

Safety Test Report

Report No.: AGC04094200301ES01

PRODUCT DESIGNATION : fast wall charger dual output with quick charge
BRAND NAME : N/A
MODEL NAME : P301.063
APPLICANT : Xindao B.V.
DATE OF ISSUE : Apr. 24, 2020
STANDARD(S) : EN 62368-1:2014+A11: 2017
REPORT VERSION : V1.0

Attestation of Global Compliance(Shenzhen) Co., Ltd.

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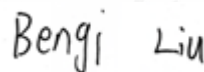
TEST REPORT

EN 62368-1

Audio/video, information and communication technology equipment – Part 1: Safety requirements

Report No.: AGC04094200301ES01

Tested by (+ signature): Bengi Liu



Reviewed by (+ signature): Byron Wang



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(Authorized Officer)



Date of issue: Apr. 24, 2020

Contents: Total 59 pages

Testing laboratory

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Community, Fuhai Street, Bao 'an District, Shenzhen, Guangdong, China

Testing location: Same as above.

Applicant

Name: Xindao B.V.

Address: P.O. Box 3082, 2280 GB, Rijswijk, The Netherlands

Manufacturer

Name: Xindao B.V.

Address: P.O. Box 3082, 2280 GB, Rijswijk, The Netherlands

Factory

Name: Xindao B.V.

Address: P.O. Box 3082, 2280 GB, Rijswijk, The Netherlands

Test specification

Standard: EN 62368-1:2014+A11:2017

Test procedure: Type test

Procedure deviation: N/A

Non-standard test method: N/A



Test Report Form/blank test report

Test Report Form No.....: AGC62368A2

TRF originator.....: AGC

Master TRF.....: 2018-09

Test item

Product designation.....: fast wall charger dual output with quick charge

Brand name.....: N/A

Test model.....: P301.063

Series model.....: N/A

Rating(s).....: Input: 100-240V~, 50-60Hz, 0.7A

Output: PD: 5V  3.0A / 9V  2.0A / 12V  1.5A Max 18W

USB: 5V  2.4A Total output: 30W

Test item particulars

Classification of use by.....:

- ☒
- Ordinary person
-
- ☐
- Instructed person
-
- ☐
- Skilled person
-
- ☐
- Children likely to be present

Supply Connection.....:

- ☒
- AC Mains
- ☐
- DC Mains
-
- ☐
- External Circuit - not Mains connected
-
-
- ☐
- ES1
- ☐
- ES2
- ☐
- ES3

Supply % Tolerance.....:

- ☒
- +10%/-10%
-
- ☐
- +20%/-15%
-
- ☐
- +____%/ -____%
-
- ☐
- None

Supply Connection – Type.....:

- ☒
- pluggable equipment type A -
-
- ☐
- non-detachable supply cord
-
- ☐
- appliance coupler
-
- ☒
- direct plug-in
-
- ☐
- mating connector
-
- ☐
- pluggable equipment type B -
-
- ☐
- non-detachable supply cord
-
- ☐
- appliance coupler
-
- ☐
- permanent connection
-
- ☐
- mating connector
- ☐
- other:

Considered current rating of protective device as part of building or equipment installation.....:

16A
Installation location: ☒ building; ☐ equipment

Equipment mobility.....:

- ☐
- movable
- ☐
- hand-held
- ☐
- transportable
-
- ☐
- stationary
- ☐
- for building-in
- ☒
- direct plug-in
-
- ☐
- rack-mounting
- ☐
- wall-mounted

Over voltage category (OVC).....:

- ☐
- OVC I
- ☒
- OVC II
- ☐
- OVC III
-
- ☐
- OVC IV
- ☐
- other:

Class of equipment.....:

- ☐
- Class I
- ☒
- Class II
- ☐
- Class III



Access location	☐ restricted access location ☒ N/A
Pollution degree (PD)	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified maxium operating ambient.....	40°C
IP protection class	☒ IPX0 ☐ IP ____
Power Systems	N/A ☒ TN ☐ TT ☐ IT - ____ V _{L-L}
Altitude during operation (m)	☒ 2000 m or less ☐ ____ m
Altitude of test laboratory (m)	☒ 2000 m or less ☐ ____ m
Mass of equipment (kg)	☒ 0.082 kg

Test case verdicts

Test case does not apply to the test object : N (/A)

Test item does meet the requirement : P(ass)

Test item does not meet the requirement..... : F(ail)

Testing

Date of receipt of test item : Mar. 18, 2020

Date of performance of test..... : Mar. 24, – Apr. 17, 2020

Attachments

Attachment A : Photos of product

General remarks

This report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item tested.

“(See remark #)” refers to a remark appended to the report.

“(See appended table)” refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

Report Revise Record:

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Apr. 24, 2020	Valid	Initial release

General product information

The equipment is direct plug-in type class II equipment integrated with EU plug.

The top enclosure is secured to bottom enclosure by ultra sonic.

Instructions and equipment marking related to safety is applied in the language that is acceptable in the country in which the equipment is to be sold.

The max. ambient temperature for apparatus is 40°C

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

Summary of testing

The test item passed.

Copy of marking plates

fast wall charger dual output with quick charge

Model: P301.063

Input: 100-240V~, 50-60Hz, 0.7A

Output: PD: 5V $\equiv$ 3.0A / 9V $\equiv$ 2.0A / 12V $\equiv$ 1.5A Max 18W

USB: 5V $\equiv$ 2.4A

Total output: 30W

Xindao B.V.



P.O. Box 3082, 2280 GB, Rijswijk, The Netherlands

Made In China

Importer: xxx

Address: xxx

Remark:

- 1) The CE marking and WEEE symbol (if any) should be at least 5mm and 7mm respectively in height.
- 2) The markings and instructions are the minimum requirements required by safety standard. For final production samples, the additional markings which do not give rise to misunderstanding may be added.
- 3) As declared by the applicant, the importer (and manufacturer, if it is different)'s name, registered trade name or mark and the postal address will be marked on the products before being place on the market.
- 4) Marking on the packaging or in a document accompanying the electrical equipment is only acceptable if it is not possible to place such markings on the product.



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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)
All internal circuits except output circuit	ES3
Output circuit	ES1

Electrically-caused fire (Clause 6):

(Note: List sub-assembly or circuit designation and corresponding energy source classification)

Example: Battery pack (maximum 85 watts):

PS2

Source of power or PIS	Corresponding classification (PS)
All circuit except output circuit	PS3
Output circuit	PS2

Injury caused by hazardous substances (Clause 7)

(Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.)

Example: Liquid in filled component

Glycol

Source of hazardous substances	Corresponding chemical
N/A	N/A

Mechanically-caused injury (Clause 8)

(Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.)

Example: Wall mount unit

MS2

Source of kinetic/mechanical energy	Corresponding classification (MS)
Edges and corners	MS1
Mass of equipment	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 part	TS1
Internal part of equipment	TS3

Radiation (Clause 10)

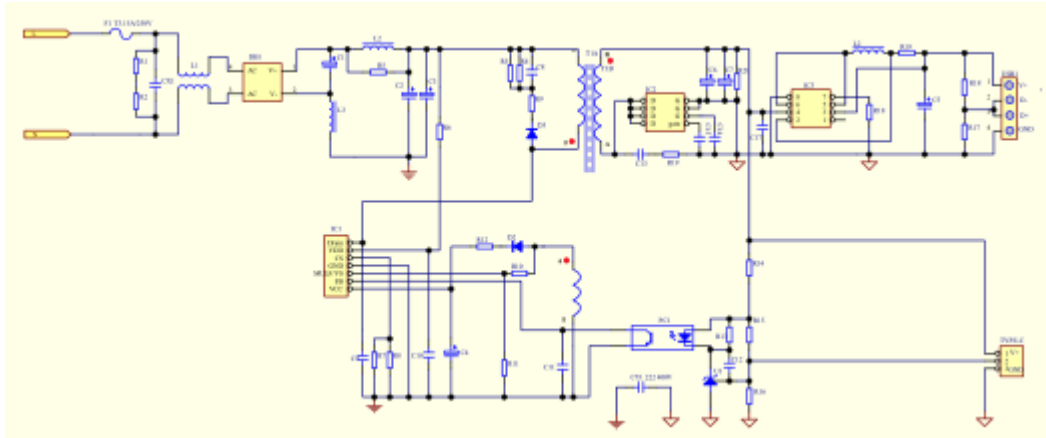
(Note: List the types of radiation present in the product and the corresponding energy source classification.)

Example: DVD – Class 1 Laser Product

RS1

Type of radiation	Corresponding classification (RS)
N/A	N/A

ENERGY SOURCE DIAGRAM



☒ ES
 ☒ PS
 ☒ MS
 ☒ TS
 ☐ RS



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OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary person	ES3: All internal circuits except output circuit	N/A	N/A	Enclosure, transformer (T1) and Y1-cap (CY1) and Opto-Coupler (U2)
Ordinary person	ES1: Output circuit	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
All combustible within equipment except output circuit	PS3: All circuit except output circuit	See 6.3	1. V-0 PCB used. 2. All other components: at least V-2 except for mount on V-0 material or small parts of combustible material. 3. Transformer complied with Annex G.5.3. 4. V-0 enclosure used.	N/A
All combustible in output circuit	PS1: Output circuit	N/A	N/A	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary person	MS1: Mass < 7kg	N/A	N/A	N/A
Ordinary person	MS1: Edges and corners	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced



Ordinary person	TS1: Accessible part	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
Supplementary Information: (1) See attached energy source diagram for additional details. (2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				



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Clause	Requirement – Test	Result – Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
4.1.3	Equipment design and construction	No accessible part which could cause injury	P
4.1.15	Markings and instructions	(See Annex F)	P
4.4.4	Safeguard robustness	See below	P
4.4.4.2	Steady force tests.....	(See Annex T.4)	P
4.4.4.3	Drop tests	(See Annex T.7)	P
4.4.4.4	Impact tests	Direct plug in equipment	N
4.4.4.5	Internal accessible safeguard enclosure and barrier tests		N
4.4.4.6	Glass Impact tests.....		N
4.4.4.7	Thermoplastic material tests	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard	(See Annex T)	P
4.4.4.9	Accessibility and safeguard effectiveness	No damaged	P
4.5	Explosion	No explosion occurs during normal/abnormal operation and single fault conditions	P
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard	The wires are secured by double method so that a loosening of the terminal connection is unlikely.	P
4.6.2	10 N force test applied to		P
4.7	Equipment for direct insertion into mains socket outlets	Direct plug in	P
4.7.2	Mains plug part complies with the relevant standard	EN 50075	P
4.7.3	Torque (Nm)	0.04Nm	P
4.8	Products containing coin/button cell batteries	No coin/button batteries used.	N
4.8.2	Instructional safeguard		N
4.8.3	Battery Compartment Construction		N

EN 62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Means to reduce the possibility of children removing the battery..... :		—
4.8.4	Battery Compartment Mechanical Tests..... :		N
4.8.5	Battery Accessibility		N
4.9	Likelihood of fire or shock due to entry of conductive object..... :	No likelihood of conductive object entering into enclosure.	P

5	ELECTRICALLY-CAUSED INJURY		P
5.2.1	Electrical energy source classification s..... :	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current..... :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits..... :	Peak voltage 384V, drop to 24V after 2s.	P
5.2.2.4	Single pulse limits..... :	No such single pulses with the EUT	N
5.2.2.5	Limits for repetitive pulses..... :	No such repetitive pulses with the EUT	N
5.2.2.6	Ringing signals..... :	No such ringing signals with the EUT	N
5.2.2.7	Audio signals..... :		N
5.3	Protection against electrical energy sources	See below	P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.2.1	Accessibility to electrical energy sources and safeguards	Only ES1 circuit can be accessed for this product.	P
5.3.2.2	Contact requirements	No openings allowing entry of a probe. No access with test probe to any ES3 circuit or parts.	P
	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	No such terminal	N
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	The choice and application have taken into account as specified in this Clause 5 and Annex T and natural rubber, hygroscopic materials or asbestos are not used as insulation.	P

EN 62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
5.4.1.3	Humidity conditioning	Humidity conditioning test was conducted, refer to 5.4.8	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	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	See appended table 5.4.2.2, 5.4.2.4, and 5.4.2.3	P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	See only 5.4.1.10.3 below.	P
5.4.1.10.2	Vicat softening temperature	Ball pressure conducted	N
5.4.1.10.3	Ball pressure	see appended table 5.4.1.10.3.	P
5.4.2	Clearances	The highest value of 5.4.2.2 and 5.4.2.3 shall be used	P
5.4.2.2	Determining clearance using peak working voltage	Temporary overvoltage 2000V _{peak} assumed.	P
5.4.2.3	Determining clearance using required withstand voltage	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
	a) a.c. mains transient voltage	2500 V _{pk} considered for Overvoltage Cat. II	—
	b) d.c. mains transient voltage		—
	c) external circuit transient voltage		—
	d) transient voltage determined by measurement ...		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N
5.4.2.5	Multiplication factors for clearances and test voltages		N
5.4.3	Creepage distances	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group	IIIb	—
5.4.4	Solid insulation	Plastic enclosure used as solid insulation	P



EN 62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
5.4.4.2	Minimum distance through insulation		P
5.4.4.3	Insulation compound forming solid insulation		N
5.4.4.4	Solid insulation in semiconductor devices		P
5.4.4.5	Cemented joints		N
5.4.4.6	Thin sheet material	Insulation tape on T1	P
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material		P
	Number of layers (pcs)	Min. 2 layers	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	See G.5.3 and G.6.1 only.	P
5.4.4.9	Solid insulation at frequencies >30 kHz	See appended table 5.4.4.9.	P
5.4.5	Antenna terminal insulation		P
5.4.5.1	General		P
5.4.5.2	Voltage surge test		P
	Insulation resistance (MΩ)	>100 MΩ	—
5.4.6	Insulation of internal wire as part of supplementary safeguard	No such 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
	Relative humidity (%)	93	—
	Temperature (°C)	40	—
	Duration (h)	120	—
5.4.9	Electric strength test	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test		P
5.4.9.2	Test procedure for routine tests	Should be considered and conducted during production at factory.	N
5.4.10	Protection against transient voltages between external circuit	No such circuit	N
5.4.10.1	Parts and circuits separated from external circuits		N



EN 62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
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 such external circuit.	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		P
5.5.1	General	See below.	P
5.5.2	Capacitors and RC units	Approved Y1 type capacitor used	P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector	Approved X-cap used	P
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See Annex G.12)	P
5.5.5	Relays	No such devices	N
5.5.6	Resistors	No such devices	N
5.5.7	SPD's	No such devices	N
5.5.7.1	Use of an SPD connected to reliable earthing		N
5.5.7.2	Use of an SPD between mains and protective earth		N
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable	No such external circuits.	N
5.6	Protective conductor	Class II equipment	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

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Clause	Requirement – Test	Result – Remark	Verdict
	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	Figure 4 of IEC 60990 was used in determining of the limit of ES1.	P
5.7.2.1	Measurement of touch current	See appendent table 5.2	P
5.7.2.2	Measurement of prospective touch voltage		P
5.7.3	Equipment set-up, supply connections and earth connections	Clause 4, 5.3 and 5.4 of IEC 60990:1999 applied.	P
	System of interconnected equipment (separate connections/single connection)	Single	—
	Multiple connections to mains (one connection at a time/simultaneous connections)	Single	—
5.7.4	Earthed conductive accessible parts.....	Class II equipment.	N
5.7.5	Protective conductor current		N
	Supply Voltage (V)		—
	Measured current (mA)		—
	Instructional Safeguard		N
5.7.6	Prospective touch voltage and touch current due to external circuits	No external circuits.	N
5.7.6.1	Touch current from coaxial cables		N

EN 62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
5.7.6.2	Prospective touch voltage and touch current from external circuits		N
5.7.7	Summation of touch currents from external circuits	No 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
6.2.2	Power source circuit classifications	PS (power source) classification determined by measuring the maximum power in Figures 34 and 35 for load and power source circuits.	P
6.2.2.1	General	See the following details.	P
6.2.2.2	Power measurement for worst-case load fault ... :	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault..... :	(See appended table 6.2.2)	P
6.2.2.4	PS1		N
6.2.2.5	PS2	(See appended table 6.2.2)	P
6.2.2.6	PS3	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources	See the following details.	P
6.2.3.1	Arcing PIS	Primary circuit	P
6.2.3.2	Resistive PIS	All circuits inside enclosure	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	No such materials used.	N
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method by control fire spread.	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		N
6.4.3.1	General		N

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Clause	Requirement – Test	Result – Remark	Verdict
6.4.3.2	Supplementary Safeguards		N
	Special conditions if conductors on printed boards are opened or peeled		N
6.4.3.3	Single Fault Conditions..... :		N
	Special conditions for temperature limited by fuse		N
6.4.4	Control of fire spread in PS1 circuits		N
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards :	(See appended tables 4.1.2 and Annex G)	P
6.4.6	Control of fire spread in PS3 circuit		P
6.4.7	Separation of combustible materials from a PIS	Fire enclosure provided	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	Equipment enclosure was evaluated as a fire enclosure.	P
6.4.8.1	Fire enclosure and fire barrier material properties	See the following details.	P
6.4.8.2.1	Requirements for a fire barrier		N
6.4.8.2.2	Requirements for a fire enclosure	Equipment fire enclosure was made of min. V-0 material.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	See the following details.	P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		N
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) :	No openings	P
	Needle Flame test		N
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) :	No openings	P
	Flammability tests for the bottom of a fire enclosure :		N
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..... :	The plastic enclosure rated min. V-0 is considered as fire enclosure.	P
6.5	Internal and external wiring		P
6.5.1	Requirements	Approved input wire used.	P

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Clause	Requirement – Test	Result – Remark	Verdict
6.5.2	Cross-sectional area (mm2)	(See appended tables 4.1.2)	—
6.5.3	Requirements for interconnection to building wiring		N
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1	Output complies with clause Q.1	P

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N
7.2	Reduction of exposure to hazardous substances	No hazardous chemicals within the equipment.	N
7.3	Ozone exposure	No ozone production within the equipment.	N
7.4	Use of personal safeguards (PPE)	No such consideration.	N
	Personal safeguards and instructions	See above.	—
7.5	Use of instructional safeguards and instructions	No chemical-caused injuries, the instruction safeguard was not required.	N
	Instructional safeguard (ISO 7010)	(See Annex F)	—
7.6	Batteries	No battery used.	N

8	MECHANICALLY-CAUSED INJURY		P
8.1	General	See the following details.	P
8.2	Mechanical energy source classifications	Edges and corners, classified as MS1 Equipment mass 0.042kg < 7 kg, classified as MS1	P
8.3	Safeguards against mechanical energy sources	MS1	N
8.4	Safeguards against parts with sharp edges and corners	Accessible edges and corners of the equipment are rounded and are classified as MS1.	P
8.4.1	Safeguards	See above.	N
8.5	Safeguards against moving parts	No moving parts within the equipment.	N
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment	See above.	N
8.5.2	Instructional Safeguard.....	See above.	—

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Clause	Requirement – Test	Result – Remark	Verdict
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		
	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	Fixed during used and mass less than 7kg	N
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	Direct plug in equipment.	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	No such device	N
8.8.1	Classification		N
8.8.2	Applied Force	See above.	N
8.9	Wheels or casters attachment requirements	No such wheels or casters within the EUT	N

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Clause	Requirement – Test	Result – Remark	Verdict
8.9.1	Classification	See above.	N
8.9.2	Applied force	See above.	—
8.10	Carts, stands and similar carriers	No such device provided within the EUT.	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	MS1 equipment	N
8.11.1	General		N
8.11.2	Product Classification		N
8.11.3	Mechanical strength test, variable N		N
8.11.4	Mechanical strength test 250N, including end stops		N
8.12	Telescoping or rod antennas.....	No such device provided within the EUT.	N
	Button/Ball diameter (mm).....	See above.	—

9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications	All accessible surfaces are classified as TS1, see appended table 5.4.1.4, 6.3.2, 9.0, B.2.6	P
9.3	Safeguard against thermal energy sources	See above.	P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard	Accessible Enclosure temperatures do not exceed TS1 limits.	P
9.4.2	Instructional safeguard	TS1 class, instructional safe guard no necessary.	N

10	RADIATION	N
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Clause	Requirement – Test	Result – Remark	Verdict
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	No such x-radiation generated from the equipment.	N
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

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Clause	Requirement – Test	Result – Remark	Verdict
10.6	Protection against acoustic energy sources	No such consideration for the purpose of personal music players.	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	See the following details.	P
B.2.1	General requirements	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers..... :		N
B.2.3	Supply voltage and tolerances	+10%, -10% considered	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&B.4)	P
B.3.2	Covering of ventilation openings	No ventilation openings	N

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Clause	Requirement – Test	Result – Remark	Verdict
B.3.3	D.C. mains polarity test	Connected by polarity car cigarette light connector	N
B.3.4	Setting of voltage selector	No setting of voltage selector within the EUT	N
B.3.5	Maximum load at output terminals	(See appended table B.3&B.4)	P
B.3.6	Reverse battery polarity	No battery within the EUT	N
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 effectively.	P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited		N
B.4.3	Motor tests	No motor within the EUT	N
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature	See above.	N
B.4.4	Short circuit of functional insulation	See the following details.	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.3 & B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.3 & B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards within the EUT	N
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.3 & B.4)	P
B.4.6	Short circuit or disconnect of passive components	(See appended table B.3 & B.4)	P
B.4.7	Continuous operation of components	The EUT is continuous operating type and no such components intended for short time operation or intermittent operation	N
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	Class 1 and Class 2 energy sources were within limits during and after single fault conditions.	P
B.4.9	Battery charging under single fault conditions	No battery involved in the EUT	N

C	UV RADIATION		N
C.1	Protection of materials in equipment from UV radiation	No such UV generated from the equipment.	N
C.1.2	Requirements		N
C.1.3	Test method		N

EN 62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
C.2	UV light conditioning test		N
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		P
D.1	Impulse test generators		N
D.2	Antenna interface test generator		P
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	See the following details.	P
	Instructions – Language :	English	—
F.2	Letter symbols and graphical symbols	See the following details.	P
F.2.1	Letter symbols according to IEC60027-1	Letter symbols for quantities and units are complied with IEC 60027-1.	P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Graphical symbols are complied with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010.	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Equipment marking is located on the exterior surface and is easily visible.	P
F.3.2	Equipment identification markings	See the following details.	P
F.3.2.1	Manufacturer identification :	See copy of marking plate.	—
F.3.2.2	Model identification :	See copy of marking plate.	—
F.3.3	Equipment rating markings	See the following details.	P

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Clause	Requirement – Test	Result – Remark	Verdict
F.3.3.1	Equipment with direct connection to mains	Connected to AC 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	100-240V	—
F.3.3.4	Rated frequency.....	50-60Hz	—
F.3.3.6	Rated current or rated power	0.7A	—
F.3.3.7	Equipment with multiple supply connections	Only one supply connection.	N
F.3.4	Voltage setting device	No such device on the equipment.	N
F.3.5	Terminals and operating devices	See below	N
F.3.5.1	Mains appliance outlet and socket-outlet markings	No such outlet on the equipment.	N
F.3.5.2	Switch position identification marking	No such switch on the equipment.	N
F.3.5.3	Replacement fuse identification and rating markings.....	Fuse: F1, T3.15AL/250V	P
F.3.5.4	Replacement battery identification marking	No battery	N
F.3.5.5	Terminal marking location		N
F.3.6	Equipment markings related to equipment classification	Class II	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		N
F.3.7	Equipment IP rating marking	This equipment is classified as IPX0.	—
F.3.8	External power supply output marking	See copy of marking plate.	P
F.3.9	Durability, legibility and permanence of marking	See the following details.	P
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test, 15 sec. for water and 15 sec. for petroleum spirit. After each test, the marking remained legible.	P
F.4	Instructions		P

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Clause	Requirement – Test	Result – Remark	Verdict
	a) Equipment for use in locations where children not likely to be present - marking		N
	b) Instructions given for installation or initial use	Relevant safety caution texts and installation instruction are available.	P
	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	No such terminal	N
	f) Protective earthing employed as safeguard		N
	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	The EUT is not a permanently connected equipment	N
	j) Replaceable components or modules providing safeguard function		N
F.5	Instructional safeguards	No instructional safeguard is considered as necessary.	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	No such switch as disconnect devices provided within the equipment.	N
G.1.2	Ratings, endurance, spacing, maximum load		N
G.2	Relays		N
G.2.1	General requirements	No such relay provided within the equipment.	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	No thermal cut-off provided within the equipment.	N

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Clause	Requirement – Test	Result – Remark	Verdict
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)	See above.	N
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)	See above.	N
G.3.1.2	Thermal cut-off connections maintained and secure	See above.	N
G.3.2	Thermal links		N
G.3.2.1a)	Thermal links separately tested with IEC 60691	No thermal link provided within the equipment.	N
G.3.2.1b)	Thermal links tested as part of the equipment	See above.	N
	Aging hours (H)	See above.	—
	Single Fault Condition	See above.	—
	Test Voltage (V) and Insulation Resistance (Ω)...	See above.	—
G.3.3	PTC Thermistors	No PTC thermistor provided within the equipment.	N
G.3.4	Overcurrent protection devices	Approved fuse 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	No such component.	N
G.3.5.2	Single faults conditions		N
G.4	Connectors		P
G.4.1	Spacings		N
G.4.2	Mains connector configuration	Plug complied with EN 50075 used.	N
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	Output connector with a shape that insert into mains connector is unlikely to occur.	P
G.5	Wound Components		P
G.5.1	Wire insulation in wound components	Approved Insulated wire used as Reinforced insulation for secondary winding of T1.	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	Tape, tubing	P
G.5.1.2 b)	Construction subject to routine testing		N
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)		—

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Clause	Requirement – Test	Result – Remark	Verdict
	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.5.3.3.	—
G.5.3.2	Insulation	Primary windings and secondary windings are separated by Reinforced insulation	P
	Protection from displacement of windings	By bobbin and insulating tape	—
G.5.3.3	Overload test.....	(See appended table B.3)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment.	P
G.5.3.3.2	Winding Temperatures testing in the unit	(See appended table B.3)	P
G.5.3.3.3	Winding Temperatures - Alternative test method		N
G.5.4	Motors		N
G.5.4.1	General requirements	No motors	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)		—
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

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Clause	Requirement – Test	Result – Remark	Verdict
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	Triple insulated winding in T1 secondary windings used as reinforced safeguard in the isolating transformer that has separately complied with Annex J.	P
G.6.2	Solvent-based enamel wiring insulation	Insulation does not rely on solvent-based enamel.	P
G.7	Mains supply cords		N
G.7.1	General requirements	No supply cords	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		
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
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

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Clause	Requirement – Test	Result – Remark	Verdict
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	No VDRs.	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	(See appended table B.3)	N
G.9	Integrated Circuit (IC) Current Limiters		N
G.9.1 a)	Manufacturer defines limit at max. 5A.	No IC current limiter provided within the equipment.	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	No such resistor as safeguard used	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	Capacitors used in accordance with their rating and complied with subclasses of IEC 60384-14. (see appended table 4.1.2)	P
G.11.2	Conditioning of capacitors and RC units	(see appended table 4.1.2)	P
G.11.3	Rules for selecting capacitors	The selection followed with tables G.9 and G.12.	P
G.12	Optocouplers		P

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Clause	Requirement – Test	Result – Remark	Verdict
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results)..... :	Use approved optocouplers	P
	Type test voltage Vini :		—
	Routine test voltage, Vini,b :		—
G.13	Printed boards		P
G.13.1	General requirements	See the following details.	P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board complied with the minimum clearance and creepage requirements	P
G.13.3	Coated printed boards	No coated printed board provided within the equipment.	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

EN 62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
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
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	Ringling 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	Approved tripple wire used	P

EN 62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
K	SAFETY INTERLOCKS		N
K.1	General requirements	No safety interlock provided within the equipment.	N
K.2	Components of safety interlock safeguard mechanism	(See Annex G)	N
K.3	Inadvertent change of operating mode		N
K.4	Interlock safeguard override		N
K.5	Fail-safe		N
	Compliance	(See appended table B.4)	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	AC mains plug used as disconnect device.	P
L.2	Permanently connected equipment		N
L.3	Parts that remain energized		N
L.4	Single phase equipment	Disconnect device disconnects all poles simultaneously.	P
L.5	Three-phase equipment		N
L.6	Switches as disconnect devices	Directly plug in apparatus.	N
L.7	Plugs as disconnect devices		N
L.8	Multiple power sources	Single	N
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N
M.1	General requirements	No battery used.	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

EN 62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
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
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		N
M.4.2.2 b)	Single faults in charging circuitry		N
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

EN 62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
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 V_z (m ³ /s)		—
M.8.2.3	Correction factors.....		—
M.8.2.4	Calculation of distance d (mm)		—
M.9	Preventing electrolyte spillage		N
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		—

O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Figures O.1 to O.20 of this Annex applied.....	Considered.	—

P	SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS		P
P.1	General requirements		P
P.2.2	Safeguards against entry of foreign object	No openings of enclosure.	P
	Location and Dimensions (mm)		—
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

EN 62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
	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	No such construction.	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	No such construction.	N
P.4.2 a)	Conditioning testing		N
	Tc (°C).....		—
	Tr (°C)		—
	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		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 appended 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	No such consideration.	N

EN 62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
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	The fire enclosure was made of rated min. V-0 material.	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
	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).....		—

EN 62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
	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	See the following details.	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	(See appended table T.4)	P
T.5	Steady force test, 250 N		N
T.6	Enclosure impact test		N
	Fall test		N
	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)	No such glass provided within the equipment.	N
T.9.1	General requirements	See above.	N
T.9.2	Impact test and compliance	See above.	N
	Impact energy (J).....		—
	Height (m)		—
T.10	Glass fragmentation test	No glass used.	N
T.11	Test for telescoping or rod antennas	No such antennas provided within the equipment.	N
	Torque value (Nm)	See above.	—

U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N
U.1	General requirements	No CRT provided within the equipment.	N
U.2	Compliance and test method for non-intrinsically protected CRTs	See above.	N
U.3	Protective Screen	See above.	N

EN 62368-1			
Clause	Requirement – Test	Result – Remark	Verdict

V	DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)		P
V.1	Accessible parts of equipment	No access with test probes to any hazardous parts	P
V.2	Accessible part criterion	No live parts can be accessible.	P



EN 62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment Part 1: Safety requirements)			
	CENELEC COMMON MODIFICATIONS (EN)		--
1	NOTE Z1		P
4.Z1	Protective devices included as integral parts of the equipment or as parts of the building installation:	Considered	P
	a) Included as parts of the equipment		P
	b) For components in series with the mains; by devices in the building installation		P
	c) For pluggable type B or permanently connected; by devices in the building installation		P
5.4.2.3.2.4	Interconnection with external circuit	No connection to external circuit.	N
10.2.1	Additional requirements in 10.5.1	No radiation.	N
10.5.1	RS1 compliance measurement conditions	Added.	N
10.6.2.1	EN 71-1:2011, 4.20 and methods and distances	Added.	N
10.Z1	Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz	Added.	N
G.7.1	NOTE Z1	Added.	N

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		--
4.1.15	Denmark, Finland, Norway and Sweden: Class I pluggable equipment type A marking		N
4.7.3	United Kingdom: Torque test socket-outlet BS 1363, and the plug part BS 1363.		N
5.2.2.2	Denmark: Warning for high touchcurrent		N
5.4.11.1 and Annex G	Finland and Sweden: Separation of the telecommunication network from earth		N
5.5.2.1	Norway: Capacitors rated for the applicable line-to-line voltage (230 V).	Considered.	P
5.5.6	Finland, Norway and Sweden: Resistors used as basic safeguard or bridging basic insulation comply with G.10.1 and G.10.2.		N
5.6.1	Denmark: Protection for pluggable equipment type A; integral part of the equipment		N
5.6.4.2.1	Ireland and United Kingdom: The protective current rating is taken to be 13 A		N
5.6.5.1	Ireland and United Kingdom: Conductor sizes of flexible cords to be accepted by terminals for equipment rated 10 A to 13 A		N

EN 62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
5.7.5	Denmark: The installation instruction affixed to the equipment if high protective conductor current		N
5.7.6.1	Norway and Sweden: Television distribution system isolation text in user manual		N
5.7.6.2	Denmark: Warning for high touch current		N
B.3.1 and B.4	Ireland and United Kingdom: Tests conducted using an external miniature circuit breaker or protective devices included as an integral part of the direct plug-in equipment		N
G.4.2	Denmark: Appliances rated ≤ 13 A provided with a plug according to DS 60884-2-D1:2011.		N
	Class I equipment provided with socket-outlets provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.		N
	If a single-phase equipment having rated >13 A or poly-phase equipment provided with a supply cord with a plug, plug in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.		N
	Mains socket outlets intended for providing power to Class II apparatus rated 2,5 A in accordance with DS 60884-2-D1:2011 standard sheet DKA 1- 4a.		N
	Other current rating socket outlets in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.		N
	Mains socket-outlets with earth 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		N
G.4.2	United Kingdom: The plug part of direct plug-in equipment assessed to BS 1363		N
G.7.1	United Kingdom: Equipment fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768		N
G.7.1	Ireland: Apparatus provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use		N
G.7.2	Ireland and United Kingdom: A power supply cord for equipment which is rated over 10 A and up to and including 13 A.		N

ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		--
10.5.2	Germany: Cathode ray tube intended for the display of visual images, authorization or application of type approval and marking.		N

4.1.2	TABLE: List of critical components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹	
Plastic enclosure	CHI MEI CORPORATION	PC-110(+)	V-0, 105°C, min. thickness 1.5 mm	UL 94	UL E56070	
Pin holder	LG CHEMICAL(GUANGZHOU)ENGINEERING PLASTICS CO LTD	EF-1006F(m)	V-0, 115°C	UL 94	UL E248280	
Input Wire	Dongguan Keben Electronic Technology Co Ltd	1007, 1015	min.300V, 80°C,min.24AWG	UL758	UL E318852	
Insulation tube used for input leading wire	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-HFT(XY)	125°C	UL 224	E180908	
PCB	JIANGXI ZHONG XI NHUA ELECTRONICS INDUSTARY CO TED	ZXH-2, ZXH-1	V-0, 130°C, min. thickness 1.0 mm	UL 94	UL E331298	
Fuse (F1)	Dongguan Anlu Electronics Technology Co. Ltd.	32GT	T3.15L/ 250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL248-14	UL E365174 VDE 40039890	
Shrinkable tube for fuse	Shenzhen YINGSHANGKE ELECTRONICS CO., LTD	TG-100	VW-1, 105°C, 600V	UL 224	UL E356931	
Electrolytic Capacitor (C1, C2, C3)	Interchangeable	Interchangeable	15µF, min. 400V ac, 105°C	EN 62368-1	Test with appliance	
Inductor (L2)	Tongda Electronics (Shenzhen) Limited	T633-400 UH	Rated 130°C	EN 62368-1	Test with appliance	
-Magnet wire	JIANGSU HONGLIU MAGNET WIRE TECHNOLOGY CO LTD	QA-x/155	155°C	UL 1446	UL E335065	
-Triple insulated wire	SHANGHAI HENGYI SPECIAL CABLE CO LTD	HY-88	130°C	UL 2353	UL E346236	
-Tube	SHENZHEN WOER HEAT-SHRINK ABLE MATERIAL CO LTD	WST-600	200°C	UL 224	UL E203950	
Line choke (L1)	Tongda Electronics (Shenzhen) Limited	6×3×4-2 400UH	Rated 130°C	EN 62368-1	Test with appliance	
- Magnet wire	DONG GUAN YIDA INDUSTRIAL CO LTD	xUEW/155	155°C	UL 1446	UL E344055	



-Tube	SHENZHEN WOER HEAT-SHRINK ABLE MATERIAL CO LTD	WST-600	200°C	UL 224	UL E203950
X-Capacitor (CX1)	Dain Electronics Co., Ltd.	MEX, MPX, NPX	250Vac, X2, 0.33uf, 110°C	EN 60384-14	VDE 40018798
(Alternative)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	MPX	250Vac, X2, 0.33uf, 110°C	EN 60384- 14	VDE 40034679
(Alternative)	Shantou City Youying Electronic	MPK	250Vac, X2, 0.33uf, 110°C	EN 60384- 14	VDE 40041469
(Alternative)	Dongguan Champion Electronic Technology Co., Ltd	MPX Series	250Vac, X2, 0.33uf, 110°C	EN 60384- 14	VDE 40044148
Bleeding resistor (R1, R2,)	Interchangeable	Interchangeable	1.0M ohm, min. 1/4W	EN 62368-1	Test with appliance
Bridge diode (DB1)	Interchangeable	Interchangeable	Min. 2 A, min. 1000 V	EN 62368-1	Test with appliance
Y- capacitor (CY1)	JYA-NAY CO LTD	JN	Max. 2200pF, min. 250Vac, 125°C, Y1 type	EN 60384-14, UL 60384-14	VDE 40001831 UL E201384
(Alternative)	DONGGUAN CIGU ELECTRONIC TECHNOLOG Y CO., LTD.	CE	Max. 2200pF, min. 250Vac, 125°C, Y1 type	UL 60384-14	UL E481614
Opto-coupler (PC1)	Shenzhen Orendo Components Co., Ltd.	OR-1009	Cr.&Cl.=min.8 .0mm;Dti.=mi n. >0.4mm;min. 100°C	UL 60747-5-5 UL 60950-1	UL 323844
Transformer (T1)	Shenzhen Bojian Technology Co., Ltd.	PQ20/13-3 0W	Class B	IEC/EN 60950-1	Test with appliance
-Bobbin	CHANG CHUN PLASTICS CO LTD	T375J	Phenolic, V-0, 150°C, min. thickness 0.4mm	UL94, UL746C	UL E59481
(Alternative)	Sumitomo Bakelite Co., Ltd.	PM-9820, PM-9630	Phenolic, V-0, 150 °C,min. thickness:0.8 7mm	UL94, UL746C	UL E41429



-Triple insulated wire	GUANGZHOU WANBAO ELECTRONIC MATERIAL CO LTD	DTM-B(xx) @	130°C	IEC 60590-1, UL 2353	UL E323485
(Alternative)	SHENZHEN HEDONG NEW MATERIALS CO.,LTD	TIW-B	130°C	IEC 60590-1, UL 2353	UL E357240
-Insulation tape	YHHUA ADHESIVE TAPE CO LTD	POLYFSTER FILM TAPE	130°C	UL510	UL E165111
(Alternative)	JINGJIANG FUWEI ADHESIVE PRODUCT CO LTD	FW	130°C	UL 510	UL E302608
-Magnet wire	Shantou Shengang Electrical Industrial Co Ltd	xUEW/130	130°C	UL 510	UL E239508
-Tube	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-L	200°C	UL 224	UL E180908
-Varnish	QUALIPOLY CHEMICAL CORP	1032*	155°C	UL 1446	UL E213437
Supplementary information:--					

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, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests			N
(The following mechanical tests are conducted in the sequence noted.)				
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)
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	264	USB Output “+” to “-”	Normal	5.11Vdc max	--	--	ES1
			Abnormal – output over load	5.11Vdc max	--	--	
			Abnormal – R19	5.13Vdc max	--	--	
2	264	PD Output “+”	Normal	12.0Vdc max	--	--	

		to “-”	Abnormal – output over load	12.0Vdc max	--	--	
			Abnormal – R19	12.05Vdc max	--	--	
3	264	Output to earth	Earth and plastic enclosure with metal foil	--	0.005	--	ES1
			Earth and output terminals	--	0.025	--	

5.2.2.3 – Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, Nf	Upk (V)	
--	--	--	Normal	--	--	--
			Abnormal	--	--	
			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	--	--	--	

5.2.2.5 – Repetitive Pulses

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

Test Conditions:

Normal –

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):	a):240V×1.1/50Hz b):100V×0.9/60Hz			—		
	Ambient T _{min} (°C):	--	--	—			
	Ambient T _{max} (°C):	--	--	—			
	Tma (°C):	40	40	—			
Maximum measured temperature T of part/at:		T (°C)			Allowed T _{max} (°C)		
Test condition No.:		a)	b)	--			
Plug holder		42.5	50.9	105			
Input wire		54.4	61.0	80			
CX1		72.2	86.0	110			
E-cap C1		85.0	94.8	105			
E-cap C3		86.1	95.9	105			
Inductance L3		81.3	110.7	130			
T1 coil		96.8	105.8	110*			
T1 bobbin		94.4	102.5	110			
PCB near T1		89.7	98.7	130			
CY1		84.6	108.1	125			
U2		86.7	93.8	125			
E-cap C7		87.5	99.2	105			
E-cap C5		91.4	101.6	105			
Inductance L2		93.8	104.6	130			
Plastic enclosure inside near T1		74.0	89.5	105			
Ambient		40.0	40.0	--			
For accessible part							
Plastic enclosure outside near T1		62.4	75.6	77			
Ambient		25.0	25.0	--			
Supplementary information: *) Temperature limits for winding include less 10K for thermocouple measurement method.							
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information:							
Note 1: Tma should be considered as directed by applicable requirement							
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							

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	LG CHEMICAL(GUANGZHOU)ENGINEERING PLASTICS CO LTD	125	0.9	
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)
Primary traces of different polarity before fuse F1	<420	<250	60.6	1.5	2.6	2.5	2.6
Trace under fuse F1	<420	<250	60.6	1.5	2.6	2.5	2.6
Trace under Transformer	528	281	60.6	3.3	9.2	5.0	9.2
Trace under CY1	<420	<250	60.6	3.0	8.4	5.0	8.4
Trace under U2	<420	<250	60.6	3.0	8.2	5.0	8.2
Supplementary information:							
Note 1: Only for frequency above 30 kHz							
Note 2: See table 5.4.2.4 if this is based on electric strength test							
Note 3: Provide Material Group							

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage			P
	Overvoltage Category (OV):			II
	Pollution Degree:			2
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Measured cl (mm)
See table 5.4.2.2, 5.4.2.4 and 5.4.3 above.		2500	1.5mm for BI 3.0mm for RI	--
Supplementary information: BI= basice insulation, RI=reinforce insulation.				

5.4.2.4	TABLE: Clearances based on electric strength test			N
Test voltage applied between:		Required cl (mm)	Test voltage (Kv) peak/ r.m.s. / d.c-	Breakdown Yes / No
--		--	--	--
Supplementary information:				

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements	P
------------------------------------	--	---

Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
Enclosure	420	≤30	1)	0.4	Min. 1.5
Bobbin	420	≤30	1)	0.4	Min. 0.4
Supplementary information: 1). See appended table 4.1.2 for details.					

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Basic/supplementary:				
L/N before fuse (F1)		DC	2500	No
Reinforced:				
L/N and enclosure with metal foil		DC	4000	No
L/N and output		DC	4000	No
T1 primary to secondary		DC	4000	No
T1 core to secondary		DC	4000	No
1 layer of insulating tape on T1		DC	4000	No
Routine Tests:				
--		--	--	--
Supplementary information:				

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: ☐ bleeding resistor rating: ☐ 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	264V/60Hz	—	
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)	
--	1	--	
--	2*	--	
--	3	--	
--	4	--	
--	5	--	
--	6	--	
--	7	--	
Supplementary Information:			
Notes:			
[1] Supply voltage is the anticipated maximum Touch Voltage			
[2] Earthed neutral conductor [Voltage differences less than 1% or more]			
[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3			
[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.			
[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.			

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
Primary circuit	Normal and abnormal	Power (W) :	--	--	PS3 (declared by manufacturer)
		V _A (V) :	--	--	
		I _A (A) :	--	--	
USB Output	Normal	Power (W) :	12.44	--	PS1
		V _A (V) :	4.88	--	
		I _A (A) :	2.57	--	
	IC2 pin G-gate short	Power (W) :	(shut down)	--	PS1
		V _A (V) :	(shut down)	--	
		I _A (A) :	(shut down)	--	
PD Output	Normal	Power (W) :	--	35.19	PS2
		V _A (V) :	--	11.06	
		I _A (A) :	--	3.26	
	IC2 pin G-gate short	Power (W) :	--	(shut down)	PS2
		V _A (V) :	--	(shut down)	
		I _A (A) :	--	(shut down)	

		I_A (A) :	--	(shut down)	
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 (Vp)	Measured r.m.s current (Irms)	Calculated value (Vp x Irms)	Arcing PIS? Yes / No	
All internal circuit	--	--	--	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 (Vn) and normal operating condition rms current (Irms) 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 internal circuit / component	--	--	--	--	Yes
Supplementary Information: A combination of voltmeter, VA and ammeter I_A may be used instead of a wattmeter. If a separate voltmeter and ammeter are used, the product of ($VA \times I_A$) 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	
PD output: 5V/3A+ USB output: 5V/2.4A								
90V/50Hz	0.635	--	34.70	--	F1	0.635	Normal operation	
90V/60Hz	0.637	--	34.55	--	F1	0.637	Normal operation	
100V/50Hz	0.573	0.7	34.21	--	F1	0.573	Normal operation	
100V/60Hz	0.578	0.7	34.06	--	F1	0.578	Normal operation	
240V/50Hz	0.299	0.7	34.40	--	F1	0.299	Normal operation	
240V/60Hz	0.298	0.7	34.34	--	F1	0.298	Normal operation	
264V/50Hz	0.280	--	34.54	--	F1	0.280	Normal operation	
264V/60Hz	0.282	--	34.64	--	F1	0.282	Normal operation	
PD output: 9V/2A+ USB output: 5V/2.4A								
90V/50Hz	0.677	--	37.01	--	F1	0.677	Normal operation	
90V/60Hz	0.679	--	36.91	--	F1	0.679	Normal operation	
100V/50Hz	0.613	0.7	36.52	--	F1	0.613	Normal operation	
100V/60Hz	0.618	0.7	36.45	--	F1	0.618	Normal operation	
240V/50Hz	0.321	0.7	35.15	--	F1	0.321	Normal operation	
240V/60Hz	0.320	0.7	35.11	--	F1	0.320	Normal operation	
264V/50Hz	0.302	--	35.14	--	F1	0.302	Normal operation	
264V/60Hz	0.300	--	35.18	--	F1	0.300	Normal operation	
PD output: 12V/1.5A+ USB output: 5V/2.4A								
90V/50Hz	0.670	--	36.71	--	F1	0.670	Normal operation	
90V/60Hz	0.672	--	36.59	--	F1	0.672	Normal operation	
100V/50Hz	0.606	0.7	36.19	--	F1	0.606	Normal operation	
100V/60Hz	0.609	0.7	36.11	--	F1	0.609	Normal operation	
240V/50Hz	0.302	0.7	35.06	--	F1	0.302	Normal operation	
240V/60Hz	0.302	0.7	35.07	--	F1	0.302	Normal operation	
264V/50Hz	0.282	--	35.12	--	F1	0.282	Normal operation	
264V/60Hz	0.281	--	35.13	--	F1	0.281	Normal operation	
Supplementary information: --								

B.3		TABLE: Abnormal operating condition tests		P
Ambient temperature (°C)			25°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
USB output	Overload	264V	3h20min	F1	0.304-0.318-0.022	Type J	T1 coil= 97.8°C, T1 bobbin =95.5°C, Enclosure outside near T1=75.7°C Ambient=25.3°C	When the USB port is load to 2.6A, unit shut down. No hazards.
PD output	Overload	264V	4h20min	F1	0.303-0.384-0.427-0.056	Type J	T1 coil= 118.5°C, T1 bobbin =113.7°C, Enclosure outside near T1=92.3°C Ambient=25.5°C	When the PD port is load to 3.3A, unit shut down. No hazards.
Supplementary information: S-C= short circuit.								

B.4 TABLE: Fault condition tests								P
Ambient temperature (°C)						25°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
USB output	S-C	264V	10min	F1	0.032	--	--	Unit shutdown immediately, no damage and hazards.
PD output	S-C	264V	10min	F1	0.032	--	--	Unit shutdown immediately, no damage and hazards.
T1, pin A-B	S-C	264V	10min	F1	0.032	--	--	Unit shutdown immediately, no hazards.
DB1	S-C	264V	10min	F1	0.02	--	--	F1 opened, no damage and hazards.
C1	S-C	264V	10min	F1	0.02	--	--	F1 opened, no damage and hazards.
R7	S-C	264V	10min	F1	0.08	--	--	F1 opened, no damage and hazards.
D2	S-C	264V	10min	F1	0.03	--	--	F1 opened, no damage and hazards.
R19	S-C	264V	10min	F1	0.03	--	--	Unit shutdown immediately, no damage and hazards.

R14	S-C	264V	10min	F1	0.08	--	--	PD port shutdown immediately, USB port running normally, no damage and hazards.
Supplementary information: --								

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

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

Battery identification	Charging at T _{lowest} (°C)	Observation	Charging at T _{highest} (°C)	Observation
--	--	--	--	--
--	--	--	--	--
Supplementary Information:				

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
USB output	Normal	5.11	2.57	8	12.44	100
USB output	IC2 pin G-gate S-C	0(shut down)	0	8	0	100
PDB output	Normal	12.0	3.26	8	36.08	100
PD output	IC2 pin G-gate S-C	0(shut down)	0	8	0	100
Supplementary Information: S-C=Short circuit, O-C=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	
Top enclosure	Plastic	Min. 1.5	100	5	No damaged	
Side enclosure	Plastic	Min. 1.5	100	5	No damaged	
Bottom enclosure	Plastic	Min. 1.5	100	5	No damaged	
Internal component	--	--	10	5	No reduction the clearances and creepage distances	
Supplementary information:						

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

T.7	TABLE: Drop tests				P
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Top enclosure	Plastic	Min. 1.5	1000	No damaged	
Side enclosure	Plastic	Min. 1.5	1000	No damaged	
Bottom enclosure	Plastic	Min. 1.5	1000	No damaged	
Supplementary information:					

T.8	TABLE: Stress relief test					P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Completed sample	Plastic enclosure (for all sources)	Min. 1.5	100	7	No damaged, no hazards.	
Supplementary information: For details refer to appended table 4.1.2.						



Attachment A
Photos of product

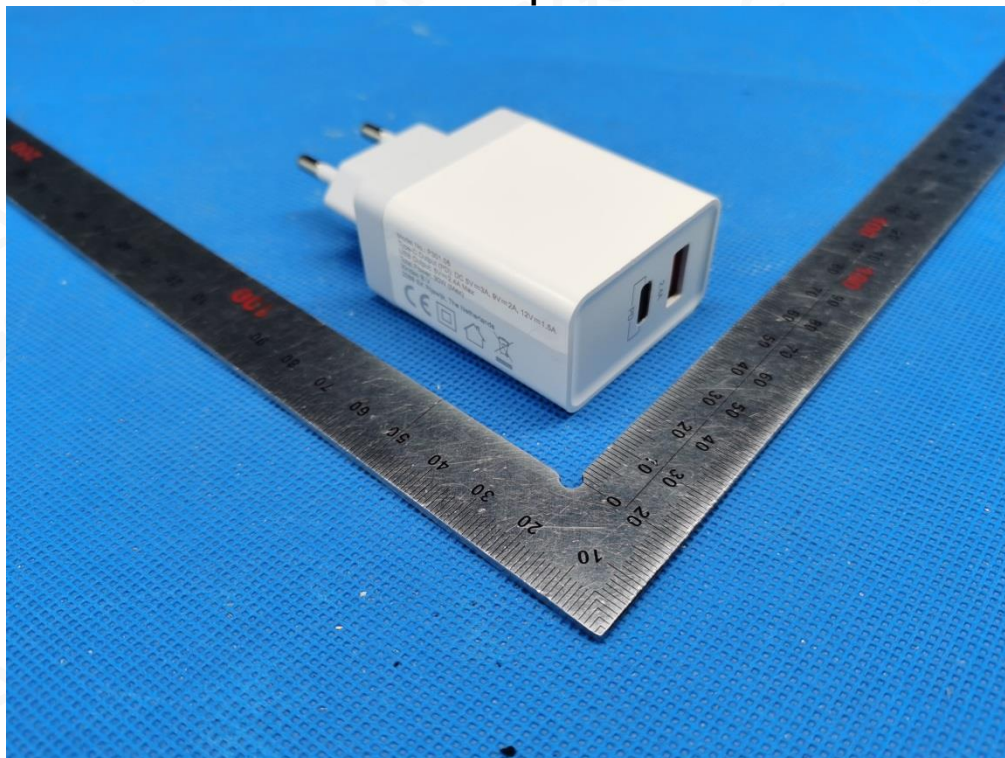


Fig.1 – Over view

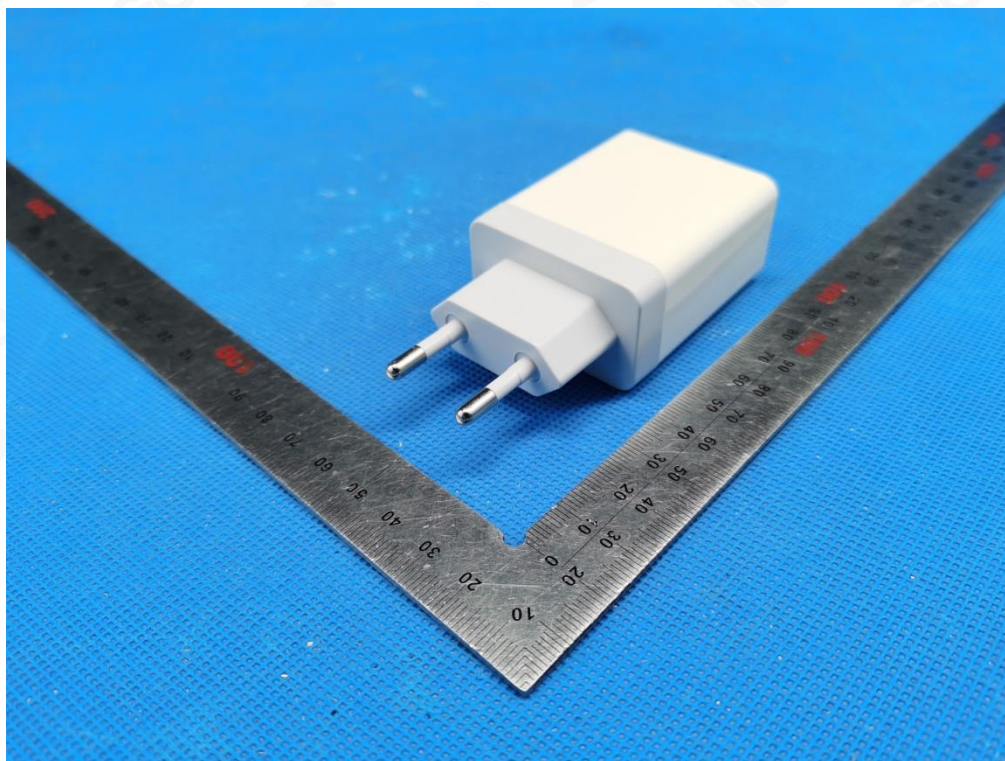


Fig.2 – Over view

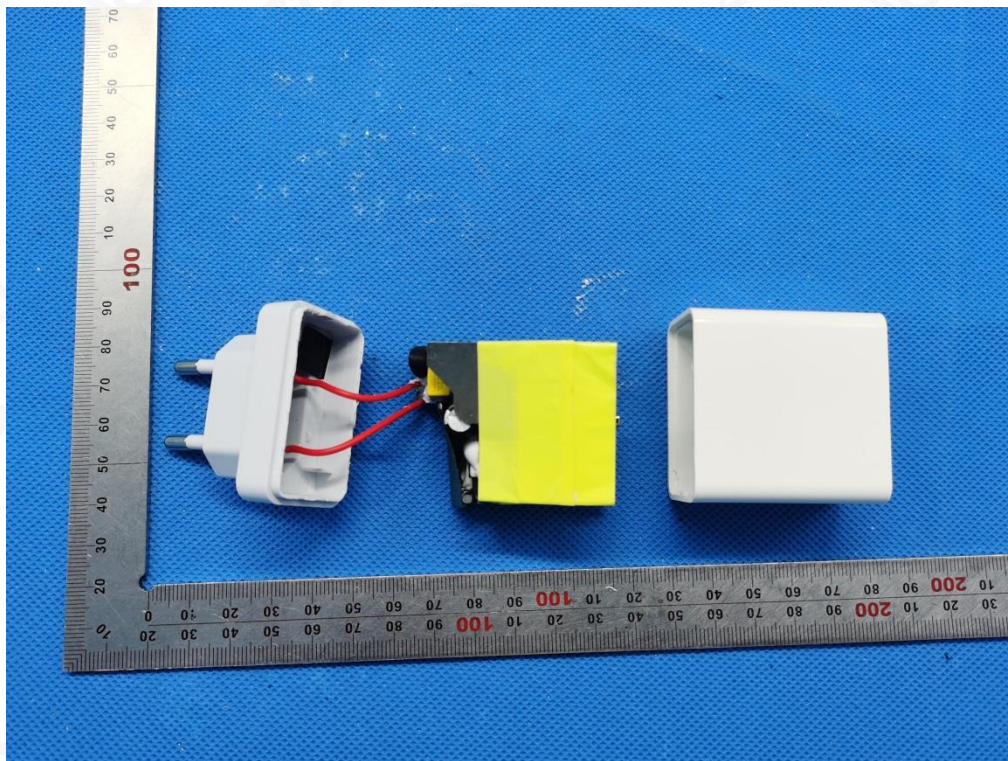


Fig.3 – Internal view



Fig.4 –Internal view

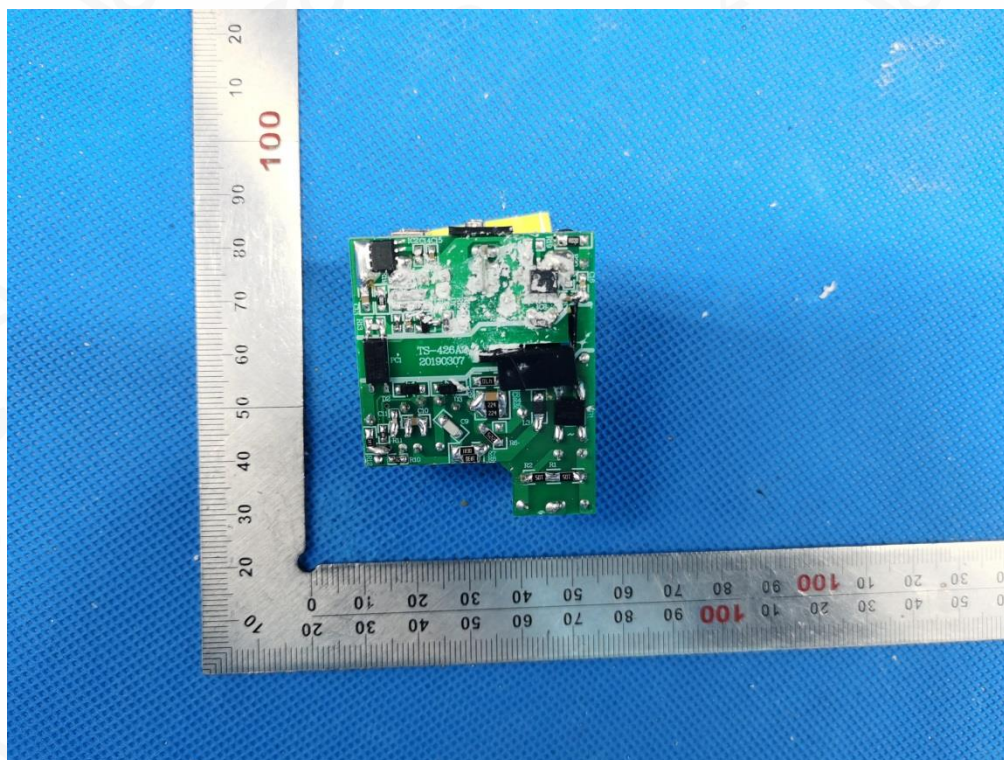


Fig.5 –PCB view

-----END OF REPORT-----



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