



## **APPLICATION FOR TEST REPORT**

**On Behalf of**

**SHENZHEN FEIJIADA TECHNOLOGY CO., LTD**

**REMOTE CONTROL AIRCRAFT SERIES**

**Model No.: See below**

**Prepared for :** SHENZHEN FEIJIADA TECHNOLOGY CO., LTD  
428, BLDG. 2, JINFANGHUA E-COMMERCE INDUSTRIAL PARK,  
**Address:** NO.450 BULONG ROAD, BANTIAN ST., LONGGANG DISTRICT  
SHENZHEN CHINA (MAINLAND)

**Prepared By :** Shenzhen Alpha Product Testing Co., Ltd.  
**Address:** Building i, No.2, Lixin Road, Fuyong Street, Bao'an District,  
518103, Shenzhen, Guangdong, China

**Date of Test:** September 21-30, 2020  
**Date of Report:** September 30, 2020  
**Report Number:** A2009169-C02-R04  
**Version Number:** V0

**TEST REPORT**  
**IEC 62368-1 / EN 62368-1**

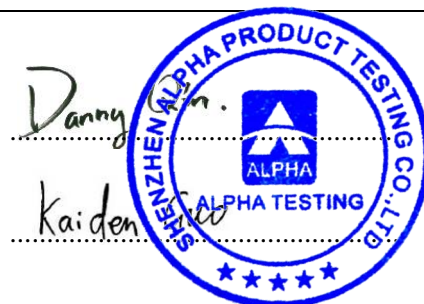
**Audio/video, information and communication technology equipment**  
**Part 1: Safety requirements**

**Report Number** ..... : A2009169-C02-R04

**Tested by (name + signature)** ..... : Danny Qin

**Approved by (name + signature)** ..... : Kaiden Guo

**Date of issue** ..... : September 30, 2020



**Testing Laboratory** ..... : Shenzhen Alpha Product Testing Co., Ltd.

**Address** ..... : Building i, No.2, Lixin Road, Fuyong Street, Bao'an District,  
518103, Shenzhen, Guangdong, China

**Testing location/procedure**..... : TL ☒ RMT ☐ SMT ☐ WMT ☐ TMP ☐

**Address** ..... : Same as above

**Applicant's name** ..... : SHENZHEN FEIJIADA TECHNOLOGY CO., LTD

**Address** ..... : 428, BLDG. 2, JINFANGHUA E-COMMERCE INDUSTRIAL PARK,  
NO.450 BULONG ROAD, BANTIAN ST., LONGGANG DISTRICT  
SHENZHEN CHINA (MAINLAND)

**Test specification:**

**Standard**..... : ☐ IEC 62368-1:2014  
☒ EN 62368-1:2014 + A11:2017

**Test procedure** ..... : LVD

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

**Test Report Form No.** ..... : IEC62368\_1B

**Test Report Form(s) Originator**..... : ALPHA

**Master TRF** ..... : 2019-03

**Test Item description** ..... : REMOTE CONTROL AIRCRAFT SERIES

**Trade Mark**..... : N/A

**Model/Type reference** ..... : See below


**Model difference**..... : See general product information

**Manufacturer** ..... : SHENZHEN FEIJIADA TECHNOLOGY CO., LTD

**Address** ..... : 428, BLDG. 2, JINFANGHUA E-COMMERCE INDUSTRIAL  
PARK, NO.450 BULONG ROAD, BANTIAN ST., LONGGANG  
DISTRICT SHENZHEN CHINA (MAINLAND)

**Rating**..... : 6V---( supplied by 4\*AAA battery)

<b>Test item particulars:</b>	
Classification of use by .....	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input type="checkbox"/> Children likely to be present
Supply Connection .....	<input type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input checked="" type="checkbox"/> External Circuit - not Mains connected - <input checked="" type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance .....	<input type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> +____%/ -____% <input checked="" type="checkbox"/> None
Supply Connection – Type .....	<input type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input checked="" type="checkbox"/> other: _ not directly connected to the mains ____
Considered current rating of protective device as part of building or equipment installation .....	____ A; Installation location: <input type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility.....	<input type="checkbox"/> movable <input checked="" type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC) .....	<input type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input checked="" type="checkbox"/> other: ____
Class of equipment .....	<input type="checkbox"/> Class I <input type="checkbox"/> Class II <input checked="" type="checkbox"/> Class III
Access location .....	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD) .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maximum operating ambient ..	25°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>
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) .....	Approximately 0.03kg
<b>Possible test case verdicts:</b>	
- test case does not apply to the test object.....	N(N/A)
- test object does meet the requirement .....	P (Pass)
- test object does not meet the requirement .....	F (Fail)

<b>Testing:</b>	
Date of receipt of test item.....	September 16, 2020
Date (s) of performance of tests.....	September 21-30, 2020
<b>General remarks:</b>	
<p>"(See Enclosure #)" refers to additional information appended to the report.          "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	
<b>General product information:</b>	
<p>The apparatus is supplied by 6V 4*AAA battery, the output of battery is considered inherently limited power source so the apparatus belong to class III appliance.</p> <p>The max. Ambient temperature is considered as 25°C, for no declaration from the manufacturer about it.</p> <p>All models are identical except for model name</p> <p>All tests were tested on model No: EX5</p> <p>Model: EX5, JD-22, JD-22S, JD-23, JD-23S, JD-25, JD-25S, JD-26, JD-26S, JD-27, JD-27S, JD-28, JD-28S, JD-29, JD-29S, JD-30, JD-30S, E020, E021, E021S, E022, E022S, E38, E58, E58 PRO, E61, E61H, E61HW, E65H, E65HW, E511, E511S, E520, E520S, E520S PRO, E530, E530S, E68, E69, E610, E540, E540S, EX5 PRO, EX6, EX7, FX1, FX2, FX10, F111, F40, F41, F540, F540S, JY025, JY026, JY028, JY029, S161, S162, S163, S165, S166, S167, S168, S169, S171, S172, S173, S175, S176, S177, S178, S179, S186, S188, S189, S199</p> <p>The remote-controlled aircraft is an accessory of the EUT</p> <p>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.</p>	
Copy of marking plate:	
<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>REMOTE CONTROL AIRCRAFT SERIES</p> <p>Model No.: EX5</p>  <p>Manufacturer: SHENZHEN FEIJIADA TECHNOLOGY CO., LTD              Address: 428, BLDG. 2, JINFANGHUA E-COMMERCE INDUSTRIAL PARK, NO.450 BULONG ROAD, BANTIAN ST., LONGGANG DISTRICT SHENZHEN CHINA (MAINLAND)              Importer: XXX              Address: YYY              Made In China</p> </div>	
Note:	
<p>1. The height of the letters is not less than 2mm, the height of the WEEE logo is not less than 7mm, height of CE mark at least 5mm, the height of other marks at least 5mm.</p> <p>2. XXX means Importer name; YYY means Importer address.</p>	

**ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:**

(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.)

(Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.

**Electrically-caused injury (Clause 5):**

(Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification)

Example: +5 V dc input

ES1

**Source of electrical energy****Corresponding classification (ES)**

6V (4\*AAA battery) input

ES1

**Electrically-caused fire (Clause 6):**

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

Example: Battery pack (maximum 85 watts):

PS2

**Source of power or PIS****Corresponding classification (PS)**

6V (4\*AAA battery) input

PS1

**Injury caused by hazardous substances (Clause 7)**

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

Example: Liquid in filled component

Glycol

**Source of hazardous substances****Corresponding chemical**

Non-rechargeable carbon-zinc batteries used for remote control device

Complied with annex M

**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)**

hand-held equipment <7kg

MS1

Edges and corners of enclosure

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)**

thermoplastic enclosure

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)**

LED for indicating

RS1

**ENERGY SOURCE DIAGRAM**

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

☒ ES    ☒ PS    ☒ MS    ☒ TS    ☒ RS

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	ES1: 6V (4*AAA battery) input	/	/	/
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	PS1: 6V (4*AAA battery) input	/	/	/
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	Non-rechargeable carbon-zinc batteries used for remote control device	Complied with annex M	/	/
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	MS1: Edges and corners	/	/	/
Ordinary	MS1:hand-held equipment<7kg	/	/	/
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS1: thermoplastic enclosure	/	/	/
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	RS1: LED for indicating	/	/	/
Supplementary Information:				
(1) See attached energy source diagram for additional details.				
(2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4</b>	<b>GENERAL REQUIREMENTS</b>		<b>P</b>
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components	Components that 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		P
4.1.15	Markings and instructions .....	(See Annex F)	P
4.4.4	Safeguard robustness		P
4.4.4.2	Steady force tests .....	(See Annex T.4)	P
4.4.4.3	Drop tests.....	(See Annex T.7)	P
4.4.4.4	Impact tests.....		N
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....		N
4.4.4.6	Glass Impact tests .....		N
4.4.4.7	Thermoplastic material tests .....	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard .....		N
4.4.4.9	Accessibility and safeguard effectiveness		P
4.5	Explosion	No explosion occur	N
4.6	Fixing of conductors		N
4.6.1	Fix conductors not to defeat a safeguard		N
4.6.2	10 N force test applied to .....		N
4.7	Equipment for direct insertion into mains socket - outlets		N
4.7.2	Mains plug part complies with the relevant standard .....		N
4.7.3	Torque (Nm) .....		N
4.8	Products containing coin/button cell batteries		N
4.8.2	Instructional safeguard		N
4.8.3	Battery Compartment Construction		N
	Means to reduce the possibility of children removing the battery .....		—
4.8.4	Battery Compartment Mechanical Tests .....		N
4.8.5	Battery Accessibility		N
4.9	Likelihood of fire or shock due to entry of conductive object.....		N

<b>5</b>	<b>ELECTRICALLY-CAUSED INJURY</b>		<b>P</b>
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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.1	Electrical energy source classifications .....	Supplied by a 6V 4*AAA battery	P
5.2.2	ES1, ES2 and ES3 limits	ES1	P
5.2.2.2	Steady-state voltage and current .....	(See appended table 5.2)	P
5.2.2.3	Capacitance limits .....		N
5.2.2.4	Single pulse limits .....		N
5.2.2.5	Limits for repetitive pulses .....		N
5.2.2.6	Ringing signals .....		N
5.2.2.7	Audio signals .....		N
5.3	Protection against electrical energy sources		N
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		N
5.3.2.1	Accessibility to electrical energy sources and safeguards		N
5.3.2.2	Contact requirements		N
	a) Test with test probe from Annex V .....		N
	b) Electric strength test potential (V) .....		N
	c) Air gap (mm) .....		N
5.3.2.4	Terminals for connecting stripped wire		N
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Humidity conditioning .....		N
5.4.1.4	Maximum operating temperature for insulating materials .....	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree .....	Pollution degree 2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N
5.4.1.5.3	Thermal cycling		N
5.4.1.6	Insulation in transformers with varying dimensions		N
5.4.1.7	Insulation in circuits generating starting pulses		N
5.4.1.8	Determination of working voltage		N
5.4.1.9	Insulating surfaces		N
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	not directly connected to the mains	N
5.4.1.10.2	Vicat softening temperature .....		N
5.4.1.10.3	Ball pressure .....		N
5.4.2	Clearances		N
5.4.2.2	Determining clearance using peak working voltage		N
5.4.2.3	Determining clearance using required withstand voltage .....		N



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	a) a.c. mains transient voltage .....		—
	b) d.c. mains transient voltage .....		—
	c) external circuit transient voltage .....		—
	d) transient voltage determined by measurement :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N
5.4.2.5	Multiplication factors for clearances and test voltages .....		N
5.4.3	Creepage distances .....		N
5.4.3.1	General		N
5.4.3.3	Material Group .....		—
5.4.4	Solid insulation		N
5.4.4.2	Minimum distance through insulation .....		N
5.4.4.3	Insulation compound forming solid insulation		N
5.4.4.4	Solid insulation in semiconductor devices		N
5.4.4.5	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
5.4.4.6.4	Standard test procedure for non-separable thin sheet material .....		N
5.4.4.6.5	Mandrel test		N
5.4.4.7	Solid insulation in wound components		N
5.4.4.9	Solid insulation at frequencies >30 kHz.....		N
5.4.5	Antenna terminal insulation		N
5.4.5.1	General		N
5.4.5.2	Voltage surge test		N
	Insulation resistance (MΩ) .....		—
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 (°C) .....		—
	Duration (h) .....		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.9	Electric strength test .....		N
5.4.9.1	Test procedure for a solid insulation type test		N
5.4.9.2	Test procedure for routine tests		N
5.4.10	Protection against transient voltages between external circuit		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
5.4.11	Insulation between external circuits and earthed circuitry .....		N
5.4.11.1	Exceptions to separation between external circuits and earth		N
5.4.11.2	Requirements		N
	Rated operating voltage $U_{op}$ (V) .....		—
	Nominal voltage $U_{peak}$ (V) .....		—
	Max increase due to variation $U_{sp}$ .....		—
	Max increase due to ageing $\Delta U_{sa}$ .....		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ .....		—
5.5	Components as safeguards		
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	SPD's		N
5.5.7.1	Use of an SPD connected to reliable earthing		N
5.5.7.2	Use of an SPD between mains and protective earth		N
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable .....		N
5.6	Protective conductor		N
5.6.2	Requirement for protective conductors		N
5.6.2.1	General requirements		N

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Clause	Requirement + Test	Result - Remark	Verdict
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> ) .....		—
5.6.4	Requirement for protective bonding conductors		N
5.6.4.1	Protective bonding conductors		N
	Protective bonding conductor size (mm <sup>2</sup> ). ....		—
	Protective current rating (A) .....		—
5.6.4.3	Current limiting and overcurrent protective devices		N
5.6.5	Terminals for protective conductors		N
5.6.5.1	Requirement		N
	Conductor size (mm <sup>2</sup> ), nominal thread diameter (mm). ....		N
5.6.5.2	Corrosion		N
5.6.6	Resistance of the protective system		N
5.6.6.1	Requirements		N
5.6.6.2	Test Method Resistance ( $\Omega$ ) .....		N
5.6.7	Reliable earthing		N
5.7	Prospective touch voltage, touch current and protective conductor current		N
5.7.2	Measuring devices and networks	not directly connected to the mains	N
5.7.2.1	Measurement of touch current .....		N
5.7.2.2	Measurement of prospective touch voltage		N
5.7.3	Equipment set-up, supply connections and earth connections		N
	System of interconnected equipment (separate connections/single connection) .....		—
	Multiple connections to mains (one connection at a time/simultaneous connections) .....		—
5.7.4	Earthed conductive accessible parts .....		N
5.7.5	Protective conductor current		N
	Supply Voltage (V) .....		—
	Measured current (mA) .....		—
	Instructional Safeguard .....		N
5.7.6	Prospective touch voltage and touch current due to external circuits		N
5.7.6.1	Touch current from coaxial cables		N
5.7.6.2	Prospective touch voltage and touch current from external circuits		N
5.7.7	Summation of touch currents from external circuits		N
	a) Equipment with earthed external circuits Measured		N

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Clause	Requirement + Test	Result - Remark	Verdict

	current (mA).....:		
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA) .....:		N

<b>6</b>	<b>ELECTRICALLY- CAUSED FIRE</b>		<b>P</b>
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications	Supplied by a 6V 4*AAA battery	P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault.....:	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault .....:		N
6.2.2.4	PS1 .....:	(See appended table 6.2.2)	P
6.2.2.5	PS2 .....:	Only PS1	N
6.2.2.6	PS3 .....:	Only PS1	N
6.2.3	Classification of potential ignition sources		N
6.2.3.1	Arcing PIS .....:		N
6.2.3.2	Resistive PIS .....:		N
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.....:		P
6.3.1 (b)	Combustible materials outside fire enclosure		P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method by control of fire spread applied	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N
6.4.3.1	General		N
6.4.3.2	Supplementary Safeguards	Use of materials with the required flammability classes.	N
	Special conditions if conductors on printed boards are opened or peeled		N
6.4.3.3	Single Fault Conditions ..... :		N
	Special conditions for temperature limited by fuse		N
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits	Compliance detailed as follows: – Printed board: rated min. V-1 – Wire insulation: complying with Clause 6 (See Table 4.1.2 for tubing used). The input lead	N

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Clause	Requirement + Test	Result - Remark	Verdict
		wire and output cord are complied to UL 758 standard, which test method and testing condition equal to IEC/EN 60695-11-21. – <u>All other components</u> : at least V-2 except for parts mounted on min. V-1 material or small parts of combustible material (with mass less than 4g) or components complying to relevant IEC standard.	
6.4.5.2	Supplementary safeguards .....		N
6.4.6	Control of fire spread in PS3 circuit		N
6.4.7	Separation of combustible materials from a PIS	Only PS1, not PIS	N
6.4.7.1	General .....		N
6.4.7.2	Separation by distance		N
6.4.7.3	Separation by a fire barrier		N
6.4.8	Fire enclosures and fire barriers		N
6.4.8.1	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	No such parts used	N
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....		N
	Needle Flame test		N
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....		N
	Flammability tests for the bottom of a fire enclosure .....		N
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) .....		N
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....		N
6.5	Internal and external wiring		N
6.5.1	Requirements		N
6.5.2	Cross-sectional area (mm <sup>2</sup> ) .....		—
6.5.3	Requirements for interconnection to building wiring .....		N
6.6	Safeguards against fire due to connection to additional equipment		N

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Clause	Requirement + Test	Result - Remark	Verdict

	External port limited to PS2 or complies with Clause Q.1		N
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<b>7</b>	<b>INJURY CAUSED BY HAZARDOUS SUBSTANCES</b>		<b>N</b>
7.2	Reduction of exposure to hazardous substances	No such parts used	N
7.3	Ozone exposure		N
7.4	Use of personal safeguards (PPE)		N
	Personal safeguards and instructions.....:		—
7.5	Use of instructional safeguards and instructions		N
	Instructional safeguard (ISO 7010).....:		—
7.6	Batteries.....:	AAA battery	N

<b>8</b>	<b>MECHANICALLY-CAUSED INJURY</b>		<b>P</b>
8.1	General		P
8.2	Mechanical energy source classifications	MS1	P
8.3	Safeguards against mechanical energy sources		N
8.4	Safeguards against parts with sharp edges and corners	Edges or corners are rounded.	P
8.4.1	Safeguards		N
8.5	Safeguards against moving parts		N
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N
8.5.2	Instructional Safeguard .....		—
8.5.4	Special categories of equipment comprising moving parts		N
8.5.4.1	Large data storage equipment		N
8.5.4.2	Equipment having electromechanical device for destruction of media		N
8.5.4.2.1	Safeguards and Safety Interlocks.....:		N
8.5.4.2.2	Instructional safeguards against moving parts		N
	Instructional Safeguard .....		—
8.5.4.2.3	Disconnection from the supply		N
8.5.4.2.4	Probe type and force (N).....:		N
8.5.5	High Pressure Lamps		N
8.5.5.1	Energy Source Classification		N
8.5.5.2	High Pressure Lamp Explosion Test .....		N
8.6	Stability	<7kg	N
8.6.1	Product classification		N
	Instructional Safeguard .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
8.6.2	Static stability		N
8.6.2.2	Static stability test		N
	Applied Force.....:		—
8.6.2.3	Downward Force Test		N
8.6.3	Relocation stability test		N
	Unit configuration during 10° tilt .....		—
8.6.4	Glass slide test		N
8.6.5	Horizontal force test (Applied Force) .....		N
	Position of feet or movable parts .....		—
8.7	Equipment mounted to wall or ceiling		N
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....		N
8.7.2	Direction and applied force .....		N
8.8	Handles strength		N
8.8.1	Classification		N
8.8.2	Applied Force .....		N
8.9	Wheels or casters attachment requirements		N
8.9.1	Classification		N
8.9.2	Applied force .....		—
8.10	Carts, stands and similar carriers		N
8.10.1	General		N
8.10.2	Marking and instructions		N
	Instructional Safeguard .....		—
8.10.3	Cart, stand or carrier loading test and compliance		N
	Applied force .....		—
8.10.4	Cart, stand or carrier impact test		N
8.10.5	Mechanical stability		N
	Applied horizontal force (N).....:		—
8.10.6	Thermoplastic temperature stability (°C) .....		N
8.11	Mounting means for rack mounted equipment		N
8.11.1	General		N
8.11.2	Product Classification		N
8.11.3	Mechanical strength test, variable N .....		N
8.11.4	Mechanical strength test 250N, including end stops		N
8.12	Telescoping or rod antennas .....		N
	Button/Ball diameter (mm) .....		—

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Clause	Requirement + Test	Result - Remark	Verdict

9	<b>THERMAL BURN INJURY</b>		<b>P</b>
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

10	<b>RADIATION</b>		<b>P</b>
10.2	Radiation energy source classification		P
10.2.1	General classification		P
10.3	Protection against laser radiation		N
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault .....		N
	Instructional safeguard .....		—
	Tool .....		—
10.4	Protection against visible, infrared, and UV radiation	Only indicator light used, complied with RS1.	P
10.4.1	General	LED only used as indicator light	P
10.4.1.a)	RS3 for Ordinary and instructed persons .....		N
10.4.1.b)	RS3 accessible to a skilled person .....		N
	Personal safeguard (PPE) instructional safeguard:		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 :		P
10.4.1.d)	Normal, abnormal, single-fault conditions .....		N
10.4.1.e)	Enclosure material employed as safeguard is opaque .....		N
10.4.1.f)	UV attenuation .....		N
10.4.1.g)	Materials resistant to degradation UV .....		N
10.4.1.h)	Enclosure containment of optical radiation .....		N
10.4.1.i)	Exempt Group under normal operating conditions:		P
10.4.2	Instructional safeguard .....		N
10.5	Protection against x-radiation		N
10.5.1	X- radiation energy source that exists equipment:		N
	Normal, abnormal, single fault conditions		N
	Equipment safeguards .....		N
	Instructional safeguard for skilled person .....		N
10.5.3	Most unfavourable supply voltage to give maximum radiation .....		—
	Abnormal and single-fault condition .....		N



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Clause	Requirement + Test	Result - Remark	Verdict
	Maximum radiation (pA/kg) .....		N
10.6	Protection against acoustic energy sources		N
10.6.1	General		N
10.6.2	Classification		N
	Acoustic output, dB(A) .....		N
	Output voltage, unweighted r.m.s. ....		N
10.6.4	Protection of persons		N
	Instructional safeguards .....		N
	Equipment safeguard prevent ordinary person to RS2 .....		—
	Means to actively inform user of increase sound pressure .....		—
	Equipment safeguard prevent ordinary person to RS2 .....		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N
10.6.5.1	Corded passive listening devices with analog input		N
	Input voltage with 94 dB(A) $L_{Aeq}$ acoustic pressure output .....		—
10.6.5.2	Corded listening devices with digital input		N
	Maximum dB(A) .....		—
10.6.5.3	Cordless listening device		N
	Maximum dB(A) .....		—

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements.....	(	P
	Audio Amplifiers and equipment with audio amplifiers .....		N
B.2.3	Supply voltage and tolerances		N
B.2.5	Input test .....		N
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		N
B.3.3	D.C. mains polarity test		N
B.3.4	Setting of voltage selector .....		N
B.3.5	Maximum load at output terminals .....		N
B.3.6	Reverse battery polarity		P

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Clause	Requirement + Test	Result - Remark	Verdict

B.3.7	Abnormal operating conditions as specified in Clause E.2.		N
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 .....	No such device used.	N
B.4.3	Motor tests		N
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature .....		N
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
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		N
B.4.6	Short circuit or disconnect of passive components		P
B.4.7	Continuous operation of components		N
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.....:		N

<b>C</b>	<b>UV RADIATION</b>		<b>N</b>
C.1	Protection of materials in equipment from UV radiation	No such parts used	N
C.1.2	Requirements		N
C.1.3	Test method		N
C.2	UV light conditioning test		N
C.2.1	Test apparatus		N
C.2.2	Mounting of test samples		N
C.2.3	Carbon-arc light-exposure apparatus		N
C.2.4	Xenon-arc light exposure apparatus		N

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

<b>E</b>	<b>TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS</b>		<b>N</b>
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Clause	Requirement + Test	Result - Remark	Verdict

E.1	Audio amplifier normal operating conditions		N
	Audio signal voltage (V) .....		—
	Rated load impedance ( $\Omega$ ) .....		—
E.2	Audio amplifier abnormal operating conditions		N

<b>F</b>	<b>EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS</b>		<b>P</b>
F.1	General requirements		P
	Instructions – Language .....	Given in English language or local language	—
F.2	Letter symbols and graphical symbols	See marking plate	P
F.2.1	Letter symbols according to IEC60027-1	Letter symbols for quantities and units are complied with IEC 60027-1.	P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Graphical symbols are complied with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010.	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	The required marking is located on the enclosure of the equipment and is easily visible.	P
F.3.2	Equipment identification markings	See copy of marking plate.	P
F.3.2.1	Manufacturer identification .....	See copy of marking plate.	—
F.3.2.2	Model identification .....		—
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		N
F.3.3.2	Equipment without direct connection to mains		P
F.3.3.3	Nature of supply voltage.....		—
F.3.3.4	Rated voltage.....		—
F.3.3.4	Rated frequency .....		—
F.3.3.6	Rated current or rated power .....		—
F.3.3.7	Equipment with multiple supply connections		N
F.3.4	Voltage setting device		N
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings .....		N
F.3.5.2	Switch position identification marking .....		N
F.3.5.3	Replacement fuse identification and rating markings .....		N
F.3.5.4	Replacement battery identification marking .....		P
F.3.5.5	Terminal marking location		P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.6	Equipment markings related to equipment classification		N
F.3.6.1	Class I Equipment	Class III appliance	N
F.3.6.1.1	Protective earthing conductor terminal		N
F.3.6.1.2	Neutral conductor terminal		N
F.3.6.1.3	Protective bonding conductor terminals		N
F.3.6.2	Class II equipment (IEC60417-5172)		N
F.3.6.2.1	Class II equipment with or without functional earth		N
F.3.6.2.2	Class II equipment with functional earth terminal marking		N
F.3.7	Equipment IP rating marking .....	IPX0	—
F.3.8	External power supply output marking	See copy of marking plate.	P
F.3.9	Durability, legibility and permanence of marking	Marking is considered to be legible and easily discernible. See also the following details.	P
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 sec. And then again for 15 sec, with the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was no curling and lifting of the label edge. After each test, the marking remained legible.	P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		N
	b) Instructions given for installation or initial use		P
	c) Equipment intended to be fastened in place		N
	d) Equipment intended for use only in restricted access area		N
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1	No such part used	N
	f) Protective earthing employed as safeguard		N
	g) Protective earthing conductor current exceeding ES 2 limits		N
	h) Symbols used on equipment		P
	i) Permanently connected equipment not provided with all-pole mains switch		N
	j) Replaceable components or modules providing safeguard function		N

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Clause	Requirement + Test	Result - Remark	Verdict

F.5	Instructional safeguards		N
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		N

<b>G</b>	<b>COMPONENTS</b>		<b>P</b>
<b>G.1</b>	<b>Switches</b>		<b>N</b>
G.1.1	General requirements	No switch used	N
G.1.2	Ratings, endurance, spacing, maximum load		N
<b>G.2</b>	<b>Relays</b>		<b>N</b>
G.2.1	General requirements	No relay used	N
G.2.2	Overload test		N
G.2.3	Relay controlling connectors supply power		N
G.2.4	Mains relay, modified as stated in G.2		N
<b>G.3</b>	<b>Protection Devices</b>		<b>N</b>
G.3.1	Thermal cut-offs		N
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N
G.3.1.2	Thermal cut-off connections maintained and secure		N
G.3.2	Thermal links		N
G.3.2.1a)	Thermal links separately tested with IEC 60691		N
G.3.2.1b)	Thermal links tested as part of the equipment		N
	Aging hours (H).....:		—
	Single Fault Condition .....		—
	Test Voltage (V) and Insulation Resistance ( $\Omega$ ) ...:		—
G.3.3	PTC Thermistors		N
G.3.4	Overcurrent protection devices		N
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N
G.3.5.1	Non-resettable devices suitably rated and marking provided		N
G.3.5.2	Single faults conditions.....:		N
<b>G.4</b>	<b>Connectors</b>		<b>N</b>
G.4.1	Spacings		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>		<b>N</b>

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.1	Wire insulation in wound components .....		N
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N
G.5.1.2 b)	Construction subject to routine testing		N
G.5.2	Endurance test on wound components		N
G.5.2.1	General test requirements		N
G.5.2.2	Heat run test		N
	Time (s).....:		—
	Temperature (°C).....:		—
G.5.2.3	Wound Components supplied by mains		N
<b>G.5.3</b>	<b>Transformers</b>		<b>N</b>
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1) .....		N
	Position .....		—
	Method of protection .....		—
G.5.3.2	Insulation		N
	Protection from displacement of windings .....		—
G.5.3.3	Overload test .....		N
G.5.3.3.1	Test conditions		N
G.5.3.3.2	Winding Temperatures testing in the unit		N
G.5.3.3.3	Winding Temperatures - Alternative test method		N
<b>G.5.4</b>	<b>Motors</b>		<b>N</b>
G.5.4.1	General requirements		N
	Position .....		—
G.5.4.2	Test conditions		N
G.5.4.3	Running overload test		N
G.5.4.4	Locked-rotor overload test		N
	Test duration (days) .....		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N
G.5.4.5.2	Tested in the unit		N
	Electric strength test (V) .....		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....		N
	Electric strength test (V) .....		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N
G.5.4.6.2	Tested in the unit		N

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Clause	Requirement + Test	Result - Remark	Verdict
	Maximum Temperature .....		N
	Electric strength test (V) .....		N
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) .....		N
	Electric strength test (V) .....		N
G.5.4.7	Motors with capacitors		N
G.5.4.8	Three-phase motors		N
G.5.4.9	Series motors		N
	Operating voltage .....		—
<b>G.6</b>	<b>Wire Insulation</b>		<b>N</b>
G.6.1	General		N
G.6.2	Solvent-based enamel wiring insulation		N
<b>G.7</b>	<b>Mains supply cords</b>		<b>N</b>
G.7.1	General requirements		N
	Type .....		—
	Rated current (A) .....		—
	Cross-sectional area (mm <sup>2</sup> ), (AWG) .....		—
G.7.2	Compliance and test method		N
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N
G.7.3.2	Cord strain relief		N
G.7.3.2.1	Requirements		N
	Strain relief test force (N) .....		—
G.7.3.2.2	Strain relief mechanism failure		N
G.7.3.2.3	Cord sheath or jacket position, distance (mm) .....		—
G.7.3.2.4	Strain relief comprised of polymeric material		N
G.7.4	Cord Entry .....		N
G.7.5	Non-detachable cord bend protection		N
G.7.5.1	Requirements		N
G.7.5.2	Mass (g) .....		—
	Diameter (mm) .....		—
	Temperature (°C) .....		—
G.7.6	Supply wiring space		N
G.7.6.2	Stranded wire		N
G.7.6.2.1	Test with 8 mm strand		N
<b>G.8</b>	<b>Varistors</b>		<b>N</b>
G.8.1	General requirements		N

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Clause	Requirement + Test	Result - Remark	Verdict
G.8.2	Safeguard against shock		N
G.8.3	Safeguard against fire		N
G.8.3.2	Varistor overload test.....:		N
G.8.3.3	Temporary overvoltage .....		N
<b>G.9</b>	<b>Integrated Circuit (IC) Current Limiters</b>		<b>N</b>
G.9.1 a)	Manufacturer defines limit at max. 5A.		N
G.9.1 b)	Limiters do not have manual operator or reset		N
G.9.1 c)	Supply source does not exceed 250 VA .....		—
G.9.1 d)	IC limiter output current (max. 5A) .....		—
G.9.1 e)	Manufacturers' defined drift .....		—
G.9.2	Test Program 1		N
G.9.3	Test Program 2		N
G.9.4	Test Program 3		N
<b>G.10</b>	<b>Resistors</b>		<b>N</b>
G.10.1	General requirements		N
G.10.2	Resistor test		N
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N
G.10.3.1	General requirements		N
G.10.3.2	Voltage surge test		N
G.10.3.3	Impulse test		N
<b>G.11</b>	<b>Capacitor and RC units</b>		<b>N</b>
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>		<b>N</b>
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results) .....		N
	Type test voltage V <sub>ini</sub> .....		—
	Routine test voltage, V <sub>ini,b</sub> .....		—
<b>G.13</b>	<b>Printed boards</b>		<b>P</b>
G.13.1	General requirements	Approved PCB used	P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N
G.13.4	Insulation between conductors on the same inner surface		N



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

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Clause	Requirement + Test	Result - Remark	Verdict

H.2	Method A		N
H.3	Method B		N
H.3.1	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 complied with		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>		<b>N</b>
	General requirements		N

<b>K</b>	<b>SAFETY INTERLOCKS</b>		<b>N</b>
K.1	General requirements		N
K.2	Components of safety interlock safeguard mechanism .....		N
K.3	Inadvertent change of operating mode		N
K.4	Interlock safeguard override		N
K.5	Fail-safe		N
	Compliance .....		N
K.6	Mechanically operated safety interlocks		N
K.6.1	Endurance requirement		N
K.6.2	Compliance and Test method .....		N
K.7	Interlock circuit isolation		N
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) .....		N
K.7.2	Overload test, Current (A) .....		N
K.7.3	Endurance test		N
K.7.4	Electric strength test .....		N

<b>L</b>	<b>DISCONNECT DEVICES</b>		<b>N</b>
L.1	General requirements	not directly connected to the mains	N
L.2	Permanently connected equipment		N
L.3	Parts that remain energized		N

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Clause	Requirement + Test	Result - Remark	Verdict
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

M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N
M.1	General requirements		N
M.2	Safety of batteries and their cells		N
M.2.1	Requirements		N
M.2.2	Compliance and test method (identify method)....:		N
M.3	Protection circuits		N
M.3.1	Requirements		N
M.3.2	Tests		N
	- Overcharging of a rechargeable battery		N
	- Unintentional charging of a non-rechargeable battery		N
	- Reverse charging of a rechargeable battery		N
	- Excessive discharging rate for any battery		N
M.3.3	Compliance .....		N
M.4	Additional safeguards for equipment containing secondary lithium battery		N
M.4.1	General		N
M.4.2	Charging safeguards		N
M.4.2.1	Charging operating limits		N
M.4.2.2a)	Charging voltage, current and temperature.....:		—
M.4.2.2 b)	Single faults in charging circuitry .....		—
M.4.3	Fire Enclosure		N
M.4.4	Endurance of equipment containing a secondary lithium battery		N
M.4.4.2	Preparation		N
M.4.4.3	Drop and charge/discharge function tests		N
	Drop		N
	Charge		N
	Discharge		N
M.4.4.4	Charge-discharge cycle test		N
M.4.4.5	Result of charge-discharge cycle test		N
M.5	Risk of burn due to short circuit during carrying		N

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Clause	Requirement + Test	Result - Remark	Verdict
M.5.1	Requirement		N
M.5.2	Compliance and Test Method (Test of P.2.3)		N
M.6	Prevention of short circuits and protection from other effects of electric current		N
M.6.1	Short circuits		N
M.6.1.1	General requirements		N
M.6.1.2	Test method to simulate an internal fault		N
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) .....		N
M.6.2	Leakage current (mA) .....		N
M.7	Risk of explosion from lead acid and NiCd batteries		N
M.7.1	Ventilation preventing explosive gas concentration		N
M.7.2	Compliance and test method		N
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N
M.8.1	General requirements		N
M.8.2	Test method		N
M.8.2.1	General requirements		N
M.8.2.2	Estimation of hypothetical volume Vz (m3/s) .....		—
M.8.2.3	Correction factors .....		—
M.8.2.4	Calculation of distance d (mm) .....		—
M.9	Preventing electrolyte spillage		N
M.9.1	Protection from electrolyte spillage		N
M.9.2	Tray for preventing electrolyte spillage		N
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) .....		N

<b>N</b>	<b>ELECTROCHEMICAL POTENTIALS</b>		<b>N</b>
	Metal(s) used .....		—

<b>O</b>	<b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>		<b>N</b>
	Figures O.1 to O.20 of this Annex applied.....		—

<b>P</b>	<b>SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS</b>		<b>N</b>
P.1	General requirements		N
P.2.2	Safeguards against entry of foreign object		N
	Location and Dimensions (mm) .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
P.2.3	Safeguard against the consequences of entry of foreign object		N
P.2.3.1	Safeguards against the entry of a foreign object		N
	Openings in transportable equipment		N
	Transportable equipment with metalized plastic parts .....		N
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) .....		N
P.3	Safeguards against spillage of internal liquids		N
P.3.1	General requirements		N
P.3.2	Determination of spillage consequences		N
P.3.3	Spillage safeguards		N
P.3.4	Safeguards effectiveness		N
P.4	Metallized coatings and adhesive securing parts		N
P.4.2 a)	Conditioning testing		N
	Tc (°C).....		—
	Tr (°C) .....		—
	Ta (°C) .....		—
P.4.2 b)	Abrasion testing .....		N
P.4.2 c)	Mechanical strength testing .....	(See Annex T)	N

Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		N
Q.1	Limited power sources		N
Q.1.1 a)	Inherently limited output		N
Q.1.1 b)	Impedance limited output		N
	- Regulating network limited output under normal operating and simulated single fault condition		N
Q.1.1 c)	Overcurrent protective device limited output		N
Q.1.1 d)	IC current limiter complying with G.9		N
Q.1.2	Compliance and test method		N
Q.2	Test for external circuits – paired conductor cable		N
	Maximum output current (A) .....		—
	Current limiting method .....		—

R	LIMITED SHORT CIRCUIT TEST		N
R.1	General requirements		N
R.2	Determination of the overcurrent protective device and circuit		N

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Clause	Requirement + Test	Result - Remark	Verdict

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

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Clause	Requirement + Test	Result - Remark	Verdict

T	MECHANICAL STRENGTH TESTS		P
T.1	General requirements		P
T.2	Steady force test, 10 N .....		N
T.3	Steady force test, 30 N .....		N
T.4	Steady force test, 100 N .....	100 N applied to external enclosure. No energy or other hazards.	P
T.5	Steady force test, 250 N .....		N
T.6	Enclosure impact test		N
	Fall test		N
	Swing test		N
T.7	Drop test .....	1m, 3times, no damaged, no hazards.	P
T.8	Stress relief test .....	70°C, 7h, no damaged, no hazards	P
T.9	Impact Test (glass)		N
T.9.1	General requirements		N
T.9.2	Impact test and compliance		N
	Impact energy (J) .....		—
	Height (m) .....		—
T.10	Glass fragmentation test .....		N
T.11	Test for telescoping or rod antennas		N
	Torque value (Nm) .....		—

U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N
U.1	General requirements		N
U.2	Compliance and test method for non-intrinsically protected CRTs		N
U.3	Protective Screen .....		N

V	DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)		N
V.1	Accessible parts of equipment		N
V.2	Accessible part criterion		N

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Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment Part 1: Safety requirements)																																										
	CENELEC COMMON MODIFICATIONS (EN)																																									
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed “Z”.					P																																				
CONTENTS	<b>Add</b> the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords					P																																				
	<b>Delete</b> all the “country” notes in the reference document (IEC 62368-1:2014) according to the following list: <table><tr><td>0.2.1</td><td>Note</td><td>1</td><td>Note 3</td><td>4.1.15</td><td>Note</td></tr><tr><td>4.7.3</td><td>Note 1 and 2</td><td>5.2.2.2</td><td>Note</td><td>5.4.2.3.2.2 Table 13</td><td>Note c</td></tr><tr><td>5.4.2.3.2.4</td><td>Note 1 and 3</td><td>5.4.2.5</td><td>Note 2</td><td>5.4.5.1</td><td>Note</td></tr><tr><td>5.5.2.1</td><td>Note</td><td>5.5.6</td><td>Note</td><td>5.6.4.2.1</td><td>Note 2 and 3</td></tr><tr><td>5.7.5</td><td>Note</td><td>5.7.6.1</td><td>Note 1 and 2</td><td>10.2.1 Table 39</td><td>Note 2, 3 and 4</td></tr><tr><td>10.5.3</td><td>Note 2</td><td>10.6.2.1</td><td>Note 3</td><td>F.3.3.6</td><td>Note 3</td></tr></table>					0.2.1	Note	1	Note 3	4.1.15	Note	4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c	5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3	5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4	10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3	N
0.2.1	Note	1	Note 3	4.1.15	Note																																					
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10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3																																					
	For special national conditions, see Annex ZB.					P																																				
1	<b>Add</b> the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.					P																																				
4.Z1	<b>Add</b> the following new subclause after 4.9: To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. <b>mains</b> , protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-			See below.		N																																				



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Clause	Requirement + Test	Result - Remark	Verdict
	<p>circuit and earth fault protection may be provided by protective devices in the building installation;</p> <p>c) it is permitted for <b>pluggable equipment type B</b> or <b>permanently connected equipment</b>, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for <b>pluggable equipment type A</b> the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>		
5.4.2.3.2.4	<b>Add</b> the following to the end of this subclause: The requirement for interconnection with <b>external circuit</b> is in addition given in EN 50491-3:2009.	No external circuits.	N
10.2.1	<b>Add</b> the following to <sup>c)</sup> and <sup>d)</sup> in table 39: For additional requirements, see 10.5.1.	No such radiation from the equipment.	N
10.6.1	<b>Add</b> the following paragraph to the end of the subclause: EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.	No such x-radiation generated from the equipment.	N
10.Z1	<b>Add</b> the following new subclause after 10.6.5. <b>10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</b> The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566		N
G.7.1	<b>Add</b> the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.		N
Bibliography	<b>Add</b> the following standards: <b>Add</b> the following notes for the standards indicated: IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4.		N

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Clause	Requirement + Test	Result - Remark	Verdict
	IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.		
<b>ZB</b>	<b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)</b>		N
4.1.15	<b>Denmark, Finland, Norway and Sweden</b> To the end of the subclause the following is added: <b>Class I pluggable equipment type A</b> intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and <b>accessible</b> parts, have a marking stating that the equipment shall be connected to an earthed <b>mains</b> socket-outlet. The marking text in the applicable countries shall be as follows: In <b>Denmark</b> : "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord." In <b>Finland</b> : "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In <b>Norway</b> : "Apparatet må tilkoples jordet stikkontakt" In <b>Sweden</b> : "Apparaten skall anslutas till jordat uttag"		N
4.7.3	<b>United Kingdom</b> To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex		N
5.2.2.2	<b>Denmark</b> After the 2nd paragraph add the following: A warning (marking <b>safeguard</b> ) for high <b>touch current</b> is required if the <b>touch current</b> exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No high touch current.	N
5.4.11.1 and Annex G	<b>Finland and Sweden</b> To the end of the subclause the following is added: For separation of the telecommunication network	No TNV circuits.	N

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>from earth the following is applicable:            If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> <li>• two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>• one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> <li>• passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and</li> <li>• is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5kV.</li> </ul> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>• the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11;</li> <li>• the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.</li> </ul>		
5.5.2.1	<p><b>Norway</b>            After the 3rd paragraph the following is added:            Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).</p>		N
5.5.6	<p><b>Finland, Norway and Sweden</b>            To the end of the subclause the following is added:            Resistors used as <b>basic safeguard</b> or bridging</p>	No such resistors.	N

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Clause	Requirement + Test	Result - Remark	Verdict
	<b>basic insulation in class I pluggable equipment type A</b> shall comply with G.10.1 and the test of G.10.2.		
5.6.1	<b>Denmark</b> <b>Add</b> to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.		N
5.6.4.2.1	<b>Ireland and United Kingdom</b> After the indent for <b>pluggable equipment type A</b> , the following is added: – the <b>protective current rating</b> is taken to be 13 A, this being the largest rating of fuse used in the <b>mains</b> plug.		N
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm <sup>2</sup> to 1,5 mm <sup>2</sup> in cross-sectional area.		N
5.7.5	<b>Denmark</b> To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the <b>protective conductor current</b> exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No high protective conductor current.	N
5.7.6.1	<b>Norway and Sweden</b> To the end of the subclause the following is added: The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Apparatus connected to the protective earthing	Not such system.	N

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)”</p> <p>NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):  “Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.”</p> <p>Translation to Swedish:  ”Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.</p>		
5.7.6.2	<p><b>Denmark</b></p> <p>To the end of the subclause the following is added:</p> <p>The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .</p>	No external circuits.	N
B.3.1 and B.4	<p><b>Ireland and United Kingdom</b></p> <p>The following is applicable:</p> <p>To protect against excessive currents and short-circuits in the primary circuit of <b>direct plug-in equipment</b>, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of</p>		N

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Clause	Requirement + Test	Result - Remark	Verdict
	the <b>direct plug-in equipment</b> , until the requirements of Annexes B.3.1 and B.4 are met		
G.4.2	<p><b>Denmark</b></p> <p>To the end of the subclause the following is added:</p> <p>Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a.</p> <p>Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.</p> <p>Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a</p> <p><i>Justification:</i></p> <p>Heavy Current Regulations, Section 6c</p>		N
G.4.2	<p><b>United Kingdom</b></p> <p>To the end of the subclause the following is added:</p> <p>The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.</p>		N
G.7.1	<p><b>United Kingdom</b></p> <p>To the first paragraph the following is added:</p> <p>Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains</p>		N

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations.</p> <p>NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		
G.7.1	<p><b>Ireland</b></p> <p>To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard</p>		N
G.7.2	<p><b>Ireland and United Kingdom</b></p> <p>To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm<sup>2</sup> is allowed for equipment which is rated over 10 A and up to and including 13 A.</p>		N
ZC	<b>ANNEX ZC, NATIONAL DEVIATIONS (EN)</b>		N
10.5.2	<p><b>Germany</b></p> <p>The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking.</p> <p><i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM.</p> <p><b>NOTE</b> Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int +49-531-592-6320, Internet: <a href="http://www.ptb.de">http://www.ptb.de</a></p>	No CRT within the equipment.	N

<b>4.1.2</b>	<b>TABLE: List of critical components</b>					<b>P</b>
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1</sup>	
Plastic enclosure	Various	Various	HB, 80°C, or better	UL 94	UL	
PCB	Various	Various	V-0, 130°C	UL 796	UL	
AAA battery	Various	--	1.5Vdc	--	--	
Aircraft	SHENZHEN FEIJIADA TECHNOLOGY CO., LTD	JD-22	--	CE	CE	
Supplementary information:						

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



<b>4.8.4, 4.8.5</b>	<b>TABLE: Lithium coin/button cell batteries mechanical tests</b>	<b>N</b>
<b>(The following mechanical tests are conducted in the sequence noted.)</b>		

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

5.2	TABLE: Classification of electrical energy sources						P
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
1	6Vdc	Input	Normal	--	--	--	ES1
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	
5.2.2.3 - Capacitance Limits							N
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class	
				Capacitance, nF	Upk (V)		
--	--	--	Normal	--	--	--	
			Abnormal	--	--		
			Single fault – SC/OC	--	--		
5.2.2.4 - Single Pulses							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	
5.2.2.5 - Repetitive Pulses							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Off time (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

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

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

<b>5.4.1.10.3</b>	<b>TABLE: Ball pressure test of thermoplastics</b>			<b>N</b>
Allowed impression diameter (mm) :		≤ 2 mm		—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)	
--	--	--	--	
<b>Supplementary information:</b>				

<b>5.4.2.2, 5.4.2.4 and 5.4.3</b>	<b>TABLE: Minimum Clearances/Creepage distance</b>						N
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	Ur.m.s (V)	Frequency (kHz) <sup>1</sup>	Required cl (mm)	cl (mm) <sup>2</sup>	Required <sup>3</sup> cr (mm)	cr (mm)
--	--	--	--	--	--	--	--
Supplementary information: Note 1: Only for frequency above 30 kHz Note 2: See table 5.4.2.4 if this is based on electric strength test Note 3: Provide Material Group							

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage				N
	Overvoltage Category (OV):				
	Pollution Degree:				
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Measured cl (mm)	
--		--	--	--	
Supplementary information:					

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

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements					N
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)	
--	--	--	--	--	--	
--	--	--	--	--	--	
--	--	--	--	--	--	
Supplementary information:						

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

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

5.5.2.2	TABLE: Stored discharge on capacitors					N
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification	
--	--	--	--	--	--	
--	--	--	--	--	--	
--	--	--	--	--	--	
Supplementary information:						
X-capacitors installed for testing are:						
<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						

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

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part		N
Supply voltage .....:			—
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)	
	1		
	2		
	3		
	4		
	5		
	6		
	8		

## Supplementary Information:

## Notes:

[1] Supply voltage is the anticipated maximum Touch Voltage

[2] Earthed neutral conductor [Voltage differences less than 1% or more]

[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3

[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.

[5] (\*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.

6.2.2	Table: Electrical power sources (PS) measurements for classification					P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s <sup>*)</sup>	PS Classification	
Input:6Vdc	--	Power (W) :	--	--	PS1	
		VA (V) :	--	--		
		IA (A) :	--	----		

## Supplementary Information:

(\*) Measurement taken only when limits at 3 seconds exceed PS1 limits

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)				N
Location		Open circuit voltage After 3 s (V <sub>p</sub> )	Measured r.m.s current (I <sub>rms</sub> )	Calculated value (V <sub>p</sub> x I <sub>rms</sub> )	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 (V<sub>p</sub>) and normal operating condition rms current (I<sub>rms</sub>) is greater than 15.

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

## 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.

<b>8.5.5</b>	<b>TABLE: High Pressure Lamp</b>		<b>N</b>
Description		Values	Energy Source Classification
Lamp type .....			—
Manufacturer .....			—
Cat no. ....			—
Pressure (cold) (MPa).....			—
Pressure (operating) (MPa) .....			—
Operating time (minutes) .....			—
Explosion method .....			—
Max particle length escaping enclosure (mm) ..			—
Max particle length beyond 1 m (mm).....			—
Overall result .....			
Supplementary information:			

B.2.5	TABLE: Input test							N
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
--	--	--	--	--	--	--	--	
Supplementary information: Equipment may be have rated current or rated power or both. Both should be measured								

<b>B.3</b>	<b>TABLE: Abnormal operating condition tests</b>							<b>P</b>
Ambient temperature (°C) .....					25°C or less			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Button battery	Reverse polarity	6Vdc	10min	--	--	--	--	Unit shutdown, no damaged, no hazards
<p>Supplementary information:</p> <p>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.</p>								

<b>B.4</b>	<b>TABLE: Fault condition tests</b>							<b>P</b>
Ambient temperature (°C) .....					25°C or less			—
Power source for EUT: Manufacturer, model/type, output rating ..								—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
C1	s-c	6Vdc	10min	--	--	--	--	As normal work
Supplementary information:								

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

Annex Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)					N
Note: Measured UOC (V) with all load circuits disconnected:						
Output Circuit	Components	U <sub>oc</sub> (V)	I <sub>sc</sub> (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
--	--	--	--	--	--	--
--	--	--	--	--	--	--
Supplementary Information: SC=Short circuit, OC=Open circuit						

<b>T.2, T.3, T.4, T.5</b>	<b>TABLE: Steady force test</b>					<b>P</b>
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation	
Enclosure	Plastic	--	100N	5s	No damaged, no hazards	
Supplementary information:						

<b>T.6, T.9</b>	<b>TABLE: Impact tests</b>					<b>N</b>
-----------------	----------------------------	--	--	--	--	----------

Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation
--	--	--	--	--
Supplementary information:				

T.7	TABLE: Drop tests				P
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Enclosure	Plastic	--	1000	No damaged, no hazards	
Supplementary information:					

T.8	TABLE: Stress relief test					P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Enclosure	Plastic	--	70	7	No damaged, no hazards	
Supplementary information:						



**Appendix 1****Equipment List**

No.	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
Aa-SE001	Data Acquisition / Switch Unit	Agilent	34970A	MY44052414	2020.8.14	2021.8.13
Aa-SE002	Thermocouple wire	OMEGA	TT-K-30-1000	kxff	2020.8.17	2021.8.16
Aa-SE004	Oven Chamber	Rongfeng	101A-3	31446	2020.8.11	2021.8.10
Aa-SE005	DC Electronic Load	Array	3711A	A06BI03017	2020.8.11	2021.8.10
Aa-SE006	DC Electronic Load	Array	3711A	A06BI02095	2020.8.11	2021.8.10
Aa-SE007	DC Electronic Load	Array	3711A	A06BI03015	2020.8.11	2021.8.10
Aa-SE008	DC Electronic Load	Array	3711A	A06BH02122	2020.8.11	2021.8.10
Aa-SE010	Digital Power Meter	Qingzhi	8716C	870806042	2020.8.11	2021.8.10
Aa-SE011	Digital Power Meter	Qingzhi	8716C	870806037	2020.8.11	2021.8.10
Aa-SE013	Multi Meter	Fluke	115C	96721596	2020.8.11	2021.8.10
Aa-SE014	Desktop Multi Meter	Fluke	45	7662018	2020.8.11	2021.8.10
Aa-SE015	Desktop Multi Meter	Fluke	45	8095018	2020.8.11	2021.8.10
Aa-SE016	Desktop Multi Meter	Fluke	45	6792039	2020.8.11	2021.8.10
Aa-SE017	Grounding Bond Meter	Yang Zhi	YD2654B	548-053	2020.8.11	2021.8.10
Aa-SE018	Leakage Current Meter	EXTECH	7611	1330848	2020.8.12	2021.8.11
Aa-SE019	Insulation Resistance Tester	Yang Zhi	YD9820A	20A-1734	2020.8.11	2021.8.10
Aa-SE022	Push-Pull Scale	Algol	NK-300	67420	2020.8.11	2021.8.10
Aa-SE023	Digital Caliper	Yitu	YT211	P840156	2020.8.14	2021.8.13
Aa-SE025	Goniometer	Wenzhou	JZC-B2	15032	2020.8.14	2021.8.13
Aa-SE026	Tumbling Barrel	Zhilitong	GT-1	G010308	2020.8.11	2021.8.10
Aa-SE027	Audio Generator	LWDQGS	TAG-101	308909	2020.8.11	2021.8.10
Aa-SE028	Noise Generator	DF	DF1681	071001107	2020.8.14	2021.8.13
Aa-SE029	Plug Torque Tester	Zhilitong	LJ-1	LJ010908	2020.8.11	2021.8.10
Aa-SE030	Test Probe 13	Zhilitong	TP13	D3L15	2020.8.14	2021.8.13
Aa-SE031	Test Probe 41	Zhilitong	TP41	D30L80	2019.11.26	2020.11.25
Aa-SE035	Test Probe	Zhilitong	D4L100	60065-913	2020.8.14	2021.8.13
Aa-SE036	Test Probe C	Zhilitong	TP-C	60065-915	2019.11.26	2020.11.25
Aa-SE037	Test Probe D	Zhilitong	TP-D	60065-914	2020.8.14	2021.8.13
Aa-SE039	Test hook	Zhilitong	TH-1	W8L180T1	2020.8.14	2021.8.13
Aa-SE040	Accessibility Probe	Zhilitong	ZA-1	A1310	2020.8.14	2021.8.13
Aa-SE041	UL Finger Probe	Zhilitong	ULP-01	D5L97	2020.8.14	2021.8.13
Aa-SE042	Steel Ball	Zhilitong	GQ-1	G121008	2020.8.14	2021.8.13
Aa-SE043	Ball Pressure Tester	Sinna	SN3407	08051808	2020.8.14	2021.8.13
Aa-SE044	Ball Pressure Tester	Sinna	SN3407	08082302	2020.8.14	2021.8.13
Aa-SE045	Hammer	Sinna	SN3406	08083102	2020.8.14	2021.8.13
Aa-SE046	Torque Driver	kanon	12LTDK	08G338	2020.8.11	2021.8.10
Aa-SE050	Hardened steel pin	Zhilitong	SC30	R25N30	2020.8.14	2021.8.13
Aa-SE051	Platform scale	shanghai	TGT-100	526	2020.8.11	2021.8.10
Aa-SE053	Test rod	Zhilitong	TZ-14	D40N5	2020.8.14	2021.8.13
Aa-SE054	Vibration tester	shengshiwei	SW-TF	20100228	2020.8.11	2021.8.10
Aa-SE055	Surge tester	Ceprei	1065A	0503Y01	2020.8.11	2021.8.10
Aa-SE056	Digital Power Meter	Qingzhi	8713B1	870909080	2020.8.11	2021.8.10
Aa-SE057	Dust chamber	Gongwen	SC-500	100311	2020.8.11	2021.8.10
Aa-SE058	Draught-proof enclosure	Tengbo	TB180	Q100226	2020.8.11	2021.8.10
Aa-SE059	Hammer	Zhilitong	CJ-3	C031026	2020.8.14	2021.8.13
Aa-SE060	Hammer	Zhilitong	CJ-3	C031027	2020.8.14	2021.8.13
Aa-SE061	Hammer	Zhilitong	CJ-3	C031028	2020.8.14	2021.8.13
Aa-SE063	Leakage Current Tester	Simpson	228	7173286	2020.8.12	2021.8.11
Aa-SE064	Temp. & Humid. Chamber	Weihuang	WHTH-1000-40-880	100631	2020.5.28	2021.5.27
Aa-SE065	Salt spary tester	Henqiang	KH-160	/	2020.8.11	2021.8.10
Aa-SE066	Oscillating tube	damsion	DMS-E01	2011DNS-E010401	2019.10.25	2020.10.24
Aa-SE067	Spray nozzle	Lihui	LH56	63125	2019.10.25	2020.10.24
Aa-SE068	Immersion tester	kunshang	IPX7-1	SK2018M5	2020.8.11	2021.8.10
Aa-SE069	Test Probe 18	Aodesaichuang	AUTO-18	auto110721-18-01	2020.8.14	2021.8.13

**Equipment List**

No.	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
Aa-SE070	Test Probe 19	Aodesaichuang	AUTO-19	auto110721-19-02	2020.8.14	2021.8.13
Aa-SE071	Data Acquisition / Switch Unit	Agilent	34970A	MY44052411	2020.8.14	2021.8.13
Aa-SE072	Data Acquisition / Switch Unit	Agilent	34970A	MY44011615	2020.8.14	2021.8.13
Aa-SE073	Digital Power Meter	Yokogawa	WT210	91K223105	2020.8.11	2021.8.10
Aa-SE074	Desktop Multi Meter	Agilent	34401A	MY44008459	2020.8.11	2021.8.10
Aa-SE075	Desktop Multi Meter	Agilent	34401A	MY44008472	2020.8.11	2021.8.10
Aa-SE076	Hi-Pot Tester	ME I RUIKE	RK2672D	RK72D111130-010	2020.8.11	2021.8.10
Aa-SE078	Torque Driver	Aigu	10DPSK	356019	2020.8.11	2021.8.10
Aa-SE079	Magnifying glass	German	10x	12234	2020.8.14	2021.8.13
Aa-SE080	Regulated Power Supply	APC	AFC-11010G	F310120052	2020.8.11	2021.8.10
Aa-SE081	Air Pressure Gauge	Tianya	N509	/	2019.11.29	2020.11.28
Aa-SE082	Step Temperature Room	Long An	LA-ORT28	LA-201206001	2020.8.11	2021.8.10
Aa-SE083	"GO" Gauge for E27 Caps	KINGPO	7006-27B-1	8688	2020.8.17	2021.8.16
Aa-SE084	"NOT GO" Gauge for E27 Caps	KINGPO	7006-28A-1	8689	2020.8.17	2021.8.16
Aa-SE085	"GO" Gauge for dimension "S1" of E27 Caps	KINGPO	7006-27C-1	8691	2020.8.17	2021.8.16
Aa-SE086	Gauge for E27 Caps for testing contact making	KINGPO	7006-50-1	8693	2020.8.17	2021.8.16
Aa-SE087	Gauge for E27 Caps for testing protection against accidental contact during insertion	KINGPO	7006-51A-2	8690	2020.8.17	2021.8.16
Aa-SE089	Single wing drop tester	FEILING	FL8618	/	2020.8.11	2021.8.10
Aa-SE090	Data Acquisition / Switch Unit	Agilent	34970A	MY44006829	2020.8.14	2021.8.13
Aa-SE091	Thermocouple wire	OMEGA	TT-J-30-1000	/	2020.8.17	2021.8.16
Aa-SE092	Touch current tester	Ceprei	410B	1207AG10	2020.8.12	2021.8.11
Aa-SE093	Cord oscillating tester	Dongguan lixiong	LX-1211	/	2020.8.11	2021.8.10
Aa-SE094	Lampholder digital torsion meter	Inventfine Instrument Co., Ltd.	CH338	1301004	2020.8.11	2021.8.10
Aa-SE095	Straight steel pin	KINGPO	SE095	/	2020.8.17	2021.8.16
Aa-SE096	Digital Caliper	Guanglu	SF2000	C1211225254	2020.8.14	2021.8.13
Aa-SE097	Digital Caliper	Guanglu	SF2000	C1211225024	2020.8.11	2021.8.10
Aa-SE098	Timer	PURSUN	PS-528	/	2020.8.14	2021.8.13
Aa-SE099	Timer	PURSUN	PS-528	/	2020.8.14	2021.8.13
Aa-SE100	Switching Mode DC Power Supply	GW INSTEK	GPS-1850D	EN820728	2020.8.11	2021.8.10
Aa-SE101	Digital Power Meter	EVERFINE	PF9901	1005046	2020.8.11	2021.8.10
Aa-SE102	Digital Power Meter	EVERFINE	PF9901	G100731CJ6331237	2020.8.11	2021.8.10
Aa-SE103	Tape line	YANGGUANG	YG-206	/	2019.10.29	2020.10.28
Aa-SE105	Pressure Gauge	ZHHY	SE105	/	2019.11.23	2020.11.22
Aa-SE106	"GO" Gauge for E14 Caps	GRT/china	7006-27F-1	2013053131	2020.8.17	2021.8.16
Aa-SE107	"NOT GO" Gauge for E14 Caps	GRT/china	7006-28B-1	2013053126	2020.8.17	2021.8.16
Aa-SE108	"GO" Gauge for dimension "S1" of E14 Caps	GRT/china	7006-27G-1	2013053132	2020.8.17	2021.8.16
Aa-SE109	Gauge for E14 Caps for testing contact making	GRT/china	7006-54-2	2013053128	2020.8.17	2021.8.16
Aa-SE110	Gauge for E14 Caps for testing protection against accidental contact during insertion	GRT/china	7006-55-2	2013053129	2020.8.17	2021.8.16
Aa-SE111	"GO" and "NOT GO" Gauge for base GU10	KINGPO	7006-121-1	KingPo12485237	2020.8.17	2021.8.16
Aa-SE112	"GO" plug gauge for E12 lampholder	GRT/china	7006-25C-1	20130512135005	2020.8.17	2021.8.16
Aa-SE113	"NOT GO" plug gauge for E12 lampholder	GRT/china	7006-26B-1	20130512135006	2020.8.17	2021.8.16
Aa-SE114	"GO" Gauge for E26 Caps	GRT/china	7006-27D-3	2013053135	2020.8.17	2021.8.16
Aa-SE115	"NOT GO" Gauge for E26 Caps	GRT/china	7006-29L-4	2013053125	2020.8.17	2021.8.16

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No.	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
Aa-SE116	"GO" Gauge for E40 Caps	ANGUI TESTING	7006-27-7	20140405	2020.8.14	2021.8.13
Aa-SE117	"NOT GO" Gauge for E40 Caps	ANGUI TESTING	7006-28D-1	20140406	2020.8.14	2021.8.13
Aa-SE118	Gauge for E40 Caps for testing contact making	ANGUI TESTING	7006-52-1	20140407	2020.8.14	2021.8.13
Aa-SE119	Gauge for E40 Caps for testing protection against accidental contact during insertion	ANGUI TESTING	7006-53-1	20140408	2020.8.14	2021.8.13
Aa-SE120	"Go" gauge for bi-pin cap on finished lamps G13	KINGPO	7006-45-4	KingPo12485238	2020.8.17	2021.8.16
Aa-SE121	"Go" gauge for bi-pin cap on finished lamps G5	KINGPO	7006-46A-3	KingPo12485230	2020.8.17	2021.8.16
Aa-SE122	Gauge for three-pin flat-pin plugs (10A)	KINGPO	AS/NZS 3112 Fig A 10A	KingPo12485231	2020.8.17	2021.8.16
Aa-SE123	Gauge for three-pin flat-pin plugs (15A)	KINGPO	AS/NZS 3112 Fig A 15A	KingPo12485232	2020.8.17	2021.8.16
Aa-SE124	Gauge for three-pin flat-pin plugs (20A)	KINGPO	AS/NZS 3112 Fig A 20A	KingPo12485233	2020.8.17	2021.8.16
Aa-SE125	Gauge for two-pin flat-pin plugs with parallel pins	KINGPO	AS/NZS 3112 Fig B	KingPo12485236	2020.8.17	2021.8.16
Aa-SE126	Gauge for flat and round pin plugs (two flat live pins and a round earth pin)	KINGPO	AS/NZS 3112 Fig F-A	KingPo12485234	2020.8.17	2021.8.16
Aa-SE127	Gauge for flat and round pin plugs (two round live pins and a flat earth pin)	KINGPO	AS/NZS 3112 Fig F-B	KingPo12485235	2020.8.17	2021.8.16
Aa-SE128	Transport type simulation vibration tester	KING DESIGN	KD-9363-550-PC	LT0PCLA13003	2019.11.11	2020.11.10
Aa-SE129	Oven Chamber	Rongfeng	101A-3	33897	2020.8.11	2021.8.10
Aa-SE130	"Go" gauges for caps on finished lamps B22	ANGUI TESTING	7006-11-8	20140404	2020.8.14	2021.8.13
Aa-SE131	"Not Go" gauges for caps on finished lamps B22	ANGUI TESTING	7006-10-8	20140403	2020.8.14	2021.8.13
Aa-SE132	Gauges for testing the insertion of caps in lampholders B22d	ANGUI TESTING	7006-4A-2	20140401	2020.8.14	2021.8.13
Aa-SE133	Gauges for testing the retention of B22d caps in the holder	ANGUI TESTING	7006-4B-1	20140402	2020.8.14	2021.8.13
Aa-SE134	1000:1 Oscilloscope Probe	Pintek	HVP-18HF	13010082	2020.8.18	2021.8.17
Aa-SE136	AC power source	All power	APW-150N	930607	2020.8.11	2021.8.10
Aa-SE137	Horizontal&vertical tester	AUTOSTRONG	AUTO-SPA	AUTO1033	2020.8.11	2021.8.10
Aa-SE138	Tracking index tester	AUTOSTRONG	AUTO-LDA	AUTO1040	2019.10.25	2020.10.24
Aa-SE139	Vicat softening tester	AUTOSTRONG	AUTO-WK	/	2019.10.25	2020.10.24
Aa-SE140	Electroplated coating thickness tester	Guangzhou Dongru electronic	DR280	9324	2020.8.14	2021.8.13
Aa-SE141	Battery Tester	DG	W602	DG2014W6021772	2020.8.11	2021.8.10
Aa-SE142	Test plug for antenna coaxial sockets	ANGUI TESTING	AG-IEC60065F9	/	2020.8.14	2021.8.13
Aa-SE143	SHORE D Durometer	Handpi	LX-D	8134006969	2020.8.14	2021.8.13
Aa-SE144	Steel Ball	ANGUI TESTING	GQ-2	/	2020.8.14	2021.8.13
Aa-SE145	"Go" gauges for caps on finished lamps B15	ANGUI TESTING	7006-11-8	140728017	2020.8.17	2021.8.16
Aa-SE146	"Not Go" gauges for caps on finished lamps B15	ANGUI TESTING	7006-10-8	140728010	2020.8.17	2021.8.16
Aa-SE147	Gauges for testing the insertion of caps in lampholders B15d	ANGUI TESTING	7006-4A-2	140728004	2020.8.17	2021.8.16
Aa-SE148	Gauges for testing the retention of B15d caps in the holder	ANGUI TESTING	7006-4B-1	140728009	2020.8.17	2021.8.16
Aa-SE149	"GO" Gauge for E39 Caps	ANGUI TESTING	7006-24B-1	144509	2020.8.17	2021.8.16
Aa-SE150	Gauge for E39 Caps for testing	ANGUI TESTING	7006-24A-1	144511	2020.8.17	2021.8.16

**Equipment List**

No.	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
	contact making					
Aa-SE151	"NOT GO" Gauge for E39 Caps	ANGUI TESTING	7006-24C-1	144510	2020.8.17	2021.8.16
Aa-SE152	Noise Generator/filter	ZCTEK	ZC6221	ZC14020178	2019.11.27	2020.11.26
Aa-SE153	Hi-Pot Tester	ME I RUIKE	RK2671C	RK71C-BEAI005	2020.8.11	2021.8.10
Aa-SE155	AS/NZS3112 High temperature pressure testing device	ANGUI TESTING	AG8113F1	/	2020.8.14	2021.8.13
Aa-SE156	Low Pressure Tester	BELL	BE-ZK-125	201505250002	2020.8.11	2021.8.10
Aa-SE157	Thermal abuse chamber	BELL	BE-101-480B	201505250003	2020.8.11	2021.8.10
Aa-SE158	Temperature control short-circuit tester	BELL	BE-1000W	201505250004	2020.8.11	2021.8.10
Aa-SE159	Projectile Tester	BELL	BE-6046	201505250005	2020.8.11	2021.8.10
Aa-SE160	Test machine for forced internal short circuit of cells	BELL	BE-6045W	201505250006	2020.8.11	2021.8.10
Aa-SE161	Crush tester	BELL	BE-6045-2T	201505250007	2020.8.11	2021.8.10
Aa-SE162	Rapid temperature test chamber	BELL	BTKS-408C-5	201505250008	2020.8.11	2021.8.10
Aa-SE163	Mechanical shock(crash hazard)	BELL	BE-5066	201505250009	2020.8.11	2021.8.10
Aa-SE164	Battery Testing System	NEWARE	CT-3008-5V10A-204	T1505-080859	2020.8.11	2021.8.10
Aa-SE165	Battery Testing System	NEWARE	CT-3008-5V10A-204	T1505-080860	2020.8.11	2021.8.10
Aa-SE166	Battery Testing System	NEWARE	CT-3008-20V6A-A	T1505-080861	2020.8.11	2021.8.10
Aa-SE167	Shock tester	LABTONE	HSKT10	L150529	2020.8.11	2021.8.10
Aa-SE168	Electromagnetic vibration tester	LABTONE	CV-700	L150530	2020.8.11	2021.8.10
Aa-SE169	Electronic scales	JM	JM-A	/	2020.8.11	2021.8.10
Aa-SE170	Digital Power Meter	EVERFINE	PF9901	G100731CO1351143	2020.8.11	2021.8.10
Aa-SE171	"GO" and "NOT GO" Gauge for starters	KINGPO	IEC 60155 Fig 6	/	2020.8.17	2021.8.16
Aa-SE172	"NOT GO" Gauge for starters	KINGPO	IEC 60155 Fig 7	/	2020.8.17	2021.8.16
Aa-SE173	"GO" Gauge for starters	KINGPO	IEC 60155 Fig 8	/	2020.8.17	2021.8.16
Aa-SE174	Internal resistance tester	TestPad	BTS-100	IR09100699	2020.8.11	2021.8.10
Aa-SE175	DC Electronic Load	PRODIGIT	3302C	80602C 446	2020.8.11	2021.8.10
Aa-SE176	DC Electronic Load	PRODIGIT	3302C	25689721698	2020.8.11	2021.8.10
Aa-SE177	Data Acquisition / Switch Unit	Agilent	34970A	MY44041739	2020.8.14	2021.8.13
Aa-SE180	Digital Power Meter	EVERFINE	PF9901	G100731CN1351244	2020.8.11	2021.8.10
Aa-SE181	Cord oscillating tester	Futexing	FT-CWT03	CWT1604001	2019.11.11	2020.11.10
Aa-SE182	Pointer type DC current meter	Shanghai Liangbiao	C31-A	6003	2020.8.12	2021.8.11
Aa-SE183	Three phase ammeter	Chengdu Huayi	PMH8161-9K4	20100604801	2020.8.11	2021.8.10
Aa-SE184	Shunt	pulianchuang	FL-2/0.5 50A	/	2020.8.14	2021.8.13
Aa-SE185	Shunt	pulianchuang	FL-2/0.5 200A	/	2020.8.14	2021.8.13
Aa-SE186	Creepage distance testing card-Straight card	ANGUI TESTING	SE-A141	/	2020.8.14	2021.8.13
Aa-SE187	Creepage distance testing card-Bending card	ANGUI TESTING	SE-A142	/	2020.8.14	2021.8.13
Aa-SE188	Conductivity Meters	leici	DDS-11A	163	2020.8.14	2021.8.13
Aa-SE189	Manual Supercharger	Zhejiang Yuhuang	SB-10Mpa	/	2020.8.14	2021.8.13
Aa-SE190	Grounding resistance meter	hangzhoudongshun	ZC29B-2	/	2020.8.11	2021.8.10
Aa-SE191	AC power source	All power	AFW-210A	992429	2020.8.11	2021.8.10
Aa-SE192	Digital Power Meter	EVERFINE	PF9901	G135716CM5361147	2020.8.11	2021.8.10
Aa-SE193	Horizontal distributed photometer	EVERFINE	GO-2000B	G105623CM5361116	2020.5.29	2021.5.28

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No.	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
Aa-SE194	UV-VIS-NIR Spectroradiometer for Photobiological Safety Analysis	EVERFINE	PMS-700	G107114CJ1341112	2018.11.6	2020.11.5
Aa-SE197	Digital Power Meter	EVERFINE	PF9811	G135717CJ7361129	2020.8.11	2021.8.10
Aa-SE198	Digital CC&CV DC Power Supply	EVERFINE	WY3010	G111418CM5361135	2020.8.11	2021.8.10
Aa-SE199	AC Power Source	EVERFINE	DPS1005	G119890CJ6361133	2020.8.11	2021.8.10
Aa-SE200	Spectral irradiance standard lamp	EVERFINE	D204BH	G100284CA1361114	2016.9.24	after ignited 50 hours
Aa-SE201	Standard luminance source	EVERFINE	SLS-150	G137329CJ6361112	2016.9.24	after ignited 50 hours
Aa-SE202	Standard lamp of ultraviolet radiation	EVERFINE	SIS-631	G110132CA1361120	2016.9.24	after ignited 50 hours
Aa-SE203	Falling water drops device	Gongwen	DJ-B	/	2019.10.25	2020.10.24
Aa-SE204	Continuous immersion in water device	Gongwen	X8	161130	2020.8.11	2021.8.10
Aa-SE205	Torque Driver	kanon	30LTDK	/	2019.10.29	2020.10.28
Aa-SE206	Gauge for single-phase two-pole plug	ANGUI TESTING	AGGB02F6	/	2020.8.14	2021.8.13
Aa-SE207	"GO" and "Not Go" Gauge for plug pins	ANGUI TESTING	AGENF1GO	/	2020.8.14	2021.8.13
Aa-SE208	Gauge for pin diameter	ANGUI TESTING	AGENF2	/	2020.8.14	2021.8.13
Aa-SE209	Gauge for checking impossibility of single-pole insertion of into socket-outlets	ANGUI TESTING	AGENF4	/	2020.8.14	2021.8.13
Aa-SE210	Gauge for plug pins	ANGUI TESTING	AGBS1363F5	/	2020.8.14	2021.8.13
Aa-SE211	12.5mm steel ball	ANGUI TESTING	ST-12.5	/	2019.12.24	2020.12.23
Aa-SE212	Electronic Thermo-Hygrometer	Boyang	HTC-1	SE212	2019.12.24	2020.12.23
Aa-SE213	Electronic Thermo-Hygrometer	Boyang	HTC-1	SE213	2019.12.24	2020.12.23
Aa-SE218	Visual IR Thermometer	FLUKE	VT04	VT04-14060109	2019.12.24	2020.12.23
Aa-SE219	Industrial microscope	SAIKEDIGITAL	SK2610B	/	2020.4.24	2021.4.23
Aa-SE220	Leakage Current Tester	Simpson	229-2	12267	2019.11.11	2020.11.10
Aa-SE221	Portable Ground Fault Circuit Interrupter (GFCI)	Technology research, LLC	25000	/	2018.6.27	2021.6.26
Aa-SE222	"GO" Gauge for starters for class II fluorescent luminaires	ANGUI TESTING	IEC 60155 Fig B.2	/	2020.4.24	2021.4.23
Aa-SE223	Ingestion gauge	ANGUI TESTING	AGB2F3	/	2020.8.14	2021.8.13
Aa-SE224	Heating enclosure for thermally protected ballasts	ANGUI TESTING	AGSB1778	/	2020.8.11	2021.8.10
Aa-SE225	Battery Testing System	NEWARE	CT-4008-6V4A-CCDL	T1505-080859	2019.10.25	2020.10.24
Aa-SE226	125mm diameter circular baffle test finger	Shice testing	SC-F2B-B	SC17110102	2019.12.24	2020.12.23
Aa-SE227	aneroid barometer	Yanrui testing	DYM3	No19378	2019.12.24	2020.12.23
Aa-SE228	Electric humiture grapher	Accurate	TH10W-E	HHW-004	2019.12.24	2020.12.23
Aa-SE229	Electric humiture grapher	Accurate	TH10W-E	HHW-005	2019.12.24	2020.12.23
Aa-SE230	Electric humiture grapher	Accurate	TH10W-E	HHW-006	2019.12.24	2020.12.23
Aa-SE231	Electric humiture grapher	Accurate	TH10W-E	HHW-007	2019.12.24	2020.12.23
Aa-SE232	Electric humiture grapher	Accurate	TH10W-E	HHW-008	2019.12.24	2020.12.23
Aa-SE233	Electric humiture grapher	Accurate	TH10W-E	HHW-009	2019.12.24	2020.12.23
Aa-SE234	8mm diameter test rod	Zhongzheng testing	SZZT-8	2017010202	2019.12.24	2020.12.23
Aa-SE235	Apparatus for refrigerator spillage test	ANBIAO TESTING	ANB-4706.13NS	/	2019.12.24	2020.12.23
Aa-SE236	Apparatus for 30 ml spillage test	ANBIAO TESTING	AT-4706.19-102	/	2019.12.24	2020.12.23
Aa-SE237	Touch current testing network	ANGUI TESTING	AG990F4	/	2019.12.24	2020.12.23
Aa-SE238	Wedge probe	ANGUI TESTING	AGS5366	/	2020.4.24	2021.4.23
Aa-SE239	13mm Straight steel pin	KINGPO	9504.6.4.2	/	2020.2.28	2021.2.27

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No.	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
Aa-SE240	LCR meter	TONGHUI	TH2811D	QC-211-05420	2020.2.28	2021.2.27
Aa-SE241	Meter rod	ANGUI TESTING	M6-M25	/	2020.2.28	2021.2.27
Aa-SE242	Pin gauge	ANGUI TESTING	0.5mm-6mm	/	2020.2.28	2021.2.27
Aa-SE243	Metal halide lamp load cabinet	ANGUI TESTING	AG598FC3	/	2020.2.28	2021.2.27
Aa-SE244	Test circuit for thermally protected lamp controlgear	ANGUI TESTING	AG347B1	/	2020.2.28	2021.2.27
Aa-SE245	Oscilloscope	Tektronix	TDS3032B	B036945	2020.4.24	2021.4.23
Aa-SE246	Glow Wire Test Apparatus	ANGUI TESTING	AGZRS	180121661	2020.4.24	2021.4.23
Aa-SE247	Clamp flow meter	FLUKE	FLUKE 36	67307993	2020.8.14	2021.8.13
Aa-SE248	DC Electronic Load	PRODIGIT	3311F	20602FL0450	2020.8.11	2021.8.10
Aa-SE249	DC Electronic Load	PRODIGIT	3311F	20502FL0345	2020.8.11	2021.8.10
Aa-SE250	Hammer	ANGUI TESTING	AGCJ10	1808132041	2020.8.14	2021.8.13
Aa-SE251	Hammer	ANGUI TESTING	AGCJ20	1808132042	2020.8.14	2021.8.13
Aa-SE252	IK shock tester	ANGUI TESTING	AGCKCJ	1808132043	2020.8.14	2021.8.13
Aa-SE253	Electronic pulse generator	ANGUI TESTING	AG368FD3	/	2020.8.11	2021.8.10
Aa-SE254	Switch life tester	Eurofins	SLT-10M	/	2020.8.11	2021.8.10
Aa-SE255	Battery Testing System	NEWARE	CT-4008-5V12A-204	T1711-141960	2019.12.23	2020.12.22
Aa-SE256	Digital display inclinometer	AICE	DXL-360S	3609975	2019.12.25	2020.12.24
Aa-SE257	Contact tachometer	SMART	AR925	03301201	2020.8.14	2021.8.13
Aa-SE258	Photoelectric tachometer	SMART	AR926	03171211	2020.8.14	2021.8.13
Aa-SE259	Hemispherical clindrical rod	ANGUI TESTING	AGD40	1810312038	2020.8.14	2021.8.13
Aa-SE260	Single-phase leakage current testing network	ANGUI TESTING	AG335F1	/	2020.4.24	2021.4.23
Aa-SE261	Three-phase leakage current testing network	ANGUI TESTING	AG335F3	/	2020.4.24	2021.4.23
Aa-SE262	Human simulated impedance	ANGUI TESTING	AG990F4	/	2020.4.24	2021.4.23
Aa-SE263	Three-phase leakage current testing network	ANGUI TESTING	AG950F5B	/	2020.4.24	2021.4.23
Aa-SE264	Load cabinet	ANGUI TESTING	AG250V30A	/	2020.4.24	2021.4.23
Aa-SE265	Digital Power Meter	Yokogawa	WT310E-C2-H/G5	C3UH02073E	2020.2.28	2021.2.27
Aa-SE266	Plug pins strength testing apparatus	ANGUI TESTING	AGBSF32	1904151050	2020.4.24	2021.4.23
Aa-SE267	Plus pins mechanical life test apparatus	ANGUI TESTING	AGAS31444	1903231843	2020.4.24	2021.4.23
Aa-SE268	Plug pins reliability test apparatus	ANGUI TESTING	AGBSF7	1904151051	2020.4.24	2021.4.23
Aa-SE269	Plug pins torque test apparatus	ANGUI TESTING	AGBSF33	1904151053	2020.4.24	2021.4.23
Aa-SE270	Plug pins deflection test apparatus	ANGUI TESTING	AGBSF8	1901241557	2020.4.24	2021.4.23
Aa-SE271	Abrasion test apparatus	ANGUI TESTING	AGENF9	1905091509	2020.4.24	2021.4.23
Aa-SE272	"Go" and "Not Go" gauge for unmounted bi-pin cap G5	Hanyang testing	7006-46-3	/	2020.4.24	2021.4.23
Aa-SE273	Low temperature impact test apparatus	ANGUI TESTING	AGASF26	1904151055	2020.4.24	2021.4.23
Aa-SE274	Tumbling barrel	ANGUI TESTING	AGDTBBE	1904151018	2020.4.24	2021.4.23
Aa-SE275	"Go" and "Not Go" gauge for unmounted bi-pin cap G13	Hanyang testing	7006-44-4	/	2020.4.24	2021.4.23
Aa-SE276	Plug temperature rise test apparatus	ANGUI TESTING	AGGBF446A	1904151058	2020.4.24	2021.4.23
Aa-SE277	Plug temperature rise test apparatus	ANGUI TESTING	AGBSF17B	1904151056	2020.4.24	2021.4.23
Aa-SE278	Plug temperature rise test apparatus	ANGUI TESTING	AGASF29A	1904151057	2020.4.24	2021.4.23
Aa-SE279	Electric humiture grapher	Accurate	TH10W-E	HHW-931	2020.4.24	2021.4.23
Aa-SE280	Electric humiture grapher	Accurate	TH10W-E	HHW-932	2020.4.24	2021.4.23
Aa-SE281	Electric humiture grapher	Accurate	TH10W-E	HHW-933	2020.4.24	2021.4.23
Aa-SE282	Electric humiture grapher	Accurate	TH10W-E	HHW-934	2020.4.24	2021.4.23
Aa-SE283	Ohm Meter	Yang Zi	YD2511A	2511-182336	2020.8.11	2021.8.10
Aa-SE284	Electronic Scale	Senssun	ACS-15-S	J5030333	2020.8.11	2021.8.10

**Equipment List**

No.	Equipment	Manufacturer	Model No.	Serial No.	Calibration date	Calibration due date
Aa-SE285	Needle Flame Test Set	ANGUI TESTING	AG695115	1810071756	2020.5.28	2021.5.27
Aa-SE286	Switching Mode DC Power Supply	ZHAOXIN	KXN-6030D	18K6030D12183	2020.8.11	2021.8.10
Aa-SE287	100:1 Oscillograph Probe	RIGOL	RP1300H	/	2020.8.14	2021.8.13
Aa-SE288	100:1 Oscillograph Probe	RIGOL	RP1300H	/	2019.10.25	2020.10.24
Aa-SE289	Digital Power Meter	EVERFINE	PF9901	P185823CA1391202	2020.8.11	2021.8.10
Aa-SE290	Data Acquisition / Switch Unit	Agilent	34970A	US37005584	2020.8.14	2021.8.13
Aa-SE291	Switching Mode DC Power Supply	Longwei	LW3080KD	190903414	2019.10.25	2020.10.24
Aa-SE292	Electronic scales	JM	JM-A30002	193	2019.10.29	2020.10.28
Aa-SE293	Precision Oven Box	GAOXIN	GX-3020-B50T	1901022	2019.11.23	2020.11.22
Aa-SE294	Oscilloscope	Tektronix	MDO34	C018406	2019.11.27	2020.11.26
Aa-SE295	Finger Nail Probe	HANYANG	FZ-1105	1910118	2019.11.26	2020.11.25
Aa-SE296	Thrust Test Finger	HANYANG	FZ-1106	1910104	2019.11.26	2020.11.25
Aa-SE297	Test Probe	HANYANG	FZ-1109	1910096	2019.11.26	2020.11.25
Aa-SE298	Test Probe B Joint Test Finger	HANYANG	FZ-1101A	1910095	2019.11.26	2020.11.25
Aa-SE299	Joint Test Finger	HANYANG	FZ-1101S	1910117	2019.11.26	2020.11.25
Aa-SE300	Pressure Test Apparatus	HANYANG	330N	1910116	2019.11.23	2020.11.22
Aa-SE301	Lampholder bending moment tester	HANYANG	FZ-1202E	1910097	2019.11.23	2020.11.22
Aa-SE302	Luminance Colorimeter	Topcon	BM-7A	990648	2019.12.10	2020.12.09
Aa-SE303	Temp. & Humid. Chamber	Teelong	TL-HW408S	TL-20191205-01	2019.12.23	2020.12.22
Aa-SE304	Battery Testing System	CORSHN	CTS-5V10A08CU	CORSHN01	2019.12.23	2020.12.22
Aa-SE305	Battery Testing System	CORSHN	CTS-5V10A08CU	CORSHN02	2019.12.23	2020.12.22
Aa-SE306	Battery Testing System	CORSHN	CTS-5V10A08CU	CORSHN03	2019.12.23	2020.12.22
Aa-SE307	Battery Testing System	CORSHN	CTS-5V10A08CU	CORSHN04	2019.12.23	2020.12.22
Aa-SE308	Battery Testing System	CORSHN	CTS-5V10A08CU	CORSHN05	2019.12.23	2020.12.22
Aa-SE309	Battery Testing System	CORSHN	CTS-5V10A08CU	CORSHN06	2019.12.23	2020.12.22
Aa-SE310	Battery Testing System	CORSHN	CTS-5V10A08CU	CORSHN07	2019.12.23	2020.12.22
Aa-SE311	Battery Testing System	CORSHN	CTS-5V10A08CU	CORSHN08	2019.12.23	2020.12.22
Aa-SE312	Battery Testing System	CORSHN	CTS-5V10A08CU	CORSHN09	2019.12.23	2020.12.22
Aa-SE313	Battery Testing System	CORSHN	CTS-5V10A08CU	CORSHN10	2019.12.23	2020.12.22
Aa-SE314	Probe for measuring surface temperatures	HANYANG	FZ1121	2005019	2020.8.17	2021.8.16
Aa-SE315	Battery Testing System	CORSHN	CTS-30V10A08CU	CORSHN11	2020.8.11	2021.8.10
Aa-SE316	Battery Testing System	CORSHN	CTS-30V10A08CU	CORSHN12	2020.8.11	2021.8.10
Aa-SE317	Battery Testing System	CORSHN	CTS-30V10A08CU	CORSHN13	2020.8.11	2021.8.10
Aa-SE318	Battery Testing System	CORSHN	CTS-30V10A08CU	CORSHN14	2020.8.11	2021.8.10
Aa-SE319	High Accuracy Array Spectrora	EVERFINE	HAAS-2000-IR1	M112279CM1361113	2020.8.11	2021.8.10
Aa-SE320	DC Power Supply	ITECH	IT6872A	800445020747120000	2020.8.11	2021.8.10
Aa-SE321	Multi Meter	HYELEC	MY64	/	2020.8.11	2021.8.10
Aa-SE322	10:1 Oscillograph Probe	Tektronix	TPP0250	C125615	2020.8.14	2021.8.13
Aa-SE323	Data Acquisition / Switch Unit	Agilent	34970A	MY41000156	2020.8.14	2021.8.13
Aa-SE324	Data Acquisition / Switch Unit	Agilent	34970A	MY41000165	2020.8.14	2021.8.13
Aa-SE325	Data Acquisition / Switch Unit	Agilent	34970A	MY41000172	2020.8.14	2021.8.13
Aa-SE326	Data Acquisition / Switch Unit	Agilent	34970A	MY41000174	2020.8.14	2021.8.13
Aa-SE327	Data Acquisition / Switch Unit	Agilent	34970A	MY41000179	2020.8.14	2021.8.13

**Appendix 2**  
**Photo documentation**



Figure 1 Overall view



Figure 2 Overall view



**Photo documentation**



Figure 3 Overall view



Figure 4 Overall view



**Photo documentation**

Figure 5 Overall view

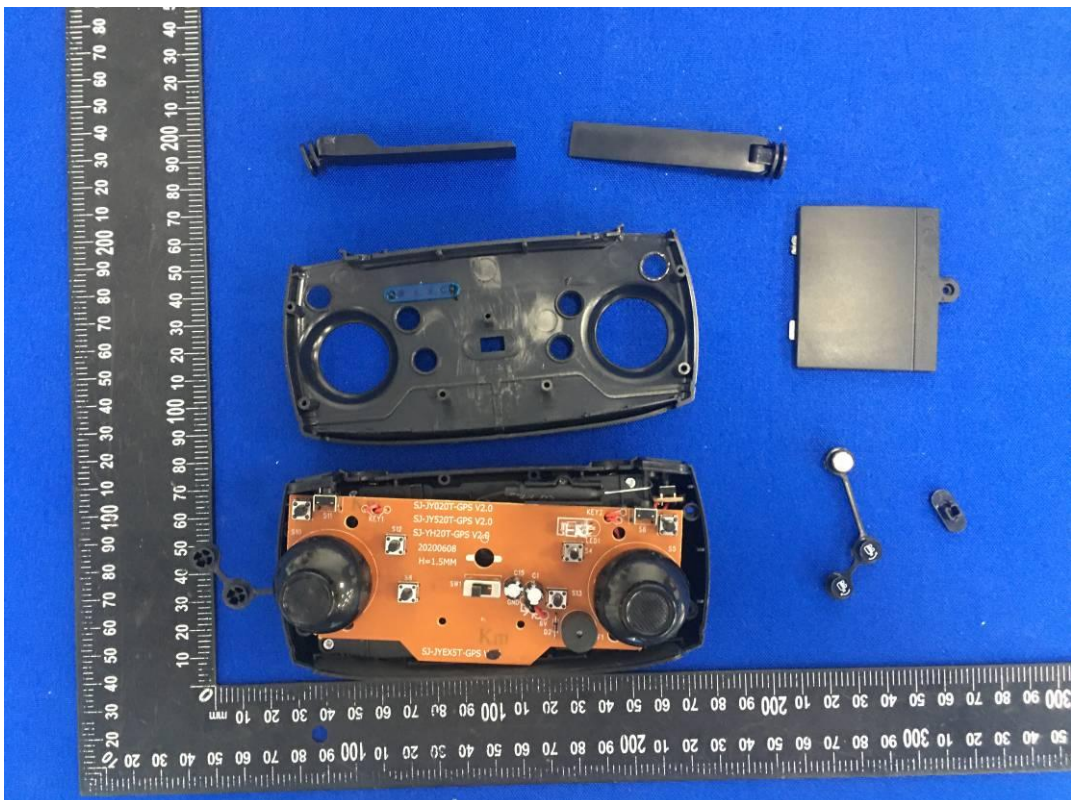


Figure 6 Internal view



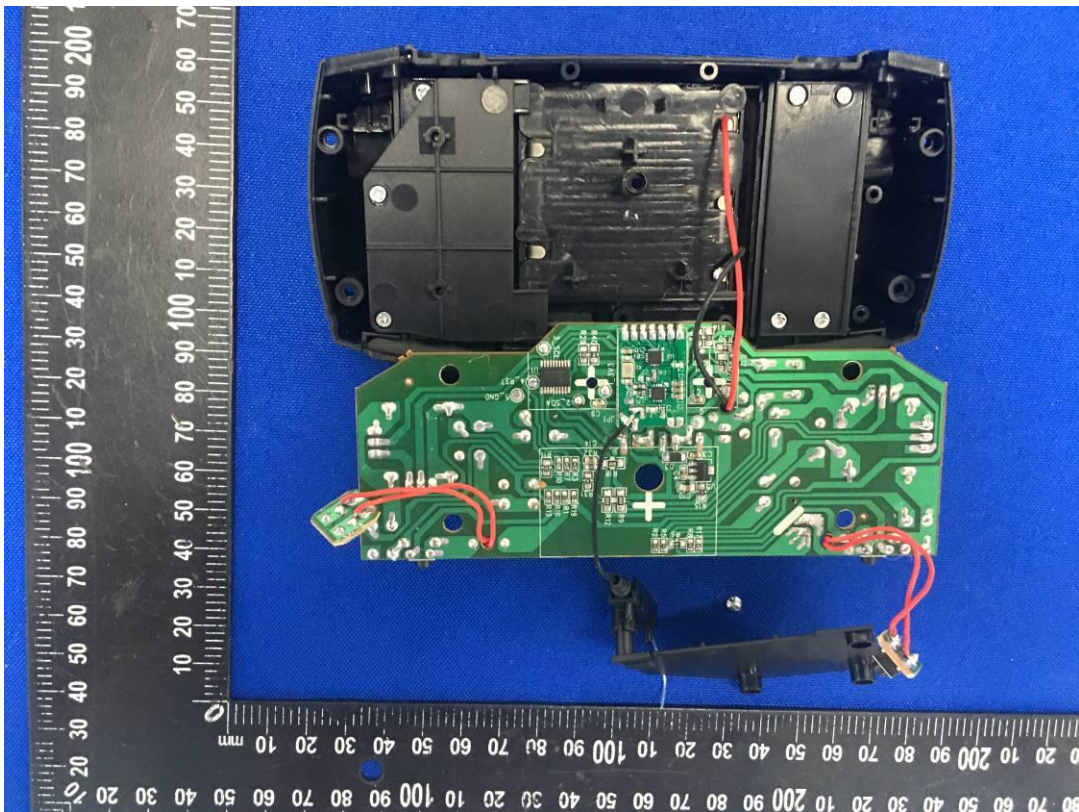
**Photo documentation**

Figure 7 Internal view

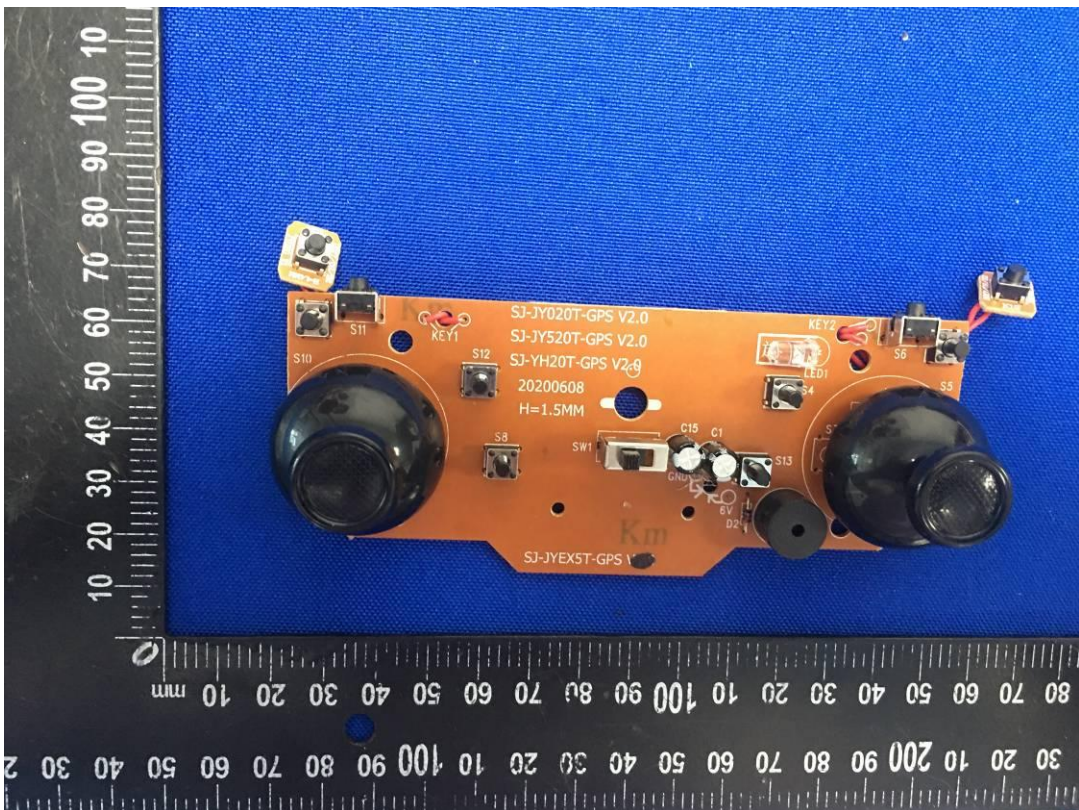


Figure 8 Internal PCB



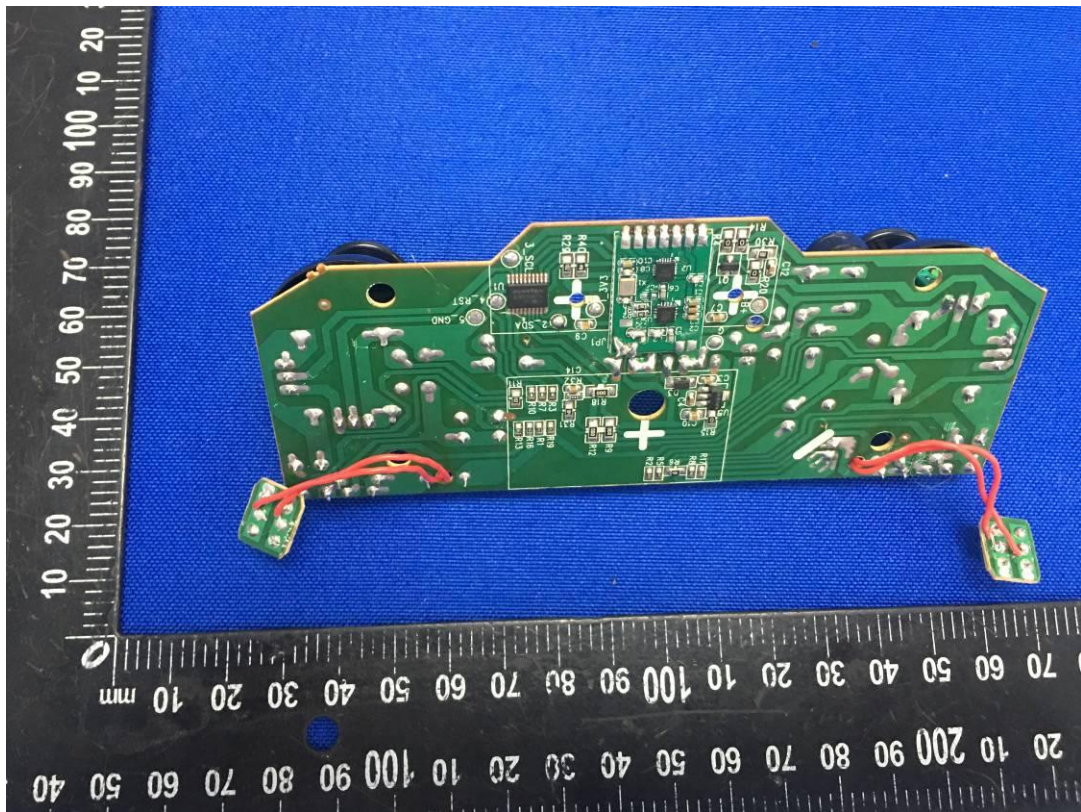
**Photo documentation**

Figure 9 Internal PCB

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