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# Safety Test Report

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Report No.: AGC16823250801TS01

**PRODUCT DESIGNATION** : Ruuvi Air  
**BRAND NAME** : Ruuvi  
**MODEL NAME** : Ruuvi Air  
**APPLICANT** : Ruuvi Innovations Ltd.  
**DATE OF ISSUE** : Sep. 10, 2025  
**STANDARD(S)** : IEC 62368-1: 2018, AS/NZS 62368.1:2022  
**REPORT VERSION** : V1.0

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



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**TEST REPORT**  
**IEC 62368-1**  
**Audio/video, information and communication technology equipment**  
**Part 1: Safety requirements**

Report Number.....: AGC16823250801TS01

Tested by(+ signature).....: Sugar Xie

*Sugar Xie*

Reviewed by (+ signature).....: Dylan Yan

*Dylan Yan*

Approved by (+ signature).....: Byron Wang  
(Authorized Officer)

*Byron Wang*

Date of issue.....: Sep. 10, 2025

Total number of pages.....: Total 57 pages

**Testing laboratory**

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

Address.....: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping  
Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Testing location.....: Same as above.

**Applicant**

Name.....: Ruuvi Innovations Ltd.

Address.....: Hameenkatu 10 B 132, RIIHIMAKI 11100, Finland

**Manufacturer**

Name.....: Ruuvi Innovations Ltd.

Address.....: Hameenkatu 10 B 132, RIIHIMAKI 11100, Finland

**Factory**

Name.....: Ruuvi Innovations Ltd.

Address.....: Hameenkatu 10 B 132, RIIHIMAKI 11100, Finland

**Test specification:**

Standard.....: IEC 62368-1: 2018, AS/NZS 62368.1:2022

Test procedure.....: Type test

Procedure deviation.....: N/A

Non-standard test method.....: N/A

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**Test Report Form/blank test report**

Test Report Form No.: AGC62368A3

TRF originator: AGC

Master TRF: 2020-07

**Test item**

Test item description: Ruuvi Air

Trade Mark: Ruuvi

Test model: Ruuvi Air

Series model: N/A

Ratings: 5V=1A

**Test item particulars**

Product group	<input checked="" type="checkbox"/> end product <input type="checkbox"/> built-in component
Classification of use by	<input checked="" type="checkbox"/> Ordinary person <input checked="" type="checkbox"/> Children likely present <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person
Supply connection	<input type="checkbox"/> AC mains <input type="checkbox"/> DC mains <input checked="" type="checkbox"/> 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"/> 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: <u>not mains connected</u>
Considered current rating of protective device	<input type="checkbox"/> 16 A; Location: <input type="checkbox"/> building <input type="checkbox"/> equipment <input checked="" type="checkbox"/> N/A
Equipment mobility	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input checked="" type="checkbox"/> transportable <input type="checkbox"/> direct plug-in <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> wall/ceiling-mounted <input type="checkbox"/> SRME/rack-mounted <input type="checkbox"/> other:
Overvoltage category (OVC)	<input type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input checked="" type="checkbox"/> other: <u>not mains connected</u>

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Class of equipment.....:	<input type="checkbox"/> Class I <input type="checkbox"/> Class II <input checked="" type="checkbox"/> Class III <input type="checkbox"/> Not classified <input type="checkbox"/>
Special installation location.....:	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> restricted access area <input type="checkbox"/> outdoor location <input type="checkbox"/>
Pollution degree (PD).....:	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified T <sub>ma</sub> .....:	50°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 <sub>L-L</sub> <input checked="" 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"/> <1 kg

**Possible test case verdicts:**

- test case does not apply to the test object.....: N(/A)
- test object does meet the requirement.....: P (Pass)
- test object does not meet the requirement.....: F (Fail)

**Testing:**

Date of receipt of test item.....: Aug. 15, 2025  
Date (s) of performance of tests.....: Aug. 15, 2025 – Sep. 05, 2025

**Attachments:**

Attachment A.....: Photos of product

**General remarks:**

This report shall not be reproduced except in full without the written approval of the testing laboratory.  
The test results presented in this report relate only to the item tested.  
“(See remark #)” refers to a remark appended to the report.  
“(See appended table)” refers to a table appended to the report.  
Throughout this report a point is used as the decimal separator.

**Report Revise Record:**

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Sep. 10, 2025	Valid	Initial release

**General product information and other remarks:**

1. The test product is Ruuvi Air, which power supply through Type-C port. It is considered transportable apparatus.
2. Instructions and equipment marking related to safety is applied in the language that is acceptable in the country in which the equipment is to be sold.
3. The product was submitted and tested for use at the manufacturer's recommended ambient temperature (T<sub>ma</sub>) of 50°C.

**Summary of testing**

The product fulfils the requirements of IEC 62368-1:2018, AS/NZS 62368.1:2022.

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**Copy of marking plate:**



**Remark:**

- 1) The markings and instructions are the minimum requirements required by safety standard. For final production samples, the additional markings which do not give rise to misunderstanding may be added.
- 2) Marking on the packaging or in a document accompanying the electrical equipment is only acceptable if it is not possible to place such markings on the product.

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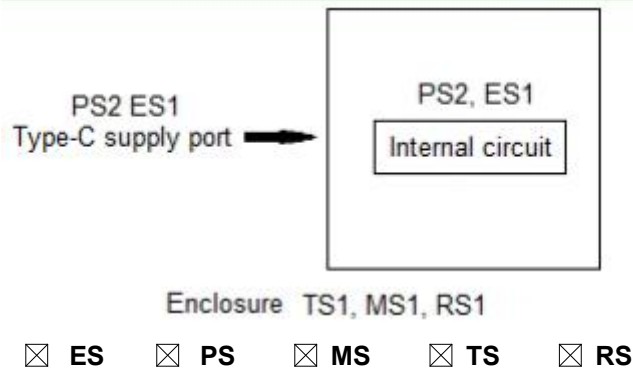
OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	Possible Hazard			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
ES1: All Internal circuits	Ordinary person	N/A	N/A	N/A
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 <sup>st</sup> S	2 <sup>nd</sup> S
PS2: Internal circuits PS2: Type-C supply port	All Flammable materials inside and plastic/ metal enclosure	1. No ignition occurred. 2. No parts exceeding 90% of its spontaneous ignition temperature.	1. PCB is complied with V-1 material. 2. all other components: at least V-2 except for mounted on min. V-1 material or small parts of combustible material.	N/A
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
N/A	N/A	N/A	N/A	N/A
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS1: Edges and corners	Ordinary person	N/A	N/A	N/A
MS1: Equipment mass	Ordinary person	N/A	N/A	N/A
MS1: DC brushless fan	Ordinary person	N/A	N/A	N/A
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1: Accessible plastic enclosure	Ordinary person	N/A	N/A	N/A
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
Exempt Group: LED light	Ordinary person	N/A	N/A	N/A
Supplementary Information:				
“B” – Basic Safeguard; “S” – Supplementary Safeguard; “R” – Reinforced Safeguard				

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### ENERGY SOURCE DIAGRAM

**Optional.** Manufacturers are to provide the energy sources diagram identify declared energy sources and identifying the demarcations are between power sources. Recommend diagram be provided included in power supply and multipart systems.

Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings



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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4</b>	<b>GENERAL REQUIREMENTS</b>		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
4.1.3	Equipment design and construction	No accessible part which could cause injury	P
4.1.4	Specified ambient temperature for outdoor use (°C) ..... :		N
4.1.5	Constructions and components not specifically covered	No such parts.	N
4.1.8	Liquids and liquid filled components (LFC)	No such parts.	N
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness		P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Annex T.4)	P
4.4.3.3	Drop tests	(See Annex T.7)	P
4.4.3.4	Impact tests		N
4.4.3.5	Internal accessible safeguard tests		N
4.4.3.6	Glass impact tests		N
4.4.3.7	Glass fixation tests		N
	Glass impact test (1J)		N
	Push/pull test (10 N)		N
4.4.3.8	Thermoplastic material tests	(See Annex T.8)	P
4.4.3.9	Air comprising a safeguard		N
4.4.3.10	Accessibility, glass, safeguard effectiveness	Safeguard remain effective.	P
4.4.4	Displacement of a safeguard by an insulating liquid		N
4.4.5	Safety interlocks	No such component within equipment.	N
<b>4.5</b>	<b>Explosion</b>		P
4.5.1	General	No explosion occurs during normal/abnormal operation and single fault conditions	P

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.5.2	No explosion during normal/abnormal operating condition	(See Clause B.2, B.3)	P
	No harm by explosion during single fault conditions	(See Clause B.4)	P
<b>4.6</b>	<b>Fixing of conductors</b>		N
	Fix conductors not to defeat a safeguard	Not defeat a safeguard.	N
	Compliance is checked by test..... :		N
<b>4.7</b>	<b>Equipment for direct insertion into mains socket-outlets</b>		N
4.7.2	Mains plug part complies with relevant standard..:		N
4.7.3	Torque (Nm)..... :		N
<b>4.8</b>	<b>Equipment containing coin/button cell batteries</b>		P
4.8.1	General	Non-removable	P
4.8.2	Instructional safeguard.....:		N
4.8.3	Battery compartment door/cover construction		N
	Open torque test		N
4.8.4.2	Stress relief test		N
4.8.4.3	Battery replacement test		N
4.8.4.4	Drop test		N
4.8.4.5	Impact test		N
4.8.4.6	Crush test		N
4.8.5	Compliance		N
	30N force test with test probe		N
	20N force test with test hook		N
<b>4.9</b>	<b>Likelihood of fire or shock due to entry of conductive object</b>		N
<b>4.10</b>	<b>Component requirements</b>		N
4.10.1	Disconnect Device		N
4.10.2	Switches and relays		N
<b>5</b>	<b>ELECTRICALLY-CAUSED INJURY</b>		P
<b>5.2</b>	<b>Classification and limits of electrical energy sources</b>		P
5.2.2	ES1, ES2 and ES3 limits	(See appended table 5.2)	P
5.2.2.2	Steady-state voltage and current limits..... :	ES1	P
5.2.2.3	Capacitance limits..... :		N
5.2.2.4	Single pulse limits..... :	No such single pulses with the EUT	N

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.5	Limits for repetitive pulses..... :	No such repetitive pulses with the EUT	N
5.2.2.6	Ringing signals	No such ringing signals with the EUT	N
5.2.2.7	Audio signals	Internal speakers and supplied by ES1 circuit only.	N
<b>5.3</b>	<b>Protection against electrical energy sources</b>		N
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	ES1	N
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits		N
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		N
5.3.2.1	Accessibility to electrical energy sources and safeguards		N
	Accessibility to outdoor equipment bare parts		N
5.3.2.2	Contact requirements		N
	Test with test probe from Annex V		-
5.3.2.2 a)	Air gap – electric strength test potential (V)..... :		N
5.3.2.2 b)	Air gap – distance (mm) ..... :		N
5.3.2.3	Compliance		N
5.3.2.4	Terminals for connecting stripped wire		N
<b>5.4</b>	<b>Insulation materials and requirements</b>		N
5.4.1.2	Properties of insulating material		N
5.4.1.3	Material is non-hygroscopic		N
5.4.1.4	Maximum operating temperature for insulating materials..... :		N
5.4.1.5	Pollution degrees..... :		N
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N
5.4.1.5.3	Thermal cycling test		N
5.4.1.6	Insulation in transformers with varying dimensions		N
5.4.1.7	Insulation in circuits generating starting pulses		N
5.4.1.8	Determination of working voltage..... :		N
5.4.1.9	Insulating surfaces		N
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N
5.4.1.10.2	Vicat test..... :		N

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.10.3	Ball pressure test..... :		N
5.4.2	Clearances		N
5.4.2.1	General requirements		N
	Clearances in circuits connected to AC Mains, Alternative method		N
5.4.2.2	Procedure 1 for determining clearance		N
	Temporary overvoltage..... :		—
5.4.2.3	Procedure 2 for determining clearance		N
5.4.2.3.2.2	a.c. mains transient voltage..... :		—
5.4.2.3.2.3	d.c. mains transient voltage..... :		—
5.4.2.3.2.4	External circuit transient voltage..... :		—
5.4.2.3.2.5	Transient voltage determined by measurement..... :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test..... :		N
5.4.2.5	Multiplication factors for clearances and test voltages..... :		N
5.4.2.6	Clearance measurement..... :		N
5.4.3	Creepage distances		N
5.4.3.1	General		N
5.4.3.3	Material group..... :		—
5.4.3.4	Creepage distances measurement..... :		N
5.4.4	Solid insulation		N
5.4.4.1	General requirements		N
5.4.4.2	Minimum distance through insulation..... :		N
5.4.4.3	Insulating compound forming solid insulation		N
5.4.4.4	Solid insulation in semiconductor devices		N
5.4.4.5	Insulating compound forming cemented joints		N
5.4.4.6	Thin sheet material		N
5.4.4.6.1	General requirements		N
5.4.4.6.2	Separable thin sheet material		N
	Number of layers (pcs)..... :		N
5.4.4.6.3	Non-separable thin sheet material		N
	Number of layers (pcs) ..... :		N
5.4.4.6.4	Standard test procedure for non-separable thin sheet material..... :		N

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6.5	Mandrel test		N
5.4.4.7	Solid insulation in wound components		N
5.4.4.9	Solid insulation at frequencies >30 kHz, $E_P$ , $K_R$ , $d$ , $V_{PW}$ (V)..... :		N
	Alternative by electric strength test, tested voltage (V), $K_R$ ..... :		N
5.4.5	Antenna terminal insulation		N
5.4.5.1	General		N
5.4.5.2	Voltage surge test		N
5.4.5.3	Insulation resistance ( $M\Omega$ )..... :		N
	Electric strength test..... :		N
5.4.6	Insulation of internal wire as part of supplementary safeguard		N
5.4.7	Tests for semiconductor components and for cemented joints		N
5.4.8	Humidity conditioning		N
	Relative humidity (%), temperature ( $^{\circ}C$ ), duration (h)..... :		—
5.4.9	Electric strength test		N
5.4.9.1	Test procedure for type test of solid insulation..... :		N
5.4.9.2	Test procedure for routine test		N
5.4.10	Safeguards against transient voltages from external circuits		N
5.4.10.1	Parts and circuits separated from external circuits		N
5.4.10.2	Test methods		N
5.4.10.2.1	General		N
5.4.10.2.2	Impulse test..... :		N
5.4.10.2.3	Steady-state test..... :		N
5.4.10.3	Verification for insulation breakdown for impulse test..... :		N
5.4.11	Separation between external circuits and earth		N
5.4.11.1	Exceptions to separation between external circuits and earth		N
5.4.11.2	Requirements		N
	SPDs bridge separation between external circuit and earth		N
	Rated operating voltage $U_{op}$ (V)..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Nominal voltage $U_{peak}$ (V).....:		—
	Max increase due to variation $\Delta U_{sp}$ .....		—
	Max increase due to ageing $\Delta U_{sa}$ .....		—
5.4.11.3	Test method and compliance.....:		N
5.4.12	Insulating liquid		N
5.4.12.1	General requirements		N
5.4.12.2	Electric strength of an insulating liquid.....:		N
5.4.12.3	Compatibility of an insulating liquid.....:		N
5.4.12.4	Container for insulating liquid.....:		N
<b>5.5</b>	<b>Components as safeguards</b>		N
5.5.1	General		N
5.5.2	Capacitors and RC units		N
5.5.2.1	General requirement		N
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector.....:		N
5.5.3	Transformers		N
5.5.4	Optocouplers		N
5.5.5	Relays		N
5.5.6	Resistors		N
5.5.7	SPDs		N
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable.....:		N
5.5.9	Safeguards for socket-outlets in outdoor equipment		N
	RCD rated residual operating current (mA).....:		—
<b>5.6</b>	<b>Protective conductor</b>		N
5.6.2	Requirement for protective conductors		N
5.6.2.1	General requirements		N
5.6.2.2	Colour of insulation		N
5.6.3	Requirement for protective earthing conductors		N
	Protective earthing conductor size (mm <sup>2</sup> ).....:		—
	Protective earthing conductor serving as a reinforced safeguard		N
	Protective earthing conductor serving as a double safeguard		N

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.4	Requirements for protective bonding conductors		N
5.6.4.1	Protective bonding conductors		N
	Protective bonding conductor size (mm <sup>2</sup> ).....:		—
5.6.4.2	Protective current rating (A)..... :		N
5.6.5	Terminals for protective conductors		N
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)..... :		N
	Terminal size for connecting protective bonding conductors (mm)..... :		N
5.6.5.2	Corrosion		N
5.6.6	Resistance of the protective bonding system		N
5.6.6.1	Requirements		N
5.6.6.2	Test Method..... :		N
5.6.6.3	Resistance ( $\Omega$ ) or voltage drop.....:		N
5.6.7	Reliable connection of a protective earthing conductor		N
5.6.8	Functional earthing		N
	Conductor size (mm <sup>2</sup> )..... :		N
	Class II with functional earthing marking .....		N
	Appliance inlet cl & cr (mm)..... :		N
<b>5.7</b>	<b>Prospective touch voltage, touch current and protective conductor current</b>		N
5.7.2	Measuring devices and networks		N
5.7.2.1	Measurement of touch current		N
5.7.2.2	Measurement of voltage		N
5.7.3	Equipment set-up, supply connections and earth connections		N
5.7.4	Unearthed accessible parts.....:		N
5.7.5	Earthed accessible conductive parts..... :		N
5.7.6	Requirements when touch current exceeds ES2 limits		N
	Protective conductor current (mA)..... :		N
	Instructional Safeguard..... :		N
5.7.7	Prospective touch voltage and touch current associated with external circuits		N
5.7.7.1	Touch current from coaxial cables		N

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N
5.7.8	Summation of touch currents from external circuits		N
	a) Equipment connected to earthed external circuits, current (mA)..... :		N
	b) Equipment connected to unearthed external circuits, current (mA)..... :		N
<b>5.8</b>	<b>Backfeed safeguard in battery backed up supplies</b>		N
	Mains terminal ES..... :		N
	Air gap (mm)..... :		N
<b>6</b>	<b>ELECTRICALLY- CAUSED FIRE</b>		P
<b>6.2</b>	<b>Classification of PS and PIS</b>		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
6.2.3	Classification of potential ignition sources	(See appended table 6.2.2)	P
6.2.3.1	Arcing PIS..... :		N
6.2.3.2	Resistive PIS..... :	(See appended table 6.2.3.2)	P
<b>6.3</b>	<b>Safeguards against fire under normal operating and abnormal operating conditions</b>		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials..... :	(See appended table B.1.5 and B.3)	P
	Combustible materials outside fire enclosure..... :	No such materials used.	N
<b>6.4</b>	<b>Safeguards against fire under single fault conditions</b>		P
6.4.1	Safeguard method		P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N
6.4.3.1	Supplementary safeguards		N
6.4.3.2	Single Fault Conditions..... :		N
	Special conditions for temperature limited by fuse		N
6.4.4	Control of fire spread in PS1 circuits		N
6.4.5	Control of fire spread in PS2 circuits		P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.5.2	Supplementary safeguards	Refer to appended table 4.1.2 for detail. PCB rated V-0	P
6.4.6	Control of fire spread in PS3 circuits		N
6.4.7	Separation of combustible materials from a PIS		N
6.4.7.2	Separation by distance		N
6.4.7.3	Separation by a fire barrier		N
6.4.8	Fire enclosures and fire barriers		N
6.4.8.2	Fire enclosure and fire barrier material properties		N
6.4.8.2.1	Requirements for a fire barrier		N
6.4.8.2.2	Requirements for a fire enclosure		N
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		N
6.4.8.3.1	Fire enclosure and fire barrier openings		N
6.4.8.3.2	Fire barrier dimensions		N
6.4.8.3.3	Top openings and properties		N
	Openings dimensions (mm)..... :	The opening did not exceed 5mm in any dimensions.	N
6.4.8.3.4	Bottom openings and properties		N
	Openings dimensions (mm)..... :		N
	Flammability tests for the bottom of a fire enclosure		N
	Instructional Safeguard..... :		N
6.4.8.3.5	Side openings and properties		N
	Openings dimensions (mm)..... :		N
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)..... :		N
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating..... :		N
6.4.9	Flammability of insulating liquid..... :		N
<b>6.5</b>	<b>Internal and external wiring</b>		P
6.5.1	General requirements	(See appended table 4.1.2)	P
6.5.2	Requirements for interconnection to building wiring..... :		N
6.5.3	Internal wiring size (mm <sup>2</sup> ) for socket-outlets..... :	No such wiring, outlet and inlet.	N
<b>6.6</b>	<b>Safeguards against fire due to the connection to additional equipment</b>		N
<b>7</b>	<b>INJURY CAUSED BY HAZARDOUS SUBSTANCES</b>		N

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Clause	Requirement + Test	Result - Remark	Verdict
7.2	<b>Reduction of exposure to hazardous substances</b>		N
7.3	<b>Ozone exposure</b>		N
7.4	<b>Use of personal safeguards or personal protective equipment (PPE)</b>		N
	Personal safeguards and instructions..... :	No PPE used.	—
7.5	<b>Use of instructional safeguards and instructions</b>		N
	Instructional safeguard (ISO 7010)..... :		—
7.6	<b>Batteries and their protection circuits</b>		N
8	<b>MECHANICALLY-CAUSED INJURY</b>		P
8.2	<b>Mechanical energy source classifications</b>		P
8.3	<b>Safeguards against mechanical energy sources</b>		N
8.4	<b>Safeguards against parts with sharp edges and corners</b>		N
8.4.1	Safeguards	MS1 only	N
	Instructional Safeguard..... :		N
8.4.2	Sharp edges or corners	No sharp edges and corners	N
8.5	<b>Safeguards against moving parts</b>		N
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts	No moving parts.	N
	MS2 or MS3 part required to be accessible for the function of the equipment		N
	Moving MS3 parts only accessible to skilled person		N
8.5.2	Instructional safeguard..... :		N
8.5.4	Special categories of equipment containing moving parts		N
8.5.4.1	General		N
8.5.4.2	Equipment containing work cells with MS3 parts		N
8.5.4.2.1	Protection of persons in the work cell		N
8.5.4.2.2	Access protection override		N
8.5.4.2.2.1	Override system		N
8.5.4.2.2.2	Visual indicator		N
8.5.4.2.3	Emergency stop system		N
	Maximum stopping distance from the point of activation (m)..... :		N
	Space between end point and nearest fixed mechanical part (mm)..... :		N
8.5.4.2.4	Endurance requirements		N

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Clause	Requirement + Test	Result - Remark	Verdict
	Mechanical system subjected to 100 000 cycles of operation		N
	- Mechanical function check and visual inspection		N
	- Cable assembly..... :		N
8.5.4.3	Equipment having electromechanical device for destruction of media		N
8.5.4.3.1	Equipment safeguards		N
8.5.4.3.2	Instructional safeguards against moving parts..... :		N
8.5.4.3.3	Disconnection from the supply		N
8.5.4.3.4	Cut type and test force (N)..... :		N
8.5.4.3.5	Compliance		N
8.5.5	High pressure lamps		N
	Explosion test..... :		N
8.5.5.3	Glass particles dimensions (mm)..... :		N
<b>8.6</b>	<b>Stability of equipment</b>		N
8.6.1	General		N
	Instructional safeguard..... :		N
8.6.2	Static stability		N
8.6.2.2	Static stability test..... :		N
8.6.2.3	Downward force test		N
8.6.3	Relocation stability		N
	Wheels diameter (mm)..... :		—
	Tilt test		N
8.6.4	Glass slide test		N
8.6.5	Horizontal force test..... :		N
<b>8.7</b>	<b>Equipment mounted to wall, ceiling or other structure</b>		N
8.7.1	Mount means type..... :		N
8.7.2	Test methods		N
	Test 1, additional downwards force (N)..... :		N
	Test 2, number of attachment points and test force (N)..... :		N
	Test 3 Nominal diameter (mm) and applied torque (Nm)..... :		N
<b>8.8</b>	<b>Handles strength</b>		N

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Clause	Requirement + Test	Result - Remark	Verdict
8.8.1	General	No handles.	N
8.8.2	Handle strength test		N
	Number of handles..... :		—
	Force applied (N)..... :		—
<b>8.9</b>	<b>Wheels or casters attachment requirements</b>		N
8.9.2	Pull test	No wheels or casters	N
<b>8.10</b>	<b>Carts, stands and similar carriers</b>		N
8.10.1	General	No such part	N
8.10.2	Marking and instructions..... :		N
8.10.3	Cart, stand or carrier loading test		N
	Loading force applied (N)..... :		N
8.10.4	Cart, stand or carrier impact test		N
8.10.5	Mechanical stability		N
	Force applied (N)..... :		—
8.10.6	Thermoplastic temperature stability		N
<b>8.11</b>	<b>Mounting means for slide-rail mounted equipment (SRME)</b>		N
8.11.1	General	No slide-rail mounted.	N
8.11.2	Requirements for slide rails		N
	Instructional Safeguard..... :		N
8.11.3	Mechanical strength test		N
8.11.3.1	Downward force test, force (N) applied..... :		N
8.11.3.2	Lateral push force test		N
8.11.3.3	Integrity of slide rail end stops		N
8.11.4	Compliance		N
<b>8.12</b>	<b>Telescoping or rod antennas</b>		
	Button/ball diameter (mm)..... :	No antenna	—
<b>9</b>	<b>THERMAL BURN INJURY</b>		P
<b>9.2</b>	<b>Thermal energy source classifications</b>		P
<b>9.3</b>	<b>Touch temperature limits</b>		P
9.3.1	Touch temperatures of accessible parts..... :	(See appended table 9.3)	P
9.3.2	Test method and compliance	Checked by test.	P
<b>9.4</b>	<b>Safeguards against thermal energy sources</b>		P
<b>9.5</b>	<b>Requirements for safeguards</b>		P

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Clause	Requirement + Test	Result - Remark	Verdict
9.5.1	Equipment safeguard	Enclosure as a safeguard.	P
9.5.2	Instructional safeguard.....:		N
<b>9.6</b>	<b>Requirements for wireless power transmitters</b>		N
9.6.1	General		N
9.6.2	Specification of the foreign objects		N
9.6.3	Test method and compliance.....:	(See appended 9.3)	N
<b>10</b>	<b>RADIATION</b>		P
<b>10.2</b>	<b>Radiation energy source classification</b>		P
10.2.1	General classification	Exempt Group: LED light	P
	Lasers.....:		—
	Lamps and lamp systems.....:	LED light	—
	Image projectors.....:		—
	X-Ray.....:		—
	Personal music player.....:		—
<b>10.3</b>	<b>Safeguards against laser radiation</b>		N
	The standard(s) equipment containing laser(s) comply.....:	No laser	N
<b>10.4</b>	<b>Safeguards against optical radiation from lamps and lamp systems (including LED types)</b>		N
10.4.1	General requirements		N
	Instructional safeguard provided for accessible radiation level needs to exceed		N
	Risk group marking and location.....:		N
	Information for safe operation and installation		N
10.4.2	Requirements for enclosures		N
	UV radiation exposure.....:		N
10.4.3	Instructional safeguard.....:		N
<b>10.5</b>	<b>Safeguards against X-radiation</b>		N
10.5.1	Requirements	No X-radiation	N
	Instructional safeguard for skilled persons.....:		—
10.5.3	Maximum radiation (pA/kg).....:		—
<b>10.6</b>	<b>Safeguards against acoustic energy sources</b>		N
10.6.1	General		N
10.6.2	Classification	No such acoustic energy sources	N

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Clause	Requirement + Test	Result - Remark	Verdict
	Acoustic output $L_{Aeq,T}$ , dB(A)..... :		N
	Unweighted RMS output voltage (mV)..... :		N
	Digital output signal (dBFS).....:		N
10.6.3	Requirements for dose-based systems		N
10.6.3.1	General requirements		N
10.6.3.2	Dose-based warning and automatic decrease		N
10.6.3.3	Exposure-based warning and requirements		N
	30 s integrated exposure level (MEL30)..... :		N
	Warning for MEL $\geq 100$ dB(A)..... :		N
10.6.4	Measurement methods		N
10.6.5	Protection of persons		N
	Instructional safeguards.....:		N
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N
10.6.6.1	Corded listening devices with analogue input		N
	Listening device input voltage (mV)..... :		N
10.6.6.2	Corded listening devices with digital input		N
	Max. acoustic output $L_{Aeq,T}$ , dB(A)..... :		N
10.6.6.3	Cordless listening devices		N
	Max. acoustic output $L_{Aeq,T}$ , dB(A)..... :		N
<b>B</b>	<b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b>		P
<b>B.1</b>	<b>General</b>		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
<b>B.2</b>	<b>Normal operating conditions</b>		P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers..... :		N
B.2.3	Supply voltage and tolerances		N
B.2.5	Input test..... :	(See appended table B.2.5)	P
<b>B.3</b>	<b>Simulated abnormal operating conditions</b>		P
B.3.1	General	(See appended table B.3&B.4)	P
B.3.2	Covering of ventilation openings		P
	Instructional safeguard.....:		N

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Clause	Requirement + Test	Result - Remark	Verdict
B.3.3	DC mains polarity test	No DC mains	N
B.3.4	Setting of voltage selector	No such device.	N
B.3.5	Maximum load at output terminals		N
B.3.6	Reverse battery polarity	Impossible reverse polarity by inherent design.	N
B.3.7	Audio amplifier abnormal operating conditions		N
B.3.8	Safeguards functional during and after abnormal operating conditions..... :	All safeguards remained effectively.	P
<b>B.4</b>	<b>Simulated single fault conditions</b>		P
B.4.1	General		P
B.4.2	Temperature controlling device		N
B.4.3	Blocked motor test	No motor within the EUT	N
B.4.4	Functional insulation	See the following details.	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.3&B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.3&B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards within the EUT	N
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnection of passive components	(See appended table B.3&B.4)	P
B.4.7	Continuous operation of components	The EUT is continuous operating type and no such components intended for short time operation or intermittent operation	N
B.4.8	Compliance during and after single fault conditions ..... :	(See appended table B.3&B.4)	P
B.4.9	Battery charging and discharging under single fault conditions		N
<b>C</b>	<b>UV RADIATION</b>		N
<b>C.1</b>	<b>Protection of materials in equipment from UV radiation</b>		N
C.1.2	Requirements	No UV radiation	N
C.1.3	Test method		N
<b>C.2</b>	<b>UV light conditioning test</b>		N
C.2.1	Test apparatus..... :		N
C.2.2	Mounting of test samples		N

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Clause	Requirement + Test	Result - Remark	Verdict
C.2.3	Carbon-arc light-exposure test		N
C.2.4	Xenon-arc light-exposure test		N
<b>D</b>	<b>TEST GENERATORS</b>		N
<b>D.1</b>	<b>Impulse test generators</b>		N
<b>D.2</b>	<b>Antenna interface test generator</b>		N
<b>D.3</b>	<b>Electronic pulse generator</b>		N
<b>E</b>	<b>TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS</b>		N
<b>E.1</b>	<b>Electrical energy source classification for audio signals</b>		N
	Maximum non-clipped output power (W)..... :		—
	Rated load impedance ( $\Omega$ )..... :		—
	Open-circuit output voltage (V)..... :		—
	Instructional safeguard..... :		—
<b>E.2</b>	<b>Audio amplifier normal operating conditions</b>		N
	Audio signal source type..... :		—
	Audio output power (W)..... :		—
	Audio output voltage (V)..... :		—
	Rated load impedance ( $\Omega$ )..... :		—
	Requirements for temperature measurement		N
E.3	Audio amplifier abnormal operating conditions		N
<b>F</b>	<b>EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS</b>		P
<b>F.1</b>	<b>General</b>		P
	Language ..... :	Only english version review. Versions in other language will be provided when submitted for national approval.	—
<b>F.2</b>	<b>Letter symbols and graphical symbols</b>		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 according to IEC, ISO or manufacturer specific	Graphical symbols are complied with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010.	P
<b>F.3</b>	<b>Equipment markings</b>		P
F.3.1	Equipment marking locations	Equipment marking is located on the exterior surface and is easily visible.	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.2	Equipment identification markings	See the following details.	P
F.3.2.1	Manufacturer identification..... :	See copy of marking plate.	—
F.3.2.2	Model identification..... :	See copy of marking plate.	—
F.3.3	Equipment rating markings	See the following details.	P
F.3.3.1	Equipment with direct connection to mains		N
F.3.3.2	Equipment without direct connection to mains	See above.	P
F.3.3.3	Nature of the supply voltage..... :	==	P
F.3.3.4	Rated voltage..... :	5V	P
F.3.3.5	Rated frequency..... :		N
F.3.3.6	Rated current or rated power..... :	1A	P
F.3.3.7	Equipment with multiple supply connections		N
F.3.4	Voltage setting device		N
F.3.5	Terminals and operating devices		N
F.3.5.1	Mains appliance outlet and socket-outlet markings ..... :	No such devices on the equipment.	N
F.3.5.2	Switch position identification marking..... :	No such switch on the equipment.	N
F.3.5.3	Replacement fuse identification and rating markings..... :		N
	Instructional safeguards for neutral fuse..... :		N
F.3.5.4	Replacement battery identification marking..... :		N
F.3.5.5	Neutral conductor terminal		N
F.3.5.6	Terminal marking location		N
F.3.6	Equipment markings related to equipment classification	Class III	N
F.3.6.1	Class I equipment		N
F.3.6.1.1	Protective earthing conductor terminal..... :		N
F.3.6.1.2	Protective bonding conductor terminals ..... :		N
F.3.6.2	Equipment class marking..... :		N
F.3.6.3	Functional earthing terminal marking..... :		N
F.3.7	Equipment IP rating marking..... :		N
F.3.8	External power supply output marking..... :		N
F.3.9	Durability, legibility and permanence of marking	See the following details.	P

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F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test, 15 sec. for water and 15 sec. for petroleum spirit. After each test, the marking remained legible.	P
<b>F.4</b>	<b>Instructions</b>		P
	a) Information prior to installation and initial use	Relevant safety caution texts and installation instruction are available.	P
	b) Equipment for use in locations where children not likely to be present		N
	c) Instructions for installation and interconnection		N
	d) Equipment intended for use only in restricted access area		N
	e) Equipment intended to be fastened in place	No such terminal	N
	f) Instructions for audio equipment terminals		N
	g) Protective earthing used as a safeguard		N
	h) Protective conductor current exceeding ES2 limits		N
	i) Graphic symbols used on equipment	The EUT is not a permanently connected equipment	N
	j) Permanently connected equipment not provided with all-pole mains switch		N
	k) Replaceable components or modules providing safeguard function		N
	l) Equipment containing insulating liquid		N
	m) Installation instructions for outdoor equipment		N
<b>F.5</b>	Instructional safeguards		P
<b>G</b>	<b>COMPONENTS</b>		P
<b>G.1</b>	<b>Switches</b>		N
G.1.1	General		N
G.1.2	Ratings, endurance, spacing, maximum load		N
G.1.3	Test method and compliance		N
<b>G.2</b>	<b>Relays</b>		N
G.2.1	Requirements	No relays	N
G.2.2	Overload test		N
G.2.3	Relay controlling connectors supplying power to other equipment		N

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Clause	Requirement + Test	Result - Remark	Verdict
G.2.4	Test method and compliance		N
<b>G.3</b>	<b>Protective devices</b>		N
G.3.1	Thermal cut-offs	No such device	N
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)	No thermal cut-off provided within the equipment.	N
	Thermal cut-outs tested as part of the equipment as indicated in c)		N
G.3.1.2	Test method and compliance		N
G.3.2	Thermal links		N
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		N
	b) Thermal links tested as part of the equipment		N
G.3.2.2	Test method and compliance		N
G.3.3	PTC thermistors	No such device	N
G.3.4	Overcurrent protection devices		N
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		N
G.3.5.1	Non-resettable devices suitably rated and marking provided		N
G.3.5.2	Single faults conditions..... :		N
<b>G.4</b>	<b>Connectors</b>		N
G.4.1	Spacings	No such connector within the EUT	N
G.4.2	Mains connector configuration..... :		N
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N
<b>G.5</b>	<b>Wound components</b>		N
G.5.1	Wire insulation in wound components	No such component.	N
G.5.1.2	Protection against mechanical stress		N
G.5.2	Endurance test		N
G.5.2.1	General test requirements		N
G.5.2.2	Heat run test		N
	Test time (days per cycle)..... :		—
	Test temperature (°C)..... :		—
G.5.2.3	Wound components supplied from the mains		N
G.5.2.4	No insulation breakdown		N

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.3	Transformers		N
G.5.3.1	Compliance method.....:		N
	Position.....:		N
	Method of protection.....:		N
G.5.3.2	Insulation		N
	Protection from displacement of windings.....:		—
G.5.3.3	Transformer overload tests		N
G.5.3.3.1	Test conditions		N
G.5.3.3.2	Winding temperatures		N
G.5.3.3.3	Winding temperatures - alternative test method		N
G.5.3.4	Transformers using FIW		N
G.5.3.4.1	General		N
	FIW wire nominal diameter.....:		—
G.5.3.4.2	Transformers with basic insulation only		N
G.5.3.4.3	Transformers with double insulation or reinforced insulation.....:		N
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N
G.5.3.4.5	Thermal cycling test and compliance		N
G.5.3.4.6	Partial discharge test		N
G.5.3.4.7	Routine test		N
G.5.4	Motors	No motors	N
G.5.4.1	General requirements		N
G.5.4.2	Motor overload test conditions		N
G.5.4.3	Running overload test		N
G.5.4.4.2	Locked-rotor overload test		N
	Test duration (days) .....:		—
G.5.4.5	Running overload test for DC motors		N
G.5.4.5.2	Tested in the unit		N
G.5.4.5.3	Alternative method		N
G.5.4.6	Locked-rotor overload test for DC motors		N
G.5.4.6.2	Tested in the unit		N
	Maximum Temperature .....:		N
G.5.4.6.3	Alternative method		N

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.7	Motors with capacitors		N
G.5.4.8	Three-phase motors		N
G.5.4.9	Series motors		N
	Operating voltage.....:		—
<b>G.6</b>	<b>Wire Insulation</b>		N
G.6.1	General		N
G.6.2	Enamelled winding wire insulation		N
<b>G.7</b>	<b>Mains supply cords</b>		N
G.7.1	General requirements		N
	Type.....:		—
G.7.2	Cross sectional area (mm <sup>2</sup> or AWG).....:		N
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N
G.7.3.2	Cord strain relief		N
G.7.3.2.1	Requirements		N
	Strain relief test force (N).....:		N
G.7.3.2.2	Strain relief mechanism failure		N
G.7.3.2.3	Cord sheath or jacket position, distance (mm).....:		N
G.7.3.2.4	Strain relief and cord anchorage material		N
G.7.4	Cord Entry		N
G.7.5	Non-detachable cord bend protection		N
G.7.5.1	Requirements		N
G.7.5.2	Test method and compliance		N
	Overall diameter or minor overall dimension, <i>D</i> (mm).....:		—
	Radius of curvature after test (mm).....:		—
G.7.6	Supply wiring space		N
G.7.6.1	General requirements		N
G.7.6.2	Stranded wire		N
G.7.6.2.1	Requirements		N
G.7.6.2.2	Test with 8 mm strand		N
<b>G.8</b>	<b>Varistors</b>		N
G.8.1	General requirements	No such device.	N
G.8.2	Safeguards against fire		N

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Clause	Requirement + Test	Result - Remark	Verdict
G.8.2.1	General		N
G.8.2.2	Varistor overload test		N
G.8.2.3	Temporary overvoltage test		N
<b>G.9</b>	<b>Integrated circuit (IC) current limiters</b>		N
G.9.1	Requirements	No such device.	N
	IC limiter output current (max. 5A)..... :		—
	Manufacturers' defined drift .....:		—
G.9.2	Test Program		N
G.9.3	Compliance		N
<b>G.10</b>	<b>Resistors</b>		N
G.10.1	General	No such device.	N
G.10.2	Conditioning		N
G.10.3	Resistor test		N
G.10.4	Voltage surge test		N
G.10.5	Impulse test		N
G.10.6	Overload test		N
<b>G.11</b>	<b>Capacitors and RC units</b>		N
G.11.1	General requirements		N
G.11.2	Conditioning of capacitors and RC units		N
G.11.3	Rules for selecting capacitors		N
<b>G.12</b>	<b>Optocouplers</b>		N
	Optocouplers comply with IEC 60747-5-5 with specifics	No such device.	N
	Type test voltage $V_{ini,a}$ ..... :		—
	Routine test voltage, $V_{ini,b}$ ..... :		—
<b>G.13</b>	<b>Printed boards</b>		P
G.13.1	General requirements	See the following details.	P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board complied with the minimum clearance and creepage requirements	P
G.13.3	Coated printed boards	No coated printed board provided within the equipment.	N

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Clause	Requirement + Test	Result - Remark	Verdict
G.13.4	Insulation between conductors on the same inner surface		N
G.13.5	Insulation between conductors on different surfaces		N
	Distance through insulation..... :		N
	Number of insulation layers (pcs)..... :		—
G.13.6	Tests on coated printed boards		N
G.13.6.1	Sample preparation and preliminary inspection		N
G.13.6.2	Test method and compliance		N
<b>G.14</b>	<b>Coating on components terminals</b>		N
G.14.1	Requirements ..... :		N
<b>G.15</b>	<b>Pressurized liquid filled components</b>		N
G.15.1	Requirements	No such components used	N
G.15.2	Test methods and compliance		N
G.15.2.1	Hydrostatic pressure test		N
G.15.2.2	Creep resistance test		N
G.15.2.3	Tubing and fittings compatibility test		N
G.15.2.4	Vibration test		N
G.15.2.5	Thermal cycling test		N
G.15.2.6	Force test		N
G.15.3	Compliance		N
<b>G.16</b>	<b>IC including capacitor discharge function (ICX)</b>		N
G.16.1	Condition for fault tested is not required	No such device	N
	ICX with associated circuitry tested in equipment		N
	ICX tested separately		N
G.16.2	Tests		N
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test.... :		—
	Mains voltage that impulses to be superimposed on..... :		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test..... :		—
G.16.3	Capacitor discharge test..... :		N
<b>H</b>	<b>CRITERIA FOR TELEPHONE RINGING SIGNALS</b>		N
<b>H.1</b>	<b>General</b>		N

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Clause	Requirement + Test	Result - Remark	Verdict
<b>H.2</b>	<b>Method A</b>		N
<b>H.3</b>	<b>Method B</b>		N
H.3.1	Ringing signal	No such telephone ringing signal	N
H.3.1.1	Frequency (Hz).....:		—
H.3.1.2	Voltage (V).....:		—
H.3.1.3	Cadence; time (s) and voltage (V).....:		—
H.3.1.4	Single fault current (mA).....:		—
H.3.2	Tripping device and monitoring voltage		N
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N
H.3.2.2	Tripping device		N
H.3.2.3	Monitoring voltage (V).....:		N
<b>J</b>	<b>INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION</b>		N
<b>J.1</b>	<b>General</b>		N
	Winding wire insulation.....:		—
	Solid round winding wire, diameter (mm).....:		N
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm <sup>2</sup> ).....:		N
<b>J.2/J.3</b>	Tests and Manufacturing		—
<b>K</b>	<b>SAFETY INTERLOCKS</b>		N
<b>K.1</b>	<b>General requirements</b>		N
	Instructional safeguard.....:	No such device.	N
<b>K.2</b>	<b>Components of safety interlock safeguard mechanism</b>		N
<b>K.3</b>	<b>Inadvertent change of operating mode</b>		N
<b>K.4</b>	<b>Interlock safeguard override</b>		N
<b>K.5</b>	<b>Fail-safe</b>		N
K.5.1	Under single fault condition		N
<b>K.6</b>	<b>Mechanically operated safety interlocks</b>		N
K.6.1	Endurance requirement		N
K.6.2	Test method and compliance.....:		N
<b>K.7</b>	<b>Interlock circuit isolation</b>		N
K.7.1	Separation distance for contact gaps & interlock circuit elements		N
	In circuit connected to mains, separation distance for contact gaps (mm).....:		N

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Clause	Requirement + Test	Result - Remark	Verdict
	In circuit isolated from mains, separation distance for contact gaps (mm)..... :		N
	Electric strength test before and after the test of K.7.2..... :		N
K.7.2	Overload test, Current (A)..... :		N
K.7.3	Endurance test		N
K.7.4	Electric strength test		N
<b>L</b>	<b>DISCONNECT DEVICES</b>		N
L.1	General requirements		N
L.2	Permanently connected equipment		N
L.3	Parts that remain energized		N
L.4	Single-phase equipment		N
L.5	Three-phase equipment		N
L.6	Switches as disconnect devices		N
L.7	Plugs as disconnect devices		N
L.8	Multiple power sources		N
	Instructional safeguard..... :		N
<b>M</b>	<b>EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS</b>		N
<b>M.1</b>	<b>General requirements</b>		N
<b>M.2</b>	<b>Safety of batteries and their cells</b>		N
M.2.1	Batteries and their cells comply with relevant IEC standards..... :		N
<b>M.3</b>	<b>Protection circuits for batteries provided within the equipment</b>		N
M.3.1	Requirements		N
M.3.2	Test method		N
	Overcharging of a rechargeable battery	(See appended table M.3)	N
	Excessive discharging		N
	Unintentional charging of a non-rechargeable battery		N
	Reverse charging of a rechargeable battery	(See appended table M.3)	N
M.3.3	Compliance	No chemical leakage, no liquid spillage, no explosion, no emission fo flame or expulsion of molten metal	N
<b>M.4</b>	<b>Additional safeguards for equipment containing a portable secondary lithium battery</b>		N

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Clause	Requirement + Test	Result - Remark	Verdict
M.4.1	General		N
M.4.2	Charging safeguards		N
M.4.2.1	Requirements		N
M.4.2.2	Compliance..... :	(See appended table M.4)	N
M.4.3	Fire enclosure..... :		N
M.4.4	Drop test of equipment containing a secondary lithium battery		N
M.4.4.2	Preparation and procedure for the drop test		N
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%)..... :	After Drop test, the open circuit voltage difference: 0.2% in the 24H.	N
M.4.4.4	Check of the charge/discharge function		N
M.4.4.5	Charge / discharge cycle test	No explosion and Emission of flame	N
M.4.4.6	Compliance		N
<b>M.5</b>	<b>Risk of burn due to short-circuit during carrying</b>		N
M.5.1	Requirement	No bare conductive terminal used	N
M.5.2	Test method and compliance		N
<b>M.6</b>	<b>Safeguards against short-circuits</b>		N
M.6.1	External and internal faults	No such explosion or fire likely to result from short circuits.	N
M.6.2	Compliance		N
<b>M.7</b>	<b>Risk of explosion from lead acid and NiCd batteries</b>		N
M.7.1	Ventilation preventing explosive gas concentration		N
	Calculated hydrogen generation rate..... :		N
M.7.2	Test method and compliance		N
	Minimum air flow rate, Q (m <sup>3</sup> /h)..... :		N
M.7.3	Ventilation tests		N
M.7.3.1	General		N
M.7.3.2	Ventilation test – alternative 1		N
	Hydrogen gas concentration (%)..... :		N
M.7.3.3	Ventilation test – alternative 2		N
	Obtained hydrogen generation rate..... :		N
M.7.3.4	Ventilation test – alternative 3		N
	Hydrogen gas concentration (%)..... :		N

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Clause	Requirement + Test	Result - Remark	Verdict
M.7.4	Marking.....:		N
<b>M.8</b>	<b>Protection against internal ignition from external spark sources of batteries with aqueous electrolyte</b>		N
M.8.1	General		N
M.8.2	Test method		N
M.8.2.1	General		N
M.8.2.2	Estimation of hypothetical volume $V_Z$ (m <sup>3</sup> /s).....:		—
M.8.2.3	Correction factors.....:		—
M.8.2.4	Calculation of distance $d$ (mm).....:		—
<b>M.9</b>	<b>Preventing electrolyte spillage</b>		N
M.9.1	Protection from electrolyte spillage		N
M.9.2	Tray for preventing electrolyte spillage		N
<b>M.10</b>	<b>Instructions to prevent reasonably foreseeable misuse</b>		N
	Instructional safeguard.....:		N
<b>N</b>	<b>ELECTROCHEMICAL POTENTIALS</b>		N
	Material(s) used.....:		—
<b>O</b>	<b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>		N
	Value of $X$ (mm).....:		—
<b>P</b>	<b>SAFEGUARDS AGAINST CONDUCTIVE OBJECTS</b>		N
<b>P.1</b>	<b>General</b>		N
<b>P.2</b>	<b>Safeguards against entry or consequences of entry of a foreign object</b>		N
P.2.1	General		N
P.2.2	Safeguards against entry of a foreign object		N
	Location and Dimensions (mm).....:		—
P.2.3	Safeguards against the consequences of entry of a foreign object		N
P.2.3.1	Safeguard requirements		N
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment		N
	Transportable equipment with metalized plastic parts.....:		N
P.2.3.2	Consequence of entry test.....:		N
<b>P.3</b>	<b>Safeguards against spillage of internal liquids</b>		N
P.3.1	General	No such part.	N

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
P.3.2	Determination of spillage consequences		N
P.3.3	Spillage safeguards		N
P.3.4	Compliance		N
<b>P.4</b>	<b>Metallized coatings and adhesives securing parts</b>		N
P.4.1	General	No such application	N
P.4.2	Tests		N
	Conditioning, T <sub>C</sub> (°C)..... :		—
	Duration (weeks)..... :		—
<b>Q</b>	<b>CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING</b>		N
<b>Q.1</b>	<b>Limited power sources</b>		N
Q.1.1	Requirements		N
	a) Inherently limited output		N
	b) Impedance limited output		N
	c) Regulating network limited output		N
	d) Overcurrent protective device limited output		N
	e) IC current limiter complying with G.9		N
Q.1.2	Test method and compliance..... :		N
	Current rating of overcurrent protective device (A) ..... :		N
<b>Q.2</b>	<b>Test for external circuits – paired conductor cable</b>	No such circuit.	N
	Maximum output current (A)..... :		N
	Current limiting method..... :		—
<b>R</b>	<b>LIMITED SHORT CIRCUIT TEST</b>		N
<b>R.1</b>	<b>General</b>	Class III equipment	N
<b>R.2</b>	<b>Test setup</b>		N
	Overcurrent protective device for test..... :		—
<b>R.3</b>	<b>Test method</b>		N
	Cord/cable used for test..... :		—
<b>R.4</b>	<b>Compliance</b>		N
<b>S</b>	<b>TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		N
<b>S.1</b>	<b>Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W</b>		N
	Samples, material..... :	Approved material used.	—

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Wall thickness (mm)..... :		—
	Conditioning (°C)..... :		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N
	- Material not consumed completely		N
	- Material extinguishes within 30s		N
	- No burning of layer or wrapping tissue		N
<b>S.2</b>	<b>Flammability test for fire enclosure and fire barrier integrity</b>		
	Samples, material..... :		—
	Wall thickness (mm)..... :		—
	Conditioning (°C)..... :		—
<b>S.3</b>	<b>Flammability test for the bottom of a fire enclosure</b>		N
S.3.1	Mounting of samples		N
S.3.2	Test method and compliance		N
	Mounting of samples..... :		—
	Wall thickness (mm)..... :		—
<b>S.4</b>	<b>Flammability classification of materials</b>		N
<b>S.5</b>	<b>Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power exceeding 4 000 W</b>		N
	Samples, material..... :		—
	Wall thickness (mm)..... :		—
	Conditioning (°C)..... :		—
<b>T</b>	<b>MECHANICAL STRENGTH TESTS</b>		P
<b>T.1</b>	<b>General</b>		P
<b>T.2</b>	<b>Steady force test, 10 N..... :</b>		N
<b>T.3</b>	<b>Steady force test, 30 N..... :</b>		N
<b>T.4</b>	<b>Steady force test, 100 N..... :</b>	(See appended table T.4)	P
<b>T.5</b>	<b>Steady force test, 250 N..... :</b>		N
<b>T.6</b>	<b>Enclosure impact test</b>		N
	Fall test		N
	Swing test		N
<b>T.7</b>	<b>Drop test..... :</b>	(See appended table T.7)	P
<b>T.8</b>	<b>Stress relief test..... :</b>	(See appended table T.8)	P

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>T.9</b>	<b>Glass Impact Test</b> .....:		N
<b>T.10</b>	<b>Glass fragmentation test</b>		N
	Number of particles counted.....:	No glass	N
<b>T.11</b>	<b>Test for telescoping or rod antennas</b>		N
	Torque value (Nm).....:	No antenna	N
<b>U</b>	<b>MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION</b>		N
<b>U.1</b>	<b>General</b>		N
	Instructional safeguard.....:		N
<b>U.2</b>	<b>Test method and compliance for non-intrinsically protected CRTs</b>		N
<b>U.3</b>	<b>Protective screen</b>		N
<b>V</b>	<b>DETERMINATION OF ACCESSIBLE PARTS</b>		N
<b>V.1</b>	<b>Accessible parts of equipment</b>		N
V.1.1	General	No hazards can be accessible by figure V.1 and V.5	N
V.1.2	Surfaces and openings tested with jointed test probes		N
V.1.3	Openings tested with straight unjointed test probes		N
V.1.4	Plugs, jacks, connectors tested with blunt probe		N
V.1.5	Slot openings tested with wedge probe		N
V.1.6	Terminals tested with rigid test wire		N
<b>V.2</b>	<b>Accessible part criterion</b>		N
<b>X</b>	<b>ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)</b>		N
	Clearance.....:		N
<b>Y</b>	<b>CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES</b>		N
<b>Y.1</b>	<b>General</b>		N
<b>Y.2</b>	<b>Resistance to UV radiation</b>		N
<b>Y.3</b>	<b>Resistance to corrosion</b>		N
<b>Y.3</b>	<b>Resistance to corrosion</b>		N
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by.....:		N
Y.3.2	Test apparatus		N
Y.3.3	Water – saturated sulphur dioxide atmosphere		N

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Y.3.4	Test procedure.....:		N
Y.3.5	Compliance		N
<b>Y.4</b>	<b>Gaskets</b>		N
Y.4.1	General		N
Y.4.2	Gasket tests		N
Y.4.3	Tensile strength and elongation tests		N
	Alternative test methods..... :		N
Y.4.4	Compression test		N
Y.4.5	Oil resistance		N
Y.4.6	Securing means		N
<b>Y.5</b>	<b>Protection of equipment within an outdoor enclosure</b>		N
Y.5.1	General		N
Y.5.2	Protection from moisture		N
	Relevant tests of IEC 60529 or Y.5.3..... :		N
Y.5.3	Water spray test		N
Y.5.4	Protection from plants and vermin		N
Y.5.5	Protection from excessive dust		N
Y.5.5.1	General		N
Y.5.5.2	IP5X equipment		N
Y.5.5.3	IP6X equipment		N
<b>Y.6</b>	<b>Mechanical strength of enclosures</b>		N
Y.6.1	General		N
Y.6.2	Impact test.....:		N

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IEC 62368-1			
Clause	Requirement – Test	Result – Remark	Verdict
<b>ATTACHMENT TO TEST REPORT</b> <b>IEC 62368-1</b> <b>(AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES</b> <b>(Audio/video, information and communication technology equipment)</b>			
Differences according to: AS/NZS 62368.1:2022			
<b>Appendix ZZ</b>	Variations to IEC 62368-1:2018 (ED. 3.0) for Australia and New Zealand		P
<b>ZZ1 Scope</b>	This Appendix lists the normative variations to IEC 62368-1:2018 (ED. 3.0)		P
<b>ZZ2 Variations</b>	The following modifications are required for Australian/New Zealand conditions:		P
<b>2</b>	<p>After the first paragraph, <i>add</i> the following:  The Australian or Australian/New Zealand Standards listed below are modified adoptions of, or not equivalent to, the IEC normative references and are required for the application of this Standard. All references in the source text to those IEC normative references shall be replaced by references to the corresponding Australian or Australian/New Zealand Standards. Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably</p> <ul style="list-style-type: none"> <li>-AS/NZS 3112, <i>Approval and test specification—Plugs and socket-outlets</i></li> <li>-AS/NZS 3123, <i>Approval and test specification—Plugs, socket-outlets and couplers for general industrial application</i></li> <li>-AS/NZS 3191, <i>Electric flexible cords</i></li> <li>-AS/NZS 60884.1, <i>Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</i></li> <li>-IEC 60086-2 <i>Primary batteries — Part 2: Physical and electrical specifications</i></li> <li>-AS/NZS 60065, <i>Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)</i></li> <li>-AS/NZS 60320.1, <i>Appliance couplers for household and similar general purposes, Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)</i></li> <li>-AS/NZS 60320.2.2, <i>Appliance couplers for household and similar general purposes Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD)</i></li> <li>-AS/NZS 60695.2.11, <i>Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products</i></li> <li>-AS/NZS 60695.11.5, <i>Fire hazard testing, Part</i></li> </ul>		P

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	<p>11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance</p> <p>-AS/NZS 60695.11.10, Fire hazard testing, Part 11.10: Test flames—50 W</p> <p>horizontal and vertical flame test methods</p> <p>-AS/NZS 60884.1, Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</p> <p>-AS/NZS 60950.1, Information technology equipment—Safety, Part 1: General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)</p> <p>IEC 61032:1997, Protection of persons and equipment by enclosures—Probes for verification</p> <p>-AS/NZS 61558.1, Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 3, MOD)</p> <p>-AS/NZS 61558.2.16, Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.</p>		
4.7.2	<p><b>Requirements</b></p> <p>Delete the text of the second paragraph and replace with the following:</p> <p>Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet conforming to AS/NZS 3112, shall conform to the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets. Conformity is checked by inspection and, if necessary, by the tests in AS/NZS 3112.</p> <p>NOTE: Equipment with plug portions for use in countries other than Australia and New Zealand will need to conform to other countries' requirements</p> <p>Note Additional AS/NZS 3112 Appendix J, TRF is appended to end of this TRF.</p>		N
4.7.3	<p><b>Compliance Criteria</b></p> <p>Delete this clause</p>		N
4.8.1	<p><b>General</b></p> <p>After second list, add the following:</p> <p>NOTE: Refer to the Consumer Goods (Products Containing Button/Coin Batteries) Safety Standard 2020 and Consumer Goods (Products Containing Button/Coin Batteries) Information Standard 2020 for more information on button cell batteries in Australia.</p>		N
5.4.10.2.1	<p><b>General</b></p> <p>Delete the first paragraph and replace with the</p>		N

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	following: In Australia, the separation is checked by the test given in both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test given in either 5.4.10.2.2 or 5.4.10.2.3.		
<b>Table 28</b>	<i>Delete</i> Table 28 and <i>replace</i> with the following:		N
Parts	Impulse test		Steady state test
	New Zealand	Australia	New Zealand Australia
Parts indicated in Clause 5.4.10.1 a) <sup>a</sup>	2.5 kV	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment.	1.5 kV 3 kV
Parts indicated in Clause 5.4.10.1 b) and c) <sup>b</sup>	1.5 kV <sup>c</sup>		1.0 kV 1.5 kV
<sup>a</sup> Surge suppressors shall not be removed. <sup>b</sup> Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment. <sup>c</sup> During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.			
<b>5.4.10.2.2</b>	<i>Delete</i> "NOTE" and <i>replace</i> with "NOTE 1". After NOTE 1, <i>add</i> the following: NOTE 2: For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 3: For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		N
<b>5.4.10.2.3</b>	<i>Delete</i> "NOTE" and <i>replace</i> with "NOTE 1". After NOTE 1, <i>add</i> the following: NOTE 2: For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 3: The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.		N
<b>6</b>	<b>Electrically-caused fire</b>		N
<b>6.6</b>	After Clause 6.6, <i>add</i> the new Clauses 6.201 as follows: <b>6.201 External power supplies, docking stations and other similar devices</b> (see special national conditions)		N
<b>8.6</b>	<b>Stability of equipment</b>		N
<b>Table 36</b>	Footnote <sup>a</sup> , after first sentence, <i>add</i> the following: Equipment having displays with moving images shall include "television sets and display devices".		N
<b>8.6.1</b>	After Clause 8.6.1 <i>add</i> the following new clauses: <b>8.6.201 Restraining Device fixing point</b> (see special national conditions) <b>8.6.202 Restraining device</b> (see special national conditions)		N

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<b>Annex F Paragraph F.3.3.4</b>	<b>Rated Voltage</b> Delete "NOTE" and <i>replace</i> with NOTE1" After NOTE 1, <i>add</i> the following Equipment that is intended for connection to the supply mains in Australia and New Zealand shall be marked with: (a) A rated voltage of: <ul style="list-style-type: none"> <li>• 230 V for single phase equipment</li> <li>• 400 V for poly phase equipment</li> </ul> Or (b) A rated voltage range that includes: <ul style="list-style-type: none"> <li>• 230 V for single phase equipment</li> <li>• 400 V for poly phase equipment</li> </ul> NOTE 2: equipment that is not rated as above is not suitable for direct connection to the supply mains in Australia or new Zealand.		N
<b>Annex F.3.3.5</b>	After the list, <i>add</i> the following Equipment that is intended for connection to supply mains in Australia or New Zealand shall be marked with a rated frequency of 50 Hz or a rated frequency range or nominal value which includes 50Hz		N
<b>Annex F.3.8</b>	After "The DC output of an external power supply", insert "or docking stations and other similar external devices"		N
<b>Annex G Paragraph G.4.2</b>	<b>Mains connectors</b> 1 After "IEC 60320", insert "or AS/NZS 60320 series". 2 After "IEC 60906-1", insert "or AS/NZS 3123" 3 <i>After</i> first paragraph <i>add</i> the following: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.		N
<b>Paragraph G.5.3.1</b>	<b>Transformers, General</b> 1 Third dashed point <i>replace</i> 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 Fourth dashed point <i>replace</i> 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.		N
<b>Annex G.7.1</b>	<b>Mains supply cords, General</b> Fourth dashed paragraph, <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'		N
<b>Table G.7</b>	<b>Sizes of conductors</b> 1 First column, second row, <i>delete</i> "6" and <i>replace</i> with "7.5" 2 Second column, second row, <i>delete</i> '0,75' and <i>replace</i> with '0.75 <sup>b</sup> 3 <i>Delete</i> NOTE 1. 4 <i>Replace</i> 'NOTE 2' with 'NOTE:'. 5 <i>Delete</i> 'Footnote b' and <i>replace</i> with the following:		N

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	<p><sup>b</sup> This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm<sup>2</sup> three-core supply flexible cords are not permitted; see AS/NZS 3191).</p> <p>6 Footnote c <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'</p> <p>7 Footnote d <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'</p>		
<b>Annex M M 2.1</b>	Add "IEC 60086-2" to the list		N
<b>Annex M Paragraph M.3.2</b>	<p><b>Test method</b></p> <p>Delete "NOTE" and replace with "NOTE 1"</p> <p>After NOTE 1 <i>add</i> the following:</p> <p>NOTE 2: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of ES1 may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.</p>		N
	<b>Special national conditions (if any)</b>		N
<b>6.201</b>	<p><b>External power supplies, docking stations and other similar devices</b></p> <p>For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage—</p> <ul style="list-style-type: none"> <li>(a) at all ES1 outlets or connectors shall not increase by more than 10 % of the output rated voltage under normal operating conditions, measured after 3 s of introducing a single fault condition and after 3 s of introducing abnormal operating conditions; and</li> <li>(b) of a USB outlet or connector shall not increase by more than 3 V or 10 % of the output rated voltage under normal operating conditions, whichever is higher, measured after 3 seconds of introducing a single fault condition and after 3 s of introducing abnormal operating conditions</li> </ul> <p>For equipment with multiple rated voltages at the output, the requirements apply with the equipment configured for each output rated voltage in turn</p> <p>NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium</p>		N

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	<p>batteries. The 3 s measurement delay is based on IEC document 108/742/INF, <i>TC 108, Standards Interpretation Panel Question 15 — Output voltage</i>, in relation to similar requirements in IEC 62368-3:2017.</p> <p>Conformity shall be checked by measurement, taking into account the abnormal operating conditions of Annex B.3 and the simulated single fault conditions of Annex B.4.</p>		
8.6.201	<p><b>Restraining device fixing point</b>  Freestanding-capable MS2 and MS3 television sets and display devices shall be provided with a fixing point to facilitate the anchoring of the equipment from toppling</p> <p>The fixing point shall conform to Clause 8.7 where the fixing point uses a wall, ceiling or other structure mount. Alternatively, the fixing point shall be capable of withstanding a pull equal to the mass of the equipment in all directions without damage</p> <p>Instructions for installation or instructions for use shall be provided to specify correct use of the fixing point</p>		N
8.6.202	<p><b>Restraining device</b>  MS2 and MS3 television sets and display devices shall be provided with a restraining device and associated hardware to attach to the television set or display device.</p> <p>The restraining device shall be capable of withstanding a pull equal to the mass of the equipment in all directions.</p> <p>Instructions for installation or instructions for use shall be provided to specify correct use of the fixing point</p>		N

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5.2	TABLE: Classification of electrical energy sources						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type <sup>1)</sup>	Additional Info <sup>2)</sup>	
5.0V	Internal circuit	Normal	5.0	--	--	--	ES1 (By declared)
		Abnormal	--	--	--	--	
		Single fault	--	--	--	--	
Supplementary information:							

5.4.1.8	TABLE: Working voltage measurement					N
Location		RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	
--		--	--	--	--	
--		--	--	--	--	
Supplementary information:						

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics				N
Method..... :			ISO 306 / B50		—
Object/ Part No./Material		Manufacturer/trademark	Thickness (mm)	T softening (°C)	
--		--	--	--	
--		--	--	--	
Supplementary information:					

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics				N
Allowed impression diameter (mm)..... :					—
Object/Part No./Material		Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)
--		--	--	--	--
Supplementary information:					

5.4.2, 5.4.3	TABLE: Minimum Clearances/Creepage distance							N
Clearance (cl) and creepage distance (cr) at/of/between:	U <sub>p</sub> (V)	U <sub>rms</sub> (V)	Freq <sup>1)</sup> (Hz)	Required cl (mm)	cl (mm)	E.S. <sup>2)</sup> (V)	Required cr (mm)	cr (mm)
--	--	--	--	--	--	--	--	--
Supplementary information:								

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<b>5.4.4.2</b>	<b>TABLE: Minimum distance through insulation</b>				<b>N</b>
Distance through insulation (DTI) at/of		Peak voltage (V)	Insulation	Required DTI (mm)	Measured DTI (mm)
--		--	--	--	--
Supplementary information:					

<b>5.4.4.9</b>	<b>TABLE: Solid insulation at frequencies &gt;30 kHz</b>					<b>N</b>
Insulation material	$E_P$	Frequency (kHz)	$K_R$	Thickness $d$ (mm)	Insulation	$V_{PW}$ (Vpk)
--	--	--	--	--	--	--
Supplementary information:						

<b>5.4.9</b>	<b>TABLE: Electric strength tests</b>			<b>N</b>
Test voltage applied between:		Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V)	Breakdown Yes / No
--		--	--	--
--		--	--	--
Supplementary information:				

<b>5.5.2.2</b>	<b>TABLE: Stored discharge on capacitors</b>				<b>N</b>
Location	Supply voltage (V)	Operating and fault condition <sup>1)</sup>	Switch position	Measured voltage (Vpk)	ES Class
--	--	--	--	--	--
Supplementary information:					
X-capacitors installed for testing:					
<input type="checkbox"/> bleeding resistor rating:					
<input type="checkbox"/> ICX:					
1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit					

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

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<b>5.7.4</b>	<b>TABLE: Unearthed accessible parts</b>					<b>N</b>
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage ( $V_{rms}$ or $V_{pk}$ )	Current ( $A_{rms}$ or $A_{pk}$ )	Freq. (Hz)	
--	--	--	--	--	--	--
Supplementary information:						

5.7.5	TABLE: Earthed accessible conductive part			N
Supply voltage (V).....:				—
Phase(s) .....		[ ] Single Phase; [ ] Three Phase: [ ] Delta [ ] Wye		
Power Distribution System .....		<input type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT		
Location		Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment
--		--	--	--
Supplementary Information:				

<b>5.8</b>	<b>TABLE: Backfeed safeguard in battery backed up supplies</b>					<b>N</b>
Location	Supply voltage (V)	Operating and fault condition	Time (s)	Open-circuit voltage (V)	Touch current (A)	ES Class
--	--	--	--	--	--	--
Supplementary information:						
Abbreviation: SC= short circuit, OC= open circuit						

<b>6.2.2</b>	<b>TABLE: Power source circuit classifications</b>					<b>P</b>
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power <sup>1)</sup> (W)	Time (S)	PS class
Internal circuit	Normal	--	--	--	--	PS2 by declared
Type-C supply port	Normal	--	--	--	--	PS2
Supplementary information:						

6.2.3.1	TABLE: Determination of Arcing PIS				N
Location		Open circuit voltage after 3 s (Vpk)	Measured r.m.s current (A)	Calculated value	Arcing PIS? Yes / No
--		--	--	--	--
Supplementary information:					

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6.2.3.2	TABLE: Determination of resistive PIS			P
Location		Operating and fault condition	Dissipate power (W)	Resistive PIS? Yes / No
--		--	--	Yes (by declared)
Supplementary information: Abbreviation: SC= short circuit; OC= open circuit				

8.5.5	TABLE: High pressure lamp				N
Lamp manufacturer		Lamp type	Explosion method	Longest axis of glass particle (mm)	Particle found beyond 1 m Yes / No
--		--	--	--	--
Supplementary information:					

9.6	TABLE: Temperature measurements for wireless power transmitters							N	
Supply voltage (V).....:								—	
Max. transmit power of transmitter (W)..... :								—	
Foreign objects	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm		
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	
--	--	--	--	--	--	--	--	--	
Supplementary information:									

5.4.1.4, 9.3, B.1.5, B.2.6		TABLE: Temperature measurements					P	
Supply voltage (V) .....		a) Normal working					—	
Ambient temperature during test $T_{\text{amb}}$ (°C).....:		25.0	--	--	--	—		
Maximum measured temperature $T$ of part/at:		$T$ (°C)					Allowed $T_{\text{max}}$ (°C)	
Test condition No.:		a)	--	--	--	--		
Internal wire		43.7	--	--	--	80		
PCB near U1		55.2	--	--	--	130		
Plastic enclosure inside near PCB		46.1	--	--	--	Ref.		
Ambient		50.0	--	--	--	--		
For accessible part								
Plastic enclosure outside near PCB		29.6	--	--	--	48		
Ambient		25.0	--	--	--	--		
Temperature $T$ of winding:	$t_1$ (°C)	$R_1$ (Ω)	$t_2$ (°C)	$R_2$ (Ω)	$T$ (°C)	Allowed	Insulation class	

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						$T_{max} (^{\circ}C)$	
--	--	--	--	--	--	--	--
Supplementary information:							
Note 1: Tma should be considered as directed by applicable requirement							
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							

<b>B.2.5</b>	<b>TABLE: Input test</b>							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
5.0	--	0.126	1	0.63	--	--	--	Normal working
Supplementary information:								

B.3, B.4		TABLE: Abnormal operating and fault condition tests					P
Ambient temperature T <sub>amb</sub> (°C)..... :				25		—	
Power source for EUT: Manufacturer, model/type, outputrating... :				--		—	
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation	
U5 pin 8-1	S-C	5.0	30mins	--	--	Unit working normally, no damage and hazard. Input current: 0.126A	
Supplementary information: S-C= short circuit.							

M.3	TABLE: Protection circuits for batteries provided within the equipment						N
Is it possible to install the battery in a reverse polarity position?.....:				--		—	
Equipment Specification	Charging						
	Voltage (V)			Current (A)			
	--			--			
Manufacturer/type	Battery specification						
	Non-rechargeable batteries		Rechargeable batteries				
	Discharging current (A)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)	
			Voltage (V)	Current (A)			
--	--	--	--	--	--	--	
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.							
Specified battery temperature (°C).....:							--
Component No.	Fault condition	Charge/discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation
--	--	--	--	--	--	--	--

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Supplementary information: see table Annex B.2.5 and B.3, B.4 for detail

M.4.2	TABLE: Charging safeguards for equipment containing a secondary lithium battery					N
Maximum specified charging voltage (V)..... :						—
Maximum specified charging current (A)..... :						—
Highest specified charging temperature (°C)..... :						—
Lowest specified charging temperature (°C)..... :						—
Battery manufacturer/type	Operating and fault condition	Measurement			Observation	
		Charging voltage (V)	Charging current (A)	Temp. (°C)		
--	--	--	--	--	--	
Supplementary information:						

<b>Q.1</b>	<b>TABLE: Circuits intended for interconnection with building wiring (LPS)</b>						N
Output Circuit	Condition	U <sub>oc</sub> (V)	Time (s)	I <sub>sc</sub> (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
--	--	--	--	--	--	--	--
Supplementary Information:							

<b>T.2, T.3, T.4, T.5</b>	<b>TABLE: Steady force test</b>					P
Part/Location	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation
Top enclosure	Plastic	See table 4.1.2	30mm probe	100	5	No damaged
Side enclosure	Plastic	See table 4.1.2	30mm probe	100	5	No damaged
Bottom enclosure	Plastic	See table 4.1.2	30mm probe	100	5	No damaged
Supplementary information:						

T.6, T.9	TABLE: Impact test				N
Location/part	Material	Thickness (mm)	Height (mm)	Observation	
--	--	--	--	--	
Supplementary information:					

T.7	TABLE: Drop test					P
Location/part		Material	Thickness (mm)	Height (mm)	Observation	

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Top enclosure	Plastic	See table 4.1.2	1000	No damaged
Side enclosure	Plastic	See table 4.1.2	1000	No damaged
Bottom enclosure	Plastic	See table 4.1.2	1000	No damaged
Supplementary information:				

<b>T.8</b>	<b>TABLE: Stress relief test</b>					<b>P</b>
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Completed sample	Plastic enclosure (for all sources)	See table 4.1.2	70	7	No damaged, no hazards.	
Supplementary information:						

<b>X</b>	<b>TABLE: Alternative method for determining minimum clearances distances</b>				<b>N</b>
Clearance distanced between:	Peak of working voltage (V)	Required cl (mm)	Measured cl (mm)		
--	--	--	--		
Supplementary information:					

<b>4.1.2</b>	<b>TABLE: Critical components information</b>					<b>P</b>
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1)</sup>	
Internal wire	Interchangeable	Interchangeable	Min. 28AWG, min. 80°C, min. 30V, VW-1	UL 758	UL	
PCB	Interchangeable	Interchangeable	V-0, 130°C	UL94, UL796	UL	
Plastic enclosure	CHI MEI CORPORATION	PC-110	Min. 1.5mm, V-2, 105°C	UL94	UL E56070	
Supplementary information:						

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### Attachment A Photos of product



Fig.1 – Over view



Fig.2 – Over view

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Fig.3 – Port view



Fig.4 – Open view

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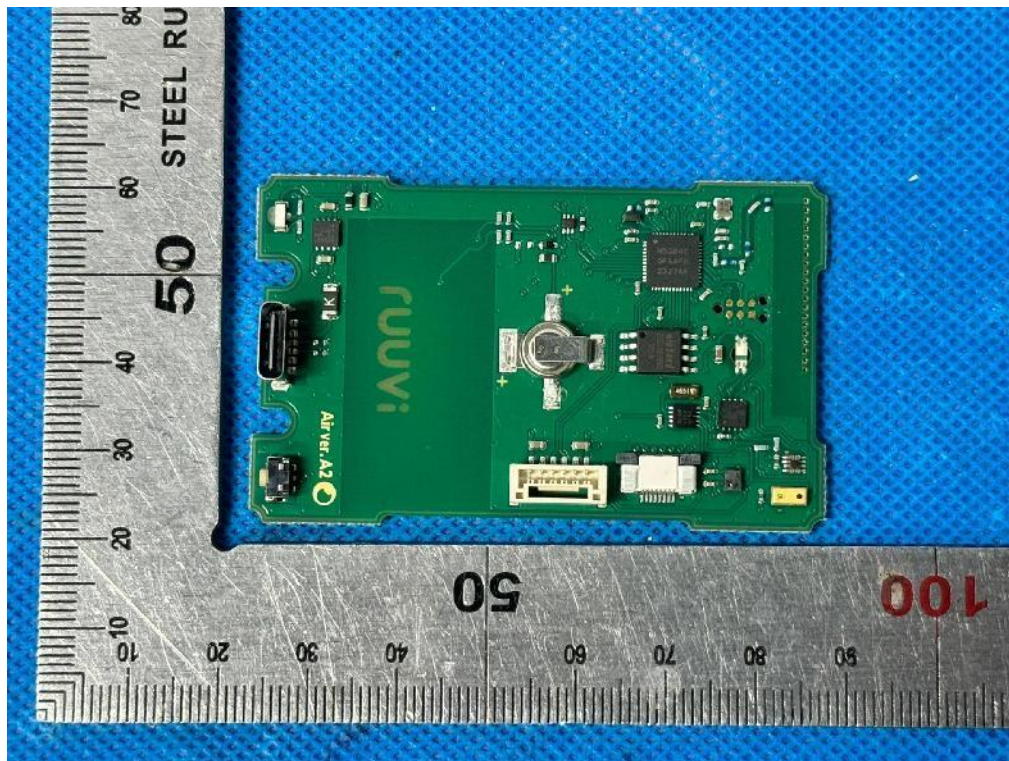


Fig.5 – PCB view

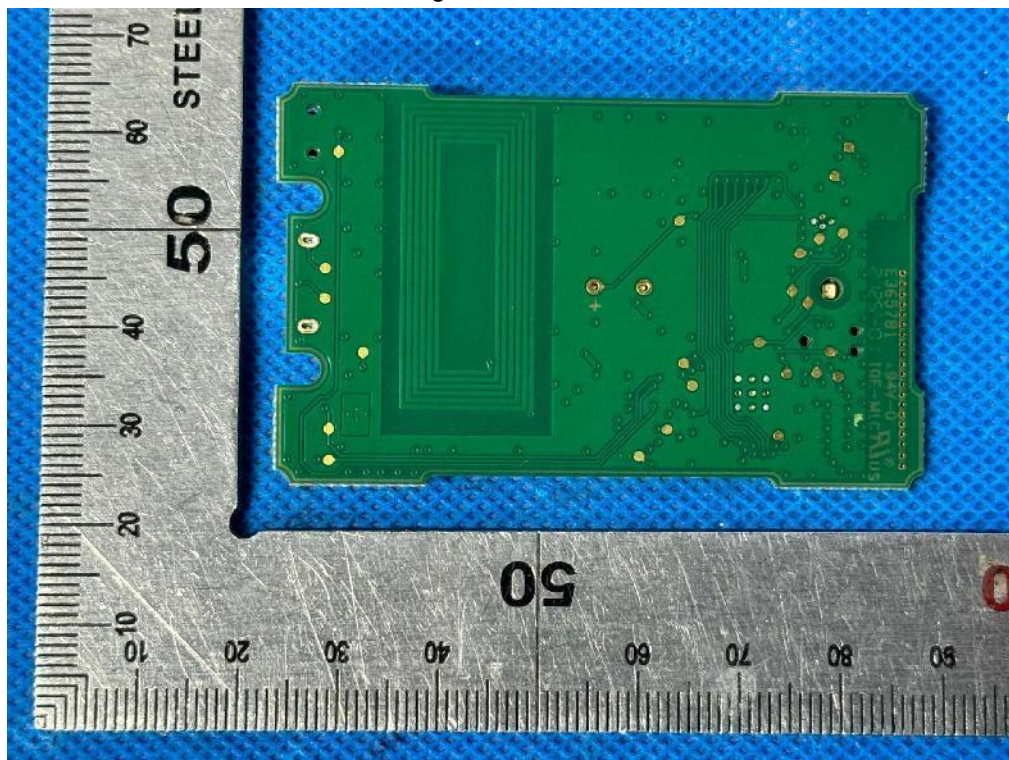


Fig.6 – PCB view

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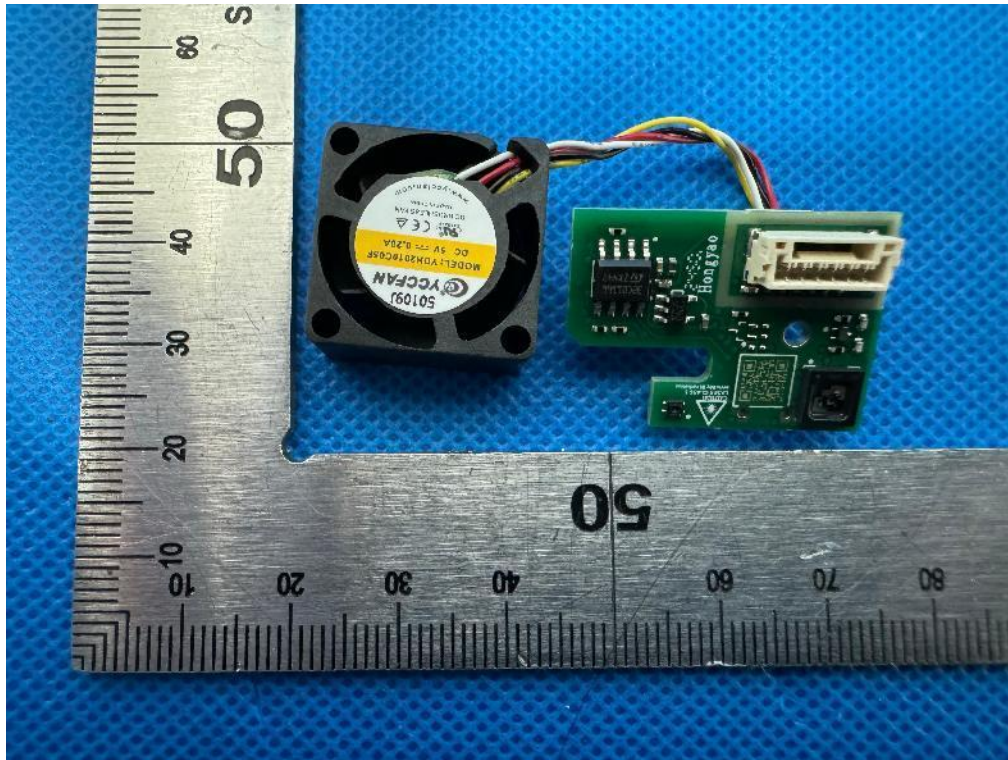


Fig.7 – PCB view

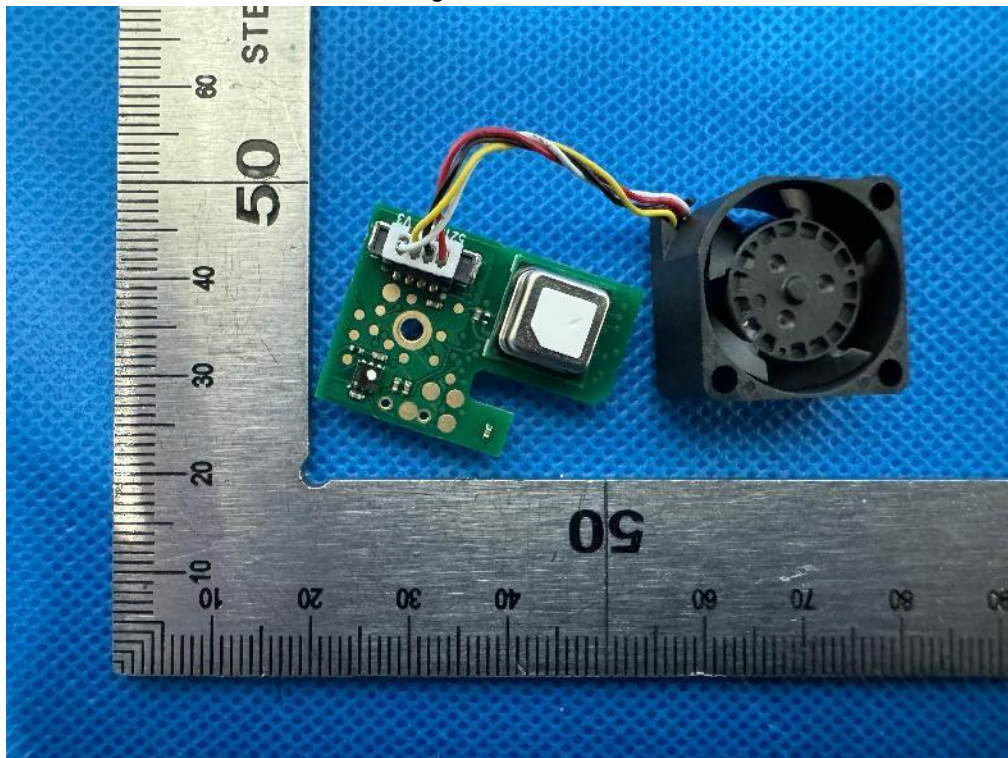


Fig.8 – PCB view

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Fig.9 – DC brushless fan

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