



Test Report issued under the responsibility of:

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TEST REPORT

IEC 62368-1

Audio/video, information and communication technology equipment

Part 1: Safety requirements

Report Number : 190700260TWN-001

Date of issue : August 16, 2019

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Applicant's name : GlobTek, Inc.

Address : 186 Veterans Dr. Northvale, NJ 07647, USA

Test specification:

Standard : IEC 62368-1:2014 (Second Edition)

Test procedure : CB Scheme

Non-standard test method : N/A

Test Report Form No. : IEC 62368_1B

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

Master TRF : 2014-03

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Test Item description	I.T.E Power Supply	
Trade Mark		
Manufacturer	Same as applicant	
Model/Type reference	GT*46161-**-*	
	(See general product information on page 8)	
Ratings	Input: 100-240 V~, 50-60 Hz, 0.45 A; Output: 5-5.5 Vdc, Max.3.2 A, Max 16 W Class II	
Testing procedure and testing location:		
<input checked="" type="checkbox"/> CB Testing Laboratory:	Intertek Testing Services Taiwan Ltd.	
Testing location/ address	5 F, No. 423, Ruiguang Rd., Neihu District, Taipei 114, Taiwan	
<input type="checkbox"/> Associated CB Testing Laboratory:		
Testing location/ address		
Tested by (name + signature)	Ken Ko, Project Handler	
Approved by (name + signature)	Dan Chen, Reviewer	
<input type="checkbox"/> Testing procedure: TMP/CTF Stage 1		
Testing location/ address		
Tested by (name + signature)		
Approved by (name + signature)		
<input type="checkbox"/> Testing procedure: WMT/CTF Stage 2		
Testing location/ address		
Tested by (name + signature)		
Witnessed by (name + signature)		
Approved by (name + signature)		
<input type="checkbox"/> Testing procedure: SMT/CTF Stage 3 or 4		
Testing location/ address		
Tested by (name + signature)		
Approved by (name + signature)		
Supervised by (name + signature)		

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

Appendix 1 (31 pages) – National differences.

Appendix 2 (1 page) – Circuit diagram.

Appendix 3 (2 pages) – PCB layout.

Appendix 4 (1 page) – Transformer specification

Photos (9 pages)

Summary of testing:

Tests performed (name of test and test clause) :

4.6.2	10 N steady force test
5.2	Classification of electrical energy sources
5.4.1.4, 6.3.2, 9.0, B.2.6	Temperature measurements
5.4.1.8	Determination of working voltage test
5.4.2, 5.4.3	Clearances and creepage distances measurement
5.4.4	Solid insulation measurement
5.4.8	Humidity conditioning test
5.4.9	Electric strength test
5.7	Prospective touch voltage, touch current and protective conductor current test
6.2.2	Electrical power sources (PS) measurements for classification
B.2.5	Input test
B.3	Simulated abnormal operating conditions
B.4	Simulated single fault conditions
F.3.10	Marking durability test
Q.1	Limited power source test
T.2	Steady force test – 10 N
T.4	Steady force test – 100 N
T.8	Stress relief test
V.1	Determination of accessible parts test Safeguards against electrically

Testing location:

Intertek Testing Services Taiwan Ltd.

Summary of compliance with National Differences:

List of countries addressed:

Group difference, special national deviations of all CENELEC countries, US and AU.

Explanation of CENELEC countries: Austria (AT), Belgium (BE), Bulgaria (BG), Croatia (HR), Cyprus (CY), Czech Republic (CZ), Denmark (DK), Estonia (EE), Finland (FI), France (FR), Germany (DE), Greece (GR), Hungary (HU), Iceland (IS), Ireland (IE), Italy (IT), Latvia (LV), Lithuania (LT), Luxembourg (LU), Malta (MT), Netherlands (NL), Norway (NO), Poland (PL), Portugal (PT), Romania (RO), Spain (ES), Slovakia (SK), Slovenia (SI), Sweden (SE), Switzerland (CH) and United Kingdom (GB)

Explanation of used codes for National Differences: United States of America (US), Australia (AU).

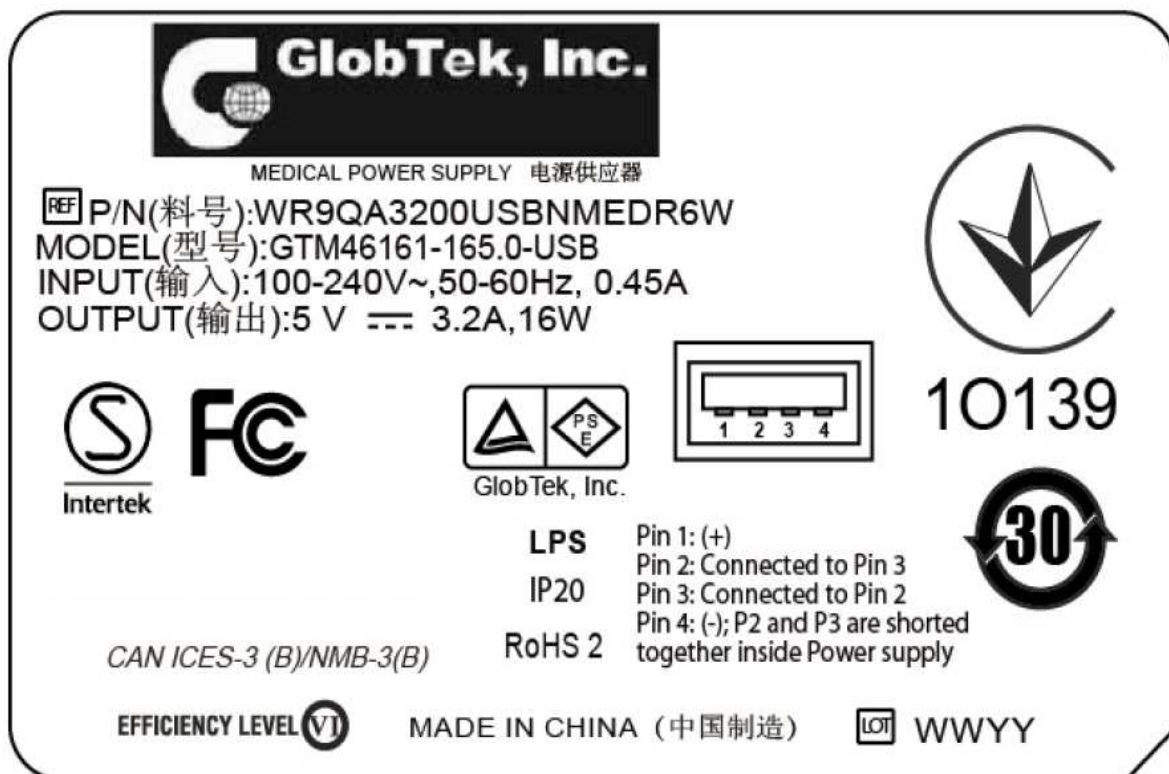
All country differences listed in the CB Bulletin are covered by the Common Modifications, Special National Conditions, National Deviations, and National Requirements noted above except for the following countries which are documented in Country Differences. Attachments attached to this report: refer to appendix 2 for details.

Compliance with the National requirements of “(countries)” as given in CB Bulletin of IEC website dated July 2019 was confirmed.

☒ **The product fulfils the requirements of IEC 62368-1:2014 (2nd edition) and EN 62368-1:2014+A11:2017.**

Copy of marking plate:

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



Note:

1. Class II symbol is used lasers to engrave on enclosure.
2. The above markings are the minimum requirements required by the safety. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.
3. When the equipment is vended to EUROPE, manufacturers and importers shall indicate on the electrical equipment their name, registered trade name or registered trade mark and the postal address at which they can be contacted or, where that is not possible, on its packaging or in a document accompanying the electrical equipment.

TEST ITEM PARTICULARS:	
Classification of use by	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input checked="" type="checkbox"/> Children likely to be present
Supply Connection.....	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit - not Mains connected <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance	<input checked="" type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> + ____ %/ - ____ % <input type="checkbox"/> None
Supply Connection – Type	<input checked="" type="checkbox"/> pluggable equipment type A <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input checked="" type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input type="checkbox"/> other: _____
Considered current rating of protective device as part of building or equipment installation	16 A (20 A for Noth America) Installation location: <input type="checkbox"/> building; <input checked="" type="checkbox"/> equipment
Equipment mobility	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input checked="" type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: _____
Class of equipment	<input type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III
Access location	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified 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 type="checkbox"/> IT - ____ V _{L-L}
Altitude during operation (m)	<input type="checkbox"/> 2000 m or less <input checked="" type="checkbox"/> 5000 m
Altitude of test laboratory (m)	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m
Mass of equipment (kg)	<input checked="" type="checkbox"/> 0.06 kg

POSSIBLE TEST CASE VERDICTS:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement	F (Fail)
TESTING:	
Date of receipt of test item.....:	July 16, 2019
Date (s) of performance of tests	July 16, 2019 - August 9, 2019
GENERAL REMARKS:	
<p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p> <p>This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.</p> <p>When determining the test conclusion, the Measurement Uncertainty of test has been considered.</p>	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60335-1:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided :	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies)	1. GlobTek (Suzhou) Co., Ltd. Building 4, No. 76 JinLing East Road, Suzhou Industrial Park, Suzhou, JiangSu, 215021, China 2. GlobTek, Inc. 186 Veterans Dr. Northvale, NJ 07647, USA

GENERAL PRODUCT INFORMATION:

General product information:

The equipment is an I.T.E. Power Supply for ITE and indoor use only.

The integral plug forming as part of the equipment is considered as the disconnect device.

The equipment is considered as direct plug-in and Class II equipment.

The equipment is submitted and evaluated for maximum manufacturer's recommended ambient of 40 °C.

The equipment is intended to be used in tropical conditions.

The enclosure is fixed together by ultrasonic welding.

The equipment was evaluated for a maximum operating altitude of 5000 m.

There are two kinds of Circuit diagram and PCB layout, the detail refer to below table:

Circuit diagram/ PCB layout	Fuse	Output type
Type 1	Fusible resistor (RF1) & fuse (FS1)	USB*1
Type 2	Fusible resistor (RF1) or fuse (RF1) & fuse (FS1)	USB*1, USB*2, USB Type-C
Note: Circuit diagram/ PCB Layout type 1 and type 2 are similar except for fuse type and secondary component (LF2).		

Explanation for models GT*46161-**-*:

The 1st symbol “*” denotes “M” or “-” or “H” for market identification and not related to safety.

The 2nd symbol “*” denotes the rated output wattage designation, which can be “01” to “16”, with interval of 1.

The 3rd symbol “*” denotes the standard rated output voltage designation, which can be “5.0” to “5.5” or “05” to “05.5” with interval of 0.1 Vdc.

The last symbol “*” denotes -USB means Type 1 USB*1, -USB1A means Type 2 USB*1, -USB2A means Type 2 USB*2

and -USBC means Type 2 USB Type C.

Model	Input	Output Voltage	Max. output current	Max. output power
GT*46161-*5.0-*, GT*46161-*05-*	100-240 V~, 50-60 Hz, 0.45 A	5 Vdc	3.2 A	16 W
GT*46161-**-* (The 3rd “*” can be “5.1” to “5.5” or “05.1” to “05.5”)		5.1-5.5 Vdc	3.14 A	16 W

Note: All models are similar except for output type and different output voltage.

All tests are performed on Circuit diagram/PCB layout type 1 (Model: GTM46161-165.0-USB).

Output of all models compliance for sub-clause 2.5 Limit Power Source.

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

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	ES3: All primary circuits	N/A	N/A	Enclosure
Ordinary	ES1: Secondary output connector	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Enclosure	PS3 circuits	Complied with clause 6.3	V-0	N/A
PCB	PS3 circuits	Complied with clause 6.3	V-1 or better	N/A
Internal wiring	PS3 circuits (internal)	N/A	N/A	Complied with clause 6.5
Other (electronic component)	PS3 circuits	Complied with clause 6.3	Complied with clause 6.4.5, 6.4.6	N/A
Secondary output connector	PS2	Complied with clause 6.3	Complied with clause 6.4.5	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	MS1	N/A	N/A	N/A

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS1: Enclosure accessible surfaces	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
Supplementary Information:				
(1) See attached energy source diagram for additional details.				
(2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	(see appended tables 4.1.2)	P
4.1.2	Use of components	Components, which are certified to IEC and/or national standards, are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment	P
4.1.3	Equipment design and construction	Considered	P
4.1.15	Markings and instructions.....:	(See Annex F)	P
4.4.4	Safeguard robustness	See below	P
4.4.4.2	Steady force tests.....:	(See Annex T.4)	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.....:	No such safeguard	N/A
4.4.4.6	Glass Impact tests.....:	No glass material	N/A
4.4.4.7	Thermoplastic material tests	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard.....:	No such device	N/A
4.4.4.9	Accessibility and safeguard effectiveness	During and after the tests, the EUT still complies with the relevant requirement of this standard	P
4.5	Explosion	No explosion occurs	N/A
4.6	Fixing of conductors	See below	P
4.6.1	Fix conductors not to defeat a safeguard	No conductors defeat a safeguard	P
4.6.2	10 N force test applied to	10 N force applied to Internal wiring and all components	P
4.7	Equipment for direct insertion into mains socket - outlets	The EUT is a direct plug-in equipment	P
4.7.2	Mains plug part complies with the relevant standard.....:	Considered	P
4.7.3	Torque (Nm)	≤ 0.25 Nm	P
4.8	Products containing coin/button cell batteries	No any coin/button cell batteries	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery.....:		—

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

5	ELECTRICALLY-CAUSED INJURY		P
5.2.1	Electrical energy source classifications	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits	Considered	P
5.2.2.2	Steady-state voltage and current	(See appended table 5.2)	P
5.2.2.3	Capacitance limits.....	See subclause 5.2.2.3	P
5.2.2.4	Single pulse limits	No single pulse introduced	N/A
5.2.2.5	Limits for repetitive pulses	No repetitive pulses introduced	N/A
5.2.2.6	Ringing signals	No means for connection to telephone network and no ringing signal generated	N/A
5.2.2.7	Audio signals	No audio signal terminals located in accessible area	N/A
5.3	Protection against electrical energy sources	See below	P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	Considered	P
5.3.2.1	Accessibility to electrical energy sources and safeguards	Considered	P
5.3.2.2	Contact requirements	No opening	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		N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	The choice and application have taken into account as specified in this Clause 5 and Annex T except natural rubber, hygroscopic materials or asbestos are not used as insulation	P
5.4.1.3	Humidity conditioning	(See subclause 5.4.8, 5.4.9.1)	P
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
5.4.1.5	Pollution degree	2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2	N/A
5.4.1.5.3	Thermal cycling		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage		P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	Ball pressure test considered	P
5.4.1.10.2	Vicat softening temperature	Complied with 5.4.1.10	N/A
5.4.1.10.3	Ball pressure	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2)	P
5.4.2.3	Determining clearance using required withstand voltage	Refer to 5.4.2.2	P
	a) a.c. mains transient voltage	2500 Vpk	—
	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 applicable	N/A
5.4.2.5	Multiplication factors for clearances and test voltages	Specified the equipment to be operated up to 5000 m above sea level, the required clearance is multiplied by the altitude correction factor 1.48 according to Table 17 (See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.3	Creepage distances.....	(See appended table 5.4.3)	P
5.4.3.1	General	See below	P
5.4.3.3	Material Group	Material Group IIIb assumed	—
5.4.4	Solid insulation	See below	P
5.4.4.2	Minimum distance through insulation	(See appended table 5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs)		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material.....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz.....:		N/A
5.4.5	Antenna terminal insulation	No Antenna terminal	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	See below	P
	Relative humidity (%)	95	—
	Temperature (°C)	40	—
	Duration (h)	120	—
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	Tests were conducted after 5.4.8 for each source in table 4.1.2	P
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit	Not applicable	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
	Rated operating voltage U_{op} (V)		—
	Nominal voltage U_{peak} (V)		—
	Max increase due to variation U_{sp}		—
	Max increase due to ageing ΔU_{sa}		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$		—
5.5	Components as safeguards		
5.5.1	General		P
5.5.2	Capacitors and RC units	See below	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.2.1	General requirement	Approved Y capacitor (see appended table 4.1.2)	P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector		N/A
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	No such devices used	N/A
5.5.5	Relays	No such devices used	N/A
5.5.6	Resistors	No such devices used	N/A
5.5.7	SPD's		N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable		N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors	Class II equipment	N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm ²)		—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm ²). :		—
	Protective current rating (A)		—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Requirement		N/A
	Conductor size (mm ²), nominal thread diameter (mm). :		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance (Ω)		N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks	Peak voltage indicated instrument used	P
5.7.2.1	Measurement of touch current	(See appended table 5.2.2.2)	P
5.7.2.2	Measurement of prospective touch voltage	The equipment is Class II equipment	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.3	Equipment set-up, supply connections and earth connections	The equipment is Class II equipment	N/A
	System of interconnected equipment (separate connections/single connection)		—
	Multiple connections to mains (one connection at a time/simultaneous connections)		—
5.7.4	Earthed conductive accessible parts	The equipment is Class II equipment	N/A
5.7.5	Protective conductor current	The equipment is Class II equipment	N/A
	Supply Voltage (V)		—
	Measured current (mA)		—
	Instructional Safeguard		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits		N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits		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

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Clause	Requirement + Test	Result - Remark	Verdict
6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications	All circuits are considered PS3, except for secondary output connector complied with Q1	P
6.2.2.1	General	See the following details	P
6.2.2.2	Power measurement for worst-case load fault:	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault.....:	(See appended table 6.2.2)	P
6.2.2.4	PS1	(See appended table 6.2.2)	P
6.2.2.5	PS2	(See appended table 6.2.2)	P
6.2.2.6	PS3		N/A
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS	The available power exceeding 15 W and no further test is considered necessary (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	(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 materials outside fire enclosure	N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Control fire spread 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
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	N/A
6.4.5	Control of fire spread in PS2 circuits	Considered	P
6.4.5.2	Supplementary safeguards	PCB min. V-1	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.6	Control of fire spread in PS3 circuit	Fire enclosure provided and PCB rated V-1 or better	P
6.4.7	Separation of combustible materials from a PIS	See below	P
6.4.7.1	General.....:	(See tables 6.2.3.1 and 6.2.3.2)	P
6.4.7.2	Separation by distance	Enclosure & PCB rated V-1 or better	P
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	The fire enclosure is the overall enclosure	P
6.4.8.1	Fire enclosure and fire barrier material properties	See below	P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	V-0 fire enclosure is provided	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	See below	P
6.4.8.3.1	Fire enclosure and fire barrier openings	V-0 fire enclosure is provided	P
6.4.8.3.2	Fire barrier dimensions	No fire barrier	N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm):	No openings	P
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm):	No openings	P
	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):	No door or cover	N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....:	V-0 fire enclosure is provided	P
6.5	Internal and external wiring		P
6.5.1	Requirements	IEC/TS 60695-11-21 complied wires used	P
6.5.2	Cross-sectional area (mm ²):		—
6.5.3	Requirements for interconnection to building wiring:	No interconnection to building wiring.	N/A
6.6	Safeguards against fire due to connection to additional equipment	(See table Annex Q.1)	P
	External port limited to PS2 or complies with Clause Q.1	(See table Annex Q.1)	P

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N/A
7.2	Reduction of exposure to hazardous substances	No hazardous substances	N/A
7.3	Ozone exposure	No ozone produced	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010)		—
7.6	Batteries	No such batteries provided	N/A

8	MECHANICALLY-CAUSED INJURY		P
8.1	General	Enclosure is smooth and no mechanical energy sources	P
8.2	Mechanical energy source classifications	MS1	P
8.3	Safeguards against mechanical energy sources	No additional safeguards is needed to against mechanical energy sources	N/A
8.4	Safeguards against parts with sharp edges and corners	No sharp edges and corners	P
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts	No moving parts within EUT	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard..... :		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks	No 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.....:	No pressure lamp	N/A
8.6	Stability	No stability requirements for 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		—

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

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Clause	Requirement + Test	Result - Remark	Verdict


9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications	Classified as TS1	P
9.3	Safeguard against thermal energy sources		P
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard	Not required due to TS1	N/A
9.4.2	Instructional safeguard		N/A


10	RADIATION		P
10.2	Radiation energy source classification	See below	P
10.2.1	General classification	Indicating LEDs	P
10.3	Protection against laser radiation	Fiber port is Class I level, see table 4.1.2	P
	Laser radiation that exists equipment:	RS1	—
	Normal, abnormal, single-fault		N/A
	Instructional safeguard		—
	Tool.....		—
10.4	Protection against visible, infrared, and UV radiation		N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons.....		N/A
10.4.1.b)	RS3 accessible to a skilled person.....		N/A
	Personal safeguard (PPE) instructional safeguard.....		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1. :		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions		N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque.....		N/A
10.4.1.f)	UV attenuation.....		N/A
10.4.1.g)	Materials resistant to degradation UV		N/A
10.4.1.h)	Enclosure containment of optical radiation		N/A
10.4.1.i)	Exempt Group under normal operating conditions		N/A
10.4.2	Instructional safeguard		N/A
10.5	Protection against x-radiation		N/A
10.5.1	X- radiation energy source that exists equipment:		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards		N/A
	Instructional safeguard for skilled person.....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.5.3	Most unfavourable supply voltage to give maximum radiation..... :		—
	Abnormal and single-fault condition :		N/A
	Maximum radiation (pA/kg) :		N/A
10.6	Protection against acoustic energy sources	No 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..... :		—
	Equipment safeguard prevent ordinary person to RS2..... :		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output..... :		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A)..... :		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A)..... :		—

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers :	(See Annex E)	N/A
B.2.3	Supply voltage and tolerances	100-240 Vac, -10% to +10%	P
B.2.5	Input test..... :	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements..... :	(See appended table B.3)	P
B.3.2	Covering of ventilation openings	No openings within the EUT	N/A
B.3.3	D.C. mains polarity test	A.C. mains supply	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.3.4	Setting of voltage selector	No such selector	N/A
B.3.5	Maximum load at output terminals	(See appended table B.3 & B.4)	P
B.3.6	Reverse battery polarity	No battery within the equipment	N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions		P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited	No such controlling device	N/A
B.4.3	Motor tests	No motor within the EUT	N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature		N/A
B.4.4	Short circuit of functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation		P
B.4.4.2	Short circuit of creepage distances for functional insulation		P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No such coated printed boards.	N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	No such devices.	N/A
B.4.6	Short circuit or disconnect of passive components	(See appended table B.4)	P
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		P
B.4.9	Battery charging under single fault conditions ... :		N/A
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation	No 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
D	TEST GENERATORS		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Audio amplifier normal operating conditions	No audio amplifier	N/A
	Audio signal voltage (V)		—
	Rated load impedance (Ω)		—
E.2	Audio amplifier abnormal operating conditions		N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General requirements		P
	Instructions – Language	English	—
F.2	Letter symbols and graphical symbols	See below	P
F.2.1	Letter symbols according to IEC60027-1	Complied with IEC 60027-1	P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Complied with IEC 60417 or ISO 3864-2 or ISO 7000	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Equipment marking is located on its exterior surface and is readily visible	P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification		—
F.3.2.2	Model identification	GT*46161-**-*	—
F.3.3	Equipment rating markings	See below	P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of supply voltage	AC	—
F.3.3.4	Rated voltage	100-240 Vac	—
F.3.3.4	Rated frequency	50-60 Hz	—
F.3.3.6	Rated current or rated power	0.45 A	—
F.3.3.7	Equipment with multiple supply connections	Single supply connection	N/A
F.3.4	Voltage setting device	No such device	N/A
F.3.5	Terminals and operating devices	No such device	N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings	No such device	N/A
F.3.5.2	Switch position identification marking		N/A
F.3.5.3	Replacement fuse identification and rating markings	Fuse is not intended to be replaceable	N/A
F.3.5.4	Replacement battery identification marking		N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification	See below	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.6.1	Class I Equipment	Class II equipment	N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A
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 II equipment	P
F.3.6.2.1	Class II equipment with or without functional earth	 IEC 60417-5172 (2003-02) used	P
F.3.6.2.2	Class II equipment with functional earth terminal marking	No functional earth terminal.	N/A
F.3.7	Equipment IP rating marking :	IPX0 equipment	—
F.3.8	External power supply output marking	5-5.5 Vdc, Max.3.2 A, Max 16 W	P
F.3.9	Durability, legibility and permanence of marking	See below	P
F.3.10	Test for permanence of markings	After test there was no damage on the label. The marking on the label did not fade. There was no curling and lifting of the label edge	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	No 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)	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards		N/A
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		N/A
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General requirements	No switch	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	Relays		N/A
G.2.1	General requirements	No relays	N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	Protection Devices		P
G.3.1	Thermal cut-offs	No thermal cut-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	No thermal links.	N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H)		—
	Single Fault Condition		—
	Test Voltage (V) and Insulation Resistance (Ω) . :		—
G.3.3	PTC Thermistors		N/A
G.3.4	Overcurrent protection devices	One fuse (RF1) or fusible resistor (RF1) and one fuse (FS1) are located in the primary circuit	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	No such device	N/A
G.3.5.2	Single faults conditions.....:		N/A
G.4	Connectors		N/A
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	Wound Components		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°	Insulation tube used in the transformer as mechanical protection	P
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s)		—
	Temperature (°C)		—
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	Transformers		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC 62368-1)	See below	P
	Position	T1, Isolation between primary and secondary	—
	Method of protection	See appended table B.4	—
G.5.3.2	Insulation	The electric strength test performed by applied voltage of 4000 Vdc (The core is considered as primary)	P
	Protection from displacement of windings	Bobbin and insulation tape used for fixing	—
G.5.3.3	Overload test	(See appended table B.3 & B.4)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment	P
G.5.3.3.2	Winding Temperatures testing in the unit	(See appended table B.3 & B.4)	P
G.5.3.3.3	Winding Temperatures - Alternative test method	Alternative test method was not considered	N/A
G.5.4	Motors		N/A
G.5.4.1	General requirements	No motors provided	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

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Clause	Requirement + Test	Result - Remark	Verdict
	Maximum Temperature		N/A
	Electric strength test (V)		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h)		N/A
	Electric strength test (V)		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage		—
G.6	Wire Insulation		P
G.6.1	General		P
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	Mains supply cords		P
G.7.1	General requirements	No power supply cord provided	N/A
	Type.....		—
	Rated current (A)		—
	Cross-sectional area (mm ²), (AWG)		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords	See below	P
G.7.3.2	Cord strain relief	EUT with a non-detachable output cord	P
G.7.3.2.1	Requirements	See below	P
	Strain relief test force (N)	30 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
G.8	Varistors		P
G.8.1	General requirements	(see appended table 4.1.2)	P

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Clause	Requirement + Test	Result - Remark	Verdict
G.8.2	Safeguard against shock		P
G.8.3	Safeguard against fire		P
G.8.3.2	Varistor overload test	The EUT is a Class II equipment	N/A
G.8.3.3	Temporary overvoltage	The EUT is a Class II equipment	N/A
G.9	Integrated Circuit (IC) Current Limiters		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.	No such devices	N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA		—
G.9.1 d)	IC limiter output current (max. 5A)		—
G.9.1 e)	Manufacturers' defined drift		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	Resistors		N/A
G.10.1	General requirements		N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	Capacitor and RC units		P
G.11.1	General requirements	Approved Y1 Capacitor used between primary and secondary circuits	P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
G.12	Optocouplers		N/A
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results)		N/A
	Type test voltage V _{ini}		—
	Routine test voltage, V _{ini,b}		—
G.13	Printed boards		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards	The minimum clearance & creepage distance on the printed board comply with the requirements	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction)		—
G.13.5	Insulation between conductors on different surfaces		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
G.14	Coating on components terminals		N/A
G.14.1	Requirements	(See G.13)	N/A
G.15	Liquid filled components		N/A
G.15.1	General requirements	No such devices	N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		N/A
b)	Impulse test using circuit 2 with $U_c =$ to transient voltage		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance		—
D3)	Resistance		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz)		—
H.3.1.2	Voltage (V)		—
H.3.1.3	Cadence; time (s) and voltage (V)		—
H.3.1.4	Single fault current (mA):		—
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)		—
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		P
	General requirements	(see appended tables 4.1.2)	P
K	SAFETY INTERLOCKS		N/A
K.1	General requirements	No safety interlocks	N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location)		N/A
K.7.2	Overload test, Current (A)		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	DISCONNECT DEVICES		P
L.1	General requirements	Mains plug that is part of direct plug-in equipment	P
L.2	Permanently connected equipment	Not permanently equipment	N/A
L.3	Parts that remain energized		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
L.4	Single phase equipment	Disconnect device disconnected both poles simultaneously	P
L.5	Three-phase equipment	Single phase equipment	N/A
L.6	Switches as disconnect devices	No switches	N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources	Single power source	N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N/A
M.1	General requirements	No batteries	N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method):		N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance		N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature.:		—
M.4.2.2 b)	Single faults in charging circuitry		—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method)		N/A
M.6.2	Leakage current (mA)		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s)..... :		—
M.8.2.3	Correction factors..... :		—
M.8.2.4	Calculation of distance d (mm)		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing)		N/A
N	ELECTROCHEMICAL POTENTIALS		N/A
	Metal(s) used	Class II equipment	—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Figures O.1 to O.20 of this Annex applied..... :	Considered	—
P	SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS		P
P.1	General requirements	See below	P
P.2.2	Safeguards against entry of foreign object		P
	Location and Dimensions (mm)	No openings	—
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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Openings in transportable equipment	Not transportable equipment	N/A
	Transportable equipment with metalized plastic parts	Not transportable equipment	N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard)	Not transportable equipment	N/A
P.3	Safeguards against spillage of internal liquids	No internal liquids	N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts	No metallized coatings	N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C).....		—
	Tr (°C)		—
	Ta (°C).....		—
P.4.2 b)	Abrasion testing		N/A
P.4.2 c)	Mechanical strength testing		N/A
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources	See below	P
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition	(See appended table 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		P
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A)		—
	Current limiting method.....		—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)).		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm).....		—
	Conditioning (°C).....		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material		—
	Wall thickness (mm).....		—
	Conditioning (°C).....		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material		—
	Wall thickness (mm).....		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm).....		—
	Conditioning (test condition), (°C)		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
T	MECHANICAL STRENGTH TESTS		P
T.1	General requirements		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
T.2	Steady force test, 10 N	The equipment is still complying with relevant requirements of this standard	P
T.3	Steady force test, 30 N		N/A
T.4	Steady force test, 100 N	The equipment is still complying with relevant requirements of this standard	P
T.5	Steady force test, 250 N		N/A
T.6	Enclosure impact test	The equipment is direct plug-in equipment	N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test	(See appended table T7)	P
T.8	Stress relief test	(See appended table T8)	P
T.9	Impact Test (glass)	No glass parts	N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J).....		—
	Height (m)		—
T.10	Glass fragmentation test		N/A
T.11	Test for telescoping or rod antennas	No telescoping or rod antennas	N/A
	Torque value (Nm)		—
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General requirements		N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen.....		N/A
V	DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)		P
V.1	Accessible parts of equipment		P
V.2	Accessible part criterion	Only class 1 energy source can be accessible	P

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

4.1.2	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity1	
Plastic Material List:						
Enclosure/ Blade holder	SABIC INNOVATIVE PLASTICS B V	C2950	Min. V-0, min. thick: 1.5 mm, 85 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94	UL recognized E45329	
Alt.	SABIC INNOVATIVE PLASTICS B V	CX7211	Min. V-0, min. thick: 1.5 mm, 90 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94	UL recognized E45329	
Alt.	SABIC INNOVATIVE PLASTICS B V	EXCY0098	Min. V-0, min. thick: 1.5 mm, 90 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94	UL recognized E45329	
Alt.	SABIC INNOVATIVE PLASTICS B V	945	Min. V-0, min. thick: 1.5 mm, 90 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94	UL recognized E45329	
Alt.	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	AC310(+)	Min. V-0, min. thick: 1.5 mm, 85 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94	UL recognized E162823	
Alt.	TEIJIN CHEMICALS LTD	LN-1250P	Min. V-0, min. thick: 1.5 mm, 125 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94	UL recognized E50075	
Alt.	TEIJIN CHEMICALS LTD	LN-1250G	Min. V-0, min. thick: 1.5 mm, 125 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94	UL recognized E50075	
PCB	WALEX ELECTRONIC (WUXI) CO LTD	T2A, T2B, T4	Min. V-0, min. 130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94, UL 796	UL recognized E154355	
Alt.	DONGGUAN HE TONG ELECTRONICS CO LTD	CEM1, 2V0, FR4	Min. V-0, min. 130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94, UL 796	UL recognized E243157	
Alt.	CHEERFUL ELECTRONIC	02, 03, 03A	Min. V-0, min. 130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94, UL 796	UL recognized E199724	

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

4.1.2	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity1	
Alt.	DONGGUAN DAYSUN ELECTRONIC CO LTD	DS2	Min. V-0, min. 130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94, UL 796	UL recognized E251754	
Alt.	SHANGHAI AREX PRECISION ELECTRONIC CO LTD	02V0, 03V0, 04V0	Min. V-0, min. 130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94, UL 796	UL recognized E186016	
Alt.	BRITE PLUS ELECTRONICS (SUZHOU) CO LTD	DKV0-3A, DGV0-3A	Min. V-0, min. 130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94, UL 796	UL recognized E177671	
Alt.	SHENZHEN TONGCHUANG XIN ELECTRONICS CO LTD	TCX	Min. V-0, min. 130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94, UL 796	UL recognized E250336	
Alt.	PACIFIC WIN INDUSTRIAL LTD	PW-02, PW-03	Min. V-0, min. 130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94, UL 796	UL recognized E228070	
Alt.	GOLDEN TRIANGLE PCB & TECHNOLOGIE S LTD	GT-D	Min. V-0, min. 130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94, UL 796	UL recognized E340752	
Alt.	KUOTIANG ENT LTD	C-2, C-2A	Min. V-0, min. 130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94, UL 796	UL recognized E227299	
Fusible resistor (RF1)	ANHUI CHANGSHENG ELECTRONICS CO LTD	RXF21-1W	1 Ω, 1 W	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 248-1, UL 248-14	Tested with appliance, UL recognized E306095	
Alt.	SHENZHEN GREAT ELECTRONICS CO LTD	RXF-1W	1 Ω, 1 W	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 248-1, UL 248-14	Tested with appliance, UL recognized E301541	

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

4.1.2	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity1	
Alt.	JIANGSU XINYANG ELECTRONIC COMPONENT CO LTD	RF10-1W	1 Ω , 1 W	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 248-1, UL 248-14	Tested with appliance, UL recognized E312842	
Alt.	SHENZHEN KAYOCOTA ELECTRONICS CO LTD	FRKNP-1WS	1 Ω , 1 W	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 248-1, UL 248-14	Tested with appliance, UL recognized E318056	
Alt.	ANHUI CHANGSHENG ELECTRONICS CO LTD	FRT-1W	1 Ω , 1 W	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 248-1, UL 248-14	Tested with appliance, UL recognized E306095	
Alt.	TZAI YUAN ENTERPRISE CO LTD	KNF1W	1 Ω , 1 W	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 248-1, UL 248-14	Tested with appliance, UL recognized E355632	
Alt.	Yageo Components (Suzhou) Co. Ltd.	FKN	1 Ω , 1 W	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 248-1, UL 248-14	Tested with appliance, UL recognized E323780	
Fuse (FS1) (for Circuit diagram/ PCB layout type 1 & 2),	Conquer Electronics Co., Ltd.	MST series	T1 A or T2 A, 250 V, LBC	IEC 60127-1, IEC 60127-3	VDE 40017118	
Alt.	Ever Island Electric Co., Ltd. And Walter Electric	2010	T1 A or T2 A, 250 V, LBC	IEC 60127-1, IEC 60127-3	VDE 40018781	
Alt.	Bel Fuse Ltd.	RST	T1 A or T2 A, 250 V, LBC	IEC 60127-1, IEC 60127-3	VDE 40011144	
Alt.	Cooper Bussmann LLC	SS-5	T1 A or T2 A, 250 V, LBC	IEC 60127-1, IEC 60127-3	VDE 40015513	
Alt.	Walter Electronic Co. Ltd.	ICP series	T1 A or T2 A, 250 V, LBC	IEC 60127-1, IEC 60127-3	VDE 40012824	

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

4.1.2	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity1	
Alt.	Shenzhen Lanson Electronics Co. Ltd.	SMT	T1 A or T2 A, 250 V, LBC	IEC 60127-1, IEC 60127-3	VDE 40012592	
Alt.	Das & Sons International Ltd.	385T	T1 A or T2 A, 250 V, LBC	IEC 60127-1, IEC 60127-3	VDE 40008524	
Fuse (RF1) (for Circuit diagram/ PCB layout type 2)	Walter Electronic Co. Ltd.	ICP series	T1 A or T2 A, 250 V, LBC	IEC 60127-1, IEC 60127-3	VDE 40012824	
Alt.	Zhongshan Lanbao Electrical Appliances Co., Ltd.	RTI-10 Serie(s)	T1 A or T2 A, 250 V, LBC	IEC 60127-1, IEC 60127-3	VDE 40017009	
Varistor (MOV1) (optional)	Joyin Co., Ltd.	JVR10N471K, JVR14N471K	Max. Continuous voltage: min 300 Vac (rms), 85 °C, The coating is V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 005937	
Alt.	Centra Science Corp.	10D471K, 14D471K	Max. Continuous voltage: min 300 Vac (rms), 85 °C, The coating is V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40008220	
Alt.	Thinking Electronic Industrial Co., Ltd.	TVR10471K, TVR14471K	Max. Continuous voltage: min 300 Vac (rms), 85 °C, The coating is V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 005944	
Alt.	Success Electronics Co., Ltd.	SVR10D471K, SVR14D471K	Max. Continuous voltage: min 300 Vac (rms), 85 °C, The coating is V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40030401	
Alt.	Ceramate Techn. Co., Ltd.	GNR10D471K, GNR14D471K	Max. Continuous voltage: min 300 Vac (rms), 85 °C, The coating is V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40031745	
Alt.	Brightking (Shenzhen) Co., Ltd.	14D471K, 10D471K	Max. Continuous voltage: min 300 Vac (rms), 85 °C, The coating is V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40027827	
Alt.	Lien Shun Electronics Co., Ltd.	10D471K, 14D471K	Max. Continuous voltage: min 300 Vac (rms), 85 °C, The coating is V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40005858	
Alt.	HONGZHI ENTERPRISES LTD	HEL-10D471K, HEL-14D471K	Max. Continuous voltage: min 300 Vac (rms), 85 °C, The coating is V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40008621	

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Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity1	
Alt.	GUANGXI NEW FUTURE INFORMATION INDUSTRY CO LTD	10D471K, 14D471K	Max. Continuous voltage: min 300 Vac (rms), 85 °C, The coating is V-0	IEC 61051-1 IEC 61051-2 IEC 61051-2-2	VDE 40030322	
Bridge diode (BD1)	Interchangeable	—	Min. 1.0 A, min. 1000 V	Applicable parts of IEC 62368- 1:2014 (2nd Edition)	—	
Electrolytic capacitor (C1, C2)	Interchangeable	—	15 uF, Min. 400 V, 105 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition)	—	
Inductors (LF1)	GlobTek/ENG /BOAM/ HAOPUWEI	RC00258	130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition)	Test in appliance	
IC (US1)	Interchangeable	—	1.5 mA, 18 Vdd	Applicable parts of IEC 62368- 1:2014 (2nd Edition)	—	
Sense Resistor (RS6)	Interchangeable	—	Min. 1.2 Ω	Applicable parts of IEC 62368- 1:2014 (2nd Edition)	—	
Sense Resistor (RS7)	Interchangeable	—	Min. 1.1 Ω	Applicable parts of IEC 62368- 1:2014 (2nd Edition)	—	
Bridging- Capacitor (CY1, CY2) (optional)	TDK Corporation	CD	Y1, max. 1000 pF, min. 250 Vac, 25/125/21/B	IEC/EN 60384- 14	VDE 40029780	
Alt.	Success Electronics Co., Ltd.	SE	Y1, max. 1000 pF, min. 250 Vac, 40/125/56/C	IEC/EN 60384- 14	VDE 40037211 VDE 40020002	
Alt.	Success Electronics Co., Ltd.	SB	Y1, max. 1000 pF, min. 250 Vac, 40/125/56/C	IEC/EN 60384- 14	VDE 40037221 VDE 40020001	
Alt.	Murata Mfg. Co., Ltd.	KX	Y1, max. 1000 pF, min. 250 Vac, 25/125/21/B	IEC/EN 60384- 14	VDE 40002831	
Alt.	Walsin Technology Corp.	AH	Y1, max. 1000 pF, min. 250 Vac, 25/125/21/C	IEC/EN 60384- 14	VDE 40001804	

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

4.1.2	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity1	
Alt.	JYA-NAY Co., Ltd.	JN	Y1, max. 1000 pF, min. 250 Vac, 25/125/21/C	IEC/EN 60384- 14	VDE 40001831	
Alt.	Haohua Electronic Co.	CT7	Y1, max. 1000 pF, min. 250 Vac, 30/125/56/C	IEC/EN 60384- 14	VDE 40003902	
Alt.	Hongzhi Enterprises Ltd.	Y	Y1, max. 1000 pF, min. 250 Vac, 25/125/21/B	IEC/EN 60384- 14	VDE 40038760	
Alt.	Jerro Electronics Corp.	JX series	Y1, max. 1000 pF, min. 250 Vac, 40/125/21/C	IEC/EN 60384- 14	VDE 40032158	
Transformer Material List:						
Transformer (T1)	GlobTek/ENG /BOAM/ HAOPUWEI	XF01036	Class B	Applicable parts of IEC 62368- 1:2014 (2nd Edition)	Tested with appliance	
- Magnet wire	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEWN/U	130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition)	Tested with appliance	
Alt.	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEWS/U	130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition)	Tested with appliance	
Alt.	JUNG SHING WIRE CO LTD	UEW-4	130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition)	Tested with appliance	
Alt.	JUNG SHING WIRE CO LTD	UEY-2	130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition)	Tested with appliance	
Alt.	JIANGSU HONGLIU MAGNET WIRE TECHNOLOGY	2UEW/130	130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition)	Tested with appliance	
Alt.	CHANGZHOU DAYANG WIRE & CABLE CO LTD	2UEW/130	130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition)	Tested with appliance	
Alt.	WUXI JUFENG COMPOUND LINE CO LTD	2UEWB	130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition)	Tested with appliance	

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

4.1.2	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity1	
Alt.	JIANGSU DARTONG M & E CO LTD	UEW	130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition)	Tested with appliance	
Alt.	SHANDONG SAINT ELECTRIC CO LTD	UEW/130	130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition)	Tested with appliance	
Alt.	ZHEJIANG LANGLI ELECTRIC EQUIPMENTS CO LTD	UEW	130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition)	Tested with appliance	
-Triple- insulated wire	Great Leoflon Industrial Co., Ltd.	TRW (B) Serie(s)	130 °C	IEC 60950-1	VDE 136581	
Alt.	COSMOLINK CO. Ltd.	TIW-M Serie(s)	130 °C	IEC 60950-1	VDE 138053	
Alt.	Furukawa Electric Co., Ltd. Electronics	TEX-E	130 °C	IEC 60950-1	VDE 006735	
Alt.	TOTOKU ELECTRIC CO LTD	TIW-2	130 °C	IEC 60950-1	VDE 40005152	
Alt.	E&B TECHNOLOGY CO LTD	E&B-XXXB, E&B-XXXB-1	130 °C	IEC 60950-1	VDE 40023473	
Alt.	SHENZHEN JIUDING NEW MATERIAL CO LTD	DTIW-B	130 °C	IEC 60950-1	VDE 40037495	
-Bobbin	CHANG CHUN PLASTICS CO LTD	T375J	Min. V-0, 150 °C, Phenolic	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94	Tested with appliance, UL recognized E59481	
Alt.	CHANG CHUN PLASTICS CO LTD	T375HF	Min. V-0, 150 °C, Phenolic	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94	Tested with appliance, UL recognized E59481	
Alt.	SUMITOMO BAKELITE CO LTD	PM-9820	Min. V-0, 150 °C, Phenolic	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94	Tested with appliance, UL recognized E41429	

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

4.1.2	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity1	
Alt.	HITACHI CHEMICAL CO LTD	CP-J-8800	Min. V-0, 150 °C, Phenolic	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94	Tested with appliance, UL recognized E42956	
-Insulating tape	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1, 1350T-1, 44	Min. 130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 510	Tested with appliance, UL recognized E17385	
Alt.	BONDTEC PACIFIC CO LTD	370S	Min. 130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 510	Tested with appliance, UL recognized E175868	
Alt.	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ CT WF	Min. 130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 510	Tested with appliance, UL recognized E165111	
Alt.	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	Min. 130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 510	Tested with appliance, UL recognized E246950	
Alt.	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	Min. 130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 510	Tested with appliance, UL recognized E246820	
Alt.	SHEN ZHEN WEI CHUANG DA PACKAGING MATERIALS CO., LTD.	W-001	Min. 130 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 510	Tested with appliance, UL recognized E333581	
-PTFE tubing	GREAT HOLDING INDUSTRIAL CO LTD	TFT / TFS	Min. 300 V, 200 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94	Tested with appliance, UL recognized E156256	
Alt.	SHENZHEN WOER HEAT- SHRINKABLE MATERIAL CO LTD	WF	600 V, 200 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94	Tested with appliance, UL recognized E203950	
Alt.	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TT-T, CB- TT-S	Min. 300 V, 200 °C	Applicable parts of IEC 62368- 1:2014 (2nd Edition), UL 94	Tested with appliance, UL recognized E180908	

Supplementary information:

1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.

2) For all transformers under all manufacturers.

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.1.2	TABLE: List of critical components		P
Object/part No.	Manufacturer/ trademark	Type / model	Technical data
		Standard	Mark(s) of conformity1
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
4.8.4.5	TABLE: Impact		—
	Impacts per surface	Surface tested	Impact energy (Nm)
			Comments
4.8.4.6	TABLE: Crush test		—
	Test position	Surface tested	Crushing Force (N)
			Duration force applied (s)
Supplementary information:			
4.8.5	TABLE: Lithium coin/button cell batteries mechanical test result		N/A
	Test position	Surface tested	Force (N)
			Duration force applied (s)
Supplementary information:			

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Clause	Requirement + Test	Result - Remark	Verdict

5.2		Table: Classification of electrical energy sources					P
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
Test on model GTM46161-165.0-USB:							
1	264 Vac	Primary circuits supplied by a.c. mains supply	Normal	--	--	--	ES3
			Abnormal	--	--	--	
			Single fault – Q1(D-S)/SC	--	--	--	
2	264 Vac	Output	Normal	11.3 Vdc	--	--	ES1
			Abnormal	--	--	--	
			Single fault – DS3	0	--	--	
3	264 Vac	Output	Normal	21.2 Vdc	--	--	ES1
			Abnormal	--	--	--	
			Single fault – DS3	11.7 Vdc	--	--	
5.2.2.3 - Capacitance Limits							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class	
				Capacitance, nF	Upk (V)		
Test Conditions: Normal – Abnormal - Supplementary information: SC=Short Circuit, OC=Short Circuit							

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

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements			P
	Supply voltage (V).....:	90 Vac/60 Hz	264 Vac/60 Hz	—
	Ambient Tmin (°C).....:	40		—
	Ambient Tmax (°C).....:	40		—
Maximum measured temperature T of part/at.....:		T (°C)		Allowed T _{max} (°C)

Test on model GTM46161-165.0-USB:

1. Enclosure Inside near Inlet Blade	75.9	73.3	80
2. PWB near Rectifier Bridge (BD1)	88.3	73.0	130
3. PWB near Transformer	102.5	103.1	130
4. Transformer (T1) Winding	102.5	99.2	110
5. Transformer (T1) Core	105.4	104.6	Ref.
6. CY1 body near Transformer	71.1	70.8	125
7. CY2 body near Transformer	83.6	88.4	125
8. Enclosure Inside near Transformer (T1) Top	78.6	78.1	For reference
9. Enclosure Outside near Transformer (T1) Top	69.9	69.8	77
10. Ambient	40.0	40.0	--

Supplementary information:

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

Supplementary information:

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

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics			P
Allowed impression diameter (mm).....:			≤ 2 mm	—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)	
Blade holder	(C2950)	125	1.56	
Blade holder	(CX7211/EXCY0098)	125	1.21	
Blade holder	(945)	125	1.23	
Blade holder	AC310(+)	125	1.25	
Blade holder	(LN-1250P/LN-1250G)	125	1.13	
Bobbin	(T375J/T375HF)	125	1.02	
Bobbin	(PM-9820)	125	0.98	
Bobbin	(CP-J-8800)	125	1.11	
Supplementary information:				

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						P
learance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Frequency (kHz)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
L to N before fuse(FI)	380	240	<30	2.22	3.6	2.5	3.6
Two poles of fuse(FI)	380	240	<30	2.22	3.0	2.5	3.0
CY1 Primary circuits to secondary circuits(BI)	380	240	66.7	2.22	4.4	2.5	4.4
CY2 Primary circuits to secondary circuits(SI)	380	240	66.7	2.22	8.2	2.5	8.2
Live parts to Enclosure parts(RI)	380	240	<30	4.44	7.5	5.0	7.5
Live parts to accessible parts(RI)	380	240	66.7	4.44	7.0	5.0	7.0
Primary circuit to secondary circuits (PCB trace under T1) (RI)	496	240	66.7	4.44	10.5	5.0	10.5
Transformer Primary winding to secondary winding(RI)	496	240	66.7	4.44	21.4	5.0	21.4
Transformer secondary winding to core(RI)	496	240	66.7	4.44	8.7	5.0	8.7
Supplementary information:							
B=Basic insulation, S=Supplementary insulation, R=Reinforced insulation.							
Material group: IIIa/IIIb:							
Required value was multiplied by the factor 1,48 due to the maximum specified altitude of 5000 m.							

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage	P
	Overvoltage Category (OV): OVC II	

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Pollution Degree: 2		
Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)
1)	2500	3.0	1)
Supplementary information: Refer to 5.4.2.2, 5.4.2.4 and 5.4.3, Required withstand voltage is 2500 Vpk			

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:				

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements					P
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)	
Enclosure	380	66.7K	Plastic	0.4	See appended table 4.1.2	
Bobbin of T1	496	66.7K	Phenolic	0.4	See appended table 4.1.2	
Insulation tape on T1 and secondary heatsink	496	66.7K	--	2 layers	See appended table 4.1.2	
Insulation sheet	496	66.7K	Phenolic	0.4	See appended table 4.1.2	
Thin sheet at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required layer (s)	Layer (s)	
—	—	—	—	—	—	
Supplementary information:						
1. The core of transformer (T1) is considered as primary winding.						
2. (See appended table 4.1.2)						

5.4.9	TABLE: Electric strength tests				P
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes/No		
Functional:					
Line and Neutral after current fuse (F1) opened	DC	2500	No		
Reinforced:					
L/N and secondary circuits	DC	4000	No		
L/N and plastic enclosure covered with metal foil	DC	4000	No		

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.9	TABLE: Electric strength tests		P
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V)
Transformer (T1): Primary and secondary		DC	4000
Transformer (T1): Primary winding to core		DC	4000
Routine Tests:			
N/A		N/A	N/A
Supplementary information:			

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

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

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part			P
Supply voltage.....:		264 Vac/60 Hz		—
Location		Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7		Touch current (mA)
L, N to USB Port		1 (e closed, normal and reverse polarity p)		0.11
L, N to USB Port		2* (netural open (switch n), earth intact and normal polarity, again in reverse polarity (switch p)		0.18
L, N to USB Port (CY1 short circuit)		1 (e closed, normal and reverse polarity p)		0.15

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Clause	Requirement + Test	Result - Remark	Verdict
L, N to USB Port (CY1 short circuit)	2* (netural open (switch n), earth intact and normal polarity, again in reverse polarity (switch p)		0.18
--	3 (for IT system, each phase conductor faulted to earth, one at a time (switch g)		--
--	4 (for three-phase, each phase conductor open, one at a time switches l)		--
--	5 (IT power system or three phase delta system)		--
--	6 (three-phase for use on centre- earthed dalta supply system)		--
--	8 (incidental electrically connected to other parts)		--
<p>Supplementary Information:</p> <p>[1] Supply voltage is the anticipated maximum Touch Voltage</p> <p>[2] Earthed neutral conductor [Voltage differences less than 1% or more]</p> <p>[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3 [4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.</p> <p>[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.</p> <p>a) Not considered IT power system. b) Not three phase equipment.</p> <p>c) Not IT power system or three phase delta system.</p> <p>d) Not three-phase for use on centre-earthed dalta supply system. e) Not such parts.</p>			

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Clause	Requirement + Test	Result - Remark	Verdict

6.2.2	Table: Electrical power sources (PS) measurements for classification					P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s*)	PS Classification	
Test on model GTM46161-165.0-USB:						
Output (See 6.2.2.2)	Normal operation	Power (W) :	9.8	9.8	PS1	
		V _A (V) :	3.04	3.04		
		I _A (A) :	3.258	3.258		
RS5 (See 6.2.2.3)	Short circuit	Power (W) :	9.8	9.8	PS1	
		V _A (V) :	3.04	3.04		
		I _A (A) :	3.258	3.258		
Supplementary Information:						
(*) Measurement taken only when limits at 3 seconds exceed PS1 limits						

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)				P
Location	Open circuit voltage After 3 s (V _p)	Measured r.m.s current (I _{rms})	Calculated value (V _p x I _{rms})	Arcing PIS? Yes / No	
—	—	—	—	—	
Supplementary information:					
An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V _p) and normal operating condition rms current (I _{rms}) is greater than 15.					
The EUT is a Pluggable type A equipment					

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
—	—	—	—	—	Yes
Supplementary Information:					
A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.					
If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.					
A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, <u>or</u> (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.					

8.5.5	TABLE: High Pressure Lamp			N/A
Description	Values	Energy Source Classification		
Lamp type		—		

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
Test on Circuit diagram/PCB layout type 1 (Model: GTM46161-165.0-USB):								
90 V/50 Hz	0.374	--	20.2	—	FS1/RF1	0.374	Maximum rated output load	
90 V/60 Hz	0.382	--	20.1	—	FS1/RF1	0.382	Maximum rated output load	
100 V/50 Hz	0.341	0.45	19.9	—	FS1/RF1	0.341	Maximum rated output load	
100 V/60 Hz	0.349	0.45	19.8	—	FS1/RF1	0.349	Maximum rated output load	
240 V/50 Hz	0.185	0.45	20.0	—	FS1/RF1	0.185	Maximum rated output load	
240 V/60 Hz	0.185	0.45	20.0	—	FS1/RF1	0.185	Maximum rated output load	
264 V/50 Hz	0.174	--	20.1	—	FS1/RF1	0.174	Maximum rated output load	
264 V/60 Hz	0.176	--	20.4	—	FS1/RF1	0.176	Maximum rated output load	
Test on Circuit diagram/PCB layout type 2 (Model: GTM46161-165.0-USB1A):								
90 V/50 Hz	0.353	--	19.2	—	FS1/RF1	0.353	Maximum rated output load	
90 V/60 Hz	0.354	--	19.2	—	FS1/RF1	0.354	Maximum rated output load	
100 V/50 Hz	0.318	0.45	19.0	—	FS1/RF1	0.318	Maximum rated output load	
100 V/60 Hz	0.319	0.45	19.0	—	FS1/RF1	0.319	Maximum rated output load	
240 V/50 Hz	0.160	0.45	18.9	—	FS1/RF1	0.160	Maximum rated output load	
240 V/60 Hz	0.158	0.45	18.9	—	FS1/RF1	0.158	Maximum rated output load	
264 V/50 Hz	0.149	--	19.1	—	FS1/RF1	0.149	Maximum rated output load	
264 V/60 Hz	0.148	--	19.1	—	FS1/RF1	0.148	Maximum rated output load	
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured								

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

B.3		TABLE: Abnormal operating condition tests						P
Ambient temperature (°C).....:						25		—
Power source for EUT: Manufacturer, model/type, output ratin...:						See appended table 4.1.2		—
Component No	Fault Condition	Supply voltage (V)	Test time (ms)	Fuse no.	Fuse current (A)	T-couple	Temp. (°C)	Observation
C1	SC	90/264	1 s	FS1/RF1	0	K type	--	Fuse opened immediately no hazards, repeat 10 times with same result
C2	SC	90/264	1 s	FS1/RF1	0	K type	--	Fuse opened immediately no hazards, repeat 10 times with same result
DS1	SC	90/264	7 h	FS1/RF1	0.525	K type	--	Unit work normally no hazards.
RS10	SC	90/264	10 min.	FS1/RF1	0	K type	--	Unit shutdown, immediately no hazards.
RS7	SC	90/264	10 min.	FS1/RF1	0	K type	--	Unit shutdown, immediately no hazards.
DS3	SC	90/264	7 h	FS1/RF1	0.017	K type	--	Unit operated normally. no hazards.
C5	SC	90/264	10 min.	FS1/RF1	0	K type	--	Output circuit protected instantly. Unit is recoverable. no hazards.
RS20	SC	90/264	1 s	FS1/RF1	0	K type	--	The Voltage dropped down to 0.64 V. Work for 7 h. Unit is recoverable. no hazards.

Supplementary information:

1. S: Short-circuited; O: Open-circuited; O/L: Overloaded; B: Blocked; L: Locked.
2. Observation: The observations during and after fault condition tests.
3. Damaged: Which component (components) damaged during the fault condition test.
4. Temp: The maximum temperature of transformer (T1) winding.
5. Max. Voltage: The maximum accessible voltage of DC output terminal during the fault condition test.

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

B.4	TABLE: Fault condition tests							P
Ambient temperature (°C).....:					25			—
Power source for EUT: Manufacturer, model/type, output rating					See appended table 4.1.2			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Output	OI	90	4.5 h	FS1/RF1	Max. 0.362 A	K type	Temperature recorded: T1 winding = 123 °C Enclosure: 85 °C	Load to 3.646 A, EUT protected immediately, no hazards.
Output	OI	264	4.5 h	FS1/RF1	Max. 0.199 A	K type	Temperature recorded: T1 winding = 119 °C Enclosure: 82 °C	Load to 3.630 A, EUT protected immediately, no hazards.
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. S: Short-circuited; O: Open-circuited; O/L: Overloaded; B: Blocked; L: Locked								

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:										

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

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				
	Normal				
	Abnormal				
	Single fault – SC/OC				
Battery identification	Charging at T _{lowest} (°C)	Observation	Charging at T _{highest} (°C)	Observation	
Supplementary Information:					

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)					P
Note: Measured UOC (V) with all load circuits disconnected: See below						
Output Circuit	Components	U _{oc} (V)	I _{sc} (A)		S (VA)	
			Meas	Limit	Meas	Limit
Output (V+/V-)	Normal condition	5.48 Vdc	3.2	≤ 8.0	16.0	≤ 100
Output (V+/V-)	Single fault (RS6 & RS7 Sc)	0	Unit shut down	≤ 8.0	Unit shut down	≤ 100
Supplementary Information: SC=Short circuit, OC=Open circuit						

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

T.2, T.3, T.4, T.5		TABLE: Steady force test				P
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation	
Enclosure top	1)	2.0	100	5	Intact	
Enclosure bottom	1)	2.0	100	5	Intact	
Enclosure side	1)	2.0	100	5	Intact	
Supplementary information: See appended table 4.1.2						

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

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

T.7	TABLE: Drop tests				P
Part/Location		Material	Thickness (mm)	Drop Height (mm)	Observation
Enclosure		1)	2.0	1000	Intact
Supplementary information:					
1. See appended table 4.1.2.					
2. The voltage difference shall not exceed 5%. (M.4.4.3).					
3. After 1 m drop, the charging/discharging circuit functions are still available operation and all safeguards are effective. (M.4.4.4).					

T.8	TABLE: Stress relief test				P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Whole EUT	¹⁾	2.0	89	7	Intact
Supplementary information: See appended table 4.1.2					

A completed list of used test equipment shall be provided in the Test Reports when a Manufacturer Testing Laboratory according to TMP/CTF stage 1 or WMT/CTF stage 2 procedure has been used.

IEC 62368_1B

IEC 62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment - Part 1: Safety requirements)
Differences according to: EN 62368-1:2014+A11:2017
Attachment Form No: EU_GD_IEC62368_1B_II
Attachment Originator: Nemko AS
Master Attachment: Date 2017-09-22
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	CENELEC COMMON MODIFICATIONS (EN)					—
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z".					P
CONTENTS	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords					P
	Delete all the "country" notes in the reference document (IEC 62368-1:2014) according to the following list:					P
	0.2.1	Note	1	Note 3	4.1.15	Note
	4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c
	5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note
	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3
	5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4
	10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3
	For special national conditions, see Annex ZB.					—

IEC 62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1	Add the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.		N/A
4.Z1	Add the following new subclause after 4.9: To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. mains , protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): 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; 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; c) it is permitted for pluggable equipment type B or permanently connected equipment , to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for pluggable equipment type A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		P
5.4.2.3.2.4	Add the following to the end of this subclause: The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.		P
10.2.1	Add the following to ^{c)} and ^{d)} in table 39: For additional requirements, see 10.5.1.		N/A

IEC 62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	<p>Add the following after the first paragraph:</p> <p><i>For RS 1 compliance is checked by measurement under the following conditions:</i></p> <p><i>In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or presets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.</i></p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p><i>The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus.</i></p> <p><i>Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.</i></p> <p><i>For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.</i></p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>		N/A
10.6.1	<p>Add the following paragraph to the end of the subclause:</p> <p>EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.</p>		N/A
10.Z1	<p>Add the following new subclause after 10.6.5.</p> <p>10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</p> <p>The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz).</p> <p>For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566</p>		N/A

IEC 62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	Add the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.		N/A
Bibliography	Add the following standards: Add the following notes for the standards indicated: IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.		
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		—
4.1.15	Denmark, Finland, Norway and Sweden To the end of the subclause the following is added: Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Denmark : "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord." In Finland : "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway : "Apparatet må tilkoples jordet stikkontakt" In Sweden : "Apparaten skall anslutas till jordat uttag"		N/A

IEC 62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	United Kingdom To the end of the subclause the following is added: 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	The EUT is not directly plug-in equipment	N/A
5.2.2.2	Denmark After the 2nd paragraph add the following: A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A

IEC 62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.11.1 and Annex G	<p>Finland and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>For separation of the telecommunication network from earth the following is applicable:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5kV. <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> • the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; • the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14. 		N/A

IEC 62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.2.1	Norway After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).		P
5.5.6	Finland, Norway and Sweden To the end of the subclause the following is added: Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.	No such device used as safeguard	N/A
5.6.1	Denmark Add to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.		N/A
5.6.4.2.1	Ireland and United Kingdom After the indent for pluggable equipment type A , the following is added: – the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.		N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm ² to 1,5 mm ² in cross-sectional area.		N/A
5.7.5	Denmark To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A

IEC 62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.1	<p>Norway and Sweden</p> <p>To the end of the subclause the following is added: 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: “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): “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: ”Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”</p>		N/A

IEC 62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	Denmark To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA.		N/A
B.3.1 and B.4	Ireland and United Kingdom The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of direct plug-in equipment , tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the direct plug-in equipment , until the requirements of Annexes B.3.1 and B.4 are met		N/A
G.4.2	Denmark 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		P

IEC 62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	United Kingdom To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.	The EUT is not directly plug-in equipment	N/A
G.7.1	United Kingdom To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		P
G.7.1	Ireland To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		P
G.7.2	Ireland and United Kingdom To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm ² is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A

IEC 62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		—
10.5.2	<p>Germany</p> <p>The following requirement applies:</p> <p>For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking.</p> <p><i>Justification:</i></p> <p>German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM.</p> <p>NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int +49-531-592-6320, Internet: http://www.ptb.de</p>		N/A

IEC 62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<p align="center">ATTACHMENT TO TEST REPORT</p> <p align="center">IEC 62368-1</p> <p align="center">(AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES</p> <p align="center">(Audio/video, information and communication technology equipment)</p>			
Differences according to: AS/NZS 62368.1:2018			
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	National Differences		—
Appendix ZZ	Variations to IEC 62368-1:2014 (ED. 2.0) for Australia and New Zealand		—
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2014 (ED. 2.0)		—
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		—
2	<p>Add the following to the list of normative references:</p> <p>The following normative documents are referenced in Appendix ZZ:</p> <p>-AS/NZS 3112, <i>Approval and test specification—Plugs and socket-outlets</i></p> <p>-AS/NZS 3123, <i>Approval and test specification—Plugs, socket-outlets and couplers for general industrial application</i></p> <p>-AS/NZS 3191, <i>Electric flexible cords</i></p> <p>-AS/NZS 60065, <i>Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)</i></p> <p>-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></p> <p>-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></p>		P

IEC 62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>-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></p> <p>-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></p> <p>-AS/NZS 60695.11.10, <i>Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods</i></p> <p>-AS/NZS 60884.1, <i>Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</i></p> <p>-AS/NZS 60950.1:2015, <i>Information technology equipment—Safety, Part 1: General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)</i></p> <p>IEC 61032:1997, <i>Protection of persons and equipment by enclosures—Probes for verification</i></p> <p>-AS/NZS 61558.1:2008 (including Amendment 2:2015), <i>Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 2.1, MOD)</i></p> <p>-AS/NZS 61558.2.16, <i>Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.</i></p>		
4.1.1	<p>Application of requirements and acceptance of materials, components and subassemblies</p> <p>1 <i>Replace the text 'IEC 60950-1' with 'AS/NZS 60950.1:2015'.</i></p> <p>2 <i>Replace the text 'IEC 60065' with 'AS/NZS 60065'.</i></p>		P
4.7	Equipment for direct insertion into mains socket-outlets		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.2	Requirements Delete the text of the second paragraph and replace with the following: 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.	The EUT is not directly plug-in equipment	N/A
4.7.3	Compliance Criteria Delete the first paragraph and Note 1 and Note 2 and replace with the following: Compliance is checked by inspection and, if necessary, by the tests in AS/NZS 3112.		N/A
4.8	Delete existing clause title and replace with the following: 4.8 Products containing coin/button cell batteries		N/A
4.8.1	General 1 Second dashed point, delete the text and replace with the following: – include coin/button cell batteries with a diameter of 32 mm or less. 2 After the second dashed point, insert the following Note: NOTE 1: Batteries are specified in IEC 60086-2. 3 After the third dashed point, renumber the existing Note as 'NOTE 2'. 4 Fifth dashed point, delete the word 'lithium'.	No batter	N/A
4.8.2	Instructional Safeguard First line, delete the word 'lithium'.		N/A
4.8.3	Construction First line, after the word 'Equipment' insert the words 'containing one or more coin/button batteries and'		N/A
4.8.5	Compliance criteria Delete the first paragraph and replace with the following: 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.		N/A

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Clause	Requirement + Test		Result - Remark		Verdict
5.4.10.2	Test methods				N/A
5.4.10.2.1	General Delete 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.		Not connected to such external circuit		N/A
Table 29	Replace the table with the following:				N/A
Parts		Impulse test		Steady state test	
		New Zealand	Australia	New Zealand	Australia
Parts indicated in Clause 5.4.10.1 a) ^a		2.5 kV 10/700 µs	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment. 10/700 µs	1.5 kV	3 kV
Parts indicated in Clause 5.4.10.1 b) and c) ^b		1.5 kV 10/700 µs ^c		1.0 kV	1.5 kV
^a Surge suppressors shall not be removed.					
^b Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment.					
^c During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.					
5.4.10.2.2	After the first paragraph, <i>insert</i> new Notes 201 and 202 as follows: NOTE 201 For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.				N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.10.2.3	After the first paragraph, <i>insert</i> new Notes 201 and 202 as follows: NOTE 201 For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
6	Electrically-caused fire		N/A
6.1	General After the first paragraph, <i>insert</i> the following new paragraph: Alternatively, the requirements of Clauses 6.2 to 6.5.2 are considered to be fulfilled if the equipment complies with the requirements of Clause 6.202		N/A
6.6	After Clause 6.6, <i>add</i> the new Clauses 6.201 and 6.202 as follows: 6.201 External power supplies, docking stations and other similar devices and 6.202 Resistance to fire—Alternative tests (see special national conditions)		N/A
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment In the first dashed row and the second dashed rows <i>replace</i> 'IEC 60950-1:2005' with 'AS/NZS 60950.1:2015'.	Not Large data storage equipment	N/A
8.6	Stability of equipment		P

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

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Clause	Requirement + Test	Result - Remark	Verdict
Paragraph G.5.3.1	Transformers, General 1 In the third dashed point <i>replace</i> 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 In the fourth dashed point <i>replace</i> 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.		P
Paragraph G.7.1	Mains supply cords, General In the fourth dashed paragraph, <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'		P
Table G.5	Sizes of conductors 1 In the second row, first column, <i>delete</i> '6' and <i>replace</i> with '7.5' 2 In the second row, second column, <i>delete</i> '0,75' and <i>replace</i> with '0.75' ^b 3 <i>Delete</i> Note 1. 4 <i>Replace</i> 'NOTE 2' with 'NOTE:'. 5 <i>Delete</i> the text of 'Footnote b' and <i>replace</i> with the following: ^b This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm ² three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 In Footnote c <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1' 7 In Footnote d <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'		P
Annex M Paragraph M.3.2	Protection circuits for batteries provided within the equipment, Test method After the first dashed point <i>add</i> the following Note: NOTE 201: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of SELV may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.	No batter	N/A
	Special national conditions (if any)		P

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

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Clause	Requirement + Test	Result - Remark	Verdict
	gears, cams, belts and bearings; – small electrical components, such as capacitors with a volume not exceeding 1 750 mm ³ , 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. NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to another.		
	<i>Compliance shall be checked by the tests of Clauses 6.202.2, 6.202.3 and 6.202.4.</i> For the base material of printed boards, compliance shall be checked by the test of Clause 6.202.5. The tests shall be carried out on parts of non-metallic material which have been removed from the equipment. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring.		N/A
6.202.2	Testing of non-metallic materials Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the relevant part is not thinner than the sample tested.		N/A
6.202.3	Testing of insulating materials Parts of insulating material supporting Potential Ignition Sources shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE: Contacts in components such as switch contacts are considered to be connections		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	<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

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

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>If parts, other than enclosures, do not withstand the glow wire tests of Clause 6.202.3, by failure to extinguish within 30 s after the removal of the glowwire tip, the needle-flame test detailed in Clause 6.202.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of Clause 6.202.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested.</p> <p>NOTE 1: If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing.</p> <p>NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing.</p> <p>NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.</p>		

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6.202.5	<p>Testing of printed boards</p> <p>The base material of printed boards shall be subjected to the needle-flame test of Clause 6.202.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge</p> <p>is less than 3 mm from a potential ignition source.</p> <p>The test is not carried out if—</p> <ul style="list-style-type: none"> – the printed board does not carry any potential ignition source; – the base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and <p>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</p> <ul style="list-style-type: none"> – the base material of printed boards, on which the available equipment power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. <p><i>Conformance shall be determined using the smallest thickness of the material.</i></p> <p>NOTE: Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximize the apparent power for more than 2 min when the circuit supplied is disconnected.</p>		N/A

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6.202.6	For open circuit voltages greater than 4 kV Potential ignition sources with open circuit voltages exceeding 4 kV (peak) a.c. or d.c. under normal operating conditions shall be contained in a FIRE ENCLOSURE which shall comply with flammability category V-1 or better according to AS/NZS 60695.11.10.	No voltages more than 4 kV	N/A
8.6.1.201	8.6.1.201 Instructional safeguard for fixed-mount television sets 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		P
8.6.1.202	Restraining device 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.	Sales to New Zealand and Australia need an additional evaluation.	N/A

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<p align="center">ATTACHMENT TO TEST REPORT IEC 62368-1 2th Ed.</p> <p align="center">U.S.A. NATIONAL DIFFERENCES</p> <p align="center">Audio/video, information and communication technology equipment – Part 1: Safety requirements</p>			
Differences according to.....: CSA/UL 62368-1:2014			
Attachment Form No.....: US&CA_ND_IEC 180800332TWN-001R1623681B			
Attachment Originator UL(US)			
Master Attachment.....: Date 2015-06			
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Clause	Requirement + Test	Result - Remark	Verdict
<p align="center">IEC 62368-1 - US and Canadian National Differences</p> <p align="center">Special National Conditions based on Regulations and Other National Differences</p>			
1.1	All equipment is to be designed to allow installation according to the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.		P
1.4	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		P
4.1.17	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.		N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		N/A
4.8	Lithium coin / button cell batteries have modified special construction and performance requirements.		N/A

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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	The EUT is a Class III 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
Annex F (F.3.3.8)	Output terminals provided for supply of other equipment, except mains, supply are marked with a maximum rating or references to which equipment it is permitted to be connected.		P
Annex G (G.7.1)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
Annex G (G.7.3)	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	Sales to United States of America and Canada an additional evaluation.	N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.	Sales to United States of America and Canada an additional evaluation.	N/A
Annex G (G.7.5)	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V d.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A

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Annex M	Battery packs for stationary applications comply with special component requirements.	No such device	N/A
Annex DVA (1)	Equipment intended for use in spaces used for environmental air are subjected to special flammability requirements for heat and visible smoke release.		N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. & Canadian Regulations.		N/A
	Baby monitors additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
Annex DVA (5.6.3)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		N/A
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a min. flammability classification of V-1.		N/A
Annex DVA (10.3.1)	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (10.5.1)	Equipment that produces ionizing radiation complies with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A

IEC 62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (F.3.3.3)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."		N/A
Annex DVA (F.3.3.5)	Equipment identified for ITE (computer) room installation is marked with the rated current		N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position		N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles complies with NEC 250.146(D) and CEC 10-112 and 10-906(8).		N/A
Annex DVA (G.4.3)	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.		N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A
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

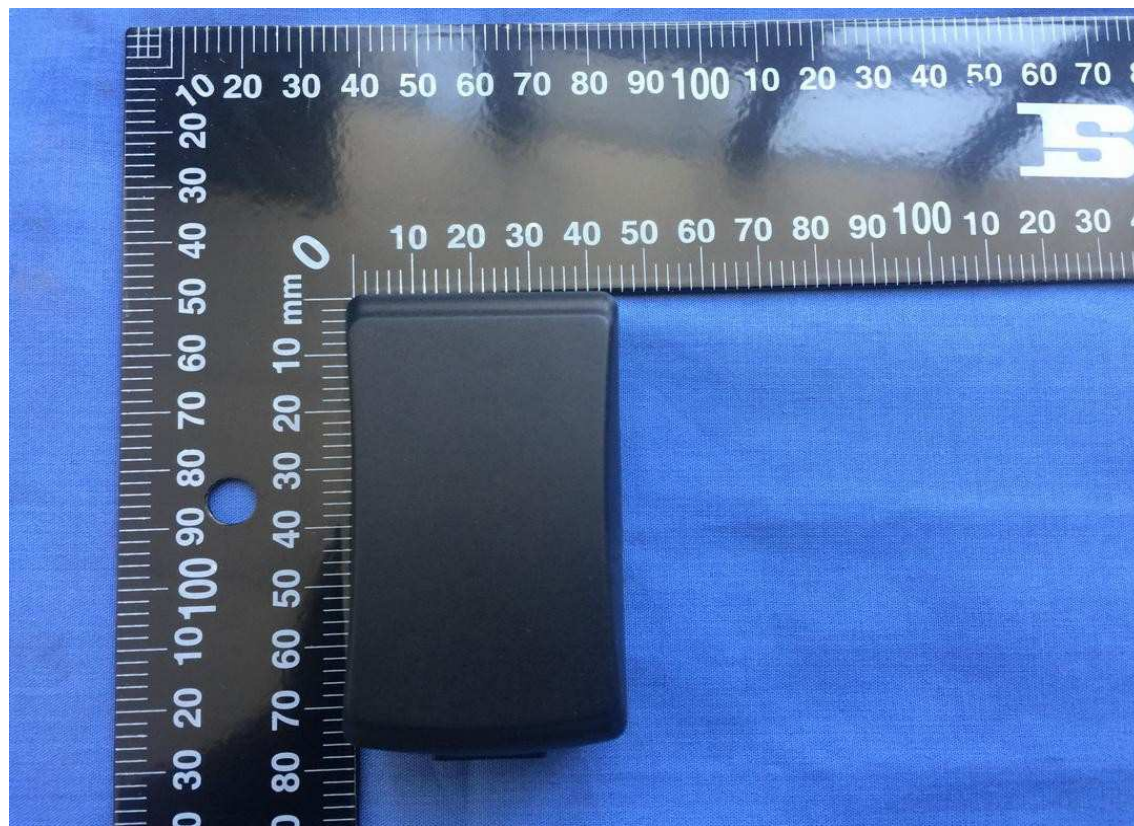
IEC 62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (Q)	Wiring terminals intended to supply Class 2 outputs according to the NEC or CEC Part 1 are marked with the voltage rating and "Class 2" or equivalent; marking is located adjacent to the terminals and visible 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.		N/A
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

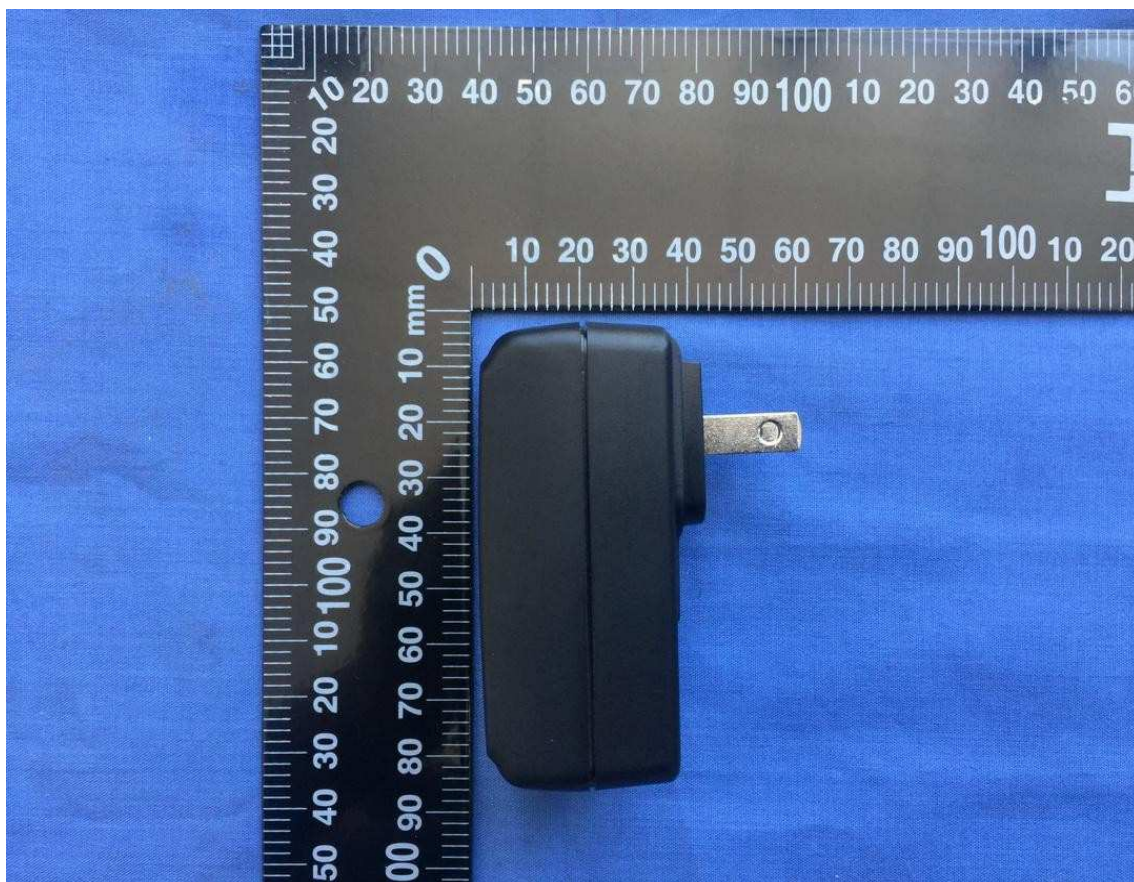
IEC 62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.3.2)	Terminals for permanent wiring, including protective earthing terminals, are suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and are specially marked when specified.		N/A
Annex DVH (DVH.3.2)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, complies with special earthing, wiring, marking and installation instruction requirements.		N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.		N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A

External view of EUT



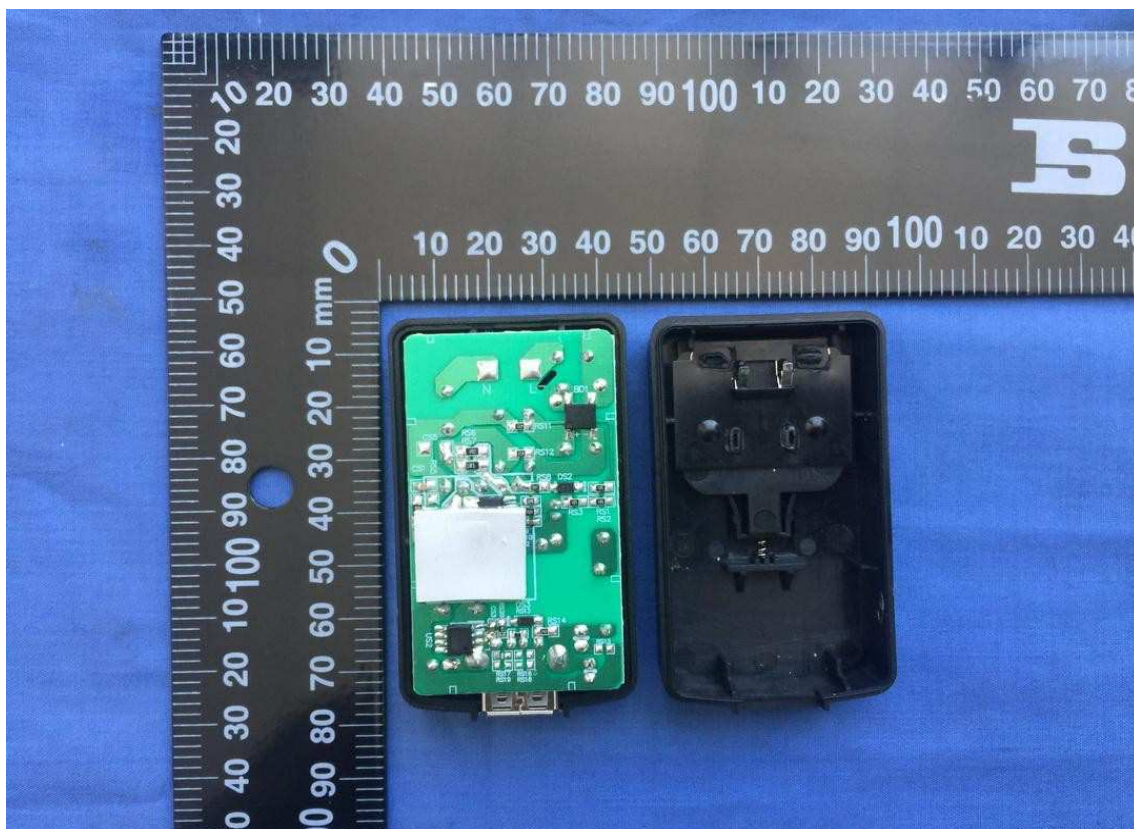
External view of EUT



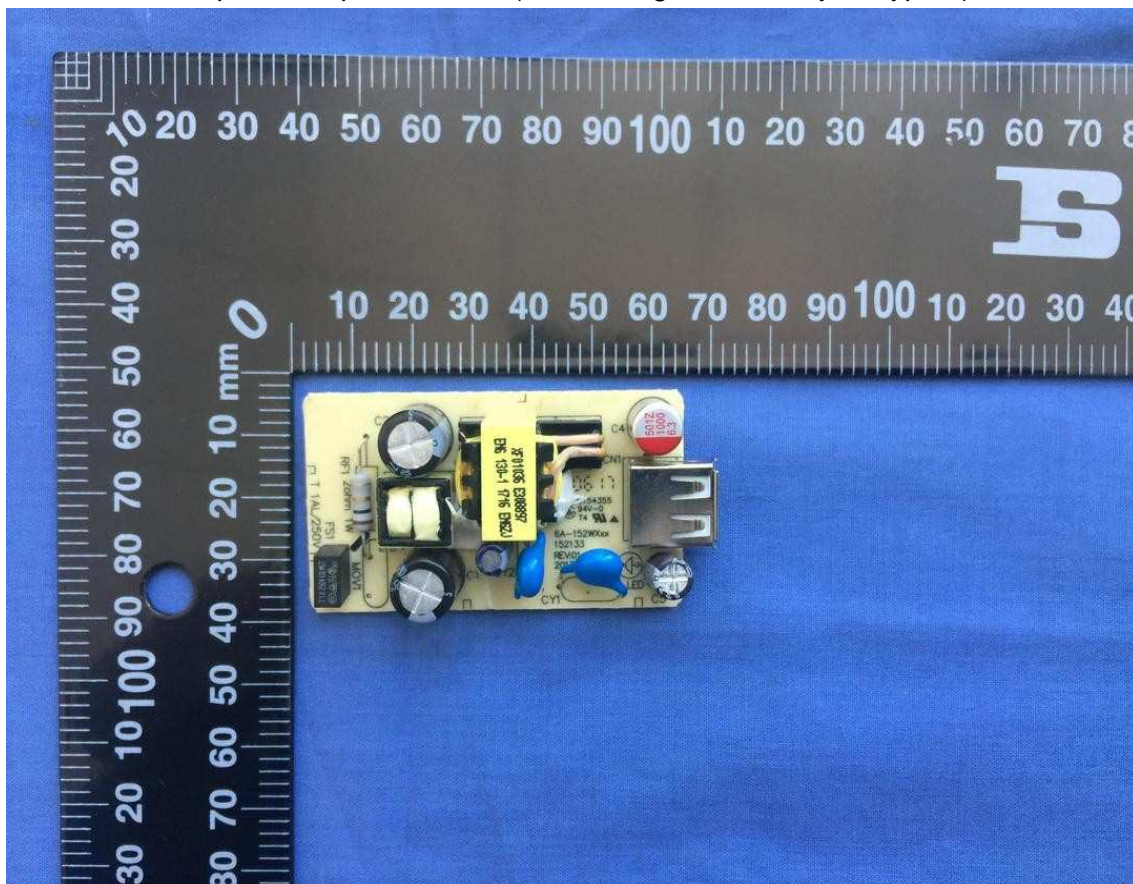


Internal view of EUT

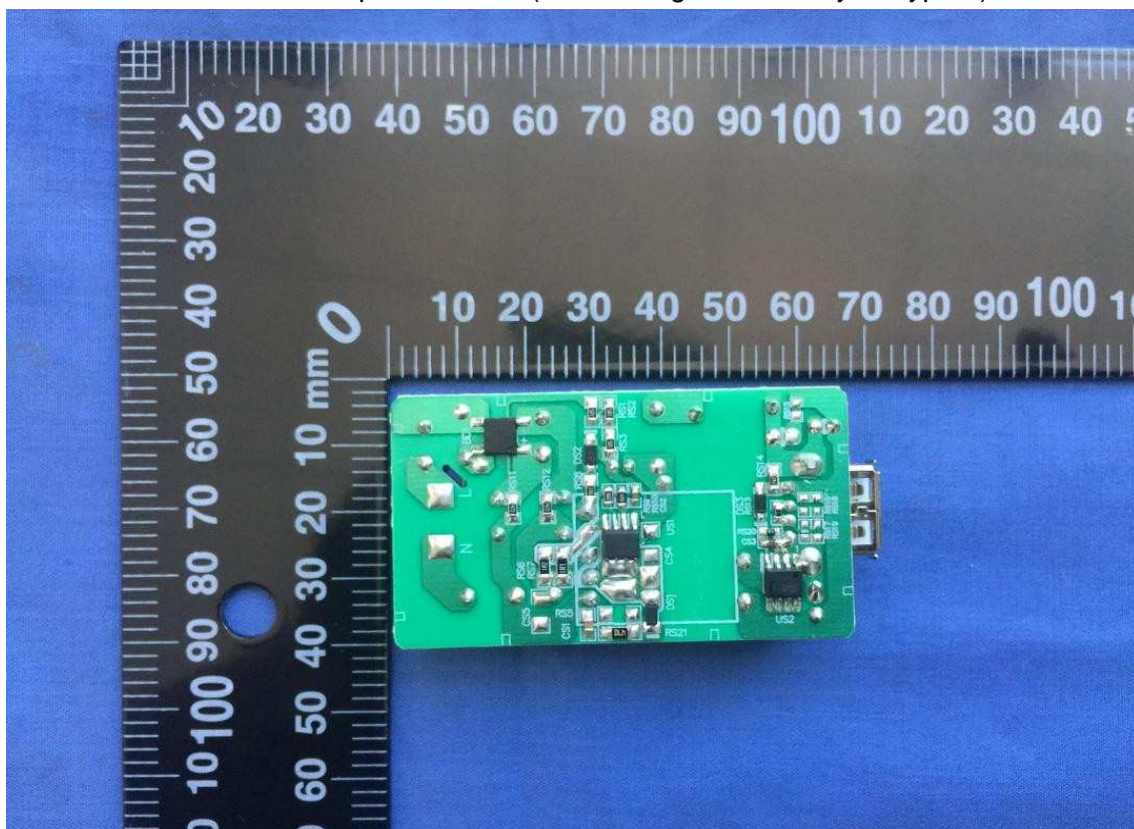




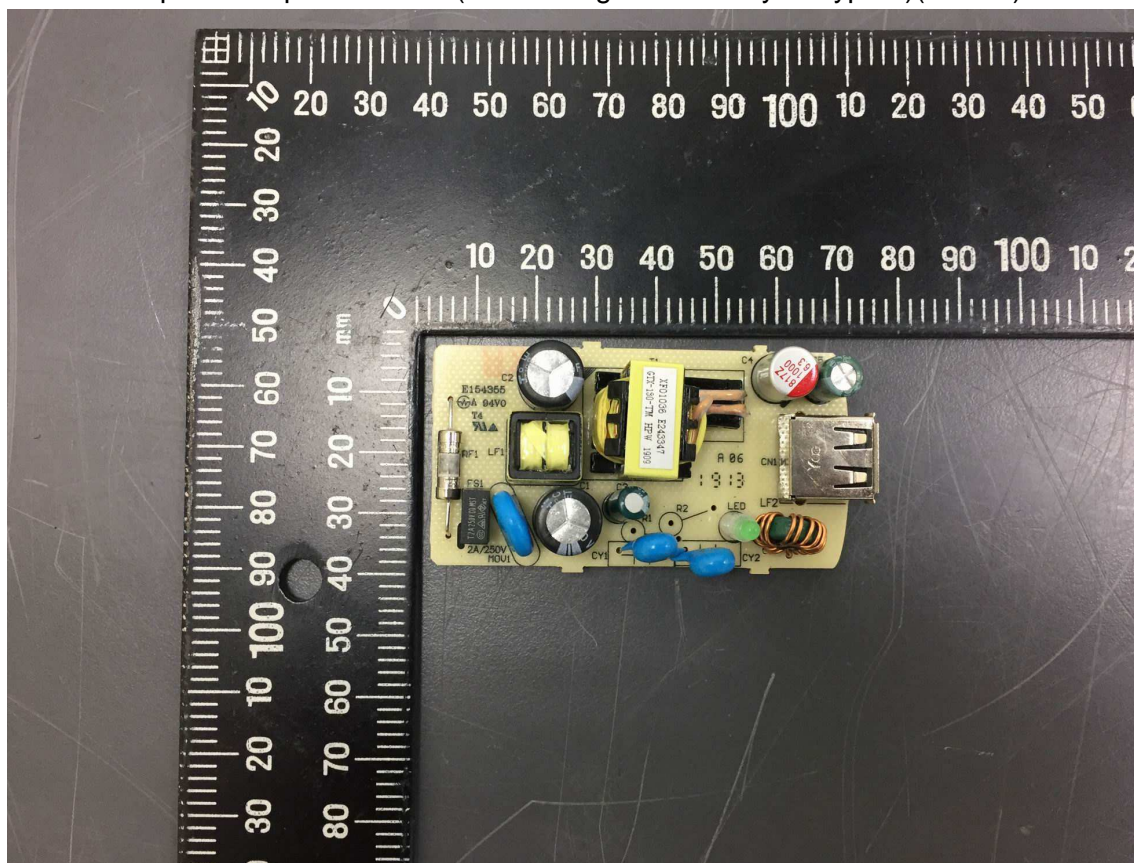
Top view of power board (Circuit diagram/PCB layout type 1)



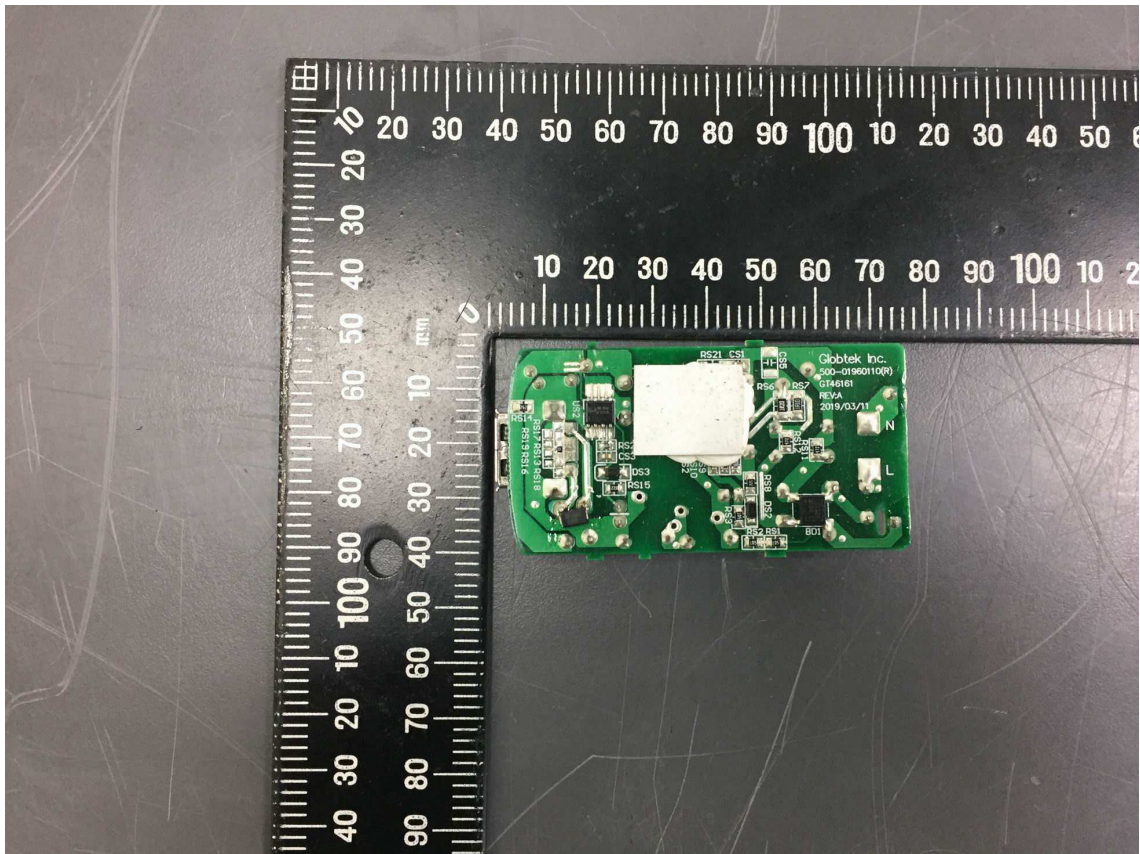
Bottom view of power board (Circuit diagram/PCB layout type 1)



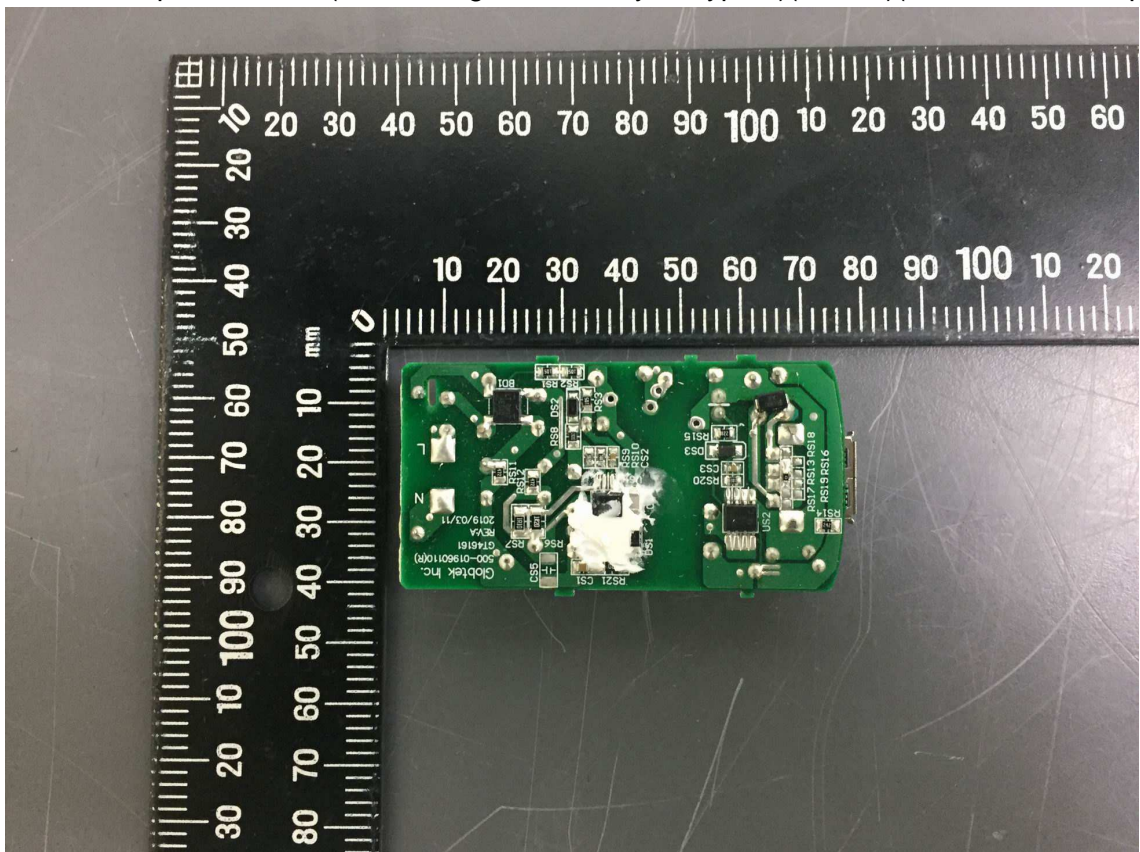
Top view of power board (Circuit diagram/PCB layout type 2)(USB*1)



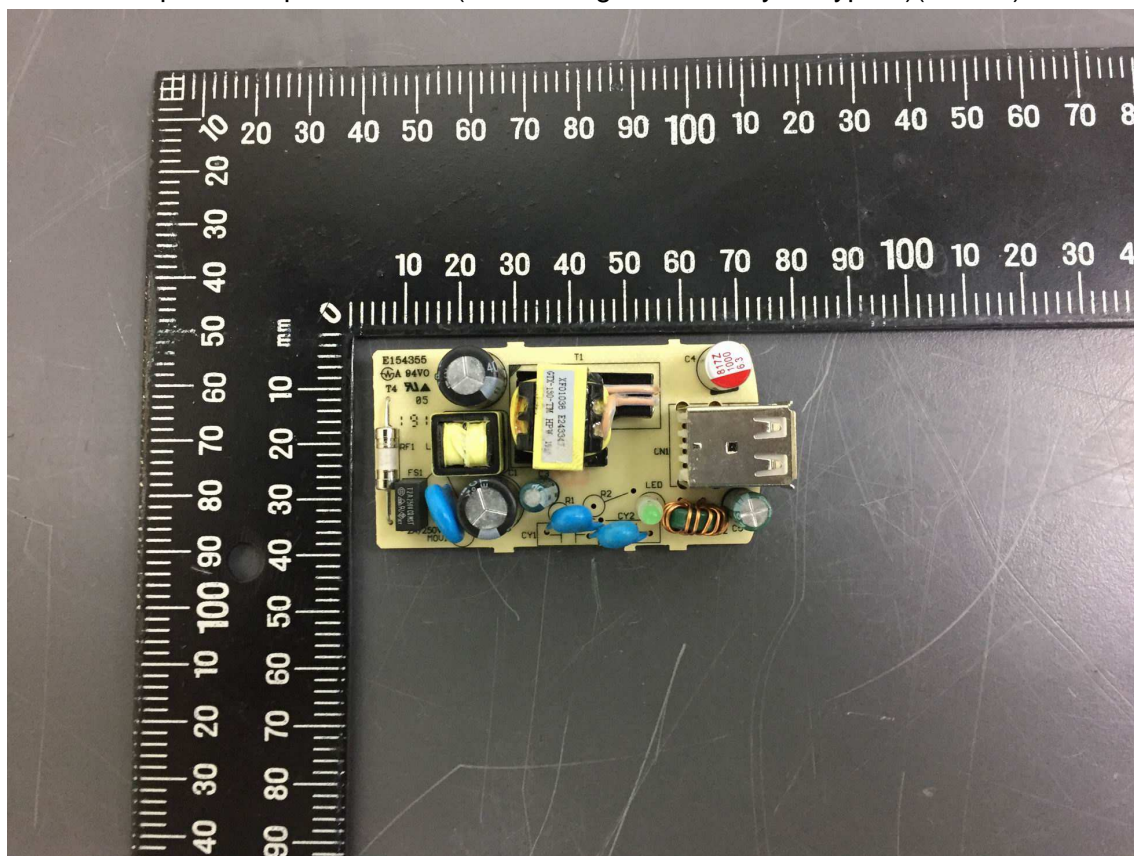
Bottom view of power board (Circuit diagram/PCB layout type 2)(USB*1)



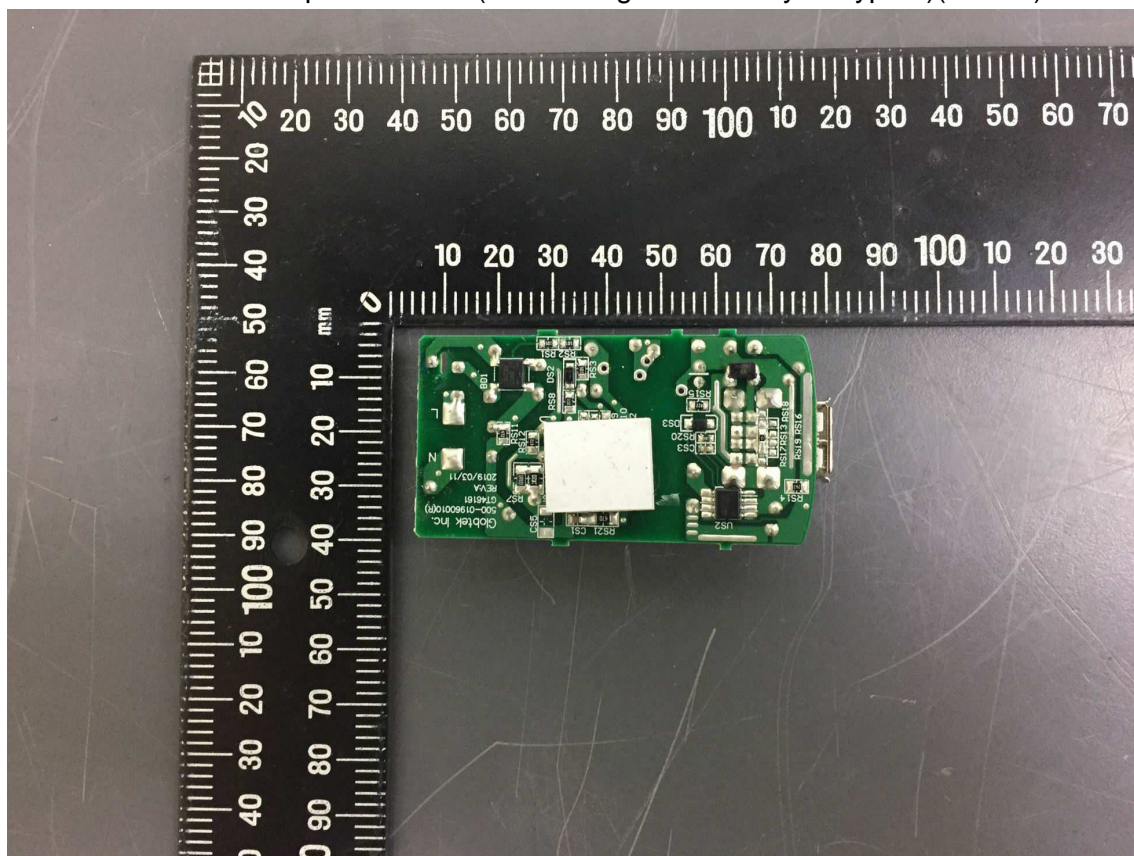
Bottom view of power board (Circuit diagram/PCB layout type 2)(USB*1)(Remove thermal pad)



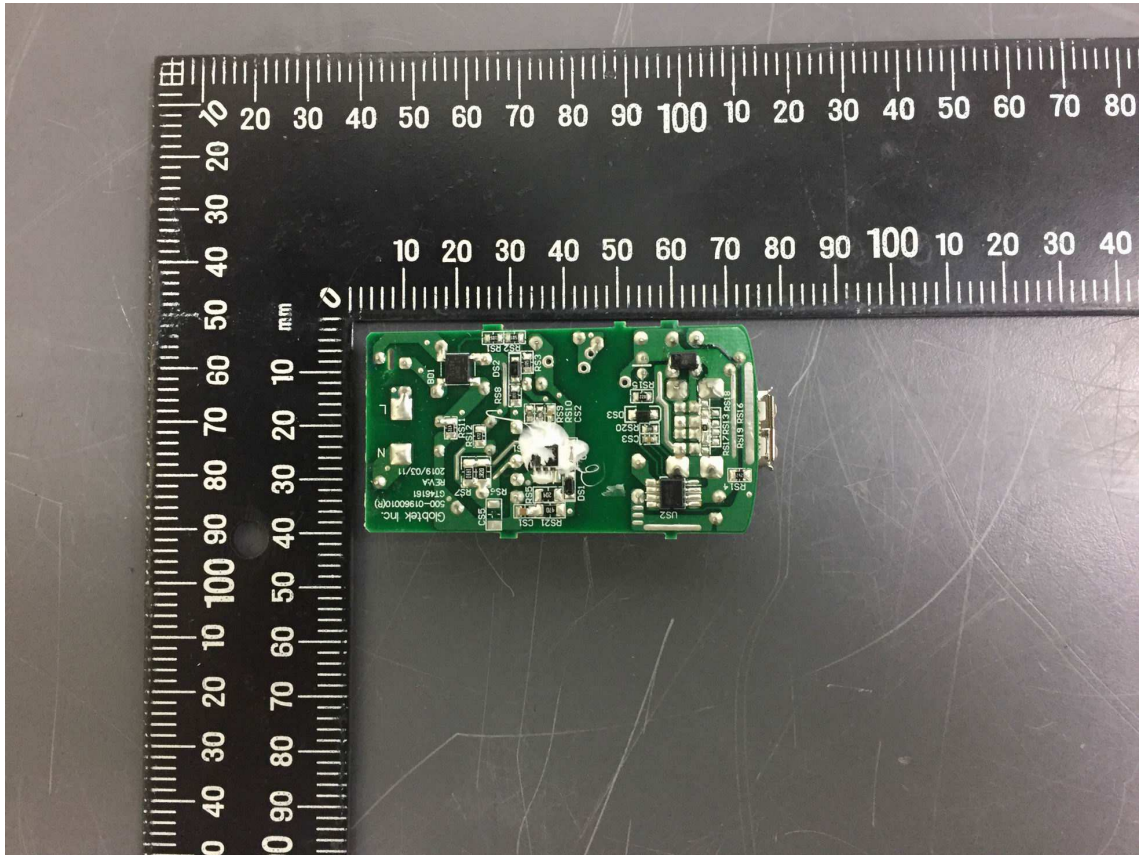
Top view of power board (Circuit diagram/PCB layout type 2)(USB*2)



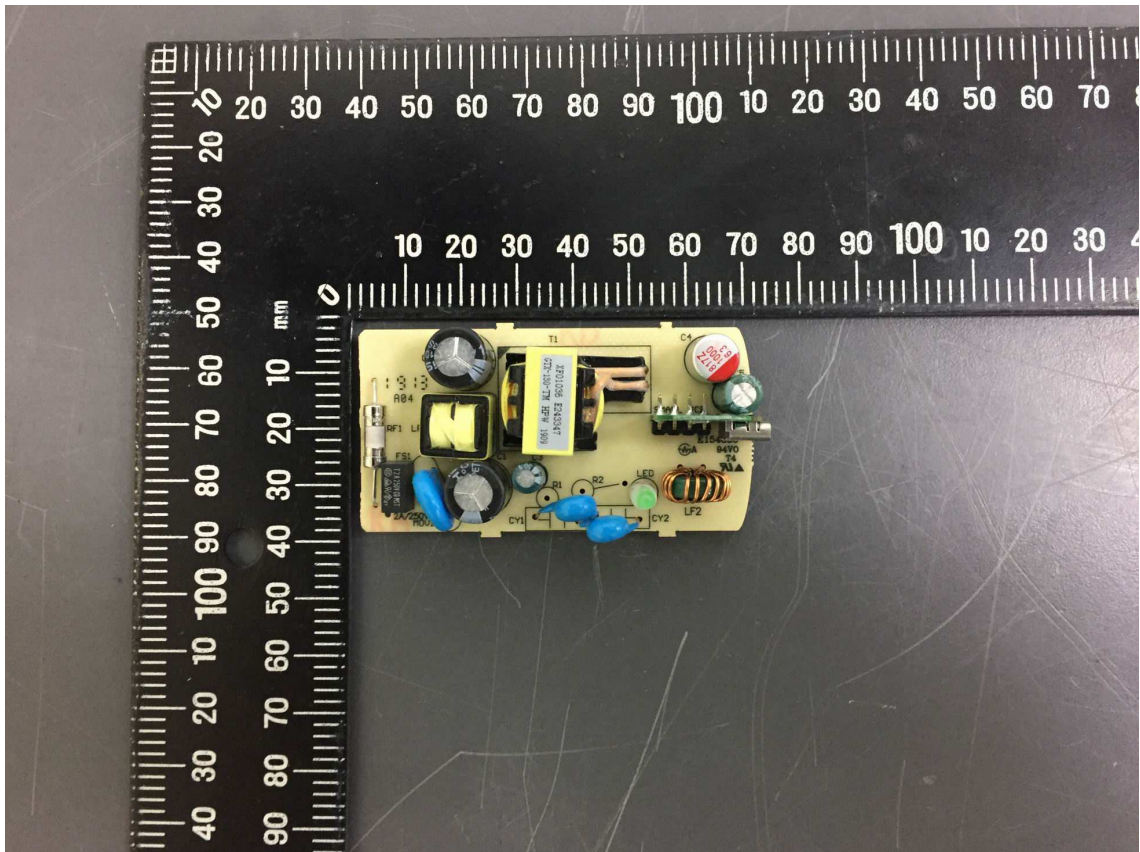
Bottom view of power board (Circuit diagram/PCB layout type 2)(USB*2)



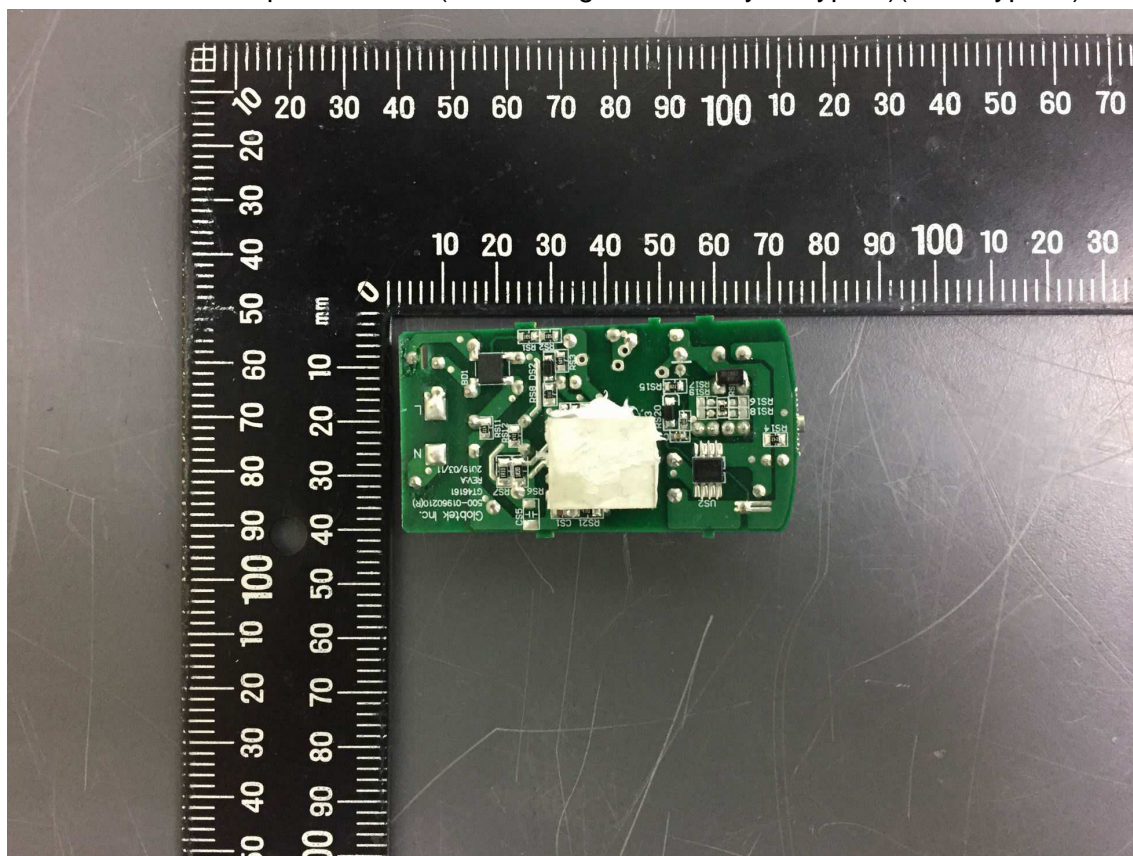
Bottom view of power board (Circuit diagram/PCB layout type 2)(USB*2)(Remove thermal pad)



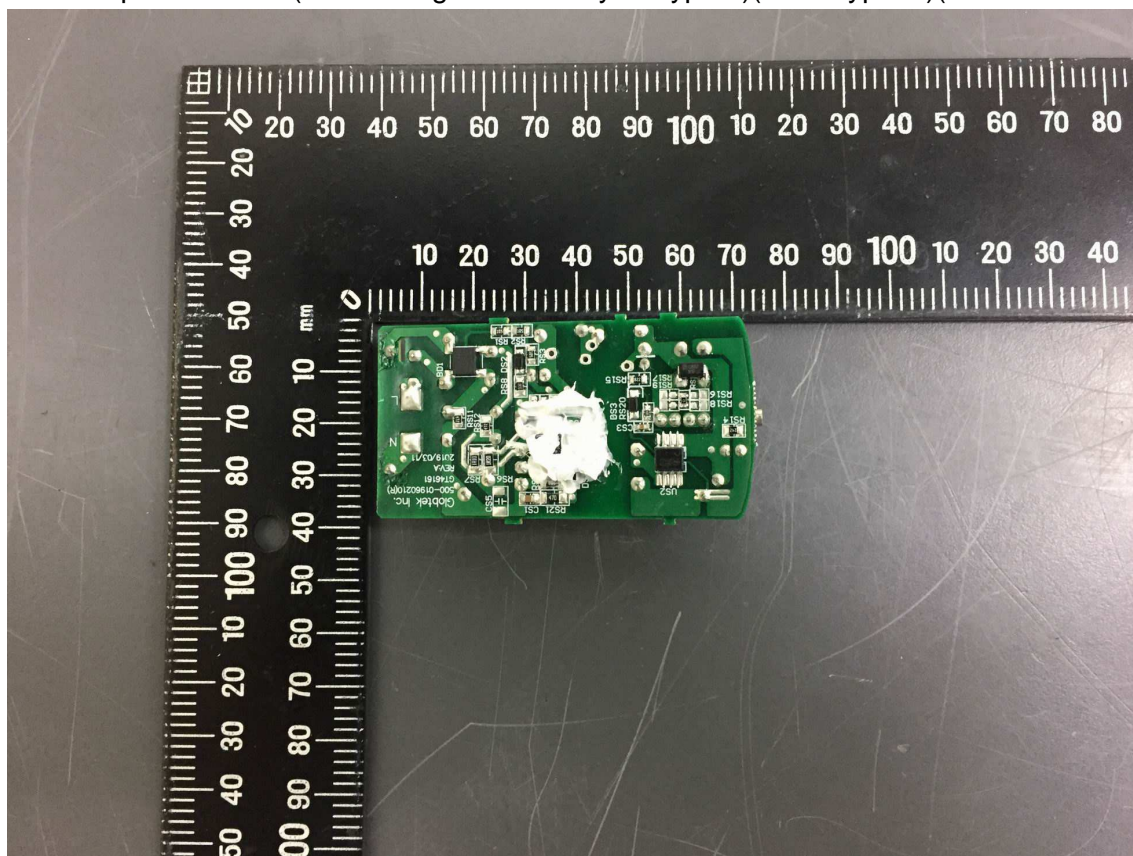
Top view of power board (Circuit diagram/PCB layout type 2)(USB Type-C)



Bottom view of power board (Circuit diagram/PCB layout type 2)(USB Type-C)



Bottom view of power board (Circuit diagram/PCB layout type 2)(USB Type-C)(Remove thermal pad)



Back view of power board (Circuit diagram/PCB layout type 2)

