



Test Report issued under the responsibility of:



TEST REPORT

IEC 62368-1

Audio/video, information and communication technology equipment

Part 1: Safety requirements

Report Number : 210602694SHA-001

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Name of Testing Laboratory : Intertek Testing Services Shanghai
preparing the Report : Building No. 86, 1198 Qinzhou Road (North) 200233 Shanghai
CHINA

Applicant's name : GlobTek, Inc.

Address : 186 Veterans Dr. Northvale, NJ 07647 USA

Test specification:

Standard : IEC 62368-1: 2014

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_1D

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

Master TRF : Dated 2021-02-04

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General disclaimer:

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Test Item description	ICT/ITE POWER SUPPLY
Trade Mark	
Manufacturer	Same as applicant
Model/Type reference	GT*21089-*****, GT*21096-*****(Refer to page 8 for details)
Ratings	Input: 100-240V~, 50-60Hz or 50/60Hz, Max. 0.5A Output: 3.3-48Vdc, Max. 2.6A, Max. 19.2W (Refer to page 9 for details)

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	Intertek Testing Services Shanghai
Testing location/ address		Building No. 86, 1198 Qinzhou Road (North) 200233 Shanghai CHINA
Tested by (name, function, signature)		Albert Zhou (Engineer) <i>Albert Zhou</i>
Approved by (name, function, signature)...		Will Wang (Mandated Reviewer) <i>Will Wang</i>
<input type="checkbox"/>	Testing procedure: CTF Stage 1:	N/A
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature)...		
<input type="checkbox"/>	Testing procedure: CTF Stage 2:	N/A
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 :	N/A
<input type="checkbox"/>	Testing procedure: CTF Stage 4:	N/A
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):

Appendix No.1: Photos of product; from page 73 to 86, total 14 pages.

Appendix No.2: Group differences for CENELEC countries, from page 87 to page 96, total 10 pages

Appendix No.3: National differences for USA and Canada, from page 97 to page 102, total 6 pages

Appendix No.4: National differences for Australia/New Zealand, from page 103 to page 112, total 10 pages

Appendix No.5: National differences for Japan, from page 113 to page 116, total 4 pages

Summary of testing:

From the result of our examination and tests in the submitted samples, conclude they comply with the requirements of the standard IEC 62368-1:2014 (Second Edition) & EN 62368-1:2014+AC:15+A11:2017 & BS EN 62368-1:2014+AC:15+A11:2017.

Tests performed (name of test and test clause):

All applicable tests as described in Test Case and Measurement Sections were performed.

Maximal ambient temperature as specified by the manufacturer: +40°C.

5.2 Classification and limits of electrical energy sources

5.3.2 Accessibility to electrical energy sources and safeguards

5.4.1.4 Maximum operating temperatures for materials, components and systems

5.4.1.8 Determination of working voltage

5.4.1.10.3 Ball pressure test

5.4.2 Clearances

5.4.3 Creepage distances

5.4.8 Humidity conditioning

5.4.9 Electric strength test

5.7.2.1 Measurement of touch current

6.2.2.2 Power measurement for worst-case load fault

6.2.2.3 Power measurement for worst-case source fault

6.4.3.3 Single Fault Conditions test

B.2.5 Input test

B.3.5 Maximum load at output terminals

F.3.10 Permanence of markings

G.5.3.3 Overload test of Transformers

T.2 Steady force test, 10 N

T.4 Steady force test, 100 N

T.7 Drop test

T.8 Stress relief test

Remark:

From the result of our examination and tests in the submitted samples, conclude they comply with the requirements of the standard IEC 62368-1:2014 (Second Edition)

Testing location:

Intertek Testing Services Shanghai
Building No.86, 1198 Qinzhou Road
(North), 200233 Shanghai, China

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

Group differences for CENELEC countries and national differences for Japan, Australia/New Zealand, US and Canada are considered.

☒ **The product fulfils the requirements of IEC 62368-1:2014 (Second Edition) & EN 62368-1:2014+AC:15+A11:2017 & BS EN 62368-1:2014+AC:15+A11:2017.**

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:

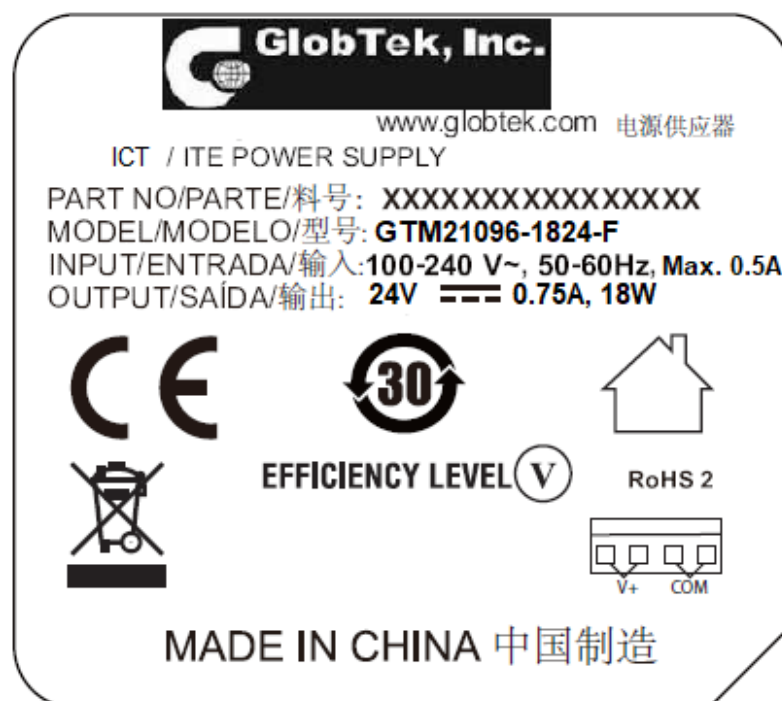
Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

☒ **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(s):

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.



Remark:

The above markings are the minimum requirements required by the safety standard. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.

Other models are with similar label as corresponding above models except different model name and output ratings.

TEST ITEM PARTICULARS:	
Classification of use by.....:	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input type="checkbox"/> Children likely to be present
Supply Connection.....:	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit - not Mains connected - <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input checked="" 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"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input checked="" type="checkbox"/> other: building-in equipment shall be evaluated in end system (see also general product information).
Considered current rating of protective device as part of building or equipment installation.....:	16A (20A for North America) Installation location: <input checked="" type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility.....:	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input checked="" type="checkbox"/> transportable <input type="checkbox"/> stationary <input checked="" type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC).....:	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: _____
Class of equipment	<input checked="" type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III <input checked="" type="checkbox"/> Not classified (For building-in model series)
Access location.....:	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maximum operating ambient.....:	40°C
IP protection class.....:	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP____
Power Systems.....:	<input checked="" type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT – ____ V _{L-L}
Altitude during operation (m).....:	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ≤ m
Altitude of test laboratory (m).....:	<input type="checkbox"/> 2000 m or less <input checked="" type="checkbox"/> ≤50 m
Mass of equipment (kg).....:	Max. 0.176kg

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	2021-06-23
Date (s) of performance of tests	2021-06-23 to 2021-09-26
GENERAL REMARKS:	
<p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator. When determining for test conclusion, measurement uncertainty of tests has been considered. Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty <i>This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.</i> The test report only allows to be revised only within the report defined retention period unless standard or regulation was withdrawn or invalid.</p>	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60068-2-1:	
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)	1. GlobTek (Suzhou) Co., Ltd Building 4, No. 76 JinLing East Road, Suzhou Industrial Park, Suzhou, JiangSu, 215021, China 2. GlobTek, Inc. 186 Veterans Dr. Northvale, NJ 07647 USA
GENERAL PRODUCT INFORMATION:	
General product information: Product covered by this report is ICT/ITE power supply module. Desktop power supplies GT*21089-**** are provided with suitable external enclosure. The top and bottom parts of the enclosure are ultrasonic welded. Models GT*21096-**** are open frame types without external enclosure. The products were tested to be suitable for connection to ≤ 16 A (IEC) and ≤ 20 A (USA) branch circuit in series. The unit is approved for TN mains star connections. The power supplies are rated class I or class II or class II units may have an optional functional earth connection. Open frame class I power supplies shall be properly bonded to the main protective bonding termination in the end product. The GT*21089-**** and GT*21096-**** have the same circuit diagram. All the types are designed for continuous operation.	

The products are not intended to be used in maximum ambient temperature exceed of 40 °C.
The products are not intended to use in environment which altitude exceed 2000m.
Different transformer types are alternative and provides reinforced insulation.

GT*21089-*****

The 1st “*” part can be ‘M’ or ‘-’ or ‘H’ for market identification and not related to safety.

The 2nd “*” denotes the rated output wattage designation, which can be “01” to “19”, in step of 1 denote 1W.

The 3rd “*” denotes the standard rated output voltage designation, which can be “03”, “05”, “06”, “09”, “12”, “15”, “18”, “24”, “48”;

The 4th “*” is optional deviation, subtracted from standard output voltage, which can be “-0.01” to “-23.99” with interval of 0.01, or blank to indicate no voltage different.

The 5th “*” =-T2 means desktop class II with C8 AC inlet

=-T3 means desktop class I or class II with functional earth with C14 AC inlet

=-T3A means desktop class I or class II with functional earth with C6 AC inlet

The last “*” denote any six character = 0-9 or A-Z or ()[] or – or blank for marketing purposes.

GT*21096-*****

The 1st “*” part can be ‘M’ or ‘-’ or ‘H’ for market identification and not related to safety.

The 2nd “*” denotes the rated output wattage designation, which can be “01” to “19”, in step of 1 denote 1W.

The 3rd “*” denotes the standard rated output voltage designation, which can be “03”, “05”, “06”, “09”, “12”, “15”, “18”, “24”, “48”;

The 4th “*” is optional deviation, subtracted from standard output voltage, which can be “-0.01” to “-23.99” with interval of 0.01, or blank to indicate no voltage different.

The 5th “*” =-F means Open Frame class I or class II with functional earth

=-FW means Open Frame class II

=-R means PCB mounted class I or class II with functional earth

=-RW means PCB mounted class II

The last “*” denote any six character = 0-9 or A-Z or ()[] or – or blank for marketing purposes.

Model list:

Model	Output Voltage (Max.Vdc)	Output current (Max.A)	Output watt (Max.W)
GT*21089-0903*** GT*21096-0903***	3.3	2.6	9W
GT*21089-1305*** GT*21096-1305***	5.0		13W
GT*21089-1506*** GT*21096-1506***	6.0		15W
GT*21089-1509*** GT*21096-1509***	9.0		15W
GT*21089-1512*** GT*21096-1512***	12.0		15W
GT*21089-1815*** GT*21096-1815***	15.0		18W
GT*21089-1818*** GT*21096-1818***	18.0		18W
GT*21089-1824*** GT*21096-1824***	24.0		18W
GT*21089-1948*** GT*21096-1948***	48.0		19W

Abbreviations used in the report:

- normal conditions	N.C.	- single fault conditions	S.F.C
- functional insulation	FI	- basic insulation	BI
- double insulation	DI	- supplementary insulation	SI
- between parts of opposite polarity	BOP	- reinforced insulation	RI

Indicate used abbreviations (if any)

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
<p>(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.)</p>	
<p>Electrically-caused injury (Clause 5): (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input</p>	
ES1	
Source of electrical energy	Corresponding classification (ES)
Internal primary circuit	ES3
Internal secondary circuit	ES1
<p>Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts):</p>	
PS2	
Source of power or PIS	Corresponding classification (PS)
Primary circuit inside the enclosure	PS3
Secondary output circuit	PS2
<p>Injury caused by hazardous substances (Clause 7) (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component</p>	
Glycol	
Source of hazardous substances	Corresponding chemical
N/A	None
<p>Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit</p>	
MS2	
Source of kinetic/mechanical energy	Corresponding classification (MS)
Edges and corners of enclosure	MS1
Mass of the unit	MS1
<p>Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure</p>	
TS1	
Source of thermal energy	Corresponding classification (TS)
External surfaces	TS1 for accessible part
<p>Radiation (Clause 10) (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product</p>	
RS1	
Type of radiation	Corresponding classification (RS)
N/A	N/A

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplement ary	Reinforced (Enclosure)
Ordinary	ES3: Primary circuit	N/A	N/A	Enclosure
Ordinary	ES1: Output circuit	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source	Safeguards		
		Basic	Supplement ary	Reinforced
Combustible materials within Fire enclosure	PS3: Primary circuits inside the enclosure (For open frame models, all circuits and components shall be within the end equipment)	Normal temperature below ignition temperature	Fire enclosure; fire barrier; Suitable component and material used	N/A
No such part	PS2: Secondary output circuit	Normal temperature below ignition temperature	PCB V-0, wire insulation and tubing VW-1, all other components are mounted on PCB.	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplement ary	Reinforced
N/A	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplement ary	Reinforced (Enclosure)
Ordinary	MS1: Edges and corners	N/A	N/A	N/A
Mass of the unit	MS1	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplement ary	Reinforced
Ordinary	TS1: Plastic enclosure	N/A	N/A	N/A
10.1	Radiation			
		Safeguards		

Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Basic	Supplement ary	Reinforced
N/A	N/A	N/A	N/A	N/A
Supplementary Information: (1) See attached energy source diagram for additional details. (2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment. See also Annex G	P
4.1.3	Equipment design and construction	Evaluation of safeguards regarding limiting the outputs to fulfill ES1, and protection in regard to risk of ignition, mechanical-caused injury and thermal burn considered.	P
4.1.15	Markings and instructions.....:	(See Annex F)	P
4.4.4	Safeguard robustness	See below.	P
4.4.4.2	Steady force tests.....:	(See Annex T.2 and T.4)	P
4.4.4.3	Drop tests	(See Annex T.7)	P
4.4.4.4	Impact tests		N/A
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....:	The external enclosure cannot be opened without damaging the product.	N/A
4.4.4.6	Glass Impact tests	No such glass used.	N/A
4.4.4.7	Thermoplastic material tests	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard.....:	(See Annex T)	P
4.4.4.9	Accessibility and safeguard effectiveness	After tests of 4.4.4.2, 4.4.4.3, 4.4.4.7, no safeguard damaged.	P
4.5	Explosion	No explosion occurs during normal/abnormal operation and single fault conditions	P
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard	The conductors will be connected by pluggable connector or wire terminals.	P
4.6.2	10 N force test applied to	Internal components and wiring.	P
4.7	Equipment for direct insertion into mains socket - outlets	Not direct plug-in plug	N/A
4.7.2	Mains plug part complies with the relevant standard.....:		N/A
4.7.3	Torque (Nm)		N/A
4.8	Products containing coin/button cell batteries	No coin/button cell batteries used.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery		
4.8.4	Battery Compartment Mechanical Tests		N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object.....	No likelihood of conductive object entering into enclosure.	P

5	ELECTRICALLY-CAUSED INJURY		P
5.2.1	Electrical energy source classifications.....	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current	(See appended table 5.2)	P
5.2.2.3	Capacitance limits	(See appended table 5.2)	P
5.2.2.4	Single pulse limits	No such single pulses generated in the EUT or applied to it.	N/A
5.2.2.5	Limits for repetitive pulses	No such repetitive pulses within the EUT	N/A
5.2.2.6	Ringing signals	No such ringing signals within the EUT	N/A
5.2.2.7	Audio signals	No such audio signals	N/A
5.3	Protection against electrical energy sources	See table "OVERVIEW OF EMPLOYED SAFEGUARDS"	P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
5.3.2.2	Contact requirements		P
	a) Test with test probe from Annex V	ES3 voltages less than 420 V peak	P
	b) Electric strength test potential (V)		N/A
	c) Air gap (mm)		N/A
5.3.2.4	Terminals for connecting stripped wire	No stripped wire used.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Humidity conditioning	No hygroscopic material used.	N/A
5.4.1.4	Maximum operating temperature for insulating materials	Considered to be class 130 (B)	P
5.4.1.5	Pollution degree	2	
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2 is applied.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such transformer.	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such starting pulses.	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		P
5.4.1.10.2	Vicat softening temperature..... :		N/A
5.4.1.10.3	Ball pressure :	The bobbin materials of each transformer are phenolic which is acceptable without test. For other parts see appended table 5.4.1.10.3.	P
5.4.2	Clearances	The highest value of 5.4.3.3 and 5.4.2.3 be used.	P
5.4.2.2	Determining clearance using peak working voltage	Temporary overvoltage 2000V _{peak} assumed.	P
5.4.2.3	Determining clearance using required withstand voltage :	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
	a) a.c. mains transient voltage :	2500 V _{pk} considered for Overvoltage Cat. II	—
	b) d.c. mains transient voltage :	Not d.c. mains.	—
	c) external circuit transient voltage :	No such transient	—
	d) transient voltage determined by measurement :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	Using procedure 2 to determine the clearance according to 5.4.2.3.	N/A
5.4.2.5	Multiplication factors for clearances and test voltages :	Up to 2000m	N/A
5.4.3	Creepage distances :	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group :	IIIa & IIIb	
5.4.4	Solid insulation		P
5.4.4.2	Minimum distance through insulation :	(See appended table 5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation	Approved Opto-coupler used	P
5.4.4.4	Solid insulation in semiconductor devices	Approved Opto-coupler used	P
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material	2 layers insulation tape used for secondary heat-sink and transformer as reinforce insulation	P
5.4.4.6.1	General requirements		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6.2	Separable thin sheet material		P
	Number of layers (pcs) :	2 layers	P
5.4.4.6.3	Non-separable thin sheet material	No such insulation used within the EUT	N/A
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		P
5.4.4.9	Solid insulation at frequencies >30 kHz :	Evaluated according to 5.4.9.1	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
	Insulation resistance (M) :		N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard :	No such insulation of internal wire as part of supplementary safeguard.	N/A
5.4.7	Tests for semiconductor components and for cemented joints	No tests necessary –see only 5.4.4.4.	N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%) :	93%	—
	Temperature (°C) :	40°C	—
	Duration (h) :	120h	—
5.4.9	Electric strength test :	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test	(See appended table 5.4.9)	P
5.4.9.2	Test procedure for routine tests	Should be considered and conducted during production at factory.	N/A
5.4.10	Protection against transient voltages between external circuit	No such external circuits	N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test :		N/A
5.4.10.2.3	Steady-state test :		N/A
5.4.11	Insulation between external circuits and earthed circuitry :	No such external circuit.	N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Rated operating voltage U_{op} (V).....:		—
	Nominal voltage U_{peak} (V).....:		—
	Max increase due to variation U_{sp}		—
	Max increase due to ageing ΔU_{sa}		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$		—
5.5	Components as safeguards		
5.5.1	General	See below.	P
5.5.2	Capacitors and RC units	Approved Y1 capacitor (CY1) provided. See G.11.1.	P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector.....:	Max. 5.8V	P
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	Approved Optocoupler used	P
5.5.5	Relays	No such component provided	N/A
5.5.6	Resistors		N/A
5.5.7	SPD's		N/A
5.5.7.1	Use of an SPD connected to reliable earthing	No such use	N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable.....:	No such external circuits.	N/A
5.6	Protective conductor		
5.6.2	Requirement for protective conductors	Class I AC inlet used for models GT*21089-***-T3/T3A* GT*21096-***-F/R*	P
5.6.2.1	General requirements		P
5.6.2.2	Colour of insulation	Green/Yellow wire used	P
5.6.3	Requirement for protective earthing conductors		P
	Protective earthing conductor size (mm ²)	AC inlet used	--
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm ²).		--
	Protective current rating (A)		--
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors	AC inlet direct connect to protective bonding wire	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.5.1	Requirement		N/A
	Conductor size (mm ²), nominal thread diameter (mm)		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance		N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks	Figure 4 of IEC 60990 was used in determining of the limit of ES1.	P
5.7.2.1	Measurement of touch current	(See appended table 5.7.2.2, 5.7.4)	P
5.7.2.2	Measurement of prospective touch voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		N/A
	System of interconnected equipment (separate connections/single connection)		—
	Multiple connections to mains (one connection at a time/simultaneous connections)		—
5.7.4	Earthed conductive accessible parts		N/A
5.7.5	Protective conductor current		N/A
	Supply Voltage (V)		—
	Measured current (mA)		—
	Instructional Safeguard		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits	No external circuits.	N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits	No external circuits.	N/A
	a) Equipment with earthed external circuits Measured current (mA)		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA)		N/A

6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications		P
6.2.2.1	General		P

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.2	Power measurement for worst-case load fault ... :	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault :	(See appended table 6.2.2)	P
6.2.2.4	PS1 :		N/A
6.2.2.5	PS2 :	Secondary output circuit	P
6.2.2.6	PS3 :	All circuits inside the equipment enclosure	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS :	Soldering connections on PCB in primary circuit are considered as arcing PIS.	P
6.2.3.2	Resistive PIS :	Components in primary circuit are considered as resistive PIS.	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials :	No ignition and no such temperature attained within the equipment. (See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure	Only output wire and connector complying to 6.4.5.	N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method by control of fire spread applied, Fire enclosure provided.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions :		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards :	(See appended tables 4.1.2 and Annex G)	P
6.4.6	Control of fire spread in PS3 circuit	(See appended tables 4.1.2 and Annex G)	P
6.4.7	Separation of combustible materials from a PIS	Fire enclosure provided.	N/A
6.4.7.1	General :		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier	No specific barrier provided.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8	Fire enclosures and fire barriers	See below.	P
6.4.8.1	Fire enclosure and fire barrier material properties	The V-0 fire enclosure is used the overall enclosure.	P
6.4.8.2.1	Requirements for a fire barrier	No fire barrier used.	N/A
6.4.8.2.2	Requirements for a fire enclosure	The V-0 fire enclosure is used the overall enclosure as above.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm)	No openings	N/A
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm)		N/A
	Flammability tests for the bottom of a fire enclosure		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c)		N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating	Fire enclosure is made of V-0 material.	N/A
6.5	Internal and external wiring		P
6.5.1	Requirements		P
6.5.2	Cross-sectional area (mm ²)	(See appended tables 4.1.2)	—
6.5.3	Requirements for interconnection to building wiring	(See Annex Q.)	N/A
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1		P

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N/A
7.2	Reduction of exposure to hazardous substances	No hazardous chemicals within the equipment.	N/A
7.3	Ozone exposure	No ozone production within the equipment.	N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010)		—

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Clause	Requirement + Test	Result - Remark	Verdict
7.6	Batteries	No battery used.	N/A
8	MECHANICALLY-CAUSED INJURY		P
8.1	General		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	Edges and corners of the enclosure are rounded.	P
8.4.1	Safeguards	MS1	N/A
8.5	Safeguards against moving parts	No moving parts.	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks		N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N)		N/A
8.5.5	High Pressure Lamps		N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test		N/A
8.6	Stability	Classification MS1 according to table 35, line 5 and no stability requirements.	N/A
8.6.1	Product classification		N/A
	Instructional Safeguard		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt		—

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Clause	Requirement + Test	Result - Remark	Verdict
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force).....:		N/A
	Position of feet or movable parts.....:		—
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface)		N/A
8.7.2	Direction and applied force.....:		N/A
8.8	Handles strength		N/A
8.8.1	Classification		N/A
8.8.2	Applied Force		N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force		—
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard.....:		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N)		—
8.10.6	Thermoplastic temperature stability (C)		N/A
8.11	Mounting means for rack mounted equipment		N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable N		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas.....	No such parts.	N/A
	Button/Ball diameter (mm)		—

9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications	Temperature of enclosure classed as TS1.	P
9.3	Safeguard against thermal energy sources		N/A
9.4	Requirements for safeguards		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard		N/A

10	RADIATION		N/A
10.2	Radiation energy source classification	Only indication LED used, No such radiation generated from the equipment.	N/A
10.2.1	General classification	See the following details.	N/A
10.3	Protection against laser radiation	No such radiation generated from the equipment.	N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault		N/A
	Instructional safeguard		—
	Tool.....		—
10.4	Protection against visible, infrared, and UV radiation	No such radiation generated from the equipment.	N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons		N/A
10.4.1.b)	RS3 accessible to a skilled person.....		N/A
	Personal safeguard (PPE) instructional safeguard.....		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions		N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque.....		N/A
10.4.1.f)	UV attenuation.....		N/A
10.4.1.g)	Materials resistant to degradation UV		N/A
10.4.1.h)	Enclosure containment of optical radiation.....		N/A
10.4.1.i)	Exempt Group under normal operating conditions		N/A
10.4.2	Instructional safeguard		N/A
10.5	Protection against x-radiation	No such x-radiation generated from the equipment	N/A
10.5.1	X- radiation energy source that exists equipment :		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards.....		N/A
	Instructional safeguard for skilled person.....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.5.3	Most unfavourable supply voltage to give maximum radiation		—
	Abnormal and single-fault condition		N/A
	Maximum radiation (pA/kg)		N/A
10.6	Protection against acoustic energy sources	Not such equipment.	N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A)		N/A
	Output voltage, unweighted r.m.s.		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards		N/A
	Equipment safeguard prevent ordinary person to RS2		—
	Means to actively inform user of increase sound pressure		—
	Equipment safeguard prevent ordinary person to RS2		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A)		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A)		—

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements	(See summary of testing for tested models, each loaded according to its output ratings. See also appended table B.2.5.)	P
	Audio Amplifiers and equipment with audio amplifiers	Not such equipment.	N/A
B.2.3	Supply voltage and tolerances	+10 % and -10 % considered.	P
B.2.5	Input test	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P

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Clause	Requirement + Test	Result - Remark	Verdict
B.3.1	General requirements..... :	(See appended table B.3 & B.4)	P
B.3.2	Covering of ventilation openings		N/A
B.3.3	D.C. mains polarity test	The EUT is not connected to a D.C. mains	N/A
B.3.4	Setting of voltage selector :	No voltage selector was used.	N/A
B.3.5	Maximum load at output terminals:	(See appended table B.3 & B.4)	P
B.3.6	Reverse battery polarity	No battery within the EUT	N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.	Not such equipment.	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions	All safeguards remained effective.	P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited :	No such device used.	N/A
B.4.3	Motor tests	No motors used.	N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature :		--
B.4.4	Short circuit of functional insulation	See below.	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.3 & B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.3 & B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards used.	N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.3 & B.4 for faults on semiconductor components)	P
B.4.6	Short circuit or disconnect of passive components	(See appended table B.3 & B.4)	P
B.4.7	Continuous operation of components	The EUT is continuous operating type and no such components intended for short time operation or intermittent operation	N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		P
B.4.9	Battery charging under single fault conditions ... :	No battery involved in the EUT	N/A
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation	No UV generated from the equipment.	N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		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	Audio amplifier normal operating conditions	Not such equipment.	N/A
	Audio signal voltage (V)		--
	Rated load impedance (Ω)		--
E.2	Audio amplifier abnormal operating conditions		N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General requirements	See below.	P
	Instructions – Language	English	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		N/A
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	The required marking is located on the enclosure of the equipment and is easily visible.	P
F.3.2	Equipment identification markings	See copy of marking plate.	P
F.3.2.1	Manufacturer identification	See copy of marking plate.	—
F.3.2.2	Model identification	See model list.	—
F.3.3	Equipment rating markings	See the following details.	P
F.3.3.1	Equipment with direct connection to mains	The equipment is direct connected to AC mains, see F.3.3.3 to F.3.3.6.	P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of supply voltage	AC	—
F.3.3.4	Rated voltage	See copy of marking plate.	—
F.3.3.4	Rated frequency	See copy of marking plate.	—

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.3.6	Rated current or rated power	See copy of marking plate.	—
F.3.3.7	Equipment with multiple supply connections	Only one mains supply connection provided.	N/A
F.3.4	Voltage setting device	No voltage setting device.	N/A
F.3.5	Terminals and operating devices	See below.	P
F.3.5.1	Mains appliance outlet and socket-outlet markings	No outlet used.	N/A
F.3.5.2	Switch position identification marking	No switch used.	N/A
F.3.5.3	Replacement fuse identification and rating markings	The fuse is located within the equipment and not replaceable by an ordinary person or an instructed person. The fuse is marked with F1, F2: T1A 250V	P
F.3.5.4	Replacement battery identification marking	No such battery on the equipment. See sub-clause F.5	N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification	See below.	P
F.3.6.1	Class I Equipment	For models GT*21089-***-T3/T3A* GT*21096-***-F/R*	P
F.3.6.1.1	Protective earthing conductor terminal		P
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		P
F.3.6.2	Class II equipment (IEC60417-5172)	For model GT*21089-***-T2* GT*21096-***-FW/RW*	P
F.3.6.2.1	Class II equipment with or without functional earth		P
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking	IPX0.	—
F.3.8	External power supply output marking	See copy of marking plate.	P
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings		P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		P
	b) Instructions given for installation or initial use		P
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1	No such terminals provided.	N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES2 limits		N/A
	h) Symbols used on equipment	No such symbols used as a safeguard considered.	N/A
	i) Permanently connected equipment not provided with all-pole mains switch	Not permanently connected equipment.	N/A
	j) Replaceable components or modules providing safeguard function	No such markings.	N/A
F.5	Instructional safeguards	No instructional safeguard is considered as necessary.	N/A
	Where "instructional safeguard" is referenced in the test report it specifies the required elements, location of marking and/or instruction	No instructional safeguard required in the equipment.	N/A

G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General requirements	No switch used.	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	Relays		N/A
G.2.1	General requirements	No relay used.	N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	Protection Devices		P
G.3.1	Thermal cut-offs	No thermal cut-off used.	N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691	No thermal link used.	N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H)		—
	Single Fault Condition		—
	Test Voltage (V) and Insulation Resistance (Ω) . :		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.3	PTC Thermistors	No PTC thermistor used.	N/A
G.3.4	Overcurrent protection devices	Certified fuse used according to IEC 60127.	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions.....:		N/A
G.4	Connectors		P
G.4.1	Spacings	See below	P
G.4.2	Mains connector configuration	Approved AC inlet used	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	Output connector can not insertion into mains socket outlet	P
G.5	Wound Components		P
G.5.1	Wire insulation in wound components.....	Approved Insulated wire used as Reinforced insulation for secondary winding of T1.	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	Separated by tube or tape, See photo document for details.	P
G.5.1.2 b)	Construction subject to routine testing	The routine tests are to be considered for the production based on the relevant approval	N/A
G.5.2	Endurance test on wound components	Not applied for.	N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s)		—
	Temperature (°C)		—
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	Transformers		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1)	The transformer meets the requirements given in G.5.3.2 and G.5.3.3.	P
	Position.....:	T1	—
	Method of protection	See G.5.3.3.	—
G.5.3.2	Insulation	Primary windings and secondary windings are separated by Reinforced insulation (The core is considered as primary part as it is not isolated from Primary)	P
	Protection from displacement of windings	The end-turn of each winding is fixed by insulating tape	—
G.5.3.3	Overload test	(See appended table B.3 & B.4)	P

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.3.3.1	Test conditions	Tested in the complete equipment as an SMPS.	P
G.5.3.3.2	Winding Temperatures testing in the unit	(See appended table B.3&B.4)	P
G.5.3.3.3	Winding Temperatures - Alternative test method	Alternative test method was not considered.	N/A
G.5.4	Motors		N/A
G.5.4.1	General requirements	No motor used.	N/A
	Position		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days)		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V)		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h)		N/A
	Electric strength test (V)		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature		N/A
	Electric strength test (V)		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h)		N/A
	Electric strength test (V)		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage		—
G.6	Wire Insulation		P
G.6.1	General	Triple insulated winding in T1 secondary windings used as reinforced safeguard in the isolating transformer that has separately complied with Annex J. See Appended table 4.1.2. No other wires used in the EUT.	P
G.6.2	Solvent-based enamel wiring insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.7	Mains supply cords		N/A
G.7.1	General requirements		N/A
	Type.....:		—
	Rated current (A).....:		—
	Cross-sectional area (mm ²), (AWG)		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N)		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)....:		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g)		—
	Diameter (m)		—
	Temperature (C)		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire	No such wire.	N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	Varistors		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguard against shock	(see appended table 4.1.2)	N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test	Clause 6.4.1 is not applicable.	N/A
G.8.3.3	Temporary overvoltage		N/A
G.9	Integrated Circuit (IC) Current Limiters		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.	No IC current limiter provided within the equipment.	N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA		--
G.9.1 d)	IC limiter output current (max. 5A)		--
G.9.1 e)	Manufacturers' defined drift		--
G.9.2	Test Program 1		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	Resistors		N/A
G.10.1	General requirements	No such resistor as safeguard used	N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	Capacitor and RC units		P
G.11.1	General requirements	Certified Y1 capacitor used between primary and secondary circuit and X capacitor between L & N.	P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
G.12	Optocouplers		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results)		P
	Type test voltage Vini	(see appended table 4.1.2)	—
	Routine test voltage, Vini,b	(see appended table 4.1.2)	—
G.13	Printed boards		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board complied with the minimum clearance and creepage requirements	P
G.13.3	Coated printed boards	No coated printed board or multilayer board applied for within the equipment.	N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction)		—
G.13.5	Insulation between conductors on different surfaces		P
	Distance through insulation	Min. 0.4mm	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Number of insulation layers (pcs)	Single layer	—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements	No coating on component terminals considered to affect creepage or clearances.	N/A
G.15	Liquid filled components		N/A
G.15.1	General requirements	No such device provided within the equipment.	N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		N/A
b)	Impulse test using circuit 2 with $U_c =$ to transient voltage		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance		—
D3)	Resistance		—
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General	No telephone ringing signal generated within the equipment.	N/A
H.2	Method A		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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 complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)		—

J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		P
	General requirements	Triple insulated winding wiring used as reinforced safeguard in the isolating transformer that has been evaluated to Annex J as follows: Requirements of Annex U of IEC 60950-1/A2 are identical to Annex J of this standard (for wires providing Reinforced insulation). See Table 4.1.2.	P

K	SAFETY INTERLOCKS		N/A
K.1	General requirements	No safety interlock provided.	N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location)		N/A
K.7.2	Overload test, Current (A)		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A

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

L	DISCONNECT DEVICES		P
L.1	General requirements	Appliance inlet used as disconnect device.	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		P
L.8	Multiple power sources	Only one a.c. mains connection.	N/A

M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N/A
M.1	General requirements	No battery used.	N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method) .. :		--
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance		--
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature		--
M.4.2.2 b)	Single faults in charging circuitry		--
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method)		--
M.6.2	Leakage current (mA)		--
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s).....		--
M.8.2.3	Correction factors		--
M.8.2.4	Calculation of distance d (mm)		--
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing)		N/A
N	ELECTROCHEMICAL POTENTIALS		N/A
	Metal(s) used		--

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

O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Figures O.1 to O.20 of this Annex applied :	All applicable figures	—

P	SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS		N/A
P.1	General requirements		N/A
P.2.2	Safeguards against entry of foreign object	No opening	N/A
	Location and Dimensions (mm) :		—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts :		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) :		N/A
P.3	Safeguards against spillage of internal liquids	No such liquids.	N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts	No such construction.	N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C)..... :		—
	Tr (°C) :		—
	Ta (°C)..... :		—
P.4.2 b)	Abrasion testing :		N/A
P.4.2 c)	Mechanical strength testing :		N/A

Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources	See appended table Annex Q.1	P
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		P
	- Regulating network limited output under normal operating and simulated single fault condition	A regulating network limits the output in compliance with table Q.1 both under normal operating conditions and after any single fault.	P
Q.1.1 c)	Overcurrent protective device limited output		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method	See appended table Annex Q.1	P
Q.2	Test for external circuits – paired conductor cable	No such circuit for connection to the EUT	N/A
	Maximum output current (A)		--
	Current limiting method		--

R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General requirements	No such consideration.	N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)).		N/A

S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	Approved fire enclosure with V-0 material used.	N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (test condition), (°C)		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A

T	MECHANICAL STRENGTH TESTS		P
T.1	General requirements		P
T.2	Steady force test, 10 N	(See appended table T.2)	P
T.3	Steady force test, 30 N	Not applicable	N/A
T.4	Steady force test, 100 N	(See appended table T.4)	P
T.5	Steady force test, 250 N	Not applicable	N/A
T.6	Enclosure impact test	Transportable equipment	N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test	(See appended table T7)	P
T.8	Stress relief test	(See appended table T8)	P
T.9	Impact Test (glass)	No glass used.	N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J)		—
	Height (m)		—
T.10	Glass fragmentation test		N/A
T.11	Test for telescoping or rod antennas	No such antennas provided within the equipment.	N/A
	Torque value (Nm)		—

U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General requirements	No CRT provided.	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
U.3	Protective Screen.....:		N/A
V	DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)		P
V.1	Accessible parts of equipment	No access with test probes to any hazardous parts	P
V.2	Accessible part criterion		P

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

4.1.2	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾	
PCB	WALEX ELECTRONIC (WUXI) CO LTD	T2, T2A, T2B T4	Min. 1,6 mm thickness, min. V- 0, 130°C	IEC 62368-1 UL 796	Tested with appliance UL E154355	
Alt. use	DONGGUAN HE TONG ELECTRONICS CO LTD	CEM1 2V0 FR4	Min. 1,6 mm thickness, min. V- 0, 130°C	IEC 62368-1 UL 796	Tested with appliance UL E243157	
Alt. use	CHEERFUL ELECTRONIC (HK) LTD	02 03 03A	Min. 1,6 mm thickness, min. V- 0, 130°C	IEC 62368-1 UL 796	Tested with appliance UL E199724	
Alt. use	DONGGUAN DAYSUN ELECTRONIC CO LTD	DS2	Min. 1,6 mm thickness, min. V- 0, 130°C	IEC 62368-1 UL 796	Tested with appliance UL E251754	
Alt. use	DAFENG AREX ELECTRONICS TECHNOLOGY CO LTD	02V0 03V0 04V0	Min. 1,6 mm thickness, min. V- 0, 130°C	IEC 62368-1 UL 796	Tested with appliance UL E186016	
Alt. use	BRITE PLUS ELECTRONICS (SUZHOU) CO LTD	DKV0-3A DGV0-3A	Min. 1,6 mm thickness, min. V- 0, 130°C	IEC 62368-1 UL 796	Tested with appliance UL E177671	
Alt. use	KUOTIANG ENT LTD	C-2 C-2A	Min. 1,6 mm thickness, min. V- 0, 130°C	IEC 62368-1 UL 796	Tested with appliance UL E227299	
Alt. use	SHENZHEN TONGCHUANGXI N ELECTRONICS CO LTD	TCX	Min. 1,6 mm thickness, min. V- 0, 130°C	IEC 62368-1 UL 796	Tested with appliance UL E250336	
Alt. use	PACIFIC WIN INDUSTRIAL LTD	PW-02 PW-03	Min. 1,6 mm thickness, min. V- 0, 130°C	IEC 62368-1 UL 796	Tested with appliance UL E228070	
Alt. use	YUANMAN PRINTED CIRCUIT CO LTD	1V0	Min. 1,6 mm thickness, min. V- 0, 130°C	IEC 62368-1 UL 796	Tested with appliance UL E74757	
Alt. use	SUZHOU XINKE ELECTRONICS CO LTD	XK-2, XK-3	Min. 1,6 mm thickness, min. V- 0, 130°C	IEC 62368-1 UL 796	Tested with appliance UL E231590	

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	KUNSHAN CITY HUA SHENG CIRCUIT BOARD CO LTD	HS-S	Min. 1,6 mm thickness, min. V- 0, 130°C	IEC 62368-1 UL 796	Tested with appliance UL E229877
Alt. use	HUIZHOU SHUNJIA ELECTRONICS CO LTD	SJ-B	Min. 1,6 mm thickness, min. V- 0, 130°C	IEC 62368-1 UL 796	Tested with appliance UL E320884
Alt. use	SHANGHAI H- FAST ELECTRONICS CO LTD	411001, 211001	Min. 1,6 mm thickness, min. V- 0, 130°C	IEC 62368-1 UL 796	Tested with appliance UL E337862
Fuse (F1, F2) (F2 is optional)	Conquer Electronics Co., Ltd.	MST series	T1A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017118 UL E82636
Alt. use	Conquer Electronics Co., Ltd.	PDU	T1A, 250V	IEC 60127-1 IEC 60127-3	VDE40006776
Alt. use	Ever Island Electric Co., Ltd. And Walter Electric	2010, ICP	T1A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40018781 UL E220181
Alt. use	Ever Island Electric Co., Ltd. And Walter Electric	2000	T1A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40018787 UL E220181
Alt. use	Bel Fuse Ltd.	RST-Serie(s)	T1A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40011144 UL E20624
Alt. use	Bel Fuse Ltd.	MRT	T1A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 139937 UL E20624
Alt. use	Cooper Bussmann LLC	SS-5	T1A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40015513 UL E19180

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	Shenzhen Lanson Electronics Co. Ltd.	SMT	T1A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40012592 UL E221465
Alt. use	Das & Sons International Ltd.	385T series	T1A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40008524 UL E205718
Alt. use	Dongguan Better Electronics Technology Co., Ltd.	932	T1A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40033369 UL E300003
Alt. use	Hollyland Company Limited	5ET	T1A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40015669 UL E156471
Alt. use	Sunny East Enterprise Co. Ltd.	CFD-Serie(s)	T1A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40030246 UL E133774
Alt. use	Conquer Electronics Co., Ltd.	MET series	T1A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017157 UL E82636
Alt. use	Zhongshan Lanbao Electrical Appliances Co., Ltd.	RTI-10 Serie(s)	T1A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017009 UL E213695
Y capacitor (CY1) (Optional)	TDK Corporation	CD	Y1, AC250V, max 4700pF, 55/125/21/B	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40017931 UL E37861
Alt. use	Success Electronics Co., Ltd.	SE	Y1, AC250V, or AC500V, max 4700pF, 40/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40037211 VDE 40020002 UL E114280
Alt. use	Success Electronics Co., Ltd.	SB	Y1, AC250V, max 4700pF, 40/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40037221 VDE 40020001 UL E114280

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	Murata Mfg. Co., Ltd.	KX	Y1, AC250V, max 4700pF, 25/125/21/B	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40002831 UL E37921
Alt. use	Walsin Technology Corp.	AH	Y1, AC250V, max 4700pF, 25/125/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40001804 UL E146544
Alt. use	JYA-NAY Co., Ltd.	JN	Y1, AC250V, max 4700pF, 25/125/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40001831 UL E201384
Alt. use	Haohua Electronic Co.	CT 7	Y1, AC250V, max 4700pF, 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40003902 UL E233106
Alt. use	Jyh Chung Electronic Co., Ltd.	JD	Y1, AC250V, max 4700pF, 40/125/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 137027 UL E187963
Alt. use	Jerro Electronics Corp.	JX-series	Y1, AC250V, max 5700pF, 40/125/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40032158 UL E333001
Alt. use	WELSON INDUSTRIAL CO LTD	WD	Y1, AC250V, max 4700pF, 55/125/21/C	IEC/EN 60384-14	VDE 40016157
X capacitor (CX1) (Optional)	Cheng Tung Industrial Co., Ltd.	CTX	Min. 300VAC, Max. 0.22μF, 110 °C, X1 or X2	IEC 62368-1 UL 60384-14 UL 1414	Tested with appliance UL E193049
Alt. use	Tenta Electric Industrial Co. Ltd.	MEX	Min. 250VAC, Max. 0.22μF, 40/100/21/B, X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 119119 UL E222911
Alt. use	Joey Electronics (Dong Guan) Co., Ltd.	MPX	Min. 250VAC, Max. 0.22μF, 40/105/21/B, X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40032481 UL E216807

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt. use	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Min. 250VAC, Max. 0.22μF, 40/100/21/C, X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40015608 UL E183780
Alt. use	Yuo Yu Electronics Co. Ltd.	MPX	Min. 250VAC, Max. 0.22μF, 40/100/21/C, X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40032392 UL E200119
Alt. use	Sinhua Electronics (Huzhou) Co., Ltd.	MPX	Min. 250VAC, Max. 0.22μF, 40/100/21/C, X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40014686 UL E237560
Alt. use	Jiangsu Xinghua Huayu Electronics Co., Ltd.	MPX - Series	Min. 250VAC, Max. 0.22μF, 40/100/21/C, X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40022417 UL E311166
Alt. use	Dain Electronics Co., Ltd.	MEX, MPX, NPX	Min. 250VAC, Max. 0.22μF, 40/100/21/C, X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40018798 UL E147776
Alt. use	Shenzhen Jinghao Capacitor Co., Ltd.	CBB62B	Min. 250VAC, Max. 0.22μF, 40/110/56/B, X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40018690 UL E252286
Alt. use	Foshan Shunde Chuang Ge Electronic Industrial Co., Ltd.	MKP-X2	Min. 250VAC, Max. 0.22μF, 40/105/21/B, X2	IEC/EN 60384-14	VDE 40008922
Alt. use	Okaya Electric Industries Co. LTD	RE-Series	Min. 250VAC, Max. 0.22μF, 55/100/56/C, X2	IEC/EN 60384-14	VDE 40028657
Alt. use	VISHAY Capacitors Belgium NV	F 1772	Min. 250VAC, Max. 0.22μF, 40/100/56/C, X2	IEC/EN 60384-14	VDE 40005095
Alt. use	Winday Electronic Industrial Co., Ltd.	MPX series	Min. 250VAC, Max. 0.22μF, 40/100/21/C, X2	IEC/EN 60384-14	VDE 40018071
Bleeder Resistor (R8, R9)	YAGEO COMPONENTS (SUZHOU) CO LTD	HHV series	470kΩ, Min.1/8W	IEC/EN 62368-1	Tested with appliance UL E323780

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	FUTABA ELECTRIC CO LTD	RM series	470kΩ, Min.1/8W	IEC/EN 62368-1	Tested with appliance UL E257690
Alt. use	Vishay Components India Pvt. Ltd	SVR37 series	470kΩ, Min.1/8W	IEC/EN 62368-1	Tested with appliance UL E362452
Alt. use	Interchangeable	Interchangeable	470kΩ, Min.1/8W	IEC/EN 62368-1	Tested with appliance
Photo coupler (U1)	Everlight Electronics Co., Ltd.	EL817	Dti=0.5mm Int. , dcr=6.0mm EXT.dcr=7.7mm, thermal cycling test,110°C	IEC/EN 60747-5-2	VDE 132249
Alt. use	COSMO Electronics Corporation	K1010 / KP1010	Dti=0.6mm Int. , dcr=4.0mm EXT.dcr=5.0mm, thermal cycling test,115°C	IEC/EN 60747-5-2	VDE 101347
Alt. use	Lite-On Technology Corporation	LTV-817	Dti=0.8mm Int., EXT.dcr=7.8mm, thermal cycling test,100°C	IEC/EN 60747-5-2	VDE 40015248
Alt. use	Fairchild Semiconductor Pte Ltd.	H11A817B / FOD817B	Insulation voltage: 850V; Transient overvoltage: 6000V; CTI175; Int. Cr/ Ext. Cr: ≥7,0/ 7,0 mm; 30/110/21	IEC/EN 60747-5-2	VDE 40026857
Alt. use	Sharp Corporation Electronic Components and Devices Group	PC817	Insulation voltage: 890V; Transient overvoltage: 9000V Int. Cr/ Ext. Cr: 7.62/ 7.62 mm; 30/100/21	IEC/EN 60747-5-2	VDE 40008087
Alt. use	Bright Led Electronics Corp.	BPC-817 A/B/C/D/L BPC-817 M BPC-817 S	Dti=0.4mm EXT.dcr=7.0mm, thermal cycling test,100°C	IEC/EN 60747-5-2	VDE 40007240

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	Toshiba Corporation Semiconductor & Storage Products Company	TLP817F	Dti > 0.4mm, Ext cr > 8.0mm, Isolation 3000Vac min., 110°C min., Thermal cycling test	IEC/EN 60747-5-2	VDE 40021173
Appliance inlet CN1 Class I units for GT*21089 series (C6 type)	Zhejiang LECI Electronics Co., Ltd.	DB-6	7A, 125Vac	IEC/EN 60320-1	VDE 40032465
Alt. use	Rich Bay Co., Ltd.	R-30790	7A, 125Vac	IEC/EN 60320-1	VDE 40030381
Alt. use	Sun Fair Electric Wire & Cable (HK) Co. Ltd.	S-02	7A, 125Vac	IEC/EN 60320-1	VDE 40034448
Alt. use	TECX-UNIONS Technology Corporation	TU-333	7A, 125Vac	IEC/EN 60320-1	ENEC 00633
Alt. use	Rong Feng Industrial Co., Ltd.	RF-190	7A, 125Vac	IEC/EN 60320-1	VDE 40030379
Alt. use	Inalways Corporation	0724	7A, 125Vac	IEC/EN 60320-1	ENEC 2010080
Alt. use	Zhe Jiang Bei Er jia	ST-A04-002	7A, 125Vac	IEC/EN 60320-1	VDE 40016045
Alt. use	Shenzhen Delikang Electronics Technology Co. Ltd.	CDJ-2	7A, 125Vac	IEC/EN 60320-1	VDE 40015580
Appliance inlet CN1 Class I units for GT*21089 series (C14 type)	Zhejiang LECI Electronics Co., Ltd.	DB-14	10A, 250Vac	IEC/EN 60320-1	VDE 40032137
Alt. use	Rich Bay Co., Ltd.	R-301SN	10A, 250Vac	IEC/EN 60320-1	VDE 40030228
Alt. use	Sun Fair Electric Wire & Cable (HK)Co. Ltd.	S-03	10A, 250Vac	IEC/EN 60320-1	VDE 40034447
Alt. use	TECX-UNIONS Technology Corporation	TU-301-S, TU-301-SP	10A, 250Vac	IEC/EN 60320-1	ENEC 00647

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	Rong Feng Industrial Co., Ltd.	SS-120	10A, 250Vac	IEC/EN 60320-1	VDE 40028101
Alt. use	Inalways Corporation	0711	10A, 250Vac	IEC/EN 60320-1	ENEC 2010084
Alt. use	Zhe Jiang Bei Er jia	ST-A01-003J	10A, 250Vac	IEC/EN 60320-1	VDE 40013388
Appliance inlet CN1 Class II units for GT*21089 series (C8 type)	Zhejiang LECI Electronics Co., Ltd.	DB-8	7A, 125Vac	IEC/EN 60320-1	VDE 40032028
Alt. use	Rich Bay Co., Ltd.	R-201SN90	7A, 125Vac	IEC/EN 60320-1	VDE 40030384
Alt. use	Sun Fair Electric Wire & Cable (HK)Co. Ltd.	S-01	7A, 125Vac	IEC/EN 60320-1	VDE 40034449
Alt. use	TECX-UNIONS Technology Corporation	SO-222	7A, 125Vac	IEC/EN 60320-1	VDE 40043268
Alt. use	Rong Feng Industrial Co., Ltd.	RF-180	7A, 125Vac	IEC/EN 60320-1	VDE 40030168
Alt. use	Inalways Corporation	0721	7A, 125Vac	IEC/EN 60320-1	ENEC 2010087
Alt. use	Zhe Jiang Bei Er jia	ST-A03-005	7A, 125Vac	IEC/EN 60320-1	VDE 40014833
Alt. use	Shenzhen Delikang Electronics Technology Co. Ltd.	CDJ-8	7A, 125Vac	IEC/EN 60320-1	VDE 40025531
Input connector (For GT*21096 series)	Molex L L C	41791 Series	V-0, 250V; Min 7A; 3 pin or 2 pin	IEC/EN 62368-1	Tested with appliance UL E29179
Alt. use	JOINT TECH ELECTRONIC INDUSTRIAL CO LTD	A7920 series A3960 series	V-0, 250V; Min 7A; 3 pin or 2 pin	IEC/EN 62368-1	Tested with appliance UL E179987
Alt. use	Japan solderless terminal	VH series VA series	V-0, 250V; Min 7A; 3 pin or 2 pin	IEC/EN 62368-1	Tested with appliance UL E60389
Alt. use	ZHEJIANG HONGXING ELECTRICAL CO LTD	HX396XX-YYY series	V-0, 250V; Min 5A; 3 pin or 2 pin	IEC/EN 62368-1	Tested with appliance UL E228500
Output connector (For GT*21096 series)	Molex L L C	42227 Series	V-0, 250V; 4A;	IEC/EN 62368-1	Tested with appliance UL E29179

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	JOINT TECH ELECTRONIC INDUSTRIAL CO LTD	A2542 series	V-0, 250V; 4A;	IEC/EN 62368-1	Tested with appliance UL E179987
Alt. use	Japan solderless terminal	VH series VA series	V-0, 250V; 4A;	IEC/EN 62368-1	Tested with appliance UL E60389
Earthing wire for Class I model (GT*21089 series used)	KUNSHAN NEW ZHICHENG ELECTRONICS TECHNOLOGIES CO LTD	1015,1007, 1185, 3271, 3266, 1569	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 62368-1	Tested with appliance UL E237831
Alt. use	ZHUANG SHAN CHUAN ELECTRICAL PRODUCTS (KUNSHAN) CO LTD	1015,1007, 1185,1569	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 62368-1	Tested with appliance UL E333601
Alt. use	DONGGUAN CHUANTAI WIRE PRODUCTS CO LTD	1015,1007, 1185,1569	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 62368-1	Tested with appliance UL E315628
Alt. use	YONG HAO ELECTRICAL INDUSTRY CO LTD	1015,1007, 1185,1569	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 62368-1	Tested with appliance UL E240426
Alt. use	DONGGUAN GUNEETAL WIRE & CABLE CO LTD	1015,1007, 1185, 3271, 3266, 1569	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 62368-1	Tested with appliance UL E204204
Alt. use	SHENG YU ENTERPRISE CO LTD	1015, 1007, 1185	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 62368-1	Tested with appliance UL E219726
Alt. use	KUNSHAN XINGHONGMENG ELECTRONIC CO LTD	1015,1007, 1185, 3271, 3266, 1569	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 62368-1	Tested with appliance UL E315421
Alt. use	SUZHOU YEMAO ELECTRONIC CO LTD	1015, 1007, 1185	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 62368-1	Tested with appliance UL E353532
Alt. use	XINYA ELECTRONIC CO LTD	1015, 1007, 1185	Min. 20 AWG, Min. 300V, Min. 80°C	IEC/EN 62368-1	Tested with appliance UL E170689

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Output cord (Only for GT*21089 series used)	Interchangeable	Interchangeable	Min. 24AWG, min. 300Vac, min. 80°C	IEC/EN 62368-1 UL 758	Tested with appliance UL approved
- Description:	Interchangeability based on specified rating.				
Heat-shrinkable tubing (Optional)	SHENZHEN WOER HEAT- SHRINKABLE MATERIAL CO LTD	RSFR, RSFR- H, RSFR-HPF	600V, 125 °C	IEC/EN 62368-1	Tested with appliance UL E203950
Alt. use	QIFURUI ELECTRONICS CO	QFR-h	600V, 125°C	IEC/EN 62368-1 UL 224	Tested within appliance UL E225897
Alt. use	DONGGUAN SALIPT CO LTD	SALIPT S- 901-300 SALIPT S- 901-600	Min. 300V, 125°C	IEC/EN 62368-1 UL 224	Tested within appliance UL E209436
Alt. use	GUANGZHOU KAIHENG ENTERPRISE GROUP	K-2 (+) K-2 (CB)	Min. 300V, 125°C	IEC/EN 62368-1 UL 224	Tested within appliance UL E214175
Alt. use	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-HFT	Min. 300V, 125°C	IEC/EN 62368-1 UL 224	Tested within appliance UL E180908
Transformer (T1)	GlobTek / ENG / BOAM / HAOPUWEI	04B150/04B1 29 for (3.3- 6V), 04B145 for (6.1-11.9V), 04B146 for (12-17.9V), 04B147 for (18-23.9V), 04B121 for (24-43.9V) 04B147D for (44-48V)	Class B, with critical component listed below	IEC 62368-1	Tested with appliance
-Triple- insulated wire	Great Leoflon Industrial Co., Ltd.	TRW (B) Serie(s)	Class B, reinforced insulation	IEC 62368-1 UL 2353 UL 60601-1	VDE 136581 UL E211989
- Alt. use	COSMOLINK CO. Ltd.	TIW-M Serie(s)	Class B, reinforced insulation	IEC 62368-1 UL 2353 UL 60601-1	VDE 138053 UL E213764

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
- Alt. use	Furukawa Electric Co., Ltd. Electronics & Automotive Systems Company Global Business Development Division	TEX-E	Class B, reinforced insulation	IEC 62368-1 UL 2353 UL 60601-1	VDE 006735 UL E206440
- Alt. use	TOTOKU ELECTRIC CO LTD	TIW-2	Reinforced insulation, rated 130° C (Class B)	IEC 62368-1 UL 2353 UL 60601-1	VDE 40005152 UL E249037
- Alt. use	E&B TECHNOLOGY CO LTD	E&B-XXXB E&B-XXXB-1	Reinforced insulation, Class B	IEC 62368-1 UL 2353 UL 60601-1	VDE 40023473 UL E315265
- Alt. use	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TIW	Reinforced insulation, Class B	IEC 62368-1 UL 2353 UL 60601-1	Tested with appliance UL E249037
- Alt. use	SHENZHEN JIUDING NEW MATERIAL CO LTD	DTIW-B	Reinforced insulation, Class B	IEC 62368-1 UL 2353 UL 60601-1	VDE 40037495 UL E357999
-Bobbin	CHANG CHUN PLASTICS CO LTD	T375J T375HF	V-0, 150°C, thickness 0,45 mm min.	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E59481
- Alt. use	CHANG CHUN PLASTICS CO LTD	4130	V-0, 140°C, thickness 0,74 mm min.	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E59481
- Alt. use	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, thickness 0,45 mm min.	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E41429
- Alt. use	HITACHI CHEMICAL CO LTD	CP-J-8800	V-0, 150°C, thickness 0,45 mm min.	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E42956
-Insulating tape	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1 1350T-1 44	Min.130°C	IEC 62368-1 UL 510	Tested with appliance UL E17385
- Alt. use	BONDTEC PACIFIC CO LTD	370S	Min.130°C	IEC 62368-1 UL 510	Tested with appliance UL E175868

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
- Alt. use	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ CT WF	Min.130°C	IEC 62368-1 UL 510	Tested with appliance UL E165111
- Alt. use	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	Min.130°C	IEC 62368-1 UL 510	Tested with appliance UL E246950
- Alt. use	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	Min.130°C	IEC 62368-1 UL 510	Tested with appliance UL E246820
-PTFE tubing	GREAT HOLDING INDUSTRIAL CO LTD	TFT / TFS	Min. 300V, 200°C	IEC 62368-1	Tested with appliance UL E156256
-Alt. use	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	WF	600V, 200°C	IEC 62368-1	Tested with appliance UL E203950
-Alt. use	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TT-T / CB-TT-S	Min. 300V, 200°C	IEC 62368-1	Tested with appliance UL E180908
Enclosure (all parts) for GT*21089 series used	SABIC INNOVATIVE PLASTICS B V	C2950	PC/ABS, Min. V-0, Min. thickness: 2.0mm, 85°C	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt. use	SABIC INNOVATIVE PLASTICS B V	HF500R	PC, V-0, Min. thickness: 2.0mm, 125°C	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt. use	SABIC INNOVATIVE PLASTICS B V	CX7211 EXCY0098	PC/ABS, Min. V-0, Min. thickness: 2.0mm, 90°C	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt. use	SABIC INNOVATIVE PLASTICS B V	945 940	PC, Min. V-1, Min. thickness: 2.0mm, 120°C	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt. use	SABIC INNOVATIVE PLASTICS B V	SE1, SE1X	PPE+PS, Min. V-1, Min. thickness:2.0mm, 105°C	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt. use	SABIC INNOVATIVE PLASTICS B V	SE100	PPE+PS, Min. V-1, Min. thickness:2.0mm, 95°C	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt. use	SABIC JAPAN L L C	C2950	PC/ABS, Min. V-0, Min. thickness: 2.0mm, 105°C	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	CX7211 EXCY0098	PC/ABS, Min. V-1, Min. thickness: 2.0mm, 90°C	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	945 940	PC, Min. V-1, Min. thickness: 2.0mm, 120°C	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	HF500R	PC, V-0, Min. thickness: 2.0mm, 125°C	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	SE1, SE1X	PPE+PS, Min. V-1, Min. thickness:2.0mm, 105°C	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	SE100	PPE+PS, Min. V-1, Min. thickness:2.0mm, 95°C	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	TEIJIN CHEMICALS LTD	LN-1250P LN-1250G	PC, Min. V-0, Min. thickness: 2.0mm, 115°C	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E50075
Alt. use	CHI MEI CORPORATION	PA-765A	ABS, Min. V-0, Min. thickness: 2.0mm, 85°C	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E56070
Alt. use	CHI MEI CORPORATION	PC-540	PC/ABS, Min. V-0, Min. thickness: 2.0mm, 70°C	IEC 62368-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E56070
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. 2) This must be a certification mark showing compliance with an applicable IEC standard and National or Regional Differences. For all transformers under all manufacturers. “interchangeable” components comply with IECEE OD file: od-g-2060_ed 1.1.					

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
5.2	Table: Classification of electrical energy sources						P
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions ¹⁾	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
Model: GTM21089-1948-T3							
1	264Va.c. 60Hz	Primary circuits supplied by a.c. mains supply	Normal	264VAC	--	60Hz	ES3 (declaration)
			Abnormal	0	--	--	
			Single fault	0	--	--	
2	264Va.c. 60Hz	Secondary output	Normal	48.09Vdc	--	DC	ES1
			Abnormal – output (OL)	47.88Vdc	--	DC	
			Single fault – T1 sec. (SC)	0.02Vdc	--	--	
			Single fault – R12 (SC)	0.02Vdc	--	--	
			Single fault – R12 (OC)	0.02Vdc	--	--	
Model: GTM21089-1824-T3							
1	264Va.c. 60Hz	Primary circuits supplied by a.c. mains supply	Normal	264VAC	--	60Hz	ES3 (declaration)
			Abnormal	0	--	--	
			Single fault	0	--	--	
2	264Va.c. 60Hz	Secondary output	Normal	24.15Vdc	--	DC	ES1
			Abnormal – output (OL)	23.87Vdc	--	DC	
			Single fault – T1 sec. (SC)	0.02Vdc	--	--	
			Single fault – R12 (SC)	0.02Vdc	--	--	
			Single fault – R12 (OC)	0.02Vdc	--	--	

IEC 62368-1							
Clause		Requirement + Test			Result - Remark		Verdict
5.2		Table: Classification of electrical energy sources					P
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions ¹⁾	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
Model: GTM21089-1305-T2							
1	264Va.c. 60Hz	Primary circuits supplied by a.c. mains supply	Normal	264VAC	--	60Hz	ES3 (declaration)
			Abnormal	0	--	--	
			Single fault	0	--	--	
2	264Va.c. 60Hz	Secondary output	Normal	5.06Vdc	--	DC	ES1
			Abnormal – output (OL)	4.89Vdc	--	DC	
			Single fault – T1 sec. (SC)	0.02Vdc	--	--	
			Single fault – R12 (SC)	0.02Vdc	--	--	
			Single fault – R12 (OC)	0.02Vdc	--	--	
Note:							

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

5.2.2.3 - Capacitance Limits

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

Overall capacity:--

Limit: --

5.2.2.4 - Single Pulses

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

5.2.2.5 - Repetitive Pulses

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

Test Conditions:

Normal – Full load and no load.

Abnormal – Overload output

Supplementary information: SC=Short Circuit, OC=Open Circuit

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

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) :	90	264		—	
	Ambient T _{min} (°C) :	40	40		—	
Maximum measured temperature T of part/at:		T (°C)			Allowed T _{max} (°C)	
Model: GTM21089-1305-T2						
T1 winding	95	--	93	--	110	
T1 core	89	--	87	--	110	
LF1	83	--	74	--	110	
Output wire	58	--	56	--	80	
Optocoupler	78	--	80	--	100	
Y-capacitor	84	--	81	--	125	
X-capacitor	76	--	73	--	100	
PCB	100	--	96	--	130	
External enclosure	68	--	66	--	77	
Internal enclosure	74	--	71	--	Ref.	
Inlet body	52	--	50	--	70	
Model: GTM21089-1824-T3						
T1 winding	88	--	90	--	110	
T1 core	84	--	87	--	110	
LF1	82	--	75	--	110	
Output wire	54	--	52	--	80	
Optocoupler	74	--	82	--	100	
Y-capacitor	80	--	76	--	125	
X-capacitor	72	--	69	--	100	
PCB	91	--	102	--	130	
External enclosure	66	--	68	--	77	
Internal enclosure	77	--	80	--	Ref.	
Inlet body	54	--	52	--	70	
Model: GTM21089-1948-T3						

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Clause	Requirement + Test		Result - Remark		Verdict
T1 winding	95	--	104	--	110
T1 core	92	--	102	--	110
LF1	87	--	85	--	110
Output wire	59	--	57	--	80
Optocoupler	81	--	93	--	100
Y-capacitor	83	--	87	--	125
X-capacitor	71	--	75	--	100
PCB	92	--	100	--	130
External enclosure	64	--	67	--	77
Internal enclosure	71	--	74	--	Ref.
Inlet body	58	--	55	--	70
<p>Supplementary information: * Temperature limit for TS1 of accessible enclosure according to Table 38.</p> <p>Note 1: The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (T_{ma}) of 40°C.</p> <p>Note 2: The temperatures were measured under the worse case normal mode defined in clause B.2.1.</p> <p>Note 3: Temperature limits are calculated as follows: Winding components providing safety isolation: Class B → T_{max} = 120 - 10=110°C</p> <p>Note 4: Test was repeated for three times as the temperature of T1 winding was close to limited value.</p>					

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

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics			P
Allowed impression diameter (mm)	≤ 2 mm			—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)	
Enclosure (HF500R)	SABIC INNOVATIVE / SABIC JAPAN	125	1.4	
Enclosure (C2950)	SABIC INNOVATIVE / SABIC JAPAN	125	1.3	
Enclosure (945)	SABIC INNOVATIVE / SABIC JAPAN	125	1.3	
Enclosure (CX7211)	SABIC INNOVATIVE / SABIC JAPAN	125	1.6	

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Clause	Requirement + Test	Result - Remark	Verdict
Enclosure (LN-1250P)	TEIJIN CHEMICALS LTD	125	1.5
Enclosure (LN-1250G)	TEIJIN CHEMICALS LTD	125	1.5
Enclosure (PA-765A)	CHI MEI CORPORATION	125	1.3
Enclosure (PC-540)	CHI MEI CORPORATION	125	1.3
Supplementary information: The bobbin material of transformer (T1) are phenolic, no test is needed.			

5.4.2.2, 5.4.2.4 and 5.4.3 TABLE: Minimum Clearances/Creepage distance							P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz) ¹	Required cl (mm)	cl (mm) ²	Required ³ cr (mm)	cr (mm)
Line and Neutral before current fuse (BI)	2000	250	<30	1.27	8.0	2.40	8.0
Two ends of the current fuse (BI)	2000	250	<30	1.27	2.50	2.40	2.50
Line to primary trace (BI)	2000	250	<30	1.27	2.95	2.40	2.95
Primary to functional earth (Class I)(RI)	2000	250	<30	2.54	6.08	5.0	6.08
Live parts to accessible parts(RI)	2000	250	85	2.54	6.21	5.0	6.21
Primary circuits to secondary circuits(RI)	2000	250	85	2.54	5.20	5.0	6.80
Primary winding to secondary winding(RI)	2000	250	85	2.54	>5.5	5.0	>5.5
Secondary winding to core(RI)	2000	250	85	2.54	>5.5	5.0	>5.5
Core to secondary parts(RI)	2000	250	85	2.54	>5.5	5.0	>5.5
Supplementary information: Note 1: Only for frequency above 30 kHz Note 2: See table 5.4.2.4 if this is based on electric strength test Note 3: Provide Material group IIIb							

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage			P
	Overvoltage Category (OV):			II
	Pollution Degree:			2
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Measured cl (mm)
Line and Neutral before current fuse (BI)		2500	1.5	8.0
Two ends of the current fuse (BI)		2500	1.5	2.50
Line to primary trace (BI)		2500	1.5	2.95
Primary to functional earth (Class I)(RI)		2500	3.0	6.08
Live parts to accessible parts(RI)		2500	3.0	6.21
Primary circuits to secondary circuits(RI)		2500	3.0	5.20
Primary winding to secondary winding(RI)		2500	3.0	>5.5
Secondary winding to core(RI)		2500	3.0	>5.5
Core to secondary parts(RI)		2500	3.0	>5.5
Supplementary information:				

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.2.4	TABLE: Clearances based on electric strength test			N/A
Test voltage applied between:	Required cl (mm)	Test voltage (kV) peak/ r.m.s. / d.c.	Breakdown Yes / No	
--	--	--	--	
--	--	--	--	
Supplementary information: Using procedure 2 to determine the clearance.				

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements					P
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)	
Enclosure	480	<30	Plastic	0.4	See appended table 4.1.2	
Bobbin of T1	480	85	Phenolic	0.4	See appended table 4.1.2	
Insulation sheet	480	85	Phenolic	0.4	See appended table 4.1.2	
PCB	480	85	Phenolic	0.4	See appended table 4.1.2	
Supplementary information:						

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (Vpeak)	Breakdown Yes / No	
Basic/supplementary:				
Line to Neutral (with fuse disconnect)	DC	2500	No	
Reinforced:				
Primary circuit to body (RI)	DC	4000	No	
Primary circuit to functional earth (RI)	DC	4000	No	
Primary circuit to secondary circuit (RI)	DC	4000	No	
Primary winding to secondary winding of T1 (RI)	DC	4000	No	
Secondary winding to core (RI)	DC	4000	No	
Insulation tape around transformer per layer (RI)	DC	4000	No	
Insulation sheet (RI)	DC	4000	No	
Supplementary information: 1) Each source of insulation tape tested, see appended table 4.2.1 for detail.				

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part		P
Supply voltage	264Vac	—	
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)	
L, N to output terminal(Class I)	1 (e closed, normal and reverse polarity p)	0.079	
L, N to output terminal(Class I)	2* (netural open (switch n), earth intact and normal polarity, again in reverse polarity (switch p)	0.132	
L, N to output terminal(Class I, CY1 short circuit)	1 (e closed, normal and reverse polarity p)	0.130	
L, N to output terminal(Class I, CY1 short circuit)	2* (netural open (switch n), earth intact and normal polarity, again in reverse polarity (switch p)	0.148	
L, N to output terminal(Class II)	1 (e closed, normal and reverse polarity p)	0.079	
L, N to output terminal(Class II)	2* (netural open (switch n), earth intact and normal polarity, again in reverse polarity (switch p)	0.221	
L, N to output terminal(Class II, CY1 short circuit)	1 (e closed, normal and reverse polarity p)	0.130	
L, N to output terminal(Class II, CY1 short circuit)	2* (netural open (switch n), earth intact and normal polarity, again in reverse polarity (switch p)	0.181	
L, N to output terminal(Class I)	1 (e open, normal and reverse polarity p)	0.079	
L, N to output terminal(Class I)	2* (netural open (switch n), earth intact and normal polarity, again in reverse polarity (switch p)	0.132	
L, N to output terminal(Class I, CY1 short circuit)	1 (e open, normal and reverse polarity p)	0.130	
L, N to output terminal(Class I, CY1 short circuit)	2* (netural open (switch n), earth intact and normal polarity, again in reverse polarity (switch p)	0.148	
L, N to output terminal(Class II)	1 (e open, normal and reverse polarity p)	0.079	
L, N to output terminal(Class II)	2* (netural open (switch n), earth intact and normal polarity, again in reverse polarity (switch p)	0.221	
L, N to output terminal(Class II, CY1 short circuit)	1 (e open, normal and reverse polarity p)	0.130	
L, N to output terminal(Class II, CY1 short circuit)	2* (netural open (switch n), earth intact and normal polarity, again in reverse polarity (switch p)	0.181	

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Clause	Requirement + Test	Result - Remark	Verdict

<p>Notes:</p> <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>a) Not considered IT power system.</p> <p>b) Not three phase equipment.</p> <p>c) Not IT power system or three phase delta system.</p> <p>d) Not three-phase for use on centre-earthed delta supply system.</p> <p>e) Not such parts.</p>			
---	--	--	--

6.2.2	Table: Electrical power sources (PS) measurements for classification				P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s ^{*)}	PS Classification
Model: GTM21089-1305-T2					
A	DC output	Power (W) :	--	20.45	PS2
		V _A (V) :	--	4.89	
		I _A (A) :	--	4.63	
Model: GTM21089-1824-T3					
A	DC output	Power (W) :	--	33.83	PS2
		V _A (V) :	--	23.54	
		I _A (A) :	--	1.47	
Model: GTM21089-1948-T3					
A	DC output	Power (W) :	--	47.44	PS2
		V _A (V) :	--	48.07	
		I _A (A) :	--	1.04	
Supplementary information:					
(*) Measurement taken only when limits at 5 seconds exceed PS2 limits					
Note: The maximum power is measured under abnormal condition.					

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)				N/A
Location	Open circuit voltage After 3 s (V _p)	Measured r.m.s current (I _{rms})	Calculated value (V _p x I _{rms})	Arcing PIS? Yes / No	

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15.

Note: Soldering connections on PCB in primary circuit are considered as arcing PIS, all arcing PIS are inside the V-0 fire enclosure.

6.2.3.2	Table: Determination of Potential Ignition Sources (Resistive PIS)					N/A
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No	

Supplementary Information:

A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.

If a separate voltmeter and ammeter are used, the product of ($VA \times IA$) is used to determine Resistive PIS classification.

A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (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.

Note: Components in primary circuit are considered as resistive PIS, all resistive PIS are inside the V-0 fire enclosure.

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

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Clause	Requirement + Test	Result - Remark	Verdict

B.2.5	TABLE: Input test						P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
Model: GTM21089-1305-T2							
90	0.366	--	18.1	--	F1/F2	0.366	Max normal load
100	0.355	0.5	17.8	--	F1/F2	0.355	
240	0.174	0.5	17.9	--	F1/F2	0.174	
264	0.162	--	18.0	--	F1/F2	0.162	
Model: GTM21089-1824-T3							
90	0.441	--	22.1	--	F1/F2	0.441	Max normal load
100	0.402	0.5	21.9	--	F1/F2	0.402	
240	0.211	0.5	22.8	--	F1/F2	0.211	
264	0.204	--	23.1	--	F1/F2	0.204	
Model: GTM21089-1948-T3							
90	0.466	--	23.4	--	F1/F2	0.466	Max normal load
100	0.423	0.5	23.2	--	F1/F2	0.423	
240	0.222	0.5	24.1	--	F1/F2	0.222	
264	0.211	--	24.6	--	F1/F2	0.211	
Supplementary information:							
The maximum measured current under rated voltage did not exceed 110% of the rated current.							

B.2.5	TABLE: Input test							P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
Model: GTM21096-1003-F								
90	0.265	--	12.16	--	F1/F2	0.265	Max normal load	
100	0.245	0.5	12.02	--	F1/F2	0.245		
240	0.149	0.5	12.35	--	F1/F2	0.149		
264	0.144	--	12.36	--	F1/F2	0.144		
Model: GTM21096-1506-F								
90	0.413	--	21.09	--	F1/F2	0.413	Max normal load	
100	0.383	0.5	20.74	--	F1/F2	0.383		
240	0.229	0.5	20.33	--	F1/F2	0.229		
264	0.218	--	20.53	--	F1/F2	0.218		
Supplementary information: The maximum measured current under rated voltage did not exceed 110% of the rated current.								

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Clause	Requirement + Test					Result - Remark		Verdict
B.3 & B.4	TABLE: Abnormal operating and fault condition tests							P
Ambient temperature (°C)						25°C, if not specified		—
Power source for EUT: Manufacturer, model/type, output rating .:						Chroma, 61512, 18kVA		—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
C2	SC	90/264	10mins	F1/ F2	0.011	--	--	EUT protected immediately, no hazards
Q3 pinD-S	SC	90/264	<1s	F1/ F2	>10	--	--	EUT shut down immediately, fuse opened, repeat 10 times, no hazards
Q3 pinG-S	SC	90/264	10mins	F1/ F2	0.011	--	--	EUT protected immediately, no hazards
D8	SC	90/264	10mins	F1/ F2	0.011	--	--	EUT protected immediately, no hazards
T1 pin1-3	SC	90/264	<2mins	F1/ F2	>10	--	--	EUT shut down, fuse opened, repeat 10 times, no hazards
T1 pin6-8	SC	90/264	10mins	F1/ F2	0.011	--	--	EUT protected immediately, no hazards
C9	SC	90/264	<1s	F1/ F2	>10	--	--	EUT shut down immediately, fuse opened, repeat 10 times, no hazards
D3	SC	90/264	<1s	F1/ F2	>10	--	--	EUT shut down immediately, fuse opened, repeat 10 times, no hazards
Output	SC	90/264	10mins	F1/ F2	0.011	--	--	EUT protected immediately, no hazards
Output (GTM2108 9-1305-T2)	OL	264	4h	F1/ F2	0.250	--	--	Load to 4.63A, EUT protected immediately, no hazards. Temperature recorded: T1 winding = 123°C
	OL	90V	4h	F1/ F2	0.381	--	--	Load to 2.93A, EUT protected immediately, no hazards. Temperature recorded: T1 winding = 100°C

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Clause	Requirement + Test					Result - Remark		Verdict
Output (GTM2108 9-1824-T3)	OL	264	4h	F1/ F2	0.469A	--	--	Load to 0.9A, EUT protected immediately, no hazards. Temperature recorded: T1 winding = 97°C
Output (GTM2108 9-1948-T3)	OL	264	4h	F1/ F2	0.544A	--	--	Load to 0.570A, EUT protected immediately, no hazards. Temperature recorded: T1 winding = 107°C
	OL	90	4h	FS1/ FS2	0.422A	--	--	Load to 1.040A, EUT protected immediately, no hazards. Temperature recorded: T1 winding = 137°C
<p>Supplementary information:</p> <p>Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4.</p> <p>1) SC: Short-circuited; OC: Open-circuited; OL: Overloaded; BL: Blocked.</p> <p>2) The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; In addition all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions.</p> <p>3) The test result showed no Class 1 or 2 energy source become Class 3 level during and after single fault condition.</p> <p>4) The overloaded condition is applied according to annex G.5.3.3.</p> <p>Winding Limit for T1: 175-10=165°C</p>								

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

Annex M.4	Table: Additional safeguards for equipment containing secondary lithium batteries					N/A
Battery/Cell No.	Test conditions	Measurements			Observation	
		U	I (A)	Temp (C)		
	Normal					
	Abnormal					
	Single fault –SC/OC					
Supplementary Information:						
Battery identification	Charging at T _{lowest} (°C)	Observation	Charging at T _{highest} (°C)	Observation		
Supplementary Information:						

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Clause	Requirement + Test	Result - Remark	Verdict

T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation	
Enclosure top, closed to transformer (T.4)	Plastics	2.0	100	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Enclosure side (T.4)	Same as above	2.0	100	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Enclosure bottom, closed to transformer (T.4)	Same as above	2.0	100	5	Enclosure remained intact, no crack / opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Internal components (T.2)	--	--	10	5	No insulation breakdown. No reduction the clearances and creepage distances	
Supplementary information:						

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

T.7	TABLE: Drop tests				P
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Three side of enclosure	Hardwood	15mm	1000mm	After the drop test, no open was found for the enclosure	
Supplementary information:					

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

T.8	TABLE: Stress relief test					P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Enclosure	Plastics	2.0mm	90	7	Enclosure remained intact, no cracking /opening developed in the enclosure joint. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Supplementary information:						

Appendix No.1: Photos of product

External view GTM21089 class I



External view GTM21089 class I

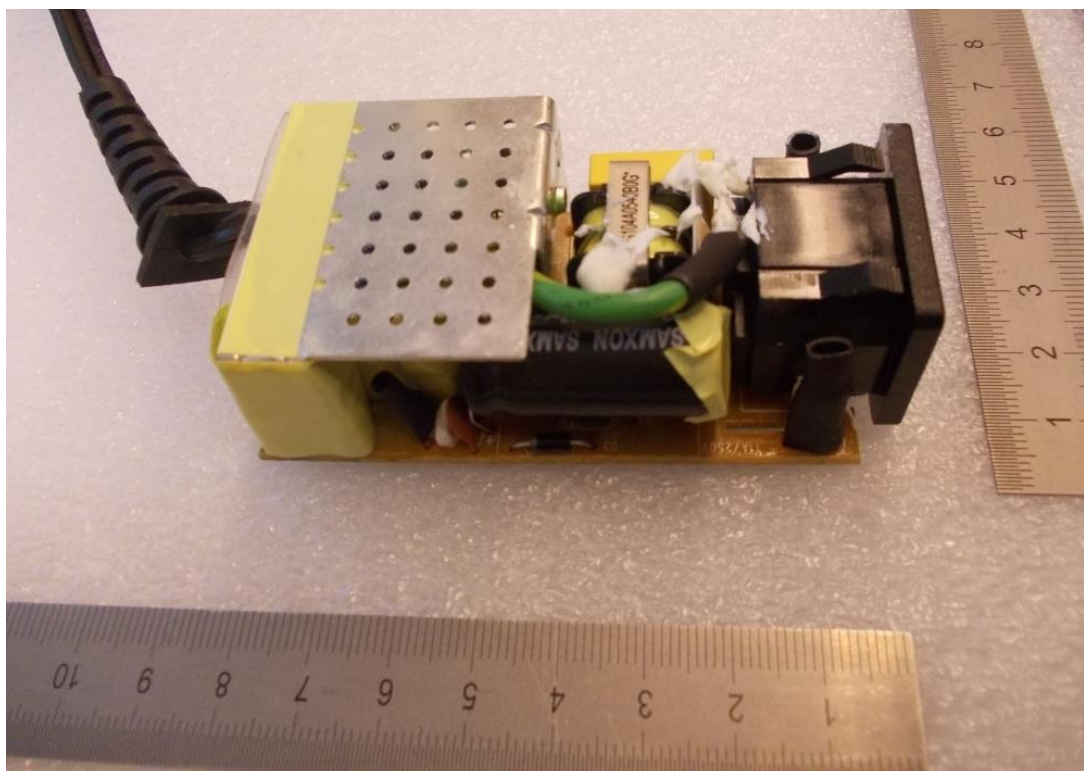


Appendix No.1: Photos of product

External view GTM21089 class I

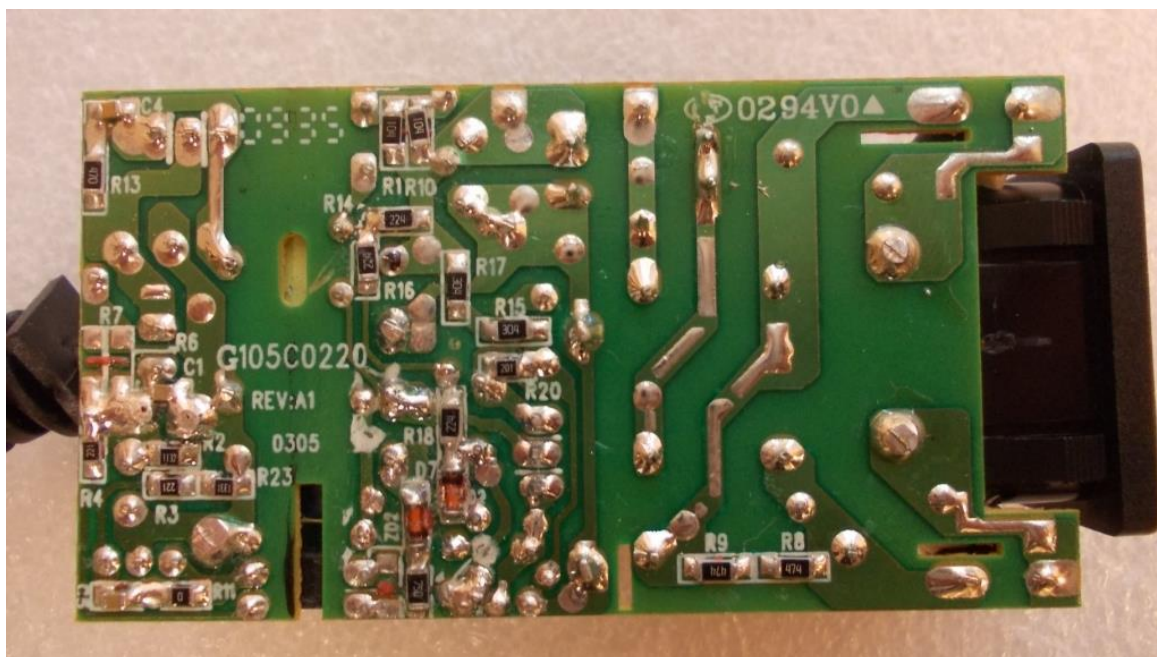


Internal view GTM21089 class I



Appendix No.1: Photos of product

Internal view GTM21089 class I

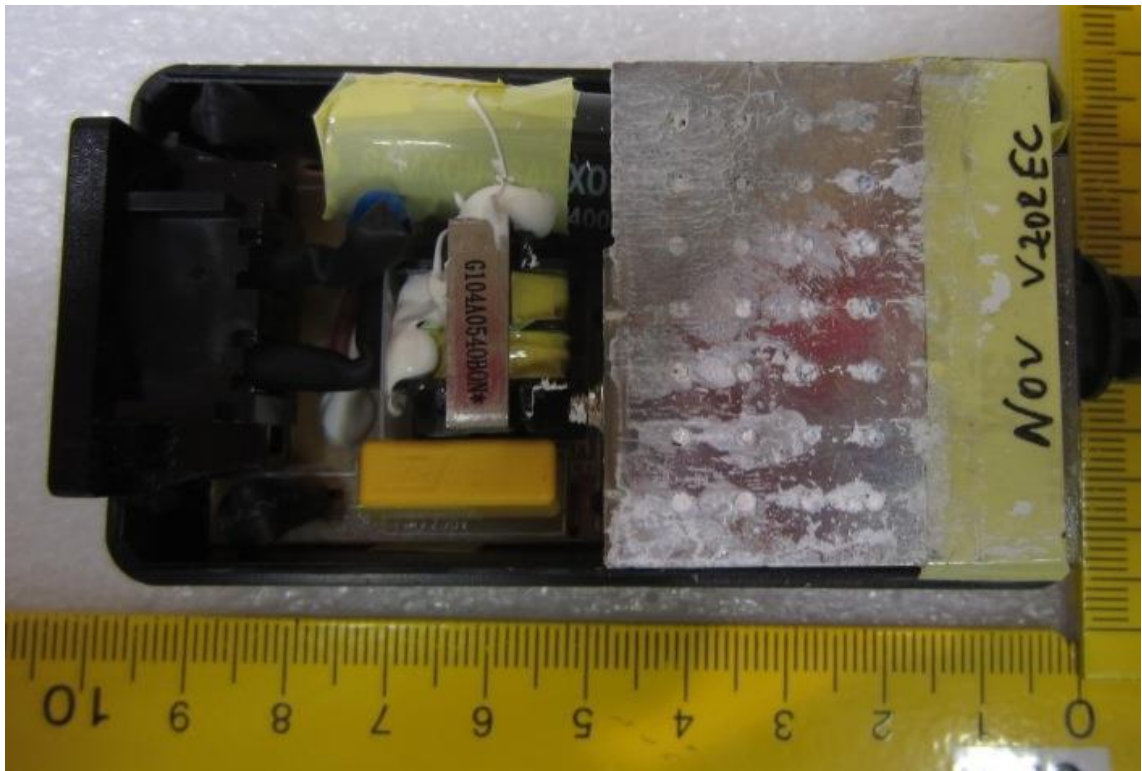


External view GTM21089 Class II

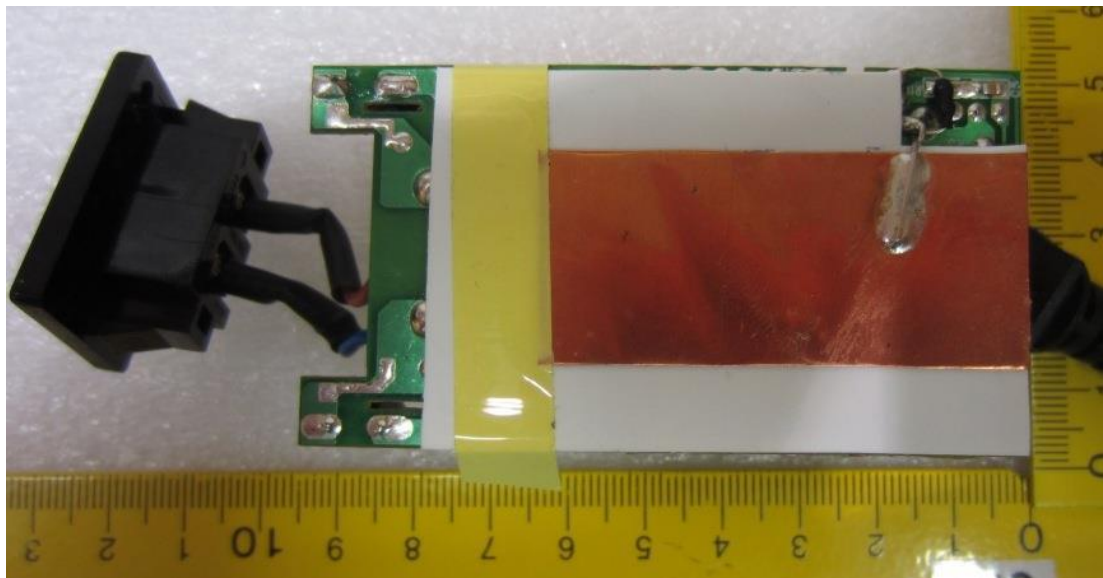


Appendix No.1: Photos of product

Internal view GTM21089 Class II

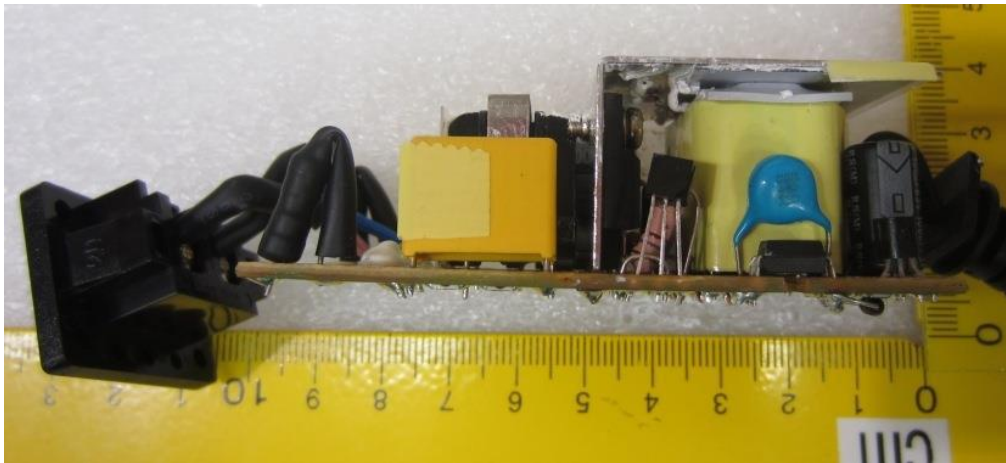


Internal view GTM21089 Class II

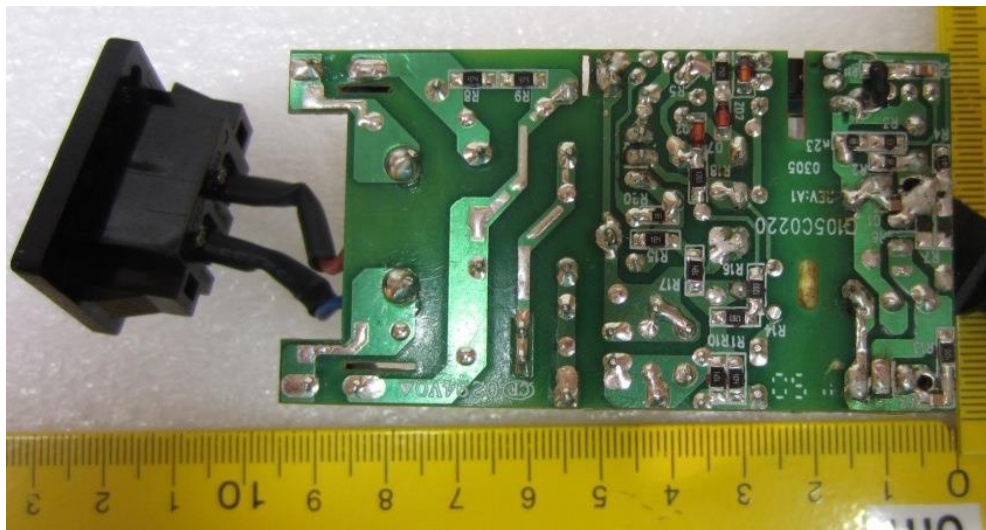


Appendix No.1: Photos of product

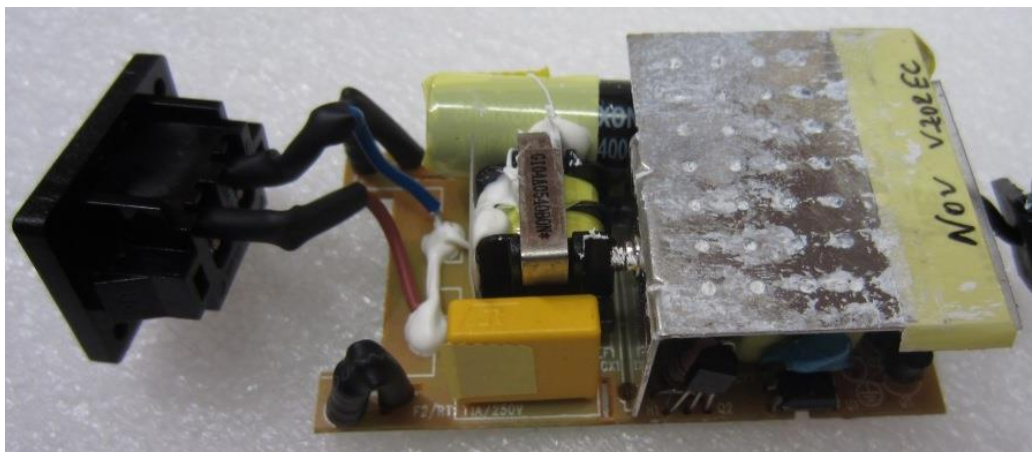
Internal view GTM21089 Class II



Internal view GTM21089 Class II

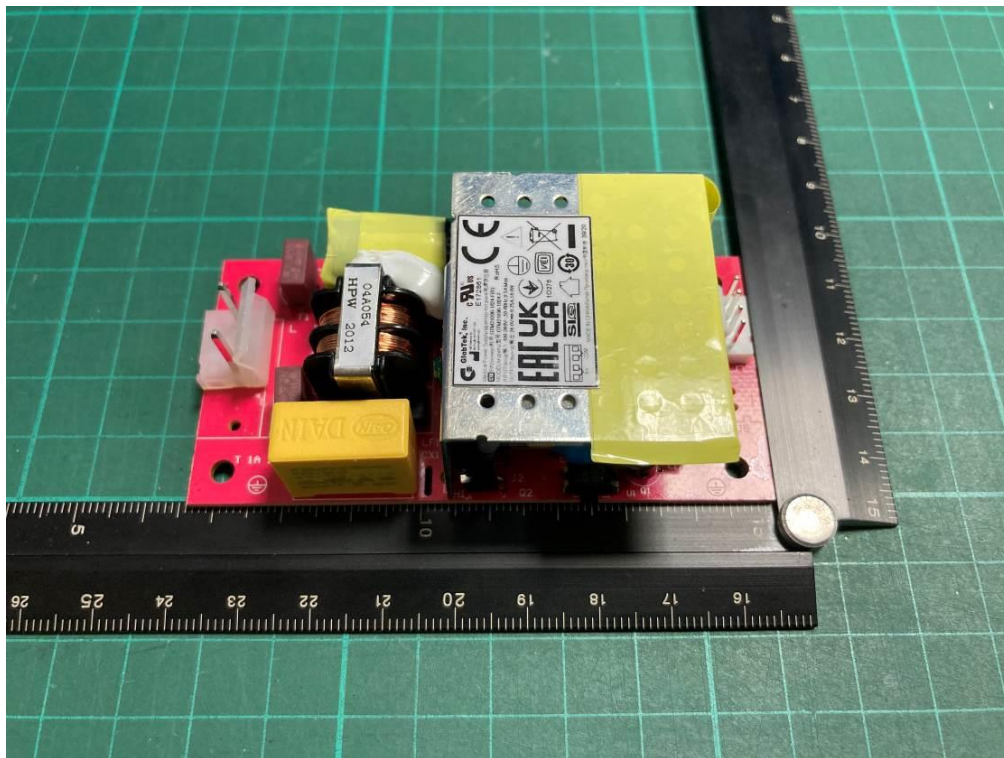


Internal view GTM21089 Class II

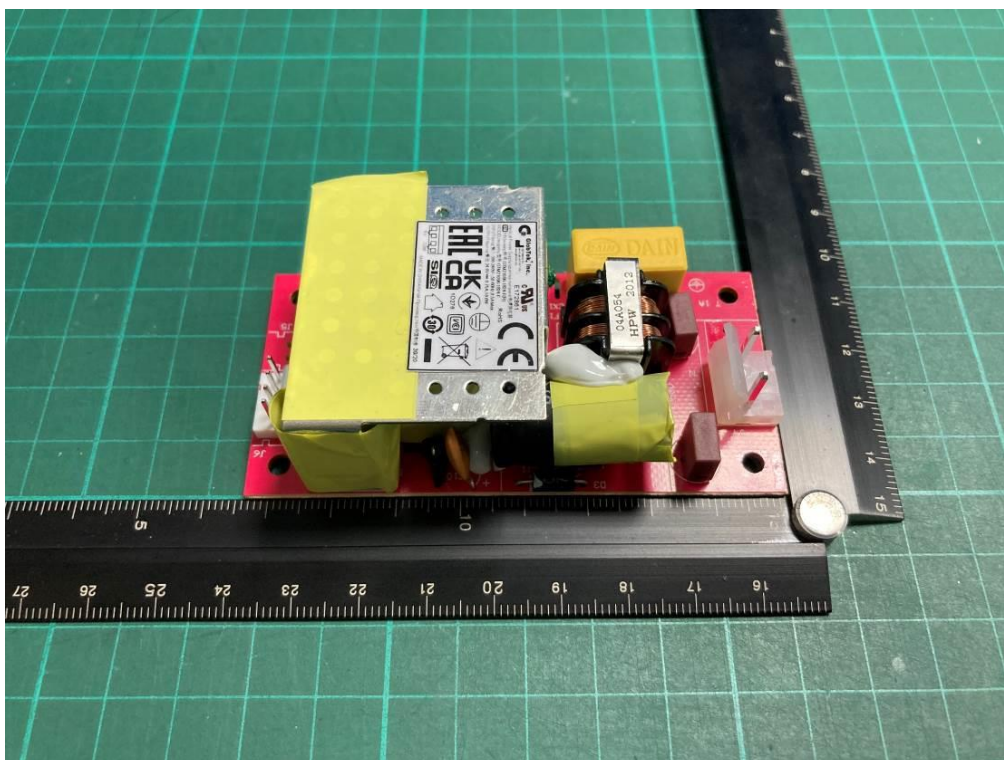


Appendix No.1: Photos of product

External view GTM21096 series

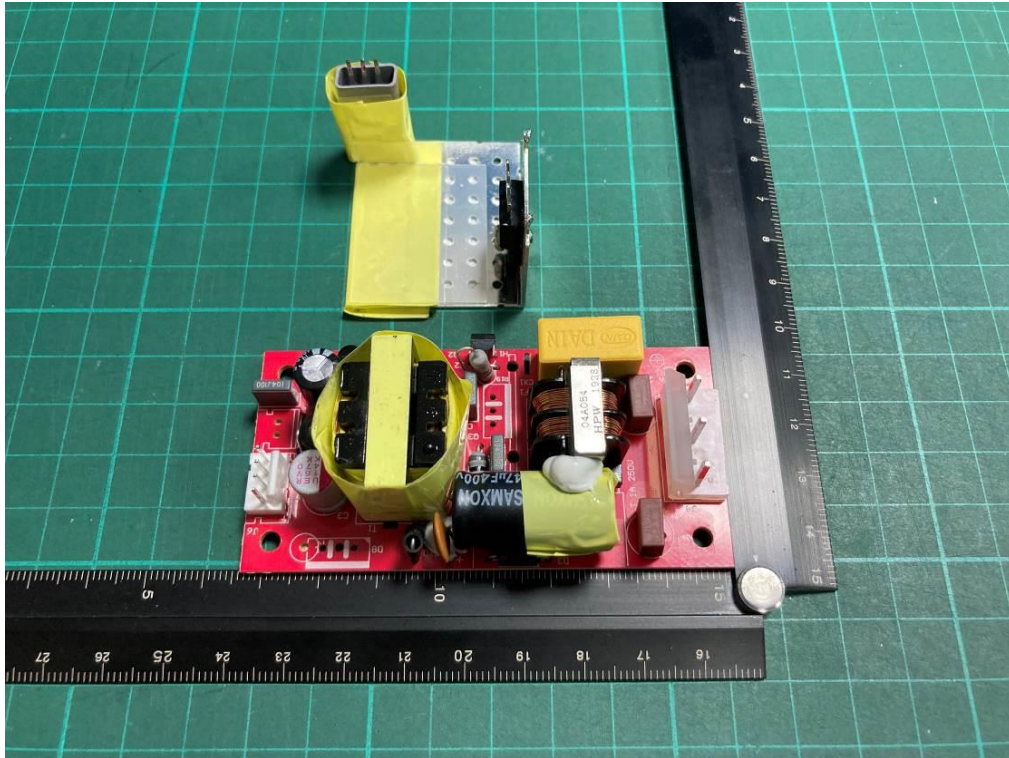


External view GTM21096 series

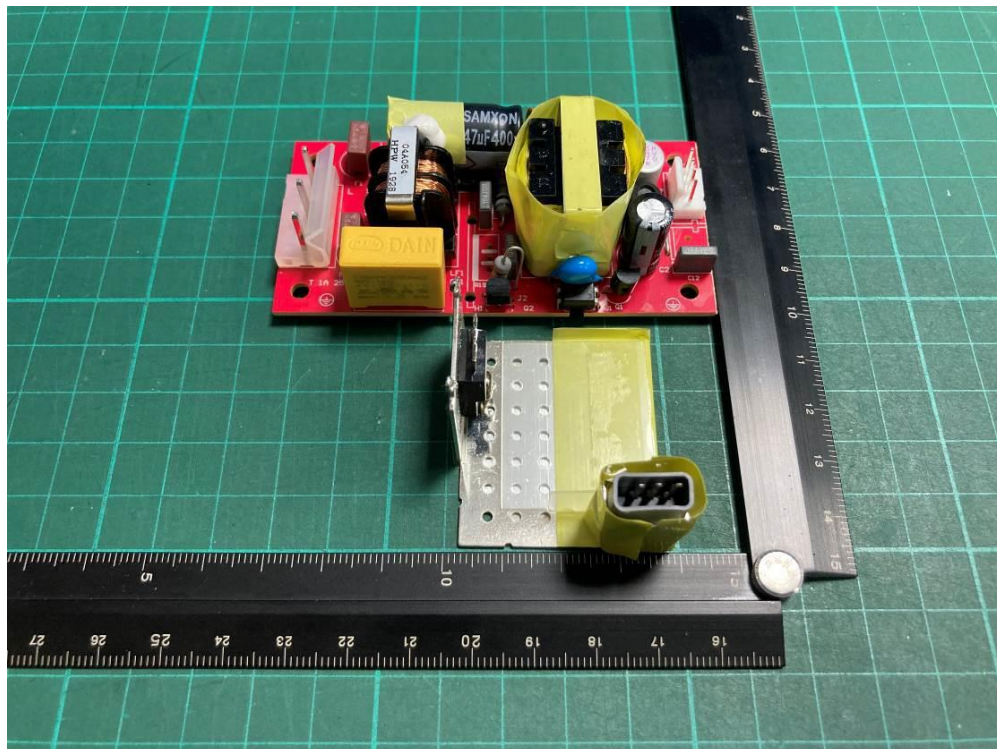


Appendix No.1: Photos of product

External view GTM21096 series

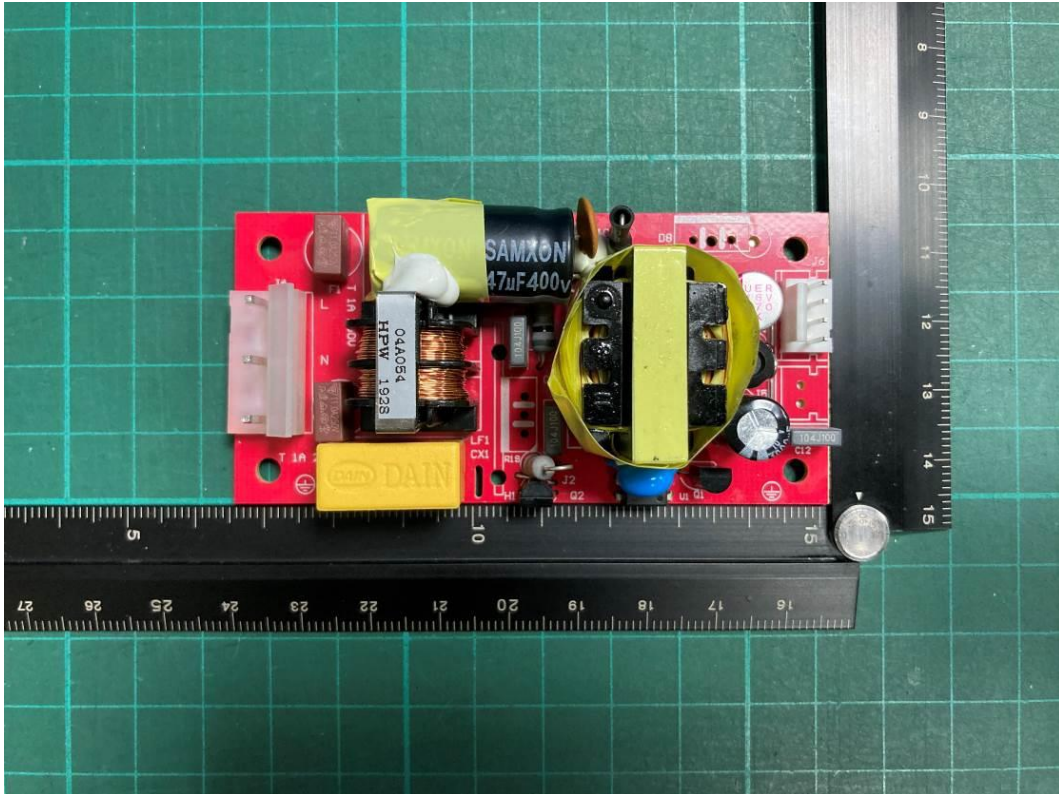


External view GTM21096 series

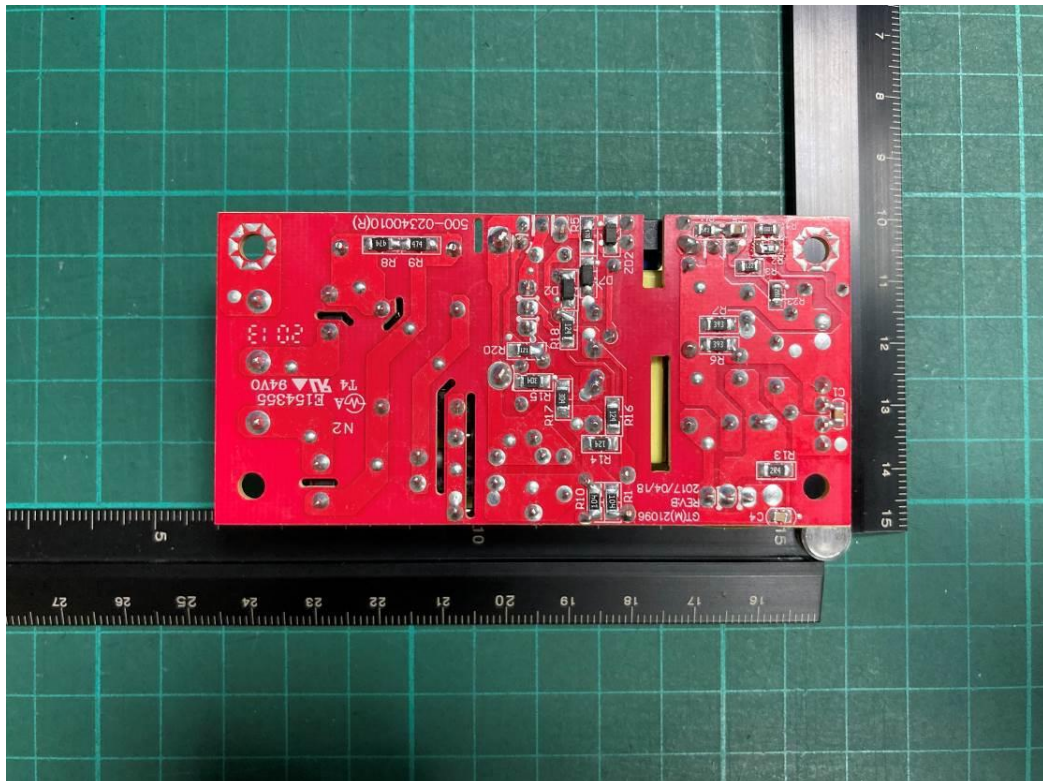


Appendix No.1: Photos of product

PCB



PCB

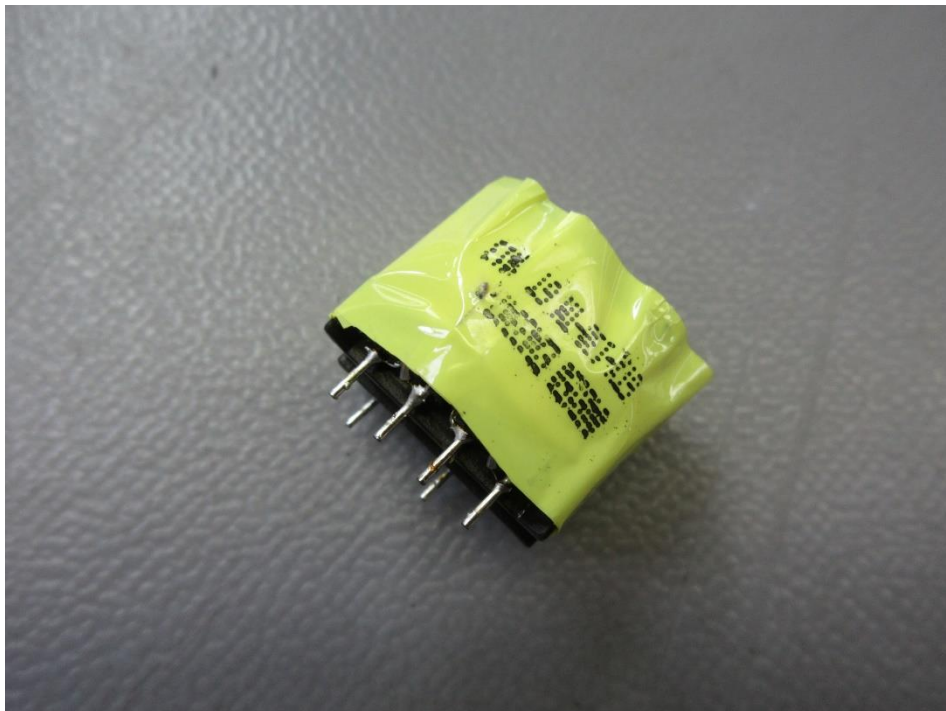


Appendix No.1: Photos of product

Transformer



Transformer

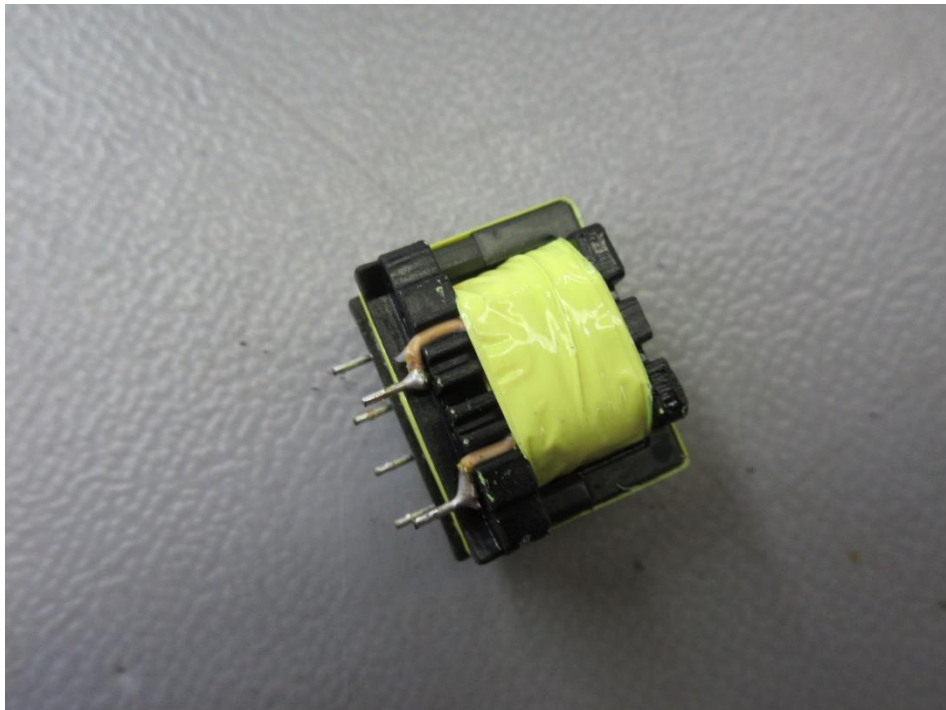


Appendix No.1: Photos of product

Transformer

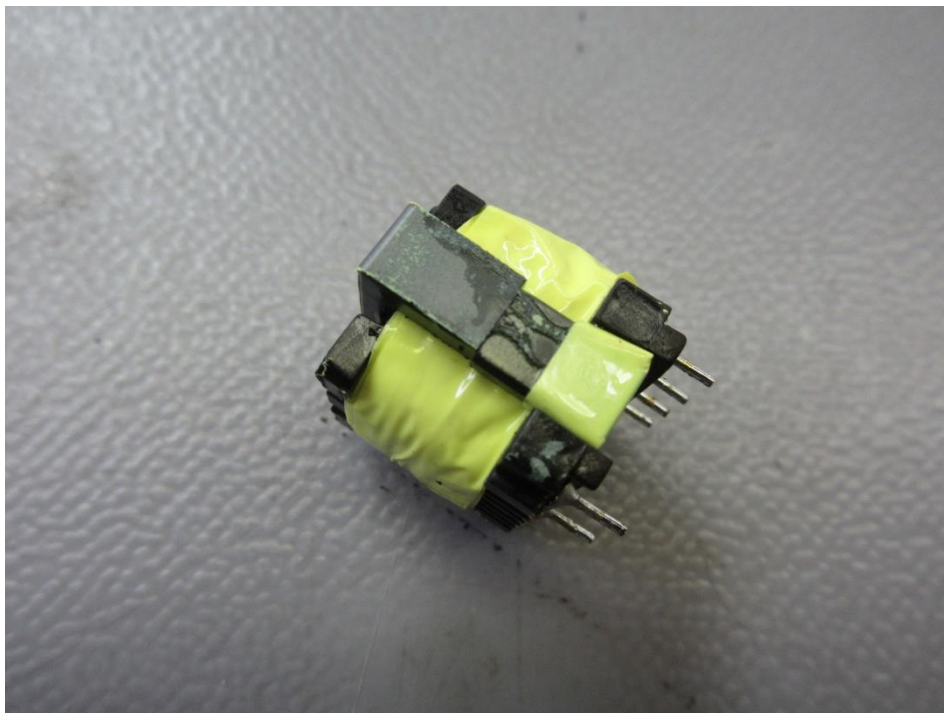


Transformer



Appendix No.1: Photos of product

Transformer

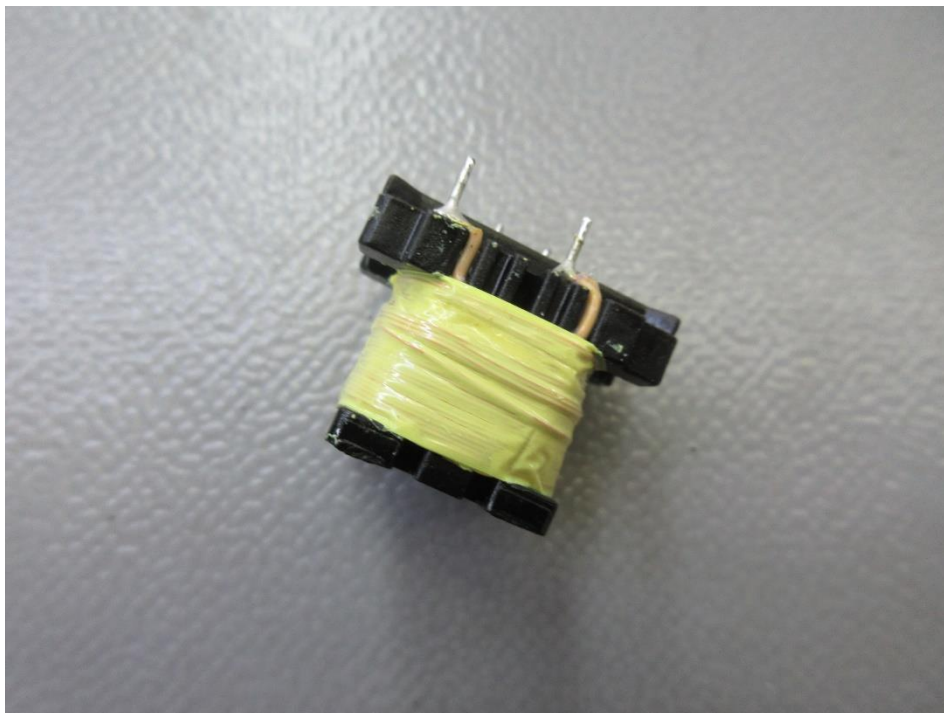


Transformer

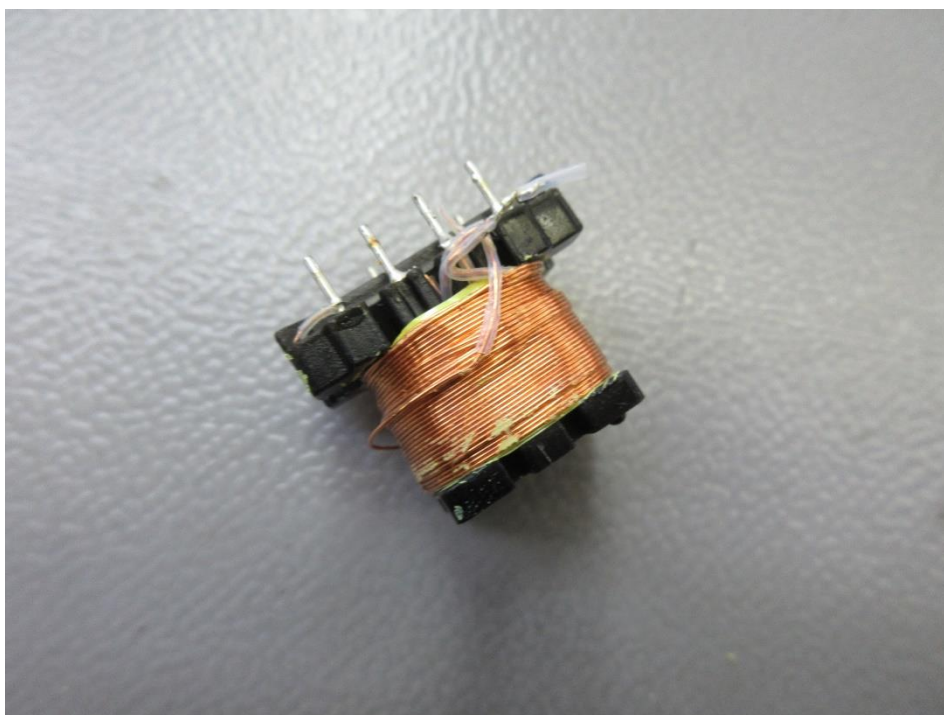


Appendix No.1: Photos of product

Transformer

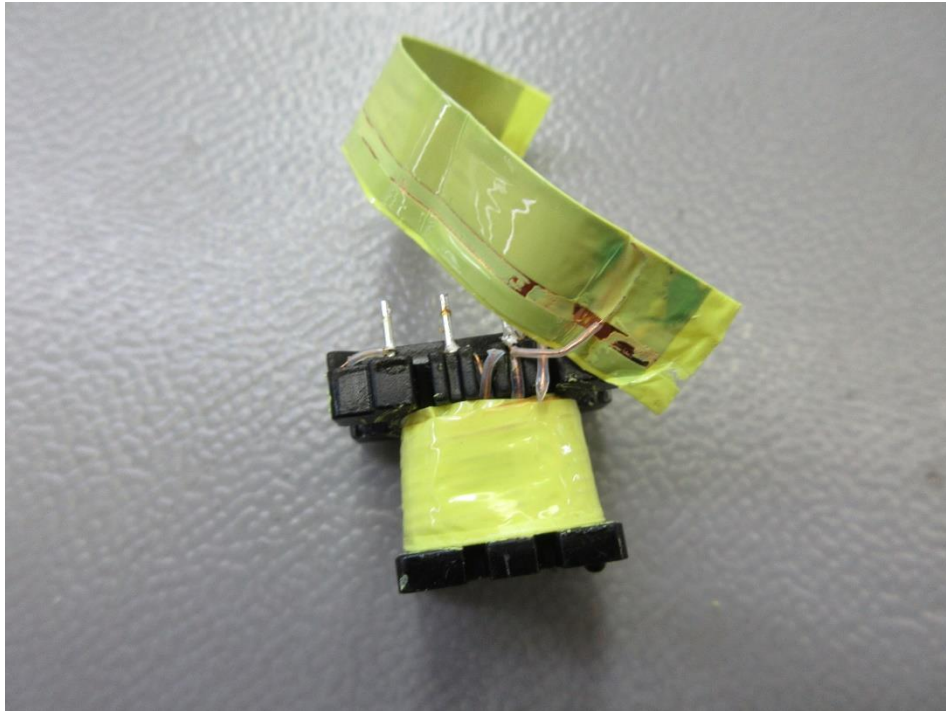


Transformer

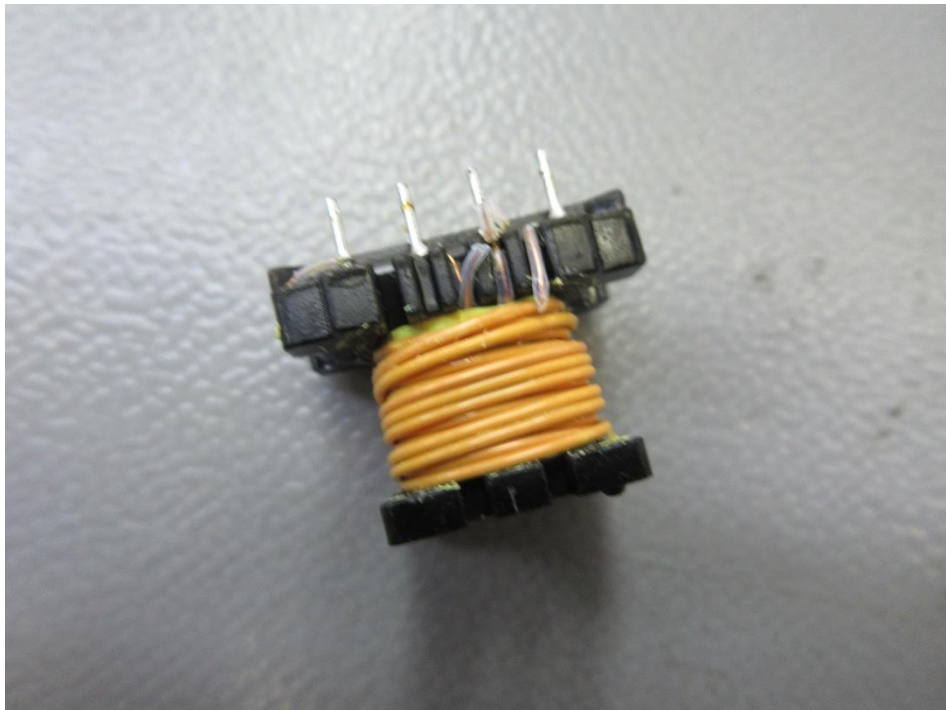


Appendix No.1: Photos of product

Transformer



Transformer

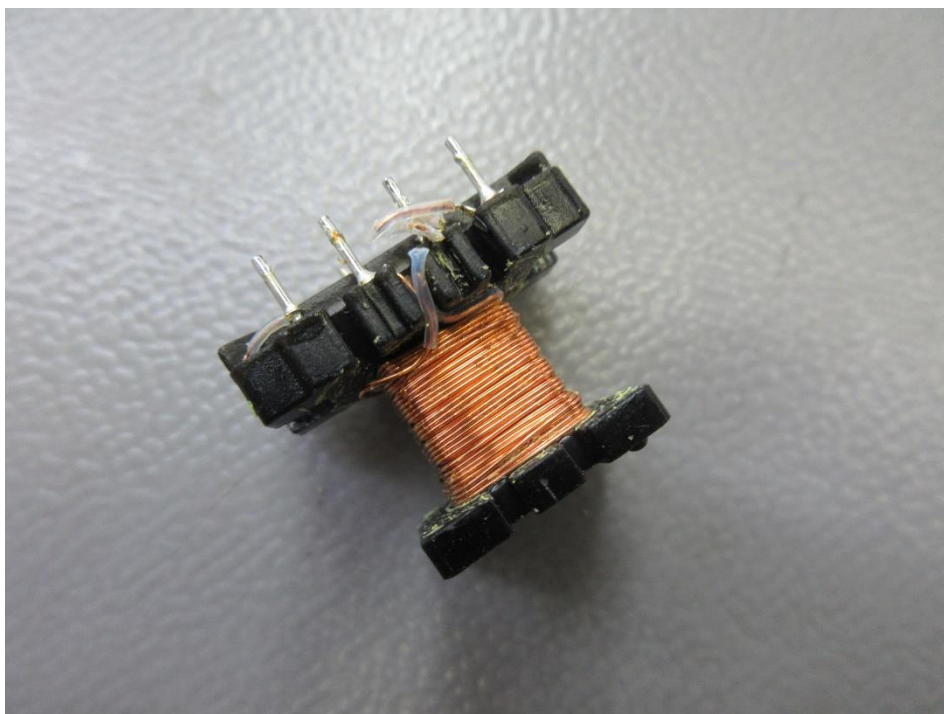


Appendix No.1: Photos of product

Transformer



Transformer



ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT																																										
IEC 62368-1																																										
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES																																										
(Audio/video, information and communication technology equipment - Part 1: Safety requirements)																																										
Differences according to : EN 62368-1:2014+A11:2017																																										
Attachment Form No. : EU_GD_IEC62368_1D_II																																										
Attachment Originator : Nemko AS																																										
Master Attachment..... : Date 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																																				
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed “Z”.					--																																				
CONTENTS	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords					P																																				
	Delete all the “country” notes in the reference document (IEC 62368-1:2014) according to the following list: <table><tr><td>0.2.1</td><td>Note</td><td>1</td><td>Note 3</td><td>4.1.15</td><td>Note</td></tr><tr><td>4.7.3</td><td>Note 1 and 2</td><td>5.2.2.2</td><td>Note</td><td>5.4.2.3.2.2 Table 13</td><td>Note c</td></tr><tr><td>5.4.2.3.2.4</td><td>Note 1 and 3</td><td>5.4.2.5</td><td>Note 2</td><td>5.4.5.1</td><td>Note</td></tr><tr><td>5.5.2.1</td><td>Note</td><td>5.5.6</td><td>Note</td><td>5.6.4.2.1</td><td>Note 2 and 3</td></tr><tr><td>5.7.5</td><td>Note</td><td>5.7.6.1</td><td>Note 1 and 2</td><td>10.2.1 Table 39</td><td>Note 2, 3 and 4</td></tr><tr><td>10.5.3</td><td>Note 2</td><td>10.6.2.1</td><td>Note 3</td><td>F.3.3.6</td><td>Note 3</td></tr></table>					0.2.1	Note	1	Note 3	4.1.15	Note	4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c	5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3	5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4	10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3	P
0.2.1	Note	1	Note 3	4.1.15	Note																																					
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10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3																																					
	For special national conditions, see Annex ZB.					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.					P																																				

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

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	<p>Add the following after the first paragraph: <i>For RS 1 compliance is checked by measurement under the following conditions:</i></p> <p><i>In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or presets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.</i></p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p><i>The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus.</i></p> <p><i>Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.</i></p> <p><i>For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.</i></p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>		N/A
10.6.1	<p>Add the following paragraph to the end of the subclause: EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.</p>		N/A
10.Z1	<p>Add the following new subclause after 10.6.5. 10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</p> <p>The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz).</p> <p>For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566</p>		N/A
G.7.1	<p>Add the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>		P

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

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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), and • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5kV. <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> • the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; • the additional testing shall be performed on all the test specimens as described in EN 60384-14; <p>the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.</p>		N/A
5.5.2.1	<p>Norway</p> <p>After the 3rd paragraph the following is added:</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

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.6	Finland, Norway and Sweden To the end of the subclause the following is added: Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.		N/A
5.6.1	Denmark Add to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.		N/A
5.6.4.2.1	Ireland and United Kingdom After the indent for pluggable equipment type A , the following is added: – the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.		N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm ² to 1,5 mm ² in cross-sectional area.		N/A
5.7.5	Denmark To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.1	<p>Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>“Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)”</p> <p>NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.”</p> <p>Translation to Swedish:</p> <p>”Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”</p>		N/A

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	<p>Denmark</p> <p>To the end of the subclause the following is added:</p> <p>The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .</p>		N/A
B.3.1 and B.4	<p>Ireland and United Kingdom</p> <p>The following is applicable:</p> <p>To protect against excessive currents and short-circuits in the primary circuit of direct plug-in equipment, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the direct plug-in equipment, until the requirements of Annexes B.3.1 and B.4 are met</p>		N/A
G.4.2	<p>Denmark</p> <p>To the end of the subclause the following is added:</p> <p>Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a.</p> <p>Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.</p> <p>Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a</p> <p><i>Justification:</i> Heavy Current Regulations, Section 6c</p>		N/A

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	United Kingdom To the end of the subclause the following is added: 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.		N/A
G.7.1	United Kingdom To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
G.7.1	Ireland To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	Ireland and United Kingdom To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm ² is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A
10.5.2	<p>Germany</p> <p>The following requirement applies:</p> <p>For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking.</p> <p><i>Justification:</i></p> <p>German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM.</p> <p>NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int +49-531-592-6320, Internet: http://www.ptb.de</p>		N/A

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<p align="center">ATTACHMENT TO TEST REPORT IEC 62368-1 2th Ed. U.S.A. NATIONAL DIFFERENCES Audio/video, information and communication technology equipment – Part 1: Safety requirements</p>			
Differences according to: CSA/UL 62368-1:2014			
TRF template used: : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No.: US_CA_ND_IEC62368_1D			
Attachment Originator: UL(US)			
Master Attachment: Date 2021-02-04			
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<p align="center">IEC 62368-1 - US and Canadian National Differences Special National Conditions based on Regulations and Other National Differences</p>			
1.1	All equipment is to be designed to allow installation according to the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.		P
1.4	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		P
4.1.17	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.	Should be evaluated during national approval.	N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.	Should be evaluated during national approval.	N/A
4.8	Lithium coin / button cell batteries have modified special construction and performance requirements.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.5, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment		N/A

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.7	Equipment intended to receive telecommunication ringing signals complies with a special touch current measurement tests.	Not such equipment	N/A
6.5.1	PS3 wiring outside a fire enclosure complies with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A
Annex F (F.3.3.8)	Output terminals provided for supply of other equipment, except mains, supply are marked with a maximum rating or references to which equipment it is permitted to be connected.	Should be evaluated during national approval.	N/A
Annex G (G.7.1)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
Annex G (G.7.3)	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	Should be evaluated during national approval.	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.	Should be evaluated during national approval.	N/A
Annex G (G.7.5)	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.	Should be evaluated during national approval.	N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V d.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
Annex M	Battery packs for stationary applications comply with special component requirements.	No battery.	N/A
Annex DVA (1)	Equipment intended for use in spaces used for environmental air are subjected to special flammability requirements for heat and visible smoke release.	Not such equipment or application as below.	N/A

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) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. & Canadian Regulations.		N/A
	Baby monitors additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
Annex DVA (5.6.3)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		P
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a min. flammability classification of V-1.		P
Annex DVA (10.3.1)	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (10.5.1)	Equipment that produces ionizing radiation complies with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (F.3.3.3)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."		N/A
Annex DVA (F.3.3.5)	Equipment identified for ITE (computer) room installation is marked with the rated current		N/A

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position		N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles complies with NEC 250.146(D) and CEC 10-112 and 10-906(8).		N/A
Annex DVA (G.4.3)	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.	No such fuse provided.	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 (Annex M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A
Annex DVA (Q)	Wiring terminals intended to supply Class 2 outputs according to the NEC or CEC Part 1 are marked with the voltage rating and "Class 2" or equivalent; marking is located adjacent to the terminals and visible during wiring.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. Components required to comply include: appliance couplers, attachment plugs, battery back-up systems, battery packs, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultra-capacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, data storage equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.	See Table 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 in accordance with the NEC/CEC.	Inlet for detachable power cord.	P
Annex DVH (DVH.3.2)	Terminals for permanent wiring, including protective earthing terminals, are suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and are specially marked when specified.		N/A
Annex DVH (DVH.3.2)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, complies with special earthing, wiring, marking and installation instruction requirements.		N/A

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Appendix No.4: National differences for Australia/New Zealand

ATTACHMENT TO TEST REPORT IEC 62368-1 (AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment)			
Differences according to : AS/NZS 62368.1:2018			
Attachment Form No. : AU_NZ_ND_IEC62368_1B			
Attachment Originator : JAS-ANZ			
Master Attachment : 2021-02-29			
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	National Differences		P
Appendix ZZ	Variations to IEC 62368-1:2014 (ED. 2.0) for Australia and New Zealand		P
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2014 (ED. 2.0)		P
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		P
2	Add the following to the list of normative references: The following normative documents are referenced in Appendix ZZ: -AS/NZS 3112, <i>Approval and test specification—Plugs and socket-outlets</i> -AS/NZS 3123, <i>Approval and test specification—Plugs, socket-outlets and couplers for general industrial application</i> -AS/NZS 3191, <i>Electric flexible cords</i> -AS/NZS 60065, <i>Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)</i> -AS/NZS 60320.1, <i>Appliance couplers for household and similar general purposes, Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)</i> -AS/NZS 60320.2.2, <i>Appliance couplers for household and similar general purposes Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD)</i> -AS/NZS 60695.2.11, <i>Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products</i> -AS/NZS 60695.11.5, <i>Fire hazard testing, Part 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

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 Replace the text 'IEC 60950-1' with 'AS/NZS 60950.1:2015'.</p> <p>2 Replace the text 'IEC 60065' with 'AS/NZS 60065'.</p>		P
4.7	Equipment for direct insertion into mains socket-outlets		P
4.7.2	<p>Requirements</p> <p>Delete the text of the second paragraph and replace with the following:</p> <p>Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.</p>		P
4.7.3	<p>Compliance Criteria</p> <p>Delete the first paragraph and Note 1 and Note 2 and replace with the following:</p> <p><i>Compliance is checked by inspection and, if necessary, by the tests in AS/NZS 3112.</i></p>		P
4.8	<p>Delete existing clause title and replace with the following:</p> <p>4.8 Products containing coin/button cell batteries</p>		N/A
4.8.1	<p>General</p> <p>1 Second dashed point, delete the text and replace with the following:</p> <p>– include coin/button cell batteries with a diameter of 32 mm or less.</p> <p>2 After the second dashed point, insert the following Note:</p> <p>NOTE 1: Batteries are specified in IEC 60086-2.</p> <p>3 After the third dashed point, renumber the existing Note as 'NOTE 2'.</p> <p>4 Fifth dashed point, delete the word 'lithium'.</p>		N/A

ATTACHMENT						
Clause	Requirement + Test		Result - Remark	Verdict		
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			N/A		
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		N/A
		New Zealand				

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
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		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)		N/A
8.5.4	Special categories of equipment comprising moving parts		N/A
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		N/A
8.6.1 and Table 36	Requirements 1. Table 36, <i>insert</i> Footnote c at the end of the 'Glass slide' heading, and <i>add</i> a new Footnote c after the text of Footnote b in the last row of Table 36 as follows: ° The glass slide test is not applicable to floor standing equipment, even though the equipment may have controls or a display. 2. Table 36, fifth row, <i>insert</i> '201' at the end of 'No stability requirements' 3. Table 36, ninth row, <i>insert</i> '201' at the end of 'No stability requirements' 4. Table 36, <i>add</i> the following new footnote: 201 MS2 and MS3 television sets and display devices, designed only for fixing to a wall, ceiling or equipment rack, are not subjected to stability requirements only if the instructional safeguard of Clause 8.6.1.201 is provided. Otherwise, the glass slide requirements of Clause 8.6.4 and horizontal force requirements of Clause 8.6.5 apply. 5. Second paragraph beneath Table 36, <i>delete</i> the words 'MS2 and MS3 television sets' and <i>replace</i> with 'MS2 and MS3 television sets and display devices'		N/A
8.6.1	After Clause 8.6.1 <i>add</i> the following new clauses: 8.6.1.201 Instructional safeguard for fixed-mount television sets (see special national conditions)		N/A

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex F Paragraph F.3.5.1	Mains appliance outlet and socket-outlet markings <i>Replace</i> 'IEC 60320-2-2' with 'AS/NZS 60320.2.2'.		N/A
Annex G Paragraph G.4.2	Mains connectors 1 In the second line <i>insert</i> 'or AS/NZS 3123' after 'IEC 60906-1'. 2 In the second line <i>insert</i> 'or AS/NZS 60320 series' after 'IEC 60320 series' 3 <i>Add</i> the following new paragraph: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.		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'.		P
Paragraph G.7.1	Mains supply cords, General In the fourth dashed paragraph, <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'		P
Table G.5	Sizes of conductors 1 In the second row, first column, <i>delete</i> '6' and <i>replace</i> with '7.5' 2 In the second row, second column, <i>delete</i> '0,75' and <i>replace</i> with '0.75' ^b 3 <i>Delete</i> Note 1. 4 <i>Replace</i> 'NOTE 2' with 'NOTE:'. 5 <i>Delete</i> the text of 'Footnote b' and <i>replace</i> with the following: ^b This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm ² three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 In Footnote c <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1' 7 In Footnote d <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A
Annex M Paragraph M.3.2	Protection circuits for batteries provided within the equipment, Test method After the first dashed point <i>add</i> the following Note: NOTE 201: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of SELV may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.		N/A

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

ATTACHMENT									
Clause	Requirement + Test	Result - Remark	Verdict						
	for the possible effect of propagating the fire from one part to another.								
	<i>Compliance shall be checked by the tests of Clauses 6.202.2, 6.202.3 and 6.202.4.</i> For the base material of printed boards, compliance shall be checked by the test of Clause 6.202.5. The tests shall be carried out on parts of non-metallic material which have been removed from the equipment. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring.		N/A						
6.202.2	Testing of non-metallic materials Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the relevant part is not thinner than the sample tested.		N/A						
6.202.3	Testing of insulating materials Parts of insulating material supporting Potential Ignition Sources shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE: Contacts in components such as switch contacts are considered to be connections		N/A						
	For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test need not be tested		N/A						
	<div>The needle-flame test shall be made in 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>Delete the first and second paragraphs and <i>replace</i> with the following:</td></tr></table>	Clause of AS/NZS 60695.11.5	Change	9 Test procedure		9.2 Application of needle-flame	Delete the first and second paragraphs and <i>replace</i> with the following:		N/A
Clause of AS/NZS 60695.11.5	Change								
9 Test procedure									
9.2 Application of needle-flame	Delete the first and second paragraphs and <i>replace</i> with the following:								

ATTACHMENT				
Clause	Requirement + Test		Result - Remark	Verdict
		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	Replace 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	Replace with the following: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.		
	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.			
6.202.4	Testing in the event of non-extinguishing material 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. 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.			N/A

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<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, having openings only for connecting wires which fill the openings completely. <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>	V-0	N/A
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

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

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Appendix No.5: National differences for Japan

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.		P
5.6.1	Mains socket-outlet and appliance outlet shall comply with Clause G.4.2A if they are incorporated as part of the equipment.		N/A
5.6.2.1	Mains connection of class 0I equipment: Instructional safeguard in accordance with Clause F.3.6.1A; Mains plug having a lead wire for protective earthing connection of class 0I equipment; Independent main protective earthing terminal installed by ordinary person.		P
5.6.2.2	This requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.		N/A

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.3	In case of class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall comply with either of the following: – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cable with 1.25 mm ² or more cross-sectional area		N/A
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series or JIS C 8303, or otherwise being considered to comply with relevant regulations, or that is provided with mains appliance outlet as specified in JIS C 8283-2-2 for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.		N/A
5.7.4	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990.		P
6.4.3.3	A fuse complying with JIS C 6575 series or a fuse having equivalent characteristics shall open within 1 s. For Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”. A fuse not complying with JIS C 6575 series shall be tested with the breaking capacity taken into account.		P
8.5.4.2.1	Only three-phase stationary equipment rated more than 200 V ac can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.		N/A
8.5.4.2.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.		N/A
8.5.4.2.4	The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.		N/A

ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.2.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part. Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.		N/A
9.2.6, Table 38	Handles, Knobs, grips, etc. and external surfaces either held, touched or worn against the body in normal use (> 1 min) ^{b,c}		N/A
F.3.5.1	Instructional safeguard of class 0I equipment in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8303 or relevant regulation to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.		N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic.		P
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.3 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions and instructional safeguard shall be provided regarding the earthing connection.		P
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.		N/A
G.3.2.1	The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.		N/A

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