Test Report issued under the responsibility of:

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

Report Number .....:	SHES250601180001
Date of issue .....:	2025-07-03
Total number of pages.....:	69 pages
Name of Testing Laboratory preparing the Report .....:	SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
Applicant's name.....:	Hangzhou Hikvision Digital Technology Co., Ltd.
Address .....:	No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China
Test specification:	
Standard.....:	IEC 62368-1:2014
Test procedure .....:	CB Scheme
Non-standard test method .....:	N/A
TRF template used .....:	IECEE OD-2020-F1:2021, Ed.1.4
Test Report Form No.....:	IEC62368_1D
Test Report Form(s) Originator ..:	UL(US)
Master TRF.....:	Dated 2022-04-14

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

General disclaimer:

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

Test Item description ..... :		Network Video Recorder	
Trade Mark(s) ..... :		HIKVISION	
Manufacturer..... :		Same as applicant	
Model/Type reference ..... :		See page 8-9	
Ratings ..... :		100-240 Va.c., 50/60 Hz, 2,10 A; Class I	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.	
Testing location/ address ..... :		588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China.	
Tested by (name, function, signature) ..... :		Leo Wang Project Engineer	
Approved by (name, function, signature) ..... :		Emilien Li Reviewer	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Approved by (name, function, signature) ..... :			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Witnessed by (name, function, signature) ..... :			
Approved by (name, function, signature) ..... :			
☐	**Testing procedure: CTF Stage 3 :**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Witnessed by (name, function, signature) ..... :			
Approved by (name, function, signature) ..... :			
Supervised by (name, function, signature) ..... :			

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

Attachment 1 – 27 pages of Photos documentation;
Attachment 2 – 10 pages of European group differences and national differences;
Attachment 3 – 1 page of Safety information.

Summary of testing:

The sample(s) tested complies with the requirements of IEC 62368-1: 2014 (Second Edition) and EN 62368-1:2014+A11:2017.

Unless otherwise specified, the EUT with model DS-9664NXI-I8/VPro (System DC fan: EFC-08E12M, CPU DC fan: MGA4012LB-O15) were selected as representative model for full testing. Due to the different main board, we choose model DS-8664NXI-I8/VPro as representative model for part testing:

B.2.5 Input test

5.4.1.4 & 9.2.6 Temperature measurements

6.4 (B.3-B.4) Single fault conditions

M.3 Tests for protection circuits for batteries provided within the equipment

Q.1 LPS

Max load condition: USB 2,0 each load 0,5A, USB 3,0 each load 0,9A, DC12V output1(9A) load 0,5A, Another DC12V output2(9B) load 1,0A, 8T HHD*8 (Manufacture: SEAGATE, model name: ST8000VX0002)

Heating test:
Tma = 55°C (declared by manufacturer)

K-type thermocouple used for temperature measurement.

Tests performed (name of test and test clause):

☒ 4. General requirements
☒ 5. Electrically-caused injury
☒ 6. Electrically-caused fire
☒ 7. Injury caused by hazardous substances
☒ 8. Mechanically-caused injury
☒ 9. Thermal burn injury
☒10. Radiation
☒ Annex B. Normal operating condition tests, abnormal operating condition tests and single fault condition tests
☒ Annex F.3.9. Performance of Marking test
☒ Annex M Equipment containing batteries and their protection circuits
☒ Annex Q. Limited Power Source
☒ Annex T. Mechanical strength tests
☒ Annex V. Determination of accessible parts

Testing location:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China.

Summary of compliance with National Differences (List of countries addressed):

1. EU Group Differences (EN 62368-1:2014+A11:2017)
2. EU Special National Conditions, EU A-deviations: DE, DK, FI, GB, IE, NO, SE

Explanation of used codes: DE=Germany, DK=Denmark, FI=Finland, GB= United Kingdom, IE=Ireland, NO=Norway, SE=Sweden

☒ **The product fulfils the above requirements of EN 62368-1:2014+A11:2017.**

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

☒ No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").

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

Information on uncertainty of measurement:

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

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

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

Copy of marking plate:

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

Marking for model DS-9664NXI-I8/VPro

Marking for model DS-8664NXI-I8/VPro

Remark:

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

TEST ITEM PARTICULARS:	
Classification of use by..... :	☒ 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%/-15% ☐ +____%/ -_____% ☐ 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: Not directly connected to mains
Considered current rating of protective device as part of building or equipment installation .....:	☒ 20 A for or North America; ☒ 16 A for other markets except North America 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: Not directly connected to mains
Class of equipment .....:	☒ Class I ☐ Class II ☐ Class III ☐ Class II with functional earthing ☐ Not classifed
Access location .....:	☐ restricted access location ☒ N/A
Pollution degree (PD) .....:	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified maxium operating ambient.....:	55 °C
IP protection class .....:	☒ IPX0 ☐ IP___
Power Systems .....:	☒ TN ☒ TT ☐ IT - ____ $V_{L-L;}$ ☐ dc mains ☐ N/A
Altitude during operation (m) .....:	☒ 2000 m or less ☐ 5000 m
Altitude of test laboratory (m) .....:	☒ 2000 m or less ☐ 100 m

Mass of equipment (kg) .....:	☒ DS-9664NXI-I8/VPro: Approx. 9,83 kg for EUT, 0,77kg*8 for HDD DS-8664NXI-I8/VPro with alternative main board: 8,64kg
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 .....:	2025-06-27
Date (s) of performance of tests .....:	2025-06-27 to 2025-07-01
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 document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.	
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** Factory declaration letter.pdf, dated 2023-01-04.
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) .....:	1. Hangzhou Hikvision Technology Co., Ltd. No. 700, Dongliu Road, Binjiang District, Hangzhou City, Zhejiang, 310052, China 2. Hangzhou Hikvision Electronics Co., Ltd. No. 299, Qiushi Road, Tonglu Economic Development Zone, Tonglu County, Hangzhou, Zhejiang, 311500, China 3. Chongqing Hikvision technology Co., Ltd. No. 118, Haikang Road, Area C, Jianqiao Industrial Park, Dadukou District, Chongqing, 401325, China

GENERAL PRODUCT INFORMATION:

Product Description –

Functions	The equipment under test is a Class I Network Video Recorder which powered by certified built-in power supply.
Material of enclosure	Metal & plastic
Other features	Indoor use only

Model list:

DS-9616NXI-I8/VPro	DS-9616NXI-I8/VProUHK	DS-9616NXI-I8/VProCKV
DS-9616NXI-I8/VProUVS	DS-9616NXI-I8/VProKVO	DS-9616NXI-I8/VProHUN
DS-9616NXI-I8/VPro/EDU	DS-9616NXI-I8/VPro/RTL	DS-9616NXI-I8/VPro/NRG
DS-9616NXI-I8/VPro/LGX	DS-9616NXI-I8/VPro/MFG	DS-9616NXI-I8/VPro/RMS
DS-9632NXI-I8/VPro	DS-9632NXI-I8/VProUHK	DS-9632NXI-I8/VProCKV
DS-9632NXI-I8/VProUVS	DS-9632NXI-I8/VProKVO	DS-9632NXI-I8/VProHUN
DS-9632NXI-I8/VPro/EDU	DS-9632NXI-I8/VPro/RTL	DS-9632NXI-I8/VPro/NRG
DS-9632NXI-I8/VPro/LGX	DS-9632NXI-I8/VPro/MFG	DS-9632NXI-I8/VPro/RMS
DS-9664NXI-I8/VPro	DS-9664NXI-I8/VProUHK	DS-9664NXI-I8/VProCKV
DS-9664NXI-I8/VProUVS	DS-9664NXI-I8/VProKVO	DS-9664NXI-I8/VProHUN
DS-9664NXI-I8/VPro/EDU	DS-9664NXI-I8/VPro/RTL	DS-9664NXI-I8/VPro/NRG
DS-9664NXI-I8/VPro/LGX	DS-9664NXI-I8/VPro/MFG	DS-9664NXI-I8/VPro/RMS
DS-8616NXI-I8/VPro	DS-8616NXI-I8/VProUHK	DS-8616NXI-I8/VProCKV
DS-8616NXI-I8/VProUVS	DS-8616NXI-I8/VProKVO	DS-8616NXI-I8/VProHUN
DS-8616NXI-I8/VPro/EDU	DS-8616NXI-I8/VPro/RTL	DS-8616NXI-I8/VPro/NRG
DS-8616NXI-I8/VPro/LGX	DS-8616NXI-I8/VPro/MFG	DS-8616NXI-I8/VPro/RMS
DS-8632NXI-I8/VPro	DS-8632NXI-I8/VProUHK	DS-8632NXI-I8/VProCKV
DS-8632NXI-I8/VProUVS	DS-8632NXI-I8/VProKVO	DS-8632NXI-I8/VProHUN
DS-8632NXI-I8/VPro/EDU	DS-8632NXI-I8/VPro/RTL	DS-8632NXI-I8/VPro/NRG
DS-8632NXI-I8/VPro/LGX	DS-8632NXI-I8/VPro/MFG	DS-8632NXI-I8/VPro/RMS
DS-8664NXI-I8/VPro	DS-8664NXI-I8/VProUHK	DS-8664NXI-I8/VProCKV
DS-8664NXI-I8/VProUVS	DS-8664NXI-I8/VProKVO	DS-8664NXI-I8/VProHUN
DS-8664NXI-I8/VPro/EDU	DS-8664NXI-I8/VPro/RTL	DS-8664NXI-I8/VPro/NRG
DS-8664NXI-I8/VPro/LGX	DS-8664NXI-I8/VPro/MFG	DS-8664NXI-I8/VPro/RMS
DS-9664NXI-I8/S	DS-9664NXI-I8/SUHK	DS-9664NXI-I8/SCKV
DS-9664NXI-I8/SUVS	DS-9664NXI-I8/SKVO	DS-9664NXI-I8/SHUN
DS-9664NXI-I8/S/EDU	DS-9664NXI-I8/S/RTL	DS-9664NXI-I8/S/NRG
DS-9664NXI-I8/S/LGX	DS-9664NXI-I8/S/MFG	DS-9664NXI-I8/S/RMS
DS-9632NXI-I8/S	DS-9632NXI-I8/SUHK	DS-9632NXI-I8/SCKV
DS-9632NXI-I8/SUVS	DS-9632NXI-I8/SKVO	DS-9632NXI-I8/SHUN
DS-9632NXI-I8/S/EDU	DS-9632NXI-I8/S/RTL	DS-9632NXI-I8/S/NRG
DS-9632NXI-I8/S/LGX	DS-9632NXI-I8/S/MFG	DS-9632NXI-I8/S/RMS
DS-9616NXI-I8/S	DS-9616NXI-I8/SUHK	DS-9616NXI-I8/SCKV
DS-9616NXI-I8/SUVS	DS-9616NXI-I8/SKVO	DS-9616NXI-I8/SHUN
DS-9616NXI-I8/S/EDU	DS-9616NXI-I8/S/RTL	DS-9616NXI-I8/S/NRG
DS-9616NXI-I8/S/LGX	DS-9616NXI-I8/S/MFG	DS-9616NXI-I8/S/RMS
DS-8664NXI-I8/S	DS-8664NXI-I8/SUHK	DS-8664NXI-I8/SCKV
DS-8664NXI-I8/SUVS	DS-8664NXI-I8/SKVO	DS-8664NXI-I8/SHUN
DS-8664NXI-I8/S/EDU	DS-8664NXI-I8/S/RTL	DS-8664NXI-I8/S/NRG
DS-8664NXI-I8/S/LGX	DS-8664NXI-I8/S/MFG	DS-8664NXI-I8/S/RMS
DS-8632NXI-I8/S	DS-8632NXI-I8/SUHK	DS-8632NXI-I8/SCKV

DS-8632NXI-I8/SUVS	DS-8632NXI-I8/SKVO	DS-8632NXI-I8/SHUN
DS-8632NXI-I8/S/EDU	DS-8632NXI-I8/S/RTL	DS-8632NXI-I8/S/NRG
DS-8632NXI-I8/S/LGX	DS-8632NXI-I8/S/MFG	DS-8632NXI-I8/S/RMS
DS-8616NXI-I8/S	DS-8616NXI-I8/SUHK	DS-8616NXI-I8/SCKV
DS-8616NXI-I8/SUVS	DS-8616NXI-I8/SKVO	DS-8616NXI-I8/SHUN
DS-8616NXI-I8/S/EDU	DS-8616NXI-I8/S/RTL	DS-8616NXI-I8/S/NRG
DS-8616NXI-I8/S/LGX	DS-8616NXI-I8/S/MFG	DS-8616NXI-I8/S/RMS

Model Differences –

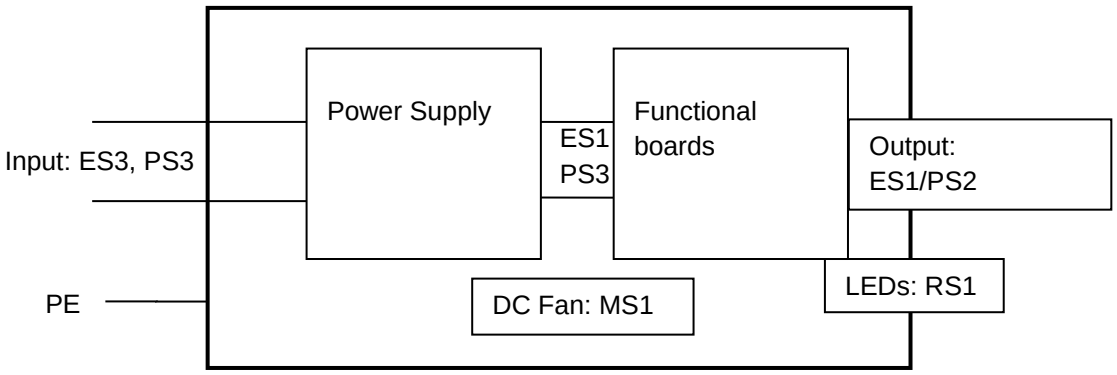
All models are identical except for model name, internal back board, front panel and main board.
86 series models don't have internal back board of HDD, 96 series models have it. The two series models have different main board and front panel, details see photo attachment.

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

N/A

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.	
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)**
Power input	ES3
Internal Power Supply primary circuits	ES3
Secondary internal circuits	ES1
All accessible parts	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)**
Power input	PS3
All internal circuits	PS3
Output terminals	PS2
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**
Lithium coin battery	Lithium-ion
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)**
Sharp edges and corners	MS1
Equipment mass	MS2
DC Fan	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 parts	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)**
LEDs as indicators	RS1

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



Enclosure: ES1, MS1, TS1
Mass: MS2

■ **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
Ordinary person	ES3: Power Supply primary circuits	Basic Insulation	Protective Earthing	Enclosure
Ordinary person	ES1: Secondary internal circuits	N/A	N/A	N/A
Ordinary person	ES1: Enclosure	N/A	N/A	N/A
Ordinary person	ES1: Output port	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Internal combustible materials	PS3: Internal circuits	1. No ignition occurred. 2. No parts exceeding 90% of its spontaneous ignition temperature. 3. combustible material outside fire enclosure is of min HB	1. PCB is of min V-1 material 2. All other components were mounted on min V-1 PCB or of min V-2 or small parts of combustible material less than 4g. 3. Fire enclosure provided	N/A
Output port	PS2: Output terminals	1. No ignition occurred. 2. No parts exceeding 90% of its spontaneous ignition temperature. 3. combustible material outside fire enclosure is of min	1. PCB is of min V-1 material 2. All other components were mounted on min V-1 PCB or of min V-2 or small parts of combustible material less than 4g.	N/A

		HB		
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
Lithium coin battery	Lithium-ion	N/A	N/A	Comply with Clause M
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3: High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary person	MS1: Sharp edges and corners	N/A	N/A	N/A
Ordinary person	MS2: Equipment mass	N/A	N/A	Complies with Clause 8.6
Ordinary person	MS1: DC Fan	N/A	N/A	Complies with Clause 8.5
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary person	TS1: Accessible parts	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary person	RS1: LEDs as indicators	N/A	N/A	N/A
Supplementary Information: (1) See attached energy source diagram for additional details. (2) “N” – Normal Condition; “A” – Abnormal Condition; “S” Single Fault				

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

4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of this standard and the relevant component standard. Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of this standard.	P
4.1.3	Equipment design and construction		P
4.1.15	Markings and instructions.....:	(See Annex F)	P
4.4.4	Safeguard robustness		P
4.4.4.2	Steady force tests.....:	(See Annex T.5)	P
4.4.4.3	Drop tests .....:		N/A
4.4.4.4	Impact tests .....:	(See Annex T.6)	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....:		N/A
4.4.4.6	Glass Impact tests .....:		N/A
4.4.4.7	Thermoplastic material tests.....:	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard.....:	(See Annex T)	P
4.4.4.9	Accessibility and safeguard effectiveness		P
4.5	Explosion	No explosion.	P
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard		P
4.6.2	10 N force test applied to .....:		N/A
4.7	Equipment for direct insertion into mains socket - outlets	Not such equipment.	N/A
4.7.2	Mains plug part complies with the relevant standard.....:		N/A
4.7.3	Torque (Nm) .....:		N/A
4.8	Products containing coin/button cell batteries	Professional equipment, and the battery is not intended to be replaced by end user.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction	No such construction	N/A
	Means to reduce the possibility of children removing the battery.....:		—
4.8.4	Battery Compartment Mechanical Tests .....:		N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object.....:	(See Annex P)	P
5	**ELECTRICALLY-CAUSED INJURY**		P
5.2.1	Electrical energy source classifications.....:	Approved internal power supply	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current.....:	Approved internal power supply	P
5.2.2.3	Capacitance limits .....:	Approved internal power supply	P
5.2.2.4	Single pulse limits .....:		N/A
5.2.2.5	Limits for repetitive pulses .....:		N/A
5.2.2.6	Ringing signals .....:		N/A
5.2.2.7	Audio signals .....:		N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
5.3.2.2	Contact requirements		P
	a) Test with test probe from Annex V.....:	No bare parts at ES2 or ES3 or ES3 basic safeguard could be accessed by operator.	P
	b) Electric strength test potential (V) .....:		N/A
	c) Air gap (mm) .....:	More than 2mm.	P
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Humidity conditioning .....:	Approved internal power supply	P
5.4.1.4	Maximum operating temperature for insulating materials .....:	Approved internal power supply	P
5.4.1.5	Pollution degree .....:	2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage	Approved internal power supply.	P
5.4.1.9	Insulating surfaces		N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		P
5.4.1.10.2	Vicat softening temperature ..... :		N/A
5.4.1.10.3	Ball pressure ..... :	No thermoplastic parts.	N/A
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage	Refer to Internal approved power supply. Fully wrapped built-in certified power supply, without exposed primary circuit.	P
5.4.2.3	Determining clearance using required withstand voltage ..... :	Refer to Internal approved power supply. Fully wrapped built-in certified power supply, without exposed primary circuit.	P
	a) a.c. mains transient voltage ..... :	2500	—
	b) d.c. mains transient voltage ..... :	No such transient	—
	c) external circuit transient voltage ..... :	No such transient	—
	d) transient voltage determined by measurement ..... :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A
5.4.2.5	Multiplication factors for clearances and test voltages ..... :		N/A
5.4.3	Creepage distances ..... :	Refer to Internal approved power supply. Fully wrapped built-in certified power supply, without exposed primary circuit.	P
5.4.3.1	General		P
5.4.3.3	Material Group ..... :	IIIb	—
5.4.4	Solid insulation	Approved internal power supply.	P
5.4.4.2	Minimum distance through insulation ..... :	Approved internal power supply.	P
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material	Approved internal power supply.	P
5.4.4.6.1	General requirements	Approved internal power supply.	P
5.4.4.6.2	Separable thin sheet material	Approved internal power supply.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Number of layers (pcs) .....:	Approved internal power supply.	P
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material .....:		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz .....:		N/A
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
	Insulation resistance (MΩ).....:		—
5.4.6	Insulation of internal wire as part of supplementary safeguard .....:		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning	Evaluated in approved power supplies unit.	P
	Relative humidity (%).....:		—
	Temperature (°C) .....:		—
	Duration (h) .....:		—
5.4.9	Electric strength test .....:	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test	Approved internal power supply.	P
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test .....:		N/A
5.4.10.2.3	Steady-state test.....:		N/A
5.4.11	Insulation between external circuits and earthed circuitry .....:		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V).....:		—
	Nominal voltage U_{peak} (V).....:		—
	Max increase due to variation U_{sp} .....:		—
	Max increase due to ageing ΔU_{sa} .....:		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	$U_{op}= U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ .....:		—
5.5	Components as safeguards		P
5.5.1	General		P
5.5.2	Capacitors and RC units	Approved internal power supply.	P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector.....:	Approved internal power supply.	P
5.5.3	Transformers	Approved internal power supply.	P
5.5.4	Optocouplers	Approved internal power supply.	P
5.5.5	Relays		N/A
5.5.6	Resistors	Approved internal power supply.	P
5.5.7	SPD's	Approved internal power supply.	P
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable.....:		N/A
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors		P
5.6.2.1	General requirements		P
5.6.2.2	Colour of insulation	Considered in power supply unit: Min. 16AWG yellow/green wire used from inlet earthing pin to metal enclosure considered as protective bonding conductor	P
5.6.3	Requirement for protective earthing conductors		P
	Protective earthing conductor size (mm^2) .....:	AC inlet	—
5.6.4	Requirement for protective bonding conductors		P
5.6.4.1	Protective bonding conductors		P
	Protective bonding conductor size (mm^2). .....:	Considered in power supply unit: Min. 16AWG used for the wire connecting earth terminal to metal enclosure.	—
	Protective current rating (A) ..... :	Protective current rating 16A (20A for USA and Canada)	—
5.6.4.3	Current limiting and overcurrent protective devices		P
5.6.5	Terminals for protective conductors		P
5.6.5.1	Requirement		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Conductor size (mm^2), nominal thread diameter (mm). .....:	AC inlet used for protective earthing conductor terminal; Min. 16AWG used for protective bonding conductor, The protective bonding conductor terminal with min. 3,5mm diameter	P
5.6.5.2	Corrosion	In accordance with Annex N.	P
5.6.6	Resistance of the protective system		P
5.6.6.1	Requirements		P
5.6.6.2	Test Method Resistance (Ω).....:	(See appended table 5.6.6.2)	P
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current .....:	(See appended table 5.7.4)	P
5.7.2.2	Measurement of prospective touch voltage		P
5.7.3	Equipment set-up, supply connections and earth connections		P
	System of interconnected equipment (separate connections/single connection) .....:		—
	Multiple connections to mains (one connection at a time/simultaneous connections) .....:		—
5.7.4	Earthed conductive accessible parts.....:	(See appended Table 5.7.4)	P
5.7.5	Protective conductor current		N/A
	Supply Voltage (V).....:		—
	Measured current (mA).....:		—
	Instructional Safeguard.....:		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits		N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits		N/A
	a) Equipment with earthed external circuits Measured current (mA).....:		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		N/A

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		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault ... :	The internal circuit is considered as PS3 without test.	P
6.2.2.3	Power measurement for worst-case power source fault ..... :	Output terminals considered as PS2.	P
6.2.2.4	PS1 ..... :		N/A
6.2.2.5	PS2 ..... :	Refer to Annex Q.	P
6.2.2.6	PS3 ..... :	The product is powered by PS3. And internal circuit is considered as PS3 without test.	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS ..... :	All primary circuit as Arcing PIS without test.	P
6.2.3.2	Resistive PIS ..... :	The internal circuit is considered as resistive PIS without test.	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials ..... :	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure	Min. HB	P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Control fire spread used.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions ..... :	(See appended table 6.4.3)	N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards ..... :	(See appended tables 4.1.2 and Annex G)	P
6.4.6	Control of fire spread in PS3 circuit		P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.1	General ..... :		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.8	Fire enclosures and fire barriers		P
6.4.8.1	Fire enclosure and fire barrier material properties		P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure		P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....:	Top side: No openings Left/Right side: Numerous hexagons with maximum dimension 5*5,8mm, which are not located to the area that below a PIS and within 30 mm diameter cylinder extending indefinitely below the PIS. Front side: Openings on front LED panel are far from PIS, not located in area of Figure 41. Rear side: Openings of DC fan in power supply unit: Distance between side openings to PIS: >15mm.	P
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....:	No opening	P
	Flammability tests for the bottom of a fire enclosure .....:		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) .....:	No door or cover.	N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....:	Enclosure is metal and V-0 plastic.	P
6.5	Internal and external wiring		P
6.5.1	Requirements		P
6.5.2	Cross-sectional area (mm^2) .....:	Suitable UL recognized wiring which is PVC insulated and rated VW-1 used.	—
6.5.3	Requirements for interconnection to building wiring .....:		N/A
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1	See table annex Q.1	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		P
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions ..... :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010) .....:		—
7.6	Batteries.....:	(See Annex M)	P
8	**MECHANICALLY-CAUSED INJURY**		P
8.1	General		P
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners	No sharp edges or corners: MS1	N/A
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts		P
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment	The DC Fan is within the limits under normal and fault conditions. System DC Fan EFC-08E12M: $K=6x10^{-7}(0,072x40^2x2500^2)$ =432 2500/15000+432/2400=0,17+0,18 =0,35<1; Alternative DC Fan MGA8012KB-O25: $K=6x10^{-7}(0,068x40^2x2800^2)$ =511,8 2800/15000+511,8/2400=0,187+0, 213=0,4<1; Alternative DC fan DAZA0825B2L-018: $K=6x10^{-7}(0,08x40^2x2600^2)$ =519,2 2600/15000+519,2/2400=0,173+0, 22=0,393<1; CPU Fan MGA4012LB-O15: $K=6x10^{-7}(0,016x27,5^2x4500^2)$ =147,1 4500/15000+147,1/2400 =0,362<1 According to above calculation, moving fans blade are considered not likely to cause injury.	P
8.5.2	Instructional Safeguard..... :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.4	Special categories of equipment comprising moving parts	Not such equipment.	N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks .....:		N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard.....:		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N) .....:		N/A
8.5.5	High Pressure Lamps	No such part.	N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test.....:		N/A
8.6	Stability		P
8.6.1	Product classification		P
	Instructional Safeguard.....:	Equipment mass: MS2	—
8.6.2	Static stability		P
8.6.2.2	Static stability test	Unit does not overbalance at 10º.	P
	Applied Force.....:		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt.....:		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force).....:		N/A
	Position of feet or movable parts.....:		—
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....:		N/A
8.7.2	Direction and applied force.....:		N/A
8.8	Handles strength		N/A
8.8.1	Classification		N/A
8.8.2	Applied Force .....:		N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force .....:		—
8.10	Carts, stands and similar carriers	No such part.	N/A
8.10.1	General		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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).....:		N/A
8.11	Mounting means for rack mounted equipment		N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable *N* .....:		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas.....	No such part.	N/A
	Button/Ball diameter (mm).....:		—
9	**THERMAL BURN INJURY**		P
9.2	Thermal energy source classifications	TS1 for accessible parts.	P
9.3	Safeguard against thermal energy sources		P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard		P
9.4.2	Instructional safeguard .....:	Not used.	N/A
10	**RADIATION**		P
10.2	Radiation energy source classification		P
10.2.1	General classification	RS1 for LEDs as indicators.	P
10.3	Protection against laser radiation	No such part.	N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault..... :		N/A
	Instructional safeguard ..... :		—
	Tool..... :		—
10.4	Protection against visible, infrared, and UV radiation	RS1 for LEDs as indicators.	P
10.4.1	General		P
10.4.1.a)	RS3 for Ordinary and instructed persons.....:		N/A
10.4.1.b)	RS3 accessible to a skilled person.....:		N/A
	Personal safeguard (PPE) instructional		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	safeguard.....:		
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 . :	RS1 for LEDs as indicators.	P
10.4.1.d)	Normal, abnormal, single-fault conditions ..... :		P
10.4.1.e)	Enclosure material employed as safeguard is opaque.....:		N/A
10.4.1.f)	UV attenuation.....:		N/A
10.4.1.g)	Materials resistant to degradation UV .....:		N/A
10.4.1.h)	Enclosure containment of optical radiation.....:		N/A
10.4.1.i)	Exempt Group under normal operating conditions.....:	RS1 for LEDs as indicators.	P
10.4.2	Instructional safeguard .....:		N/A
10.5	Protection against x-radiation	No such radiation.	N/A
10.5.1	X- radiation energy source that exists equipment :		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards.....:		N/A
	Instructional safeguard for skilled person..... :		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation .....:		—
	Abnormal and single-fault condition ..... :		N/A
	Maximum radiation (pA/kg)..... :		N/A
10.6	Protection against acoustic energy sources	No such radiation.	N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A)..... :		N/A
	Output voltage, unweighted r.m.s..... :		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards ..... :		N/A
	Equipment safeguard prevent ordinary person to RS2..... :		—
	Means to actively inform user of increase sound pressure..... :		—
	Equipment safeguard prevent ordinary person to RS2..... :		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output..... :		—
10.6.5.2	Corded listening devices with digital input		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers ..... :	No such part.	N/A
B.2.3	Supply voltage and tolerances		P
B.2.5	Input test..... :	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements..... :	(See appended table B.3)	P
B.3.2	Covering of ventilation openings	(See appended table B.3)	P
B.3.3	D.C. mains polarity test		N/A
B.3.4	Setting of voltage selector ..... :		N/A
B.3.5	Maximum load at output terminals ..... :	(See appended table B.3)	P
B.3.6	Reverse battery polarity		N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions		P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited ..... :	(See appended table B.4)	N/A
B.4.3	Motor tests		P
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature ..... :	(See Clause G.5)	P
B.4.4	Short circuit of functional insulation		N/A
B.4.4.1	Short circuit of clearances for functional insulation		N/A
B.4.4.2	Short circuit of creepage distances for functional insulation		N/A
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		N/A
B.4.6	Short circuit or disconnect of passive components		P
B.4.7	Continuous operation of components		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		P
B.4.9	Battery charging under single fault conditions ... :	(See Annex M)	P
C	**UV RADIATION**		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
D	**TEST GENERATORS**		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		N/A
E.1	Audio amplifier normal operating conditions	No such part	N/A
	Audio signal voltage (V) .....:		—
	Rated load impedance (Ω) .....:		
E.2	Audio amplifier abnormal operating conditions		N/A
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	General requirements		P
	Instructions – Language .....:	English	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Exterior of equipment.	P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification .....:	HIKVISION	—
F.3.2.2	Model identification .....:	See model list.	—
F.3.3	Equipment rating markings	100-240 Va.c., 50/60 Hz, 2,10A	P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.3.3	Nature of supply voltage.....:	AC	—
F.3.3.4	Rated voltage .....:	100-240 Va.c.	—
F.3.3.4	Rated frequency .....:	50/60 Hz	—
F.3.3.6	Rated current or rated power .....:	2,10 A	—
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device	No such part.	N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings..... :		N/A
F.3.5.2	Switch position identification marking ..... :		N/A
F.3.5.3	Replacement fuse identification and rating markings..... :	Provided on approved internal power supply.	P
F.3.5.4	Replacement battery identification marking ..... :		N/A
F.3.5.5	Terminal marking location	No such marking.	N/A
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I Equipment		P
F.3.6.1.1	Protective earthing conductor terminal	Certified appliance inlet used.	P
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		P
F.3.6.2	Class II equipment (IEC60417-5172)		N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking .....:	IPX0 Not marked on the equipment.	—
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings	The label was subject to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 sec. And then again for 15 sec. with cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was no curling and lifting of the label edge.	P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking	This equipment is not suitable for use in locations where children are likely to be present.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	b) Instructions given for installation or initial use		P
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard		P
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment		P
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards		P
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		P
G	**COMPONENTS**		P
G.1	**Switches**		N/A
G.1.1	General requirements		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	**Relays**		N/A
G.2.1	General requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	**Protection Devices**		P
G.3.1	Thermal cut-offs		N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691		N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H) ..... :		—
	Single Fault Condition ..... :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Test Voltage (V) and Insulation Resistance (Ω). :		—
G.3.3	PTC Thermistors		N/A
G.3.4	Overcurrent protection devices		P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions.....:		N/A
G.4	**Connectors**		P
G.4.1	Spacings		P
G.4.2	Mains connector configuration .....:	The appliance inlet complied with IEC 60320-1.	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		P
G.5	**Wound Components**		P
G.5.1	Wire insulation in wound components.....	Considered in certified power supplies.	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	Considered in certified power supplies.	P
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) .....:		—
	Temperature (°C) .....:		—
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	**Transformers**		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....:	Considered in certified power supplies.	P
	Position.....:		—
	Method of protection .....:		—
G.5.3.2	Insulation	Considered in certified power supplies.	P
	Protection from displacement of windings.....:		—
G.5.3.3	Overload test ..... :	Considered in certified power supplies.	P
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding Temperatures testing in the unit		N/A
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	**Motors**		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.1	General requirements	DC fan	P
	Position .....:		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) .....:		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V).....:		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....:		N/A
	Electric strength test (V).....:		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		P
G.5.4.6.2	Tested in the unit		P
	Maximum Temperature .....:	See appended table B.4	P
	Electric strength test (V) .....:		P
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) .....:		N/A
	Electric strength test (V).....:		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage .....:		—
G.6	**Wire Insulation**		P
G.6.1	General	Considered in certified power supplies.	P
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	**Mains supply cords**		P
G.7.1	General requirements		P
	Type.....:	The European power supply cord have been evaluated in this report, the other power supply cords should comply to the national standard of the countries in which it will be installed	—
	Rated current (A).....:	See table 4.1.2	—
	Cross-sectional area (mm2), (AWG)..... :	See table 4.1.2	—
G.7.2	Compliance and test method		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) .....:		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)....:		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry ..... :		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) ..... :		—
	Diameter (m) .....:		—
	Temperature (°C) .....:		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	**Varistors**		P
G.8.1	General requirements	Considered in certified power supplies.	P
G.8.2	Safeguard against shock		P
G.8.3	Safeguard against fire		P
G.8.3.2	Varistor overload test .....:	Metal enclosure provided.	N/A
G.8.3.3	Temporary overvoltage .....:		N/A
G.9	**Integrated Circuit (IC) Current Limiters**		P
G.9.1 a)	Manufacturer defines limit at max. 5A.	For USB and DC12V output ports	P
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA .....:	See table 4.1.2	—
G.9.1 d)	IC limiter output current (max. 5A) .....:	See table 4.1.2	—
G.9.1 e)	Manufacturers' defined drift .....:		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	**Resistors**		N/A
G.10.1	General requirements		N/A
G.10.2	Resistor test		N/A

IEC 62368-1			
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		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	**Capacitor and RC units**		P
G.11.1	General requirements	Considered in certified power supplies.	P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
G.12	**Optocouplers**		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....:	Considered in certified power supplies.	P
	Type test voltage Vini .....:	Min. 4000	—
	Routine test voltage, Vini,b .....:	Min. 4000	—
G.13	**Printed boards**		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction).....:		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation.....:		N/A
	Number of insulation layers (pcs) .....:		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements ..... :		N/A
G.15	**Liquid filled components**		N/A
G.15.1	General requirements	No such part.	N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
b)	Impulse test using circuit 2 with Uc = to transient voltage .....:		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage .....:		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance .....:		—
D3)	Resistance .....:		—
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		N/A
H.1	General	No ringing signal.	N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) .....:		—
H.3.1.2	Voltage (V) .....:		—
H.3.1.3	Cadence; time (s) and voltage (V) .....:		—
H.3.1.4	Single fault current (mA):.....:		—
H.3.2	Tripping device and monitoring voltage .....:		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) .....:		—
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		N/A
	General requirements	(See separate test report)	N/A
K	**SAFETY INTERLOCKS**		N/A
K.1	General requirements		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance .....:		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method .....:		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) .....:		N/A
K.7.2	Overload test, Current (A) .....:		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test .....:		N/A
L	**DISCONNECT DEVICES**		P
L.1	General requirements		P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		P
L.4	Single phase equipment	Appliance inlet	P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		P
M.1	General requirements		P
M.2	Safety of batteries and their cells		P
M.2.1	Requirements	Certified coin battery.	P
M.2.2	Compliance and test method (identify method) .. :		P
M.3	Protection circuits		P
M.3.1	Requirements		P
M.3.2	Tests		P
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		P
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.3.3	Compliance .....:	(See appended Tables and Annex M and M.4)	P
M.4	Additional safeguards for equipment containing secondary lithium battery	The battery is not rechargeable.	N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature .....:		--
M.4.2.2 b)	Single faults in charging circuitry .....:		--
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		P
M.6.1	Short circuits	Certified coin battery.	P
M.6.1.1	General requirements		P
M.6.1.2	Test method to simulate an internal fault	Certified coin battery.	N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) .....:		N/A
M.6.2	Leakage current (mA) .....:		N/A
M.7	Risk of explosion from lead acid and NiCd batteries	Not lead acid or NiCd battery.	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	Not such battery.	N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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) ..... :	Provided in user manual.	P
N	**ELECTROCHEMICAL POTENTIALS**		P
	Metal(s) used ..... :	Zin on steel	—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		P
	Figures O.1 to O.20 of this Annex applied ..... :	(See appended table 5.4.2, 5.4.3)	—
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		P
	Location and Dimensions (mm) ..... :	Top side: No openings Left/Right side: Numerous hexagons with maximum dimension 5*5,8mm, which are not located to the area that below a PIS and within 30 mm diameter cylinder extending indefinitely below the PIS. Front side: Openings on front LED panel are far from PIS, not located in area of Figure 41. Rear side: Openings of DC fan in power supply unit: Distance between side openings to PIS: >15mm.	—
P.2.3	Safeguard against the consequences of entry of foreign object		P
P.2.3.1	Safeguards against the entry of a foreign object	No bare conductive parts of a safeguard or PIS within the projected volume as depicted in Figure P.3.	P
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts ..... :		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) ..... :		N/A
P.3	Safeguards against spillage of internal liquids	No internal liquid.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C) ..... :		—
	Tr (°C) ..... :		—
	Ta (°C) ..... :		—
P.4.2 b)	Abrasion testing ..... :		N/A
P.4.2 c)	Mechanical strength testing ..... :		N/A
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		P
Q.1	Limited power sources		P
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		N/A
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		P
Q.1.2	Compliance and test method		P
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) ..... :		—
	Current limiting method ..... :		—
R	**LIMITED SHORT CIRCUIT TEST**		**N/A**
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)). ..... :		N/A
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	Not used.	N/A
	Samples, material ..... :		—
	Wall thickness (mm) ..... :		—
	Conditioning (°C) ..... :		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material .....:		—
	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**		**P**
T.1	General requirements		P
T.2	Steady force test, 10 N .....:		N/A
T.3	Steady force test, 30 N .....:		N/A
T.4	Steady force test, 100 N .....:		N/A
T.5	Steady force test, 250 N .....:	(See appended table T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	P
	Fall test		P
	Swing test		N/A
T.7	Drop test .....:		N/A
T.8	Stress relief test .....:	(See appended table T.8)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J).....:		—
	Height (m) .....:		—
T.10	Glass fragmentation test .....:		N/A
T.11	Test for telescoping or rod antennas	No such part.	N/A
	Torque value (Nm) .....:		—
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		N/A
U.1	General requirements	No such part.	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen.....:		N/A
V	**DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)**		P
V.1	Accessible parts of equipment		P
V.2	Accessible part criterion		P

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

4.1.2	TABLE: List of critical components				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1]
Plastic faceplate	NINGBO LG YONGXING CHEMICAL CO LTD	FR-500	V-0/5VB, 60°C, thickness 2,5mm	UL 94	UL E203955
Metal enclosure	Interchangeable	Interchangeable	Min. 0,8mm thickness	IEC 62368-1: 2014 (Second Edition) and EN 62368-1:2014+A11:2017	Test with appliance
PCB	SUNTAK MULTILAYER PCB CO LTD	STM-5	V-0, 130°C	UL 796	UL E207844
Alternative	GUANGZHOU FAST-PRINT CIRCUIT TECHNOLOGY CO LTD	M11	V-0, 130°C	UL 796	UL E204460
Alternative	SUNTAK MULTILAYER PCB CO LTD	STD-3	V-0, 130°C	UL 796	UL E207844
Alternative	WENZHOU GALAXY ELECTRONICS CO LTD	01V0	V-0, 130°C	UL 796	UL E157634
Alternative	WENZHOU OULONG ELECTRIC CO LTD	OL-D	V-0, 130°C	UL 796	UL E231017
Alternative	VICTORY GIANT TECHNOLOGY (HUIZHOU) CO LTD	SH	V-0, 130°C	UL 796	UL E248779
Alternative	SHENZHEN KINWONG ELECTRONIC CO LTD	8B	V-0, 130°C	UL 796	UL E243951
Alternative	SHENZHEN MANKUN ELECTRONICS CO LTD	MK-D	V-0, 130°C	UL 796	UL E248237

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

Alternative	Interchangeable	Interchangeable	V-0, 130°C	UL 796	UL
RTC Battery	GUANGZHOU TIANQIU ENTERPRISE CO LTD	CR2032	Max Abnormal Charging Current 10mA Max Abnormal Charging Voltage 3,5V dc	UL1642	UL MH48705
System DC fan	ASIA VITAL COMPONENTS CO.,LTD.	EFC-08E12M	12VDC, 0,15A, 29,14CFM	EN 62368-1:2014/A11:2017	TUV Rh: R 50467958
Alternative	Dongguan Protechnic Electric Co., Ltd.	MGA8012KB-O25	12VDC, 0,088A, 35,75CFM	EN 62368-1:2014/A11:2017	TUV SUD: B 031023 0137
Alternative	Asia Vital Components Co.,Ltd.	DAZA0825B2L-018	12VDC,0.09A, 33,6CFM	EN IEC 62368-1:2020/A11:2020	TUV SUD: B 025730 0895
CPU fan on cooler assembly	Dongguan Protechnic Electric Co., Ltd.	MGA4012LB-O15	12Vdc, 0,09A, 1,08W Max, 6,15CFM, 4500±10%RPM	EN IEC 62368-1:2020/A11:2020	TUV SUD: B 031023 014 1
Protection IC for USB ports (UL3, UL4)	Joulwatt	JW7115S-2SOTA#TRPBF	Vin: 2,7-5,5Vdc, Vout: 2,7-5,5Vdc, Iout: 2,05-2,35A;	IEC 62368-1:2014	UL CB Cert: DK-90295-UL
Alternative	DIODES INC	AP2822 followed by A - H, followed by N or Blank, followed by K, KA, KB or KE, followed by TR-G1.	Input: 2,7 to 5,5Vd.c., Output continuous rating: 1,0-2,0A; Output current limit: 2,1-3,2A	IEC 62368-1:2014	UL Ref. Certif. No.: US-34501-UL Report No.: E339337-A6001-CB-1
Alternative	DIODES INC	AP22816, AP22818	Input: 2,7 to 5,5Vd.c., Output continuous rating: 1,0-2,0A; Output current limit: 2,1-3,2A	IEC 62368-1:2018	UL Ref. Certif. No.: US-38695-UL Report No.: E322375-A6016-CB-1

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

Protection IC for DC12V output ports (UV1, UV8)	SGMICRO	SGM2521YS8G/TR, SGM2521YTDC8G/TR, SGM2521AYS8G/TR, SGM2521AYTDC8G/TR, SGM2522YS8G/TR, SGM2522YTDC8G/TR, SGM2522AYS8G/TR, SGM2522AYTDC8G/TR	Input: 4,5 V d. c. – 24 V d. c., Max. 2 A; Output: 0 V d. c. – 24 V d. c.; Max. 2 A; Class III	IEC 62368-1:2018	SGS CB Cert No.: BE-42262 Report No.: SHES220601212801
Alternative	SG Micro Corp	SGM2580CYN5G/TR	2,5Vdc to 5,5Vdc	IEC 60950-1:2005/AMD1:2009, IEC 60950-1:2005/AMD2:2013, IEC 60950-1:2005	UL DK-82510-UL
Building-in power supply units (two provided)	AcBel Polytech Inc.	SFXA1151A	I/P: 100-240V~, 60/50Hz,3A, class I; O/P:+12Vdc, 12,5A MAX, Rated output power: 150W Max	IEC 62368-1:2018	TUV Rh cert: JPTUV-126670-M1, report: 60444321 002; JPTUV-126670, report: 60444321 001
Alternative	Shenzhen Huntkey Electric Co.Ltd.	HK250-48PP	I/P: 100-240V~, 50-60Hz,3A, class I; O/P:+12Vdc, 12,5A, Rated output power: 150W Max	IEC 62368-1:2018	UL CB Cert: DK-120443-UL; report: E181356-A6272-CB-1
Power cord set					
- Power plug	Phino Electric Co., Ltd.	PHP-206	AC 250V, 16A	DIN VDE 0620-2-1 (VDE 0620-2-1):2016-01 DIN VDE 0620-2-1/A1 (VDE 0620-2-1/A1):2017-09	VDE 40013375

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

- Power connector	Phino Electric Co., Ltd.	PHS-301	AC 250V, 10A	DIN EN IEC 60320-1 (VDE 0625-1):2023-06; EN IEC 60320-1:2021	VDE 40038017
- Power cord	Phino Electric Co., Ltd.	H05VV-F	3 x 0,75 mm²	DIN EN 50525-2-11 (VDE 0285-525-2-11):2012-01; EN 50525-2-11:2011	VDE 113841
Alternative Power cord set					
- Power plug	Hangzhou Hongshi Electrical Ltd.	SW102	AC 250V, 16A	DIN VDE 0620-2-1 (VDE 0620-2-1):2016-01 DIN VDE 0620-2-1/A1 (VDE 0620-2-1/A1):2017-09	VDE 40004330
- Power connector	Scolmore International Ltd.	SW903	10A, 250V	EN 60320-1:2001;A1	Nemko Cert No.: NO3683
- Power cord	LINOYA ELECTRONIC TECHNOLOGY CO LTD	H05VV-F	3 x 0,75 mm²	DIN EN 50525-2-11 (VDE 0285-525-2-11):2012-01; EN 50525-2-11:2011	VDE 40035072
Alternative Power cord set					
- Power plug	CIXI WANNENG ELECTRONCO., LTD	D003	AC 250V, 16A	DIN VDE 0620-2-1 (VDE 0620-2-1):2016-01 DIN VDE 0620-2-1/A1 (VDE 0620-2-1/A1):2017-09	VDE 40044952
- Power connector	Cixi Wanneng Electron Co., Ltd	WN-W01	AC 250V, 10A	EN 60320-1,2015	DEKRA 2197045.01
- Power cord	CIXI WANNENG ELECTRONCO., LTD	H05VV-F	3 x 0,75 mm²	DIN EN 50525-2-11(VDE 0285-525-2-11):2012-01; EN 50525-2-11:2011	VDE 40044024
Alternative Power cord set					

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

- Power plug	Interchangeable	Interchangeable	AC 250V, 16A	DIN VDE 0620-2-1 (VDE 0620-2-1):2016-01 DIN VDE 0620-2-1/A1 (VDE 0620-2-1/A1):2017-09	SGS or equivalent Certified body
- Power connector	Interchangeable	Interchangeable	AC 250V, 10A	DIN EN IEC 60320-1 (VDE 0625-1):2023-06; EN IEC 60320-1:2021	SGS or equivalent Certified body
- Power cord	Interchangeable	Interchangeable	3 x 0,75 mm²	DIN EN 50525-2-11 (VDE 0285-525-2-11):2012-01; EN 50525-2-11:2011	SGS or equivalent Certified body
Internal secondary wires	Interchangeable	Interchangeable	PVC, TFE, PTFE, FEB, Polychloroprene or polyimide or VW-1	--	--
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			
Clause	Requirement + Test	Result - Remark	Verdict

4.8.4, 4.8.5	**TABLE: Lithium coin/button cell batteries mechanical tests**	N/A

(The following mechanical tests are conducted in the sequence noted.)

4.8.4.2 TABLE: Stress Relief test —

Part	Material	Oven Temperature (°C)	Comments

4.8.4.3 TABLE: Battery replacement test —

Battery part no. .....:		—
Battery Installation/withdrawal	Battery Installation/Removal Cycle	Comments
	1	
	2	
	3	
	4	
	5	
	6	
	8	
	9	
	10	

4.8.4.4 TABLE: Drop test —

Impact Area	Drop Distance	Drop No.	Observations
		1	
		2	
		3	

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:

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

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

5.2	Table: Classification of electrical energy sources						P
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	
EUT DS-9664NXI-I8/VPro test with power supply HK250-48PP							
1	264 Va.c.	DC12V+ to DC12V- (12V output of power supply)	Normal	DC12V	--	--	ES1
			Abnormal	DC12V	--	--	
			Single fault – earth open	DC12V	--	--	
2	264 Va.c.	DC12V+ to GND (12V output of power supply)	Normal	--	0,044mApk	60	ES1
			Abnormal	--	0,043mApk	60	
			Single fault –fuse open	--	0,046mApk	60	
3	264 Va.c.	DC12V- to GND (12V output of power supply)	Normal	--	0,038mApk	60	ES1
			Abnormal	--	0,035mApk	60	
			Single fault –fuse open	--	0,039mApk	60	
4	264 Va.c.	Plastic enclosure	Normal	--	0,001mApk	60	ES1
			Abnormal	--	0,001mApk	60	
			Single fault –fuse open	--	0,001mApk	60	
EUT DS-9664NXI-I8/VPro test with power supply SFXA1151A							
5	264 Va.c.	DC12V+ to DC12V- (12V output of power supply)	Normal	DC12V	--	--	ES1
			Abnormal	DC12V	--	--	
			Single fault – earth open	DC12V	--	--	
6	264 Va.c.	DC12V+ to GND (12V output of power supply)	Normal	--	0,035mApk	60	ES1
			Abnormal	--	0,034mApk	60	
			Single fault –fuse open	--	0,037mApk	60	

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

5.2	**Table: Classification of electrical energy sources**						P
7	264 Va.c.	DC12V- to GND (12V output of power supply)	Normal	--	0,033mApk	60	ES1
			Abnormal	--	0,031mApk	60	
			Single fault –fuse open	--	0,036mApk	60	
8	264 Va.c.	Plastic enclosure	Normal	--	0,001mApk	60	ES1
			Abnormal – See B.3 and B.4	--	0,001mApk	60	
			Single fault –F1 OC	--	0,001mApk	60	

5.2.2.3 - Capacitance Limits

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

5.2.2.4 - Single Pulses

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

5.2.2.5 - Repetitive Pulses

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

Test Conditions:

Normal –

Abnormal -

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

Class I equipment is intended to be supplied by internal switching power supply modules with ES1 output and no ES2 or ES3 voltage is generated within unit. All output circuits are classified as ES1 and no operator access to energized parts.

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

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements			P
	Supply voltage (V) ..... :	90VAC/60Hz	264VAC/50Hz	—
	Ambient T_{min} (°C) ..... :	24,0	23,4	—
	Ambient T_{max} (°C) ..... :	25,0	25,0	—
	Tma (°C) ..... :	55,0	55,0	—
Maximum measured temperature T of part/at:		T (°C)		Allowed T_{max} (°C)
EUT DS-9664NXI-I8/VPro test with power supply HK250-48PP				
PCB near DSP		72,4	74,3	130
RTC		65,9	67,0	100
PCB(82133) near U1		63,0	64,0	130
PCB near U9		60,8	62,2	130
HDD		63,4	65,0	Ref
Plastic enclosure inside		57,7	57,3	60
Plastic enclosure outside*		26,2	28,0	94
Metal enclosure*		26,9	27,4	70
AC Inlet		64,2	63,4	70
input wire		65,5	67,0	80
MOV1		56,4	56,8	85
CX2		70,3	64,5	110
PCB near LF2		75,2	65,8	130
PCB near F2		64,7	63,9	130
output wire		79,9	64,9	80
PCB near BD1		86,3	69,8	130
PCB near L1		77,2	67,8	130
C2		63,9	66,9	105
PCB near Q4		67,1	65,8	130
C4		66,9	66,1	105
T1 coil		77,5	77,0	110
T1 core		72,0	70,7	110
PCB near IC 604		60,6	61,7	130
Supplementary information:				

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--

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

Supplementary information:
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) *: the measured temperature for this part is under ambient temperature of 25 °C. Other temperature point list in this table has shifted to Tma 55°C. The limited value of power supply unit temperature refers to the power supply test report.

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

5.4.1.4, 6.3.2, 9.0, B.2.6	**TABLE: Temperature measurements**			P
	Supply voltage (V) ..... :	90VAC/60Hz	264VAC/50Hz	—
	Ambient T_{min} (°C) ..... :	24,0	23,5	—
	Ambient T_{max} (°C) ..... :	25,0	25,0	—
	Tma (°C) ..... :	55,0	55,0	—
Maximum measured temperature T of part/at:		T (°C)		Allowed T_{max} (°C)
EUT DS-9664NXI-I8/VPro test with power supply SFXA1151A				
AC Inlet		61,2	59,7	70
Input wire		62,6	60,8	80
MOV1		62,6	60,6	85
CN1		62,4	60,5	100
C4		62,7	60,8	105
LC1		67,3	63,9	130
PCB near BD1		76,5	66,0	130
RT1		71,3	65,3	130
L3		69,7	63,2	130
PCB near Q31		68,9	63,8	130
T1 coil		67,8	66,8	110
T1 core		65,0	63,6	110
C47		64,0	63,1	105
M4		64,1	62,3	130
Output wire		62,4	61,6	80
PCB near DSP		75,4	74,6	130
RTC		68,6	67,5	Ref
PCB (82133) near U1		65,5	64,3	130
PCB near U9		63,9	62,8	130
HDD		65,9	64,9	Ref
Plastic enclosure inside		58,5	57,5	60
Plastic enclosure outside*		28,5	27,5	94
Metal enclosure*		28,4	27,3	70
Supplementary information:				

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--

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

Supplementary information:
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) *: the measured temperature for this part is under ambient temperature of 25 °C. Other temperature point list in this table has shifted to Tma 55°C. The limited value of power supply unit temperature refers to the power supply test report.

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

5.4.1.4, 6.3.2, 9.0, B.2.6	**TABLE: Temperature measurements**			P
	Supply voltage (V) ..... :	90VAC/60Hz	264VAC/50Hz	—
	Ambient T_{min} (°C) ..... :	24,0	23,4	—
	Ambient T_{max} (°C) ..... :	25,0	25,0	—
	Tma (°C) ..... :	55,0	55,0	—
Maximum measured temperature T of part/at:		T (°C)		Allowed T_{max} (°C)
EUT DS-8664NXI-I8/VPro test with power supply HK250-48PP				
AC Inlet		67,2	66,8	70
input wire		67,2	66,7	80
MOV1		55,5	55,2	85
CX2		70,6	67,3	110
LF2		73,3	67,4	130
F2		68,5	67,5	Ref
output wire		65,1	64,7	80
PCB near BD1		85,9	71,5	130
L1		79,1	70,8	130
C2		68,0	66,9	105
PCB near Q4		68,7	67,6	130
C4		67,8	67,3	105
T1 coil		79,2	79,4	110
T1 core		72,9	72,6	110
IC604		66,2	65,9	130
PCB near DSP		81,5	81,8	130
RTC		64,5	64,8	Ref
PCB(82133) near U1		69,3	69,4	130
PCB near USB port		56,0	56,1	130
HDD		77,5	78,3	Ref
Plastic enclosure inside		59,8	59,6	60
Plastic enclosure outside*		31,0	30,9	94
metal enclosure*		29,4	29,3	70
Supplementary information:				

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--

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

Supplementary information:
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) *: the measured temperature for this part is under ambient temperature of 25 °C. Other temperature point list in this table has shifted to Tma 55°C. The limited value of power supply unit temperature refers to the power supply test report.

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

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements			P
	Supply voltage (V) ..... :	90VAC/60Hz	264VAC/50Hz	—
	Ambient T_{min} (°C) ..... :	24,0	23,5	—
	Ambient T_{max} (°C) ..... :	25,0	25,0	—
	Tma (°C) ..... :	55,0	55,0	—
Maximum measured temperature T of part/at:		T (°C)		Allowed T_{max} (°C)
EUT DS-8664NXI-I8/VPro test with power supply SFXA1151A				
AC Inlet		60,9	61,5	70
input wire		62,6	62,6	80
MOV1		63,0	62,3	85
CN1		62,6	62,2	100
C4		63,0	62,8	105
LC1		68,1	65,8	130
PCB near BD1		84,6	70,0	130
RT1		75,5	68,6	130
L3		72,5	65,5	130
PCB near Q31		70,1	66,5	130
T1 coil		68,0	68,7	110
T1 core		64,6	64,9	110
C47		66,0	66,8	105
M4		64,9	64,6	130
output wire		66,9	67,7	80
PCB near DSP		78,8	79,7	130
RTC		63,2	63,7	Ref
PCB(82133) near U1		67,6	68,1	130
PCB near USB port		64,9	65,7	130
HDD		74,8	76,4	Ref
Plastic enclosure inside		59,8	59,5	60
Plastic enclosure outside*		29,4	30,0	94
metal enclosure*		26,9	27,5	70
Supplementary information:				

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--

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

Supplementary information:
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) *: the measured temperature for this part is under ambient temperature of 25 °C. Other temperature point list in this table has shifted to Tma 55°C. The limited value of power supply unit temperature refers to the power supply test report.

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

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

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)[1]	Required cl (mm)	cl (mm)[2]	Required[3] cr (mm)	cr (mm)
Functional:							
--	--	--	--	--	--	--	--
Basic/supplementary:							
--	--	--	--	--	--	--	--
Reinforced:							
--	--	--	--	--	--	--	--
Supplementary information: Refer to Internal approved power supply. Fully wrapped built-in certified power supply, without exposed primary circuit.							

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage	P
	Overvoltage Category (OV):	II
	Pollution Degree:	2

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

Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)
Functional:			
--	--	--	--
--	--	--	--
Basic/supplementary:			
--	--	--	--
Reinforced:			
--	--	--	--
Supplementary information: Refer to Internal approved power supply. Fully wrapped built-in certified power supply, without exposed primary circuit.			

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	P

Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
--	--	--	--	--	--
--	--	--	--	--	--
Supplementary information: Considered in power supply test report.					

5.4.9	TABLE: Electric strength tests	P

Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Functional:			
--	--	--	--
Basic/supplementary:			
L/N to Metal enclosure	DC	2500	No
Reinforced:			
L/N to Secondary terminal	DC	4000	No
L/N-plastic enclosure	DC	4000	No

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

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Supplementary information: Double buliding-in power supplies and single buliding-in power supply with the same test results. Test with each power supply has the same result.				

5.5.2.2	TABLE: Stored discharge on capacitors				P
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: [x] bleeding resistor rating: [ ] ICX: Notes: A. Test Location: Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth B. Operating condition abbreviations: N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition Evaluated in internal power supply report.					

5.6.6.2	TABLE: Resistance of protective conductors and terminations			P
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)
EUT DS-9664NXI-I8/VPro test with power supply HK250-48PP				
PE to metal enclosure	32	2	0,256	0,008
PE to metal enclosure	40	2	0,400	0,010
EUT DS-9664NXI-I8/VPro test with power supply SFXA1151A				
PE to metal enclosure	32	2	0,256	0,008
PE to metal enclosure	40	2	0,480	0,012
Supplementary information:				

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part	P
Supply voltage	264V/60Hz	—
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)

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

L/N to metal enclosure	1	EUT DS-9664NXI-I8/VPro test with power supply HK250-48PP: Normal: 0,78mApk Reverse: 0,75mApk EUT DS-9664NXI-I8/VPro test with power supply SFXA1151A: Normal: 0,65mApk Reverse: 0,62mApk
	2*	-
	3	-
	4	-
	5	-
	6	-
	8	-

Supplementary Information:

Notes:

[1] Supply voltage is the anticipated maximum Touch Voltage

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

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

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

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

1) Test with double buliding-in power supplies.

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
Power input and all internal circuits	--	Power (W) :	--	--	PS3 without test
		V_A (V) :	--	--	
		I_A (A) :	--	--	

Supplementary Information:

(*) Measurement taken only when limits at 3 seconds exceed PS1 limits.
For output terminals, circuits that meet the requirement of Annex Q are considered to PS2 circuits according to clause 6.4.5.1.

6.2.3.1	**Table: Determination of Potential Ignition Sources (Arcing PIS)**			P
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
All primary circuits	--	--	--	Yes

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

Supplementary information:

All primary circuit as Arcing PIS without test.

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
The internal circuits	--	--	--	--	Yes

Supplementary Information:

The internal circuit as Resistive PIS without test.

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:			

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

B.2.5	TABLE: Input test							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
EUT DS-9664NXI-I8/VPro test with power supply HK250-48PP								
90	50	1,42	--	126,92	--	F1	1,42	USB2.0:0,5A; USB3.0:0,9A; 12V out1(9A) load 0,5A 12V out2(9B) load 1,0A HDD:8T *8
100	50	1,27	2,1	125,71	--	F1	1,27	
240	50	0,56	2,1	121,38	--	F1	0,56	
264	50	0,53	--	121,29	--	F1	0,53	
90	60	1,43	--	126,94	--	F1	1,43	
100	60	1,28	2,1	125,86	--	F1	1,28	
240	60	0,57	2,1	121,53	--	F1	0,57	
264	60	0,54	--	121,35	--	F1	0,54	
EUT DS-9664NXI-I8/VPro test with power supply SFXA1151A								
90	50	1,36	--	119,63	--	F1	1,36	Normal work, USB2.0:0,5A; USB3.0:0,9A; 12V out1(9A) load 0,5A 12V out2(9B) load 1,0A HDD:8T *8
100	50	1,23	2,1	119,27	--	F1	1,23	
240	50	0,64	2,1	117,97	--	F1	0,64	
264	50	0,61	--	118,83	--	F1	0,61	
90	60	1,36	--	119,83	--	F1	1,36	
100	60	1,23	2,1	119,43	--	F1	1,23	
240	60	0,64	2,1	118,36	--	F1	0,64	
264	60	0,61	--	118,16	--	F1	0,61	
Supplementary information:								

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

B.2.5	TABLE: Input test							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
EUT DS-8664NXI-I8/VPro test with power supply HK250-48PP								
90	50	1,64	--	146,49	--	F1	1,64	USB2.0:0,5A; USB3.0:0,9A; 12V out1(9A) load 0,5A 12V out2(9B) load 1,0A HDD:8T *8
100	50	1,47	2,1	145,82	--	F1	1,47	
240	50	0,62	2,1	140,97	--	F1	0,62	
264	50	0,57	--	140,70	--	F1	0,57	
90	60	1,64	--	146,53	--	F1	1,64	
100	60	1,48	2,1	145,78	--	F1	1,48	
240	60	0,63	2,1	140,39	--	F1	0,63	
264	60	0,58	--	139,56	--	F1	0,58	
EUT DS-8664NXI-I8/VPro test with power supply SFXA1151A								
90	50	1,62	--	144,64	--	F1	1,62	Normal work, USB2.0:0,5A; USB3.0:0,9A; 12V out1(9A) load 0,5A 12V out2(9B) load 1,0A HDD:8T *8
100	50	1,45	2,1	144,06	--	F1	1,45	
240	50	0,61	2,1	139,13	--	F1	0,61	
264	50	0,56	--	138,99	--	F1	0,56	
90	60	1,62	--	145,45	--	F1	1,62	
100	60	1,45	2,1	144,56	--	F1	1,45	
240	60	0,62	2,1	139,81	--	F1	0,62	
264	60	0,56	--	139,04	--	F1	0,56	
Supplementary information:								

B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) .....:					25°C if not specified			—
Power source for EUT: Manufacturer, model/type, output rating ..:					See table 4.1.2			—
Component No.	Abnormal Condition	Supply voltage. (V)	Test time (ms)	Fuse no.	Fuse current. (A)	T-couple	Temp. (°C)	Observation
EUT DS-9664NXI-I8/VPro test with power supply HK250-48PP								
Openings	block	90	4h	F1	1,52	K	Max. temp. measured: T1 coil: 54,5°C; T1 core: 49,3°C; Metal enclosure: 35,5°C; Ambient: 23,9°C.	EUT work normally. No damaged, no hazards.

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

B.3	TABLE: Abnormal operating condition tests		P
Ambient temperature (°C) .....:		25°C if not specified	—
Power source for EUT: Manufacturer, model/type, output rating ..:		See table 4.1.2	—

Component No.	Abnormal Condition	Supply voltage. (V)	Test time (ms)	Fuse no.	Fuse current. (A)	T-couple	Temp. (°C)	Observation
USB(2.0&3.0)	Overload	90	4h	--	1,42→ 1,43→ 1,45→ 1,40	K	Max. temp. measured: T1 coil: 47,7°C; T1 core: 41,7°C; Metal enclosure: 28°C; Ambient: 23,9°C.	Temperature was table when output loaded to 2,16A, when increase to 2,17A, USB output port shut down. No damage, no hazard.
DC12V output(9A&9B)	Overload	90	4h	--	1,42→ 1,43→ 1,44 → 1,38	K	Max. temp. measured: T1 coil: 46,9°C; T1 core: 41°C; Metal enclosure: 26,6°C; Ambient: 23,9°C.	Temperature was table when output loaded to 1,57A, when increase to 1,58A, USB output port shut down. No damage, no hazard.
USB(2.0&3.0)	OL	90	10min	F1	1,4	--	--	The port shutdown, No damage, no hazard.
DC12V output(9A&9B)	SC	264	10min	F1	1,38	--	--	The port shutdown, No damage, no hazard.
EUT DS-8664NXI-I8/VPro test with power supply HK250-48PP								
Openings	block	90	4h	F1	2,24	K	Max. temp. measured: T1 coil: 78,6°C; T1 core: 71°C; Metal enclosure: 43,1°C; Ambient: 23,9°C.	The EUT normal work. No damage, no hazards.

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

B.3	TABLE: Abnormal operating condition tests		P
Ambient temperature (°C) .....:		25°C if not specified	—
Power source for EUT: Manufacturer, model/type, output rating ..:		See table 4.1.2	—

Component No.	Abnormal Condition	Supply voltage. (V)	Test time (ms)	Fuse no.	Fuse current. (A)	T-couple	Temp. (°C)	Observation
USB(2.0&3.0)	Overload	90	4h	F1	1,64→1,65→ 1,68→1,60	K	Max. temp. measured: T1 coil: 50°C; T1 core: 43,8°C; Metal enclosure: 31°C; Ambient: 25°C.	Temperature was table when output loaded to 2.16A, when increase to 2.17A, USB output port shut down. No damage, no hazard.
DC12V output(9A&9B)	Overload	90	4h	F1	1,64→1,68→ 1,71→1,59	K	Max. temp. measured: T1 coil: 55,9°C; T1 core: 48,5°C; Metal enclosure: 31,1°C; Ambient: 25°C.	Temperature was table when output loaded to 1.57A, when increase to 1.58A, USB output port shut down. No damage, no hazard.
USB(2.0&3.0)	OL	90	10min	F1	1,6	--	--	The port shutdown, No damage, no hazard.
DC12V output(9A&9B)	SC	264	10min	F1	1,59	--	--	The port shutdown, No damage, no hazard.

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

1. Test with single buliding-in power supply.
2. System fan and CPU fan were locked at the same time.
3. USB 2.0 ports have same protect circuit, and USB 3.0 ports have same protect circuit.

B.4	TABLE: Fault condition tests	P

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

Ambient temperature (°C) .....:	25°C if not specified	—
Power source for EUT: Manufacturer, model/type, output rating .:	See Table 4.1.2	—

Component No.	Fault Condition	Supply voltage. (V)	Test time (ms)	Fuse no.	Fuse current. (A)	T-couple	Temp. (°C)	Observation
EUT DS-9664NXI-I8/VPro test with power supply HK250-48PP								
System fan and CPU fan except power fan	Locked	90	4h	F1	1,5	K	Max. temp. measured: T1 coil: 49°C; T1 core: 43,4°C; Metal enclosure: 31,9°C; Ambient: 25°C.	EUT work normally. No damaged, no hazards.
Power fan	Locked	90	10min	F1	0	--	--	EUT shutdown immediately, no damage, no hazard.
QA1 pin 1-2	SC	264	10min	F1	0,11	--	--	EUT work normally. No damaged, no hazards.
UV1 pin1-6	SC	264	10min	F1	0,06	--	--	EUT work normally. No damaged, no hazards.
EUT DS-9664NXI-I8/VPro test with power supply SFXA1151A								
TVS8	SC	264	10min	F1	0,02	--	--	EUT work normally. No damaged, no hazards.
DN5 pin 1-3	SC	264	10min	F1	0,08	--	--	EUT work normally. No damaged, no hazards.
EUT DS-8664NXI-I8/VPro test with power supply HK250-48PP								
System fan and CPU fan except power fan	Locked	90	4h	F1	1,95	K	Max. temp. measured: T1 coil: 58,7°C; T1 core: 52,2°C; Metal enclosure: 32,5°C; Ambient: 25°C.	EUT work normally. No damaged, no hazards.
Power fan	Locked	90	10min	F1	0	--	--	EUT shutdown immediately, no damage, no hazard.
QA1 pin 1-2	SC	264	10min	--	0,11	--	--	EUT work normally. No damaged, no hazards.
UV1 pin1-6	SC	264	10min	--	0,06	--	--	EUT work normally. No damaged, no hazards.
EUT DS-8664NXI-I8/VPro test with power supply SFXA1151A								

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

TVS8	SC	264	10min	F1	0,02	--	--	EUT work normally. No damaged, no hazards.
DN5 pin 1-3	SC	264	10min	F1	0,08	--	--	EUT work normally. No damaged, no hazards.

Supplementary information:

1. Test with single buliding-in power supply.
2. USB 2.0 ports have same protect circuit, and USB 3.0 ports have same protect circuit.

Annex M	**TABLE: Batteries**									P
The tests of Annex M are applicable only when appropriate battery data is not available										P
Is it possible to install the battery in a reverse polarity position?..... :						No				N/A
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Model DS-9664NXI-I8/VPro										
Max. current during normal condition	0,004mA	--	--	--	--	--	--	--	--	
Max. current during fault condition	2,2mA DN2 Pin 1-3 SC	10mA	2,0mA CA2 SC	--	--	--	--	--	--	
Model DS-8664NXI-I8/VPro										
Max. current during normal condition	0,005mA	--	--	--	--	--	--	--	--	
Max. current during fault condition	2,2mA DN2 Pin 1-3 SC	10mA	2,0mA CA2 SC	--	--	--	--	--	--	
Test results:										Verdict
- Chemical leaks										No / P
- Explosion of the battery										No / P
- Emission of flame or expulsion of molten metal										No / P
- Electric strength tests of equipment after completion of tests										No / P
Supplementary information:										

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

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

Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp (C)	
	Normal				
	Abnormal				
	Single fault –SC/OC				
	Normal				
	Abnormal				
	Single fault – SC/OC				
Supplementary Information:					

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

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

Annex Q.1	**TABLE: Circuits intended for interconnection with building wiring (LPS)**						**P**
Note: Measured UOC (V) with all load circuits disconnected:							
Output Circuit	Components	U_{oc} (V)	I_{sc} (A)		S (VA)		
			Meas.	Limit	Meas.	Limit	
Model DS-9664NXI-I8/VPro							
eSATA	Normal	0	0	8	0	100	
LAN	Normal	0	0	8	0	100	
AUDIO	Normal	0	0	8	0	100	
VIDEO	Normal	0	0	8	0	100	
HDMI	Normal	5,02	0	8	0	100	
VGA	Normal	4,93	0	8	0	100	
RS232	Normal	0	0	8	0	100	
RS485	Normal	0	0	8	0	100	
ALARM IN	Normal	0	0	8	0	100	
ALARM OUT	Normal	0	0	8	0	100	
9A	Normal	12,06	1,56	8	17,15	100	
9B	Normal	12,01	1,57	8	16,72	100	
USB3.0	Normal	5,02	1,98	8	9,46	100	
USB2.0	Normal	5,00	2,16	8	10,11	100	
Model DS-8664NXI-I8/VPro							
eSATA	Normal	0	0	8	0	100	
LAN	Normal	0	0	8	0	100	
AUDIO	Normal	0	0	8	0	100	
VIDEO	Normal	0	0	8	0	100	
HDMI	Normal	5,02	0	8	0	100	
VGA	Normal	4,93	0	8	0	100	
RS232	Normal	0	0	8	0	100	
RS485	Normal	0	0	8	0	100	
ALARM OUT	Normal	0	0	8	0	100	
9A	Normal	12,06	1,56	8	17,15	100	
9B	Normal	12,01	1,57	8	16,72	100	
USB3.0	Normal	5,02	1,98	8	9,46	100	

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

USB2.0	Normal	5,00	2,16	8	10,11	100

Supplementary Information:
USB2.0 output is protected by certified AP2822CK/RT9701GB;
USB3.0 output is protected by certified AP2822GKBTR-G1;
9A&9B output is protected by certified SGM2521YS8G/TR.

T.2, T.3, T.4, T.5	TABLE: Steady force test				P
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
Enclosure (top/bottom/side)	Metal	Min. 0,8	250	5	Intact
Front panel	Plastic	Min. 2,5	250	5	Intact
Supplementary information:					

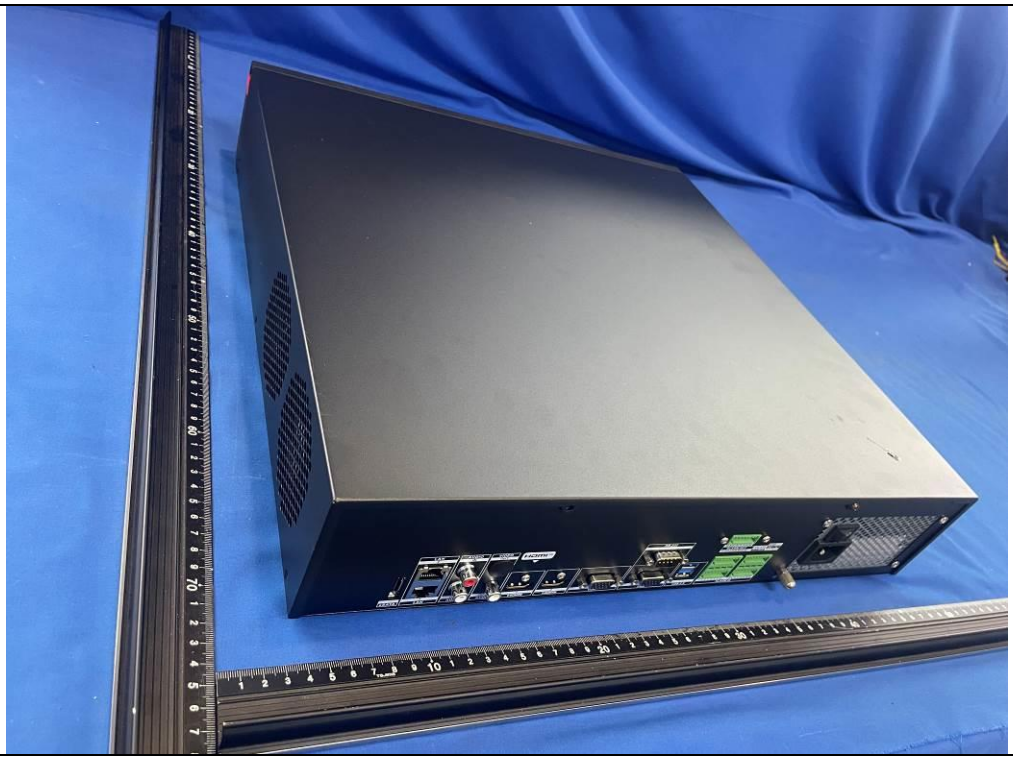
T.6, T.9	TABLE: Impact tests			P
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation
Enclosure (top/bottom/side)	Metal	Min. 0,8	1300	Intact
Front panel	Plastic	Min. 2,5	1300	Intact
Supplementary information:				

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

T.8	TABLE: Stress relief test				P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Front panel	Plastic	Min. 2,5	70	7	Intact
Supplementary information:					

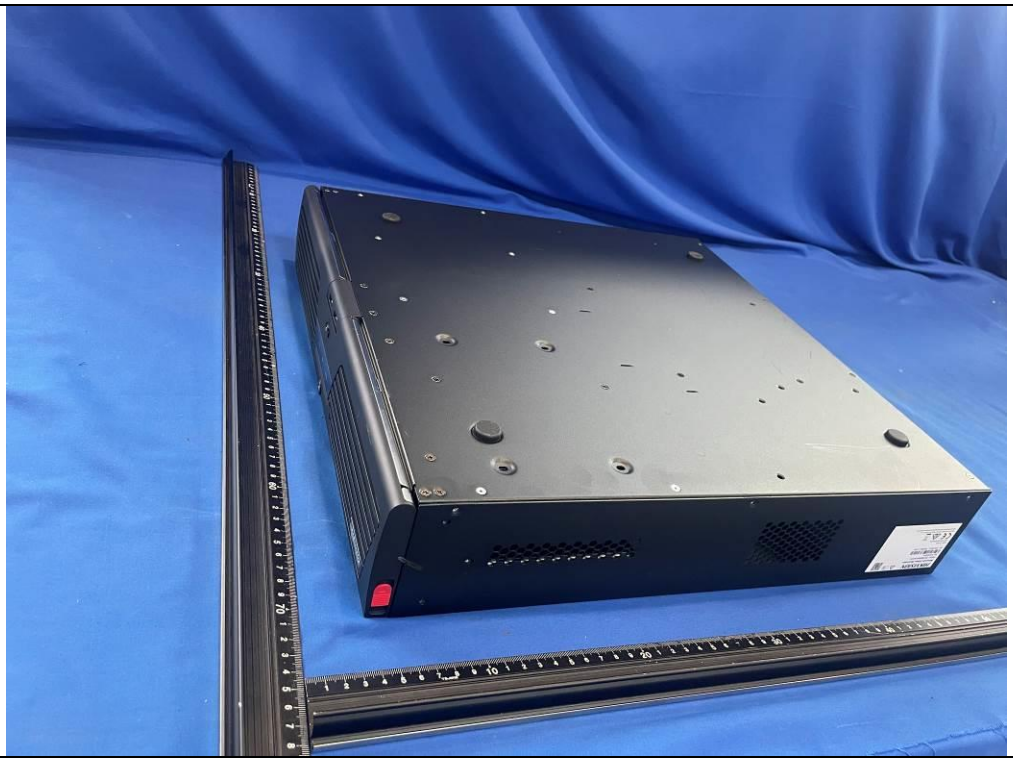
*** End of Test report ***

Details of: General View (Model DS-9664NXI-I8/VPro)

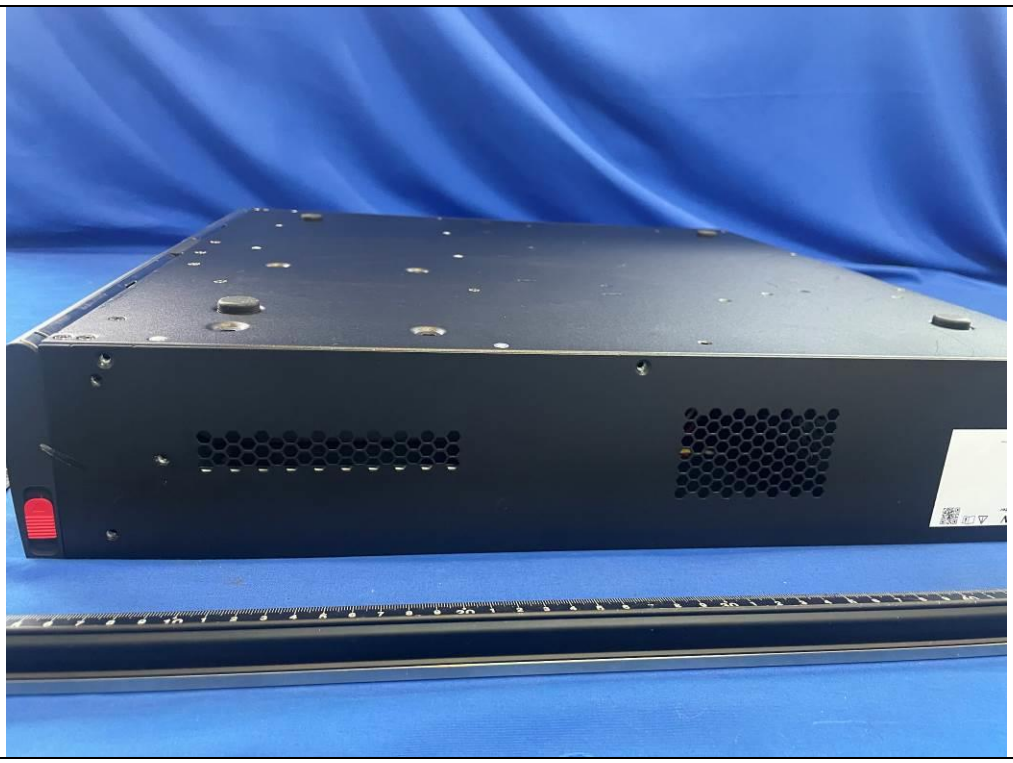


Details of: General View (Model DS-9664NXI-I8/VPro)

Details of: General View (Model DS-9664NXI-I8/VPro)

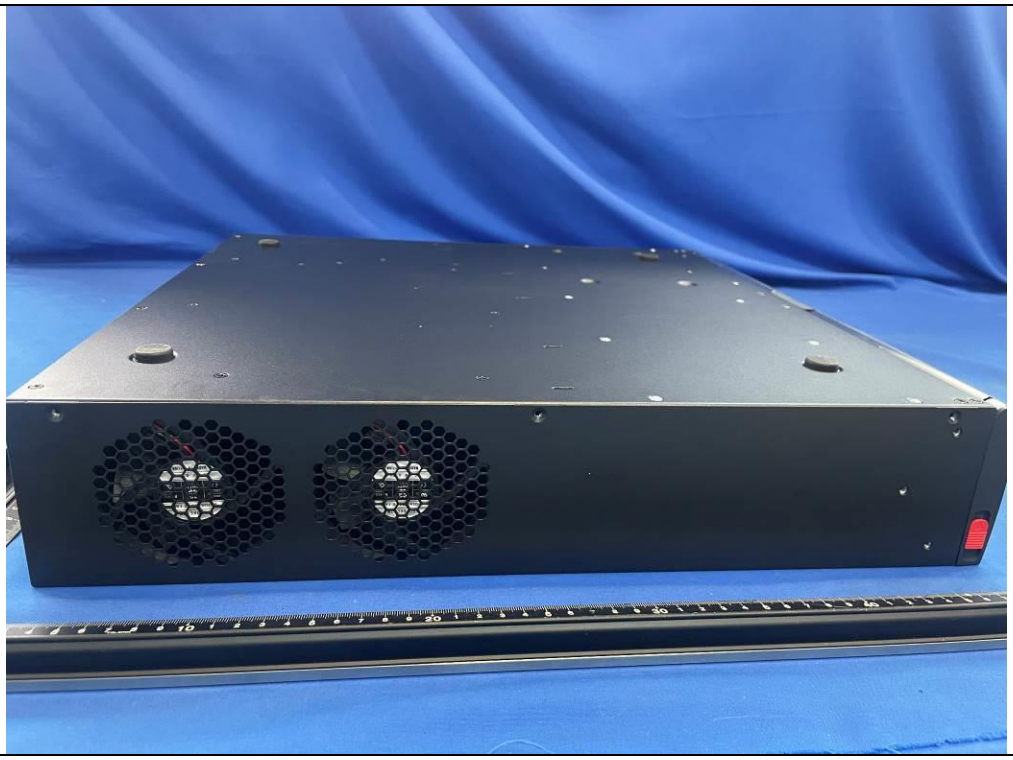


Details of: General View (Model DS-9664NXI-I8/VPro)



Details of: General View (Model DS-9664NXI-I8/VPro)

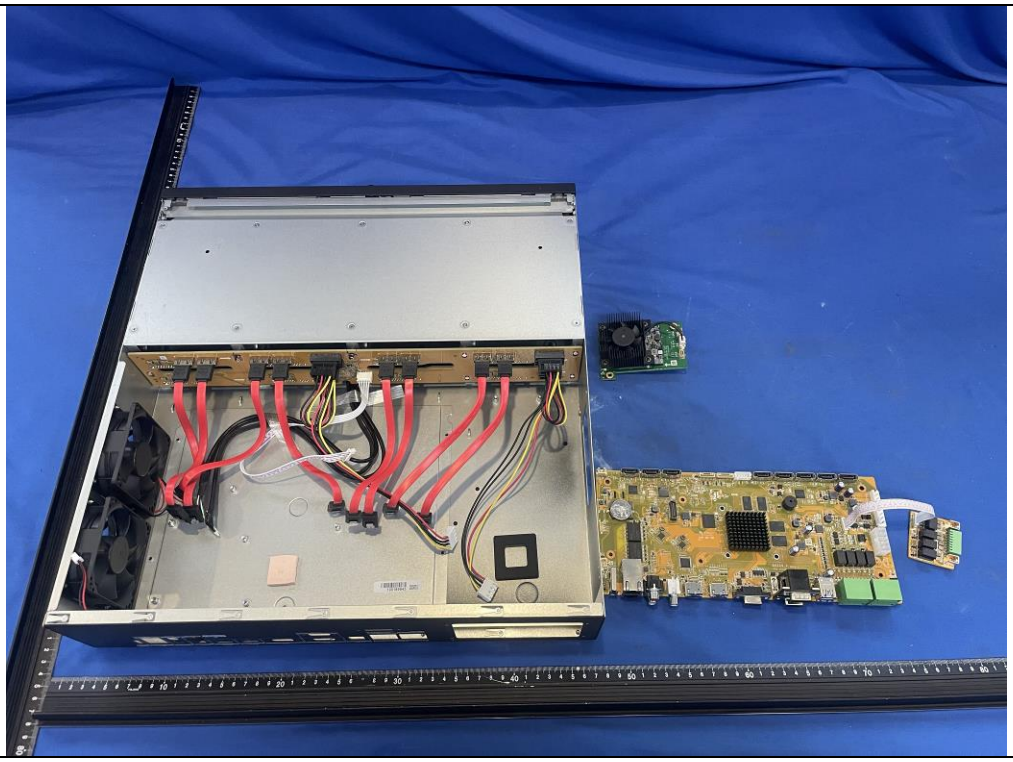
Details of: General View (Model DS-9664NXI-I8/VPro)



Details of: Internal View (Model DS-9664NXI-I8/VPro)

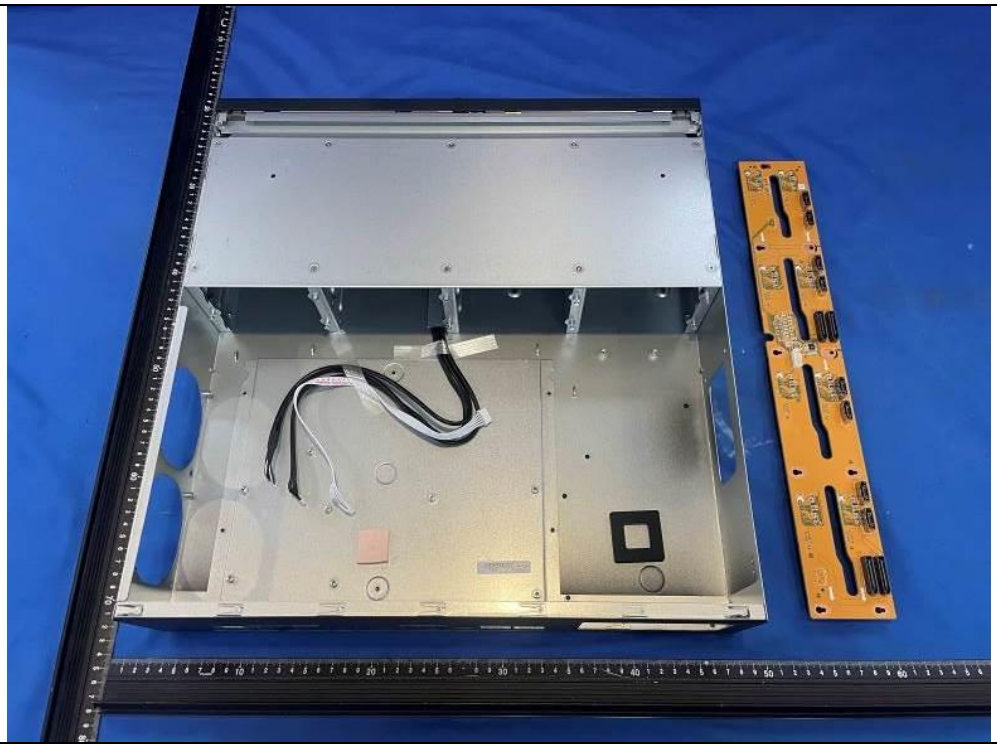
Details of: Internal View (Model DS-9664NXI-I8/VPro)

Details of: Internal View (Model DS-9664NXI-I8/VPro)

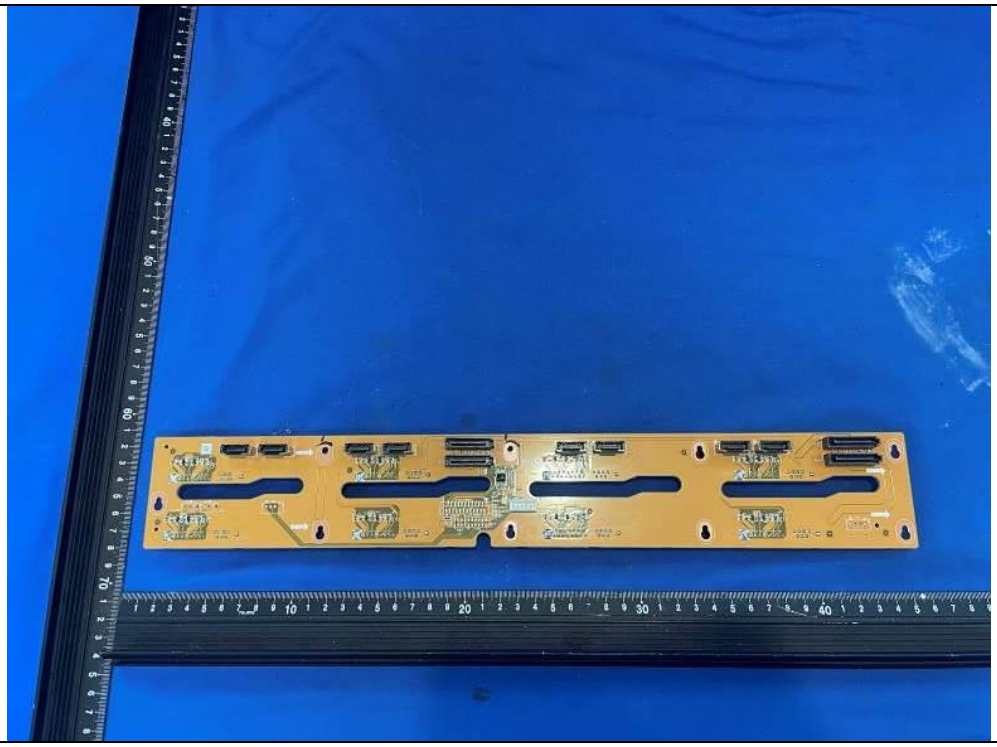


Details of: Internal View (Model DS-9664NXI-I8/VPro)

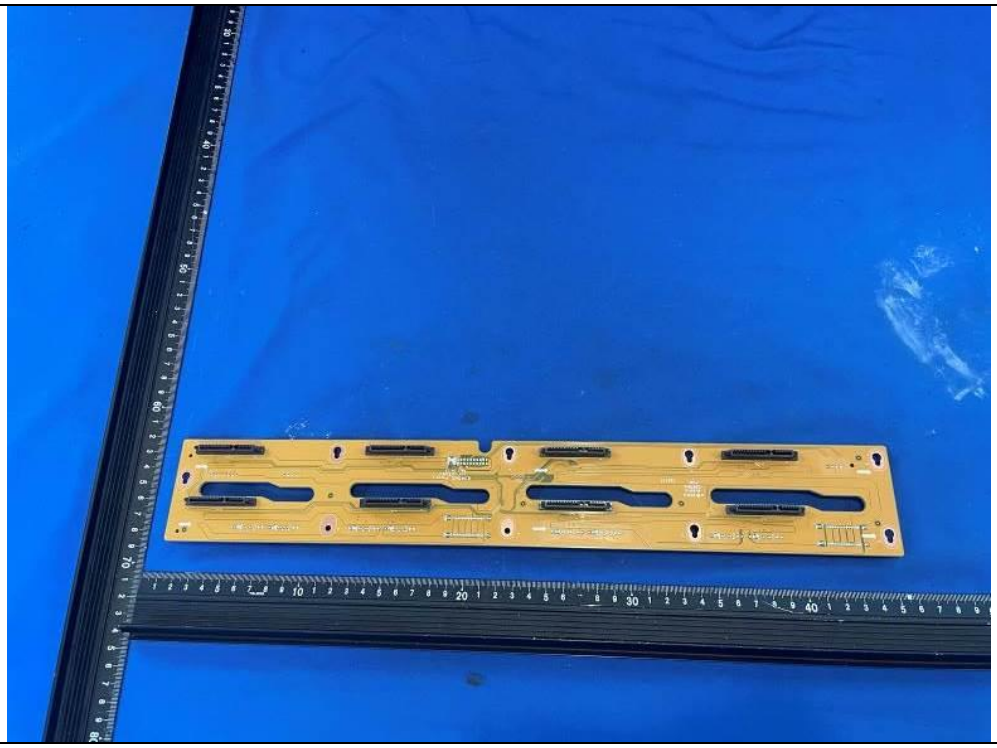
Details of: Internal View (Model DS-9664NXI-I8/VPro)



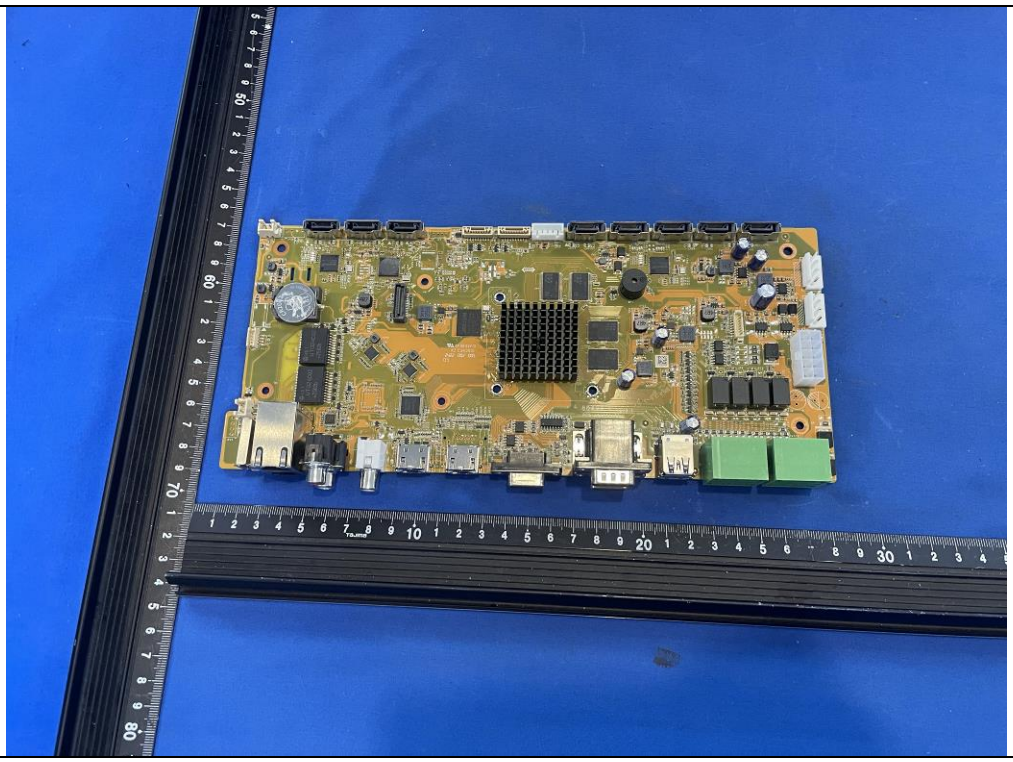
Details of: PCB-1



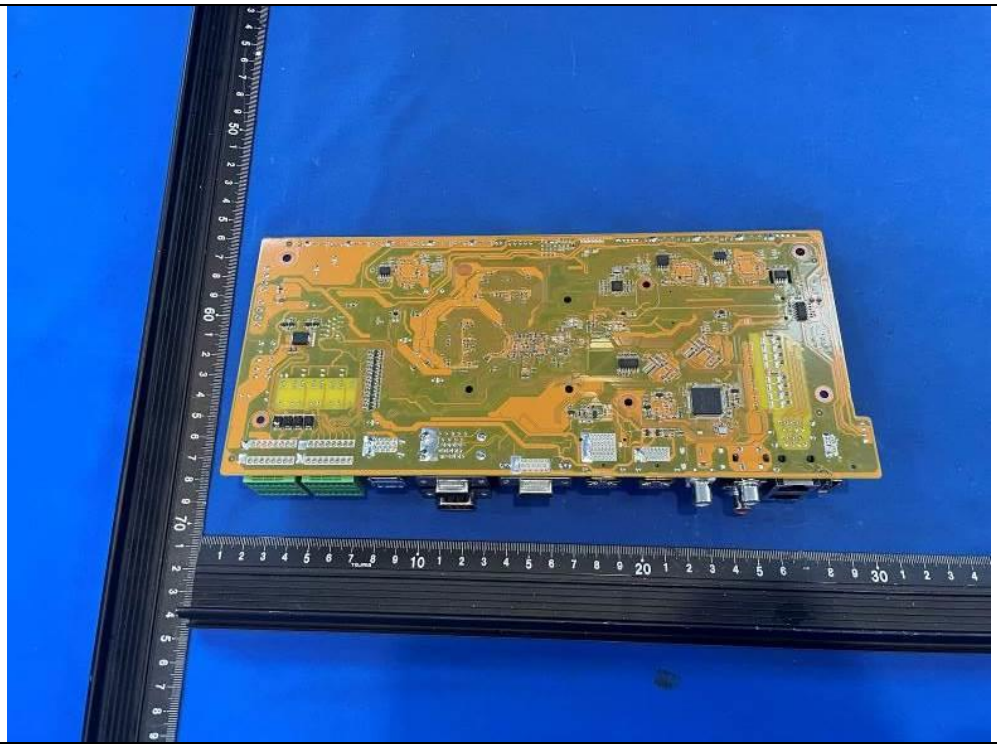
Details of: PCB-1



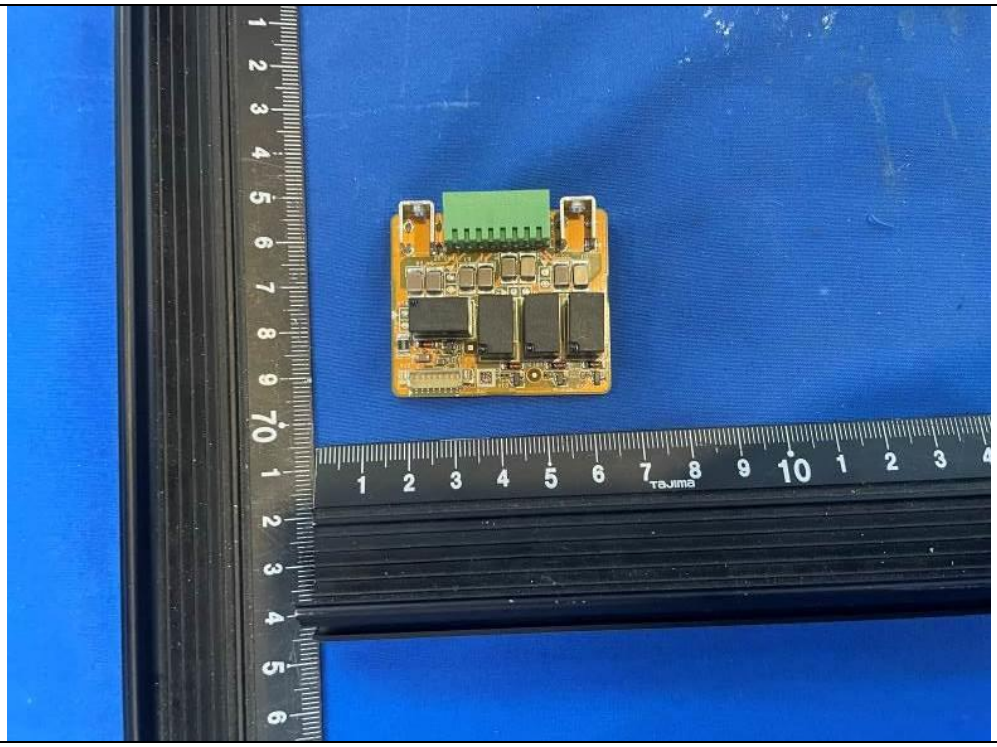
Details of: Main board (80499_P Rev3.1)



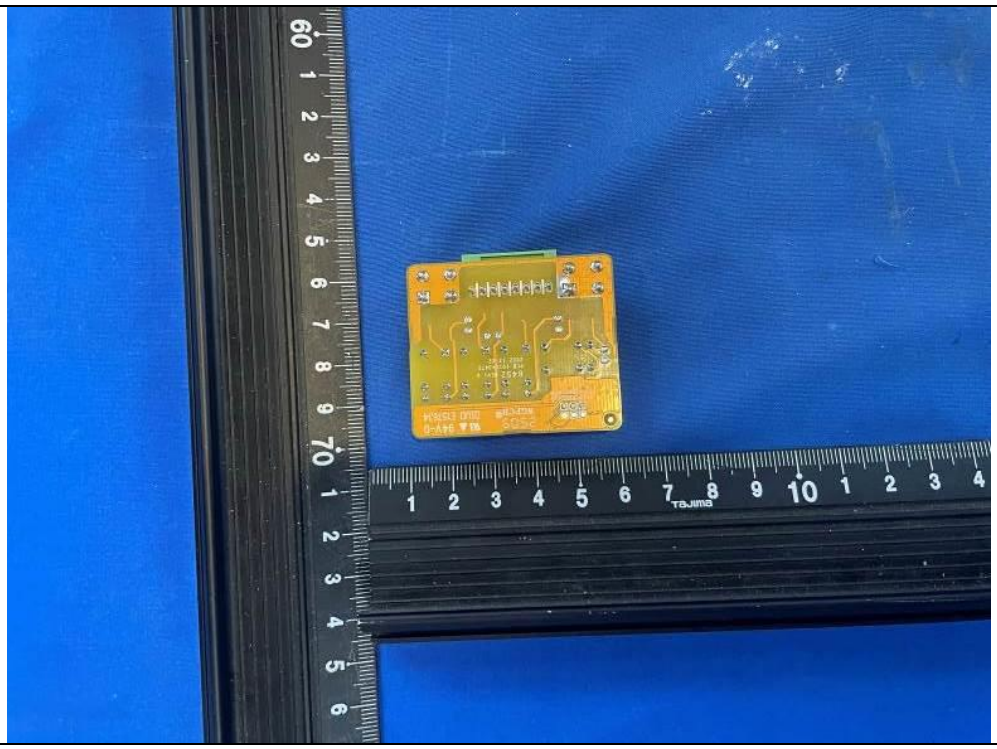
Details of: PCB (80499_P Rev3.1)



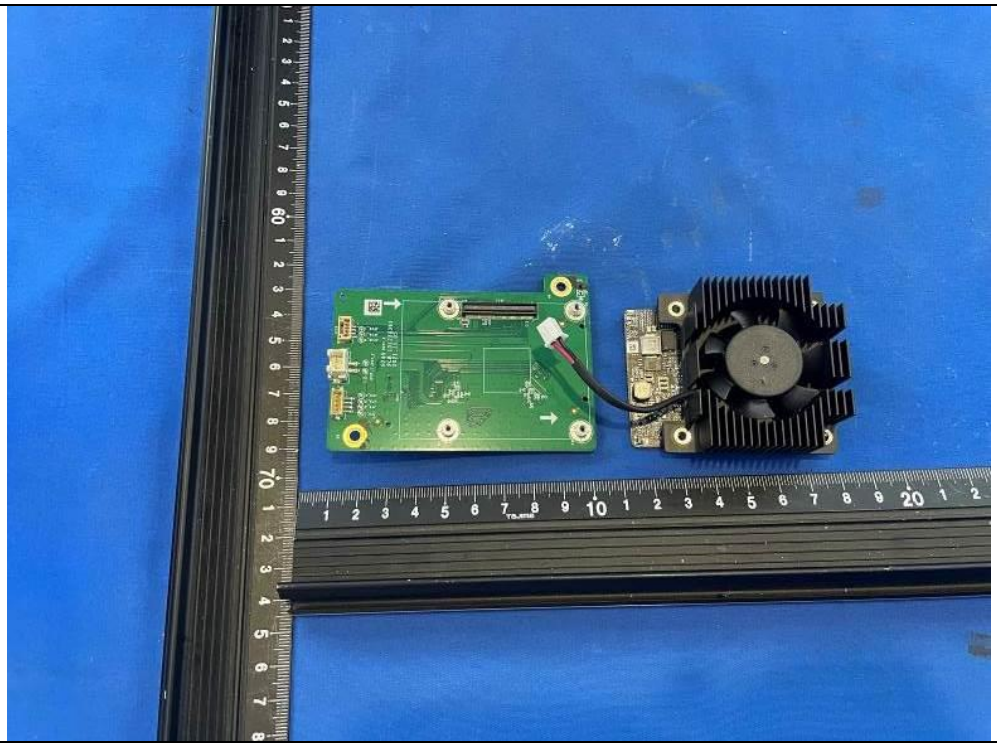
Details of: PCB-2



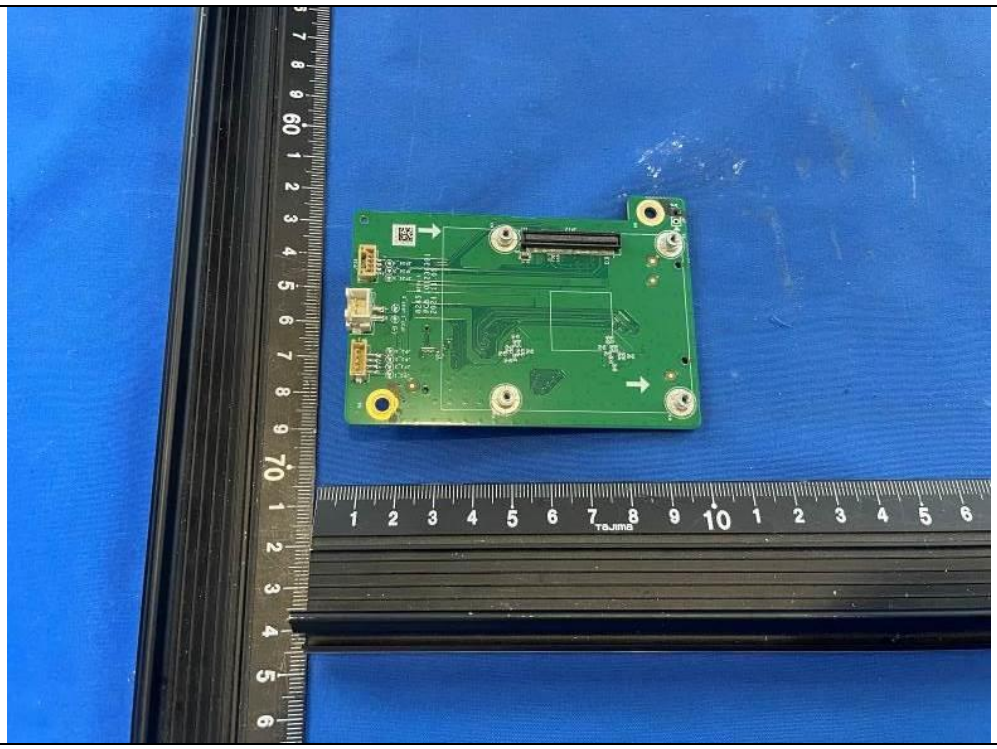
Details of: PCB-2



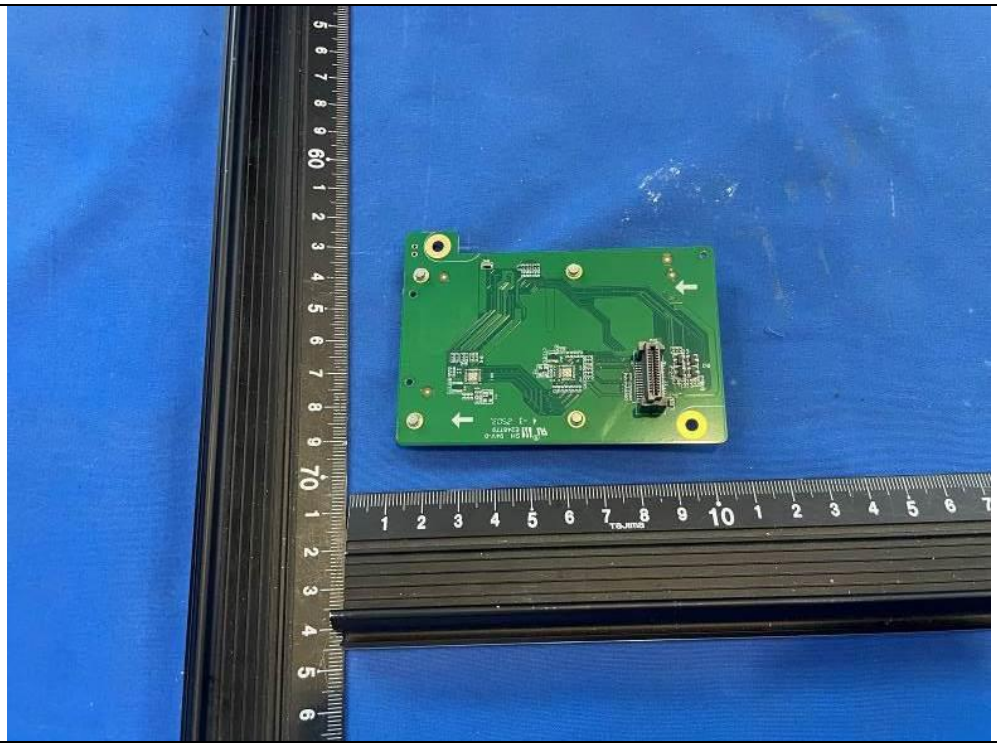
Details of: PCB and DC Fan



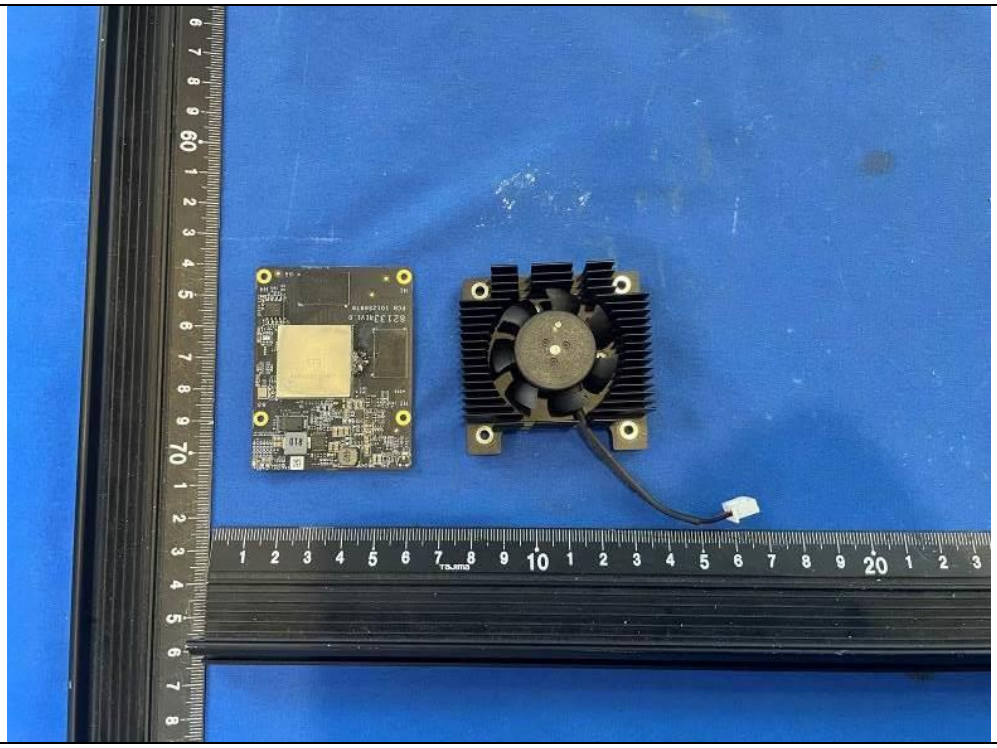
Details of: PCB-3



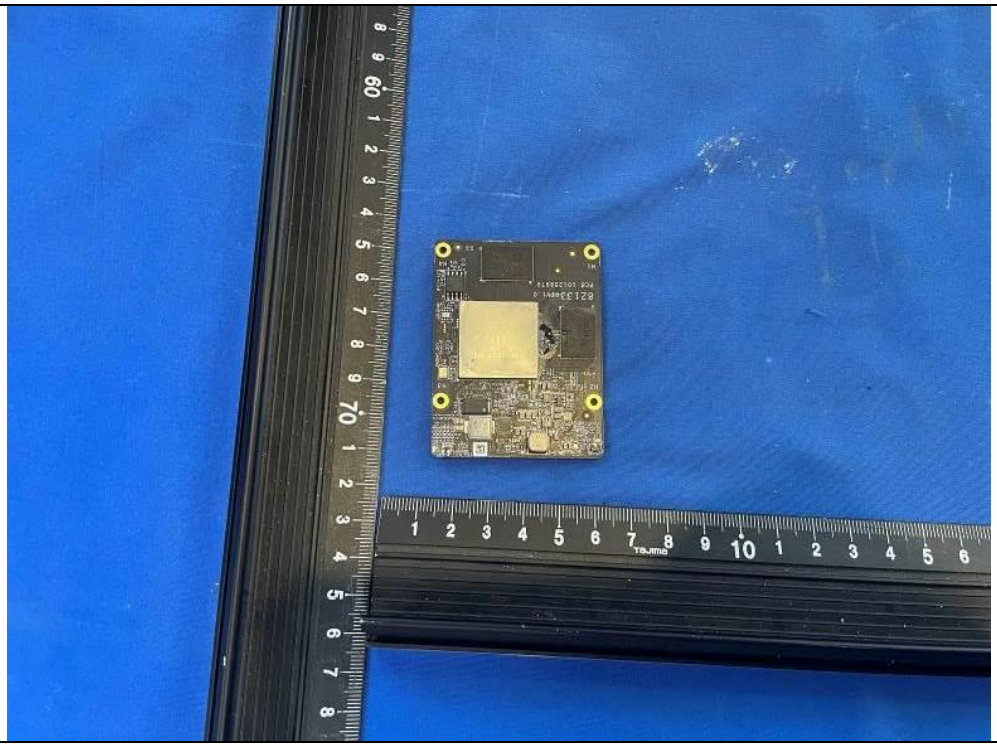
Details of: PCB-3



Details of: PCB and DC Fan

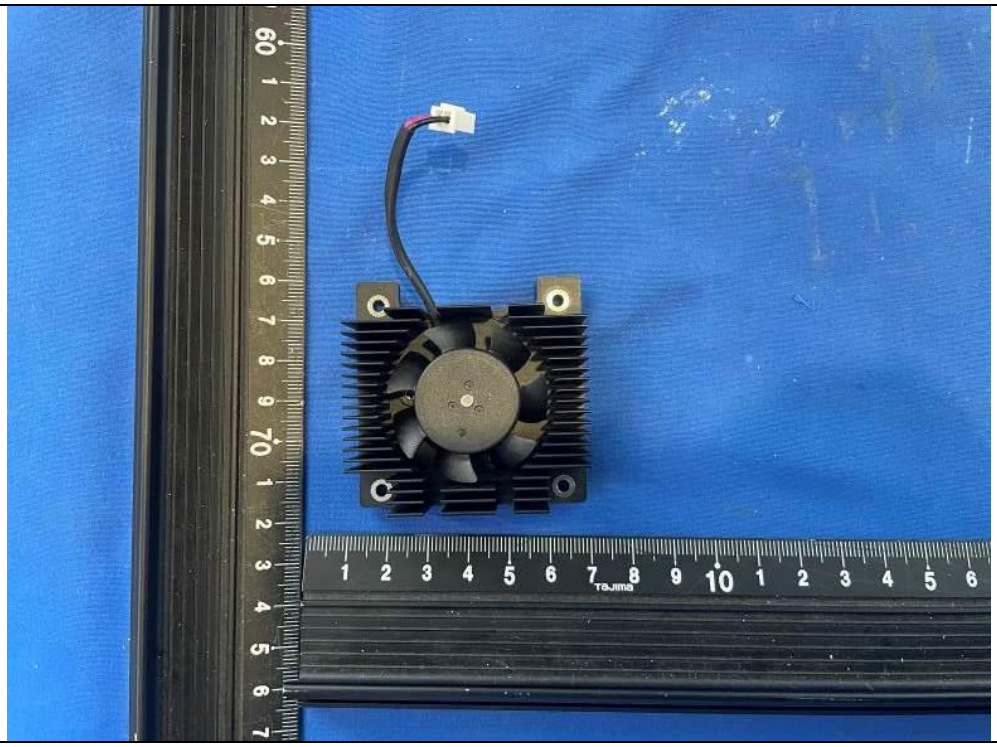


Details of: PCB-4

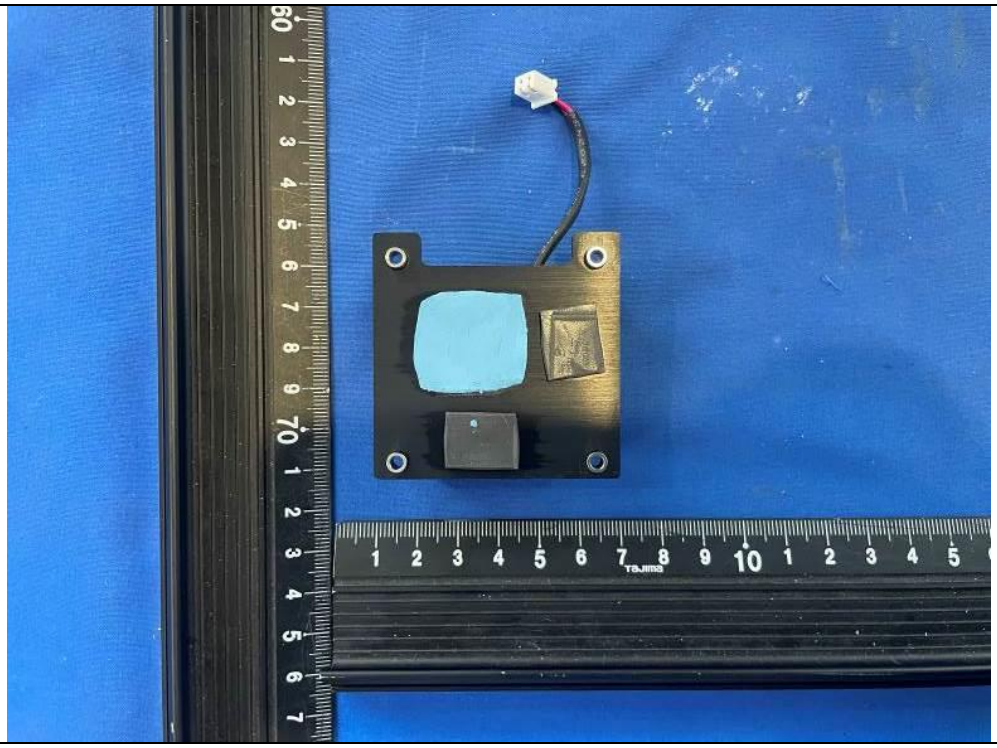


Details of: PCB-4

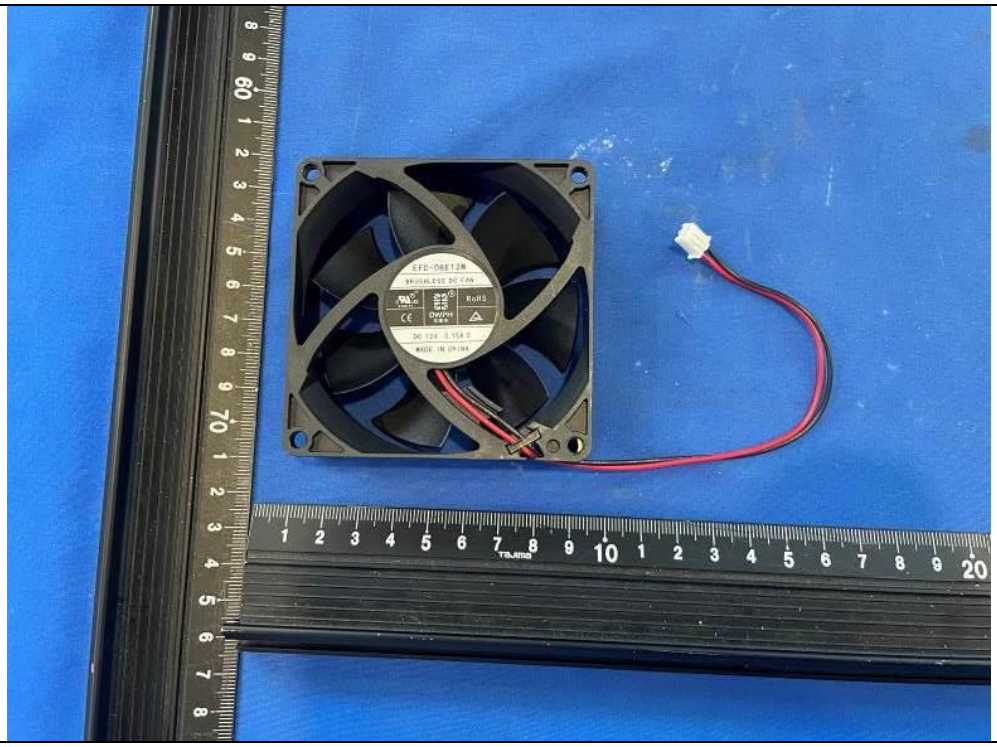
Details of: DC fan on cooler assembly



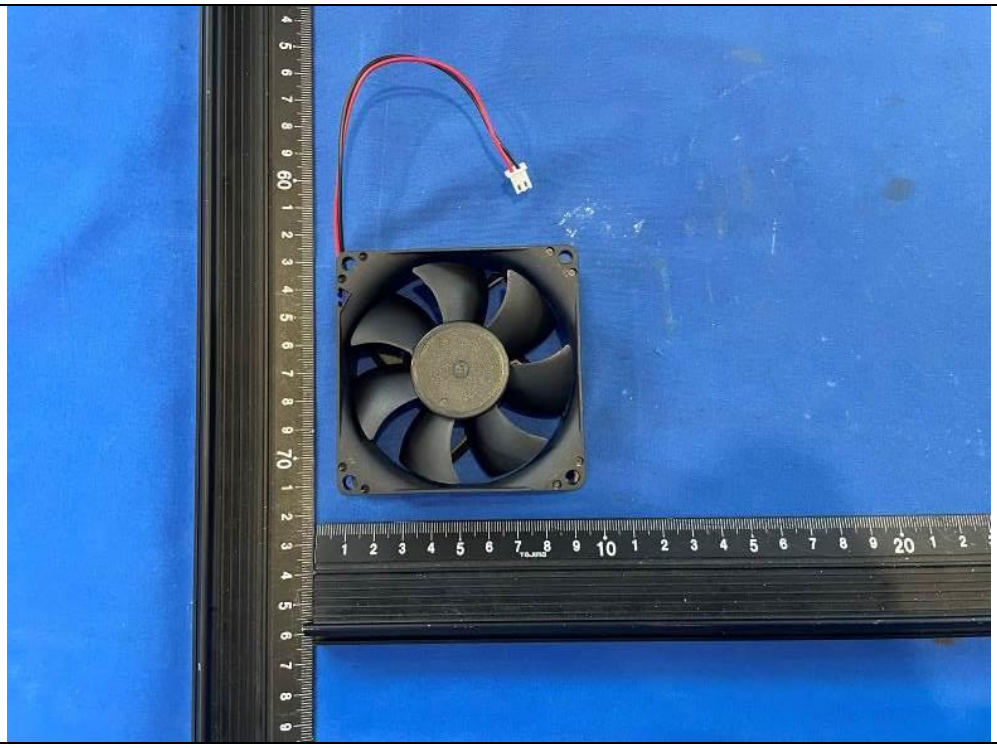
Details of: Internal View



Details of: DC fan in system

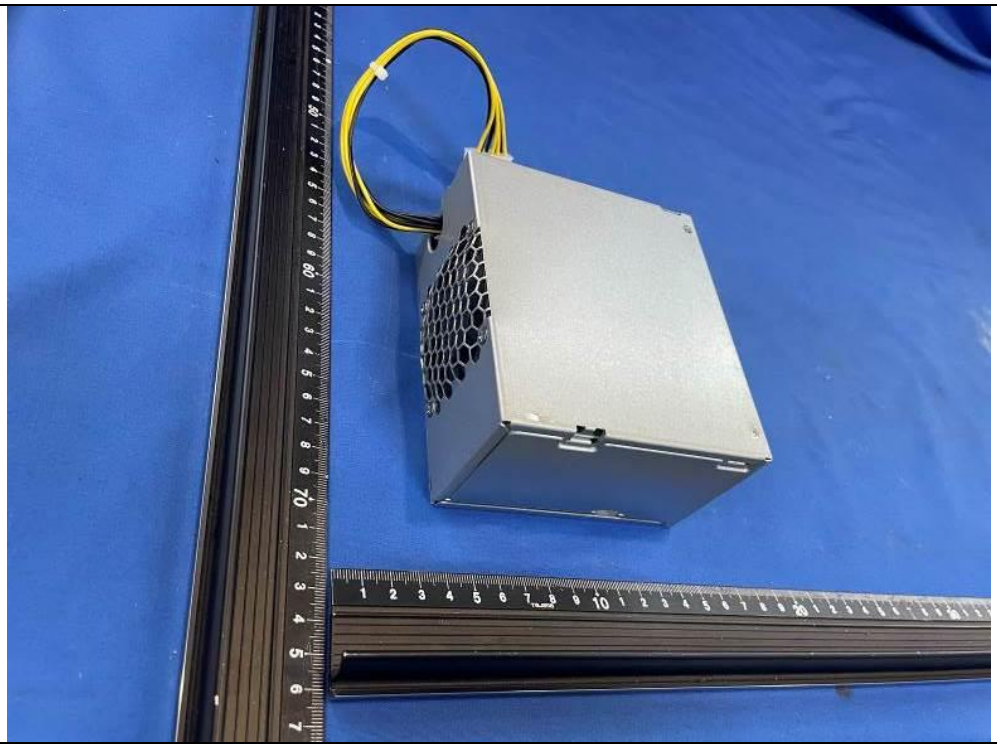


Details of: DC fan in system



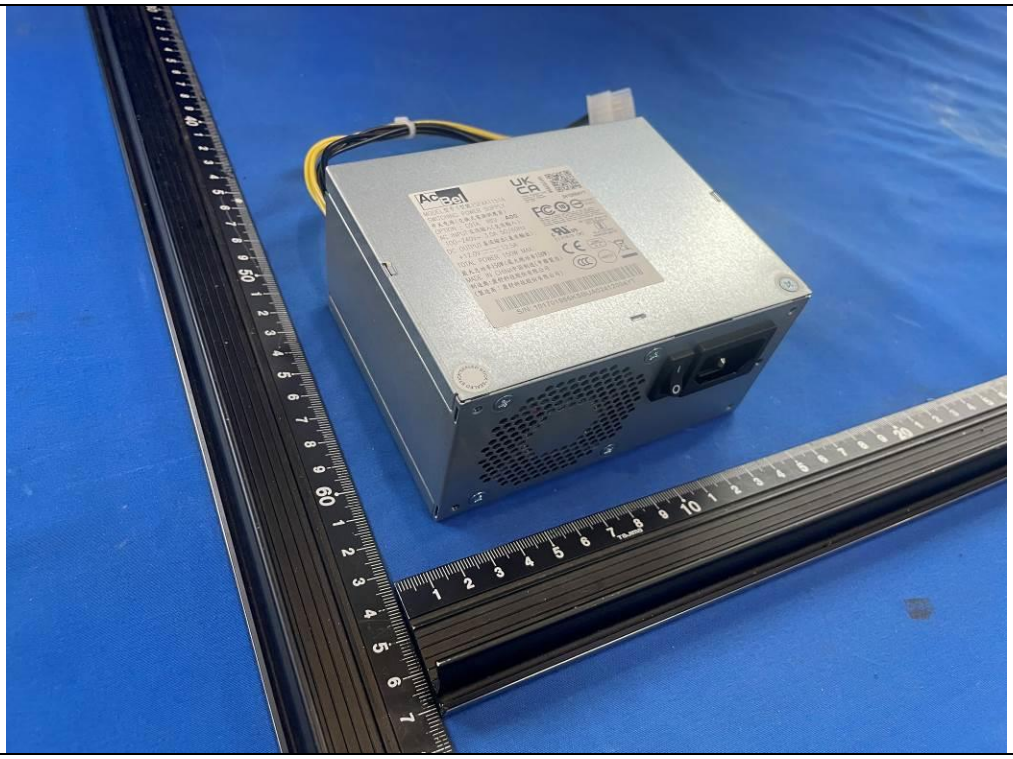
Details of: Building-in power supply HK250-48PP

Details of: Building-in power supply HK250-48PP

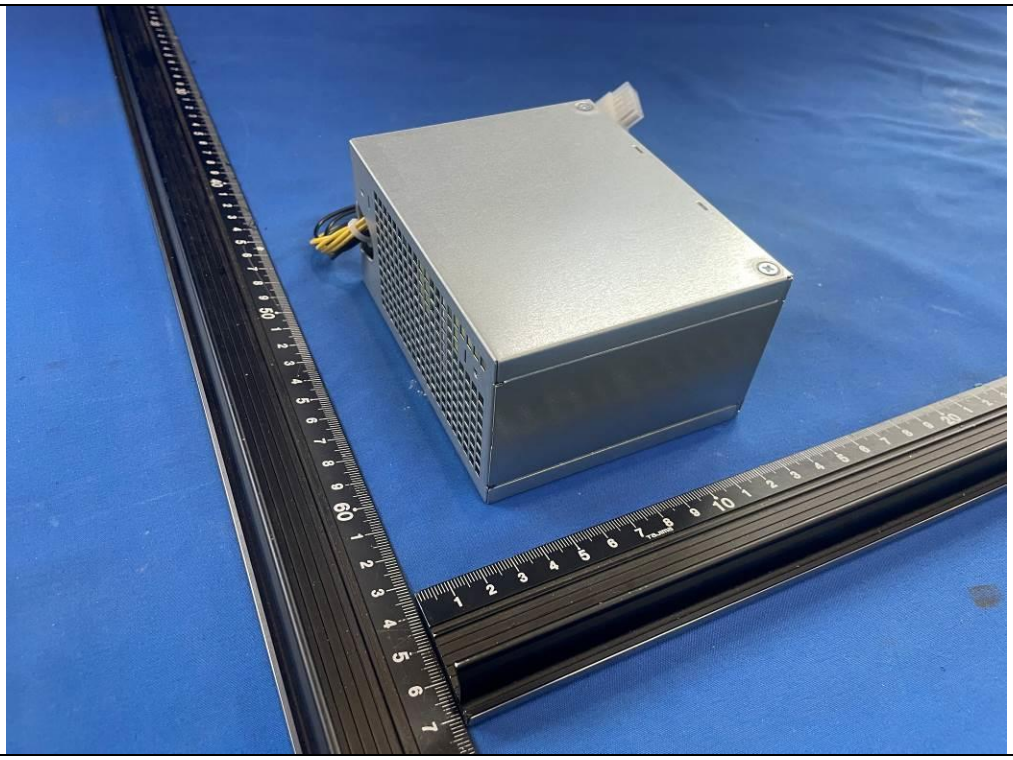


Details of: Building-in power supply HK250-48PP

Details of: Building-in power supply SFXA1151A

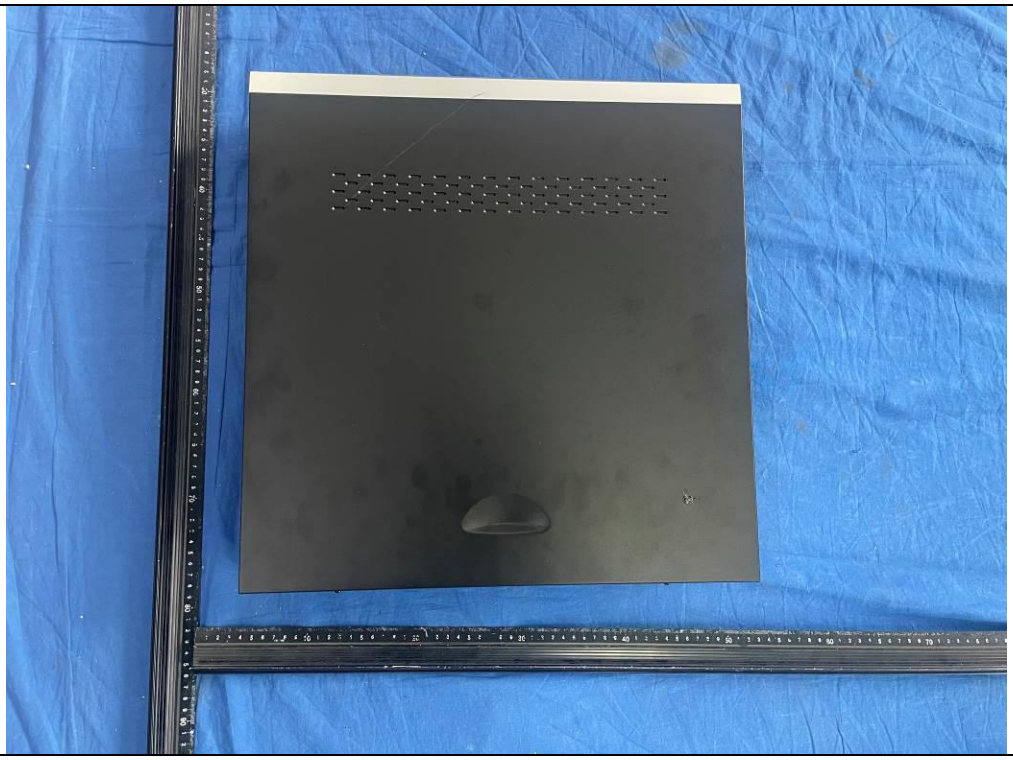


Details of: Building-in power supply SFXA1151A



Details of: Building-in power supply SFXA1151A

Details of: General View (Model: DS-8664NXI-I8/VPro)



Details of: General View (Model: DS-8664NXI-I8/VPro)

Details of: General View (Model: DS-8664NXI-I8/VPro)

Details of: General View (Model: DS-8664NXI-I8/VPro)

Details of: General View (Model: DS-8664NXI-I8/VPro)

Details of: General View (Model: DS-8664NXI-I8/VPro)

Details of: General View (Model: DS-8664NXI-I8/VPro)

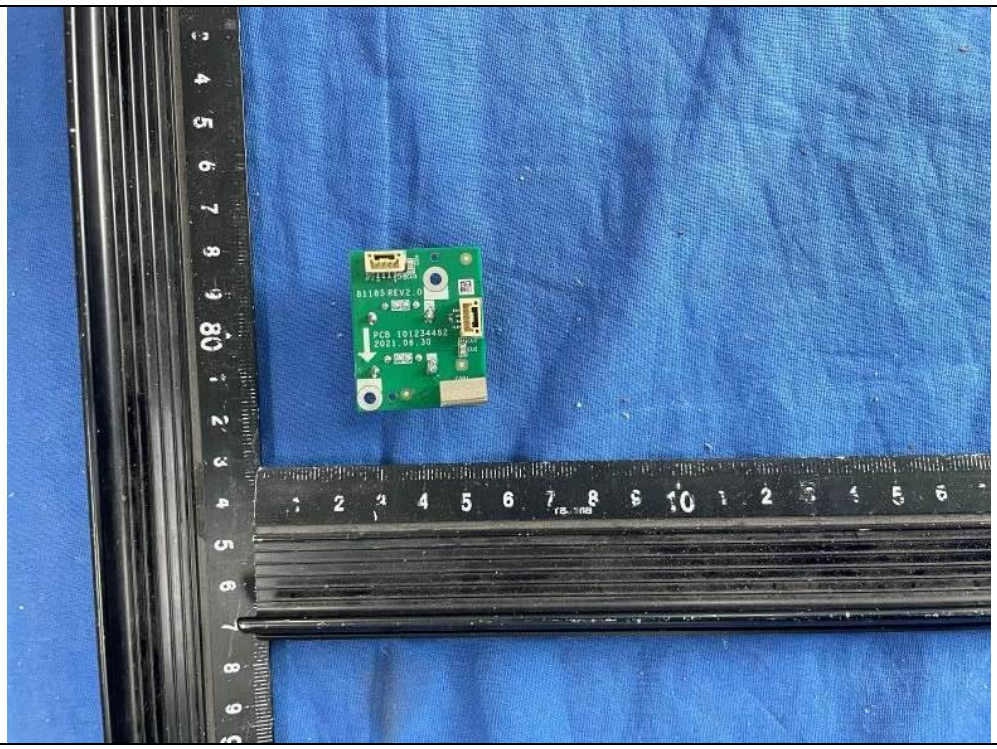
Details of: Internal View with alternative main board (80499_P Rev3.2)

Details of: Internal View with alternative front panel

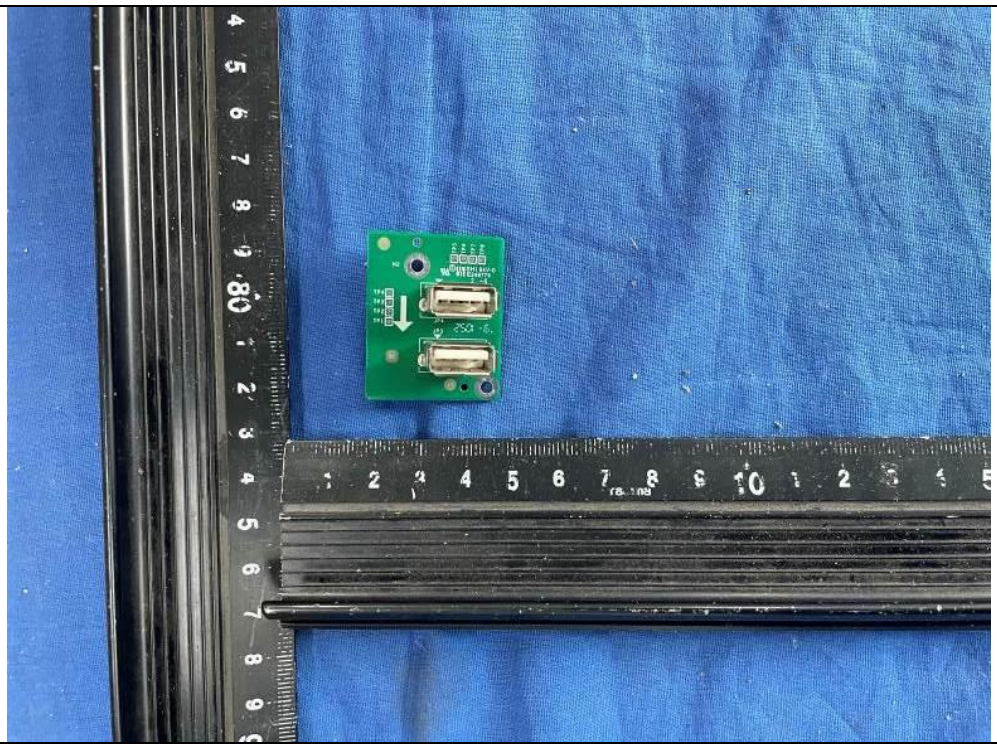
Details of: Internal View with alternative front panel

Details of: Internal View with alternative front panel

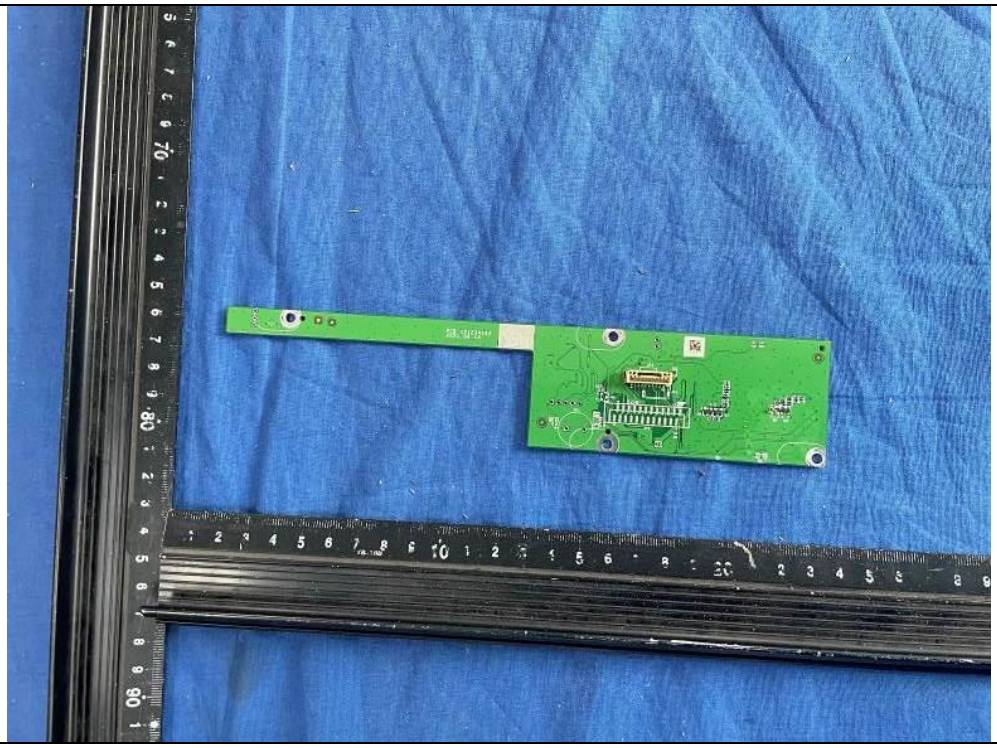
Details of: PCB of alternative front panel



Details of: PCB of alternative front panel



Details of: PCB of alternative front panel



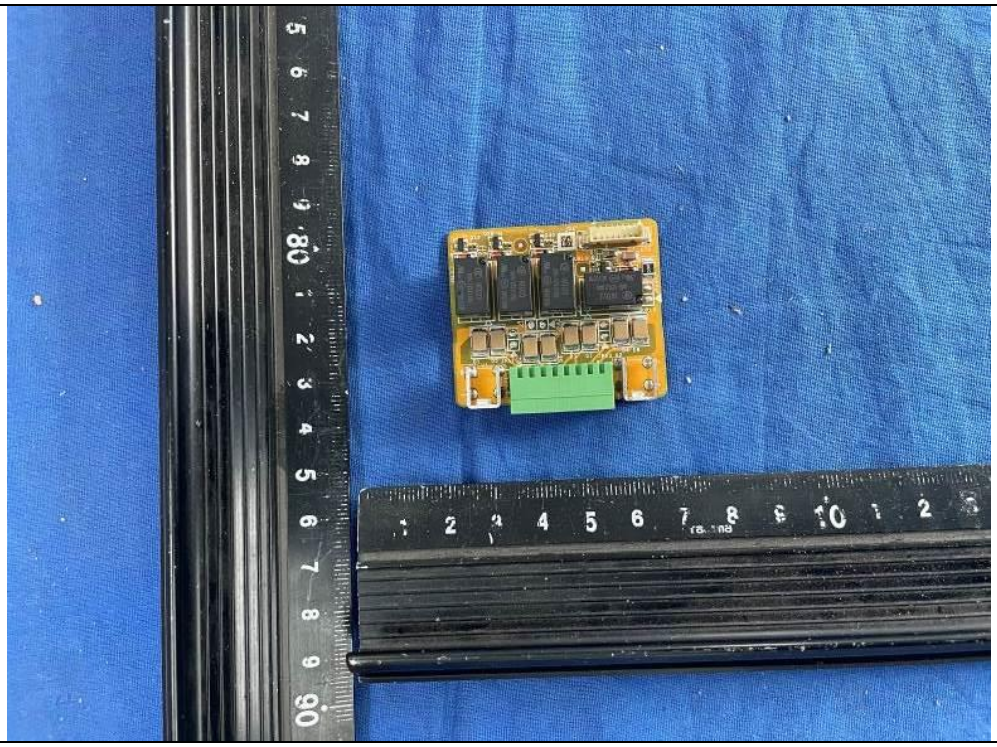
Details of: PCB of alternative front panel

Details of: Alternative main board (80499_P Rev3.2)

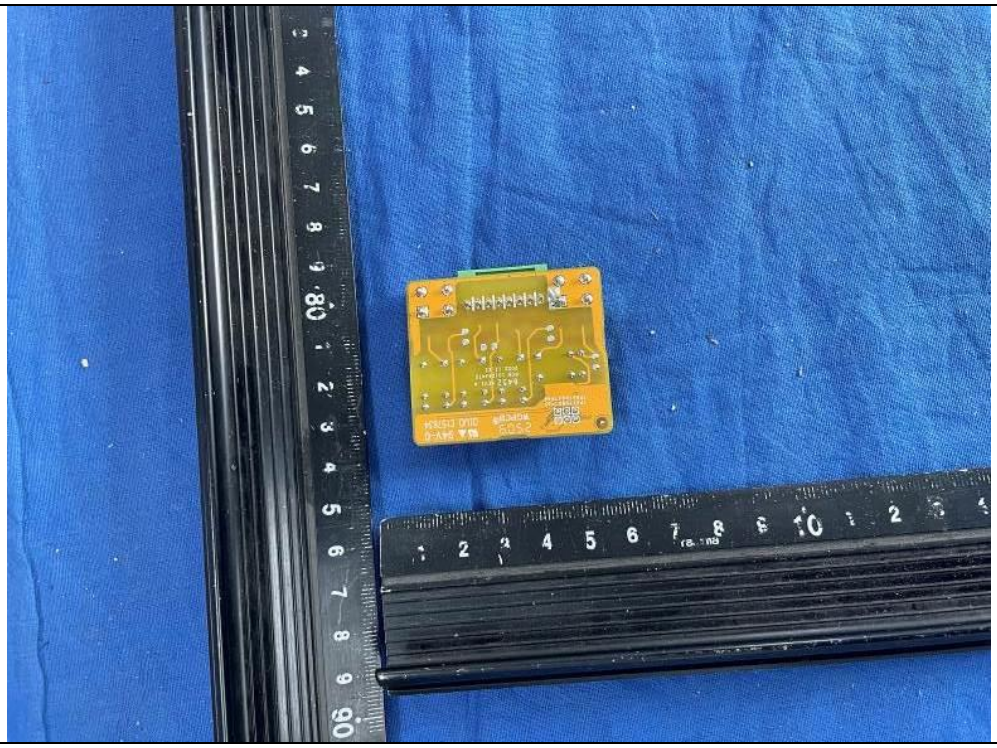
Details of: Alternative main board (80499_P Rev3.2)

Details of: Alternative main board (80499_P Rev3.2)

Details of: PCB near alternative main board



Details of: PCB near alternative main board



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

<table>
<tr><td colspan="4">IEC62368_1D - ATTACHMENT</td></tr>
<tr><td>Clause</td><td>Requirement + Test</td><td>Result - Remark</td><td>Verdict</td></tr>
<tr><td colspan="4">ATTACHMENT TO TEST REPORT
IEC 62368-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
(Audio/video, information and communication technology equipment - Part 1: Safety requirements)</td></tr>
<tr><td colspan="4">Differences according to ..... : EN 62368-1:2014+A11:2017</td></tr>
<tr><td colspan="4">Attachment Form No. ..... : EU_GD_IEC62368_1D_II
Attachment Originator ..... : Nemko AS
Master Attachment..... : Date 2021-02-04</td></tr>
<tr><td colspan="4"></td></tr>
<tr><td></td><td>CENELEC COMMON MODIFICATIONS (EN)</td><td></td><td>P</td></tr>
<tr><td></td><td>Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed “Z”.</td><td></td><td>P</td></tr>
<tr><td>CONTENTS</td><td>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</td><td></td><td>P</td></tr>
<tr><td></td><td>Delete all the “country” notes in the reference document (IEC 62368-1:2014) according to the following list:
<table>
<tr><td>0.2.1</td><td>Note</td><td>1</td><td>Note 3</td><td>4.1.15</td><td>Note</td></tr>
<tr><td>4.7.3</td><td>Note 1 and 2</td><td>5.2.2.2</td><td>Note</td><td>5.4.2.3.2.2 Table 13</td><td>Note c</td></tr>
<tr><td>5.4.2.3.2.4</td><td>Note 1 and 3</td><td>5.4.2.5</td><td>Note 2</td><td>5.4.5.1</td><td>Note</td></tr>
<tr><td>5.5.2.1</td><td>Note</td><td>5.5.6</td><td>Note</td><td>5.6.4.2.1</td><td>Note 2 and 3</td></tr>
<tr><td>5.7.5</td><td>Note</td><td>5.7.6.1</td><td>Note 1 and 2</td><td>10.2.1 Table 39</td><td>Note 2, 3 and 4</td></tr>
<tr><td>10.5.3</td><td>Note 2</td><td>10.6.2.1</td><td>Note 3</td><td>F.3.3.6</td><td>Note 3</td></tr>
</table></td><td></td><td>P</td></tr>
<tr><td></td><td>For special national conditions, see Annex ZB.</td><td></td><td>P</td></tr>
<tr><td>1</td><td>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.</td><td></td><td>P</td></tr>
</table>

IEC62368_1D - ATTACHMENT			
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.		P
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.		N/A

IEC62368_1D - ATTACHMENT			
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.		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.		P

IEC62368_1D - ATTACHMENT			
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.		P
ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		N/A
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”		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

IEC62368_1D - ATTACHMENT			
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.		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.		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).		P

IEC62368_1D - ATTACHMENT			
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.		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.		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.		P
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.		P
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.		N/A

IEC62368_1D - ATTACHMENT			
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.”.		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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 .		N/A
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		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		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.		N/A
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.		P
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		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.		N/A

IEC62368_1D - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ZC	**ANNEX ZC, NATIONAL DEVIATIONS (EN)**		**N/A**
10.5.2	**Germany** The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. *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		N/A

---End of Attachment 2---

Safety Information

Please read all the safety information carefully before using.

- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.
- Firmly connect the plug to the power socket. Do not connect several devices to one power adapter. Power off the device before connecting and disconnecting accessories and peripherals.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.
- For the device with the sign ϟ indicating hazardous live, the external wiring connected to the terminals requires installation by an instructed person.
- This product is designed for professional security installations and is not classified as consumer electronics.
- This equipment is not suitable for use in locations where children are likely to be present.

WARNING:

1. Do not ingest battery. Chemical Burn Hazard!
2. This product contains a coin/button cell battery. If the coin/button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.
3. Improper replacement of the battery with an incorrect type may defeat a safeguard (for example, in the case of some lithium battery types).
4. Do not dispose of the battery into fire or a hot oven, or mechanically crush or cut the battery, which may result in an explosion.
5. Do not leave the battery in an extremely high temperature surrounding environment, which may result in an explosion or the leakage of flammable liquid or gas.
6. Do not subject the battery to extremely low air pressure, which may result in an explosion or the leakage of flammable liquid or gas.
7. Dispose of used batteries according to the instructions.
8. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.
9. The battery is hazardous and should be kept away from children (whether the battery is new or used).

- If smoke, odor, or noise arises from the device, immediately turn off the power, unplug the power cable, and contact the service center.
- Use the device in conjunction with an UPS, and use factory recommended HDD if possible.
- For the device with fan blades or motors, keep body parts away from fan blades or motors.
- Disconnect the power source during servicing.
- Do not touch the bare components (such as the metal contacts of the inlets) and wait for at least 5 minutes, since electricity may still exist after the device is powered off.
- Never place the device in an unstable location. The device may fall, causing serious personal injury or death.
- If the device uses a 3-prong power supply plug, it must be connected to an earthed mains socket-outlet properly.

*******End of Attachment 3*******