



TEST REPORT

Reference No. : WTH21X12147020S
Applicant : Shenzhen Filmbase Technology Co., Ltd.
Address : 31F, 3A Building, Smart Park, Baolong, Longgang, Shenzhen, China
Manufacturer : Shenzhen Filmbase Technology Co., Ltd.
Address : 31F, 3A Building, Smart Park, Baolong, Longgang, Shenzhen, China
Product : PDLC Smart Film Smart Glass Transformer
Model(s) : FB-03-20-60V
Total pages : 58 pages
Standards : J62368-1(2020)
Audio/video, information and communication technology equipment-
Part 1:Safety requirements
Test Report Form No : WTX_J62368_1_2020A
Date of Receipt sample : 2022-01-19
Date of Test : 2022-01-19 to 2022-02-18
Date of Issue : 2022-02-21
Test Result : **Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.



Prepared By
Waltek Testing Group (Shenzhen) Co., Ltd.

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Test item description : PDLC Smart Film Smart Glass Transformer

Trademark :



(Filmbase)

Model and/or type reference : FB-03-20-60V

Rating(s)..... : Input: 110-120V~, 50/60Hz, 0.6A
Output: 60V~, 0.83A MAX

Remark:

Whether parts of tests for the product have been subcontracted to other labs:

Yes No

If Yes, list the related test items and lab information: --

Test items: --

Lab information: --

Summary of testing:

Tests performed (name of test and test clause):

- J62368-1(2020)

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

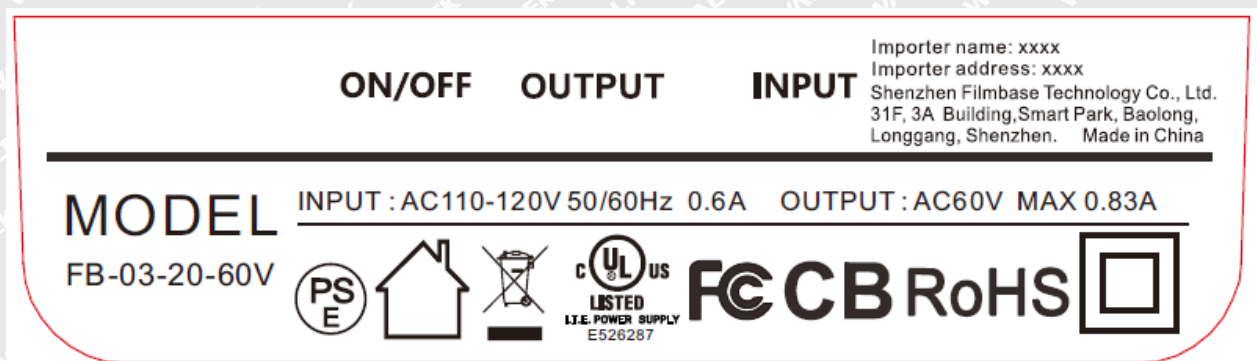
Testing location:

Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei

Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China

Copy of marking plate:



Remark:

Above label for reference only, final label marking on product shall contain the information at least. Minimum height of graphical symbols is 5mm.



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 checked="" type="checkbox"/> Children likely to be present
Supply Connection	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit - not Mains connected - <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance	<input checked="" type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> +%/ -% <input type="checkbox"/> None
Supply Connection – Type	<input checked="" type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input checked="" type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input type="checkbox"/> other:
Considered current rating of protective device as part of building or equipment installation	16A; Installation location: <input checked="" type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input checked="" type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input checked="" type="checkbox"/> wall-mounted
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
Class of equipment	<input type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III
Access location	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maxium operating ambient:	50°C
IP protection class	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP__
Power Systems	<input checked="" type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT – V _{L-L} <input type="checkbox"/> not AC mains
Altitude during operation (m)	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> _____ m
Altitude of test laboratory (m)	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> _____ m
Mass of equipment (kg)	<input checked="" type="checkbox"/> Approx 0.91kg



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	2022-01-19
Date (s) of performance of tests	2022-01-19 to 2022-02-18
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)	Shenzhen Yuguang New Material Co., Ltd Building2#, Huaqiang Industry Park. Baolong. Longgang. Shenzhen, China
GENERAL PRODUCT INFORMATION:	
Product Description	
1. The equipment with model no. FB-03-20-60V is a PDLC Smart Film Smart Glass Transformer for indoor use only. The equipment is considered to be Class II of movable and stationary equipment. 2. The specified maximum ambient temperature is 50°C. 3. In the process of using the product, the user cannot touch the output.	
Model Differences	
N/A	
Additional application considerations – (Considerations used to test a component or sub-assembly)	
N/A	



ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.)	
Electrically-caused injury (Clause 5): (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input, ES1	
Source of electrical energy	Corresponding classification (ES)
Primary circuits conductively connected to the mains	ES3
Transformer output	ES3
Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts):	
Source of power or PIS	Corresponding classification (PS)
All circuits	PS3
Injury caused by hazardous substances (Clause 7) (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled componentGlycol	
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 unitMS2	
Source of kinetic/mechanical energy	Corresponding classification (MS)
Edges and corners of accessible parts	MS1
Mass of EUT	MS1
Wall/ceiling mount	MS3
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	
Source of thermal energy	Corresponding classification (TS)
Internal components	TS3
Accessible surfaces of EUT	TS1
Radiation (Clause 10) (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product	
TYPE of radiation	Corresponding classification (RS)
Indicating light	RS1



ENERGY SOURCE DIAGRAM

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

ES PS MS TS RS

Details see ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE

WALTEK



OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary person	ES3: Primary circuits	N/A	N/A	Enclosure
Ordinary person	ES1: Output terminal	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Enclosure	PS3: All circuits	See 6.3	See 6.4.6	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3: High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary person	MS1: Corner and edge are smooth	N/A	N/A	N/A
Ordinary person	MS1: Mass of EUT	N/A	N/A	N/A
Ordinary person	MS3: Wall/ceiling mount	N/A	N/A	Adequate mounting
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary person	TS3: Internal components	N/A	N/A	Enclosure
Ordinary person	TS1: Accessible parts	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary person	RS1: Indicating light	N/A	N/A	N/A
Supplementary Information:				
(1) See attached energy source diagram for additional details.				
(2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				



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Clause	Requirement – Test	Result – Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment. See also Annex G	P
4.1.3	Equipment design and construction		P
4.1.15	Markings and instructions.....	(See Annex F)	P
4.4.4	Safeguard robustness	See below	P
4.4.4.2	Steady force tests.....	(See Annex T.5)	P
4.4.4.3	Drop tests.....	(See Annex T.7)	P
4.4.4.4	Impact tests.....	(See Annex T.6)	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....	No such enclosure and barrier	N/A
4.4.4.6	Glass Impact tests.....	No glass used	N/A
4.4.4.7	Thermoplastic material tests.....	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard.....	Considered, but no such barrier or enclosure provided	N/A
4.4.4.9	Accessibility and safeguard effectiveness	All safeguards remain effective	P
4.5	Explosion	No explosion occurs during normal/abnormal operation and single fault conditions	P
4.6	Fixing of conductors	See below	P
4.6.1	Fix conductors not to defeat a safeguard	After 10N test, no reducing clearances or creepage distances	P
4.6.2	10 N force test applied to.....	(See Annex T.2)	P
4.7	Equipment for direct insertion into mains socket - outlets	Not such equipment	N/A
4.7.2	Mains plug part complies with the relevant standard.....		N/A
4.7.3	Torque (Nm).....		N/A
4.8	Products containing coin/button cell batteries	No such battery	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery.....		—
4.8.4	Battery Compartment Mechanical Tests.....		N/A



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Clause	Requirement – Test	Result – Remark	Verdict

4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object.....	(See Annex P)	P

5	ELECTRICALLY-CAUSED INJURY		P
5.2.1	Electrical energy source classifications	(See appended table 5.2.2.2)	P
5.2.2	ES1, ES2 and ES3 limits	Accessible parts were with ES1.	P
5.2.2.2	Steady-state voltage and current	(See appended table 5.2.2.2)	P
5.2.2.3	Capacitance limits	No such capacitor	N/A
5.2.2.4	Single pulse limits	No single pulse	N/A
5.2.2.5	Limits for repetitive pulses	No repetitive pulses	N/A
5.2.2.6	Ringing signals	No analogue telephone network ringing signals	N/A
5.2.2.7	Audio signals	No audio signals	N/A
5.3	Protection against electrical energy sources	Complied	P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	Sufficient safeguard was provided between energy source and ordinary, instructed and skilled persons	P
5.3.2.1	Accessibility to electrical energy sources and safeguards	ES3 parts were not accessible to ordinary and instructed persons	P
5.3.2.2	Contact requirements		P
	a) Test with test probe from Annex V	See 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	No such terminal	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, 6.3.2, 9.0, B.2.6)	P
5.4.1.5	Pollution degree	2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions	Not used	N/A
5.4.1.7	Insulation in circuits generating starting pulses	Not used	N/A
5.4.1.8	Determination of working voltage		N/A



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Clause	Requirement – Test	Result – Remark	Verdict
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		P
5.4.1.10.2	Vicat softening temperature		N/A
5.4.1.10.3	Ball pressure		P
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage		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	2500Vp	—
	b) d.c. mains transient voltage	No connections to d.c. mains.	—
	c) external circuit transient voltage	No connections to external circuit with transient voltage.	—
	d) transient voltage determined by measurement.....		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	Not used	N/A
5.4.2.5	Multiplication factors for clearances and test voltages.....	2000m	N/A
5.4.3	Creepage distances	(See appended table 5.4.3)	P
5.4.3.1	General	See below	P
5.4.3.3	Material Group	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		N/A
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs)		N/A
5.4.4.6.3	Non-separable thin sheet material	No such part	N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz		N/A



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Clause	Requirement – Test	Result – Remark	Verdict
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
	Insulation resistance (MΩ).....		—
5.4.6	Insulation of internal wire as part of supplementary safeguard.....		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%).....	93	—
	Temperature (°C)	40	—
	Duration (h).....	120	—
5.4.9	Electric strength test.....	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test	Test voltage based on transient voltages	P
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test		N/A
5.4.10.2.3	Steady-state test.....		N/A
5.4.11	Insulation between external circuits and earthed circuitry		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage $U_{op}(V)$		—
	Nominal voltage $U_{peak}(V)$		—
	Max increase due to variation U_{sp}		—
	Max increase due to ageing ΔU_{sa}		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$		—
5.5	Components as safeguards		
5.5.1	General		P
5.5.2	Capacitors and RC units		N/A
5.5.2.1	General requirement		N/A



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Clause	Requirement – Test	Result – Remark	Verdict
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector.....		N/A
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers		N/A
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		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		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current	(See appended table 5.2)	P
5.7.2.2	Measurement of prospective touch voltage		P



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Clause	Requirement – Test	Result – Remark	Verdict
5.7.3	Equipment set-up, supply connections and earth connections		P
	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	PS (power source) classification determined by measuring the maximum power in Figures 34 and 35 for load and power source circuits.	P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault	(See appended table 6.2.2)	P
6.2.2.4	PS1		N/A
6.2.2.5	PS2		N/A
6.2.2.6	PS3	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources	See the following details.	P
6.2.3.1	Arcing PIS	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS	(See appended table 6.2.3.2)	P



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Clause	Requirement – Test	Result – Remark	Verdict
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure		P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method by control of fire spread applied.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions		N/A
	Special conditions for temperature limited by fuse	No such consideration.	N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		N/A
6.4.5.2	Supplementary safeguards		N/A
6.4.6	Control of fire spread in PS3 circuit	Enclosure is made of plastic rated V-0.	P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.1	General		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	See below.	P
6.4.8.1	Fire enclosure and fire barrier material properties	Enclosure is made of plastic rated V-0.	P
6.4.8.2.1	Requirements for a 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



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Clause	Requirement – Test	Result – Remark	Verdict
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm)		P
	Flammability tests for the bottom of a fire enclosure		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c)		N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating	Enclosure is made of plastic rated V-0.	P
6.5	Internal and external wiring		P
6.5.1	Requirements	Internal wires in PS3 circuits comply with VW-1	P
6.5.2	Cross-sectional area (mm ²)	Considered	—
6.5.3	Requirements for interconnection to building wiring		N/A
6.6	Safeguards against fire due to connection to additional equipment		N/A
	External port limited to PS2 or complies with Clause Q.1		N/A

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010).....		—
7.6	Batteries.....		N/A

8	MECHANICALLY-CAUSED INJURY		P
8.1	General		P
8.2	Mechanical energy source classifications	MS1	P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners	No sharp edges and corners	N/A
8.4.1	Safeguards	MS1 classification	N/A
8.5	Safeguards against moving parts	No such part	N/A



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Clause	Requirement – Test	Result – Remark	Verdict
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks		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	Classification MS1 according to table35, line 5 and no stability requirements.	N/A
8.6.1	Product classification	MS1	N/A
	Instructional Safeguard	Not required	—
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	Mounted > 2m MS3	P
8.7.1	Mounting Means (Length of screws (mm) and mounting surface)	Mounting means provided with the equipment	P
8.7.2	Direction and applied force		P
8.8	Handles strength	No handles.	N/A
8.8.1	Classification		N/A



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Clause	Requirement – Test	Result – Remark	Verdict
8.8.2	Applied Force		N/A
8.9	Wheels or casters attachment requirements	Not such equipment	N/A
8.9.1	Classification		N/A
8.9.2	Applied force		—
8.10	Carts, stands and similar carriers	Not such equipment	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 such equipment	N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable N.....		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas.....		N/A
	Button/Ball diameter (mm)		—

9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications	TS3: internal components TS1: accessible parts	P
9.3	Safeguard against thermal energy sources		P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard	Enclosure provided	P
9.4.2	Instructional safeguard		N/A

10	RADIATION		P
10.2	Radiation energy source classification		P
10.2.1	General classification	RS1 for Indicating light	P
10.3	Protection against laser radiation	No laser radiation	N/A



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Clause	Requirement – Test	Result – Remark	Verdict
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault.....		N/A
	Instructional safeguard		—
	Tool.....		—
10.4	Protection against visible, infrared, and UV radiation		P
10.4.1	General	See below	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.....	RS1 for Indicating light	P
10.4.2	Instructional safeguard		N/A
10.5	Protection against x-radiation		N/A
10.5.1	X- radiation energy source that exists equipment.....		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards.....		N/A
	Instructional safeguard for skilled person		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation		—
	Abnormal and single-fault condition		N/A
	Maximum radiation (pA/kg).....		N/A
10.6	Protection against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A)		N/A
	Output voltage, unweighted r.m.s.....		N/A
10.6.4	Protection of persons		N/A



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

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements.....	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers		N/A
B.2.3	Supply voltage and tolerances	+10% / -10%	P
B.2.5	Input test.....	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements.....		P
B.3.2	Covering of ventilation openings	(See appended table B.3)	P
B.3.3	D.C. mains polarity test	AC mains supplied	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	No battery	N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.	No audio amplifier	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions	(See appended table B.3)	P
B.4	Simulated single fault conditions		P



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Clause	Requirement – Test	Result – Remark	Verdict
B.4.2	Temperature controlling device open or short-circuited	No such device	N/A
B.4.3	Motor tests		P
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature	(See appended table B.4)	P
B.4.4	Short circuit of functional insulation	(See appended table B.4)	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards within the EUT	N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		N/A
B.4.6	Short circuit or disconnect of passive components	(See appended table B.4)	P
B.4.7	Continuous operation of components	The EUT is continuous operating type and no such components intended for short time operation or intermittent operation	N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	No change to circuits classified in 5.3.	P
B.4.9	Battery charging under single fault conditions....	No battery	N/A

C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation	No UV radiation within the EUT.	N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A

D	TEST GENERATORS		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A



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Clause	Requirement – Test	Result – Remark	Verdict

E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V).....		—
	Rated load impedance (Ω)		—
E.2	Audio amplifier abnormal operating conditions		N/A

F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General requirements		P
	Instructions – Language	English version user manual was provided.	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1	Letter symbols for quantities and units are complied with IEC 60027-1.	P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Graphical symbols are complied with IEC 60417, ISO 3864-2, ISO7000 or ISO 7010.	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Equipment marking located on enclosure.	P
F.3.2	Equipment identification markings	See below	P
F.3.2.1	Manufacturer identification	(See copy of marking plate)	P
F.3.2.2	Model identification	(See copy of marking plate)	P
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of supply voltage.....	(See copy of marking plate)	P
F.3.3.4	Rated voltage.....	(See copy of marking plate)	P
F.3.3.4	Rated frequency	(See copy of marking plate)	P
F.3.3.6	Rated current or rated power.....	(See copy of marking plate)	P
F.3.3.7	Equipment with multiple supply connections	No multiple supply connection	N/A
F.3.4	Voltage setting device	No such device	N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings	No mains appliance outlets or socket-outlets	N/A
F.3.5.2	Switch position identification marking.....	No switches	N/A



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Clause	Requirement – Test	Result – Remark	Verdict
F.3.5.3	Replacement fuse identification and rating markings	The Fuse is located within the equipment and not replaceable by an ordinary person or an instructed person.	P
F.3.5.4	Replacement battery identification marking	No battery	N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I Equipment	Class II	N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)	Class II symbol (IEC 60417-1, symbol No. 5172) is applied to the label	P
F.3.6.2.1	Class II equipment with or without functional earth		P
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		N/A
F.3.9	Durability, legibility and permanence of marking	All markings required are easily discernible under normal lighting conditions	P
F.3.10	Test for permanence of markings	After rubbing test by water and petroleum spirit, the marking still legible; it is not easily possible to remove the marking plate and show no curling.	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	See user manual	P
	c) Equipment intended to be fastened in place	See user manual	P
	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 ES2 limits		N/A
	h) Symbols used on equipment		P



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Clause	Requirement – Test	Result – Remark	Verdict
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards		P
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		P

G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General requirements	No such component	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	Relays		P
G.2.1	General requirements	Approved	P
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	Protection Devices		P
G.3.1	Thermal cut-offs	No such component	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 such component	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 such component	N/A
G.3.4	Overcurrent protection devices	Approved	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



J62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
G.3.5.2	Single faults conditions		N/A
G.4	Connectors		P
G.4.1	Spacings		P
G.4.2	Mains connector configuration	(See table 4.1.2)	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	Wound Components		N/A
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°		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
G.5.3	Transformers		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1)	The transformers meet the requirements given in G.5.3.2 and G.5.3.3.	P
	Position	Isolation transformer	—
	Method of protection	Bobbin and insulation tape used	—
G.5.3.2	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	Maximum temperatures of windings did not exceed the limits given in Table G.3. During the test, the transformer did not emit flames or molten metal. (See appended table B.3)	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 used	P
	Position	Mentioned in user manual	—



J62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days)		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V)		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h)		N/A
	Electric strength test (V)		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		P
G.5.4.6.2	Tested in the unit		P
	Maximum Temperature	(See appended table B.4)	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
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage		—
G.6	Wire Insulation		N/A
G.6.1	General		N/A
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	Mains supply cords		N/A
G.7.1	General requirements	No such mains supply cords	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)		—



J62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
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	No such component	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
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.	No such component	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	No such component	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



J62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
G.11	Capacitor and RC units		N/A
G.11.1	General requirements	No such component	N/A
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
G.12	Optocouplers		N/A
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results)	No such component	N/A
	Type test voltage Vini		—
	Routine test voltage, Vini,b.....		—
G.13	Printed boards		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction)		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)		—
	:		
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements		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



J62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		N/A
b)	Impulse test using circuit 2 with $U_c =$ to transient voltage		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance		—
D3)	Resistance		—

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	Ringling 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



J62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
K	SAFETY INTERLOCKS		N/A
K.1	General requirements	No safety interlocks inside the EUT	N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance.....		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location)		N/A
K.7.2	Overload test, Current (A)		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A

L	DISCONNECT DEVICES		P
L.1	General requirements	Interrupted by appliance inlet	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices	Not used	N/A
L.7	Plugs as disconnect devices	No power cord covered in report	N/A
L.8	Multiple power sources	Single power source	N/A

M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N/A
M.1	General requirements	No battery	N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method)..		N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A



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Clause	Requirement – Test	Result – Remark	Verdict
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance		N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature		—
M.4.2.2 b)	Single faults in charging circuitry.....		—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method)		N/A
M.6.2	Leakage current (mA)		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A



J62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s)		—
M.8.2.3	Correction factors		—
M.8.2.4	Calculation of distance d (mm)		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing)		N/A

N	ELECTROCHEMICAL POTENTIALS		P
	Metal(s) used	Considered	—

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

P	SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS		P
P.1	General requirements		P
P.2.2	Safeguards against entry of foreign object		P
	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



J62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
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		N/A
Q.1	Limited power sources		N/A
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		N/A
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		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A)		—
	Current limiting method		—

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



J62368-1			
Clause	Requirement – Test	Result – Remark	Verdict

S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material.....		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material.....		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material.....		—
	Wall thickness (mm)		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosure materials of equipment with a steady-state power exceeding 4000 W		N/A
	Samples, material.....		—
	Wall thickness (mm)		—
	Conditioning (test condition), (°C)		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A



J62368-1			
Clause	Requirement – Test	Result – Remark	Verdict

T	MECHANICAL STRENGTH TESTS		P
T.1	General requirements		P
T.2	Steady force test, 10 N	(See appended table T.2)	P
T.3	Steady force test, 30 N		N/A
T.4	Steady force test, 100 N		N/A
T.5	Steady force test, 250 N	(See appended table T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	P
	Fall test		P
	Swing test		P
T.7	Drop test	(See appended table T.7)	P
T.8	Stress relief test.....	(See appended table T.8)	P
T.9	Impact Test (glass)	No parts made of 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
V.2	Accessible part criterion		P



IEC62368_1D - ATTACHMENT			
Clause	Requirement – Test	Result – Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 (JAPAN) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to : J62368-1 (2020)			
TRF template used: : IEC62368-1, Ed. 1.1			
Attachment Form No. : JP_ND_IEC62368_1D			
Attachment Originator : UL (JP)			
Master Attachment : Date 2021-02-04			
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	National Differences		—
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this standard or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.	Considered	P
5.6.1	Mains socket-outlet and appliance outlet shall comply with Clause G.4.2A if they are incorporated as part of the equipment.	Not applicable	N/A
5.6.2.1	Mains connection of class 0I equipment: Instructional safeguard in accordance with Clause F.3.6.1A; Mains plug having a lead wire for protective earthing connection of class 0I equipment; Independent main protective earthing terminal installed by ordinary person.	Class II equipment	N/A
5.6.2.2	This requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.		N/A



IEC62368_1D - ATTACHMENT			
Clause	Requirement – Test	Result – Remark	Verdict
5.6.3	In case of class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall comply with either of the following: – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cable with 1.25 mm ² or more cross-sectional area		N/A
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series or JIS C 8303, or otherwise being considered to comply with relevant regulations, or that is provided with mains appliance outlet as specified in JIS C 8283-2-2 for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.	Class II equipment	N/A
5.7.4	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990.	Class II equipment	N/A
6.4.3.3	A fuse complying with JIS C 6575 series or a fuse having equivalent characteristics shall open within 1 s. For Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”. A fuse not complying with JIS C 6575 series shall be tested with the breaking capacity taken into account.		N/A
8.5.4.2.1	Only three-phase stationary equipment rated more than 200 V ac can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.	Not applicable	N/A
8.5.4.2.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.	Not applicable	N/A
8.5.4.2.4	The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.	Not applicable	N/A



IEC62368_1D - ATTACHMENT			
Clause	Requirement – Test	Result – Remark	Verdict
8.5.4.2.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part. Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.	Not applicable	N/A
9.2.6, Table 38	Handles, Knobs, grips, etc. and external surfaces either held, touched or worn against the body in normal use (> 1 min) b,c	Considered	P
F.3.5.1	Instructional safeguard of class 0I equipment in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8303 or relevant regulation to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.	Class II equipment	N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic.		P
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.3 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions and instructional safeguard shall be provided regarding the earthing connection.	Class II equipment	N/A
F.3.6.2.1	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.		N/A
F.4	Instruction for audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A. Installation instruction for the protective earthing connection for class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided within the package for the equipment.		N/A
G.3.2.1	The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.	No thermal link used	N/A



IEC62368_1D - ATTACHMENT			
Clause	Requirement – Test	Result – Remark	Verdict
G.3.4	<p>Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the relevant part of JIS C 6575 (corresponding to IEC60127) or shall have equivalent characteristics.</p> <p>If there are no applicable IEC standards, overcurrent protective devices used as a safeguard shall comply with their applicable IEC standards.</p>		N/A
G.4.1	This requirement is not applicable to Clauses G.4.2 and G.4.2A.		N/A
G.4.2	<p>Mains connector shall comply with JIS C 8282 series, JIS C 8283 series, JIS C 8285, JIS C 8303 or IEC 60309 series.</p> <p>Mains plugs and socket-outlets shall comply with JIS C 8282 series, JIS C 8303, IEC 60309 series, or have equivalent or better performance.</p> <p>A power supply cord set provided with appliance connector that can fit appliance inlet complying with JIS C 8283-1 shall comply with JIS C 8286.</p> <p>Construction preventing mechanical stress not to transmit to the soldering part of inlet terminal. Consideration for an equipment rated not more than 125 V provided with Type C14 and C18 appliance coupler complying with JIS C 8283 series.</p>		N/A
G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively.		N/A
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.	Mains supply cord is not covered in this report	N/A
G.8.3.3	Withstand $1,71 \times 1,1 \times U_0$ for 5 s.	No such part	N/A



4.1.2	TABLE: List of critical components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity1	
Appliance inlet	LECI Electronics Co., Ltd	DB-8-Serie(s)	AC 250V, 2.5A	IEC/EN 60320-1	VDE 40032028	
(Alternative)	Zhe Jiang Bei Er Jia Electronic Co., Ltd.	ST-A03-005	AC 250V, 2.5A	IEC/EN 60320-1	VDE 40014833	
(Alternative)	Yueqing Yanhui Electronic Co., Ltd.	DB-14-T-Serie(s)	AC 250V, 2.5A	IEC/EN 60320-1	VDE 40035411	
Fuse	Shenzhen Lanson Electronics Co. Ltd.	SMT T3,15A250V	250V AC, T3.15A	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40012592	
(Alternative)	Littelfuse Inc.	392	250V AC, T3.15A	IEC/EN 60127-1 IEC/EN 60127-3	VDE 126983	
(Alternative)	XC Electronics (Shen Zhen) Corp. Ltd.	5TE	250V AC, T3.15A	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40029550 VDE 40036821	
(Alternative)	Dongguan Better Electronics Technology Co., Ltd.	932	250V AC, T3.15A	IEC/EN 60127-1 IEC/EN 60127-3	TUV R 50279350 VDE 40033369	
(Alternative)	Conquer Electronics Co., Ltd.	MET	250V AC, T3.15A	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40017157	
Relay	Donghai County Tongling Electrical Appliance Co., Ltd.	JQC-3FF-S-Z	250VAC, 10A	EN 61810-1	TUV R 50316150	
PCB	ZHEJIANG ZAPON ELECTRONIC TECHNOLOGY CO LTD	Z-M	V-0, 130°C	UL 94, UL 796	UL E253641	
(Alternative)	KINGBOARD LAMINATES HOLDINGS LTD	KB-6160A	V-0, 130°C	UL 94, UL 796	UL E123995	
(Alternative)	Interchangeable	Interchangeable	V-0, 130°C	UL 94, UL 796	UL	
Transformer	Shenzhen PENGDAYI	50W	Class 130 (B)	J62368-1	Tested with appliance	
- Input lead wire	SHENZHEN TONGJIAXIN ELECTRONIC CO LTD	1672	18-24AWG, 105°C, 300V, VW-1	UL 758	UL E338302	



(Alternative)	DONGGUAN CHANGAN HUAWEI WIRE CO LTD	1672	18-24AWG, 105°C, 300V, VW-1	UL 758	UL E320244
(Alternative)	DONGGUAN TRIUMPHCABLE CO LTD	1672	18-24AWG, 105°C, 300V, VW-1	UL 758	UL E249743
(Alternative)	DONGGUAN CITY JIN ZAO LI ELECTRONIC TECHNOLOGY CO LTD	1672	18-24AWG, 105°C, 300V, VW-1	UL 758	UL E348531
(Alternative)	RAN SUN INDUSTRIAL CO	1672	18-24AWG, 105°C, 300V, VW-1	UL 758	UL E157882
(Alternative)	SHENZHEN HONGYA ELECTRONICS CO LTD	1672	18-24AWG, 105°C, 300V, VW-1	UL 758	UL E346933
- Output lead wire	DONGGUAN JINLAN INDUSTRY CO LTD	2468, 2464	18-24AWG, 80°C, 300V, VW-1	UL 758	UL E339790
(Alternative)	SHENZHEN CITY DE XING LONG ELECTRIC CO LTD	2468, 2464	18-24AWG, 80°C, 300V, VW-1	UL 758	UL E328945
(Alternative)	DONGGUAN CITY DHE WIRE & CABLE CO LTD	2468, 2464	18-24AWG, 80°C, 300V, VW-1	UL 758	UL E343712
(Alternative)	DONGGUAN ZHIHE ELECTRICAL CABLE TECH CO LTD	2468	18-24AWG, 80°C, 300V, VW-1	UL 758	UL E258239
(Alternative)	KWANG IL ELECTRIC WIRE CO LTD	2468, 2464	18-24AWG, 80°C, 300V, VW-1	UL 758	UL E150633
(Alternative)	DONGGUAN TRIUMPHCABLE CO LTD	2468, 2464	18-24AWG, 80°C, 300V, VW-1	UL 758	UL E249743
(Alternative)	DONGGUAN WENCHANG ELECTRONIC CO LTD	2468, 2464, 1158	18-24AWG, 80°C, 300V, VW-1	UL 758	UL E214500
- Magnet wire	ZHENG YI ELECTRICAL MATERIAL CO LTD	xUEW, QA-x/155	155°C	UL 1446	UL E316891
- Bobbin	CHANG CHUN PLASTICS CO LTD	T375HF	V-0, 150°C	UL 94, UL 746	UL E59481
(Alternative)	POLYROCKS CHEMICAL CO LTD	5003	V-0, 150°C	UL 94, UL 746	UL E340831



- Insulation tape	SUZHOU MAILADUONA ELECTRIC MATERIAL CO LTD	JY313#	130°C	UL 510A	UL E188295
(Alternative)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ* (b)	130°C	UL 510A	UL E165111
Varnish	John C Dolph Co	BB-346-HF	155°C	UL 1446	UL E317427
(Alternative)	ZHUHAI CHANGXIAN NEW MATERIALS TECHNOLOGY CO LTD	E962	130°C	UL 1446	UL E335405
Plastic material of enclosure	SABIC INNOVATIVE PLASTICS B V	SHF4910(GG)	V-0, 120°C, 1.5mm min. thickness	UL 94, UL 746	UL E45329

Supplementary information:

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

4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests			N/A
(The following mechanical tests are conducted in the sequence noted.)				
4.8.4.2	TABLE: Stress Relief test			—
Part	Material	Oven Temperature (°C)	Comments	
--	--	--	--	
4.8.4.3	TABLE: Battery replacement test			—
Battery part no.				—
Battery Installation/withdrawal		Battery Installation/Removal Cycle	Comments	
		1		
		2		
		3		
		4		
		5		
		6		
		8		
		9		
		10		
4.8.4.4	TABLE: Drop test			—
Impact Area	Drop Distance	Drop No.	Observations	
		1		
		2		



		3		
4.8.4.5	TABLE: Impact			—
Impacts per surface	Surface tested	Impact energy (Nm)	Comments	
--	--	--	--	
4.8.4.6	TABLE: Crush test			—
Test position	Surface tested	Crushing Force (N)	Duration force applied (s)	
--	--	--	--	
Supplementary information:				

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	132Vac	AC mains	Normal	132V	--	60	ES3
			Abnormal	--	--	--	
			Single fault –	--	--	--	
2	132Vac	Transformer secondary output	Normal	72Vpk	--	--	ES3
			Abnormal	--	--	--	
			Single fault –	--	--	--	
4	132Vac	Plastic enclosure	Normal	--	0.066mApk	60	ES1
			Abnormal	--	--	--	
			Single fault –	--	--	--	
5.2.2.3 - Capacitance Limits							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class	
				Capacitance, nF	Upk (V)		
--	--	--	--	--	--	--	
5.2.2.4 - Single Pulses							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	lpk (mA)	



--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

5.2.2.5 - Repetitive Pulses

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

Test Conditions:

Normal –

Abnormal -

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

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements				P
Supply voltage (V)	99V60Hz		132V/50Hz		—
Ambient T _{min} (°C)	See below				—
Ambient T _{max} (°C)					—
Maximum measured temperature T of part/at:	T (°C)				Allowed T _{max} (°C)
	Horizontal	Vertical	Horizontal	Vertical	
Appliance inlet	65.4	65.6	66.9	67.4	70
Input lead wire of transformer	72.0	71.7	75.4	74.4	105
Primary winding of transformer	109.6	107.1	117.5	113.8	110
Secondary winding of transformer	87.0	86.6	92.7	90.0	110
Bobbin of transformer	96.3	94.5	105.2	101.7	Ref.
Output lead wire of transformer	77.3	74.8	82.1	78.1	105
Relay body	81.3	79.7	83.8	82.1	85
C4 body	77.8	77.0	80.7	79.5	105
PCB	70.4	69.5	72.6	71.0	130
DC fan body	70.9	71.1	75.6	73.6	Ref.
Output wire	65.2	64.2	67.1	65.6	80
Plastic enclosure inside near transformer, top	78.3	78.3	83.2	81.8	Ref.
Plastic enclosure inside near transformer, bottom	71.4	67.3	75.3	69.3	Ref.
Ambient	50.0	50.0	50.0	50.0	50.0



Touch Temperatures:							
Plastic enclosure outside near transformer, top	49.8	50.1	54.1	53.3	77		
Plastic enclosure outside near transformer, bottom	52.3	49.5	55.9	52.3	77		
Ambient	25.0	25.0	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 requirement.							
Note 2: T _{ma} is not included in assessment of Touch Temperatures (Clause 9).							
Note 3: The maximum ambient temperature specified by manufacturer is 50°C.							

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

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics			P
Allowed impression diameter (mm) :			≤ 2 mm	—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)	
Appliance inlet	See appended table 4.1.2	125	1.6	
Supplementary information:				

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						P
Clearance (cl) and creepage distance (cr) at/of/between:	U _p (V)	U r.m.s. (V)	Frequency (kHz) ¹	Required cl (mm)	cl (mm) ²	Required ³ cr (mm)	cr (mm)
L to N before F1	170	120	0.06	1.5	3.6	1.5	3.6
Difference polarities of fuse F1	170	120	0.06	1.5	3.2	1.5	3.2
Primary circuit to accessible part outside plastic enclosure	170	120	0.06	3.0	>10	3.0	>10



Supplementary information: Note 1: Only for frequency above 30 kHz Note 2: See table 5.4.2.4 if this is based on electric strength test Note 3: Provide Material Group

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage			P
	Overtoltage Category (OV):			II
	Pollution Degree:			2
Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)	
--	--	--	--	
Supplementary information: Requirement considered in table 5.4.2.2.				

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

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 (Hz)	Material	Required DTI (mm)	DTI (mm)	
Plastic enclosure	420	60	All sources used in table 4.1.2	0.4	2.7	
Supplementary information:						

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No	
Basic/supplementary:				
L to N (F1 disconnected)	DC	2500	No	
Reinforced:				
Primary circuit to accessible part outer enclosure with metal foil	DC	4000	No	
Outer plastic enclosure with metal foil to inner plastic enclosure	DC	4000	No	
Routine Tests:				
--	--	--	--	



5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No	
Supplementary information: The DC voltage source was performed on all testing once in forward and once in reverse.				

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						

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)
Measured to protective earthing terminal	1	N/A	
	2*	N/A	
	3	N/A	
	4	N/A	
	5	N/A	
	6	N/A	
	8	N/A	
Supplementary Information: Notes:			



- [1] Supply voltage is the anticipated maximum Touch Voltage
 [2] Earthed neutral conductor [Voltage differences less than 1% or more]
 [3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3
 [4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.
 [5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.
 N: Normal condition, R: Reverse condition.

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 mains	--	Power (W) :	--	--	PS3
		V _A (V) :	--	--	
		I _A (A) :	--	--	
Supplementary Information: (*) Measurement taken only when limits at 3 seconds exceed PS1 limits SC=Short Circuit, OC=Open Circuit					

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 × I _{rms})	Arcing PIS? Yes / No
Primary circuits and secondary circuit / 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
Primary circuits and secondary circuit / parts	--	--	--	--	Yes (Declaration)



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
99V/50Hz	0.514	--	50.6	--	F1	0.514	Output: 60VAC, 0.83A
99V/60Hz	0.515	--	50.2	--	F1	0.515	
110V/50Hz	0.517	0.6	56.4	--	F1	0.517	
110V/60Hz	0.513	0.6	56.1	--	F1	0.513	
120V/50Hz	0.520	0.6	61.3	--	F1	0.520	
120V/60Hz	0.513	0.6	61.1	--	F1	0.513	
132V/50Hz	0.526	--	66.9	--	F1	0.526	
132V/60Hz	0.512	--	66.8	--	F1	0.512	
Supplementary information:							
The measured input power did not exceed the marked input rating by more than 10 percent when the apparatus was operated to produce the maximum normal input power							

B.3	TABLE: Abnormal operating condition tests		P
Ambient temperature (°C) :	See below		—
Power source for EUT: Manufacturer, model/type, output rating :	See cover page for details		—



Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current (A)	T-couple	Temp. (°C)	Observation
Transformer	OL	132V50Hz	3h46min	F1	0.675	Primary winding of transformer	156.9	No higher temperature rise exceeding its limit occurred.
						Secondary winding of transformer	151.2	
						Plastic enclosure outside near transformer, top	69.5	
						Plastic enclosure outside near transformer, bottom	62.3	
						Ambient	22.9	
Ventilation opening	Blocked	132V50Hz	2h38min	F1	0.526	Primary winding of transformer	118.9	No component damaged, no ignition, no electronic break down, all safeguard remained effective,
						Secondary winding of transformer	97.6	
						Plastic enclosure outside near transformer, top	58.1	
						Plastic enclosure outside near transformer, bottom	59.1	
						Ambient	22.7	
DC fan	Locked	132V50Hz	7hr.	F1	0.557	Primary winding of transformer	138.4	No component damaged, no ignition, no electronic break down, all safeguard remained effective,
						Secondary winding of transformer	132.4	
						Plastic enclosure outside near transformer, top	66.0	



						Plastic enclosure outside near transformer, bottom	59.5	
						Ambient	23.8	
Output terminal	SC	132V50Hz	10mins	F1	0	--	--	Unit shutdown immediately, recoverable, no hazard.

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.

- 1) SC=Short circuit, OC=Open circuit, OL=Overload.
- 2) The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; In addition all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions.
- 3) The test result showed no Class 1 or 2 energy source become Class 3 level during and after single fault condition.
- 4) The overloaded condition is applied according to annex G.5.3.3.

B.4 TABLE: Fault condition tests								P
Ambient temperature (°C)						25 (unless otherwise specified)		—
Power source for EUT: Manufacturer, model/type, output rating ..						See cover page for details		—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
C1	SC	132V50Hz	10mins	F1	0	--	--	Transformer damaged, no hazard.
U2 pin1-8	SC	132V50Hz	10mins	F1	0	--	--	Unit shutdown immediately, recoverable, no hazard.
C2	SC	132V50Hz	10mins	F1	0	--	--	Unit shutdown immediately, recoverable, no hazard.
D4	SC	132V50Hz	10mins	F1	0	--	--	Unit shutdown immediately, recoverable, no hazard.



Supplementary information:

1) SC=Short circuit, OC=Open circuit.

2) The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; In addition all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions.

3) The test result showed no Class 1 or 2 energy source become Class 3 level during and after single fault condition.

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

Annex M.4	Table: Additional safeguards for equipment containing secondary lithium batteries					N/A
Battery/Cell No.	Test conditions	Measurements			Observation	
		U	I (A)	Temp (C)		
--	--	--	--	--	--	
	--	--	--	--	--	
Supplementary Information:						
Battery identification	Charging at T _{lowest} (°C)	Observation	Charging at T _{highest} (°C)	Observation		



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

Supplementary Information:
SC=Short circuit, OC=Open circuit.

Annex Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)				N/A	
Note: Measured UOC (V) with all load circuits disconnected:						
Output Circuit	Components	U _{oc} (V)	I _{sc} (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
--	--	--	--	8	--	100

Supplementary Information:
SC=Short circuit, OC=Open circuit.

T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation	
Internal components/parts	--	--	10	5	Clearances is not reduced, no hazard	
External enclosure	Plastic	2.7	250	5	No damage, no hazard.	

Supplementary information:

T.6, T.9	TABLE: Impact tests				P
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
External enclosure	Plastic	2.7	1300	No damage, no hazard.	

Supplementary information:

T.7	TABLE: Drop tests				P
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
External enclosure	Plastic	2.7	750	No damage, no hazard.	

Supplementary information:

T.8	TABLE: Stress relief test				P
-----	---------------------------	--	--	--	---



Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Completed equipment	Plastic	2.7	94	7	No damage, no hazard.
Supplementary information:					

WALTEK



Photo Documentation

Model: FB-03-20-60V



Photo 1



Photo 2



Photo Documentation

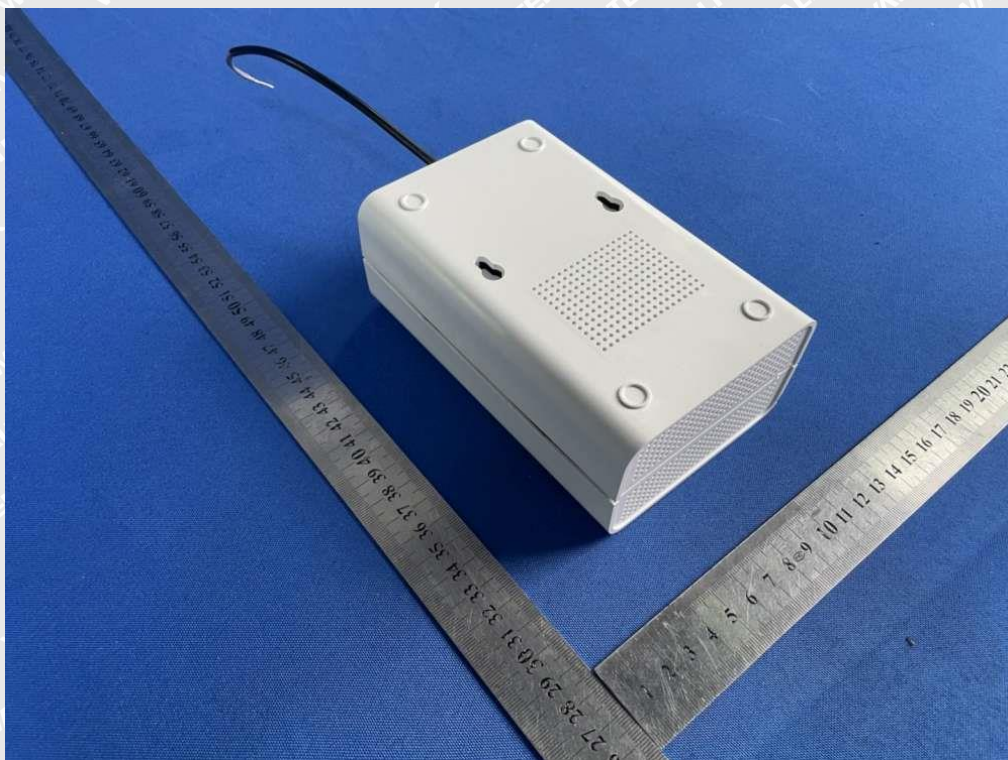


Photo 3

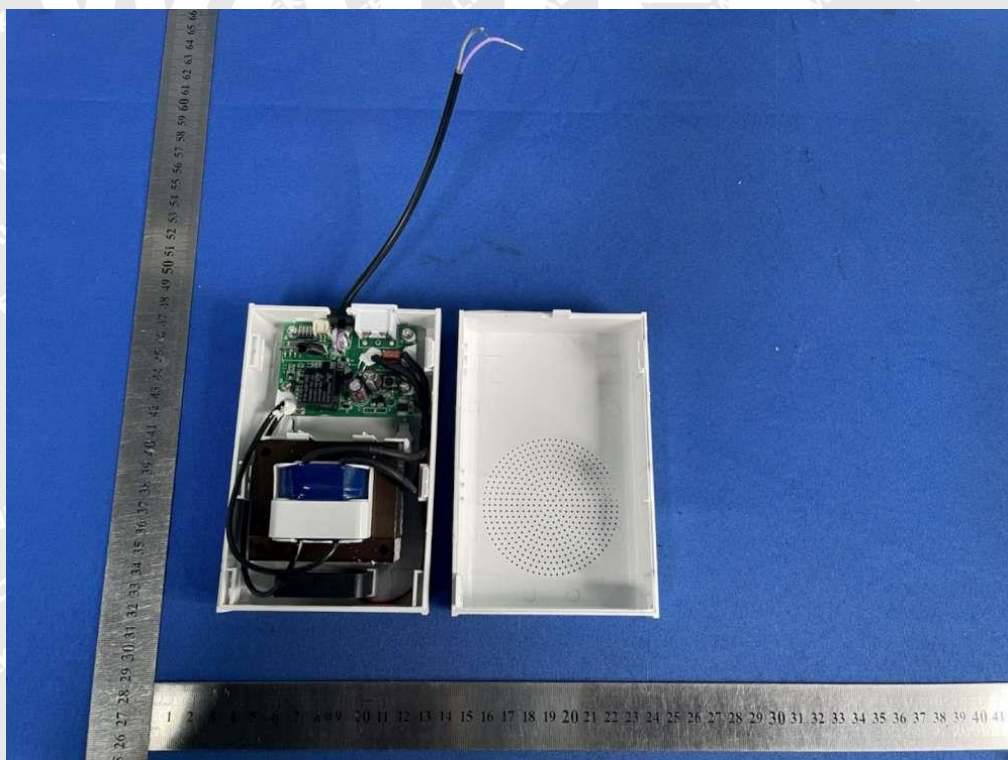


Photo 4



Photo Documentation

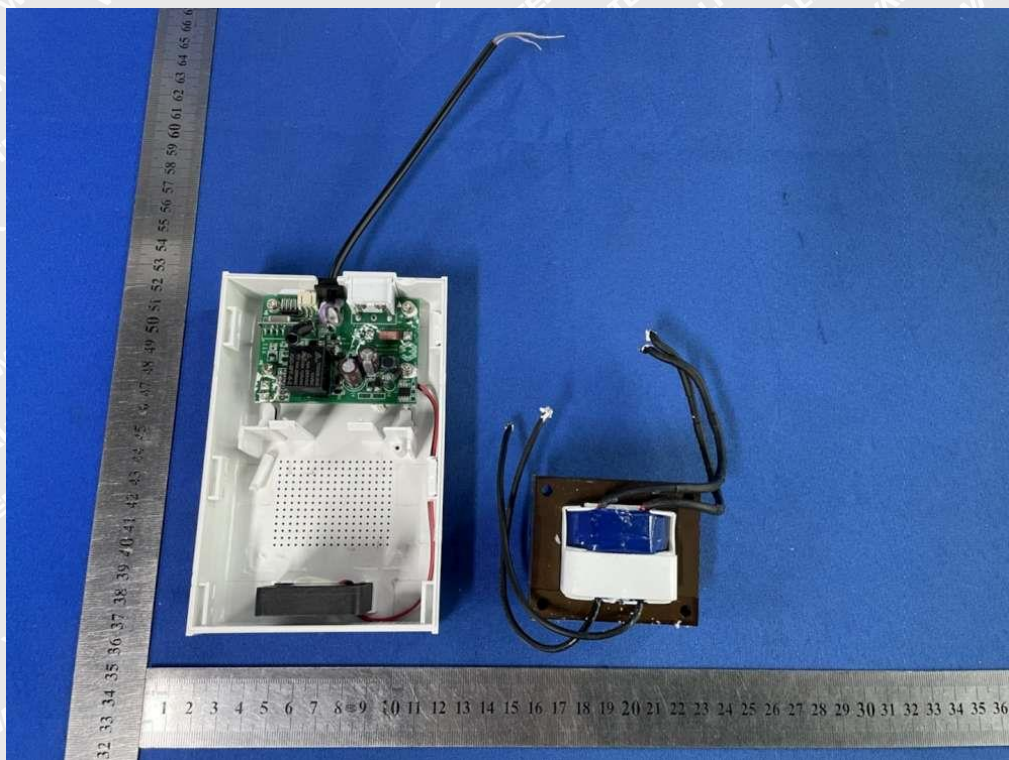


Photo 5

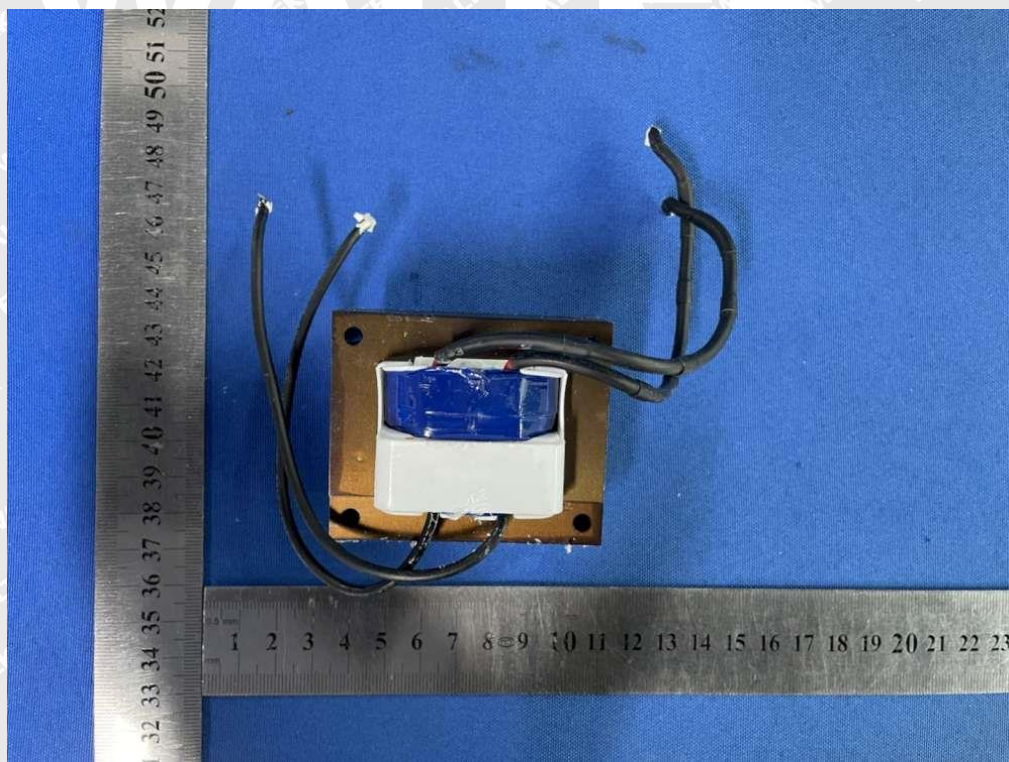


Photo 6



Photo Documentation

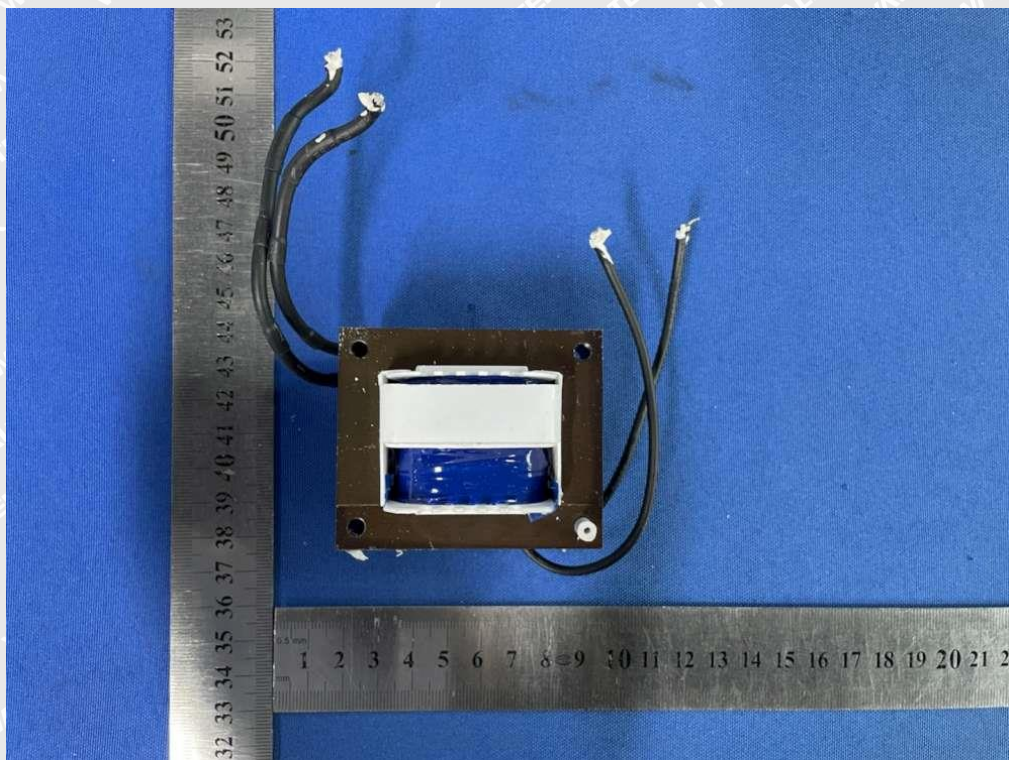


Photo 7

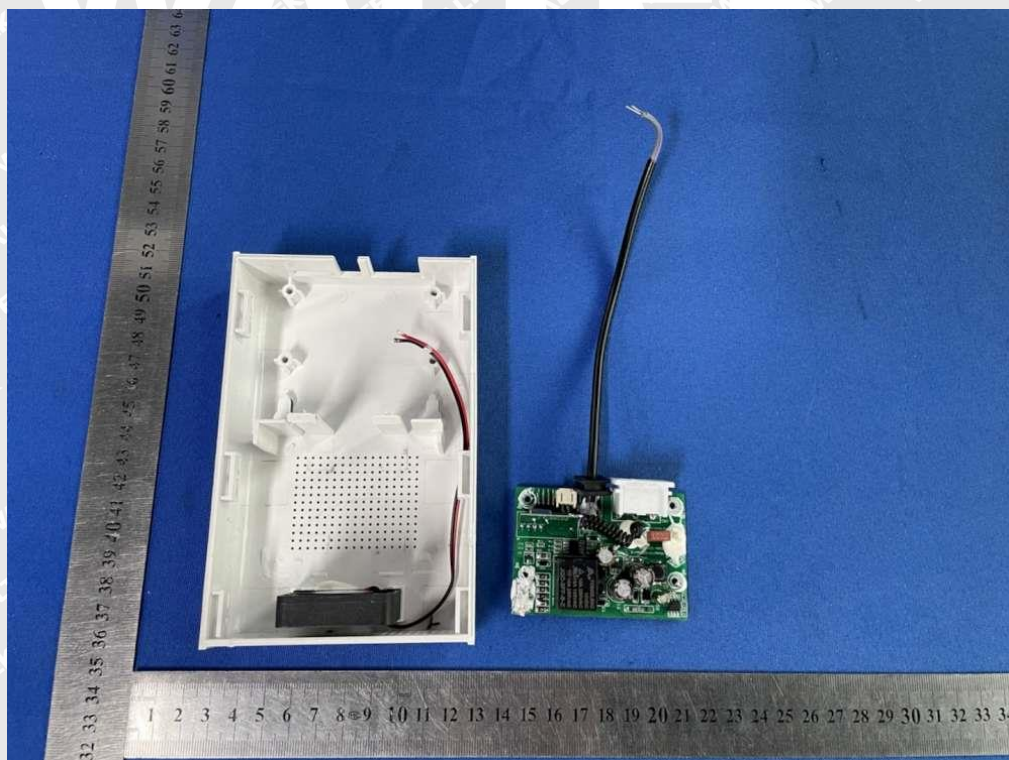


Photo 8



Photo Documentation

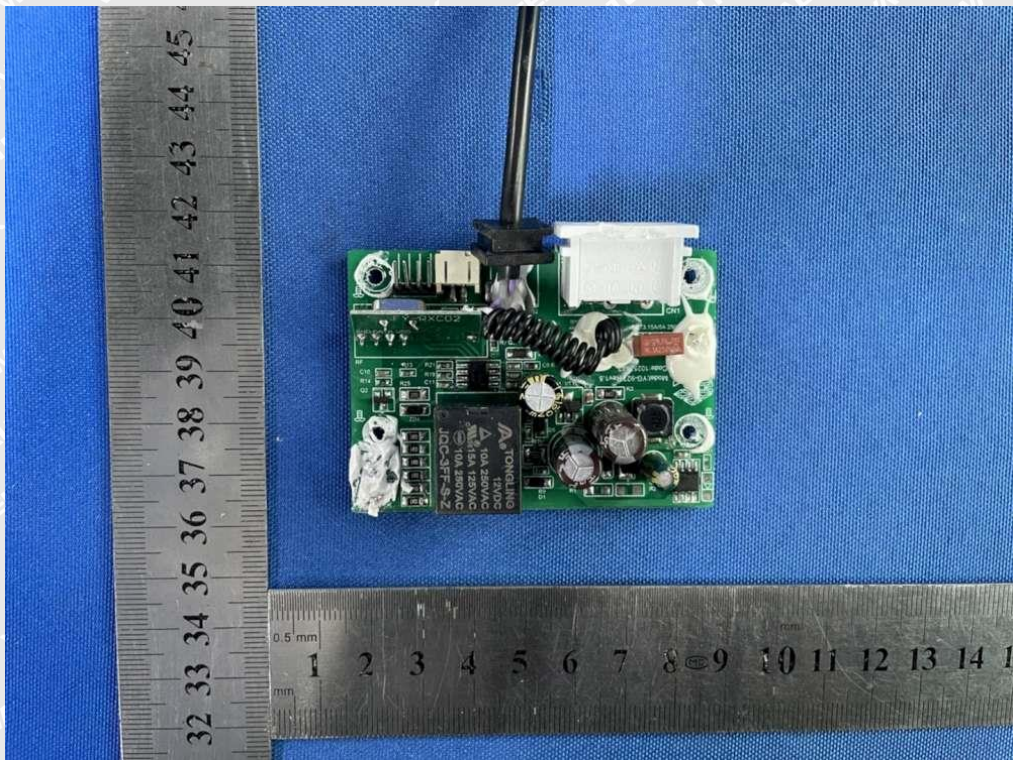


Photo 9

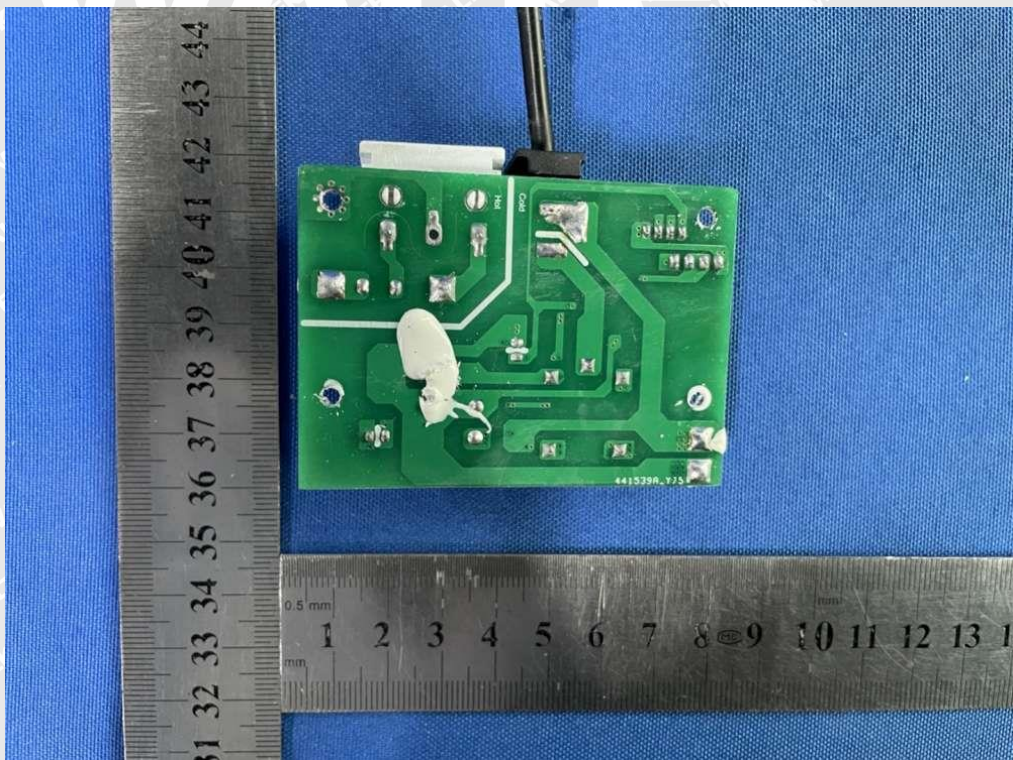


Photo 10

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