






www.nemko.com

<b>TEST REPORT</b> <b>IEC 62368-1</b> <b>Audio/video, information and communication technology equipment</b> <b>Part 1: Safety requirements</b>	
<b>Report Number</b> .....	396786
<b>Date of issue</b> .....	2020-05-29
<b>Total number of pages</b> .....	72 pages, refer to page 4 for attachments
<b>Applicant's name</b> .....	GlobTek, Inc.
<b>Address</b> .....	186 Veterans Dr. Northvale, NJ 07647 USA
<b>Test specification:</b>	
<b>Standard</b> .....	IEC 62368-1:2014 (Second Edition)
<b>Test procedure</b> .....	CB Scheme
<b>Non-standard test method</b> .....	N/A
<b>Test Report Form No.</b> .....	IEC62368_1B
<b>Test Report Form(s) Originator</b> .....	UL(US)
<b>Master TRF</b> .....	2014-03
<b>Copyright © 2014 Worldwide System for Conformity Testing and Certification of Electrotechnical Equipment and Components (IECEE), Geneva, Switzerland. All rights reserved.</b> This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context. If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed. <b>This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.</b>	
<b>General disclaimer:</b> The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

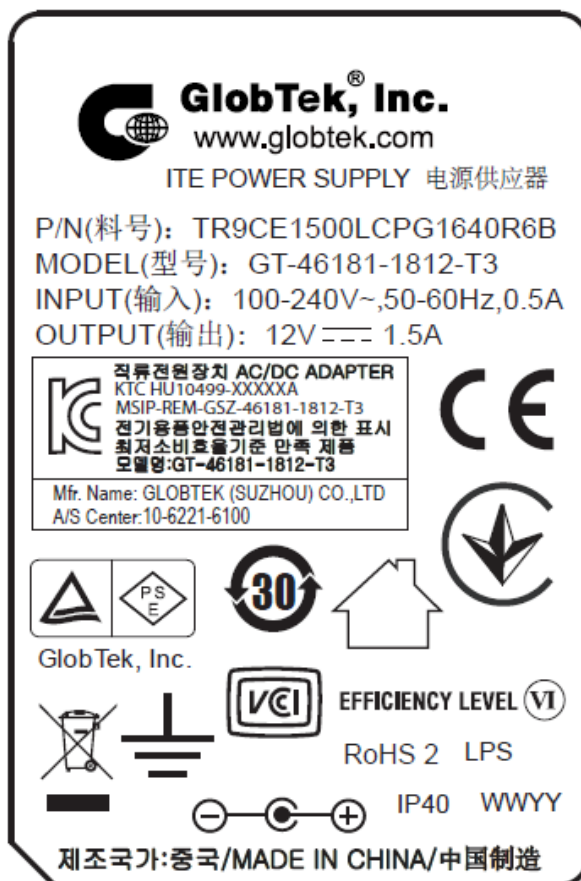
Test Item description .....	ICT/ITE Power Supply
Trade Mark .....	
Manufacturer .....	Same as applicant.
Model/Type reference .....	GT-46181-***-T** (see general product information for model designation)
Ratings .....	AC Input: 0.5A 100-240Vac 50-60Hz Output: see general product information for details

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

<b>List of Attachments (including a total number of pages in each attachment):</b> <ol style="list-style-type: none"> <li>1. Photos (4 pages)</li> <li>2. PCB layout (1 page)</li> <li>3. Transformer specification (3 pages)</li> <li>4. European differences (10 pages)</li> <li>5. US and Canada differences (5 pages)</li> <li>6. Japanese differences (4 pages)</li> <li>7. Australia / New Zealand differences (11 pages)</li> </ol>																															
<b>Summary of testing:</b>																															
<b>Tests performed (name of test and test clause):</b> <table border="1"> <thead> <tr> <th>Clause</th> <th>Test(s)</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>General Requirements</td> </tr> <tr> <td>5</td> <td>Electrically-caused injury</td> </tr> <tr> <td>6</td> <td>Electrically-caused fire</td> </tr> <tr> <td>9</td> <td>Thermal burn injury</td> </tr> <tr> <td>B</td> <td>Normal operating condition tests, abnormal operating condition tests and single fault condition tests</td> </tr> <tr> <td>F</td> <td>Equipment markings, instructions, and instructional safeguards</td> </tr> <tr> <td>G</td> <td>Components</td> </tr> <tr> <td>L</td> <td>Disconnect devices</td> </tr> <tr> <td>N</td> <td>Electrochemical potentials</td> </tr> <tr> <td>O</td> <td>Measurement of creepage distances and clearances</td> </tr> <tr> <td>P</td> <td>Safeguards against entry of foreign objects and spillage of internal liquids</td> </tr> <tr> <td>Q</td> <td>Circuit intended for interconnection with building wiring (LPS)</td> </tr> <tr> <td>T</td> <td>Mechanical strength tests</td> </tr> <tr> <td>V</td> <td>Determination of accessible parts</td> </tr> </tbody> </table>	Clause	Test(s)	4	General Requirements	5	Electrically-caused injury	6	Electrically-caused fire	9	Thermal burn injury	B	Normal operating condition tests, abnormal operating condition tests and single fault condition tests	F	Equipment markings, instructions, and instructional safeguards	G	Components	L	Disconnect devices	N	Electrochemical potentials	O	Measurement of creepage distances and clearances	P	Safeguards against entry of foreign objects and spillage of internal liquids	Q	Circuit intended for interconnection with building wiring (LPS)	T	Mechanical strength tests	V	Determination of accessible parts	<b>Testing location:</b>  Refer to page 3
Clause	Test(s)																														
4	General Requirements																														
5	Electrically-caused injury																														
6	Electrically-caused fire																														
9	Thermal burn injury																														
B	Normal operating condition tests, abnormal operating condition tests and single fault condition tests																														
F	Equipment markings, instructions, and instructional safeguards																														
G	Components																														
L	Disconnect devices																														
N	Electrochemical potentials																														
O	Measurement of creepage distances and clearances																														
P	Safeguards against entry of foreign objects and spillage of internal liquids																														
Q	Circuit intended for interconnection with building wiring (LPS)																														
T	Mechanical strength tests																														
V	Determination of accessible parts																														
4.1, G.7 Power supply cord set	Power supply cord is not provided with the equipment, should be considered when market to relevant country.																														
<b>Summary of compliance with National Differences:</b>																															
<b>List of countries addressed</b>																															
- EU countries, US and Canada, Japan and Australia / New Zealand.																															
<input checked="" type="checkbox"/> <b>The product fulfils the requirements of IEC 62368-1: 2014 (Second Edition) and EN 62368-1: 2014+A11:2017</b>																															

**Copy of marking plate:**

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



This is a representative label. Others are same with this except model name and output rating.

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

TEST ITEM PARTICULARS:	
Classification of use by .....	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input checked="" type="checkbox"/> Children likely to be present
Supply Connection.....	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit – not Mains connected - <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance .....	<input checked="" type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> +____%/ -____% <input type="checkbox"/> None
Supply Connection – Type .....	<input checked="" type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input 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 type="checkbox"/> other:_____
Considered current rating of protective device as part of building or equipment installation .....	16A (20A for Canada and US); Installation location: <input checked="" type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility .....	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input checked="" type="checkbox"/> transportable <input type="checkbox"/> stationary <input 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 type="checkbox"/> Class II <input type="checkbox"/> Class III
Access location .....	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD) .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maxium 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 checked="" type="checkbox"/> IT – 230 V L-L for Norway
Altitude during operation (m) .....	<input type="checkbox"/> 2000 m or less <input checked="" type="checkbox"/> 4000 m
Altitude of test laboratory (m) .....	<input checked="" type="checkbox"/> 2000 m or less
Mass of equipment (kg) .....	<input checked="" type="checkbox"/> Weight Approx.: 0.133kg Dimension (W x H x D): 80 x 50 x30mm (excluding the output wires and connector)

<b>POSSIBLE TEST CASE VERDICTS:</b>	
- 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)
<b>TESTING:</b>	
Date of receipt of test item..... :	2020-04-02
Date (s) of performance of tests..... :	2020-04-03 to 2020-05-27
<b>GENERAL REMARKS:</b>	
<p>“(See Enclosure #)” refers to additional information appended to the report.  “(See appended table)” refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	
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"/> <b>Yes</b> <input type="checkbox"/> <b>Not applicable</b>
<b>When differences exist; they shall be identified in the General product information section.</b>	
<b>Name and address of factory (ies) .....</b> :	GlobTek, Inc. 186 Veterans Dr. Northvale, NJ 07647 USA  GlobTek (Suzhou) Co., Ltd Building 4, No. 76, Jin Ling East Rd., Suzhou Industrial Park, Suzhou, JiangSu 215021, China



**GENERAL PRODUCT INFORMATION:****Product Description –**

The equipment is a series of class I external type switching mode power supply adaptors (desk top type with appliance inlet) for DC supply of information technology equipment.

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

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

Max. recommended operating ambient (T<sub>ma</sub>): 40°C

DC output complies with Annex Q (LPS).

Additional requirements:

Exposure to extreme temperatures, excessive dust, moisture or vibration; to flammable gases; to corrosive or explosive atmospheres:

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

Electromedical equipment connected to the patient:

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

Equipment used in vehicles, ships or aircrafts, in tropical countries, or at elevations > 2000m:

This equipment is intended to operate in a “normal” environment (Offices and homes) and is intended to be operated under altitude up to 4000m, so the clearance is multiplied by the altitude correction factor (1.29 linear interpolation used), specified in table 17 of IEC 62368-1.

## Model Differences –

### Explanation of model designation GT-46181-\*\*\*-T\*\*:

The 1st “\*” denotes the rated output wattage, with a maximum value of "18",

The 2nd “\*” denotes the standard rated output voltage designation, with a value of "05", "09", "12", "15",

The 3rd “\*” is optional deviation, subtracted from standard output voltage, which can be “-0.1” to “-3.9” with interval of 0.1, or blank to indicate no voltage different,

The 2nd and 3rd together denote the output voltage, with a range of 5-15Vdc

The 4th “\*” can be 3 or 3A, 3 means C14 inlet type, 3A means C6 inlet type.

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

### Model list:

Model	Output Voltage	Max. Output Current	Max. Output Wattage	Transformer (T1)	Resistor (R10)
GT-46181-*05-T**	5V	3.6A	18W	XF00941	1.2Ω, 1W
GT-46181-*09*-T**	5.1-9V	3.5A	18W	XF00941(5.1-7.5V), XF00962(7.6-9V)	1.1Ω, 1W
GT-46181-*12*-T**	9.1-12V	1.97A	18W	XF00962(9.1-10.5), XF00933(10.6-12V)	1.0Ω, 1W
GT-46181-*15*-T**	12.1-15V	1.48A	18W	XF00933(12.1-15V)	1.0Ω, 1W

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

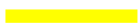
<b>ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:</b>	
<p>(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.)            (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body 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><b>Electrically-caused injury (Clause 5):</b>            (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)
Primary circuits conductively connected to the mains, and secondary circuits before DC output	ES3
DC output	ES1
<p><b>Electrically-caused fire (Clause 6):</b>            (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)
All circuits expect for DC output	PS3
DC output	PS2
Primary circuits and secondary circuits	Resistive PIS
<p><b>Injury caused by hazardous substances (Clause 7)</b>            (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	N/A
<p><b>Mechanically-caused injury (Clause 8)</b>            (Note: List moving part(s), fan, special installations, etc. &amp; corresponding MS classification based on Table 35.)            Example: Wall mount unit</p>	
MS2	
Source of kinetic/mechanical energy	Corresponding classification (MS)
Sharp edge and corners (outside enclosure)	MS1
Equipment mass (<7kg)	MS1
<p><b>Thermal burn injury (Clause 9)</b>            (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 (Touched occasionally for very short periods (1s<t<10s))	TS1
<p><b>Radiation (Clause 10)</b>            (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

# ENERGY SOURCE DIAGRAM

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



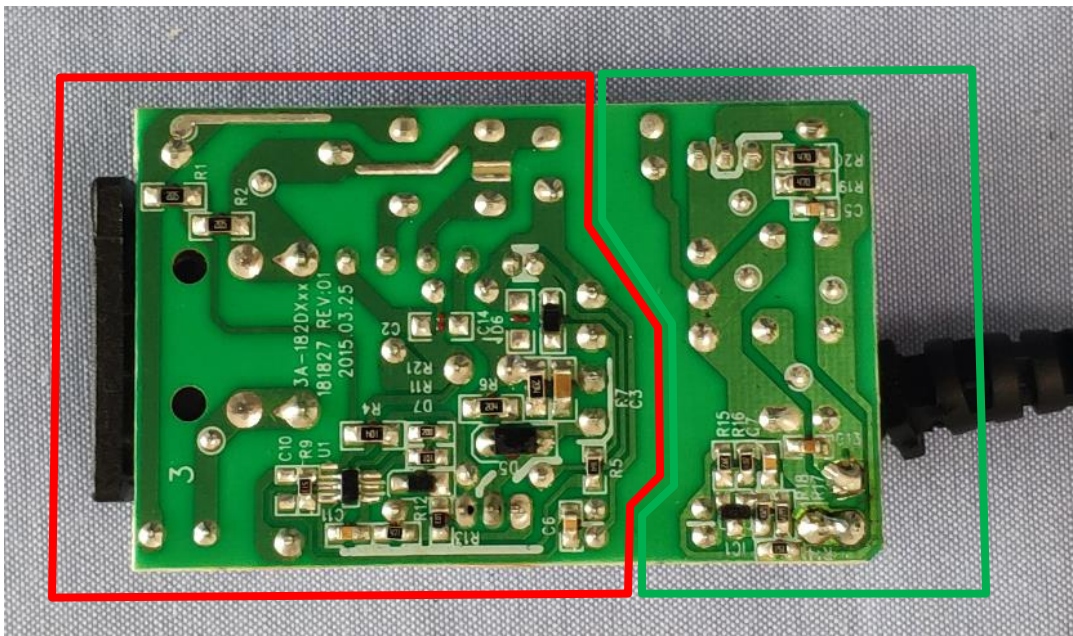
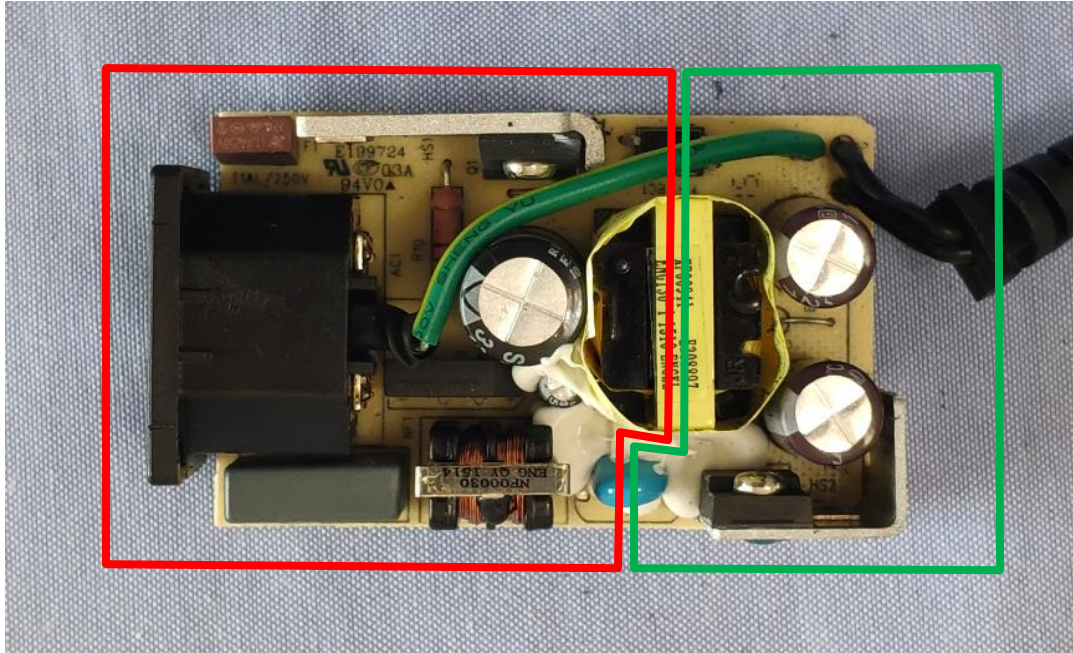
Class 1



Class 2



Class 3



☒ ES

☐ PS

☐ MS

☐ TS

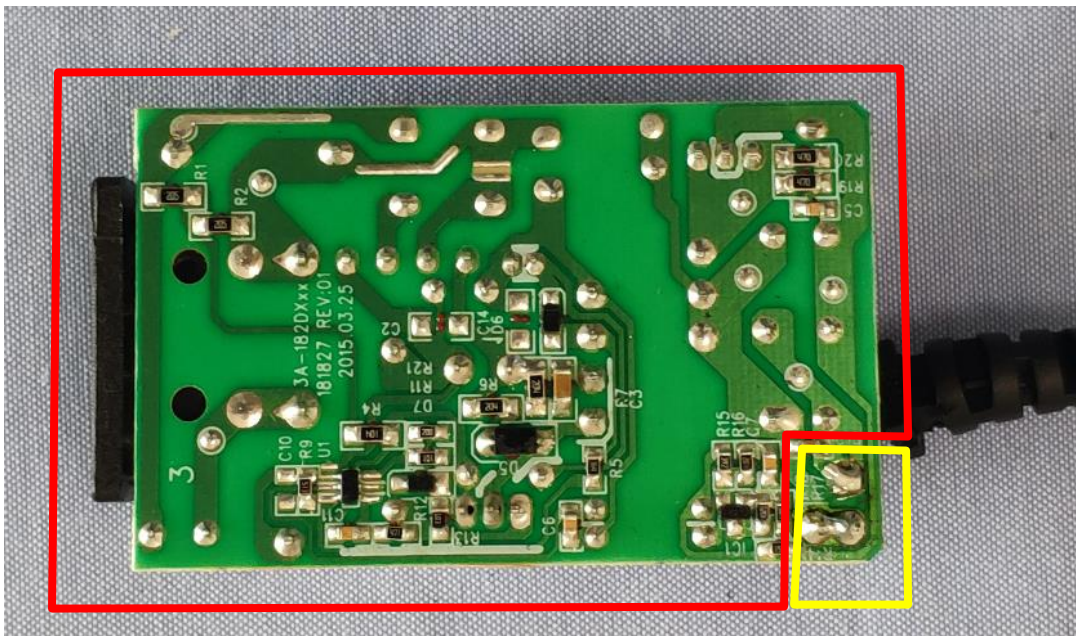
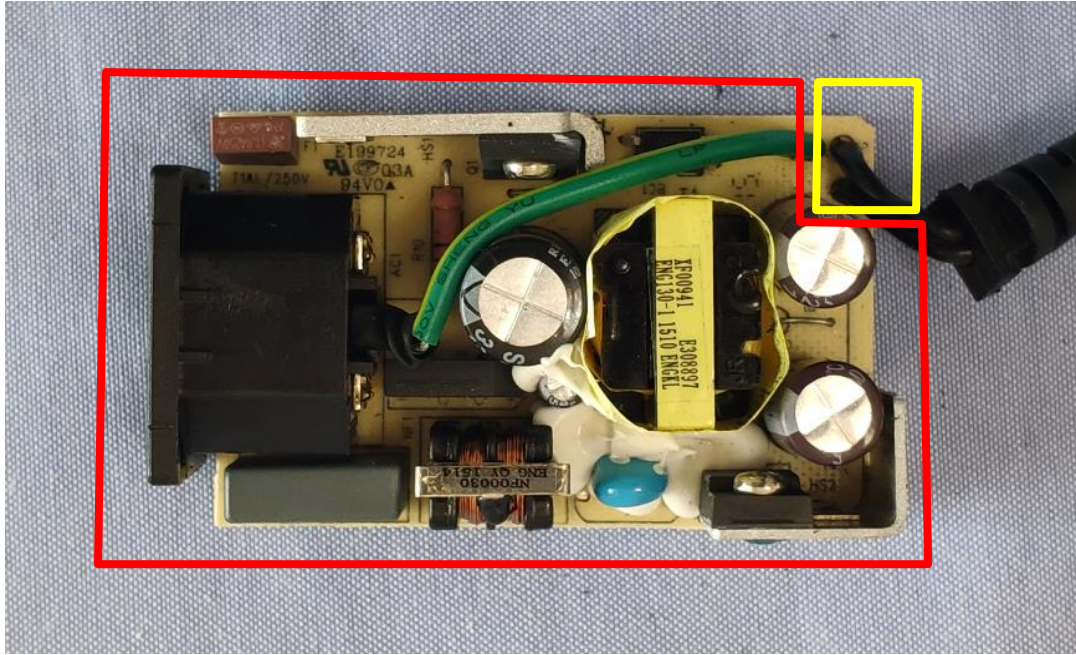
☐ RS



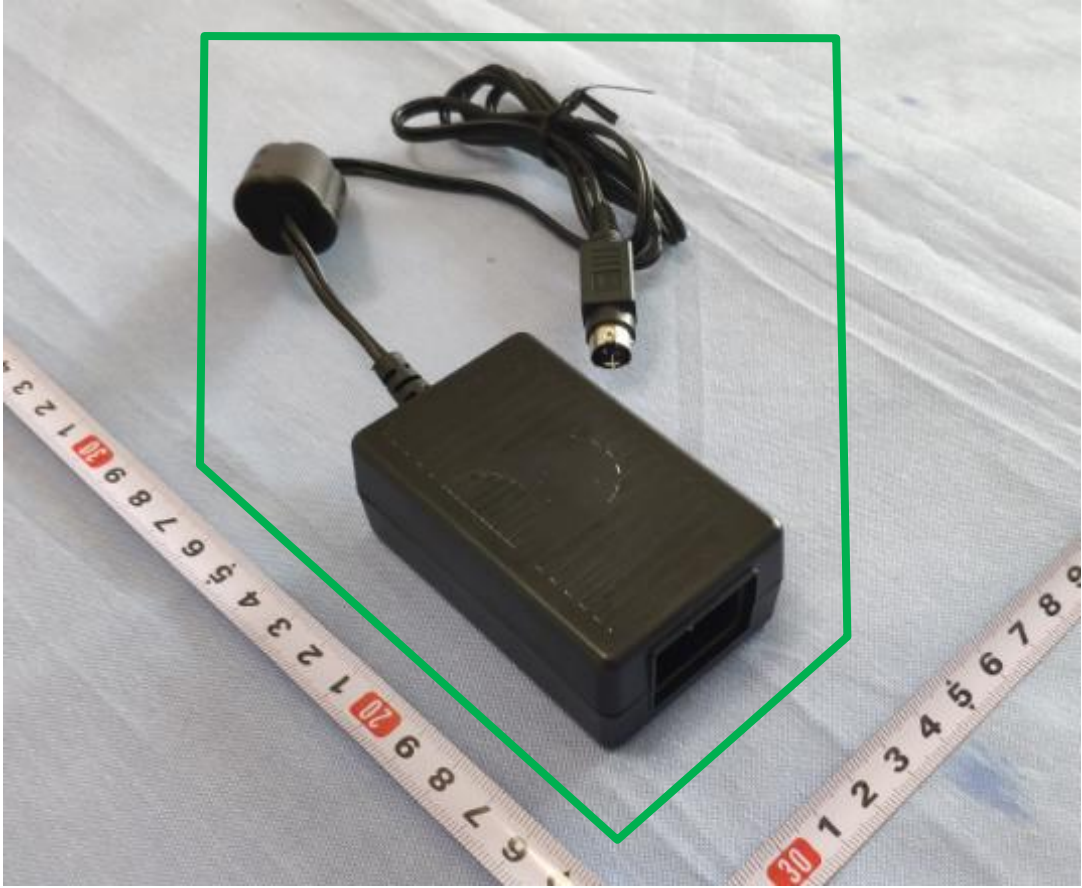
# ENERGY SOURCE DIAGRAM

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

■ Class 1
 ■ Class 2
 ■ Class 3



☐ ES
 ☒ PS
 ☐ MS
 ☐ TS
 ☐ RS

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

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	Supplementary	Reinforced (Enclosure)
Ordinary person	ES3: Primary circuits	N/A	N/A	Enclosure.
Ordinary person	ES3: Primary Circuits	N/A	N/A	Cl. & Cr. Distance comply 5.4.2 & 5.4.3; Solid insulation 5.4.4; Component comply Annex G
Ordinary person	ES3: Primary Circuit (X-cap)	N/A	N/A	Bleeder resistors cl.5.5.2.2
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Entry of foreign objects	PS3	N/A	N/A	No openings
Internal combustible material	PS3	1)	Min. V-1 PCB; Min. V-0 enclosure	N/A
Combustible material -Internal wire	PS3	1)	6.5.1 Complied with 60695-11-21 or equivalent	N/A
Combustible material -Output wire	PS2	1)	6.5.1 Complied with 60695-11-21 or equivalent	N/A
<b>1)</b> No ignition, Components inside of fire enclosure which measured temperature <300°C during test, refer to table 5.4.1.4, 6.3.2, 9.0, B.2.6. Note: Resistive PIS is within PS2 and PS3 circuit, V-0 enclosure used.				
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary person	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part	Energy Source	Safeguards		

(e.g. Ordinary)	(MS3:High Pressure Lamp)	Basic	Supplementary	Reinforced (Enclosure)
Ordinary person	MS1: Sharp edges and corners (none)	N/A	N/A	N/A
Ordinary person	MS1: Less than 7kg	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary person	TS1: Plastic enclosure, output cord, Inlet (thermoplastic)	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary person	N/A	N/A	N/A	N/A
Supplementary Information: (1) See attached energy source diagram for additional details.				



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4</b>	<b>GENERAL REQUIREMENTS</b>		<b>P</b>
4.1.1	Acceptance of materials, components and subassemblies	Refer to summary of testing and appended table 4.1.2.	P
4.1.2	Use of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard. Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 62368-1.	P
4.1.3	Equipment design and construction	Equipment is adequately designed and constructed.	P
4.1.15	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.5)	P
4.4.4.3	Drop tests .....	(See Annex T.7)	P
4.4.4.4	Impact tests .....	(See Annex T.6)	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....:	Internal part was not accessible.	N/A
4.4.4.6	Glass Impact tests .....	No glass.	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.2)	P
4.4.4.9	Accessibility and safeguard effectiveness	All safeguards remain effective.	P
4.5	Explosion		N/A
4.6	Fixing of conductors	See below:	P
4.6.1	Fix conductors not to defeat a safeguard	After 10N test, no reducing clearances or creepage distances.	P
4.6.2	10 N force test applied to .....	(See Annex T.2)	P
4.7	Equipment for direct insertion into mains socket – outlets	Not direct plug-in equipment.	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 such battery.	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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 openings.	N/A

<b>5</b>	<b>ELECTRICALLY-CAUSED INJURY</b>		<b>P</b>
5.2.1	Electrical energy source classifications.....	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits	See below:	P
5.2.2.2	Steady-state voltage and current.....	(See appended table 5.2.2.2)	P
5.2.2.3	Capacitance limits .....	(See appended table 5.2.2.3)	P
5.2.2.4	Single pulse limits .....	No single pulses generated.	N/A
5.2.2.5	Limits for repetitive pulses .....	(See appended table 5.2.2.5)	P
5.2.2.6	Ringing signals .....	Not used an analogue telephone network ringing signal in the equipment.	N/A
5.2.2.7	Audio signals .....	No audio signals.	N/A
5.3	Protection against electrical energy sources	Complied.	P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	Sufficient safeguard was provided between energy source and ordinary, instructed and skilled persons.	P
5.3.2.1	Accessibility to electrical energy sources and safeguards	ES3 parts were not accessible to ordinary and instructed persons.	P
5.3.2.2	Contact requirements	No openings.	P
	a) Test with test probe from Annex V .....		N/A
	b) Electric strength test potential (V) .....		N/A
	c) Air gap (mm) .....		N/A
5.3.2.4	Terminals for connecting stripped wire	No such terminal.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	Insulating material complied with cl. 5 and Annex T. No hygroscopic material.	P
5.4.1.3	Humidity conditioning .....	See clause 5.4.8 and 5.4.9	P
5.4.1.4	Maximum operating temperature for insulating materials .....	(See appended table 5.4.1.4) Transformer insulation system is certified by UL.	P
5.4.1.5	Pollution degree .....	2	—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions	Not used.	N/A
5.4.1.7	Insulation in circuits generating starting pulses	Not used.	N/A
5.4.1.8	Determination of working voltage	(see appended table 5.4.2.2, 5.4.2.4 & 5.4.3)	P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	The materials for bobbin of T1 is phenolic.	N/A
5.4.1.10.2	Vicat softening temperature..... :		N/A
5.4.1.10.3	Ball pressure ..... :		N/A
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage		N/A
5.4.2.3	Determining clearance using required withstand voltage ..... :	(See appended table 5.4.2.2)	P
	a) a.c. mains transient voltage ..... :	2500Vp	—
	b) d.c. mains transient voltage ..... :		—
	c) external circuit transient voltage ..... :		—
	d) transient voltage determined by measurement :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	Not used.	N/A
5.4.2.5	Multiplication factors for clearances and test voltages ..... :	Multiplication factor 1.29 for clearance is used. (up to 4000 m)	P
5.4.3	Creepage distances ..... :	(See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group ..... :	IIIb	—
5.4.4	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	Evaluated with cl. 5.4.4.4	P
5.4.4.4	Solid insulation in semiconductor devices	Certificated optocoupler used and comply with G.12 (See appended table 4.1.2)	P
5.4.4.5	Cemented joints	Certificated optocoupler used and comply with G.12 (See appended table 4.1.2)	P
5.4.4.6	Thin sheet material	(See appended table 5.4.9)	P
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Number of layers (pcs) .....	(See appended table 5.4.9)	—
5.4.4.6.3	Non-separable thin sheet material	No such part.	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	Insulation on winding wire complies with G.6.	P
5.4.4.9	Solid insulation at frequencies >30 kHz .....	cl.5.4.9.1 is considered and with uniform field strength.	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 (MΩ).....		—
5.4.6	Insulation of internal wire as part of supplementary safeguard .....		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning	Test was performed on product with each source of transformer listed in table 4.1.2.	P
	Relative humidity (%).....	93% R.H.	—
	Temperature (°C) .....	40°C	—
	Duration (h) .....	120hr	—
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	Test voltage based on transient voltages.	P
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit		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 .....		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated operating voltage $U_{op}$ (V).....:		—
	Nominal voltage $U_{peak}$ (V).....:		—
	Max increase due to variation $U_{sp}$ .....		—
	Max increase due to ageing $\Delta U_{sa}$ .....		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ .....		—
5.5	Components as safeguards		
5.5.1	General		P
5.5.2	Capacitors and RC units		P
5.5.2.1	General requirement	CX1, CY1 and CY2 complied with IEC 60384-14.	P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector.....:	(See appended table 5.5.2.2)	P
5.5.3	Transformers	T1 (See Annex G.5.3)	P
5.5.4	Optocouplers	PC1 (See Annex G.12)	P
5.5.5	Relays	No such component used.	N/A
5.5.6	Resistors	Certified bleeder resistors (R1 and R2 in series) used after fuse and used as discharge safeguard.	P
5.5.7	SPD's		N/A
5.5.7.1	Use of an SPD connected to reliable earthing	No SPD is used between the mains and earth.	N/A
5.5.7.2	Use of an SPD between mains and protective earth	No SPD is used between the mains and protective earth.	N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable.....:		N/A
5.6	Protective conductor		
5.6.2	Requirement for protective conductors		P
5.6.2.1	General requirements	Appliance coupler used. Hook-in method used to provide mechanical securement of earthing wire.	P
5.6.2.2	Colour of insulation	Green-and-yellow colour.	P
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm <sup>2</sup> ) .....		—
5.6.4	Requirement for protective bonding conductors		P
5.6.4.1	Protective bonding conductors	See below:	P
	Protective bonding conductor size (mm <sup>2</sup> ). .....	18 AWG	—
	Protective current rating (A) .....	Rated current: 0.5A.	—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.4.3	Current limiting and overcurrent protective devices	No such device on protective earthing / bonding conductor.	P
5.6.5	Terminals for protective conductors	Certified AC inlet used.	P
5.6.5.1	Requirement		N/A
	Conductor size (mm <sup>2</sup> ), nominal thread diameter (mm). .....		N/A
5.6.5.2	Corrosion		P
5.6.6	Resistance of the protective system		P
5.6.6.1	Requirements	Protective bonding conductor and appliance inlet does not have excessive resistance.	P
5.6.6.2	Test Method Resistance ( $\Omega$ ).....	(See appended table 5.6.6.2)	P
5.6.7	Reliable earthing	Not permanently connected equipment.	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 5.2.2.2, 5.7.2.2 and 5.7.4)	P
5.7.2.2	Measurement of prospective touch voltage	(See appended table 5.2.2.2, 5.7.2.2 and 5.7.4)	P
5.7.3	Equipment set-up, supply connections and earth connections	Single mains connection, tests are performed with protective earthing connection disconnected.	P
	System of interconnected equipment (separate connections/single connection) .....	Single connection	—
	Multiple connections to mains (one connection at a time/simultaneous connections) .....		—
5.7.4	Earthed conductive accessible parts .....	(See appended table 5.7.2.2 and 5.7.4)	P
5.7.5	Protective conductor current	Touch current is within ES1. (See appended table 5.7.2.2 and 5.7.4)	P
	Supply Voltage (V).....	264	—
	Measured current (Ma) .....	(See appended table 5.7.4)	—
	Instructional Safeguard.....		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits	The equipment not intended connect to 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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.7	Summation of touch currents from 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

<b>6</b>	<b>ELECTRICALLY- CAUSED FIRE</b>		<b>P</b>
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications	All circuits are considered PS3 except for the circuits of DC output complied with PS2 and Annex Q.1.	P
6.2.2.1	General	See 6.2.2	P
6.2.2.2	Power measurement for worst-case load fault ... :	See 6.2.2	P
6.2.2.3	Power measurement for worst-case power source fault .....	See 6.2.2	N/A
6.2.2.4	PS1 .....	See 6.2.2	N/A
6.2.2.5	PS2 .....	See 6.2.2	P
6.2.2.6	PS3 .....	See 6.2.2	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS .....		N/A
6.2.3.2	Resistive PIS .....	(See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials .....	Measured temperature less than 300 °C (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	No combustible material outside fire enclosure.	N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Control fire spread was used.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits	All circuit is PS2 or above.	P
6.4.5.2	Supplementary safeguards .....	(See appended tables 4.1.2 and Annex G) Fire enclosure used and output cable complied cl.6.5.	P
6.4.6	Control of fire spread in PS3 circuit	Refer to 6.4.5 and the enclosure made of V-0.	P
6.4.7	Separation of combustible materials from a PIS		P
6.4.7.1	General.....	All circuits are resistive PIS. Fire enclosure is made by V-0 material. Components complied with requirement, detail refer to table 6.2.3.2.	P
6.4.7.2	Separation by distance	All components are within PIS fire cone, refer to table 6.2.3.2.	P
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		P
6.4.8.1	Fire enclosure and fire barrier material properties		P
6.4.8.2.1	Requirements for a fire barrier	No fire barrier.	N/A
6.4.8.2.2	Requirements for a fire enclosure	Available power <4000W. Fire enclosure is made of V-0 material. Output wire is Min. VW-1.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	No openings in the fire enclosure.	N/A
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....		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.	P
6.5	Internal and external wiring		P



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.5.1	Requirements	Internal primary wires and output wires complied with IEC 60695-11-21. The test method described in IEC 60695-11-21 is considered equivalent to that test wiring materials which bearing VW-1 rating (according to UL758).	P
6.5.2	Cross-sectional area (mm <sup>2</sup> ) .....		—
6.5.3	Requirements for interconnection to building wiring .....	Equipment is not intended to provide power over the wiring system.	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	The DC output complies with requirements of Clause Q.1.	P

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

<b>8</b>	<b>MECHANICALLY-CAUSED INJURY</b>		P
8.1	General		P
8.2	Mechanical energy source classifications	All edges and corners are rounded and/or smoothed, classified as MS1. Max. 0.133kg, classified as MS1.	P
8.3	Safeguards against mechanical energy sources		N/A
8.4	Safeguards against parts with sharp edges and corners	Classified as MS1, additional safeguard is not required.	N/A
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts	No moving parts.	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard .....		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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	MS1.	N/A
8.6.1	Product classification		N/A
	Instructional Safeguard .....		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force .....		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt.....		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force).....		N/A
	Position of feet or movable parts.....		—
8.7	Equipment mounted to wall or ceiling		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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 <i>N</i> .....		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas .....		N/A
	Button/Ball diameter (mm) .....		—

<b>9</b>	<b>THERMAL BURN INJURY</b>		P
9.2	Thermal energy source classifications	Refer to Energy Source identification and classification table for thermal energy source.	P
9.3	Safeguard against thermal energy sources	Accessible parts limited to TS1.	N/A
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard	Enclosure provided to limit the transfer of thermal energy of internal parts under normal operating conditions and abnormal operating conditions.	P
9.4.2	Instructional safeguard .....		N/A


<b>10</b>	<b>RADIATION</b>		N/A
10.2	Radiation energy source classification		N/A
10.2.1	General classification		N/A
10.3	Protection against laser radiation		N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault .....		N/A
	Instructional safeguard .....		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Tool..... :		—
10.4	Protection against visible, infrared, and UV radiation		N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons .....		N/A
10.4.1.b)	RS3 accessible to a skilled person..... :		N/A
	Personal safeguard (PPE) instructional safeguard..... :		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 . :		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions .....		N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque..... :		N/A
10.4.1.f)	UV attenuation..... :		N/A
10.4.1.g)	Materials resistant to degradation UV .....		N/A
10.4.1.h)	Enclosure containment of optical radiation..... :		N/A
10.4.1.i)	Exempt Group under normal operating conditions..... :		N/A
10.4.2	Instructional safeguard .....		N/A
10.5	Protection against x-radiation		N/A
10.5.1	X- radiation energy source that exists equipment :		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards..... :		N/A
	Instructional safeguard for skilled person..... :		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation .....		—
	Abnormal and single-fault condition .....		N/A
	Maximum radiation (Pa/kg)..... :		N/A
10.6	Protection against acoustic energy sources		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..... :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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>B</b>	<b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b>		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers .....		N/A
B.2.3	Supply voltage and tolerances	+10% / -10% (264V / 90V)	P
B.2.5	Input test..... :	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements..... :	(See appended table B.3)	P
B.3.2	Covering of ventilation openings	No openings in enclosure.	N/A
B.3.3	D.C. mains polarity test	AC mains supplied.	N/A
B.3.4	Setting of voltage selector .....	No voltage selector.	N/A
B.3.5	Maximum load at output terminals .....	(See appended table B.3)	P
B.3.6	Reverse battery polarity	No battery.	N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.	No audio amplifier.	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions	All safeguards remain effective.	P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited .....	No such device.	N/A
B.4.3	Motor tests	No motor.	N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature .....		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.4.4	Short circuit of functional insulation	See below:	P
B.4.4.1	Short circuit of clearances for functional insulation	Clearance complied with 5.4.2.	P
B.4.4.2	Short circuit of creepage distances for functional insulation	Creepage distance complied with 5.4.3.	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated PCB used.	N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnect of passive components		P
B.4.7	Continuous operation of components	No component 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	Enclosure limited to TS1 during and after single fault conditions. Accessible output terminal limited to ES1 and TS1 during and after single fault conditions. No flame during and after single fault condition. (See appended table B.4)	P
B.4.9	Battery charging under single fault conditions ... :	No battery.	N/A
<b>C</b>	<b>UV RADIATION</b>		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
<b>D</b>	<b>TEST GENERATORS</b>		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
<b>E</b>	<b>TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS</b>		N/A
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V) ..... :		—
	Rated load impedance ( $\Omega$ ) ..... :		—
E.2	Audio amplifier abnormal operating conditions		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>F</b>	<b>EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS</b>		<b>P</b>
F.1	General requirements		P
	Instructions – Language .....	English verified.	—
F.2	Letter symbols and graphical symbols	Refer below:	P
F.2.1	Letter symbols according to IEC60027-1	A, V, Hz	P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	AC symbol (IEC 60417-5032), DC symbol (IEC 60417-5031) for the output	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	The required marking is located on the external enclosure of the equipment.	P
F.3.2	Equipment identification markings	Refer below.	P
F.3.2.1	Manufacturer identification .....		—
F.3.2.2	Model identification .....	GT-46181-***-T**	—
F.3.3	Equipment rating markings	Refer below:	P
F.3.3.1	Equipment with direct connection to mains	Refer F.3.3.3 – F.3.3.6	P
F.3.3.2	Equipment without direct connection to mains	Direct connection to mains.	N/A
F.3.3.3	Nature of supply voltage.....	~ (IEC 60417-5032)	—
F.3.3.4	Rated voltage .....	100-240V~	—
F.3.3.4	Rated frequency .....	50-60Hz	—
F.3.3.6	Rated current or rated power .....	0.5A	—
F.3.3.7	Equipment with multiple supply connections	Single supply connection.	N/A
F.3.4	Voltage setting device	No voltage selector. Auto ranging used.	N/A
F.3.5	Terminals and operating devices	Refer below:	P
F.3.5.1	Mains appliance outlet and socket-outlet markings .....	No mains outlet.	N/A
F.3.5.2	Switch position identification marking .....	No switch.	N/A
F.3.5.3	Replacement fuse identification and rating markings .....	Non-replaceable PCB-mount fuse: F1 T1AL / 250V	P
F.3.5.4	Replacement battery identification marking .....	No battery.	N/A
F.3.5.5	Terminal marking location		P
F.3.6	Equipment markings related to equipment classification	Refer below:	P
F.3.6.1	Class I Equipment		P
F.3.6.1.1	Protective earthing conductor terminal	Appliance inlet used.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)	Class I equipment.	N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking .....:	No IP rating.	—
F.3.8	External power supply output marking	See copy of marking plate	P
F.3.9	Durability, legibility and permanence of marking	Marking comply with the requirements.	P
F.3.10	Test for permanence of markings	Markings withstand the required test.	P
F.4	Instructions		N/A
	a) Equipment for use in locations where children not likely to be present – marking		N/A
	b) Instructions given for installation or initial use		N/A
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment		N/A
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards	No instructional safeguards used.	N/A
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		N/A
<b>G</b>	<b>COMPONENTS</b>		<b>P</b>
<b>G.1</b>	<b>Switches</b>		<b>N/A</b>
G.1.1	General requirements	No switch.	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
<b>G.2</b>	<b>Relays</b>		<b>N/A</b>
G.2.1	General requirements	No relay.	N/A



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
<b>G.3</b>	<b>Protection Devices</b>		P
G.3.1	Thermal cut-offs		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		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 ( $\Omega$ ). :		—
G.3.3	PTC Thermistors		N/A
G.3.4	Overcurrent protection devices	F1 complied with IEC 60127.	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		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
<b>G.4</b>	<b>Connectors</b>		P
G.4.1	Spacings	Refer to G.4.2.	P
G.4.2	Mains connector configuration ..... :	Certified appliance inlet used.	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	The output terminal is unlikely insertion into mains socket-outlets.	P
<b>G.5</b>	<b>Wound Components</b>		P
G.5.1	Wire insulation in wound components.....	(See Annex J)	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	Protection against mechanical stress is provided by insulation tube and insulation tape.	P
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) ..... :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Temperature (°C) .....		—
G.5.2.3	Wound Components supplied by mains		N/A
<b>G.5.3</b>	<b>Transformers</b>		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....	IEC 62368-1 cl.G.5.3.2 & G.5.3.3.	P
	Position .....	(See appended table 4.1.2)	—
	Method of protection .....	Inherent.	—
G.5.3.2	Insulation	Reinforced.	P
	Protection from displacement of windings.....	Refer to transformer specification.	—
G.5.3.3	Overload test .....	(See appended table B.3)	P
G.5.3.3.1	Test conditions	Switch mode transformer tested in the complete equipment. Load applied to the output of the power supply unit.	P
G.5.3.3.2	Winding Temperatures testing in the unit	Current limiting transformer, Class 130. Temperature limit: 175°C	P
G.5.3.3.3	Winding Temperatures – Alternative test method		N/A
<b>G.5.4</b>	<b>Motors</b>		N/A
G.5.4.1	General requirements	No motor.	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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 .....		—
<b>G.6</b>	<b>Wire Insulation</b>		P
G.6.1	General	Certified triple insulated wire is used in transformer. Peak working voltage is ES3. Reinforced insulation is required.	P
G.6.2	Solvent-based enamel wiring insulation		N/A
<b>G.7</b>	<b>Mains supply cords</b>		N/A
G.7.1	General requirements	Mains supply cords is not covered in this report.	N/A
	Type.....		—
	Rated current (A) .....		—
	Cross-sectional area (mm <sup>2</sup> ), (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		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
<b>G.8</b>	<b>Varistors</b>		N/A
G.8.1	General requirements	No varistor used.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test .....		N/A
G.8.3.3	Temporary overvoltage .....		N/A
<b>G.9</b>	<b>Integrated Circuit (IC) Current Limiters</b>		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.	No such component used.	N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA .....		—
G.9.1 d)	IC limiter output current (max. 5A) .....		—
G.9.1 e)	Manufacturers' defined drift .....		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
<b>G.10</b>	<b>Resistors</b>		P
G.10.1	General requirements	Certified bleeder resistors (R1 and R2 in series) used after fuse and used as discharge safeguard.	P
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	Not connected with external circuit consisted of 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
<b>G.11</b>	<b>Capacitor and RC units</b>		P
G.11.1	General requirements	X1 or X2, Y1 or Y2 capacitors are certified according to IEC60384-14.	P
G.11.2	Conditioning of capacitors and RC units	Capacitors complied with IEC 60384-14.	P
G.11.3	Rules for selecting capacitors	X1 or X2, Y1 or Y2 capacitors are certified according to IEC60384-14.	P
<b>G.12</b>	<b>Optocouplers</b>		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results) .....	Certificated optocoupler used and comply with requirement. (See appended table 4.1.2)	P
	Type test voltage Vini .....	Considered.	—
	Routine test voltage, Vini,b .....	Considered.	—

IEC 62368-1			
Clause	Requirement + Test		Verdict
<b>G.13</b>	<b>Printed boards</b>		<b>P</b>
G.13.1	General requirements	Basic considered (ES3 side), primary and secondary circuits are not insulated by PCB layers.	P
G.13.2	Uncoated printed boards	Safeguard complied cl.5.4.2 & 5.4.3.	P
G.13.3	Coated printed boards	Not used.	N/A
G.13.4	Insulation between conductors on the same inner surface	Inner surface not used with cemented joint requirements.	N/A
	Compliance with cemented joint requirements (Specify construction) .....		—
G.13.5	Insulation between conductors on different surfaces	Basic insulation. No thickness requirement.	N/A
	Distance through insulation .....		N/A
	Number of insulation layers (pcs) .....		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
<b>G.14</b>	<b>Coating on components terminals</b>		<b>N/A</b>
G.14.1	Requirements .....		N/A
<b>G.15</b>	<b>Liquid filled components</b>		<b>N/A</b>
G.15.1	General requirements		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
<b>G.16</b>	<b>IC including capacitor discharge function (ICX)</b>		<b>N/A</b>
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours	No such component used.	N/A
b)	Impulse test using circuit 2 with $U_c$ = to transient voltage .....		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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 .....		—
<b>H</b>	<b>CRITERIA FOR TELEPHONE RINGING SIGNALS</b>		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) .....		—
H.3.1.2	Voltage (V) .....		—
H.3.1.3	Cadence; time (s) and voltage (V) .....		—
H.3.1.4	Single fault current (Ma): .....		—
H.3.2	Tripping device and monitoring voltage .....		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) .....		—
<b>J</b>	<b>INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION</b>		P
	General requirements	Triple insulated wire used in transformer is separately approved.	P
<b>K</b>	<b>SAFETY INTERLOCKS</b>		N/A
K.1	General requirements		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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
<b>L</b>	<b>DISCONNECT DEVICES</b>		P
L.1	General requirements	Both phases conductors were interrupted by appliance inlet.	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized	No parts remain energized, refer to cl.5.5.2.2.	N/A
L.4	Single phase equipment	Both poles were disconnected simultaneously.	P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices	Not used.	N/A
L.7	Plugs as disconnect devices	No power cord coved in report.	N/A
L.8	Multiple power sources	Single power source.	N/A
<b>M</b>	<b>EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS</b>		N/A
M.1	General requirements	No battery.	N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method) .. :		N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance .....		N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.4.2.2a)	Charging voltage, current and temperature .....		—
M.4.2.2 b)	Single faults in charging circuitry .....		—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) .....		N/A
M.6.2	Leakage current (Ma) .....		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume $V_z$ (m <sup>3</sup> /s).....		—
M.8.2.3	Correction factors.....		—
M.8.2.4	Calculation of distance $d$ (mm) .....		—
M.9	Preventing electrolyte spillage		N/A



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) .....		N/A
<b>N</b>	<b>ELECTROCHEMICAL POTENTIALS</b>		<b>P</b>
	Metal(s) used .....	Considered.	—
<b>O</b>	<b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>		<b>P</b>
	Figures O.1 to O.20 of this Annex applied .....	Considered.	—
<b>P</b>	<b>SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS</b>		<b>N/A</b>
P.1	General requirements		N/A
P.2.2	Safeguards against entry of foreign object	No openings.	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 liquid.	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		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
<b>Q</b>	<b>CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING</b>		<b>P</b>
Q.1	Limited power sources		P
Q.1.1 a)	Inherently limited output		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Q.1.1 b)	Impedance limited output		P
	- Regulating network limited output under normal operating and simulated single fault condition	(See appended table Annex Q.1)	P
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method	(See appended table Annex Q.1)	P
Q.2	Test for external circuits – paired conductor cable	Not connect to external circuits.	N/A
	Maximum output current (A) .....		—
	Current limiting method .....		—
<b>R</b>	<b>LIMITED SHORT CIRCUIT TEST</b>		N/A
R.1	General requirements		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
<b>S</b>	<b>TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		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	Fire enclosure is made from V-0 material. No testing required.	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 .....		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Wall thickness (mm) .....		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material .....		—
	Wall thickness (mm) .....		—
	Conditioning (test condition), (°C) .....		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
<b>T</b>	<b>MECHANICAL STRENGTH TESTS</b>		<b>P</b>
T.1	General requirements		P
T.2	Steady force test, 10 N .....	(See appended table T.2)	P
T.3	Steady force test, 30 N .....		N/A
T.4	Steady force test, 100 N .....		N/A
T.5	Steady force test, 250 N .....	(See appended table T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	P
	Fall test	No hazard as result from the steel sphere fall test.	P
	Swing test		N/A
T.7	Drop test .....	(See appended table T.7)	P
T.8	Stress relief test .....	(See appended table T.8)	P
T.9	Impact Test (glass)		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		N/A
	Torque value (Nm) .....		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>U</b>	<b>MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION</b>		N/A
U.1	General requirements		N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen.....:		N/A
<b>V</b>	<b>DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)</b>		P
V.1	Accessible parts of equipment		P
V.2	Accessible part criterion		P

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 <sup>1)</sup>	
Plastic enclosure	SABIC JAPAN L L C	945(GG), 915R (GG)	V-0, 120°C, Min. 2.0mm thickness	UL 94	UL	
Alt.)	SABIC INNOVATIVE PLASTICS US L L C	945(GG), 915R (GG)	V-0, 120°C, Min. 2.0mm thickness	UL 94	UL	
Alt.)	SABIC INNOVATIVE PLASTICS B V	945(GG), 915R(GG)	V-0, 120°C, Min. 2.0mm thickness	UL 94	UL	
Alt.)	LG CHEM (GUANGZHOU) ENGINEERING PLASTIC CO LTD	LUPOY EF-1006F(m)	V-0, 115°C, Min. 2.0mm thickness	UL 94	UL	
Alt.)	COVESTRO DEUTSCHHLAN D AG [PC RESINS]	FR6005+(z)	V-0, 105°C, Min. 2.0mm thickness	UL 94	UL	
Alt.)	SILVER AGE ENGINEERING PLASTICS (DONGGUAN) CO LTD	PC2330	V-0, 115°C, Min. 2.0mm thickness	UL 94	UL	
PCB	Interchangeable	Interchangeable	V-1 or better, min. 130°C	UL796	UL	
Appliance inlet (CN1) (for GT-46181-***-T3*)	TECX	TU-301-SP, TU-301 series including to TU-301A, TU-301AP, TU-301S, TU-301AP-A and TU-301-AL	Min. 250Vac; Min. 10A (C14 type)	IEC/EN60320-1, UL 498	ENEC-UL, UL	
Alt.)	Leci	DB-14, DB-14-1, DB-14-2, DB-14-3, DB-14-5, DB-14-6, DB-14-1-7, DB-14-8, DB-14-10	250Vac, 10A (C14 type)	IEC/EN60320-1, UL 498	VDE, UL	
Alt.)	Zhe Jiang BeiErjia	ST-A01-003J, ST-A01-001L, ST-A01-002L, ST-A01-003K	250Vac, 10A (C14 type)	IEC/EN60320-1, UL 498	VDE, UL	
Alt.)	Sun Fair	S-03	250Vac, 10A (C14 type)	IEC/EN60320-1, UL 498	VDE, UL	

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1)</sup>
Alt.)	Echo	AC-P01, AC-P03, AC-P06, AC-P07	250Vac, 10A (C14 type)	IEC/EN60320-1, UL 498	VDE, UL
Appliance inlet (CN1) (for GT-46181- ***-T3A*)	TECX	TU-333	AC 250V, 2.5A (C6 type)	IEC/EN60320-1, UL 498	ENEC-UL, UL
Alt.)	Sun Fair	S-02	AC 250V, 2.5A (C6 type)	IEC/EN60320-1, UL 498	VDE, UL
Alt.)	Leci	DB-6, DB-6-2, DB-6-3, DB-6-4, DB-6-2BP27P27	AC 250V, 2.5A (C6 type)	IEC/EN60320-1, UL 498	VDE, UL
Fuse (F1)	Conquer	MST	T1AL, 250V	IEC/EN 60127-1, IEC/EN 60127-2, UL 248-1, UL 248-14	VDE UL
Alt.)	Ever Island Electric Co Ltd & Walter Electric	2010	T1AL, 250V	IEC/EN 60127-1, IEC/EN 60127-2, UL 248-1, UL 248-14	VDE UL
Alt.)	Hollyland	5ET	T1AL, 250V	IEC/EN 60127-1, IEC/EN 60127-2, UL 248-1, UL 248-14	VDE UL
Alt.)	BEL	RST	T1AL, 250V	IEC/EN 60127-1, IEC/EN 60127-2, ANSI/UL 248-1, ANSI/UL 248-14	VDE, UL
Alt.)	Cooper Bussmann	SS-5	T1AL, 250V	IEC/EN 60127-1, IEC/EN 60127-2, UL 248-1, UL 248-14	VDE UL
Alt.)	Littelfuse	392	T1AL, 250V	IEC/EN 60127-1, IEC/EN 60127-2, UL 248-1, UL 248-14	VDE UL
Alt.)	Dongguan Better	932	T1AL, 250V	IEC/EN 60127-1, IEC/EN 60127-2, ANSI/UL 248-1, ANSI/UL 248-14	VDE, UL
Choke (NF1)	ENG	NF00030	105°C Min.	IEC 62368-1	Test with equipment
X-Capacitor (CX1) (optional)	Cheng Tung Industrial Co Ltd	CTX	Max. 0.22µF, Min. 250V, 100°C, min. X2 type	IEC/EN 60384- 14:2013, UL 60384-14	ENEC 15, UL

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1)</sup>
Alt.)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0.22µF, Min. 250V, 100°C, min. X2 type	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Tenta	MEX	Max. 0.22µF, Min. 250V, 100°C, min. X2 type	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Joey Electronics (Dongguan) Co Ltd	MPX	Max. 0.22µF, Min. 250V, 105°C, min. X2 type	IEC/EN 60384- 14:2013, UL 60384-14	VDE, UL
Alt.)	Xiangtai Electronic (Shenzhen) Co Ltd	MPK, MPX	Max. 0.22µF, Min. 250V, 110°C, min. X2 type	IEC/EN 60384- 14:2013, UL 60384-14	VDE, UL
Alt.)	Carli Electronics Co Ltd	MPX	Max. 0.22µF, Min. 250V, 100°C, min. X2 type	IEC/EN 60384- 14:2013, UL 60384-14	VDE, UL
Bleeder resistor (R1, R2) (two in series)	Tzai Yuan	HSMD*****, SMD*****	Max.2MΩ, min. 1/4 W	IEC 62368-1 (ed.1), UL 62368-1	CB by UL, UL
Alt.)	Prosperity	FVS03, TF12V, FVS20, TF20V, FVS25, TF25V	Max.2MΩ, min. 1/4 W	IEC 62368-1:2014, UL 62368-1	CB by UL, UL
Alt.)	Ralec	RTV06, RTV12, RTV20, RTV25,	Max.2MΩ, min. 1/4 W	IEC 62368-1:2014	CB by UL
Alt.)	Futaba	RM	Max.2MΩ, min. 1/4 W	EN 60065:2014	VDE
Alt.)	Yageo Components (Suzhou)	HHV series	Max.2MΩ, min. 1/4 W	IEC 62368-1:2018	VDE
Bridging diode (DB1)	Interchangeable	Interchangeable	Min 2A, min 600V	IEC 62368-1	Test in equipment
E-Capacitor (C1)	Interchangeable	Interchangeable	Max.33µF Min.400V, 105°C	IEC 62368-1	Test in equipment
Transistor (Q1)	Interchangeable	Interchangeable	4A Min.600V	IEC 62368-1	Test in equipment
Photo Coupler (PC1)	Everlight Electronics Co., Ltd.	EL817	Dti=0.5mm, Int. dcr=6.0mm, Ext. dcr=7.7mm, Thermal cycling test, 110°C	IEC/EN 60950-1, IEC/EN 60747-5-5, UL 1577	VDE, FINKO, UL



Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1)</sup>
Alt.)	Lite-On Technology Corporation	LTV-817	Dti=0.8mm, Ext. dcr=7.8mm, Thermal cycling test, 100°C	IEC/EN 60950-1, IEC/EN 60747-5-5, UL 1577	VDE, FINKO, UL
Alt.)	Bright Led Electronics Corp.	BPC- 817A/B/C/D/L, BPC-817 S, BPC-817 M	Dti=0.4mm, Ext. dcr=7.0mm, Thermal cycling test, 100°C	IEC/EN 60950-1, IEC/EN 60747-5-5, UL 1577	VDE, FINKO, UL
Alt.)	COSMO	K1010	Dti=0.6mm, Int. dcr=4.0mm, Ext. dcr=5.0mm, Thermal cycling test, 115°C	IEC/EN 60950-1, IEC/EN 60747-5-5, UL 1577	VDE, FINKO, UL
Alt.)	Renesas Electronics Corporation	PS2561-1	Dti=0.4mm, Ext. dcr=7.0mm, Thermal cycling test, 5000V, 100°C	IEC/EN 60950-1, IEC/EN 60747-5-5, UL 1577	VDE, FINKO, UL
Alt.)	SHENZHEN ORIENT COMPONENTS CO LTD	ORPC817x, ORPC817M x, ORPC817S x	Dti=0.4mm, Ext. dcr=7.6mm, Thermal cycling test, 110°C	IEC/EN 60950-1, IEC/EN 60747-5-5, UL 1577	VDE, FINKO, UL
Y-Capacitor (CY1)	Walsin Technology Corp	AH	Max. 2200pF, Min. 250Vac, 125 °C, Y1 type	IEC/EN 60384-14, UL 60384-1	VDE, UL
Alt.)	Success Electronics Co., Ltd.	SE, SB, SF	Max. 2200pF, Min. 250Vac, 125 °C, Y1 type	IEC/EN 60384-14, UL 60384-1	VDE, UL
Alt.)	TDK Corporation	CD	Max. 2200pF, Min. 250Vac, 125 °C, Y1 type	IEC/EN 60384-14, UL 60384-1	VDE, UL
Alt.)	Haohua Electronic Co	CT7	Max. 2200pF, Min. 250Vac, 125 °C, Y1 type	IEC/EN 60384-14, UL 60384-1	VDE, UL
Alt.)	Xiangtail Electronic (Shenzhen) Co Ltd	YO series	Max. 2200pF, Min. 250Vac, 125 °C, Y1 type	IEC/EN 60384-14, UL 60384-1	VDE, UL
Alt.)	Juhong ELE company	JB series	Max. 2200pF, Min. 250Vac, 125 °C, Y1 type	IEC/EN 60384-14, UL 60384-1	VDE, UL
Alt.)	Murata Mfg. Co., Ltd.	KX	Max. 2200pF, Min. 250Vac, 125 °C, Y1 type	IEC/EN 60384-14, UL 60384-1	VDE, UL

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1)</sup>
Y-Capacitor (CY2) (optional)	Walsin Technology Corp	AH	Max. 100pF, Min. 250Vac, 125 °C, Y1 type	IEC/EN 60384-14, UL 60384-1	VDE, UL
Alt.)	Success Electronics Co., Ltd.	SE, SB, SF	Max. 100pF, Min. 250Vac, 125 °C, Y1 type	IEC/EN 60384-14, UL 60384-1	VDE, UL
Alt.)	TDK Corporation	CD	Max. 100pF, Min. 250Vac, 125 °C, Y1 type	IEC/EN 60384-14, UL 60384-1	VDE, UL
Alt.)	Haohua Electronic Co	CT7	Max. 100pF, Min. 250Vac, 125 °C, Y1 type	IEC/EN 60384-14, UL 60384-1	VDE, UL
Alt.)	Xiangtail Electronic (Shenzhen) Co Ltd	YO series	Max. 100pF, Min. 250Vac, 125 °C, Y1 type	IEC/EN 60384-14, UL 60384-1	VDE, UL
Alt.)	Juhong ELE company	JB series	Max. 100pF, Min. 250Vac, 125 °C, Y1 type	IEC/EN 60384-14, UL 60384-1	VDE, UL
Alt.)	Murata Mfg. Co., Ltd.	KX	Max. 100pF, Min. 250Vac, 125 °C, Y1 type	IEC/EN 60384-14, UL 60384-1	VDE, UL
LPS resistor (R10) (for GT-46181- 1505-T**)	Interchangeable	Interchangeable	1.2 ohm, 1W	IEC 62368-1	Test in equipment
LPS resistor (R10) (for GT-46181- 1605-T**)	Interchangeable	Interchangeable	1.1 ohm, 1W	IEC 62368-1	Test in equipment
LPS resistor (R10) (for GT-46181- *09*-T**, GT- 46181-*12*-T**, GT-46181-*15*- T**)	Interchangeable	Interchangeable	1.0 ohm, 1W	IEC 62368-1	Test in equipment
Transformer (T1) 1) (for 5-7.5V)	GlobTek	XF00941	Class B, UL insulation system GTX- 130-TM (E243347)	IEC 62368-1, UL 1446	Tested in equipment, UL

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1)</sup>
Alt.)	ENG	XF00941	Class B, UL insulation system ENG130- 1 (E308897)	IEC 62368-1, UL 1446	Tested in equipment, UL
Alt.)	HAOPUWEI	XF00941	Class B, UL insulation system ZT-130 (E315275)	IEC 62368-1, UL 1446	Tested in equipment, UL
Alt.)	BOAM	XF00941	Class B, UL insulation system BOAM- 01 B1 (E252329)	IEC 62368-1, UL 1446	Tested in equipment, UL
Transformer (T1) <b>1)</b> (for 7.6-10.5V)	GlobTek	XF00962	Class B, UL insulation system GTX- 130-TM (E243347)	IEC 62368-1 and evaluated acco. To IEC 60085, UL 1446	Tested in equipment, UL
Alt.)	ENG	XF00962	Class B, UL insulation system ENG130- 1 (E308897)	IEC 62368-1, UL 1446	Tested in equipment, UL
Alt.)	HAOPUWEI	XF00962	Class B, UL insulation system ZT-130 (E315275)	IEC 62368-1, UL 1446	Tested in equipment, UL
Alt.)	BOAM	XF00962	Class B, UL insulation system BOAM- 01 B1 (E252329)	IEC 62368-1, UL 1446	Tested in equipment, UL
Transformer (T1) <b>1)</b> (for 10.6-15V)	GlobTek	XF00933	Class B, UL insulation system GTX- 130-TM (E243347)	IEC 62368-1 and evaluated acco. To IEC 60085, UL 1446	Tested in equipment, UL
Alt.)	ENG	XF00933	Class B, UL insulation system ENG130- 1 (E308897)	IEC 62368-1, UL 1446	Tested in equipment, UL
Alt.)	HAOPUWEI	XF00933	Class B, UL insulation system ZT-130 (E315275)	IEC 62368-1, UL 1446	Tested in equipment, UL
Alt.)	BOAM	XF00933	Class B, UL insulation system BOAM- 01 B1 (252329)	IEC 62368-1, UL 1446	Tested in equipment, UL

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1)</sup>
- Bobbin for all the transformer	CHANG CHUN PLASTICS CO LTD	T375J, T375HF	Phenolic, V-0, 150°C, Min. 0.71mm thickness	UL 94	UL
Alt.)	SUMITOMO BAKELITE CO LTD	PM-9820	Phenolic, V-0, 150°C, Min. 0.71mm thickness	UL 94	UL
- Insulation tape for all the transformer	3M	1350F-1, 1350T-1	130°C	UL 510	UL
Alt.)	Bondtec	370S	130°C	UL 510	UL
- TIW	Great Leoflon	TRW(B)	130°C	IEC 60950-1, UL2353	VDE, UL
Protective bonding conductor (Green/Yellow)	Interchangeable	Interchangeable	Marked VW-1 or FT-1, min. 18AWG, min. 300V, min. 85°C	UL 758	UL
Output wire	Interchangeable	Interchangeable	Max.3.05m, Min. VW-1 or FT- 1, Min. 80°C, Min. 60V, Min. 20 AWG	IEC62368-1	Test in equipment
Strain relief	Interchangeable	Interchangeable	V-1 or better	UL94, UL746C	UL
PCB	Interchangeable	Interchangeable	Min. V-0, 130°C	UL 796	UL
Secondary capacitor (C8)	Interchangeable	Interchangeable	Max.2200µF, Min. 10V, Min. 105°C	IEC62368-1	Test in equipment
Supplementary information:					
Supplementary information: <sup>1)</sup> Provided evidence ensures the agreed level of compliance. See OD-CB2039. <b>1)</b> T1 shares the same construction from different vendors. All the transformers have the similar construction, different in winding turns and layer of insulation tapes.					

4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests			N/A
(The following mechanical tests are conducted in the sequence noted.)				
4.8.4.2	TABLE: Stress Relief test			—
Part		Material	Oven Temperature (°C)	Comments
4.8.4.3	TABLE: Battery replacement test			—
Battery part no. ....:				—
Battery Installation/withdrawal		Battery Installation/Removal Cycle		Comments
		1		
		2		
		3		
		4		
		5		
		6		
		8		
		9		
		10		
4.8.4.4	TABLE: Drop test			—
Impact Area		Drop Distance	Drop No.	Observations
			1	
			2	
			3	
4.8.4.5	TABLE: Impact			—
Impacts per surface		Surface tested	Impact energy (Nm)	Comments
4.8.4.6	TABLE: Crush test			—
Test position		Surface tested	Crushing Force (N)	Duration force applied (s)
Supplementary information:				

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

5.2		Table: Classification of electrical energy sources					P
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (A <sub>pk</sub> or A <sub>rms</sub> )	Hz	
1	264Vac	Primary Circuit	Normal	N/A	N/A	N/A	ES3
			Abnormal	N/A	N/A	N/A	
			Single fault – SC/OC	N/A	N/A	N/A	
2	264Vac	DC output port (+5V – RTN / GT-46181-1605-T**)	Normal	5.20	N/A	N/A	ES1
			Abnormal	4.90	N/A	N/A	
			Single fault – SC/OC	0	N/A	N/A	
3	264Vac	DC output port (+9V – RTN / GT-46181-1809-T**)	Normal	9.22	N/A	N/A	ES1
			Abnormal	9.0	N/A	N/A	
			Single fault – SC/OC	0	N/A	N/A	
4	264Vac	DC output port (+15V – RTN / GT-46181-1815-T**)	Normal	15.09	N/A	N/A	ES1
			Abnormal	14.66	N/A	N/A	
			Single fault – SC/OC	0	N/A	N/A	
5	264Vac	DC output port to earth (when CY2 is in position)	Normal	N/A	0.001 mApk	a.c. (60Hz)	ES1
			Fault (Refer to fault condition on table B.3 and B.4, output shutdown)	N/A	0.001 mApk	a.c. (60Hz)	ES1
			Fault (Refer to fault condition on table B.3 and B.4, fuse open)	N/A	0.001 mApk	a.c. (60Hz)	ES1

			Fault (Single fault condition of basic safeguard: loss of protective earth connection)	N/A	0.18 mApk	a.c. (60Hz)	ES1 (ES2 limit) 2)
6	264Vac	Accessible Enclosure (with metal foil) to earth	Normal <sup>1)</sup>	N/A	0.015 mApk	a.c. (60Hz)	ES1

#### 5.2.2.3 – Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, Nf	Upk (V)	
1	264	CX1	Normal	220Nf Max..	374V	ES3
			Abnormal	N/A	N/A	
			Single fault – SC/OC	N/A	N/A	

#### 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)	
N/A	N/A	N/A	Normal	N/A	N/A	N/A	N/A
			Abnormal	N/A	N/A	N/A	
			Single fault – SC/OC	N/A	N/A	N/A	

#### 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)	
N/A	N/A	N/A	Normal	N/A	N/A	N/A	N/A
			Abnormal	N/A	N/A	N/A	
			Single fault – SC/OC (when cycling)	N/A	N/A	N/A	

#### Test Conditions:

Normal – Maximum rated load

Abnormal – Overload

Supplementary information: S-c=Short Circuit, O-c=Short circuit.

<sup>1)</sup> Fault and abnormal condition test no effect on the touch current test result.

5.4.1.4, 6.3.2, 9.0, B.2.6		TABLE: Temperature measurements					P
	Supply voltage (V) ..... :	90V 60Hz Label on bottom	90V 60Hz Label on top	264V 60Hz Label on bottom	264V 60Hz Label on top	—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)	
GT-46181-1605-T**							
Inlet		60.2	55.7	60.8	55.9	70	
CX1 body		66.3	60.0	67.1	59.9	100	
NF1 coil		88.2	71.9	87.9	71.6	95 *)	
PCB under DB1		79.2	67.6	80.1	67.7	130	
C1 body		86.5	77.1	86.4	76.9	105	
HS1 near Q1		79.0	71.9	80.0	73.0	130	
PC1 body		70.1	66.2	72.3	68.8	100	
CY1 body		91.7	86.2	91.9	86.6	125	
T1 primary side coil		93.9	87.4	94.2	87.9	110	
T1 secondary side coil		88.0	83.7	87.8	83.7	110	
T1 core		92.4	88.9	92.6	89.5	110	
HS2 near D8		101.5	97.2	101.2	97.4	130	
C8 body (secondary capacitor)		88.5	84.6	88.2	84.9	105	
Inside of plastic enclosure near T1		77.2	73.5	77.7	75.1	105	
Ambient		40.0	40.0	40.0	40.0	--	
Touch Temperatures:							
Output wire		52.6	49.3	53.5	51.8	77 (TS1) **)	
Surface of plastic enclosure near T1		51.7	48.7	53.2	51.8	77 (TS1) **)	
Ambient		25.0	25.0	25.0	25.0	--	
Supplementary information: T <sub>mra</sub> =40°C. ) Temperature limits of winding include less 10°C for thermocouple measurement method. If no limit is stated, temperature is for reference only. ) External surfaces touched occasionally for very short periods (>1 s and <10 s).							
Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
Supplementary information: Note 1: T <sub>ma</sub> should be considered as directed by applicable requirement Note 2: T <sub>ma</sub> is not included in assessment of Touch Temperatures (Clause 9)							



5.4.1.4, 6.3.2, 9.0, B.2.6		TABLE: Temperature measurements					P
	Supply voltage (V) ..... :	90V 60Hz Label on bottom	90V 60Hz Label on top	264V 60Hz Label on bottom	264V 60Hz Label on top	—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)	
GT-46181-1809-T**							
Inlet		58.8	55.1	58.5	55.0	70	
CX1 body		67.7	60.8	68.3	61.2	100	
NF1 coil		90.3	73.8	89.5	74.1	95 *)	
PCB under DB1		81.1	67.9	82.1	68.7	130	
C1 body		87.4	76.6	87.2	77.4	105	
HS1 near Q1		82.9	74.7	83.0	75.9	130	
PC1 body		71.1	66.7	72.0	69.3	100	
CY1 body		87.1	81.1	87.5	82.8	125	
T1 primary side coil		96.5	89.9	95.8	91.4	110	
T1 secondary side coil		90.6	86.1	90.3	87.5	110	
T1 core		94.7	91.5	94.7	93.0	110	
HS2 near D8		93.5	90.7	93.7	92.5	130	
C8 body (secondary capacitor)		78.0	74.6	77.9	76.7	105	
Inside of plastic enclosure near T1		76.3	72.7	76.5	75.3	105	
Ambient		40.0	40.0	40.0	40.0	--	
Touch Temperatures:							
Output wire		50.9	46.9	51.2	49.5	77 (TS1) **)	
Surface of plastic enclosure near T1		46.0	41.5	46.1	43.9	77 (TS1) **)	
Ambient		25.0	25.0	25.0	25.0	--	
Supplementary information: T <sub>mra</sub> =40°C. ) Temperature limits of winding include less 10°C for thermocouple measurement method. If no limit is stated, temperature is for reference only. ) External surfaces touched occasionally for very short periods (>1 s and <10 s).							
Temperature T of winding:		t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)
Supplementary information: Note 1: T <sub>ma</sub> should be considered as directed by applicable requirement Note 2: T <sub>ma</sub> is not included in assessment of Touch Temperatures (Clause 9)							

5.4.1.4, 6.3.2, 9.0, B.2.6		TABLE: Temperature measurements					P
	Supply voltage (V) ..... :	90V 60Hz Label on bottom	90V 60Hz Label on top	264V 60Hz Label on bottom	264V 60Hz Label on top	—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)	
GT-46181-1815-T**							
Inlet		54.7	51.4	55.2	51.0	70	
CX1 body		63.7	56.7	64.9	57.1	100	
NF1 coil		84.9	67.4	84.3	67.2	95 *)	
PCB under DB1		73.0	61.2	74.0	61.4	130	
C1 body		81.7	71.9	81.7	72.2	105	
HS1 near Q1		76.3	68.9	76.7	69.4	130	
PC1 body		65.4	61.7	67.0	63.6	100	
CY1 body		77.6	72.3	78.0	73.2	125	
T1 primary side coil		86.2	80.7	86.5	81.5	110	
T1 secondary side coil		81.6	77.8	81.9	78.9	110	
T1 core		83.2	80.6	83.6	81.7	110	
HS2 near D8		80.1	78.7	80.1	79.5	130	
C8 body (secondary capacitor)		73.0	71.2	73.0	72.1	105	
Inside of plastic enclosure near T1		65.5	62.3	66.0	64.4	105	
Ambient		40.0	40.0	40.0	40.0	--	
Touch Temperatures:							
Output wire		47.6	44.5	48.3	46.8	77 (TS1) **)	
Surface of plastic enclosure near T1		44.7	40.7	45.5	44.7	77 (TS1) **)	
Ambient		25.0	25.0	25.0	25.0	--	
Supplementary information: T <sub>mra</sub> =40°C. ) Temperature limits of winding include less 10°C for thermocouple measurement method. If no limit is stated, temperature is for reference only. ) External surfaces touched occasionally for very short periods (>1 s and <10 s).							
Temperature T of winding:		t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)
Supplementary information: Note 1: T <sub>ma</sub> should be considered as directed by applicable requirement Note 2: T <sub>ma</sub> is not included in assessment of Touch Temperatures (Clause 9)							

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

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

<b>5.4.2.2, 5.4.2.4 and 5.4.3</b>	<b>TABLE: Minimum Clearances/Creepage distance</b>						<b>P</b>
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz) <sup>1</sup>	Required cl (mm) , **, **)	cl (mm) <sup>2</sup>	Required <sup>3</sup> cr (mm)	cr (mm)
Basic:							
Line trace – R4 trace before fuse F1	340	240	0.06	2.0	2.5	2.5	2.5
L pin – N pin	340	240	0.06	2.0	12.7	2.5	12.7
F1, in – out	340	240	0.06	2.0	3.0	2.5	3.0
DB1 body (with 10N) – Earth pin of inlet	340	240	0.06	2.0	6.0	2.5	6.0
Reinforced:							
CY1 pri. trace – sec.trace with groove	340	240	0.06	3.9	4.2	5.0	6.6
PC1 pri. trace – sec.trace	340	240	0.06	3.9	6.1	5.0	6.1
T1 core with tape – D8 body (with 10N)	528	306	59.5	3.9	6.6	6.2 <b>1)</b>	6.6
T1 core with tape – C8 body (with 10N)	528	306	59.5	3.9	7.0	6.2 <b>1)</b>	7.0
HS1 body (with 10N) – Accessible part	340	240	0.06	3.9	5.7	5.0	5.7
For Transformer T1							

Reinforced: Primary – Secondary	528	306	59.5	3.9	6.8	6.2 <b>1)</b>	6.8
Reinforced: Secondary – Core	528	306	59.5	3.9	6.2	6.2 <b>1)</b>	6.2
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. No distance reduced after 10 N force applied to various components: D8, C8 and HS1. Glue added on CY1, CY2, C4. T1 Core is considered as primary part. <b>1)</b> Linear interpolation is used. <b>*)</b> A multiplier factor (1.29) was used to consider the additional altitude requirement for clearance as described under altitude 4000 m. <b>**) Limit considered by cl.5.4.2.3.4 with required withstand voltage (2500V). Procedure 2 is used.</b>							

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage				P
	Overvoltage Category (OV):				
	Pollution Degree:				
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Measured cl (mm)	
Supplementary information: Requirement considered in table 5.4.2.2.					

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:				

<b>5.4.4.2, 5.4.4.5 c) 5.4.4.9</b>	<b>TABLE: Distance through insulation measurements</b>					<b>P</b>
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz) <sup>1)</sup>	Material	Required DTI (mm)	DTI (mm)	
Reinforced: Enclosure	528	0.06	Plastic	0.4	Min. 2.0	
Reinforced: Insulation tape on T1 core (Test with 1 layer)	528	0.06	Plastic	2 layers	2 layers	

**Supplementary information:**

Test voltage 2500VDC for Basic insulation and 4000VDC for Reinforced insulation.

No flash over or insulation breakdown after test.

<sup>1)</sup> cl.5.4.9.1 is considered and field strength is uniform. High switching frequency is not considered.

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V) <b>1)</b>	Breakdown Yes / No
Basic:				
Live – Neutral (disconnected fuse)		DC	2500 V	No
Reinforced:				
Primary – Plastic enclosure (wrapped with foil)		DC	4000 V	No
Primary – Output terminals (including functional earth pin)		DC	4000 V	No
Insulation tape used in T1 (Test with 1 layer)		DC	4000 V	No
T1 Primary – Secondary <b>3)</b>		DC	4000 V	No
T1 Core – Secondary <b>2) 3)</b>		DC	4000 V	No
Supplementary information:				
<b>1)</b> Method of transient voltage considered.				
<b>2)</b> T1 core considered as primary.				
<b>3)</b> Tests conducted on all type's transformer under all manufacturers.				

5.5.2.2	TABLE: Stored discharge on capacitors				P
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification
264	Phase to Neutral	N	N/A	0	ES1
Supplementary information:					
X-capacitors installed for testing are: CX1=Max.0.22μF.					
<input checked="" type="checkbox"/> bleeding resistor rating: Certified bleeder resistors used. R1=R2=Max.2 MΩ. (Two resistors are in series).					
<input type="checkbox"/> ICX:					
Notes:					
A. Test Location:					
Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth					
B. Operating condition abbreviations:					
N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition					

<b>5.6.6.2</b>	<b>TABLE: Resistance of protective conductors and terminations</b>				<b>N/A</b>
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance ( $\Omega$ )	
Supplementary information:					

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part		P
Supply voltage .....	264Vac 60Hz	—	
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)	
Output – to earth	1	Line/ Neutral - GND: 0.18mA <sub>peak</sub>	
	2 (*)	N/A	
	3	1)	
	4	N/A	
	5	2)	
	6	N/A	
	8	N/A	
Supplementary Information:			
Notes:			
[1] Supply voltage is the anticipated maximum Touch Voltage			
[2] Earthed neutral conductor [Voltage differences less than 1% or more]			
[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3			
[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.			
[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.			
1) Norway IT power system Line fault condition was evaluated, which is as same as TN, TT system earthing conductor fault condition, other IT power system is not evaluated.			
2) Not applicable, Single-phase equipment.			

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 <sup>*)</sup>	PS Classification
A	All circuits except for DC output	Power (W) :	N/A	N/A	PS3
		V <sub>A</sub> (V) :	N/A	N/A	
		I <sub>A</sub> (A) :	N/A	N/A	
B	DC output port (+5V / GT-46181-1605-T <sup>**</sup> )	Power (W) :	20.13	20.13	PS2
		V <sub>A</sub> (V) :	5.20	5.20	
		I <sub>A</sub> (A) :	4.13	4.13	
C	DC output port (+9V / GT-46181-1809-T <sup>**</sup> )	Power (W) :	24.0	24.0	PS2
		V <sub>A</sub> (V) :	9.22	9.22	
		I <sub>A</sub> (A) :	2.8	2.8	
D	DC output port (+15V / GT-46181-1809-T <sup>**</sup> )	Power (W) :	23.79	23.79	PS2
		V <sub>A</sub> (V) :	15.09	15.09	
		I <sub>A</sub> (A) :	1.67	1.67	

Supplementary Information:

(\*) Measurement taken only when limits at 3 seconds exceed PS1 limits.

The above measurements are the maximum values (max. V and max. A not obtained at the same time).

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

Supplementary information:

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

Supplementary Information:

\*) Output measurement > 15W in normal condition and all other circuit is assumed as PS2 or PS3, therefore all circuits are resistive PIS and covered by fire enclosure.

A combination of voltmeter, V<sub>A</sub> and ammeter I<sub>A</sub> may be used instead of a wattmeter.

If a separate voltmeter and ammeter are used, the product of (V x I) 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.

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:			



B.2.5		TABLE: Input test						P
U (V/Hz)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
For model GT-46181-1605-T**								
90/50	0.38	--	20.37	--	F1	0.38	Max. normal load: 5Vdc/3.2A	
100/50	0.36	0.5	20.20	--	F1	0.36	Max. normal load: 5Vdc/3.2A	
240/50	0.20	0.5	19.70	--	F1	0.20	Max. normal load: 5Vdc/3.2A	
254/50	0.19	--	19.60	--	F1	0.19	Max. normal load: 5Vdc/3.2A	
264/50	0.19	--	16.60	--	F1	0.19	Max. normal load: 5Vdc/3.2A	
90/60	0.38	--	20.38	--	F1	0.38	Max. normal load: 5Vdc/3.2A	
100/60	0.35	0.5	20.16	--	F1	0.35	Max. normal load: 5Vdc/3.2A	
240/60	0.20	0.5	19.60	--	F1	0.20	Max. normal load: 5Vdc/3.2A	
254/60	0.20	--	19.60	--	F1	0.20	Max. normal load: 5Vdc/3.2A	
264/60	0.19	--	19.60	--	F1	0.19	Max. normal load: 5Vdc/3.2A	
For model GT-46181-1809-T**								
90/50	0.39	--	21.80	--	F1	0.39	Max. normal load: 9Vdc/2A	
100/50	0.36	0.5	21.57	--	F1	0.36	Max. normal load: 9Vdc/2A	
240/50	0.21	0.5	21.30	--	F1	0.21	Max. normal load: 9Vdc/2A	
254/50	0.20	--	21.30	--	F1	0.20	Max. normal load: 9Vdc/2A	
264/50	0.20	--	21.20	--	F1	0.20	Max. normal load: 9Vdc/2A	
90/60	0.39	--	21.80	--	F1	0.39	Max. normal load: 9Vdc/2A	
100/60	0.36	0.5	21.61	--	F1	0.36	Max. normal load: 9Vdc/2A	
240/60	0.22	0.5	21.30	--	F1	0.22	Max. normal load: 9Vdc/2A	
254/60	0.21	--	21.30	--	F1	0.21	Max. normal load: 9Vdc/2A	
264/60	0.20	--	21.30	--	F1	0.20	Max. normal load: 9Vdc/2A	
For model GT-46181-1812-T**								
90/50	0.39	--	21.59	--	F1	0.39	Max. normal load: 12Vdc/1.5A	
100/50	0.35	0.5	21.44	--	F1	0.35	Max. normal load: 12Vdc/1.5A	
240/50	0.22	0.5	21.00	--	F1	0.22	Max. normal load: 12Vdc/1.5A	
254/50	0.21	--	21.00	--	F1	0.21	Max. normal load: 12Vdc/1.5A	
264/50	0.20	--	20.90	--	F1	0.20	Max. normal load: 12Vdc/1.5A	
90/60	0.39	--	21.59	--	F1	0.39	Max. normal load: 12Vdc/1.5A	
100/60	0.36	0.5	21.50	--	F1	0.36	Max. normal load: 12Vdc/1.5A	
240/60	0.22	0.5	21.00	--	F1	0.22	Max. normal load: 12Vdc/1.5A	
254/60	0.21	--	21.00	--	F1	0.21	Max. normal load: 12Vdc/1.5A	
264/60	0.21	--	21.00	--	F1	0.21	Max. normal load: 12Vdc/1.5A	
For model GT-46181-1815-T**								
90/50	0.39	--	21.20	--	F1	0.39	Max. normal load: 15Vdc/1.2A	

B.2.5		TABLE: Input test						P
U (V/Hz)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
100/50	0.36	0.5	21.02	--	F1	0.36	Max. normal load: 15Vdc/1.2A	
240/50	0.22	0.5	20.70	--	F1	0.22	Max. normal load: 15Vdc/1.2A	
254/50	0.21	--	20.70	--	F1	0.21	Max. normal load: 15Vdc/1.2A	
264/50	0.21	--	20.60	--	F1	0.21	Max. normal load: 15Vdc/1.2A	
90/60	0.40	--	21.20	--	F1	0.40	Max. normal load: 15Vdc/1.2A	
100/60	0.37	0.5	21.06	--	F1	0.37	Max. normal load: 15Vdc/1.2A	
240/60	0.22	0.5	20.70	--	F1	0.22	Max. normal load: 15Vdc/1.2A	
254/60	0.22	--	20.70	--	F1	0.22	Max. normal load: 15Vdc/1.2A	
264/60	0.21	--	20.70	--	F1	0.21	Max. normal load: 15Vdc/1.2A	
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured.								

B.3		TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) .....					See below:			—	
Power source for EUT: Manufacturer, model/type, output rating ...:					-			—	
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation	
GT-46181-1605-T**:									
+5V output	O-L	240	3 hours 18 min	F1	0.26	T1 coil	99.0	CT at 4.0A increased to 4.2A, unit shut down. NT, NB, NC, ASRE.	
						Ambient	26.3		
						Enclosure	64.0		
						Output cord	46.0		
						Ambient	25.0		
T1 (7) after D8	O-L	240	3 hours 48 min	F1	0.26	T1 coil	93.0	CT at 0.8A increased to 1.0A, unit shut down. NT, NB, NC..	
						Ambient	26.4		
GT-46181-1809-T**:									
+9V output	O-L	240	3 hours 18 min	F1	0.27	T1 coil	91.0	CT at 2.5A increased to 2.7A, unit shut down. NT, NB, NC, ASRE.	
						Ambient	26.3		
						Enclosure	56.0		
						Output cord	40.0		
						Ambient	25.0		
T1 (7) after D8	O-L	240	3 hours 48 min	F1	0.27	T1 coil	90.0	CT at 0.5A increased to 0.7A, unit shut down. NT, NB, NC..	
						Ambient	26.4		
GT-46181-1815-T**:									
+15V output	O-L	240	3 hours 18 min	F1	0.25	T1 coil	76.0	CT at 1.4A increased to 1.6A, unit shut down. NT, NB, NC, ASRE.	
						Ambient	26.3		
						Enclosure	54.0		
						Output cord	38.0		
						Ambient	25.0		
T1 (7) after D8	O-L	240	3 hours 48 min	F1	0.25	T1 coil	74.0	CT at 0.2A increased to 0.4A, unit shut down. NT, NB, NC..	
						Ambient	25.0		

Supplementary information:

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.

O-L=overload.

Electric strength tests conducted after abnormal condition, no flash over or insulation breakdown.

After above abnormal condition test, the output comply with ES1 limit.

NC: Cheesecloth remained intact.

NT: tissue paper remained intact.

NB: No indication of dielectric breakdown.

CT: Constant temperatures were obtained.

ASRE: All safeguards remained effectively.

B.4		TABLE: Fault condition tests						P
Ambient temperature (°C) .....					25°C, if not specify the ambient temperature.			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
GT-46181-1605-T**:								
+5V - RTN	S-c	240	30 min	F1	0.02	--	--	Unit shutdown immediately. NT, NB, NC, ASRE.
T1 (1-2)	S-c	240	30 min	F1	0.02	--	--	Unit shutdown immediately. NT, NB, NC, ASRE.
T1 (3-4)	S-c	240	30 min	F1	0.02	--	--	Unit shutdown immediately. NT, NB, NC, ASRE.
T1 (7-8)	S-c	240	30 min	F1	0.02	--	--	Unit shutdown immediately. NT, NB, NC, ASRE.
GT-46181-1809-T**:								
+9V - RTN	S-c	240	30 min	F1	0.02	--	--	Unit shutdown immediately. NT, NB, NC, ASRE.
T1 (1-2)	S-c	240	30 min	F1	0.02	--	--	Unit shutdown immediately. NT, NB, NC, ASRE.
T1 (3-4)	S-c	240	30 min	F1	0.02	--	--	Unit shutdown immediately. NT, NB, NC, ASRE.
T1 (7-8)	S-c	240	30 min	F1	0.02	--	--	Unit shutdown immediately. NT, NB, NC, ASRE.
GT-46181-1815-T**:								
+15V - RTN	S-c	240	30 min	F1	0.02	--	--	Unit shutdown immediately. NT, NB, NC, ASRE.
T1 (1-2)	S-c	240	30 min	F1	0.02	--	--	Unit shutdown immediately. NT, NB, NC, ASRE.
T1 (3-4)	S-c	240	30 min	F1	0.02	--	--	Unit shutdown immediately. NT, NB, NC, ASRE.
T1 (7-8)	S-c	240	30 min	F1	0.02	--	--	Unit shutdown immediately. NT, NB, NC, ASRE.
DB1(L - +)	S-c	240	<1s	F1	*	--	--	IP (F1), NT, NB, NC, ASRE.

Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
C1	S-c	240	<1s	F1	*	--	--	IP (F1), NT, NB, NC, ASRE.
Q1 (1-2)	S-c	240	<1s	F1	*	--	--	CD (Q1, R10), NT, NB, NC, ASRE, RF.
Q1 (1-3)	S-c	240	30 min	F1	0.02	--	--	Unit shutdown immediately. NT, NB, NC, ASRE.
Q1 (2-3)	S-c	240	<1s	F1	*	--	--	CD (Q1, R10), NT, NB, NC, ASRE, RF.
PC1 (1-2)	S-c	240	30 min	F1	0.02 – 0.12	--	--	Unit cycle protection. NT, NB, NC, ASRE.
PC1 (3-4)	S-c	240	30 min	F1	0.02	--	--	Unit shutdown immediately. NT, NB, NC, ASRE.
PC1 (1)	O-c	240	30 min	F1	0.02 – 0.12	--	--	Unit cycle protection. NT, NB, NC, ASRE.
U1 (5-2)	S-c	240	30 min	F1	0.02	--	--	CD (U1), NT, NB, NC, ASRE, RF.

Supplementary information:

S-c=short circuit, O-c=open circuit.

\*) Fuse current is more than fuse rating times 2.1.

Electric strength tests conducted after every single fault condition, no flash over or insulation breakdown.

After above fault condition tests, the output comply with ES1 limit.

NC: Cheesecloth remained intact.

NT: tissue paper remained intact.

NB: No indication of dielectric breakdown.

CT: Constant temperatures were obtained.

ASRE: All safeguards remained effectively.

IP: Internal protection operated (list component) repeat all fuse (see appended table 4.1.2) one time, results were same.

CD: Components damaged. (list damaged components)

RF: Repeated 2 times, results were same.

All ES measurement refer to table 5.2.

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

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

Annex Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)					P
Note: Measured UOC (V) with all load circuits disconnected:						
Output Circuit	Components	U <sub>oc</sub> (V)	I <sub>sc</sub> (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
DC output port (+5V / GT-46181-1605-T**)	Normal	5.20	4.13	8	20.13	100
	Single fault: R12 OC	5.20	0 1)	8	0 1)	100
	Single fault: PC1 pin1-2 SC	5.20	0 1)	8	0 1)	100
	Single fault: R18 SC	5.20	0 1)	8	0 1)	100
	Single fault: R10 SC	5.20	0 1)	8	0 1)	100
DC output port (+9V / GT-46181-1809-T**)	Normal	9.22	2.8	8	24.0	100
	Single fault: R12 OC	9.22	0 1)	8	0 1)	100
	Single fault: PC1 pin1-2 SC	9.22	0 1)	8	0 1)	100
	Single fault: R18 SC	9.22	0 1)	8	0 1)	100
	Single fault: R10 SC	9.22	0 1)	8	0 1)	100
DC output port (+15V / GT-46181-1815-T**)	Normal	15.09	1.67	8	23.79	100
	Single fault: R12 OC	15.09	0 1)	8	0 1)	100
	Single fault: PC1 pin1-2 SC	15.09	0 1)	8	0 1)	100
	Single fault: R18 SC	15.09	0 1)	8	0 1)	100
	Single fault: R10 SC	15.09	0 1)	8	0 1)	100
Supplementary Information: SC=Short circuit, OC=open circuit. 1) Output shut down.						



<b>T.2, T.3, T.4, T.5</b>	<b>TABLE: Steady force test</b>					<b>P</b>
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation	
Enclosure	Thermoplastic	Min. 2.0mm	250N	5sec	Safeguards remained effective	
D8, C8 and HS1	--	--	10N	5sec	Safeguards remained effective	
Supplementary information:						

<b>T.6, T.9</b>	<b>TABLE: Impact tests</b>				<b>P</b>
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
Enclosure	Thermoplastic	Min. 2.0mm	1300	Energy source did not become accessible, equipment safeguards were not defeated.	
Supplementary information:					

<b>T.7</b>	<b>TABLE: Drop tests</b>				<b>P</b>
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Enclosure	Thermoplastic	Min. 2.0mm	1000	Energy source did not become accessible, equipment safeguards were not defeated.	
Supplementary information:					

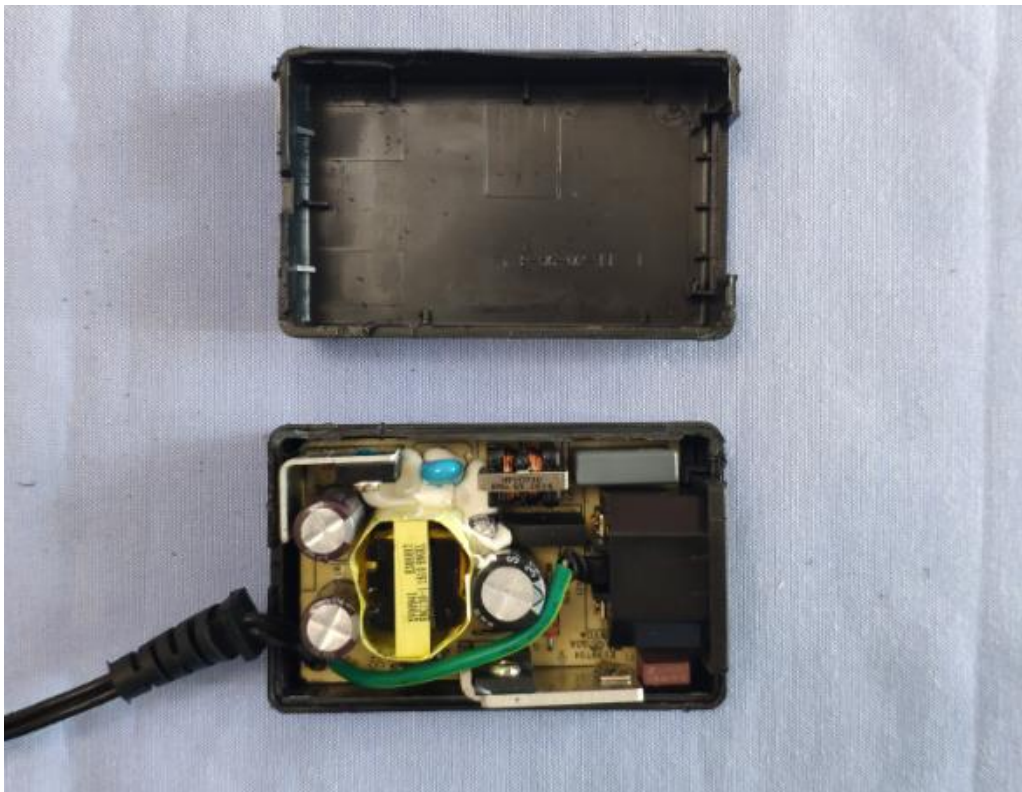
<b>T.8</b>	<b>TABLE: Stress relief test</b>					<b>P</b>
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Enclosure	Thermoplastic	Min. 2.0mm	88	7	No risk of shrinkage or distortion on material	
Supplementary information:						

-- End of report --

Photos

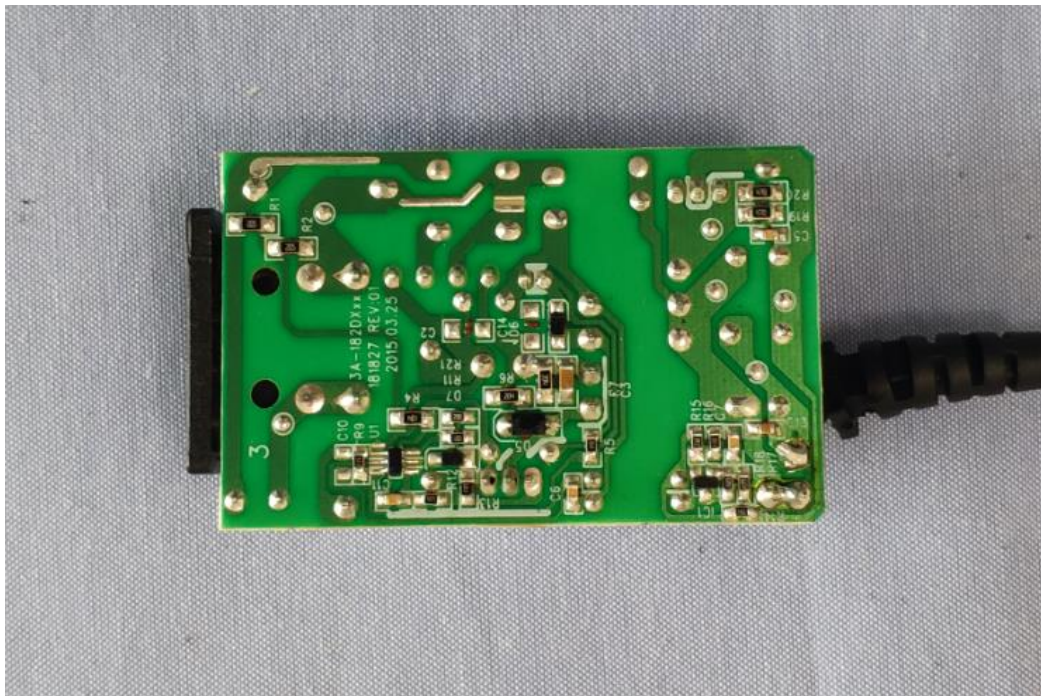
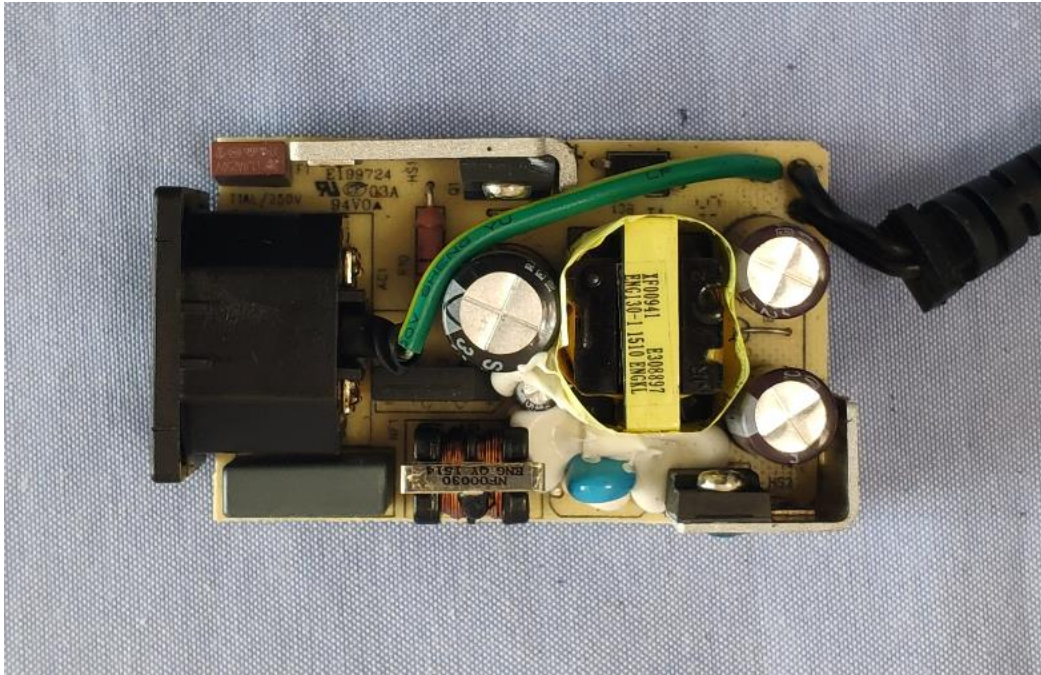


**Photos**



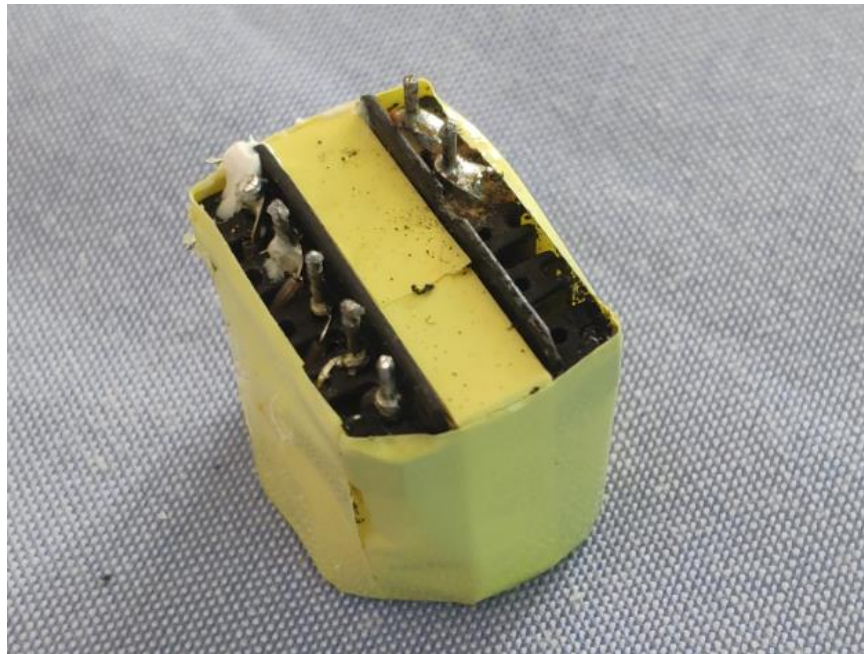


Photos



**Photos**

Transformer





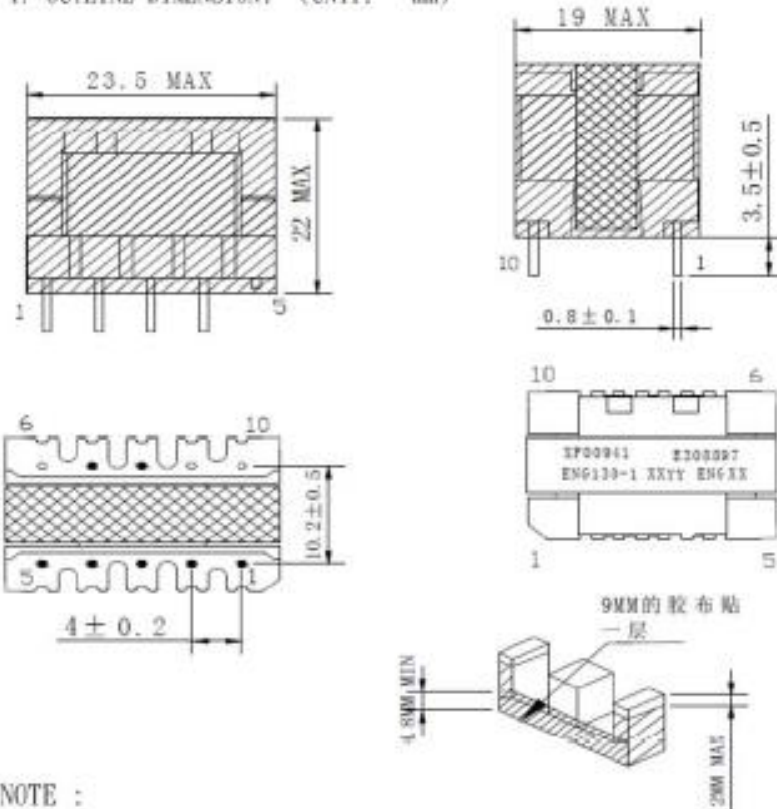


## Transformer specification

Construction / winding diagram / component part no.: T1

## SPECIFICATION

1. OUTLINE DIMENSION: (UNIT: mm)



NOTE :

- PIN6, 9, 10 CUT OFF, PIN5 CUT OFF 2/3.
- CORE 單邊研磨, 研磨 CORE 放 TOP 端. PIN 端 CORE 先用 13MM 的膠布背膠一層, 再靠 PIN6-10 側的 CORE 須用 9MM/W\*22MM/L 的膠布背膠一層, 如圖示, 外用膠帶 5.5MM 的固定 3TS
- 產品須含浸, 成品后用 20mm 的膠帶沿線包方向平齊底部線架隔板包 2 圈絕緣.
- 標籤內容如圖示, YYMM 為生產年周期, 貼於產品 PIN1-5 側頂部 CORE 上, 字體面向 PIN1-5 腳;
- 各外觀尺寸限制如圖示;

DESCRIPTION	TRANSFORMER	Customer P/N	XF00941	DATE	2015/7/15
-------------	-------------	--------------	---------	------	-----------

RDS041.0307

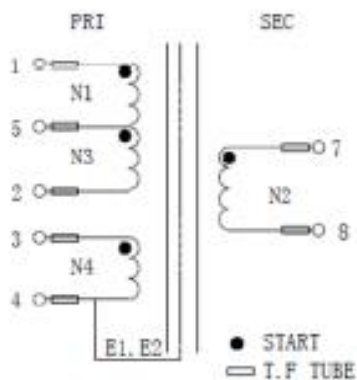
ENG ELECTRIC CO.,LTD

## Transformer specification

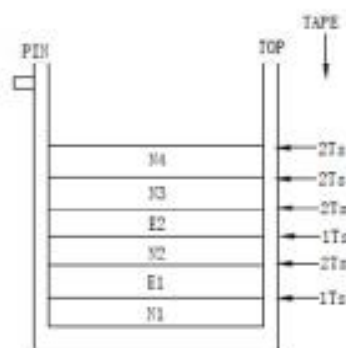
Construction / winding diagram / component part no.: T1

# SPECIFICATION

## SCHEMATIC:



## WINDING CONSTRUCTION:



## 4. WINDING TABLE

WINDING	MARGIN TAPE PIN/TOP	START	FINISH	WIRE SIZE	TURNS	TAPE	I.F. TUBE		NOTES
							START	FINISH	
N1	0/0	1	5	Φ0.18*2P	60Tz	1Tz	✓	✓	密繞三層
E1	0/0	4	CU	0.025T*3F	0.9Tz	2Tz	✓		居中
N2	0/0	7	8	Φ0.4*2P TRW(B)	6Tz	1Tz	✓	✓	密繞
E2	0/0	4	CU	0.025T*3F	0.9Tz	2Tz	✓		居中
N3	0/0	5	2	Φ0.18*2P	30Tz	2Tz	✓	✓	密+疏繞
N4	0/0	3	4	Φ0.18*1P	17Tz	2Tz	✓	✓	中密繞

## NOTE:

- PIN 朝外, 機器順時針繞制。
- E1, E2 爲內銅箔(背膠一層反折 2MM MIN), 接引線 Φ0.20\*1P 於 PIN4 腳。
- N1 密繞線前在 PIN6-10 側 PIN 端貼 7.6MM/W 的 L 型膠布, 待 E1 繞完后反折回線包內 3MM MIN。
- E2 密繞線前在 PIN6-10 側 PIN 端貼 17MM/W 的 L 型膠布, 待 N4 繞完后反折回線包內 3MM MIN。

DESCRIPTION	TRANSFORMER	Customer P/N	XF00941	DATE	2015/7/15
-------------	-------------	--------------	---------	------	-----------

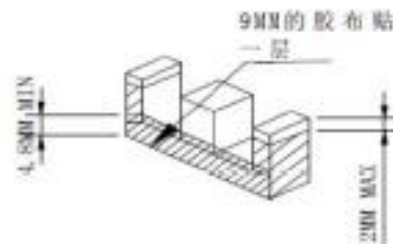
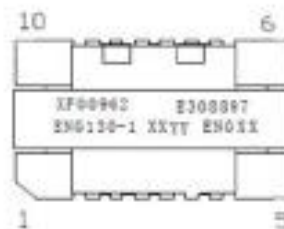
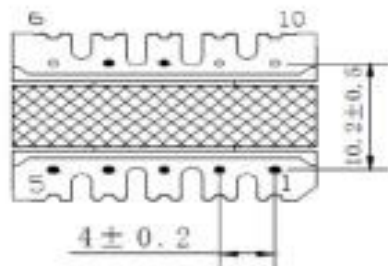
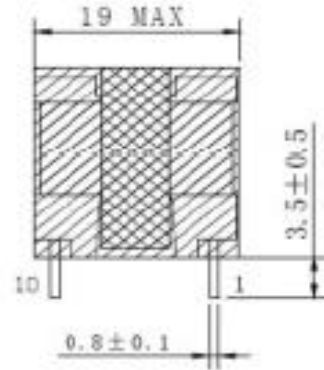
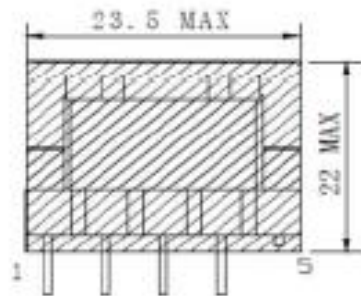


## Transformer specification

Construction / winding diagram / component part no.: T1

# SPECIFICATION

1. OUTLINE DIMENSION: (UNIT: mm)



NOTE :

- PIN6, 9, 10 CUT OFF, PIN5 CUT OFF 2/3.
- CORE 單邊研磨, 研磨 CORE 放 TOP 端. PIN 端 CORE 先用 13MM 的胶布背胶一层, 再靠 PIN6-10 侧的 CORE 须用 9MM/宽\*22MM/L 的胶布背胶一层, 如图示, 外用胶带 5.5MM 的固定 3TS
- 产品须含浸. 成品后用 20mm 的胶带沿线包方向平齐底部线架档板包 2 圈绝缘.
- 标签内容如图示, YYMM 为生产年周期, 贴于产品 PIN1-5 侧顶部 CORE 上, 字体面向 PIN1-5 脚.
- 各外观尺寸限制如图示:

DESCRIPTION	TRANSFORMER	Customer P/N	XF00962	DATE	2015/7/15
-------------	-------------	--------------	---------	------	-----------

RDS041.0307

ENG ELECTRIC CO.,LTD

IEC62368_1B - ATTACHMENT																																										
Clause	Requirement + Test				Result - Remark	Verdict																																				
<div>ATTACHMENT TO TEST REPORT</div> <div>IEC 62368-1</div> <div>EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</div> <div>(Audio/video, information and communication technology equipment - Part 1: Safety requirements)</div>																																										
Differences according to ..... : EN 62368-1:2014+A11:2017																																										
Attachment Form No. .... : EU_GD_IEC62368_1B_ii																																										
Attachment Originator ..... : Nemko AS																																										
Master Attachment..... : Date 2017-08																																										
Copyright © 2017 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.																																										
	CENELEC COMMON MODIFICATIONS (EN)																																									
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed “Z”.																																									
CONTENTS	<b>Add</b> 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																																									
	<b>Delete</b> 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	
0.2.1	Note	1	Note 3	4.1.15	Note																																					
4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c																																					
5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note																																					
5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3																																					
5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4																																					
10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3																																					
	For special national conditions, see Annex ZB.																																									
1	<b>Add</b> the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.					P																																				

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	<p><b>Add</b> 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. <b>mains</b>, 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 <b>pluggable equipment type B</b> or <b>permanently connected equipment</b>, 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 <b>pluggable equipment type A</b> the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>	As integral parts of the equipment.	P
5.4.2.3.2.4	<p><b>Add</b> the following to the end of this subclause:</p> <p>The requirement for interconnection with <b>external circuit</b> is in addition given in EN 50491-3:2009.</p>		N/A
10.2.1	<p>Add the following to <sup>c)</sup> and <sup>d)</sup> in table 39:</p> <p>For additional requirements, see 10.5.1.</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	<p><b>Add</b> 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 cm<sup>2</sup>, 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><b>Add</b> 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><b>Add</b> the following new subclause after 10.6.5.  <b>10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</b></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><b>Add</b> the following note:  NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>	Not cover in this report.	N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Bibliography	<p><b>Add</b> the following standards:</p> <p><b>Add</b> 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>		
<b>ZB</b>	<b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)</b>		<b>P</b>
4.1.15	<p><b>Denmark, Finland, Norway and Sweden</b></p> <p>To the end of the subclause the following is added:</p> <p><b>Class I pluggable equipment type A</b> 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 <b>accessible</b> parts, have a marking stating that the equipment shall be connected to an earthed <b>mains</b> socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In <b>Denmark</b>: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord."</p> <p>In <b>Finland</b>: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In <b>Norway</b>: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In <b>Sweden</b>: "Apparaten skall anslutas till jordat uttag"</p>	It should be considered when market to relevant country.	—
4.7.3	<p><b>United Kingdom</b></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

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.2	<b>Denmark</b> After the 2nd paragraph add the following: A warning (marking <b>safeguard</b> ) for high <b>touch current</b> is required if the <b>touch current</b> exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A
5.4.11.1 and Annex G	<b>Finland and Sweden</b> To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either <ul style="list-style-type: none"> <li>• two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>• one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> 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 <ul style="list-style-type: none"> <li>• 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</li> <li>• is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5kV.</li> </ul> It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: <ul style="list-style-type: none"> <li>• 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;</li> <li>• the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.</li> </ul>	Not TNV.	N/A
5.5.2.1	<b>Norway</b> After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).	Capacitors rated min. 250V.	P

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.6	<b>Finland, Norway and Sweden</b> To the end of the subclause the following is added: Resistors used as <b>basic safeguard</b> or bridging <b>basic insulation</b> in <b>class I pluggable equipment type A</b> shall comply with G.10.1 and the test of G.10.2.		N/A
5.6.1	<b>Denmark</b> <b>Add</b> 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	<b>Ireland and United Kingdom</b> After the indent for <b>pluggable equipment type A</b> , the following is added: – the <b>protective current rating</b> is taken to be 13 A, this being the largest rating of fuse used in the <b>mains</b> plug.		P
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm <sup>2</sup> to 1,5 mm <sup>2</sup> in cross-sectional area.	Power cord not provide. See summary of testing.	—
5.7.5	<b>Denmark</b> To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the <b>protective conductor current</b> exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.1	<p><b>Norway and Sweden</b></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>	Not TV.	N/A



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	<b>Denmark</b> To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .		N/A
B.3.1 and B.4	<b>Ireland and United Kingdom</b> The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of <b>direct plug-in equipment</b> , 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 <b>direct plug-in equipment</b> , until the requirements of Annexes B.3.1 and B.4 are met		N/A
G.4.2	<b>Denmark</b> To the end of the subclause the following is added: 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. 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. 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. 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. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. 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 <i>Justification:</i> Heavy Current Regulations, Section 6c	Power cord not provide. See summary of testing.  No Mains socket outlet.	—

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	<b>United Kingdom</b> 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	<b>United Kingdom</b> 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.	Power cord not provide. See summary of testing.	—
G.7.1	<b>Ireland</b> 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	Power cord not provide. See summary of testing.	—
G.7.2	<b>Ireland and United Kingdom</b> To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm <sup>2</sup> is allowed for equipment which is rated over 10 A and up to and including 13 A.	Power cord not provide. See summary of testing.	—

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<b>ZC</b>	<b>ANNEX ZC, NATIONAL DEVIATIONS (EN)</b>		<b>N/A</b>
10.5.2	<p><b>Germany</b></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><b>NOTE</b> Contact address:  Physikalisch-Technische Bundesanstalt,  Bundesallee 100,  D-38116 Braunschweig,  Tel.: Int +49-531-592-6320,  Internet: <a href="http://www.ptb.de">http://www.ptb.de</a></p>	Not CRT.	N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<b>ATTACHMENT TO TEST REPORT IEC 62368-1 2th Ed.</b> <b>U.S.A. NATIONAL DIFFERENCES</b> Audio/video, information and communication technology equipment – Part 1: Safety requirements			
<b>Differences according to</b> ..... : CSA/UL 62368-1:2014			
<b>Attachment Form No.</b> ..... : US&CA_ND_IEC623681B			
<b>Attachment Originator</b> ..... : UL(US)			
<b>Master Attachment</b> ..... : Date 2015-06			
<b>Copyright © 2015 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.</b>			

IEC 62368-1 - US and Canadian National Differences Special National Conditions based on Regulations and Other National Differences			
1.1	All equipment is to be designed to allow installation according to the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.		P
1.4	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.	The EUT is not used as distribution equipment.	N/A
4.1.17	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.	Power cord not provide. See summary of testing.	—
	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.	Power cord not provide. See summary of testing.	—
4.8	Lithium coin / button cell batteries have modified special construction and performance requirements.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.5, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment		N/A
5.7.7	Equipment intended to receive telecommunication ringing signals complies with a special touch current measurement tests.		N/A
6.5.1	PS3 wiring outside a fire enclosure complies with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex F (F.3.3.8)	Output terminals provided for supply of other equipment, except mains, supply are marked with a maximum rating or references to which equipment it is permitted to be connected.	Max. output rating is listed on the product.	P
Annex G (G.7.1)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
Annex G (G.7.3)	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	Power cord not provide. See summary of testing.	—
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.	Power cord not provide. See summary of testing.	—
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.	Power cord not provide. See summary of testing.	—
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 <sub>peak</sub> or 60 V d.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
Annex M	Battery packs for stationary applications comply with special component requirements.		N/A
Annex DVA (1)	Equipment intended for use in spaces used for environmental air are subjected to special flammability requirements for heat and visible smoke release.		N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m <sup>3</sup> (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

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (5.6.3)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Considered.	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 <sup>2</sup> (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a min. flammability classification of V-1.		N/A
Annex DVA (10.3.1)	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (10.5.1)	Equipment that produces ionizing radiation complies with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (F.3.3.3)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."	One phase.	N/A
Annex DVA (F.3.3.5)	Equipment identified for ITE (computer) room installation is marked with the rated current		N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position		N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No outlet.	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).	No isolated ground.	N/A
Annex DVA (G.4.3)	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.		N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
Annex DVA (Annex M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A
Annex DVA (Q)	Wiring terminals intended to supply Class 2 outputs according to the NEC or CEC Part 1 are marked with the voltage rating and "Class 2" or equivalent; marking is located adjacent to the terminals and visible during wiring.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. Components required to comply include: appliance couplers, attachment plugs, battery back-up systems, battery packs, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultra-capacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, data storage equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.	See table 4.1.2. in main report. The power supply cord is not evaluated, only with the other component comply with the 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.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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 <sup>2</sup> ).		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, complies with special earthing, wiring, marking and installation instruction requirements.		N/A
Annex DVI (6.7 )	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.		N/A
Annex DVJ (10.6.1 )	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center"><b>ATTACHMENT TO TEST REPORT</b>  <b>IEC 62368-1</b>  <b>(JAPAN) NATIONAL DIFFERENCES</b>  (Audio/video, information and communication technology equipment – Part 1: Safety requirements)</p>			
<b>Differences according to</b> ..... : J62368-1 (H30)			
<b>Attachment Form No.</b> ..... : JP_ND_IEC62368_1B			
<b>Attachment Originator</b> ..... : UL (JP)			
<b>Master Attachment</b> ..... : Date 2018-11-22			
<b>Copyright © 2018 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.</b>			
	<b>National Differences</b>		
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this standard or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.	Considered.	P
5.6.1	Mains socket-outlet and appliance outlet shall comply with Clause G.4.2A if they are incorporated as part of the equipment.	Not applicable.	N/A
5.6.2.1	Mains connection of class 0I equipment: Instructional safeguard in accordance with Clause F.3.6.1A;  Mains plug having a lead wire for protective earthing connection of class 0I equipment;  Independent main protective earthing terminal installed by ordinary person.	Class I equipment.	N/A
5.6.2.2	This requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.		N/A
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 <sup>2</sup> or more cross-sectional area		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series or JIS C 8303, or otherwise being considered to comply with relevant regulations, or that is provided with mains appliance outlet as specified in JIS C 8283-2-2 for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.	Class I equipment.	N/A
5.7.4	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990.	Class I equipment.	N/A
6.4.3.3	A fuse complying with JIS C 6575 series or a fuse having equivalent characteristics shall open within 1 s.  For Class A fuse of JIS C 6575, replace "2.1 times" by "1.35 times" and in case of Class B fuse of JIS C 6575, replace "2.1 times" by "1.6 times". A fuse not complying with JIS C 6575 series shall be tested with the breaking capacity taken into account.		N/A
8.5.4.2.1	Only three-phase stationary equipment rated more than 200 V ac can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.	No applicable.	N/A
8.5.4.2.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.	No applicable.	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.	No applicable.	N/A
8.5.4.2.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part.  Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.	No applicable.	N/A
9.2.6, Table 38	Handles, Knobs, grips, etc. and external surfaces either held, touched or worn against the body in normal use (> 1 min) b,c	Considered.	P

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.1	Instructional safeguard of class 0I equipment in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8303 or relevant regulation to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.	Class I equipment.	N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic.	See main report.	P
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.3 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions and instructional safeguard shall be provided regarding the earthing connection.	Class I equipment.	N/A
F.3.6.2.1	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.		N/A
F.4	Instruction for audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A. Installation instruction for the protective earthing connection for class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided within the package for the equipment.		N/A
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.	No thermal link used.	N/A
G.3.4	Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the relevant part of JIS C 6575 (corresponding to IEC60127) or shall have equivalent characteristics. If there are no applicable IEC standards, overcurrent protective devices used as a safeguard shall comply with their applicable IEC standards.		N/A
G.4.1	This requirement is not applicable to Clauses G.4.2 and G.4.2A.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	<p>Mains connector shall comply with JIS C 8282 series, JIS C 8283 series, JIS C 8285, JIS C 8303 or IEC 60309 series.</p> <p>Mains plugs and socket-outlets shall comply with JIS C 8282 series, JIS C 8303, IEC 60309 series, or have equivalent or better performance.</p> <p>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.</p> <p>Construction preventing mechanical stress not to transmit to the soldering part of inlet terminal.</p> <p>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>		N/A
G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively.		N/A
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.	Mains supply cord is not covered in this report.	N/A
G.8.3.3	Withstand $1,71 \times 1.1 \times U_0$ for 5 s.	No such part.	N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<b>ATTACHMENT TO TEST REPORT</b> IEC 62368-1 (AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment)			
<b>Differences according to</b> ..... : AS/NZS 62368.1:2018			
<b>Attachment Form No.</b> ..... : AU_NZ_ND_IEC62368_1B			
<b>Attachment Originator</b> ..... : JAS-ANZ			
<b>Master Attachment</b> ..... : 2019-02-04			
Copyright © 2019 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	<b>National Differences</b>		
<b>Appendix ZZ</b>	Variations to IEC 62368-1:2014 (ED. 2.0) for Australia and New Zealand		P
<b>ZZ1 Scope</b>	This Appendix lists the normative variations to IEC 62368-1:2014 (ED. 2.0)		P
<b>ZZ2 Variations</b>	The following modifications are required for Australian/New Zealand conditions:		P
<b>2</b>	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

IEC62368_1B - 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><b>Application of requirements and acceptance of materials, components and subassemblies</b></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	<b>Equipment for direct insertion into mains socket-outlets</b>		N/A
4.7.2	<p><b>Requirements</b></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>		N/A
4.7.3	<p><b>Compliance Criteria</b></p> <p>Delete the first paragraph and Note 1 and Note 2 and replace with the following:</p> <p>Compliance is checked by inspection and, if necessary, by the tests in AS/NZS 3112.</p>		N/A
4.8	<p>Delete existing clause title and replace with the following:</p> <p><b>4.8 Products containing coin/button cell batteries</b></p>		N/A

IEC62368_1B - ATTACHMENT					
Clause	Requirement + Test		Result - Remark	Verdict	
4.8.1	<b>General</b> 1 Second dashed point, <i>delete</i> the text and <i>replace</i> with the following: – include coin/button cell batteries with a diameter of 32 mm or less. 2 After the second dashed point, <i>insert</i> the following Note: NOTE 1: Batteries are specified in IEC 60086-2. 3 After the third dashed point, <i>renumber</i> the existing Note as 'NOTE 2'. 4 Fifth dashed point, <i>delete</i> the word 'lithium'.		No such battery.	N/A	
4.8.2	<b>Instructional Safeguard</b> First line, <i>delete</i> the word 'lithium'.			N/A	
4.8.3	<b>Construction</b> First line, after the word 'Equipment' <i>insert</i> the words 'containing one or more coin/button batteries and'			N/A	
4.8.5	<b>Compliance criteria</b> <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	<b>Test methods</b>			N/A	
5.4.10.2.1	<b>General</b> <i>Delete</i> the first paragraph and <i>replace</i> with the following: In Australia only, the separation is checked by the test of both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test of either Clause 5.4.10.2.2 or Clause 5.4.10.2.3.			N/A	
Table 29	Replace the table with the following:			N/A	
Parts		Impulse test		Steady state test	
		New Zealand	Australia	New Zealand	Australia
Parts indicated in Clause 5.4.10.1 a) <sup>a</sup>		2.5 kV 10/700 µs	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment. 10/700 µs	1.5 kV	3 kV
Parts indicated in Clause 5.4.10.1 b) and c) <sup>b</sup>		1.5 kV 10/700 µs <sup>c</sup>		1.0 kV	1.5 kV
<sup>a</sup> Surge suppressors shall not be removed. <sup>b</sup> Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment. <sup>c</sup> During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.					

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<b>5.4.10.2.2</b>	After the first paragraph, <i>insert</i> new Notes 201 and 202 as follows: NOTE 201 For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		N/A
<b>5.4.10.2.3</b>	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
<b>6</b>	<b>Electrically-caused fire</b>		N/A
<b>6.1</b>	<b>General</b> After the first paragraph, <i>insert</i> the following new paragraph: Alternatively, the requirements of Clauses 6.2 to 6.5.2 are considered to be fulfilled if the equipment complies with the requirements of Clause 6.202	Alternative tests not performed.	N/A
<b>6.6</b>	After Clause 6.6, <i>add</i> the new Clauses 6.201 and 6.202 as follows: <b>6.201 External power supplies, docking stations and other similar devices</b> and <b>6.202 Resistance to fire—Alternative tests</b> (see special national conditions)		N/A
<b>8.5.4</b>	<b>Special categories of equipment comprising moving parts</b>		N/A
<b>8.5.4.1</b>	<b>Large data storage equipment</b> 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
<b>8.6</b>	<b>Stability of equipment</b>		N/A



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<b>8.6.1 and Table 36</b>	<b>Requirements</b> 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'	MS1.	N/A
<b>8.6.1</b>	After Clause 8.6.1 <i>add</i> the following new clauses: <b>8.6.1.201 Instructional safeguard for fixed-mount television sets</b> (see special national conditions)		N/A
<b>Annex F Paragraph F.3.5.1</b>	<b>Mains appliance outlet and socket-outlet markings</b> <i>Replace</i> 'IEC 60320-2-2' with 'AS/NZS 60320.2.2'.	No mains outlet.	N/A
<b>Annex G Paragraph G.4.2</b>	<b>Mains connectors</b> 1 In the second line <i>insert</i> 'or AS/NZS 3123' after 'IEC 60906-1'. 2 In the second line <i>insert</i> 'or AS/NZS 60320 series' after 'IEC 60320 series' 3 <i>Add</i> the following new paragraph: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.		N/A
<b>Paragraph G.5.3.1</b>	<b>Transformers, General</b> 1 In the third dashed point <i>replace</i> 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 In the fourth dashed point <i>replace</i> 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.		N/A
<b>Paragraph G.7.1</b>	<b>Mains supply cords, General</b> In the fourth dashed paragraph, <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'	Mains supply cords is not covered in this report.	N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<b>Table G.5</b>	<b>Sizes of conductors</b> 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 <sup>b</sup> 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: <sup>b</sup> 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 <sup>2</sup> 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
<b>Annex M Paragraph M.3.2</b>	<b>Protection circuits for batteries provided within the equipment, Test method</b> 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
	<b>Special national conditions (if any)</b>		

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.201	<p><b>External power supplies, docking stations and other similar devices</b></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"> <li>– at all ES1 outlets or connectors shall not increase by more than 10% of its rated output voltage under normal operating condition; and</li> <li>– 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.</li> </ul> <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	<b>Resistance to fire—Alternative tests</b>		N/A
6.202.1	<p><b>General</b></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"> <li>– small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings;</li> <li>– small electrical components, such as capacitors with a volume not exceeding 1 750 mm<sup>3</sup>, 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.</li> </ul> <p>NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to another.</p>	Alternative tests not performed.	N/A

IEC62368_1B - ATTACHMENT									
Clause	Requirement + Test	Result - Remark	Verdict						
	<p><i>Compliance shall be checked by the tests of Clauses 6.202.2, 6.202.3 and 6.202.4.</i></p> <p>For the base material of printed boards, compliance shall be checked by the test of Clause 6.202.5.</p> <p>The tests shall be carried out on parts of non-metallic material which have been removed from the equipment. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use.</p> <p>These tests are not carried out on internal wiring.</p>		N/A						
6.202.2	<p><b>Testing of non-metallic materials</b></p> <p>Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C.</p> <p>Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the relevant part is not thinner than the sample tested.</p>		N/A						
6.202.3	<p><b>Testing of insulating materials</b></p> <p>Parts of insulating material supporting Potential Ignition Sources shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C.</p> <p>The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection.</p> <p>NOTE: Contacts in components such as switch contacts are considered to be connections</p>		N/A						
	<p>For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test.</p> <p>However, parts shielded by a barrier which meets the needle-flame test need not be tested</p>		N/A						
	<p>The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:</p> <table><tr><td><b>Clause of AS/NZS 60695.11.5</b></td><td>Change</td></tr><tr><td><b>9 Test procedure</b></td><td></td></tr><tr><td><b>9.2 Application of needle-flame</b></td><td><p>Delete the first and second paragraphs and <i>replace</i> with the following:</p><p>The specimen shall be</p></td></tr></table>	<b>Clause of AS/NZS 60695.11.5</b>	Change	<b>9 Test procedure</b>		<b>9.2 Application of needle-flame</b>	<p>Delete the first and second paragraphs and <i>replace</i> with the following:</p> <p>The specimen shall be</p>		N/A
<b>Clause of AS/NZS 60695.11.5</b>	Change								
<b>9 Test procedure</b>									
<b>9.2 Application of needle-flame</b>	<p>Delete the first and second paragraphs and <i>replace</i> with the following:</p> <p>The specimen shall be</p>								

IEC62368_1B - ATTACHMENT				
Clause	Requirement + Test		Result - Remark	Verdict
		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	<b>Testing in the event of non-extinguishing material</b>  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			N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>consequential testing.</p> <p>NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing.</p> <p>NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.</p>		
6.202.5	<p><b>Testing of printed boards</b></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"> <li>– the printed board does not carry any potential ignition source;</li> <li>– 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</li> <li>– 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.</li> </ul> <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>		N/A
6.202.6	<p><b>For open circuit voltages greater than 4 Kv</b></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</p>		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	flammability category V-1 or better according to AS/NZS 60695.11.10.		
<b>8.6.1.201</b>	<b>8.6.1.201 Instructional safeguard for fixed-mount television sets</b> 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. The elements of the instructional safeguard shall be as follows: – element 1a: not available; – element 2: 'Stability Hazard' or equivalent wording; – element 3: 'The television set may fall, causing serious personal injury or death' or equivalent text; – element 4: the following or equivalent text: To prevent injury, this television set must be securely attached to the floor/wall in accordance with the installation instructions	Not TV.	N/A
<b>8.6.1.202</b>	<b>Restraining device</b> 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. 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.	Not TV.	N/A