

S

T

S

L

A

B



TEST REPORT

Report No: STS2011122A01

Issued for

Shenzhen AiNaU Technology Co., Ltd.

Floor 3, Building 48, Cuigang Industry Park Zone5, Huaide
Community , Fuyong Street, Baoan Dist.,Shenzhen
City,China

Product Name:	POWER ADAPTER
Brand Name:	--
Model Name:	C02
Series Model:	
Test Standard:	EN 62368-1:2014+A11:2017



Any reproduction of this document must be done in full. No single part of this document may be reproduced without permission from STS, All Test Data Presented in this report is only applicable to presented Test sample

Shenzhen STS Test Services Co., Ltd.
A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ,
Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China
TEL: +86-755 3688 6288 FAX: +86-755 3688 6277 E-mail: sts@stsapp.com

**TEST REPORT****IEC 62368-1****Audio/video, information and communication technology equipment
Part 1: Safety requirements****Report Number.**: STS2011122A01**Tested by (+ signature)**: Zoe Li/
Engineer**Reviewed by (+ signature)**: Winson Huang /
Projecthandler**Approved by (+ signature)**: Bovey Yang /
Technical
Director**Date of issue**.....: 26 Nov. 2020**Total number of pages**..... 66 pages**Testing laboratory**: Shenzhen STS Test Services Co., Ltd.**Address**: A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road,
HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang
Dong, China**Applicant's name**: Shenzhen AiNaU Technology Co.,Ltd.**Address**: Floor 3, Building 48, Cuigang Industry Park Zone5, Huaide Community ,
Fuyong Street, Baoan Dist.,Shenzhen City,China**Test specification:****Standard**: EN 62368-1:2014+A11:2017
IEC 62368-1:2014 (Second Edition)**Test procedure**: IEC Scheme**Non-standard test method.:** N/A**Test Report Form No**.....: IEC62368_1B**Test Report Form(s) Originator**: UL(US)**Master TRF**.....: 2014-03**This test report is specially limited to the above client company and product model only. It may not be duplicated without prior written consent of STS Test.****Test item description**: POWER ADAPTER**Trade Mark**: --**Manufacturer**: Shenzhen AiNaU Technology Co.,Ltd.**Address**: Floor 3, Building 48, Cuigang Industry Park Zone5, Huaide Community ,
Fuyong Street, Baoan Dist.,Shenzhen City,China**Model/Type reference**.....: C02**Ratings**: Input: 100-240V~ 50/60Hz
Output: 5.0V ---2000mA

Summary of testing:

Tests performed (name of test and test clause):

EN 62368-1:2014+A11:2017

IEC 62368-1:2014 (Second Edition)

The submitted samples were found to comply with the requirements of above specification.

Testing location:

Shenzhen STS Test Services Co., Ltd.

A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China
CNAS Registration No.:L7649

Comment:

This report also includes:

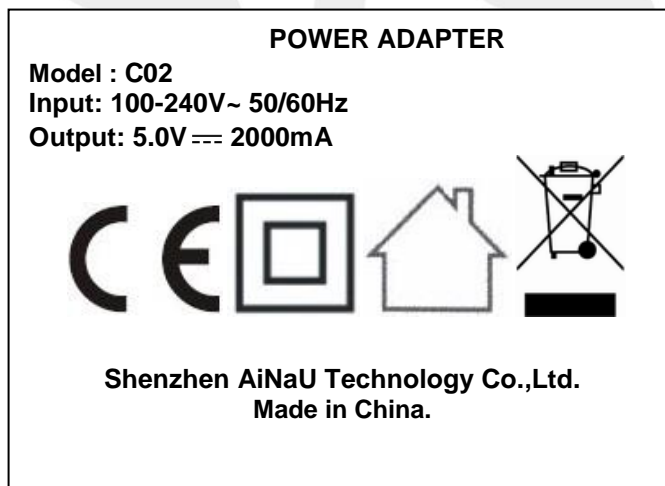
- Photo documentation:3 pages

-EU plug data: ATTACHMENT 1; 6 pages

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.

(Additional requirements for markings.



Remark on above marking:

1. The height of CE symbols is more than 5 mm;
2. The height of WEEE symbols is more than 7 mm;
3. Since similar label used, only label for models above listed to represent other similar ones.



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 checked="" type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance	<input checked="" type="checkbox"/> +10%/-10%
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 checked="" type="checkbox"/> other: _____
Considered current rating of protective device as part of building or equipment installation	_____ A; Installation location: <input type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input checked="" type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC)	<input type="checkbox"/> OVC <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: _____
Class of equipment	<input type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III
Access location	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maximum operating ambient :	__25__ °C
IP protection class	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP__
Power Systems	<input type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - ____ V L-L
Altitude during operation (m)	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m
Altitude of test laboratory (m)	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m
Mass of equipment (kg)	Approx. 0.035kg
Possible test case verdicts:	
- test case does not apply to the test object	N (not applicable)
- test object does meet the requirement	P (Pass)
- test object does not meet the requirement	F (Fail)

**Testing**.....:

Date of receipt of test item.....: 17 Nov. 2020

Date(s) of performance of tests.....: 17 Nov. 2020~25 Nov. 2020

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.

"(See appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

General product information:

1. The equipment is a AC Adapter which is used as information and audio/video technology equipment
2. Top and bottom enclosure are melt together by ultrasonic welding.
3. The working temperature 25°C.
4. The EU plug used in the equipment has been tested according to EN 50075 (See attachment 1).

See model list detail:

Model Name	Input Rating	Output Voltage (V)	Output Current (mA)	Output power(W)
C02	100-240V~ 50/60Hz	5.0	2000	10.0

**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 circuit of unit	ES3
Secondary circuit ,output port accessible enclosure	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)
Output port	PS1
Primary circuit	PS3

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
No hazardous substances	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)
Whole unit	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 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	--

ENERGY SOURCE DIAGRAM

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



☒ ES
 ☒ PS
 ☒ MS
 ☒ TS
 ☒ RS

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	Primary circuit(ES3)	--	--	Enclosure
--	--	--	--	--
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Plastic enclosure	Primary circuit(PS3)	--	V-0	--
PCB	Primary circuit(PS3)		V-1 or better	
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
--	--	--	--	--
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
--	--	--	--	--
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
--	--	--	--	--
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
--	--	--	--	--
Supplementary Information:				
(1) See attached energy source diagram for additional details.				
(2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components		P
4.1.3	Equipment design and construction		P
4.1.15	Markings and instructions	(See Annex F)	P
4.4.4	Safeguard robustness		P
4.4.4.2	Steady force tests	(See Annex T.2,T.5)	P
4.4.4.3	Drop tests.....	(See Annex T.7)	P
4.4.4.4	Impact tests.....	(See Annex T.6)	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests	Not applicable	N
4.4.4.6	Glass Impact tests	Not applicable	N
4.4.4.7	Thermoplastic material tests	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard		N
4.4.4.9	Accessibility and safeguard effectiveness		P
4.5	Explosion	No explosion	P
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard		P
4.6.2	10 N force test applied to		P
4.7	Equipment for direct insertion into mains socket - outlets		P
4.7.2	Mains plug part complies with the relevant standard		P
4.7.3	Torque (Nm).....		N
4.8	Products containing coin/button cell batteries		N
4.8.2	Instructional safeguard		N
4.8.3	Battery Compartment Construction	Non-rechargeable battery	N
	Means to reduce the possibility of children removing the battery		—
4.8.4	Battery Compartment Mechanical Tests.....		N
4.8.5	Battery Accessibility		N
4.9	Likelihood of fire or shock due to entry of conductive object	(See Annex P)	P
5	ELECTRICALLY-CAUSED INJURY		P
5.2.1	Electrical energy source classifications	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.2	Steady-state voltage and current.....:	(See appended table 5.2)	P
5.2.2.3	Capacitance limits		P
5.2.2.4	Single pulse limits.....:		N
5.2.2.5	Limits for repetitive pulses.....:		N
5.2.2.6	Ringing signals		N
5.2.2.7	Audio signals		N
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	Ordinary person can access	P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
5.3.2.2	Contact requirements	No openings on enclosures as received and after mechanical test	N
	a) Test with test probe from Annex V		N
	b) Electric strength test potential (V).....:		N
	c) Air gap (mm)		N
5.3.2.4	Terminals for connecting stripped wire		N
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Humidity conditioning		P
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree.....:	Pollution degree 2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N
5.4.1.5.3	Thermal cycling		N
5.4.1.6	Insulation in transformers with varying dimensions		N
5.4.1.7	Insulation in circuits generating starting pulses		N
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		P
5.4.1.10.2	Vicat softening temperature		N
5.4.1.10.3	Ball pressure	Plug holder, 125°C, 1.52mm	P
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.3)	P
5.4.2.3	Determining clearance using required withstand voltage	(See appended table 5.4.2.3)	P



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	a) a.c. mains transient voltage	2500 Vpk	—
	b) d.c. mains transient voltage	No connections to d.c. mains	—
	c) external circuit transient voltage	No connections to external circuit with transient voltage	—
	d) transient voltage determined by measurement	Option was not used	—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N
5.4.2.5	Multiplication factors for clearances and test voltages.....		N
5.4.3	Creepage distances	(See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group	IIIb	—
5.4.4	Solid insulation		P
5.4.4.2	Minimum distance through insulation	(See appended table 5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation	No insulation compound forming solid insulation	N
5.4.4.4	Solid insulation in semiconductor devices	No insulation compound forming solid insulation	N
5.4.4.5	Cemented joints		N
5.4.4.6	Thin sheet material	Insulation tape used in T1	P
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material		P
	Number of layers (pcs)	2	P
5.4.4.6.3	Non-separable thin sheet material		N
5.4.4.6.4	Standard test procedure for non-separable thin sheet material.....		N
5.4.4.6.5	Mandrel test		N
5.4.4.7	Solid insulation in wound components		N
5.4.4.9	Solid insulation at frequencies >30 kHz.....		N
5.4.5	Antenna terminal insulation		N
5.4.5.1	General		N
5.4.5.2	Voltage surge test		N
	Insulation resistance (MΩ)		—
5.4.6	Insulation of internal wire as part of supplementary safeguard		N
5.4.7	Tests for semiconductor components and for cemented joints		N
5.4.8	Humidity conditioning		P



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Relative humidity (%)	93%	—
	Temperature (°C)	25°C	—
	Duration (h)	48h	—
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		P
5.4.9.2	Test procedure for routine tests		P
5.4.10	Protection against transient voltages between external circuit	No connection to external circuits with transient voltage.	N
5.4.10.1	Parts and circuits separated from external circuits		N
5.4.10.2	Test methods		N
5.4.10.2.1	General		N
5.4.10.2.2	Impulse test.....		N
5.4.10.2.3	Steady-state test		N
5.4.11	Insulation between external circuits and earthed circuitry	No connection to external circuits with transient voltage.	N
5.4.11.1	Exceptions to separation between external circuits and earth		N
5.4.11.2	Requirements		N
	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		P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector		N
5.5.3	Transformers		P
5.5.4	Optocouplers		N
5.5.5	Relays		N
5.5.6	Resistors		N
5.5.7	SPD's		P
5.5.7.1	Use of an SPD connected to reliable earthing		P
5.5.7.2	Use of an SPD between mains and protective earth		P



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable	(See Annex G.10.3)	N
5.6	Protective conductor		N
5.6.2	Requirement for protective conductors		N
5.6.2.1	General requirements		N
5.6.2.2	Colour of insulation		N
5.6.3	Requirement for protective earthing conductors		N
	Protective earthing conductor size (mm ²)		—
5.6.4	Requirement for protective bonding conductors		N
5.6.4.1	Protective bonding conductors		N
	Protective bonding conductor size (mm ²).		—
	Protective current rating (A)		—
5.6.4.3	Current limiting and overcurrent protective devices		N
5.6.5	Terminals for protective conductors		N
5.6.5.1	Requirement		N
	Conductor size (mm ²), nominal thread diameter (mm).....		N
5.6.5.2	Corrosion		N
5.6.6	Resistance of the protective system		N
5.6.6.1	Requirements		N
5.6.6.2	Test Method Resistance (Ω)		N
5.6.7	Reliable earthing		N
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current.....		P
5.7.2.2	Measurement of prospective touch voltage		N
5.7.3	Equipment set-up, supply connections and earth connections		P
	System of interconnected equipment (separate connections/single connection).....	No interconnected equipment	—
	Multiple connections to mains (one connection at a time/simultaneous connections).....	No multiple connections to mains	—
5.7.4	Earthed conductive accessible parts		N
5.7.5	Protective conductor current		N
	Supply Voltage (V)		—
	Measured current (mA)		—
	Instructional Safeguard		N



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6	Prospective touch voltage and touch current due to external circuits		N
5.7.6.1	Touch current from coaxial cables		N
5.7.6.2	Prospective touch voltage and touch current from external circuits		N
5.7.7	Summation of touch currents from external circuits		N
	a) Equipment with earthed external circuits Measured current (mA)		N
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA)		N
6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications		P
6.2.2.1	General		P
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		N
6.2.2.6	PS3		P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS		P
6.2.3.2	Resistive PIS		P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials.....:	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure		P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method of "control of fire spread" is used.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		P
6.4.3.1	General		P
6.4.3.2	Supplementary Safeguards		P



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Special conditions if conductors on printed boards are opened or peeled		N
6.4.3.3	Single Fault Conditions	(See appended table 6.4.3)	P
	Special conditions for temperature limited by fuse		N
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards		P
6.4.6	Control of fire spread in PS3 circuit		P
6.4.7	Separation of combustible materials from a PIS		N
6.4.7.1	General		N
6.4.7.2	Separation by distance		N
6.4.7.3	Separation by a fire barrier		N
6.4.8	Fire enclosures and fire barriers		P
6.4.8.1	Fire enclosure and fire barrier material properties	Fire enclosure is rated min V-0	P
6.4.8.2.1	Requirements for a fire barrier		N
6.4.8.2.2	Requirements for a fire enclosure		P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	No opening	P
6.4.8.3.1	Fire enclosure and fire barrier openings		N
6.4.8.3.2	Fire barrier dimensions		N
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions(mm)		N
	Needle Flame test		N
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm)		N
	Flammability tests for the bottom of a fire enclosure		N
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c).....		N
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating	Fire enclosure rated minV-0	P
6.5	Internal and external wiring		N
6.5.1	Requirements		N
6.5.2	Cross-sectional area (mm ²)		—
6.5.3	Requirements for interconnection to building wiring.....		N
6.6	Safeguards against fire due to connection to additional equipment		P



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	External port limited to PS2 or complies with Clause Q.1		P
7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N
7.2	Reduction of exposure to hazardous substances		N
7.3	Ozone exposure		N
7.4	Use of personal safeguards (PPE)		N
	Personal safeguards and instructions..... :		—
7.5	Use of instructional safeguards and instructions		N
	Instructional safeguard (ISO 7010) :		—
7.6	Batteries :		N
8	MECHANICALLY-CAUSED INJURY		P
8.1	General		P
8.2	Mechanical energy source classifications	MS1	P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners	Edges and corners are classed as MS1	P
8.4.1	Safeguards		N
8.5	Safeguards against moving parts	No moving parts	N
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N
8.5.2	Instructional Safeguard :		—
8.5.4	Special categories of equipment comprising moving parts		N
8.5.4.1	Large data storage equipment		N
8.5.4.2	Equipment having electromechanical device for destruction of media		N
8.5.4.2.1	Safeguards and Safety Interlocks..... :		N
8.5.4.2.2	Instructional safeguards against moving parts		N
	Instructional Safeguard :		—
8.5.4.2.3	Disconnection from the supply		N
8.5.4.2.4	Probe type and force (N)..... :		N
8.5.5	High Pressure Lamps		N
8.5.5.1	Energy Source Classification		N
8.5.5.2	High Pressure Lamp Explosion Test :		N
8.6	Stability		N



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.1	Product classification		N
	Instructional Safeguard		—
8.6.2	Static stability		N
8.6.2.2	Static stability test		N
	Applied Force		—
8.6.2.3	Downward Force Test		N
8.6.3	Relocation stability test		N
	Unit configuration during 10° tilt		—
8.6.4	Glass slide test		N
8.6.5	Horizontal force test (Applied Force)		N
	Position of feet or movable parts		—
8.7	Equipment mounted to wall or ceiling		N
8.7.1	Mounting Means (Length of screws (mm) and mounting surface)		N
8.7.2	Direction and applied force		N
8.8	Handles strength		N
8.8.1	Classification		N
8.8.2	Applied Force		N
8.9	Wheels or casters attachment requirements		N
8.9.1	Classification		N
8.9.2	Applied force.....		—
8.10	Carts, stands and similar carriers		N
8.10.1	General		N
8.10.2	Marking and instructions		N
	Instructional Safeguard		—
8.10.3	Cart, stand or carrier loading test and compliance		N
	Applied force.....		—
8.10.4	Cart, stand or carrier impact test		N
8.10.5	Mechanical stability		N
	Applied horizontal force (N)		—
8.10.6	Thermoplastic temperature stability (°C)		N
8.11	Mounting means for rack mounted equipment		N
8.11.1	General		N
8.11.2	Product Classification		N
8.11.3	Mechanical strength test, variable <i>N</i>		N
8.11.4	Mechanical strength test 250N, including end stops		N



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.12	Telescoping or rod antennas		N
	Button/Ball diameter (mm)		—
9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications	Enclosure is classed as TS1. Internal parts are claimed as TS3. Enclosure is used as safeguard.	P
9.3	Safeguard against thermal energy sources		P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard		P
9.4.2	Instructional safeguard		N
10	RADIATION		N
10.2	Radiation energy source classification		N
10.2.1	General classification		N
10.3	Protection against laser radiation		N
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault		N
	Instructional safeguard		—
	Tool		—
10.4	Protection against visible, infrared, and UV radiation		N
10.4.1	General		N
10.4.1.a)	RS3 for Ordinary and instructed persons		N
10.4.1.b)	RS3 accessible to a skilled person		N
	Personal safeguard (PPE) instructional safeguard		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1..:		N
10.4.1.d)	Normal, abnormal, single-fault conditions		N
10.4.1.e)	Enclosure material employed as safeguard is opaque		N
10.4.1.f)	UV attenuation		N
10.4.1.g)	Materials resistant to degradation UV		N
10.4.1.h)	Enclosure containment of optical radiation		N
10.4.1.i)	Exempt Group under normal operating conditions		N
10.4.2	Instructional safeguard		N
10.5	Protection against x-radiation		N



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	X- radiation energy source that exists equipment		N
	Normal, abnormal, single fault conditions		N
	Equipment safeguards		N
	Instructional safeguard for skilled person		N
10.5.3	Most unfavourable supply voltage to give maximum radiation.....		—
	Abnormal and single-fault condition.....		N
	Maximum radiation (pA/kg)		N
10.6	Protection against acoustic energy sources		N
10.6.1	General		N
10.6.2	Classification		N
	Acoustic output, dB(A)		N
	Output voltage, unweighted r.m.s.		N
10.6.4	Protection of persons		N
	Instructional safeguards.....		N
	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
10.6.5.1	Corded passive listening devices with analog input		N
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output		—
10.6.5.2	Corded listening devices with digital input		N
	Maximum dB(A)		—
10.6.5.3	Cordless listening device		N
	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



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
B.2.3	Supply voltage and tolerances	Rated voltage $\pm 10\%$	P
B.2.5	Input test	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements	(See appended table B.3)	P
B.3.2	Covering of ventilation openings		N
B.3.3	D.C. mains polarity test		P
B.3.4	Setting of voltage selector		N
B.3.5	Maximum load at output terminals.....		P
B.3.6	Reverse battery polarity		N
B.3.7	Abnormal operating conditions as specified in Clause E.2.		N
B.3.8	Safeguards functional during and after abnormal operating conditions	All safeguards remained effective.	P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited.....	(See appended table B.4)	P
B.4.3	Motor tests		N
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature		N
B.4.4	Short circuit of functional insulation	(See appended table B.4)	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.4)	N
B.4.6	Short circuit or disconnect of passive components	(See appended table B.4)	P
B.4.7	Continuous operation of components		N
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		P
B.4.9	Battery charging under single fault conditions....	No batteries	N

C	UV RADIATION		N
C.1	Protection of materials in equipment from UV radiation		N
C.1.2	Requirements		N
C.1.3	Test method		N
C.2	UV light conditioning test		N



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
C.2.1	Test apparatus		N
C.2.2	Mounting of test samples		N
C.2.3	Carbon-arc light-exposure apparatus		N
C.2.4	Xenon-arc light exposure apparatus		N
D	TEST GENERATORS		N
D.1	Impulse test generators		N
D.2	Antenna interface test generator		N
D.3	Electronic pulse generator		N
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N
E.1	Audio amplifier normal operating conditions		N
	Audio signal voltage (V)		—
	Rated load impedance (Ω)		
E.2	Audio amplifier abnormal operating conditions		N
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General requirements		P
	Instructions – Language	English version only	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations		P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification	See marking plate	—
F.3.2.2	Model identification	See page 2	—
F.3.3	Equipment rating markings	See marking plate	P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N
F.3.3.3	Nature of supply voltage	~	—
F.3.3.4	Rated voltage	See marking plate	—
F.3.3.4	Rated frequency	See marking plate	—
F.3.3.6	Rated current or rated power	See marking plate	—
F.3.3.7	Equipment with multiple supply connections		N



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.4	Voltage setting device		N
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings		N
F.3.5.2	Switch position identification marking		N
F.3.5.3	Replacement fuse identification and rating markings	FR1 5.1R,1W	P
F.3.5.4	Replacement battery identification marking		N
F.3.5.5	Terminal marking location		N
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I Equipment		N
F.3.6.1.1	Protective earthing conductor terminal		N
F.3.6.1.2	Neutral conductor terminal		N
F.3.6.1.3	Protective bonding conductor terminals		N
F.3.6.2	Class II equipment (IEC60417-5172)		P
F.3.6.2.1	Class II equipment with or without functional earth		N
F.3.6.2.2	Class II equipment with functional earth terminal marking		P
F.3.7	Equipment IP rating marking	IPX0	—
F.3.8	External power supply output marking		P
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings		P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		N
	b) Instructions given for installation or initial use		N
	c) Equipment intended to be fastened in place		N
	d) Equipment intended for use only in restricted access area		N
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N
	f) Protective earthing employed as safeguard		P
	g) Protective earthing conductor current exceeding ES 2 limits		N
	h) Symbols used on equipment		P
	i) Permanently connected equipment not provided with all-pole mains switch		N



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
j)	j) Replaceable components or modules providing safeguard function		N
F.5	Instructional safeguards		N
	Where "instructional safeguard" is referenced in the test report it specifies the required elements, location of marking and/or instruction		N

G	COMPONENTS		P
G.1	Switches		N
G.1.1	General requirements		N
G.1.2	Ratings, endurance, spacing, maximum load		N
G.2	Relays		N
G.2.1	General requirements		N
G.2.2	Overload test		N
G.2.3	Relay controlling connectors supply power		N
G.2.4	Mains relay, modified as stated in G.2		N
G.3	Protection Devices		P
G.3.1	Thermal cut-offs		N
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N
G.3.1.2	Thermal cut-off connections maintained and secure		N
G.3.2	Thermal links		N
G.3.2.1a)	Thermal links separately tested with IEC 60691		N
G.3.2.1b)	Thermal links tested as part of the equipment		N
	Aging hours (H)..... :		—
	Single Fault Condition..... :		—
	Test Voltage (V) and Insulation Resistance (Ω) . :		—
G.3.3	PTC Thermistors		N
G.3.4	Overcurrent protection devices	Fuse resistor used	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N
G.3.5.1	Non-resettable devices suitably rated and marking provided		N
G.3.5.2	Single faults conditions :	(See appended Table B.4)	N
G.4	Connectors		N
G.4.1	Spacings		N



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	Mains connector configuration		N
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N
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°	Tube was used	P
G.5.1.2 b)	Construction subject to routine testing		P
G.5.2	Endurance test on wound components		N
G.5.2.1	General test requirements		N
G.5.2.2	Heat run test		N
	Time (s).....		—
	Temperature (°C).....		—
G.5.2.3	Wound Components supplied by mains		N
G.5.3	Transformers		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1)	The transformer meets the requirements given in G.5.3.2 and G.5.3.3.	P
	Position	T1	—
	Method of protection	See G.5.3.2 and G.5.3.3.	—
G.5.3.2	Insulation	Primary windings and secondary windings are separated by Reinforced insulation.	P
	Protection from displacement of windings	Approved triple-insulated winding wire used in T1 for secondary winding.	—
G.5.3.3	Overload test	(See appended table B.3)	P
G.5.3.3.1	Test conditions	Transformer is tested in the complete unit.	P
G.5.3.3.2	Winding Temperatures testing in the unit		P
G.5.3.3.3	Winding Temperatures - Alternative test method		N
G.5.4	Motors		N
G.5.4.1	General requirements		N
	Position		—
G.5.4.2	Test conditions		N
G.5.4.3	Running overload test		N
G.5.4.4	Locked-rotor overload test		N
	Test duration (days)		—



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N
G.5.4.5.2	Tested in the unit		N
	Electric strength test (V)		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h)		N
	Electric strength test (V)		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N
G.5.4.6.2	Tested in the unit		N
	Maximum Temperature		N
	Electric strength test (V)		N
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h)		N
	Electric strength test (V)		N
G.5.4.7	Motors with capacitors		N
G.5.4.8	Three-phase motors		N
G.5.4.9	Series motors		N
	Operating voltage		—
G.6	Wire Insulation		P
G.6.1	General		P
G.6.2	Solvent-based enamel wiring insulation		N
G.7	Mains supply cords		N
G.7.1	General requirements		N
	Type		—
	Rated current (A)		—
	Cross-sectional area (mm ²), (AWG)		—
G.7.2	Compliance and test method		N
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N
G.7.3.2	Cord strain relief		N
G.7.3.2.1	Requirements		N
	Strain relief test force (N)		—
G.7.3.2.2	Strain relief mechanism failure		N
G.7.3.2.3	Cord sheath or jacket position, distance (mm) ...		—
G.7.3.2.4	Strain relief comprised of polymeric material		N
G.7.4	Cord Entry		N



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.5	Non-detachable cord bend protection		N
G.7.5.1	Requirements		N
G.7.5.2	Mass (g)		—
	Diameter (m)		—
	Temperature (°C)		—
G.7.6	Supply wiring space		N
G.7.6.2	Stranded wire		N
G.7.6.2.1	Test with 8 mm strand		N
G.8	Varistors		N
G.8.1	General requirements		N
G.8.2	Safeguard against shock		N
G.8.3	Safeguard against fire		N
G.8.3.2	Varistor overload test		N
G.8.3.3	Temporary overvoltage		N
G.9	Integrated Circuit (IC) Current Limiters		N
G.9.1 a)	Manufacturer defines limit at max. 5A.		N
G.9.1 b)	Limiters do not have manual operator or reset		N
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
G.9.3	Test Program 2		N
G.9.4	Test Program 3		N
G.10	Resistors		N
G.10.1	General requirements		N
G.10.2	Resistor test		N
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N
G.10.3.1	General requirements		N
G.10.3.2	Voltage surge test		N
G.10.3.3	Impulse test		N
G.11	Capacitor and RC units		P
G.11.1	General requirements		P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.12	Optocouplers		N
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results)		N
	Type test voltage Vini		—
	Routine test voltage, Vini,b		—
G.13	Printed boards		P
G.13.1	General requirements	Approved Printed board used	P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N
G.13.4	Insulation between conductors on the same inner surface		N
	Compliance with cemented joint requirements (Specify construction)		—
G.13.5	Insulation between conductors on different surfaces		N
	Distance through insulation		N
	Number of insulation layers (pcs)		—
G.13.6	Tests on coated printed boards		N
G.13.6.1	Sample preparation and preliminary inspection		N
G.13.6.2a)	Thermal conditioning		N
G.13.6.2b)	Electric strength test		N
G.13.6.2c)	Abrasion resistance test		N
G.14	Coating on components terminals		N
G.14.1	Requirements	(See G.13)	N
G.15	Liquid filled components		N
G.15.1	General requirements		N
G.15.2	Requirements		N
G.15.3	Compliance and test methods		N
G.15.3.1	Hydrostatic pressure test		N
G.15.3.2	Creep resistance test		N
G.15.3.3	Tubing and fittings compatibility test		N
G.15.3.4	Vibration test		N
G.15.3.5	Thermal cycling test		N
G.15.3.6	Force test		N
G.15.4	Compliance		N
G.16	IC including capacitor discharge function (ICX)		N



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		N
b)	Impulse test using circuit 2 with U_c = to transient voltage		N
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N
C2)	Test voltage		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N
D2)	Capacitance		—
D3)	Resistance		—

H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N
H.1	General		N
H.2	Method A		N
H.3	Method B		N
H.3.1	Ringing signal		N
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
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N
H.3.2.2	Tripping device		N
H.3.2.3	Monitoring voltage (V)		—

J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		P
	General requirements		P

K	SAFETY INTERLOCKS		N
K.1	General requirements		N
K.2	Components of safety interlock safeguard mechanism		N
K.3	Inadvertent change of operating mode		N
K.4	Interlock safeguard override		N
K.5	Fail-safe		N



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Compliance..... :		N
K.6	Mechanically operated safety interlocks		N
K.6.1	Endurance requirement		N
K.6.2	Compliance and Test method :		N
K.7	Interlock circuit isolation		N
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) :		N
K.7.2	Overload test, Current (A) :		N
K.7.3	Endurance test		N
K.7.4	Electric strength test :	(See appended table 5.4.11)	N

L	DISCONNECT DEVICES		P
L.1	General requirements	Direct plug-in Equipment	P
L.2	Permanently connected equipment		N
L.3	Parts that remain energized		N
L.4	Single phase equipment		P
L.5	Three-phase equipment		N
L.6	Switches as disconnect devices		N
L.7	Plugs as disconnect devices		P
L.8	Multiple power sources		N

M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N
M.1	General requirements		N
M.2	Safety of batteries and their cells		N
M.2.1	Requirements		N
M.2.2	Compliance and test method (identify method)....:		N
M.3	Protection circuits		N
M.3.1	Requirements		N
M.3.2	Tests		N
	- Overcharging of a rechargeable battery		N
	- Unintentional charging of a non-rechargeable battery		N
	- Reverse charging of a rechargeable battery		N
	- Excessive discharging rate for any battery		N
M.3.3	Compliance :		N
M.4	Additional safeguards for equipment containing secondary lithium battery		N



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
M.4.1	General		N
M.4.2	Charging safeguards		N
M.4.2.1	Charging operating limits		N
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
M.4.4	Endurance of equipment containing a secondary lithium battery		N
M.4.4.2	Preparation		N
M.4.4.3	Drop and charge/discharge function tests		N
	Drop		N
	Charge		N
	Discharge		N
M.4.4.4	Charge-discharge cycle test		N
M.4.4.5	Result of charge-discharge cycle test		N
M.5	Risk of burn due to short circuit during carrying		N
M.5.1	Requirement		N
M.5.2	Compliance and Test Method (Test of P.2.3)		N
M.6	Prevention of short circuits and protection from other effects of electric current		N
M.6.1	Short circuits		N
M.6.1.1	General requirements		N
M.6.1.2	Test method to simulate an internal fault		N
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) :		N
M.6.2	Leakage current (mA) :		N
M.7	Risk of explosion from lead acid and NiCd batteries		N
M.7.1	Ventilation preventing explosive gas concentration		N
M.7.2	Compliance and test method		N
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N
M.8.1	General requirements		N
M.8.2	Test method		N
M.8.2.1	General requirements		N
M.8.2.2	Estimation of hypothetical volume Vz (m³/s) :		—
M.8.2.3	Correction factors :		—



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
M.8.2.4	Calculation of distance d (mm)		—
M.9	Preventing electrolyte spillage		N
M.9.1	Protection from electrolyte spillage		N
M.9.2	Tray for preventing electrolyte spillage		N
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing)		N

N	ELECTROCHEMICAL POTENTIALS		N
	Metal(s) used	Pollution degree considered	—

O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Figures O.1 to O.20 of this Annex applied	Measurement is in accordance with applicable figures.	—

P	SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS		P
P.1	General requirements	No opening.	P
P.2.2	Safeguards against entry of foreign object		P
	Location and Dimensions (mm)	No openings for entrance of foreign object	—
P.2.3	Safeguard against the consequences of entry of foreign object		N
P.2.3.1	Safeguards against the entry of a foreign object		N
	Openings in transportable equipment		N
	Transportable equipment with metalized plastic parts		N
P.2.3.2	Openings in transportable equipment in relation to metalized parts of a barrier or enclosure (identification of supplementary safeguard)		N
P.3	Safeguards against spillage of internal liquids		N
P.3.1	General requirements		N
P.3.2	Determination of spillage consequences		N
P.3.3	Spillage safeguards		N
P.3.4	Safeguards effectiveness		N
P.4	Metalized coatings and adhesive securing parts		N
P.4.2 a)	Conditioning testing		N
	T _c (°C)		—
	T _r (°C)		—



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Ta (°C)		—
P.4.2 b)	Abrasion testing		N
P.4.2 c)	Mechanical strength testing		N

Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources		P
Q.1.1 a)	Inherently limited output		N
Q.1.1 b)	Impedance limited output		P
	- Regulating network limited output under normal operating and simulated single fault condition	(See table annex Q.1)	P
Q.1.1 c)	Overcurrent protective device limited output		N
Q.1.1 d)	IC current limiter complying with G.9		N
Q.1.2	Compliance and test method	(See table annex Q.1)	P
Q.2	Test for external circuits – paired conductor cable		N
	Maximum output current (A)		—
	Current limiting method		—

R	LIMITED SHORT CIRCUIT TEST		N
R.1	General requirements		N
R.2	Determination of the overcurrent protective device and circuit		N
R.3	Test method Supply voltage (V) and short-circuit current (A).		N

S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N
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
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N
	- Material not consumed completely		N
	- Material extinguishes within 30s		N
	- No burning of layer or wrapping tissue		N
S.2	Flammability test for fire enclosure and fire barrier integrity		N



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N
	Test specimen does not show any additional hole		N
S.3	Flammability test for the bottom of a fire enclosure		N
	Samples, material		—
	Wall thickness (mm)		—
	Cheesecloth did not ignite		N
S.4	Flammability classification of materials		N
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
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (test condition), (°C)		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N
	After every test specimen was not consumed completely		N
	After fifth flame application, flame extinguished within 1 min		N

T	MECHANICAL STRENGTH TESTS		P
T.1	General requirements		P
T.2	Steady force test, 10 N	(See appended table T.2)	P
T.3	Steady force test, 30 N		N
T.4	Steady force test, 100 N		N
T.5	Steady force test, 250 N	(See appended table T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	P
	Fall test		P
	Swing test		N
T.7	Drop test	(See appended table T.7)	P
T.8	Stress relief test	(See appended table T.8)	P
T.9	Impact Test (glass)		N
T.9.1	General requirements		N



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
T.9.2	Impact test and compliance		N
	Impact energy (J)		—
	Height (m).....		—
T.10	Glass fragmentation test.....		N
T.11	Test for telescoping or rod antennas		N
	Torque value (Nm)		—

U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N
U.1	General requirements		N
U.2	Compliance and test method for non-intrinsically protected CRTs		N
U.3	Protective Screen	(See Annex T)	N

V	DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)		P
V.1	Accessible parts of equipment		P
V.2	Accessible part criterion		P

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
Copyright © 2017 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.	

	CENELEC COMMON MODIFICATIONS (EN)	
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z".	P
CONTENT S	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



IEC62368_1B - ATTACHMENT																																										
Clause	Requirement + Test			Result - Remark		Verdict																																				
	Delete all the “country” notes in the reference document (IEC 62368-1:2014) according to the following list: <table><tr><td>0.2.1</td><td>Note</td><td>1</td><td>Note 3</td><td>4.1.15</td><td>Note</td></tr><tr><td>4.7.3</td><td>Note 1 and 2</td><td>5.2.2.2</td><td>Note</td><td>5.4.2.3.2.2 Table 13</td><td>Note c</td></tr><tr><td>5.4.2.3.2.4</td><td>Note 1 and 3</td><td>5.4.2.5</td><td>Note 2</td><td>5.4.5.1</td><td>Note</td></tr><tr><td>5.5.2.1</td><td>Note</td><td>5.5.6</td><td>Note</td><td>5.6.4.2.1</td><td>Note 2 and 3</td></tr><tr><td>5.7.5</td><td>Note</td><td>5.7.6.1</td><td>Note 1 and 2</td><td>10.2.1 Table 39</td><td>Note 2, 3 and 4</td></tr><tr><td>10.5.3</td><td>Note 2</td><td>10.6.2.1</td><td>Note 3</td><td>F.3.3.6</td><td>Note 3</td></tr></table>					0.2.1	Note	1	Note 3	4.1.15	Note	4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c	5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3	5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4	10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3	P
0.2.1	Note	1	Note 3	4.1.15	Note																																					
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.					P																																				
1	Add the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.					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																																				



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.		N/A
10.2.1	Add the following to c) and d) in table 39: For additional requirements, see 10.5.1.		P
10.5.1	Add the following after the first paragraph: <i>For RS 1 compliance is checked by measurement under the following conditions:</i> <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> NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. <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> <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> <i>For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.</i> NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.		N/A
10.6.1	Add the following paragraph to the end of the subclause: EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.		N/A
10.Z1	Add the following new subclause after 10.6.5. 10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz 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). 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		N/A



IEC62368_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.		P
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



IEC62368_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		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



IEC62368_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
5.5.2.1	<p>Norway</p> <p>After the 3rd paragraph the following is added:</p> <p>Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).</p>		N/A



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.6	Finland, Norway and Sweden To the end of the subclause the following is added: Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.		N/A
5.6.1	Denmark Add to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.		P
5.6.4.2.1	Ireland and United Kingdom After the indent for pluggable equipment type A , the following is added: – the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.		P
5.6.5.1	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.		P
5.7.5	Denmark To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.1	<p>Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>“Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)”</p> <p>NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.”</p> <p>Translation to Swedish:</p> <p>“Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”</p>		N/A



IEC62368_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		N/A



IEC62368_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.		N/A
G.7.1	United Kingdom To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
G.7.1	Ireland To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	Ireland and United Kingdom To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm ² is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A



IEC62368_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



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	TABLE: List of critical components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹	
EU plug	Shenzhen AiNaU Technology Co.,Ltd	ANU-050200	250Vac, 2.5A	EN 50075	Tested with appliance	
Plastic Enclosure and plug holder	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR6005+(Z)	PC, V-0, 105°C, min. 1.5mm thickness	UL 94 UL 746	UL E121562	
PCB	Kingboard Laminates Holdings Ltd	KB-5150	V-0, 130°C	EN60695-11- 10:2013 VED0471-11- 10:2014-10	UL E123995	
Fuse (FR1)	Dongguan Hongda Electronic Technology Co., Ltd.	RXF	5.1R,1W	EN 60065	VDE:40036858 UL: E359590	
Y capacitor (CY1)	Jyh Chung Electronic Co.,Ltd.	JD	2200Pf,400V Y1, 125°C	IEC/EN 60384- 14	VDE 137027	
(Alternative)	Shantou High-New Zone Songtian Enterprise Co.,Ltd.	CT7/CD	2200pF,400V Y1, 125°C	IEC/EN 60384- 14	VDE 40038642	
(Alternative)	JYA-NAY Co.,Ltd.	JN	2200pF,400V Y1, 125°C	EN 60384-14	VDE 40036393	
Bridge Diode(DB1)	Interchangeable	Interchangeabl e	600V Min, 0.5Amin.	EN 62368-1	Tested with appliance	
Transformer (T1)	Shenzhen Mingdafa Electronics Co.,Ltd.	BCK1610-001	Class B	EN 62368-1	Tested with appliance	
- Bobbin	Changchun Plastics Co., Ltd	T375HF	Phenolic, V-0, 150°C, Min. thickness 0.8mm	UL 94 UL 746	UL E59481	
-Tape	SHENZHEH XINHUAHUI PLASIIC & INSULATION MATERIAL CO LTD,	HMT803	150°C	IEC/EC60950-1	UL E328315	
-Triple insulated wire	Shenzhen Darun Science & Technology Co.,Ltd,	DRTIW-F	155 °C	IEC/EN 60950- 1	VDE 40032470	
-Wire	SHANTOU SHENGANG ELECTRICAL INDUSTRIAL CO LTD	UEW	155 °C	IEC/EC60950-1	UL E239508	



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

- 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.
- 2) Description line content is optional. Main line description needs to clearly detail the component used for testing





IEC62368_1B - ATTACHMENT				
Clause	Requirement + Test		Result - Remark	Verdict
4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests			N
(The following mechanical tests are conducted in the sequence noted.)				
4.8.4.2	TABLE: Stress Relief test			—
Part		Material	Oven Temperature (°C)	Comments
-		-	--	--
4.8.4.3	TABLE: Battery replacement test			—
Battery part no. :				—
Battery Installation/withdrawal		Battery Installation/Removal Cycle		Comments
--		1		--
		2		--
		3		--
		4		--
		5		--
		6		--
		8		--
		9		--
		10		--
4.8.4.4	TABLE: Drop test			—
Impact Area		Drop Distance	Drop No.	Observations
-		-	1	-
-		-	2	-
-		-	3	-
4.8.4.5	TABLE: Impact			—
Impacts per surface		Surface tested	Impact energy (Nm)	Comments
-		-	-	-
4.8.4.6	TABLE: Crush test			—
Test position		Surface tested	Crushing Force (N)	Duration force applied (s)
-		-	-	-
Supplementary information:				
4.8.5	TABLE: Lithium coin/button cell batteries mechanical test result			N
Test position		Surface tested	Force (N)	Duration force applied (s)
-		-	-	-



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

5.2	Table: Classification of electrical energy sources	P
------------	---	----------

5.2.2.2 – Steady State Voltage and Current conditions

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
1	264Vac/60Hz	USB pin"+ to "earth"	Normal	-	0.033mA _{pk}	60	ES1
			Overload	-	0.033mA _{pk}	60	
			Single fault – U1 pin 1-5 S-C	-	0.033mA _{pk}	60	
			Single fault – D3 S-C	-	0.033mA _{pk}	60	
2	264Vac/60Hz	USB pin"- to "earth"	Normal	-	0.033mA _{pk}	60	ES1
			Abnormal	-	0.033mA _{pk}	60	
			Single fault – U1 pin 1-5 S-C	-	0.033mA _{pk}	60	
			Single fault – D3 S-C	-	0.033mA _{pk}	60	
3	264Vac/60Hz	USB pin"+ to " "	Normal	5.12V _{dc}	-	DC	ES1
			Abnormal	5.12V _{dc}	-	DC	
			Single fault – U1 pin 1-5 S-C	0	-	DC	
			Single fault – D3 S-C	0	-	DC	

5.2.2.3 - Capacitance Limits

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

5.2.2.4 - Single Pulses

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



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

5.2.2.5 - Repetitive Pulses

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

Test Conditions:

Normal –

Abnormal -

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

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P	
	Supply voltage (V)	90V	264V	--	--	—	
	Ambient T _{min} (°C)	23.8	23.9	--	--	—	
	Ambient T _{max} (°C)	24.6	24.7	--	--	—	
	T _{ma} (°C)	25.0	25.0	--	--	—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T _{max} (°C)	
C7 body		77.6	75.4	--	--	105	
CY1 body		72.4	64.0	--	--	125	
PCB near T1		87.3	75.7	--	--	130	
T1 bobbin		94.0	77.6	--	--	110	
T1 coil		106.3	88.5	--	--	110	
PCB near U3		88.4	80.3	--	--	130	
PCB near DB1		79.5	57.0	--	--	130	
PCB near U1		97.0	82.2			130	
Enclosure inside		69.7	59.4	--	--	105	
Enclosure outside		61.1	52.7	--	--	77	
Plug holder		36.1	34.2	--	--	77	
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
-	-	-	-	-	-	-	B



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

Note 1: Tma should be considered as directed by applicable requirement

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

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics			P
Allowed impression diameter (mm)			≤ 2 mm	—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)	
Plug holder	See table 4.1.2	125	1.52	
Supplementary information:				

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz) ¹	Required cl (mm)	cl (mm) ²	Required ³ cr (mm)	cr (mm)
Between L to N before fuse F1	420	240	0.06	1.27	3.0	2.5	3.0
Different polarity of F1	420	240	0.06	1.27	3.0	2.5	3.0
Primary pin of T1 to Secondary pin of T1 on PCB	528	256	47.9	2.54	6.2	5.0	6.2
Core of T1 to secondary pin of T1	528	256	47.9	2.54	7.5	5.0	7.5
Primary winding to Secondary winding of T1	528	256	47.9	2.54	7.5	5.0	7.5
Supplementary information:							
Note 1: Only for frequency above 30 kHz							
Note 2: See table 5.4.2.4 if this is based on electric strength test							
Note 3: Provide Material Group							
-A force of 10 N is applied to the internal components.							
-Core of transformer is deeming as primary conductor.							

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage		P
	Overvoltage Category (OV):		2
	Pollution Degree:		II



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)
See table 5.4.2.2, 5.4.2.4 and 5.4.3 above.	2500Vp	See table 5.4.2.2, 5.4.2.4 and 5.4.3 above.	--
Supplementary information:			

5.4.2.4	TABLE: Clearances based on electric strength test			P
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)	
Plastic enclosure:	528	47.9	See table 4.1.2	0.4	Min.1.5	
Supplementary information:						

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No	
Functional:				
--	--	--	--	
Basic/supplementary:				
L to N (fuse disconnect)	DC	2500	No	
Reinforced:				
L/N Input to output terminals	DC	4000	No	
L/N Input to plastic enclosure(wrapped with foil)	DC	4000	No	
T1: primary and secondary	DC	4000	No	
T1: secondary and core (core considered as primary)	DC	4000	No	
One layers insulation type of T1	DC	4000	No	
Routine Tests:				
--	--	--	--	
Supplementary information:				



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

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

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part		N
Supply voltage..... :	--	—	
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)	
	1	--	
	2*	--	
	3	--	
	4	--	
	5	--	
	6	--	
	8	--	
Supplementary Information:			
Notes:			
[1] Supply voltage is the anticipated maximum Touch Voltage			
[2] Earthed neutral conductor [Voltage differences less than 1% or more]			



IEC62368_1B - ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3

[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.

[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.

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
Output port	Normal condition	Power (W) :	11.01	11.01	PS1
		V _A (V) :	4.56	4.56	
		I _A (A) :	2.40	2.40	
Output port	U1 pin 4-2	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	
Output port	D3	Power (W) :	0	--	PS1
		V _A (V) :	0	--	
		I _A (A) :	0	--	

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	
All circuits (exclude the output terminal)	--	--	--	Yes	

Supplementary information:

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

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



IEC62368_1B - ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

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, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.

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

B.2.5	TABLE: Input test						P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
90V/ 50Hz	0.241	--	13.17	--	FR1	0.241	Rated load 5Vdc,2.0A.
90V/ 60Hz	0.244	--	13.12	--	FR1	0.244	
100V/ 50Hz	0.220	0.3	13.0	--	FR1	0.220	
100V/ 60Hz	0.224	0.3	12.98	--	FR1	0.224	
240V/ 50Hz	0.113	0.3	12.65	--	FR1	0.113	
240V/ 60Hz	0.113	0.3	12.60	--	FR1	0.113	
264V/ 50Hz	0.105	--	12.70	--	FR1	0.105	
264V/ 60Hz	0.104	--	12.67	--	FR1	0.104	
Supplementary information:							
Equipment may be have rated current or rated power or both. Both should be measured							

B.3	TABLE: Abnormal operating condition tests			P
------------	--	--	--	----------



IEC62368_1B - ATTACHMENT								
Clause	Requirement + Test					Result - Remark		Verdict
Ambient temperature (°C)						25		—
Power source for EUT: Manufacturer, model/type, output rating . :						--		—
Component No.	Abnormal Condition	Supply voltage , (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Output	OL	264	7h	FR1	0.104 to 0.106 to 0.107 to 0	K-type	T1 coil: 105.8°C T1 core: 103.6°C Enclosure outside: 67.7°C Ambient: 24.8°C	Max. output current increased to 2.41A shutdown, no hazards, no damaged.
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.								

B.4		TABLE: Fault condition tests							P
Ambient temperature (°C)									—
Power source for EUT: Manufacturer, model/type, output rating ...									—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation	
C1	S-C	264	10min	FR1	0	K-type	-	Fuse resistor (FR1) opened immediately, no hazard.	
DB1 pin1-3	S-C	264	10min	FR1	0	K-type	-	Fuse resistor (FR1) opened immediately, no hazard.	
T1 pin6-7	S-C	264	10min	FR1	0	K-type	-	Unit shutdown immediately and recoverable, no hazard, no damage.	
T1 Pin1-2	S-C	264	10min	FR1	0	K-type	-	Unit shutdown immediately and recoverable, no hazard, no damage.	
U1 pin1-2	S-C	264	10min	FR1	0	K-type	-	Unit shutdown immediately and recoverable, no hazard, no damage.	



IEC62368_1B - ATTACHMENT								
Clause	Requirement + Test					Result - Remark		Verdict
U1 pin4-6	S-C	264	10min	FR1	0	K-type	-	Unit shutdown immediately and recoverable, no hazard, no damage.
R1	S-C	264	10min	FR1	0	K-type	-	Unit shutdown immediately and recoverable, no hazard, no damage.
Output	S-C	264	10min	FR1	0	K-type	-	Unit shutdown immediately and recoverable, no hazard, no damage.
Supplementary information:								

Annex M	TABLE: Batteries								N	
The tests of Annex M are applicable only when appropriate battery data is not available									N	
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				--					N	
- Explosion of the battery				--					N	
- Emission of flame or expulsion of molten metal				--					N	
- Electric strength tests of equipment after completion of tests				--					N	
Supplementary information:										

Annex M.4	Table: Additional safeguards for equipment containing secondary lithium batteries					N
Battery/Cell No.	Test conditions	Measurements			Observation	
		U	I (A)	Temp (C)		
-	Normal	-	-	-	-	



IEC62368_1B - ATTACHMENT					
Clause	Requirement + Test			Result - Remark	Verdict
-	Abnormal	-	-	-	-
-	Single fault –SC/OC	-	-	-	-
-	Normal	-	-	-	-
-	Abnormal	-	-	-	-
-	Single fault – SC/OC	-	-	-	-
Supplementary Information:					

Annex Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)					P
Note: Measured UOC (V) with all load circuits disconnected:						
Output Circuit	Components	U _{oc} (V)	I _{sc} (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
Output	Normal operation	5.05	2.41	8.0	11.0	100
Output	Single fault: U1 pin 1-2 S-C	0	0	8.0	0	100
Output	Single fault: U1 pin 4-6 S-C	0	0	8.0	0	100
Output	Single fault: D3 S-C	0	0	8.0	0	100
Supplementary Information: SC=Short circuit, OC=Open circuit						

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	See table 4.1.2	Min.1.5	250	5	No visible damage	
Enclosure/Side	See table 4.1.2	Min.1.5	250	5	No visible damage	
Enclosure/Bottom	See table 4.1.2	Min.1.5	250	5	No visible damage	
Internal/components	--	--	10	5	No visible damage	
Supplementary information:						

T.6, T.9	TABLE: Impact tests				P
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
Enclosure/Top	See table 4.1.2	Min.1.5	1300	No visible damage	
Enclosure/Side	See table 4.1.2	Min.1.5	1300	No visible damage	



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Enclosure/Bottom	See table 4.1.2	Min.1.5	1300	No visible damage
Supplementary information:				

T.7	TABLE: Drop tests				P
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Enclosure/Top	See table 4.1.2	Min.1.5	1000	No visible damage	
Enclosure/Side	See table 4.1.2	Min.1.5	1000	No visible damage	
Enclosure/Bottom	See table 4.1.2	Min.1.5	1000	No visible damage	
Supplementary information:					

T.8	TABLE: Stress relief test				P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Enclosure/Whole unit	See table 4.1.2	Min.1.5	70	7	No visible damage
Supplementary information:					



Attachment 1

5	RATING		P
	Plugs according to this standard shall be rated 2,5 A, 250 V a.c.		P
6	MARKING		N/A
6.1	Plugs shall be marked with:		N/A
	- the rated current in amperes		N/A
	- the rated voltage in volts		N/A
	- the symbol for nature of supply: ~		N/A
	- either the name, trade mark or identification mark of the manufacturer or responsible vendor		N/A
	- the type reference, which may be a catalogue number		N/A
6.2	When symbols are used, they shall be as follows:		N/A
	- amperes: A		N/A
	- volts: V		N/A
6.3	Symbol for class II construction not used		N/A
6.4	Marking durable and easily legible, tested with 15 s water and 15 s petroleum spirit		N/A
7	DIMENSIONS		P
	Plugs comply with standard sheet 1		P
	Compliance is checked by measurement	See appended table 7	P
	Compliance checked by means of the gauges in figure 1 (optional) and figure 2		P
8	PROTECTION AGAINST ELECTRIC SHOCK		P
8.1	Live parts shall not be accessible		P
	Checked by test finger		P
	No deformation or no live part accessible during the additional test: (75 ⁺³) N through the tip of a straightunjointed test finger for (60 ⁺⁵) s at ambient temperature (35±2) °C		P
8.2	No possibility to make connection between a pin of the plug and a live socket contact of a socket-outlet while the other pin is accessible		P
	Compliance is checked by means of the gauge in figure 4: no contact between the gauge and the engagement face of the plug for 1 min (at 35 °C±2 °C for thermoplastic material)		P
8.3	External parts of plugs, with the exception of the pins, shall be of insulating material		P
9	CONSTRUCTION		P
9.1	Plugs shall be non-rewireable		P



9.2	Switches, fuses or lampholders shall not be incorporated in plugs		P
9.3	Pins of plugs shall be solid and have adequate mechanical strength	See tests of clause 13	P
9.4	Pins of plugs shall be locked against rotation and adequately fixed into the body of the plug	See tests of clause 13.1 and 13.4	P
9.5	Plugs shall be provided with soldered, welded, crimped or equally effective permanent connections, screwed or snap-on connections shall not be used. Connections made by crimping a presoldered flexible conductor are not permitted, unless the soldered area is outside the crimping area.		P
9.6	Plugs shall be shaped in such a way and made of such a material that they can easily be withdrawn by hand from a socket-outlet.		N/A
	In addition, the gripping surfaces shall be so designed that the plug can be withdrawn without having to pull the cord.		N/A
	Compliance is checked by inspecting whether the plug has either: <ul style="list-style-type: none">- a usable length for gripping of at least 55 mm in axial direction, or- such indent that a ball with a diameter of 12 mm can penetrate radially into the body at least 2 mm from two opposite directions or at least 4 mm from one direction.		N/A
	In case of non-compliance with the above requirements, a gripping test shall be performed		N/A
10	RESISTANCE TO HUMIDITY		N/A
	Plugs shall be proof against humidity which may occur in normal use. Checked by the humidity treatment, 91%-95%, 20°C-30°C for 48 h, then plugs shall satisfy electric strength test specified in clause 11		N/A
11	INSULATION RESISTANCE AND ELECTRIC STRENGTH		N/A
11.1	The insulation resistance shall be not less than 5 MΩ.		N/A
11.2	Electric strength: 2000 V a.c. test voltage applied for 1 min. No flashover or breakdown shall occur during the test	See appended table 11.2	P
12	FLEXIBLE CORDS AND THEIR CONNECTION		N/A
12.1	Cord in compliance with HD 21.5 or HD 22.4		N/A
12.2	Moulded-on plugs shall be so designed that the cores of the cord are relieved from strain where they are connected to the terminations. Checked by the following test:		N/A



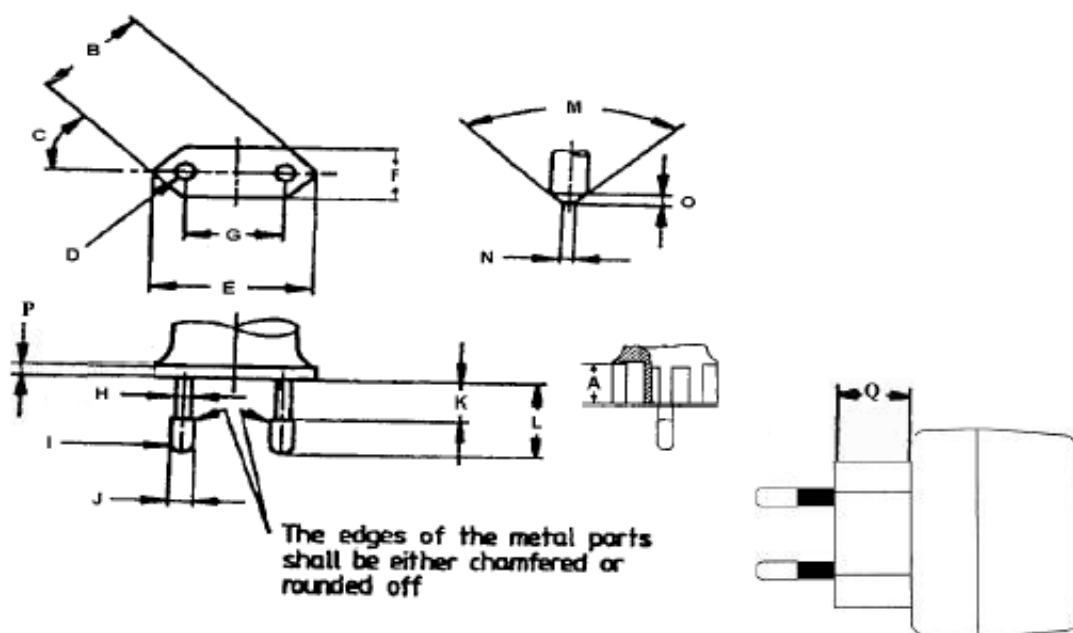
	The plug is placed in a test apparatus as shown in figure 5 so that the axis of the cord is vertical where it enters the plug. The cord is then subjected 100 times to a pull of 50 N, without jerks each time for 1 s		N/A
	Immediately afterwards the cord is subjected for 1 min to a torque of :		N/A
	- nominal cross-sectional area of 0,5 mm ² , 0,1 Nm		N/A
	- nominal cross-sectional area of 0,75 mm ² , 0,15 Nm		N/A
	- flat tinsel cords is H03VH-Y		N/A
	After the tests:		
	- the cord shall not have been displaced by more than 2 mm		N/A
	- no break in electrical connections		N/A
12.3	Flexible cords and their connection		N/A
	Flexing test: 10000 flexings, is moved backwards and forwards through an angle of 90 ° (45 ° on either side of the vertical)		N/A
	10 N for plugs with cords having a nominal cross-sectional area of 0,75 mm ² or less		N/A
	20 N for plugs with other cords		N/A
	A current of 2,5 A is passed through the conductors , the voltage between them being 250 V a.c.		N/A
	During the test, there shall be no interruption of the test current and no short-circuit between conductors		N/A
	After the test, the plugs shall show no damage		N/A
	The voltage drop between a pin and the corresponding conductor shall not exceed 10 mV		N/A
13	MECHANICAL STRENGTH		P
13.1	Pressure between 2 flat surfaces on the plug (150 N for 5 min)		P
	15 minutes after removal of the force, no deformation would result in undue alteration of those dimensions which ensure safety		P
13.2	Subjected to tumbling barrel; number of falls : Direct plug-in equipment, 0.090 500 falls		P
	After the test		
	- no part shall become detached or loosened		P
	- plug shall introduced into the gauge of figure 2		P
	- shall comply with clause 7 and 8.2		P



	- the pins shall not turn when applying a torque of 0,4 Nm for 1 min, first in one direction and then in opposite direction		P
13.3	Insulating sleeves: 20000 movements, (4 _{-0,1}) N (apparatus shown in Figure 9)	2000 movements	P
	After the test		
	- the sleeve shall show no damage		P
	- the sleeve shall not have punctured or rucked up		P
	- the sleeve shall satisfy electric strength test		P
13.4	(40 ⁺¹) N applied for (60 ⁺⁵) s on each pin in turn, at (70 ± 2) °C, after the plug has been placed for (60 ⁺⁵) min		P
	Displacement ≤ 1 mm when the plug has cooled down	Max. displacement of pin: 0.72 mm	P
14	RESISTANCE TO HEAT AND TO AGEING		P
14.1	Plugs shall be sufficiently resistant to heat, compliance is checked by the test of clause 14.1.1 and 14.1.2		P
14.1.1	Plugs other than moulded-on plugs, are kept for 1 h in a heating cabinet at (100 ± 2) °C		P
	After the test, the plugs are allowed to cool down to approximately room temperature, the marking shall still be legible		P
14.1.2	A force of (20 ⁺¹) N applied by means of an apparatus shown in figure 10 at (80 ± 2) °C		P
	After (60 ⁺⁵) min, the jaws are removed and the plugs shall show no damage		P
14.2	Plugs are kept in the cabinet at (70 ± 2) °C for 168 h, then removed from the cabinet and kept at room temperature for at least 96 h		N/A
	After the test, the plugs shall show no damage which would lead to non-compliance with this standard. Then obtained a force of 5N, no traces		N/A
15	CURRENT-CARRYING PARTS AND CONNECTIONS		P
15.1	Connections, electrical and mechanical, shall withstand the mechanical stresses occurring in normal use. Compliance is checked by inspection.		P
15.2	Electrical connections shall be so designed that contact pressure is not transmitted through insulating material.		P
15.3	Current-carrying parts shall be either of:		P
	- copper		N/A



	- an alloy containing at least 58% copper for parts made from rolled sheet (in cold condition) or at least 50% copper for other parts	> 58% copper	P
	- other metals having a mechanical strength, an electrical conductivity and a resistance to corrosion adequate for their intended use		N/A
	Current-carrying parts which may be subjected to mechanical wear, shall not be made of steel provided with an electroplated coating		P
16	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH INSULATION		N/A
	Creepage and clearance distance between live parts ≥ 3 mm		N/A
	Creepage and clearance distance between live parts and accessible external surfaces ≥ 3 mm		N/A
	Distance through insulation $\geq 1,5$ mm		N/A
17	RESISTANCE OF INSULATING MATERIAL TO ABNORMAL HEAT AND TO FIRE		P
	Glow-wire test (750 °C): no visible flame, no sustained glowing or flames and glowing extinguish within 30 s after removal of glow-wire	See appended table 17	P
	Glow-wire test (650 °C): no visible flame, no sustained glowing or flames and glowing extinguish within 30 s after removal of glow-wire	See appended table 17	P



Symbol	Requirement (mm)	Measured (mm)	Symbol	Requirement (mm)	Measured (mm)
A	$\geq 16,5$	17.8mm	I	--	--
B	25,6 - 26,6	25.8mm	J	3,94 - 4,06	3.95mm
C	45 °	45 °	K	10,0 - 11,0	10.1mm
D	R 5,0 - 6,0	5mm	L	18,5 - 19,5	18.7mm
E	34,6 - 36,0	35.0mm	M	$\leq 90^\circ$	--
F	13,0 - 14,4	13.5mm	N	0,7 - 1,7	1.6mm
G	Engagement 18,0 - 19,2	18.4mm	O	$\leq 2,0$	1.5mm
G	End 17,0 - 18,0	17.9mm	P	$\geq 4,0$	4.3mm
H	Within 4 mm from engagement face \leq 4,0mm	3.99mm	Q	$\geq 18,0$	18.4mm
	Above 4 mm from engagement face \leq 3,8mm	3.24mm			

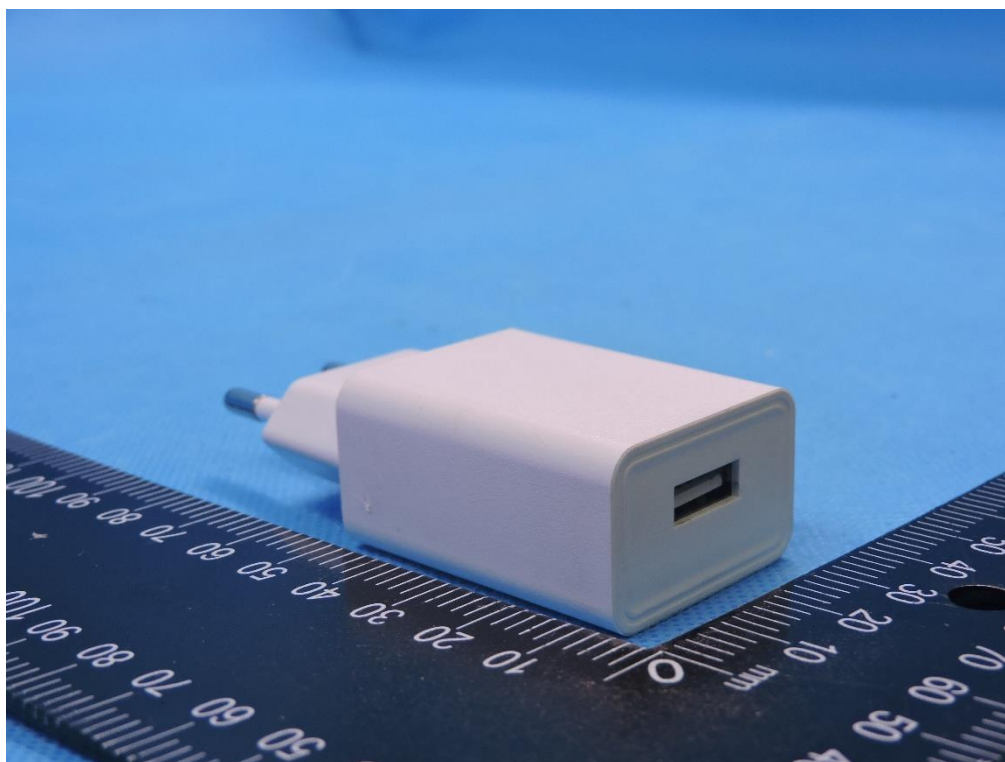
Photos:

Fig. 1 overview

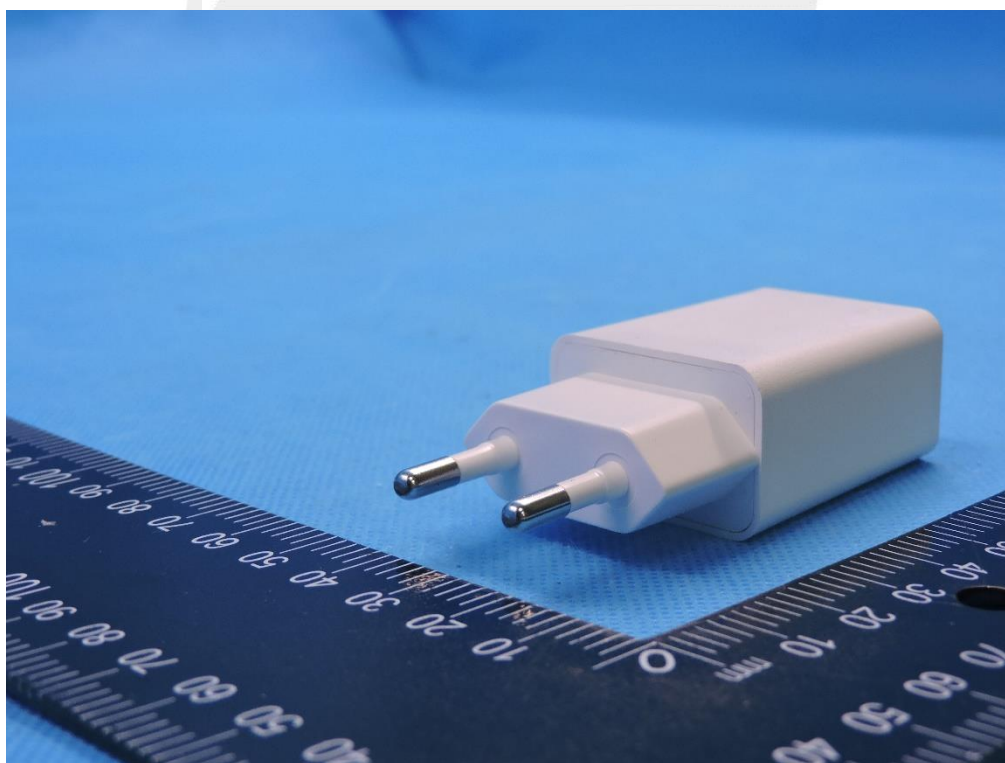


Fig. 2 overview

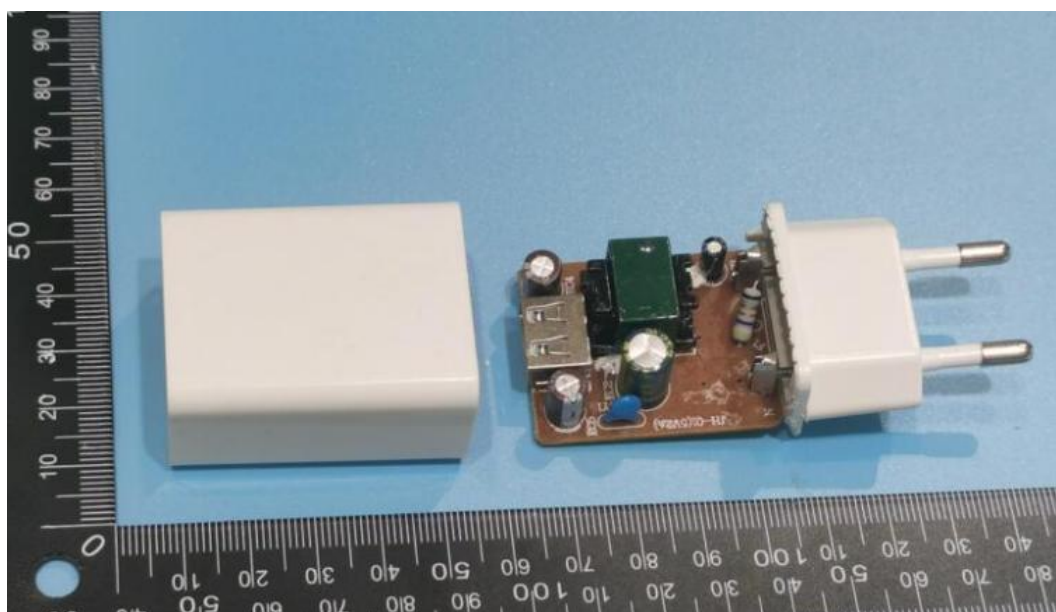


Fig. 3 Internal view

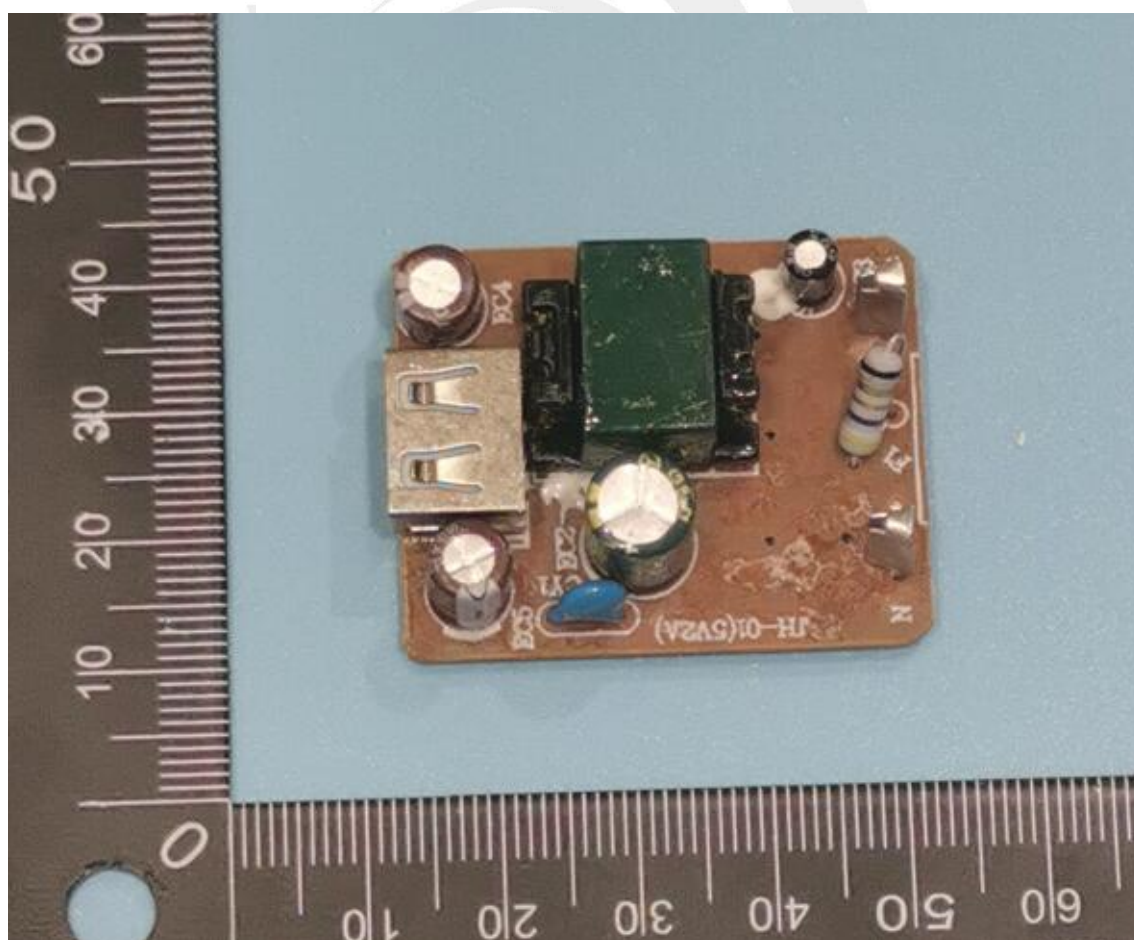


Fig. 4 Internal view

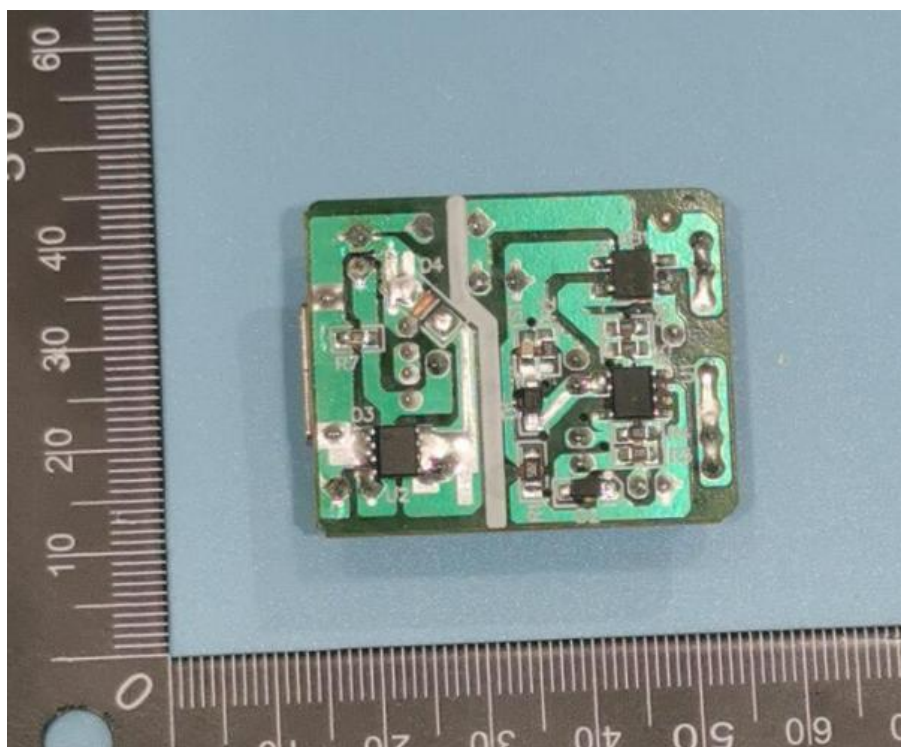


Fig. 5 Internal view

==== End of Test Report ====