



Test Report issued under the responsibility of:



## TEST REPORT

IEC 62368-1

### Audio/video, information and communication technology equipment

#### Part 1: Safety requirements

Report Number ..... : SHES230500903301

Date of issue..... : 2023-06-19

Total number of pages ..... : 54 Pages

Name of Testing Laboratory preparing the Report ..... : SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Applicant's name ..... : Hangzhou Hikvision Digital Technology Co., Ltd.

Address..... : No. 555 Qianmo Road, Binjiang District, Hangzhou 310052, China

#### Test specification:

Standard ..... : IEC 62368-1:2014

Test procedure ..... : CB Scheme

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

TRF template used..... : IECEE OD-2020-F1:2021, Ed.1.4

Test Report Form No. .... : IEC62368\_1D

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

Master TRF ..... : Dated 2022-04-14

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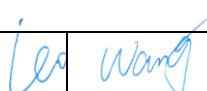
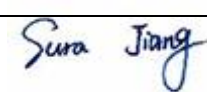
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**This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.**

#### General disclaimer:

The test results presented in this report relate only to the object tested.

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Test Item description .....			Tripod Turnstile		
Trade Mark .....			<b>HIKVISION</b>		
Manufacturer .....			Same as applicant		
Model/Type reference .....			See page 8		
Ratings .....			100 - 240 Va.c., 50 / 60 Hz, 1,0-0,4 A; Class I		
<b>Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):</b>					
<input checked="" type="checkbox"/>	<b>CB Testing Laboratory:</b>		SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.		
Testing location/ address .....			588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China		
Tested by (name, function, signature).....			Leo Wang Project Engineer		
Approved by (name, function, signature) .....			Sura Jiang Reviewer		
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 1:</b>		N/A		
Testing location/ address .....					
Tested by (name, function, signature).....					
Approved by (name, function, signature) .....					
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 2:</b>		N/A		
Testing location/ address .....					
Tested by (name, function, signature).....					
Witnessed by (name, function, signature) .....					
Approved by (name, function, signature) .....					
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 3 :</b>		N/A		
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 4:</b>		N/A		
Testing location/ address .....					
Tested by (name, function, signature).....					
Witnessed by (name, function, signature) .....					
Approved by (name, function, signature) .....					
Supervised by (name, function, signature).....					

<b>List of Attachments (including a total number of pages in each attachment):</b> Attachment 1: 18 pages of Photos documents; Attachment 2: 10 pages of European group differences and national differences. Attachment 3: 3 pages of safety information.	
<b>Summary of testing:</b> The sample(s) tested complies with the requirements of IEC 62368-1: 2014 (Second Edition), EN 62368-1:2014+A11:2017.  Unless otherwise specified, the EUT with model DS-K3G200X-R was selected as representative model for full testing. All models has two power supplies (Internal power supply and adapter)  Tma = 65°C (declared by manufacturer) K-type thermocouple used for temperature measurement.	
<b>Tests performed (name of test and test clause):</b> <input checked="" type="checkbox"/> 4. General requirements <input checked="" type="checkbox"/> 5. Electrically-caused injury <input checked="" type="checkbox"/> 6. Electrically-caused fire <input checked="" type="checkbox"/> 7. Injury caused by hazardous substances <input checked="" type="checkbox"/> 8. Mechanically-caused injury <input checked="" type="checkbox"/> 9. Thermal burn injury <input checked="" type="checkbox"/> 10. Radiation <input checked="" type="checkbox"/> Annex B. Normal operating condition tests, abnormal operating condition tests and single fault condition tests <input checked="" type="checkbox"/> Annex F.3.9. Performance of Marking test <input checked="" type="checkbox"/> Annex M Equipment containing batteries and their protection circuits <input checked="" type="checkbox"/> Annex Q. Limited Power Source <input checked="" type="checkbox"/> Annex T. Mechanical strength tests <input checked="" type="checkbox"/> Annex V. Determination of accessible parts	<b>Testing location:</b> SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. 588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China
<b>Summary of compliance with National Differences (List of countries addressed):</b> 1. EU Group Differences (EN 62368-1:2014+A11:2017) 2. EU Special National Conditions, EU A-deviations: DE, DK, FI, GB, IE, NO, SE  Explanation of used codes: DE=Germany, DK=Denmark, FI=Finland, GB= United Kingdom, IE=Ireland, NO=Norway, SE=Sweden <input checked="" type="checkbox"/> <b>The product fulfils the above requirements.</b>	
<b>Use of uncertainty of measurement for decisions on conformity (decision rule) :</b>  <input checked="" type="checkbox"/> No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as	

“accuracy method”).

☐ Other:... (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

**Information on uncertainty of measurement:**

The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.

IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

**Copy of marking plate:**

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective National Certification Body that own these marks.

**Marking for DS-K3G200X-R****HIKVISION****Tripod Turnstile****Model: DS-K3G200X-R****SN: 400345678      Date: 04/2023****I/P: 100-240V~, 50/60Hz, 1A-0.4A****Made in China      M-Dm55****This device complies with Part 15 of the FCC Rules.****Operation is subject to the following two conditions:****(1) this device may not cause harmful interference, and  
(2) this device must accept any interference received,  
including interference that may cause undesired operation.****Manufacturer: Hangzhou Hikvision Digital Technology Co., Ltd.****Address: No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China****400345678****400345678****Remark:**

- 1) The Height of CE logo shall not be less than 5 mm; Height of WEEE logo shall not be less than 7 mm.
- 2) The marking plates for other models are of the same pattern except for model name.
- 3) As declared by the applicant, the importer (and manufacturer, if it is different)'s name, registered trade name or registered trade mark and the postal address will be marked on the products before being place on the market. The contact details shall be in a language easily understood by end-users and market surveillance authorities.

TEST ITEM PARTICULARS:	
Classification of use by .....	<input checked="" type="checkbox"/> Ordinary person <input checked="" type="checkbox"/> Instructed person <input checked="" type="checkbox"/> Skilled person <input checked="" type="checkbox"/> Children likely to be present
Supply Connection.....	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit - not Mains connected - <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance .....	<input checked="" type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> +____%/ -____% <input type="checkbox"/> None
Supply Connection – Type .....	<input checked="" type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input checked="" type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input type="checkbox"/> other: Not directly connected to mains
Considered current rating of protective device as part of building or equipment installation .....	16 A for other area; 20 A for north America Installation location: <input checked="" type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility .....	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input checked="" type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC) .....	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: Not directly connected to mains
Class of equipment .....	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III
Access location .....	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD) .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer 掣 specified maxium operating ambient .....	65°C
IP protection class .....	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP__
Power Systems .....	<input checked="" type="checkbox"/> TN <input checked="" type="checkbox"/> TT <input type="checkbox"/> IT - ____ V L-L <input type="checkbox"/> N/A
Altitude during operation (m) .....	<input type="checkbox"/> 2000 m or less <input checked="" type="checkbox"/> __5000 m
Altitude of test laboratory (m) .....	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> 100 m
Mass of equipment (kg) .....	<input checked="" type="checkbox"/> 27,12kg

<b>POSSIBLE TEST CASE VERDICTS:</b>	
- test case does not apply to the test object..... :	N/A
- test object does meet the requirement ..... :	P (Pass)
- test object does not meet the requirement ..... :	F (Fail)
<b>TESTING:</b>	
Date of receipt of test item..... :	2023-05-16
Date (s) of performance of tests..... :	2023-05-16 to 2023-05-23
<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><b>Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.</b></p> <p>This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions.aspx</a> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx">http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx</a>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.</p> <p>Any holder of this document is advised that information contained hereon reflects the Company’s findings at the time of its intervention only and within the limits of Client’s instructions, if any. The Company’s sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.</p> <p>Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.</p>	
<b>Manufacturer’s Declaration per sub-clause 4.2.5 of IECEE 02:</b>	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....	<input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>Not applicable</b>  Factory declaration letter, pdf, dated on 2023-05-23.
<b>When differences exist; they shall be identified in the General product information section.</b>	
<b>Name and address of factory (ies) .....</b>	1. Hangzhou Hikvision Technology Co., Ltd. No. 700, Dongliu Road, Binjiang District, Hangzhou City, Zhejiang, 310052, China.  2. Hangzhou Hikvision Electronics Co., Ltd. No. 299, Qiushi Road, Tonglu Economic Development Zone, Tonglu County, Hangzhou, Zhejiang, 311500, China.  3.Chongqing Hikvision technology Co., LTD. No.118, Haikang Road, Area C, Jianqiao Industrial Park, Dadukou District, Chongqing, 401325, China.
<b>GENERAL PRODUCT INFORMATION:</b>	

**Product Description –**

Functions	The equipment under test is Class I Tripod Turnstile, which is powered by building-in power supply and adapter.
Material of enclosure	Metal & plastic
Other features	Indoor use only

**Model list:**

DS-K3G200X-R/ED	DS-K3G200X-R/E	DS-K3G200X-R/D
DS-K3G200X-R/Fe	DS-K3G200X-R/M	DS-K3G200X-R
DS-K3G200LX-R	DS-K3G200X-RUHK	DS-K3G200X-RCKV
DS-K3G200X-RUVS	DS-K3G200X-RKVO	DS-K3G200X-RHUN
DS-K3G200LX-RUHK	DS-K3G200LX-RCKV	DS-K3G200LX-RUVS
DS-K3G200LX-RKVO	DS-K3G200LX-RHUN	--

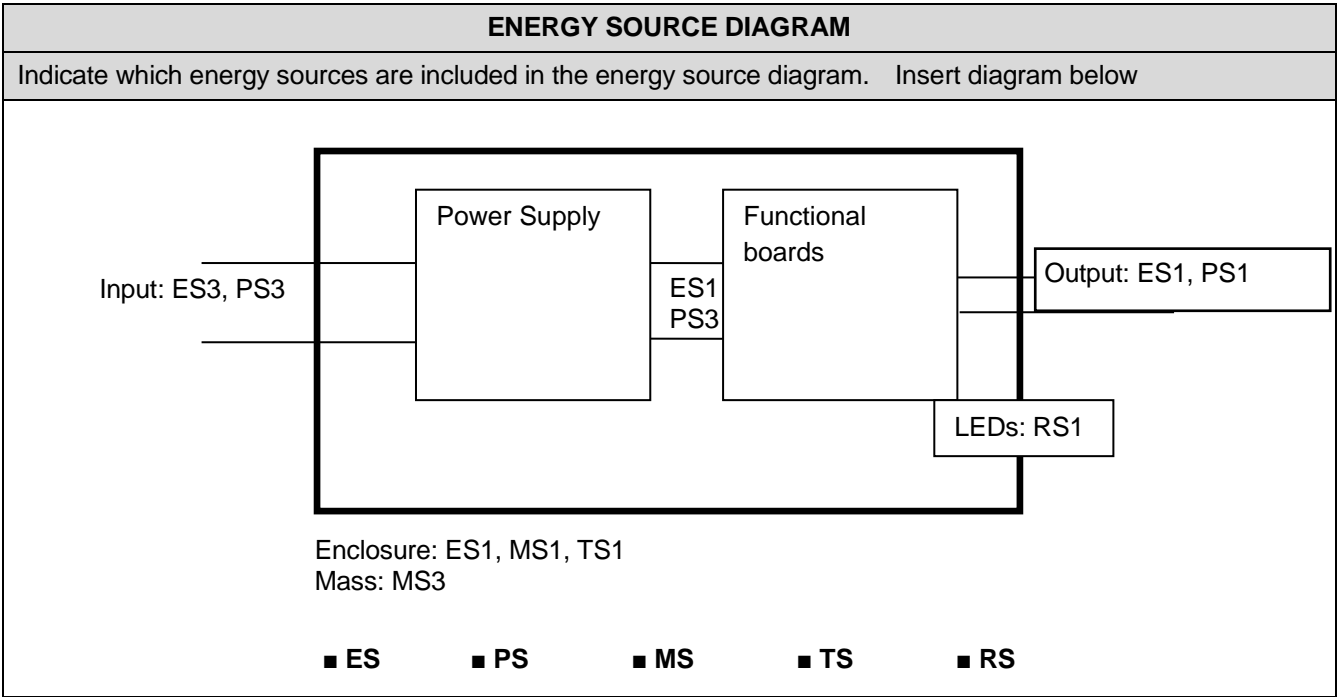
**Model difference**

All the models are identical except for model name which have no impact for safety.

**Additional application considerations – (Considerations used to test a component or sub-assembly) –**  
N/A



ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.)	
<b>Electrically-caused injury (Clause 5):</b> (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input <span style="float: right;">ES1</span>	
Source of electrical energy	Corresponding classification (ES)
Power input	ES3
Internal circuit except power supply	ES1
Enclosure	ES1
<b>Electrically-caused fire (Clause 6):</b> (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): <span style="float: right;">PS2</span>	
<b>Source of power or PIS</b>	<b>Corresponding classification (PS)</b>
Power input	PS3
All internal circuits	PS3
Output ports	PS1
<b>Injury caused by hazardous substances (Clause 7)</b> (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component <span style="float: right;">Glycol</span>	
Lithium battery	Lithium-ion
<b>Mechanically-caused injury (Clause 8)</b> (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit <span style="float: right;">MS2</span>	
<b>Source of kinetic/mechanical energy</b>	<b>Corresponding classification (MS)</b>
Sharp edges and corners	MS1
Equipment mass	MS3
<b>Thermal burn injury (Clause 9)</b> (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 <span style="float: right;">TS1</span>	
<b>Source of thermal energy</b>	<b>Corresponding classification (TS)</b>
Accessible parts	TS1
<b>Radiation (Clause 10)</b> (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product <span style="float: right;">RS1</span>	
<b>Type of radiation</b>	<b>Corresponding classification (RS)</b>
LEDs	RS1



OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary person	ES3: Power Supply primary circuits	Basic Insulation	Supplementary Insulation	Enclosure
Ordinary person	ES1: Secondary accessible ports	N/A	N/A	N/A
Ordinary person	ES1: Metal enclosure	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Internal combustible materials	PS3: Internal circuits	1. No ignition occurred. 2. No parts exceeding 90% of its spontaneous ignition temperature. 3. Combustible material outside fire enclosure is of min HB	1. PCB is of min V-1 material 2. All other components were mounted on min V-1 PCB or of min V-2 or small parts of combustible material less than 4g. 3. Fire enclosure provided	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary person	Lithium battery	N/A	N/A	Comply with Annex M
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary person	MS1: Sharp edges and corners	N/A	N/A	N/A
Ordinary person	MS3: Equipment mass	N/A	N/A	Fixed
9.1	Thermal Burn			
Body Part	Energy Source	Safeguards		

(e.g., Ordinary)	(TS2)	Basic	Supplementary	Reinforced
Ordinary person	TS1: Accessible parts	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary person	RS1: LEDs	N/A	N/A	N/A
Supplementary Information: (1) See attached energy source diagram for additional details. (2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<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	<p>Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard.</p> <p>Components not certified are used in accordance with their ratings and they comply with applicable parts of this standard and the relevant component standard.</p> <p>Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of this standard.</p>	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.5)	P
4.4.4.3	Drop tests.....:		N/A
4.4.4.4	Impact tests.....:	(See Annex T.6)	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....:		N/A
4.4.4.6	Glass Impact tests.....:		N/A
4.4.4.7	Thermoplastic material tests.....:		N/A
4.4.4.8	Air comprising a safeguard.....:		N/A
4.4.4.9	Accessibility and safeguard effectiveness		N/A
4.5	Explosion	No explosion.	P
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard		P
4.6.2	10 N force test applied to.....:		P
4.7	Equipment for direct insertion into mains socket - outlets	Not such equipment.	N/A
4.7.2	Mains plug part complies with the relevant standard.....:		N/A
4.7.3	Torque (Nm).....:		N/A
4.8	Products containing coin/button cell batteries		N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Means to reduce the possibility of children removing the battery .....		—
4.8.4	Battery Compartment Mechanical Tests .....		N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object.....	(See Annex P)	P

<b>5</b>	<b>ELECTRICALLY-CAUSED INJURY</b>		P
5.2.1	Electrical energy source classifications.....	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current.....	(See appended table 5.2)	P
5.2.2.3	Capacitance limits .....	Approved internal power supply	N/A
5.2.2.4	Single pulse limits .....		N/A
5.2.2.5	Limits for repetitive pulses .....		N/A
5.2.2.6	Ringing signals .....		N/A
5.2.2.7	Audio signals .....		N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
5.3.2.2	Contact requirements		P
	a) Test with test probe from Annex V .....	Checked by V.1.2 (Figure V.1), V.1.3, V.1.6.	P
	b) Electric strength test potential (V) .....		N/A
	c) Air gap (mm) .....		N/A
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Humidity conditioning .....	approved internal power supply	P
5.4.1.4	Maximum operating temperature for insulating materials .....	approved internal power supply	P
5.4.1.5	Pollution degree .....	2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage	approved internal power supply	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.9	Insulating surfaces		N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N/A
5.4.1.10.2	Vicat softening temperature..... :		N/A
5.4.1.10.3	Ball pressure ..... :	evaluated in internal power supply report	P
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2)	N/A
5.4.2.3	Determining clearance using required withstand voltage ..... :	(See appended table 5.4.2.3)	N/A
	a) a.c. mains transient voltage ..... :	2500	—
	b) d.c. mains transient voltage ..... :		—
	c) external circuit transient voltage ..... :		—
	d) transient voltage determined by measurement ..... :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	(See appended table 5.4.2.4)	N/A
5.4.2.5	Multiplication factors for clearances and test voltages ..... :	5000m, 1,48	P
5.4.3	Creepage distances ..... :		P
5.4.3.1	General		P
5.4.3.3	Material Group ..... :	IIIb	—
5.4.4	Solid insulation	approved internal power supply	P
5.4.4.2	Minimum distance through insulation ..... :	(See appended table 5.4.4.2)	N/A
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) ..... :		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material ..... :	(See appended Table 5.4.9)	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz ..... :	(See appended Table 5.4.4.9)	N/A
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.5.2	Voltage surge test		N/A
	Insulation resistance (MΩ).....:		—
5.4.6	Insulation of internal wire as part of supplementary safeguard.....:	(See appended table 5.4.4.2)	N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning	approved internal power supply	P
	Relative humidity (%).....:	93%	—
	Temperature (°C) .....	40	—
	Duration (h) .....	120	—
5.4.9	Electric strength test.....:	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test		P
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit		N/A
5.4.10.1	Parts and circuits separated from external circuits	(See appended table 5.4.9)	N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test.....:	(See appended table 5.4.9)	N/A
5.4.10.2.3	Steady-state test.....:	(See appended table 5.4.9)	N/A
5.4.11	Insulation between external circuits and earthed circuitry.....:	(See appended table 5.4.9)	N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	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		P
5.5.2	Capacitors and RC units	approved internal power supply	P
5.5.2.1	General requirement		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector.....:	(See appended table 5.5.2.2)	N/A
5.5.3	Transformers	approved internal power supply	P
5.5.4	Optocouplers	approved internal power supply	P
5.5.5	Relays	(See Annex G.2)	N/A



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Clause	Requirement + Test	Result - Remark	Verdict
5.5.6	Resistors	approved internal power supply	P
5.5.7	SPD's	approved internal power supply	P
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable.....:	(See Annex G.10.3)	N/A
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors		P
5.6.2.1	General requirements		P
5.6.2.2	Colour of insulation	Yellow and green wire	P
5.6.3	Requirement for protective earthing conductors		P
	Protective earthing conductor size (mm <sup>2</sup> ) .....		—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm <sup>2</sup> ). ....:	min. 0,75	—
	Protective current rating (A) .....	<25A	—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		P
5.6.5.1	Requirement		P
	Conductor size (mm <sup>2</sup> ), nominal thread diameter (mm). ....:	See table 4.1.2	P
5.6.5.2	Corrosion		P
5.6.6	Resistance of the protective system		P
5.6.6.1	Requirements		P
5.6.6.2	Test Method Resistance ( $\Omega$ ).....:	(See appended table 5.6.6.2)	P
5.6.7	Reliable earthing	approved internal power supply	P
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current .....	(See appended table 5.7.4)	P
5.7.2.2	Measurement of prospective touch voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		N/A
	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 .....	(See appended Table 5.7.4)	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.5	Protective conductor current		N/A
	Supply Voltage (V).....:		—
	Measured current (mA).....:		—
	Instructional Safeguard.....:	(See F.4 and F.5)	N/A
5.7.6	Prospective touch voltage and touch current due to external circuits		N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits		N/A
	a) Equipment with earthed external circuits Measured current (mA).....:		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		N/A

<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		P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault ... :	The internal circuit is considered as PS3 without test.	P
6.2.2.3	Power measurement for worst-case power source fault ..... :	The internal circuit is considered as PS3 without test.	P
6.2.2.4	PS1 ..... :	Output ports	P
6.2.2.5	PS2 ..... :		N/A
6.2.2.6	PS3 ..... :	The product is powered by PS3. And internal circuit is considered as PS3 without test.	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS ..... :	All primary circuit is considered as arcing PIS without test.	P
6.2.3.2	Resistive PIS ..... :	The internal circuit except primary circuit is considered as resistive PIS without test.	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials ..... :	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure		N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Control fire spread used.	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions ..... :	(See appended table 6.4.3)	N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits		N/A
6.4.5.2	Supplementary safeguards ..... :	(See appended tables 4.1.2 and Annex G)	N/A
6.4.6	Control of fire spread in PS3 circuit		P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.1	General ..... :	(See tables 6.2.3.1 and 6.2.3.2)	N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		P
6.4.8.1	Fire enclosure and fire barrier material properties		P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure		P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) ..... :	No opening.	P
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) ..... :	Current openings are for mounting and will be clogged after installation. Install only on concrete or other non-combustible surface	P
	Flammability tests for the bottom of a fire enclosure ..... :		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) ..... :	No door or cover.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....:	[ ] minimum 5mm from resistive PIS, [ X ] enclosure is metal or V-0	P
6.5	Internal and external wiring		P
6.5.1	Requirements		P
6.5.2	Cross-sectional area (mm <sup>2</sup> ) .....	Suitable UL recognized wiring which is PVC insulated and rated VW-1 used.	—
6.5.3	Requirements for interconnection to building wiring .....	(See Annex Q.)	N/A
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1		P

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

<b>8</b>	<b>MECHANICALLY-CAUSED INJURY</b>		P
8.1	General		P
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners	No sharp edges or corners, MS1	N/A
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts		N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard .....		—
8.5.4	Special categories of equipment comprising moving parts	Not such equipment.	N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.2.1	Safeguards and Safety Interlocks .....	(See Annex F.4 and Annex K)	N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard .....		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N) .....		N/A
8.5.5	High Pressure Lamps	No such part.	N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test.....	(See appended table 8.5.5.2)	N/A
8.6	Stability	Equipment mass: MS3	N/A
8.6.1	Product classification		N/A
	Instructional Safeguard .....		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force .....		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt.....		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force).....		N/A
	Position of feet or movable parts.....		—
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....		N/A
8.7.2	Direction and applied force.....		N/A
8.8	Handles strength	No such part.	N/A
8.8.1	Classification		N/A
8.8.2	Applied Force .....		N/A
8.9	Wheels or casters attachment requirements	No such part.	N/A
8.9.1	Classification		N/A
8.9.2	Applied force .....		—
8.10	Carts, stands and similar carriers	No such part.	N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard .....		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Applied force .....		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N) .....		—
8.10.6	Thermoplastic temperature stability (°C) .....		N/A
8.11	Mounting means for rack mounted equipment	No such part.	N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable <i>N</i> .....		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas .....	No such part.	N/A
	Button/Ball diameter (mm) .....		—

<b>9</b>	<b>THERMAL BURN INJURY</b>		<b>P</b>
9.2	Thermal energy source classifications	TS1 for accessible parts.	P
9.3	Safeguard against thermal energy sources	Enclosure safeguard	P
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard .....	Not used.	N/A

<b>10</b>	<b>RADIATION</b>		<b>P</b>
10.2	Radiation energy source classification		P
10.2.1	General classification	RS1 for LEDs.	P
10.3	Protection against laser radiation	No such part.	N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault.....		N/A
	Instructional safeguard .....		—
	Tool.....		—
10.4	Protection against visible, infrared, and UV radiation	RS1 for LEDs.	P
10.4.1	General		P
10.4.1.a)	RS3 for Ordinary and instructed persons .....		N/A
10.4.1.b)	RS3 accessible to a skilled person.....		N/A
	Personal safeguard (PPE) instructional safeguard.....		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 .:	RS1 for LEDs.	P
10.4.1.d)	Normal, abnormal, single-fault conditions .....		P

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Clause	Requirement + Test	Result - Remark	Verdict
10.4.1.e)	Enclosure material employed as safeguard is opaque..... :		N/A
10.4.1.f)	UV attenuation..... :		N/A
10.4.1.g)	Materials resistant to degradation UV ..... :		N/A
10.4.1.h)	Enclosure containment of optical radiation..... :		N/A
10.4.1.i)	Exempt Group under normal operating conditions..... :		P
10.4.2	Instructional safeguard ..... :		N/A
10.5	Protection against x-radiation	No such radiation.	N/A
10.5.1	X- radiation energy source that exists equipment :		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards..... :		N/A
	Instructional safeguard for skilled person..... :		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation ..... :		—
	Abnormal and single-fault condition ..... :		N/A
	Maximum radiation (pA/kg)..... :		N/A
10.6	Protection against acoustic energy sources	No such radiation.	N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A) ..... :		N/A
	Output voltage, unweighted r.m.s..... :		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards ..... :		N/A
	Equipment safeguard prevent ordinary person to RS2..... :		—
	Means to actively inform user of increase sound pressure..... :		—
	Equipment safeguard prevent ordinary person to RS2..... :		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) $L_{Aeq}$ acoustic pressure output..... :		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A) ..... :		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A) ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict

<b>B</b>	<b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b>		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers ..... :	No such part.	N/A
B.2.3	Supply voltage and tolerances		P
B.2.5	Input test..... :	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		N/A
B.3.1	General requirements..... :		N/A
B.3.2	Covering of ventilation openings		N/A
B.3.3	D.C. mains polarity test		N/A
B.3.4	Setting of voltage selector ..... :		N/A
B.3.5	Maximum load at output terminals ..... :		N/A
B.3.6	Reverse battery polarity		N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions		N/A
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited ..... :		N/A
B.4.3	Motor tests		N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature ..... :		N/A
B.4.4	Short circuit of functional insulation		N/A
B.4.4.1	Short circuit of clearances for functional insulation		N/A
B.4.4.2	Short circuit of creepage distances for functional insulation		N/A
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		N/A
B.4.6	Short circuit or disconnect of passive components		P
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		P
B.4.9	Battery charging under single fault conditions ... :	(See Annex M)	P



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Clause	Requirement + Test	Result - Remark	Verdict
<b>C</b>	<b>UV RADIATION</b>		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
<b>D</b>	<b>TEST GENERATORS</b>		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
<b>E</b>	<b>TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS</b>		N/A
E.1	Audio amplifier normal operating conditions	No such part	N/A
	Audio signal voltage (V) .....		—
	Rated load impedance ( $\Omega$ ) .....		
E.2	Audio amplifier abnormal operating conditions		N/A
<b>F</b>	<b>EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS</b>		P
F.1	General requirements		P
	Instructions – Language .....	English	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Exterior of equipment.	P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification .....	See copy of marking plate	—
F.3.2.2	Model identification .....	See copy of marking plate	—
F.3.3	Equipment rating markings	See copy of marking plate	P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of supply voltage.....	See copy of marking plate	—
F.3.3.4	Rated voltage .....	See copy of marking plate	—
F.3.3.4	Rated frequency .....	See copy of marking plate	—

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.3.6	Rated current or rated power .....	See copy of marking plate	—
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device	No such part.	N/A
F.3.5	Terminals and operating devices		N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings .....		N/A
F.3.5.2	Switch position identification marking .....		N/A
F.3.5.3	Replacement fuse identification and rating markings .....	approved internal power supply	P
F.3.5.4	Replacement battery identification marking .....		P
F.3.5.5	Terminal marking location	No such marking.	N/A
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I Equipment		P
F.3.6.1.1	Protective earthing conductor terminal		P
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)		N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking .....		—
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings	The label was subject 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 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.	P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use		P
	c) Equipment intended to be fastened in place		P
	d) Equipment intended for use only in restricted access area		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard		P
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment		P
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards		P
	Where "instructional safeguard" is referenced in the test report it specifies the required elements, location of marking and/or instruction		P
<b>G</b>	<b>COMPONENTS</b>		P
<b>G.1</b>	<b>Switches</b>		P
G.1.1	General requirements		P
G.1.2	Ratings, endurance, spacing, maximum load		P
<b>G.2</b>	<b>Relays</b>		N/A
G.2.1	General requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
<b>G.3</b>	<b>Protection Devices</b>		P
G.3.1	Thermal cut-offs	Approved fuse in certified internal power supply	N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691		N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H) ..... :		—
	Single Fault Condition ..... :		—
	Test Voltage (V) and Insulation Resistance ( $\Omega$ ). :		—
G.3.3	PTC Thermistors		P
G.3.4	Overcurrent protection devices		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions.....:		N/A
<b>G.4</b>	<b>Connectors</b>		P
G.4.1	Spacings		P
G.4.2	Mains connector configuration .....		P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
<b>G.5</b>	<b>Wound Components</b>		P
G.5.1	Wire insulation in wound components.....	approved internal power supply	N/A
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) .....		—
	Temperature (°C) .....		—
G.5.2.3	Wound Components supplied by mains		N/A
<b>G.5.3</b>	<b>Transformers</b>		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....	approved internal power supply	P
	Position.....		N/A
	Method of protection .....		N/A
G.5.3.2	Insulation		N/A
	Protection from displacement of windings.....		N/A
G.5.3.3	Overload test .....		—
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding Temperatures testing in the unit		N/A
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
<b>G.5.4</b>	<b>Motors</b>		N/A
G.5.4.1	General requirements		N/A
	Position .....		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V) .....		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....		N/A
	Electric strength test (V) .....		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature .....		N/A
	Electric strength test (V) .....		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) .....		N/A
	Electric strength test (V) .....		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage .....		—
<b>G.6</b>	<b>Wire Insulation</b>		P
G.6.1	General	approved internal power supply	N/A
G.6.2	Solvent-based enamel wiring insulation		N/A
<b>G.7</b>	<b>Mains supply cords</b>		P
G.7.1	General requirements		P
	Type.....	See 4.1.2	—
	Rated current (A) .....	See 4.1.2	—
	Cross-sectional area (mm <sup>2</sup> ), (AWG).....	See 4.1.2	—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) .....		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)....		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry .....		N/A
G.7.5	Non-detachable cord bend protection		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) .....		—
	Diameter (m) .....		—
	Temperature (°C) .....		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
<b>G.8</b>	<b>Varistors</b>		P
G.8.1	General requirements	approved internal power supply	N/A
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test .....		N/A
G.8.3.3	Temporary overvoltage .....		N/A
<b>G.9</b>	<b>Integrated Circuit (IC) Current Limiters</b>		P
G.9.1 a)	Manufacturer defines limit at max. 5A.		P
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA .....		—
G.9.1 d)	IC limiter output current (max. 5A) .....		—
G.9.1 e)	Manufacturers' defined drift .....		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
<b>G.10</b>	<b>Resistors</b>		N/A
G.10.1	General requirements		N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
<b>G.11</b>	<b>Capacitor and RC units</b>		P
G.11.1	General requirements	approved internal power supply	N/A
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
<b>G.12</b>	<b>Optocouplers</b>		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results) .....	approved internal power supply	N/A
	Type test voltage Vini .....		—
	Routine test voltage, Vini,b .....		—
<b>G.13</b>	<b>Printed boards</b>		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction) .....		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation .....		N/A
	Number of insulation layers (pcs) .....		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
<b>G.14</b>	<b>Coating on components terminals</b>		N/A
G.14.1	Requirements .....	(See G.13)	N/A
<b>G.15</b>	<b>Liquid filled components</b>		N/A
G.15.1	General requirements	No such part.	N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
<b>G.16</b>	<b>IC including capacitor discharge function (ICX)</b>		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
b)	Impulse test using circuit 2 with $U_c$ = to transient voltage .....		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage .....		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance .....		—
D3)	Resistance .....		—
<b>H</b>	<b>CRITERIA FOR TELEPHONE RINGING SIGNALS</b>		N/A
H.1	General	No ringing signal.	N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) .....		—
H.3.1.2	Voltage (V) .....		—
H.3.1.3	Cadence; time (s) and voltage (V) .....		—
H.3.1.4	Single fault current (mA):.....		—
H.3.2	Tripping device and monitoring voltage .....		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) .....		—
<b>J</b>	<b>INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION</b>		N/A
	General requirements	(See separate test report)	N/A
<b>K</b>	<b>SAFETY INTERLOCKS</b>		N/A
K.1	General requirements		N/A
K.2	Components of safety interlock safeguard mechanism .....	(See Annex G)	N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance .....	(See appended table B.4)	N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method .....		N/A
K.7	Interlock circuit isolation		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) .....		N/A
K.7.2	Overload test, Current (A) .....		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test .....		N/A
<b>L</b>	<b>DISCONNECT DEVICES</b>		N/A
L.1	General requirements		N/A
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		N/A
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
<b>M</b>	<b>EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS</b>		P
M.1	General requirements		P
M.2	Safety of batteries and their cells		P
M.2.1	Requirements		P
M.2.2	Compliance and test method (identify method) .. :	(See appended Tables and Annex M.3 and M.4)	P
M.3	Protection circuits		P
M.3.1	Requirements		P
M.3.2	Tests		P
	- Overcharging of a rechargeable battery		P
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		P
M.3.3	Compliance .....	(See appended Tables and Annex M.3 and M.4)	P
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature .....		—
M.4.2.2 b)	Single faults in charging circuitry .....		—
M.4.3	Fire Enclosure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		P
M.6.1	Short circuits	Certified coin battery.	P
M.6.1.1	General requirements		P
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) .....		N/A
M.6.2	Leakage current (mA) .....		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume $V_z$ (m <sup>3</sup> /s).....		—
M.8.2.3	Correction factors.....		—
M.8.2.4	Calculation of distance $d$ (mm) .....		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) .....	The complete instructional safeguard is provided in the instructions.	P

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Clause	Requirement + Test		Verdict
<b>N</b>	<b>ELECTROCHEMICAL POTENTIALS</b>		<b>P</b>
	Metal(s) used .....	Pollution degree considered	—
<b>O</b>	<b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>		<b>P</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>P</b>
P.1	General requirements		P
P.2.2	Safeguards against entry of foreign object		P
	Location and Dimensions (mm) .....	During normal use, the openings are facing down.	—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts .....		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) .....		N/A
P.3	Safeguards against spillage of internal liquids	No internal liquid.	N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C) .....		—
	Tr (°C) .....		—
	Ta (°C) .....		—
P.4.2 b)	Abrasion testing .....		N/A
P.4.2 c)	Mechanical strength testing .....		N/A
<b>Q</b>	<b>CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING</b>		<b>P</b>
Q.1	Limited power sources		P
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		N/A
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		P

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Clause	Requirement + Test	Result - Remark	Verdict
Q.1.2	Compliance and test method		P
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) .....		—
	Current limiting method .....		—
<b>R</b>	<b>LIMITED SHORT CIRCUIT TEST</b>		<b>N/A</b>
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)). .....		N/A
<b>S</b>	<b>TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		<b>N/A</b>
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	Not used.	N/A
	Samples, material .....		—
	Wall thickness (mm) .....		—
	Conditioning (°C) .....		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material .....		—
	Wall thickness (mm) .....		—
	Conditioning (°C) .....		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material .....		—
	Wall thickness (mm) .....		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Wall thickness (mm) .....		—
	Conditioning (test condition), (°C) .....		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
<b>T</b>	<b>MECHANICAL STRENGTH TESTS</b>		P
T.1	General requirements		P
T.2	Steady force test, 10 N .....	(See appended table T2)	P
T.3	Steady force test, 30 N .....		N/A
T.4	Steady force test, 100 N .....		N/A
T.5	Steady force test, 250 N .....	(See appended table T5)	P
T.6	Enclosure impact test	(See appended table T6)	P
	Fall test		P
	Swing test		P
T.7	Drop test .....		N/A
T.8	Stress relief test .....		N/A
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J) .....		—
	Height (m) .....		—
T.10	Glass fragmentation test .....		N/A
T.11	Test for telescoping or rod antennas	No such part.	N/A
	Torque value (Nm) .....		—
<b>U</b>	<b>MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION</b>		N/A
U.1	General requirements	No such part.	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen.....		N/A
<b>V</b>	<b>DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)</b>		P
V.1	Accessible parts of equipment		P
V.2	Accessible part criterion		P

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

4.1.2	TABLE: List of critical components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1</sup>	
Building-in power supply	MEAN WELL Enterprise Co., Ltd.	LRS-150F-24	Input: 100-240Vac, 3,0A, 50/60Hz Output: 24Vdc, 6,5A, 5000m	IEC 62368- 1:2014	UL CB Cert: Report: E183223- 4788385288-1 Original	
Alternative	Delta Electronics, Inc.	PMT- 24V150W2BA	Input: 100-240Vac, 3,0A, 50/60Hz Output: 24Vdc, 6,25A, Max. 150W; 5000m	IEC 62368- 1:2014	TUV Rheinland Ref. Certif. No.: JPTUV- 091300-M2	
Metal enclosure	Interchangeable	Interchangeable	Min. thickness: 1,0 mm	IEC 62368- 1:2014  EN 62368- 1:2014/A11:20 17	Test with appliance	
Plastic enclosure	Covestro Deutschland AG [PC Resins]	FR3010	Min. thickness: 2,5mm, V-0, 85°C	UL 746 UL 94	UL E41613	
Alternative	SABIC JAPAN L L C	C2950(GG)	Min. thickness: 2,5mm, V-0, 75°C	UL 746 UL 94	UL E45587	
PCB	WENZHO OULONG ELECTRIC CO LTD	OL-D	V-0, 130°C	UL 796 UL 94	UL E231017	
Alternative	Interchangeable	Interchangeable	V-1 or better, 130°C	UL796 UL94	UL	
RTC	SEIKO INSRUMENT INC MICRO- ENERGY DIV	MS621R	Max Charging Current 300mA Max Charging Voltage 3.4V dc	UL1642	UL MH15628	
Alternative	FDK CORPORATION	ML614R	Max Charging Current 300mA Max Charging Voltage 5.0V dc	UL1642	UL MH13421	
PPTC Current Limiter (R105)	POLYTRONICS	SMD1812P260 TF/16	16V dc, 2,6A	EN 62319-1- 1:2005  EN 62319-1- 1:2005	TUV Rheinland R 50099121	

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
PPTC Current Limiter (R108)	POLYTRONICS	SMD2920P185 TF	33V dc, 1,85A	EN 62319-1-1:2005 EN 62319-1-1:2005	TUV Rheinland R 50099121
Polymeric Thermistors (R9)	CYG WAYON CIRCUIT PROTECTION CO LTD	LP-SM125C	15V dc, 1,25A	EN 62319-1-1:2005 EN 62319-1-1:2005	TUV Rheinland R 50318402
IC current limiter (UL11, UL1, UL2, UL10)	SGMICRO	SGM2584AYN5 G/TR	Input: 2,5-5,5 V d.c.; Output: 0-5,0 V d.c.; Maximum 1,1 A	IEC 62368-1:2018	SGS CB Cert: Report: SHES2103004 94201
Alternative	SGMICRO	SGM2588AYN5 G/TR	Input: 2,5-5,5 V d.c.; Output: 0-5,0 V d.c.; Maximum 2,6 A	IEC 62368-1:2018	SGS CB Cert: Report: SHES2012025 75101, SHES2012025 75101-M1
Alternative	Joulwatt	JW7115S-1SOTA#TRPBF	Input: 2,7-5,5 V d.c.; Output: 2,7-5,5 V d.c.; Iout1,1-1,5 A	IEC 62368-1:2014	UL CB Cert: Ref. Certif. No.: DK-92033-UL
Alternative	Richtek	RT9742..G.	Input: 2,7-6,0 V d.c.; Output: Maximum 3 A	IEC 62368-1:2014	Nemko CB Cert: Report: 382012
Heating Module	Shenzhen Fulianda Electric Heater Manufacture Co.,Ltd.	C1000GJ-0132	220 V,20 W	IEC 62368-1:2014 EN 62368-1:2014/A11:2017	Test with appliance
Switch	LECI ELECTRONICS CO., LTD	RS601	250VAC, 10K, T105/55	DIN EN IEC 61058-1 (VDE 0630-1):2018-08; EN IEC 61058-1:2018 DIN EN 61058-1-1 (VDE 0630-1-1):2017-02; EN 61058-1-1:2016 IEC 61058-1:2016 IEC 61058-1-1:2016 UL 61058-1	UL E258800 VDE 40017430
Green yellow wire	SICHUAN RUI THAI ELECTRONIC TECHNOLOGY CO LTD	1015	600V, 18 AWG, 105°C, VW-1	UL 758	UL E476292

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alternative	NS-TECH CO LTD SHENZHEN	1015	600V, 18 AWG, 105°C, VW-1	UL 758	UL E254391
Primary lead wire	XINYA ELECTRONIC CO LTD	1015	600V, 22 AWG, 105°C, VW-1	UL 758	UL E170689
AC adapter	Channel Well Technology Co.,Ltd	KPL-060M-VI	Input:100-240Vac 1,2A 50/60Hz;output:24V 2,5A, 60W	IEC 62368-1:2014	TUV Rheinland Report No.: 31581397.033 Ref. Certif. No.: US-TUVR-011359-A1
Connector, non-rewirable	LINOYA ELECTRONIC TECHNOLOGY CO LTD	XYC-03	10A, 250V	DIN EN 60320-1 (VDE 0625-1):2016-04; EN 60320-1:2015 + AC:2016 IEC 60320-1:2015	VDE 40016051
Thermoplastic PVC insulation	LINOYA ELECTRONIC TECHNOLOGY CO LTD	H05VV-F	2,5 x 0,75, 2,5 mm <sup>2</sup>	DIN EN 50525-2-11 (VDE 0285-525-2-11):2012-01; EN 50525-2-11:2011	VDE 40035072
Tape	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-1000	600Vac, 125°C	UL 510	UL E180908
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. 2) Description line content is optional. Main line description needs to clearly detail the component used for testing					



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Clause	Requirement + Test	Result - Remark	Verdict

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

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

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

Supplementary information:

5.2	Table: Classification of electrical energy sources						P
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (A <sub>pk</sub> or A <sub>rms</sub> )	Hz	
1	264	Metal enclosure to earth	Normal	--	1uA <sub>pk</sub>	60	ES1
			Abnormal – DC fan blocked	--	1uA <sub>pk</sub>	60	
			Single fault – earth open	--	1uA <sub>pk</sub>	60	

#### 5.2.2.3 - Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
			Normal			
			Abnormal			
			Single fault – SC/OC			

#### 5.2.2.4 - Single Pulses

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

#### 5.2.2.5 - Repetitive Pulses

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

Test Conditions:

Normal –

Abnormal -

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

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements						P
	Supply voltage (V) ..... :	90VAC/60Hz		264VAC/50Hz		—	
	Ambient T <sub>min</sub> (°C) ..... :	21,6		22,6		—	
	Ambient T <sub>max</sub> (°C) ..... :	25,0		25,0		—	
	Tma (°C) ..... :	65,0		65,0		—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)	
LRS-150F-24							
PCB near U40(H0006)		88,9		87,6		130	
RTC(H0006)		87,7		86,4		Ref.	
PCB near UA1(H0007)		85,0		83,6		130	
RTC(H0007)		86,2		84,9		Ref.	
PCB near U7(H1014)		86,6		85,5		130	
PCB near U1(18650)		79,5		78,8		130	
PCB near D12(H3032)		94,3		93,7		130	
Metal enclosure on top near light*		35,7		35,3		70	
SW1 body		79,8		79,6		105	
ZNR6 body near ZNR5		80,6		80,3		120	
TB1 near L		73,8		71,8		130	
LF1 coil		79,5		76,7		120	
C2 body		78,5		77,1		110	
C5 body		79,2		77,3		85	
T1 coil		87,4		86,7		110	
T1 core		80,3		79,5		110	
U2 body		80,9		79,6		110	
U3 body		84,0		83,0		110	
C129 body		76,2		74,5		85	
PCB near BD1		81,5		81,8		130	
TB1 body near output(+)		73,9		72,5		105	
Plastic enclosure*		30,5		30,2		77	
Supplementary information:							
--							
Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
--	--	--	--	--	--	--	--

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

## Supplementary information:

## Supplementary information:

Note 1: T<sub>ma</sub> should be considered as directed by applicable requirement

Note 2: T<sub>ma</sub> is not included in assessment of Touch Temperatures (Clause 9)

\* The test results of touchable surface temperature were considered base on ambient temperature 25°C.

Other temperature point list in this table has shifted to T<sub>ma</sub>.

The limits of power components are obtained from the power supply report.

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements						P	
	Supply voltage (V) ..... :		90VAC/60Hz		264VAC/50Hz		—	
	Ambient T <sub>min</sub> (°C) ..... :		21,2		20,4		—	
	Ambient T <sub>max</sub> (°C) ..... :		25,0		20,5		—	
	T <sub>ma</sub> (°C) ..... :		65,0		65,0		—	
Maximum measured temperature T of part/at:			T (°C)				Allowed T <sub>max</sub> (°C)	
EUT:								
PCB near U40(H0006)			68,0		67,8		130	
RTC(H0006)			67,5		67,7		Ref.	
PCB near UA1(H0007)			67,5		67,7		130	
RTC(H0007)			67,4		67,5		Ref.	
PCB near U7(H1014)			82,6		82,2		130	
PCB near U1(18650)			71,6		70,9		130	
PCB near D12(H3032)			94,4		94,4		130	
Plastic enclosure on top*			30,9		29,4		77	
Metal enclosure on top near light*			34,1		33,6		70	
Adapter:								
AC inlet			68,8		68,7		70	
C2 body			74,6		74,5		105	
C6 body			75,0		77,2		105	
Internal plastic enclosure above T1			67,0		67,4		85	
Supplementary information:								
--								
Temperature T of winding:		t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
--		--	--	--	--	--	--	--

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

Supplementary information:

Supplementary information:

Note 1: T<sub>ma</sub> should be considered as directed by applicable requirement

Note 2: T<sub>ma</sub> is not included in assessment of Touch Temperatures (Clause 9)

\* The test results of touchable surface temperature were considered base on ambient temperature 25°C.

Other temperature point list in this table has shifted to T<sub>ma</sub>.

The limits of power components are obtained from the adapter report.

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements			P
	Supply voltage (V) ..... :	90VAC/60Hz	264VAC/50Hz	—
	Ambient T <sub>min</sub> (°C) ..... :	23,7	23,4	—
	Ambient T <sub>max</sub> (°C) ..... :	25,0	25,0	—
	Tma (°C) ..... :	65,0	65,0	—
Maximum measured temperature T of part/at:		T (°C)		Allowed T <sub>max</sub> (°C)
PMT-24V150W2BA				
PCB near U40(H0006)		85,9	86,0	130
RTC(H0006)		84,8	84,9	Ref.
PCB near UA1(H0007)		82,0	82,1	130
RTC(H0007)		83,3	83,4	Ref.
PCB near U7(H1014)		84,0	84,0	Ref.
PCB near U1(18650)		78,0	78,2	130
PCB near D12(H3032)		93,3	93,3	130
Metal enclosure on top near light		73,1	73,2	130
Plastic enclosure		67,9	67,8	130
SW1		78,4	75,2	77
CX1 near FL1		79,5	76,0	100
FL1 coil		77,4	74,0	120
PCB under BD1		78,7	74,4	130
C4 near BD1		77,9	75,9	105
PCB under Q1		83,7	76,6	130
T1 coil (class F)		87,2	81,5	110
T1 core (class F)		78,8	73,8	110
IC51		73,5	70,9	120
C32 near T1		78,4	74,7	105
C103 near T1		83,6	79,3	105

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
Output terminal CN1 + pin		70,8		67,8			85
Supplementary information:							
--							
Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information:							
Supplementary information: Note 1: Tma should be considered as directed by applicable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9) * The test results of touchable surface temperature were considered base on ambient temperature 25°C. Other temperature point list in this table has shifted to Tma. The limits of power components are obtained from the adapter report.							

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

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

<b>5.4.2.2, 5.4.2.4 and 5.4.3</b>	<b>TABLE: Minimum Clearances/Creepage distance</b>						P	
Clearance (cl) and creepage distance (cr) at/of/between:		Up (V)	U r.m.s. (V)	Frequency (kHz) <sup>1</sup>	Required cl (mm)	cl (mm) <sup>2</sup>	Required <sup>3</sup> cr (mm)	cr (mm)
Primary component to metal enclosure		420	250	0,06	3,8	5,0	4,8	5,0
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								

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Clause	Requirement + Test	Result - Remark	Verdict
<b>5.4.2.3</b>	<b>TABLE: Minimum Clearances distances using required withstand voltage</b>		<b>P</b>
	<b>Overvoltage Category (OV):</b>		II
	<b>Pollution Degree:</b>		2
Clearance distanced between:		Required withstand voltage	Required cl (mm)
Primary component to main board		2500Vpk	4,5
Measured cl (mm)			5,0
Supplementary information:			

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

<b>5.4.4.2, 5.4.4.5 c) 5.4.4.9</b>	<b>TABLE: Distance through insulation measurements</b>					<b>N/A</b>
Distance through insulation di at/of:		Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
--		--	--	--	--	--
Supplementary information:						
Evaluated in power supply test report.						

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes/No
Functional:				
--	--	--	--	
Basic/supplementary:				
L/N to metal enclosure	DC	2500V	No	
Reinforced:				
L/N to Output terminal	DC	4000V	No	
Routine Tests:				
--	--	--	--	
Supplementary information:				

<b>5.5.2.2</b>	<b>TABLE: Stored discharge on capacitors</b>	<b>N/A</b>
----------------	--	------------

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Clause	Requirement + Test	Result - Remark	Verdict

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:

☐ bleeding resistor rating:

☐ 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

Evaluated in power supply test report.

<b>5.6.6.2</b>	<b>TABLE: Resistance of protective conductors and terminations</b>				<b>P</b>
Accessible part		Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)
Earth pin on inlet to metal enclosure		32	2	0,48	0,015
Earth pin on inlet to metal enclosure		40	2	0,56	0,014
Supplementary information:					

<b>5.7.2.2, 5.7.4</b>	<b>TABLE: Earthed accessible conductive part</b>		<b>P</b>
Supply voltage .....		264V	—
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	0,754
		2*	
		3	
		4	
		5	
		6	
		8	
Supplementary Information:			
Notes:			
[1] Supply voltage is the anticipated maximum Touch Voltage			



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Clause	Requirement + Test	Result - Remark	Verdict

- [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.  
 [5] Consider reverse polarity

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	Normal	Power (W) :	--	--	PS3 without test	
		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)				P
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	
All primary circuits	--	--	--	Yes	
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)				P
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No
All internal circuits	--	--	--	--	Yes
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, <u>or</u> (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.					

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Clause	Requirement + Test	Result - Remark	Verdict

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

B.2.5	TABLE: Input test							P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
By internal power supply model: LRS-150F-24								

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

B.2.5	TABLE: Input test						P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
90V 50Hz	0,44	--	23,67	--	F1	0,44	Max normal load
100V 50Hz	0,40	1,0	23,45	--	F1	0,40	
240V 50Hz	0,27	0,4	24,26	--	F1	0,27	
264V 50Hz	0,22	--	24,52	--	F1	0,22	
90V 60Hz	0,43	--	23,13	--	F1	0,43	
100V 60Hz	0,40	1,0	23,34	--	F1	0,40	
240V 60Hz	0,29	0,4	24,58	--	F1	0,29	
264V 60Hz	0,22	--	24,78	--	F1	0,22	
By internal adapter							
90V 50Hz	0,38	--	18,11	--	--	0,38	Max normal load
100V 50Hz	0,35	1,0	18,25	--	--	0,35	
240V 50Hz	0,19	0,4	18,43	--	--	0,19	
264V 50Hz	0,18	--	18,67	--	--	0,18	
90V 60Hz	0,39	--	18,64	--	--	0,39	
100V 60Hz	0,35	0,4	18,60	--	--	0,35	
240V 60Hz	0,19	0,4	18,89	--	--	0,19	
264V 60Hz	0,18	--		--	--	0,18	
By internal power supply model: PMT-24V150W2BA							
90V 50Hz	0,38	--	21,20	--	F1	0,38	Max normal load
100V 50Hz	0,35	1,0	20,97	--	F1	0,35	
240V 50Hz	0,24	0,4	21,86	--	F1	0,24	
264V 50Hz	0,19	--	21,76	--	F1	0,19	
90V 60Hz	0,38	--	20,89	--	F1	0,38	
100V 60Hz	0,35	1,0	21,06	--	F1	0,35	
240V 60Hz	0,23	0,4	21,45	--	F1	0,23	
264V 60Hz	0,20	--	22,75	--	F1	0,20	
Supplementary information:							

B.3	TABLE: Abnormal operating condition tests							N/A
Ambient temperature (°C) .....					See below.			—
Power source for EUT: Manufacturer, model/type, output rating ..					See table 4.1.2.			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation

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Clause	Requirement + Test	Result - Remark	Verdict

<b>B.3</b>	<b>TABLE: Abnormal operating condition tests</b>							N/A
Ambient temperature (°C) .....							See below.	—
Power source for EUT: Manufacturer, model/type, output rating ..							See table 4.1.2.	—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Supplementary information: Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4.								

<b>B.4</b>	<b>TABLE: Fault condition tests</b>							P
Ambient temperature (°C)? .....							25°C if not specified	—
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
CV15	SC	264V	10min	F1	0,01	--	--	EUT shut down immediately, No damage,no hazard.
D1(LED)	SC	264V	10min	F1	0,21	--	--	LED shut down immediately, No damage,no hazard.
UL2 PIN1-4	SC	264V	10min	F1	0,22	--	--	Normal work, No damage,no hazard.
Supplementary information: Sc=Short circuit;								

Annex M	TABLE: Batteries								P
The tests of Annex M are applicable only when appropriate battery data is not available									P
Is it possible to install the battery in a reverse polarity position? .....:							No		N/A
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition	--	--	--	3,23mA	300mA	0,19uA	--	--	--
Max. current during fault condition	--	--	--	6,46mA (R11 SC)	300mA	1,2mA (CV73 SC)	--	--	--

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Test results:			Verdict
- Chemical leaks		No	P
- Explosion of the battery		No	P
- Emission of flame or expulsion of molten metal		No	P
- Electric strength tests of equipment after completion of tests			P
Supplementary information:			

<b>Annex M.4</b>	<b>Table: Additional safeguards for equipment containing secondary lithium batteries</b>				N/A
Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp (C)	
Supplementary Information:					

Battery identification	Charging at $T_{lowest}$ (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation
Supplementary Information:				

Annex Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)					P
Note: Measured UOC (V) with all load circuits disconnected:						
Output Circuit	Components	U <sub>oc</sub> (V)	I <sub>sc</sub> (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
LAN	normal	0	0	8	0	100
Supplementary Information: Sc=Short circuit.						

<b>T.2, T.3, T.4, T.5</b>	<b>TABLE: Steady force test</b>				P
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
Enclosure	Metal	1,0	250	5	Intact
Enclosure	Plastic	2,5	250	5	Intact

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

Internal primary components	--	--	10	5	Clearance and creepage not reduced to under limited value.
-----------------------------	----	----	----	---	--

Supplementary information:

T.6, T.9	TABLE: Impact tests				P
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
Enclosure	Metal	1,0	1300	Intact	
Enclosure	Plastic	2,5	1300	Intact	
Supplementary information:					

T.7	TABLE: Drop tests				N/A
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Supplementary information:					

<b>T.8</b>	<b>TABLE: Stress relief test</b>				N/A
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Supplementary information:					

\*\*\* End of Test report \*\*\*

Details of:   General view (model: DS-K3G200X-R)



Details of:   General view (model: DS-K3G200X-R)





Details of:   General view (model: DS-K3G200X-R).....



Details of:   General view (model: DS-K3G200X-R).....

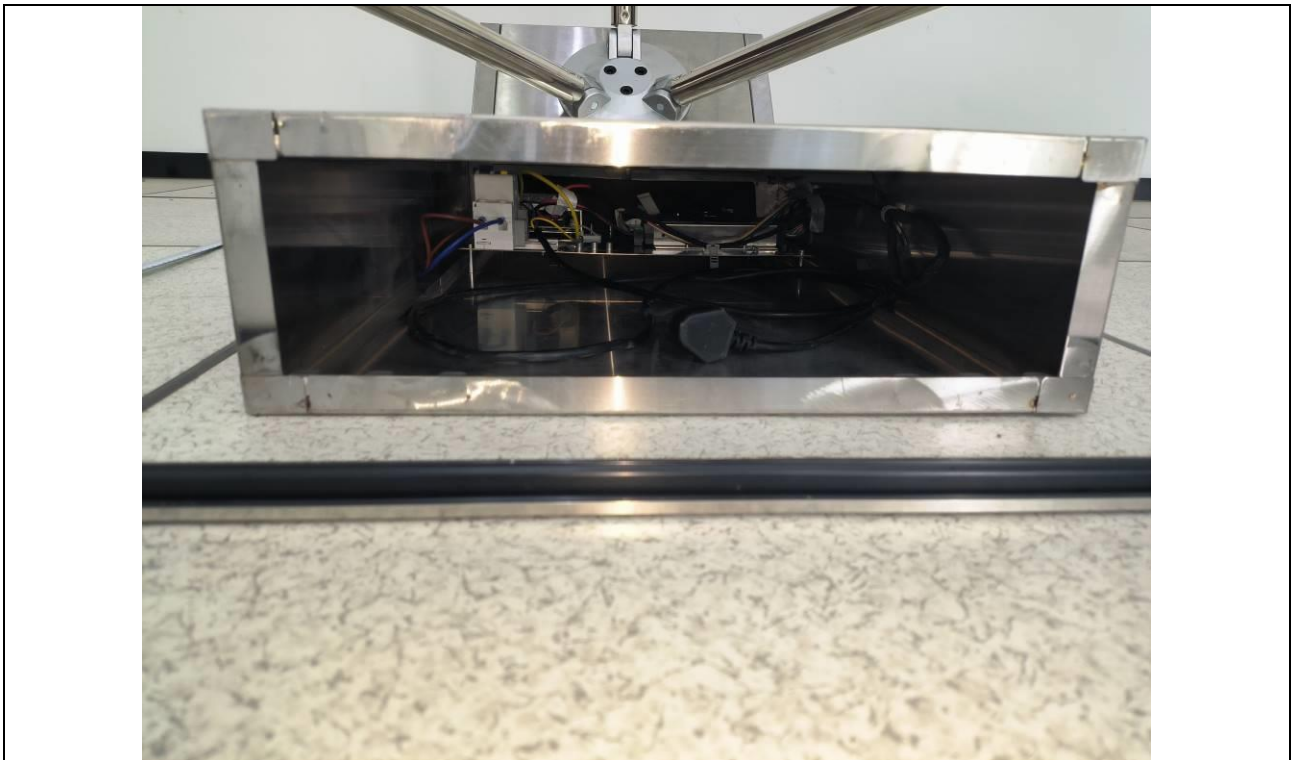




Details of: General view (model: DS-K3G200X-R)



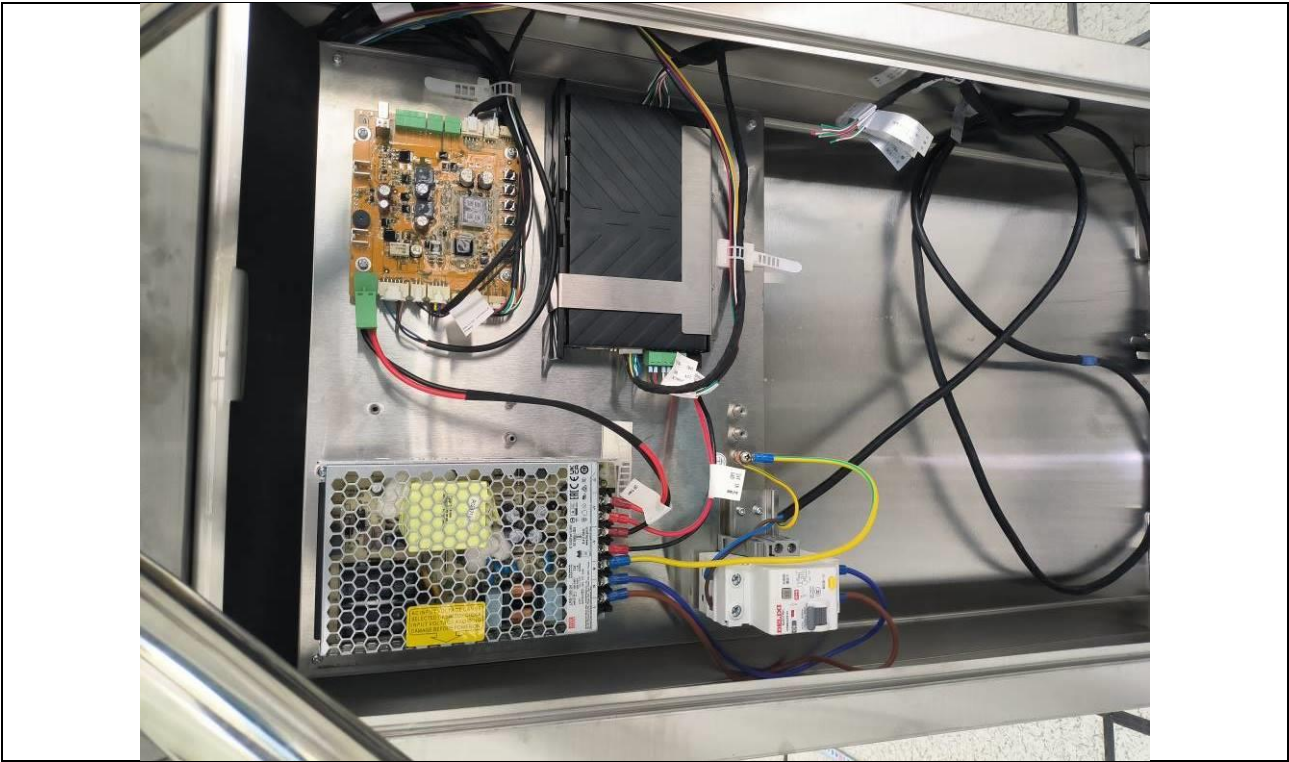
Details of: Internal view



Details of: Internal view

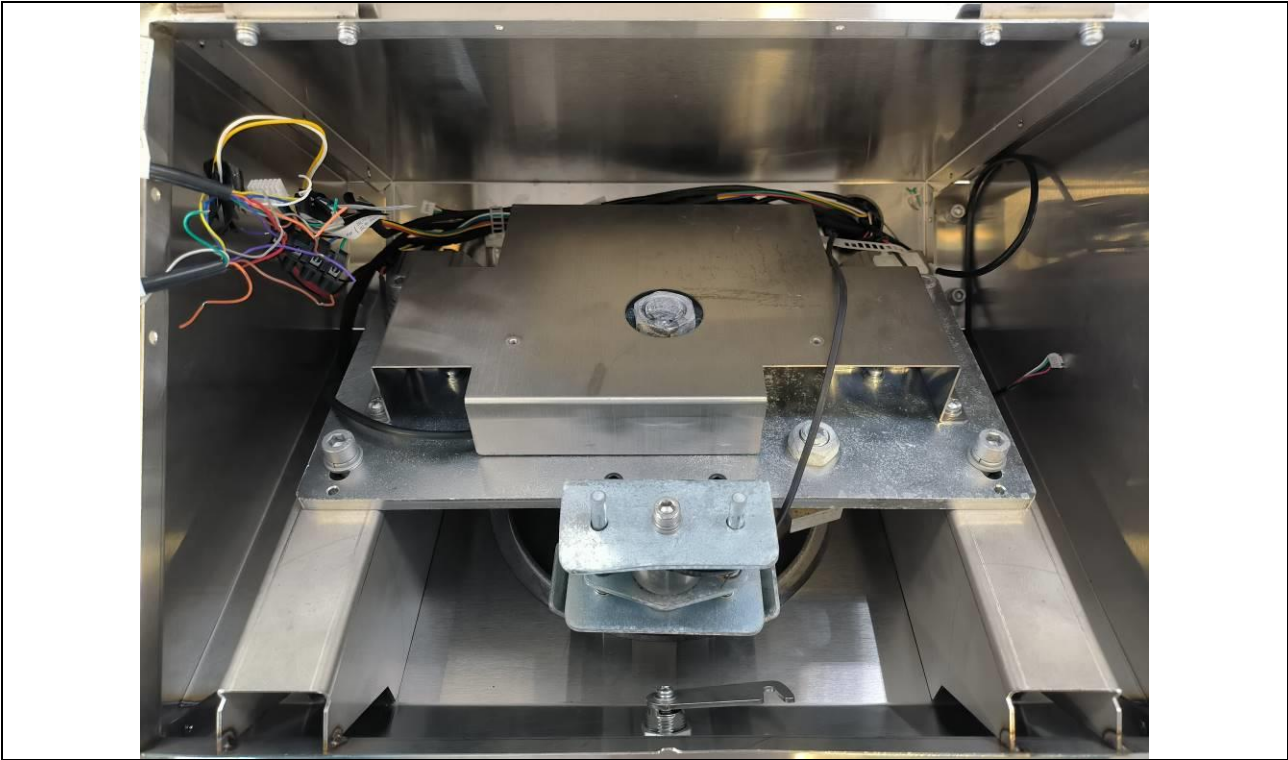


Details of: Internal view





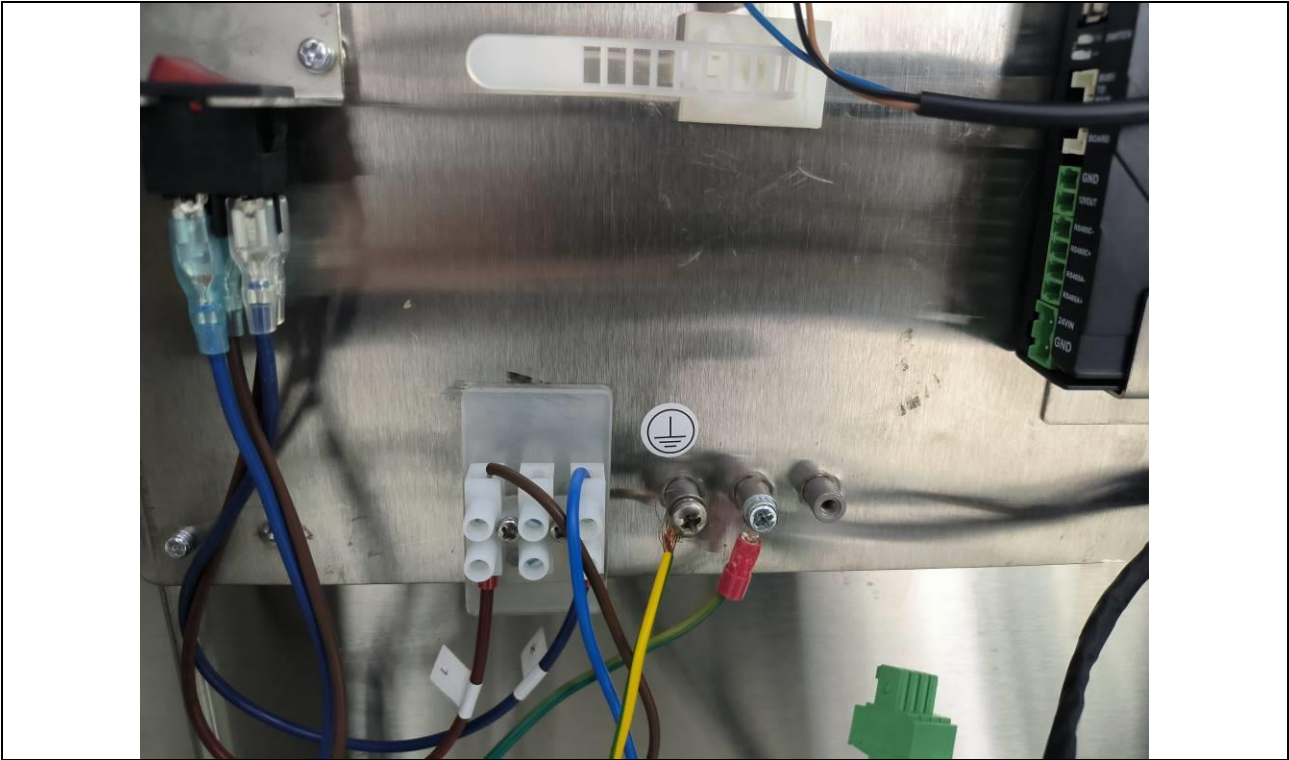
Details of: Internal view



Details of: Internal view



Details of: Internal view

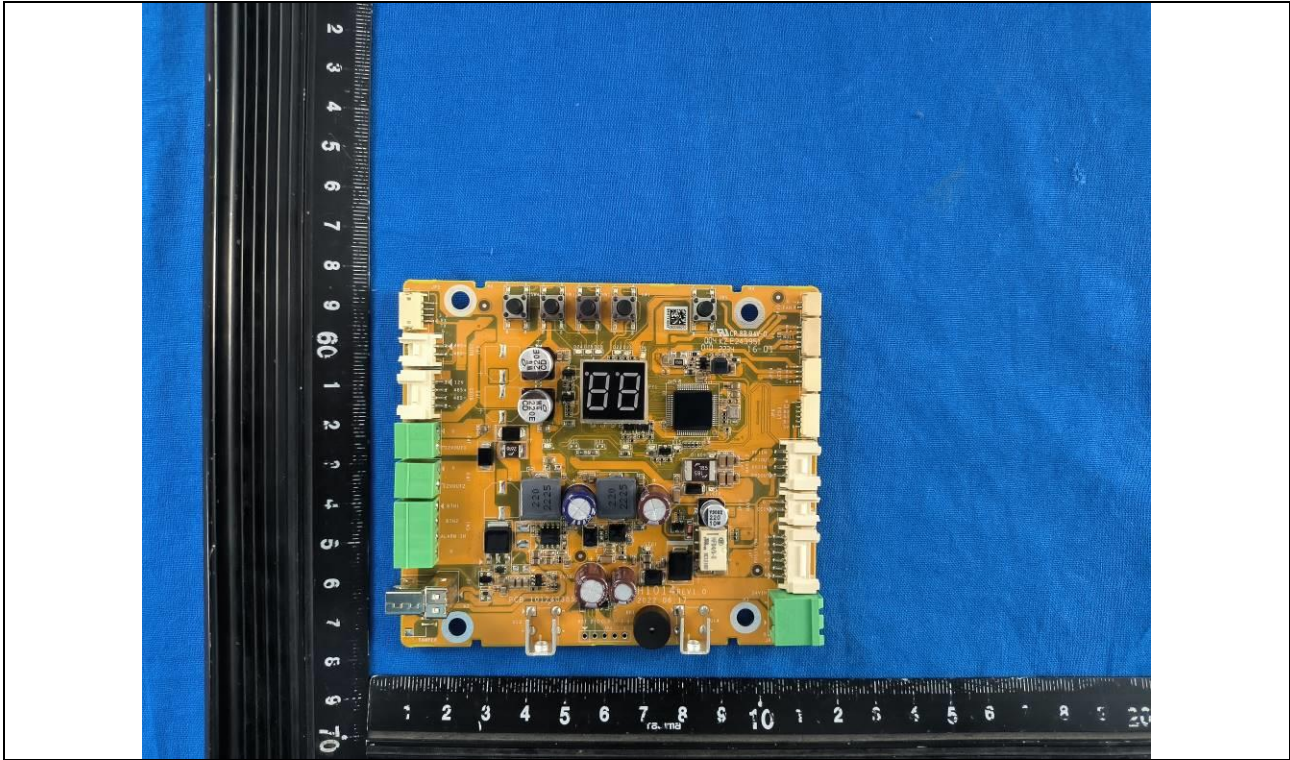


Details of: Internal view

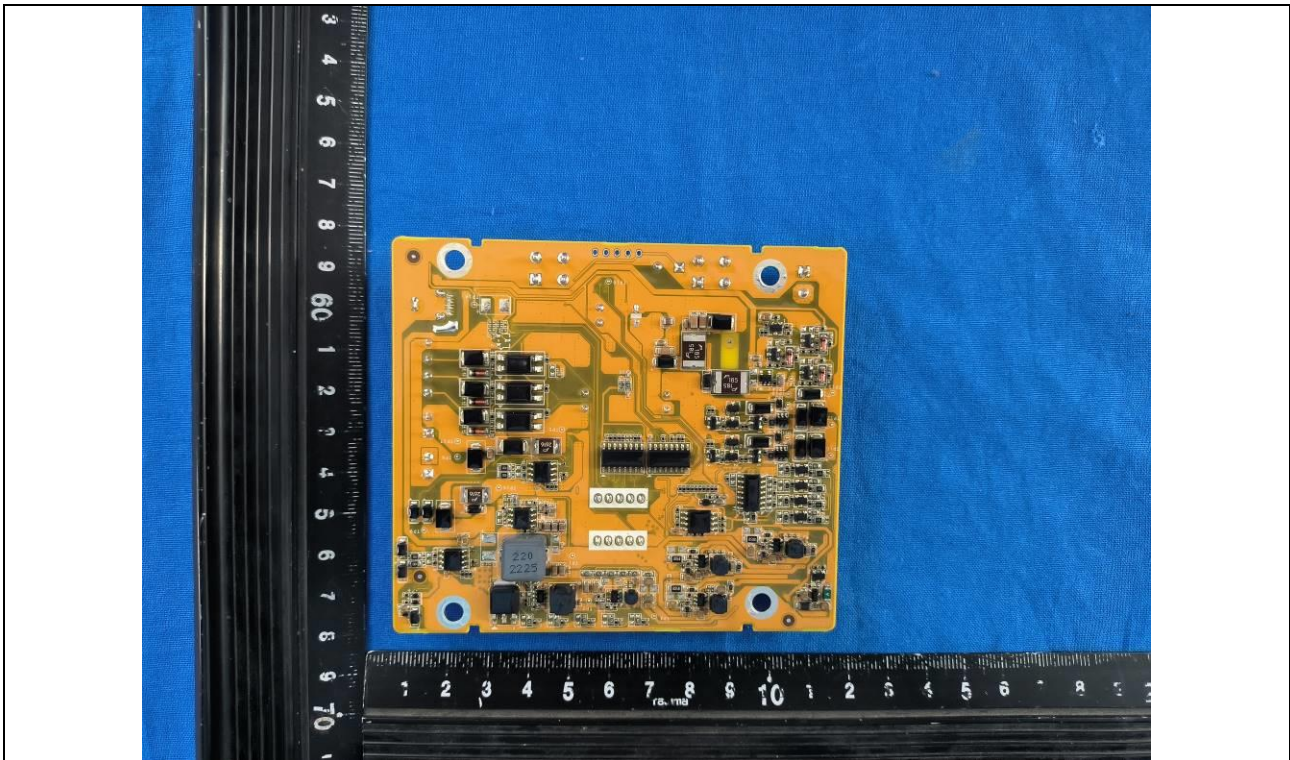




Details of: PCB-1

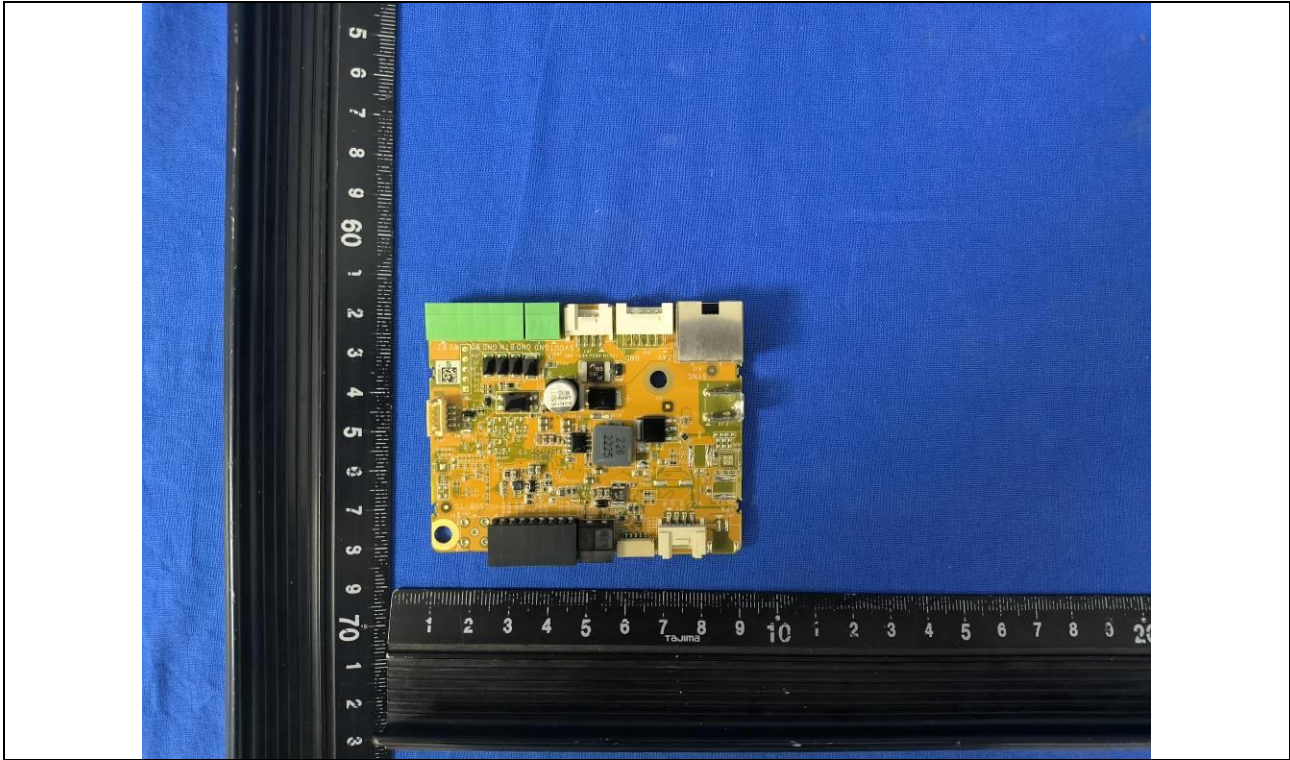


Details of: PCB-1

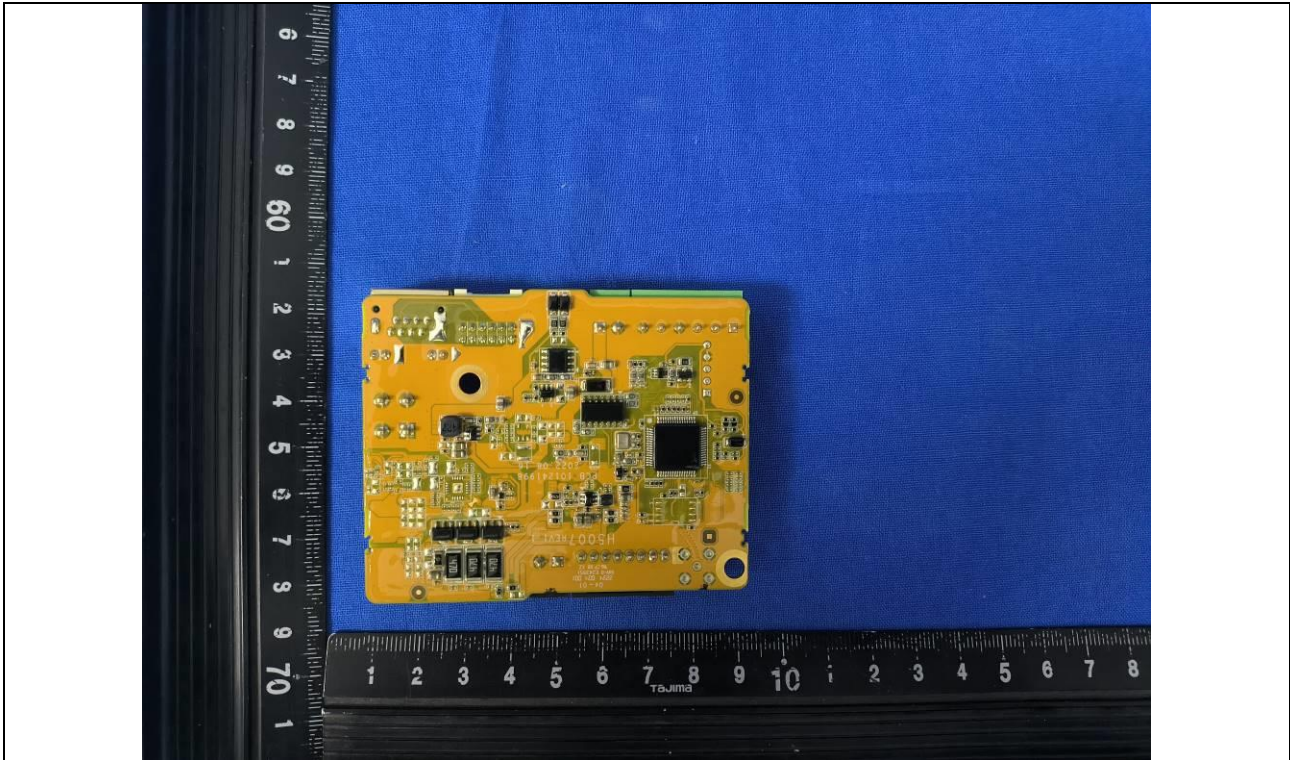




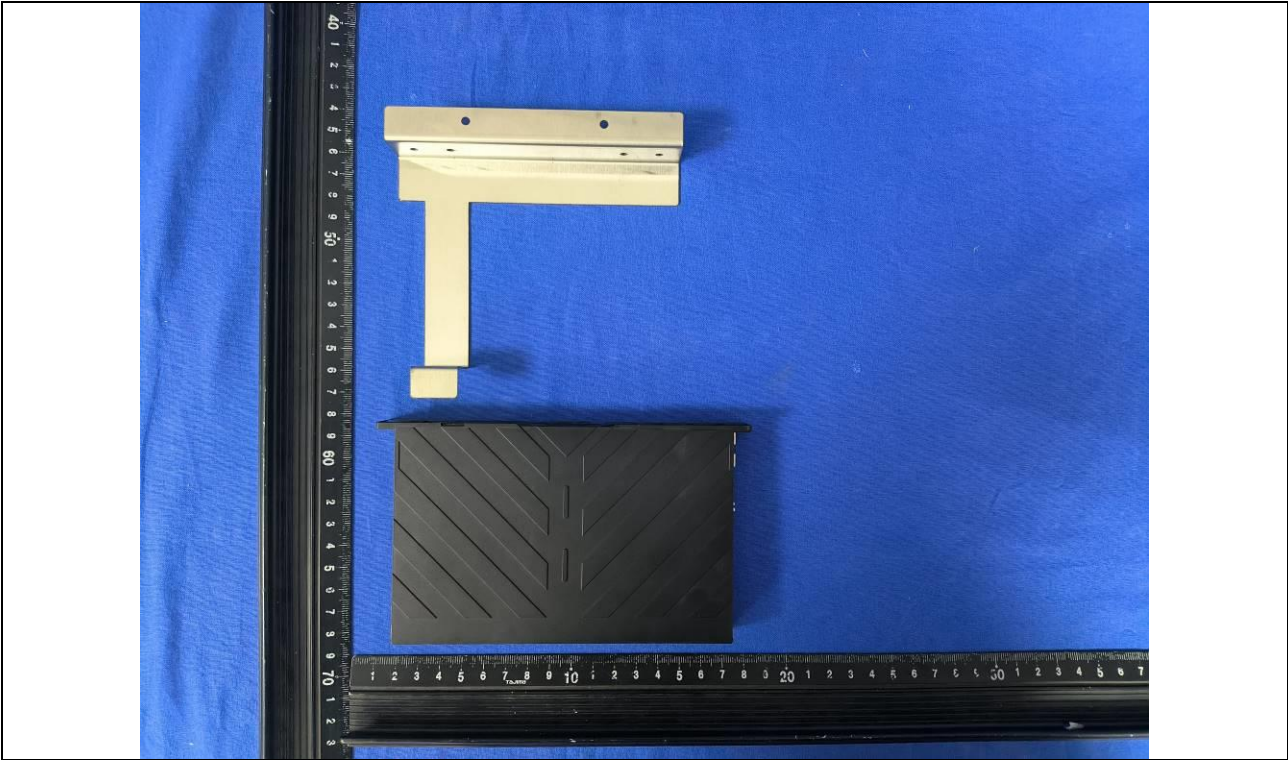
Details of: PCB-2



Details of: PCB-2



Details of: Internal view

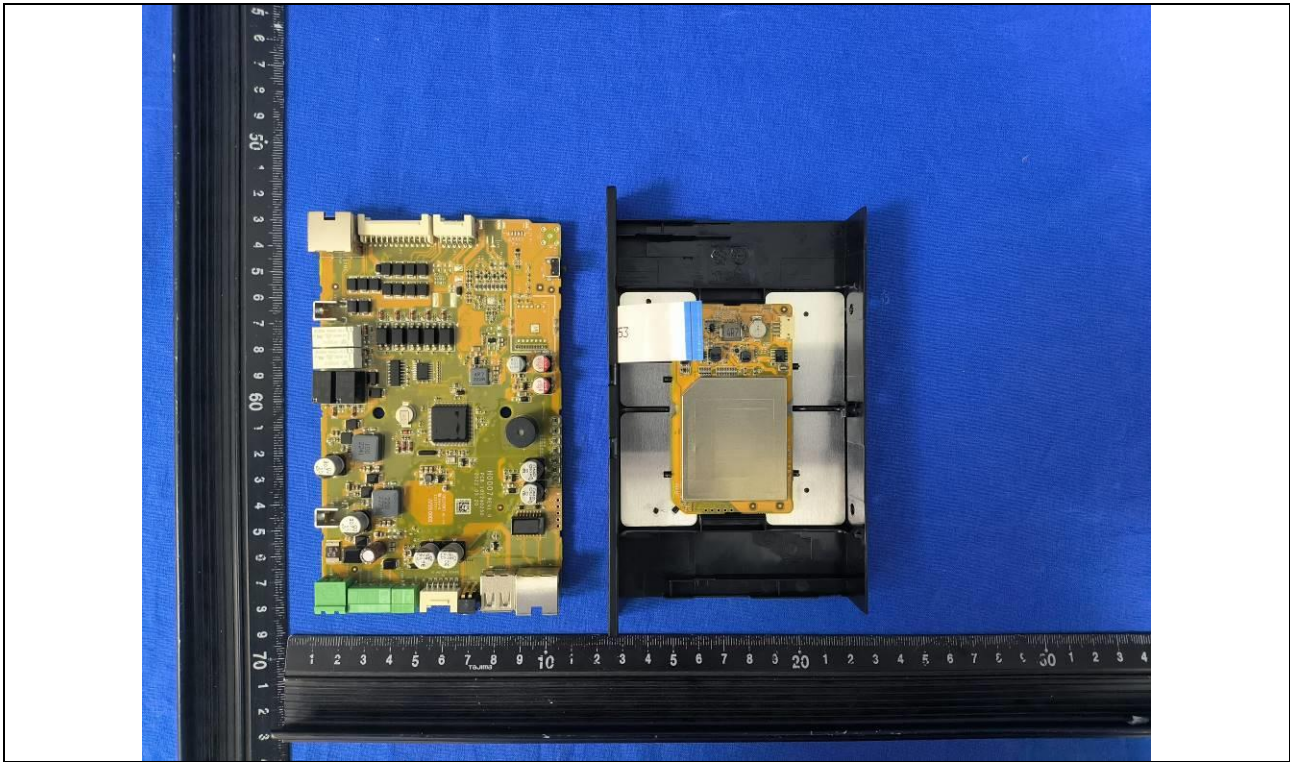


Details of: Internal view





Details of: Internal view

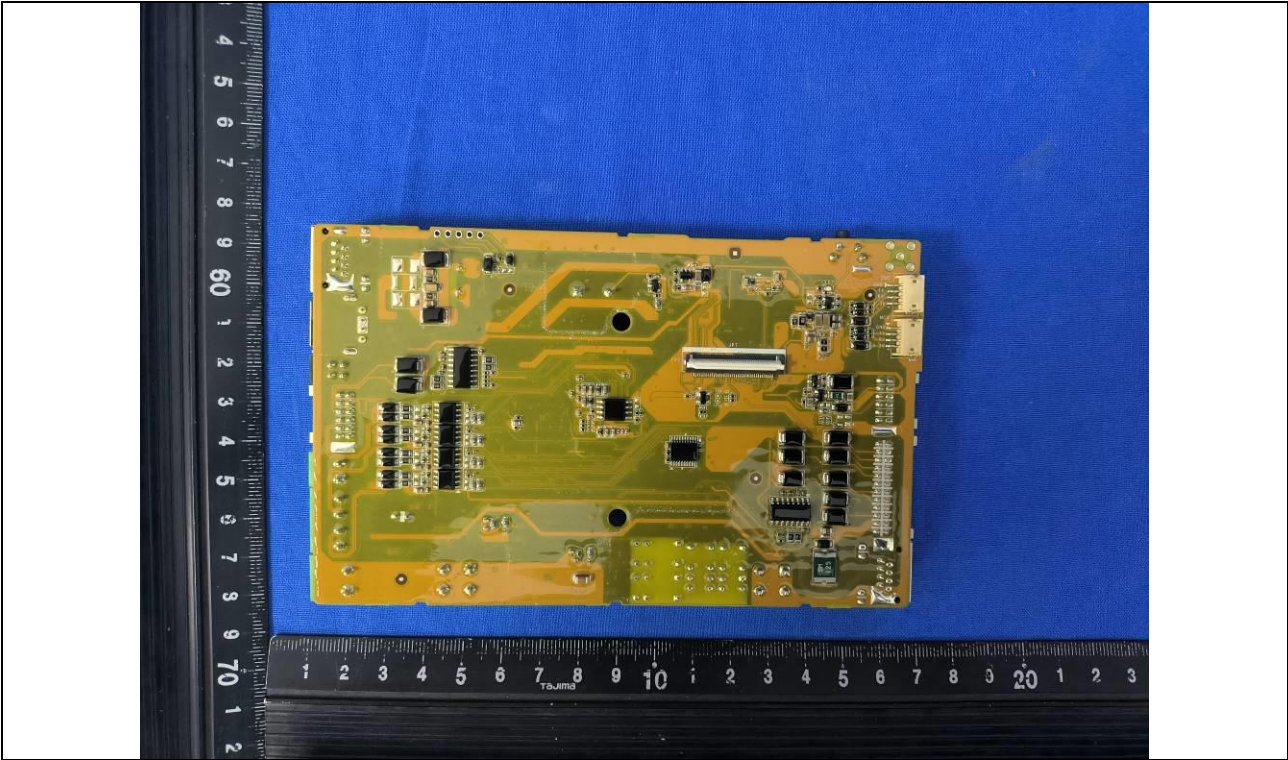


Details of: PCB-3

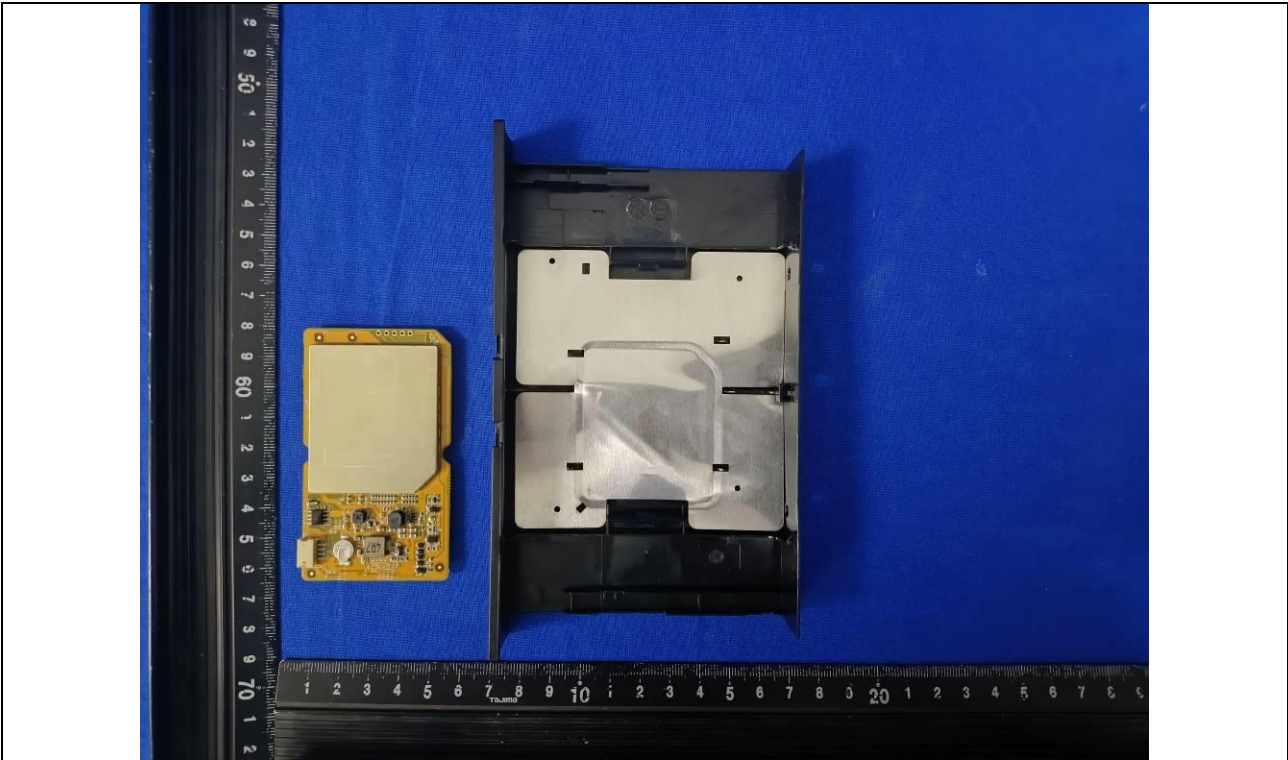




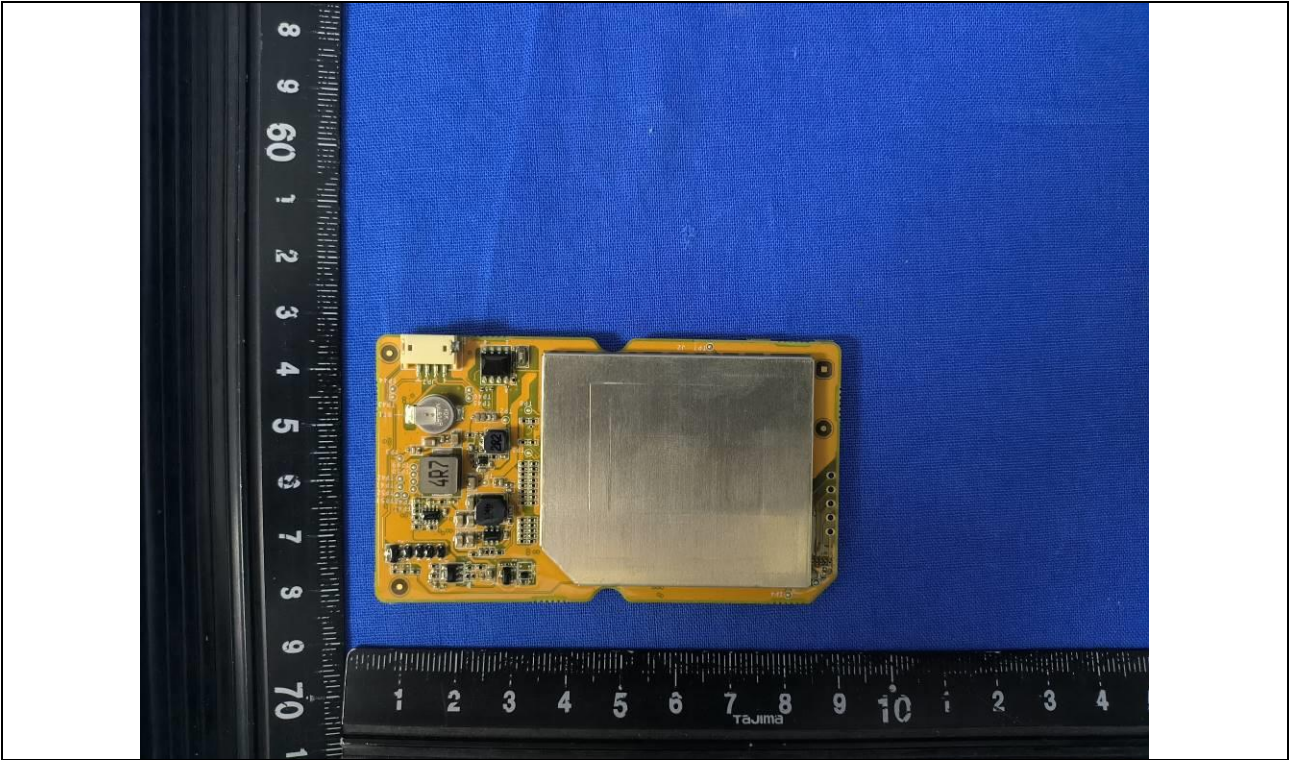
Details of: PCB-3



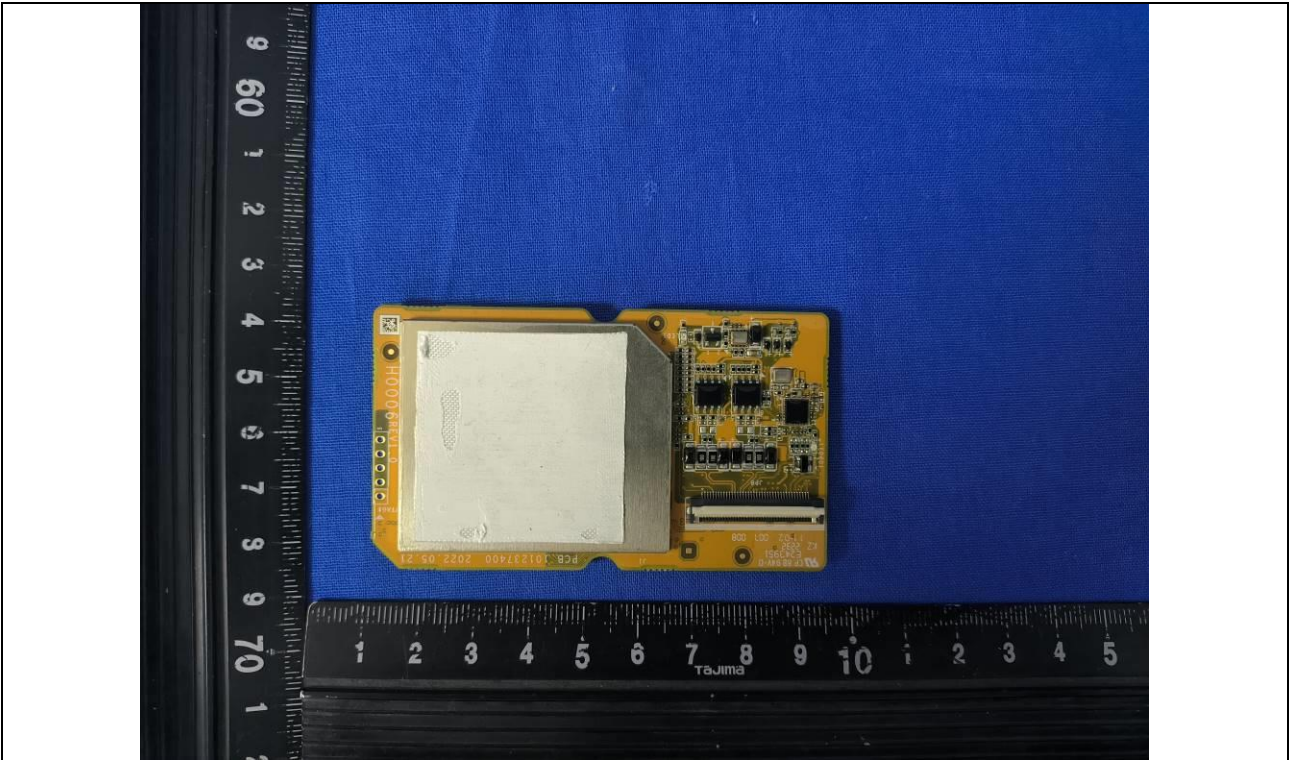
Details of: Internal view



Details of: PCB-4

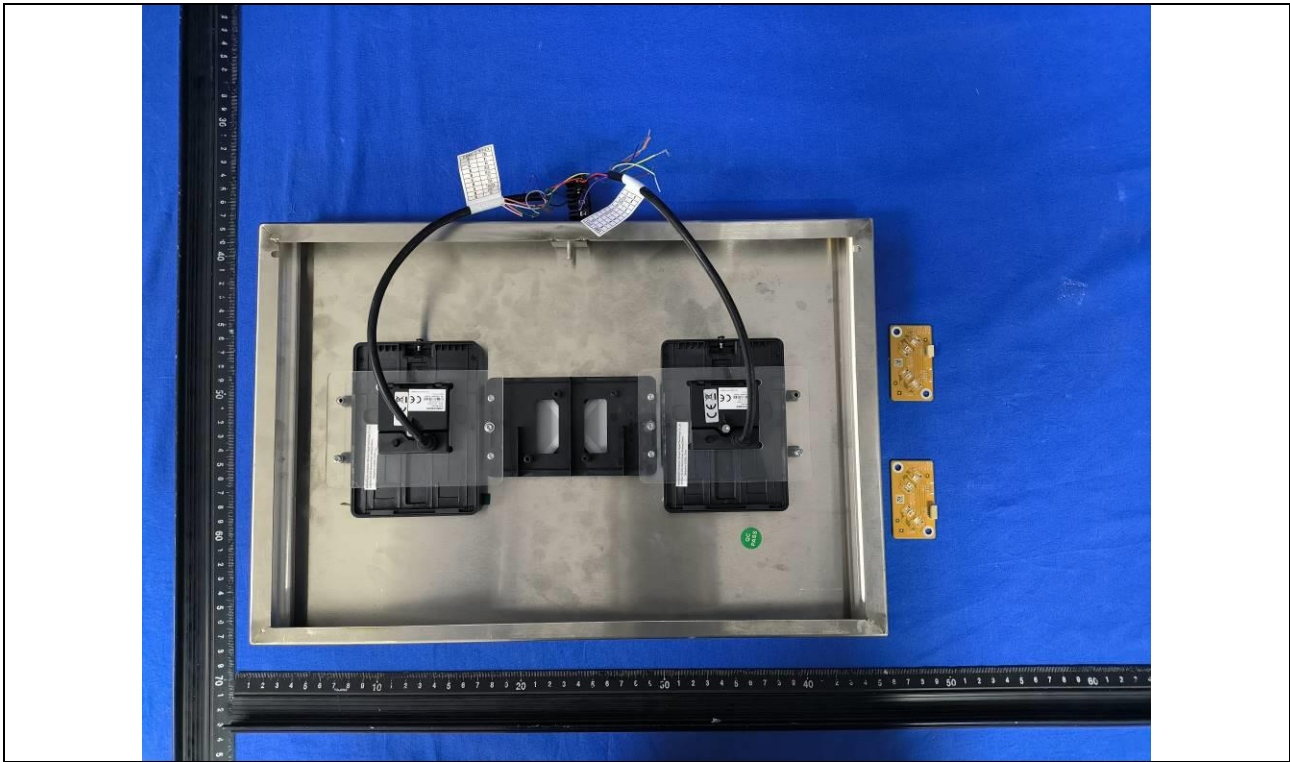


Details of: PCB-4

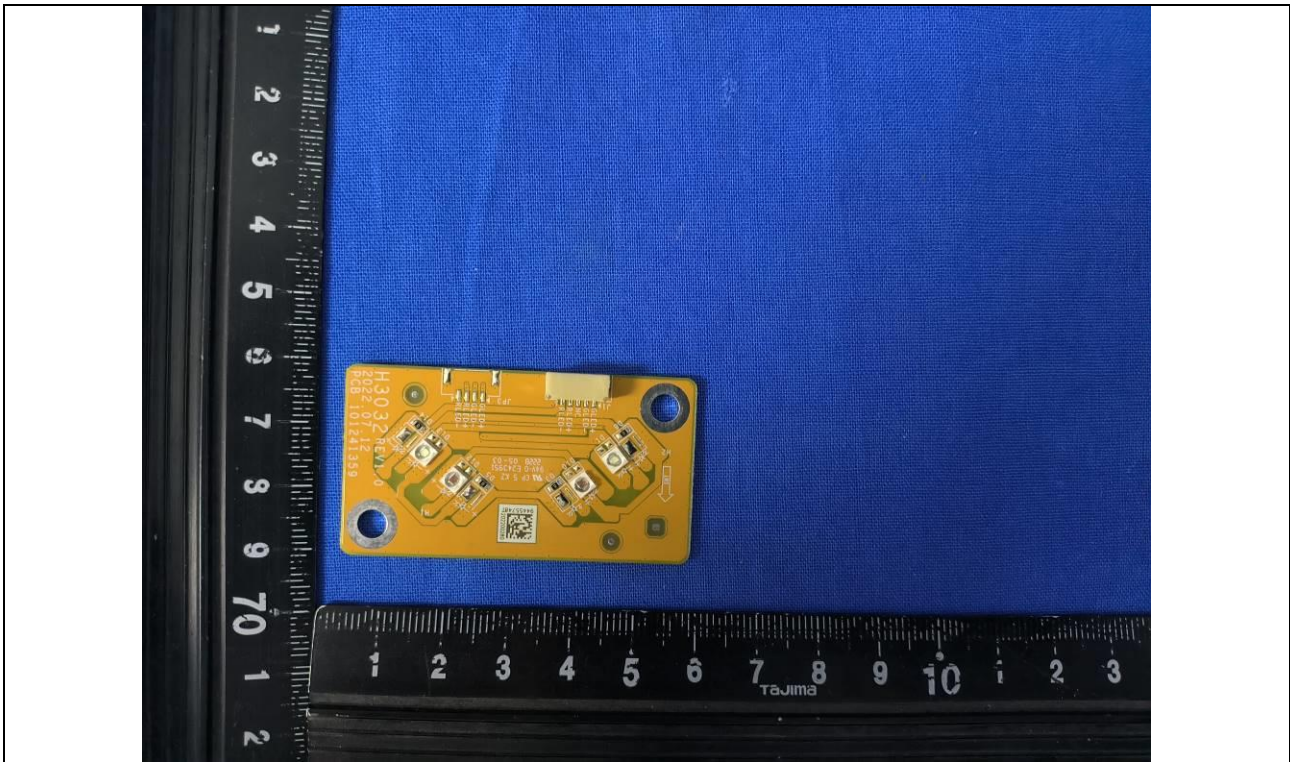




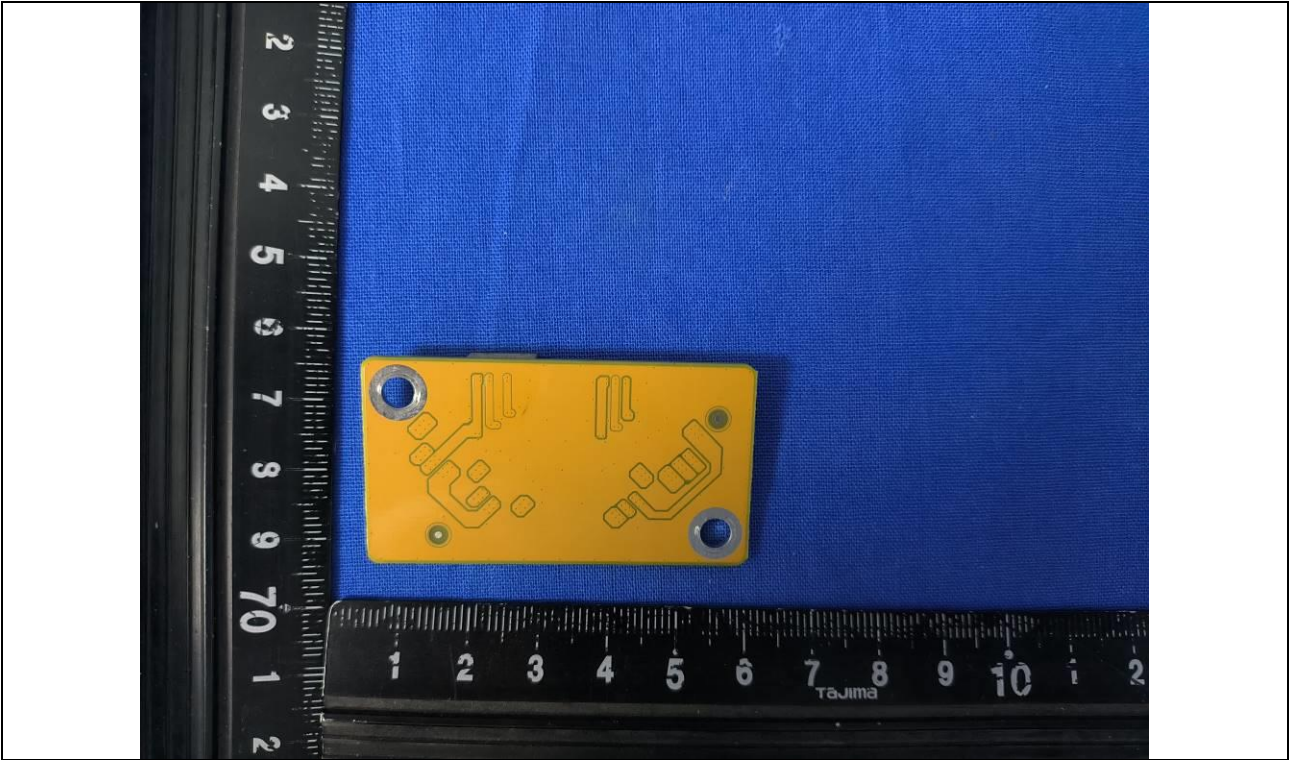
Details of: Internal view



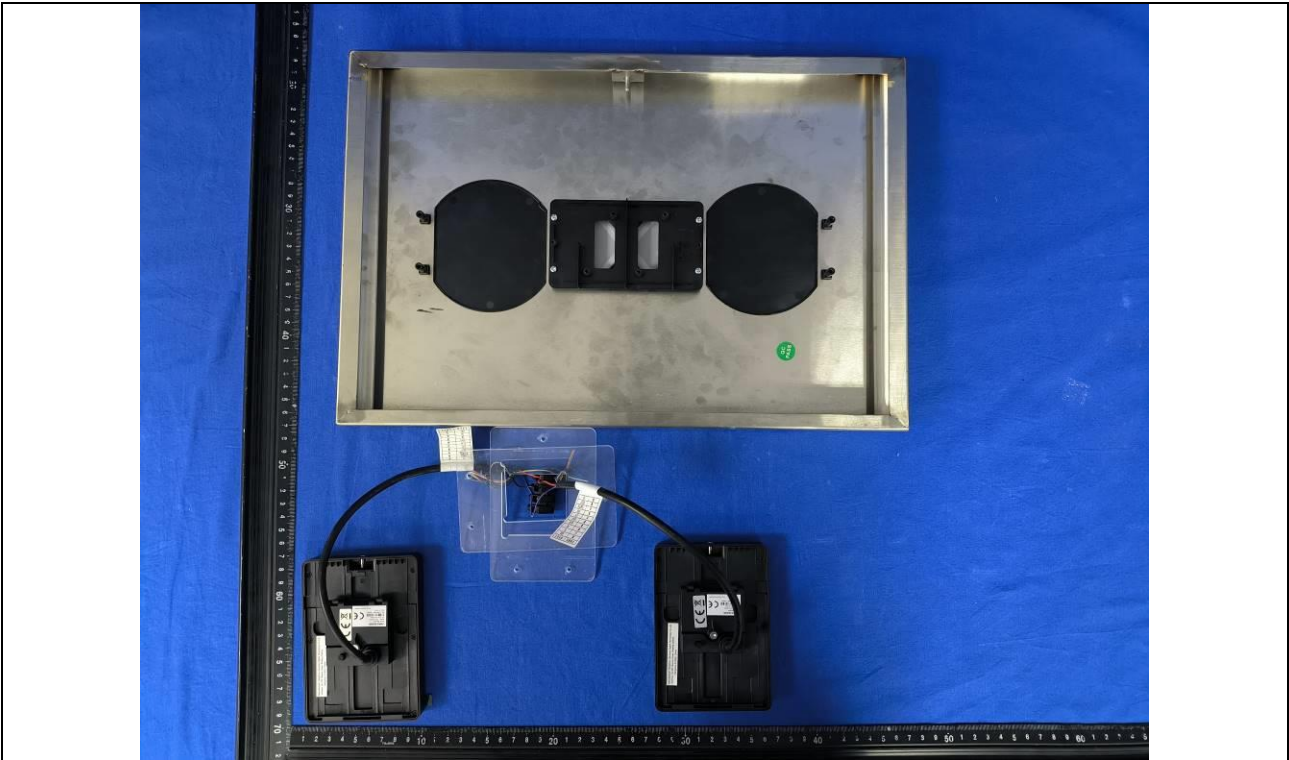
Details of: PCB-5



Details of: PCB-5

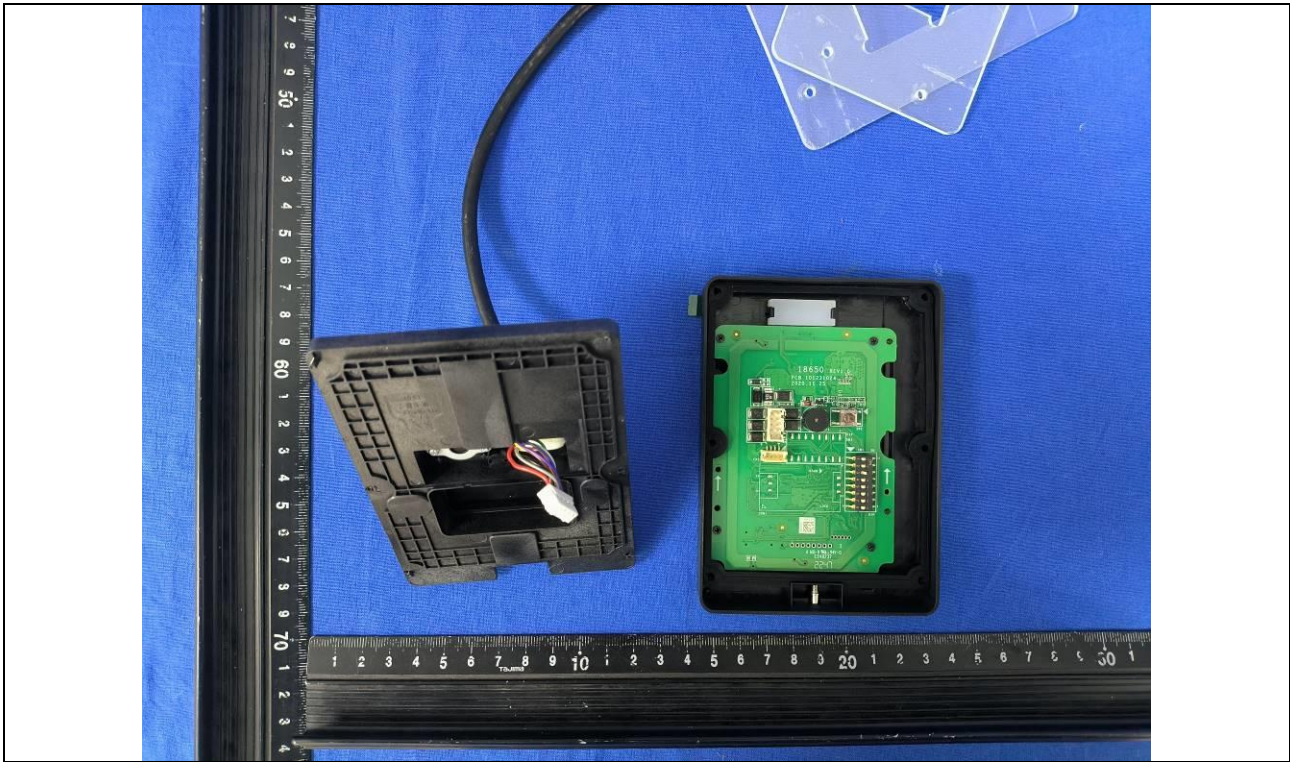


Details of: Internal view





Details of: Internal view

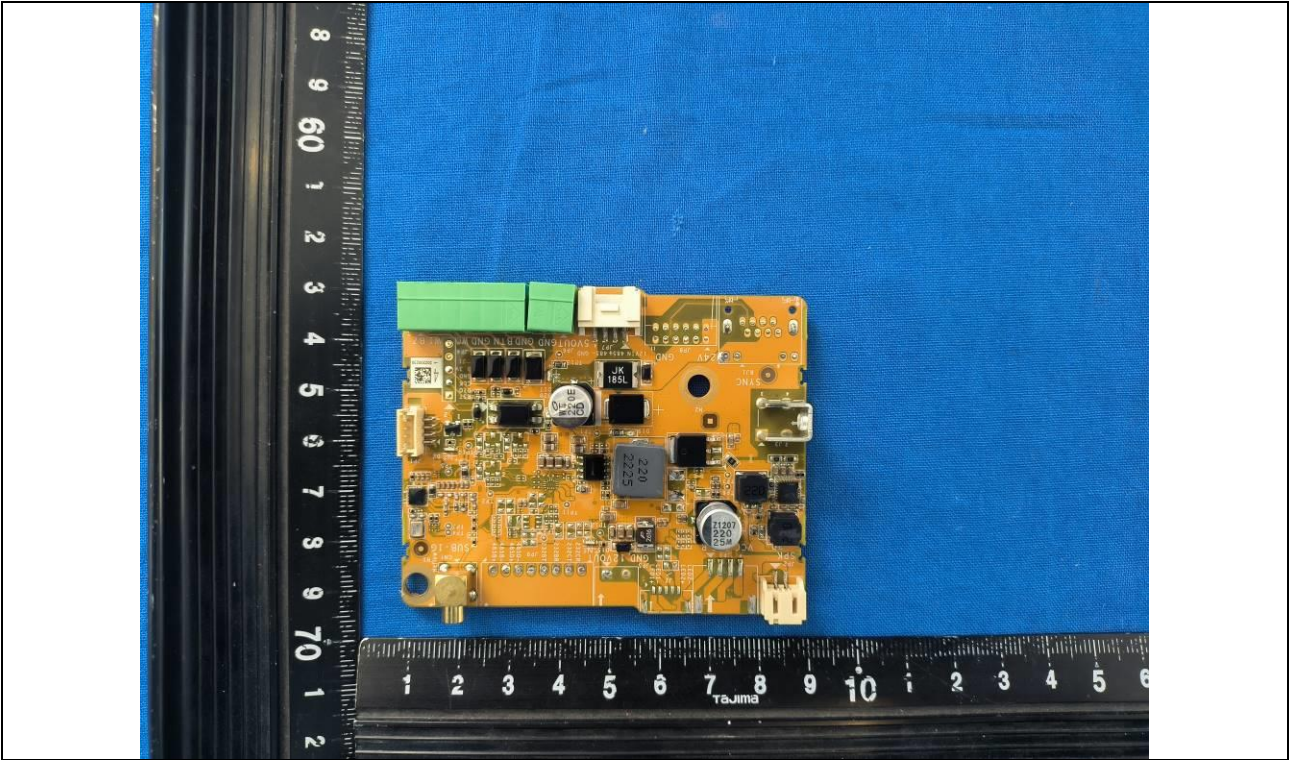


Details of: Internal view

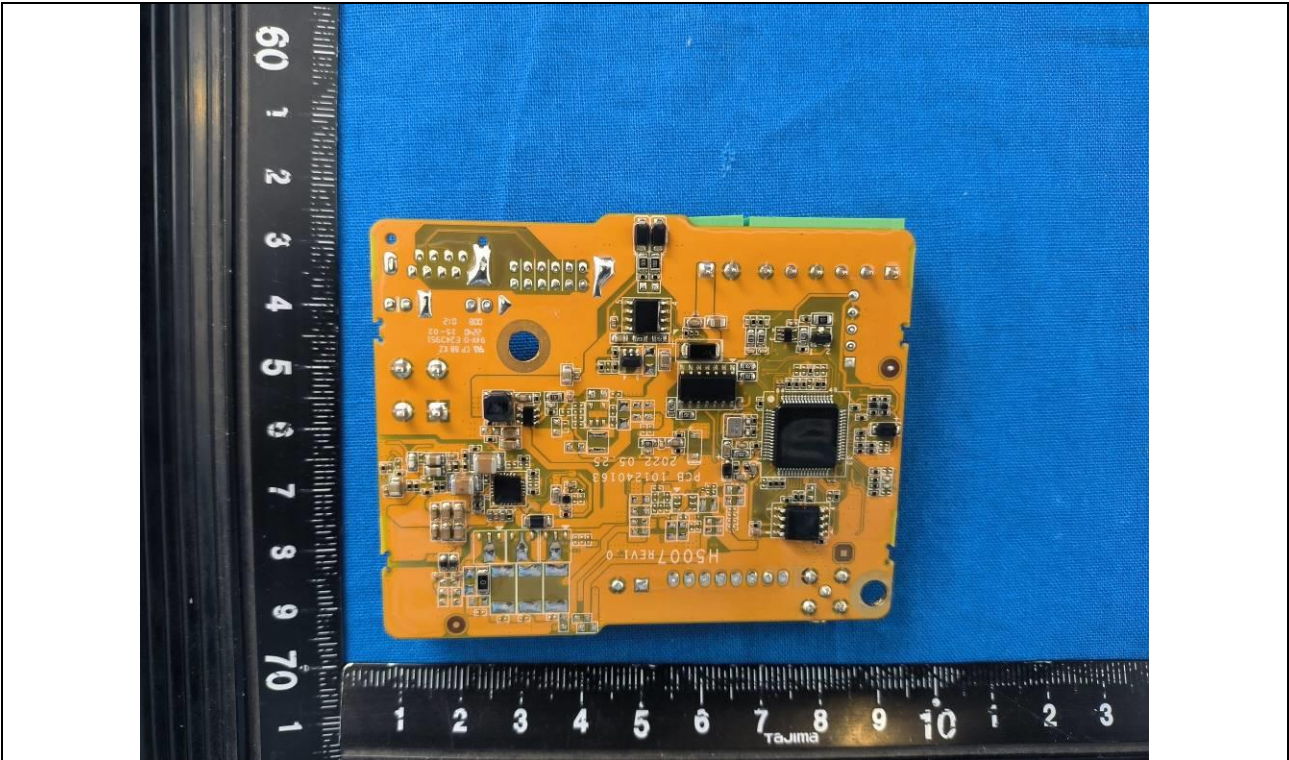




Details of: PCB-6

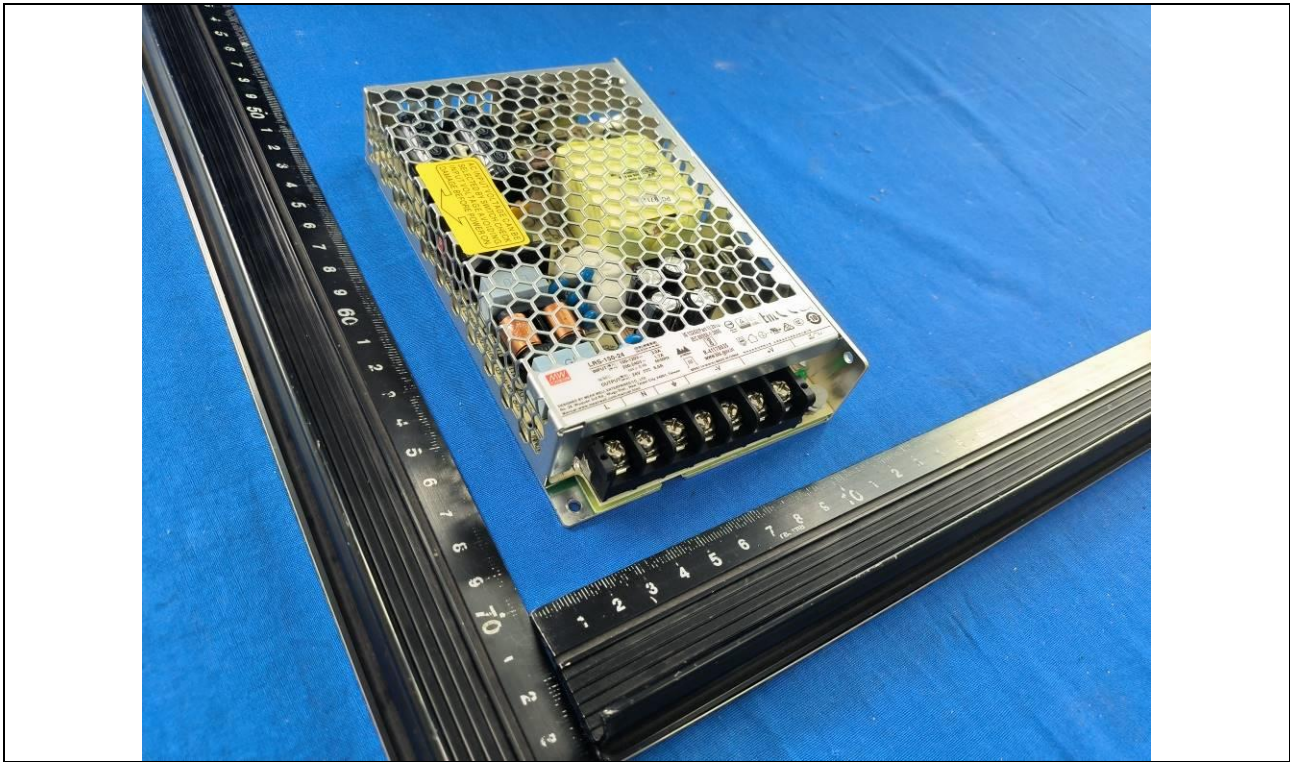


Details of: PCB-6

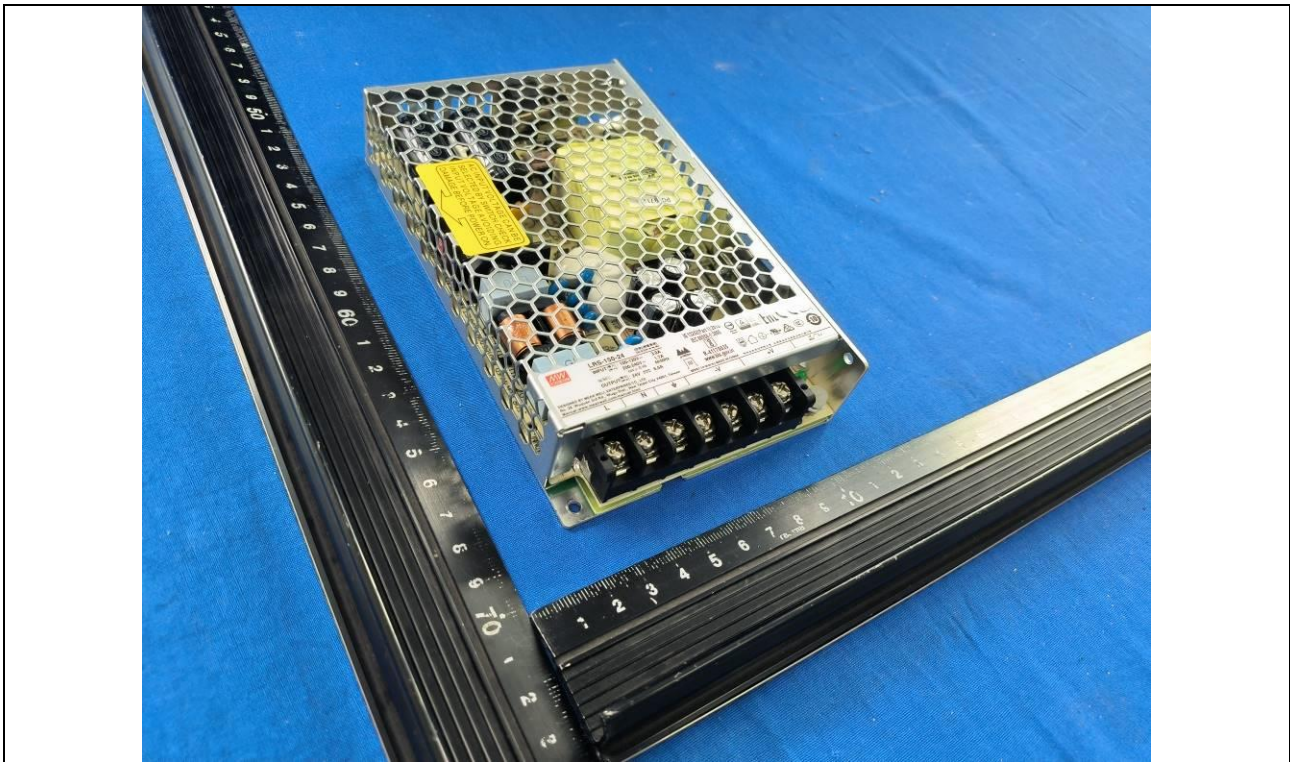




Details of: Internal power supply (Model: LRS-150F-24)



Details of: Internal power supply (Model: PMT-24V150W2BA)



Details of: Internal adapter (Model: KPL-060M-VI)



\*\*\*\*\*End of Attachment 1\*\*\*\*\*



IEC62368_1D - ATTACHMENT																																											
Clause	Requirement + Test				Result - Remark		Verdict																																				
<div>ATTACHMENT TO TEST REPORT</div> <div>IEC 62368-1</div> <div>EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</div> <div>(Audio/video, information and communication technology equipment - Part 1: Safety requirements)</div>																																											
Differences according to ..... : EN 62368-1:2014+A11:2017																																											
Attachment Form No. .... : EU_GD_IEC62368_1D_II																																											
Attachment Originator ..... : Nemko AS																																											
Master Attachment..... : Date 2021-02-04																																											
Copyright © 2021 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.																																											
	CENELEC COMMON MODIFICATIONS (EN)						P																																				
	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	P
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																																						
	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.				Should be considered during national approval.		P																																				

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	<p><b>Add</b> the following new subclause after 4.9:</p> <p>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):</p> <p>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;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</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>		P
5.4.2.3.2.4	<p><b>Add</b> the following to the end of this subclause:</p> <p>The requirement for interconnection with <b>external circuit</b> is in addition given in EN 50491-3:2009.</p>		N/A
10.2.1	<p>Add the following to <sup>c)</sup> and <sup>d)</sup> in table 39:</p> <p>For additional requirements, see 10.5.1.</p>		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	<p><b>Add</b> the following after the first paragraph:  <i>For RS 1 compliance is checked by measurement under the following conditions:</i></p> <p><i>In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or presets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.</i></p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p><i>The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm<sup>2</sup>, at any point 10 cm from the outer surface of the apparatus.</i></p> <p><i>Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.</i></p> <p><i>For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.</i></p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>		N/A
10.6.1	<p><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.</p>		N/A
10.Z1	<p><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></p> <p>The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz).</p> <p>For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566</p>		N/A
G.7.1	<p><b>Add</b> the following note:  NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Bibliography	<p><b>Add</b> the following standards:</p> <p><b>Add</b> the following notes for the standards indicated:</p> <p>IEC 60130-9 NOTE Harmonized as EN 60130-9.</p> <p>IEC 60269-2 NOTE Harmonized as HD 60269-2.</p> <p>IEC 60309-1 NOTE Harmonized as EN 60309-1.</p> <p>IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series.</p> <p>IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4.</p> <p>IEC 60664-5 NOTE Harmonized as EN 60664-5.</p> <p>IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified).</p> <p>IEC 61508-1 NOTE Harmonized as EN 61508-1.</p> <p>IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1.</p> <p>IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4.</p> <p>IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6.</p> <p>IEC 61643-1 NOTE Harmonized as EN 61643-1.</p> <p>IEC 61643-21 NOTE Harmonized as EN 61643-21.</p> <p>IEC 61643-311 NOTE Harmonized as EN 61643-311.</p> <p>IEC 61643-321 NOTE Harmonized as EN 61643-321.</p> <p>IEC 61643-331 NOTE Harmonized as EN 61643-331.</p>		N/A
<b>ZB</b>	<b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)</b>		N/A
4.1.15	<p><b>Denmark, Finland, Norway and Sweden</b></p> <p>To the end of the subclause the following is added:</p> <p><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.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In <b>Denmark</b>: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord."</p> <p>In <b>Finland</b>: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In <b>Norway</b>: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In <b>Sweden</b>: "Apparaten skall anslutas till jordat uttag"</p>		N/A
4.7.3	<p><b>United Kingdom</b></p> <p>To the end of the subclause the following is added:</p> <p>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</p>		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.2	<p><b>Denmark</b></p> <p>After the 2nd paragraph add the following:</p> <p>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.</p>		N/A
5.4.11.1 and Annex G	<p><b>Finland and Sweden</b></p> <p>To the end of the subclause the following is added:</p> <p>For separation of the telecommunication network from earth the following is applicable:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> <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;</li> </ul> <p>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.</p>		N/A
5.5.2.1	<p><b>Norway</b></p> <p>After the 3rd paragraph the following is added:</p> <p>Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).</p>		P

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.6	<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 <b>basic insulation</b> in <b>class I pluggable equipment type A</b> shall comply with G.10.1 and the test of G.10.2.		N/A
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/A
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/A
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/A
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.		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.1	<p><b>Norway and Sweden</b></p> <p>To the end of the subclause the following is added:</p> <p>The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>“Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)”</p> <p>NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“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:</p> <p>“Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”</p>		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	<b>Denmark</b> To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .		N/A
B.3.1 and B.4	<b>Ireland and United Kingdom</b> The following is applicable: 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 the <b>direct plug-in equipment</b> , until the requirements of Annexes B.3.1 and B.4 are met		N/A
G.4.2	<b>Denmark</b> To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a <i>Justification:</i> Heavy Current Regulations, Section 6c		N/A



IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	<b>United Kingdom</b> To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
G.7.1	<b>United Kingdom</b> To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
G.7.1	<b>Ireland</b> To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	<b>Ireland and United Kingdom</b> 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.		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<b>ZC</b>	<b>ANNEX ZC, NATIONAL DEVIATIONS (EN)</b>		<b>N/A</b>
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>		N/A

---End of Attachment 2---

## EU Conformity Statement



This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the EMC Directive 2014/30/EU, RE Directive 2014/53/EU, the RoHS Directive 2011/65/EU



2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: [www.recyclethis.info](http://www.recyclethis.info)



2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: [www.recyclethis.info](http://www.recyclethis.info)

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into Dangers and Cautions:

**Dangers:** Neglecting any of the warnings may cause serious injury or death.

**Cautions:** Neglecting any of the cautions may cause injury or equipment damage.

<b>Dangers:</b> Follow these safeguards to prevent serious injury or death.	<b>Cautions:</b> Follow these precautions to prevent potential injury or material damage.

### **Danger:**

- All the electronic operation should be strictly compliance with the electrical safety regulations, fire prevention regulations and other related regulations in your local region.
- Please use the power adapter, which is provided by normal company. The power consumption cannot be less than the required value.
- Do not connect several devices to one power adapter as adapter overload may cause over-heat or fire hazard.
- Please make sure that the power has been disconnected before you wire, install or dismantle the device.

If the top caps should be open and the device should be powered on for maintenance, make sure:

1. Power off the fan to prevent the operator from getting injured accidentally.
2. Do not touch bare high-voltage components.
3. Make sure the switch's wiring sequence is correct after maintenance.

Please make sure that the power has been disconnected before you wire, install or dismantle the device.

When the product is installed on wall or ceiling, the device shall be firmly fixed.

If smoke, odors or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.

Do not ingest battery, Chemical Burn Hazard.

This product contains a coin/button cell battery. If the coin/button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.

Keep new and used batteries away from children. If the battery compartment does not close securely, stop using the product and keep it away from children. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.

If the product does not work properly, please contact your dealer or the nearest service center.

Never attempt to disassemble the device yourself. (We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.)

#### **Cautions:**

- Stainless steel may be corroded in some circumstances. You need to clean and care the device by using the stainless steel cleaner. It is suggested to clean the device every month.
- Do not drop the device or subject it to physical shock, and do not expose it to high electromagnetism radiation. Avoid the equipment installation on vibrations surface or places subject to shock (ignorance can cause equipment damage).
- Do not place the device in extremely hot (refer to the specification of the device for the detailed operating temperature), cold, dusty or damp locations, and do not expose it to high electromagnetic radiation.
- The device cover for indoor use shall be kept from rain and moisture.
- Exposing the equipment to direct sun light, low ventilation or heat source such as heater or radiator is forbidden (ignorance can cause fire danger).
- Do not aim the device at the sun or extra bright places. A blooming or smear may occur otherwise (which is not a malfunction however), and affecting the endurance of sensor at the same time.
- Please use the provided glove when open up the device cover, avoid direct contact with the device cover, because the acidic sweat of the fingers may erode the surface coating of the device cover.
- Please use a soft and dry cloth when clean inside and outside surfaces of the device cover, do not use alkaline detergents.
- Please keep all wrappers after unpack them for future use. In case of any failure occurred, you need to return the device to the factory with the original wrapper. Transportation without the original wrapper may result in damage on the device and lead to additional costs.

Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.

Biometric recognition products are not 100% applicable to anti-spoofing environments. If you require a higher security level, use multiple authentication modes.

Do not stay in the lane when the device is rebooting.

**RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.**

**SUITABLE FOR MOUNTING ON CONCRETE OR OTHER NON-COMBUSTIBLE SURFACE ONLY.**

The instructions shall require connection of the equipment protective earthing conductor to the installation protective earthing conductor.

**\*\*\*\*\*End of attachment 3\*\*\*\*\***