



# LVD TEST REPORT

## EN IEC 62368-1:2020+A11:2020

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

For

**OpenVox Communication Co., Ltd.**

Room 624, 6/F, Tsinghua Information Port, Qingqing Road, Longhua Street, Longhua District, Shenzhen ,Guangdong,China

**Model: MAG1100**

2024-03-14

<b>This Report Concerns:</b> <input checked="" type="checkbox"/> Original Report	<b>Equipment Type:</b> Analog Gateway
<b>Test By:</b> Eric Tao / <i>Eric Tao</i>	
<b>Report Number:</b> TH2403055-C02-R01	
<b>Test Date:</b> 2024-03-06 to 2024-03-14	
<b>Reviewed By:</b> Robin Liu / <i>Robin Liu</i>	
<b>Approved By:</b> Prince Huang / <i>Prince Huang</i>	
<b>Prepared By:</b> Shenzhen Tian Hai Test Technology Co., Ltd. 4F, A3 BLDG, The Silicon Valley Power intelligent terminal industrial park, Guanlan street, Longhua district, Shenzhen Tel : 86-755-86615100 Fax: 86-755-86615105	

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior written consent of Shenzhen Tian Hai Test Technology Co.,Ltd.



TEST REPORT

EN IEC 62368-1:2020+A11:2020

Report Reference No..... TH2403055-C02-R01

Tested by (signature)..... Eric Tao

Reviewed by (signature)..... Robin Liu

Approved by (signature)..... Prince Huang

Date of issue..... 2024-03-14



Testing Laboratory Name..... Shenzhen Tian Hai Test Technology Co., Ltd.

Address..... 4F, A3 BLDG, The Silicon Valley Power intelligent terminal industrial park, Guanlan street, Longhua district, Shenzhen.

Testing location..... Same as above

Applicant's Name..... OpenVox Communication Co., Ltd.

Address..... Room 624, 6/F, Tsinghua Information Port, Qingqing Road, Longhua Street, Longhua District, Shenzhen ,Guangdong,China

Test specification

Standard..... EN IEC 62368-1:2020+A11:2020

Test procedure ..... CE mark

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

Test item description..... Analog Gateway

Model and/or type reference..... MAG1100

Trade mark..... OpenVox

Manufacturer..... OpenVox Communication Co., Ltd.

Address..... Room 201, Building I, Jinchangda, Building 00082, Shangwei Industrial Zone, Zhangkengjing Community, Guanhu Street, Longhua District, Shenzhen, Guangdong, China

Rating(s)..... AC 100 ~ 240V,50/60Hz,1.5A,120W

Note..... --



Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies).....:	<b>OpenVox Communication Co., Ltd.</b> Room 201, Building I, Jinchangda, Building 00082, Sh angwei Industrial Zone, Zhangkengjing Community, G uanhu Street, Longhua District, Shenzhen, Guangdong, China
<b>GENERAL PRODUCT INFORMATION:</b>	
<b>Product Description:</b> The equipment under test (EUT) is a Fingerprint Reader for use with audio/video, information and communication technology equipment. The plastic enclosure of EUT is secured by ultrasonic. And the AC Adapter has certification. Copy of Marking Plate:	
Model Differences –N/A	
Additional application considerations – (Considerations used to test a component or sub-assembly) – N/A	
<b>ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:</b>	
(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.	
<b>Electrically-caused injury (Clause 5):</b> (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification)	
Source of electrical energy	Corresponding classification (ES)
All circuits except for output circuits	ES3
Output circuits (connector)	ES1
<b>Electrically-caused fire (Clause 6):</b> (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): PS2	
Source of power or PIS	Corresponding classification (PS)
All circuits	PS2, Arching and Resistive PIS
<b>Injury caused by hazardous substances (Clause 7)</b> (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component Glycol	
Source of hazardous substances	Corresponding chemical
N/A	



Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit	
	MS2
Source of kinetic/mechanical energy	Corresponding classification (MS)
Source of kinetic/mechanical energy	Corresponding classification (MS)
Sharp edges and corners	MS1
Equipment mass	MS1
Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure TS1	
Source of thermal energy	Corresponding classification (TS)
Enclosure (plastic)	TS1
Radiation (Clause 10) (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product	
	RS1
Type of radiation	Corresponding classification (RS)
N/A	
<b>ENERGY SOURCE DIAGRAM</b>	
Indicate which energy sources are included in the energy source diagram. Insert diagram below	
-ES -PS -MS -TS -RS	



OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	ES3: Primary circuit of power module	N/A	N/A	Enclosure, See 5.4.2, 5.4.3, 5.5.2.1, 5.5.3 and 5.5.4
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Enclosure	PS2: Primary circuit of power module	See 6.3	V-0 See 6.4.6	N/A
PCB	PS2: Primary circuit of power module	See 6.3	V-1 or better See 6.4.6	N/A
Internal wiring	PS2: Internal power module input line	N/A	N/A	See 6.5
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A				
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
N/A				
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS1: Accessible surfaces	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
N/A				
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
<b>4</b>	<b>GENERAL REQUIREMENTS</b>		P
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components	Comply with IEC standard requirements	P
4.1.3	Equipment design and construction	Complied	P
4.1.15	Markings and instructions	(See Annex F)	P
4.4.4	Safeguard robustness	No safeguard	N/A
4.4.4.2	Steady force tests	(See Annex T.3, T.4)	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	(See Annex T.3)	P
4.4.4.6	Glass Impact tests	(See Annex T.9, Annex U)	N/A
4.4.4.7	Thermoplastic material tests	(See Annex T.8)	N/A
4.4.4.8	Air comprising a safeguard	(See Annex T)	N/A
4.4.4.9	Accessibility and safeguard effectiveness		P
4.5	Explosion		P
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard		N/A
4.6.2	10 N force test applied to	See 5.4.2, 5.4.3	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 batteries	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery		N/A
4.8.4	Battery Compartment Mechanical Tests	(See Table 4.8.4)	N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object		P
<b>5</b>	<b>ELECTRICALLY-CAUSED INJURY</b>		P
5.2.1	Electrical energy source classifications	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits	ES3	P
5.2.2.2	Steady-state voltage and current	(See appended table 5.2)	P
5.2.2.3	Capacitance limits	(See appended table 5.2)	N/A
5.2.2.4	Single pulse limits	(See appended table 5.2)	P
5.2.2.5	Limits for repetitive pulses	(See appended table 5.2)	P
5.2.2.6	Ringling signals	(See Annex H)	N/A



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Clause	Requirement – Test	Result – Remark	Verdict
5.2.2.7	Audio signals	(See Clause E.1 )	N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	instructed persons	P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
5.3.2.2	Contact requirements		P
	a) Test with test probe from Annex V		P
	b) Electric strength test potential (V)		P
	c) Air gap (mm)		P
5.3.2.4	Terminals for connecting stripped wire		P
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Humidity conditioning	(See sub-clause 5.4.8)	P
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree	PD2	
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		P
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage		P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N/A
5.4.1.10.2	Vicat softening temperature	(See appended table 5.4.1.10.2)	N/A
5.4.1.10.3	Ball pressure	(See appended table 5.4.1.10.3)	N/A
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2)	P
5.4.2.3	Determining clearance using required withstand voltage	(See appended table 5.4.2.3)	P
	a) a.c. mains transient voltage	2500Vpeak	
	b) d.c. mains transient voltage	/	
	c) external circuit transient voltage	/	
	d) transient voltage determined by measurement	/	
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	(See appended table 5.4.2.4)	N/A
5.4.2.5	Multiplication factors for clearances and test voltages		P
5.4.3	Creepage distances	(See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group	IIIb	



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Clause	Requirement – Test	Result – Remark	Verdict
5.4.4	Solid insulation		N/A
5.4.4.2	Minimum distance through insulation	(See appended table 5.4.4.2)	N/A
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	(See appended Table 5.4.9)	N/A
	Number of layers (pcs)		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material	(See appended Table 5.4.9)	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	(See appended Table 5.4.4.9)	N/A
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 (M)		
5.4.6	Insulation of internal wire as part of supplementary safeguard	(See appended table 5.4.4.2)	N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%)	93.1	
	Temperature (°C)	40.4	
	Duration (h)	48	
5.4.9	Electric strength test	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test		P
5.4.9.2	Test procedure for routine tests		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	(See appended table 5.4.9)	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	(See appended table 5.4.9)	N/A
5.4.10.2.3	Steady-state test	(See appended table 5.4.9)	N/A
5.4.11	Insulation between external circuits and earthed circuitry	(See appended table 5.4.9)	N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A





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Clause	Requirement – Test	Result – Remark	Verdict
	Rated operating voltage U <sub>op</sub> (V)		
	Nominal voltage U <sub>peak</sub> (V)		
	Max increase due to variation U <sub>sp</sub>		
	Max increase due to ageing U <sub>sa</sub>		
	U <sub>op</sub> = U <sub>peak</sub> + U <sub>sp</sub> + U <sub>sa</sub>		
5.5	Components as safeguards		P
5.5.1	General		P
5.5.2	Capacitors and RC units		P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector	(See appended table 5.5.2.2)	N/A
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See sub-clause 5.4 or Annex G.12)	N/A
5.5.5	Relays	(See Annex G.2)	N/A
5.5.6	Resistors	(See Annex G.10)	P
5.5.7	SPD's	(See Annex G.8)	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	(See Annex G.10.3)	N/A
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors	Class I equipment	P
5.6.2.1	General requirements		P
5.6.2.2	Colour of insulation		P
5.6.3	Requirement for protective earthing conductors		P
	Protective earthing conductor size (mm )		
5.6.4	Requirement for protective bonding conductors		P
5.6.4.1	Protective bonding conductors		P
	Protective bonding conductor size (mm )		
	Protective current rating (A)		
5.6.4.3	Current limiting and overcurrent protective devices		P
5.6.5	Terminals for protective conductors		P
5.6.5.1	Requirement		P
	Conductor size (mm ), nominal thread diameter		P
5.6.5.2	Corrosion		P
5.6.6	Resistance of the protective system		P
5.6.6.1	Requirements		P
5.6.6.2	Test Method Resistance	(See appended table 5.6.6.2)	P
5.6.7	Reliable earthing		P



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Clause	Requirement – Test	Result – Remark	Verdict
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	0.11mA	P
5.7.2.2	Measurement of prospective touch voltage		P
5.7.3	Equipment set-up, supply connections and earth connections		P
	System of interconnected equipment (separate connections/single connection)	single connection	
	Multiple connections to mains (one connection at a time/simultaneous connections)		
5.7.4	Earthed conductive accessible parts	(See appended Table 5.7.4)	P
5.7.5	Protective conductor current		P
	Supply Voltage (V)		
	Measured current (mA)		
	Instructional Safeguard	(See F.4 and F.5)	N/A
5.7.6	Prospective touch voltage and touch current due to external circuits		P
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		P
5.7.7	Summation of touch currents from external circuits		P
	a) Equipment with earthed external circuits Measured current (mA)		P
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA)		P
<b>6</b>	<b>ELECTRICALLY- CAUSED FIRE</b>		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications	All circuits are considered as PS2.	P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault	See 6.2.2	P
6.2.2.3	Power measurement for worst-case power source fault		P
6.2.2.4	PS1		N/A
6.2.2.5	PS2	All circuits	P
6.2.2.6	PS3		N/A
6.2.3	Classification of potential ignition sources	All conductors and devices are considered as PIS.	P
6.2.3.1	Arcing PIS	See 6.2.3	N/A
6.2.3.2	Resistive PIS	See 6.2.3	N/A
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		N/A



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Clause	Requirement – Test	Result – Remark	Verdict
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Control of fire spread.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	PS2	P
6.4.3.1	General		P
6.4.3.2	Supplementary Safeguards		P
	Special conditions if conductors on printed boards are opened or peeled		P
6.4.3.3	Single Fault Conditions	(See appended table 6.4.3)	P
	Special conditions for temperature limited by fuse		P
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards	PCBs are made of V-0 or better; Components other than PCB and wires are: - mounted on PCB rated V-1 or better, or - made of V-2/VTM-2 or better (See appended tables 4.1.2 and Annex G)	P
6.4.6	Control of fire spread in PS3 circuit		N/A
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.1	General	(See tables 6.2.3.1 and 6.2.3.2)	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		P
6.4.8.1	Fire enclosure and fire barrier material properties		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)		N/A
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm)		N/A
	Flammability tests for the bottom of a fire enclosure		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c)		N/A



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Clause	Requirement – Test	Result – Remark	Verdict
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating	Fire enclosure is made of metal material.	P
6.5	Internal and external wiring		P
6.5.1	Requirements	VW-1	P
6.5.2	Cross-sectional area (mm <sup>2</sup> )		
6.5.3	Requirements for interconnection to building wiring	(See Annex Q.)	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
<b>7</b>	<b>INJURY CAUSED BY HAZARDOUS SUBSTANCES</b>		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:		N/A
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010)		N/A
7.6	Batteries	(See Annex M)	N/A
<b>8</b>	<b>MECHANICALLY-CAUSED INJURY</b>		P
8.1	General		P
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners	MS1	P
8.4.1	Safeguards		P
8.5	Safeguards against moving parts		N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
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	(See Annex F.4 and Annex K)	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	(See appended table 8.5.5.2)	N/A



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Clause	Requirement – Test	Result – Remark	Verdict
8.6	Stability		N/A
8.6.1	Product classification		N/A
	Instructional Safeguard:		
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force:		
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10 tilt		
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force)		N/A
	Position of feet or movable parts		
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface)		N/A
8.7.2	Direction and applied force		N/A
8.8	Handles strength		N/A
8.8.1	Classification		N/A
8.8.2	Applied Force		N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force		
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard		
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force		
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N)		
8.10.6	Thermoplastic temperature stability		N/A
8.11	Mounting means for rack mounted 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	(See Annex T)	N/A
	Button/Ball diameter (mm)		



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Clause	Requirement – Test	Result – Remark	Verdict
<b>9</b>	<b>THERMAL BURN INJURY</b>		P
9.2	Thermal energy source classifications		P
9.3	Safeguard against thermal energy sources		P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard		P
9.4.2	Instructional safeguard		N/A
<b>10</b>	<b>RADIATION</b>		P
10.2	Radiation energy source classification		P
10.2.1	General classification		P
10.3	Protection against laser radiation		N/A
	Laser radiation that exists equipment:		
	Normal, abnormal, single-fault:	(See attached laser test report)	N/A
	Instructional safeguard:		
	Tool:		
10.4	Protection against visible, infrared, and UV radiation		N/A
10.4.1	General		N/A
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		N/A
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		N/A
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:	(See appended table B.3 & B.4)	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	(See appended table B.3 & B.4)	N/A
	Maximum radiation (pA/kg)		N/A
10.6	Protection against acoustic energy sources		N/A



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Clause	Requirement – Test	Result – Remark	Verdict
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A)		N/A
	Output voltage, unweighted r.m.s		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards		N/A
	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) LAeq 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>B</b>	<b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b>		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers	(See Annex E)	N/A
B.2.3	Supply voltage and tolerances	100 ~ 240V	P
B.2.5	Input test	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements	(See appended table B.3)	P
B.3.2	Covering of ventilation openings		P
B.3.3	D.C. mains polarity test		N/A
B.3.4	Setting of voltage selector		N/A
B.3.5	Maximum load at output terminals		P
B.3.6	Reverse battery polarity		N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions		P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited	(See appended table B.4)	N/A
B.4.3	Motor tests		N/A



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Clause	Requirement – Test	Result – Remark	Verdict
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature	(See Clause G.5)	N/A
B.4.4	Short circuit of functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation		P
B.4.4.2	Short circuit of creepage distances for functional insulation		P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		N/A
B.4.6	Short circuit or disconnect of passive components		P
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		P
B.4.9	Battery charging under single fault conditions	(See Annex M)	N/A
<b>C</b>	<b>UV RADIATION</b>		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
<b>D</b>	<b>TEST GENERATORS</b>		--
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
<b>E</b>	<b>TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS</b>		N/A
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V)		
	Rated load impedance ( $\Omega$ )		
E.2	Audio amplifier abnormal operating conditions		N/A
<b>F</b>	<b>EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS</b>		P
F.1	General requirements		P
	Instructions – Language	English	
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P





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Clause	Requirement – Test	Result – Remark	Verdict
F.3.1	Equipment marking locations	On outer enclosure	P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification	OpenVox Communication Co., Ltd.	
F.3.2.2	Model identification	MAG1100	
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		N/A
F.3.3.2	Equipment without direct connection to mains		P
F.3.3.3	Nature of supply voltage	AC	
F.3.3.4	Rated voltage	100-240V	
F.3.3.5	Rated frequency	50/60Hz	
F.3.3.6	Rated current or rated power	1.5A	
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings		N/A
F.3.5.2	Switch position identification marking		P
F.3.5.3	Replacement fuse identification and rating markings		P
F.3.5.4	Replacement battery identification marking		N/A
F.3.5.5	Terminal marking location		P
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I Equipment		P
F.3.6.1.1	Protective earthing conductor terminal		P
F.3.6.1.2	Neutral conductor terminal		P
F.3.6.1.3	Protective bonding conductor terminals		P
F.3.6.2	Class II equipment (IEC60417-5172)		N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking		
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings		P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		P
	b) Instructions given for installation or initial use		P
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A



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Clause	Requirement – Test	Result – Remark	Verdict
	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		P
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment		P
	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		N/A
	Where “instructional safeguard” is referenced in the test report it specifies the required elements,location of marking and/or instruction		N/A
<b>G</b>	<b>COMPONENTS</b>		<b>P</b>
G.1	Switches		<b>P</b>
G.1.1	General requirements		<b>P</b>
G.1.2	Ratings, endurance, spacing, maximum load		<b>P</b>
G.2	Relays		N/A
G.2.1	General requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	Protection Devices		<b>P</b>
G.3.1	Thermal cut-offs		N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	hermal 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		N/A
	Thermal links tested as part of the equipment		N/A
	Aging hours (H)		
	Single Fault Condition		
	Test Voltage (V) and Insulation Resistance		
G.3.3	PTC Thermistors		N/A
G.3.4	Overcurrent protection devices		<b>P</b>
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions	(See appended Table B.4)	N/A



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Clause	Requirement – Test	Result – Remark	Verdict
G.4	Connectors		N/A
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	Wound Components		P
G.5.1	Wire insulation in wound components	(See Annex J)	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		P
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)	See G.5.3.2, G.5.3.3	P
	Position		
	Method of protection	Over current protection by circuit	
G.5.3.2	Insulation		N/A
	Protection from displacement of windings		
G.5.3.3	Overload test	(See appended table B.3)	N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding Temperatures testing in the unit		N/A
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	Motors		N/A
G.5.4.1	General requirements		N/A
	Position		
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)		



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Clause	Requirement – Test	Result – Remark	Verdict
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature		N/A
	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.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage		
G.6	Wire Insulation		P
G.6.1	General		P
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	Mains supply cords		P
G.7.1	General requirements		P
	Type		
	Rated current (A)		
	Cross-sectional area (mm <sup>2</sup> ), (AWG)		
G.7.2	Compliance and test method		P
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords	detachable	N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N)		
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)		
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g)		
	Diameter (m)		
	Temperature (°C)		
G.7.6	Supply wiring space		P
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		P
<b>G.8</b>	<b>Varistors</b>		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguard against shock		N/A



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Clause	Requirement – Test	Result – Remark	Verdict
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test	(See appended table B.3)	N/A
G.8.3.3	Temporary overvoltage	(See appended table B.3)	N/A
G.9	Integrated Circuit (IC) Current Limiters		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.		N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA		
G.9.1 d)	IC limiter output current (max. 5A)		
G.9.1 e)	Manufacturers' defined drift		
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	Resistors		N/A
G.10.1	General requirements		N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	Capacitor and RC units		P
G.11.1	General requirements		N/A
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
G.12	Optocouplers		N/A
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results)		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	(See appended table 5.4.4.5)	N/A



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Clause	Requirement – Test	Result – Remark	Verdict
	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	(See G.13)	N/A
G.15	Liquid filled components		N/A
G.15.1	General requirements		N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/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		
<b>H</b>	<b>CRITERIA FOR TELEPHONE RINGING SIGNALS</b>		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)		



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Clause	Requirement – Test	Result – Remark	Verdict
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)		
<b>J</b>	<b>INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION</b>		N/A
	General requirements		N/A
<b>K</b>	<b>SAFETY INTERLOCKS</b>		N/A
K.1	General requirements		N/A
K.2	Components of safety interlock safeguard mechanism	(See Annex G)	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	(See appended table B.4)	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	(See appended table 5.4.11)	N/A
<b>L</b>	<b>DISCONNECT DEVICES</b>		P
L.1	General requirements		P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		P
L.4	Single phase equipment		P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		P
L.7	Plugs as disconnect devices		P
L.8	Multiple power sources		N/A
<b>M</b>	<b>EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS</b>		N/A
M.1	General requirements		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



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Clause	Requirement – Test	Result – Remark	Verdict
M.3.1	Requirements		N/A
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	(See appended Tables and Annex M and M.4)	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	(See Table M.4)	
M.4.2.2 b)	Single faults in charging circuitry	(See Annex B.4)	
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
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A





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Clause	Requirement – Test	Result – Remark	Verdict
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 Vz (m/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
<b>N</b>	<b>ELECTROCHEMICAL POTENTIALS</b>		N/A
	Metal(s) used		
<b>O</b>	<b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>		P
	Figures O.1 to O.20 of this Annex applied	PD2	
<b>P</b>	<b>SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS</b>		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 metallized plastic parts		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard)		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		P
P.4.2 a)	Conditioning testing		P
	Tc (°C)		
	Tr (°C)		
	Ta (°C)		



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Clause	Requirement – Test	Result – Remark	Verdict
P.4.2 b)	Abrasion testing	(See G.13.6.2)	N/A
P.4.2 c)	Mechanical strength testing	(See Annex T)	P
<b>Q</b>	<b>CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING</b>		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	(See Annex Q.1)	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		
<b>R</b>	<b>LIMITED SHORT CIRCUIT TEST</b>		P
R.1	General requirements		P
R.2	Determination of the overcurrent protective device and circuit		P
R.3	Test method Supply voltage (V) and short-circuit current (A)		P
<b>S</b>	<b>TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		P
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		P
	Samples, material		
	Wall thickness (mm)		
	Conditioning (°C)		
	Test flame according to IEC 60695-11-5 with conditions as set out		P
	- Material not consumed completely		P
	- Material extinguishes within 30s		P
	- No burning of layer or wrapping tissue		P
S.2	Flammability test for fire enclosure and fire barrier integrity		P
	Samples, material		
	Wall thickness (mm)		
	Conditioning (°C)		
	Test flame according to IEC 60695-11-5 with conditions as set out		P
	Test specimen does not show any additional hole		P
S.3	Flammability test for the bottom of a fire enclosure		P
	Samples, material		
	Wall thickness (mm)		



EN IEC 62368-1:2020+A11:2020			
Clause	Requirement – Test	Result – Remark	Verdict
	Cheesecloth did not ignite		P
S.4	Flammability classification of materials		P
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material		
	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
<b>T</b>	<b>MECHANICAL STRENGTH TESTS</b>		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		P
T.4	Steady force test, 100 N	(See appended table T.4)	N/A
T.5	Steady force test, 250 N		N/A
T.6	Enclosure impact test	(See appended table T.6)	P
	Fall test		P
	Swing test		N/A
T.7	Drop test	(See appended table T.7)	P
T.8	Stress relief test	(See appended table T.8)	N/A
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J)		
	Height (m)		
T.10	Glass fragmentation test	(See sub-clause 4.4.4.9)	N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)		
<b>U</b>	<b>MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION</b>		N/A
U.1	General requirements		N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen	(See Annex T)	N/A
<b>V</b>	<b>DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)</b>		P
V.1	Accessible parts of equipment		P
V.2	Accessible part criterion		P



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	--	
		7	--	
		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	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
No.	Supply Voltage	Location((e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
1	Input	Primary circuits supplied by a.c. mains supply	Normal	--	--	--	ES3
			Abnormal:	--	--	--	
			Single fault SC/OC:	--	--	--	
5.2.2.3	Capacitance Limits						
No.	Supply Voltage	Location((e.g. circuit designation)	Test conditions	Parameters		ES Class	
				Capacitance, nF	Upk (V)		



			Normal	--	--	--	
			Abnormal:	--	--	--	
			Single fault SC/OC:	--	--	--	
5.2.2.4 Single Pulses							
No.	Supply Voltage	Location((e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
			Normal	--	--	--	
			Abnormal	--	--	--	
			Single fault SC/OC	--	--	--	
5.2.2.5 Repetitive Pulses							
No.	Supply Voltage	Location((e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
			Normal	--	--	--	
			Abnormal	--	--	--	
			Single fault SC/OC	--	--	--	
Test Conditions: Normal – any load. Abnormal - Supplementary information: SC=Short Circuit, OC=Short Circuit							

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements						P
	Supply voltage(V):	90V/50Hz		264V/50Hz		--	
Maximum measured temperature T of part/at:		T(°C)				Allowed Tmax (°C)	
Power cord		27.3		29.1		70	
Switch		31.2		32.6		77	
Internal power cord		33.8		34.2		70	
PCB near transformer		59.5		57.7		130	
Transformer core		63.2		64.1		100	
Transformer winding		69.6		71.3		100	
IC on motherboard		44.8		45.8		130	
Enclosure		33.9		34.6		60	
Ambient		24.2		24.3		--	
Temperature T of winding:	t1 (°C)	R1 (°C)	t2 (°C)	R2 (°C)	T (°C)	Allowed Tmax (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information: Note 1: Tma should be considered as directed by applicable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9) 1. With a specified maximum ambient temperature and test temperature of 45°C, the maximum permitted temperatures are calculated as follows: Winding components (providing safety isolation): Class 130 (B) Tmax = 120°C - 10°C = 110°C							



2. During the test, the sealing compound did not soften or melt.

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		N/A
Allowed impression diameter (mm):			
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)
--	--	--	--
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 <sub>p</sub> (V)	U <sub>r.m.s.</sub> (V)	Frequency (kHz) <sup>1</sup>	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Functional:							
--	--	--	--	--	--	--	--
Basic/supplementary:							
primary circuit to grounding shell	385	296	--	1.5	5.44	2.96	5.44
Reinforced:							
primary circuit to secondary Circuit	385	296	--	3.0	7.51	5.92	7.51
Supplementary information:							
1) * Both frequencies lower than 30 kHz and higher than 30 kHz are present. Limit from Table 11 based on the temporary overvoltage (2000V <sub>peak</sub> ) which is higher than Table 12.							

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage		N/A
Overvoltage Category (OV):			
Pollution Degree:			
Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)
--	--	--	--
Supplementary information:			
1. BI: basic insulation; RI: reinforced insulation;			

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				N/A
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
--	--	--	--	--	--
--	--	--	--	--	--
Supplementary information:					



5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Functional:				
--		--	--	--
Basic/supplementary:				
primary circuit to grounding shell		AC	2500	No
Reinforced:				
primary circuit to secondary Circuit		AC	4000	No
Supplementary information:				

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

5.6.6.2	TABLE: Resistance of protective conductors and terminations				P
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	
Accessible grounded metal components	32	2	1.57	0.053	
Supplementary information:					

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part			N/A
Supply voltage :				--
Location:		Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)	
		1	N/A	
		2*	N/A	
		3	N/A	
		4	N/A	
		5	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)				

6.2.2	Table: Electrical power sources (PS) measurements for classification				P
Power Source Location	Description	Measurement	Max Power after 3 s	Max Power after 5s*	PS Classification
Output	Normal	Power (W):	--	--	PS2



	VA (V):	--	--
	IA (A):	--	--

Supplementary Information:  
 “Max power after 3 s” is determined by adjustment of the variable resistive load to cause not more than 15 W of power dissipation for 3 seconds.  
 (\*) “Max power after 5 s” is determined by adjustment of the variable resistive load to cause not more than 100 W of power dissipation.  
 If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine PS Classification.

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)			N/A
Location	Open circuit Voltage After 3 s (Vp)	Measured r.m.s Current (Irms)	Calculated value (Vp x Irms)	Arcing PIS? Yes / No
--	--	--	--	--

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 (Vp) and normal operating condition rms current (Irms) is greater than 15.

6.2.3.2	Table: Determination of Potential Ignition Sources (Resistive PIS)				N/A
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
--	--	--	--	--	Resistive PIS

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):		--	
Max particle length beyond 1 m (mm):		MS_	
Overall result:		MS_	

Supplementary information:





B.2.5 TABLE: Input test							P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
90V/50Hz	1.310	--	117.90	120	F1	1.310	Normal condition
90V/60Hz	1.281	--	115.29	120	F1	1.281	Normal condition
100V/50Hz	1.162	1.5	116.20	120	F1	1.162	Normal condition
100V/60Hz	1.137	1.5	113.70	120	F1	1.137	Normal condition
240V/50Hz	0.491	1.5	117.84	120	F1	0.491	Normal condition
240V/60Hz	0.488	1.5	117.12	120	F1	0.488	Normal condition
264V/50Hz	0.442	--	116.69	120	F1	0.442	Normal condition
264V/60Hz	0.439	--	115.90	120	F1	0.439	Normal condition

Supplementary information:  
Equipment may be have rated current or rated power or both. Both should be measured

B.3 TABLE: Abnormal operating condition tests								N/A
Ambient temperature (°C):								--
Power source for EUT: Manufacturer, model/type, output rating:								--
Component No.	Abnormal Condition	Supply voltage, (V)	Test time	Fuse no.	Fuse current, (A)	T-couple	Temp.(°C)	Observation
--	--	--	--	--	--	--	--	--

-Supplementary information:  
Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4.

B.4 TABLE: Fault condition tests								P
Ambient temperature (°C):								25
Power source for EUT: Manufacturer, model/type, output rating:								--
Component No.	Fault Condition	Supply voltage, (V)	Test time	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
--	--	--	--	--	--	--	--	--

Supplementary information:  
NB = No indication of dielectric breakdown; NC = Cheesecloth remained intact; NT = Tissue paper remained intact; IP = Internal protection operated (list component); CD = Components damaged (list damaged components); @ = Tests were repeated 2 more times (Totally 3 times) and get the same result; I/P = Input; O/P = Output, NSF = No Ignition, TC = Touch Current measured.

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



- Electric strength tests of equipment after completion of tests	--	--
Supplementary information:		

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

Supplementary Information: SC = short circuit.

Battery identification	Charging at Tlowest(°C)	Observation	Charging at Highest(°C)	Observation
--	--	--	--	--

Supplementary Information:

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	Uoc (V)	Isc (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
--	--	--	--	--	--	--

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

T.2, T.3, T.4, T.5	TABLE: Steady force test	P
--------------------	--------------------------	---

Part/Location	Material	Thickness (mm)	Force(N)	Test Duration (sec)	Observation
Enclosure(Top/Side /Bottom)	Metal	--	10	5	No damage, No cracking

Supplementary information:

T.6, T.9	TABLE: Impact tests	P
----------	---------------------	---

Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation
Enclosure	Metal	--	1300	No damage, No cracking

Supplementary information:

T.7	TABLE: Drop tests	P
-----	-------------------	---

Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation
Top/Side /Bottom	metal	--	1m	No damage, No cracking

Supplementary information:

T.8	TABLE: Stress relief test	N/A
-----	---------------------------	-----

Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration(h)	Observation
--	--	--	--	--	--

Supplementary information:



Appendix for product photos





\*\*\*\*\*END OF THE REPORT\*\*\*\*\*