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

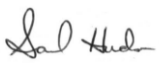
Report Number ..... :	104106447ATL-001C
Date of issue..... :	2019-12-19
Total number of pages ..... :	78
Applicant's name..... :	Crestron Electronics, Inc.
Address ..... :	15 Volvo Dr. Rockleigh, NJ 07647-2507, USA
Test specification:	
Standard ..... :	IEC 62368-1:2014 (Second Edition)
Test procedure ..... :	CB Scheme
Non-standard test method..... :	N/A
Test Report Form No.....:	IEC62368_1&IEC60065&IEC60950_1A
Test Report Form(s) Originator ..... :	UL(US)
Master TRF..... :	2015-06

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 .....:	USB extender Modules.
Trade Mark .....:	CRESTRON
Manufacturer .....:	See page 6
Model/Type reference.....:	M201904002, M201904003
Rating .....:	24Vdc (Unit powered by POE (Power over Ethernet) or by Creston Class II certified power supply)

Testing procedure and testing location:			
☒	CB Testing Laboratory:	Intertek Testing Services NA, Inc.	
Testing location/ address .....:		1950 Evergreen Blvd., Suite 100, Duluth, GA 30096, USA	
☐	Associated CB Testing Laboratory:		
Testing location/ address.....:			
Tested by (name, function, signature)...:		Kalpit Patel Project Handler	
Approved by (name, function, signature) :		Samuel Hudson 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)...:			
Approved by (name, function, signature) :			
Supervised by (name, function, signature):			

List of Attachments (including a total number of pages in each attachment):

Document No.	Documents included / attached to this report (description)	Page No.
Attachment 1	National & Group Differences	16
Attachment 2	Photos	4
Attachment 3	External Class II power adaptor CB certificate	1

Summary of testing:

Tests performed (name of test and test clause):

Clause	Description
5.2	Classification of Electrical Energy Sources
5.4.1.4	Max. operating temperature for materials, components and systems
6.4	Single fault conditions
B.3	Simulated abnormal operating conditions

Testing location:

Intertek Testing Services NA, Inc.

1950 Evergreen Blvd., Suite 100, Duluth, GA 30096, USA

Summary of compliance with National Differences:

List of countries addressed

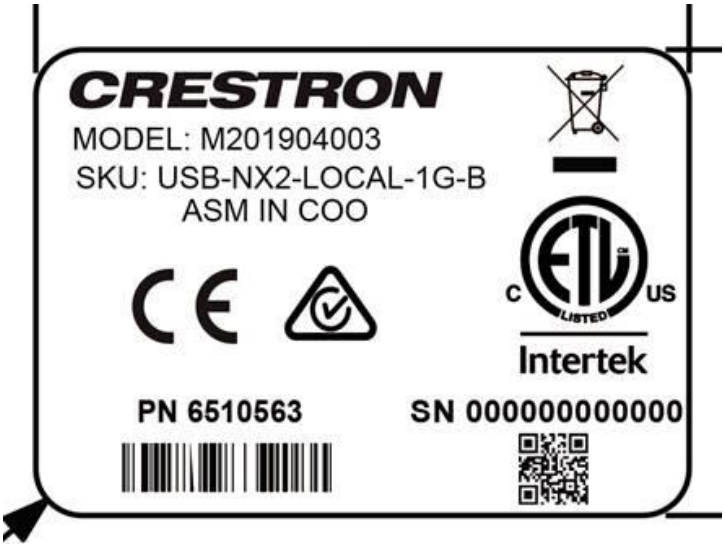
CA, CENELEC Group and National Differences, US

☒ **The product fulfils the requirements of** IEC 62368-1:2014 (Second Edition)

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.

Label on the unit:



TEST ITEM PARTICULARS:	
Classification of use by ..... :	☒ Ordinary person ☐ Instructed person ☐ Skilled person ☐ Children likely to be present
Supply Connection ..... :	☐ AC Mains ☐ DC Mains ☒ External Circuit - not Mains connected - ☒ ES1 ☐ ES2 ☐ ES3
Supply % Tolerance ..... :	☐ +10%/-10% ☐ +20%/-20% per manufacturer ☐ +____%/ -_____% ☒ None
Supply Connection – Type ..... :	☐ pluggable equipment type A - ☐ non-detachable supply cord ☐ appliance coupler ☐ direct plug-in ☐ mating connector ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☒ mating connector ☐ other:
Considered current rating of protective device as part of building or equipment installation ..... :	Installation location: ☒ building; ☐ equipment
Equipment mobility ..... :	☐ movable ☐ hand-held ☐ transportable ☒ stationary ☐ for building-in ☐ direct plug-in ☐ rack-mounting ☐ wall-mounted
Over voltage category (OVC) ..... :	☒ OVC I ☐ OVC II ☐ OVC III ☐ OVC IV ☐ other: _____
Class of equipment ..... :	☐ Class I ☐ Class II ☒ Class III
Access location ..... :	☐ restricted access location ☒ N/A
Pollution degree (PD) ..... :	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified maximum operating ambient . :	40°C
IP protection class ..... :	☒ IPX0 ☐ IPXX
Power Systems ..... :	DC supply from certified Class II external power supply or Power Over Ethernet
Altitude during operation (m) ..... :	☒ 2000 m or less ☐ _____ m
Altitude of test laboratory (m) ..... :	☒ 2000 m or less ☐ _____ m
Mass of equipment (kg) ..... :	☒ 0.24 kg max.
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..... :	2019-10-30 (Sample ID# ATL1910301053-001 to -004)
Date (s) of performance of tests..... :	2019-11-11 – 2019-11-22

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 ☐ comma / ☒ point is used as the decimal separator.

This Test Report covers test results for IEC 62368-1: 2014 (Second Edition), and additional results for IEC 60065: 2014 (Eighth Edition) and/or IEC 60950-1: 2005 (Second Edition) + Am 1: 2009 + Am 2: 2013.

Where a requirement in IEC 62368-1 addresses the same requirement/principle in IEC 60065 and/or IEC 60950-1, compliance with the IEC 62368-1 requirements covers compliance with the same requirement/principle in IEC 60065 and/or IEC 6095-1, as indicated.

The complete background/rationale behind the considerations in this TRF is outlined in **108/575/INF,** *IEC TC 108 position related to TRFs associated with the transition of IEC 60065 and IEC 60950-1 to IEC 62368-1.* Use of this TRF is intended to allow for a smooth transition from the legacy standards, IEC 60065 and IEC 60950-1, to the state-of-art requirements for safety of audio/video, information and communication technology equipment, IEC 62368-1.

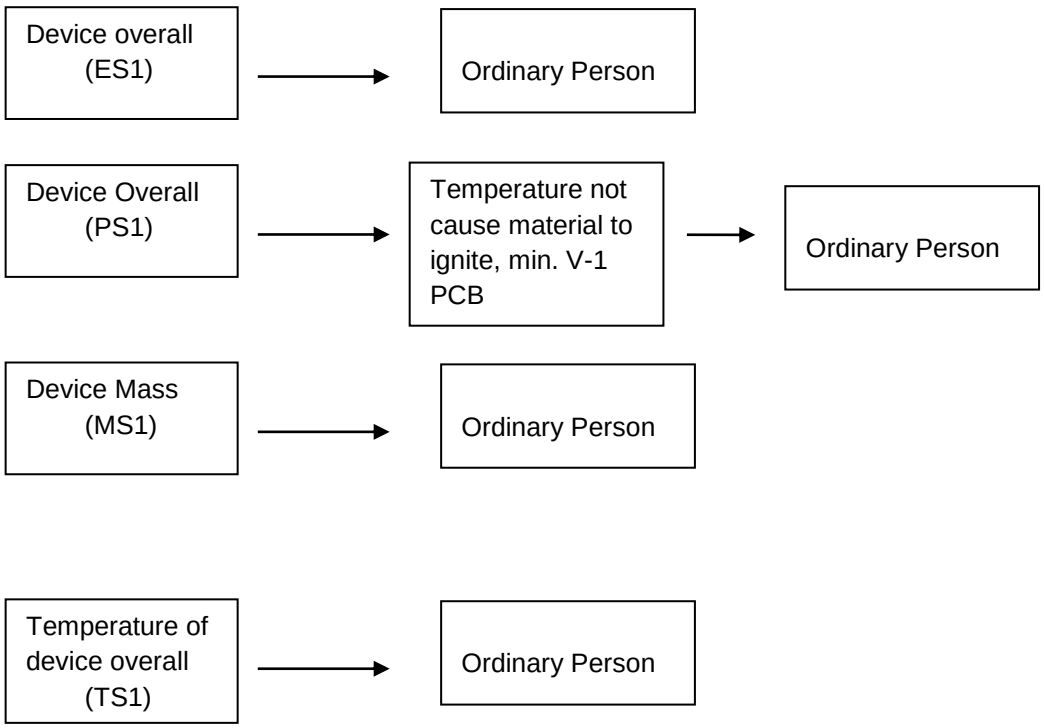
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☒ **Yes** ☐ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) ..... :	**Location 1:** Crestron Electronics Inc. 88 Ramland Rd, Orangeburg, NY 10962, USA **Location 2:** JABIL CIRCUIT DE MEXICO S DE R L DE C V Technology Park # 420 Carretera Nogales Km 13.5 Av. Guadalupe # 225, Zapopan Jalisco 45010, MEXICO **Location 3:** EPI de Mexico S de RL de CV Boulevard Independencia #1451 Int.2 Parque Industrial Intermex Oriente CP 32599 Juarez Chihuahua MEXICO

GENERAL PRODUCT INFORMATION:
Product Description – The product is a wall plate USB extender that delivers USB1.1 and 2.0 and connects at multiple locations. The unit powered by CB approved external power supply or PoE. Model number for the units is M201904002 and M201904003 whereas SKU Numbers for the product are USB-NX2-Remote-1G-W, USB-NX2-Remote-1G-B, USB-NX2-Local-1G-W, USB-NX2-Local-1G-B, USB-EXT-2-LOCAL-1G-W, USB-EXT-2-LOCAL-1G-B, USB-EXT-2-REMOTE-1G-W , USB-EXT-2-REMOTE-1G-B.
Model Differences: Models differ in functionality and number of ports.
Additional application considerations – (Considerations used to test a component or sub-assembly) – 1) Unit considered Class III, powered by certified external Class II SELV DC power adaptor or power over ethernet.

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.	
Electrically-caused injury (Clause 5): (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input ES1	
Source of electrical energy	**Corresponding classification (ES)**
Device overall (24Vdc max input)	**ES1**
Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): PS2	
Source of power or PIS	**Corresponding classification (PS)**
Device overall	**PS1**
Injury caused by hazardous substances (Clause 7) (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component Glycol	
Source of hazardous substances	**Corresponding chemical**
The product does not use, contain, or produce hazardous substances	N/A
Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit MS2	
Source of kinetic/mechanical energy	**Corresponding classification (MS)**
Edges & Corners	**MS1**
Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure TS1	
Source of thermal energy	**Corresponding classification (TS)**
Accessible Part	**TS1**
Radiation (Clause 10) (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product RS1	
Type of radiation	**Corresponding classification (RS)**
-	-

ENERGY SOURCE DIAGRAM

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



☒ **ES** ☒ **PS** ☒ **MS** ☒ **TS** ☐ **RS**

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	**Possible Hazard**			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary person	ES1: 24Vdc max. SELV power	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS1: 15 Watt max. circuit)	Safeguards		
		Basic	Supplementary	Reinforced
PWB	PS1: Power Circuit – from the output of the certified external Class II power supply or POE	Suitable Component	Fire Enclosure	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
The product does not contain or produce hazardous substances				
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3: High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
The product is a MS1 consideration. It does not have sharp edges or corners, has no moving parts, has no stability requirements due to less than 7kg weight, has no mounting requirements due to less than 1kg weight, has no handles, has no wheels/casters, has no carrier, it is not rack mounted, and it has no telescoping rod or antenna.				
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary person	TS1: Metal Enclosure	No safeguards are required. Enclosure not touched in normal use. Only front plate touched for short duration.		
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Trained person	RS1: Indicator LED	N/A	N/A	N/A
Supplementary Information: (1) See attached energy source diagram for additional details. (2) “N” – Normal Condition; “A” – Abnormal Condition; “S” Single Fault				

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies (IEC 60065, 3.4) & (IEC 60950-1, 1.5.1)	See appended table 4.1.2	P
4.1.2	Use of components (IEC 60065, 3.4, 14.1) & (IEC 60950-1, 1.5.2)	All safety related components are either approved to pertinent standards and used within their ratings or evaluated within application	P
4.1.3	Equipment design and construction (IEC 60065, 3.1) & (IEC 60950-1, 1.3.2)		P
4.1.15	Markings and instructions.....: (IEC 60065, 5.1) & (IEC 60950-1, 1.7)	(See Annex F)	—
4.4.4	Safeguard robustness		P
4.4.4.2	Steady force tests.....: (IEC 60065, 9.1.1.7 c), 13.3.1) & (IEC 60950-1, 4.2.4)	The product is ES1 and PS1, failure of the enclosure will not present a hazard to the user (See Annex T.4, T.5)	—
4.4.4.3	Drop tests .....: (IEC 60065, 12.1.5) & (IEC 60950-1, 4.2.6)	Stationary equipment (See Annex T.7)	—
4.4.4.4	Impact tests .....: (IEC 60065, 12.1.4) & (IEC 60950-1, 4.2.5)	SELV components, no hazards in the unit	—
4.4.4.5	Internal accessible safeguard enclosure and barrier tests .....: (IEC 60950-1, 4.2.3)	No class 2 or 3 energy source	—
4.4.4.6	Glass Impact tests.....: (IEC 60065, 19.6) & (IEC 60950-1, 4.2.5)	No such parts	—
4.4.4.7	Thermoplastic material tests .....: (IEC 60065, 12.1.6) & (IEC 60950-1, 4.2.7)	External metal enclosure with few circular openings measured 2.3mm	—
4.4.4.8	Air comprising a safeguard.....: (IEC 60065, 9.1.7) & (IEC 60950-1, 4.2)	None	—
4.4.4.9	Accessibility and safeguard effectiveness (IEC 60065, 9.1.7) & (IEC 60950-1, 4.2.1)	PS1, ES1 considered	P
4.5	Explosion	No such risk	N/A
4.6	Fixing of conductors (IEC 60065, 8.14) & (IEC 60950-1, 3.1.9)		P
4.6.1	Fix conductors not to defeat a safeguard (IEC 60065, 8.14) & (IEC 60950-1, 3.1.9)	All wires are routed properly	P
4.6.2	10 N force test applied to .....: (IEC 60065, 8.14) & (IEC 60950-1, 3.1.9)		—
4.7	Equipment for direct insertion into mains socket – outlets (IEC 60065, 15.4) & (IEC 60950-1, 4.3.6)	None	N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.2	Mains plug part complies with the relevant standard.....: (IEC 60065, 15.4.2) & (IEC 60950-1, 4.3.6)	SELV DC input	—
4.7.3	Torque (Nm) .....: (IEC 60065, 15.4.1) & (IEC 60950-1, 4.3.6)	See above	—
4.8	Products containing coin/button cell batteries (IEC 60065, 12.7)	No batteries	N/A
4.8.2	Instructional safeguard (IEC 60065, 5.4 c), 5.5.2 j))		N/A
4.8.3	Battery Compartment Construction (IEC 60065, 12.7.2)		N/A
	Means to reduce the possibility of children removing the battery.....:	See above	—
4.8.4	Battery Compartment Mechanical Tests.....: (IEC 60065, 12.7.3)	See above	—
4.8.5	Battery Accessibility (IEC 60065, 12.7.4)	No Li coin/button cell battery	N/A
4.9	Likelihood of fire or shock due to entry of conductive object.....: (IEC 60065, 9.1.3, 20.3.2) & (IEC 60950-1, 4.6.1)	No PS3 or ES3 (See Annex P)	—
5	**ELECTRICALLY-CAUSED INJURY**		P
5.2.1	Electrical energy source classifications .....:	(See appended table 5.2)	—
5.2.2	ES1, ES2 and ES3 limits	ES1	P
5.2.2.2	Steady-state voltage and current .....: (IEC 60065, 9.1.1.2) & (IEC 60950-1, 2.2, 2.3, 2.4)	See appended table 5.2)	—
5.2.2.3	Capacitance limits.....: (IEC 60065, 9.1.1.2) & (IEC 60950-1, 2.4)	No such energy source	—
5.2.2.4	Single pulse limits .....: (IEC 60950-1, 2.2)	None	—
5.2.2.5	Limits for repetitive pulses .....: (IEC 60950-1, 2.2)	None	—
5.2.2.6	Ringing signals .....: (IEC 60950-1, 2.3, Annex M)	No ringing signals	—
5.2.2.7	Audio signals .....: (IEC 60065, 9.1.1.2) & (IEC 60950-1, 2.1.1.9)	No audio amplifier	—
5.3	Protection against electrical energy sources (IEC 60065, 9.1.1) & (IEC 60950-1, 2.1)	ES1	N/A
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons (IEC 60065, 9.1.1) & (IEC 60950-1, 2.1)	ES1	N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
5.3.2.1	Accessibility to electrical energy sources and safeguards (IEC 60065, 9.1.1.3, 9.1.2, 9.1.3, 9.1.4, 9.1.5) & (IEC 60950-1, 2.1.1.1)	ES1 considered	P
5.3.2.2	Contact requirements (IEC 60065, 9.1.1.1) & (IEC 60950-1, 2.1.1.1)	ES1 considered	N/A
	a) Test with test probe from Annex V..... :	See above	—
	b) Electric strength test potential (V) ..... :	See above	—
	c) Air gap (mm) ..... :	See above	—
5.3.2.4	Terminals for connecting stripped wire (IEC 60065, 9.1.1.4)	None	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material (IEC 60065, 8.3) & (IEC 60950-1, 2.9.1)	Functional insulation considered, the metal enclosure	P
5.4.1.3	Humidity conditioning ..... : (IEC 60065, 10.3) (IEC 60950-1, 2.9.1)	No hygroscopic material (See sub-clause 5.4.8)	—
5.4.1.4	Maximum operating temperature for insulating materials ..... : (IEC 60065, 7.1) & (IEC 60950-1, 4.5)	(See appended table 5.4.1.4)	—
5.4.1.5	Pollution degree ..... : (IEC 60065, 13.1) & (IEC 60950-1, 2.10.1.2)	2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound (IEC 60065, 13.6, 13.7) & (IEC 60950-1, 2.10.10)	Pollution degree 2	N/A
5.4.1.5.3	Thermal cycling (IEC 60065, 13.6) & (IEC 60950-1, 2.10.9)	Pollution degree 2	N/A
5.4.1.6	Insulation in transformers with varying dimensions (IEC 60065, 13.2) & (IEC 60950-1, 2.10.1.5)	SELV input, reinforced insulation to be provided by certified external power supply or at POE DC source	N/A
5.4.1.7	Insulation in circuits generating starting pulses (IEC 60950-1, 2.10.3.5)	No such circuits	N/A
5.4.1.8	Determination of working voltage (IEC 60065, 13.2) & (IEC 60950-1, 2.10.2)	24Vdc max considered	N/A
5.4.1.9	Insulating surfaces (IEC 60065, 13.3.1) & (IEC 60950-1, 2.10.3.1)	Considered	N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted (IEC 60065, 7.2) & (IEC 60950-1, 4.5.5)	No such parts	N/A
5.4.1.10.2	Vicat softening temperature..... : (IEC 60065, 7.2)	(See appended table 5.4.1.10.2)	—
5.4.1.10.3	Ball pressure ..... : (IEC 60950-1, 4.5.5)	Metal enclosure (See appended table 5.4.1.10.3)	—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.2	Clearances (IEC 60065, 13.3, Annex J) & (IEC 60950-1, 2.10.3, Annex G)	Class III, functional insulation only	N/A
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2)	N/A
5.4.2.3	Determining clearance using required withstand voltage ..... :	Class III, functional insulation only	—
	a) a.c. mains transient voltage..... :	See above	—
	b) d.c. mains transient voltage ..... :	See above	—
	c) external circuit transient voltage..... :	See above	—
	d) transient voltage determined by measurement ... :	See above	—
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..... :		—
5.4.3	Creepage distances..... : (IEC 60065, 13.4) & (IEC 60950-1, 2.10.4)	Class III, SELV powered	—
5.4.3.1	General	Functional insulation	N/A
5.4.3.3	Material Group ..... : (IEC 60065, 13.4) & (IEC 60950-1, 2.10.4.2)		—
5.4.4	Solid insulation (IEC 60065, 8.8) & (IEC 60950-1, 2.10.5)		N/A
5.4.4.2	Minimum distance through insulation ..... : (IEC 60065, 8.8) & (IEC 60950-1, 2.10.5.2)		N/A
5.4.4.3	Insulation compound forming solid insulation (IEC 60065, 13.6, 13.7, 13.8) & (IEC 60950-1, 2.10.5.3)		N/A
5.4.4.4	Solid insulation in semiconductor devices (IEC 60065, 13.6, 13.8) & (IEC 60950-1, 2.10.5.4)		N/A
5.4.4.5	Cemented joints (IEC 60065, 13.6) & (IEC 60950-1, 2.10.5.5)		N/A
5.4.4.6	Thin sheet material (IEC 60065, 8.8) & (IEC 60950-1, 2.10.5.6)		N/A
5.4.4.6.1	General requirements (IEC 60065, 8.8)		N/A
5.4.4.6.2	Separable thin sheet material (IEC 60065, 8.8) & (IEC 60950-1, 2.10.5.7)		N/A
	Number of layers (pcs) ..... :		—
5.4.4.6.3	Non-separable thin sheet material (IEC 60065, 8.21) & (IEC 60950-1, 2.10.5.8)		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6.4	Standard test procedure for non-separable thin sheet material.....: (IEC 60950-1, 2.10.5.9)	Class III unit	—
5.4.4.6.5	Mandrel test (IEC 60065, 8.21) & (IEC 60950-1, Annex AA)		N/A
5.4.4.7	Solid insulation in wound components (IEC 60065, 8.16) & (IEC 60950-1, 2.10.5.11)	None	N/A
5.4.4.9	Solid insulation at frequencies >30 kHz .....:		—
5.4.5	Antenna terminal insulation (IEC 60065, 10.2) & (IEC 60950-1, 7.4)	No antenna terminal	N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test (IEC 60065, 10.2) & (IEC 60950-1, 7.4.2)		N/A
	Insulation resistance (MΩ) .....:		—
5.4.6	Insulation of internal wire as part of supplementary safeguard.....: (IEC 60065, 8.9) & (IEC 60950-1, 2.1.1.3)	Class III, functional insulation	—
5.4.7	Tests for semiconductor components and for cemented joints (IEC 60065, 13.6, 13.7, 13.8) & (IEC 60950-1, 2.10.11)	No such components	N/A
5.4.8	Humidity conditioning (IEC 60065, 10.3) & (IEC 60950-1, 2.9.2)	No hygroscopic material	N/A
	Relative humidity (%) .....:		—
	Temperature (°C) .....:		—
	Duration (h) .....:		—
5.4.9	Electric strength test.....: (IEC 60065, 10.4) & (IEC 60950-1, 5.2)	Class III, functional insulation (See appended table 5.4.9)	—
5.4.9.1	Test procedure for a solid insulation type test (IEC 60065, 10.4) & (IEC 60950-1, 5.2)		N/A
5.4.9.2	Test procedure for routine tests (IEC 60065, N.3.2) & (IEC 60950-1, 5.2.2)	Class III	N/A
5.4.10	Protection against transient voltages between external circuit (IEC 60065, Annex B) & (IEC 60950-1, 6.2)	None	N/A
5.4.10.1	Parts and circuits separated from external circuits (IEC 60950-1, 6.2.1)	Class III, no connection to such circuits	N/A
5.4.10.2	Test methods (IEC 60950-1, 6.2.2)		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test.....: (IEC 60950-1, 6.2.2.1)		—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.10.2.3	Steady-state test ..... : (IEC 60950-1, 6.2.2.2)		—
5.4.11	Insulation between external circuits and earthed circuitry ..... : (IEC 60065, Annex B) & (IEC 60950-1, 6.1)	No such connection	—
5.4.11.1	Exceptions to separation between external circuits and earth (IEC 60950-1, 6.1.2.2)		N/A
5.4.11.2	Requirements (IEC 60950-1, 6.1.2.1)		N/A
	Rated operating voltage U_{op} (V) ..... :		—
	Nominal voltage U_{peak} (V) ..... :		—
	Max increase due to variation U_{sp} ..... :		—
	Max increase due to ageing ΔU_{sa} ..... :		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ ..... :		—
5.5	Components as safeguards		N/A
5.5.1	General	None of below mentioned components used as safeguards	N/A
5.5.2	Capacitors and RC units (IEC 60065, 14.3)	None	N/A
5.5.2.1	General requirement (IEC 60065, 14.3) & (IEC 60950-1, 1.5.6)		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector ..... : (IEC 60065, 9.1.6) & (IEC 60950-1, 2.1.1.7)		—
5.5.3	Transformers (IEC 60065, 14.4) & (IEC 60950-1, 1.5.4, Annex C)	None	N/A
5.5.4	Optocouplers (IEC 60065, 14.12) & (IEC 60950-1, 2.10.5.3, 2.10.5.4)	None	N/A
5.5.5	Relays	None	N/A
5.5.6	Resistors (IEC 60065, 14.2) & (IEC 60950-1, 1.5.7)	None	N/A
5.5.7	SPD's (IEC 60065, 14.13) & (IEC 60950-1, 1.5.9)	None	N/A
5.5.7.1	Use of an SPD connected to reliable earthing (IEC 60065, 14.13) & (IEC 60950-1, 1.5.9.4)		N/A
5.5.7.2	Use of an SPD between mains and protective earth (IEC 60065, 14.13) & (IEC 60950-1, 1.5.9.4)		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable.....: (IEC 60065, 10.2) & (IEC 60950-1, 1.5.7.3, 7.4)	No direct connection to mains	—
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors (IEC 60065, 15.2) & (IEC 60950-1, 2.6.3, 2.6.5)	Class III, functional earth connection only	N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation (IEC 60065, 15.2) & (IEC 60950-1, 2.6.3.5)		N/A
5.6.3	Requirement for protective earthing conductors (IEC 60065, 15.2) & (IEC 60950-1, 2.6.3.2)		N/A
	Protective earthing conductor size (mm^2) .....:	See above	—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors (IEC 60950-1, 2.6.3.3)		N/A
	Protective bonding conductor size (mm^2).....:	See above	—
	Protective current rating (A) ..... :	See above	—
5.6.4.3	Current limiting and overcurrent protective devices (IEC 60950-1, 2.6.5.2)		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Requirement (IEC 60065, 15.2) & (IEC 60950-1, 2.6.4.2)		N/A
	Conductor size (mm^2), nominal thread diameter (mm). .....:	See above	—
5.6.5.2	Corrosion (IEC 60065, 15.2) & (IEC 60950-1, 2.6.5.6)		N/A
5.6.6	Resistance of the protective system (IEC 60065, 15.2) & (IEC 60950-1, 2.6.3.4)		N/A
5.6.6.1	Requirements (IEC 60065, 15.2) & (IEC 60950-1, 2.6.3.4)		N/A
5.6.6.2	Test Method Resistance (Ω) .....: (IEC 60065, 15.2) & (IEC 60950-1, 2.6.3.4)	(See appended table 5.6.6.2)	—
5.6.7	Reliable earthing (IEC 60065, 14.13) & (IEC 60950-1, 1.5.9.4, 5.1.7.1)		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		N/A
5.7.2	Measuring devices and networks	DC input only	N/A
5.7.2.1	Measurement of touch current .....: (IEC 60065, 9.1.1.2) & (IEC 60950-1, 5.1.4)	Class III	—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.2.2	Measurement of prospective touch voltage (IEC 60065, 9.1.1.2) & (IEC 60950-1, 1.4.9)	No such connection	N/A
5.7.3	Equipment set-up, supply connections and earth connections (IEC 60065, 9.1.1.2) & (IEC 60950-1, 5.1.3)	Class III	N/A
	System of interconnected equipment (separate connections/single connection) .....:		—
	Multiple connections to mains (one connection at a time/simultaneous connections) .....:		—
5.7.4	Earthed conductive accessible parts.....: (IEC 60065, 9.1.1.2) & (IEC 60950-1, 5.1.6)	None	N/A
5.7.5	Protective conductor current (IEC 60950-1, 5.1.7)		N/A
	Supply Voltage (V) .....:		—
	Measured current (mA) .....:		—
	Instructional Safeguard .....:		—
5.7.6	Prospective touch voltage and touch current due to external circuits (IEC 60950-1, 5.1.8)	SELV DC input	N/A
5.7.6.1	Touch current from coaxial cables	None	N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits (IEC 60950-1, 5.1.8.1)		N/A
5.7.7	Summation of touch currents from external circuits (IEC 60950-1, 5.1.8.2)		N/A
	a) Equipment with earthed external circuits Measured current (mA) .....:		—
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		—

6	**ELECTRICALLY- CAUSED FIRE**		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications	Only PS1 circuits	P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault ... : (IEC 60065, 4.3.1) & (IEC 60950-1, 2.5)	(See appended table 6.2.2)	—
6.2.2.3	Power measurement for worst-case power source fault..... : (IEC 60065, 4.3.1) & (IEC 60950-1, 2.5)	(See appended table 6.2.2)	—
6.2.2.4	PS1 ..... :	(See appended table 6.2.2)	—
6.2.2.5	PS2 ..... :		—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.6	PS3 ..... :		—
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS ..... :	None	—
6.2.3.2	Resistive PIS ..... :	(See appended table 6.2.3.2)	—
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials ..... : (IEC 60065, 7.1) & (IEC 60950-1, 4.5.3)	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	—
6.3.1 (b)	Combustible materials outside fire enclosure (IEC 60950-1, 4.7.3.3)	Metal enclosure	N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method (IEC 60950-1, 4.7.1)		N/A
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits	None	N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits (IEC 60065, 11.2, 20.2)	Certified components used	P
6.4.3.1	General		P
6.4.3.2	Supplementary Safeguards (IEC 60065, 20.2)	Suitably rated components used	P
	Special conditions if conductors on printed boards are opened or peeled	PCB boards are V-0 flame rated	N/A
6.4.3.3	Single Fault Conditions..... : (IEC 60065, 11.2)	(See appended table 6.4.3)	—
	Special conditions for temperature limited by fuse	None	N/A
6.4.4	Control of fire spread in PS1 circuits	All components are mounted on PCBs, V-0 flame rated	P
6.4.5	Control of fire spread in PS2 circuits (IEC 60950-1, 4.7.3.4)		N/A
6.4.5.2	Supplementary safeguards ..... : (IEC 60950-1, 4.7.3.4)	(See appended tables 4.1.2 and Annex G)	—
6.4.6	Control of fire spread in PS3 circuit (IEC 60950-1, 4.7.3.4)		N/A
6.4.7	Separation of combustible materials from a PIS (IEC 60065, 20.2.5) & (IEC 60950-1, 4.7.3.4)	Component are mounted on a PWB rated min V-0	P
6.4.7.1	General..... :	(See tables 6.2.3.1 and 6.2.3.2)	—
6.4.7.2	Separation by distance (IEC 60065, 20.2.5) & (IEC 60950-1, 4.7.3.4)	SELV input provided by Crestron certified Class II power adaptor or POE	P

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.7.3	Separation by a fire barrier (IEC 60065, 20.2.5) & (IEC 60950-1, 4.7.3.4)	No fire barrier	N/A
6.4.8	Fire enclosures and fire barriers (IEC 60065, 20.2.5, 20.3) & (IEC 60950-1, 4.7.2, 4.7.3)	Metal enclosure	P
6.4.8.1	Fire enclosure and fire barrier material properties (IEC 60065, 20.2.5, 20.3) & (IEC 60950-1, 4.7.3.2, 4.7.3.4)	V-0 flame rated PWB	P
6.4.8.2.1	Requirements for a fire barrier (IEC 60065, 20.2.5) & (IEC 60950-1, 4.7.3.4)	Metal enclosure	N/A
6.4.8.2.2	Requirements for a fire enclosure (IEC 60065, 20.3) & (IEC 60950-1, 4.7.3.2)		N/A
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings (IEC 60065, 20.3) & (IEC 60950-1, 4.6.1, 4.6.2)	Top and side 2.3mm circular openings	N/A
6.4.8.3.2	Fire barrier dimensions (IEC 60065, 20.2.5) & (IEC 60950-1, 4.6.2)	None	N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....: (IEC 60065, 20.3) & (IEC 60950-1, 4.6.1)	2.3mm circular top openings	—
	Needle Flame test	Metal enclosure	N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....: (IEC 60065, 20.3) & (IEC 60950-1, 4.6.2)	No bottom openings	—
	Flammability tests for the bottom of a fire enclosure .....:		—
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) .....: (IEC 60950-1, 4.6.3)	No door or cover	—
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....: (IEC 60065, 20.2.5) & (IEC 60950-1, 4.7.3.1, 4.7.3.2)	V-0 flame rated material used.	—
6.5	Internal and external wiring		N/A
6.5.1	Requirements (IEC 60065, 16.3, 20.2.3) & (IEC 60950-1, 4.7.3.3, 4.7.3.4)	PWBs only	N/A
6.5.2	Cross-sectional area (mm^2) .....:	See above	—
6.5.3	Requirements for interconnection to building wiring .....: (IEC 60950-1, 2.5, 6.3)	(See Annex Q.)	—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
6.6	Safeguards against fire due to connection to additional equipment (IEC 60950-1, 3.5.4)	No such connection, only USB or HDMI connection to other equipments	N/A
	External port limited to PS2 or complies with Clause Q.1		N/A
7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		N/A
7.2	Reduction of exposure to hazardous substances	No such hazardous substances in the equipment	N/A
7.3	Ozone exposure (IEC 60950-1, 1.7.2.6)		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions .....:		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010) .....:		—
7.6	Batteries .....: (IEC 60065, 14.10) & (IEC 60950-1, 4.3.8)	(See Annex M)	—
8	**MECHANICALLY-CAUSED INJURY**		P
8.1	General		P
8.2	Mechanical energy source classifications	MS1	P
8.3	Safeguards against mechanical energy sources	No mechanical energy source	N/A
8.4	Safeguards against parts with sharp edges and corners (IEC 60065, 19.5) & (IEC 60950-1, 4.3.1)	No sharp edges or corners	P
8.4.1	Safeguards (IEC 60950-1, 4.3.1)	None	N/A
8.5	Safeguards against moving parts	No moving parts	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment (IEC 60065, 14.10.3) & (IEC 60950-1, 4.4)		N/A
8.5.2	Instructional Safeguard..... : (IEC 60950-1, 4.4.5.2)		—
8.5.4	Special categories of equipment comprising moving parts	None	N/A
8.5.4.1	Large data storage equipment (IEC 60950-23)		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media (IEC 60950-1, Annex EE)		N/A
8.5.4.2.1	Safeguards and Safety Interlocks .....: (IEC 60950-1, EE.3)	(See Annex F.4 and Annex K)	—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard.....: (IEC 60950-1, EE.2)		—
8.5.4.2.3	Disconnection from the supply (IEC 60950-1, EE.4)		N/A
8.5.4.2.4	Probe type and force (N) .....: (IEC 60950-1, EE.5)		—
8.5.5	High Pressure Lamps (IEC 60950-1, 4.2.9)	None	N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test.....:		—
8.6	Stability (IEC 60065, 19) & (IEC 60950-1, 4.1)	Weight is 0.22kg max., less than 7 kg, MS1 considered. Unit is mounted on Low Voltage Electrical box by use of 2 screws.	N/A
8.6.1	Product classification		N/A
	Instructional Safeguard.....: (IEC 60065, 5.5.2)		—
8.6.2	Static stability (IEC 60065, 19.1) & (IEC 60950-1, 4.1)		N/A
8.6.2.2	Static stability test (IEC 60065, 19.2) & (IEC 60950-1, 4.1)		N/A
	Applied Force.....:		—
8.6.2.3	Downward Force Test (IEC 60065, 19.3) & (IEC 60950-1, 4.1)		N/A
8.6.3	Relocation stability test (IEC 60065, 19.2)		N/A
	Unit configuration during 10° tilt.....:		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force).....: (IEC 60065, 19.4)		—
	Position of feet or movable parts.....:		—
8.7	Equipment mounted to wall or ceiling (IEC 60065, 19.7) & (IEC 60950-1, 4.2.10)	Unit is mounted on Low Voltage Electrical box by use of 2 screws.	N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....: (IEC 60065, 19.7)		—
8.7.2	Direction and applied force.....: (IEC 60065, 19.7) & (IEC 60950-1, 4.2.10)		—
8.8	Handles strength	No handles	N/A
8.8.1	Classification		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
8.8.2	Applied Force .....:		—
8.9	Wheels or casters attachment requirements	No wheels or casters	N/A
8.9.1	Classification		N/A
8.9.2	Applied force .....:		—
8.10	Carts, stands and similar carriers	None	N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard.....:		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force .....:		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N) .....:		—
8.10.6	Thermoplastic temperature stability (°C).....:		—
8.11	Mounting means for rack mounted equipment (IEC 60950-1, Annex DD)	No rack mounted equipment	N/A
8.11.1	General (IEC 60950-1, DD.1)		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable *N* .....: (IEC 60950-1, DD.2)		—
8.11.4	Mechanical strength test 250N, including end stops (IEC 60950-1, DD.3)		N/A
8.12	Telescoping or rod antennas.....: (IEC 60065, 12.6)	No telescoping or rod antennas (See Annex T)	—
	Button/Ball diameter (mm).....:		—

9	**THERMAL BURN INJURY**		P
9.2	Thermal energy source classifications (IEC 60065, 7.1, 11.2) & (IEC 60950-1, 4.5.4)	Accessible parts - TS1	P
9.3	Safeguard against thermal energy sources (IEC 60065, 7.1, 11.2) & (IEC 60950-1, 4.5.4)		N/A
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard (IEC 60065, 7.1, 11.2) & (IEC 60950-1, 4.5.4)		N/A
9.4.2	Instructional safeguard .....: (IEC 60065, 7.1, 11.2) & (IEC 60950-1, 4.5.4)		—

10	**RADIATION**	N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
10.2	Radiation energy source classification	No such energy source	N/A
10.2.1	General classification		N/A
10.3	Protection against laser radiation (IEC 60065, 6.2) & (IEC 60950-1, 4.3.13.5.1)	No laser	N/A
	Laser radiation that exists equipment..... :		—
	Normal, abnormal, single-fault ..... :		—
	Instructional safeguard ..... :		—
	Tool..... :		—
10.4	Protection against visible, infrared, and UV radiation (IEC 60065, 6.3) & (IEC 60950-1, 4.3.13.4, 4.3.13.5.2)	None	N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons..... :		—
10.4.1.b)	RS3 accessible to a skilled person..... :		—
	Personal safeguard (PPE) instructional safeguard ..... :		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1:		—
10.4.1.d)	Normal, abnormal, single-fault conditions ..... :	(See appended table B.3 & B.4)	—
10.4.1.e)	Enclosure material employed as safeguard is opaque..... :		—
10.4.1.f)	UV attenuation..... :		—
10.4.1.g)	Materials resistant to degradation UV ..... :		—
10.4.1.h)	Enclosure containment of optical radiation ..... :		—
10.4.1.i)	Exempt Group under normal operating conditions ..... :		—
10.4.2	Instructional safeguard ..... :		—
10.5	Protection against x-radiation (IEC 60065, 6.1) & (IEC 60950-1, 4.3.13.2)		N/A
10.5.1	X- radiation energy source that exists equipment:	(See appended table B.3 & B.4)	—
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards ..... :		—
	Instructional safeguard for skilled person..... :		—
10.5.3	Most unfavourable supply voltage to give maximum radiation ..... : (IEC 60950-1, Annex H)		—
	Abnormal and single-fault condition ..... :	(See appended table B.3 & B.4)	—
	Maximum radiation (pA/kg) ..... :		—
10.6	Protection against acoustic energy sources	Not generating any acoustic energy	N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A)..... :		—
	Output voltage, unweighted r.m.s..... :		—
10.6.4	Protection of persons		N/A
	Instructional safeguards ..... :		—
	Equipment safeguard prevent ordinary person to RS2..... :		—
	Means to actively inform user of increase sound pressure..... :		—
	Equipment safeguard prevent ordinary person to RS2..... :		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)	No such devices	N/A
10.6.5.1	Corded passive listening devices with analogue input		N/A
	Input voltage with 94 dB(A) LAeq acoustic pressure output..... :		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A)..... :		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A)..... :		—
B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements..... : (IEC 60065, 4.2.1) & (IEC 60950-1, 1.4.4)	(See Test Item Particulars and appended test tables)	—
	Audio Amplifiers and equipment with audio amplifiers ..... : (IEC 60065, 4.2.5) & (IEC 60950-1, 4.4)	Not audio amplifiers or equipment with audio amplifiers	—
B.2.3	Supply voltage and tolerances (IEC 60065, 4.2.2) & (IEC 60950-1, 1.4.5)		N/A
B.2.5	Input test..... : (IEC 60065, 4.2, 5.2 g), h)) & (IEC 60950-1, 1.6.2)	(See appended table B.2.5)	—
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements..... : (IEC 60065, 4.3) & (IEC 60950-1, 5.3.1)	(See appended table B.3)	—
B.3.2	Covering of ventilation openings (IEC 60065, 4.3.11) & (IEC 60950-1, 5.3.1)		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
B.3.3	D.C. mains polarity test (IEC 60065, 4.2.2) & (IEC 60950-1, 5.3.1)	Not connected to DC mains	N/A
B.3.4	Setting of voltage selector ..... : (IEC 60065, 4.3.14) & (IEC 60950-1, 5.3.1)	None	—
B.3.5	Maximum load at output terminals ..... : (IEC 60065, 4.3.10) & (IEC 60950-1, 5.3.7)	None	—
B.3.6	Reverse battery polarity (IEC 60065, 4.3.12) & (IEC 60950-1, 4.3.8)	No battery	N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2. (IEC 60065, 4.3.6) & (IEC 60950-1, 5.3.6)	No audio amplifier	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions (IEC 60065, 11) & (IEC 60950-1, 5.3.9)		P
B.4	Simulated single fault conditions (IEC 60065, 4.3) & (IEC 60950-1, 1.4.14)		P
B.4.2	Temperature controlling device open or short-circuited ..... :	None	—
B.4.3	Motor tests (IEC 60065, 4.3.7) & (IEC 60950-1, 5.3.2)	No motor	N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature ..... : (IEC 60065, 4.3.7) & (IEC 60950-1, 5.3.2)	No motor	—
B.4.4	Short circuit of functional insulation (IEC 60950-1, 5.3.4)		P
B.4.4.1	Short circuit of clearances for functional insulation		P
B.4.4.2	Short circuit of creepage distances for functional insulation		P
B.4.4.3	Short circuit of functional insulation on coated printed boards	Uncoated PWB	N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors (IEC 60065, 4.3.4) & (IEC 60950-1, 5.3.7)	None	N/A
B.4.6	Short circuit or disconnect of passive components (IEC 60065, 4.3.5) & (IEC 60950-1, 5.3.7)		N/A
B.4.7	Continuous operation of components (IEC 60065, 4.3.8) & (IEC 60950-1, 5.3.5)		P
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions (IEC 60065, 11) & (IEC 60950-1, 5.3.9)		P
B.4.9	Battery charging under single fault conditions ... : (IEC 60065, 14.11.3) & (IEC 60950-1, 4.3.8)	No battery (See Annex M)	—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
C	**UV RADIATION**		N/A
C.1	Protection of materials in equipment from UV radiation (IEC 60950-1, 4.3.13.3)	No UV generator	N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test (IEC 60950-1, Annex Y)		N/A
C.2.1	Test apparatus (IEC 60950-1, Y.1)		N/A
C.2.2	Mounting of test samples (IEC 60950-1, Y.2)		N/A
C.2.3	Carbon-arc light-exposure apparatus (IEC 60950-1, Y.3)		N/A
C.2.4	Xenon-arc light exposure apparatus (IEC 60950-1, Y.4)		N/A
D	**TEST GENERATORS**		N/A
D.1	Impulse test generators (IEC 60065, Annex K) & (IEC 60950-1, N.1)	No TNV circuits	N/A
D.2	Antenna interface test generator (IEC 60950-1, N.2)		N/A
D.3	Electronic pulse generator		N/A
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		N/A
E.1	Audio amplifier normal operating conditions (IEC 60065, 4.2.5) & (IEC 60950-1, 4.5.1)	No amplifier	N/A
	Audio signal voltage (V) .....:		—
	Rated load impedance (Ω) .....:		—
E.2	Audio amplifier abnormal operating conditions (IEC 60065, 4.3.6) & (IEC 60950-1, 5.3.6)		N/A
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	General requirements (IEC 60065, 5.1, 5.2, 5.3) & (IEC 60950-1, 1.7.2.1)		P
	Instructions – Language .....:	Only English version evaluated	—
F.2	Letter symbols and graphical symbols (IEC 60065, 5.1)		N/A
F.2.1	Letter symbols according to IEC60027-1 (IEC 60065, 5.1)		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
F.2.2	Graphic symbols IEC, ISO or manufacturer specific (IEC 60065, 5.1) & (IEC 60950-1, 1.7.1.1)		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations (IEC 60065, 5.1) & (IEC 60950-1, 1.7.1.2)	Marking is on the exterior of the unit	P
F.3.2	Equipment identification markings (IEC 60065, 5.2) & (IEC 60950-1, 1.7.1.2)		P
F.3.2.1	Manufacturer identification .....: (IEC 60065, 5.2 a)) & (IEC 60950-1, 1.7.1.2)	Crestron	—
F.3.2.2	Model identification .....: (IEC 60065, 5.2 b)) & (IEC 60950-1, 1.7.1.2)	On the label	—
F.3.3	Equipment rating markings (IEC 60065, 5.2) & (IEC 60950-1, 1.7.1.1)	No direct connection to mains.	N/A
F.3.3.1	Equipment with direct connection to mains (IEC 60065, 5.2 e)) & (IEC 60950-1, 1.7.1.1)		N/A
F.3.3.2	Equipment without direct connection to mains (IEC 60065, 5.2 e)) & (IEC 60950-1, 1.7.1.1)	No Ratings marking required.	P
F.3.3.3	Nature of supply voltage.....: (IEC 60065, 5.2 d)) & (IEC 60950-1, 1.7.1.1)		—
F.3.3.4	Rated voltage .....: (IEC 60065, 5.2 e)) & (IEC 60950-1, 1.7.1.1)		—
F.3.3.4	Rated frequency.....: (IEC 60065, 5.2 f)) & (IEC 60950-1, 1.7.1.1)	SELV DC input only	—
F.3.3.6	Rated current or rated power .....: (IEC 60065, 5.2 g), h)) & (IEC 60950-1, 1.7.1.1)		—
F.3.3.7	Equipment with multiple supply connections (IEC 60950-1, 1.7.1.1)	No multiple supply connection	N/A
F.3.4	Voltage setting device (IEC 60065, 5.2 e)) & (IEC 60950-1, 1.7.4)	None	N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings..... : (IEC 60065, 5.3 c)) & (IEC 60950-1, 1.7.5)	No mains appliance outlet or socket -outlet	—
F.3.5.2	Switch position identification marking ..... : (IEC 60065, 5.5.3) & (IEC 60950-1, 1.7.8.3)	No switch	—
F.3.5.3	Replacement fuse identification and rating markings..... : (IEC 60065, 14.6.3.2) & (IEC 60950-1, 1.7.6)	No user replacement fuse	—
F.3.5.4	Replacement battery identification marking ..... : (IEC 60065, 5.5.2 c)) & (IEC 60950-1, 1.7.13)	No user replaceable battery pack	—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.5	Terminal marking location (IEC 60950-1, 1.7.7.1)	No marking on removable parts	P
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I Equipment	Class III	N/A
F.3.6.1.1	Protective earthing conductor terminal (IEC 60065, 5.3 a)) & (IEC 60950-1, 1.7.7.1)	None	N/A
F.3.6.1.2	Neutral conductor terminal (IEC 60950-1, 1.7.7.2)	None	N/A
F.3.6.1.3	Protective bonding conductor terminals (IEC 60950-1, 1.7.7.1)	None	N/A
F.3.6.2	Class II equipment (IEC60417-5172)	Class III	N/A
F.3.6.2.1	Class II equipment with or without functional earth (IEC 60065, 5.2 c)) & (IEC 60950-1, 1.7.7.2)		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking (IEC 60950-1, 2.6.2)		N/A
F.3.7	Equipment IP rating marking .....: (IEC 60065, A.5)	None	—
F.3.8	External power supply output marking (IEC 60065, 5.3 c))	No power supply output	N/A
F.3.9	Durability, legibility and permanence of marking (IEC 60065, 5.1) & (IEC 60950-1, 1.7.11)		P
F.3.10	Test for permanence of markings (IEC 60065, 5.1) & (IEC 60950-1, 1.7.11)		P
F.4	Instructions (IEC 60065, 5.4, 5.5.2) & (IEC 60950-1, 1.7.2.1, 1.7.14, 5.1.7, 3,4,3)		P
	a) Equipment for use in locations where children not likely to be present – marking		N/A
	b) Instructions given for installation or initial use		P
	c) Equipment intended to be fastened in place		P
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1	No audio terminals	N/A
	f) Protective earthing employed as safeguard	Class III	N/A
	g) Protective earthing conductor current exceeding ES 2 limits	See above	N/A
	h) Symbols used on equipment		N/A
	i) Permanently connected equipment not provided with all-pole mains switch	Not permanently connected equipment	N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
	j) Replaceable components or modules providing safeguard function	None	N/A
F.5	Instructional safeguards (IEC 60065, 5.4, 5.5)		N/A
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		N/A
G	**COMPONENTS**		P
G.1	**Switches** (IEC 60950-1, 2.8.7)		N/A
G.1.1	General requirements (IEC 60065, 14.7)	None	N/A
G.1.2	Ratings, endurance, spacing, maximum load (IEC 60065, 14.7)		N/A
G.2	**Relays** (IEC 60065, 14.4.3) & (IEC 60950-1, 2.8.7)		N/A
G.2.1	General requirements	No relay	N/A
G.2.2	Overload test (IEC 60950-1, 2.8.7.2)		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	**Protection Devices**		N/A
G.3.1	Thermal cut-offs (IEC 60065, 14.6.2.2)	None	N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b) (IEC 60065, 14.6.2.2 a))		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c) (IEC 60065, 14.6.2.2 b))		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links (IEC 60065, 14.6.2.3)		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691 (IEC 60065, 14.6.2.3 a))	No thermal link	N/A
G.3.2.1b)	Thermal links tested as part of the equipment (IEC 60065, 14.6.2.3 b))		N/A
	Aging hours (H) ..... :		—
	Single Fault Condition ..... :		—
	Test Voltage (V) and Insulation Resistance (Ω). :		—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
G.3.3	PTC Thermistors (IEC 60065, 14.6.4) & (IEC 60950-1, 2.5)		N/A
G.3.4	Overcurrent protection devices (IEC 60065, 14.6.3) & (IEC 60950-1, 2.7)	Part of certified external power supply or POE	N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5 (IEC 60065, 14.6.5)		P
G.3.5.1	Non-resettable devices suitably rated and marking provided (IEC 60065, 14.6.5)		N/A
G.3.5.2	Single faults conditions.....: (IEC 60065, 14.6.5)	(See appended Table B.4)	—
G.4	**Connectors**		P
G.4.1	Spacings (IEC 60950-1, 2.10.3.1, 2.10.4.3)	All DC low voltage connector provided	P
G.4.2	Mains connector configuration .....: (IEC 60065, 15.1) & (IEC 60950-1, 3.2.4)	No mains connector	—
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely (IEC 60065, 15.1.2) & (IEC 60950-1, 4.3.5)	No mains socket-outlets	N/A
G.5	**Wound Components**		N/A
G.5.1	Wire insulation in wound components.....	None (See Annex J)	—
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90° (IEC 60065, 8.16) & (IEC 60950-1, 2.10.5.12)		N/A
G.5.1.2 b)	Construction subject to routine testing (IEC 60950-1, 2.10.5.11)		N/A
G.5.2	Endurance test on wound components (IEC 60065, 8.17)		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test (IEC 60065, 8.17 a))		N/A
	Time (s) .....:		—
	Temperature (°C) .....:		—
G.5.2.3	Wound Components supplied by mains (IEC 60065, 8.17 d))		N/A
G.5.3	**Transformers** (IEC 60950-1, 1.5.4)		N/A
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....: (IEC 60065, 14.4.3)	None	—
	Position.....:		—
	Method of protection .....:		—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
G.5.3.2	Insulation		N/A
	Protection from displacement of windings.....: (IEC 60065, 14.4) & (IEC 60950-1, C.2)		—
G.5.3.3	Overload test ..... :	(See appended table B.3)	—
G.5.3.3.1	Test conditions (IEC 60950-1, C.1)		N/A
G.5.3.3.2	Winding Temperatures testing in the unit (IEC 60065, 11.2) & (IEC 60950-1, C.1)		N/A
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	**Motors**		N/A
G.5.4.1	General requirements (IEC 60065, 4.3.7, 14.10) & (IEC 60950-1, B.1)	No motors	N/A
	Position .....:	See above	—
G.5.4.2	Test conditions (IEC 60065, 4.3.7, 14.10) & (IEC 60950-1, B.2)		N/A
G.5.4.3	Running overload test (IEC 60950-1, B.4)		N/A
G.5.4.4	Locked-rotor overload test (IEC 60065, 4.3.7) & (IEC 60950-1, B.5)		N/A
	Test duration (days) .....:	See above	—
G.5.4.5	Running overload test for d.c. motors in secondary circuits (IEC 60950-1, B.6)		N/A
G.5.4.5.2	Tested in the unit (IEC 60950-1, B.6.2)		N/A
	Electric strength test (V).....:	See above	—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....: (IEC 60950-1, B.6.3)		—
	Electric strength test (V).....:	See above	—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits (IEC 60065, 4.3.7) & (IEC 60950-1, B.7)		N/A
G.5.4.6.2	Tested in the unit (IEC 60950-1, B.7.2)		N/A
	Maximum Temperature .....:	See above	—
	Electric strength test (V) .....:	See above	—
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) .....: (IEC 60950-1, B.7.3)	See above	—
	Electric strength test (V).....:	See above	—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.7	Motors with capacitors (IEC 60950-1, B.8)		N/A
G.5.4.8	Three-phase motors (IEC 60950-1, B.9)		N/A
G.5.4.9	Series motors (IEC 60950-1, B.10)		N/A
	Operating voltage .....:	See above	—
G.6	**Wire Insulation**		N/A
G.6.1	General (IEC 60065, 8.16) & (IEC 60950-1, 2.10.5.12)	Wire insulation functional only	N/A
G.6.2	Solvent-based enamel wiring insulation (IEC 60065, 8.1) & (IEC 60950-1, 2.10.5.13)		N/A
G.7	**Mains supply cords**		N/A
G.7.1	General requirements (IEC 60065, 16.1, 16.2) & (IEC 60950-1, 3.2.5.1)	No direct mains connection	N/A
	Type.....:		—
	Rated current (A).....:		—
	Cross-sectional area (mm^2), (AWG)..... :		—
G.7.2	Compliance and test method (IEC 60065, 16.2) & (IEC 60950-1, 3.2.5.1)		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 (IEC 60065, 16.5) & (IEC 60950-1, 3.2.6)		N/A
	Strain relief test force (N) .....:		—
G.7.3.2.2	Strain relief mechanism failure (IEC 60950-1, 3.2.6)		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)....: (IEC 60065, 16.5) & (IEC 60950-1, 3.2.7)		—
G.7.3.2.4	Strain relief comprised of polymeric material (IEC 60065, 16.5) & (IEC 60950-1, 3.2.6, 3.2.7)		N/A
G.7.4	Cord Entry ..... : (IEC 60950-1, 3.1.4, 3.2.7)	(See appended table 5.4.11.1)	—
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements (IEC 60950-1, 3.2.8)		N/A
G.7.5.2	Mass (g) ..... :		—
	Diameter (m) .....:		—
	Temperature (°C) .....:		—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.6	Supply wiring space (IEC 60950-1, 3.2.9)		N/A
G.7.6.2	Stranded wire (IEC 60950-1, 3.3.8)		N/A
G.7.6.2.1	Test with 8 mm strand (IEC 60950-1, 3.3.8)		N/A
G.8	**Varistors**		N/A
G.8.1	General requirements	None	N/A
G.8.2	Safeguard against shock (IEC 60065, 14.13) & (IEC 60950-1, Annex Q)		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test .....: (IEC 60065, 14.13)	(See appended table B.3)	—
G.8.3.3	Temporary overvoltage .....:	(See appended table B.3)	—
G.9	**Integrated Circuit (IC) Current Limiters** (IEC 60950-1, Annex CC)		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A. (IEC 60950-1, CC.1)	None	N/A
G.9.1 b)	Limiters do not have manual operator or reset (IEC 60950-1, CC.1)		N/A
G.9.1 c)	Supply source does not exceed 250 VA .....: (IEC 60950-1, CC.1)		—
G.9.1 d)	IC limiter output current (max. 5A) .....: (IEC 60950-1, CC.1)		—
G.9.1 e)	Manufacturers' defined drift .....: (IEC 60950-1, CC.1)		—
G.9.2	Test Program 1 (IEC 60950-1, CC.2)		N/A
G.9.3	Test Program 2 (IEC 60950-1, CC.3)		N/A
G.9.4	Test Program 3 (IEC 60950-1, CC.4)		N/A
G.10	**Resistors** (IEC 60065, 14.2) & (IEC 60950-1, 1.5.7)		N/A
G.10.1	General requirements (IEC 60065, 14.2) & (IEC 60950-1, 1.5.7.1)	No such parts used as safeguard	N/A
G.10.2	Resistor test (IEC 60065, 14.2) & (IEC 60950-1, 1.5.7.2)		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable (IEC 60065, 14.2) & (IEC 60950-1, 1.5.7.3)		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test (IEC 60950-1, 1.5.7.3)		N/A
G.11	**Capacitor and RC units** (IEC 60065, 14.3) & (IEC 60950-1, 1.5.6)		N/A
G.11.1	General requirements (IEC 60065, 14.3.1) & (IEC 60950-1, 1.5.6)	None	N/A
G.11.2	Conditioning of capacitors and RC units (IEC 60065, 14.3.1) & (IEC 60950-1, 1.5.6)		N/A
G.11.3	Rules for selecting capacitors (IEC 60065, 14.3.2) & (IEC 60950-1, 1.5.6)		N/A
G.12	**Optocouplers**		N/A
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....: (IEC 60065, 14.12) & (IEC 60950-1, 2.10.5.4)	None	N/A
	Type test voltage Vini .....:		—
	Routine test voltage, Vini,b .....:		—
G.13	**Printed boards** (IEC 60065, 13.5) & (IEC 60950-1, 2.10.6)		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards (IEC 60065, 13.5.1) & (IEC 60950-1, 2.10.6.1)	V-0 flame rated	P
G.13.3	Coated printed boards (IEC 60065, 13.5.2) & (IEC 60950-1, 2.10.6.2)	None	N/A
G.13.4	Insulation between conductors on the same inner surface (IEC 60950-1, 2.10.6.3)	Functional insulation only	N/A
	Compliance with cemented joint requirements (Specify construction).....: (IEC 60065, 13.5.2, 13.6, 13.7) & (IEC 60950-1, 2.10.5.5)		—
G.13.5	Insulation between conductors on different surfaces (IEC 60065, 13.5.1) & (IEC 60950-1, 2.10.6.4)		N/A
	Distance through insulation.....:	(See appended table 5.4.4.5)	—
	Number of insulation layers (pcs) .....:		—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
G.13.6	Tests on coated printed boards (IEC 60065, 13.5.2) & (IEC 60950-1, 2.10.8)		N/A
G.13.6.1	Sample preparation and preliminary inspection (IEC 60950-1, 2.10.8.1)		N/A
G.13.6.2a)	Thermal conditioning (IEC 60950-1, 2.10.8.2)		N/A
G.13.6.2b)	Electric strength test (IEC 60950-1, 2.10.8.3)		N/A
G.13.6.2c)	Abrasion resistance test (IEC 60950-1, 2.10.8.4)		N/A
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements ..... : (IEC 60950-1, 2.10.7)	(See G.13)	—
G.15	**Liquid filled components**		N/A
G.15.1	General requirements	No such components	N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	**IC including capacitor discharge function (ICX)**		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours	No such components	N/A
b)	Impulse test using circuit 2 with Uc = to transient voltage .....:		—
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage .....:		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance .....:		—
D3)	Resistance .....:		—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		N/A
H.1	General (IEC 60950-1, M.1)	No TNV circuits	N/A
H.2	Method A (IEC 60950-1, M.2)		N/A
H.3	Method B (IEC 60950-1, M.3)		N/A
H.3.1	Ringing signal (IEC 60950-1, M.3.1)		N/A
H.3.1.1	Frequency (Hz) .....: (IEC 60950-1, M.3.1.1)		—
H.3.1.2	Voltage (V) .....: (IEC 60950-1, M.3.1.2)		—
H.3.1.3	Cadence; time (s) and voltage (V) .....: (IEC 60950-1, M.3.1.3)		—
H.3.1.4	Single fault current (mA):.....: (IEC 60950-1, M.3.1.4)		—
H.3.2	Tripping device and monitoring voltage .....: (IEC 60950-1, M.3.2)		—
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with (IEC 60950-1, M.3.2.1)		N/A
H.3.2.2	Tripping device (IEC 60950-1, M.3.2.2)		N/A
H.3.2.3	Monitoring voltage (V) .....: (IEC 60950-1, M.3.2.3)		—

J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		N/A
	General requirements (IEC 60065, Annex H) & (IEC 60950-1, Annex U)		N/A

K	**SAFETY INTERLOCKS**		N/A
K.1	General requirements (IEC 60065, 14.8) & (IEC 60950-1, 2.8.1, 2.8.2)	No safety interlocks	N/A
K.2	Components of safety interlock safeguard mechanism ..... (IEC 60950-1, 2.8.7)	(See Annex G)	—
K.3	Inadvertent change of operating mode (IEC 60950-1, 2.8.3)		N/A
K.4	Interlock safeguard override (IEC 60950-1, 2.8.6)		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
K.5	Fail-safe (IEC 60950-1, 2.8.4)		N/A
	Compliance .....:	(See appended table B.4)	—
K.6	Mechanically operated safety interlocks (IEC 60950-1, 2.8.5)		N/A
K.6.1	Endurance requirement (IEC 60950-1, 2.8.5)		N/A
K.6.2	Compliance and Test method .....: (IEC 60950-1, 2.8.5)		—
K.7	Interlock circuit isolation (IEC 60950-1, 2.8.7)		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) .....: (IEC 60950-1, 2.8.7.1, 2.8.7.3)		—
K.7.2	Overload test, Current (A) .....: (IEC 60950-1, 2.8.7.2)		—
K.7.3	Endurance test (IEC 60950-1, 2.8.7.3)		N/A
K.7.4	Electric strength test .....: (IEC 60950-1, 2.8.7.4)	(See appended table 5.4.11)	—

L	**DISCONNECT DEVICES**		N/A
L.1	General requirements (IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.1, 3.4.2)	None	N/A
L.2	Permanently connected equipment (IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.3)		N/A
L.3	Parts that remain energized (IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.4)		N/A
L.4	Single phase equipment (IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.6)		N/A
L.5	Three-phase equipment (IEC 60065, 8.18) & (IEC 60950-1, 3.4.7)		N/A
L.6	Switches as disconnect devices (IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.8)		N/A
L.7	Plugs as disconnect devices (IEC 60065, 5.5.3) & (IEC 60950-1, 3.4.9)	Mating DC connector	N/A
L.8	Multiple power sources (IEC 60950-1, 3.4.11)	No multiple power sources	N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		N/A
M.1	General requirements (IEC 60065, 5.5.2 c)) & (IEC 60950-1, 1.7.13)	No batteries	N/A
M.2	Safety of batteries and their cells (IEC 60065, 14.11.1) & (IEC 60950-1, 4.3.8)		N/A
M.2.1	Requirements (IEC 60950-1, 4.3.8)		N/A
M.2.2	Compliance and test method (identify method) .. : (IEC 60950-1, 4.3.8)		—
M.3	Protection circuits (IEC 60950-1, 4.3.8)		N/A
M.3.1	Requirements (IEC 60950-1, 4.3.8)		N/A
M.3.2	Tests (IEC 60950-1, 4.3.8)		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance .....: (IEC 60950-1, 4.3.8)	(See appended Tables and Annex M and M.4)	—
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature .....: (IEC 60065, 14.11.3)	(See Table M.4)	—
M.4.2.2 b)	Single faults in charging circuitry .....: (IEC 60065, 14.11.3)	(See Annex B.4)	—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests (IEC 60065, 14.11.5)		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) ..... :		—
M.6.2	Leakage current (mA) ..... :		—
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume *Vz* (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 (Determination of compliance: inspection, data review; or abnormal testing) ..... : (IEC 60065, 5.5.1)		—
N	**ELECTROCHEMICAL POTENTIALS**		N/A
	Metal(s) used ..... : (IEC 60065, Annex F) & (IEC 60950-1, Annex J)		—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		N/A
	Figures O.1 to O.20 of this Annex applied..... : (IEC 60065, Annex E) & (IEC 60950-1, Annex F)	Functional insulation only	—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

P	**SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS**		P
P.1	General requirements		P
P.2.2	Safeguards against entry of foreign object (IEC 60065, 9.1.3) & (IEC 60950-1, 4.6.1)	No Top or side openings	P
	Location and Dimensions (mm) .....:		—
P.2.3	Safeguard against the consequences of entry of foreign object	No openings	P
P.2.3.1	Safeguards against the entry of a foreign object (IEC 60950-1, 4.6.1, 4.6.4.3)		N/A
	Openings in transportable equipment	Not transportable equipment	N/A
	Transportable equipment with metalized plastic parts .....:		—
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) .....: (IEC 60950-1, 4.6.4.2, 4.6.4.3)		—
P.3	Safeguards against spillage of internal liquids	No liquids inside the unit.	N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing (IEC 60950-1, 4.6.5)		N/A
	Tc (°C).....:		—
	Tr (°C) .....:		—
	Ta (°C).....:		—
P.4.2 b)	Abrasion testing .....:	(See G.13.6.2)	—
P.4.2 c)	Mechanical strength testing .....:	(See Annex T)	—

Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		N/A
Q.1	Limited power sources (IEC 60950-1, 2.5)	Not a limited power source	N/A
Q.1.1 a)	Inherently limited output (IEC 60950-1, 2.5)		N/A
Q.1.1 b)	Impedance limited output (IEC 60950-1, 2.5)		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
Q.1.1 c)	Overcurrent protective device limited output (IEC 60950-1, 2.5)		N/A
Q.1.1 d)	IC current limiter complying with G.9 (IEC 60950-1, 2.5)	No IC current limiter	N/A
Q.1.2	Compliance and test method (IEC 60950-1, 2.5)		P
Q.2	Test for external circuits – paired conductor cable (IEC 60950-1, 6.3)	Not powering external circuit	N/A
	Maximum output current (A) .....:		—
	Current limiting method.....:		—
R	**LIMITED SHORT CIRCUIT TEST**		N/A
R.1	General requirements	No protective bonding conductor	N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)). .....:		—
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	V-0 material used.	N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure (IEC 60950-1, A.3)		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Conditioning (test condition), (°C) .....:		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A

T	**MECHANICAL STRENGTH TESTS**		N/A
T.1	General requirements	Unit is 24Vdc, 700mA max. No hazard detected.	N/A
T.2	Steady force test, 10 N .....: (IEC 60065, 13.3.1) & (IEC 60950-1, 4.2.2)	(See appended table T.2)	—
T.3	Steady force test, 30 N .....: (IEC 60065, 13.3.1) & (IEC 60950-1, 4.2.3)	No cover or door (See appended table T3)	—
T.4	Steady force test, 100 N .....: (IEC 60065, 9.1.7)	(See appended table T4)	—
T.5	Steady force test, 250 N .....: (IEC 60065, 9.1.7) & (IEC 60950-1, 4.2.4)	(See appended table T5)	—
T.6	Enclosure impact test (IEC 60065, 12.1.4) & (IEC 60950-1, 4.2.5)	(See appended table T6)	N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test .....: (IEC 60065, 12.1.5) & (IEC 60950-1, 4.2.6)	Stationary equipment (See appended table T7)	—
T.8	Stress relief test .....: (IEC 60065, 12.1.6) & (IEC 60950-1, 4.2.7)	Metal enclosure (See appended table T8)	—
T.9	Impact Test (glass) (IEC 60065, 19.6.1) & (IEC 60950-1, 4.2.5)	None	N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J).....:		—

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
	Height (m) .....:		—
T.10	Glass fragmentation test .....: (IEC 60065, 19.6.2)	(See sub-clause 4.4.4.9)	—
T.11	Test for telescoping or rod antennas (IEC 60065, 12.6)	No such antenna	N/A
	Torque value (Nm) .....:		—
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		N/A
U.1	General requirements (IEC 60065, 18.1) & (IEC 60950-1, 4.2.8)	No CRT	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs (IEC 60065, 18.2)		N/A
U.3	Protective Screen.....:	(See Annex T)	—
V	**DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)**		N/A
V.1	Accessible parts of equipment (IEC 60065, 9.1.1.3, 9.1.3, 9.1.4) & (IEC 60950-1, 1.7.2.5, 2.1.1.1, EE.5)	Class III	N/A
V.2	Accessible part criterion		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	TABLE: List of critical components				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1]
Enclosure	Crestron / Interchangeable	Metal enclosure	Metal enclosure measured 105mm (h) x 43mm (w) x 56mm (l)	IEC 62368-1 / IEC 60950-1. UL 94	Part of this evaluation UL
Power Supply	NetBit Electronics	NBS24J240075D5	100-240Vac, 50/60hz, 0.6A; Output: 24Vdc, 0.75A max.	IEC 60065:2014	TUV
DC connectors	Interchangeable	Interchangeable	Rated 50V, 1A. Flame rated V-0 min.	UL 94	UL
Ethernet connectors	Interchangeable	Interchangeable	Rated 125VAC, 1.25A. Flame rated V-0 min.	UL 94	UL
PCB	Interchangeable	Interchangeable	V-0 flame rated, 105°C rated	UL 94, UL 796	cURus

Supplementary information:

1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.

2) Description line content is optional. Main line description needs to clearly detail the component used for testing

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

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

4.8.5	**TABLE: Lithium coin/button cell batteries mechanical test result**		**N/A**
Test position	Surface tested	Force (N)	Duration force applied (s)
Supplementary information: No Lithium coin/button cell battery			

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

5.2	TABLE: Classification of electrical energy sources	P

5.2.2.2 – Steady State Voltage and Current conditions

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
1	24Vdc max.	Input power	Normal	DC 24	0.5	N/A	ES1
			Abnormal	DC 24	0.5	N/A	
			Single fault – SC/OC	DC 24	0.5	N/A	
			Normal	-	-		
			Abnormal	-	-		
			Single fault – SC/OC	-	-		

5.2.2.3 - Capacitance Limits

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

5.2.2.4 - Single Pulses

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

5.2.2.5 - Repetitive Pulses

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

Test Conditions:

Normal –

Abnormal -

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

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V)	24Vdc	24Vdc	Power over Ethernet	Power over Ethernet	—
	Ambient T_{min} (°C)	-	-	-	-	—
	Ambient T_{max} (°C)	-	-	-	-	—
	Tma (°C)	22.1	21.9	21.4	21.5	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
	Test #	Model: M201904003	Model: M201904002	Model: M201904003	Model: M201904002	
1	Power input PCB	55.7	29.4	56.7	30.1	105
2	Bottom PCB	45.2	28.3	44.7	28.4	105
3	Enclosure near DC input	37.2	26.9	38.2	27.3	70
4	Enclosure	42.3	25.3	43.4	25.7	70

Supplementary information: Test is performed on 11/13/2019 – 11/15/2019
Sample ID: ATL1910301052-003 and -004; Equipment used: 211680, 211465

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:
Note 1: Tma should be considered as directed by appliable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

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

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

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						N/A
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)[1]	Required cl (mm)	cl (mm) [2]	Required[3] cr (mm)	cr (mm)

Supplementary information: Powered by 12-24Vdc SELV input

Note 1: Only for frequency above 30 kHz
Note 2: See table 5.4.2.4 if this is based on electric strength test

Note 3: Provide Material Group

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage	N/A
	Overvoltage Category (OV) ..... :	
	Pollution Degree..... :	

Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)

Supplementary information:

Powered by 24Vdc SELV input

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

Supplementary information:

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

Supplementary information:

5.4.9	TABLE: Electric strength tests			N/A
Test voltage applied between:	Voltage shape (~~AC,~~ DC)	Test voltage (V)	Breakdown Yes / No	
Functional:				
Between input and metal enclosure	-	-	-	
Between input and Ethernet enclosure	-	-	-	

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.9	TABLE: Electric strength tests			N/A
Test voltage applied between:		Voltage shape (~~AC,~~ DC)	Test voltage (V)	Breakdown Yes / No
Basic/supplementary:		-	-	-
-		-	-	-
Reinforced:		-	-	-
-		-	-	-
Routine Tests:		-	-	-
-		-	-	-

Supplementary information:

Due to the nature of the unit powering and no hazard generated with the unit electrical components shorting to Chassis, no Di-electric isolation required and thus no testing conducted.

5.5.2.2	TABLE: Stored discharge on capacitors				N/A
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification

Supplementary information:

X-capacitors installed for testing are:

☐ bleeding resistor rating:

☐ ICX:

Notes:

A. Test Location:

Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth

B. Operating condition abbreviations:

N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition

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

Supplementary information:

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part		N/A
Supply voltage .....:			—
Location		Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1	Touch current (mA)

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

	through 6.2.2.8, except for 6.2.2.7	
	1	
	2*	
	3	

Supplementary Information: No PE connection, Class III

Notes:
[1] Supply voltage is the anticipated maximum Touch Voltage

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

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

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

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

6.2.2	TABLE: Electrical power sources (PS) measurements for classification				P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s*)	PS Classification
A	Power input	Power (W) .....:	Less than 15W	Less than 15W -	PS1
		VA (V).....:	24.0	24.0	
		IA (A) .....:	0.5A	0.5A	
B	I/O ports	Power (W) .....:	-	-	PS1
		VA (V).....:	-	-	
		IA (A) .....:	-	-	
C		Power (W) .....:			
		VA (V).....:			
		IA (A) .....:			
D		Power (W) .....:			
		VA (V).....:			
		IA (A) .....:			

Supplementary Information:

Unit is powered by Crestron network, tested on 2019-09-18

Equipment used: 211680

I/O ports: Normal Ethernet Voltage and Current present. Within PS1 limits. Power not to exceed 5VA at 5Vdc.

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

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.3.1	TABLE: Determination of Potential Ignition Sources (Arcing PIS)				N/A
Location		Open circuit voltage After 3 s (Vp)	Measured r.m.s current (Irms)	Calculated value (V_p x I_{rms})	Arcing PIS? Yes / No

Supplementary information:

Class III powered by reinforced insulated power source

An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15.

6.2.3.2	TABLE: Determination of Potential Ignition Sources (Resistive PIS)					P
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No	
All internal circuits	Normal	<15	<15	-	Yes	

Supplementary Information:

Tested on 2019-11-15
Equipment used: 211680

A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.

If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.

A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.

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

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

B.2.5	TABLE: Input test						N/A
U (Vdc)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
20Vdc	0.51	0.75	-	-	-	-	Model M201904002. Unit is continuous communication mode and in normal condition. Unit with 4 USB port used. Worst case model measured/tested.
24Vdc	0.43	0.75	-	-	-	-	
28Vdc	0.37	0.75	-	-	-	-	

Supplementary information:
Test performed on 2019-11-13. (This Testing for reference purpose only)

Equipment used: 211680
Equipment may be have rated current or rated power or both. Both should be measured

B.3	TABLE: Abnormal operating condition tests								P
Ambient temperature (°C) .....:									—
Power source for EUT: Manufacturer, model/type, output rating .:									—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation	
Enclosure openings	Blocked all vents	24Vdc	1hrs	-	-	Same location ad Regular temp test	58.2C max at 21.9 Ambient	Temperature stabilized, no hazard	

Supplementary information: Class III

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.

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

B.3.2	TABLE: Temperature measurements					P
	Supply voltage (V) ..... :	28Vdc	-	-	-	—
	Ambient T_{min} (°C) ..... :	-	-	-	-	—
	Ambient T_{max} (°C) ..... :	-	-	-	-	—
	Tma (°C) ..... :	21.9	-	-	-	—

Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
	Test #	Blocked Vents				
1	Power input PCB	60.7				105
2	Bottom PCB	49.2				105
3	Enclosure near DC input	42.2				105
4	Enclosure	48.3				70

Supplementary information: Test is performed on 11/13/2019 – 11/15/2019
Sample ID: ATL1910301052-003 and -004; Equipment used: 211680, 211465

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:
Note 1: Tma should be considered as directed by appliable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

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

Supplementary information:
Class III

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

Annex M	**TABLE: Batteries**		N/A
The tests of Annex M are applicable only when appropriate battery data is not available			N/A
Is it possible to install the battery in a reverse polarity position? .....:		No	N/A

	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition	-	-	-	-	-	-	-	-	-
Max. current during fault condition	-	-	-	-	-	-	-	-	-

Test results:		Verdict
- Chemical leaks		
- Explosion of the battery		
- Emission of flame or expulsion of molten metal		
- Electric strength tests of equipment after completion of tests		

Supplementary information:

No batteries

Annex M.4	**TABLE: Additional safeguards for equipment containing secondary lithium batteries**	N/A

Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp (C)	
Charging Circuit Faults:					
Supplementary Information: Certified battery pack in V-0 enclosure					

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

Supplementary Information:

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

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

T.2, T.3, T.4, T.5	**TABLE: Steady force test**				**N/A**
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
Supplementary information:					

T.6, T.9	**TABLE: Impact tests**			**N/A**
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation
Supplementary information:				

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

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

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

List of test equipment used:

Equipment Id	Equipment	Last Cal. Date	Cal. Due date
211680	Digital Multimeter	04/17/2019	04/17/2020
211465	Thermometer	04/24/2019	04/24/2020
*VBU – Verify before use *ICO – Initial Calibration only			

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

Attachment 1 - National Differences

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 62368-1:2014+A11:2017

Attachment Form No. ..... : EU_GD_IEC62368_1B_II

Attachment Originator..... : Nemko AS

Master Attachment..... : Date 2017-09-22

	CENELEC COMMON MODIFICATIONS (EN)		P
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z".		P
CONTENTS	**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		Added
	Delete all the "country" notes in the reference document (IEC 62368-1:2014) according to the following list:		Deleted
	For special national conditions, see Annex ZB.		P
1	**Add** the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.	Added, the client is responsible to comply with applicable EU directive, not part of this evaluation	N/A

0.2.1	Note	1	Note 3	4.1.15	Note
4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c
5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note
5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3
5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4
10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	**Add** the following new subclause after 4.9: 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): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; 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. 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.	Class III, powered by SELV power	N/A
5.4.2.3.2.4	**Add** the following to the end of this subclause: The requirement for interconnection with **external circuit** is in addition given in EN 50491-3:2009.		N/A
10.2.1	Add the following to [c] and [d] in table 39: For additional requirements, see 10.5.1.	Added	N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	**Add** the following after the first paragraph: *For RS 1 compliance is checked by measurement under the following conditions:* *In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or presets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.* NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. *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.* *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.* *For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.* NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.		N/A
10.6.1	**Add** the following paragraph to the end of the subclause: EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.	Not a personnel music player	N/A
10.Z1	**Add** the following new subclause after 10.6.5. **10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz** The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566		N/A
G.7.1	**Add** the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
Bibliography	**Add** the following standards: **Add** the following notes for the standards indicated: IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.		Added
ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		P
4.1.15	**Denmark, Finland, Norway** and **Sweden** To the end of the subclause the following is added: **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. The marking text in the applicable countries shall be as follows: In **Denmark**: “Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.” In **Finland**: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In **Norway**: “Apparatet må tilkoples jordet stikkontakt” In **Sweden**: “Apparaten skall anslutas till jordat uttag”	Class III	N/A
4.7.3	**United Kingdom** To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.2	**Denmark** After the 2nd paragraph add the following: 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.	Class III	N/A
5.4.11.1 and Annex G	**Finland and Sweden** To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either • 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. 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 • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5kV. It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: • 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; 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.	Class III	N/A
5.5.2.1	**Norway** After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.6	**Finland, Norway** and **Sweden** To the end of the subclause the following is added: 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.	Class III	N/A
5.6.1	**Denmark** **Add** to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. *Justification:* In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.	No socket-outlets	N/A
5.6.4.2.1	**Ireland and United Kingdom** After the indent for **pluggable equipment type A**, the following is added: – the **protective current rating** is taken to be 13 A, this being the largest rating of fuse used in the **mains** plug.	Class III	N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm^2 to 1,5 mm^2 in cross-sectional area.	No direct connected to mains	N/A
5.7.5	**Denmark** To the end of the subclause the following is added: 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.	Class III, no PE connection	N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.1	**Norway and Sweden** To the end of the subclause the following is added: The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)” 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. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.” Translation to Swedish: ”Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.	Not a television distribution system	N/A
5.7.6.2	**Denmark** To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .	Class III	N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
B.3.1 and B.4	**Ireland and United Kingdom** The following is applicable: 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	Not direct plug-in equipment	N/A
G.4.2	**Denmark** To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a *Justification:* Heavy Current Regulations, Section 6c	No direct connected to mains	N/A
G.4.2	**United Kingdom** To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.	Not a direct plug-in equipment	N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	**United Kingdom** To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	No direct connected to mains	N/A
G.7.1	**Ireland** To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard	No direct connected to mains	N/A
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 direct connected to mains	N/A
ZC	**ANNEX ZC, NATIONAL DEVIATIONS (EN)**		P
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. *Justification:* 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 CRT	N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1
DENMARK NATIONAL DIFFERENCES

Audio/video, information and communication technology equipment –

Part 1: Safety requirements

Differences according to.....:	DS/EN 62368-1:2014
Attachment Form No. .....:	DK_ND_IEC62368_1B
Attachment Originator .....:	UL (Demko)
Master Attachment .....:	2014-10

	National Differences		P
4.1.15	To the end of the subclause the following is added: 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. The marking text in the applicable countries shall be as follows: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord."	Class III	N/A
5.2.2.2	After the 2nd paragraph add the following: 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.	Class III	N/A
5.6.1	Add to the end of the subclause: Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. Justification: In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.	None	N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.5	To the end of the subclause the following is added: 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.	Class III	N/A
5.7.6.2	To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA.	Class III	N/A
G.4.2	To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a Justification: Heavy Current Regulations, Section 6c	No direct connected to mains	N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 2th Ed.
U.S.A. NATIONAL DIFFERENCES

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

Differences according to.....: CSA/UL 62368-1:2014

Attachment Form No. .....: US&CA_ND_IEC623681B

Attachment Originator .....: UL(US)

Master Attachment .....: Date 2015-06

IEC 62368-1 - US and Canadian National Differences Special National Conditions based on Regulations and Other National Differences			
1.1	All equipment is to be designed to allow installation according to the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, 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.		P
1.4	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.	No such equipment	N/A
4.1.17	For lengths exceeding 3.05 m, external interconnecting flexible cord and 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 flexible cord and cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		N/A
4.8	Lithium coin / button cell batteries have modified special construction and performance requirements.	None	N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.5, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment	Class III	N/A
5.7.7	Equipment intended to receive telecommunication ringing signals complies with a special touch current measurement tests.	No TNV	N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
6.5.1	PS3 wiring outside a fire enclosure complies with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A
Annex F (F.3.3.8)	Output terminals provided for supply of other equipment, except mains, supply are marked with a maximum rating or references to which equipment it is permitted to be connected.	None	N/A
Annex G (G.7.1)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	No permanent connection	N/A
Annex G (G.7.3)	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	Not direct connected to mains	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.		N/A
Annex G (G.7.5)	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.		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 TNV	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.	No TNV	N/A
Annex M	Battery packs for stationary applications comply with special component requirements.	No battery pack	N/A
Annex DVA (1)	Equipment intended for use in spaces used for environmental air are subjected to special flammability requirements for heat and visible smoke release.	Not used in such environment	N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m^3 (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		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. & Canadian Regulations.		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
	Baby monitors additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
Annex DVA (5.6.3)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		N/A
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.	No flammable liquid	N/A
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) 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 min. flammability classification of V-1.	Not for ITE room application	N/A
Annex DVA (10.3.1)	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (10.5.1)	Equipment that produces ionizing radiation complies with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (F.3.3.3)	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 are lower than the “Normal Operating Condition” in Table 2 of CAN/CSA C22.2 No. 235.”		N/A
Annex DVA (F.3.3.5)	Equipment identified for ITE (computer) room installation is marked with the rated current		N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position		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.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles complies with NEC 250.146(D) and CEC 10-112 and 10-906(8).		N/A
Annex DVA (G.4.3)	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.		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.	Not a power distribution transformer	N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
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 such device	N/A
Annex DVA (Annex M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the ITE room remote power-off circuit.	Not for ITE room application	N/A
Annex DVA (Q)	Wiring terminals intended to supply Class 2 outputs according to the NEC or CEC Part 1are marked with the voltage rating and “Class 2” or equivalent; marking is located adjacent to the terminals and visible during wiring.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.	Not intended for mounting under kitchen cabinets	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 have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. Components required to comply include: appliance couplers, attachment plugs, battery back-up systems, battery packs, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultra-capacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, data storage equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.		N/A
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.	No direct connected to mains	N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are in accordance with the NEC/CEC.		N/A
Annex DVH (DVH.3.2)	Terminals for permanent wiring, including protective earthing terminals, are suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and are specially marked when specified.		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.3.2)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm^2).		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
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, complies with special earthing, wiring, marking and installation instruction requirements.		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.		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.		N/A

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2

Attachment 2 - Photos

Photo 1 – External view Model M201904003

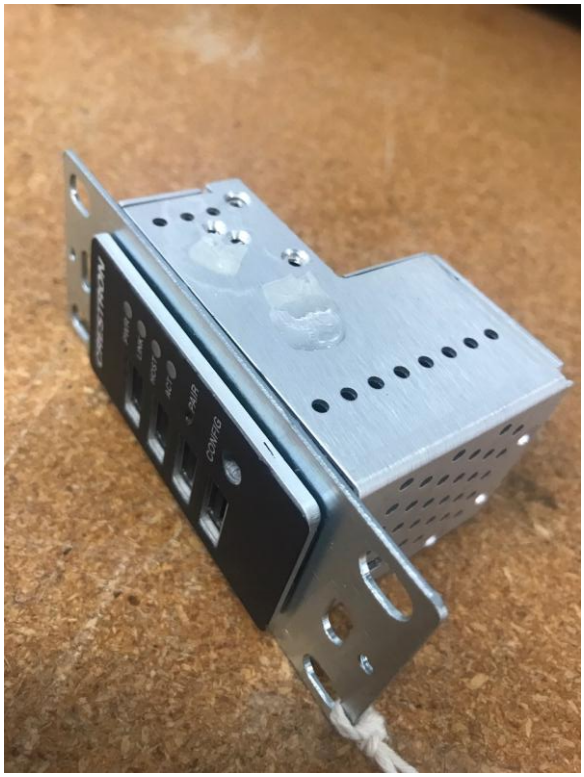


Photo 2 – External view Model M201904003

Photo 3 – Rear view Model M201904003

Photo 4 – Internal View Model M201904003

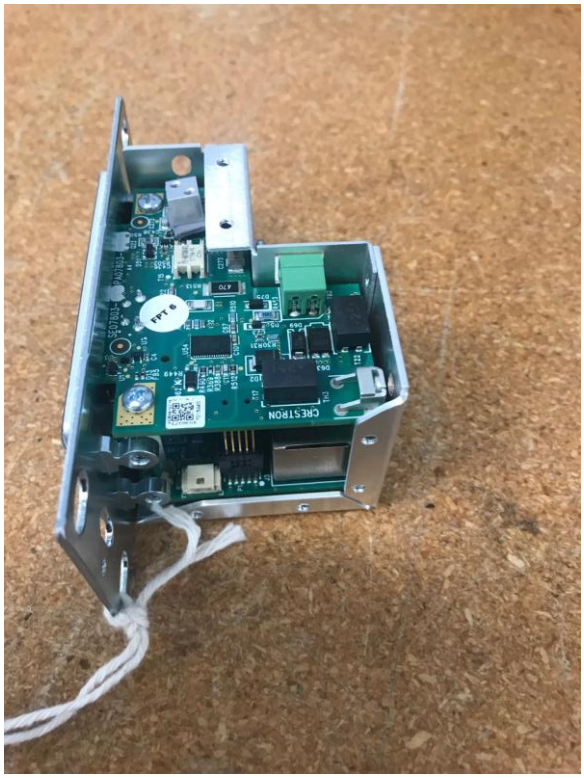


Photo 5 – External view Model M201904003 (Alternate SKU and construction)

Photo 6 – External view Model M201904002 (Alternate SKU and construction)

Photo 7 – External view Model M201904002 (Alternate SKU and construction)

IEC 62368-1 (ed.2) & IEC 60065 (ed.8) & IEC 60950-1 (ed.2), am1; am2

Attachment 3 – External Class II power adaptor CB certificate

IEC IECEE CB SCHEME

Ref. Certif. No.

SG PSB-TN-00660

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

CB TEST CERTIFICATE

Product	Adaptors (AC Adapter)
Name and address of the applicant	NetBit Electronics Ltd. Unit 1602, 16th floor, Malaysia Building, 50 Gloucester Road, Wanchai, Hong Kong
Name and address of the manufacturer	NetBit Electronics Ltd. Unit 1602, 16th floor, Malaysia Building, 50 Gloucester Road, Wanchai, Hong Kong
Name and address of the factory	Dongguan NB Power Electronic Limited No.365, South Dongkeng Road, Dongkeng Town, 523443 Dongguan City, PEOPLE'S REPUBLIC OF CHINA
Ratings and principal characteristics	Rated Input : 100-240VAC or 100-120VAC or 200-240VAC, 50/60Hz, 0.6A Rated Output : See test report for details Protection Class : II Degree of Protection : IP20
Model/type Ref.	NBS24JxxxyyyHz, NBS24JxxxyyyVz, NBS24JxxxyyyM2, NBS24JxxxyyyD5 (See test report for details of model description)
Additional information (if necessary)	See Test Report for National Differences and Group Differences
A sample of the product was tested and found to be in conformity with	IEC 60065:2014
as shown in the Test Report Ref. No. which forms part of this certificate	TÜV SÜD PSB Pte Ltd 085-150090002-000

This CB Test Certificate is issued by the National Certification Body

Date, 2017-10-02
CBS 17 09 73014 501

(Johan Chung)

TÜV SÜD PSB Pte Ltd · 1 Science Park Drive · Singapore 118221

PSB Singapore

CB-1 03.06

Page 1 of 2

---------- END OF REPORT ----------