



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..... : CB1292404043A

Date of issue : 2024-04-29

Total number of pages : 61

Name of Testing Laboratory
preparing the Report..... : Perfectlink International Corp.

Applicant's name : VIVOTEK INC.

Address : 6TH FL, 192 LIEN CHENG RD CHUNG HO DISTRICT NEW
TAIPEI, 235 TAIWAN

Test specification:

Standard : IEC 62368-1:2018

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_1E

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

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

Copyright © 2022 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.


If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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.

This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description	Network Camera	
Trade Mark(s)	 VIVOTEK or VIVOTEK or VIVOTEK	
Manufacturer.....	VIVOTEK INC. 6TH FL., 192 LIEN CHENG RD CHUNG HO DISTRICT NEW TAIPEI, 235 TAIWAN	
Model/Type reference	IB9383-HTV, IB833-HTV, IB9383-HV, IB833-HV	
Ratings	(Optionally provided on marking plate) PoE 42-57 V $\overline{\text{---}}$, 0.29-0.22 A	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/> CB Testing Laboratory:	Perfectlink International Corp.	
Testing location/ address	4F., No. 16-1, Sec. 2, Zhongyang S. Rd., Beitou Dist., Taipei City 112, Taiwan, Chinese Taipei	
Tested by (name, function, signature)	Neil Lee / Project Handler	
Approved by (name, function, signature) ..	Sprewell Chien / Reviewer	
Testing procedure: CTF Stage 1:		
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature) ..		
Testing procedure: CTF Stage 2:		
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature) .. :		
Testing procedure: CTF Stage 3:		
Testing procedure: CTF Stage 4:		
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature) .. :		
Supervised by (name, function, signature) :		

List of Attachments (including a total number of pages in each attachment): - National Differences (56 Pages) - Photo Documentation (10 Pages) Total number of pages in each attachment is indicated in each individual attachment.	
Summary of testing: - All tests were conducted under normal load conditions as below, if not specified elsewhere. - Maximum normal load: This equipment which was operated continuously with data-link mode via Ethernet connect by RJ-45, network camera capture and transmit to monitoring equipment, IR LED function is forced to enable. - All applicable tests as described in Test Case and Measurement Sections were performed. - Specified maximum ambient temperature is +55 degree C. - The test samples were pre-production sample without serial numbers. - If no specify state, all testing are performed on model IB9383-HTV to representative other models.	
Tests performed (name of test and test clause): 5.4.1.4, 6.3.2, 9.3.2, B.2.6, E1, E2 - Temperature measurements ¹⁾ 5.7.4 - Unearthed accessible conductive part ¹⁾ 8.7 - Equipment mounted to a wall or ceiling ¹⁾ Annex B.2.5 - Input test ¹⁾ Annex B.4 - Simulated single fault conditions ¹⁾ Annex F.3.10.2 - Durability ¹⁾ Annex M.3.2 - Protection circuits for batteries provided within the equipment ¹⁾ Annex T.2 to T.5 - Steady force test ¹⁾ Annex T.6 - Enclosure impact test ¹⁾ Annex T.8 - Stress relief test ¹⁾ Annex Y.6.2 - Polymeric Outdoor Enclosure Impact ¹⁾ For Subcontractor's tests performed: Annex Y.4.3 - Tensile strength and elongation ²⁾ Annex Y.5.3 - Water spray test ²⁾	Testing location: 1) Perfectlink International Corp. / 4F., No. 16-1, Sec. 2, Zhongyang S. Rd., Beitou Dist., Taipei City 112, Taiwan, Chinese Taipei Subcontractor's laboratory: 2) Underwriters Laboratories Taiwan Co., Ltd / No. 260, Daye Rd., Beitou Dist., Taipei City 112, Taiwan
Summary of compliance with National Differences (List of countries addressed): EU Group Differences, EU Special National Conditions, CA, US, AU, NZ, SA, CN, JP. Explanation of used codes: CA=Canada, US=United States of America, AU=Australia, NZ=New Zealand, SA=Saudi Arabia, CN=China, JP=Japan. <input checked="" type="checkbox"/> The product fulfils the requirements of EN IEC 62368-1:2020+A11:2020 <input checked="" type="checkbox"/> The product fulfils the requirements of UL 62368-1 Third Edition <input checked="" type="checkbox"/> The product fulfils the requirements of CSA C22.2 No. 62368-1:19 <input checked="" type="checkbox"/> The product fulfils the requirements of AS/NZS 62368.1:2022	

Use of uncertainty of measurement for decisions on conformity (decision rule) :

☒ 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 NCBs that own these marks.

(Representative)

<p>IB9383-HTV Network Camera 網路攝影機</p> <p>VIVOTEK</p> <p>MAC:0002D1XXXXXX</p>  <p>PoE 42-57V 0.29-0.22A</p> <p>IS 13252 (Part 1)/ IEC 60950-1</p> <p>   </p> <p> R-41089311 www.bis.gov.in</p> <p>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.</p> <p>Brand Owner Add.: 6F., No.192, Lien-Cheng Rd., Chung-Ho, New Taipei City, 235, Taiwan, R.O.C. M.F.G. Add.: 5F., 5F.-1, 5F.-2, No.168, LianCheng Rd., Zhonghe Dist., New Taipei City 235, Taiwan, R.O.C.</p> <p>www.vivotek.com Made in Taiwan</p>	<p>IB833-HTV Network Camera 網路攝影機</p> <p>VIVOTEK</p> <p>MAC:0002D1XXXXXX</p>  <p>PoE 42-57V 0.29-0.22A</p> <p>IS 13252 (Part 1)/ IEC 60950-1</p> <p>   </p> <p> R-41089311 www.bis.gov.in</p> <p>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.</p> <p>Brand Owner Add.: 6F., No.192, Lien-Cheng Rd., Chung-Ho, New Taipei City, 235, Taiwan, R.O.C. M.F.G. Add.: 5F., 5F.-1, 5F.-2, No.168, LianCheng Rd., Zhonghe Dist., New Taipei City 235, Taiwan, R.O.C.</p> <p>www.vivotek.com Made in Taiwan</p>
<p>IB9383-HV Network Camera 網路攝影機</p> <p>VIVOTEK</p> <p>MAC:0002D1XXXXXX</p>  <p>PoE 42-57V 0.29-0.22A</p> <p>IS 13252 (Part 1)/ IEC 60950-1</p> <p>   </p> <p> R-41089311 www.bis.gov.in</p> <p>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.</p> <p>Brand Owner Add.: 6F., No.192, Lien-Cheng Rd., Chung-Ho, New Taipei City, 235, Taiwan, R.O.C. M.F.G. Add.: 5F., 5F.-1, 5F.-2, No.168, LianCheng Rd., Zhonghe Dist., New Taipei City 235, Taiwan, R.O.C.</p> <p>www.vivotek.com Made in Taiwan</p>	<p>IB833-HV Network Camera 網路攝影機</p> <p>VIVOTEK</p> <p>MAC:0002D1XXXXXX</p>  <p>PoE 42-57V 0.29-0.22A</p> <p>IS 13252 (Part 1)/ IEC 60950-1</p> <p>   </p> <p> R-41089311 www.bis.gov.in</p> <p>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.</p> <p>Brand Owner Add.: 6F., No.192, Lien-Cheng Rd., Chung-Ho, New Taipei City, 235, Taiwan, R.O.C. M.F.G. Add.: 5F., 5F.-1, 5F.-2, No.168, LianCheng Rd., Zhonghe Dist., New Taipei City 235, Taiwan, R.O.C.</p> <p>www.vivotek.com Made in Taiwan</p>

Note. All label drawings are in the same design except for trademark. Above drawings were used as representative.

Test item particulars:	
Product group	<input checked="" type="checkbox"/> end product <input type="checkbox"/> built-in component
Classification of use by	<input checked="" type="checkbox"/> Ordinary person <input checked="" type="checkbox"/> Children likely present <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person
Supply connection	<input type="checkbox"/> AC mains <input type="checkbox"/> DC mains <input checked="" type="checkbox"/> not mains connected: <input checked="" type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply tolerance	<input type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> + %/ - % <input checked="" type="checkbox"/> None
Supply connection – type	<input type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input checked="" type="checkbox"/> other: Not directly connected to the mains
Considered current rating of protective device	<input type="checkbox"/> A for building; A for equipment; Location: <input type="checkbox"/> building <input type="checkbox"/> equipment <input checked="" type="checkbox"/> N/A
Equipment mobility	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> direct plug-in <input checked="" type="checkbox"/> stationary <input type="checkbox"/> for building-in <input checked="" type="checkbox"/> wall/ceiling-mounted <input type="checkbox"/> SRME/rack-mounted <input type="checkbox"/> other:
Overvoltage category (OVC)	<input type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input checked="" type="checkbox"/> other: Not directly connected to the mains
Class of equipment	<input type="checkbox"/> Class I <input type="checkbox"/> Class II <input checked="" type="checkbox"/> Class III <input type="checkbox"/> Not classified
Special installation location	<input type="checkbox"/> N/A <input type="checkbox"/> restricted access area <input checked="" type="checkbox"/> outdoor location
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input type="checkbox"/> PD 2 <input checked="" type="checkbox"/> PD 3
Manufacturer's specified T_{ma}	55 °C <input checked="" type="checkbox"/> Outdoor: minimum -30 °C
IP protection class	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP ____
Power systems	<input type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - 230 V _{L-L} <input checked="" type="checkbox"/> not AC mains
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"/> m
Mass of equipment (kg)	Max. 950 g

Possible test case verdicts:	
- test case does not apply to the test object.....	N/A
- test object does meet the requirement.....	P (Pass)
- test object does not meet the requirement.....	F (Fail)
Testing:	
Date of receipt of test item	2024-04-09
Date (s) of performance of tests	2024-04-09 to 2024-04-25
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator. <input type="checkbox"/> This Test Report Form contains requirements according to IEC/ISO Standard dated and includes Corrigendum dated (Note: The above text maybe removed if not applicable)	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC/IEC 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) : 1) VIVOTEK INC. 5F, No.168, Lien-Cheng Rd., Chung-Ho, New Taipei City, 235, Taiwan 2) Vivotek Inc Guishan Plant 5th Fl 268 Shanying Rd, Guishan District, Taoyuan, 333, TAIWAN	
General product information and other remarks:	
The equipment, models IB9383-HTV, IB833-HTV, IB9383-HV, IB833-HV, is a Network Camera which is intended to use within audio/video, information and communication technology equipment. The equipment consists of electronic components are mounted on PCB and housed by plastic/metal enclosures is fixed by screw. Unit must be mounted on a wall and ceiling mount. The equipment is power supplied from the external power adaptor or Power-over-Ethernet (PoE) device which is complied with the requirement of Limited Power Source (LPS) or Power source class 2 (PS2). Otherwise, the adaptor which is intended to be used with this equipment in the regional market should be stated in the specified types in the instruction by suitable regional languages.	

Based on product design and declaration from Manufacturer, the equipment is power supplied from external power source which is complied with the requirement of PS2/Limited Power Source, ES1 and separated from mains/hazardous voltage by double/reinforced insulation.

The equipment may be power supplied from the optional approved external DC or Power-over-Ethernet (PoE) device evaluated according to IEC 62368-1(ed.2), IEC 62368-1(ed.3) or IEC 60950-1:2005+A1+A2, and relevant safety information for the optional DC or Power-over-Ethernet (PoE) device shall be "Rated output: 42-57 Vdc, 0.29-0.22 A.", "Tma: 55 °C min.", "5000 min." and "LPS or PS2".

PoE circuits are considered as ES1 or SELV circuits, the function of the ITE being investigated to IEC TR 62102 is considered not connection to an Ethernet Network with outside plant routing, including campus environment; and the installation instruction clearly states that the ITE is to be connected only to PoE networks without routing to the outside plant.

The equipment must be installed by skilled person.

The equipment is intended to install under the eaves of building, and it also shall be avoided to exposure under sunlight and rain directly.

No any ordinary person accessible area is located inside the equipment.

This label drawing is a draft of an artwork for marking plates pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.

The product was investigated to the following additional standards: EN IEC 62368-1:2020+A11:2020 (which includes all European national differences, including those specified in this test report)

The product has been additionally evaluated and considered in compliance with standard BS EN IEC 62368-1:2020+A11:2020, content of UK compliance refers to European Group Differences and National Differences.

This test report is evaluated in accordance with IEC 62368-1 and EN IEC 62368-1 only.

Based on Manufacturer's declaration, the equipment including LEDs was evaluated and considered as Exempt Group LED in accordance with IEC 62471.

已註解 [NL1]: Wait final

This report determines the conformance with the limit or specific requirements, without considering of measurement uncertainty.

Model Differences –

Model name	IB9383-HTV, IB833-HTV ¹⁾	IB9383-HV, IB833-HV ¹⁾
Lens module	Type A	Type B

Stepper motor for Lens module	Provided	No provided
O-ring (between front plastic lens cover and front metal enclosure)	Type A ²⁾	Type B ²⁾
1) All models are identical to each other except for model name for marketing purpose only.		
2) The waterproof structure is the same, only difference inside lens modules for shielding areas.		
If no specify state, all testing are performed on model IB9383-HTV to representative other models.		

OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	Possible Hazard			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
ES1: Input circuit (external circuit) and output terminals	Ordinary	N/A	N/A	N/A
ES1: Accessible part	Ordinary	N/A	N/A	N/A
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 st S	2 nd S
PS2	Enclosure	See sub-clause 6.3	HB min. and metal	N/A
PS2	PCB	See sub-clause 6.3	V-1 min.	N/A
PS2	Internal components/materials	See sub-clause 6.3	See sub-clause 6.4.5.	N/A
PS2	Internal wiring	See sub-clause 6.3	See sub-clause 6.5	N/A
PS2	External wiring	See sub-clause 6.3	See sub-clause 6.5	N/A
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
Rechargeable lithium coin battery	Ordinary	N/A	N/A	See Annex M
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS1: Sharp edges and corners	Ordinary	N/A	N/A	N/A
MS1: Stepper motor	Ordinary	N/A	N/A	N/A
MS1: Equipment mass	Ordinary	N/A	N/A	N/A
MS3: Wall/Ceiling mount	Ordinary	N/A	N/A	See sub-clause 8.7
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS3: Internal component surface.	Ordinary	N/A	N/A	Enclosure

TS1: External parts and enclosure	Ordinary	N/A	N/A	N/A
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
Exempt Group: LED (used as indicating lights)	Ordinary	N/A	N/A	N/A
Exempt Group: IR LED (evaluated in appliance)	Ordinary	N/A	N/A	N/A
Supplementary Information: "B" – Basic Safeguard; "S" – Supplementary Safeguard; "R" – Reinforced Safeguard				

ENERGY SOURCE DIAGRAM
<p>Optional. Manufacturers are to provide the energy sources diagram identify declared energy sources and identifying the demarcations are between power sources. Recommend diagram be provided included in power supply and multipart systems.</p> <p>Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings</p>
<p>See table of overview of energy sources and safeguards for details.</p> <p><input checked="" type="checkbox"/> ES <input checked="" type="checkbox"/> PS <input checked="" type="checkbox"/> MS <input checked="" type="checkbox"/> TS <input checked="" type="checkbox"/> RS</p>

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2.	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
4.1.3	Equipment design and construction	Considered.	P
4.1.4	Specified ambient temperature for outdoor use (°C):	-30 degree C to 55 degree C	P
4.1.5	Constructions and components not specifically covered	No such consideration.	N/A
4.1.8	Liquids and liquid filled components (LFC)	No LFC.	N/A
4.1.15	Markings and instructions	See Annex F.	P
4.4.3	Safeguard robustness	See below.	P
4.4.3.1	General	See below.	P
4.4.3.2	Steady force tests	See Annex T.5.	P
4.4.3.3	Drop tests		N/A
4.4.3.4	Impact tests	See Annex T.6.	P
4.4.3.5	Internal accessible safeguard tests		N/A
4.4.3.6	Glass impact tests	No glass.	N/A
4.4.3.7	Glass fixation tests	No glass.	N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests	See Annex T.8.	P
4.4.3.9	Air comprising a safeguard	See Annex T	P
4.4.3.10	Accessibility, glass, safeguard effectiveness	All other safeguards remain effective.	P
4.4.4	Displacement of a safeguard by an insulating liquid	No insulating liquid.	N/A
4.4.5	Safety interlocks	No safety interlock.	N/A
4.5	Explosion		P
4.5.1	General	See below.	P
4.5.2	No explosion during normal/abnormal operating condition	No explosion occurs during normal operation.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	No harm by explosion during single fault conditions	No explosion occurs during single fault condition.	P
4.6	Fixing of conductors		N/A
	Fix conductors not to defeat a safeguard		N/A
	Compliance is checked by test..... :		N/A
4.7	Equipment for direct insertion into mains socket-outlets		N/A
4.7.2	Mains plug part complies with relevant standard .. :	Not direct plug-in equipment.	N/A
4.7.3	Torque (Nm) :		N/A
4.8	Equipment containing coin/button cell batteries		N/A
4.8.1	General	The equipment containing lithium rechargeable coin battery that is soldered in SB board.	N/A
4.8.2	Instructional safeguard :		N/A
4.8.3	Battery compartment door/cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	Likelihood of fire or shock due to entry of conductive object		N/A
4.10	Component requirements		N/A
4.10.1	Disconnect Device		N/A
4.10.2	Switches and relays		N/A
5	ELECTRICALLY-CAUSED INJURY		P
5.2	Classification and limits of electrical energy sources		P
5.2.2	ES1, ES2 and ES3 limits	See appended table 5.7.4.	P
5.2.2.2	Steady-state voltage and current limits :		N/A
5.2.2.3	Capacitance limits :		N/A
5.2.2.4	Single pulse limits :		N/A
5.2.2.5	Limits for repetitive pulses :		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.6	Ringing signals	No ringing signal.	N/A
5.2.2.7	Audio signals	No audio signal.	N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		N/A
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits		N/A
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards	No ES2 or ES3 circuit can be accessible.	P
	Accessibility to outdoor equipment bare parts	No 0.5 times ES1 circuit can be accessible.	P
5.3.2.2	Contact requirements		N/A
	Test with test probe from Annex V		—
5.3.2.2 a)	Air gap – electric strength test potential (V)		N/A
5.3.2.2 b)	Air gap – distance (mm)		N/A
5.3.2.3	Compliance		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		N/A
5.4.1.3	Material is non-hygroscopic		N/A
5.4.1.4	Maximum operating temperature for insulating materials	See appended table 5.4.1.4, 9.3, B.1.5, B.2.6.	P
5.4.1.5	Pollution degrees	Pollution degree 3.	P
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 test		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		N/A
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 test.....		N/A
5.4.1.10.3	Ball pressure test		N/A
5.4.2	Clearances		N/A
5.4.2.1	General requirements		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Clearances in circuits connected to AC Mains, Alternative method		N/A
5.4.2.2	Procedure 1 for determining clearance		N/A
	Temporary overvoltage		—
5.4.2.3	Procedure 2 for determining clearance		N/A
5.4.2.3.2.2	a.c. mains transient voltage		—
5.4.2.3.2.3	d.c. mains transient voltage		—
5.4.2.3.2.4	External circuit transient voltage.....		—
5.4.2.3.2.5	Transient voltage determined by measurement		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A
5.4.2.5	Multiplication factors for clearances and test voltages		N/A
5.4.2.6	Clearance measurement		N/A
5.4.3	Creepage distances		N/A
5.4.3.1	General		N/A
5.4.3.3	Material group		—
5.4.3.4	Creepage distances measurement		N/A
5.4.4	Solid insulation		N/A
5.4.4.1	General requirements		N/A
5.4.4.2	Minimum distance through insulation		N/A
5.4.4.3	Insulating compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Insulating compound forming 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
	Number of layers (pcs)		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P , K_R , d , V_{PW} (V)		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Alternative by electric strength test, tested voltage (V), K_R :		N/A
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance (M Ω)..... :		N/A
	Electric strength test :		N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		N/A
	Relative humidity (%), temperature (°C), duration (h) :		—
5.4.9	Electric strength test		N/A
5.4.9.1	Test procedure for type test of solid insulation..... :		N/A
5.4.9.2	Test procedure for routine test		N/A
5.4.10	Safeguards against transient voltages from external circuits		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test :		N/A
5.4.10.2.3	Steady-state test..... :		N/A
5.4.10.3	Verification for insulation breakdown for impulse test..... :		N/A
5.4.11	Separation between external circuits and earth		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V)..... :		—
	Nominal voltage U_{peak} (V)..... :		—
	Max increase due to variation ΔU_{sp} :		—
	Max increase due to ageing ΔU_{sa} :		—
5.4.11.3	Test method and compliance :		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.12	Insulating liquid	No insulating liquid.	N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid		N/A
5.4.12.3	Compatibility of an insulating liquid		N/A
5.4.12.4	Container for insulating liquid		N/A
5.5	Components as safeguards		N/A
5.5.1	General		N/A
5.5.2	Capacitors and RC units		N/A
5.5.2.1	General requirement		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector		N/A
5.5.3	Transformers		N/A
5.5.4	Optocouplers		N/A
5.5.5	Relays		N/A
5.5.6	Resistors		N/A
5.5.7	SPDs		N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable		N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA)		—
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors		P
5.6	Protective conductor	See below.	P
5.6.2	Requirement for protective conductors	See below for details.	P
5.6.2.1	General requirements	Provide a PE terminal and fixed to the rear metal enclosure by star washer and screw. Connection to a PE wiring and it is made during the installation by skilled/service personnel only.	P
5.6.2.2	Colour of insulation	The colour combination green-and-yellow is used.	P
5.6.3	Requirement for protective earthing conductors	Protective earthing conductor complies with the minimum conductor sizes in Table G.7.	P
	Protective earthing conductor size (mm ²)	Cross-sectional area is min. 0.5 mm ² or min. 20 AWG.	—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm ²). :		—
5.6.4.2	Protective current rating (A). :		N/A
5.6.5	Terminals for protective conductors	See below.	P
5.6.5.1	Terminal size for connecting protective earthing conductors (mm). :	Protective earthing terminals complies with the minimum size requirements of Table 32. Min. nominal thread diameter is min. 3.5 mm for screw type protective earthing terminal.	P
	Terminal size for connecting protective bonding conductors (mm) :		N/A
5.6.5.2	Corrosion	No combination above the line in annex N is used.	P
5.6.6	Resistance of the protective bonding system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method :		N/A
5.6.6.3	Resistance (Ω) or voltage drop :		N/A
5.6.7	Reliable connection of a protective earthing conductor		N/A
5.6.8	Functional earthing		N/A
	Conductor size (mm ²). :		N/A
	Class II with functional earthing marking :		N/A
	Appliance inlet cl & cr (mm) :		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current		P
5.7.2.2	Measurement of voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		P
5.7.4	Unearthed accessible parts :	See appended table 5.7.4.	P
5.7.5	Earthed accessible conductive parts :		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6	Requirements when touch current exceeds ES2 limits	No such consideration.	N/A
	Protective conductor current (mA)..... :		N/A
	Instructional Safeguard..... :		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits		N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A
	a) Equipment connected to earthed external circuits, current (mA) :		N/A
	b) Equipment connected to unearthed external circuits, current (mA) :		N/A
5.8	Backfeed safeguard in battery backed up supplies		N/A
	Mains terminal ES..... :		N/A
	Air gap (mm)..... :		N/A

6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of PS and PIS		P
6.2.2	Power source circuit classifications..... :	This equipment is power supplied by Limited Power Source (LPS) or Power source class 2 (PS2) sources that complied with requirement of sub-clause 6.	P
6.2.3	Classification of potential ignition sources	Arcing PIS and Resistive PIS are considered to exist inside the equipment.	P
6.2.3.1	Arcing PIS	See sub-clause 6.2.3.	N/A
6.2.3.2	Resistive PIS	See sub-clause 6.2.3.	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials :	See appended table 5.4.1.4, 9.3, B.1.5, B.2.6 and table B.3, B.4.	P
	Combustible materials outside fire enclosure..... :	See appended tables 4.1.2.	P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method	Control of fire spread is applied. See sub-clause 6.4.5.	P

IEC 62368-1			
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	Supplementary safeguards		N/A
6.4.3.2	Single Fault Conditions :		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits	See below.	P
6.4.5.2	Supplementary safeguards	Components other than PCB and wires: - are mounted on PCB rated V-1 or better; or - are made of V-2, VTM-2 or HF-2 or better; or - have a mass less than 4 g; or - have a size less than 1750 mm ³ See appended tables 4.1.2 and Annex G.	P
6.4.6	Control of fire spread in PS3 circuits		N/A
6.4.7	Separation of combustible materials from a PIS		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		N/A
6.4.8.2	Fire enclosure and fire barrier material properties		N/A
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure		N/A
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		N/A
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top openings and properties		N/A
	Openings dimensions (mm)..... :		N/A
6.4.8.3.4	Bottom openings and properties		N/A
	Openings dimensions (mm)..... :		N/A
	Flammability tests for the bottom of a fire enclosure		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Instructional Safeguard		N/A
6.4.8.3.5	Side openings and properties		N/A
	Openings dimensions (mm).....		N/A
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c).....		N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating		N/A
6.4.9	Flammability of insulating liquid.....		N/A
6.5	Internal and external wiring		P
6.5.1	General requirements	All internal and external wirings are UL recognized and rated VW-1 which is considered to be equal to the test method described in IEC/TS 60695-11-21.	P
6.5.2	Requirements for interconnection to building wiring	Not applicable.	N/A
6.5.3	Internal wiring size (mm ²) for socket-outlets.....	No such consideration.	N/A
6.6	Safeguards against fire due to the connection to additional equipment		N/A

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

8	MECHANICALLY-CAUSED INJURY	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	N/A
8.4.1	Safeguards	MS1
	Instructional Safeguard	N/A
8.4.2	Sharp edges or corners	N/A
8.5	Safeguards against moving parts	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts	MS1 for stepper motor	N/A
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard		N/A
8.5.4	Special categories of equipment containing moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m)		N/A
	Space between end point and nearest fixed mechanical part (mm)		N/A
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts		N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N)		N/A
8.5.4.3.5	Compliance		N/A
8.5.5	High pressure lamps		N/A
	Explosion test		N/A
8.5.5.3	Glass particles dimensions (mm)		N/A
8.6	Stability of equipment		N/A
8.6.1	General	Stationary and wall-mounted equipment.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Instructional safeguard		N/A
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm)		—
	Tilt test		N/A
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test		N/A
8.7	Equipment mounted to wall, ceiling or other structure		P
8.7.1	Mount means type	Wall and ceiling mount. Equipment to wall/ceiling: Length of screws: 25 mm, Ø4 mm	P
8.7.2	Test methods	See below.	P
	Test 1, additional downwards force (N).....	3 times the weight of equipment: 2.85 kg. A force in addition to the weight of the equipment is applied downwards through the centre of gravity of the equipment, for 1 min and horizontal force of 50 N is applied laterally for 60 s.	P
	Test 2, number of attachment points and test force (N).....		N/A
	Test 3 Nominal diameter (mm) and applied torque (Nm).....		N/A
8.8	Handles strength		N/A
8.8.1	General		N/A
8.8.2	Handle strength test		N/A
	Number of handles.....		—
	Force applied (N)		—
8.9	Wheels or casters attachment requirements		N/A
8.9.2	Pull test		N/A
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.10.3	Cart, stand or carrier loading test		N/A
	Loading force applied (N)		N/A
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Force applied (N)		—
8.10.6	Thermoplastic temperature stability		N/A
8.11	Mounting means for slide-rail mounted equipment (SRME)		N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard		N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force (N) applied		N/A
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance		N/A
8.12	Telescoping or rod antennas		N/A
	Button/ball diameter (mm)		—

9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications		P
9.3	Touch temperature limits		P
9.3.1	Touch temperatures of accessible parts	See appended table 5.4.1.4, 9.3, B.1.5, B.2.6.	P
9.3.2	Test method and compliance	Considered and complied.	P
9.4	Safeguards against thermal energy sources		P
9.5	Requirements for safeguards		P
9.5.1	Equipment safeguard	See appended table 5.4.1.4, 9.3, B.1.5, B.2.6.	P
9.5.2	Instructional safeguard	No such consideration.	N/A
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General	No wireless power transmitter.	N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance		N/A

10	RADIATION		P
-----------	------------------	--	---

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
10.2	Radiation energy source classification		P
10.2.1	General classification	Line 2: Exempt Group energy sources The following parts are considered as Exempt Group energy sources and complied without tests: - Indicating lights Other see page of ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE for details.	P
	Lasers	Same as above.	—
	Lamps and lamp systems	Same as above.	—
	Image projectors	Same as above.	—
	X-Ray	Same as above.	—
	Personal music player	Same as above.	—
10.3	Safeguards against laser radiation		N/A
	The standard(s) equipment containing laser(s) comply		N/A
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)		P
10.4.1	General requirements	See below.	P
	Instructional safeguard provided for accessible radiation level needs to exceed	Based on Manufacturer's declaration, the equipment including LEDs was evaluated and considered as Exempt Group LED in accordance with IEC 62471. See appended table 4.1.2 for details.	P
	Risk group marking and location		N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure		N/A
10.4.3	Instructional safeguard		N/A
10.5	Safeguards against X-radiation		N/A
10.5.1	Requirements		N/A
	Instructional safeguard for skilled persons		—
10.5.3	Maximum radiation (pA/kg)		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
10.6	Safeguards against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output $L_{Aeq,T}$, dB(A).....:		N/A
	Unweighted RMS output voltage (mV).....:		N/A
	Digital output signal (dBFS).....:		N/A
10.6.3	Requirements for dose-based systems		N/A
10.6.3.1	General requirements		N/A
10.6.3.2	Dose-based warning and automatic decrease		N/A
10.6.3.3	Exposure-based warning and requirements		N/A
	30 s integrated exposure level (MEL30)		N/A
	Warning for MEL ≥ 100 dB(A)		N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		N/A
	Instructional safeguards		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input		N/A
	Listening device input voltage (mV)		N/A
10.6.6.2	Corded listening devices with digital input		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A).....:		N/A
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A).....:		N/A

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.1	General		P
B.1.5	Temperature measurement conditions	See appended table 5.4.1.4, 9.3, B.1.5, B.2.6.	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 audio amplifier.	N/A
B.2.3	Supply voltage and tolerances	See page of Test Item Particulars and appended test tables.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.2.5	Input test	See appended table B.2.5.	P
B.3	Simulated abnormal operating conditions		N/A
B.3.1	General		N/A
B.3.2	Covering of ventilation openings		N/A
	Instructional safeguard		N/A
B.3.3	DC mains polarity test		N/A
B.3.4	Setting of voltage selector		N/A
B.3.5	Maximum load at output terminals	No output terminal supplying power to next equipment.	N/A
B.3.6	Reverse battery polarity	No any ordinary person accessible area is located inside the equipment. The lithium rechargeable coin battery that are soldered in SB board, no possible reversed polarity.	N/A
B.3.7	Audio amplifier abnormal operating conditions		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions.....		N/A
B.4	Simulated single fault conditions		P
B.4.1	General		P
B.4.2	Temperature controlling device		N/A
B.4.3	Blocked motor test	Stepper motor used. See annex G.5.4 and appended table 4.1.2 for details.	N/A
B.4.4	Functional insulation	See appended table B.3, B.4.	P
B.4.4.1	Short circuit of clearances for functional insulation	Same as above.	P
B.4.4.2	Short circuit of creepage distances for functional insulation	Same as above.	P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors		N/A
B.4.6	Short circuit or disconnection of passive components	See appended table B.3, B.4.	P
B.4.7	Continuous operation of components		N/A
B.4.8	Compliance during and after single fault conditions	All safeguards remained effectively during and after single fault conditions.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.4.9	Battery charging and discharging under single fault conditions	See annex M	P
C	UV RADIATION		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 test		N/A
C.2.4	Xenon-arc light-exposure test		N/A
D	TEST GENERATORS		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Electrical energy source classification for audio signals		N/A
	Maximum non-clipped output power (W)		—
	Rated load impedance (Ω)		—
	Open-circuit output voltage (V)		—
	Instructional safeguard		—
E.2	Audio amplifier normal operating conditions		N/A
	Audio signal source type		—
	Audio output power (W)		—
	Audio output voltage (V)		—
	Rated load impedance (Ω)		—
	Requirements for temperature measurement		N/A
E.3	Audio amplifier abnormal operating conditions		N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General		P
	Language	English. However, the versions in other languages will be provided when national certificate approval.	—
F.2	Letter symbols and graphical symbols		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	All relevant markings are provided on the outside surface of equipment.	P
F.3.2	Equipment identification markings	See below.	P
F.3.2.1	Manufacturer identification	See copy of marking plate.	P
F.3.2.2	Model identification	See copy of marking plate.	P
F.3.3	Equipment rating markings	See below.	P
F.3.3.1	Equipment with direct connection to mains		N/A
F.3.3.2	Equipment without direct connection to mains	Comply with B.2.5.	P
F.3.3.3	Nature of the supply voltage	See copy of marking plate Not directly connected to mains.	P
F.3.3.4	Rated voltage.....	See copy of marking plate Not directly connected to mains.	P
F.3.3.5	Rated frequency	Supplied by DC voltage only.	N/A
F.3.3.6	Rated current or rated power.....	See copy of marking plate Not directly connected to mains.	P
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device	No voltage setting device.	N/A
F.3.5	Terminals and operating devices	See below.	P
F.3.5.1	Mains appliance outlet and socket-outlet markings	No such mains appliance outlet and socket-outlet.	N/A
F.3.5.2	Switch position identification marking.....	No disconnect switch or circuit-breaker.	N/A
F.3.5.3	Replacement fuse identification and rating markings		N/A
	Instructional safeguards for neutral fuse		N/A
F.3.5.4	Replacement battery identification marking	Complied.	P
F.3.5.5	Neutral conductor terminal	Not permanently connected equipment.	N/A
F.3.5.6	Terminal marking location	No such consideration.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.6	Equipment markings related to equipment classification	See below.	P
F.3.6.1	Class I equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal..... :	Class III equipment. However, the symbol according to IEC 60417-5019 (2006-08) was provided adjacent to the protective earthing terminal.	P
F.3.6.1.2	Protective bonding conductor terminals :		N/A
F.3.6.2	Equipment class marking :		N/A
F.3.6.3	Functional earthing terminal marking :		N/A
F.3.7	Equipment IP rating marking :	IPX0	N/A
F.3.8	External power supply output marking :		N/A
F.3.9	Durability, legibility and permanence of marking	See below.	P
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 s and then again for 15 s with the cloth soaked with petroleum spirit. After this test, there was no damage to the label. The marking on the label did not fade. There was neither curling nor lifting of the label edge.	P
F.4	Instructions		P
	a) Information prior to installation and initial use		P
	b) Equipment for use in locations where children not likely to be present		N/A
	c) Instructions for installation and interconnection		P
	d) Equipment intended for use only in restricted access area		N/A
	e) Equipment intended to be fastened in place		P
	f) Instructions for audio equipment terminals		N/A
	g) Protective earthing used as a safeguard		P
	h) Protective conductor current exceeding ES2 limits		N/A
	i) Graphic symbols used on equipment		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	j) Permanently connected equipment not provided with all-pole mains switch		N/A
	k) Replaceable components or modules providing safeguard function		N/A
	l) Equipment containing insulating liquid		N/A
	m) Installation instructions for outdoor equipment		P
F.5	Instructional safeguards		N/A
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General	The functional switch not located in PS3 circuit.	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance		N/A
G.2	Relays		N/A
G.2.1	Requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supplying power to other equipment		N/A
G.2.4	Test method and compliance		N/A
G.3	Protective devices		N/A
G.3.1	Thermal cut-offs	No thermal cut-off.	N/A
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Test method and compliance		N/A
G.3.2	Thermal links	No thermal link.	N/A
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		N/A
	b) Thermal links tested as part of the equipment		N/A
G.3.2.2	Test method and compliance		N/A
G.3.3	PTC thermistors	No PTC thermistor.	N/A
G.3.4	Overcurrent protection devices		N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.4	Connectors		P
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration..... :		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		P
G.5	Wound components		P
G.5.1	Wire insulation in wound components		N/A
G.5.1.2	Protection against mechanical stress		N/A
G.5.2	Endurance test		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Test time (days per cycle) :		—
	Test temperature (°C)..... :		—
G.5.2.3	Wound components supplied from the mains		N/A
G.5.2.4	No insulation breakdown		N/A
G.5.3	Transformers		N/A
G.5.3.1	Compliance method..... :		N/A
	Position :		N/A
	Method of protection :		N/A
G.5.3.2	Insulation		N/A
	Protection from displacement of windings :		—
G.5.3.3	Transformer overload tests		N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding temperatures		N/A
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW		N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter :		—
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation..... :		N/A
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N/A
G.5.3.4.5	Thermal cycling test and compliance		N/A
G.5.3.4.6	Partial discharge test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.5.3.4.7	Routine test		N/A
G.5.4	Motors	Stepper motor used. See appended tables 4.1.2 for details.	P
G.5.4.1	General requirements		N/A
G.5.4.2	Motor overload test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4.2	Locked-rotor overload test		N/A
	Test duration (days)		—
G.5.4.5	Running overload test for DC motors		N/A
G.5.4.5.2	Tested in the unit		N/A
G.5.4.5.3	Alternative method		N/A
G.5.4.6	Locked-rotor overload test for DC motors		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature		N/A
G.5.4.6.3	Alternative method		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage		—
G.6	Wire Insulation		N/A
G.6.1	General		N/A
G.6.2	Enamelled winding wire insulation		N/A
G.7	Mains supply cords		N/A
G.7.1	General requirements		N/A
	Type		—
G.7.2	Cross sectional area (mm ² or AWG)		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).....		N/A
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm).....		N/A
G.7.3.2.4	Strain relief and cord anchorage material		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.4	Cord Entry		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Test method and compliance		N/A
	Overall diameter or minor overall dimension, D (mm)		—
	Radius of curvature after test (mm)		—
G.7.6	Supply wiring space		N/A
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	Varistors		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguards against fire		N/A
G.8.2.1	General		N/A
G.8.2.2	Varistor overload test		N/A
G.8.2.3	Temporary overvoltage test		N/A
G.9	Integrated circuit (IC) current limiters		N/A
G.9.1	Requirements		N/A
	IC limiter output current (max. 5A).....		—
	Manufacturers' defined drift		—
G.9.2	Test Program		N/A
G.9.3	Compliance		N/A
G.10	Resistors		N/A
G.10.1	General		N/A
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A
G.10.6	Overload test		N/A
G.11	Capacitors and RC units		N/A
G.11.1	General requirements		N/A
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.12	Optocouplers		N/A
	Optocouplers comply with IEC 60747-5-5 with specifics		N/A
	Type test voltage $V_{ini,a}$		—
	Routine test voltage, $V_{ini,b}$		—
G.13	Printed boards		N/A
G.13.1	General requirements		N/A
G.13.2	Uncoated printed boards		N/A
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
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.13.6.2	Test method and compliance		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements		N/A
G.15	Pressurized liquid filled components		N/A
G.15.1	Requirements		N/A
G.15.2	Test methods and compliance		N/A
G.15.2.1	Hydrostatic pressure test		N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.3	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
G.16.1	Condition for fault tested is not required		N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test..... :		—
	Mains voltage that impulses to be superimposed on :		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test..... :		—
G.16.3	Capacitor discharge test..... :		N/A
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	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		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)..... :		N/A
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		N/A
J.1	General		N/A
	Winding wire insulation :		—
	Solid round winding wire, diameter (mm) :		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm ²)..... :		N/A
J.2/J.3	Tests and Manufacturing		—
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
	Instructional safeguard :		N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
K.5.1	Under single fault condition		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm).....		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm).....		N/A
	Electric strength test before and after the test of K.7.2		N/A
K.7.2	Overload test, Current (A)		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	DISCONNECT DEVICES		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
	Instructional safeguard		N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		P
M.1	General requirements		P
M.2	Safety of batteries and their cells		P
M.2.1	Batteries and their cells comply with relevant IEC standards	Approved component used.	P
M.3	Protection circuits for batteries provided within the equipment	See below.	P
M.3.1	Requirements		P
M.3.2	Test method	See below.	P
	Overcharging of a rechargeable battery	See appended table Annex M.3.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Excessive discharging		N/A
	Unintentional charging of a non-rechargeable battery		N/A
	Reverse charging of a rechargeable battery	Reverse charging is prevented by its construction.	N/A
M.3.3	Compliance	See appended table Annex M.3.	P
M.4	Additional safeguards for equipment containing a portable secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Compliance		N/A
M.4.3	Fire enclosure		N/A
M.4.4	Drop test of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation and procedure for the drop test		N/A
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%):		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance		N/A
M.5	Risk of burn due to short-circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A
M.6	Safeguards against short-circuits		N/A
M.6.1	External and internal faults	Considered for approved component.	N/A
M.6.2	Compliance		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
	Calculated hydrogen generation rate		N/A
M.7.2	Test method and compliance		N/A
	Minimum air flow rate, Q (m ³ /h)		N/A
M.7.3	Ventilation tests		N/A
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Hydrogen gas concentration (%)..... :		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	Obtained hydrogen generation rate..... :		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%)..... :		N/A
M.7.4	Marking		N/A
M.8	Protection against internal ignition from external spark sources of batteries with aqueous electrolyte		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s)..... :		—
M.8.2.3	Correction factors		—
M.8.2.4	Calculation of distance d (mm)		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse		P
	Instructional safeguard	Complied by inspection and data review.	P
N	ELECTROCHEMICAL POTENTIALS		P
	Material(s) used	Considered.	—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		N/A
	Value of X (mm)..... :		—
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECTS		N/A
P.1	General		N/A
P.2	Safeguards against entry or consequences of entry of a foreign object		N/A
P.2.1	General	See below.	N/A
P.2.2	Safeguards against entry of a foreign object	Top / Bottom / Front / Rear / Right / Left sides: No openings provided.	N/A
	Location and Dimensions (mm)	Same as above.	—
P.2.3	Safeguards against the consequences of entry of a foreign object		N/A
P.2.3.1	Safeguard requirements		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment		N/A
	Transportable equipment with metalized plastic parts..... :		N/A
P.2.3.2	Consequence of entry test..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	Metallized coatings and adhesives securing parts		N/A
P.4.1	General		N/A
P.4.2	Tests		N/A
	Conditioning, T _c (°C) :		—
	Duration (weeks)..... :		—
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		N/A
Q.1	Limited power sources		N/A
Q.1.1	Requirements		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output		N/A
	d) Overcurrent protective device limited output		N/A
	e) IC current limiter complying with G.9		N/A
Q.1.2	Test method and compliance :		N/A
	Current rating of overcurrent protective device (A) :		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) :		N/A
	Current limiting method :		—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General		N/A
R.2	Test setup		N/A
	Overcurrent protective device for test..... :		—
R.3	Test method		N/A
	Cord/cable used for test :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
R.4	Compliance		N/A
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
S.3	Flammability test for the bottom of a fire enclosure		N/A
S.3.1	Mounting of samples		N/A
S.3.2	Test method and compliance		N/A
	Mounting of samples		—
	Wall thickness (mm)		—
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosure materials of equipment with a steady state power exceeding 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
T	MECHANICAL STRENGTH TESTS		P
T.1	General		P
T.2	Steady force test, 10 N		N/A
T.3	Steady force test, 30 N		N/A
T.4	Steady force test, 100 N		N/A
T.5	Steady force test, 250 N	See appended table T.2, T.3, T.4, T.5	P
T.6	Enclosure impact test	See appended table T.6, T.9	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Fall test	Same as above.	P
	Swing test	Same as above.	P
T.7	Drop test		N/A
T.8	Stress relief test.....	See appended table T.8	P
T.9	Glass Impact Test		N/A
T.10	Glass fragmentation test		N/A
	Number of particles counted.....		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)		N/A
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General		N/A
	Instructional safeguard :		N/A
U.2	Test method and compliance for non-intrinsically protected CRTs		N/A
U.3	Protective screen		N/A
V	DETERMINATION OF ACCESSIBLE PARTS		P
V.1	Accessible parts of equipment		P
V.1.1	General		P
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes		P
V.1.4	Plugs, jacks, connectors tested with blunt probe		N/A
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		N/A
V.2	Accessible part criterion		P
X	ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)		N/A
	Clearance		N/A
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		P
Y.1	General	Outdoor enclosure does not carry current during normal operation.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Y.2	Resistance to UV radiation	Front plastic lens cover, Front plastic IR LED cover and Plastic SD card cover are UL approved component with UV resistance characteristics.	P
Y.3	Resistance to corrosion	Metallic enclosure was made of aluminium and after evaluated/reviewed the data provided from manufacturer, the construction complied with requirements.	P
Y.3	Resistance to corrosion		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by..... :		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure		N/A
Y.3.5	Compliance		N/A
Y.4	Gaskets		P
Y.4.1	General	See Annex Y.4.3.	P
Y.4.2	Gasket tests	See below.	P
Y.4.3	Tensile strength and elongation tests	Test conducted on below materials: Mfr: MOMENTIVE PERFORMANCE MATERIALS JAPAN L L C Model: TSE221-5U(ad) Mfr: MOMENTIVE PERFORMANCE MATERIALS JAPAN L L C Model: TSE2186U(aq)	P
	Alternative test methods		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means		N/A
Y.5	Protection of equipment within an outdoor enclosure		P
Y.5.1	General	Pollution degree 3.	P
Y.5.2	Protection from moisture	After test, no water has entered to enclosure.	P
	Relevant tests of IEC 60529 or Y.5.3	See Annex Y.5.3.	P
Y.5.3	Water spray test		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Y.5.4	Protection from plants and vermin	No openings on the enclosure.	N/A
Y.5.5	Protection from excessive dust	See below.	N/A
Y.5.5.1	General	Clearance and creepage requirement are considered to meet PD3 requirement	N/A
Y.5.5.2	IP5X equipment		N/A
Y.5.5.3	IP6X equipment		N/A
Y.6	Mechanical strength of enclosures		P
Y.6.1	General	See below.	P
Y.6.2	Impact test :	Conduct Impact test before Water spray.	P

IEC 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

5.2	TABLE: Classification of electrical energy sources						N/A
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type ¹⁾	Additional Info ²⁾	
Supplementary information:							
1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc.							
2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.							

5.4.1.8	TABLE: Working voltage measurement					N/A
Location		RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	
Supplementary information:						
1) Test voltage:						

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

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

5.4.2, 5.4.3	TABLE: Minimum Clearances/Creepage distance							N/A
Clearance (cl) and creepage distance (cr) at/of/between:	U _p (V)	U _{rms} (V)	Freq ¹⁾ (Hz)	Required cl (mm)	cl (mm)	E.S. ²⁾ (V)	Required cr (mm)	cr (mm)

IEC 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

Supplementary information:

- 1) Only for frequency above 30 kHz
- 2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied)
- 3) See table 5.4.2.4 if this is based on electric strength test
- 4) Functional insulation shorted, see sub-clause B.4.4.
- 5) Specified the equipment to be operated up to 2000 m above sea level. Therefore, the required clearance is multiplied by the multiplication factor 1.0 according to table 16 of IEC 62368-1.

5.4.4.2	TABLE: Minimum distance through insulation				N/A
Distance through insulation (DTI) at/of	Peak voltage (V)	Insulation	Required DTI (mm)	Measured DTI (mm)	
Supplementary information:					
1) See appended table 4.1.2 for details.					

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz					N/A
Insulation material	E_P	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)
Supplementary information:						

5.4.9	TABLE: Electric strength tests				N/A
Test voltage applied between:		Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V)	Breakdown Yes / No	
Supplementary information:					
1) Electric strength tests were also conducted before and after clause 5.4.8.					
2) Electrical strength tests were repeated in reverse polarity when applying a d.c. voltage.					
3) The test according to 5.4.9 is applied immediately following the temperature test in 5.4.1.4					

5.5.2.2	TABLE: Stored discharge on capacitors					N/A
Location	Supply voltage (V)	Operating and fault condition ¹⁾	Switch position	Measured voltage (Vpk)	ES Class	

IEC 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

Supplementary information:

X-capacitors installed for testing:

☒ bleeding resistor rating:☐ ICX: N/A

1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit

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

5.7.4	TABLE: Unearthed accessible parts					P
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V_{rms} or V_{pk})	Current (A_{rms} or A_{pk})	Freq. (Hz)	
Metal enclosure (Unearthed accessible conductive parts) to PE	Annex B.4 - simulated single fault conditions - PoE 57 Vdc input and metal enclosure SC	PoE 57 Vdc	--	142 uApk / 142 uApk	--	ES1
Supplementary information:						
1) Abbreviation: SC= short circuit; OC= open circuit						

5.7.5	TABLE: Earthed accessible conductive part				N/A
Supply voltage (V).....:					—
Phase(s)		[] Single Phase; [] Three Phase: [] Delta [] Wye			
Power Distribution System		[] TN [] TT [] IT			
Location		Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment	
Supplementary Information:					
1) Supply voltage is the anticipated maximum Touch Voltage.					
2) Earthed neutral conductor [Voltage differences less than 1% or more]					
3) Specify method used for measurement as described in IEC 60990 sub-clause 4.3					

IEC 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

- 4) IEC 60990, sub-clause 6.2.2.8, Fault 7 not applicable.
- 5) (*) IEC 60990, sub-clause 6.2.2.3 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.

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

6.2.2	TABLE: Power source circuit classifications					N/A
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power ¹⁾ (W)	Time (S)	PS class
Supplementary information:						
1) Abbreviation: SC= short circuit; OC= open circuit						
2) Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3.						
3) This equipment is power supplied by Limited Power Source (LPS) or Power source class 2 (PS2) sources, all internal circuits are considered as PS2 electrical sources.						

6.2.3.1	TABLE: Determination of Arcing PIS				N/A
Location	Open circuit voltage after 3 s (Vpk)	Measured r.m.s current (A)	Calculated value	Arcing PIS? Yes / No	
Supplementary information:					
1) An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (Vp) and normal operating condition rms current (Irms) is greater than 15.					
2) All internal circuits were considered as Arcing PIS directly.					

6.2.3.2	TABLE: Determination of resistive PIS			N/A
Location	Operating and fault condition	Dissipate power (W)	Arcing PIS? Yes / No	
Supplementary information:				
1) Abbreviation: SC= short circuit; OC= open circuit				
2) An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the				

IEC 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15.

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

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

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements			P
Supply voltage (V).....		See below	See below	—
Ambient temperature during test T_{amb} (°C).....		--	--	—
Maximum measured temperature T of part/at:		T (°C)		Allowed T_{max} (°C)
Test voltage		PoE 42 Vdc	PoE 42 Vdc	--
Test position		Horizontal	Vertical	--
PCB near U2 (SB board)		79.7	80.0	105
BT1 (SB board)		75.3	75.6	100
PCB near U10 (SB board)		80.7	81.3	105
Stepping motor (Focus) body (Lens module)		75.5	75.0	105
Stepping motor (Zoom) body (Lens module)		74.3	74.1	105
PCB near U12 and UM1 (MB board)		80.4	81.0	105

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

T1 coil (power board)	83.7	85.2	105
PCB near LD1 (IR LED board)	95.7	96.6	105
Plastic inside near lens module	68.4	69.0	--
Plastic inside near IR LED	85.7	88.2	--
Plastic inside near SD card cover	72.2	73.0	--
Label	67.0	68.9	--
Tma	55.0	55.0	--
Tamb	24.3	23.9	--
Accessible parts:	--	--	--
Plastic outside near lens module	33.6	35.6	77
Plastic outside near IR LED	47.9	51.6	77
Plastic outside near SD card cover	33.6	34.6	77
Metal enclosure outside near T1	34.9	37.0	60
Tamb (shift to 25 °C)	25.0	25.0	--
Tamb	24.3	23.9	--
Test voltage	PoE 57 Vdc	--	--
Test position	Vertical	--	--
PCB near U2 (SB board)	80.1	--	105
BT1 (SB board)	75.6	--	100
PCB near U10 (SB board)	81.4	--	105
Stepping motor (Focus) body (Lens module)	75.2	--	105
Stepping motor (Zoom) body (Lens module)	74.2	--	105
PCB near U12 and UM1 (MB board)	81.1	--	105
T1 coil (power board)	86.2	--	105
PCB near LD1 (IR LED board)	96.0	--	105
Plastic inside near lens module	69.0	--	--
Plastic inside near IR LED	87.1	--	--
Plastic inside near SD card cover	73.1	--	--
Label	68.4	--	--
Tma	55.0	--	--
Tamb	24.7	--	--
Accessible parts:	--	--	--
Plastic outside near lens module	35.5	--	77
Plastic outside near IR LED	50.7	--	77

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

Plastic outside near SD card cover				34.1	--	77	
Metal enclosure outside near T1				36.9	--	60	
Tamb (shift to 25 °C)				25.0	--	--	
Tamb				24.7	--	--	
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information:							
1) The temperatures were measured under worst normal mode and as described in Annex B.2.5 and at voltages as described above.							
2) The maximum ambient temperature (Tma) permitted by the manufacturer's specification is 55 °C.							
3) All values for T (°C) are re-calculated from Tamb respectively.							
4) Maximum normal load: This equipment which was operated continuously with data-link mode via Ethernet connect by RJ-45, network camera capture and transmit to monitoring equipment, IR LED function is forced to enable.							

B.2.5		TABLE: Input test						P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
Test model: IB9383-HTV								
PoE 42 Vdc	--	0.17	0.29	7.14	--	--	--	Maximum normal load
PoE 57 Vdc	--	0.12	0.22	6.84	--	--	--	Maximum normal load
Test model: IB9383-HV								
PoE 42 Vdc	--	0.16	0.29	6.72	--	--	--	Maximum normal load
PoE 57 Vdc	--	0.11	0.22	6.27	--	--	--	Maximum normal load
Supplementary information:								
1) Equipment may have rated current or rated power or both. Both should be measured 2) Maximum normal load: This equipment which was operated continuously with data-link mode via Ethernet connect by RJ-45, network camera capture and transmit to monitoring equipment, IR LED function is forced to enable.								

B.3, B.4	TABLE: Abnormal operating and fault condition tests	P
----------	---	---

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

Ambient temperature T _{amb} (°C)					25 °C, if no others states		—
Power source for EUT: Manufacturer, model/type, outputrating ...					D.C. power supply 80 V, 19 A (x 1)		—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation	
PoE 57 Vdc input and metal enclosure	s-c	PoE 57 Vdc	30 min	--	--	No damage, no hazard. All safeguards remained effectively.	
Supplementary information:							
1) 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.							
2) s-c=short circuit, o-c=open circuit, o-l=overload							
3) The maximum ambient temperature (T _{ma}) permitted by the manufacturer's specification is 55 °C.							
4) Maximum normal load: This equipment which was operated continuously with data-link mode via Ethernet connect by RJ-45, network camera capture and transmit to monitoring equipment, IR LED function is forced to enable.							
5) Comments Key:							
NB - No indication of dielectric breakdown							
NC - Cheesecloth remained intact							
NT - Tissue paper remained intact							
6) For temperature (°C), see appended table 5.4.1.4, 9.3, B.1.5, B.2.6 for details.							

M.3	TABLE: Protection circuits for batteries provided within the equipment					P
Is it possible to install the battery in a reverse polarity position?.....:				No such consideration.		—
Equipment Specification	Charging					
	Voltage (V)			Current (A)		
	--			--		
Manufacturer/type	Battery specification					
	Non-rechargeable batteries		Rechargeable batteries			
	Discharging current (A)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)
			Voltage (V)	Current (A)		
SEIKO INSTRUMENTS INC MICRO-ENERGY DIV / MS621T	--	--	3.4 Vdc	300 mA	--	--
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.						

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

Specified battery temperature (°C)					100		
Component No.	Fault condition	Charge/discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation
MS621T	Normal	Charging	7 h	--	0.59 mA	2.83 Vdc	No damaged, no hazards. NL, NS, NE, NF.
MS621T, R1852 of SB board	SC	Charging	7 h	--	0.76 mA	2.89 Vdc	No damaged, no hazards. NL, NS, NE, NF.
MS621T, D93 pin A to C of MB board	SC	Charging	7 h	--	0.59 mA	2.83 Vdc	No damaged, no hazards. NL, NS, NE, NF.
MS621T, U22 pin 1 to 2 of Power board	SC	Charging	7 h	--	0	0	No damaged, no hazards. NL, NS, NE, NF.
Supplementary information:							
1) Abbreviation: SC= short circuit; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal.							

M.4.2	TABLE: Charging safeguards for equipment containing a secondary lithium battery				N/A
Maximum specified charging voltage (V)..... :					—
Maximum specified charging current (A) :					—
Highest specified charging temperature (°C) :					
Lowest specified charging temperature (°C) :					
Battery manufacturer/type	Operating and fault condition	Measurement			Observation
		Charging voltage (V)	Charging current (A)	Temp. (°C)	
Supplementary information:					
Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature					

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)							N/A
Output Circuit	Condition	U _{oc} (V)	Time (s)	I _{sc} (A)		S (VA)		
				Meas.	Limit	Meas.	Limit	

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

Supplementary Information:							

T.2, T.3, T.4, T.5		TABLE: Steady force test					P
Location/Part	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation	
Front IR LED cover near IR LED	Plastic ¹⁾	1)	--	250	5	No cracking, no hazard. All safeguards remain effective.	
Front Lens cover near Lens module	Plastic ¹⁾	1)	--	250	5	No cracking, no hazard. All safeguards remain effective.	
Side SD card cover near T1	Plastic ¹⁾	1)	--	250	5	No cracking, no hazard. All safeguards remain effective.	
Side metal enclosure near T1	Metal	1)	--	250	5	No cracking, no hazard. All safeguards remain effective.	
Rear metal enclosure near T1	Metal	1)	--	250	5	No cracking, no hazard. All safeguards remain effective.	
Supplementary information:							
1) For details, refer to appended table 4.1.2.							

T.6, T.9		TABLE: Impact test				P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation		
Front IR LED cover near IR LED	Plastic ¹⁾	1)	1300	No cracking, no hazard. All safeguards remain effective.		
Front Lens cover near Lens module	Plastic ¹⁾	1)	1300	No cracking, no hazard. All safeguards remain effective.		
Side SD card cover near T1	Plastic ¹⁾	1)	1300	No cracking, no hazard. All safeguards remain effective.		
Side metal enclosure near T1	Metal	1)	1300	No cracking, no hazard. All safeguards remain effective.		

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

Rear metal enclosure near T1	Metal	¹⁾	1300	No cracking, no hazard. All safeguards remain effective.
Supplementary information:				
1) For details, refer to appended table 4.1.2.				

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

T.8	TABLE: Stress relief test					P
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Complete equipment	Plastic ¹⁾	¹⁾	99	7	No shrinkage or distortion. All safeguards remain effective.	
Complete equipment	Plastic ¹⁾	¹⁾	-30	24	Carry out before water spray test (annex Y.5.3).	
Supplementary information:						
1) For details, refer to appended table 4.1.2.						

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

IEC 62368-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

4.1.2	TABLE: Critical components information					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Enclosure	--	--	--	--	--	
- Front plastic lens cover	TEIJIN LIMITED RESIN AND PLASTIC	L-1225Z(#1)(f1)	HB minimum, 1.7 mm thickness minimum., 115 degree C	ANSI/UL 94, ANSI/UL 746C	UL (E50075)	
- Front plastic IR LED cover	TEIJIN LIMITED RESIN AND PLASTIC	L-1225Z(#1)(f1)	HB minimum, 1.5 mm thickness minimum., 115 degree C	ANSI/UL 94, ANSI/UL 746C	UL (E50075)	
- Front metal enclosure	Interchangeable	Interchangeable	Aluminium alloy, 5.0 mm thick min.	--	--	
- Rear metal enclosure	Interchangeable	Interchangeable	Aluminium alloy, 6.0 mm thick min.	--	--	
- Plastic SD card cover	TEIJIN LIMITED RESIN AND PLASTIC	LN-3520Z(#)(f1)	HB minimum, 2.5 mm thickness minimum., 125 degree C	ANSI/UL 94, ANSI/UL 746C	UL (E50075)	
Mounting kit	Interchangeable	Interchangeable	Aluminium	--	--	
Breathable membrane (On the rear metal enclosure)	EF-Materials Industries Inc.	2502LT-BOP240-G3	Flammability level is ignored, when small parts (less than 4 g or less than 1750 mm ³)	--	--	
Adhesive (Between Breathable membrane and rear metal enclosure)	3M	9495LE	--	--	--	
Gasket, O-Ring, Rubber	--	--	--	--	--	

IEC 62368-1					
Clause	Requirement + Test	Result - Remark		Verdict	
- O-ring (between front plastic lens cover and front metal enclosure) (type A)	MOMENTIVE PERFORMANC E MATERIALS JAPAN L L C	TSE221-5U(ad)	HB minimum, Silicone rubber.	ANSI/UL 94	UL
- O-ring (between front plastic lens cover and front metal enclosure) (type B)	MOMENTIVE PERFORMANC E MATERIALS JAPAN L L C	TSE221-5U(ad)	HB minimum, Silicone rubber.	ANSI/UL 94	UL
- O-ring (between IR LED cover and front metal enclosure)	MOMENTIVE PERFORMANC E MATERIALS JAPAN L L C	TSE221-5U(ad)	HB minimum, Silicone rubber.	ANSI/UL 94	UL
- O-ring (between front metal enclosure and rear metal enclosure)	MOMENTIVE PERFORMANC E MATERIALS JAPAN L L C	TSE221-5U(ad)	HB minimum, Silicone rubber.	ANSI/UL 94	UL
- O-ring (between rear metal enclosure and plastic SD card cover)	MOMENTIVE PERFORMANC E MATERIALS JAPAN L L C	TSE221-5U(ad)	HB minimum, Silicone rubber.	ANSI/UL 94	UL
- Rubber for microphone used (on the front enclosure)	MOMENTIVE PERFORMANC E MATERIALS JAPAN L L C	TSE2186U(aq)	HB minimum, Silicone rubber.	ANSI/UL 94	UL
- Rubber for cable used (on the rear enclosure)	MOMENTIVE PERFORMANC E MATERIALS JAPAN L L C	TSE221-5U(ad)	HB minimum, Silicone rubber.	ANSI/UL 94	UL

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Lithium rechargeable coin battery (BT1) (On the SB board)	SEIKO INSTRUMENTS INC MICRO-ENERGY DIV	MS621T	Maximum Charge Voltage: 3.4 Vdc, Maximum Charging Current: 300 mA	UL 1642	UL
PoE transformer (T1) (On the Power board)	Matrix Electronics Co., Ltd.	MTSF064	105 degree C min.	--	--
IR LED (LD1, LD2) (On the IR LED board)	Lextar Electronics Corporation	PR35V21 V0-130D	Exempt Group, 850 nm, 290 mW/sr	IEC 62471:2006 (Evaluated in appliance.)	CB (Issued by UL)
Stepping motor (Focus) (Optional) (On the lens module Type A)	Interchangeable	Interchangeable	105 degree C	--	--
Stepping motor (Zoom) (Optional) (On the lens module Type A)	Interchangeable	Interchangeable	105 degree C	--	--
Thermal pad (Between Power board/MB board and internal metal part)	Interchangeable	Interchangeable	Flammability level is ignored, when small parts (less than 4 g or less than 1750 mm ³)	--	--
	Interchangeable	Interchangeable	V-2 min. or HF-2 min.	ANSI/UL 94:2021	UL
PCB	Interchangeable	Interchangeable	V-1 minimum, 105 degree C minimum	ANSI/UL 796:2020 or ANSI/UL 796:2021	UL
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					
2) License available upon request.					

已註解 [NL2]: Wait final

List of test equipment used:

A completed list of used test equipment shall be provided in the Test Reports when a Customer's Testing Facility according to CTF stage 1 or CTF stage 2 procedure has been used.

Note: This page may be removed when CTF stage 1 or CTF stage 2 are not used. See also clause 4.8 in OD 2020 for more details.

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date

Statement of Measurement Uncertainty

The Test Report shall include a statement concerning the uncertainty of the measurement systems used for the tests conducted when it is required by the standard, client or other authorities. In such cases, the table below may be used for reporting U of M.

(This page may be removed from the final Test Report when not required. See also clause 4.8 in OD 2020 for more details.)

Clause #	Parameter/ Measurement / test method	Requirement % or k	Calculated U of M*

*Note: Calculations leading to the reported value are on file with the NCB

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT			
IEC 62368-1			
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
(Audio/video, information and communication technology equipment - Part 1: Safety requirements)			
Differences according to		EN IEC 62368-1:2020+A11:2020	
Attachment Form No.....		EU_GD_IEC62368_1E	
Attachment Originator		UL(Demko)	
Master Attachment		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)		
	Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2020+A11:2020. All other clause numbers in that column, except for those in the paragraph below, refers to IEC 62368-1:2018. Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2018 are prefixed “Z”.		P
	Add 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
1	Modification to Clause 3 .		N/A
3.3.19	Sound exposure Replace 3.3.19 of IEC 62368-1 with the following definitions:		N/A
3.3.19.1	momentary exposure level, MEL metric for estimating 1 s sound exposure level from the HD 483-1 S2 test signal applied to both channels, based on EN 50332-1:2013, 4.2. Note 1 to entry: MEL is measured as A-weighted levels in dB. Note 2 to entry: See B.3 of EN 50332-3:2017 for additional information.	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.19.3	sound exposure, E A-weighted sound pressure (p) squared and integrated over a stated period of time, T Note 1 to entry: The SI unit is $\text{Pa}^2 \text{ s}$. $E = \int_0^T p(t)^2 dt$	No such consideration.	N/A
3.3.19.4	sound exposure level, SEL logarithmic measure of sound exposure relative to a reference value, E_0 , typically the 1 kHz threshold of hearing in humans. Note 1 to entry: SEL is measured as A-weighted levels in dB. $SEL = 10 \lg \left(\frac{E}{E_0} \right) \text{ dB}$ Note 2 to entry: See B.4 of EN 50332-3:2017 for additional information.	No such consideration.	N/A
3.3.19.5	digital signal level relative to full scale, dBFS levels reported in dBFS are always r.m.s. Full scale level, 0 dBFS, is the level of a dc-free 997-Hz sine wave whose undithered positive peak value is positive digital full scale, leaving the code corresponding to negative digital full scale unused Note 1 to entry: It is invalid to use dBFS for non-r.m.s. levels. Because the definition of full scale is based on a sine wave, the level of signals with a crest factor lower than that of a sine wave may exceed 0 dBFS. In particular, square wave signals may reach +3,01 dBFS.	No such consideration.	N/A
2	Modification to Clause 10		N/A
10.6	Safeguards against acoustic energy sources Replace 10.6 of IEC 62368-1 with the following:		N/A
10.6.1.1	Introduction	No such consideration.	N/A


IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Safeguard requirements for protection against long-term exposure to excessive sound pressure levels from personal music players closely coupled to the ear are specified below. Requirements for earphones and headphones intended for use with personal music players are also covered.</p> <p>A personal music player is a portable equipment intended for use by an ordinary person, that:</p> <ul style="list-style-type: none"> – is designed to allow the user to listen to audio or audiovisual content / material; and – uses a listening device, such as headphones or earphones that can be worn in or on or around the ears; and – has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around with while in continuous use (for example, on a street, in a subway, at an airport, etc.). <p>EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment.</p> <p>Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3.</p> <p>NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360.</p> <p>NOTE 2 It is the intention of the Committee to allow the alternative methods for now, but to only use the dose measurement method as given in 10.6.5 in future. Therefore, manufacturers are encouraged to implement 10.6.5 as soon as possible.</p> <p>Listening devices sold separately shall comply with the requirements of 10.6.6.</p> <p>These requirements are valid for music or video mode only.</p> <p>The requirements do not apply to:</p> <ul style="list-style-type: none"> – professional equipment; <p>NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.</p>		

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>– hearing aid equipment and other devices for assistive listening;</p> <p>– the following type of analogue personal music players:</p> <ul style="list-style-type: none"> • long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and • cassette player/recorder; <p>NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.</p> <p>– a player while connected to an external amplifier that does not allow the user to walk around while in use.</p> <p>For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply.</p> <p>The relevant requirements are given in EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.</p>		
10.6.1.2	<p>Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</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>	No such consideration.	N/A
10.6.2	Classification of devices without the capacity to estimate sound dose		N/A
10.6.2.1	<p>General</p> <p>This standard is transitioning from short-term based (30 s) requirements to long-term based (40</p>	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>hour) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3.</p> <p>For classifying the acoustic output $L_{Aeq,T}$, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period.</p> <p>For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, measurements may be done over the duration of the complete song. In this case, T becomes the duration of the song.</p> <p>NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the content and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song does not exceed the required limit.</p> <p>For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dB.</p>		
10.6.2.2	<p>RS1 limits (to be superseded, see 10.6.3.2)</p> <p>RS1 is a class 1 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 85 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 27 mV (analogue interface) or -25 dBFS (digital interface) when playing the fixed “programme 	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	simulation noise" described in EN 50332-1. – The RS1 limits will be updated for all devices as per 10.6.3.2.		
10.6.2.3	RS2 limits (to be superseded, see 10.6.3.3) RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or when the combination of player and listening device is known by other means such as setting or automatic 130 detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 100 dB(A) when playing the fixed "programme simulation noise" as described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 150 mV (analogue interface) or -10 dBFS (digital interface) when playing the fixed "programme simulation noise" as described in EN 50332-1.	No such consideration.	N/A
10.6.2.4	RS3 limits RS3 is a class 3 acoustic energy source that exceeds RS2 limits.	No such consideration.	N/A
10.6.3	Classification of devices (new)		N/A
10.6.3.1	General Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision of 23 June 2009, are given below.	No such consideration.	N/A
10.6.3.2	RS1 limits (new) RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1.</p> <p>– for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1.</p>		
10.6.3.3	<p>RS2 limits (new)</p> <p>RS2 is a class 2 acoustic energy source that does not exceed the following:</p> <p>– for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1.</p> <p>– for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3, shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1.</p>	No such consideration.	N/A
10.6.4	Requirements for maximum sound exposure		N/A
10.6.4.1	<p>Measurement methods</p> <p>All volume controls shall be turned to maximum during tests.</p> <p>Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.</p>	No such consideration.	N/A
10.6.4.2	<p>Protection of persons</p> <p>Except as given below, protection requirements</p>	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>for parts accessible to ordinary persons, instructed persons and skilled persons are given in 4.3.</p> <p>NOTE 1 Volume control is not considered a safeguard.</p> <p>Between RS2 and an ordinary person, the basic safeguard may be replaced by an instructional safeguard in accordance with Clause F.5, except that the instructional safeguard shall be placed on the equipment, or on the packaging, or in the instruction manual. Alternatively, the instructional safeguard may be given through the equipment display during use.</p> <p>The elements of the instructional safeguard shall be as follows:</p> <ul style="list-style-type: none"> – element 1a: the symbol , IEC 60417-6044 (2011-01) – element 2: “High sound pressure” or equivalent wording – element 3: “Hearing damage risk” or equivalent wording – element 4: “Do not listen at high volume levels for long periods.” or equivalent wording <p>An equipment safeguard shall prevent exposure of an ordinary person to an RS2 source without intentional physical action from the ordinary person and shall automatically return to an output level not exceeding what is specified for an RS1 source when the power is switched off.</p> <p>The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output exceeding RS1. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output exceeding RS1. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time.</p>		

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent of how often and how long the personal music player has been switched off.</p> <p>A skilled person shall not be unintentionally exposed to RS3.</p>		
10.6.5	Requirements for dose-based systems		N/A
10.6.5.1	<p>General requirements</p> <p>Personal music players shall give the warnings as provided below when tested according to EN 50332-3, using the limits from this clause.</p> <p>The manufacturer may offer optional settings to allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating the safeguards. This allows the users to be informed in a method that best meets their physical capabilities and device usage needs. If such optional settings are offered, an administrator (for example, parental restrictions, business/educational administrators, etc.) shall be able to lock any optional settings into a specific configuration.</p> <p>The personal music player shall be supplied with easy to understand explanation to the user of the dose management system, the risks involved, and how to use the system safely. The user shall be made aware that other sources may significantly contribute to their sound exposure, for example work, transportation, concerts, clubs, cinema, car races, etc.</p>	No such consideration.	N/A
10.6.5.2	<p>Dose-based warning and requirements</p> <p>When a dose of 100 % CSD is reached, and at least at every 100 % further increase of CSD, the device shall warn the user and require an acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to compliance with class RS1.</p>	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	The warning shall at least clearly indicate that listening above 100 % CSD leads to the risk of hearing damage or loss.		
10.6.5.3	<p>Exposure-based requirements</p> <p>With only dose-based requirements, cause and effect could be far separated in time, defying the purpose of educating users about safe listening practice. In addition to dose-based requirements, a PMP shall therefore also put a limit to the short-term sound level a user can listen at.</p> <p>The exposure-based limiter (EL) shall automatically reduce the sound level not to exceed 100 dB(A) or 150 mV integrated over the past 180 s, based on methodology defined in EN 50332-3.</p> <p>The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster.</p> <p>Test of EL functionality is conducted according to EN 50332-3, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s shall be 100 dB or lower. For equipment provided with a standardized connector, the unweighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than -10 dBFS for a digital interface.</p> <p>NOTE In case the source is known not to be music (or test signal), the EL may be disabled.</p>	No such consideration.	N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	<p>Corded listening devices with analogue input</p> <p>With 94 dB L_{Aeq} acoustic pressure output of the listening device, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the input voltage of the listening device when playing the fixed "programme simulation noise" as described in EN 50332-1 shall be ≥ 75 mV.</p>	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.		
10.6.6.2	Corded listening devices with digital input With any playing device playing the fixed “programme simulation noise” described in EN 50332-1, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.	No such consideration.	N/A
10.6.6.3	Cordless listening devices In cordless mode, – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the receiving device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.	No such consideration.	N/A
10.6.6.4	Measurement method <i>Measurements shall be made in accordance with EN 50332-2 as applicable.</i>	No such consideration.	N/A
3	Modification to the whole document		P
	Delete all the “country” notes in the reference document according to the following list:		P

IEC62368_1E - ATTACHMENT						
Clause	Requirement + Test			Result - Remark		Verdict
	0.2.1	Note 1 and 2	1	Note 4 and 5	3.3.8.1	Note 2
	3.3.8.3	Note 1	4.1.15	Note	4.7.3	Note 1 and 2
	5.2.2.2	Note	5.4.2.3.2.2 Table 12	Note c	5.4.2.3.2.4	Note 1 and 3
	5.4.2.3.2.4 Table 13	Note 2	5.4.2.5	Note 2	5.4.5.1	Note
	5.4.10.2.1	Note	5.4.10.2.2	Note	5.4.10.2.3	Note
	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3 and 4
	5.6.8	Note 2	5.7.6	Note	5.7.7.1	Note 1 and Note 2
	8.5.4.2.3	Note	10.2.1 Table 39	Note 3 and 4 and 5	10.5.3	Note 2
	10.6.1	Note 3	F.3.3.6	Note 3	Y.4.1	Note
	Y.4.5	Note				
4	Modification to Clause 1					P
1	Add the following note: <i>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.</i>			See below.		P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5	Modification to 4.Z1		N/A
4.Z1	<p>Add 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. mains, 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 pluggable equipment type B or permanently connected equipment, 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 pluggable equipment type A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>		N/A
6	Modification to 5.4.2.3.2.4		N/A
5.4.2.3.2.4	<p>Add the following to the end of this subclause:</p> <p>The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.</p>		N/A
7	Modification to 10.2.1		N/A
10.2.1	<p>Add the following to ^{c)} and ^{d)} in table 39:</p> <p>For additional requirements, see 10.5.1.</p>	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8	Modification to 10.5.1		N/A
10.5.1	<p>Add the following after the first paragraph:</p> <p>For RS 1 compliance is checked by measurement under the following conditions:</p> <p>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 pre-sets 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.</p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p>The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus.</p> <p>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.</p> <p>For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.</p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>	No such consideration.	N/A
9	Modification to G.7.1		N/A
G.7.1	<p>Add the following note:</p> <p>NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>	No power supply cord.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10	Modification to Bibliography		P
	<p>Add 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>		P
11	ADDITION OF ANNEXES		N/A
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.1.15	<p>Denmark, Finland, Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>Class I pluggable equipment type A 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 accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord."</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p>	Class III equipment.	N/A
4.7.3	<p>United Kingdom</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>	No such consideration.	N/A
5.2.2.2	<p>Denmark</p> <p>After the 2nd paragraph add the following:</p> <p>A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.</p>	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.11.1 and Annex G	<p>Finland and Sweden</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"> • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <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"> • 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), <p>and</p> <ul style="list-style-type: none"> • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV. <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p>	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<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"> 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; the additional testing shall be performed on all the test specimens as described in EN 60384-14; <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>		
5.5.2.1	<p>Norway</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>	Class III equipment.	N/A
5.5.6	<p>Finland, Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.</p>	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.1	<p>Denmark</p> <p>Add to the end of the subclause</p> <p>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.</p> <p><i>Justification:</i></p> <p>In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.</p>	No such consideration.	N/A
5.6.4.2.1	<p>Ireland and United Kingdom</p> <p>After the indent for pluggable equipment type A, the following is added:</p> <p>– the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.</p>	No such consideration.	N/A
5.6.4.2.1	<p>France</p> <p>After the indent for pluggable equipment type A, the following is added:</p> <p>– in certain cases, the protective current rating of the circuit supplied from the mains is taken as 20 A instead of 16 A.</p>	No such consideration.	N/A
5.6.5.1	<p>To the second paragraph the following is added:</p> <p>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:</p> <p>1,25 mm² to 1,5 mm² in cross-sectional area.</p>	No such consideration.	N/A
5.6.8	<p>Norway</p> <p>To the end of the subclause the following is added:</p> <p>Equipment connected with an earthed mains plug is classified as class I equipment. See the Norway marking requirement in 4.1.15. The symbol IEC 60417-6092, as specified in F.3.6.2, is accepted.</p>	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6	<p>Denmark</p> <p>To the end of the subclause the following is added:</p> <p>The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.</p>	No such consideration.	N/A
5.7.6.2	<p>Denmark</p> <p>To the end of the subclause the following is added:</p> <p>The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .</p>	No such consideration.	N/A
5.7.7.1	<p>Norway and Sweden</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.</p> <p>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</p>	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>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 jordtilkoplede utstyr – og er tilkoplede et koaksialbasert kabel-TV nett, kan forårsake brannfare.</p> <p>For å unngå dette skal det ved tilkoplede 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>		
8.5.4.2.3	<p>United Kingdom</p> <p>Add the following after the 2nd dash bullet in 3rd paragraph:</p> <p>An emergency stop system complying with the requirements of IEC 60204-1 and ISO 13850 is required where there is a risk of personal injury.</p>	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
B.3.1 and B.4	<p>Ireland and United Kingdom</p> <p>The following is applicable:</p> <p>To protect against excessive currents and short-circuits in the primary circuit of direct plug-in equipment, 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 direct plug-in equipment, until the requirements of Annexes B.3.1 and B.4 are met</p>	Not direct plug-in equipment.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	<p>Denmark</p> <p>To the end of the subclause the following is added:</p> <p>Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a polyphase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a.</p> <p>Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.</p> <p>Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a</p> <p><i>Justification:</i> Heavy Current Regulations, Section 6c</p>	Class III equipment.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	<p>United Kingdom</p> <p>To the end of the subclause the following is added:</p> <p>The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.</p>	Not direct plug-in equipment.	N/A
G.7.1	<p>United Kingdom</p> <p>To the first paragraph the following is added:</p> <p>Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc. (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations.</p> <p>NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>	No power supply cord.	N/A
G.7.1	<p>Ireland</p> <p>To the first paragraph the following is added:</p> <p>Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard</p>	No power supply cord.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.2	Ireland and United Kingdom To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm ² is allowed for equipment which is rated over 10 A and up to and including 13 A.	No power supply cord.	N/A
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A
10.5.2	Germany 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. <i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de	No cathode ray tube.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)		N/A					
	<table><tr><th rowspan="2">Type of flexible cord</th><th colspan="2">Code designations</th></tr><tr><th>IEC</th><th>CENELEC</th></tr></table>		Type of flexible cord	Code designations		IEC	CENELEC	N/A
	Type of flexible cord	Code designations						
		IEC	CENELEC					
	PVC insulated cords							
	Flat twin tinsel cord	60227 IEC 41	H03VH-Y					
	Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F					
	Ordinary polyvinyl chloride sheathed flexible cord	60227 IEC 53	H05VV-F H05VVH2-F					
	Rubber insulated cords							
	Braided cord	60245 IEC 51	H03RT-F					
	Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F					
	Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F					
	Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F					
	Cords having high flexibility							
	Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H					
	Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H					
Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H						
Cords insulated and sheathed with halogen-free thermoplastic compounds								
Light halogen-free thermoplastic insulated and sheathed flexible cords		H03Z1Z1-F H03Z1Z1H2-F						
Ordinary halogen-free thermoplastic insulated and sheathed flexible cords		H05Z1Z1-F H05Z1Z1H2-F						

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 U.S.A. AND CANADA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to: CSA/UL 62368-1:2019			
TRF template used:: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No.: US_CA_ND_IEC62368_1E			
Attachment Originator: UL(US)			
Master Attachment: Dated 2022-03-04			
Copyright © 2022 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
IEC 62368-1 - US and Canadian National Differences Special National Conditions based on Regulations and Other National Differences			
1 (1DV.1) (1.3)	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part 1, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.	Considered.	P
1 (1DV.2.1)	This standard includes additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities. See Annex DVB.	Not such equipment.	N/A
1 (1DV.2.2)	This standard includes additional requirements for equipment intended for mounting under cabinets. See Annex DVC.	Not such equipment.	N/A
1 (1DV.2.3)	IEC 62368-3 clause 5 for DC power transfer at ES1 or ES2 voltage levels is considered informative. IEC 62368-3 clause 6 for remote power feeding telecommunication (RFT) circuits is considered normative (see ITU K.50). Alternatively, equipment with RFT circuits are given in either UL 2391 or CSA/UL 60950-21. RFT-C circuits are not permitted unless the RFT-C circuit complies with RFT-V limits ($\leq 200V$ per conductor to earth).	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1 (1DV.3)	For protection against direct lightning strikes, reference is made to NFPA 780 and CAN/CSA-B72 for additional requirements.	No such consideration.	N/A
1 (DV.5)	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.	No such consideration.	N/A
4.1 (4.1.17)	For lengths exceeding 3.05 m, external interconnecting cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.		N/A
	For lengths 3.05 m or less, external interconnecting cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.	Considered.	P
4.6 (4.6.2)	Wire-wrap terminals have special construction and performance requirements.	No such consideration.	N/A
4.8 (4.8.3, 4.8.4.5, 4.8.5)	Coin / button cell batteries have modified special construction and performance requirements.	No such consideration.	N/A
5.4.2.3.2 (5.4.2.3.2.1)	Surge Arrestors and Transient Voltage Surge Suppressors installed external to the equipment are required to comply with the appropriate NEC and CEC requirements.	No such consideration.	N/A
5.5.9	Receptacles, rated 125-V, single phase, 15- or 20-A accessible to either ordinary, instructed, or skilled persons are required to be provided with GFCI Protection for Personnel if the equipment containing the receptacles is installed outdoors. The protection devices are required to comply with UL 943, and CAN/CSA C22.2 No.144.	Class III equipment.	N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.7, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment.	No such consideration.	N/A
5.7.8 (5.7.8.1)	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	No such consideration.	N/A
6.5.1	PS3 wiring outside a fire enclosure is required to comply with single fault testing in B.4, or be current limited per one of the permitted methods.	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex F (F.3.3.9)	Output terminals provided for supply of other equipment, except mains supply, are required to be marked with a maximum rating or reference to equipment permitted to be connected.	No such consideration.	N/A
Annex F (F.3.7)	Outdoor Enclosures are required to be classified and marked in accordance with UL 50 or 50E, or CAN/CSA C22.2 No. 94.1 or 94.2.		N/A
Annex G (G.7)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	Not such equipment.	N/A
	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	No power supply cord.	N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.	Same as above.	N/A
	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.	Same as above.	N/A
	Power supply cords for outdoor equipment are required to be suitable outdoor use type as required by Section 400.4 of the NEC and Rule 4-012 of the CEC, i.e., marked "W."	Class III equipment.	N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No ringing signal.	N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	Same as above.	N/A
Annex Q (Q.3)	Equipment with paired conductor and/or coax communications cables/wiring connected to building wiring are required to have special voltage, current, power and marking requirements.	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (1)	Equipment that is designed such that it may be powered from a separate electrical service, is required to meet applicable requirements for service equipment for control and protection of services and their installation and complies with Article 230 of the National Electrical Code (NEC), NFPA 70 and Section 6 of the Canadian Electrical Code, Part I, CSA C22.1.	No such consideration.	N/A
	Equipment intended for use in spaces used for environmental air (plenums) are subjected to special flammability requirements for heat and visible smoke release.	No such consideration.	N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	No such consideration.	N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. and Canadian Regulations.	No such consideration.	N/A
	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.	No baby monitors provided.	N/A
	Storage batteries and battery management equipment, other than associated with lead-acid batteries, and including battery backup systems that are not an integral part of stationary AV and ICT equipment, such as provided in separate cabinets, are required to be certified (listed) to the appropriate standard(s) for such storage batteries and equipment.	No such consideration.	N/A
Annex DVA (5.6)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Class III equipment.	N/A
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.	No flammable liquid provided.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a minimum flammability classification of V-1.	No such consideration.	N/A
Annex DVA (10.3)	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No lasers provided.	N/A
Annex DVA (10.5)	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No ionizing radiation.	N/A
Annex DVA (F.3.3.4)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or that are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."	No such consideration.	N/A
Annex DVA (F.3.3.6)	Equipment identified for ITE (computer) room installation is required to be marked with the rated current.	No such consideration.	N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position, where mounted in an enclosure, vertically mounted disconnect switches and circuit breakers with vertical operating means extending outside the enclosure are required to indicate in a location visible when accessing the external operating means whether the switch or circuit breaker is in the open (off) or closed (on) position.	No such switch and circuit breaker.	N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No such component.	N/A
	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.	No such fuse.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-400 and 10-612.	No such receptacle.	N/A
Annex DVA (G.4.3)	Interconnection of units by conductors supplied by a limited power source, or a Class 2 circuit defined in the NEC/CEC may have field wiring connections other than specified in DVH.3, such as wire-wrap and crimp-on types, if the limited power source and Class 2 circuits are separated from all other circuits by barriers, routing or fixing.	No such consideration.	N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	No such consideration.	N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).	No motor control device.	N/A
Annex DVA (G.7)	Flexible cords used outdoors are required to have the suffix "W" marked on the flexible cord.	No flexible cords in outdoors locations.	N/A
Annex DVA (M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the ITE room remote power-off circuit.	No battery.	N/A
Annex DVA (Q)	If applicable per NEC 725.121(C), some limited power sources supplied from AV/ICT equipment are required to have a label indicating the maximum voltage and rated current output for per conductor for each connection point. Where multiple connection points have the same rating, a single label is permitted to be used.	No such consideration.	N/A
	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1 are required to be marked with the voltage rating and "Class 2" or equivalent. The marking is located adjacent to the terminals and visible during wiring.	No such consideration.	N/A
	Applicable parts of Chapter 8 of the NEC, and Rules 54 and 60 of the CEC, may be applicable to ITE installed outdoors with connections to communication systems.	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.	No such consideration.	N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.	No such consideration.	N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These equipment and components include: appliance couplers, attachment plugs, battery backup systems, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, modular data centres, power supply cords, some power distribution equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.	Relevant components are approved by UL, see appended table 4.1.2.	P
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.	Not such equipment.	N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are required to be in accordance with the NEC/CEC.	No such components.	N/A
Annex DVH (DVH.2.1)	For safe and reliable connection to a mains, permanently connected equipment is to be provided.	Not permanently connected equipment.	N/A
Annex DVH (DVH.2.2)	Additional considerations for D.C. mains.	Same as above.	N/A
Annex DVH (DVH.3.2.1)	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified.	No terminal for permanent wiring.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.3.2.3)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).	No wire binding screw.	N/A
Annex DVH (DVH.3.2.4)	All associated mains supply terminals are located in proximity to each other and to the main protective earthing terminal, if any.	Same as above.	N/A
Annex DVH (DVH.3.2.5)	Terminals are located, guarded or insulated so that, should a strand of a conductor escape when the conductor is fitted, there is no likelihood of accidental contact between such a strand and accessible conductive parts or unearthed conductive parts separated from accessible conductive parts by supplementary insulation only.	Same as above.	N/A
Annex DVH (DVH.3.3)	When field connection to an external circuit is via wires (example, free conductors), the wires are not smaller than 18 AWG (0.82 mm ²) and the free length of the wire inside an outlet box or wiring compartment is 150 mm or more.	Same as above.	N/A
Annex DVH (DVH.3.4)	Size of protective earthing conductors and terminals	Same as above.	N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	Not such equipment.	N/A
Annex DVH (DVH.4.1)	Wire bending space	Same as above.	N/A
Annex DVH (DVH.4.2)	Volume of wiring compartment	Same as above.	N/A
Annex DVH (DVH.4.3)	Separation of circuits	Same as above.	N/A
Annex DVH (DVH.5)	Equipment markings and instructional safeguards	Not permanently connected equipment.	N/A
Annex DVH (DVH.5.1)	Identification of protective earthing terminal	Same as above.	N/A
Annex DVH (DVH.5.2)	Identification of terminal for earthed conductor (neutral)	Same as above.	N/A
Annex DVH (DVH.5.3)	Identification of terminals for aluminium conductors	Same as above.	N/A
Annex DVH (DVH.5.4)	Wire temperature ratings	Same as above.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.	Same as above.	N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.	No such consideration.	N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.	Not applicable.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 (AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment)			
Differences according to: AS/NZS 62368.1:2022			
TRF template used:: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No.: AU_NZ_ND_IEC62368_1E			
Attachment Originator: JAS-ANZ			
Master Attachment: 2022-07-01			
Copyright © 2020 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		
Appendix ZZ	Variations to IEC 62368-1:2018 (ED. 3.0) for Australia and New Zealand		P
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2018 (ED. 3.0)		P
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		P
2	<p>After the first paragraph, <i>add</i> the following:</p> <p>The Australian or Australian/New Zealand Standards listed below are modified adoptions of, or not equivalent to, the IEC normative references and are required for the application of this Standard. All references in the source text to those IEC normative references shall be replaced by references to the corresponding Australian or Australian/New Zealand Standards. Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably</p> <p>-AS/NZS 3112, <i>Approval and test specification—Plugs and socket-outlets</i></p> <p>-AS/NZS 3123, <i>Approval and test specification—Plugs, socket-outlets and couplers for general industrial application</i></p> <p>-AS/NZS 3191, <i>Electric flexible cords</i></p> <p>-AS/NZS 60884.1, <i>Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</i></p> <p>-IEC 60086-2 <i>Primary batteries — Part 2: Physical and electrical specifications</i></p> <p>-AS/NZS 60065, <i>Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)</i></p> <p>-AS/NZS 60320.1, <i>Appliance couplers for household and similar general purposes, Part 1: General requirements (IEC 60320-1,</i></p>	Added.	P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p><i>Ed.2.1 (2007) MOD)</i></p> <p><i>-AS/NZS 60320.2.2, Appliance couplers for household and similar general purposes</i></p> <p><i>Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD)</i></p> <p><i>-AS/NZS 60695.2.11, Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products</i></p> <p><i>-AS/NZS 60695.11.5, Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance</i></p> <p><i>-AS/NZS 60695.11.10, Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods</i></p> <p><i>-AS/NZS 60884.1, Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</i></p> <p><i>-AS/NZS 60950.1, Information technology equipment—Safety, Part 1: General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)</i></p> <p><i>IEC 61032:1997, Protection of persons and equipment by enclosures—Probes for verification</i></p> <p><i>-AS/NZS 61558.1, Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 3, MOD)</i></p> <p><i>-AS/NZS 61558.2.16, Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.</i></p>		

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.2	Requirements <i>Delete</i> the text of the second paragraph and <i>replace</i> with the following: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet conforming to AS/NZS 3112, shall conform to the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets. Conformity is checked by inspection and, if necessary, by the tests in AS/NZS 3112. NOTE: Equipment with plug portions for use in countries other than Australia and New Zealand will need to conform to other countries' requirements Note Additional AS/NZS 3112 Appendix J, TRF is appended to end of this TRF.	Not such equipment.	N/A
4.7.3	Compliance Criteria <i>Delete</i> this clause	Same as above.	N/A
4.8.1	General After second list, <i>add</i> the following: NOTE: Refer to the Consumer Goods (Products Containing Button/Coin Batteries) Safety Standard 2020 and Consumer Goods (Products Containing Button/Coin Batteries) Information Standard 2020 for more information on button cell batteries in Australia..	No such consideration.	N/A
5.4.10.2.1	General <i>Delete</i> the first paragraph and <i>replace</i> with the following: In Australia, the separation is checked by the test given in both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test given in either 5.4.10.2.2 or 5.4.10.2.3..	No such consideration.	N/A
Table 28	<i>Delete</i> Table 28 and <i>replace</i> with the following:		N/A

IEC62368_1E - ATTACHMENT					
Clause	Requirement + Test		Result - Remark		Verdict
Parts	Impulse test		Steady state test		
	New Zealand	Australia	New Zealand	Australia	
Parts indicated in Clause 5.4.10.1 a) ^a	2.5 kV	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment.	1.5 kV	3 kV	
Parts indicated in Clause 5.4.10.1 b) and c) ^b	1.5 kV ^c		1.0 kV	1.5 kV	
^a Surge suppressors shall not be removed.					
^b Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment.					
^c During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.					
5.4.10.2.2	Delete “NOTE” and replace with “NOTE 1”. After NOTE 1, add the following: NOTE 2: For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 3: For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		No such consideration.		N/A
5.4.10.2.3	Delete “NOTE” and replace with “NOTE 1”. After NOTE 1, add the following: NOTE 2: For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 3: The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.		Same as above.		N/A
6	Electrically-caused fire		See below.		N/A
6.6	After Clause 6.6, add the new Clauses 6.201 as follows: 6.201 External power supplies, docking stations and other similar devices (see special national conditions)				N/A
8.6	Stability of equipment				N/A
Table 36	Footnote ^a , after first sentence, add the following: Equipment having displays with moving images shall include “television sets and display devices”.		No such consideration.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.1	After Clause 8.6.1 <i>add</i> the following new clauses: 8.6.201 Restraining Device fixing point (see special national conditions) 8.6.202 Restraining device (see special national conditions)	Not such equipment.	N/A
Annex F Paragraph F.3.3.4	Rated Voltage <i>Delete</i> "NOTE" and <i>replace</i> with NOTE1" After NOTE 1, <i>add</i> the following Equipment that is intended for connection to the supply mains in Australia and New Zealand shall be marked with: (a) A rated voltage of: <ul style="list-style-type: none"> • 230 V for single phase equipment • 400 V for poly phase equipment Or (b) A rated voltage range that includes: <ul style="list-style-type: none"> • 230 V for single phase equipment • 400 V for poly phase equipment NOTE 2: equipment that is not rated as above is not suitable for direct connection to the supply mains in Australia or new Zealand.	Not such equipment.	N/A
Annex F.3.3.5	After the list, <i>add</i> the following Equipment that is intended for connection to supply mains in Australia or New Zealand shall be marked with a rated frequency of 50 Hz or a rated frequency range or nominal value which includes 50Hz	Not such equipment.	N/A
Annex F.3.8	After "The DC output of an external power supply", insert "or docking stations and other similar external devices"	No such consideration.	N/A
Annex G Paragraph G.4.2	Mains connectors 1 After "IEC 60320", insert "or AS/NZS 60320 series". 2 After "IEC 60906-1", insert "or AS/NZS 3123" 3 <i>After</i> first paragraph <i>add</i> the following: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Paragraph G.5.3.1	Transformers, General 1 Third dashed point <i>replace</i> 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 Fourth dashed point <i>replace</i> 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.	No such consideration.	N/A
Annex G.7.1	Mains supply cords, General Fourth dashed paragraph, <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'	No power supply cords.	N/A
Table G.7	Sizes of conductors 1 First column, second row, <i>delete</i> "6" and <i>replace</i> with "7.5" 2 Second column, second row, <i>delete</i> '0,75' and <i>replace</i> with '0.75 ^b 3 <i>Delete</i> NOTE 1. 4 <i>Replace</i> 'NOTE 2' with 'NOTE:'. 5 <i>Delete</i> 'Footnote b' and <i>replace</i> with the following: ^b This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm ² three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 Footnote c <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1' 7 Footnote d <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'	Same as above.	N/A
Annex M M 2.1	<i>Add</i> "IEC 60086-2" to the list		N/A
Annex M Paragraph M.3.2	Test method Delete "NOTE" and replace with "NOTE 1" After NOTE 1 <i>add</i> the following: NOTE 2: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of ES1 may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.	No such consideration.	N/A
	Special national conditions (if any)		P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.201	<p>External power supplies, docking stations and other similar devices</p> <p>For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage—</p> <ul style="list-style-type: none"> (a) at all ES1 outlets or connectors shall not increase by more than 10 % of the output rated voltage under normal operating conditions, measured after 3 s of introducing a single fault condition and after 3 s of introducing abnormal operating conditions; and (b) of a USB outlet or connector shall not increase by more than 3 V or 10 % of the output rated voltage under normal operating conditions, whichever is higher, measured after 3 seconds of introducing a single fault condition and after 3 s of introducing abnormal operating conditions <p>For equipment with multiple rated voltages at the output, the requirements apply with the equipment configured for each output rated voltage in turn</p> <p>NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries. The 3 s measurement delay is based on IEC document 108/742/INF, TC 108, <i>Standards Interpretation Panel Question 15 — Output voltage</i>, in relation to similar requirements in IEC 62368-3:2017.</p> <p>Conformity shall be checked by measurement, taking into account the abnormal operating conditions of Annex B.3 and the simulated single fault conditions of Annex B.4.</p>	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.201	<p>Restraining device fixing point</p> <p>Freestanding-capable MS2 and MS3 television sets and display devices shall be provided with a fixing point to facilitate the anchoring of the equipment from toppling</p> <p>The fixing point shall conform to Clause 8.7 where the fixing point uses a wall, ceiling or other structure mount. Alternatively, the fixing point shall be capable of withstanding a pull equal to the mass of the equipment in all directions without damage</p> <p>Instructions for installation or instructions for use shall be provided to specify correct use of the fixing point</p>	Not such equipment.	N/A
8.6.202	<p>Restraining device</p> <p>MS2 and MS3 television sets and display devices shall be provided with a restraining device and associated hardware to attach to the television set or display device.</p> <p>The restraining device shall be capable of withstanding a pull equal to the mass of the equipment in all directions.</p> <p>Instructions for installation or instructions for use shall be provided to specify correct use of the fixing point</p>	Not such equipment.	N/A

AS/NZS 3112:2017 Appendix J			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT AS_NZS_3112:2017_+A1:2021 Appendix J AUSTRALIAN / NEW ZEALAND NATIONAL DIFFERENCES (Approval and test specification—Plugs and socket-outlets)			
Differences according to: AS_NZS_3112:2017_Amendment 1:2021_Appendix J			
TRF template used:: IECCE OD-2020-F3, Ed. 1.1			
Attachment Form No.: AS_NZS_3112:2017_Appendix J			
Attachment Originator: JAS-ANZ			
Master Attachment: 2022-06			
Copyright © 2020 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	Note: AS/NZS 3112 is NOT covered by IECEE Accreditation for Testing / Reporting Please State Laboratory Accreditation for this Standard		N/A
	Accreditation		N/A
	Accreditation Stamp		N/A

J1 SCOPE	<p>General: This Appendix specifies additional dimensional and constructional requirements for detachable plug portions, or equipment incorporating integral supply pins or equipment incorporating detachable plug portions.</p> <p>This Appendix shall be read in conjunction with Section 2 of this Standard.</p> <p>For the purposes of this Appendix, where the term 'plug' is used in Section 2 it shall be taken to mean the plug portion of equipment or the detachable plug portion.</p> <p>The equipment shall comply with the relevant product Standard. The tests and requirements specified in this Appendix are in addition to any test and requirements of the relevant product Standard for the equipment.</p> <p>(AS/NZS 3112:2017/A1:2021)</p>	N/A
-------------	--	-----

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict



ATTACHMENT TO TEST REPORT IEC 62368-1:2018 SAUDI ARABIA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment Part 1: Safety requirements)			
Differences according to: National standard SASO-IEC 62368-1:2020			
TRF template used:: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No.: SA_ND_IEC62368_1E			
Attachment Originator: SASO			
Master Attachment: 2022-12-22			
Copyright © 2022 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		
	Plugs used for pluggable equipment comply with standard SASO-2203.	Overall compliance needs to be evaluated during the national approval.	N/A
--	Frequency (Hz)		N/A
	60 Hz		N/A
--	Rated voltage (V)		N/A
	Single phase 230 V Three phase 400 V		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 CHINA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment -Part 1: Safety requirements)			
Differences according to: GB 4943.1-2022			
TRF template used:: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No.: CN_ND_IEC62368_1E			
Attachment Originator: CQC			
Master Attachment: Dated 2022-12-01			
Copyright © 2020 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		
4.1.2	Use of components Add a paragraph: A component used shall comply with related requirements corresponding altitude of the equipment.	Considered.	P
4.11	Add clause 4.11,as follows: Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall be provided as an integral part of the equipment except the device shall meet the all requirement of Fault conditions. If pluggable equipment type B or permanently connected equipment depends on protective devices outside the equipment for protection, this shall be stated in the installation instructions of the equipment, with requirements for short-circuit protection, over-current protection ,or both if necessary.	No such consideration.	N/A
5.3.2.2	Contact requirements Amend the 2 nd paragraph of table 8 to be: For equipment intended to be used at altitude of 2000m to 5000m, the values in this table are multiplied by the multiplication factor corresponding altitude of 5000m.	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.2.5	<p>Multiplication factors for altitudes higher than 2 000 m above sea level</p> <p>Amend the 1st paragraph to be:</p> <p>For equipment to be operated at more than 2000 m above sea level and up to 5000m above sea level, the minimum CLEARANCE in tables 10,11 and 14, and resistance test voltages required in table 15, shall meet the requirements of 5000 m above sea level, This is multiplied by the multiplication factor corresponding altitude of 5000m in table 16.</p> <p>For equipment to be used at equal or less than 2000 m above sea level, the minimum CLEARANCE in tables 10, 11 and 14, and resistance test voltages required in table 15, shall meet the requirements of 2000 m above sea level. This is multiplied by the multiplication factor corresponding altitude of 2000m in table 16.</p> <p>Delete note 2 of Clause 5.4.2.5.</p>	5000 m	P
5.4.5.1	<p>General</p> <p>Delete the 2nd paragraph of Clause 5.4.5.1: This test does not apply to equipment where one antenna terminal on the equipment is connected to earth in accordance with 5.6.7.</p> <p>Add the following:</p> <p>The Insulation resistance between CATV antenna coaxial sockets and protective earth of apparatus shall comply with BASIC INSULATION. If it's possible that CLASS II apparatus with CATV antenna coaxial sockets connect with protective earth of another CLASS I apparatus by other terminals, the insulation resistance between them shall comply with BASIC INSULATION as well.</p> <p>If antenna cable separated from the protective earth before connection to the apparatus, there is no requirements of Insulation resistance between them but F.4 requirements shall be meet.</p> <p>Delete "NOTE" of Clause 5.4.5.1</p>	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.8	<p>Humidity conditioning</p> <p>Amend clause 5.4.8 as follows :</p> <p>The humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature $(40 \pm 2) ^\circ\text{C}$ and a relative humidity of $(93 \pm 3)\%$. During this conditioning, the component or subassembly is not energized.</p> <p>For equipment not to be operated at tropical climatic conditions, humidity conditioning is conducted for 48 h in a cabinet or room containing air with a relative humidity of $(93 \pm 3) \%$. The temperature of the air, at all places where samples can be located, is maintained within $2 ^\circ\text{C}$ of any convenient value between $20 ^\circ\text{C}$ and $30 ^\circ\text{C}$ such that condensation does not occur.</p> <p>Add note: For equipment to be operated at 2000 m - 5000m above sea level, assessment and requirement of humidity conditioning for Insulation material properties are considered.</p> <p>Pre-processing conditions and requirements below 2000m can be used until additional data is available.</p>	No such consideration.	N/A
6.4.9 Y.4.3	Delete references to ASTM and NEMA.		N/A
6.5.1	<p>General requirements</p> <p>Delete the text of the Note "Wire complying with UL 2556 VW-1 is considered to comply with these requirements".</p>		P
F.1	Amend the second paragraph of annex F.1 to be: Unless symbols are used or otherwise specified, safety related equipment markings, instructions, and instructional safeguards shall be in normative Chinese.	Overall compliance needs to be evaluated during the national approval.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
F.2.2	<p>After the first paragraph of annex F.2.2 ,add the following:</p> <p>For apparatus intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording or a symbol shown below shall fixed to the equipment at readily visible place.</p> <p>"Only used at altitude not exceeding 2000m."</p>  <p>For apparatus intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording or a symbol shown below shall fixed to the equipment at readily visible place.</p> <p>"Only used in not-tropical climate regions."</p>  <p>If only symbol used, the explanation of the symbol shall be contained in the instruction manual.</p> <p>The statements above shall be given in a language acceptable to the regions where the apparatus is intended to be used.</p>	Overall compliance needs to be evaluated during the national approval.	N/A
F.3.3.4	<p>After the last paragraph, Added:</p> <p>...for single rated voltage, "220 V" or three-phase "380V" shall be marked only. For a rating voltage range, 220 V or three-phase 380V shall be covered. For multiple rated voltages, one of them shall be 220 V or three-phase 380V and which default setting from manufacture shall be 220 V or three-phase 380V as well.</p>	No such consideration.	N/A
F.3.3.5	<p>After the last paragraph, Added:</p> <p>Rated frequency shall be 50Hz or frequency range shall cover 50Hz.</p>	No such consideration.	N/A
F.4	<p>Instructions</p> <p>Added:</p> <p>– For apparatus incorporating antenna coaxial sockets which is non-separated with CATV network, a warning wording or a similar shall be given in the instruction manual: "A CATV cable intended to be connected to apparatus shall be separated with the protective earth of the apparatus, otherwise fire hazard might be caused."</p>	No such consideration.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
F.5	Instructional safeguards In table F.2 , change 230V to 220V, change 400Y/230V 3Ø to 380 Y/220 V 3Ø	Overall compliance needs to be evaluated during the national approval.	N/A
G.4.2	Amend clause G.4.2 as follows : Plugs connected to the MAINS in apparatus shall comply with GB/T 1002,GB/T 1003,GB/T 2099.1 or GB/T11918 (All parts) series. Appliance coupler shall comply with GB/T 17465 (All parts) series or GB/T 11918 (All parts) series.	Overall compliance needs to be evaluated during the national approval.	N/A
	Special national conditions (if any)		
0.12	Add clause 0.12 Description of relevant information.		N/A
1	GB 4943.1-2022 applies to equipment used at altitudes not exceeding 5000m above sea level, For apparatus intended to be used at altitude not exceeding 2000m, The requirements can be appropriately reduced, but warning instructions shall be provided.. Revise the sixth paragraph of 1 as: In addition to specified by the manufacturer, this document assumes a maximum altitude of 5000m	Overall compliance needs to be evaluated during the national approval.	N/A
B.2.6.1	Amend T_{ma} as follows: T_{ma} is the maximum ambient temperature permitted by the manufacturer's specification, or 35 °C, whichever is greater. Add note 1: For equipment not to be operated at tropical climatic conditions, T_{ma} is the maximum ambient temperature permitted by the manufacturer's specification, or 25 °C, whichever is greater. Add note 2: For equipment to be operated at 2000m-5000m above sea leave, its temperature test conditions and temperature limits are under consideration. temperature test conditions and temperature limits below 2000m can be used until additional data is available.	Overall compliance needs to be evaluated during the national approval.	N/A
Annex Z (normative)	Added annex Z: Instructions of the new safety warning labels.	Overall compliance needs to be evaluated during the national approval.	N/A
Annex AA (informative)	Added annex AA: Illustration relative to safety explanation in normative Chinese, Tibetan, Mongolian, Zhuang	Overall compliance needs to be evaluated during the national approval.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Language and Uighur.		

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1:2018 JAPAN NATIONAL DIFFERENCES Audio/video, information and communication technology equipment – Part 1: Safety requirements			
Differences according to: J62368-1(2023)			
TRF template used:: IECEE OD-2020-F3:2022, Ed. 1.2			
Attachment Form No.: JP_ND_IEC62368_1E			
Attachment Originator: UL Solutions (JP)			
Master Attachment: Dated 2023-05-12			
Copyright © 2023 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this document or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.		P
5.6.1	Mains socket-outlet and interconnection coupler shall comply with Clause G.4.2A if they are incorporated as part of the equipment.	Not such equipment.	N/A
5.6.2.1	<p>Connection for protective conductor of class 0I equipment provided with instructional safeguard in accordance with Clause F.3.6.1A is considered to make earlier and break later than supply connection.</p> <p>Mains plug having a lead wire for protective earthing connection of class 0I equipment shall comply with all of the following:</p> <ul style="list-style-type: none"> – Not to be used for equipment having a rated voltage of 150 V or more – Clip is not used for the earthing connection of the lead wire. – The lead wire for earthing is at least 10 cm long <p>If class 0I equipment provides an independent main protective earthing terminal and is intended to be installed by ordinary person, earthing wire shall be provided in the package of the equipment.</p>	Class III equipment.	N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.2.2	Internal earthing conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector need not be green-and-yellow.	Class III equipment.	N/A
5.6.3	In case of class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall comply with either of the following: – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cab tire cable with 1.25 mm ² or more cross-sectional area	Class III equipment.	N/A
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series, JIS C 8300 or JIS C 8303, or that is provided with mains appliance outlet as specified in JIS C 8283 series for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.	Class III equipment.	N/A
5.7.5	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990:2016.	Class III equipment.	N/A
6.4.3.2	A fuse complying with JIS C 6575 series or a fuse having equivalent characteristics shall open within 1 s. A fuse having time/current characteristics other than those specified in IEC 60127 shall be tested with the characteristics taken into account. In case of Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”.	No applicable.	N/A
8.5.4.3.1	Only three-phase stationary equipment rated more than AC 200 V can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.	Not such equipment.	N/A
8.5.4.3.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.	Same as above.	N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.3.4	The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.	Same as above.	N/A
8.5.4.3.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part. Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.	Same as above.	N/A
F.3.5.1	When the mains socket-outlet is configured in accordance with JIS C 8282 series, JIS C 8300 or JIS C 8303, the assigned current or power shall be marked. If the voltage of the socket-outlet is the same as the mains voltage, the voltage need not be marked. Instructional safeguard of Class 0I equipment shall be provided with an instructional safeguard in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8300 or JIS C 8303 to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.	Class III equipment.	N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic shall be included.		N/A
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.2 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions shall be provided regarding the earthing connection. In addition to the above, for class 0I equipment, an instruction to connect earthing before and disconnect earthing after the connection of supply conductors shall be marked on the visible place of the main body or shall be in the text of an accompanying document.	Class III equipment.	N/A
F.3.6.2	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.	Class III equipment.	N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.8A	<p>Attention marking for aging deterioration of CRT television</p> <p>Year of manufacture, standard usage period by design according to JIS C 9921-5 and cautionary statement for possible risks of aging deterioration when used beyond the specified period shall be marked on CRT television except for industrial use CRT television.</p>	Not such equipment.	N/A
F.4	<p>For audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A, the instructions shall require that the external wiring connected to these terminals shall be installed by a skilled person, or shall be connected by means of ready-made leads or cords that are constructed in a way that would prevent contact with any ES3 circuit.</p> <p>For class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided in the package of the equipment, if the protective earthing connection is made by instructed person or skilled person, the suitable installation instruction for the protective earthing connection shall be provided.</p>	Not such equipment.	N/A
G.3.2.1	The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.		N/A
G.3.4	<p>Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the applicable JIS or IEC standard in accordance with 4.1.2 or shall have equivalent or better properties.</p> <p>Such a protective device shall have adequate breaking (rupturing) capacity to interrupt the maximum fault current (including short-circuit current) that can flow.</p>		N/A
G.4.1	This requirement does not apply to connectors covered in Clauses G.4.2 and G.4.2A.	Class III equipment.	N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	<p>Mains connectors, mains plugs and socket-outlets shall comply with JIS C 8283 series, JIS C 8285, IEC 60309 series, JIS C 8282 series, JIS C 8300, JIS C 8303, or have equivalent or better properties.</p> <p>A power supply cord set provided with appliance connector that can fit appliance inlet complying with JIS C 8283-1 shall comply with JIS C 8286.</p> <p>Construction shall prevent mechanical stress not to transmit to the soldering part of appliance inlet terminal.</p> <p>When an equipment is rated not more than 125 V and all of the following are met, Type C14 and C18 appliance inlet complying with JIS C 8283-3 can be considered as rated 15 A.</p> <ul style="list-style-type: none"> – The temperature of appliance inlet does not exceed the value specified in JIS C 8283-1 under the most unfavourable normal operating condition as specified in Clause B.2.1. – "Use only designated cord set attached in this equipment" or equivalent text is described in the operating instruction. If the cord set is not provided in the package of the equipment, suitable information regarding to the cord set is described in the operating instruction. 	Class III equipment.	N/A
G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively	Class III equipment.	N/A
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.	Class III equipment.	N/A
G.7.2 Table G.7	Cross-sectional area of equipment rated up to and including 3 A shall be 0.75 mm ² .	Class III equipment.	N/A
G.7.6.1 Table G.9	<p>The cross-sectional area of mains cords according to JIS C 3010 may comply with relevant Japanese wiring regulation.</p> <p>For cables other than those complying with JIS C 3662 series or JIS C 3663 series, the terminals shall be suitable for the size of the intended cables.</p>	Class III equipment.	N/A

Product: Network Camera

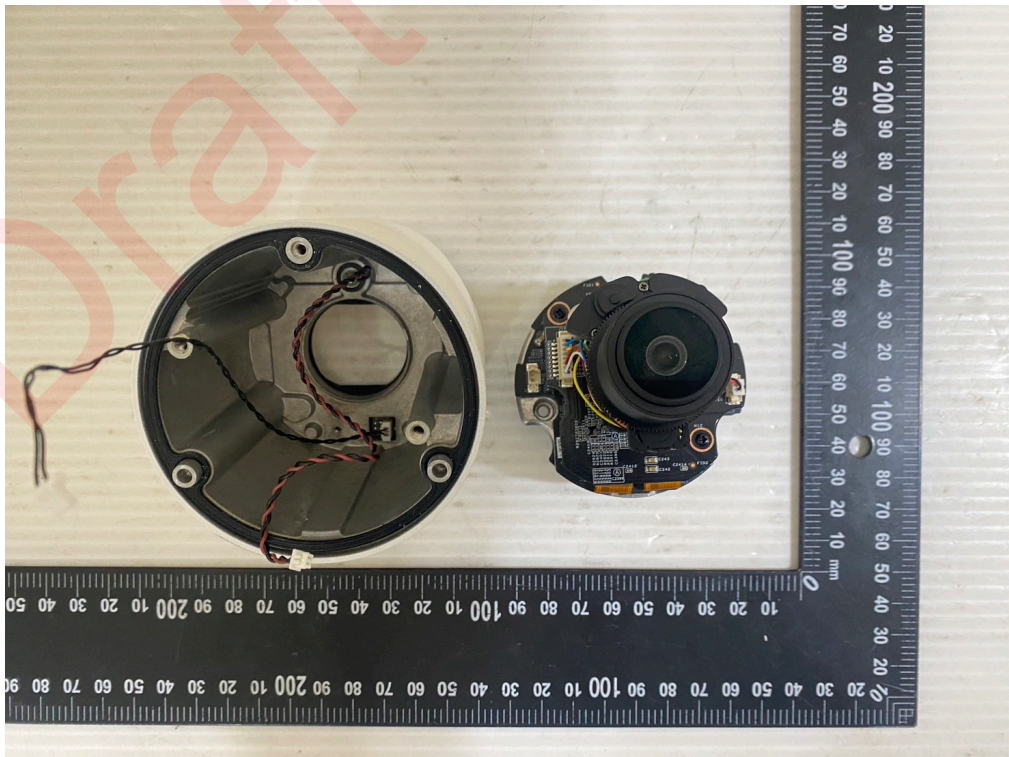
Type Designation: IB9383-HTV, IB833-HTV, IB9383-HV, IB833-HV



Product: Network Camera

Type Designation: IB9383-HTV, IB833-HTV, IB9383-HV, IB833-HV

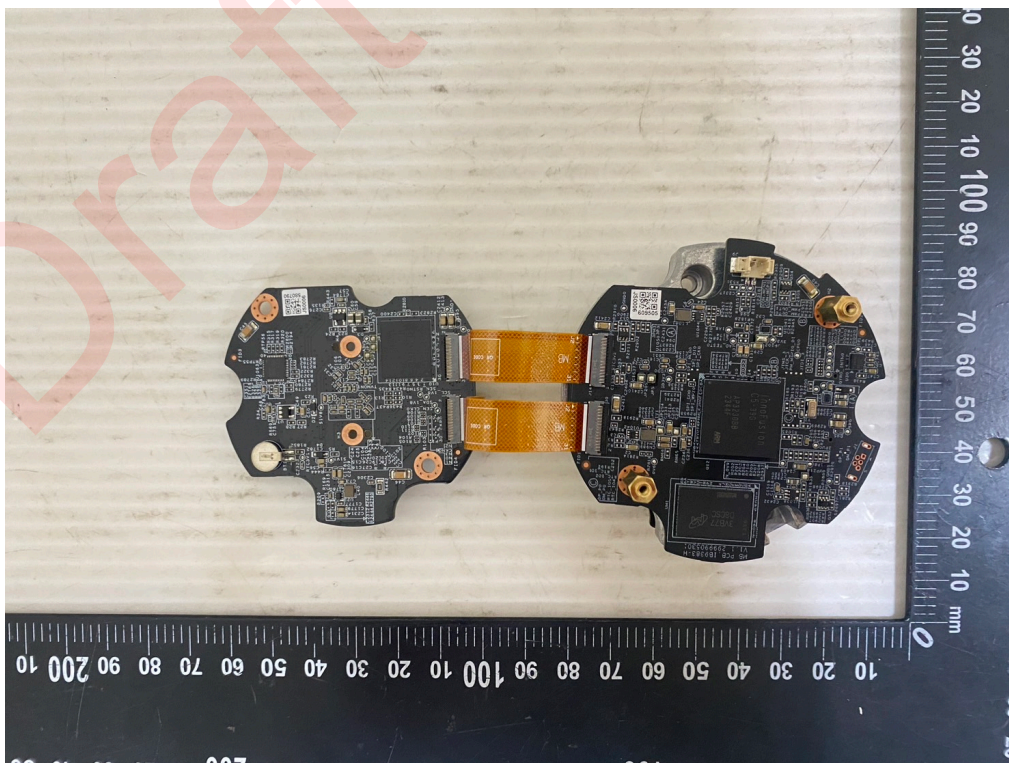
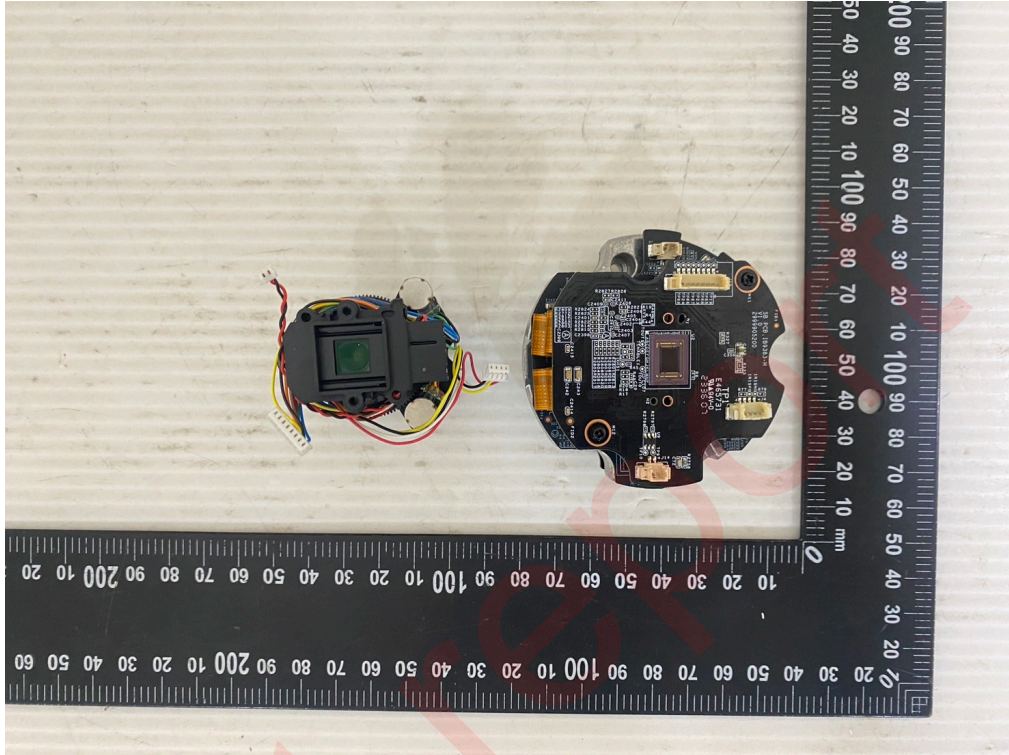
IB9383-HTV, IB833-HTV



Product: Network Camera

Type Designation: IB9383-HTV, IB833-HTV, IB9383-HV, IB833-HV

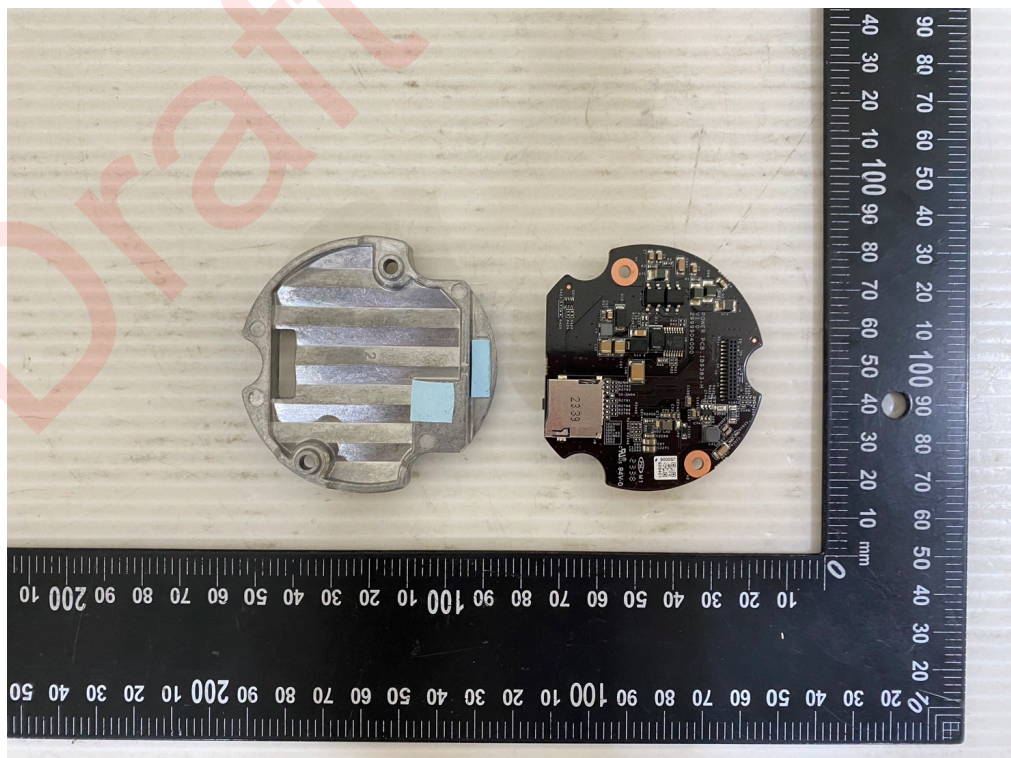
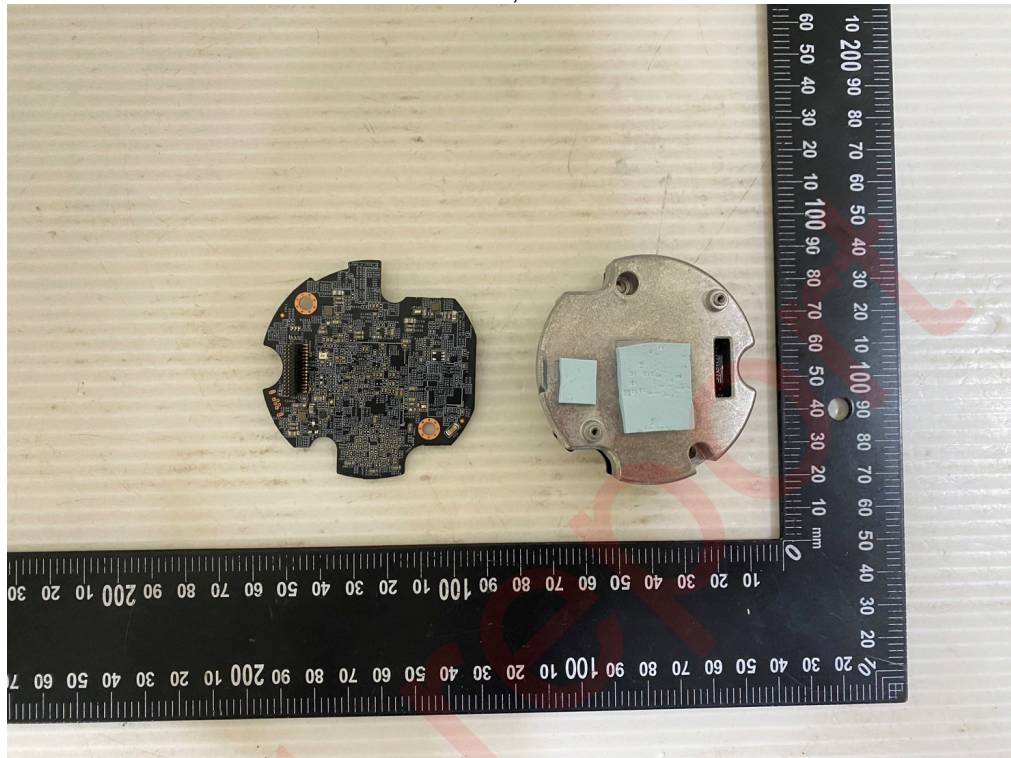
IB9383-HTV, IB833-HTV



Product: Network Camera

Type Designation: IB9383-HTV, IB833-HTV, IB9383-HV, IB833-HV

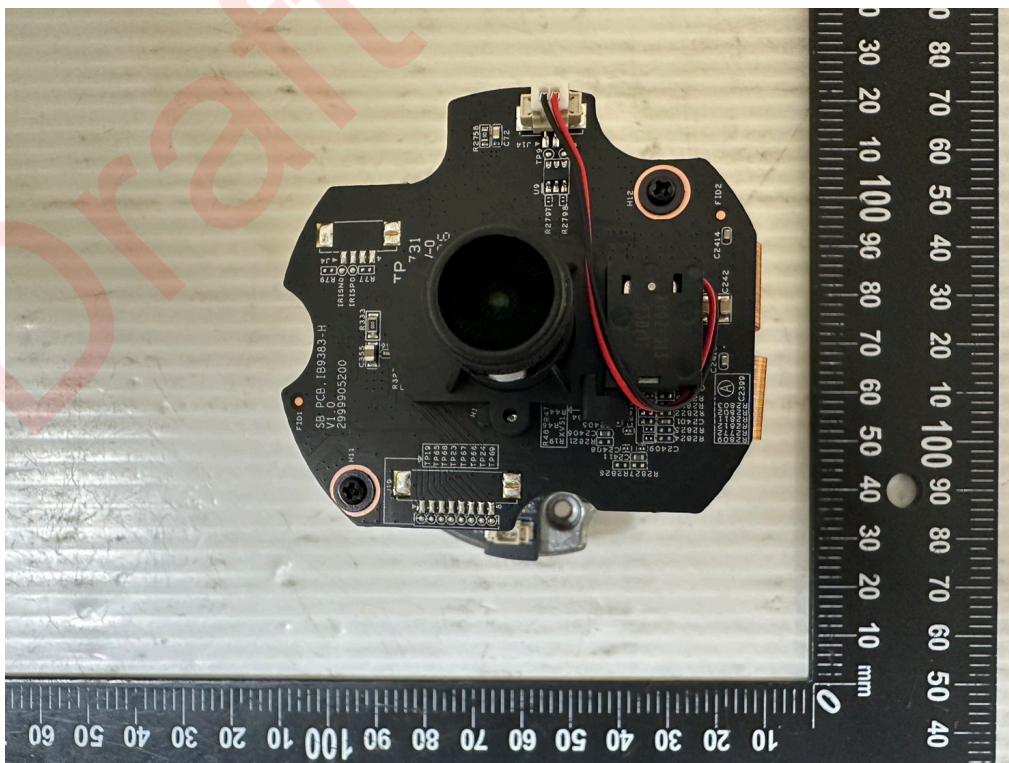
IB9383-HTV, IB833-HTV



Product: Network Camera

Type Designation: IB9383-HTV, IB833-HTV, IB9383-HV, IB833-HV

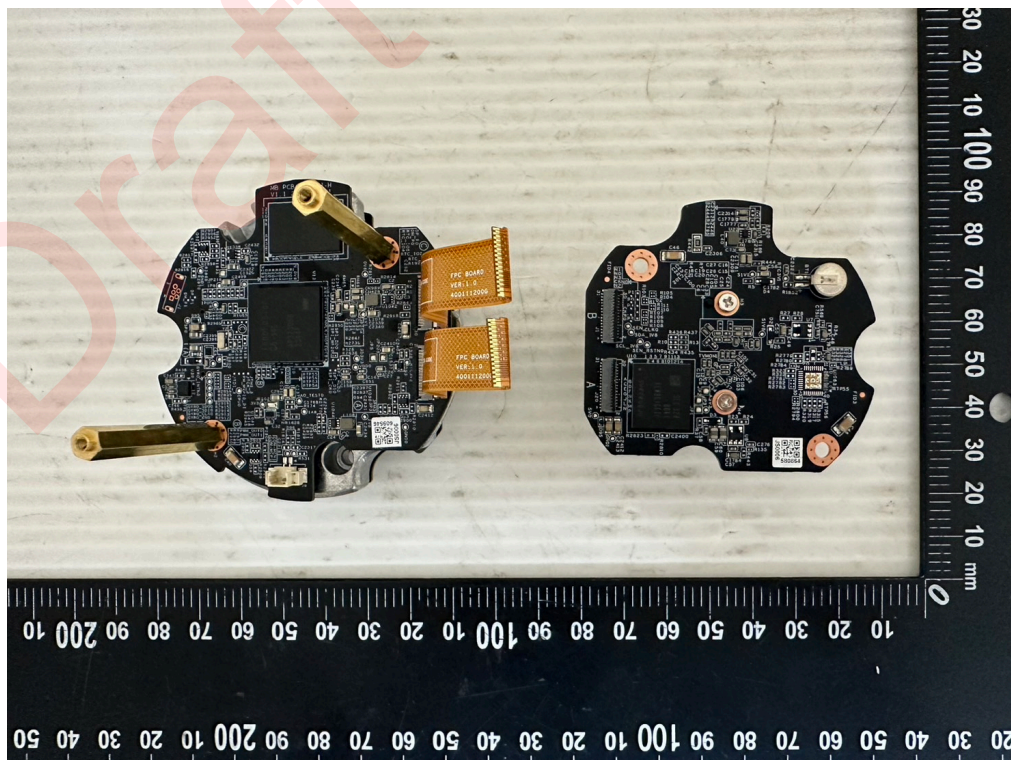
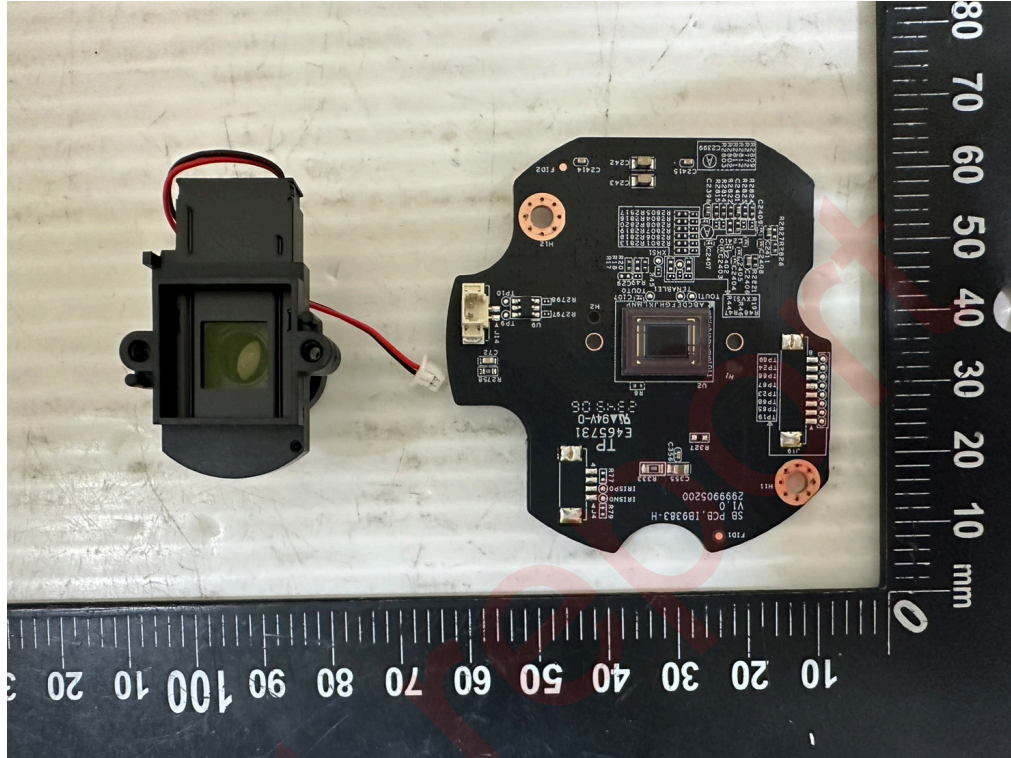
IB9383-HV, IB833-HV



Product: Network Camera

Type Designation: IB9383-HTV, IB833-HTV, IB9383-HV, IB833-HV

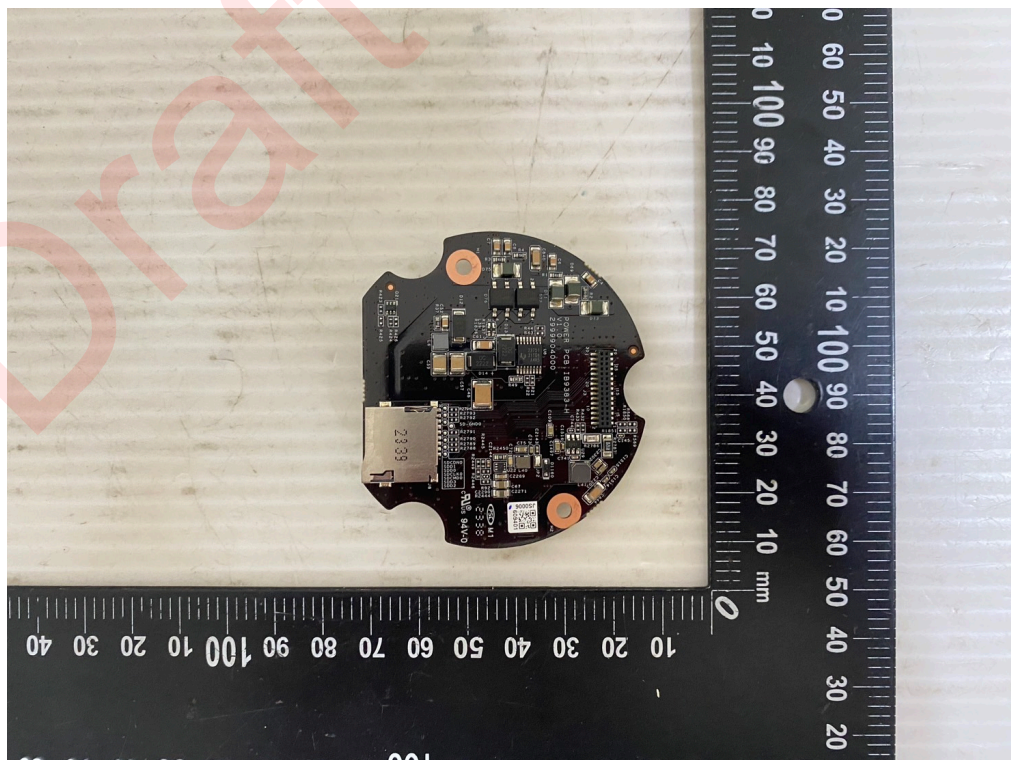
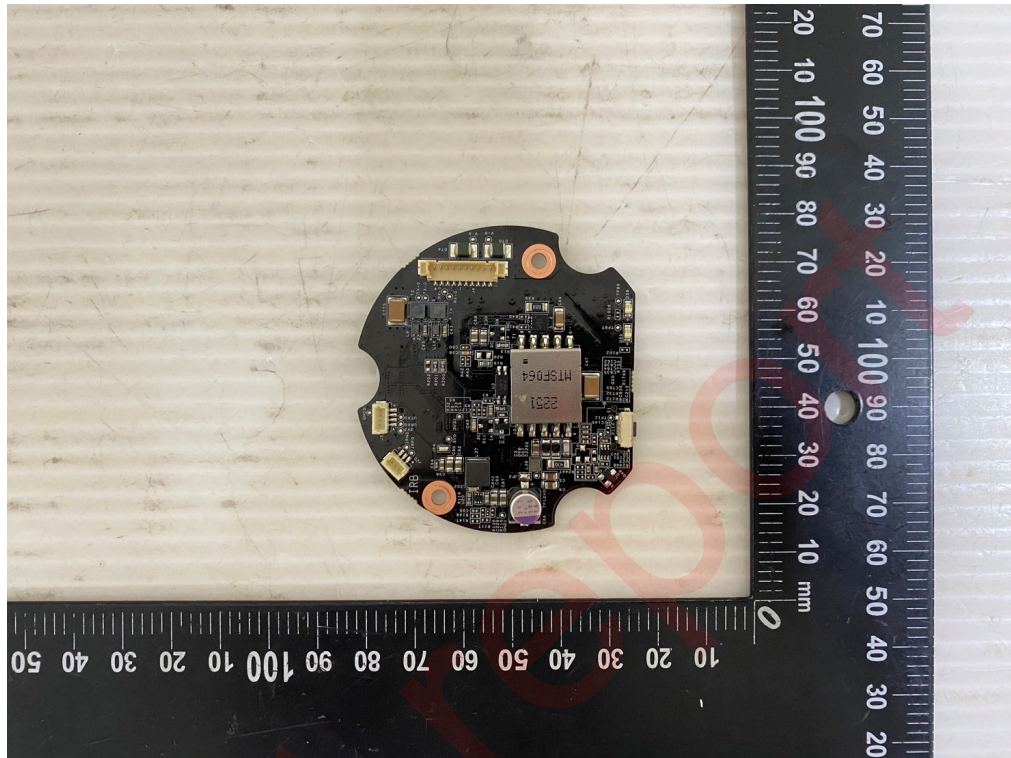
IB9383-HV, IB833-HV



Product: Network Camera

Type Designation: IB9383-HTV, IB833-HTV, IB9383-HV, IB833-HV

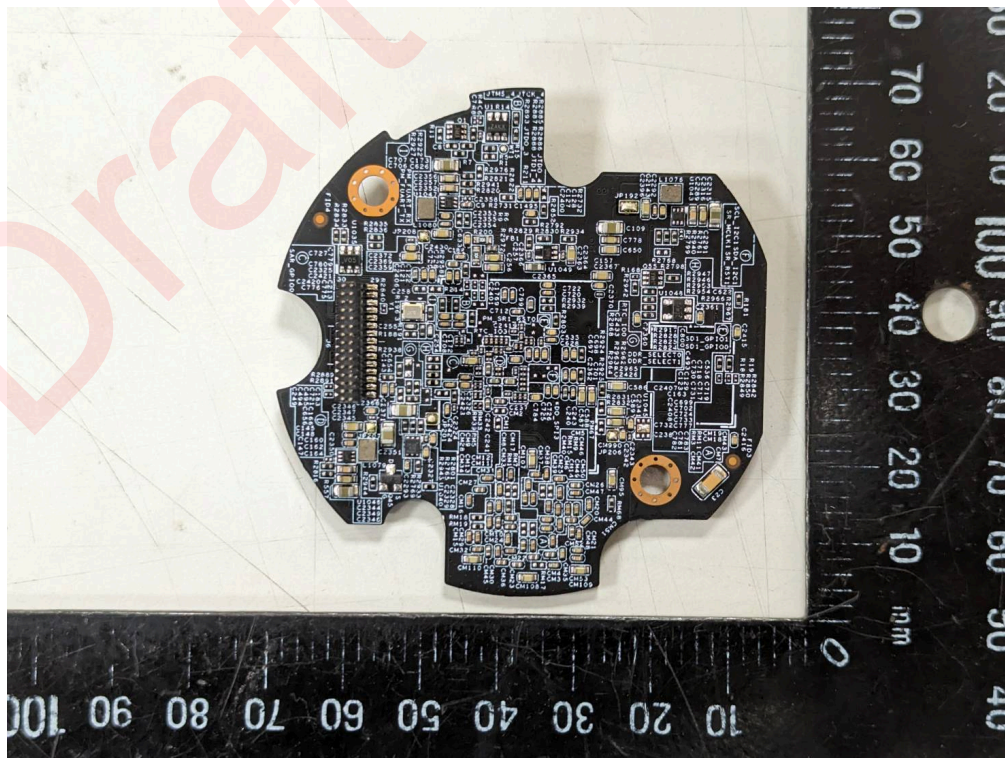
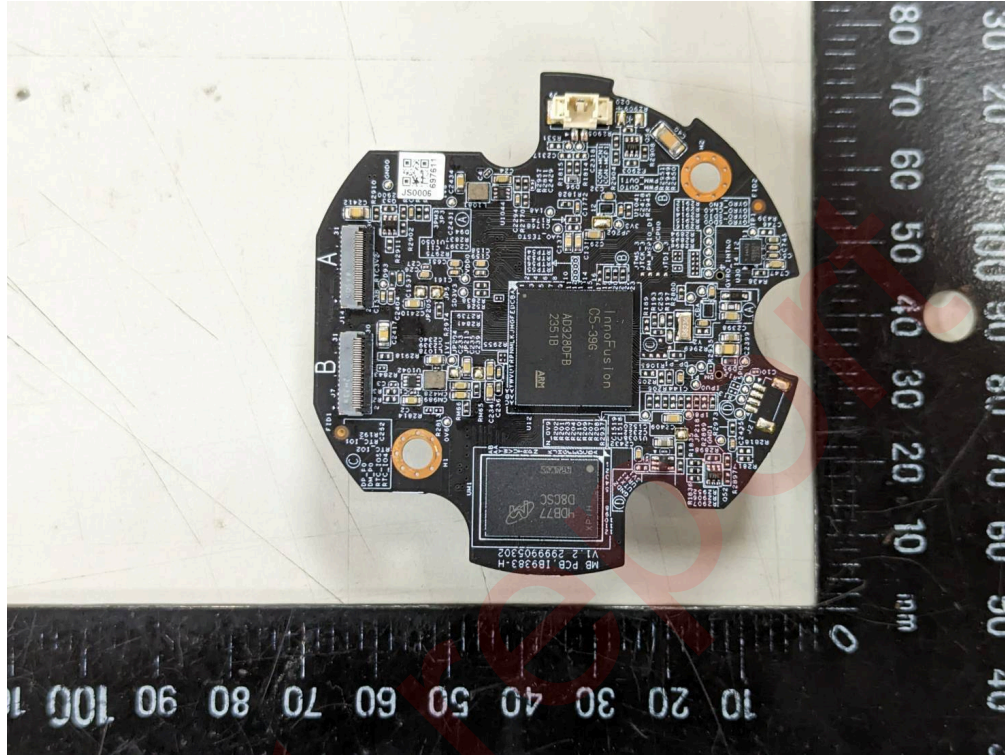
Power board



Product: Network Camera

Type Designation: IB9383-HTV, IB833-HTV, IB9383-HV, IB833-HV

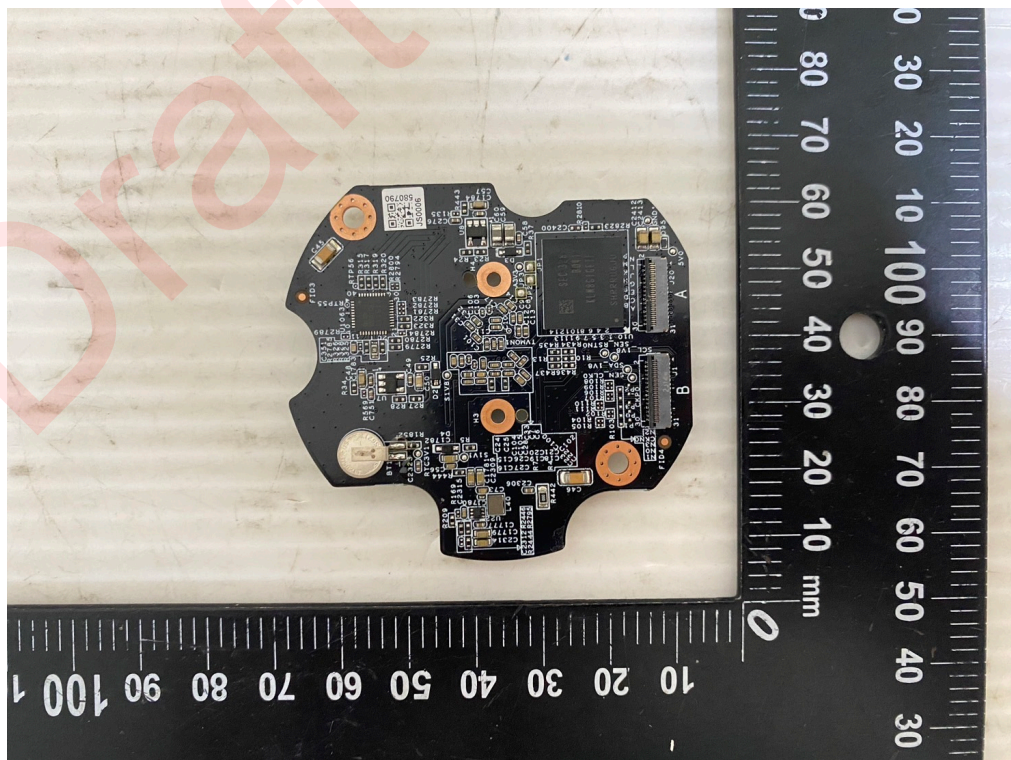
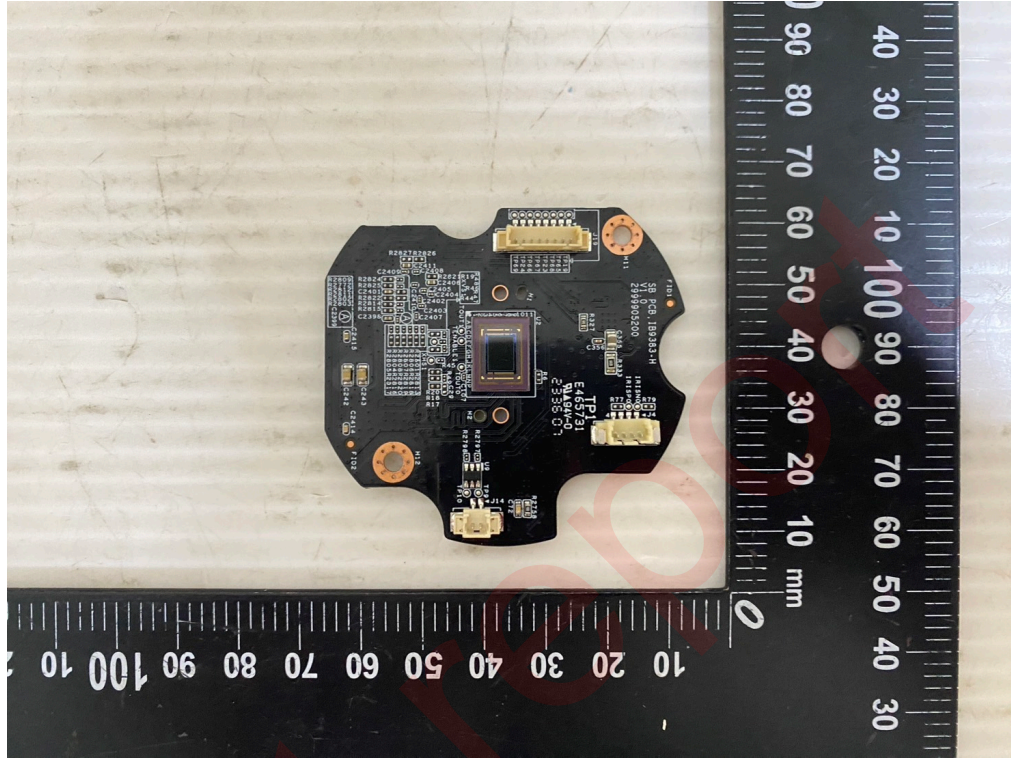
MB board



Product: Network Camera

Type Designation: IB9383-HTV, IB833-HTV, IB9383-HV, IB833-HV

SB board



Product: Network Camera

Type Designation: IB9383-HTV, IB833-HTV, IB9383-HV, IB833-HV

IR LED board

