



**TEST REPORT
EN 62368-1**

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

Report Number : LCSA110122122S

Date of issue : 2022-11-15

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Name of Testing Laboratory preparing the Report..... : Shenzhen LCS Compliance Testing Laboratory Ltd.

Applicant's name : V-TAC EXPORT LIMITED

Address : Room 301 Kam ON Building 176A, Queen's Road Central HongKong

Test specification:

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

Test procedure : Type test

Non-standard test method : N/A

TRF template used..... : IECEE OD-2020-F1:2020, Ed.1.3

Test Report Form No. : IEC62368_1D

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

Master TRF : Dated 2021-02-04

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Test Item description	Portable Power Station	
Trade Mark		
Manufacturer	Win-Power Technology Limited 201, No. 1, Shangwai Industrial Road 1, Zhangkeng Path community, Guanhu Street, Longhua district, Shenzhen City	
Model/Type reference	YW-600, YW600-VT-606	
Ratings	Battery capacity: 26.2Ah, 21.6V, 568Wh. DC Input: 12-24V==5.0A max. AC output: 220V, 2.7A 50/60Hz, 1000W Max. DC output: 12V==8A. Wireless charging output: 15W Max. USB-A1 output: 5V==2.4A, 12W Max. USB-A2 (QC3.0) output: 5V==3.0A, 9V==2.0A, 12V==1.5A, 20V==0.9A, 18W Max. USB-C output: 5V==3.0A, 9V==3.0A, 12V==3.0A, 15V==3.0A, 20V==3.25A, 65W Max.	
Testing procedure and testing location:		
<input checked="" type="checkbox"/> Testing Laboratory:	Shenzhen LCS Compliance Testing Laboratory Ltd.	
Testing location/ address	Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China	
Prepared by.....	Vic Liu Project Handler	
Checked by.....	Terry Zhu Reviewer	
Approved by.....	Hart Qiu Technical Director	



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List of Attachments (including a total number of pages in each attachment):	
Attachment No. 1: EUROPEAN GROUP DIFFERENCES	
Attachment No. 2: Photo document	
Summary of testing:	
Tests performed (name of test and test clause): The submitted samples were found to comply with the requirements of:	Testing location: Shenzhen LCS Compliance Testing Laboratory Ltd. Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China
Electrical safety: ➤ EN 62368-1:2014+A11:2017	
Summary of compliance with National Differences (List of countries addressed):	
<input checked="" type="checkbox"/> The product fulfils the requirements of <u>EN 62368-1:2014+A11:2017</u> (insert standard number and edition and delete the text in parenthesis or delete the whole sentence, if not applicable)	
Statement concerning the uncertainty of the measurement systems used for the tests	
Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:	
Procedure number, issue date and title:	
Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.	
Statement not required by the standard used for type testing	
When determining for test conclusion, measurement uncertainty of tests has been considered.	
The determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.	

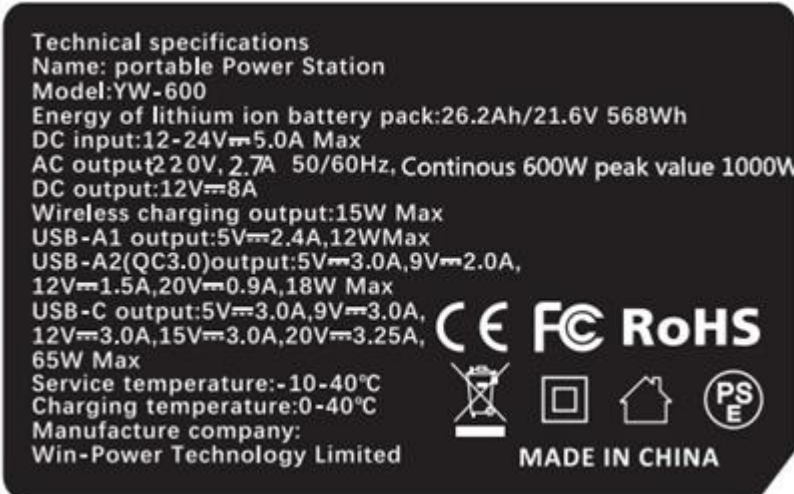


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Copy of marking plate:

The artwork below may be only a draft.



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Note:

The height of CE symbol ≥ 5.0mm, the height of WEEE symbol ≥ 7.0mm.



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TEST ITEM PARTICULARS:	
Classification of use by	<input checked="" type="checkbox"/> Ordinary person <input checked="" type="checkbox"/> Instructed person <input checked="" type="checkbox"/> Skilled person <input type="checkbox"/> Children likely to be present
Supply Connection	<input type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input checked="" type="checkbox"/> External Circuit - not mains connected - <input checked="" type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance	<input type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> + ___% / - ___% <input checked="" type="checkbox"/> None
Supply Connection – Type	<input type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input checked="" type="checkbox"/> other: not mains connected
Considered current rating of protective device as part of building or equipment installation	30A Installation location: <input type="checkbox"/> building; <input checked="" type="checkbox"/> equipment
Equipment mobility	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input checked="" type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: not Mains connected
Class of equipment	<input type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input checked="" type="checkbox"/> Not classified
Access location	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maximum operating ambient:	40°C
IP protection class	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP_ _
Power Systems	<input type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - ___ V _{L-L}
Altitude during operation (m)	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ___ m
Altitude of test laboratory (m)	<input type="checkbox"/> 2000 m or less <input checked="" type="checkbox"/> 500 m
Mass of equipment (kg)	<input checked="" type="checkbox"/> 5,33 kg



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POSSIBLE TEST CASE VERDICTS:	
- test case does not apply to the test object..... :	N/A
- test object does meet the requirement :	P (Pass)
- test object does not meet the requirement :	F (Fail)
TESTING:	
Date of receipt of test item..... :	See original test report
Date (s) of performance of tests..... :	See original test report
GENERAL REMARKS:	
<p>"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p> <p>According to the EU directives which have been aligned with EU NLF (new legislative framework), both of manufacturer and importer's name and address shall be affixed on the product or, where that is not possible, on its packaging or in a document accompanying the product before the product is placed on the EU market.</p> <p>The applicant and manufacturer information, product name, model, trademark and other information in this report are all provided by the applicant, and this laboratory is not responsible for verifying its authenticity.</p>	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC60335-1:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies)	Same as the manufacturer
GENERAL PRODUCT INFORMATION:	
Product Description	
<ol style="list-style-type: none"> The equipment is a Portable Power Station that intended to supply other equipment within the scope of this part of IEC 62368-1. The maximum operated ambient temperature is +40°C. This equipment is intended to operate in an area which has an elevation of maximum 2000m. All models are identical except for the model name. All tests used for model: YW-600. The differences between this report and the original report (report number: LCS21111115AS) are: changed the applicant's name and address, changed the trade mark and additional model name. The difference does not affect the safety of the product, and the test data refers to the test data of the original report number: LCS21111115AS. 	
Additional application considerations – (Considerations used to test a component or sub-assembly) –	



**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)**

24Vd.c. input

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)**

Internal circuits within unit

PS3

USB-A1 Output

PS1

USB-A2 (QC3.0) Output

PS2

USB-C Output

PS2

DC Output

PS3

AC output

PS3 (declared)

Battery

PS3 (declared)

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)**

Mass of the unit

MS1

Edges and corners

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)**

Enclosure (plastic/metal)

TS1

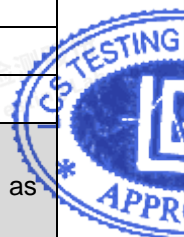


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**ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:****Radiation (Clause 10)**

(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)
Indicator light	RS1
LED lamp	RS1

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	ES1: 24Vd.c. input	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 materials within equipment fire enclosure	PS3: All internal circuits inside the equipment enclosure	Equipment safeguard (e.g., no ignition occurs; no parts exceeding 90% of its spontaneous ignition temperature)	Equipment safeguard (e.g., control of fire spread; PCB is complied with V-0 material; All other components at least V-2 except for mounted on min. V-1 material or small parts of combustible material)	N/A
USB-C Output	PS2	N/A	N/A	N/A
USB-A1 Output	PS1	N/A	N/A	N/A
USB-A2 (QC3.0) Output	PS2	N/A	N/A	N/A
DC Output	PS3	Equipment	Equipment safeguard (e.g.,	N/A



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		safeguard (e.g., no ignition occurs; no parts exceeding 90% of its spontaneous ignition temperature)	control of fire spread; PCB is complied with V-0 material; All other components at least V-2 except for mounted on min. V-1 material or small parts of combustible material)	
AC output	PS3	Equipment safeguard (e.g., no ignition occurs; no parts exceeding 90% of its spontaneous ignition temperature)	Equipment safeguard (e.g., control of fire spread; PCB is complied with V-0 material; All other components at least V-2 except for mounted on min. V-1 material or small parts of combustible material)	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	MS1: Mass of the unit<7kg	N/A	N/A	N/A
Ordinary	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	TS1: Plastic/metal enclosure	N/A	N/A	N/A
Ordinary	TS3: Internal parts / circuits	N/A	N/A	Enclosure
10.1	Radiation			





Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	RS1: Indicator light	N/A	N/A	N/A
Ordinary	RS1: LED lamp	N/A	N/A	N/A
Supplementary Information: (1) See attached energy source diagram for additional details. (2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				





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

4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2	P
4.1.2	Use of components		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.4)	P
4.4.4.3	Drop tests.....:	(See Annex T.7)	P
4.4.4.4	Impact tests.....:		N/A
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....:	The external enclosure cannot be opened without damaging the product.	N/A
4.4.4.6	Glass Impact tests.....:	No such glass used.	N/A
4.4.4.7	Thermoplastic material tests.....:	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard.....:	(See Annex T)	P
4.4.4.9	Accessibility and safeguard effectiveness		P
4.5	Explosion		N/A
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.....:	10N test was applied to internal components.	P
4.7	Equipment for direct insertion into mains socket - outlets		N/A
4.7.2	Mains plug part complies with the relevant standard.....:		N/A
4.7.3	Torque (Nm).....:		N/A
4.8	Products containing coin/button cell batteries	No coin/button cell batteries	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery.....:		—
4.8.4	Battery Compartment Mechanical Tests.....:		N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object.....:	No likelihood of conductive object entry.	P



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Clause	Requirement + Test	Result - Remark	Verdict
5	ELECTRICALLY-CAUSED INJURY		P
5.2.1	Electrical energy source classifications..... :	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current..... :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits..... :		N/A
5.2.2.4	Single pulse limits..... :	No such single pulses generated in the EUT or applied to it	N/A
5.2.2.5	Limits for repetitive pulses..... :	No such repetitive pulses within the EUT	N/A
5.2.2.6	Ringing signals..... :	No ringing signals	N/A
5.2.2.7	Audio signals..... :	No audio signals	N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
5.3.2.2	Contact requirements	No opening of enclosure, no access with test probe to any ES3 circuit or parts	P
	a) Test with test probe from Annex V..... :		P
	b) Electric strength test potential (V)..... :		N/A
	c) Air gap (mm)..... :		N/A
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Humidity conditioning..... :	(See sub-clause 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..... :	PD2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage		P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.10.2	Vicat softening temperature..... :		N/A
5.4.1.10.3	Ball pressure :		N/A
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2)	P
5.4.2.3	Determining clearance using required withstand voltage :	(See appended table 5.4.2.3)	P
	a) a.c. mains transient voltage :		—
	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/A
5.4.2.5	Multiplication factors for clearances and test voltages :	Up to 2000m	N/A
5.4.3	Creepage distances :	(See appended table 5.4.3)	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		N/A
5.4.4.4	Solid insulation in semiconductor devices		P
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material	Insulation tape used for transformer	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/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material :		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		P
5.4.4.9	Solid insulation at frequencies >30 kHz :	(See appended table 5.4.4.9)	P
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A



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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Insulation resistance (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/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%).....:	95%	—
	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 such external circuits	N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test.....:		N/A
5.4.10.2.3	Steady-state test.....:		N/A
5.4.11	Insulation between external circuits and earthed circuitry.....:	No such connections for external circuit applied within the EUT	N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V).....:		—
	Nominal voltage U_{peak} (V).....:		—
	Max increase due to variation U_{sp}:		—
	Max increase due to ageing ΔU_{sa}:		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$:		—
5.5	Components as safeguards		P
5.5.1	General		P
5.5.2	Capacitors and RC units		N/A
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector.....:		N/A
5.5.3	Transformers	(See Annex G.5.3)	P



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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.4	Optocouplers		P
5.5.5	Relays		N/A
5.5.6	Resistors		N/A
5.5.7	SPD's		N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable.....:	No such external circuits.	N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm ²)		—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm ²).....:		—
	Protective current rating (A)		—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Requirement		N/A
	Conductor size (mm ²), nominal thread diameter (mm).		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance (Ω).....:		N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		N/A
5.7.2	Measuring devices and networks		N/A
5.7.2.1	Measurement of touch current		N/A
5.7.2.2	Measurement of prospective touch voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	System of interconnected equipment (separate connections/single connection)		—
	Multiple connections to mains (one connection at a time/simultaneous connections)		—
5.7.4	Earthed conductive accessible parts		N/A
5.7.5	Protective conductor current		N/A
	Supply Voltage (V).....		—
	Measured current (mA).....		—
	Instructional Safeguard.....		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits		N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits		N/A
	a) Equipment with earthed external circuits Measured current (mA).....		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA)		N/A

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	(See appended table 6.2.2)	P
6.2.2.6	PS3	All circuits inside enclosure are claimed as PS3	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS	All circuits inside enclosure are claimed as Arcing PIS	P
6.2.3.2	Resistive PIS	All circuits inside enclosure are claimed as Resistive PIS	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P



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Clause	Requirement + Test	Result - Remark	Verdict
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		P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	PS2 and PS3 circuits	P
6.4.3.1	General		P
6.4.3.2	Supplementary Safeguards		P
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions	(See appended table 6.4.3)	P
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards	(See appended tables 4.1.2 and Annex G)	P
6.4.6	Control of fire spread in PS3 circuit		P
6.4.7	Separation of combustible materials from a PIS	PCB rated Min. V-0 class material except for other small components made of V-2 class material.	P
6.4.7.1	General	(See tables 6.2.3.1 and 6.2.3.2)	P
6.4.7.2	Separation by distance	V-0 PCB used	P
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		P
6.4.8.1	Fire enclosure and fire barrier material properties	V-0 fire enclosure used	P
6.4.8.2.1	Requirements for a fire barrier	No fire barrier	N/A
6.4.8.2.2	Requirements for a fire enclosure		P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm)		P
	Needle Flame test		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm)		N/A
	Flammability tests for the bottom of a fire enclosure		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c)	No door and cover	N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating	Fire enclosure is made of V-0 material	P
6.5	Internal and external wiring		N/A
6.5.1	Requirements		N/A
6.5.2	Cross-sectional area (mm ²)		—
6.5.3	Requirements for interconnection to building wiring		N/A
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1	USB output complies with clause Q.1	P

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

8	MECHANICALLY-CAUSED INJURY		P
8.1	General		P
8.2	Mechanical energy source classifications	MS2	P
8.3	Safeguards against mechanical energy sources		N/A
8.4	Safeguards against parts with sharp edges and corners	Edges and corners of the enclosure are rounded.	P
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts		N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
8.5.2	Instructional Safeguard..... :		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks.....:		N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard.....:		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N).....:		N/A
8.5.5	High Pressure Lamps		N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test.....:		N/A
8.6	Stability		P
8.6.1	Product classification		P
	Instructional Safeguard.....:		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force.....:		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt.....:		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force).....:		N/A
	Position of feet or movable parts.....:		—
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface).....:		N/A
8.7.2	Direction and applied force.....:		N/A
8.8	Handles strength		N/A
8.8.1	Classification		N/A
8.8.2	Applied Force.....:		N/A
8.9	Wheels or casters attachment requirements	No wheels or casters	N/A
8.9.1	Classification		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
8.9.2	Applied force		—
8.10	Carts, stands and similar carriers	No carts or stands or other carriers	N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N)		—
8.10.6	Thermoplastic temperature stability (°C)		N/A
8.11	Mounting means for rack mounted equipment	Not rack mounted	N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable <i>N</i>		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas	No such parts.	N/A
	Button/Ball diameter (mm)		—

9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications	No part considered to be accessible other than enclosure. The equipment evaluated by temperature test (see table 5.4.1.4).	P
9.3	Safeguard against thermal energy sources	Temperature of enclosure classed as TS1.	P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard	Equipment safeguard	P
9.4.2	Instructional safeguard	Instructional safeguard is not required	N/A

10	RADIATION		P
10.2	Radiation energy source classification		P
10.2.1	General classification	RS2	P
10.3	Protection against laser radiation	No laser	N/A
	Laser radiation that exists equipment:		—



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



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Clause	Requirement + Test	Result - Remark	Verdict
	Equipment safeguard prevent ordinary person to RS2..... :		—
	Means to actively inform user of increase sound pressure..... :		—
	Equipment safeguard prevent ordinary person to RS2..... :		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output..... :		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A)..... :		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A)..... :		—

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers..... :		N/A
B.2.3	Supply voltage and tolerances	Rated voltage	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..... :		P
B.3.2	Covering of ventilation openings	(See appended table B.3)	P
B.3.3	D.C. mains polarity test		N/A
B.3.4	Setting of voltage selector..... :	No such voltage selector	N/A
B.3.5	Maximum load at output terminals..... :	(See appended table B.3)	P
B.3.6	Reverse battery polarity		N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions	All safeguards remained effective	P
B.4	Simulated single fault conditions		P





IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.4.2	Temperature controlling device open or short-circuited	No such device used.	N/A
B.4.3	Motor tests	(See appended table B.3)	P
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature	(See Clause G.5)	P
B.4.4	Short circuit of functional insulation		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/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnect of passive components	(See appended table B.4)	P
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		P
B.4.9	Battery charging under single fault conditions ... :		P
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
D	TEST GENERATORS		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V)		—
	Rated load impedance (Ω)		
E.2	Audio amplifier abnormal operating conditions		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General requirements		P
	Instructions – Language	English instructions provided	—
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	See copy of marking plate	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations		P
F.3.2	Equipment identification markings	See copy of marking plate	P
F.3.2.1	Manufacturer identification	See copy of marking plate	—
F.3.2.2	Model identification	See page 2 of the report	—
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		N/A
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of supply voltage.....	See copy of marking plate	—
F.3.3.4	Rated voltage	See copy of marking plate	—
F.3.3.5	Rated frequency	See copy of marking plate	—
F.3.3.6	Rated current or rated power	See copy of marking plate	—
F.3.3.7	Equipment with multiple supply connections	See copy of marking plate	N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings.....		P
F.3.5.2	Switch position identification marking		N/A
F.3.5.3	Replacement fuse identification and rating markings.....		P
F.3.5.4	Replacement battery identification marking		N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		N/A
F.3.6.1	Class I Equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
F.3.6.2.1	Class II equipment with or without functional earth	Without functional earth	N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking	IPX0	—
F.3.8	External power supply output marking	Rating marked	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/A
	b) Instructions given for installation or initial use		P
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment		N/A
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
j)	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards		N/A
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		N/A
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General requirements		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	Relays		N/A
G.2.1	General requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
G.3	Protection Devices		P
G.3.1	Thermal cut-offs	No thermal cut-offs	N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691	No thermal-links	N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H)		—
	Single Fault Condition		—
	Test Voltage (V) and Insulation Resistance (Ω). :		—
G.3.3	PTC Thermistors	No PTC	N/A
G.3.4	Overcurrent protection devices	F1 was used	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions.....	(See appended Table B.4)	P
G.4	Connectors		P
G.4.1	Spacings		P
G.4.2	Mains connector configuration	AC	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		P
G.5	Wound Components		P
G.5.1	Wire insulation in wound components.....		N/A
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	Physical separation is provided	N/A
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s)		—
	Temperature (°C)		—
G.5.2.3	Wound Components supplied by mains		N/A



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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.5.3	Transformers		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....:	Transformer T1 meet the requirements given in G.5.3.2 and G.5.3.3.	P
	Position.....:	Internal circuit	—
	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.....:		—
G.5.3.3	Overload test	(See appended table B.3)	P
G.5.3.3.1	Test conditions		P
G.5.3.3.2	Winding Temperatures testing in the unit		P
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	Motors		P
G.5.4.1	General requirements	DC FAN	P
	Position	Internal circuit	—
G.5.4.2	Test conditions		P
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days)		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V)		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h)		N/A
	Electric strength test (V)		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		P
G.5.4.6.2	Tested in the unit		P
	Maximum Temperature		P
	Electric strength test (V)		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h)		N/A
	Electric strength test (V)		N/A
G.5.4.7	Motors with capacitors		N/A



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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage		—
G.6	Wire Insulation		P
G.6.1	General		P
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	Mains supply cords		N/A
G.7.1	General requirements		N/A
	Type.....		—
	Rated current (A).....		—
	Cross-sectional area (mm ²), (AWG).....		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N)		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm).....		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g)		—
	Diameter (m)		—
	Temperature (°C)		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	Varistors		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test		N/A



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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.8.3.3	Temporary overvoltage		N/A
G.9	Integrated Circuit (IC) Current Limiters		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.		N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA		—
G.9.1 d)	IC limiter output current (max. 5A)		—
G.9.1 e)	Manufacturers' defined drift		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	Resistors		N/A
G.10.1	General requirements		N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	Capacitor and RC units		P
G.11.1	General requirements	(see appended table 4.1.2)	P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
G.12	Optocouplers		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....	Certificated optocouplers (PC1, PC2, PC3,PC4) were used	P
	Type test voltage Vini		—
	Routine test voltage, Vini,b		—
G.13	Printed boards		P
G.13.1	General requirements	Certified PCB used	P
G.13.2	Uncoated printed boards		N/A
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A



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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Compliance with cemented joint requirements (Specify construction)		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements		N/A
G.15	Liquid filled components		N/A
G.15.1	General requirements		N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		P
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		P
b)	Impulse test using circuit 2 with $U_c =$ to transient voltage		P
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		P
C2)	Test voltage		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance		—
D3)	Resistance		—





IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz)		—
H.3.1.2	Voltage (V)		—
H.3.1.3	Cadence; time (s) and voltage (V)		—
H.3.1.4	Single fault current (mA):.....		—
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)		—
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		N/A
	General requirements		N/A
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location)		N/A
K.7.2	Overload test, Current (A)		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	DISCONNECT DEVICES		N/A
L.1	General requirements		N/A



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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		N/A
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		P
M.1	General requirements		P
M.2	Safety of batteries and their cells	Rechargeable Li-ion Battery	P
M.2.1	Requirements		P
M.2.2	Compliance and test method (identify method) ... :		P
M.3	Protection circuits		P
M.3.1	Requirements		P
M.3.2	Tests		P
	- Overcharging of a rechargeable battery	(See appended table M)	P
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		P
	- Excessive discharging rate for any battery	(See appended table M)	P
M.3.3	Compliance	(See appended tables M and M.4)	P
M.4	Additional safeguards for equipment containing secondary lithium battery		P
M.4.1	General		P
M.4.2	Charging safeguards		P
M.4.2.1	Charging operating limits		P
M.4.2.2a)	Charging voltage, current and temperature		—
M.4.2.2 b)	Single faults in charging circuitry		—
M.4.3	Fire Enclosure		P
M.4.4	Endurance of equipment containing a secondary lithium battery		P
M.4.4.2	Preparation		P
M.4.4.3	Drop and charge/discharge function tests		P
	Drop		P
	Charge		P



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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Discharge		P
M.4.4.4	Charge-discharge cycle test		P
M.4.4.5	Result of charge-discharge cycle test		P
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		P
M.6.1	Short circuits		P
M.6.1.1	General requirements		P
M.6.1.2	Test method to simulate an internal fault		P
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method)		N/A
M.6.2	Leakage current (mA)		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s).....		—
M.8.2.3	Correction factors		—
M.8.2.4	Calculation of distance d (mm)		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing)		P
N	ELECTROCHEMICAL POTENTIALS		N/A
	Metal(s) used	Pollution degree 2 considered	—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Figures O.1 to O.20 of this Annex applied		—





IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
P	SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS		N/A
P.1	General requirements	No openings	N/A
P.2.2	Safeguards against entry of foreign object		N/A
	Location and Dimensions (mm)		—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard)		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C)		—
	Tr (°C)		—
	Ta (°C)		—
P.4.2 b)	Abrasion testing		N/A
P.4.2 c)	Mechanical strength testing		N/A
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources		P
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		P
	- Regulating network limited output under normal operating and simulated single fault condition		P
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method	(see table Annex Q.1)	P
Q.2	Test for external circuits – paired conductor cable		N/A





IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Maximum output current (A)		—
	Current limiting method		—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A).		N/A
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material		—



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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Wall thickness (mm).....:		—
	Conditioning (test condition), (°C).....:		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
T	MECHANICAL STRENGTH TESTS		P
T.1	General requirements		P
T.2	Steady force test, 10 N	(See appended table T.2)	P
T.3	Steady force test, 30 N	Not applicable	N/A
T.4	Steady force test, 100 N	(See appended table T.4)	P
T.5	Steady force test, 250 N		N/A
T.6	Enclosure impact test		N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test	(See appended table T.7)	P
T.8	Stress relief test	(See appended table T.8)	P
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J).....:		—
	Height (m)		—
T.10	Glass fragmentation test		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)		—
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General requirements	No CRTs	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen.....:		N/A
V	DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)		P
V.1	Accessible parts of equipment		P





IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
V.2	Accessible part criterion		P





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

4.1.2	TABLE: List of critical components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹	
Plastic enclosure	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	AC310(+)	Thickness min. 1.5mm, V-0, 85°C	UL94, UL746C,	UL E162823	
PCB(Main board)	Interchangeable	Interchangeable	V-0, 130°C	UL 796	UL	
PCB (Protective board)	Interchangeable	Interchangeable	V-0, 130°C	UL 796	UL	
ADAPTER	Shenzhen Liankelilong Electronic Technology Co., Ltd	LK150-2000500	Input: 100V~, 50/60Hz, 1.6A Output: 22Vdc, 5A	IEC/EN/UL 62368-1	UL	
AC socket-outlets	RONG FENG INDUSTRIAL CO LTD	E-08	250Vac, 16A	UL 498 DIN VDE 0620-1 (VDE 0620- 1):2016-01	UL E95905 VDE	
FUSE	NANJING SART SCIENCE & TECHNOLOGY DEVELOPMENT CO LTD	S6125-M2-3.5A	250VAC, 3.5A	UL 248-1 UL 248-14 DIN VDE 0635:1984-02	UL E319512 VDE	
Internal Wire (Battery)	Interchangeable	Interchangeable	Min. 300V, Min. 16AWG, Min. 80°C	UL758	UL	
Internal wire (For AC output)	Interchangeable	Interchangeable	Min. 300V, Min. 18AWG, Min. 80°C	UL758	UL	
X. Capacitor	Changzhou Dejie Photoelectric Technology Co., Ltd.	MPX/MKP	250V~, 0.22μF, 100°C	EN/UL 60384-14	UL E339764 VDE	
Transformer	HORANS ELECTRONICS	ER42-1000-230-2	Class B	IEC/EN/UL 62368-1	Tested with appliance	
- Bobbin	SUMITOMO BAKELITE CO.,LTD	PM-9823、 PM9820	Phenolic,150°C	UL94,UL746	UL E41429	



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IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
- Wire	CHENGDU SOUTHWEST ELECTRICAL GROUP CO., LTD	UEW	POLYURETHAN E ENAMELLED COPPER WIRE 130°C	UL1446	UL E178366
-Tube	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-L	200°C	UL224	UL E180908
- Tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO.,LTD	WF* (c)(h)	130°C	UL510	UL E165111
- VARNISH	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	T-4260(a)	155°C	UL1446	UL E228349
Y-capacitor	GUANGDONG SOUTH HONGMING ELECTRONIC SCIENCE & TECHNOLOGY CO LTD	F, F(&)	Max. 1500pF, Min. 250VAC, 125°C, Y1 type	IEC/EN/UL 60384-14	UL E154899
Opto-coupler	Everlight Electronics Co., Ltd.	EL357N V	Reinforce insulation, Dti≥0.4mm, Ext. Cr./cl ≥5.0mm, 100°C	UL 1577, IEC/EN/UL 60747-5-5	UL E214129 VDE 132249
DC Fan	Shenzhen Ming Yixin Electronic Technology Co., LTD	6025	DC12V,0.5A	IEC/EN/UL 62368-1	Tested with appliance
Lithium-Ion battery cell	Jiangxi Jiuding-Power New Energy Technology Co., Ltd	N18650P 2500mAh	3.6V,2500mAh	IEC 62133-2	Report No.: 20PNC0300 10 01 001
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					



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Clause	Requirement + Test	Result - Remark	Verdict

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



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Clause	Requirement + Test	Result - Remark	Verdict
4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests		N/A
(The following mechanical tests are conducted in the sequence noted.)			
--	--	--	--
Supplementary information:			

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

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.	24Vd.c.	Internal circuits	Normal	24Vd.c. Max	--	--	ES1
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	
2.	21.6Vd.c.	Battery	Normal	24.5Vd.c. Max	--	--	ES1
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	
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 – OC XR1	--	--	--	
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	--	--	--	



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Clause	Requirement + Test	Result - Remark	Verdict

		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)	24Vd.c. (Battery charging)	21.6Vd.c. (Full Battery discharging)		—
Ambient T _{min} (°C)	See below	See below		—
Ambient T _{max} (°C)	--	--		—
T _{ma} (°C)	--	--		—
Maximum measured temperature T of part/at:	T (°C)			Allowed T _{max} (°C)
Input wire	53.7	54.8		80
EC1 body	77.5	77.8		105
EC2 body	78.3	78.0		105
PCB near U1	72.4	74.0		130
LF1 winding	89.1	91.3		130
L2 winding	87.3	89.6		130
PCB near U3	67.3	67.8		130
T1 winding	75.5	76.7		110
T1 core	72.9	73.8		110
T2 winding	76.0	76.9		110
T2 core	73.2	73.8		110
CY1 body	67.8	68.5		125



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Clause	Requirement + Test	Result - Remark	Verdict

PCB near Q1	65.6	66.3	130
PC1 body	66.0	66.7	100
PCB near U5	63.3	64.1	130
EC10 body	63.4	64.0	105
EC12 body	65.3	66.4	105
PCB near U6	67.7	68.8	130
Internal wire	46.4	46.7	80
Battery surface	40.8	42.3	Ref.
DC Fan	47.7	49.1	Ref.
Plastic enclosure inside near battery	43.2	43.7	90
Ambient	40.0	40.0	--
Plastic enclosure outside near battery	26.4	26.8	77
DC button	27.0	27.3	77
AC outlet	27.1	27.5	77
Ambient	25.0	25.0	--

Supplementary information:

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

Supplementary information:

Note 1: T_{ma} should be considered as directed by applicable requirementNote 2: T_{ma} is not included in assessment of Touch Temperatures (Clause 9)

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



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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.10.3	TABLE: Ball pressure test of thermoplastics		N/A
Allowed impression diameter (mm) : ≤ 2 mm			—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)
--	--	--	--
Supplementary information: Test repeated for all alternative materials, same results obtained.			

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)	
	Primary circuit to secondary circuit	340	240	0.06	3.0	7.7	4.8	7.7
	Primary circuit to plastic enclosure	340	240	0.06	3.0	5.3	4.8	5.3
	Transformer T1: Input winding to output winding	353	236	0.06	3.0	5.6	4.8	5.6
	Input winding of T1 to core of T1	353	236	0.06	1.5	3.7	2.4	3.7
	Output winding of T1 to core of T1	353	236	0.06	1.5	3.5	2.4	3.5
	Transformer T2: Input winding to output winding	357	238	0.06	3.0	5.6	4.8	5.6
	Input winding of T2 to core of T2	357	238	0.06	1.5	3.7	2.4	3.7
	Output winding of T2 to core of T2	357	238	0.06	1.5	3.5	2.4	3.5
	CY1 primary pin to secondary pin	340	240	0.06	3.0	7.2	4.8	7.2
	CY2 primary pin to secondary pin	340	240	0.06	3.0	7.2	4.8	7.2
	CY3 primary pin to secondary pin	340	240	0.06	3.0	7.2	4.8	7.2
	PC1 primary pin to secondary pin	340	240	0.06	3.0	7.1	4.8	7.1
	PC2 primary pin to secondary pin	340	240	0.06	3.0	7.1	4.8	7.1
	PC3 primary pin to secondary pin	340	240	0.06	3.0	7.1	4.8	7.1
	PC4 primary pin to secondary pin	340	240	0.06	3.0	7.1	4.8	7.1
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.								





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

Note 3: Provide Material Group.

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage			P
	Overvoltage Category (OV):			--
	Pollution Degree:			--
Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)	
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			N/A
Test voltage applied between:	Required cl (mm)	Test voltage (kV) peak/ r.m.s. / d.c.	Breakdown Yes / No	
--	--	--	--	
--	--	--	--	
Supplementary information:				

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements					P
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)	
Plastic enclosure	340	0.06	See table 4.1.2	0.4	See table 4.1.2	
Insulation tape	340	0.06	Polyethylene	See only 5.4.4.9	See only 5.4.4.9	
Bobbin (T1)	353	0.06	Phenolic	0.4	0.75	
Bobbin (T2)	357	0.06	Phenolic	0.4	0.75	
Supplementary information:						



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Clause	Requirement + Test	Result - Remark	Verdict

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No	
Functional:				
--	--	--	--	
Basic/supplementary:				
Transformer T1: Input winding to core	DC	2500Vpk	No	
Transformer T1: core to output winding	DC	2500Vpk	No	
Transformer T2: Input winding to core	DC	2500Vpk	No	
Transformer T2: core to output winding	DC	2500Vpk	No	
Reinforced:				
DC input to AC output	DC	4000Vpk	No	
AC output circuit to plastic enclosure (wrapped with metal foil)	DC	4000Vpk	No	
AC output circuit to USB port	DC	4000Vpk	No	
Transformer T1: Input winding to output winding	DC	4000Vpk	No	
Transformer T2: Input winding to output winding	DC	4000Vpk	No	
One layer insulation tape	DC	4000Vpk	No	
Supplementary information:				

5.5.2.2	TABLE: Stored discharge on capacitors					N/A
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification	
--	--	--	--	--	--	
--	--	--	--	--	--	
Supplementary information:						
X-capacitors installed for testing are:						
<input type="checkbox"/> bleeding resistor rating:						
<input type="checkbox"/> ICX:						
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						





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

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

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part		N/A
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]			
[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.			





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

6.2.2	Table: Electrical power sources (PS) measurements for classification				P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s*)	PS Classification
AC Output	Normal	Power (W) :	--	>100W	PS3 (declaration)
		V _A (V) :	--	--	
		I _A (A) :	--	--	
USB-A2 Output (5V)	Normal	Power (W) :	17.84	17.84	PS2
		V _A (V) :	5.10	5.10	
		I _A (A) :	3.62	3.62	
USB-A2 Output (9V)	Normal	Power (W) :	23.25	23.25	PS2
		V _A (V) :	9.06	9.06	
		I _A (A) :	2.45	2.45	
USB-A2 Output (12V)	Normal	Power (W) :	24.42	24.42	PS2
		V _A (V) :	12.05	12.05	
		I _A (A) :	1.87	1.87	
USB-A2 Output (20V)	Normal	Power (W) :	24.34	24.34	PS2
		V _A (V) :	20.14	20.14	
		I _A (A) :	1.34	1.34	
USB-A1 Output	Normal	Power (W) :	14.56	--	PS1
		V _A (V) :	5.03	--	
		I _A (A) :	2.72	--	
USB-C Output (5V)	Normal	Power (W) :	18.67	18.67	PS2
		V _A (V) :	5.12	5.12	
		I _A (A) :	3.45	3.45	
USB-C Output (9V)	Normal	Power (W) :	30.24	30.24	PS2
		V _A (V) :	9.04	9.04	
		I _A (A) :	3.43	3.43	
USB-C Output (12V)	Normal	Power (W) :	40.93	40.93	PS2
		V _A (V) :	12.04	12.04	
		I _A (A) :	3.46	3.46	
USB-C Output (15V)	Normal	Power (W) :	49.36	49.36	PS2
		V _A (V) :	15.12	15.12	
		I _A (A) :	3.34	3.34	
USB-C	Normal	Power (W) :	66.69	66.69	PS2



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Clause	Requirement + Test			Result - Remark	Verdict
Output (20V)		V _A (V) :	20.12	20.12	
		I _A (A) :	3.36	3.36	
DC Output	Normal	Power (W) :	>100W	>100W	PS3 (declaration)
		V _A (V) :	--	--	
		I _A (A) :	--	--	
Full Battery	Normal	Power (W) :	>100W	>100W	PS3 (declaration)
		V _A (V) :	--	--	
		I _A (A) :	--	--	
Wireless output	Normal	Power (W) :	16.12	16.12	PS2
		V _A (V) :	12.12	12.12	
		I _A (A) :	1.33	1.33	
Supplementary Information: SC=short circuit #: Unit shut-down immediately, recoverable, no hazard.					

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 primary circuits / parts	--	--	--	Yes (declaration)	
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 internal circuits / parts	--	--	--	--	Yes (declaration)





IEC 62368-1			
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/A
Description	Values		Energy Source Classification	
Lamp type.....:	--		—	
Manufacturer	--		—	
Cat no.:	--		—	
Pressure (cold) (MPa).....:	--		MS_	
Pressure (operating) (MPa)	--		MS_	
Operating time (minutes)	--		—	
Explosion method	--		—	
Max particle length escaping enclosure (mm) .:	--		MS_	
Max particle length beyond 1 m (mm).....:	--		MS_	
Overall result	--			
Supplementary information:				

B.2.5	TABLE: Input test						P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
24Vd.c.	4.90	5.0	117.6	--	--	--	Empty Battery Charging
24.5Vd.c.	24.5	--	600.25	--	--	--	Full Battery Discharging
Supplementary information: Equipment may be have rated current or rated power or both. Both should be measured							





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

B.3		TABLE: Abnormal operating condition tests						P
Ambient temperature (°C)		See below						—
Power source for EUT: Manufacturer, model/type, output rating ..		See page 2 for details						—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
USB-A2 Output (20V)	OL	21.6Vd.c.	2hrs 20mins	F1	24.67	Type J	T1 winding: 79.4°C; T1 core: 77.6°C; T2 winding: 79.8°C; T2 core: 77.5°C; Enclosure outside near battery: 40.9°C; Ambient: 25.0°C	Max load to 3.36A, when exceed it unit shut down, no hazard, no damage.
USB-C Output(20V)	OL	21.6Vd.c.	5hrs 20mins	F1	24.78	Type J	T1 winding: 84.5°C; T1 core: 82.2°C; T2 winding: 81.8°C; T2 core: 79.8°C; Enclosure outside near battery: 43.0°C; Ambient: 25.0°C	Max load to 1.34A, when exceed it unit shut down, no hazard, no damage.





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

B.3		TABLE: Abnormal operating condition tests						P
Ambient temperature (°C)		See below						—
Power source for EUT: Manufacturer, model/type, output rating ..		See page 2 for details						—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Wireless output	OL	21.6Vd.c.	5hrs 20mins	F1	24.53	Type J	T1 winding: 76.0°C; T1 core: 74.7°C; T2 winding: 77.8°C; T2 core: 76.4°C; Enclosure outside near battery: 42.6°C; Ambient: 25.0°C	Max output power is 16.12W, when exceed it unit shut down, no hazard, no damage.
USB-A1 Output (5V)	OL	21.6Vd.c.	5hrs 20mins	F1	24.51	Type J	T1 winding: 79.6°C; T1 core: 77.6°C; T2 winding: 79.6°C; T2 core: 77.2°C; Enclosure outside near battery: 40.4°C; Ambient: 25.0°C	Max load to 2.72A, when exceed it unit shut down, no hazard, no damage.



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Clause	Requirement + Test	Result - Remark	Verdict

B.3		TABLE: Abnormal operating condition tests						P
Ambient temperature (°C)		See below						—
Power source for EUT: Manufacturer, model/type, output rating ..		See page 2 for details						—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Opening	Blocked	21.6Vd.c.	5hrs 24mins	F1	24.5	Type J	T1 winding: 80.4°C; T1 core: 78.0°C; T2 winding: 79.8°C; T2 core: 78.1°C; Enclosure outside near battery: 42.3°C; Ambient: 25.0°C	Unit working normal, no hazard, no damage.
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. OL: overload								

B.4		TABLE: Fault condition tests						P
Ambient temperature (°C)		25.0						—
Power source for EUT: Manufacturer, model/type, output rating ..		See page 2 for details						—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Empty Battery charging								
U1 pin 2-4	SC	24Vd.c.	10mins	F1	0.002	--	--	Unit shut down, recoverable. After test, no damage, no hazard.



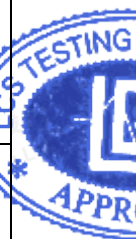


IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
R4	SC	24Vd.c.	10mins	F1	0.002	--	--	Unit shut down, recoverable. After test, no damage, no hazard.
Battery B~P- (Battery overcharging)	SC	24Vd.c.	7hrs	F1	4.94	--	--	The product worked as normal. Max continuous charging current was 4.93A. No chemicals leak, explosion, molten metal emission or expulsion observed.
Full Battery discharging								
DC FAN motor	Locked	21.6Vd.c.	7h	F1	24.5	Type J	T1 winding : 81.5°C; T1 core: 78.6°C; T2 winding : 81.2°C; T2 core: 78.4°C; Enclosure outside near battery: 42.9°C; Ambient: 25.0°C	Unit worked as normally except for DC FAN stopped. After test, no damage, no hazard.
USB-C Output	SC	21.6Vd.c.	10mins	F1	0.002	--	--	USB-C Output shut down, recoverable. After test, no damage, no hazard.





IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
USB-A1 Output	SC	21.6Vd.c.	10mins	F1	0.002	--	--	USB-A1 Output shut down, recoverable. After test, no damage, no hazard.
USB-A2 Output	SC	21.6Vd.c.	10mins	F1	0.002	--	--	USB-A2 Output shut down, recoverable. After test, no damage, no hazard.
DC Output	SC	21.6Vd.c.	10mins	F1	0.002	--	--	DC Output shut down, recoverable. After test, no damage, no hazard.
T1 pin 2-4	SC	21.6Vd.c.	10mins	F1	0.002	--	--	Unit shut down, recoverable. After test, no damage, no hazard.
T1 pin 5-7	SC	21.6Vd.c.	10mins	F1	--	--	--	Unit shut down, recoverable. After test, no damage, no hazard.
T1 pin 9-11	SC	21.6Vd.c.	10mins	F1	0.002	--	--	Unit shut down, recoverable. After test, no damage, no hazard.
T2 pin 2-4	SC	21.6Vd.c.	10mins	F1	0.002	--	--	Unit shut down, recoverable. After test, no damage, no hazard.
T2 pin 5-7	SC	21.6Vd.c.	10mins	F1	0.002	--	--	Unit shut down, recoverable. After test, no damage, no hazard.



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IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
T2 pin 9-11	SC	21.6Vd.c.	10mins	F1	0.002	--	--	Unit shut down, recoverable. After test, no damage, no hazard.
PC1 pin 1-2	SC	21.6Vd.c.	10mins	F1	0.002	--	--	Unit shut down, recoverable. After test, no damage, no hazard.
PC1 pin 3-4	SC	21.6Vd.c.	10mins	F1	0.002	--	--	Unit shut down, recoverable. After test, no damage, no hazard.
PC1 pin 1	OC	21.6Vd.c.	10mins	F1	0.002	--	--	Unit shut down, recoverable. After test, no damage, no hazard.
EC10	SC	21.6Vd.c.	10mins	F1	0.002	--	--	Fuse opened, recoverable. After test, no damage, no hazard.
EC1	SC	21.6Vd.c.	10mins	F1	0.002	--	--	Fuse opened, recoverable. After test, no damage, no hazard.
Battery B--P- (Battery excessive discharging)	SC	21.6Vd.c.	10mins	F1	25.2	--	--	The product worked as normal. Max continuous discharging current was 25.2A. No chemicals leak, explosion, molten metal emission or expulsion observed.
Supplementary information: SC: short circuit; OC=Open circuit.								



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

Annex M	TABLE: Batteries								P
The tests of Annex M are applicable only when appropriate battery data is not available									P
Is it possible to install the battery in a reverse polarity position?							No possible		--
	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	--	--	--	4.90A	26.2A	24.5A	26.2A	--	--
Max. current during fault condition	--	--	--	4.93A (Battery B~P-SC)	26.2A	25.2A (Battery B~P-SC)	26.2A	--	--
Test results:									Verdict
- Chemical leaks							No hazard		P
- Explosion of the battery							No hazard		P
- Emission of flame or expulsion of molten metal							No hazard		P
- Electric strength tests of equipment after completion of tests									N/A
Supplementary information:									





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

Annex M.4 Table: Additional safeguards for equipment containing secondary lithium batteries					P
Battery/Cell No.	Test conditions	Measurements			Observation
		U (V)	I (A)	Temp (C)	
Battery	Normal	24.5	4.90	42.8	No fire or explosion (other than venting) of secondary lithium battery shall occur. The charging voltage shall not exceed maximum specified charging voltage. The charging current shall not exceed maximum specified charging current.
	Abnormal	--	--	--	--
	Single fault – Battery B-~P- SC	24.5	4.93	42.7	No fire or explosion (other than venting) of secondary lithium battery shall occur. The charging voltage shall not exceed maximum specified charging voltage. The charging current shall not exceed maximum specified charging current.

Supplementary Information:

Battery identification	Charging at T_{lowest} (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation
------------------------	-------------------------------	-------------	--------------------------------	-------------



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IEC 62368-1				
Clause	Requirement + Test		Result - Remark	Verdict
Battery identification	Charging at T_{lowest} (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation
Battery	0	When the battery temperature reduction to 0.4°C, Unit stop charging	45	When the battery temperature reduction to 44.3°C, Unit stop charging
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-A2 Output (5V)	Normal	5.10	3.62	8	17.84	100
USB-A2 Output (9V)	Normal	9.06	2.45	8	23.25	100
USB-A2 Output (12V)	Normal	12.05	1.87	8	24.42	100
USB-A2 Output (20V)	Normal	20.14	1.34	8	24.34	100
USB-A2 Output	C22 SC	0	0	8	0	100
USB-A1 Output	Normal	5.03	3.45	8	14.56	100
USB-A1 Output	C21 SC	0	0	8	0	100
USB-C Output (5V)	Normal	5.12	3.45	8	18.67	100
USB-C Output (9V)	Normal	9.04	3.43	8	30.24	100
USB-C Output (12V)	Normal	12.04	3.46	8	40.93	100



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Clause	Requirement + Test			Result - Remark		Verdict
USB-C Output (15V)	Normal	15.12	3.34	8	49.36	100
USB-C Output (20V)	Normal	20.12	3.36	8	66.69	100
USB-C Output	C34 SC	0	0	8	0	100
Wireless output	Normal	12.12	1.33	8	16.12	100
Wireless output	C54 SC	0	0	8	0	100
Supplementary Information: SC=Short 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	
Internal parts	--	--	10	5	Enclosure remained intact, no crack/opening developed.	
Enclosure / Top	Plastic/metal	Min. 1.5	100	5	Enclosure remained intact, no crack/opening developed.	
Enclosure / Bottom	Plastic/metal	Min. 1.5	100	5	Enclosure remained intact, no crack/opening developed.	
Enclosure / Side	Plastic	Min. 1.5	100	5	Enclosure remained intact, no crack/opening developed.	
Supplementary information:						

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



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Clause	Requirement + Test	Result - Remark	Verdict

T.7	TABLE: Drop tests				P
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Enclosure / Top	Plastic/metal	Min. 1.5	1000	Enclosure remained intact, no crack/opening developed.	
Enclosure / Bottom	Plastic/metal	Min. 1.5	1000	Enclosure remained intact, no crack/opening developed.	
Enclosure / Side	Plastic	Min. 1.5	1000	Enclosure remained intact, no crack/opening developed.	
Supplementary information:					

T.8	TABLE: Stress relief test					P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Whole unit	Plastic	Min. 1.5	70	7.0	Enclosure remained intact, no crack/opening developed.	
Supplementary information:						





Attachment No .1

IEC62368_1D - ATTACHMENT																																										
Clause	Requirement + Test				Result - Remark		Verdict																																			
ATTACHMENT TO TEST REPORT IEC 62368-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment - Part 1: Safety requirements)																																										
Differences according to : EN 62368-1:2014+A11:2017																																										
Attachment Form No : EU_GD_IEC62368_1D																																										
Attachment Originator : Intertek Semko AB																																										
Master Attachment : Date 2021-02-04																																										
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CENELEC COMMON MODIFICATIONS (EN)																																										
Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z".						P																																				
CONTENTS	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords					P																																				
Delete all the "country" notes in the reference document (IEC 62368-1:2014) according to the following list:						P																																				
<table border="1"> <tbody> <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> </tbody> </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
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10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3																																					
For special national conditions, see Annex ZB.						P																																				



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IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1	Add the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.		P
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.	Considered.	P
5.4.2.3.2.4	Add the following to the end of this subclause: The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.	No external circuit.	N/A
10.2.1	Add the following to ^{c)} and ^{d)} in table 39: For additional requirements, see 10.5.1.	No radiation.	N/A



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



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IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Bibliography	<p>Add the following standards:</p> <p>Add the following notes for the standards indicated:</p> <p>IEC 60130-9 NOTE Harmonized as EN 60130-9.</p> <p>IEC 60269-2 NOTE Harmonized as HD 60269-2.</p> <p>IEC 60309-1 NOTE Harmonized as EN 60309-1.</p> <p>IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series.</p> <p>IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4.</p> <p>IEC 60664-5 NOTE Harmonized as EN 60664-5.</p> <p>IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified).</p> <p>IEC 61508-1 NOTE Harmonized as EN 61508-1.</p> <p>IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1.</p> <p>IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4.</p> <p>IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6.</p> <p>IEC 61643-1 NOTE Harmonized as EN 61643-1.</p> <p>IEC 61643-21 NOTE Harmonized as EN 61643-21.</p> <p>IEC 61643-311 NOTE Harmonized as EN 61643-311.</p> <p>IEC 61643-321 NOTE Harmonized as EN 61643-321.</p> <p>IEC 61643-331 NOTE Harmonized as EN 61643-331.</p>		N/A
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		P
4.1.15	<p>Denmark, Finland, Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord."</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p>		P



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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





Attachment No. 1

IEC62368_1D - 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



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Clause	Requirement + Test	Result - Remark	Verdict
5.5.6	<p>Finland, Norway and Sweden</p> <p>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.</p>		N/A
5.6.1	<p>Denmark</p> <p>Add to the end of the subclause</p> <p>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.</p> <p><i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.</p>		N/A
5.6.4.2.1	<p>Ireland and United Kingdom</p> <p>After the indent for pluggable equipment type A, the following is added:</p> <p>– the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.</p>		N/A
5.6.5.1	<p>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 mm² to 1,5 mm² in cross-sectional area.</p>		N/A
5.7.5	<p>Denmark</p> <p>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.</p>		N/A



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



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Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	<p>Denmark</p> <p>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 .</p>		N/A
B.3.1 and B.4	<p>Ireland and United Kingdom</p> <p>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</p>		N/A
G.4.2	<p>Denmark</p> <p>To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a <i>Justification:</i> Heavy Current Regulations, Section 6c</p>		N/A



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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



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Clause	Requirement + Test	Result - Remark	Verdict
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		P
10.5.2	<p>Germany</p> <p>The following requirement applies: 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> 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

Note: Before placing the products in the different countries, the manufacturer must ensure that:

1. Operating Instructions, Ratings Labels and Warnings Labels written in an Accepted or Official Language of the county in question.
2. The equipment complies with the National Standards and/or Electrical Codes of the country in question.
3. Mains plugs and power cordset should be assessed to the national standard.



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Attachment No. 2

Details of: External View



Details of: External View



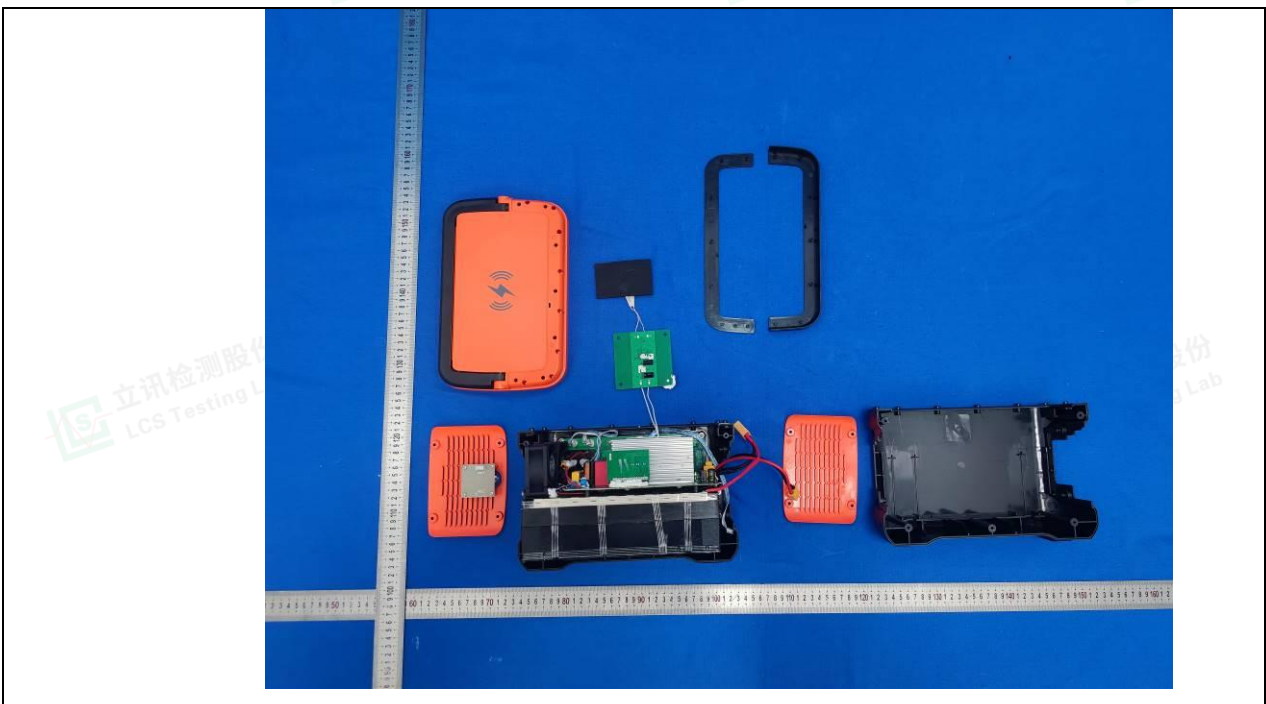


Attachment No. 2

Details of: External View



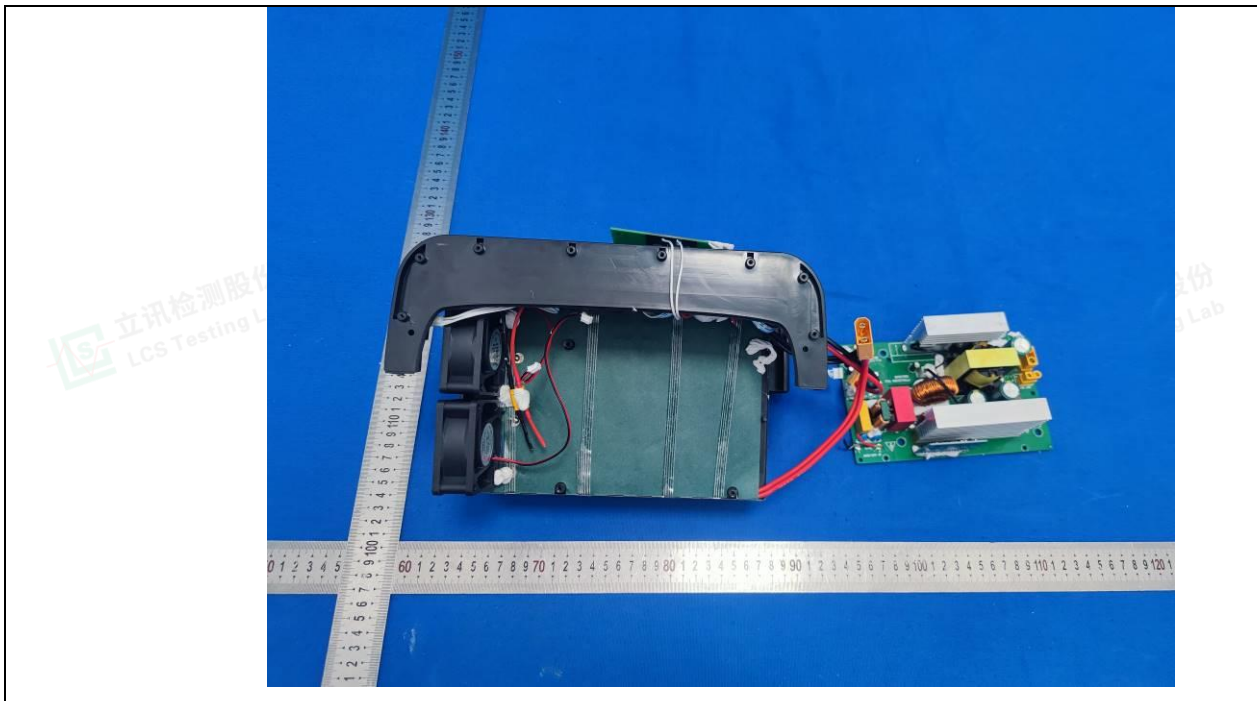
Details of: Internal View



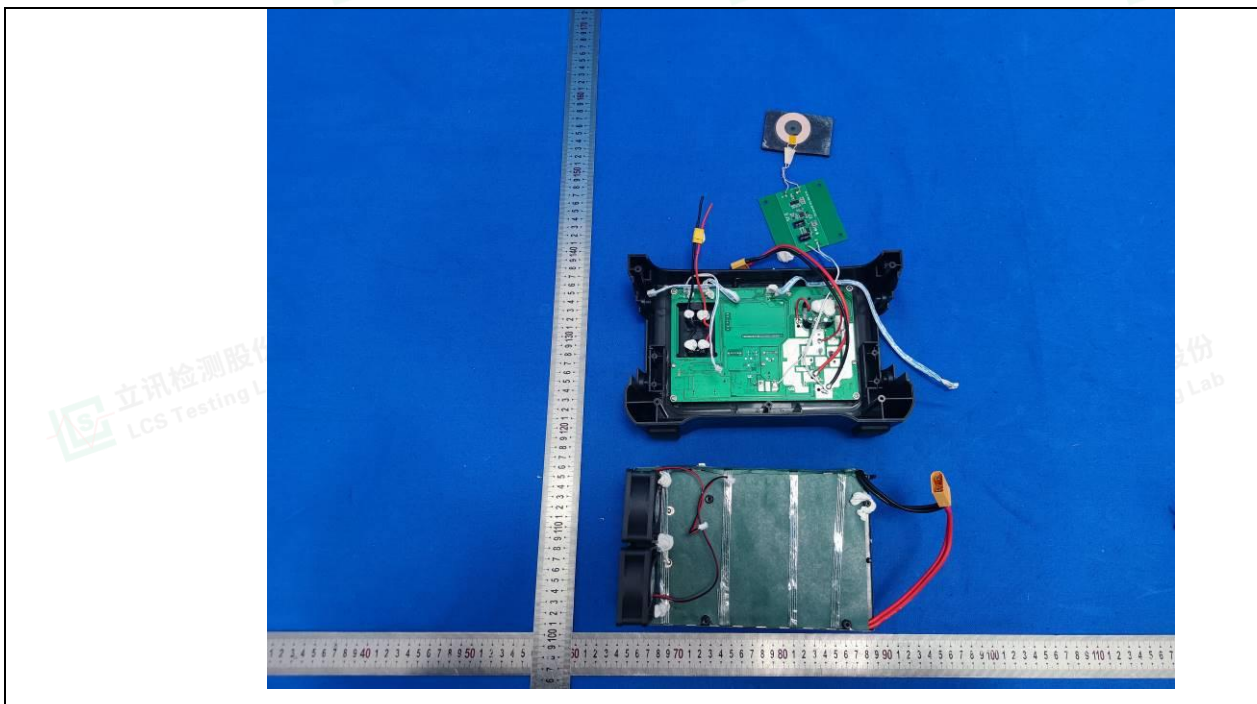


Attachment No. 2

Details of: Internal View

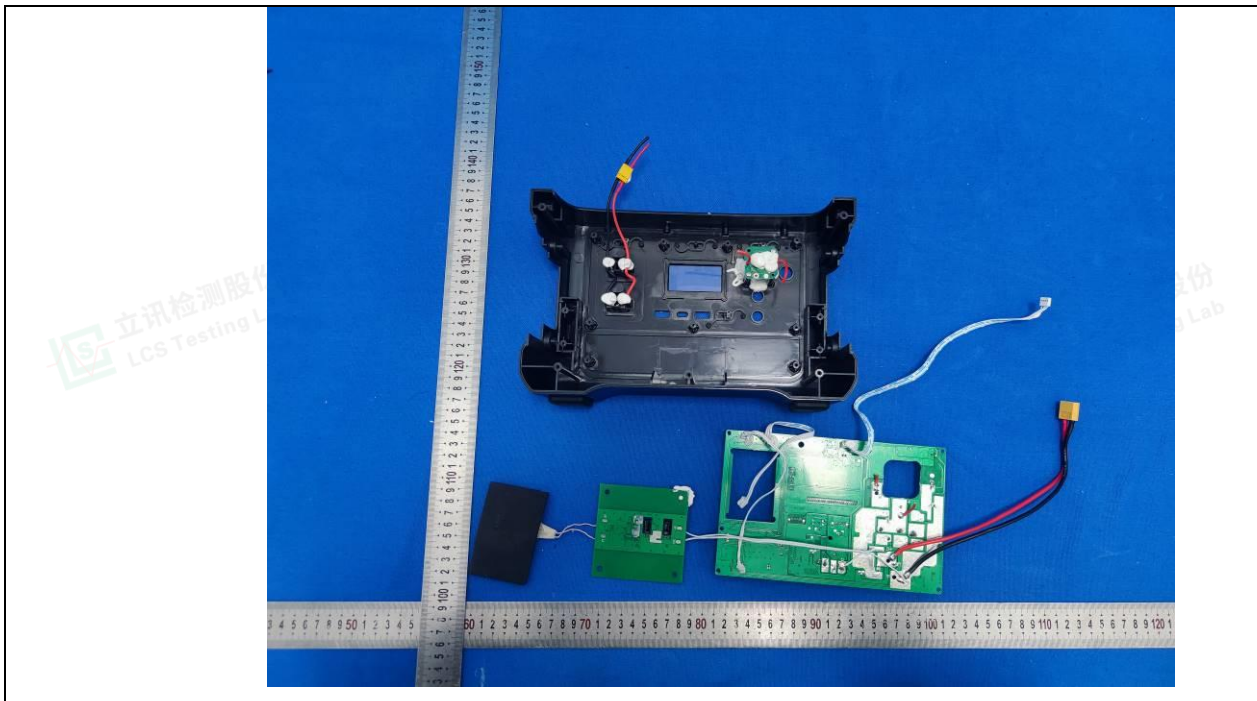


Details of: Internal View

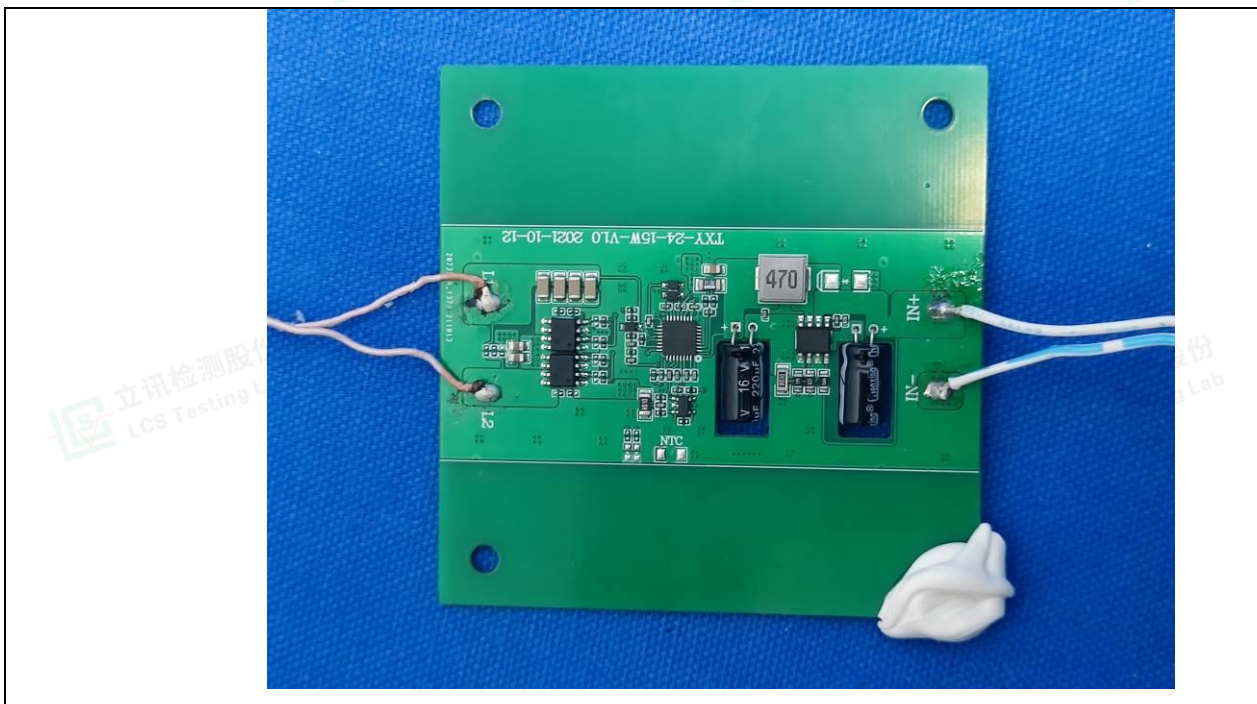




Details of: Internal View



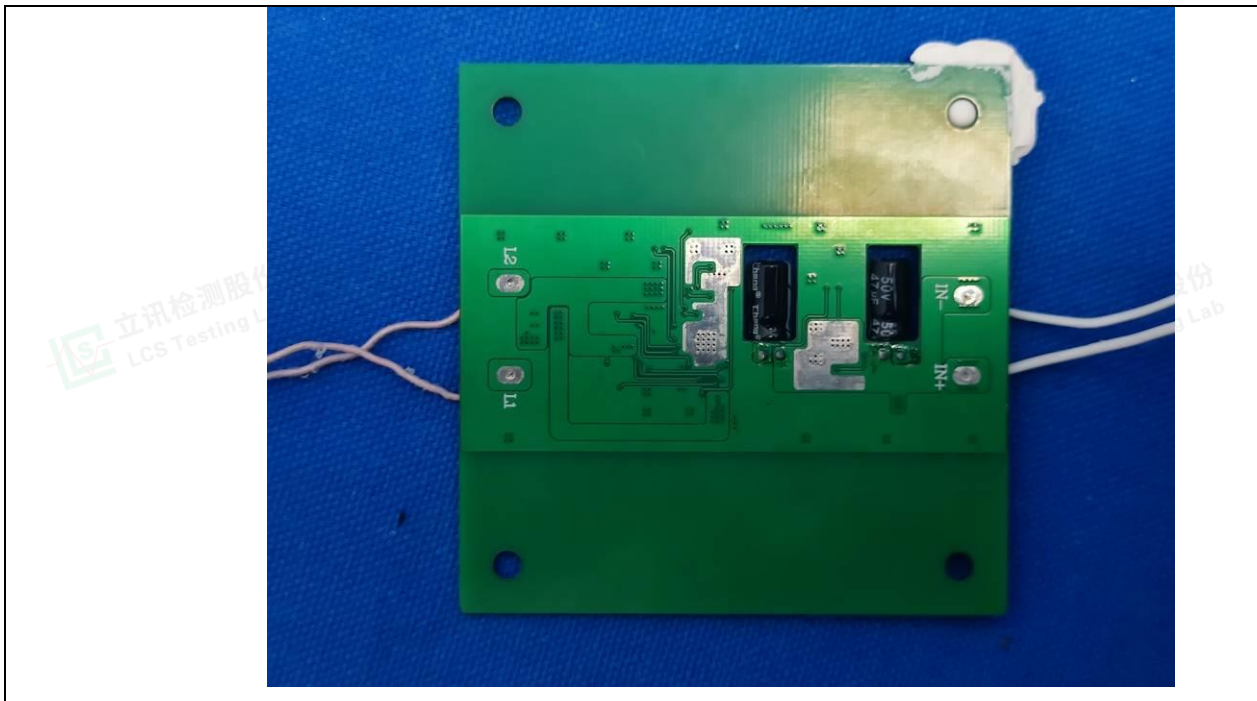
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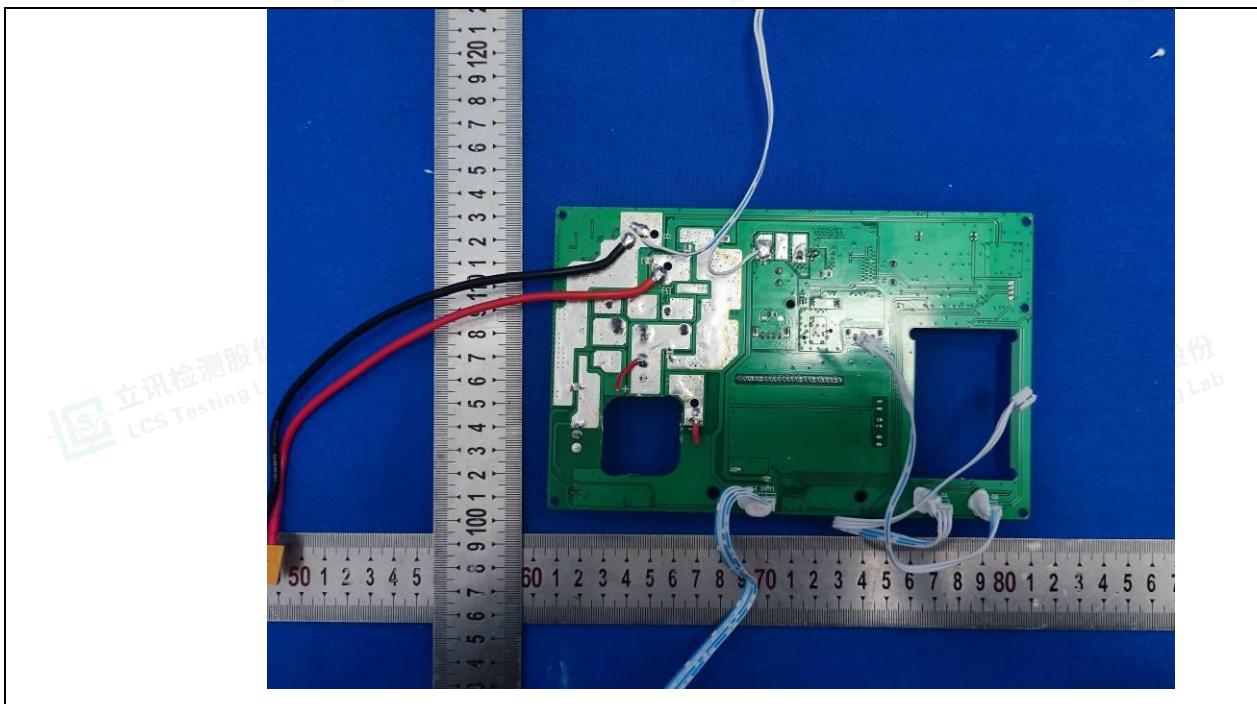


Attachment No. 2

Details of: PCB View



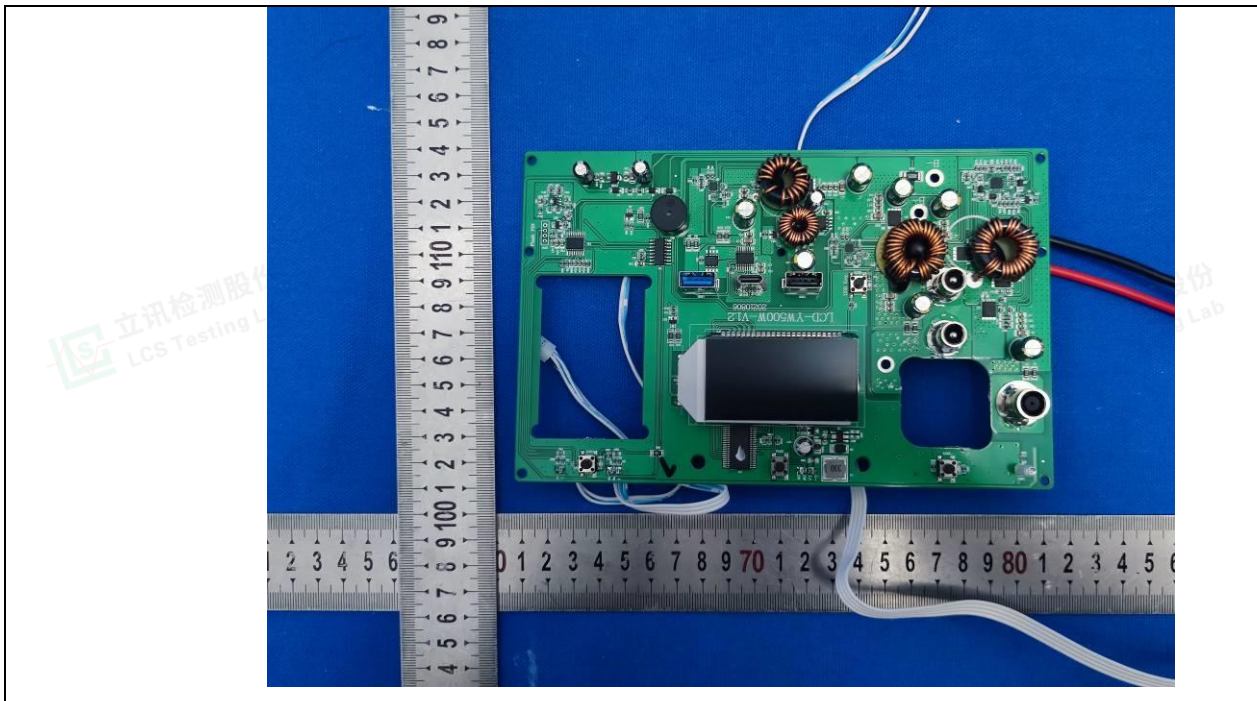
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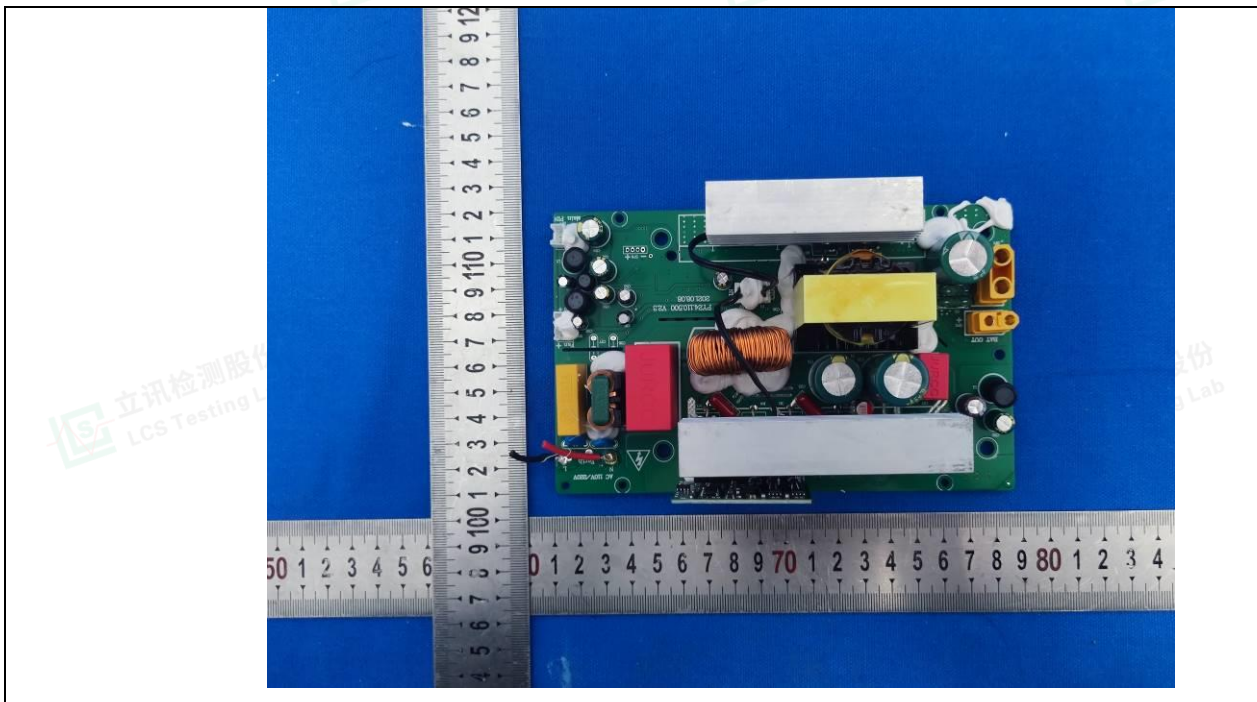


Attachment No. 2

Details of: PCB View



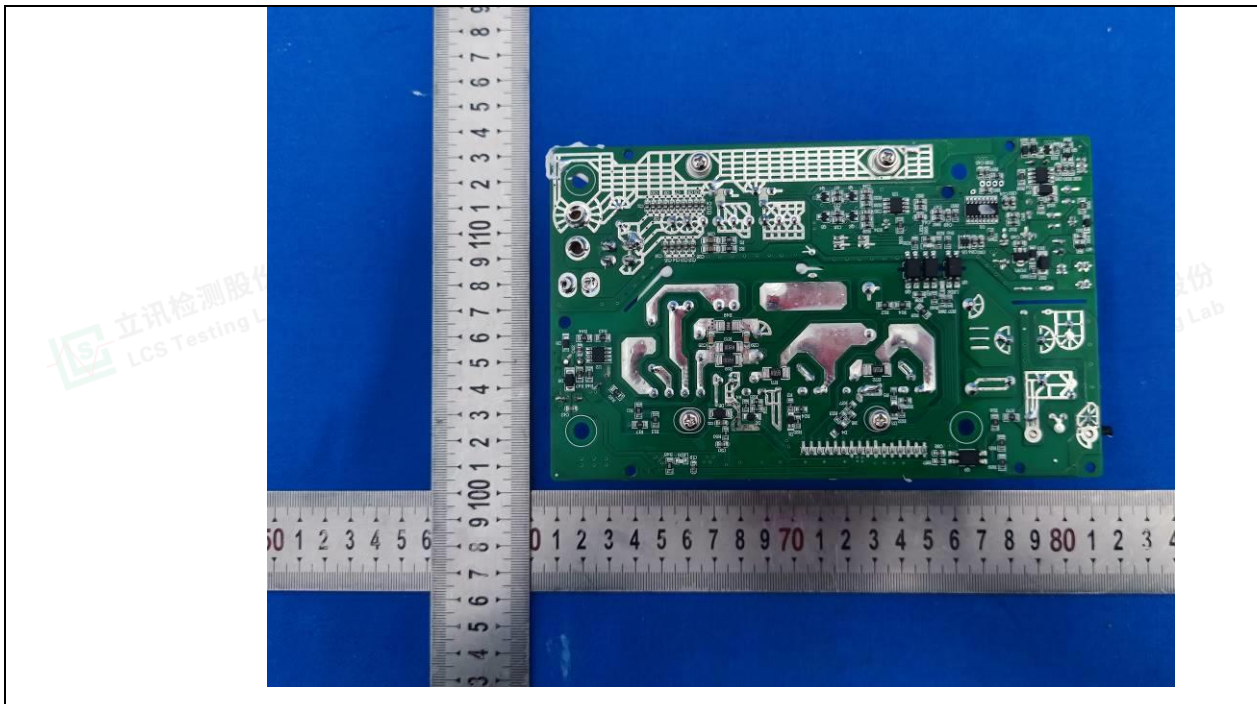
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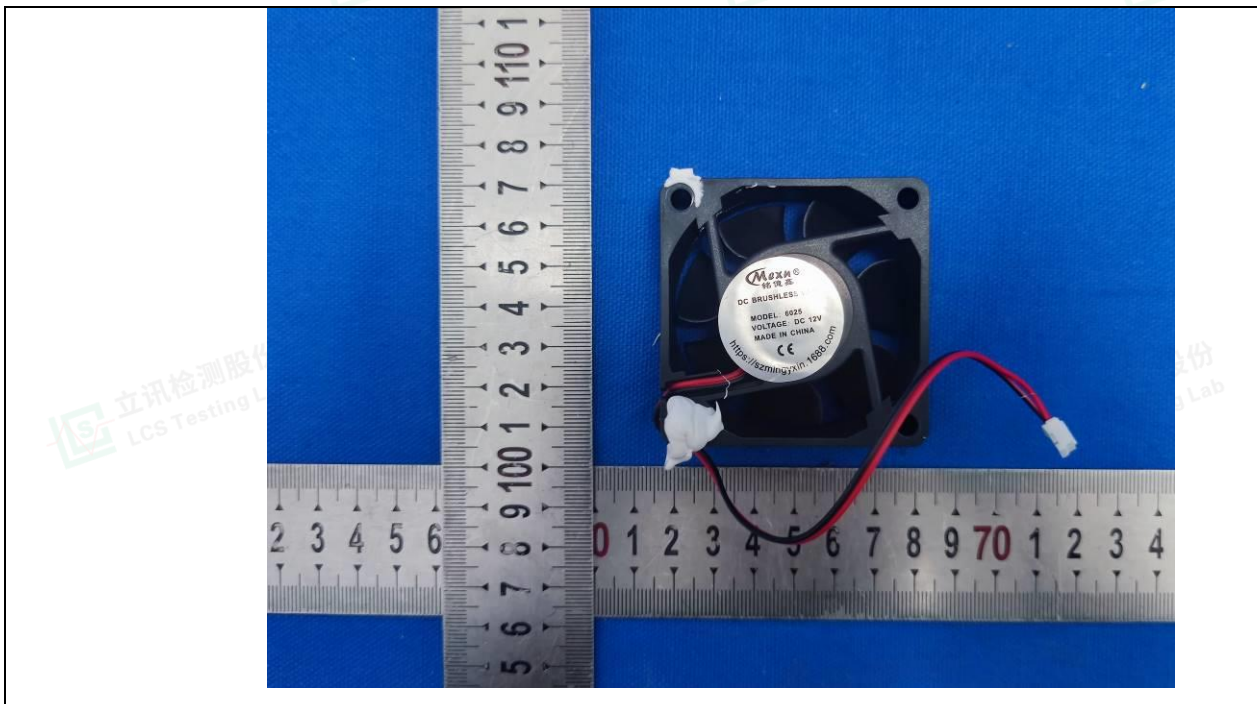


Attachment No. 2

Details of: PCB View



Details of: DC Fan View



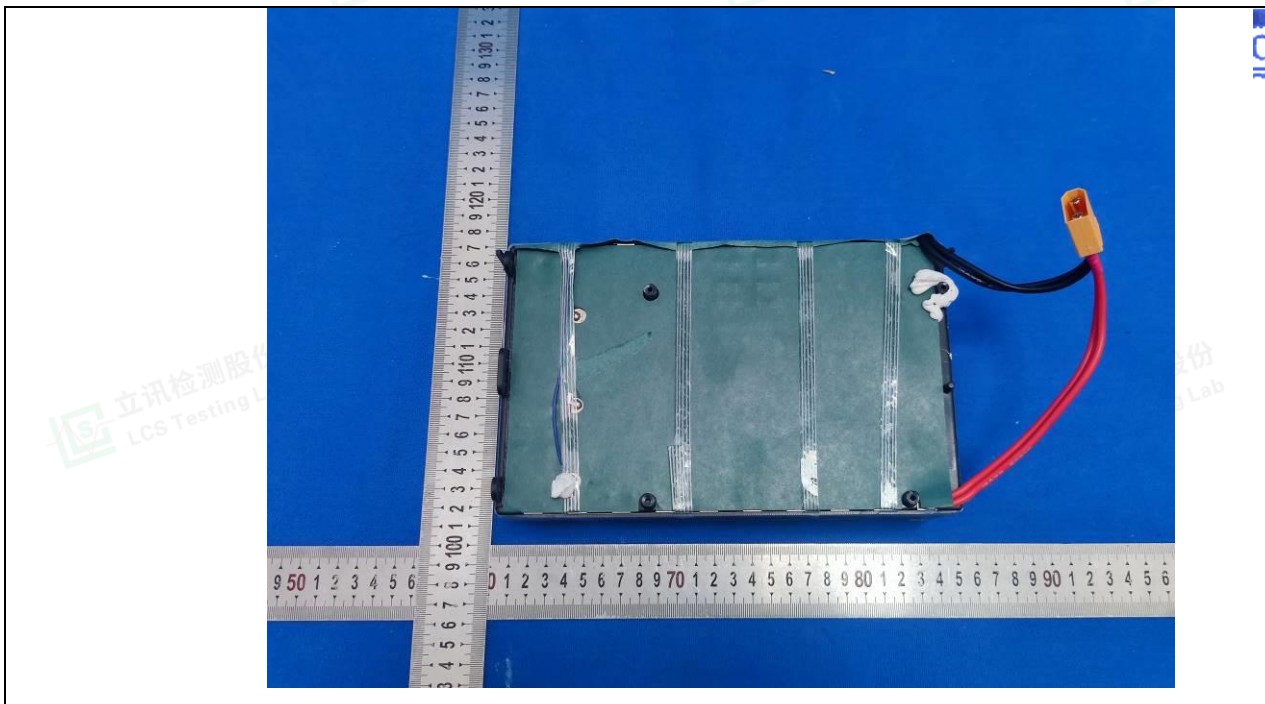


Attachment No. 2

Details of: Adapter View



Details of: Battery View



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

