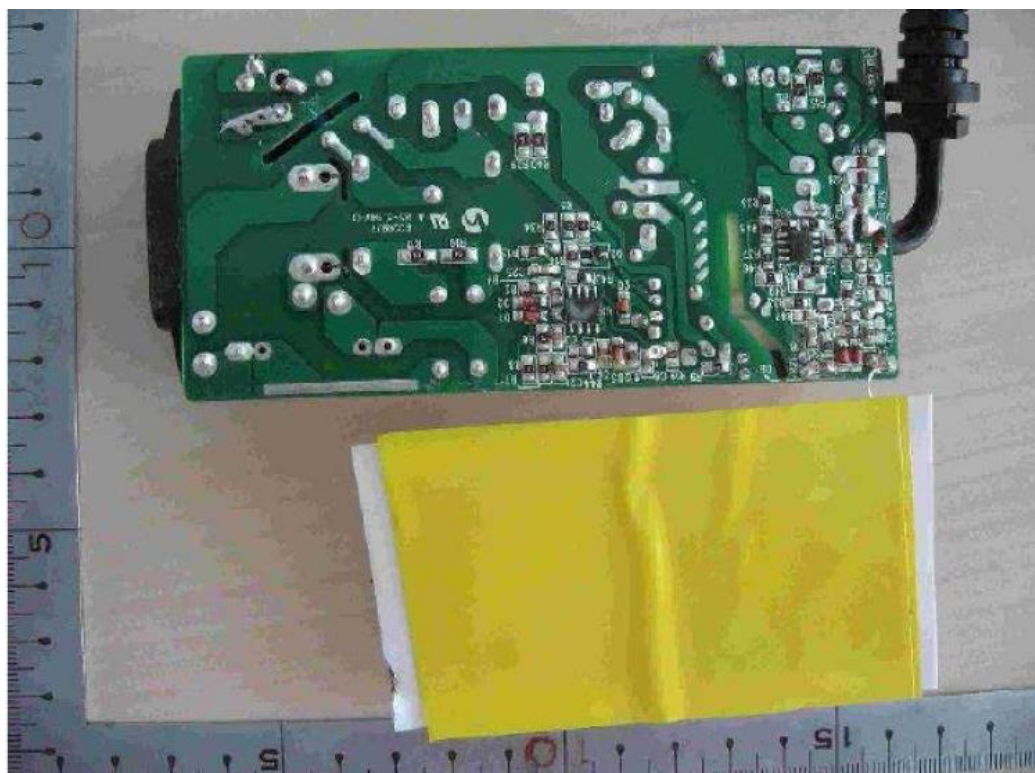
Photos



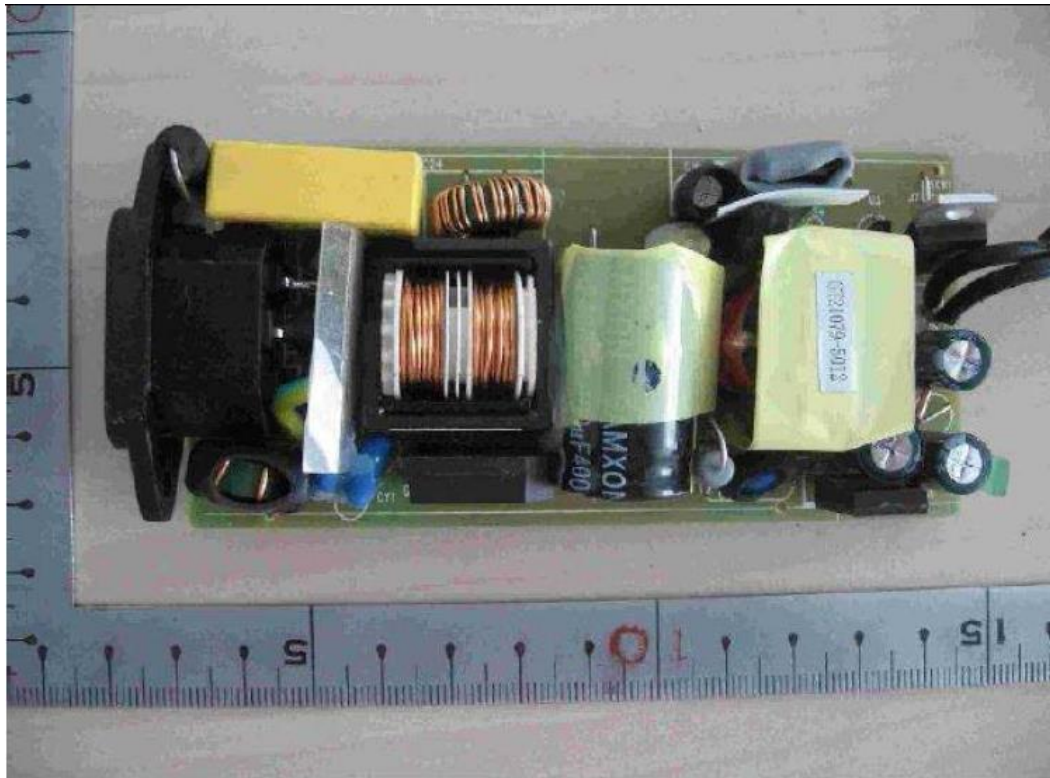
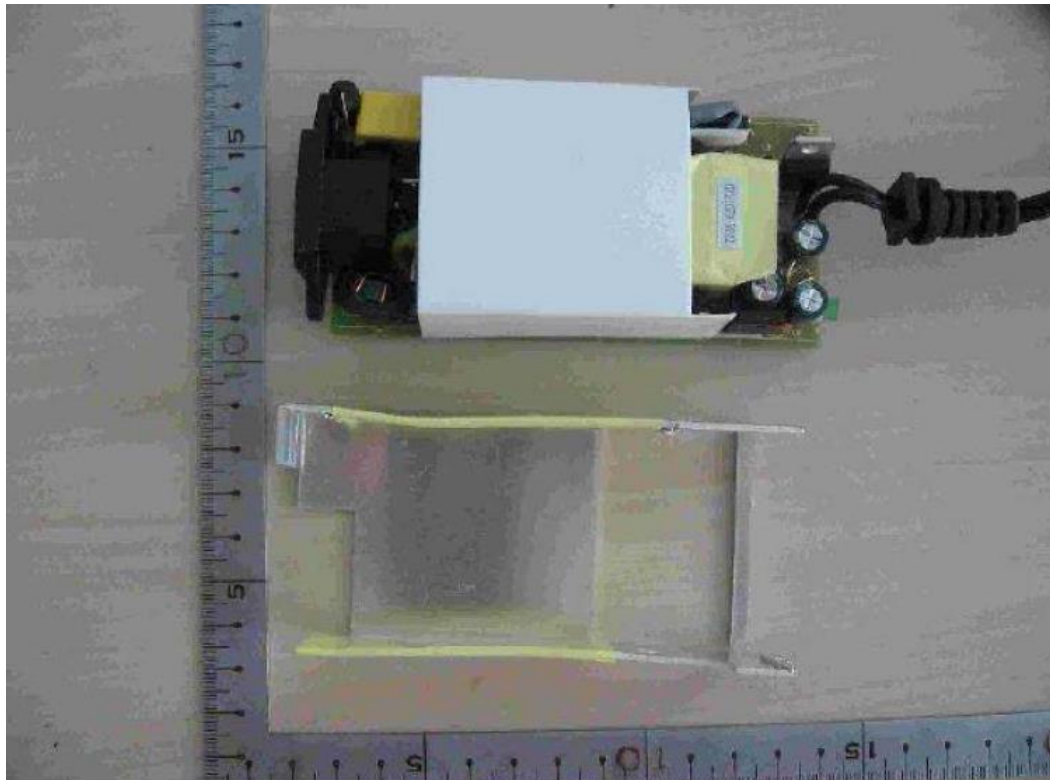
Photos



Photos

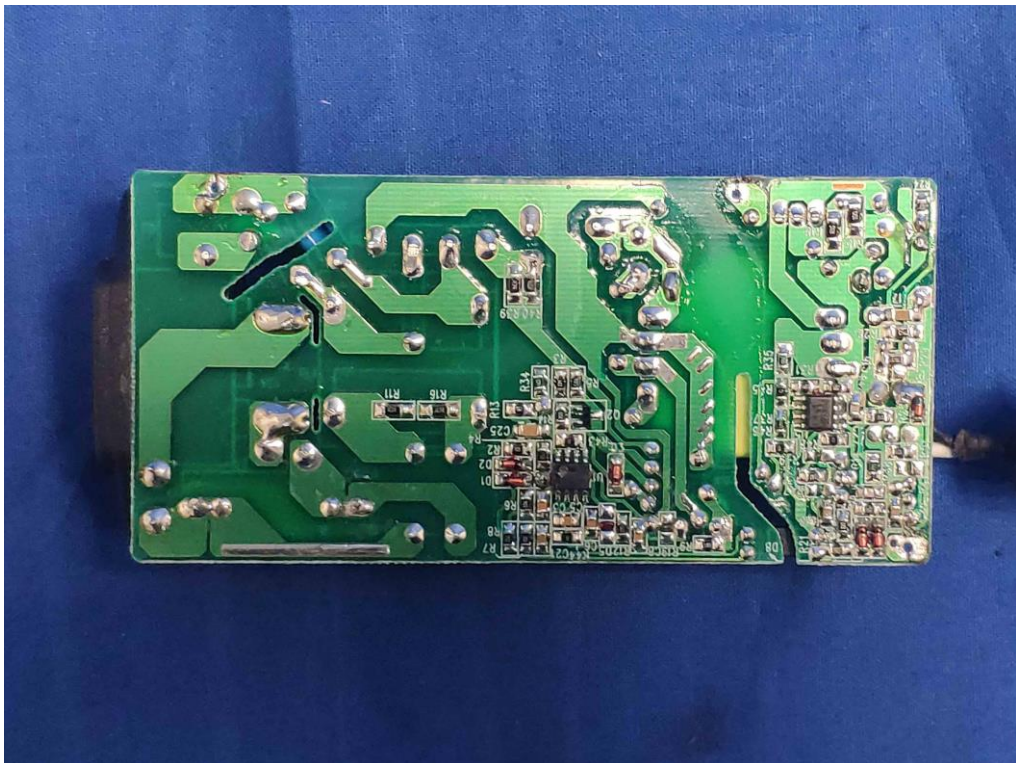
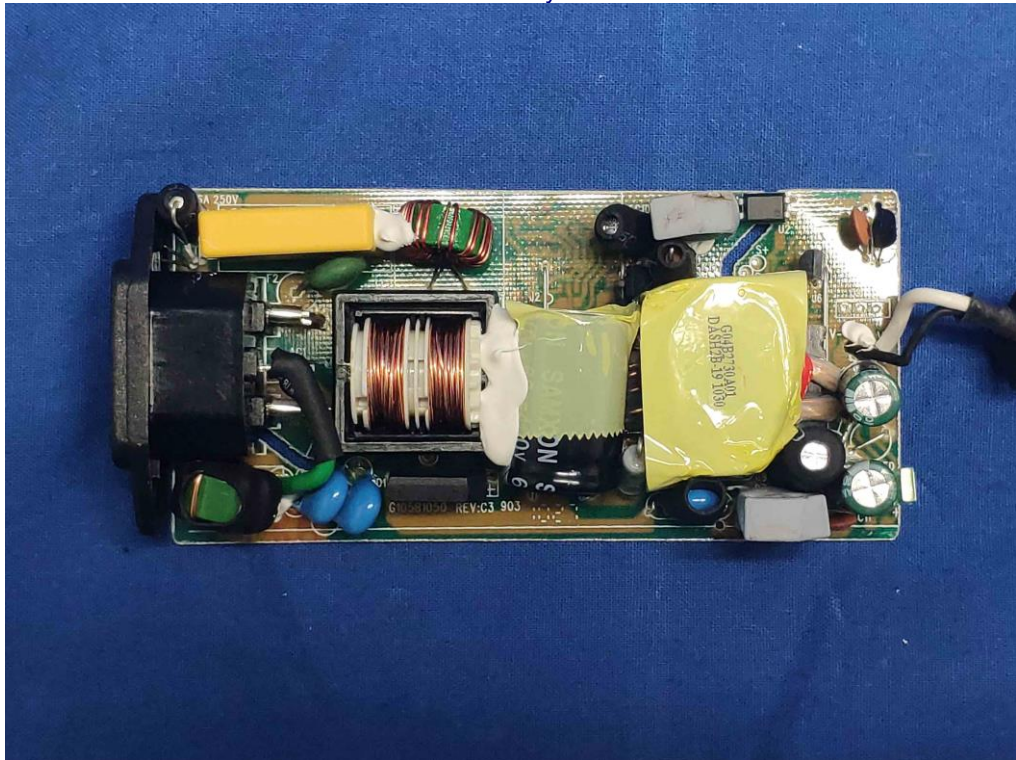


Photos



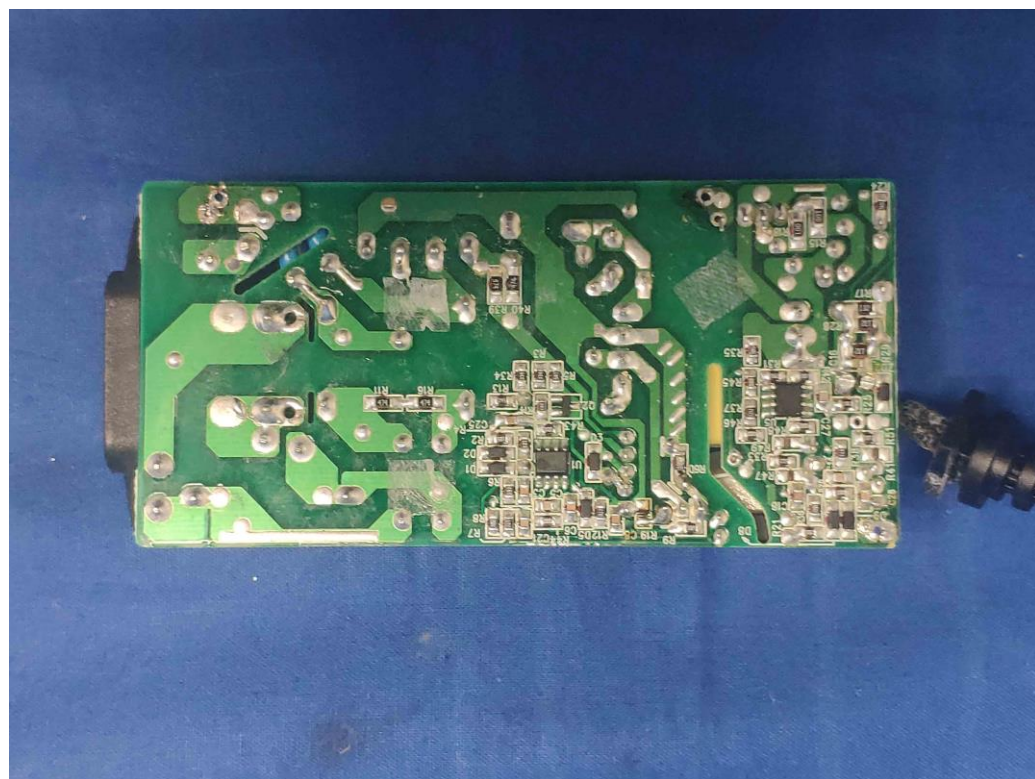
Photos

With PCB layout A



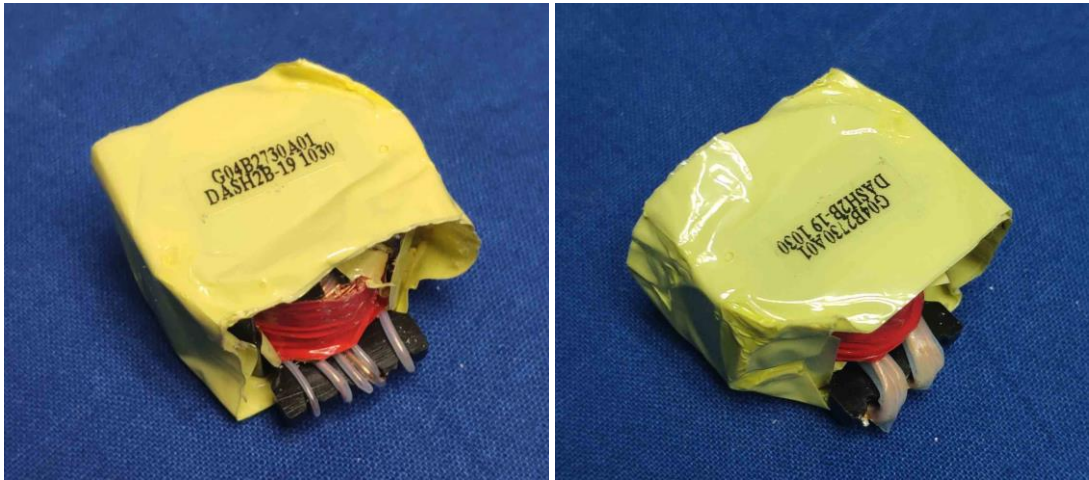
Photos

With PCB layout B



Photos

Transformer



IEC 62368-1 - 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 IEC 62368-1:2020+A11:2020		
Attachment Form No. : EU_GD_IEC62368_1E		
Attachment Originator : UL(Demko)		
Master Attachment : 2021-02-04		
Copyright © 2021 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.		
	CENELEC COMMON MODIFICATIONS (EN)	P
	Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2020+A11:2020. All other clause numbers in that column, except for those in the paragraph below, refers to IEC 62368-1:2018. Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2018 are prefixed "Z".	P
	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
1	Modification to Clause 3 .	N/A
3.3.19	Sound exposure <i>Replace 3.3.19 of IEC 62368-1 with the following definitions:</i>	N/A


IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.19.1	momentary exposure level, MEL metric for estimating 1 s sound exposure level from the HD 483-1 S2 test signal applied to both channels, based on EN 50332-1:2013, 4.2. Note 1 to entry: MEL is measured as A-weighted levels in dB. Note 2 to entry: See B.3 of EN 50332-3:2017 for additional information.	Not personal music player.	N/A
3.3.19.3	sound exposure, E A-weighted sound pressure (p) squared and integrated over a stated period of time, T Note 1 to entry: The SI unit is $\text{Pa}^2 \text{ s}$. $E = \int_0^T p(t)^2 dt$		N/A
3.3.19.4	sound exposure level, SEL logarithmic measure of sound exposure relative to a reference value, E_0 , typically the 1 kHz threshold of hearing in humans. Note 1 to entry: SEL is measured as A-weighted levels in dB. $SEL = 10 \lg \left(\frac{E}{E_0} \right) \text{ dB}$ Note 2 to entry: See B.4 of EN 50332-3:2017 for additional information.		N/A
3.3.19.5	digital signal level relative to full scale, dBFS levels reported in dBFS are always r.m.s. Full scale level, 0 dBFS, is the level of a dc-free 997-Hz sine wave whose undithered positive peak value is positive digital full scale, leaving the code corresponding to negative digital full scale unused Note 1 to entry: It is invalid to use dBFS for non-r.m.s. levels. Because the definition of full scale is based on a sine wave, the level of signals with a crest factor lower than that of a sine wave may exceed 0 dBFS. In particular, square wave signals may reach +3,01 dBFS.		N/A
2	Modification to Clause 10		N/A
10.6	Safeguards against acoustic energy sources Replace 10.6 of IEC 62368-1 with the following:		N/A
10.6.1.1	Introduction Safeguard requirements for protection against long-term exposure to excessive sound pressure	Not personal music player.	N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>levels from personal music players closely coupled to the ear are specified below. Requirements for earphones and headphones intended for use with personal music players are also covered. A personal music player is a portable equipment intended for use by an ordinary person, that:</p> <ul style="list-style-type: none"> – is designed to allow the user to listen to audio or audiovisual content / material; and – uses a listening device, such as headphones or earphones that can be worn in or on or around the ears; and – has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around while in continuous use (for example, on a street, in a subway, at an airport, etc.). <p>EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment.</p> <p>Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3.</p> <p>NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360.</p> <p>NOTE 2 It is the intention of the Committee to allow the alternative methods for now, but to only use the dose measurement method as given in 10.6.5 in future. Therefore, manufacturers are encouraged to implement 10.6.5 as soon as possible.</p> <p>Listening devices sold separately shall comply with the requirements of 10.6.6. These requirements are valid for music or video mode only. The requirements do not apply to:</p> <ul style="list-style-type: none"> – professional equipment; <p>NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.</p> <ul style="list-style-type: none"> – hearing aid equipment and other devices for assistive listening; – the following type of analogue personal music players: <ul style="list-style-type: none"> • long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and • cassette player/recorder; <p>NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.</p> <ul style="list-style-type: none"> – a player while connected to an external amplifier that does not allow the user to walk around 		

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>while in use.</p> <p>For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply.</p> <p>The relevant requirements are given in EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.</p>		
10.6.1.2	<p>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
10.6.2	Classification of devices without the capacity to estimate sound dose		N/A
10.6.2.1	<p>General</p> <p>This standard is transitioning from short-term based (30 s) requirements to long-term based (40 hour) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3.</p> <p>For classifying the acoustic output $L_{Aeq,T}$, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period.</p> <p>For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, measurements may be done over the duration of the complete song. In this case, T becomes the duration of the song.</p> <p>NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the content and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song does not exceed the required limit. For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dB.</p>	Not personal music player.	N/A
10.6.2.2	RS1 limits (to be superseded, see 10.6.3.2)		N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>RS1 is a class 1 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 85 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 27 mV (analogue interface) or -25 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1. – The RS1 limits will be updated for all devices as per 10.6.3.2. 		
10.6.2.3	<p>RS2 limits (to be superseded, see 10.6.3.3)</p> <p>RS2 is a class 2 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or when the combination of player and listening device is known by other means such as setting or automatic 130 detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 100 dB(A) when playing the fixed “programme simulation noise” as described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 150 mV (analogue interface) or -10 dBFS (digital interface) when playing the fixed “programme simulation noise” as described in EN 50332-1. 		N/A
10.6.2.4	<p>RS3 limits</p> <p>RS3 is a class 3 acoustic energy source that exceeds RS2 limits.</p>		N/A
10.6.3	Classification of devices (new)		N/A
10.6.3.1	<p>General</p> <p>Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision of 23 June 2009, are given below.</p>		N/A
10.6.3.2	RS1 limits (new)		N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>RS1 is a class 1 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1. 		
10.6.3.3	<p>RS2 limits (new)</p> <p>RS2 is a class 2 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3, shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1. 		N/A
10.6.4	Requirements for maximum sound exposure		N/A
10.6.4.1	<p>Measurement methods</p> <p>All volume controls shall be turned to maximum during tests.</p> <p>Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.</p>		N/A
10.6.4.2	<p>Protection of persons</p> <p>Except as given below, protection requirements for parts accessible to ordinary persons, instructed persons and skilled persons are given in 4.3.</p> <p>NOTE 1 Volume control is not considered a safeguard.</p>		N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Between RS2 and an ordinary person, the basic safeguard may be replaced by an instructional safeguard in accordance with Clause F.5, except that the instructional safeguard shall be placed on the equipment, or on the packaging, or in the instruction manual.</p> <p>Alternatively, the instructional safeguard may be given through the equipment display during use.</p> <p>The elements of the instructional safeguard shall be as follows:</p> <p>– element 1a: the symbol , IEC 60417-6044 (2011-01)</p> <p>– element 2: “High sound pressure” or equivalent wording</p> <p>– element 3: “Hearing damage risk” or equivalent wording</p> <p>– element 4: “Do not listen at high volume levels for long periods.” or equivalent wording</p> <p>An equipment safeguard shall prevent exposure of an ordinary person to an RS2 source without intentional physical action from the ordinary person and shall automatically return to an output level not exceeding what is specified for an RS1 source when the power is switched off.</p> <p>The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output exceeding RS1. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output exceeding RS1. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time.</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent of how often and how long the personal music player has been switched off.</p> <p>A skilled person shall not be unintentionally exposed to RS3.</p>		
10.6.5	Requirements for dose-based systems		N/A
10.6.5.1	General requirements		N/A
	Personal music players shall give the warnings as provided below when tested according to EN		

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>50332-3, using the limits from this clause.</p> <p>The manufacturer may offer optional settings to allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating the safeguards. This allows the users to be informed in a method that best meets their physical capabilities and device usage needs. If such optional settings are offered, an administrator (for example, parental restrictions, business/educational administrators, etc.) shall be able to lock any optional settings into a specific configuration.</p> <p>The personal music player shall be supplied with easy to understand explanation to the user of the dose management system, the risks involved, and how to use the system safely. The user shall be made aware that other sources may significantly contribute to their sound exposure, for example work, transportation, concerts, clubs, cinema, car races, etc.</p>		
10.6.5.2	<p>Dose-based warning and requirements</p> <p>When a dose of 100 % CSD is reached, and at least at every 100 % further increase of CSD, the device shall warn the user and require an acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to compliance with class RS1.</p> <p>The warning shall at least clearly indicate that listening above 100 % CSD leads to the risk of hearing damage or loss.</p>		N/A
10.6.5.3	<p>Exposure-based requirements</p> <p>With only dose-based requirements, cause and effect could be far separated in time, defying the purpose of educating users about safe listening practice. In addition to dose-based requirements, a PMP shall therefore also put a limit to the short-term sound level a user can listen at.</p> <p>The exposure-based limiter (EL) shall automatically reduce the sound level not to exceed 100 dB(A) or 150 mV integrated over the past 180 s, based on methodology defined in EN 50332-3.</p> <p>The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster.</p> <p>Test of EL functionality is conducted according to EN 50332-3, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s</p>		N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>shall be 100 dB or lower. For equipment provided with a standardized connector, the unweighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than -10 dBFS for a digital interface.</p> <p>NOTE In case the source is known not to be music (or test signal), the EL may be disabled.</p>		

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input With 94 dB L_{Aeq} acoustic pressure output of the listening device, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the input voltage of the listening device when playing the fixed "programme simulation noise" as described in EN 50332-1 shall be ≥ 75 mV. NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.	Not listening device.	N/A
10.6.6.2	Corded listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.3	Cordless listening devices In cordless mode, – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the receiving device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.4	Measurement method <i>Measurements shall be made in accordance with EN 50332-2 as applicable.</i>		N/A
3	Modification to the whole document		N/A

IEC 62368-1 - ATTACHMENT							
Clause	Requirement + Test			Result - Remark		Verdict	
	Delete all the “country” notes in the reference document according to the following list:					P	
	0.2.1	Note 1 and 2	1	Note 4 and 5	3.3.8.1		Note 2
	3.3.8.3	Note 1	4.1.15	Note	4.7.3		Note 1 and 2
	5.2.2.2	Note	5.4.2.3.2.2 Table 12	Note c	5.4.2.3.2.4		Note 1 and 3
	5.4.2.3.2.4 Table 13	Note 2	5.4.2.5	Note 2	5.4.5.1		Note
	5.4.10.2.1	Note	5.4.10.2.2	Note	5.4.10.2.3		Note
	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1		Note 2 and 3 and 4
	5.6.8	Note 2	5.7.6	Note	5.7.7.1		Note 1 and Note 2
	8.5.4.2.3	Note	10.2.1 Table 39	Note 3 and 4 and 5	10.5.3		Note 2
	10.6.1	Note 3	F.3.3.6	Note 3	Y.4.1		Note
	Y.4.5	Note					
4	Modification to Clause 1					P	
1	Add the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.			Considered.		P	

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5	Modification to 4.Z1		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>	The equipment is provided with fuse F1 inside equipment.	P
6	Modification to 5.4.2.3.2.4		N/A
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
7	Modification to 10.2.1		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

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8	Modification to 10.5.1		N/A
10.5.1	<p>Add the following after the first paragraph:</p> <p>For RS 1 compliance is checked by measurement under the following conditions:</p> <p>In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or pre-sets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.</p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p>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.</p> <p>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.</p> <p>For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.</p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>		N/A
9	Modification to G.7.1		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>	Not cover in this report.	N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10	Modification to Bibliography		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>		P
11	ADDITION OF ANNEXES		N/A
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		N/A
4.1.15	<p>Denmark, Finland, Norway and Sweden</p> <p>To the end of the subclause the following is added: 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." In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag"</p>	<p>The manufacture confirmed the text must be applied when market to these countries.</p>	—

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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>		N/A
5.2.2.2	<p>Denmark</p> <p>After the 2nd paragraph add the following:</p> <p>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:</p> <p>For separation of the telecommunication network from earth the following is applicable:</p> <p>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), <p>and</p> <ul style="list-style-type: none"> • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV. <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p>		N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; the additional testing shall be performed on all the test specimens as described in EN 60384-14; <p>the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.</p>		
5.5.2.1	<p>Norway</p> <p>After the 3rd paragraph the following is added:</p> <p>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
5.5.6	<p>Finland, Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>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.</p>		N/A
5.6.1	<p>Denmark</p> <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:</p> <p>In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.</p>	Fuse is integrated in the equipment.	P

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.		P
5.6.4.2.1	France After the indent for pluggable equipment type A , the following is added: – in certain cases, the protective current rating of the circuit supplied from the mains is taken as 20 A instead of 16 A.		P
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.	Power cord not provided, see summary of testing.	N/A
5.6.8	Norway To the end of the subclause the following is added: Equipment connected with an earthed mains plug is classified as class I equipment . See the Norway marking requirement in 4.1.15. The symbol IEC 60417-6092, as specified in F.3.6.2, is accepted.		P
5.7.6	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
5.7.6.2	Denmark 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
5.7.7.1	Norway and Sweden To the end of the subclause the following is added: 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. 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.	Not TV.	N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<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 jordtilkøpelt utstyr – og er tilkøpelt 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>		
8.5.4.2.3	<p>United Kingdom</p> <p>Add the following after the 2nd dash bullet in 3rd paragraph:</p> <p>An emergency stop system complying with the requirements of IEC 60204-1 and ISO 13850 is required where there is a risk of personal injury.</p>		N/A
B.3.1 and B.4	<p>Ireland and United Kingdom</p> <p>The following is applicable:</p>		N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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		
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 polyphase 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>	Power cord not provided, see summary of testing.	N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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>		N/A
G.7.1	<p>United Kingdom</p> <p>To the first paragraph the following is added:</p> <p>Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc. (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations.</p> <p>NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>	Power cord not provided, see summary of testing.	N/A
G.7.1	<p>Ireland</p> <p>To the first paragraph the following is added:</p> <p>Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard</p>		N/A
G.7.2	<p>Ireland and United Kingdom</p> <p>To the first paragraph the following is added:</p> <p>A power supply cord with a conductor of 1,25 mm² is allowed for equipment which is rated over 10 A and up to and including 13 A.</p>	Power cord not provided, see summary of testing.	N/A
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.2	<p>Germany</p> <p>The following requirement applies:</p> <p>For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking.</p> <p><i>Justification:</i> 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>	Not CRT.	N/A

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

ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)		N/A					
	<table><tr><th rowspan="2">Type of flexible cord</th><th colspan="2">Code designations</th></tr><tr><th>IEC</th><th>CENELEC</th></tr></table>		Type of flexible cord	Code designations		IEC	CENELEC	N/A
	Type of flexible cord	Code designations						
		IEC	CENELEC					
	PVC insulated cords							
	Flat twin tinsel cord	60227 IEC 41	H03VH-Y					
	Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F					
	Ordinary polyvinyl chloride sheathed flexible cord	60227 IEC 53	H05VV-F H05VVH2-F					
	Rubber insulated cords							
	Braided cord	60245 IEC 51	H03RT-F					
	Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F					
	Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F					
	Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F					
	Cords having high flexibility							
	Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H					
	Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H					
	Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H					
	Cords insulated and sheathed with halogen-free thermoplastic compounds							
	Light halogen-free thermoplastic insulated and sheathed flexible cords		H03Z1Z1-F H03Z1Z1H2-F					
Ordinary halogen-free thermoplastic insulated and sheathed flexible cords		H05Z1Z1-F H05Z1Z1H2-F						

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 U.S.A. AND CANADA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to : CSA/UL 62368-1:2019			
TRF template used: : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. : US_CA_ND_IEC62368_1E			
Attachment Originator : UL(US)			
Master Attachment : Dated 2021-02-04			
Copyright © 2021 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
IEC 62368-1 - US and Canadian National Differences Special National Conditions based on Regulations and Other National Differences			
1 (1DV.1) (1.3)	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part 1, 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 (1DV.2.1)	This standard includes additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities. See Annex DVB.		N/A
1 (1DV.2.2)	This standard includes additional requirements for equipment intended for mounting under cabinets. See Annex DVC.		N/A
1 (1DV.2.3)	IEC 62368-3 clause 5 for DC power transfer at ES1 or ES2 voltage levels is considered informative. IEC 62368-3 clause 6 for remote power feeding telecommunication (RFT) circuits is considered normative (see ITU K.50). Alternatively, equipment with RFT circuits are given in either UL 2391 or CSA/UL 60950-21. RFT-C circuits are not permitted unless the RFT-C circuit complies with RFT-V limits ($\leq 200V$ per conductor to earth).		N/A
1 (1DV.3)	For protection against direct lightning strikes, reference is made to NFPA 780 and CAN/CSA-B72 for additional requirements.		N/A
1 (DV.5)	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.1 (4.1.17)	For lengths exceeding 3.05 m, external interconnecting cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.	AC inlet used; no power supply cord provided.	N/A
	For lengths 3.05 m or less, external interconnecting cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.	AC inlet used; no power supply cord provided.	N/A
4.6 (4.6.2)	Wire-wrap terminals have special construction and performance requirements.		N/A
4.8 (4.8.3, 4.8.4.5, 4.8.5)	Coin / button cell batteries have modified special construction and performance requirements.	No battery.	N/A
5.4.2.3.2 (5.4.2.3.2.1)	Surge Arrestors and Transient Voltage Surge Suppressors installed external to the equipment are required to comply with the appropriate NEC and CEC requirements.		N/A
5.5.9	Receptacles, rated 125-V, single phase, 15- or 20-A accessible to either ordinary, instructed, or skilled persons are required to be provided with GFCI Protection for Personnel if the equipment containing the receptacles is installed outdoors. The protection devices are required to comply with UL 943, and CAN/CSA C22.2 No.144.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.7, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment.		N/A
5.7.8 (5.7.8.1)	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
6.5.1	PS3 wiring outside a fire enclosure is required to comply with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A
Annex F (F.3.3.9)	Output terminals provided for supply of other equipment, except mains supply, are required to be marked with a maximum rating or reference to equipment permitted to be connected.	Max. output rating is listed on the product.	P
Annex F (F.3.7)	Outdoor Enclosures are required to be classified and marked in accordance with UL 50 or 50E, or CAN/CSA C22.2 No. 94.1 or 94.2.		N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex G (G.7)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	Not permanent connection.	N/A
	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	AC inlet used; no power supply cord provided.	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.	AC inlet used; no power supply cord provided.	N/A
	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.	AC inlet used; no power supply cord provided.	N/A
	Power supply cords for outdoor equipment are required to be suitable outdoor use type as required by Section 400.4 of the NEC and Rule 4-012 of the CEC, i.e., marked "W."	Not outdoor equipment.	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 Q (Q.3)	Equipment with paired conductor and/or coax communications cables/wiring connected to building wiring are required to have special voltage, current, power and marking requirements.		N/A
Annex DVA (1)	Equipment that is designed such that it may be powered from a separate electrical service, is required to meet applicable requirements for service equipment for control and protection of services and their installation and complies with Article 230 of the National Electrical Code (NEC), NFPA 70 and Section 6 of the Canadian Electrical Code, Part I, CSA C22.1.		N/A
	Equipment intended for use in spaces used for environmental air (plenums) are subjected to special flammability requirements for heat and visible smoke release.		N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) are required to 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. and Canadian Regulations.		N/A
	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
	Storage batteries and battery management equipment, other than associated with lead-acid batteries, and including battery backup systems that are not an integral part of stationary AV and ICT equipment, such as provided in separate cabinets, are required to be certified (listed) to the appropriate standard(s) for such storage batteries and equipment.		N/A
Annex DVA (5.6)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	See main report.	P
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment is required to comply 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) are required to 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 minimum flammability classification of V-1.		N/A
Annex DVA (10.3)	Equipment with lasers is required to meet 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)	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (F.3.3.4)	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 that are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."	One phase.	N/A
Annex DVA (F.3.3.6)	Equipment identified for ITE (computer) room installation is required to be marked with the rated current.		N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers are required to 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.	No outlet.	N/A
	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.4.2)	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-400 and 10-612.	No isolated ground.	N/A
Annex DVA (G.4.3)	Interconnection of units by conductors supplied by a limited power source, or a Class 2 circuit defined in the NEC/CEC may have field wiring connections other than specified in DVH.3, such as wire-wrap and crimp-on types, if the limited power source and Class 2 circuits are separated from all other circuits by barriers, routing or fixing.		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
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 (G.7)	Flexible cords used outdoors are required to have the suffix "W" marked on the flexible cord.		N/A
Annex DVA (M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (Q)	If applicable per NEC 725.121(C), some limited power sources supplied from AV/ICT equipment are required to have a label indicating the maximum voltage and maximum current, or maximum voltage and nominal current output for each connection point. Where multiple connection points have the same rating, a single label is permitted to be used.		N/A
	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1 are required to be marked with the voltage rating and "Class 2" or equivalent. The marking is located adjacent to the terminals and visible during wiring.		N/A
	Applicable parts of Chapter 8 of the NEC, and Rules 54 and 60 of the CEC, may be applicable to ITE installed outdoors with connections to communication systems.		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 are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These equipment and components include: appliance couplers, attachment plugs, battery backup systems, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, modular data centers, power supply cords, some power distribution equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.	Critical components are IEC or UL certified. See list of critical components in main CB report (§4.1.2).	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 required to be in accordance with the NEC/CEC.		N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.3.2)	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified.		N/A
	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, is required to comply 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

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center">ATTACHMENT TO TEST REPORT</p> <p align="center">IEC 62368-1 (AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment)</p>			
Differences according to: AS/NZS 62368.1:2018			
TRF template used:: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No.: AU_NZ_ND_IEC62368_1D			
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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:		
2	<p>Add the following to the list of normative references:</p> <p>The following normative documents are referenced in Appendix ZZ:</p> <ul style="list-style-type: none"> -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 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance</i> -AS/NZS 60695.11.10, <i>Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods</i> 		P

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>-AS/NZS 60884.1, <i>Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</i></p> <p>-AS/NZS 60950.1:2015, <i>Information technology equipment—Safety, Part 1: General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)</i></p> <p>IEC 61032:1997, <i>Protection of persons and equipment by enclosures—Probes for verification</i></p> <p>-AS/NZS 61558.1:2008 (including Amendment 2:2015), <i>Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 2.1, MOD)</i></p> <p>-AS/NZS 61558.2.16, <i>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.</i></p>		
4.1.1	<p>Application of requirements and acceptance of materials, components and subassemblies</p> <p>1 <i>Replace the text 'IEC 60950-1' with 'AS/NZS 60950.1:2015'.</i></p> <p>2 <i>Replace the text 'IEC 60065' with 'AS/NZS 60065'.</i></p>		P
4.7	Equipment for direct insertion into mains socket-outlets		
4.7.2	<p>Requirements</p> <p><i>Delete the text of the second paragraph and replace with the following:</i></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>	Not Equipment for direct insertion into mains socket-outlets.	N/A
4.7.3	<p>Compliance Criteria</p> <p><i>Delete the first paragraph and Note 1 and Note 2 and replace with the following:</i></p> <p><i>Compliance is checked by inspection and, if necessary, by the tests in AS/NZS 3112.</i></p>		N/A
4.8	<p><i>Delete existing clause title and replace with the following:</i></p> <p>4.8 Products containing coin/button cell batteries</p>		

IEC 62368-1 - ATTACHMENT					
Clause	Requirement + Test		Result - Remark	Verdict	
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'.		No such battery.	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	Replace the table with the following:			N/A	
Parts		Impulse test		Steady state test	
		New Zealand	Australia	New Zealand	Australia
Parts indicated in Clause 5.4.10.1 a) ^a		2.5 kV 10/700 µs	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment. 10/700 µs	1.5 kV	3 kV
Parts indicated in Clause 5.4.10.1 b) and c) ^b		1.5 kV 10/700 µs ^c		1.0 kV	1.5 kV
^a Surge suppressors shall not be removed. ^b Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment. ^c During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.					

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.10.2.2	After the first paragraph, <i>insert</i> new Notes 201 and 202 as follows: NOTE 201 For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		N/A
5.4.10.2.3	After the first paragraph, <i>insert</i> new Notes 201 and 202 as follows: NOTE 201 For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
6	Electrically-caused fire		
6.1	General After the first paragraph, <i>insert</i> the following new paragraph: Alternatively, the requirements of Clauses 6.2 to 6.5.2 are considered to be fulfilled if the equipment complies with the requirements of Clause 6.202	Alternative tests not performed.	N/A
6.6	After Clause 6.6, <i>add</i> the new Clauses 6.201 and 6.202 as follows: 6.201 External power supplies, docking stations and other similar devices and 6.202 Resistance to fire—Alternative tests (see special national conditions)		P
8.5.4	Special categories of equipment comprising moving parts		
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: c 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	MS1.	N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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'		
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'.	No mains outlet.	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.	IEC standard certificate inlet used.	P
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'.		N/A
Paragraph G.7.1	Mains supply cords, General In the fourth dashed paragraph, <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'	Mains supply cords is not covered in this report.	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	Protection circuits for batteries provided within	No battery.	N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Paragraph M.3.2	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.		
	Special national conditions (if any)		
6.201	External power supplies, docking stations and other similar devices For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage— – 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. For equipment with multiple rated output voltages, the requirements apply with the equipment configured for each rated output voltage in turn. NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries. <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>	See main report.	P
6.202	Resistance to fire—Alternative tests		
6.202.1	General Parts of non-metallic material shall be resistant to ignition and spread of fire. 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: 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. b) The following parts which would contribute	Alternative tests not performed.	N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>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, according to AS/NZS 60695.11.10. <p>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.</p>		
	<p><i>Compliance shall be checked by the tests of Clauses 6.202.2, 6.202.3 and 6.202.4.</i></p> <p>For the base material of printed boards, compliance shall be checked by the test of Clause 6.202.5.</p> <p>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.</p>	Alternative tests not performed.	N/A
6.202.2	<p>Testing of non-metallic materials</p> <p>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.</p> <p>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.</p>		N/A
6.202.3	<p>Testing of insulating materials</p> <p>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.</p> <p>The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection.</p> <p>NOTE: Contacts in components such as switch contacts are considered to be connections</p>		N/A
	<p>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.</p> <p>However, parts shielded by a barrier which meets the needle-flame test need not be tested</p>		N/A
	The needle-flame test shall be made in		N/A

IEC 62368-1 - ATTACHMENT													
Clause	Requirement + Test	Result - Remark	Verdict										
	<div>accordance with AS/NZS 60695.11.5 with the following modifications:</div> <table><tr><td>Clause of AS/NZS 60695.11.5</td><td>Change</td></tr><tr><td>9 Test procedure</td><td></td></tr><tr><td>9.2 Application of needle-flame</td><td><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. The duration of application of the test flame shall be 30 s ± 1 s.</td></tr><tr><td>9.3 Number of test specimens</td><td><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.</td></tr><tr><td>11 Evaluation of test results</td><td><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.</td></tr></table> <div>The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the relevant part is not thinner than the sample tested.</div>	Clause of AS/NZS 60695.11.5	Change	9 Test procedure		9.2 Application of needle-flame	<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. The duration of application of the test flame shall be 30 s ± 1 s.	9.3 Number of test specimens	<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.	11 Evaluation of test results	<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.		
Clause of AS/NZS 60695.11.5	Change												
9 Test procedure													
9.2 Application of needle-flame	<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. The duration of application of the test flame shall be 30 s ± 1 s.												
9.3 Number of test specimens	<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.												
11 Evaluation of test results	<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.												
6.202.4	Testing in the event of non-extinguishing		N/A										

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>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>		
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 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 – 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, 		N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>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
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 	Not TV.	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>	Not TV.	N/A

IEC 62368-1 - 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 (2020)			
TRF template used: : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. : JP_ND_IEC62368_1D			
Attachment Originator : UL (JP)			
Master Attachment : Date 2021-02-04			
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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.	Considered.	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.	No socket-outlets provided.	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.	Class I equipment.	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.	No applicable.	N/A

IEC 62368-1 - ATTACHMENT			
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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 cable with 1.25 mm ² or more cross-sectional area	Class I equipment.	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.	Class I equipment.	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.	Class I equipment.	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.	Class I equipment.	N/A
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.	Not applicable.	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.	Not applicable.	N/A

IEC 62368-1 - ATTACHMENT			
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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.	Not applicable.	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.	Not applicable.	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}	Considered.	P
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.	Class I equipment.	N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic.	See main report	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.	Class I equipment.	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.		P
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.	Not applicable.	N/A

IEC 62368-1 - 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.	Must be checked when market into the country.	—
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.	Must be checked when market into the country.	—
G.4.1	This requirement is not applicable to Clauses G.4.2 and G.4.2A.	Must be checked when market into the country.	—
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.	Must be checked when market into the country.	—
G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively.	Must be checked when market into the country.	—
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.	Power supply cord not provide.	N/A
G.8.3.3	Withstand $1,71 \times 1.1 \times U_0$ for 5 s.		N/A

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

<p align="center">ATTACHMENT TO TEST REPORT</p> <p align="center">IEC 62368-1</p> <p align="center">SINGAPORE NATIONAL DIFFERENCES</p> <p align="center">AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT - PART 1: SAFETY REQUIREMENTS</p>			
Differences according to : Special National Conditions			
TRF template used: : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. : SG_ND_IEC62368_1E			
Attachment Originator : Intertek Testing Services (Singapore) Pte Ltd			
Master Attachment : 2021-07-16			
Copyright © 2021 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		
	Not Applicable		
Chapter 7	<p>Special national conditions (if any)</p> <p>Controlled goods under Consumer Protection (Safety Requirements) Registration Scheme (CPS) are required to be tested to additional requirements stipulated by Enterprise Singapore in Chapter 7 of the CPS information booklet.</p> <p>The CPS information booklet is updated on an ongoing basis. At the point of testing, refer to the latest copy of the CPS information booklet for the minimum edition of standard to apply for testing of products under the CPS scheme and any new requirements.</p> <p>Link to CPS information booklet: https://www.consumerproductsafety.gov.sg/files/cps-info-booklet.pdf</p>		
3	All appliances must be tested to 230 VAC, 50 Hz.	AC input voltage range includes "230VAC, 50Hz".	P
4	<p>Appliance fitted with voltage selector shall be tested as follows:</p> <p>Connect appliance to 230 VAC mains with voltage selector switch to settings not suitable for operation at 230 VAC.</p>	No voltage selector.	N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5	All appliances (with tropical test requirements in applicable Standards) shall comply with the tropical condition test as stated in the relevant IEC Standards.	Must be checked when market into the country.	—
6	All Class I appliances (3-pin mains plug) must be fitted with 3-pin mains plugs complying with SS 145/SS 472 that are registered with the Authority.	Must be checked when market into the country.	—
7	a) All Class II appliances must be fitted with 2-pin mains plug complying with EN 50075. b) Class II appliances that are fitted with 3-pin mains plugs must use plugs that comply with SS 145 and registered with the Authority.	Class I equipment.	N/A
9	Detachable power cord set must be listed in the test report critical component list.	The power cord has not been checked, refer to Summary of Testing.	—
18	AC Adaptor incorporated with 13A socket-outlet to be tested to additional tests clauses 13, 17 and 18 of SS 246 (till 25/10/2021), or clauses 12.1 & 12.3 of SS 145 Part 3: 2020.	Not such AC adapter.	N/A
19	Supplier who is supplying AC adaptors with detachable interchangeable plug pins must include with its products, written instructions to inform customer on the type of detachable interchangeable plug pins that are approved and suitable to use in Singapore. These instructions are to be submitted to the Conformity Assessment Body for verification when applying for Certificate of Conformity.	Not such equipment.	N/A
20	For AC Adaptors supplied together with Personal Mobility Devices: 1. Registered Supplier to declare the model of the AC adaptor that is to be used with/ bundled together with the PMDs; 2. Registered Supplier to provide valid IEC 60950-1 or IEC 62368-1 test reports for certification and registration of the declared AC adaptor under the CPS scheme; and Registered Supplier to provide the UL 2272 test report as supporting document, showing that the listed AC adaptor in the UL 2272 test report is the model declared to be used with/ bundled together with the PMDs.	Not such AC adapter.	N/A

IEC 62368-1 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
21	CD/ DVD ROMs (used in personal computers) to have test certificate showing that CD/DVD ROM has complied with IEC 60825- 1.	The equipment does not consist of CD/DVD ROM.	N/A
22	Modem card incorporated in the personal computer must be tested at set level (sub-clauses 5.1 & 6 of IEC 60950) or at component level.	The equipment does not consist of Modem Card.	N/A
23	Powerline Ethernet Adaptor incorporated with 13A socket-outlet, to be tested to additional test clauses 13, 17 & 18 of SS 246 (till 25/10/2021), or clauses 13, 17 & 18 of SS 145 Part 3: 2020.	Not such adapter.	N/A
	Other additional requirements which may be included in Chapter 7 of the information booklet in ongoing basis at the time of testing.		N/A